ski-doo®

BRP

2014

RACING Handbook

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2014

Racing Handbook

MX Z™ x 600 RS™

ski-doo®

BRP

Printed in Canada

Technical Publications
Bombardier Recreational Products Inc. (BRP)
Valcourt (Quebec) Canada

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SAFETY NOTICE

This manual has been prepared as a guide to correctly service and repair 2013 Ski Doo MX Z X 600 RS snowmobiles described in the list in the *INTRODUCTION.*

This edition was primarily published to be used by snowmobile mechanic technicians who are already familiar with all service procedures relating to Bombardier Recreational Products Inc. (BRP) made snowmobiles.

Please note that the instructions will apply only if proper hand tools and special service tools are used.

It is understood that this manual may be translated into another language. In the event of any discrepancy, the English version shall prevail.

The content depicts parts and / or procedures applicable to the particular product at time of writing. Service and Warranty Bulletins may be published to update the content of this manual. Make sure to read and understand them. It does not included dealer modifications, whether authorized or not by BRP, after manufacturing the product.

The use of BRP parts is most strongly recommended when considering replacement of any component. Dealer and / or distributor assistance should be sought in case of doubt.

The engines and the corresponding components identified in this document should not be utilized on product(s) other than those mentioned in this document.

⚠ WARNING

Unless otherwise specified, engine should be turned OFF and cold for all maintenance and repair procedures.

This manual emphasizes particular information denoted by the wording and symbols:

⚠ WARNING

Identifies an instruction which, if not followed, could cause serious personal injury including possibility of death.

CAUTION: Denotes an instruction which, if not followed, could severely damage vehicle components.

NOTE: Indicates supplementary information needed to fully complete an instruction.

Although the mere reading of such information does not eliminate the hazard, your understanding of the information will promote its correct use. Always use common shop safety practice.

This information relates to the preparation and use of BRP snowmobile and has been utilized safely and effectively by BRP. However, Bombardier Recreational Products Inc. (BRP) disclaims liability for all damages and/or injuries resulting from the improper use of the contents. We strongly recommend that any services be carried out and/or verified by a highly skilled professional mechanic. It is understood that certain modifications may render use of the vehicle illegal under existing federal, provincial and state regulations.

INTRODUCTION

GENERAL INFORMATIONS

This shop manual covers the following BRP made 2011 MX Z X 600 RS series models:

MODEL	ENGINE TYPE
MX Z x 600 RS	593 RS

The information and component/system descriptions contained in this manual are correct at time of publication. BRP however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured.

Due to late changes, it may have some differences between the manufactured product and the description and/or specifications in this document.

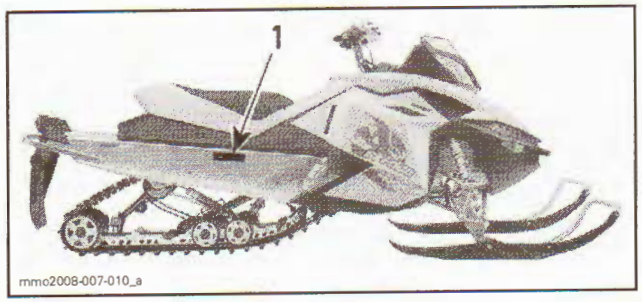
BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation.

This manual uses technical terms which may be slightly different from the ones used in the *PARTS CATALOG*.

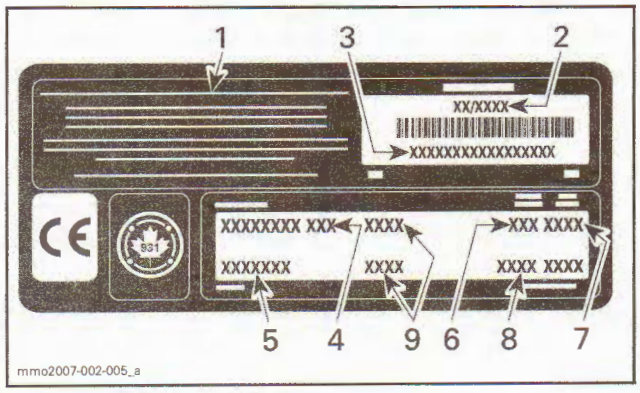
When ordering parts always refer to the specific model *PARTS CATALOG*.

HOW TO IDENTIFY YOUR SNOWMOBILE

Vehicle Description Decal



TYPICAL
1. *Vehicle description decal*



VEHICLE DESCRIPTION DECAL
1. *Manufacturer name*
2. *Manufacturing date*
3. *Vehicle identification number (V.I.N.)*
4. *Model name*
5. *Option package*
6. *Engine type*
7. *Model year*
8. *Color codes*
9. *Vehicle weight/engine power (European models)*

Vehicle Serial Number

The Vehicle Identification Number (V.I.N.) is scribed on vehicle description decal. See above. It is also engraved on tunnel near vehicle description decal.

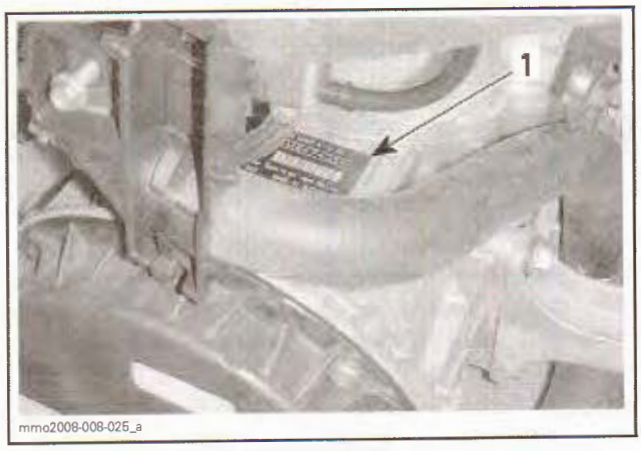
2BPSBX5A9Y1000001

Model number — Serial number

Model year: y = 2000
1 = 2001
2 = 2002
etc.

A00A8HA

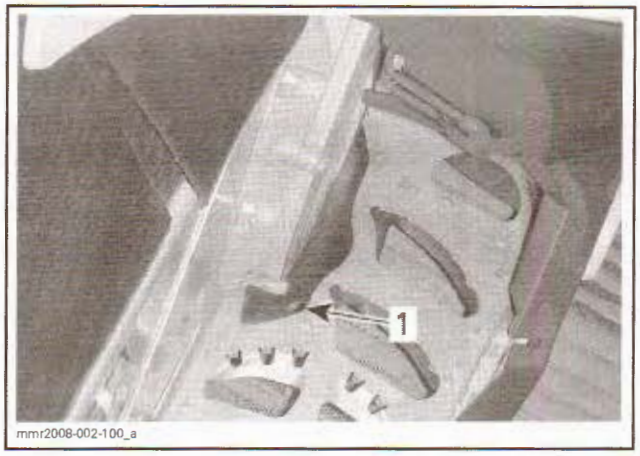
Engine Serial Number



RH SIDE OF ENGINE COMPARTMENT
1. *Engine serial number*

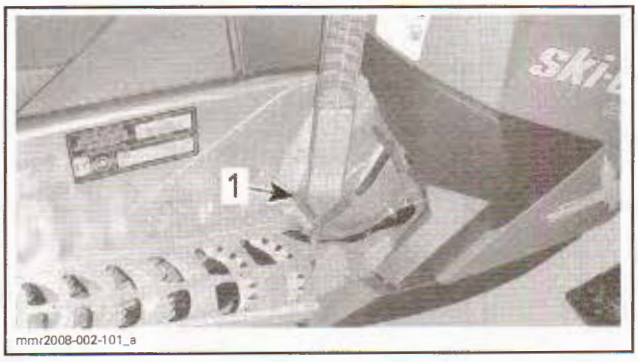
SNOWMOBILE LIFTING

To lift a MX Z X 600 RS securely, it is important to use the reinforced footrest holes.



1. Reinforced holes in footrest

Install lifting tool hooks in holes as shown.



1. Hook of lifting tool

CAUTION: Do not use footrest opening or steering column to lift the snowmobile. Frame or steering system could be seriously damaged.

ENGINE EMISSIONS INFORMATION

Manufacturer's Responsibility

Manufacturers of engines must determine the exhaust emission levels for each engine horsepower family and certify these engines with the United States of America *ENVIRONMENTAL PROTECTION AGENCY (EPA)*. An emissions control information label, showing emission levels and engine specifications, must be placed on each vehicle at the time of manufacture.

Dealer Responsibility

When performing service on snowmobiles that carry an emissions control information label, adjustments must be kept within published factory specifications.

Replacement or repair of any emission related component must be executed in a manner that maintains emission levels within the prescribed certification standards.

Dealers are not to modify the engine in any manner that would alter the horsepower or allow emission levels to exceed their predetermined factory specifications.

Exceptions include manufacturer's prescribed changes, such as altitude adjustments for example.

Owner Responsibility

The owner/operator is required to have engine maintenance performed to maintain emission levels within prescribed certification standards.

The owner/operator is not to, and should not allow anyone to modify the engine in any manner that would alter the horsepower or allow emissions levels to exceed their predetermined factory specifications.

EPA Emission Regulations

Some Ski Doo snowmobiles manufactured by BRP are certified to the EPA as conforming to the requirements of the regulations for the control of air pollution from new snowmobiles engines. This certification is contingent on certain adjustments being set to factory standards. For this reason, the factory procedure for servicing the product must be strictly followed and, whenever practicable, returned to the original intent of the design.

The responsibilities listed above are general and in no way a complete listing of the rules and regulations pertaining to the EPA requirements on exhaust emissions for snowmobiles products. For more detailed information on this subject, you may contact the following locations:

FOR ALL COURIER SERVICES:
U.S. Environmental Protection Agency
Office of Transportation and Air Quality
1310 L Street NW
Washington D.C. 20005

REGULAR US POSTAL MAIL:
1200 Pennsylvania Ave. NW
Mail Code 6403J
Washington D.C. 20460

INTERNET: http://www.epa.gov/otaq/

E MAIL: otaqpublicweb@epa.gov

TIGHTENING TORQUE

Tighten fasteners to torque mentioned in exploded views and/or text, When they are not specified, refer to following table.

⚠ WARNING

Torque wrench tightening specifications must strictly be adhered to.
Locking devices (e.g.: locking tabs, elastic stop nuts, self locking fasteners, etc.) must be installed or replaced with new ones, where specified. If the efficiency of a locking device is impaired, it must be renewed.

In order to avoid a poor assembling, tighten screws, bolts or nuts in accordance with the following procedure:

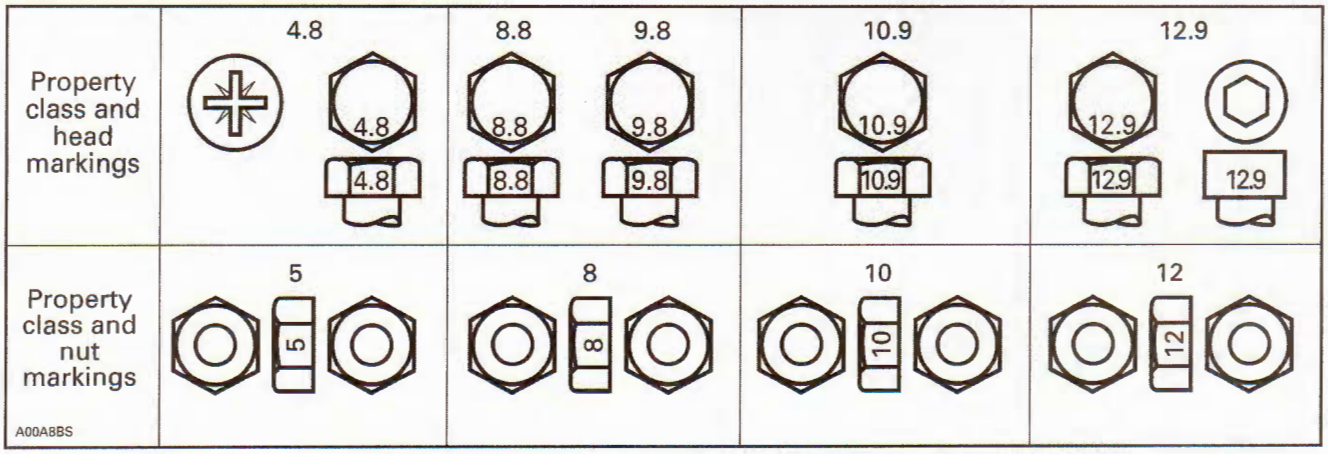
- Manually screw all screws, bolts and/or nuts.
- Apply the half of the recommended torque value.

CAUTION: Be sure to use proper tightening torque for the proper strength grade.

NOTE: When possible, always apply torque on the nut.

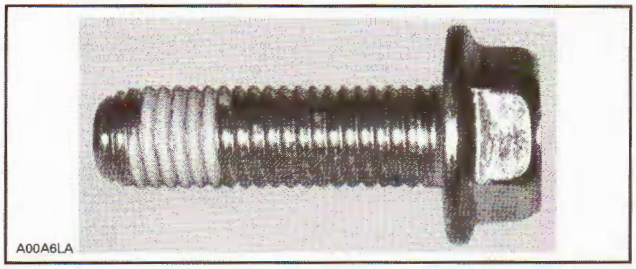
- Torque at the recommended torque value.

NOTE: Always torque screws, bolts and/or nuts in a criss cross sequence.



FASTENER SIZE	FASTENER GRADE/TORQUE			
	5.8 Grade	**8.8** Grade	**10.9** Grade	**12.9** Grade
M4	1.5 – 2 N•m (13 – 18 lbf•**in**)	2.5 – 3 N•m (22 – 27 lbf•**in**)	3.5 – 4 N•m (31 – 35 lbf•**in**)	4 – 5 N•m (35 – 44 lbf•**in**)
M5	3 – 3.5 N•m (27 – 31 lbf•**in**)	4.5 – 5.5 N•m (40 – 47 lbf•**in**)	7 – 8.5 N•m (62 – 75 lbf•**in**)	8 – 10 N•m (71 – 89 lbf•**in**)
M6	6.5 – 8.5 N•m (58 – 75 lbf•**in**)	8 – 12 N•m (71 – 106 lbf•**in**)	10.5 – 15 N•m (93 – 133 lbf•**in**)	16 N•m (142 lbf•**in**)
M8	15 N•m (133 lbf•**in**)	24.5 N•m (18 lbff•t)	31.5 N•m (23 lbf•ft)	40 N•m (30 lbf•ft)
M10	29 N•m (21 lbf•ft)	48 N•m (35 lbf•ft)	61 N•m (45 lbf•ft)	72.5 N•m (53 lbf•ft)
M12	52 N•m (38 lbf•ft)	85 N•m (63 lbf•ft)	105 N•m (77 lbf•ft)	127.5 N•m (94 lbf•ft)
M14	85 N•m (63 lbf•ft)	135 N•m (100 lbf•ft)	170 N•m (125 lbf•ft)	200 N•m (148 lbf•ft)

SELF LOCKING FASTENERS PROCEDURE



TYPICAL — SELF LOCKING FASTENER

The following describes the most common application procedures when working with self locking fasteners.

Use a metal brush or a tap to clean the hole properly then use a solvent, let act during 30 minutes and wipe off. The solvent utilization is to ensure the adhesive works properly.

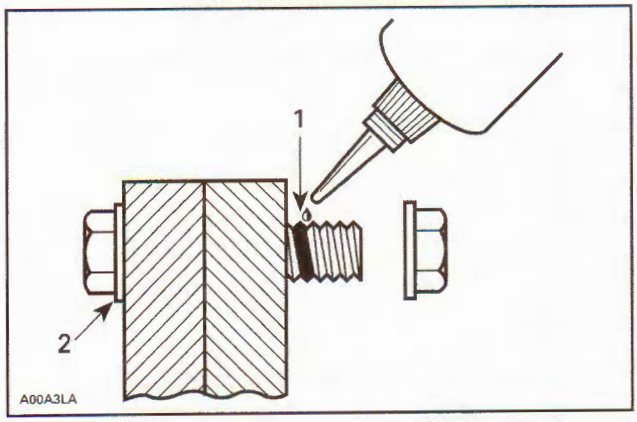
LOCTITE® APPLICATION PROCEDURE

The following describes the most common application procedures when working with Loctite products.

NOTE: Always use proper strength Loctite product as recommended in this shop manual.

Threadlocker

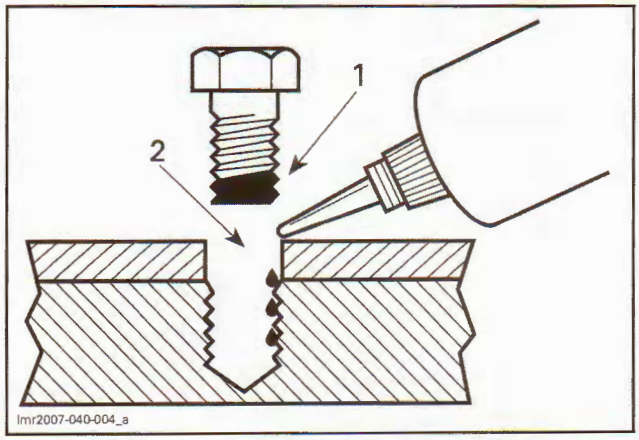
Uncovered Holes (bolts and nuts)



1. *Apply here*
2. *Do not apply*

- Clean threads (bolt and nut) with solvent.
- Apply Loctite Primer N (P/N 293 800 041) on threads and allow to dry.
- Choose proper strength Loctite threadlocker.
- Fit bolt in the hole.
- Apply a few drops of threadlocker at proposed tightened nut engagement area.
- Position nut and tighten as required.

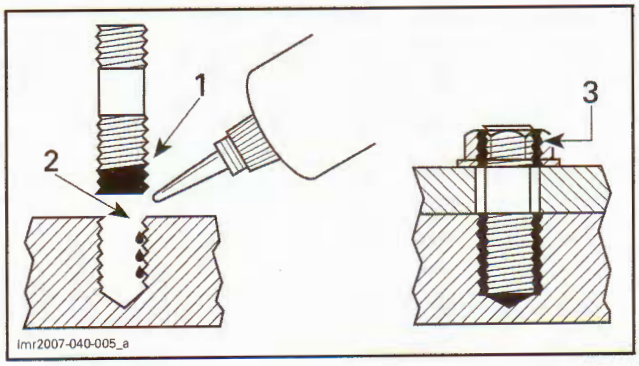
Blind Holes



1. *On threads*
2. *On threads and at the bottom of hole*

- Clean threads (bolt and hole) with solvent.
- Apply Loctite Primer N (P/N 293 800 041) on threads (bolt and nut) and allow to dry for 30 seconds.
- Choose proper strength Loctite threadlocker.
- Apply several drops along the threaded hole and at the bottom of the hole.
- Apply several drops on bolt threads.
- Tighten as required.

Stud in Blind Holes



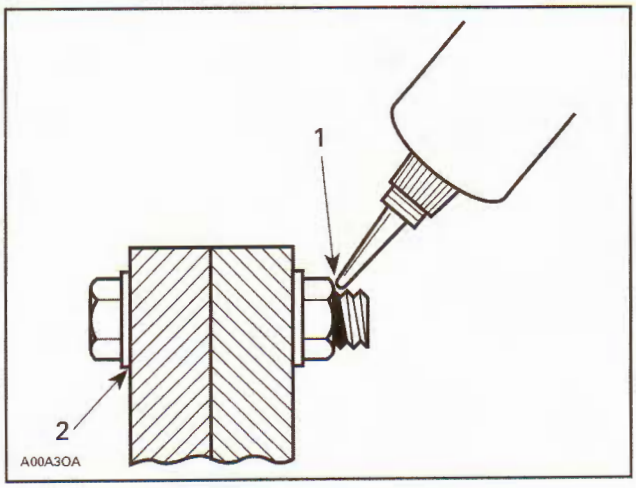
1. *On threads*
2. *On threads and in the hole*
3. *Onto nut threads*

- Clean threads (stud and hole) with solvent.
- Apply Loctite Primer N (P/N 293 800 041) on threads and allow to dry.
- Put 2 or 3 drops of proper strength Loctite threadlocker on female threads and in hole.

NOTE: To avoid a hydro lock situation, do not apply too much Loctite.

- Apply several drops of proper strength Loctite on stud threads.
- Install stud.
- Install cover, etc.
- Apply drops of proper strength Loctite on uncovered threads.
- Tighten nuts as required.

Pre Assembled Parts

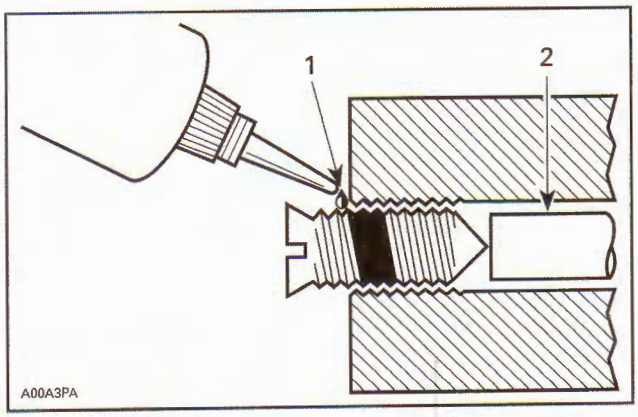


1. *Apply here*
2. *Do not apply*

- Clean bolts and nuts with solvent.
- Assemble components.
- Tighten nuts.
- Apply drops of proper strength Loctite on bolt/nut contact surfaces.
- Avoid touching metal with tip of flask.

NOTE: For preventive maintenance on existing equipment, retighten nuts and apply proper strength Loctite on bolt/nut contact surfaces.

Adjusting Screw

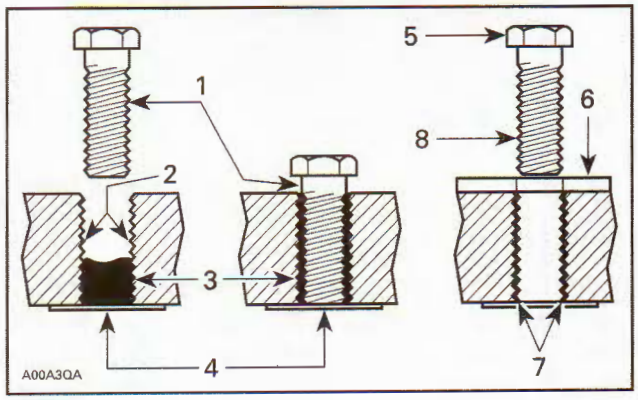


1. *Apply here*
2. *Plunger*

- Adjust screw to proper setting.
- Apply drops of proper strength Loctite threadlocker on screw/body contact surfaces.
- Avoid touching metal with tip of flask.

NOTE: If it is difficult to readjust, heat screw with a soldering iron (232°C (450°F)).

Stripped Thread Repair



1. *Release agent*
2. *Stripped threads*
3. *Form A Thread*
4. *Tapes*
5. *Cleaned bolt*
6. *Plate*
7. *New threads*
8. *Threadlocker*

Standard Thread Repair

- Follow instructions on Loctite FORM A THREAD 81668 package.
- If a plate is used to align bolt:

a. Apply release agent on mating surfaces.

b. Put waxed paper or similar film on the surfaces.

- Twist bolt when inserting it to improve thread conformation.

NOTE: NOT intended for engine stud repairs.

Repair of Small Holes/Fine Threads

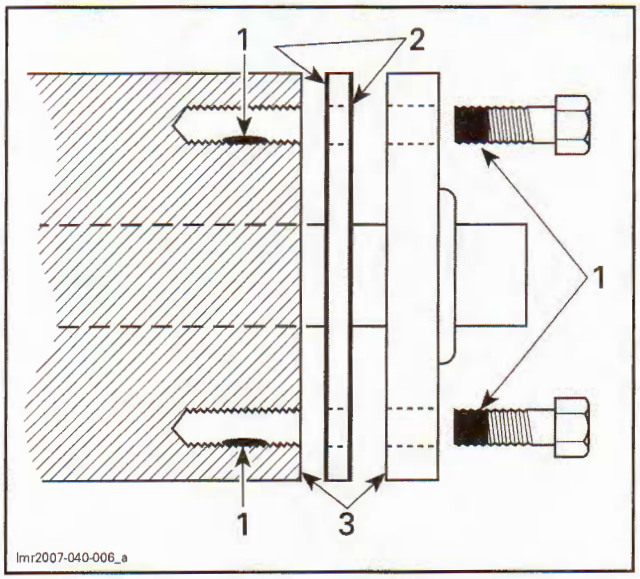
Option 1: Enlarge damaged hole, then follow *STANDARD THREAD REPAIR* procedure.

Option 2: Apply FORM A THREAD on the screw and insert in damaged hole.

Permanent Stud Installation (light duty)

- Use a stud or thread on desired length.
- DO NOT apply release agent on stud.
- Do a STANDARD THREAD REPAIR.
- Allow to cure for 30 minutes.
- Assemble.

Gasket Compound



1. *Proper strength Loctite*
2. *Loctite Primer N (P/N 293 800 041) and Gasket Eliminator 518 (P/N 293 800 038) on both sides of gasket*
3. *Loctite Primer N only*

- Remove old gasket and other contaminants with Loctite Chisel remover (P/N 413 708 500). Use a mechanical mean if necessary.

NOTE: Avoid grinding.

- Clean both mating surfaces with solvent.
- Spray Loctite Primer N on both mating surfaces and on both sides of gasket. Allow to dry 1 or 2 minutes.
- Apply GASKET ELIMINATOR 518 (P/N 293 800 038) on both sides of gasket, using a clean applicator.
- Place gasket on mating surfaces and assemble immediately.

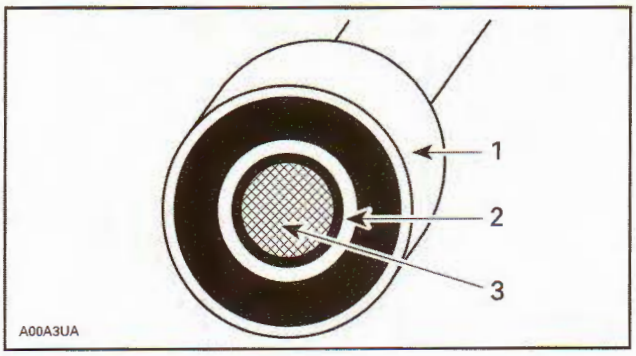
NOTE: If the cover is bolted to blind holes (above), apply proper strength Loctite in the hole and on threads. Tighten.

If holes are sunken, apply proper strength Loctite on bolt threads.

- Tighten as usual.

Mounting on Shaft

Mounting with a Press



1. *Bearing*
2. *Proper strength Loctite*
3. *Shaft*

- Clean shaft external part and element internal part.
- Apply a strip of proper strength Loctite on shaft circumference at insert or engagement point.

NOTE: Retaining compound is always forced out when applied on shaft.

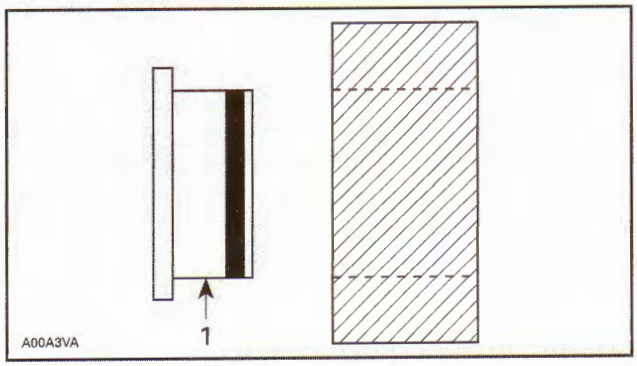
- DO NOT use antiseize Loctite or any similar product.
- No curing period is required.

Mounting in Tandem

1. Apply retaining compound on internal element bore.
2. Continue to assemble as shown above.

Case In Components

Metallic Gaskets



1. *Proper strength Loctite*

- Clean inner housing diameter and outer gasket diameter.
- Spray housing and gasket with Loctite Primer N (P/N 293 800 041).
- Apply a strip of proper strength Loctite on leading edge of outer metallic gasket diameter.

NOTE: Any Loctite product can be used here. A low strength liquid is recommended as normal strength and gap are required.

- Install according to standard procedure.
- Wipe off surplus.
- Allow it to cure for 30 minutes.

NOTE: Normally used on worn out housings to prevent leaking or sliding.

It is generally not necessary to remove gasket compound applied on outer gasket diameter.

MANUAL INFORMATION

The manual is divided into many major sections as you can see in the main table of contents at the beginning of the manual.

Each section is divided in various subsections, and again, each subsection has one or more division.

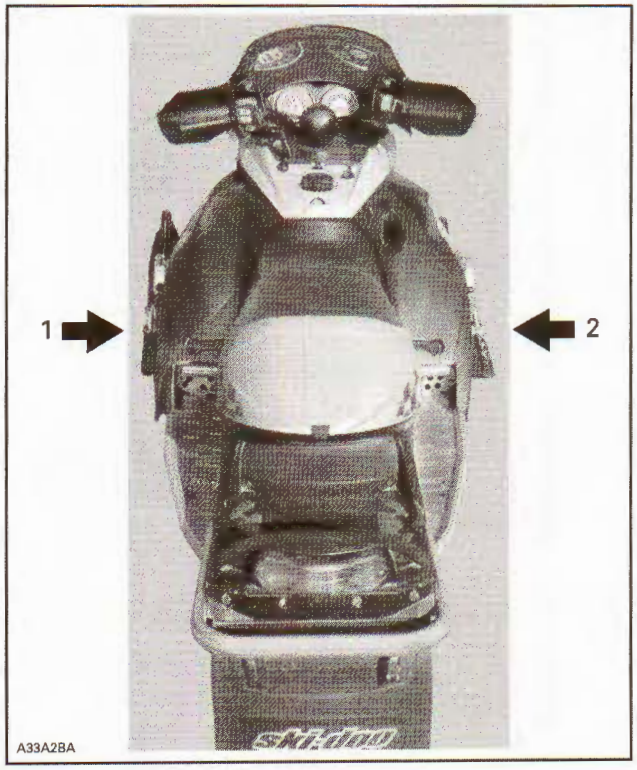
Illustrations and photos show the typical construction of the different assemblies and, in all cases, may not reproduce the full detail or exact shape of the parts shown. However, they represent parts which have the same or a similar function.

CAUTION: Most components of those vehicles are built with parts dimensioned in the metric system. Most fasteners are metric and must not be replaced by customary fasteners or vice versa. Mismatched or incorrect fasteners could cause damage to the vehicle or possible personal injury.

As many of the procedures in this manual are interrelated, we suggest, that before undertaking any task, you read and thoroughly understand the entire section or subsection in which the procedure is contained.

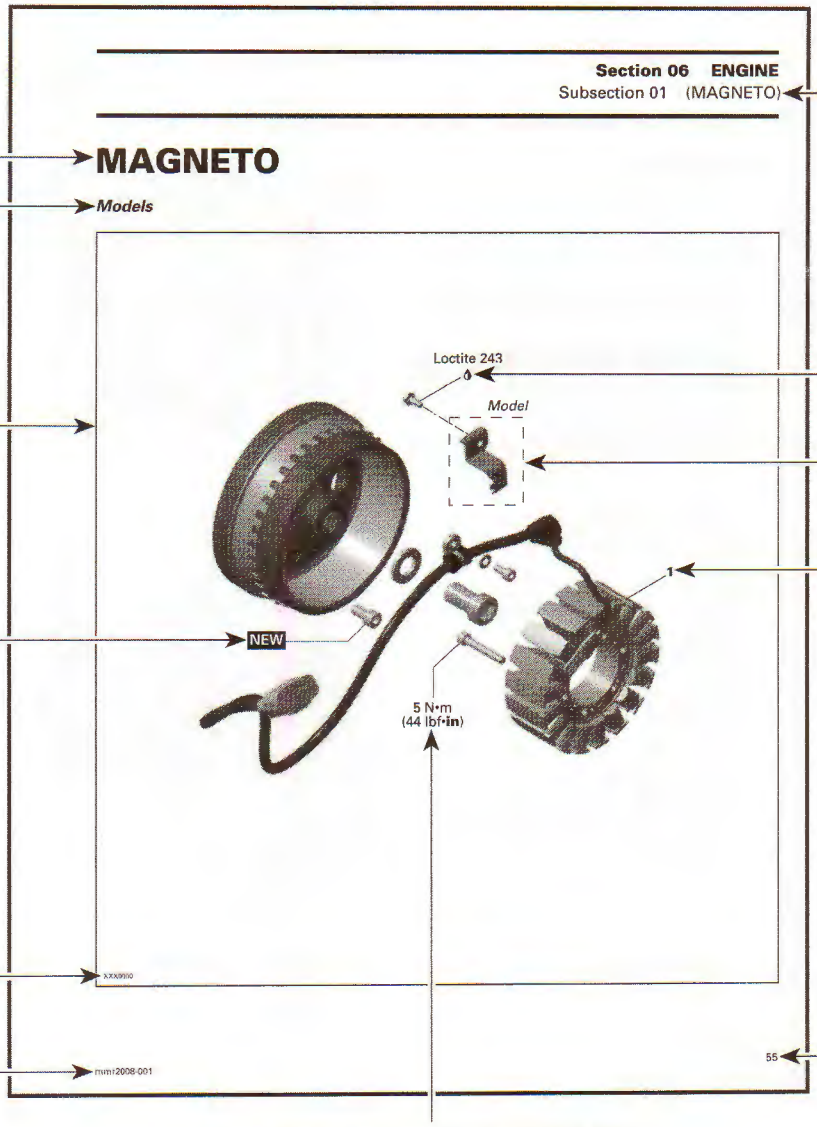
A number of procedures throughout the book require the use of special tools. Before commencing any procedure, be sure that you have on hand all the tools required, or approved equivalents.

The use of RIGHT and LEFT indications in the text, always refers to driving position (when sitting on vehicle).



TYPICAL
1. Left
2. Right

TYPICAL PAGE



Page heading indicates section and subsection.

Subsection title

Indicates applicable models.

Exploded view assists you in identifying parts and their related positions.

Drop represents a service product to be applied.

Dotted box contains parts applicable to a specific model.

Bold face number is used to identify a part referred to the text.

NEW indicates that the part must be replaced with a new one.

Illustration number for publishing process.

Document number for publishing process.

Page number

Specific torque applicable to this installation.

NOTICE Pay attention to torque specifications. Some of these are in lbf•**in** instead of lbf•ft. Use appropriate torque wrench.

Typical_iso_2008_en

TYPICAL PAGE

Tittle in bold indicates category of information to be carried out.

Reference to a specific section or subsection.

Indicates component procedures apply to.

Indicates specific procedure to be carried out.

Section 03 ENGINE
Subsection 09 (MAGNETO SYSTEM)

GENERAL

NOTE: The following procedures can be done without removing the engine.

During assembly/installation, use the torque values and service products as in the exploded views.

Clean threads before applying a threadlocker. Refer to the *SELF-LOCKING FASTENERS* and *LOCTITE APPLICATION* sections at the beginning of this manual for complete procedure.

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to.
Locking devices (e.g.: locking tabs, elastic stop nuts, self-locking fasteners, etc.) must be replaced with new ones.

PROCEDURES

MAGNETO FLYWHEEL

Magneto Flywheel Cleaning

Clean all metal components in a non-ferrous metal cleaner.

CAUTION: Clean magneto flywheel using only a clean cloth.

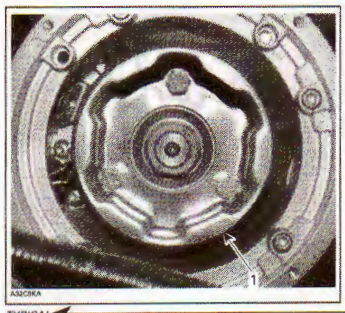
Magneto Flywheel Removal

Remove muffler, refer to the *EXHAUST SYSTEM* section.

Remove acoustic panel.

Remove rewind starter.

Remove starting pulley no. 2.



TYPICAL
1 Starting pulley

NOTE: To remove starting pulley bolts, hold magneto flywheel with a socket as shown.

TYPICAL

Models

Remove the connecting flange retaining the rewind starter to the engine housing.

mmr2008-001

57

Bold face number following part name refers to exploded view at beginning of subsection.

"TYPICAL" indicates a general view which may not represent exact details.

Call-outs pertaining to above illustration.

Illustration always follows text to which it applies.

Italic bold face typesetting indicates a procedure applicable to a specific model(s).

typical_txt_2008_en

EQUIVALENT WEIGHTS AND MEASURES CHART LINEAR MEASURE

LINEAR MEASURE	
1 inch = 25.4 millimeters (mm)	1 millimeter = .03937 inch
1 inch = 2.54 centimeters (cm)	1 centimeter = .3937 inch
1 foot = .3048 meter (m)	1 meter = 3.2808 feet
1 yard = .914 meter (m)	1 meter = 1.093 yards
1 statute mile = 1.609 kilometers (km)	1 kilometer = .6214 statute mile

AREA	
1 Sq. Foot = 144 Sq. Inches = 929.03 Sq. Centimeters (cm2)	
1 Sq. Inch = 6.4516 cm^2	1 cm2 = .155 Sq. Inch
1 Sq. Foot = .092 Sq Meter (m^2)	1 m2= 10.8 Sq. Feet
1 Sq. Yard = 9 Sq. Meter = .836 m^2	1 Sq. Mile = 2.590 km^2
1 Acre = 4.047 m2	

WEIGHT	
1 Ounce = 28.35 Grams (g)	1 Gram = .03527 Ounce
1 Pound = .4536 Kilogram (kg)	1 Kilogram = 2.2046 Pounds
1 Ton = .907 Metric Ton (t)	1 Metric Ton = 1.102 Tons

VOLUME
1 Fl. U.S. Ounce = 29.574 Milliliters = .2957 Deciliter= .0296 Liter
1 Fl. U.S. Pint = 473.18 Milliliters = 4.7316 Deciliters = .4732 Liter
1 Fl.U.S. Quart = 946.35 Milliliters = 9.4633 Deciliters = .9463 Liter
1 U.S. Gallon = 3.785 Liters
1 Cu. Inch = 16.387 Cu. cm
1 Cu. Centimeter = .061 Cu. Inch
1 Cu. Foot = 2.831.16 Cu. Cm
1 Cu. Decimeter = .0353 Cu. Foot
1 Cu. Yard = .7646 Cu. Meter
1 Dry Quart = 1.101 Liters

TEMPERATURE	
32° Fahrenheit = 0° Celsius	°F = 9/5°C + 32
0° Fahrenheit = 17.8° Celsius	°C = (°F – 32) = 5/9

SPEED
1 MPH = 1.61 KPH

POWER
1 HP = 746 WATTS

TORQUE
1 lbf•ft = 1.356 N•m (Newton Meters)

METRIC WEIGHTS AND MEASURE CHART

LINEAR MEASURE	AREA MEASURE
10 Millimeters (mm) = 1 Centimeter	100 Sq. mm = 1 Sq. Centimeter
10 Centimeters (cm) = 1 Decimeter	10 000 Sq. Centimeters = 1 m^2
10 Decimeters (dm) = 1 Meter	100 Sq. Meters = 1 Acre
10 Meters (m) = 1 Decameter (dcm)	100 Acres = 1 Hectare (h)
10 Decameter = 1 Hectometer (hm)	100 Hectares = 1 Sq. Kilometer
10 Hectometers = 1 Kilometer (km)	

WEIGHT	VOLUME/CAPACITY
10 Milligrams (mg) = 1 Centigram	10 Milliliters (mL) = 1 Centiliter
10 Centigrams (cg) = 1 Decigram	10 Centiliters (cL) = 1 Deciliter
10 Decigrams (dg) = 1 Gram (g)	10 Deciliters (dL) = 1 Liter
10 Grams = 1 Decagram (dag)	10 Liters (L) = 1 Decaliter
10 Decagrams = 1 Hectogram (hg)	10 Decaliters (daL) = 1 Hectoliter
10 Hectograms = 1 Kilogram (kg)	10 Hectoliters (hL) = 1 Kiloliter
1000 Kilograms = 1 Metric Ton (t)	1000 Cu. Millimeters = 1 Cu. cm
	1000 Cu. Centimeters = 1 Cu. dm
	1000 Cu Decimeters = 1 Cu. Meter

BRP Oils, Lubricants & Maintenance Products

Part #	Description	Size		SKI	SEA	SB	ROAD	ATV	SSV
		Metric	US						
219 700 304	ANTI CORROSION SPRAY				X	X			
293 550 055	GREASE								X
293 600 011	OIL-PUMP 75W-90	180ml	6oz	X	X	X	X	X	X
293 600 035	OIL-SHOCK	1L	1.1qt	X	X	X	X	X	X
293 600 043	OIL-GEAR SYNTHETIC 75W-90	946ml	1qt	X	X	X	X	X	X
293 600 136	OIL-SHOCK ATV	1L	1.1qt	X	X	X	X	X	X
293 600 140	OIL-GEAR SYNTHETIC 75W-140	1L	1.1qt	X	X	X	X	X	X
293 600 117	OIL 2T MINERAL	946ml	1qt	X	X	X	X	X	X
293 600 118	OIL 2T MINERAL	3.78L	1gal	X	X	X	X	X	X
293 600 119	OIL 2T DRUM MINERAL	205L	54gal	X	X	X	X	X	X
293 600 120	OIL 2T PRE-MIX	500ml	17oz	X	X	X	X	X	X
293 600 132	OIL 2T SYNTHETIC	946ml	1qt	X	X	X	X	X	X
293 600 133	OIL 2T SYNTHETIC	3.78L	1gal	X	X	X	X	X	X
293 600 134	OIL 2T DRUM SYNTHETIC	205L	54gal	X	X	X	X	X	X
293 600 100	OIL 2T SEMI-SYNTHETIC	946ml	1qt	X	X	X	X	X	X
293 600 101	OIL 2T SEMI-SYNTHETIC	3.78L	1gal	X	X	X	X	X	X
293 600 102	OIL 2T DRUM SEMI-SYNTHETIC	205L	54gal	X	X	X	X	X	X
293 600 112	OIL 4T SYNTHETIC	946ml	1qt	X	X	X	X	X	X
293 600 115	OIL 4T SYNTHETIC	3.78L	1qt	X	X	X	X	X	X
293 600 116	OIL 4T DRUM SYNTHETIC	205L	54gal	X	X	X	X	X	X
293 600 121	OIL 4T SEMI-SYNTHETIC	946ml	1qt	X	X	X	X	X	X
293 600 122	OIL 4T SEMI-SYNTHETIC	3.78L	1gal	X	X	X	X	X	X
293 600 123	OIL 4T DRUM SEMI-SYNTHETIC	205L	54gal	X	X	X	X	X	X
293 600 154	OIL 4T SYNTHETIC EXTREME COLD	946ml	1qt	X					
293 600 155	OIL 4T SYNTHETIC EXTREME COLD	3.78L	1gal	X					
293 600 156	OIL 4T DRUM SYNTHETIC EXTREME COLD	205L	54gal	X					
219 701 421	INSTANT GASKET BLACK	200gr	7oz	X	X	X	X	X	X
293 110 001	CLEANER DEGREASER CDN	397gr	14oz	X	X	X	X	X	X
293 800 005	LOCTITE 271	10ml	0.3oz	X	X	X	X	X	X
293 800 018	SEALANT PIPE	50ml	1.7oz	X	X	X	X	X	X
293 800 021	LOCTITE 495	3ml	0.1oz	X	X	X	X	X	X
293 800 038	LOCTITE 518	50ml	1.7oz	X	X	X	X	X	X
293 800 041	LOCTITE PRIMER	128gr	4.5oz	X	X	X	X	X	X
293 800 050	LOCTITE 577	250ml	8.5oz	X	X	X	X	X	X
293 800 060	LOCTITE 243	10ml	0.3oz	X	X	X	X	X	X
293 800 066	LOCTITE SEALANT 5900	300ml	10oz	X	X	X	X	X	X
293 800 070	LOCTITE ANTISEIZE	250ml	8oz	X	X	X	X	X	X
293 800 073	LOCTITE 277	10ml	0.3oz	X	X	X	X	X	X
293 800 081	LOCTITE SEALANT 5910	300ml	10oz	X	X	X	X	X	X
293 800 090	LOCTITE SEALANT	80ml	2.7oz	X	X	X	X	X	X
293 800 100	LOCTITE 406	20gr	0.7oz				X	X	X
293 800 118	LOCTITE 680	50ml	1.7oz	X	X	X	X	X	X
296 000 309	LOCTITE SEALANT SILICONE	300ml	10oz	X	X	X	X	X	X
413 408 300	LOCTITE BL.MAX	3ml	0.1oz	X					
413 702 700	LOCTITE 515	50ml	1.7oz	X	X	X	X	X	X
413 703 100	LOCTITE 609	10ml	0.3oz	X	X	X	X	X	X
413 703 400	LOCTITE 222MS	10ml	0.3oz	X	X	X			
413 705 800	LOCTITE 414	30ml	1oz	X	X	X	X	X	X
413 707 000	DOW CORNING 111	150gr	5.3oz	X	X	X	X	X	X
413 708 500	LOCTITE REMOVER	530ml	18oz	X	X	X	X	X	X
413 711 400	LOCTITE 648	10ml	0.3oz	X	X	X	X	X	X
415 129 457	LOCTITE EPOXY ADHESIVE	50ml	1.7oz	X	X	X	X	X	X
420 297 906	DREIBOND COMPOUND SEALING	30ml	1oz	X	X	X	X	X	X
420 899 526	LOCTITE 272	50ml	1.7oz	X			X	X	X

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BRP Oils, Lubricants & Maintenance Products

Part #	Description	Size		SKI	SEA	SB	ROAD	ATV	SSV
		Metric	US						
219 700 361	GREASE-SYNTHETIC	105gr	4oz	X	X	X	X	X	X
219 700 362	BO*ANTIFREEZE	946ml	1qt	X	X	X	X	X	X
219 702 685	ANTIFREEZE LONG LIFE	946ml	1qt	X	X	X	X	X	X
219 701 702	XPS ATV WASH	946ml	1qt	X	X	X	X	X	X
219 701 703	XPS STREET BIKE WASH	946ml	1qt	X	X	X	X	X	X
219 701 705	XPS CONTACT BRAKE CLEANER US	397gr	14oz	X	X	X	X	X	X
219 702 844	XPS SPRAY CLEANER & POLISH	397gr	14oz	X	X	X	X	X	X
219 701 707	XPS METAL POLISH	236ml	8oz	X	X	X	X	X	X
219 701 709	XPS ALL PURPOSE CLEANER	946ml	1qt	X	X	X	X	X	X
219 701 710	XPS VINYL DRESSING	946ml	1qt	X	X	X	X	X	X
219 701 711	XPS WASH AND WAX	946ml	1qt	X	X	X	X	X	X
219 701 712	XPS STREET BIKE DETAILING KIT			X	X	X	X	X	X
219 701 713	XPS ATV CLEANING KIT Phasing out			X	X	X	X	X	X
219 701 714	XPS QUICK DETAILING KIT Phasing out			X	X	X	X	X	X
219 701 715	XPS SEA DOO SB DETAILING KIT			X	X	X	X	X	X
219 701 759	XPS 14"X14" MICROFIBER TOWEL			X	X	X	X	X	X
219 701 776	XPS CONTACT BRAKE CLEANER CDN	397gr	14oz	X	X	X	X	X	X
219 702 533	XPS CARBON FREE FUEL TREATMENT	355ml	12oz	X	X	X	X	X	X
219 800 262	KIT HU. *SPYDER OIL CHANGE KIT (SM5) 991			X	X	X	X	X	X
219 800 263	KIT HU. *SPYDER OIL CHANGE KIT (SE5) 991			X	X	X	X	X	X
293 550 004	GREASE DIELECTRIC DC4	150gr	5.3oz	X	X	X	X	X	X
293 550 010	GREASE SYNTHETIC	400gr	14oz	X	X	X	X	X	X
293 550 019	GREASE	400gr	14oz					X	
293 550 021	GREASE ISOFLEX	50gr	2oz	X	X	X	X	X	X
293 550 030	GREASE (rubber grease)	400gr	14oz	X	X	X	X	X	X
293 550 032	XPS ASALCO (Ball Bearing Grease)	110gr	4oz	X	X	X	X	X	X
293 550 033	SYNTHETIC GREASE	400gr	14oz	X	X	X	X	X	X
293 550 062	GREASE	400gr	14oz					X	X
293 550 063	GREASE	400gr	14oz					X	X
293 600 016	XPS SPRAY LUBE BOMBARDIER	400gr	14oz	X	X	X	X	X	X
293 600 131	XPS BRAKE FLUID DOT 4	473ml	16oz	X		X	X	X	X
293 600 138	XPS SYNTHETIC CHAINCASE OIL	355ml	12oz	X	X	X	X	X	X
293 600 143	XPS SYNTHETIC CHAINCASE OIL	9.46L	2.5gal	X	X	X	X	X	X
295 501 075	MAINTENANCE OIL CHANGE KIT (SEA-DOO)			X	X	X	X	X	X
296 000 329	TRIPLE GUARD GREASE	236ml	8oz	X	X	X	X	X	X
413 408 601	FUEL STABILIZER	236ml	8oz	X	X	X	X	X	X
413 708 300	GLUE TUBE	20gr	1oz	X	X	X	X	X	X
413 711 600	OIL STORAGE CDN	350gr	12oz	X	X	X	X	X	X
413 711 809	PULLEY FLANGE CLEANER	320gr	11oz	X	X	X	X	X	X
413 711 900	OIL STORAGE USA	350gr	12oz	X	X	X	X	X	X
415 129 404	MAINTENANCE & SYNTH OIL CHANGE KIT (1200 4-TEC)			X	X	X	X	X	X
415 129 500	XPS MINERAL CHAINCASE OIL	250ml	8oz	X	X	X	X	X	X
415 129 725	MAINTENANCE & SYNTH OIL CHANGE KIT (600 ACE)			X	X	X	X	X	X
420 297 433	MOLYKOTE G-N	50gr	1.8oz	X	X	X	X	X	X
420 297 616	KLUEBE PASTE 46 MR 401	60gr	2.1oz	X	X	X		X	
420 897 186	GREASE-SILICON P12	90ml	3oz	X	X	X	X	X	X
420 899 271	GREASE	400gr	14oz	X	X	X	X	X	X
420 899 763	MOLYKOTE 54	50gr	1.8oz	X	X	X	X	X	X
703 500 735	MAINTENANCE & SEMI-SYNTH OIL CHANGE KIT (WINTER)			X	X	X	X	X	X
703 500 736	MAINTENANCE & SEMI-SYNTH OIL CHANGE KIT (SUMMER)			X	X	X	X	X	X

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CONTACTS U.S. AND CDN RACERS

Sébastien Thibault

Race Manager
670 Avenue Du Parc Valcourt, QC J0E 2L0
Phone: (450) 532 5100 Ext. 5868
Fax: (450) 532 6175
E mail: sebastien.thibault@brp.com

- Race Program
- Race Resumes
- Race Sleds Allocation.

Hélène Despaties

Ski Doo Race Agent
670 Avenue Du Parc Valcourt, QC J0E 2L0
Phone: (450) 532 5100 Ext. 5075
Fax: (450) 532 6175
E mail: helene.despaties@brp.com

- T.I.P. Sheet Distribution (See T.I.P. Sheet Application)

Website: www.ski doo.com/racingzone

- Race Schedule and Results
- Racer Bios

Yvon Petit

Race Technician
670 Avenue Du Parc Valcourt, QC J0E 2L0
Phone: (450) 532 5100 Ext. 5803
Fax: (450) 532 6175
E mail: yvon.petit@brp.com

- Technical Support

Tom Lawrence

Race Coordinator
7575, Bombardier Court
Wausau WI. 54401
Phone: (715) 847-6874
Fax: (262) 884-5883
E-mail: tom.lawrence@brp.com

- Technical Support – Race School – Race Manual

PARTS ORDER

Valcourt Racing Department

The special race parts can be ordered from the Valcourt Racing Dept. Please use order form on the following pages, it must be filled out to have your order processed.

NOTE: E mail is the preferred option of communications throughout the year.

E mail: piècesracingparts@brp.com

Fax: (450) 532 5076

Warnert Racing Support Trailer (ISOC)

BRP Mobil Parts

2178, Quebecor road, ST Cloud, MN 56304

Phone: (320) 251 2882

Fax: (320) 251 3733

E mail: parts@brp.com

Website: www.shopbrpparts.com

Ingles Performance Skidoo Race Support Trailer (ECS)

413, Besaw Road, Phoenix, NY 13135

Phone: (315) 598 7422

Fax: (315) 592 3374

E mail: info@inglesperformance.com

SHOCK SERVICE

Enzo Racing Canada Inc. Customized shock revalving and KYB suspension set up for late model Ski Doo racing sleds.

Over many years of technical race side support with KYB suspension and super teams including Blair Morgan Racing.

Wedsite: www.enzoracingcanada.com

T.I.P. SHEET APPLICATION

TECHNICAL INFORMATION POSTING

Only this form will be accepted
Last year applications are not valid anymore

Dear Ski-Doo X-Team member,

Please add my name to your list of recipients for the T.I.P. sheets to be distributed during the race season.

To receive the tip sheet by e-mail, send an e-mail to the following:

helene.despaties@brp.com
And mention to add your e-mail address to the T.I.P. Sheet distribution list

※ ※ ※ ※ ※ ※ ※

To receive T.I.P. sheet by fax, send a fax to the following:

Hélène Despaties @ (450) 532-6175
And mention to add your e-mail address to the T.I.P. Sheet distribution list

Fax: _____ (your complete fax number)

Name: _____ City: _____

mmc2014-001-001_en

INSCRIPTION BULLETIN TECHNIQUE DE COURSES

INFORMATIONS TECHNIQUES

Ce formulaire seulement sera accepté
Les inscriptions de l'an passé ne sont plus valides

Cher membre de l'équipe de courses Ski-Doo,

S.v.p. ajoutez mon nom à votre liste de distribution pour les bulletins techniques qui seront distribués durant la saison de courses.

Pour recevoir les bulletins techniques de courses par courriel, envoyez un courriel à :

helene.despaties@brp.com

et demandez à être ajouté à la liste de distribution des bulletins techniques de courses.

※ ※ ※ ※ ※ ※ ※

Pour recevoir les bulletins techniques de courses par télécopieur, envoyez une télécopie à :

Hélène Despaties @ (450) 532-6175

et demandez à être ajouté à la liste de distribution des bulletins techniques de courses.

Télécopieur: _____ (votre numéro de télécopieur)

Nom: _____ Ville: _____

mmc2014-001-001_fr

ORDER FORM

DEALER ID:#
RACER ID: #

BRP RACING DEPARTMENT
565 de la Montagne | Valcourt | QC | Canada | J0E 2L0
Fax 450-532-5076
piecesracingparts@brp.com

SHIP TO: (name & complete address)			
DEALER FED. ID # or RACER SOCIAL SECURITY # (US dealer and racer only)			
PHONE #		FAX #	
SHIPPING CONDITIONS:		PICK UP	
		RED	
(shipping fees will be charged to you)		BLUE	
		GROUND	
PAYMENT CONDITIONS:		DEALER PARTS ACCOUNT	
		RACER PARTS ACCOUNT	
CREDIT CARD NUMBER		EXPIRATION DATE	

ALL B/O PARTS WILL BE CANCELLED, REORDER AT A LATER DATE

DESCRIPTION	PART #	QUANTITY	B/O

Please, read the following important notice
15% fee will be charged on returned parts - Written return autorisation required
Phone calls orders or shipping request will not be accepted
Only faxed or e-mailed orders will be accepted (COMPLETELY FILLED)

piecesracingparts@brp.com FAX 450-532-5076

mmc2013-001-012

CDI BOX

Valcourt Race Dept.

Date:

Race Dept. Parts Order Desk	Fax (450) 532-5076
SHIP TO: *(name & complete address)*	***If you are a dealer:***
	DEALER #:
	FED. ID # *(US dealer only)*
	If you are a racer:
	SOCIAL SECURITY #
PHONE #	FAX #

PAYMENT: VISA ☐ MASTER CARD ☐ _____ Exp Date _____

SHIPPING CONDITIONS: Pick up RED: _____ BLUE: _____ GROUND: _____
(shipping fees will be charged to you)

1. **Model year** of the snowmobile _____
2. **Model** (MXZ, Summit, etc.) _____

3 **Engine:**				4 **Engine code:**				
	453	☐	797	☐	*(See the note "locaed on" ...)*	1D	☐	5D	☐
	593	☐	809	☐		2D	☐	6D	☐
	670	☐	995	☐		3D	☐	7D	☐
	793	☐				4D	☐	8D	☐

NOTE: Located on the case on the MAG side, except for the 797 who is written close to the Y manifold

5 **RER:**	Yes	☐	6 **DPM:**	Yes	☐
	No	☐		No	☐

7 **Remove DESS:**	Yes	☐	8 **Rev Limiter:**	Yes	☐	What RPM? _____
	No	☐		No	☐	

9 **What kind of race will you use this CDI box for?**	Snocross	☐	
	Drag	☐	Hom many Feet? _____
	Hillclimb	☐	

Any other comments on the timing curve: _____

Please, Read the following important notice
50 $ + freight will be charged for standard reprogrammation
75 $ + freight will be charged for custom reprogrammation
Phone calls or shipping request will not be accepted
The form must be COMPLETELY FILLED
piecesracingparts@brp.com

mmc2013-001-013

RACE TECHNICAL TEST SHEET

TEST RACE REVIEW											
Race or Test Location				Approximate Track Length Configuration							
Temp		Carburation		MJ	NJ	JN	PJ	AS	CA	IDLE	
Density		PTO									
Humidity		MAG									
Baro		FUEL									
Elevation		OIL									

Drive Spring		Drive Clutch					Driven Clutch			Gearing	Comments
74 mm	41 mm	Ramp	Clicker #	Pin + Screw	Total WT.	Lever	Helix	Spring	Belt	Top + Bottom	

Ski Shock				Center Shock			Rear Shock			Comments
L.S.	H.S.	Reb.	Spring	L.S	H.S.	Spring	L.S	H.S.	Spring	

2014 600 RS SPECIFICATIONS

SERVICE PRODUCTS

MODEL	MX Z X 600 RS
ENGINE SYSTEM	
Engine type	ROTAX® 593 RS
Cylinders	2
Displacement	594.4 cm^3 (36.3in^3)
Bore	72 mm (2.8 in)
Stroke	73 mm (2.9in)
Maximum horsepower RPM	8400 ± 100 RPM
Carburetion	2 x TMX-40
Exhaust system	Single tuned pipe, baffle muffler
Oil type	Refer to *RECOMMENDED OIL* in *FUEL AND OIL* section
Fuel/oil ratio	33:1
Coolant	Ethylene glycol/water mix (50% coolant, 50% distilled water). Use BRP premix coolant or coolant specifically designed for aluminum engines
Cooling system capacity	4.5 L (4.8 qt (U.S liq.))
Recommended fuel type	Premium unleaded (fuel which may contain up to 10% MAX ethanol)
Minimum octane rating. Refer to FUEL REQUIREMENTS	91 Pump Posted AKI (IRON+MON)/2
	95 RON
Fuel tank capacity	20 L (5.3 U.S. gal.)
Water pump shaft oil	XPS injection oil (P/N 293 600 117)
DRIVE SYSTEM	
Drive pulley type	TRA™ III light
Driven pulley type	Team rapid reaction
Engagement	5500 RPM
Small sprocket number of teeth	21
Large sprocket number of teeth	49
Drive sprocket number of teeth	8
Chaincase oil	XPS synthetic chaincase oil (P/N 413 803 300)
Chaincase oil capacity	250 ml (8.5 U.S. oz)

MODEL		MX Z X 600 RS
DRIVE SYSTEM (cont'd)		
Brake system		Hydraulic, REV-XP brake type
Brake Fluid		SRF (DOT 4) or GTLMA (DOT 4)
Track nominal width		381 mm (15 in)
Track nominal length		3 269 mm (128.7 in)
Track profile height		44.5 mm (1.75 in)
Track tension	Deflection	30 mm – 35 mm (1–3/16 in – 1–3/8 in)
	Force (1)	7.3 kg (16 lb)
Track alignment		Equal distance between edges of track guides and slider shoes
Drive belt part number		417 300 425 (3)
SUSPENSION		
Front suspension		REV-XP
Front shock		HPG™ C-40 racing clicker
Front suspension max. travel		242 mm (9.5 in)
Rear suspension		R-motion Racing
Front arm shock		HPG C-40 racing clicker
Rear arm shock		HPG C-40 racing clicker
Rear suspension max. travel		381 mm (15 in)
ELECTRICAL SYSTEM		
Lightning system output		360 Watts @ 6000 RPM
Headlamp bulb HI/LOW beam		2 x 60/55 Watts (H-4)
Taillight bulb		2.6 W / 139m W LED
Spark plug	Type	NGK BR9ECS (2)
	Gap	0.45mm ± 0.05mm (.018 in ± .002 in) (not adjustable)
Fuse (accessories)		20 A
WEIGHT AND DIMENSIONS		
Weight (dry)		198 kg (437 lb)
Vehicle overall length		2 990 mm (118 in)
Vehicle overall width (4)		1 217 mm to 1 249 mm (47.9 in to 49.2 in)
Vehicle overall height		1 000 mm (39 in)
Ski stance		1 065 mm to 1 108 mm (41.93 in to 43.62 in)

(1) Measure gap between slider shoe and bottom inside of track when exerting a downward pull to the track.

(2) **NOTICE** **Do not attempt to adjust gap on this type of spark plug.**

(3) Drive belt height must be adjusted every time a new drive belt is installed.
Confirm drive belt part number application with an authorized Ski-Doo dealer.

(4) Trail riding: check your local regulations and set skis at the narrowest position if needed.

TECHNICAL RACE DATA SHEETS

TECHNICAL DATA

SLED MODEL:	**MXZx 600RS 2014**
RACING TYPE:	**Production**
RPM MAX:	**8400-8500**
RPM ENG:	**5500**
CALIBRATION DONE AT TEMPERATURE:	**0 ° Celcius**
GAZ OCTANE (MOTOR):	**96 - 98**

	BRP P/N	Misc.					
CARBURATOR MODEL:		TMX-40mm					
MAIN JET:	404 100 500	id.	280	pto			
	404 100 500	id.	280	mag			
POWER JET:	404 162 098	id.	160				
NEEDLE:	?	id.	6FDY2	pos. #	2		
NEEDLE JET:	404 162 135	id.	P-6				
AIR or PILOT SCREW ADJ. ± 0.25 turn:		turn	1.5				
PILOT JET:	404 162 134	id.	55				
VALVE SEAT:	404 161 868	id.	1.5				
CUTAWAY:	404 162 106	id.	4.0				
	BRP P/N	**Misc.**					
		TRA III					
RAMP:	417 223 281	id.	443	pos. #	4		
SPRING: **TEAM**	417 223 610	rate (lbs)	265-405	color	wh/gn/gn		
PIN (THREATED):	417 222 595	id.	35.75mm	weight (gr)	12.4		
SET SCREW (PIN):	206 261 699	id.	M6x16	weight (gr)	2,35	qty	1
	206 260 699	id.	M6x06	weight (gr)	0,73	qty	1
		id.		weight (gr)		qty	
TUNGSTEN(PIN)		id.		weight (gr)			
LEVER:		id.		weight (gr)			
	BRP P/N	**Misc.**					
DRIVEN PULLEY MODEL:	?	TEAM					
CAM:	486 014 005	id.	64-44 x0.40		68-42x0.40	opt.	
SPRING:	955 556	rate (lbs)	180-260	color	Black/Yellow		
		pos.		preload			
	BRP P/N	**Misc.**					
GEARS:		13 wide					
SPROCKET TOP:	504 139 300	teeth	21				
SPROCKET BOTTOM:	504 153 196	teeth	49				
CHAIN:	504 152 630	links	106				
	BRP P/N	**Misc.**					
BELT:	417 300 425	MBL					
	BRP P/N	**Misc.**					
SUSPENSION							
SKI SPRING:	505 073 537	rate (lbs)	185	preload	14mm		
		shock lenght					
CENTER SPRING	503 193 751	rate (lbs)	830	preload			
	503 192 724	rate (lbs)	275	preload	3mm		
REAR SPRING > Lh	503 191 617	N.m./deg./Open °	1.73	color		pos.	2
REAR SPRING > Rh	503 191 616	N.m./deg./Open °	1.73	color		pos.	2
		rear arm travel					
BLACK COOPLER ACM		pos.	1				

Center travel must be measured from the under tubing thru the top of the rubber stopper.
Rear travel must be measured from the under spring thru the top of the rubber stopper.

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TECHNICAL DATA

SLED MODEL:	**Kit O. Mod 600RS 2014**
RACING TYPE:	**Sno-X**
RPM MAX:	**8600-8700**
RPM ENG:	**5500**
CALIBRATION DONE AT TEMPERATURE:	**0 ° Celcius**
GAZ OCTANE (MOTOR):	**114+**

	BRP P/N	Misc.					
CARBURATOR MODEL:		TMX-40mm					
MAIN JET:	404 101 200	id.	300	pto			
	404 101 200	id.	300	mag			
POWER JET:	404 162 098	id.	160				
NEEDLE:	?	id.	6FDY2	pos. #	2		
NEEDLE JET:	486 400 013	id.	P-8				
AIR or PILOT SCREW ADJ. ± 0.25 turn:		turn	0.75				
PILOT JET:	486 230 400	id.	60				
VALVE SEAT:	404 161 868	id.	1.5				
CUTAWAY:	404 162 106	id.	4.0				
	BRP P/N	**Misc.**					
DRIVE PULLEY MODEL:		TRA-III					
RAMP:	417 223 281	id.	443	pos. #	5		
SPRING:	417 223 610	rate (lbs)	265-405	color	wh/gn/gn		
PIN (THREATED):	417 222 595	id.	35.75mm	weight (gr)	12.4		
SET SCREW (PIN):	206 261 699	id.	M6x16	weight (gr)	2.35	qty	1
	206 261 299	id.	M6x12	weight (gr)	1.68	qty	1
	206 260 699	id.	M6x06	weight (gr)	0.73	qty	1
TUNGSTEN(PIN)		id.		weight (gr)			
LEVER:		id.		weight (gr)			
	BRP P/N	**Misc.**					
DRIVEN PULLEY MODEL:	?	TEAM					
CAM:	486 014 005	id.	64-44 x0.40		68-42x0.40	opt.	
SPRING:	210 280	rate (lbs)	180-280	color	black/orange		
		pos.		preload			
	BRP P/N	**Misc.**					
GEARS:							
SPROCKET TOP:	504 139 300	teeth	21				
SPROCKET BOTTOM:	504 153 196	teeth	49				
CHAIN:	504 152 630	links	106				
	BRP P/N	**Misc.**					
BELT:	417 300 425	MBL					
	BRP P/N	**Misc.**					
SUSPENSION							
SKI SPRING:	505 073 537	rate (lbs)	185	preload	14mm		
		shock lenght					
CENTER SPRING	503 193 751	rate (lbs)	830	preload			
	503 192 724	rate (lbs)	275	preload	3mm		
REAR SPRING > Lh	503 191 617	N.m./deg./Open °	1.73	color		pos.	2
REAR SPRING > Rh	503 191 616	N.m./deg./Open °	1.73	color		pos.	2
		rear arm travel					
BLACK COOPLER ACM		pos.	1				

Center travel must be measured from the under tubing thru the top of the rubber stopper.
Rear travel must be measured from the under spring thru the top of the rubber stopper.

WARNING: This information relates to the preparation and use of snowmobiles in competitive events. Bombardier Recreational Products (BRP) disclaims liability for all damages and/or injuries resulting from the improper use of the contents. We strongly recommend that these modifications be carried out and/or verified by a highly skilled professional racing mechanic. It is understood that racing or modifications of any Bombardier made snowmobile voids the vehicle warranty and that such modifications may render use of the vehicle illegal in other than sanctioned racing events under existing federal, provincial and state regulations.

mmc2014-001-003

TECHNICAL DATA

SLED MODEL:	MXZx 600RS 2013
RACING TYPE:	X-Country
RPM MAX:	8600-8700
RPM ENG:	5000
CALIBRATION DONE AT TEMPERATURE:	-5 ° Celcius
GAZ OCTANE (MOTOR):	min.= 94m.oct.

	BRP P/N	Misc.					
CARBURATOR MODEL:		TMX-38					
MAIN JET:	404101100	id.	290	pto			
	404101100	id.	290	mag			
POWER JET:	404162098	id.	160				
NEEDLE:	404162117	id.	6FDY1-57	pos. #	3		
NEEDLE JET:	404162135	id.	P-6				
AIR or PILOT SCREW ADJ. ± 0.25 turn:		turn	1.0				
PILOT JET:	404162107	id.	45				
VALVE SEAT:	404161868	id.	1.5				
CUTAWAY:	404162106	id.	4.0				
	BRP P/N	Misc.					
		TRA III					
RAMP:	417223049	id.	438	pos. #	5		
SPRING: TEAM	486010002	rate (lbs)	265-405	color	gy/gy		
PIN (THREATED):	417222595	id.	35.75mm	weight (gr)	12.4		
SET SCREW (PIN):	206260699	id.	M6x06	weight (gr)	0.73	qty	3 ea.
		id.		weight (gr)		qty	
		id.		weight (gr)		qty	
TUNGSTEN(PIN)		id.		weight (gr)			
LEVER:		id.		weight (gr)			
	BRP P/N	Misc.					
DRIVEN PULLEY MODEL:		TEAM					
CAM:	LW420563	id.	44*				
SPRING:	210280	rate (lbs)	180-280	color	Black/Orange		
		pos.		preload			
	BRP P/N	Misc.					
GEARS:		13 wide					
SPROCKET TOP:	504085300	teeth	26				
SPROCKET BOTTOM:	504152880	teeth	49				
CHAIN:	504152631	links	108				
	BRP P/N	Misc.					
BELT:	417300425	MBL					
	BRP P/N	Misc.					
SUSPENSION							
Option=1	486900125	rate (lbs)	110	preload	15mm		
SKI SPRING: Option=2	486900123	rate (lbs)	135	preload	12mm		
		shock lenght	shim 15mm shorter shock				
CENTER SPRING	503192725	rate (lbs)	350	preload			
	503193113	rate (lbs)	240	preload	6mm		
REAR SPRING > Lh	503191188	N.m./deg./Open °	1.33	color	yl/yl/yl	pos.	3
REAR SPRING > Rh	503191186	N.m./deg./Open °	1.33	color	yl/yl/yl	pos.	3
		rear arm travel					
BLACK COOPLER ACM		pos.	4				

Center travel must be measured from the under tubing thru the top of the rubber stopper.
Rear travel must be measured from the under spring thru the top of the rubber stopper.

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mmc2013-001-003

mmc2014-001-004

CONFIDENTIAL

25-05-2013
Revision 05

CARBURETOR CALIBRATION
ROTAX PRODUCTION 2013
BRP MODELS 2014

						Preliminary release #1		Preliminary release #2						Final release								
ENG	PF	MODEL NAME	TYPE	DPM JET VENT	DPM JET LEAN	MIKUNI #	BBD #	NEEDLE	N.JET	B.H. ϕ	C.A.	V.S. ϕ	S.J. ϕ	IDLE ±0.1	M.J.	PW.J.	P.J.	A.S. Ref.	P.S.	FLOAT LEVEL ± 1	RPM ±200	STATUS[7]
552	XP XU	Tundra 550 Sport Tundra 550 LT Expedition 550 Sport Renegade 550 Sport Grand Touring 550 Sport				MAG VM30-218 PTO VM30-219 MAG: Green dot PTO: Blue dot	403 138 813 403 138 814	6BFY46-3 6BFY46-4	P-8 (159) P-8 (159)	N/A N/A	2.5 2.5	1.2[3] 1.2[3]	1.3 1.3	1,6 1,6	190 200	N/A N/A	35 35	1,25 1,00	N/A N/A	23,9 23,9	1650 1650	Final Final
552	XU	Skandic WT 550				MAG VM30-218 PTO VM30-219 MAG: Green dot PTO: Blue dot	403 138 813 403 138 814	6BFY46-3 6BFY46-4	P-8 (159) P-8 (159)	N/A N/A	2.5 2.5	1.2[3] 1.2[3]	1.3 1.3	1,6 1,6	190 200	N/A N/A	35 35	1,25 1,00	N/A N/A	23,9 23,9	1650 1650	Final Final
593	XP	Grand Touring 600 Sport SUMMIT 600 Sport	HTD			TM40-418	403 138 815	9CEY2-58-2	P-0M[4]	1,6	2,0	1,5[3]	1,1	1,5	390[5]	N/A	17,5	N/A	1,5	N/A	1600	Final
593RS	XS	MXZ RS 600				TMX39-1 PTO, MAG same part.	403 138 818	6FDY2-2	P-6	N/A	4,0	1,5[3]	N/A	2,5	280	160	55	[1,5]	N/A	N/A	1600	Final
797	XP	SUMMIT 800R Sport	TPS,DPM,HTD	1,2	2,0	TM40-400	403 138 806	9EGI04-58	P-0M[4]	1,6	2,0	1,5[3]	1,1	2	480[5]	N/A	17,5	N/A	1,5	N/A	1900	Final

(1) Without primary choke
(2) With straigth float arm
(3) Viton type
(4) Press fit type nickel plated
(5) DPM vent hose or HAC vent hose or carbs vent hoses should be connected on the air box.
(6) Needle with 3 grooves (nominal plus 2 on richer side)
[x.xx] Fine thread (20°, 0.5mm pitch)

(7) Preliminary release #1: Main body
Preliminary release #2: Jet needle, needle jet, piston valve, valve seat, starter jet.
Final release: Idle, main jet, power jet, air jet, pilot jet, air screw, pilot screw, float level.

Color identification : MAG= Red, CENTER= Yellow, PTO= Blue.
Note: No color if carburetors are identical

2014
Transmission System Definition

BRP SKI-DOO - 2014 MODELS / MODELES 2014

TRANSMISSION SYSTEM DEFINITION / DEFINITION DU SYSTEME DE TRANSMISSION

Model Modèle	Engine Moteur	Platform	Status	Drive pulley / Poulie motrice									
				Model Modèle	Taper Cone	Governor cup / Cuvette de régulateur	Slider Glissière	Spring Ressort	Pin or weight / Pine ou pesée	Ramp or bloc / Rampe ou bloc	Pos. calib. or / ou capsule	Engage-ment ±100 RPM	Max. speed / Régime max. ±100 RPM
MXZ 550, Sport 120x15x1.25	552	XP	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 730	n/a	3200	6800
TUNDRA 550 Sport 137x16x1.25	552	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 700	n/a	2600	6800
TUNDRA 550 LT 154x16x1.5	552	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 700	n/a	2600	6800
TUNDRA 550 LT 154x16x1.5 Eur.	552	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 700	n/a	2600	6800
Expedition 550 Sport 154 x 16 x 1.5	552	XP	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 700	n/a	2600	6800
Renegade 550 Sport 137-15-1.25	552	XP	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 730	n/a	3200	6800
GTX FAN Sport 137x16x1,25	552	XP	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 730	n/a	3200	6800
GTX FAN Sport 137 x 16 x 1,25 Eur	552	XP	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 730	n/a	3200	6800
Skandic WT Light	552	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 700	n/a	2600	6800
Skandic WT	552	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 700	n/a	2600	6800
Skandic SWT	552	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80-170	n/a	6 X 700	n/a	2600	6800
MXZ 600 Sport 120 x 15 x 1.25	593	XP	Final	TRA 3	1:7.5	Cushion drive	Torlon	Violet / Violet	Solid - Short	412	3	3800	8100
Summit 600 Sport, 146x16x2,25	593	XP	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Pink	Solid - Short	417	3	3400	8100
GTX 600 Sport 137x16x1,25	593	XP	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Violet	Solid - Short	412	3	3400	8100
MXZ 600HO E-Tec TNT, X, X-RS, 120x15x1.25	600HO E-Tec	XS	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Green	Solid - Short	412	3	3400	8100
MXZ 600HO E-Tec X-RS, 120x15x1.5 Eur.	600HO E-Tec	XS	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Green	Solid - Short	412	3	3400	8100
Renegade 600HO E-Tec Adrenaline, X 137-16-1.25	600HO E-Tec	XS	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Green	Solid - Short	412	3	3400	8100
Renegade 600HO E-Tec Back, Back X 137-16-1.75	600HO E-Tec	XS	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Green	Solid - Short	412	3	3400	8100
GSX 600HO E-Tec LE 120 x15 x 1.25	600HO E-Tec	XS	Final	TRA 3	1:7.5	Cushion drive	Torlon	Yellow / Green	Solid - Short	412	3	3400	8100
GSX 600HO E-Tec SE 137 x 15 x1.25	600HO E-Tec	XR	Final	TRA 3	1:7.5	Cushion drive	Torlon	Red / Green	Solid - Short	414	3	3400	8100
Grand-Touring 600HO E-Tec LE, 137-15-1.0	600HO E-Tec	XR	Final	TRA 3	1:7.5	Cushion drive	Torlon	Red / Green	Solid - Short	414	3	3400	8100
Summit 600HO E-Tec SP, 146 x 16 x 2.25	600HO E-Tec	XM	Final	TRA 3	1:7.5	Cushion drive	Vespel	Violet / Green	Threaded short + 16mm	440	3	4000	8100
Summit 600HO E-Tec SP, 146 and 154 x 16 x 2.25Eur S-LEV	600HO E-Tec	XM	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Green	Solid - Short	412	3	4000	8100
Summit 600HO E-Tec SP, 154 x 16 x 2.25	600HO E-Tec	XM	Final	TRA 3	1:7.5	Cushion drive	Vespel	Violet / Green	Threaded short + 16mm	440	3	4000	8100
Tundra Xtreme 600HO E-Tec 154 x 16 x 2.25	600HO E-Tec	XU	Final	TRA 3	1:7.5	Cushion drive	Vespel	Red / Orange	Threaded short + 16mm	417	3	3400	8100
Tundra Xtreme 600HO E-Tec 154 x 16 x 2.25 Eur.	600HO E-Tec	XU	Final	TRA 3	1:7.5	Cushion drive	Torlon	Blue / Green	Solid - Short	412	3	3400	8100
Expedition LE, SE 600HO E-Tec 20 x 154 x 1.25	600HO E-Tec	XU	Final	TRA 3	1:7.5	Cushion drive	Vespel	Yellow / Red	Solid - Long	600	2	3000	8100
Skandic WT 600HO E-Tec 20 x 154 x 1.5"	600HO E-Tec	XU	Final	TRA 3	1:7.5	Cushion drive	Vespel	Yellow / Red	Solid - Long	600	2	3000	8100
Skandic SWT 600HO E-Tec 24x154x1.25"	600HO E-Tec	XU	Final	TRA 3	1:7.5	Cushion drive	Vespel	Yellow / Red	Solid - Long	600	2	3000	8100
MXZ X 600RS	600 RS	XS	Final	TRA 3-light	1:7.5	Light-cushion dr.	Vespel	Red / Red*	Threaded long + 25mm + 6 mm	443	1	5300	8400
MxZ 600 ACE Sport, 120 x 15 x 1,0	602	XP	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-177	n/a	6 X 712	n/a	2200	7250
MxZ 600 ACE Sport, 120 x 15 x 1,25 Eur.	602	XP	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-177	n/a	6 X 712	n/a	2200	7250
Renegade 600 ACE Sport 137 x 15 x 1.25	602	XP	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-135	n/a	6 X 716	n/a	2200	7250
Renegade 600 ACE Sport 137x16x1.25 Eur.	602	XP	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-135	n/a	6 X 716	n/a	2200	7250
GTX 600 ACE Sport 137x15x1,0	602	XP	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-177	n/a	6 X 712	n/a	2200	7250
GTX 600 ACE Sport 137 x 16 x 1.25 Eur	602	XP	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-135	n/a	6 X 715	n/a	2200	7250
Expedition 600 ACE Sport 154x16x1.5	602	XP	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-135	n/a	6 X 716	n/a	2200	7250
TUNDRA 600 ACE Sport 137x16x1.25	602	XU	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-135	n/a	6 X 716	n/a	2200	7250
TUNDRA 600 ACE LT 154x16x1.5	602	XU	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-135	n/a	6 X 716	n/a	2200	7250
TUNDRA 600 ACE LT 154x16x1.5 Eur.	602	XU	Final	e-drive II LC	1 : 7.5	n/a	Vespel	80-135	n/a	6 X 716	n/a	2200	7250
Skandic 600 ACE WT 154 x 20 x 1.5	602	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80 - 130	n/a	6 X 716	n/a	2200	7250
Skandic 600 ACE SWT 154 x 24 x 1.25	602	XU	Final	e-drive	1 : 7.5	n/a	Vespel	80 - 130	n/a	6 X 716	n/a	2200	7250
SUMMIT 800R Sport 154 x 16 x 2.25	800R	XP	Final	TRA 7	1:7.5	Cushion drive	Vespel	Green / Violet	Threaded long + 12mm	441	1	3800	8150
SUMMIT 800R Sport 154 x 16 x 2.25 Eur S-LEV	800R	XP	Final	TRA 7	1:7.5	Cushion drive	Vespel	Blue / Violet	Solid - Long	413	3	3800	8150

mmc2014-001-005_1

BRP SKI-DOO - 2014 MODELS / MODELES 2014

TRANSMISSION SYSTEM DEFINITION / DEFINITION DU SYSTEME DE TRANSMISSION

Model Modèle	Engine Moteur	Platform	Status	Belt Courroie	Driven pulley / Poulie menée: Model Modèle	Initial openning Ouverture Initiale (mm)	Ressort / Spring: Color	Force (N)	Preload new / after break-in period Tension neuf / après rodage (±0.7 kg)	Cam Came (°) / Type	Carter: Sprocket top / Pignon haut	Sprocket bottom / Pignon bas	Chaine / Chain: Maille/Link	width	Sprocket Barbottin
MXZ 550, Sport 120x15x1.25	552	XP	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	47-44 -XP	21	45	102	13	8 teeth 2.86
TUNDRA 550 Sport 137x16x1.25	552	XU	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	44 -XP	19	45	102	13	8 teeth 2.86
TUNDRA 550 LT 154x16x1.5	552	XU	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	44 -XP	19	45	102	13	8 teeth 2.86
TUNDRA 550 LT 154x16x1.5 Eur.	552	XU	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	44 -XP	19	45	102	13	8 teeth 2.86
Expedition 550 Sport 154 x 16 x 1.5	552	XP	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	44 -XP	19	45	102	13	8 teeth 2.86
Renegade 550 Sport 137-15-1.25	552	XP	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	47-44 -XP	21	45	102	13	8 teeth 2.86
GTX FAN Sport 137x16x1,25	552	XP	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	47-44 -XP	19	45	102	13	8 teeth 2.86
GTX FAN Sport 137 x 16 x 1,25 Eur	552	XP	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	47-44 -XP	19	45	102	13	8 teeth 2.86
Skandic WT Light	552	XU	Final	414 8607 00	QRS-SS	50.8	Brown	800N	0.0	44 -XP	19	49	104	13	7 teeth 2.86
Skandic WT	552	XU	Final	414 8807 00	QRS-NTC	50.8	Wh2-Wh2		7.0-6.4	47-44- XP	1-3,86	2- 2,3	N/A	N/A	7 teeth 2.86
Skandic SWT	552	XU	Final	414 8607 00	QRS-NTC	50.8	Wh2-Wh2		7.0-6.4	47-44- XP	1-3,86	2- 2,3	N/A	N/A	8 teeth 2.52
MXZ 600 Sport 120 x 15 x 1.25	593	XP	Final	417 300 197	QRS	52	Black	700N	0.0	42	25	45	104	13	8 teeth 2.86
Summit 600 Sport, 146x16x2,25	593	XP	Final	417 300 197	QRS	52	Black	700N	0.0	43-47 - XP	19	49	104	13	8 teeth 2.86
GTX 600 Sport 137x16x1,25	593	XP	Final	417 300 197	QRS	52	Black	700N	0.0	42	23	45	104	13	8 teeth 2.86
MXZ 600HO E-Tec TNT, X, X-RS, 120x15x1.25	600HO E-Tec	XS	Final	417 300 383	QRS	52	Green	800N	0.0	48 - XP	25	45	104	13	8 teeth 2.86
MXZ 600HO E-Tec X-RS, 120x15x1.5 Eur.	600HO E-Tec	XS	Final	417 300 383	QRS	52	Green	800N	0.0	48 - XP	25	45	104	13	8 teeth 2.86
Renegade 600HO E-Tec Adrenaline, X 137-16-1.25	600HO E-Tec	XS	Final	417 300 383	QRS	52	Green	600N	0.0	48 - XP	23	45	104	13	8 teeth 2.86
Renegade 600HO E-Tec Back, Back X 137-16-1.75	600HO E-Tec	XS	Final	417 300 383	QRS	52	Green	800N	0.0	48 - XP	21	49	106	13	8 teeth 2.86
GSX 600HO E-Tec LE 120 x15 x 1.25	600HO E-Tec	XS	Final	417 300 383	QRS	52	Green	800N	0.0	48 - XP	25	45	104	13	8 teeth 2.86
GSX 600HO E-Tec SE 137 x 15 x1.25	600HO E-Tec	XR	Final	417 300 383	QRS	52	Green	800N	0.0	48 - XP	23	45	104	13	8 teeth 2.86
Grand-Touring 600HO E-Tec LE, 137-15-1.0	600HO E-Tec	XR	Final	417 300 383	QRS	52	Green	800N	0.0	48 - XP	23	45	104	13	8 teeth 2.86
Summit 600HO E-Tec SP, 146 x 16 x 2.25	600HO E-Tec	XM	Final	417 300 383	QRS	52	Black	700N	0.0	41-45 -XP	19 Steel	49	104	13	8 teeth 2.86
Summit 600HO E-Tec SP, 146 and 154 x 16 x 2.25Eur S-LEV	600HO E-Tec	XM	Final	417 300 383	QRS	52	Black	700N	0.0	41-45 -XP	19 Steel	49	104	13	8 teeth 2.86
Summit 600HO E-Tec SP, 154 x 16 x 2.25	600HO E-Tec	XM	Final	417 300 383	QRS	52	Black	700N	0.0	41-45 -XP	19 Steel	51	106	13	8 teeth 2.86
Tundra Xtreme 600HO E-Tec 154 x 16 x 2.25	600HO E-Tec	XU	Final	417 300 383	QRS	52	Black	700N	0.0	44-42 -XP	21	49	106	13	8 teeth 2.86
Tundra Xtreme 600HO E-Tec 154 x 16 x 2.25 Eur.	600HO E-Tec	XU	Final	417 300 383	QRS	52	Black	700N	0.0	41-45 - XP	19 Steel	49	104	13	8 teeth 2.86
Expedition LE, SE 600HO E-Tec 20 x 154 x 1.25	600HO E-Tec	XU	Final	417 300 383	QRS-NTC	54	Wh2-Wh2		8.3-7.5	40 - XP	1-3,23	2- 1,98	N/A	N/A	8 teeth 2,86
Skandic WT 600HO E-Tec 20 x 154 x 1.5"	600HO E-Tec	XU	Final	417 300 383	QRS-NTC	54	Wh2-Wh2		8.3-7.5	40 - XP	1-3,86	2- 2,3	N/A	N/A	8 teeth 2,86
Skandic SWT 600HO E-Tec 24x154x1.25"	600HO E-Tec	XU	Final	417 300 383	QRS-NTC	54	Wh2-Wh2		8.3-7.5	40 - XP	1-3,23	2- 1,98	N/A	N/A	8 teeth 2,52
MXZ X 600RS	600 RS	XS	Final	417 300 425	Team 417 127 425		black/yellow	180-260	0.0	14(84-44x0.40) 24(86-42x0.40)	21 Steel	49 BRP	106	13	8 teeth 2,86"
MxZ 600 ACE Sport, 120 x 15 x 1,0	602	XP	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	24R	51	108	13	8 teeth 2.86
MxZ 600 ACE Sport, 120 x 15 x 1,25 Eur.	602	XP	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	24R	51	108	13	8 teeth 2.86
Renegade 600 ACE Sport 137 x 15 x 1.25	602	XP	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	49	106	13	8 teeth 2.86
Renegade 600 ACE Sport 137x16x1.25 Eur.	602	XP	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	51	106	13	8 teeth 2.86
GTX 600 ACE Sport 137x15x1,0	602	XP	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	49	106	13	8 teeth 2.86
GTX 600 ACE Sport 137 x 16 x 1.25 Eur	602	XP	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	51	106	13	8 teeth 2.86
Expedition 600 ACE Sport 154x16x1.5	602	XP	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	51	106	13	8 teeth 2.86
TUNDRA 600 ACE Sport 137x16x1.25	602	XU	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	51	106	13	8 teeth 2.86
TUNDRA 600 ACE LT 154x16x1.5	602	XU	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	51	106	13	8 teeth 2.86
TUNDRA 600 ACE LT 154x16x1.5 Eur.	602	XU	Final	417 3001 27	QRS-SS	50	Pk3-Pk3		7.0-6.4	41-45	21R	51	106	13	7 teeth 2.86
Skandic 600 ACE WT 154 x 20 x 1.5	602	XU	Final	417 3001 27	QRS-NTC	50	Pk3-Pk3		7.0-6.4	37-45	1-3,86	2- 2,3	N/A	N/A	7 teeth 2.86
Skandic 600 ACE SWT 154 x 24 x 1.25	602	XU	Final	417 3001 27	QRS-NTC	50	Pk3-Pk3		7.0-6.4	37-45	1-3,86	2- 2,3	N/A	N/A	8 teeth 2.52
SUMMIT 800R Sport 154 x 16 x 2.25	800R	XP	Final	417 300 391	QRS	52	Violet	1000N	0.0	43-47 - XP	19 Steel	49	104	13	8 teeth 2.86
SUMMIT 800R Sport 154 x 16 x 2.25 Eur S-LEV	800R	XP	Final	417 300 391	QRS	52	Violet	1000N	0.0	43-47 - XP	21	49	106	13	8 teeth 2.86

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BRP SKI-DOO - 2014 MODELS / MODELES 2014

TRANSMISSION SYSTEM DEFINITION / DEFINITION DU SYSTEME DE TRANSMISSION

Model Modèle	Engine Moteur	Platform	Status	Drive pulley / Poulie motrice									
				Model Modèle	Taper Cone	Governor cup / Cuvette de régulateur	Slider Glissière	Spring Ressort	Pin or weight / Pine ou pesée	Ramp or bloc / Rampe ou bloc	Pos. calib. or / ou capsule	Engage-ment ±100 RPM	Max. speed / Régime max. ±100 RPM
MXZ 800R E-Tec TNT, X, X-RS 120 x 15 x 1.25	800R E-Tec	XS	Final	TRA 7	1:7.5	Cushion drive	Vespel	Blue / Green	Solid - Long	414	3	3800	7900
MXZ 800R E-Tec X-RS 120 x 15 x 1.50 Eur.	800R E-Tec	XS	Final	TRA 7	1:7.5	Cushion drive	Vespel	Blue / Green	Solid - Long	414	3	3800	7900
GSX 800R E-Tec SE 137 x 15 x 1.25	800R E-Tec	XR	Final	TRA 7	1:7.5	Cushion drive	Vespel	Yellow / Green	Solid - Long	414	3	3800	7900
Renegade 800R E-Tec Adrenaline , X 137-16-1.25	800R E-Tec	XS	Final	TRA 7	1:7.5	Cushion drive	Vespel	Blue / Green	Solid - Long	414	3	3800	7900
Renegade 800R E-Tec B Country X 137-16 -1.75	800R E-Tec	XS	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Blue	Solid - Long	413	3	3800	7900
Renegade 800R E-Tec Eur B Country X 137-16 -1.75	800R E-Tec	XS	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Blue	Solid - Long	413	3	3800	7900
Renegade 800R E-Tec B Country 137-16 -1.75	800R E-Tec	XS	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Blue	Solid - Long	413	3	3800	7900
SUMMIT 800R E-Tec SP, X 146 x 16 x 2.5	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Pink	Threaded long + 16mm	441	3	3800	7900
SUMMIT 800R E-Tec , X 146 x 16 x 2.5 Eur. S-LEV	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Yellow / Green	Solid - Long	413	2	3800	7900
SUMMIT 800R E-Tec SP,X 154 x 16 x 2,5	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Pink	Threaded long + 16mm	441	3	3800	7900
SUMMIT 800R E-Tec SP,X 154 x 16 x 2,5Eur H-ALT	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Pink	Threaded long + 16mm	441	3	3800	7900
SUMMIT 800R E-Tec ,SP, X 154 x 16 x 2,5 Eur. S-LEV	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Yellow / Green	Solid - Long	413	2	3800	7900
SUMMIT 800R E-Tec SP, X 163 x 16 x 2,5	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Pink	Threaded long + 16mm	441	3	3800	7900
SUMMIT 800R E-Tec SP, X 163 x 16 x 2,5 Eur. H-ALT	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Pink	Threaded long + 16mm	441	3	3800	7900
SUMMIT 800R E-Tec , X 163 x 16 x 2,5 Eur. S-LEV	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Yellow / Green	Solid - Long	413	2	3800	7900
Freeride 800R E-Tec 137 x 16 x 1,75	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Blue	Solid - Long	413	3	3800	7900
Freeride 800R E-Tec 137 x 16 x 2.25	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Blue	Solid - Long	413	3	3800	7900
Freeride 800R E-Tec 137-16-2.25 Eur S-LEV	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Blue	Solid - Long	413	3	3800	7900
Freeride 800R E-Tec 146 x 16 x 2.5	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Pink	Threaded long + 16mm	441	3	3800	7900
Freeride 800R E-Tec 146 x 16 x 2.5 Eur. S-LEV	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Yellow / Green	Solid - Long	413	2	3800	7900
Freeride 800R E-Tec, 154 x 16 x 2.5	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Violet / Pink	Threaded long + 16mm	441	3	3800	7900
Freeride 800R E-Tec 154 x 16 x 2.5 Eur. S-LEV	800R E-Tec	XM	Final	TRA 7	1:7.5	Cushion drive	Vespel	Yellow / Green	Solid - Long	413	2	3800	7900
MXZ 900 ACE TNT 120 x 15 x 1,25	903	XS	Final	e-drive II	1 : 7.5	n/a	Vespel	100-155	n/a	6 X 735	n/a	2200	7250
Renegade 900 ACE Adr 137 x 16 x 1.25	903	XS	Final	e-drive II	1 : 7.5	n/a	Vespel	100-155	n/a	6 X 735	n/a	2200	7250
Renegade 900 ACE Adr 137 x 16 x 1.25 Eur.	903	XS	Final	e-drive II	1 : 7.5	n/a	Vespel	100-155	n/a	6 X 735	n/a	2200	7250
GSX 900 ACE LE 120 x 15 x 1.25	903	XS	Final	e-drive II	1 : 7.5	n/a	Vespel	100-155	n/a	6 X 740	n/a	2200	7250
G Touring 900 ACE LE 137 x 15 x 1	903	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	100-155	n/a	6 X 735	n/a	2200	7250
Expedition 900 ACE Sport 154x16x1.5	903	XS	Final	e-drive II	1 : 7.5	n/a	Vespel	100-155	n/a	6 X 735	n/a	2200	7250
Expedition 900 ACE Sport 154x16x1.5 Eur.	903	XS	Final	e-drive II	1 : 7.5	n/a	Vespel	100-155	n/a	6 X 735	n/a	2200	7250
MXZ 1200 TNT, X 120 x 15 x 1,25	1203	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	110-190	n/a	6 X 735	n/a	2200	7800
Renegade 1200 Adren, X 137 x 16 x 1.25	1203	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	110-190	n/a	6 X 735	n/a	2200	7800
Renegade 1200 X 137 x 16 x 1.75 Eur	1203	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	110-190	n/a	6 X 735	n/a	2200	7800
GSX 1200 LE 120 x 15 x 1.25	1203	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	110-190	n/a	6 X 735	n/a	2200	7800
GSX 1200 SE 137 x 15 x 1.25	1203	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	110-190	n/a	6 X 735	n/a	2200	7800
G Touring 1200 SE 137 x 16 x 1.25 Eur.	1203	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	110-190	n/a	6 X 735	n/a	2200	7800
G Touring 1200 LE, SE 137 x 15 x 1	1203	XR	Final	e-drive II	1 : 7.5	n/a	Vespel	110-190	n/a	6 X 735	n/a	2200	7800
Expedition LE, SE 1200 20 x 154 x 1,25	1203	XU	Final	e-drive II	1:7.5	n/a	Vespel	100-150	n/a	6 X 735	n/a	2200	7800

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BRP SKI-DOO - 2014 MODELS / MODELES 2014

TRANSMISSION SYSTEM DEFINITION / DEFINITION DU SYSTEME DE TRANSMISSION

Model / Modèle	Engine / Moteur	Platform	Status	Belt / Courroie	Driven pulley / Poulie menée: Model / Modèle	Initial openning / Ouverture Initiale	Ressort / Spring: Color	Ressort / Spring: Force (N)	Preload new / after break-in period / Tension neuf / après rodage (±0.7 kg)	Cam / Came (°) / Type	Carter: Sprocket top / Pignon haut	Carter: Sprocket bottom / Pignon bas	Carter: Chaine / Chain: Maille/Link	Carter: Chaine / Chain: width	Sprocket / Barbottin
MXZ 800R E-Tec TNT, X, X-RS 120 x 15 x 1.25	800R E-Tec	XS	Final	417 300 391	QRS	52	Green	800N	0.0	47-44 - XP	27	45	106	13	8 teeth 2.86
MXZ 800R E-Tec X-RS 120 x 15 x 1.50 Eur.	800R E-Tec	XS	Final	417 300 391	QRS	52	Green	800N	0.0	47-44 - XP	25	45	104	13	8 teeth 2.86
GSX 800R E-Tec SE 137 x 15 x 1.25	800R E-Tec	XR	Final	417 300 391	QRS	52	Green	800N	0.0	50-44 - XP	27	45	106	13	8 teeth 2.86
Renegade 800R E-Tec Adrenaline , X 137-16-1.25	800R E-Tec	XS	Final	417 300 391	QRS	52	Green	800N	0.0	44-42 - XP	25	45	104	13	8 teeth 2.86
Renegade 800R E-Tec B Country X 137-16 -1.75	800R E-Tec	XS	Final	417 300 391	QRS	52	Green	800N	0.0	44-42 - XP	23	45	104	13	8 teeth 2.86
Renegade 800R E-Tec Eur B Country X 137-16 -1.75	800R E-Tec	XS	Final	417 300 391	QRS	52	Green	800N	0.0	44-42 - XP	23	45	104	13	8 teeth 2.86
Renegade 800R E-Tec B Country 137-16 -1.75	800R E-Tec	XS	Final	417 300 391	QRS	52	Green	800N	0.0	44-42 - XP	23	45	104	13	8 teeth 2.86
SUMMIT 800R E-Tec SP, X 146 x 16 x 2.5	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	49	106	13	8 teeth 2.86
SUMMIT 800R E-Tec , X 146 x 16 x 2.5 Eur. S-LEV	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	49	106	13	8 teeth 2.86
SUMMIT 800R E-Tec SP,X 154 x 16 x 2,5	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	19 Steel	49	104	13	8 teeth 2.86
SUMMIT 800R E-Tec SP,X 154 x 16 x 2,5Eur H-ALT	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	19 Steel	49	104	13	8 teeth 2.86
SUMMIT 800R E-Tec ,SP, X 154 x 16 x 2,5 Eur. S-LEV	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	49	106	13	8 teeth 2.86
SUMMIT 800R E-Tec SP, X 163 x 16 x 2,5	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	19 Steel	51	106	13	8 teeth 2.86
SUMMIT 800R E-Tec SP, X 163 x 16 x 2,5 Eur. H-ALT	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	19 Steel	51	106	13	8 teeth 2.86
SUMMIT 800R E-Tec , X 163 x 16 x 2,5 Eur. S-LEV	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	19 Steel	51	106	13	8 teeth 2.86
Freeride 800R E-Tec 137 x 16 x 1,75	800R E-Tec	XM	Final	417 300 391	QRS	52	Green	800N	0.0	44-42 - XP	23	45	104	13	8 teeth 2.86
Freeride 800R E-Tec 137 x 16 x 2.25	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	45	102	13	8 teeth 2.86
Freeride 800R E-Tec 137-16-2.25 Eur S-LEV	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	45	102	13	8 teeth 2.86
Freeride 800R E-Tec 146 x 16 x 2.5	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	49	106	13	8 teeth 2.86
Freeride 800R E-Tec 146 x 16 x 2.5 Eur. S-LEV	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	49	106	13	8 teeth 2.86
Freeride 800R E-Tec, 154 x 16 x 2.5	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	19 Steel	49	104	13	8 teeth 2.86
Freeride 800R E-Tec 154 x 16 x 2.5 Eur. S-LEV	800R E-Tec	XM	Final	417 300 391	QRS	52	Blue	700N	0.0	40 - XPR	21	49	106	13	8 teeth 2.86
MXZ 900 ACE TNT 120 x 15 x 1,25	903	XS	Final	417 300 383	QRS-SS	52	Pk3-Pk3		7.5-7.0	47-40	24R	45	104	13	8 teeth 2.86
Renegade 900 ACE Adr 137 x 16 x 1.25	903	XS	Final	417 300 383	QRS-SS	52	Pk3-Pk3		7.5-7.0	47-40	24R	49	106	13	8 teeth 2.86
Renegade 900 ACE Adr 137 x 16 x 1.25 Eur.	903	XS	Final	417 300 383	QRS-SS	52	Pk3-Pk3		7.5-7.0	47-40	24R	49	106	13	8 teeth 2.86
GSX 900 ACE LE 120 x 15 x 1.25	903	XS	Final	417 300 383	QRS-SS	54	Pk3-Pk3		7.5-7.0	42	24R	45	104	13	8 teeth 2.86
G Touring 900 ACE LE 137 x 15 x 1	903	XR	Final	417 300 383	QRS-SS	54	Pk3-Pk3		7.5-7.0	47-40	24R	49	106	13	8 teeth Silent (16)
Expedition 900 ACE Sport 154x16x1.5	903	XS	Final	417 300 383	QRS-SS	52	Pk3-Pk3		7.5-7.0	47-40	24R	49	106	13	8 teeth 2.86
Expedition 900 ACE Sport 154x16x1.5 Eur.	903	XS	Final	417 300 383	QRS-SS	52	Pk3-Pk3		7.5-7.0	47-40	24R	49	106	13	8 teeth 2.86
MXZ 1200 TNT, X 120 x 15 x 1,25	1203	XR	Final	417 300 383	QRS	52	Pk4-Pk4		7.5-7.0	44-40	24R	43	104	13	8 teeth 2.86
Renegade 1200 Adren, X 137 x 16 x 1.25	1203	XR	Final	417 300 383	QRS	52	Pk4-Pk4		7.5-7.0	44-40	24R	45	104	13	8 teeth 2.86
Renegade 1200 X 137 x 16 x 1.75 Eur	1203	XR	Final	417 300 383	QRS	52	Pk4-Pk4		7.5-7.0	44-40	24R	45	104	13	8 teeth 2.86
GSX 1200 LE 120 x 15 x 1.25	1203	XR	Final	417 300 383	QRS	54	Pk4-Pk4		7.5-7.0	44-40	24R	43	104	13	8 teeth 2.86
GSX 1200 SE 137 x 15 x 1.25	1203	XR	Final	417 300 383	QRS	54	Pk4-Pk4		7.5-7.0	44-40	24R	45	104	13	8 teeth 2.86
G Touring 1200 SE 137 x 16 x 1.25 Eur.	1203	XR	Final	417 300 383	QRS	54	Pk4-Pk4		7.5-7.0	44-40	24R	49	106	13	8 teeth 2.86
G Touring 1200 LE, SE 137 x 15 x 1	1203	XR	Final	417 300 383	QRS	54	Pk4-Pk4		7.5-7.0	44-40	24R	45	104	13	8 teeth 2.86
Expedition LE, SE 1200 20 x 154 x 1,25	1203	XU	Final	417 300 391	QRS-NTC	54	Pk4-Pk4		7.5-7.0	44-40	1-3,23	2- 1,98	N/A	N/A	8 teeth 2.86

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MULTIFUNCTION DIGITAL DISPLAY

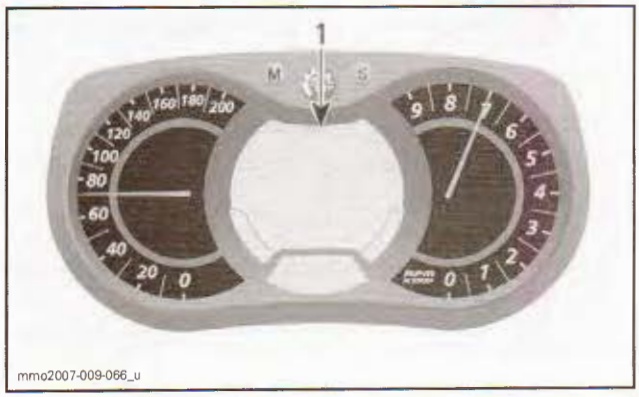
Multifunction Analog/Digital Gauge Only

Multifunction digital display that supplies several real time useful information to the driver either in English or French, contact an authorized Ski Doo dealer for language settings.

⚠ WARNING

Reading the gauge digital display can distract from the operation of the vehicle, particularly from constantly scanning the environment which could lead to a collision or loss of control. Before reading the gauge digital display, ensure your environment is clear and free from obstacle, and bring the vehicle to a low speed. Before proceeding with any adjustments, park vehicle in a safe place and away from the trail.

Also, the multifunction digital display is factory preset in Imperial units but it is possible to change it to Metric units, contact an authorized Ski Doo dealer for unit settings.



MULTIFUNCTION ANALOG/DIGITAL GAUGE
1. Multifunction display

NOTE: Some of the listed display functions may not apply to your models. Some functions can be added to the gauge, contact an authorized Ski Doo dealer.

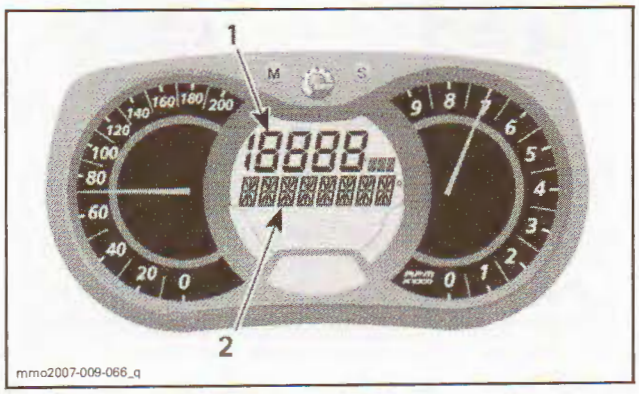
DISPLAY FEATURES	
FUNCTIONS	REFER TO TOPICS
Speedometer	A)
Tachometer (RPM)	B)
Odometer	C)
Trip meter "A" or "B"	D)
Trip hour meter	E)

DISPLAY FEATURES	
FUNCTIONS	REFER TO TOPICS
Clock	F)
Fuel level	G)
Altitude	H)
Top speed	I)
Average speed	J)
Heated grips heating intensity	K)
Heated throttle lever heating intensity	L)
Instant fuel consumption	M)
Total fuel consumption	N)
Message display	O)
Coolant temperature	P)
Top RPM	Q)
Lap record mode	R)
Exhaust gas temperature	S)
Throttle position display	T)
Air control suspension	U)
E TEC engine storage mode	V)

SPEEDOMETER

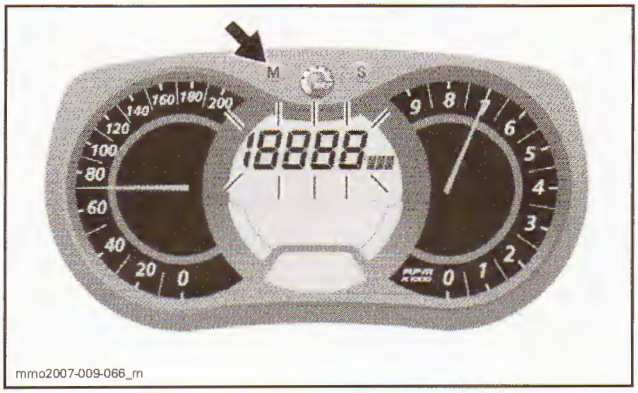
In addition of the analog type speedometer, vehicle speed can also be displayed via the multifunction display.

Vehicle speed can be displayed on display 1 or display 2.

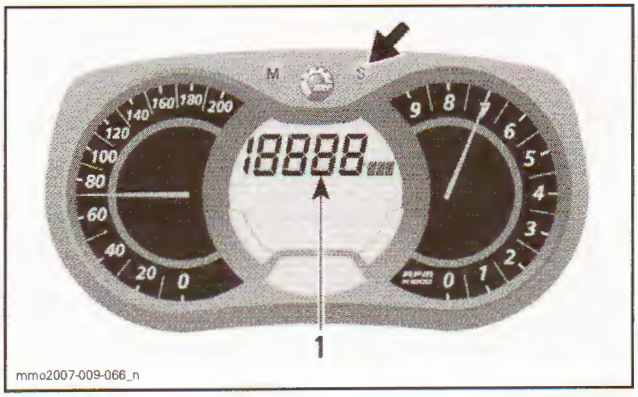


MULTIFUNCTION DISPLAY
1. Display 1
2. Display 2

Use MODE (M) button to select the desired display, then proceed as follows:

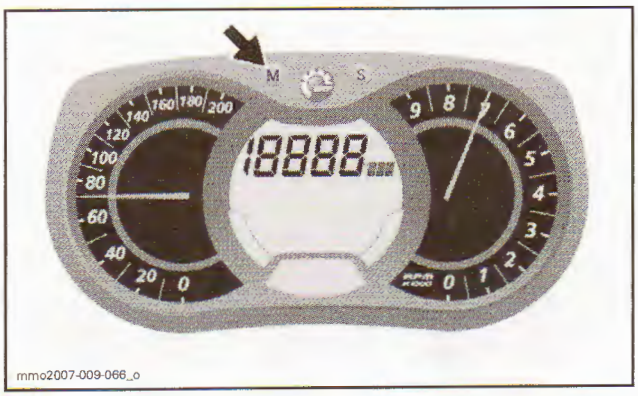


While display is flashing, press the SET (S) button to select speedometer mode.



1. *Speedometer mode*

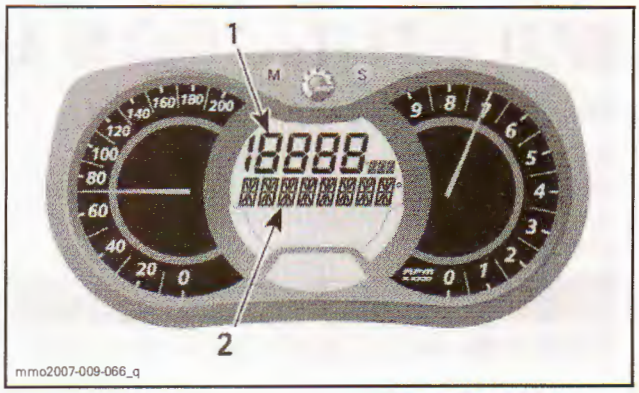
Press the MODE (M) button to confirm selection or wait 5 seconds.



TACHOMETER (RPM)

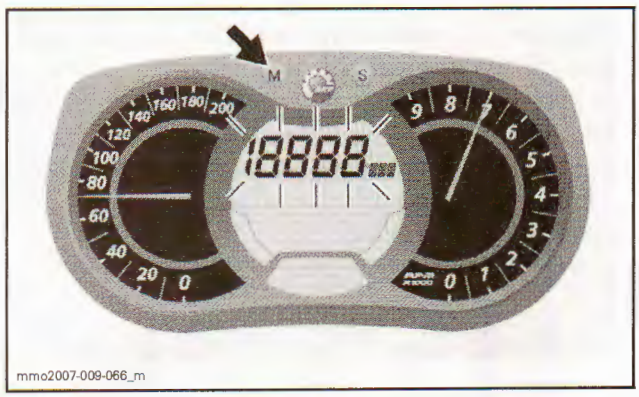
In addition of the analog type tachometer, RPM can also be displayed via the multifunction display.

Engine RPM can be displayed on display 1 or display 2.



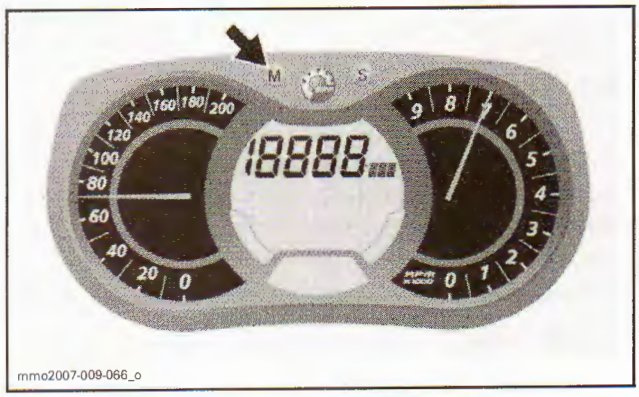
MULTIFUNCTION DISPLAY
1. *Display 1*
2. *Display 2*

Use MODE (M) button to select the desired display, then proceed as follows:



While display is flashing, press SET (S) button to select RPM mode.
1. *RPM mode*

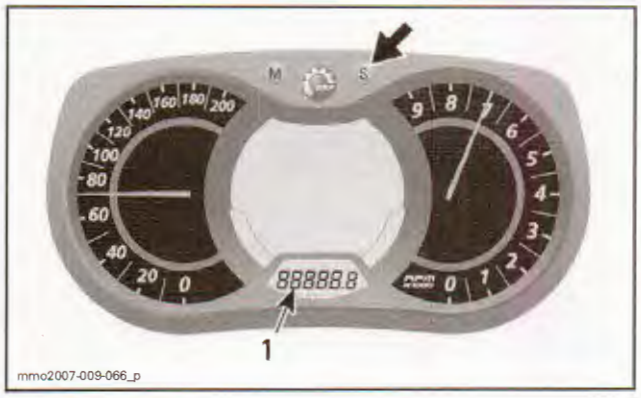
Press the MODE (M) button to confirm selection or wait 5 seconds.



ODOMETER

Records the total distance travelled.

Press the SET (S) button to select odometer mode.

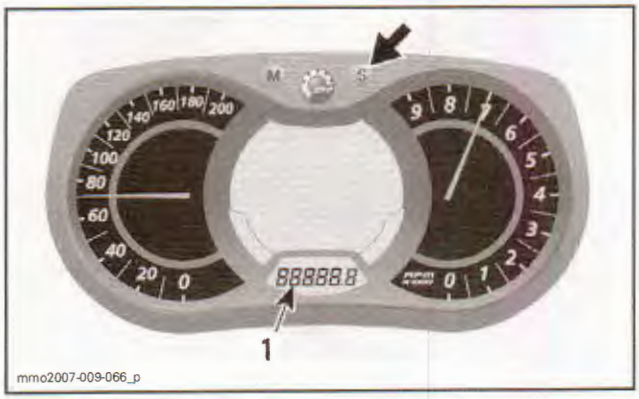


1. Odometer (km/mi) mode

TRIP METER "A" OR "B"

Trip meters records distance travelled since it has been reset.

Press the SET (S) button to select trip meter (TRIP A/TRIP B) mode.



1. Trip meter (TRIP A/TRIP B) mode

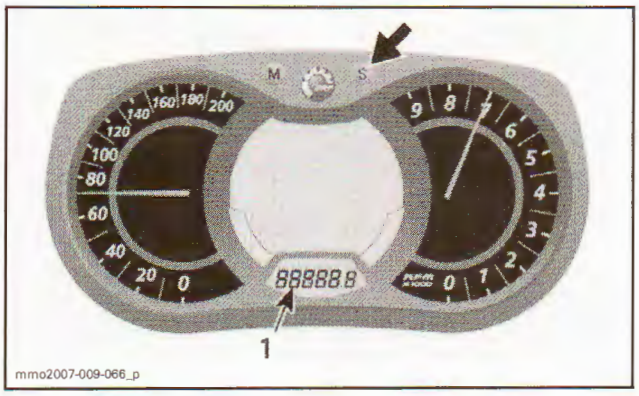
Press and hold the SET (S) button to reset.

NOTE: On E TEC models, resetting TRIP B mode will also reset TOTAL FUEL CONSUMPTION.

TRIP HOUR METER

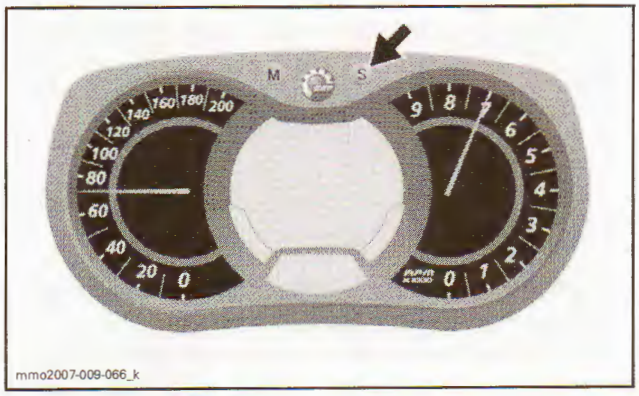
Records vehicle running time when the electrical system is activated since it has been reset.

Press the SET (S) button to select trip hour meter (HrTRIP) mode.



1. Trip hour meter (HrTRIP) mode

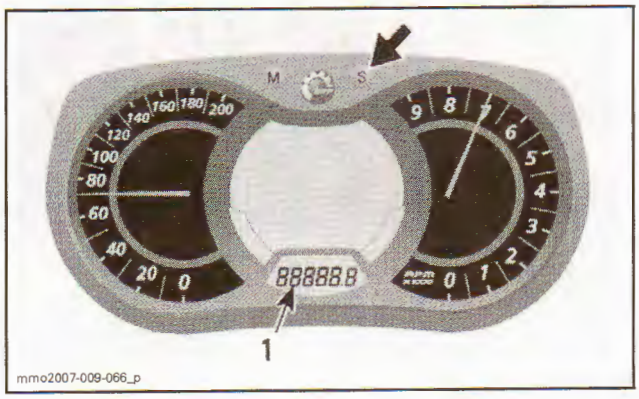
Press and hold the SET (S) button to reset.



CLOCK

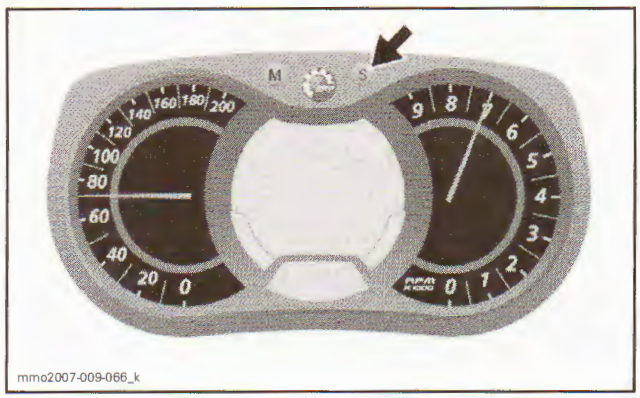
Electric Start Models

Press the SET (S) button to select clock mode.



1. Clock mode

Press and hold the SET (S) button to activate clock set up.



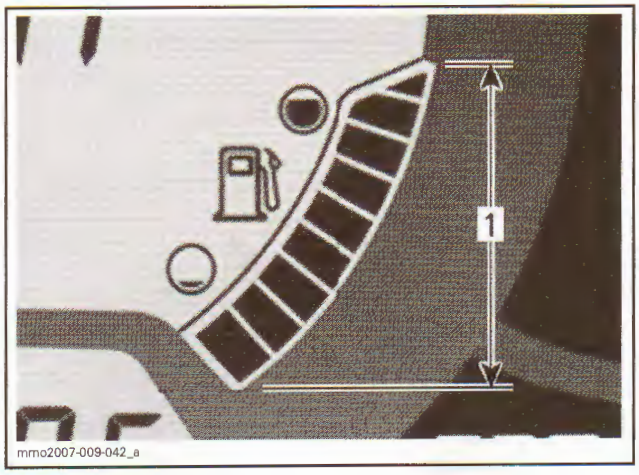
To change HOURS, while the value of HOURS is blinking, use the SET (S) button to change hours.

To change MINUTES, while the value of HOURS is blinking, press the MODE (M) button to switch to minutes. Use the SET (S) button to change minutes.

Press the MODE (M) button to save clock set up and exit mode.

FUEL LEVEL

Bar gauge that continuously indicates the amount of fuel left in the fuel tank.



FUEL LEVEL
1. Operating range

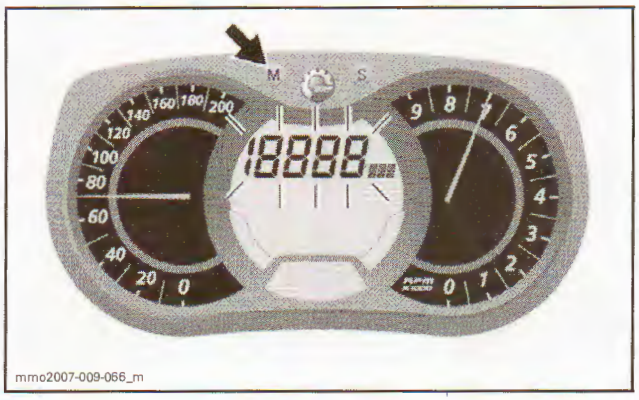
ALTITUDE

Displays vehicle **approximate** altitude above sea level calculated from the barometric pressure.

NOTE: Altitude displayed is rounded off every 100 meters or 200 feet.

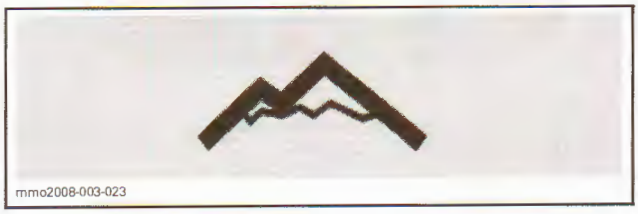
To display vehicle altitude, proceed as follows.

Press the MODE (M) button to select display 2.



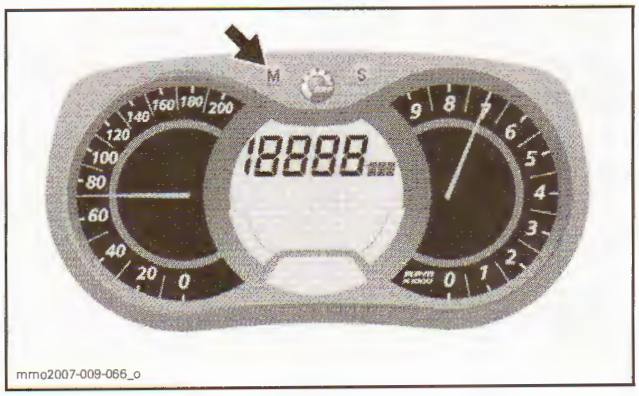
While display is flashing, press the SET (S) button to select altitude mode.

The following symbol appears when altitude mode is selected.



ALTITUDE MODE

Press the MODE (M) button to confirm selection or wait 5 seconds.

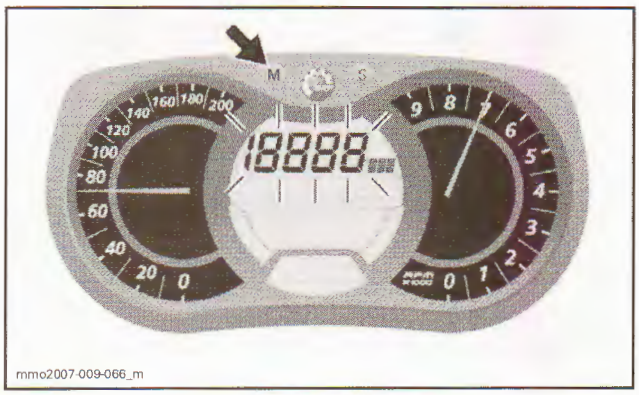


TOP SPEED

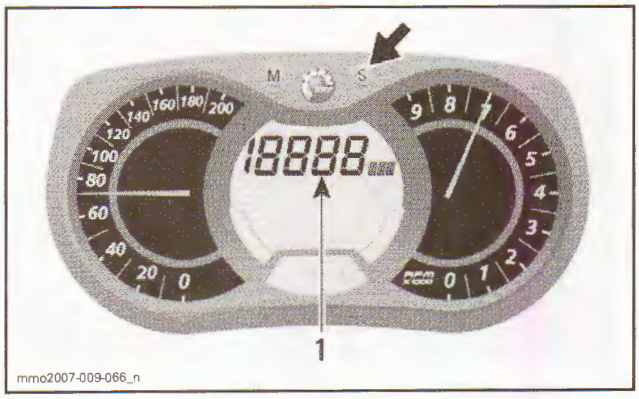
Records vehicle top speed since it has been reset.

To display vehicle top speed, proceed as follows.

Press the MODE (M) button to select display 1.

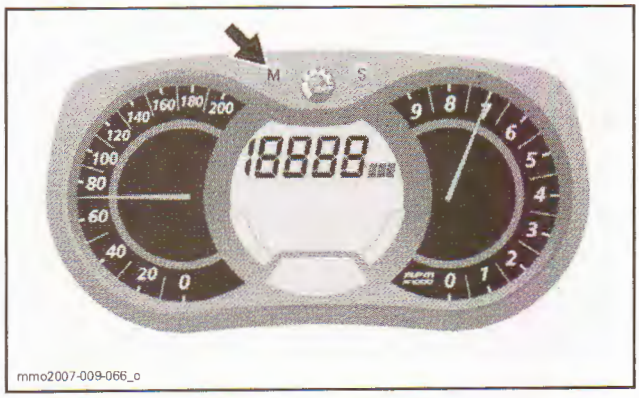


While display flashes, press the SET (S) button to select top speed (TOP_SPD) mode.

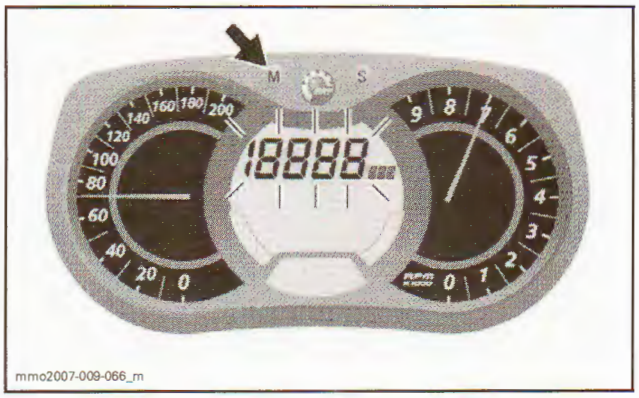


1. Top speed (TOP_SPD) mode

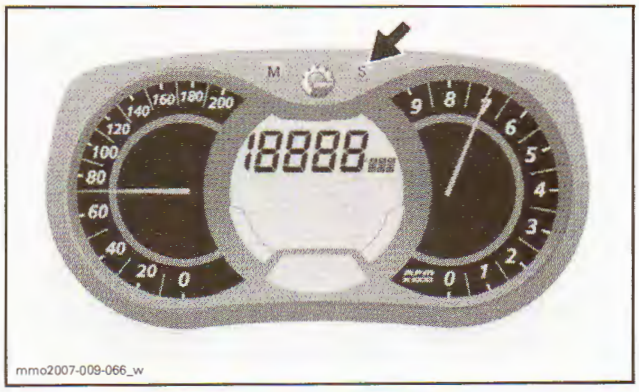
Press the MODE (M) button to confirm selection or wait 5 seconds.



To reset, press the MODE (M) to select mode.



While display flashes, press and hold the SET (S) button within 5 seconds to reset.

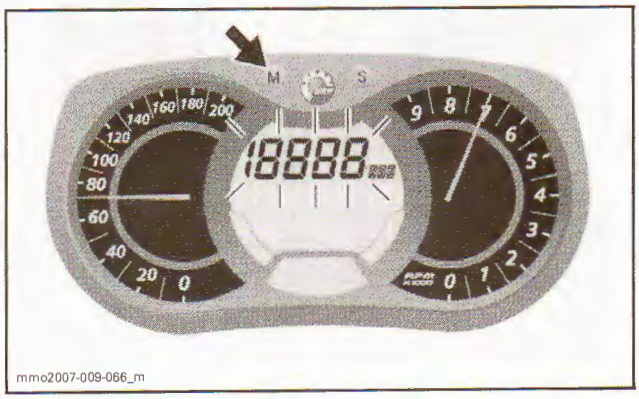


AVERAGE SPEED

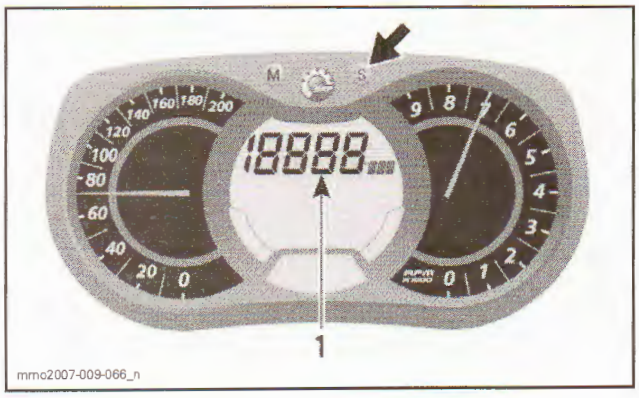
Records vehicle average speed since it has been reset.

To display vehicle average speed, proceed as follows.

Press the MODE (M) button to select display 1.

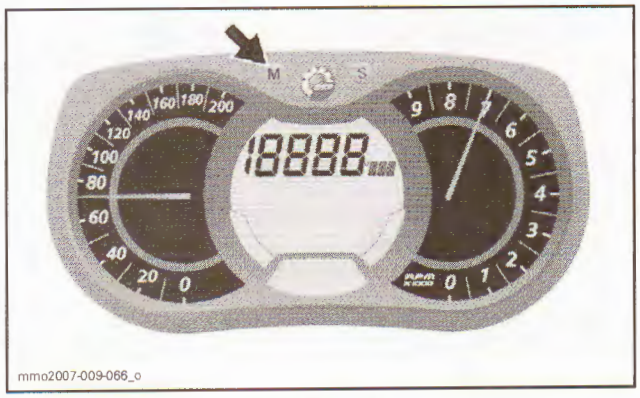


While display flashes, press SET (S) button to select vehicle average speed (AVR_SPD) mode.



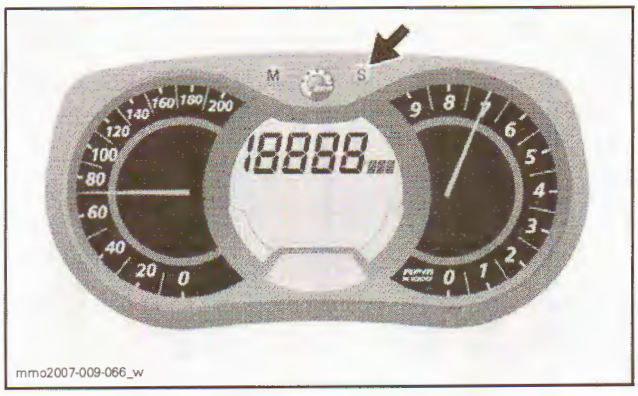
1. Vehicle average speed (AVR_SPD) mode

Press the MODE (M) button to confirm selection or wait 5 seconds.



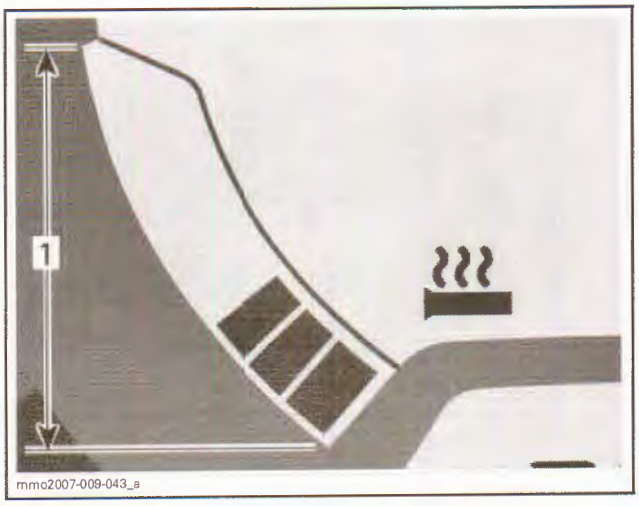
To reset, press the MODE (M) to select mode.

While display flashes, press and hold the SET (S) button within 5 seconds to reset.



HEATED GRIPS HEATING INTENSITY

Bar gauge that indicates heating intensity.

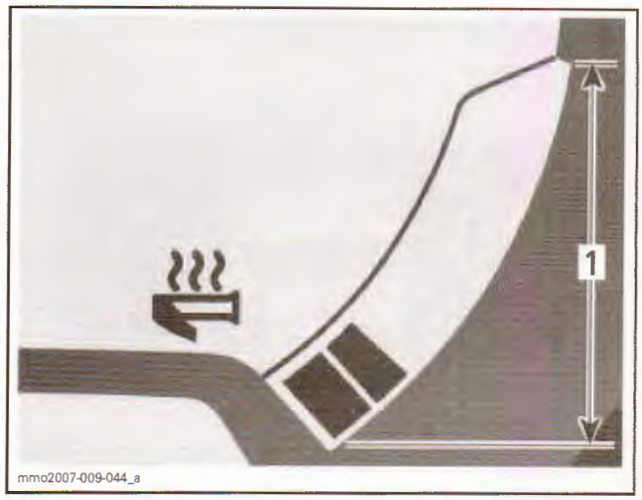


HEATED GRIPS
1. Operating range

HEATED THROTTLE LEVER HEATING INTENSITY

Bar gauge that indicates heating intensity.

Bar gauge will be displayed instead of the fuel level with the activation of the heated throttle lever switch. When released, display will return to fuel level.



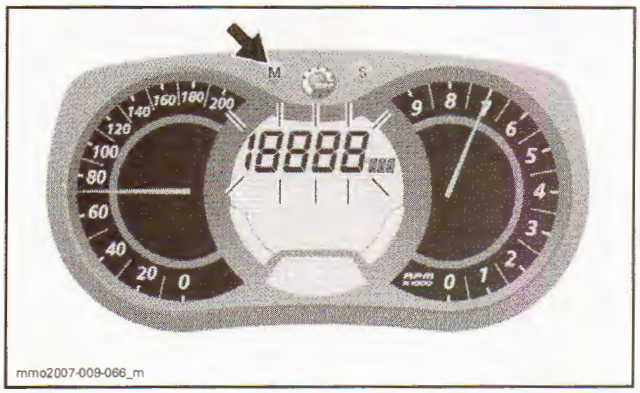
HEATED THROTTLE LEVER
1. Operating range

INSTANT FUEL CONSUMPTION

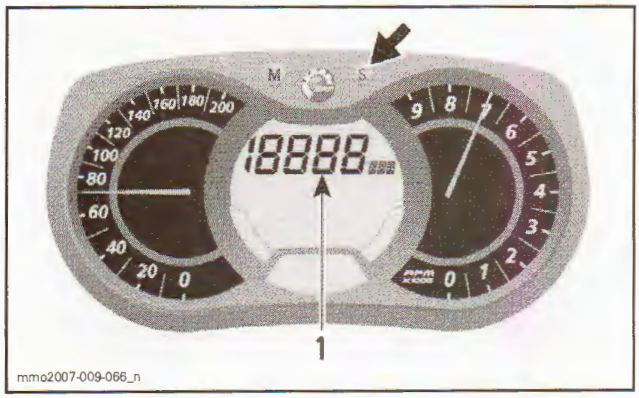
Calculates vehicle average fuel consumption while riding.

To display vehicle average fuel consumption, proceed as follows.

Press the MODE (M) button to select display 1.

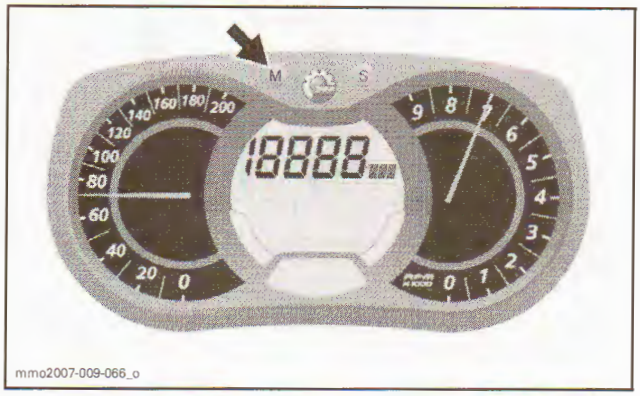


While display flashes, press SET (S) button to select instant fuel consumption mode.



1. Instant fuel consumption mode

Press the MODE (M) button to confirm selection or wait 5 seconds.



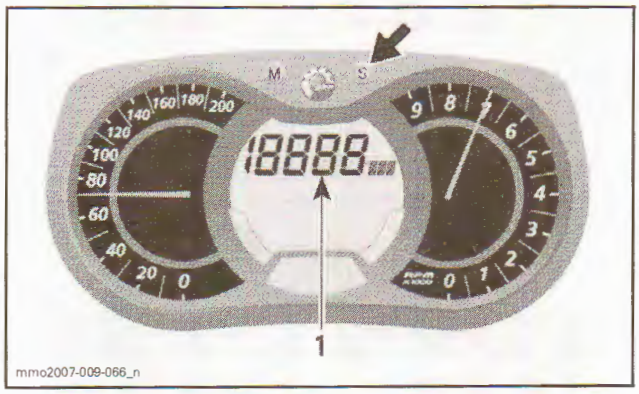
TOTAL FUEL CONSUMPTION

Records vehicle average fuel consumption since it has been reset.

To display vehicle total fuel consumption, proceed as follows.

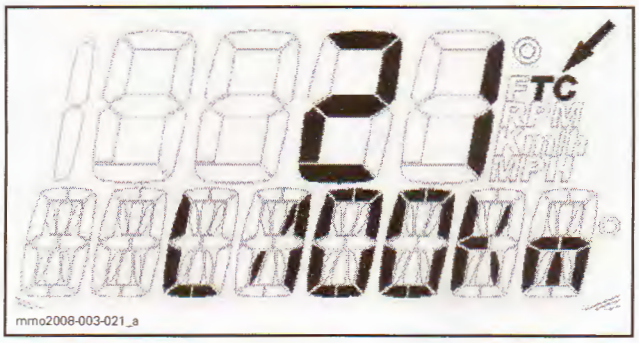
Press the MODE (M) button to select display.

While display flashes, press the SET (S) button to select total fuel consumption (TC) mode.



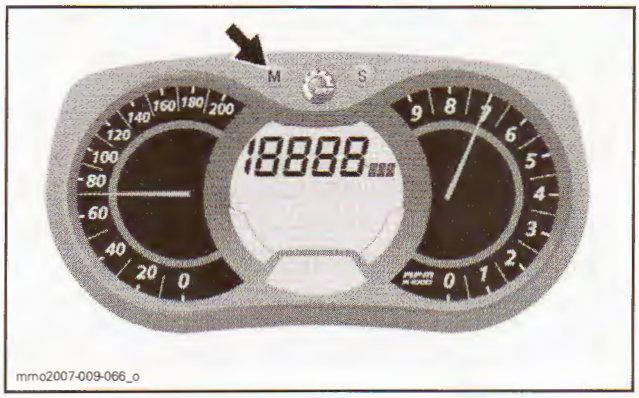
1. Total fuel consumption (TC) mode

TC appears when the mode is selected.

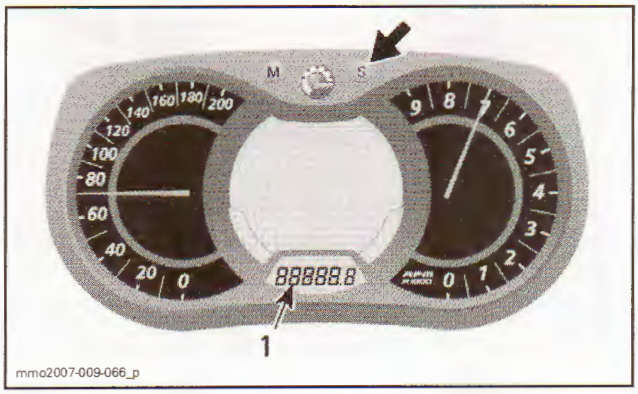


TYPICAL

Press the MODE (M) button to confirm selection or wait 5 seconds.

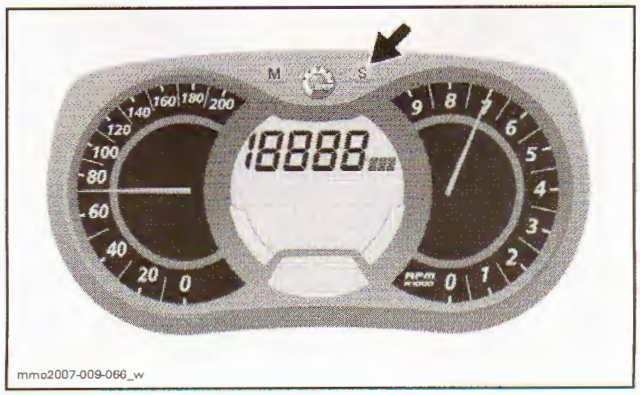


To reset, set the trip meter to TRIP B. Refer to *TRIP METER "A" OR "B"* for more details.

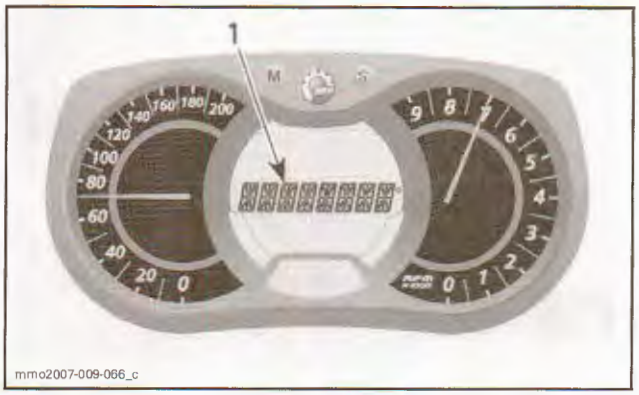


1. *Trip meter (TRIP B) mode*

Press and hold the SET (S) button to reset.



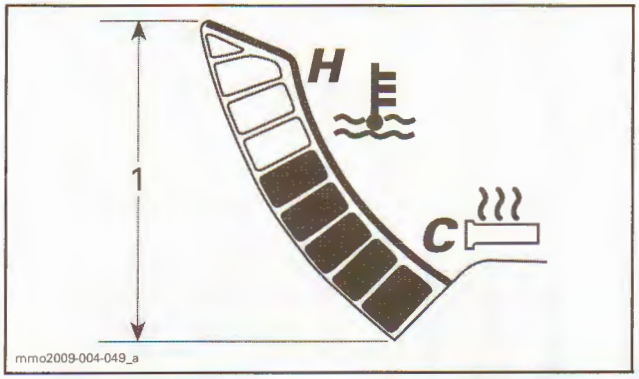
MESSAGE DISPLAY



1. *Message display*

Refer to *PILOT LAMPS AND MESSAGES* in this section for details on usual messages.

Bar gauge that continuously indicates the engine coolant temperature.



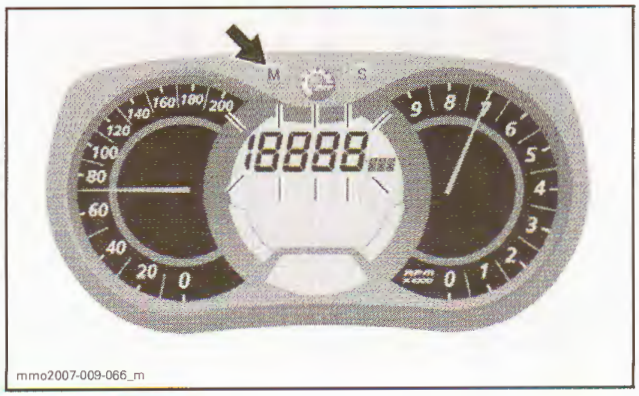
COOLANT TEMPERATURE
1. *Range*

TOP RPM

Records engine top revolution per minute (RPM) since it has been reset.

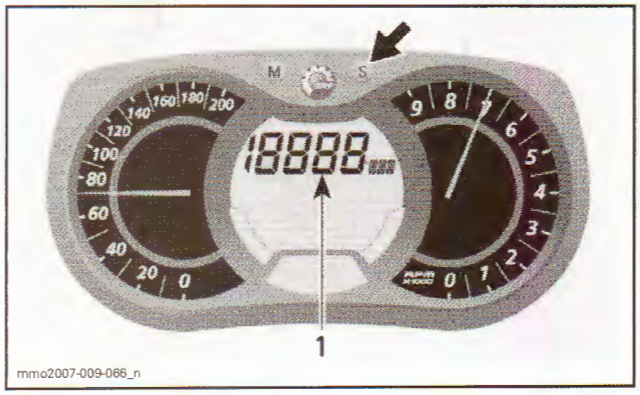
To display engine top revolution per minute, proceed as follows:

Press the MODE (M) button to select display.



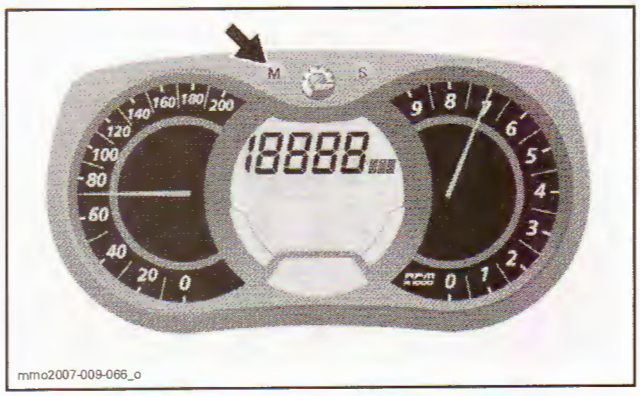
NOTE: Display will flash for approximately 5 seconds, then will return to the previously selected mode if display is not changed.

While display flashes, press the SET (S) button to scroll and select top RPM (TOP_RPM) mode.

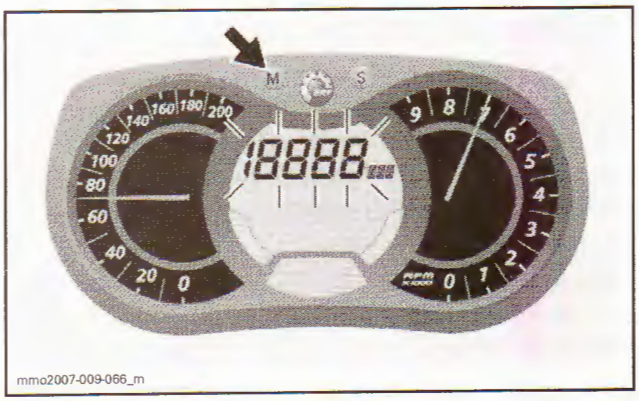


1. Top RPM (TOP_RPM) mode

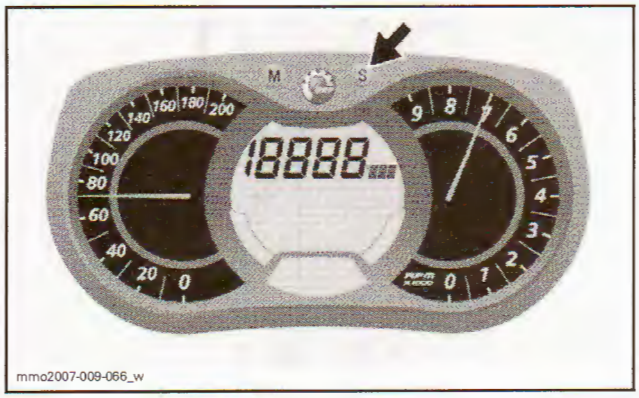
Press the MODE (M) button to confirm selection or wait 5 seconds.



To reset, press the MODE (M) to select mode.



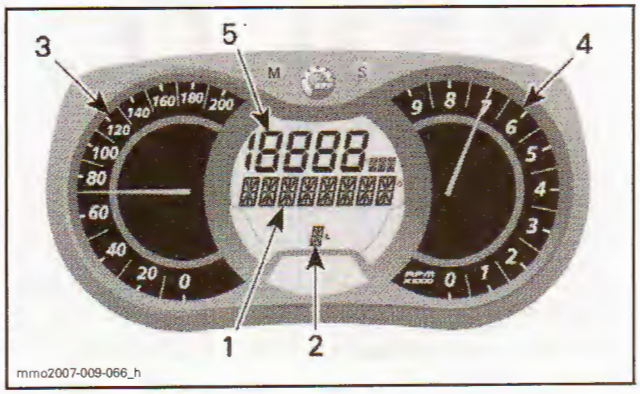
Press and hold the SET (S) button within 5 seconds to reset.



LAP RECORD MODE

With this mode, vehicle speed, engine revolutions per minute (RPM) and a preselected function in display 1 can be recorded at the same time during a period of time defined by the operator.

Also, a possibility of nine (9) different sessions (laps) can be recorded for a maximum total of 2 1/2 minutes.

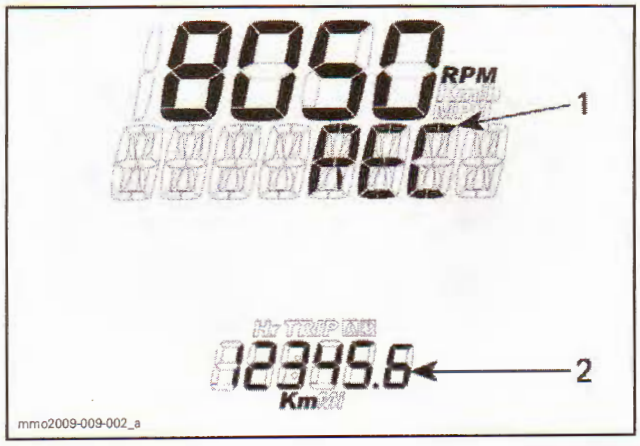


LAP RECORD MODE
1. Lap record mode display
2. Sessions (laps)
3. Vehicle speed
4. Engine revolution per minute (RPM)
5. Preselected function

To Activate Lap Record Mode:

Press the SET (S) button to select the odometer mode in display 3.

Press and hold SET (S) button for 2 seconds to activate mode, REC will be displayed to indicate that record mode has been selected.



1. Record mode
2. Odometer

Press the SET (S) button to scroll between modes.

Available modes are: STOP, REC (record) or PLAY.

To Record:

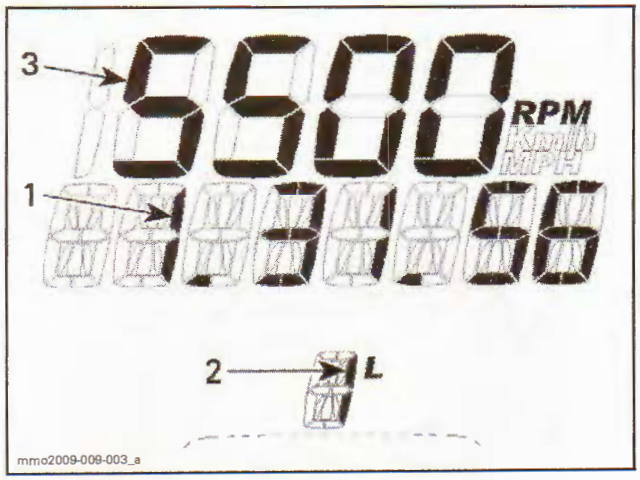
Select REC (record) mode

RECORD MODE

Press the MODE (M) button to start recording.

While recording, press the MODE (M) button again each time you want to record a new lap time (from 1 to 9 laps).

Press the SET (S) button to stop recording.



RECORD MODE
1. Recording time
2. Lap/session
3. Selected mode

To record another session, press the SET (S) button until REC (record) mode appears in display. Repeat same procedure previously described to record.

To Review Recorded Data:

Select PLAY mode.

PLAY MODE

Press the MODE (M) button to play recorded data.

All recorded data (speedometer, tachometer and the preselected mode in display 1) will be displayed at the same time.

Press the SET (S) button to stop recorded lap OR press the MODE (M) button to switch to another recorded lap.

NOTE: Pressing the SET (S) button will stop time of the lap in progress, then the display will show the recorded time length of that lap and will switch automatically to the following recorded lap after 5 seconds.

At the end of all recorded laps, STOP will appear in display.

To review recorded data again, press the SET (S) button to return to PLAY mode. Repeat same procedure previously described to review.

To record other laps, press the SET (S) button to switch to REC (record) mode. Repeat same procedure previously described to record.

Press and hold SET (S) button for 5 seconds to exit the lap record mode, the previously selected mode will be displayed.

EXHAUST GAS TEMPERATURE

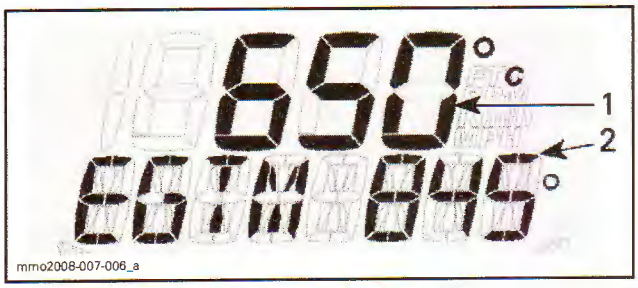
Displays real time exhaust gas temperature and records the maximum reading.

To display exhaust gas temperature, proceed as follows:

Press the MODE (M) button to select display.

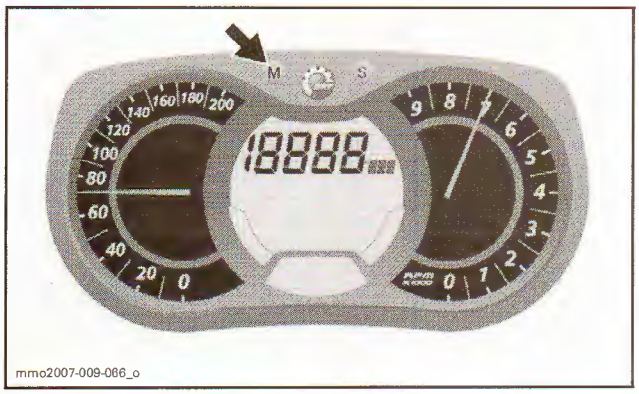
NOTE: Display will flash for approximately 5 seconds, then will return to the previously selected mode if display is not changed.

While display flashes, press the SET (S) button to scroll and select exhaust gas temperature (EGTM) mode.

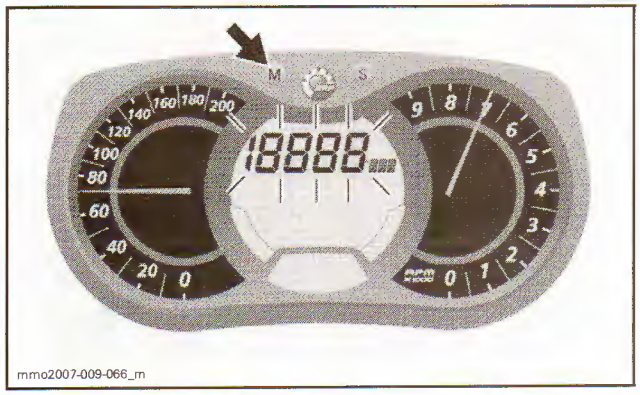


EXHAUST GAS TEMPERATURE (EGTM) MODE
1. *Current temperature*
2. *Maximum temperature recorded*

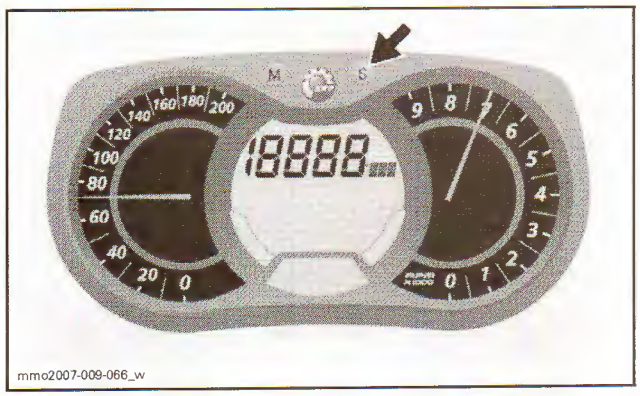
Press the MODE (M) button to confirm selection or wait 5 seconds.



To reset maximum temperature recorded, press the MODE (M) to select mode.



Press and hold the SET (S) button within 5 seconds to reset.

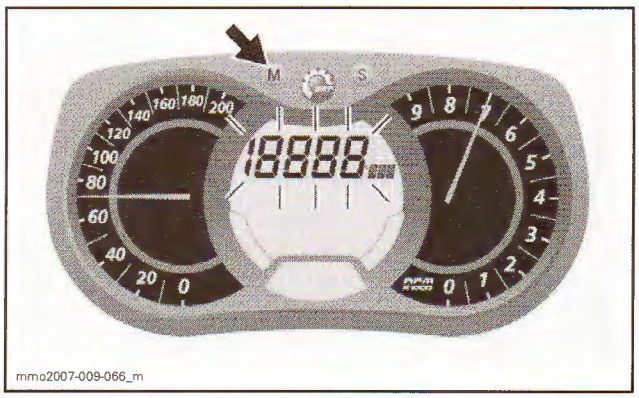


THROTTLE POSITION DISPLAY

Displays real time throttle opening in percentage from approximately 0 to 100%.

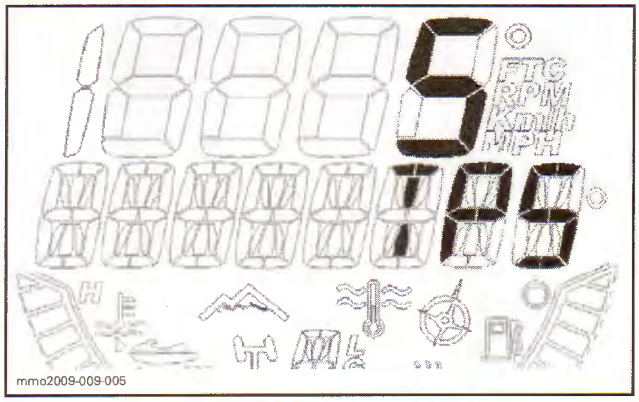
To display throttle position, proceed as follows:

Press the MODE (M) button to select display.



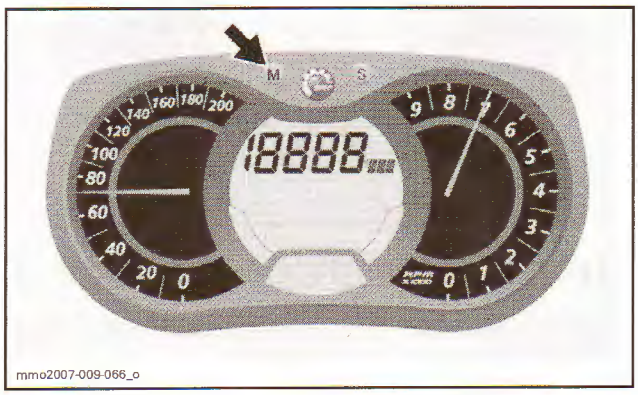
NOTE: Display will flash for approximately 5 seconds, then will return to the previously selected mode if display is not changed.

While display flashes, press the SET (S) button to scroll and select throttle position (TPS) mode.



THROTTLE POSITION MODE

Press the MODE (M) button to confirm selection or wait 5 seconds.



AIR CONTROL SUSPENSION

Displays rear suspension air shock absorber set point and actual setting.

E TEC ENGINE STORAGE MODE

Displays "OIL" when the storage mode procedure is initiated.

MONITORING SYSTEM

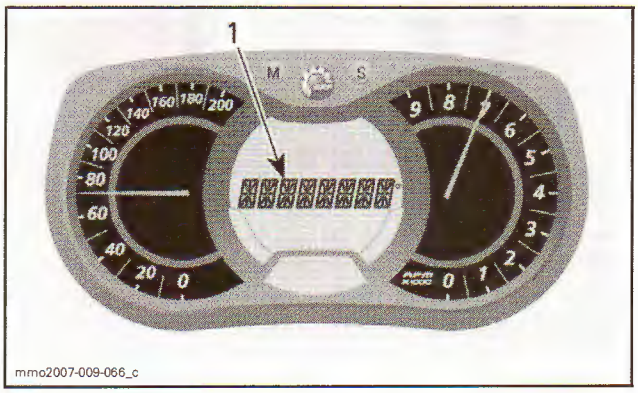
Pilot Lamps, Messages and Beeper Codes

Gauge pilot lamp(s) will inform you if an anomaly occurs or to inform you of a particular condition.

TYPICAL — PILOT LAMPS

Pilot lamp can flash alone or in combination with another lamp.

On the multifunction analog/digital gauge, the display is used as a complement of the pilot lamps to give you a brief description if an anomaly occurs or to inform you of a particular condition.



1. *Message display*

Messages will be displayed with a beep code and pilot lamp(s).

Beeper codes will be heard and messages (depending on gauge model) will be displayed to catch your attention.

See table below for details.

NOTE: Some of the listed pilot lamps and messages do not apply to all models. The message display is available only on the multifunction analog/digital gauge.

PILOT LAMP(S) ON	BEEPER	MESSAGE DISPLAY	DESCRIPTION
	4 short beeps every 30 seconds	ENGINE OVERHEAT	Engine is overheating, reduce snowmobile speed and run in loose snow or stop engine immediately and let engine cool down. Check coolant level, refer to *MAINTENANCE*. If coolant level is correct and overheating persists, contact an authorized Ski Doo dealer. Do not run the engine if condition persists.
		MUFFLER	Reduce speed or stop engine. Let engine cool down and restart. If overheating persists, contact an authorized Ski Doo dealer. Do not run the engine if condition persists.
	Short beeps repeating rapidly	ENGINE OVERHEAT	Critical overheat. Stop engine immediately and let engine cool down. Check coolant level, refer to *MAINTENANCE*. If coolant level is correct and overheating persists, contact an authorized Ski Doo dealer. Do not run the engine if condition persists.
		MUFFLER OVERHEAT	Critical overheat. Stop engine immediately and let engine cool down. If overheating persists, contact an authorized Ski Doo dealer. Do not run the engine if condition persists. Do not run the engine if condition persists.
		ECM OVERHEAT	
	4 short beeps every 5 minutes	LOW BAT	Indicate a low or high battery voltage condition. See an authorized Ski Doo dealer as soon as possible.
		HIGH BAT	
	4 short beeps	CHECK ENGINE	Engine fault, see an authorized Ski Doo dealer as soon as possible.
—	4 short beeps every 5 minutes	KNOCK	Engine detonation (RPM is limited when this condition occurs).Ensure recommended fuel is used.Check fuel quality, replace if necessary.If fault still occurs, contact an authorized Ski Doo dealer.
—	4 short beeps every 5 minutes	REV LIMIT	Engine RPM limited for protection when certain faults occur.
—	Short beeps repeating rapidly	SHUTDOWN	Shutdown procedure in force due to engine overheating or fuel pump problem, remove tether cord cap from engine cut off switch and contact an authorized Ski Doo dealer.
—	—	COMMUNICATION	Communication problem between ECM and gauge. Stop engine, remove tether cord cap. Wait a few minutes, then start engine. If problem persists, contact an authorized Ski Doo dealer.
DESS	2 short beeps	—	Good key, vehicle ready to operate.
	2 short beeps, repeating slowly	CHECK KEY	Unable to read key (bad connection). Make sure the key is clean and correctly snapped on post.
	Short beeps repeating rapidly	BAD KEY	Invalid key or key not programmed. Use the proper key for the vehicle or have the programmed.
—	—	(blinking)	Fuel level sender problem.
—	—	THROTTLE OPEN	Throttle applied while attempting an engine start (engine cranks but won't run). Release throttle while starting.
—	—	DROWN MODE	Throttle wide open while attempting an engine start (engine cranks but won't run). Release throttle while starting.

Fault Codes

Multifunction Analog/Digital Display only

To read any active fault code, press and hold MODE (M) Button and simultaneously depress the HI/LOW beam switch repeatedly several times.

If two or more codes are registered, use SET (S) or MODE (M) to scroll.

To exit the fault codes mode, press and hold MODE (M) button.

Contact an authorized Ski Doo dealer for code signification.

CODE	STATE	DESCRIPTION
P0107	Inactive	Air pressure sensor voltage too 100 Volts
P0108	Inactive	Air pressure sensor voltage too high
P0112	Inactive	Air temperature sensor voltage too 100 Volts
P0113	Active	Air temperature sensor voltage too high
P0117	Inactive	Engine temperature sensor voltage too 100 Volts
P0118	Active	Engine temperature sensor voltage too high
P0122	Active	N/A
P0217	Inactive	High engine temperature detected
P0326	Inactive	Knock sensor reference signal voltage too 100 Volts
P0336	Inactive	High engine RPM detected
P0545	Inactive	Exhaust gas temperature sensor too low
P0546	Inactive	Exhaust gas temperature sensor too high
P0600	Active	N/A
P0605	Active	Calibration checksum error
P0650	Inactive	Check engine lamp output shorted to battery, open circuit or shorted to ground
P0654	Inactive	Tachometer output shorted to battery, open circuit or shorted to ground
P0655	Inactive	Engine temperature lamp output shorted to battery, open circuit or shorted to ground I
P1217	Inactive	Overheat shutdown occured
P1261	Inactive	PTO Power Jet solenoid open circuit or shorted to ground
P1262	Inactive	PTO Power Jet solenoid shorted to battery
P1264	Inactive	MAG Power Jet solenoid open circuit or shorted to ground
P1265	Inactive	MAG Power Jet solenoid shorted to battery
P1326	Inactive	Engine detonation level too high
P1544	Inactive	Pipe preheat switch fault
P1649	Inactive	Pipe preheat lamp problem
P1675	Inactive	Relay output open circuit or shorted to ground
P1676	Inactive	Relay output shorted to battery

CARBURETOR SYNCHRONIZATION AND TPS ADJUSTMENT PROCEDURE FOR TMX

TOOLS REQUIRED

- 10 mm open end wrench
- Phillips screwdriver
- Small mirror
- Small Flashlight
- Supply harness (P/N 529 035 869) (7 19)
- 12 volt cable supply (P/N 529 035 997) (7 20)
- 12 volt battery.

CARBURETOR SYNCHRONIZATION

- Remove the air box.
- Place a mirror so you can see both carb slides.
- Check the throttle cable tension at the throttle lever (slack should be at a minimum).
- Press the throttle lever to WOT.
- Look at the carb slides to see if they are equal in height and clear the bore of the carbs. Adjust the throttle cables if they do not.
- Check the throttle cable tension again at idle position (minimum slack).
- Slowly open the throttle and watch to see if both carb slides rise at the same time.
- Adjust the idle screw so both carb slides open at the same time.
- Again, check the throttle cable slack at the idle position. Must be minimum slack in the cable.
- Tighten the cable jam nuts and recheck the carb slide operation.
- Re install the airbox.
- **Your carb slides are now synchronized.**

TPS ADJUSTMENT

- Using the electrical supply harnesses and the 12 V battery, connect to the diagnostic port on the vehicle.
- The instrument cluster will light up.
- After the "wake up" of the dashboard, push and hold the throttle lever to W.O.T. position.
- Press on the "Holeshot" button, hold it for 5 sec.
- The check engine light will appear when the TPS adjustment is complete.
- Release the throttle lever and the "Holeshot" button.
- Disconnect the battery and the supply harness.
- Put back the diagnostic port in its connector on the vehicle.

TPS LOCATION, DIAGNOSTIC CONNECTOR, HARNESS AND BATTERY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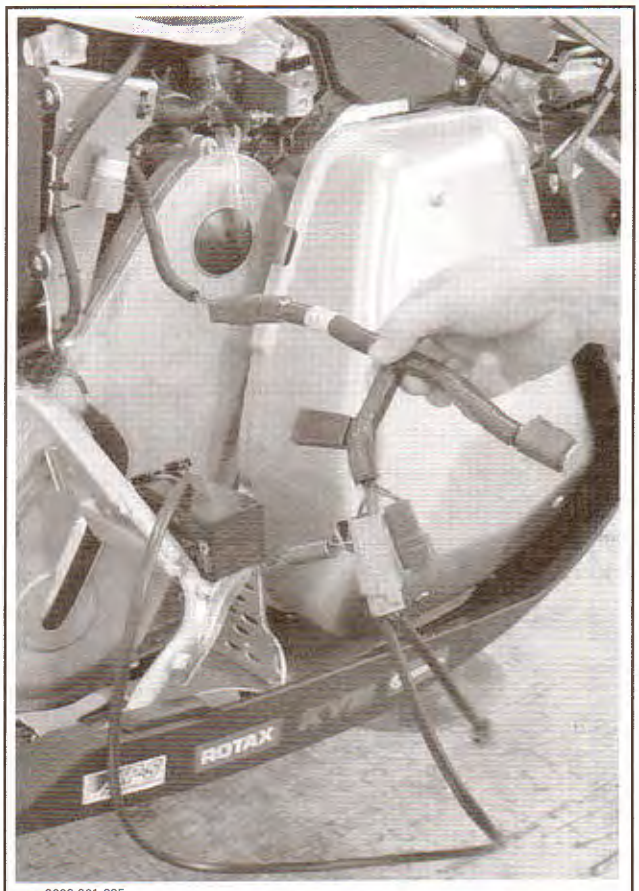

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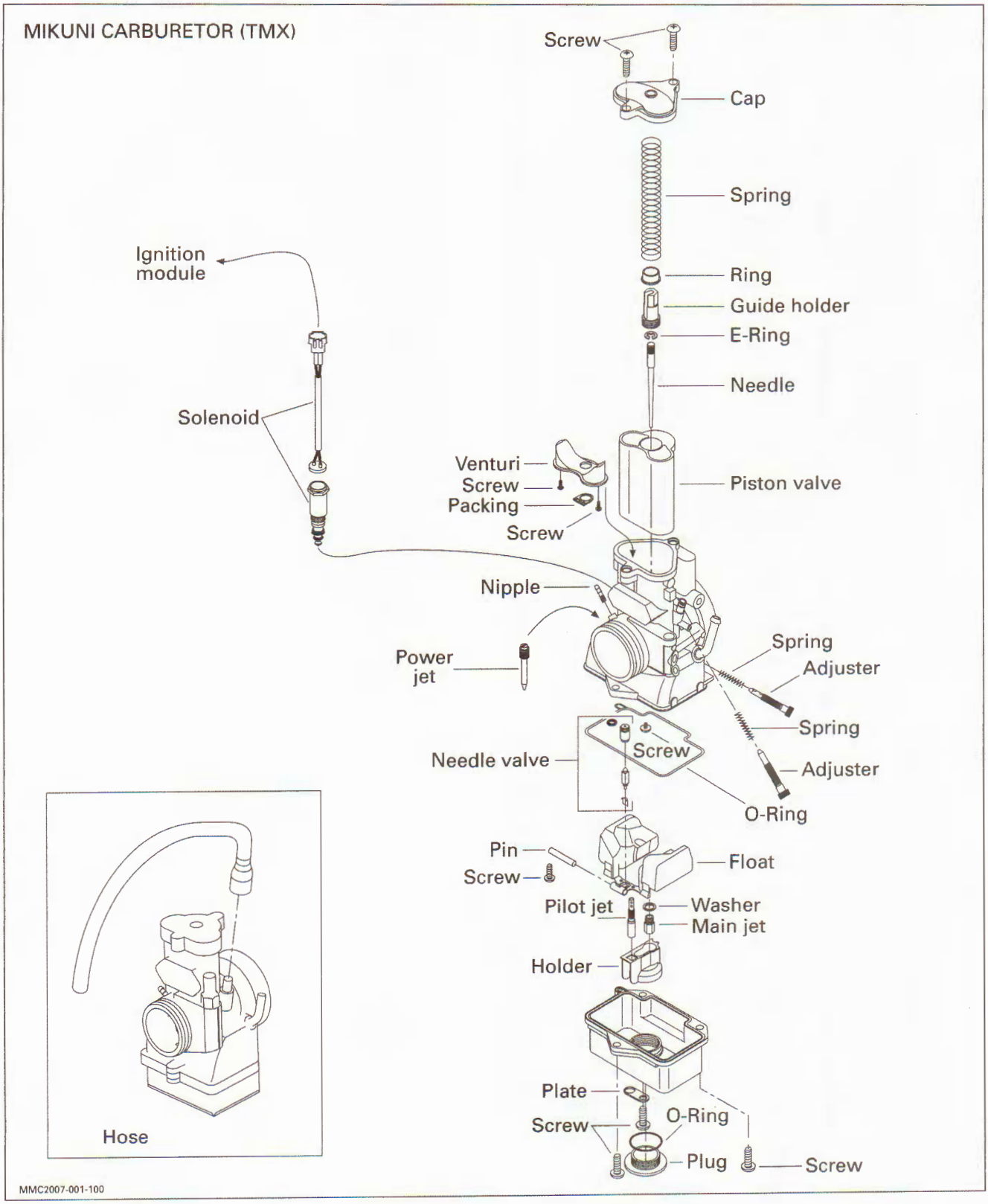
CARBURETORS

2011 600 RS



Mikuni TMX Carburetor (tuning parts)

P/N	DESCRIPTION
486 212 400	Pilot Jet 15
486 212 500	Pilot Jet, 17.5
486 212 600	Pilot Jet, 20
486 212 700	Pilot Jet, 22.5
404 161 870	Pilot Jet, 25
486 212 800	Pilot Jet, 27.5
404 162 042	Pilot Jet, 30
707 200 100	Pilot Jet, 32.5
707 200 168	Pilot Jet, 35
707 200 136	Pilot Jet, 40
404 162 107	Pilot Jet, 45
486 230 200	Pilot Jet, 50
404 162 134	Pilot Jet, 55
486 230 400	Pilot Jet, 60
486 230 500	Pilot Jet, 65

NEEDLE JET	
P 2	486 600 026
P 3	486 011 021
P 4	486 600 027
P 5	486 011 022
P 6	404 162 135
P 7	486 011 023
P 8	486 400 013
P 9	486 011 024
Q 0	404 162 105
Q 2	486 228 000
Q 4	486 228 100
Q 6	486 228 200
Q 8	486 228 300

JET NEEDLE		
Leaner	6FDY1 59	404 162 118
Leaner	6FDY1 58	404 162 114
Richer	6FDY1 57	404 162 117

MAIN JETS					
size	(P/N)	size	(P/N)	size	(P/N)
90	404 132 900	180	404 112 200	310	404 107 800
100	404 132 900	185	404 119 500	320	404 101 300
105	404 132 100	190	404 119 000	330	404 101 400
110	404 124 100	195	404 119 400	340	404 104 900
115	404 124 100	200	404 112 300	350	404 106 000
120	404 123 900	205	404 159 200	360	404 106 100
125	404 124 800	210	404 119 100	370	404 106 200
130	404 123 900	215	404 161 979	380	404 106 300
135	404 130 400	220	404 111 200	390	404 106 400
140	404 126 600	230	404 118 900	400	404 100 900
145	404 130 500	240	404 100 200	410	404 101 000
150	404 120 900	250	404 100 300	420	404 107 900
155	404 128 700	260	404 100 600	430	404 108 000
160	404 118 200	270	404 100 400	440	404 108 100
165	404 119 300	280	404 100 500	460	404 106 600
170	404 123 800	290	404 101 100	470	404 106 700
175	404 119 200	300	404 101 200	—	—

Part numbers with a 486 prefix must be ordered from Valcourt Race Dept. All others must be ordered from your local Ski Doo dealer.

Power jet:

The power jet system is an enrichment device electronically controlled by the powertech ECM. The solenoid of the power jet system is normally opened (if not supplied with voltage). The ECM cycles (cuts or supplies electrical power) the solenoid 10 times per second. When the solenoid is opened, the fuel is allowed to go from the float bowl, through the power jet (#160 size) and then into the venturi of the carburetor. When the power jet is not cycled, the fuel flow increases or decreases according to the throttle opening value. The power jet is controlled by a plurality of parameters, of which are supplied from the ATS, TPS, RPM and the engine load.

Benefits:

1.The power jet compensates and optimizes the air/fuel ratio based on outside air temperature. It's range covers ambient temperatures from 30oC to 20oC (22oF 68 oF), therefore eliminating the need to change main jets.

2.Optimizes the air / fuel ratio at peak torque and peak HP, which provides opportunities to stretch power curve significantly.

3.Optimizes the air/fuel ratio in hole shot situations and also prevents detonation in race conditions on longer pulls.

CAUTION: Unhooking the power jets' solenoid without changing the jet size (which one? The power jet?) to a #0 will enrich the air / fuel ratio and result in significant lost of engine performance. Using a #0 size power jet, without properly tuning the main jet, tube and needle, may cause major engine damage.

POWER JETS	
0	404 162 086
40	486 222 500
45	486 222 600
50	486 222 700
55	486 222 800
60	486 222 900
70	486 223 000
80	486 223 100
90	486 223 200
100	486 223 300
110	486 223 400
120	486 223 500
130	486 223 600
140	404 162 085
150	486 223 800
160	404 162 098

SPARK PLUGS

DISASSEMBLY

First unscrew the spark plug 1 turn.

Clean the spark plug and cylinder head with pressurized air, then completely unscrew.

⚠ WARNING

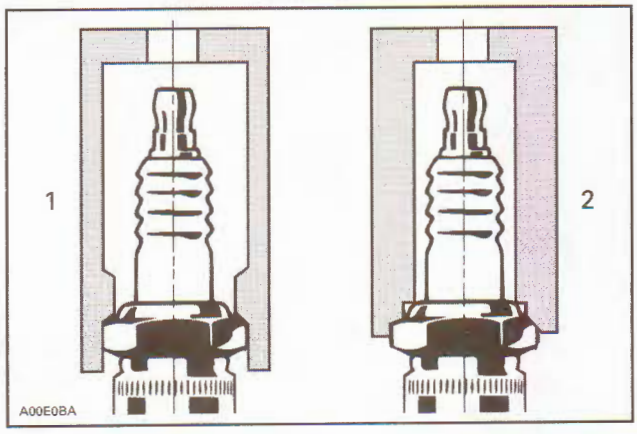
Whenever using compressed air, always wear protective eye wear.

SPARK PLUG INSTALLATION

Prior to installation make sure that contact surfaces of the cylinder head and spark plug are free of grime.

CAUTION: Do not adjust electrode gap of spark plug BR9ECS.

1. Apply antiseize lubricant (P/N 293 800 070) over the spark plug threads to prevent possible seizure.
2. Hand screw spark plug into cylinder head and tighten with a torque wrench and a proper socket.

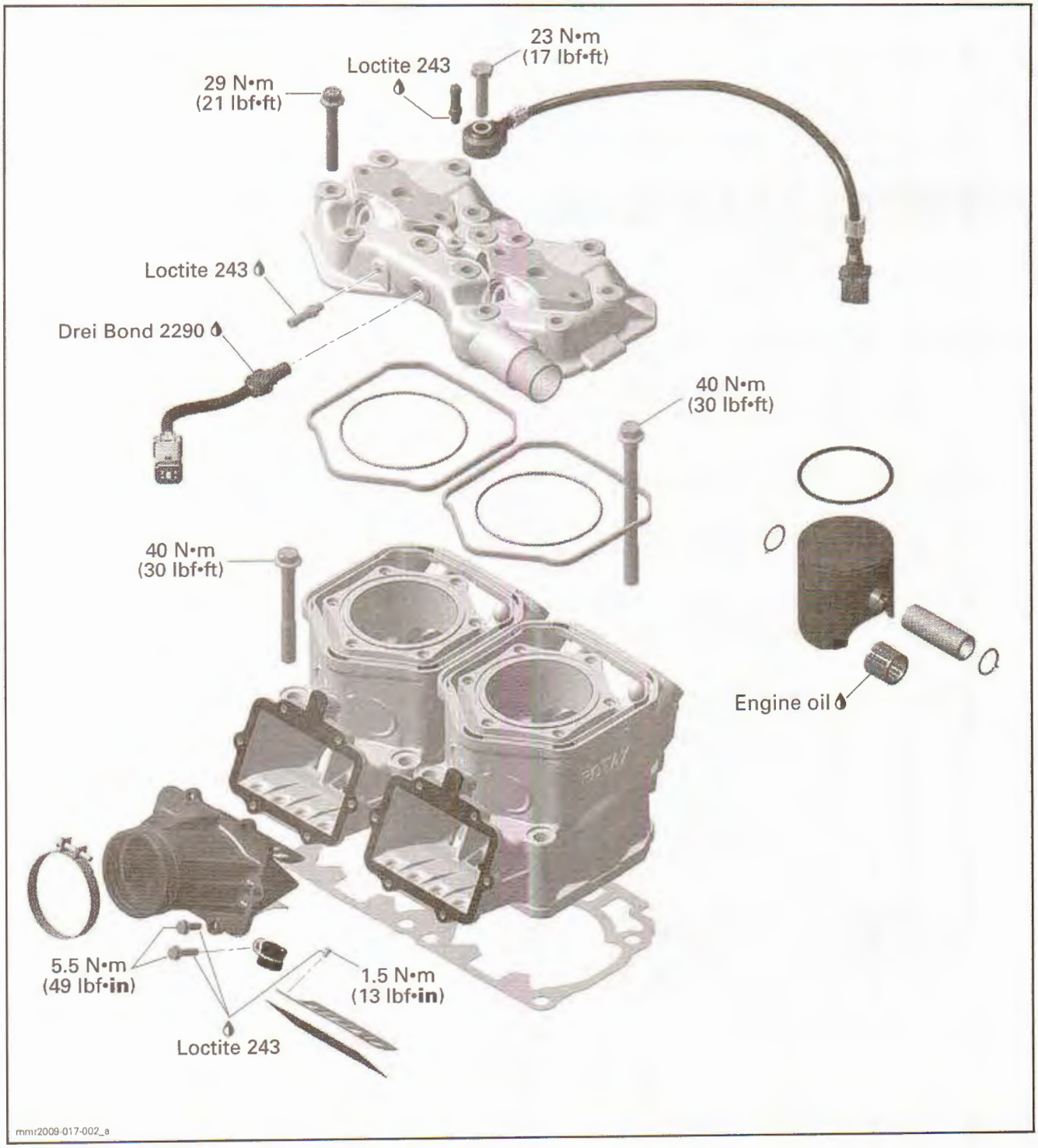


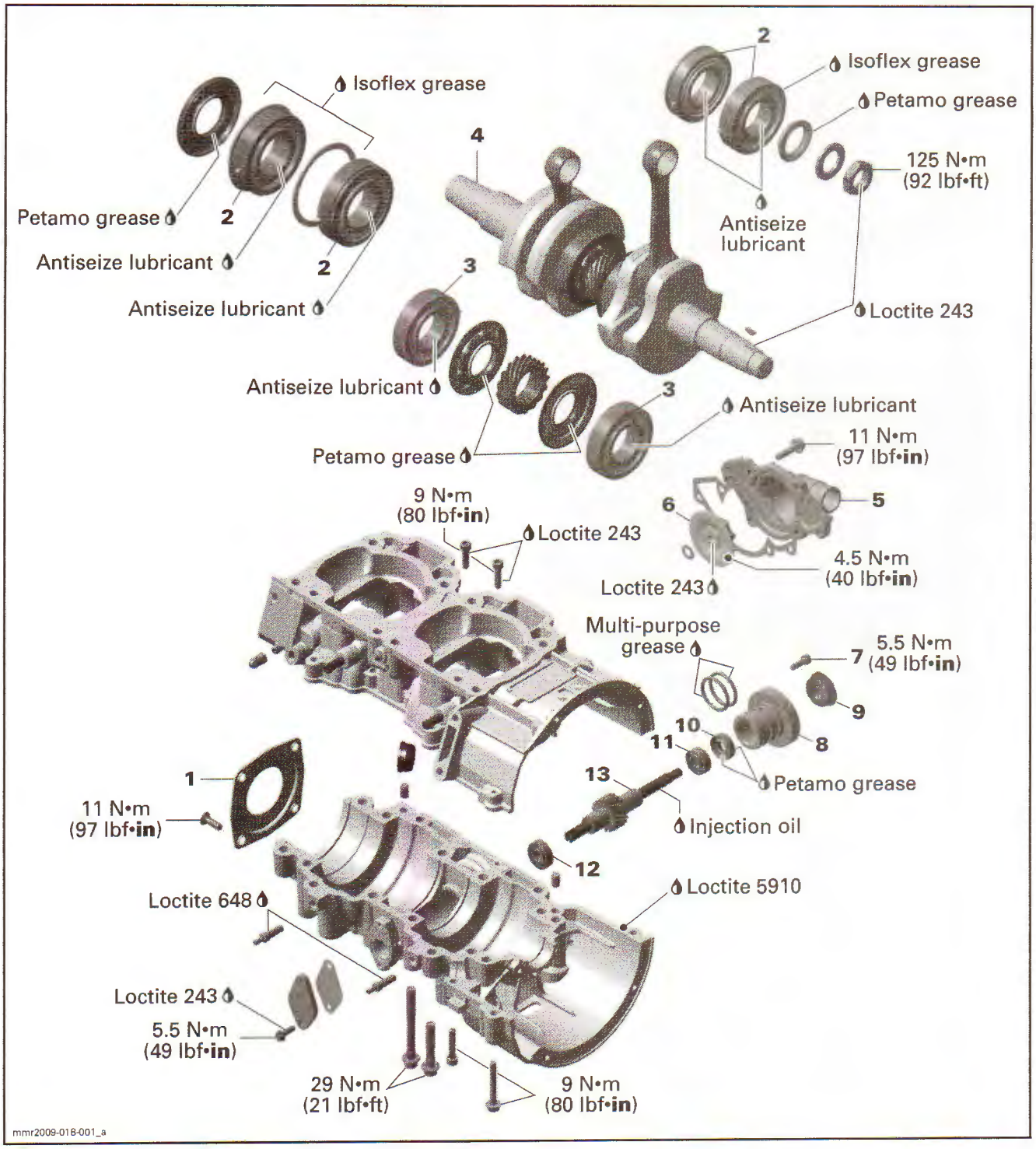
TYPICAL
1. Proper socket
2. Improper socket

SPARK PLUG TIGHTENING TORQUE

MODEL	SPARK PLUGS	TORQUE N•m (lbf•ft)
All models	NGK	27 (20)

ENGINE TORQUE SPECIFICATION




Isoflex grease
Petamo grease
2
Antiseize lubricant
2
Antiseize lubricant
4
3
Antiseize lubricant
Petamo grease
2
Isoflex grease
Petamo grease
125 N•m
(92 lbf•ft)
Antiseize
lubricant
Loctite 243
3
Antiseize lubricant
11 N•m
(97 lbf•in)
5
6
9 N•m
(80 lbf•in)
Loctite 243
4.5 N•m
(40 lbf•in)
Loctite 243
Multi-purpose
grease
7
5.5 N•m
(49 lbf•in)
9
10
11
8
Petamo grease
1
13
11 N•m
(97 lbf•in)
Injection oil
12
Loctite 5910
Loctite 648
Loctite 243
5.5 N•m
(49 lbf•in)
29 N•m
(21 lbf•ft)
9 N•m
(80 lbf•in)
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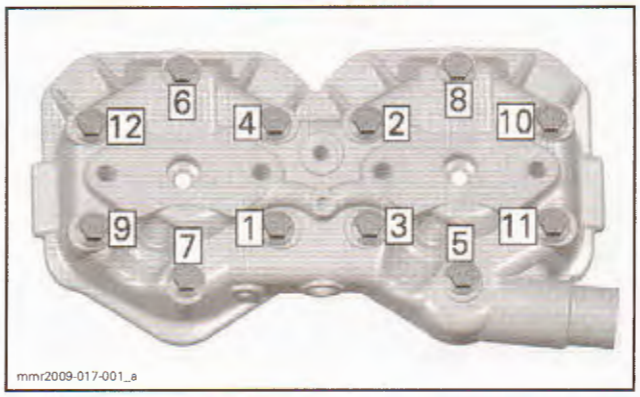

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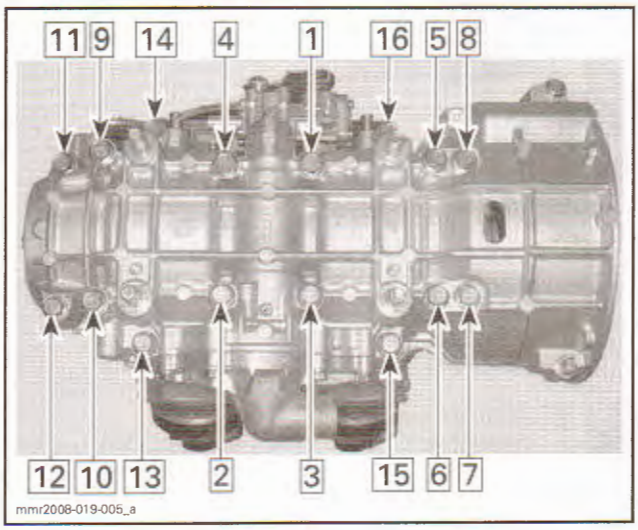

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IGNITION TIMING

GENERAL

Normally ignition timing adjustment should not be required. It has been set at factory and it should remain correctly adjusted since every part is fixed and not adjustable. The only time the ignition timing might have to be changed would be when removing and reinstalling the magneto housing, replacing the crankshaft, the magneto flywheel, the trigger coil or the MPEM or ECM. If the ignition timing is found incorrect, first check for proper crankshaft alignment. This might be the indication of a twisted crankshaft. Refer to LEAK TEST AND ENGINE DIMENSION MEASUREMENT.

The ignition timing can be checked with either the engine hot or cold. Also, the ignition timing is to be checked at 3500 RPM with a timing light.

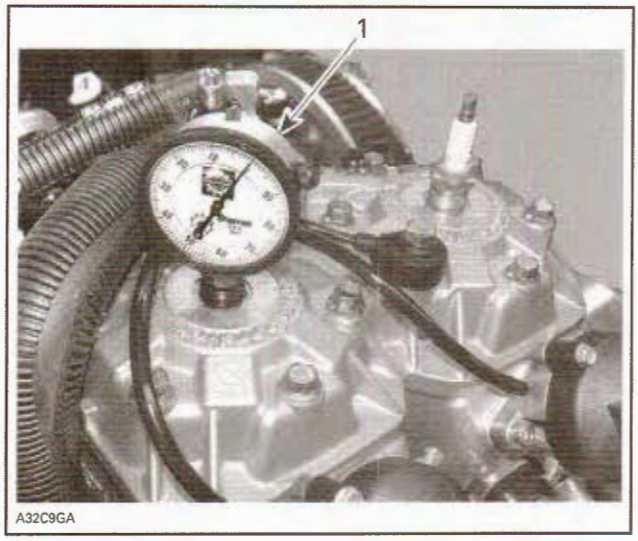
Engine retard timing varies depending on engines / models for their first hours of operation.

ENGINE/MODELS	ENGINE RETARD TIMING (°)/DURATION (H)
593 SS	3°/1 h
793 HO	2°/3 h

NOTE: Between 3000 and 4000 RPM, the spark advance does not change. So when checking ignition timing at 3500 RPM, a change in engine speed within ± 500 RPM will not affect the timing mark when checked with the timing light.

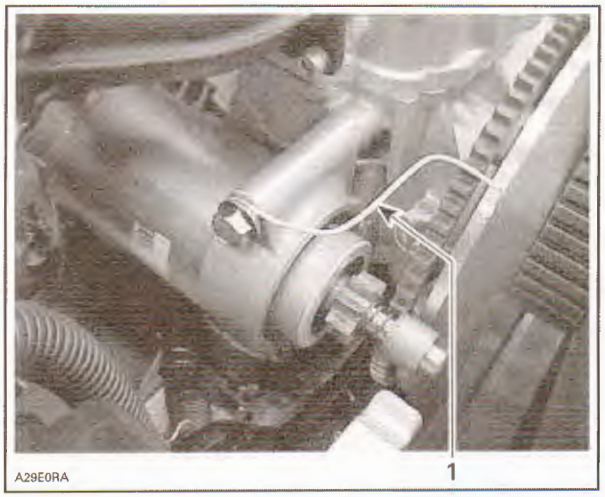
SCRIBING A TIMING MARK

- Clean the area around the MAG spark plug, and remove it.
- Install the TDC gauge in the spark plug hole, (magneto side) and adjust as follows:
  - Position the MAG piston at approximately TDC.



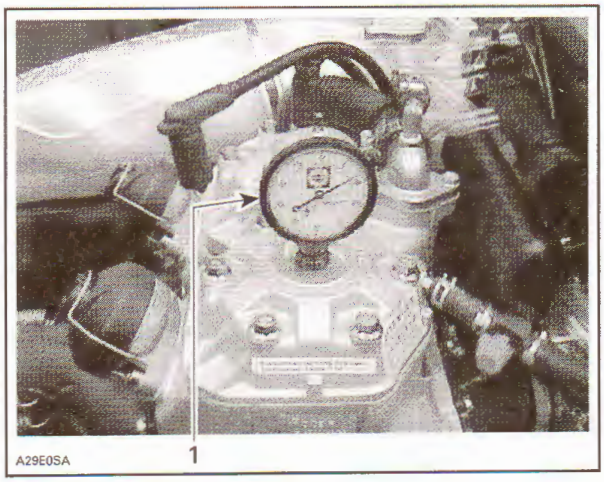
TYPICAL
1. TDC gauge on MAG side

  - Assemble the gauge to the adaptor and tighten the roller lock nut. Do not tighten the adaptor lock nut.
  - Screw the adaptor into the spark plug hole and tighten to prevent movement in the plug hole.
  - Position the dial face toward the PTO. Move the gauge down until the needle just begins to move, then move down a further 5 or 6 mm (approximately 1/4 in). Tighten adaptor lock nut by hand.
- Locate the piston TDC position as follows:
  - Slowly rotate the drive pulley back and forth across TDC while observing the needle. Note that the needle stops moving only as the piston is changing direction.
  - Rotate the dial face so that «0» is in line with the needle when it stops moving.
  - Again, slowly rotate the drive pulley back and forth across TDC and adjust the dial face to «0», until the needle always stops exactly at «0» before changing direction.
  - «0» now indicates exact TDC.
- Rotate the drive pulley clockwise, one quarter turn then carefully rotate it counterclockwise until the needle indicates the specified measurement, indicated in TECHNICAL DATA.
- Twist a wire as shown and use it as a pointer. Install the wire on upper starter bolt.

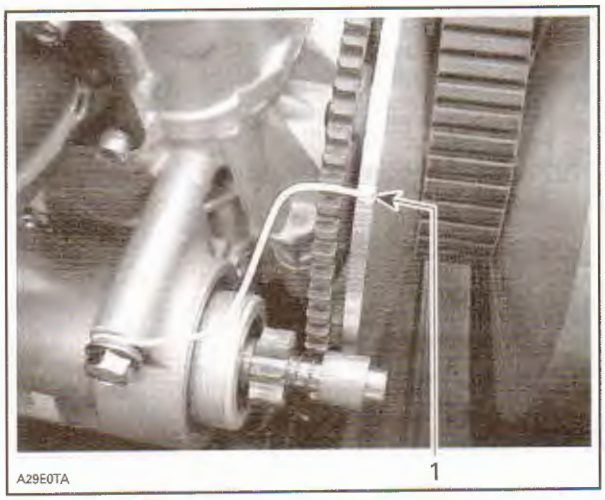


1. Pointer

- With the TDC gauge indicating specified timing, scribe a mark on drive pulley inner half in line with pointer end.



TYPICAL
1. TDC gauge indicating specified timing



1. Timing mark in line with pointer end

CHECKING IGNITION TIMING

Use a timing light.

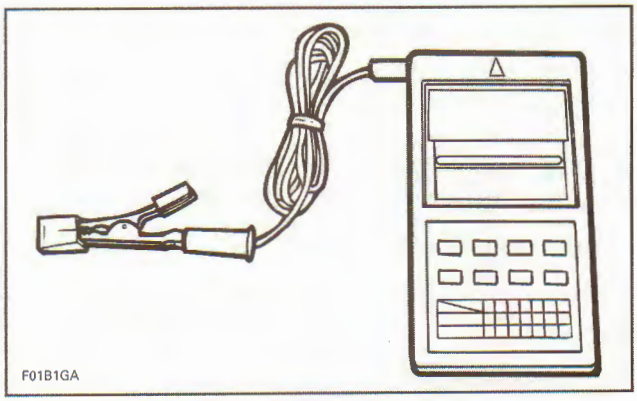
To check the ignition timing proceed as follows:

⚠ WARNING

Place ski tips against a wall, raise rear of vehicle on a stand, so that track does not contact the ground. Do not allow anyone in front of or behind the vehicle while engine is running. Keep clear of track and do not wear loose clothing which can get caught in moving parts.

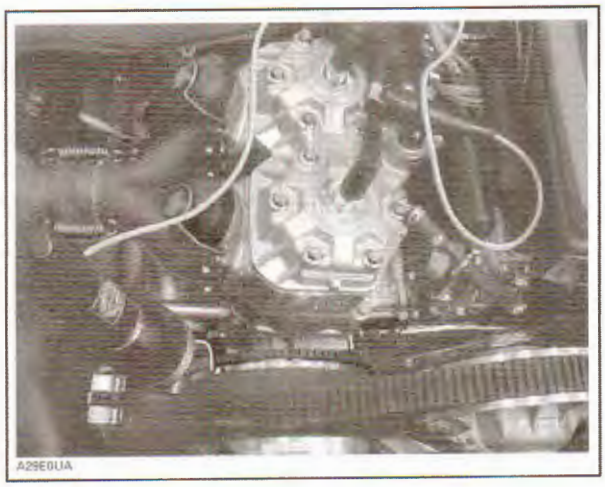
Connect the timing light pick up to a spark plug cable.

Connect a digital induction type tachometer (P/N 529 014 500).



TACHOMETER

Start the engine and point timing light on timing mark. Bring engine to 3500 RPM for a brief instant.



The timing mark must be aligned with pointer end. If such is not the case, note if timing is retarded or advanced.

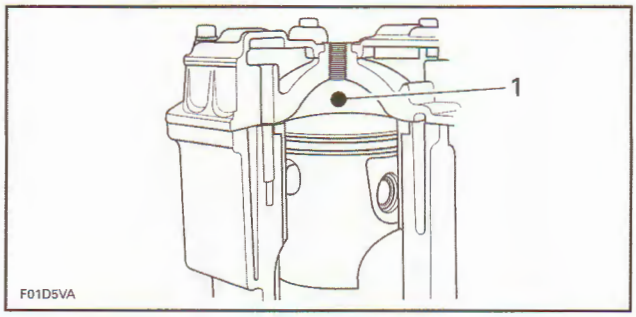
ENGINE TYPE	TOLERANCE
593	± 1°
593 HO, 593 HO SDI, 793 HO	± 0.5°

TIMING RETARDED BY ABOUT 1°

TIMING ADVANCED BY ABOUT 2°

COMBUSTION CHAMBER VOLUME MEASUREMENT

The combustion chamber volume is the region in the cylinder head above the piston at Top Dead Center. It is measurement with the cylinder head installed on the region.



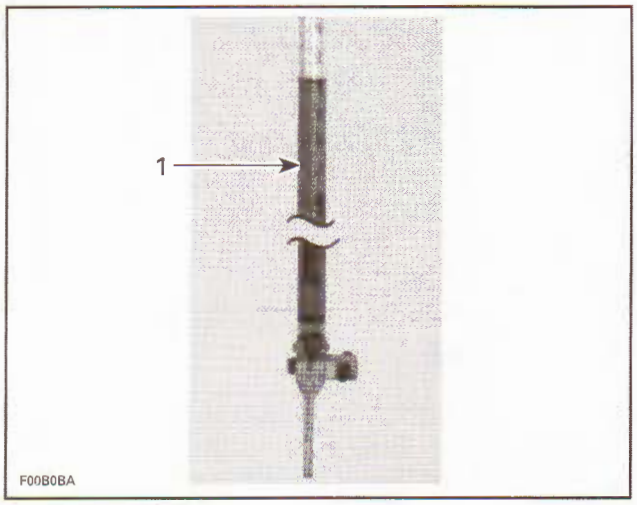
TYPICAL
1. Combustion chamber

NOTE: When checking the combustion chamber volume, engine must be cold, piston must be free of carbon deposits and cylinder head must be leveled.

- Remove both spark plugs and bring one piston to Top Dead Center a using a TDC gauge.

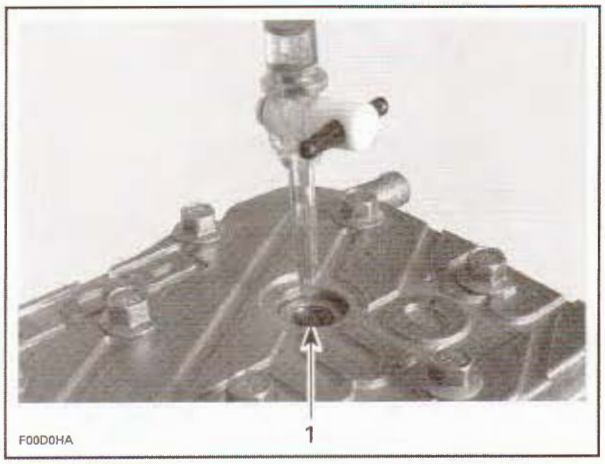
1. Bring piston to TDC

- Obtain a graduated burette (capacity 0 50 cc) and fill with an equal part (50/50) of gasoline and injection oil.



1. Graduated burette (0 50 cc)

- Open burette valve to fill its tip. Add liquid in burette until level reaches 0 cc.
- Inject the burette content through the spark plug hole until liquid touches the top spark plug hole.



1. Top of spark plug hole

NOTE: The liquid level in cylinder must not drop for a few seconds after filling. If so, there is a leak between piston and cylinder. The recorded volume would be false.

- Let burette stand upward for about 10 minutes, until liquid level is stabilized.
- Read the burette scale to obtain the quantity of liquid injected in the combustion chamber.

NOTE: When the combustion chamber is filled to top of spark plug hole, it includes an amount of 2.25 cc corresponding to the spark plug well.

- Repeat the procedure for the other cylinder.
- Install a thicker or thinner cylinder/crankcase gasket (refer to *PARTS CATALOG* in order to obtain the specified combustion chamber volume or the nearest.

ENGINE TYPE	CHANGE IN COMBUSTION CHAMBER VOLUME (cc) for every 0.1 mm (.004 in) of gasket thickness
593 HO	0.41
793 HO	0.53

FUEL, OIL AND SPARK PLUG

Specifications

mmc2014-001-006

Fuel, oil and spark plug for MY2014 engine.
Revision 01

Engine	Model	fuel	Idle openning	Idle RPM +-100	oil	oil pump adj.	spark plug type	spark plug gap	Timing @ 3500 RPM
550F	XP-XU	87	1.6mm	1650	minéral	Visuel	NGK - BR9ECS	0.45mm	2.77mm / 22 deg
600 ACE	XP-XU	87	0 degré	1450	0w40 full synth.	----	NGK - MR7Bi8	0.8mm	----
600 carb (Mx-Summit)	XP	87	1.5mm	1600	semi-synth.	16.5mm	NGK - BR9ECS	0.8mm	2.49mm / 20 deg
600HO ETEC	XS-XM-XR-XU	91	0 degré	1200	semi-synth.	Electronic	NGK - PZFR6F	0.8mm	5.39mm / 28 deg ***
600RS (Racing)	XS	91	2.5mm****	1600	pre-mix semi-synth 1@33	N/A	NGK - BR9ECS	0.45mm	3.37mm / 22 deg
800R (Summit)	XP	91	5%	1900	semi-synth.	16.5mm	NGK - BR9ECS	0.8mm	2.37mm / 18 deg **
800R ETEC	XS-XM	91	0 degré	1200	semi-synth.	Electronic	NGK - PFR7AB	0.8mm	5.63mm / 28 deg ***
900 ACE	XS-XR	87	0 degré	1300 eco/std 1500 Sport	0w40 full synth.	----	NGK - MR7Bi8	0.8mm	----
1203	XR	87	0 degré	1100	0w40 full synth.	----	NGK - CR8EKB	0.8mm	15 deg *

Note 1: fuel = R+M/2
Note 2: fuel 91 doit être "recommandé" et non "obligatoire".
Note 3: Maximum 10% d'éthanol (E10).
* Entre 1500 et 2000 RPM
** Déconnecter TPS pour vérifier le timing
***Mesuré à 3500 RPM côté PTO. Utiliser BUDDS
****Mesuré dans la slot
*****Mesuré au ralenti

SHOCK ABSORBER

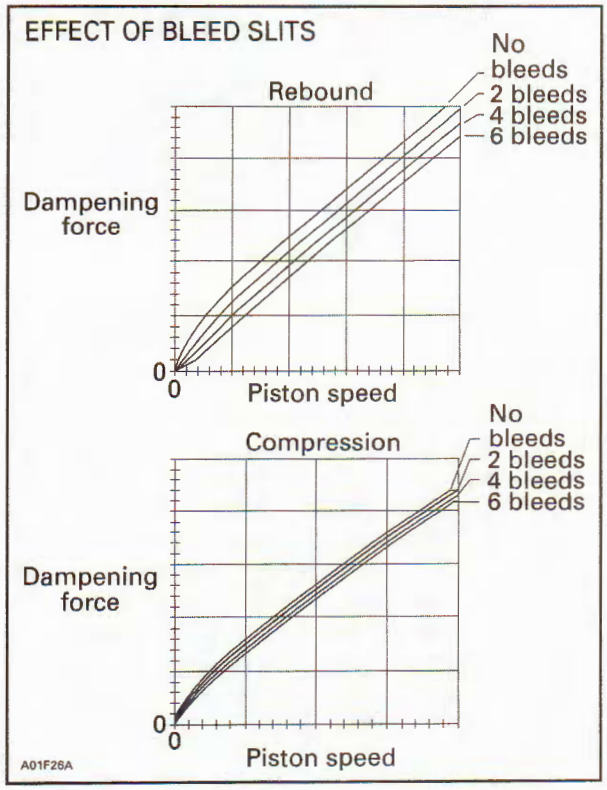
GENERAL

VALVING AND DAMPENING

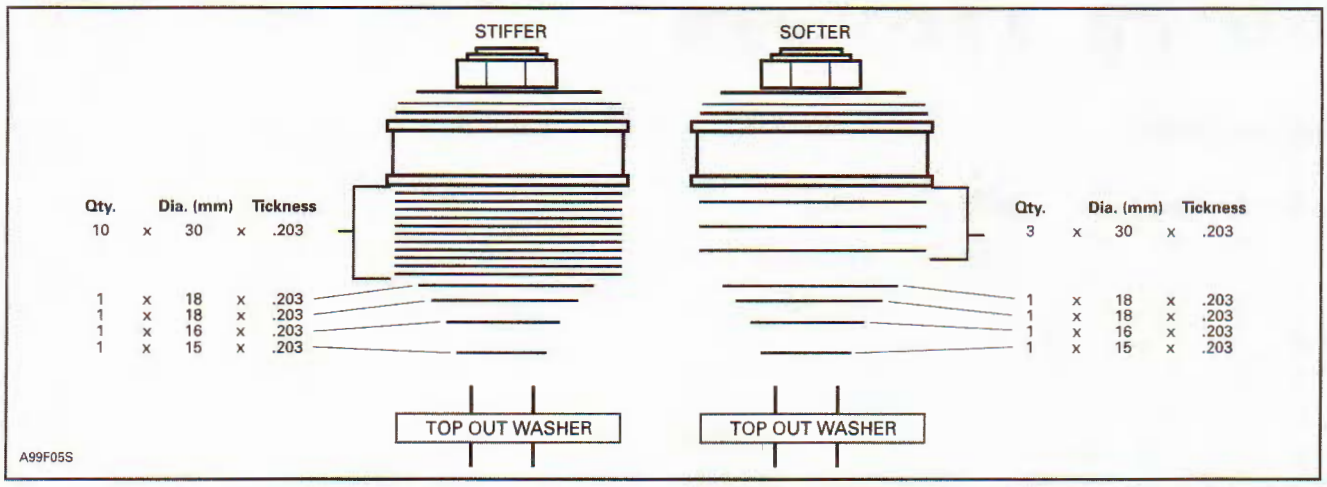
In the HPG shock, the piston passages are covered by a stack of thin metal shims of various thicknesses and diameters. The shims provide dampening by acting as spring loaded valves offering resistance to the oil traveling through the piston. There is a stack of shims on both sides of the piston. One side controls compression dampening and the other side controls rebound dampening. By varying the number and thickness of shims the dampening characteristics can be very accurately obtained. There may also be orifices or slits in the piston that are not covered by the shims. These are referred to as bleed slits. The size and number of these slits will also affect dampening. The external adjustment on the MVA, HPG shocks is a variable bleed hole.

Rebound dampening will usually be much stiffer than compression dampening. This is because rebound dampening must resist the force of the spring and because piston speeds are much slower during rebound.

At low piston speeds, the number of bleed slits will have a fairly large effect on dampening, but as piston speeds increase most of the dampening is controlled by the shim stack. This is because the flow area of the slits is much smaller than the flow area under the shims. Since only a small amount of oil can flow through the bleed slits (compared to the amount that flows under the shim stack), the slits have only a very small effect on dampening at high piston speeds. Because of this characteristic, bleed slits are most effective on rebound dampening. They will have only a very slight effect on compression damping because the typical piston speeds on compression strokes are several times faster than on rebound strokes. There really is no such thing as high speed rebound dampening.



As mentioned earlier, the configuration of the shim stack will control most of the dampening of the shock. There are several methods to tuning shim stacks. The first and most commonly used is to increase or decrease the overall stiffness of the stack. This can be done by changing the number of large shims or by increasing or decreasing their thickness.



The overall stiffness of the stack has been increased by adding 7 30 mm x .203 mm shims. This will result in firmer dampening at both low and high piston speeds. Thicker shims will also result in firmer dampening but it is better to use more thin shims than fewer thick shims. More thin shims will provide better, smoother dampening than a few thick shims. There is an equivalency between thick and thin shims, though. The following chart indicates how many thin shims are required to equal the stiffness of one thick shim.

(MM)
1 x .152 = 2.4 x .114
1 x .203 = 2.3 x .152
1 x .254 = 2.0 x .203

This means it will take 2.4 x .114 mm shims to have the same dampening as 1 x .152 mm shim. Obviously you can't use a fraction of a shim so you must find the lowest common denominator. For 2.4 it will be 5. For 2.3 it will be 10. The following chart shows the most common possibilities.

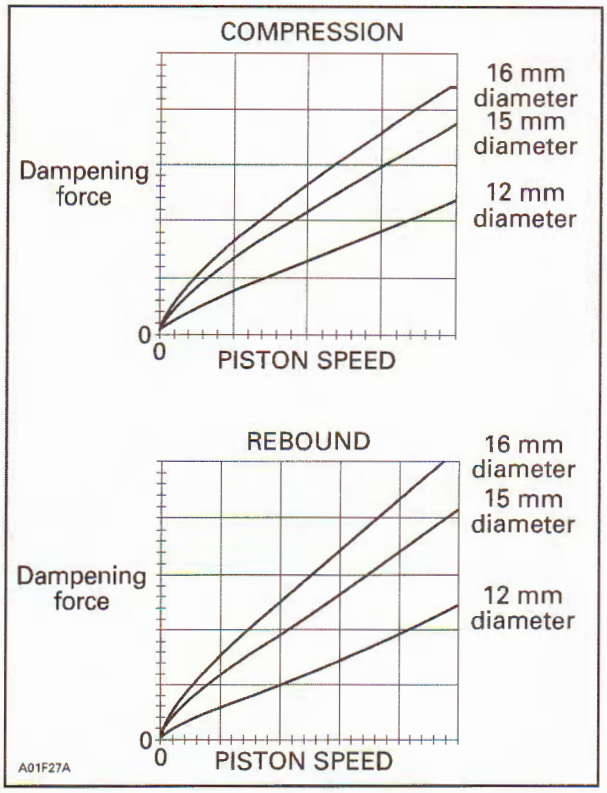
(MM)
5 x .152 = 12 x .114
10 x .152 = 24 x .114
10 x .203 = 23 x .152
1 x .254 = 2 x .203
2 x .254 = 4 x .203
3 x .254 = 6 x .203
4 x .254 = 8 x .203
5 x .254 = 10 x .203
6 x .254 = 12 x .203
7 x .254 = 14 x .203
8 x .254 = 16 x .203
9 x .254 = 18 x .203
1 x .305 = 2 x .254
2 x .305 = 3 x .254
3 x .305 = 5 x .254
4 x .305 = 7 x .254
5 x .305 = 9 x .254
6 x .305 = 10 x .254

The diameter of the smaller shims that support the large shims will also affect the dampening. A larger support shim gives more support to the large shim thus making it act stiffer. Conversely, a smaller diameter support shim will allow the large shim to bend more easily thus softening the dampening. The following graph shows the effect of different diameter support washers.

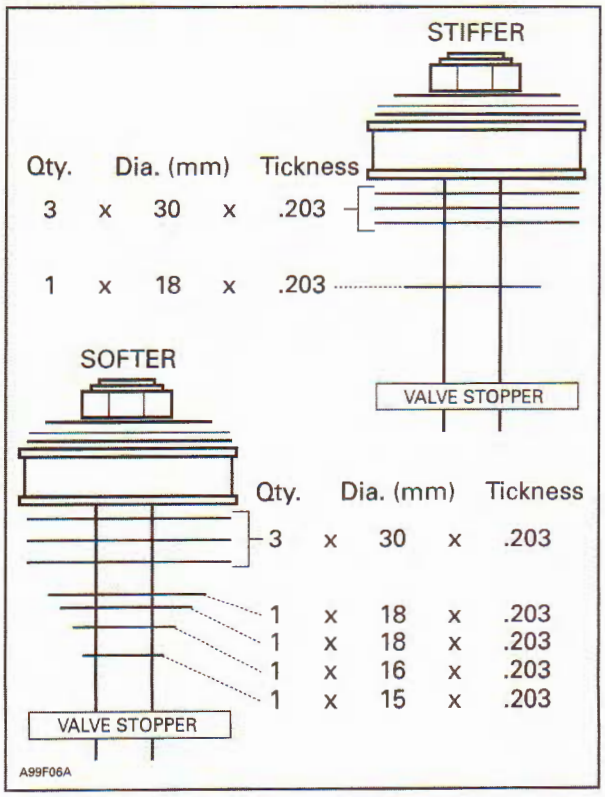
Shim Comparator Formula

Thickness^3 or cubed.

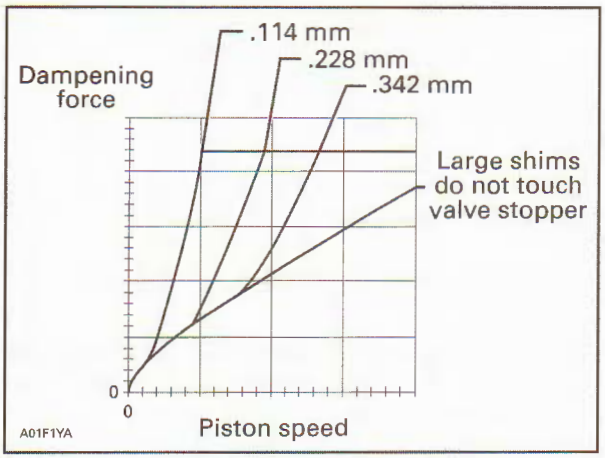
Example: .152 x .152 x .152



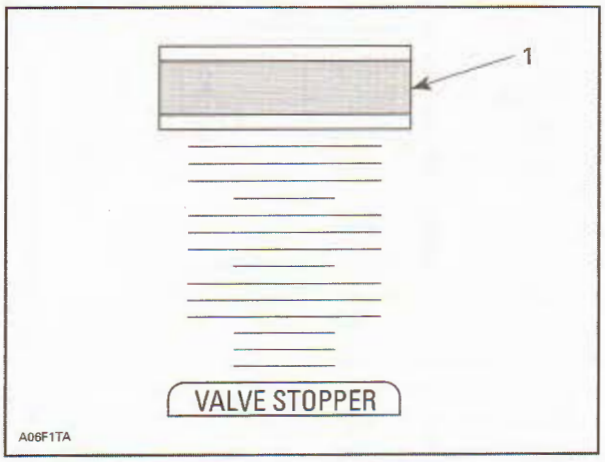
Another method of changing dampening is by controlling the amount of space the stack has to open. This is done by reducing the amount of smaller shims which support the larger shims. The larger shims act the same until they bottom out against the valve stopper.



The large shims are only able to deflect .203 mm instead of .610 mm thus reducing the flow area of the piston. This will result in the same low speed dampening, but the medium and high speed damping will be increased. The following graph represents the effect of changing the total thickness of small shims which determine the amount of large shim deflection.



As you can see, low speed dampening remains the same until the shim stack bottoms out against the valve stopper. Then the dampening becomes significantly stiffer. This is sometimes referred to as progressive dampening. Another similar way to achieve this type of dampening is to use multiple stacks of large and small shims.



1. Piston

The first stack of large shims will deflect very easily thus giving soft low speed dampening. The number of small shims will determine when the first stack hits the second stack of large shims. Now both stacks are acting together thus stiffening the dampening. This can be repeated several times until the complete stack of large shims bottoms out against the valve stopper.

As you can see, there are an unlimited number of valving combinations and many different versions will achieve very similar results. The following general guidelines should help reduce your tuning time.

- If the dampening is close to what you want, just add or remove 1 or 2 large shims, from the appropriate side, to fine tune the overall stiffness.

NOTE: Always use 30 mm diameter shims against the piston for compression dampening and 26 mm diameter shims against the piston for rebound dampening. Excludes C 46 shock and C 40.

- Generally, rebound dampening should not be changed unless a large change in spring rate is made.
- Bleed slit quantity will affect low speed dampening.
- Under dampening may be due to an aerated shock due to low gas pressure and/or old, used oil. Change the oil and recharge the gas pressure to 300 PSI before altering the shock valving.
- If the vehicle bounces or pogos a lot, the problem may be too little compression dampening NOT too little rebound dampening. Do not use too much rebound dampening! Excessive rebound dampening is a common error. Over-dampening will not allow the suspension to recycle to full extension after an obstacle compresses the suspension. This situation (called packing) will eventually bottom the suspension and not allow it to cycle properly.
- For faster weight transfer under acceleration and deceleration, use a piston with more bleed slits.
- One thing that is over looked is rider development, as the season progresses and you get more accustomed to the vehicle, ride styles will change. You will be riding more aggressively and this will require changes. Try to monitor what the vehicle is doing during this time. Just because you are faster does not mean that you will have to stiffen valving. In some cases you may become more technical and valving may need to be lessened. The most important thing to do is to understand how the suspension system works and to be able to modify or change it to your individual needs.

600 RS SHOCK

SERVICE TOOLS

Description	Part Number	Page
gas fill tool kit	503 190 102	60

SERVICE PRODUCTS

Description	Part Number	Page
shock oil	293 600 035	59
pulley flange cleaner	413 711 809	59–60

REBUILT PROCEDURE

DISASSEMBLY AND ASSEMBLY

Low Speed Compression Adjuster

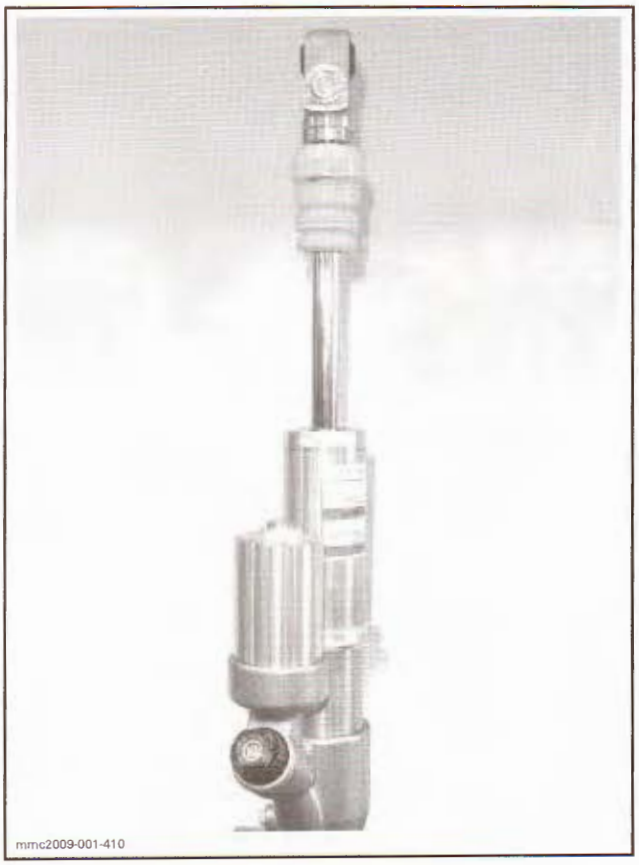
The low speed adjustment is used to change the dampening force for relatively slow suspension movement. It is used to tune the vehicle for braking, cornering, holeshots and all the bumps that create low speed movement in the suspension. The low speed adjuster has 4 turns of adjustment. Turning the adjuster clockwise increases the dampening.

High Speed Compression Adjuster

The high speed adjustment is used to change the dampening force for fast suspension. It is used to tune the vehicle for large, high speed jumps and bumps that create high speed movement in the suspension. The high speed adjuster has three turns of adjustment. Turning the adjuster clockwise increases the dampening.

SHOCK REBUILD PROCEDURE

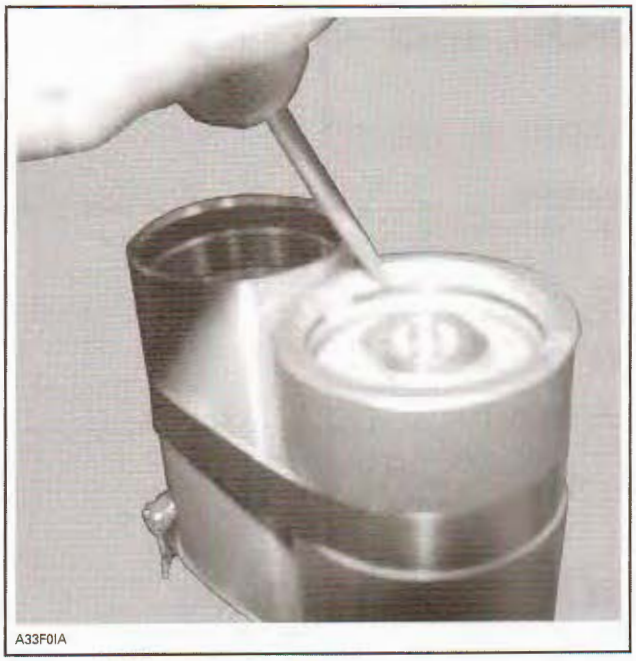
1. Tightly secure the shock base in vise. DO NOT CLAMP ONTO SHOCK BODY.
2. Using a 12 mm wrench, slowly remove air inlet valve, allowing the gas inside the reservoir to escape.
3. Remove top shock cover using a 36 mm wrench. Pull shock rod out of main shock body.


mmc2009-001-410

4. Dispose of used oil properly.


A33F0MA

5. Push down the remote reservoir cover to remove the retaining circlip.


A33F0IA

6. Remove the remote reservoir cover.

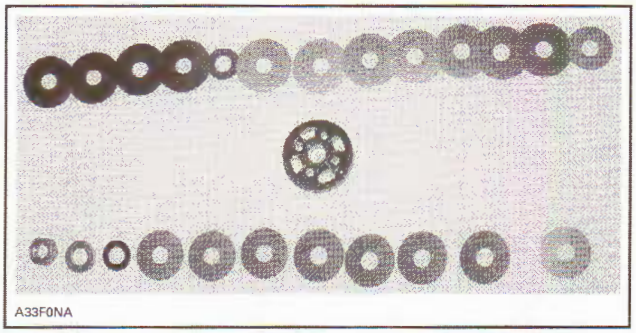

mmc2009-001-402

P/N 529 035 901

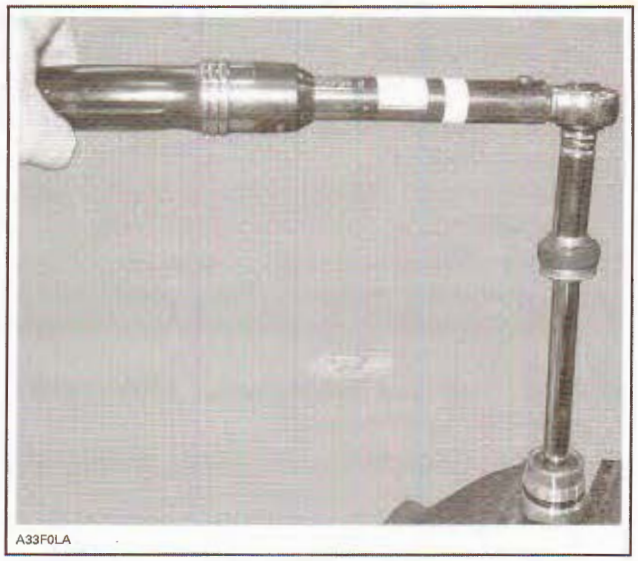
7. Remove the floating piston inside the remote reservoir.
8. Remove lock nut using a 19 mm wrench securing valve stack and piston to rod.


A33F0SA

9. Carefully remove and layout shims, washers and piston from rod. Play close attention to shims and washers sequence and piston position.


A33F0NA

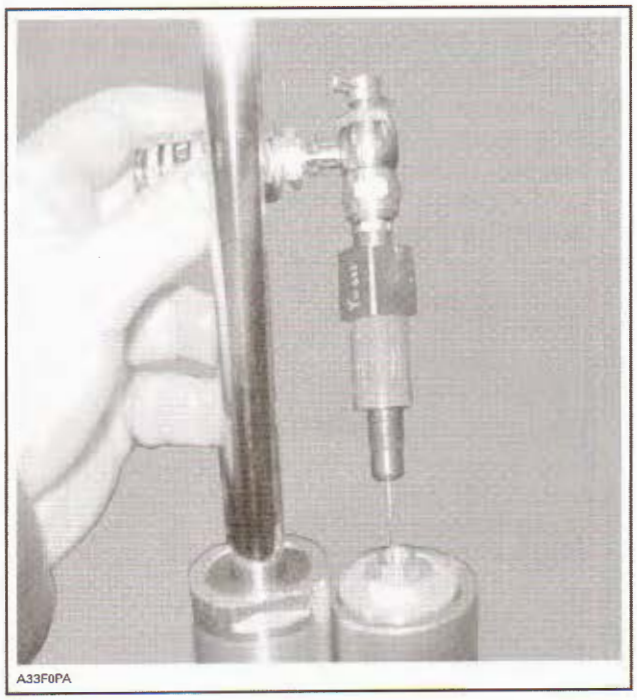
10. Clean all shock components using pulley flange cleaner (P/N 413 711 809). DO NOT MIX SHIMS AND WASHERS TOGETHER.
11. Assemble valve shims, washers and piston in proper order and place them back onto shock rod.
12. Torque the rod nut at 45 N•m (33 lbf•ft).


A33F0LA

13. Fill main shock body with shock oil (P/N 293 600 035) to a level of half full.
14. Fill remote reservoir with shock oil to within 6.4 mm (1/4 in) from the top.
15. Hold the remote reservoir in a way so the oil level in it at the same height of the level in the shock.
16. Cup your hand and place it over the remote reservoir. Pump with your hand to circulate oil through the base valve (adjustment system) to remove any trapped air. Low speed adjuster must be open 1 turn minimum.
17. Fill the remote reservoir with oil. Lubricate O ring seal on floating piston with shock oil and install. The key to good shock performance is to remove all the air from shock body reservoir and valve stack.


A33F0KA

18. Push the floating piston to the bottom of the remote reservoir. Oil will rise in the main shock body almost to the top.
19. Fill the shock body with oil until level with bottom of threads.
20. Lubricate seal around piston and valve stack and gently push into main shock body.
21. Stroke the piston and valve stack slowly to remove any trapped air. Using a small hammer or wrench, gently tap on the rod mounting eyelet to help remove air.
22. Again, push the floating piston to the bottom of the remote reservoir.
23. Pull the shock shaft as far out as possible and replace the seal cover and torque to 65 N•m (48 lbf•ft). Oil must spill from the shock body before the seal cover O ring seals the shock.
24. Install the remote reservoir cover. Install the retaining clip. Pull cover to seat against the retaining clip. Make sure the cover is firmly seated against the retaining clip before filling with gas.
25. Install the air inlet valve.
26. Pressurize the shock at 2070 kPa (300 PSI) with nitrogen (N). Use the correct gas fill tool kit (P/N 503 190 102).


A33F0PA

27. Install the safety screw into the air inlet valve and clean your shock with Pulley Flange Cleaner (P/N 413 711 809).

600RS 2014 (Sno-X Production Calibration)

600RS 2014 SKI	
RAS-MPS-R (XS-RS)	
505 073 270-271 / KYB Pro 40 R	
Valve spec	
REB.	COMP.
3 x 30 x .254	9 x 34 x .254
1 x 30 x .203	1 x 32 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .254
	1 x 26 x .305
	1 x 24 x .305
	1 x 18 x .305
No piston bleed	
BASE VALVE SPEC	
RL=3 BL=3 BH=3/4 turn	
IFP height = 54mm	
RAS-MPS-R Spring rate = 185lbs/in * 5/8"	
RAS = Response Angle Suspension	
MPS = Mechanical Power Steering	
R = Racing	

600RS 2014 CENTER	
PCX 128" (XS-RS)	
503 193 750 / KYB Pro 40	
Valve spec	
REB.	COMP.
2 x 30 x .254	6 x 34 x .254
1 x 16 x .114	1 x 23 x .152
6 x 30 x .203	5 x 34 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .254
	1 x 26 x .254
	1 x 24 x .203
	1 x 22 x .203
	1 x 20 x .305
0.9 bleed piston	
BASE VALVE SPEC	
BL=4 BH=3/4 turn	
IFP height = 54mm	
XS-RS Spring rate = 830/275lbs/in x 1/8"	
Limiter straps stock length # 3	

600RS 2014 REAR	
PCX 128" (XS-RS)	
503 193 752 / KYB Pro 40	
Valve spec	
REB.	COMP.
3 x 30 x .254	10 x 34 x .254
1 x 30 x .203	1 x 32 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .305
	1 x 26 x .305
	1 x 24 x .305
	1 x 18 x .305
0.9 bleed piston	
BASE VALVE SPEC	
BL=3 BH=3/4 turn	
IFP height = 54mm	
XS-RS Spring rate = 1 73-100 # 2 - # 2	
Coupling # 1	

600RS 2014 (Sno-X Softer Calibration)

600RS 2014 SKI	
RAS-MPS-R (XS-RS)	
505 073 270-271 / KYB Pro 40 R	
Valve spec	
REB.	COMP.
3 x 30 x .254	9 x 34 x .254
1 x 30 x .203	1 x 32 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .254
	1 x 26 x .305
	1 x 24 x .305
	3 x 17 x .114
No piston bleed	
BASE VALVE SPEC	
RL=6 BL=4 BH=3/4 turn	
IFP height = 54mm	
RAS-MPS-R Spring rate = 175lbs/in * 1/2"	
RAS = Response Angle Suspension	
MPS = Mechanical Power Steering	
R = Racing	

600RS 2014 CENTER	
PCX 128" (XS-RS)	
503 193 750 / KYB Pro 40	
Valve spec	
REB.	COMP.
2 x 30 x .254	6 x 34 x .254
1 x 16 x .114	1 x 23 x .152
6 x 30 x .203	5 x 34 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .254
	1 x 26 x .254
	1 x 24 x .203
	1 x 22 x .203
	1 x 19 x .305
0.9 bleed piston	
BASE VALVE SPEC	
BL=8 BH=3/4 turn	
IFP height = 54mm	
XS-RS Spring rate = 830/275lbs/in x 1/8"	
Limiter straps stock length # 3	

600RS 2014 REAR	
PCX 128" (XS-RS)	
503 193 752 / KYB Pro 40	
Valve spec	
REB.	COMP.
3 x 30 x .254	9 x 34 x .254
1 x 30 x .203	1 x 32 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .305
	1 x 26 x .305
	1 x 24 x .305
	3 x 17 x .114
0.9 bleed piston	
BASE VALVE SPEC	
BL=6 BH=3/4 turn	
IFP height = 54mm	
XS-RS Spring rate = 1 73-100 # 2 - # 2	
Coupling # 1	

Part description	Part #	Qty	Part description	Part #	Qty	Part description	Part #	Qty
shim 17 x .114	486 900 048	3	shim 19 x .305	486 900 100	1	shim 17 x .114	486 900 048	3
175 lbs front spring	486 900 174	2						

600RS 2014 (Sno-X Stiffer Calibration)

600RS 2014 SKI	
RAS-MPS-R (XS-RS)	
505 073 270-271 / KYB Pro 40 R	
Valve spec	
REB.	COMP.
3 x 30 x .254	9 x 34 x .254
1 x 30 x .203	1 x 32 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .254
	1 x 26 x .305
	1 x 24 x .305
	1 x 19 x .305
No piston bleed	
BASE VALVE SPEC	
RL=3 BL=2 BH=3/4 turn	
IFP height = 54mm	
RAS-MPS-R Spring rate = 185lbs/in * 5/8"	
RAS = Response Angle Suspension	
MPS = Mechanical Power Steering	
R = Racing	

600RS 2014 CENTER	
PCX 128" (XS-RS)	
503 193 750 / KYB Pro 40	
Valve spec	
REB.	COMP.
2 x 30 x .254	6 x 34 x .254
1 x 16 x .114	1 x 23 x .152
6 x 30 x .203	6 x 34 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .254
	1 x 26 x .254
	1 x 24 x .203
	1 x 22 x .203
	1 x 20 x .305
0.9 bleed piston	
BASE VALVE SPEC	
BL=3 BH=3/4 turn	
IFP height = 54mm	
XS-RS Spring rate = 830/275lbs/in x 1/8"	
Limiter straps stock length # 3	

600RS 2014 REAR	
PCX 128" (XS-RS)	
503 193 752 / KYB Pro 40	
Valve spec	
REB.	COMP.
3 x 30 x .254	10 x 34 x .254
1 x 30 x .203	1 x 32 x .254
1 x 18 x .152	1 x 30 x .254
	1 x 28 x .305
	1 x 26 x .305
	1 x 24 x .305
	19 x 19 x .305
0.9 bleed piston	
BASE VALVE SPEC	
BL=2 BH=3/4 turn	
IFP height = 54mm	
Spring rate = 1x1 73-100 # 2 - 1 x 2 02-100 # 2	
Coupling # 3	

Part description	Part #	Qty	Part description	Part #	Qty	Part description	Part #	Qty
shim 19 x .305	486 900 100	1	shim 34 x .254	486 900 098	1	shim 19 x .305	486 900 100	3
						2.02N m/deg-100	503 191 892 or 893	1

mmc2014-001-017

600 RS MY2013 X-country Calibration (PCX rear suspension)

600 RS 2012-13 Ski	
505 073 145-146	
Valve spec	
REB.	COMP.
30-t0.254 x 1	34-t0.203 x 3
16-t0.114 x 1	22-t0.152 x 1
26-t0.114 x 1	32-t0.114 x 1
30-t0.203 x 5	34-t0.203 x 3
17-t0.114 x 2	28-t0.254 x 1
	26-t0.254 x 1
	24-t0.254 x 1
	18-t0.305 x 1
BASE VALVE SPEC	
RL=6 BL=4 BH=1 turn	
IFP height = 54mm	
Spring rate = 110-135lbs/in * 1/2"	
15mm shorter shock recommended	

600 RS 2013 Center	
503,193,457	
Valve spec	
REB.	COMP.
30-t0.254 x 1	34-t0.254 x 3
16-t0.114 x 1	34-t0.203 x 1
26-t0.114 x 1	18-t0.152 x 1
30-t0.203 x 5	30-t0.114 x 1
18-t0.152 x 1	34-t0.254 x 3
	28-t0.203 x 1
	26-t0.203 x 1
	24-t0.203 x 1
	22-t0.203 x 1
	19-t0.305 x 1
1 slit piston (2 x 0.1)	
BASE VALVE SPEC	
BL=4 BH=1 turn	
IFP height = 54mm	
Spring rate = 350/240 lbs/in x 1/4"	

600 RS 2012-13 Rear	
503,193,109	
Valve spec	
REB.	COMP.
30-t0.254 x 1	34-t0.254 x 4
16-t0.114 x 1	20-t0.152 x 1
28-t0.114 x 1	32-t0.114 x 1
30-t0.203 x 4	34-t0.254 x 2
18-t0.152 x 1	28-t0.305 x 1
	26-t0.305 x 1
	24-t0.305 x 1
	22-t0.305 x 1
	19-t0.305 x 1
1 slit piston (2 x 0.1)	
BASE VALVE SPEC	
BL=4 BH=1 turn	
IFP height = 54mm	
Spring rate = 1.33-100 #3	
Coupling #4 (Maximum is #5)	

Part description	Part #	QTY
26 x 0.114	486,900,057	2
18 x 0.305	486,900,099	2
15mm spacer		2
110lbs/in Front spring	486,900,125	2
135lbs/in Front spring	486,900,123	2

Part description	Part #	QTY
18 x 0.152	486,900,062	2
26 x 0.114	486,900,057	1
19 x 0.305	486,900,100	1
350lbs/in Center spring	503,192,725	1

Part description	Part #	QTY
20 x 0.152	486,900,063	1
28 x 0.114	486,900,059	1
18 x 0.152	486,900,062	1
19 x 0.305	486,900,100	1
Spring 1.33N.m/deg	503,191,186	1
Spring 1.33N.m/deg	503,191,188	1

600 RS MY2012 Trail Calibration (PCX rear suspension)

600 RS 2012 Ski	
505 073 145-146	
Valve spec	
REB.	COMP.
30-t0.254 x 1	34-t0.203 x 2
16-t0.114 x 1	15-t0.152 x 1
24-t0.114 x 1	28-t0.114 x 1
30-t0.203 x 3	34-t0.152 x 3
18-t0.152 x 1	26-t0.254 x 1
	24-t0.254 x 1
	16-t0.203 x 1
0mm piston bleed	
BASE VALVE SPEC	
RL=10 BL=4 BH=1,5 turn	
IFP height = 54mm	
Spring rate = 90lbs/in * 1/2"	
15mm shorter shock recommended	

600 RS 2012 Center	
503 193 111	
Valve spec	
REB.	COMP.
30-t0.254 x 1	
16-t0.114 x 1	34-t0.203 x 2
24-t0.114 x 1	15-t0.152 x 1
30-t0.203 x 4	28-t0.114 x 1
17-t0.114 x 2	34-t0.152 x 2
	28-t0.203 x 1
	26-t0.203 x 1
	16-t0.203 x 1
1 slit piston (2 x 0.1)	
BASE VALVE SPEC	
BL=4 BH=1,5 turn	
IFP height = 54mm	
Spring rate = 220/240 lbs/in x 1/4"	

600 RS 2012 Rear	
503 193 109	
Valve spec	
REB.	COMP.
30-t0.254 x 1	
16-t0.114 x 1	34-t0.203 x 4
28-t0.114 x 1	18-t0.152 x 1
30-t0.203 x 4	28-t0.114 x 1
18-t0.152 x 1	34-t0.152 x 4
	28-t0.305 x 1
	26-t0.305 x 1
	16-t0.203 x 1
1 slit piston (2 x 0.1)	
BASE VALVE SPEC	
BL=4 BH=1,5 turn	
IFP height = 54mm	
Spring rate = 1.33-100 #3	
Coupling #3 (Maximum is #5)	

Part description	Part #	QTY
15 x 0.152	486 900 134	2
34 x 0.152	486 900 073	6
24 x 0.114	486 900 055	2
16 x 0.203	486 900 074	2
18 x 0.152	486 900 062	2
15mm spacer		2
90 Front spring	505 072 968	2

Part description	Part #	QTY
34 x 0.203	486 900 086	1
15 x 0.152	486 900 134	1
28 x 0.114	486 900 059	1
34 x 0.152	486 900 073	2
16 x 0.203	486 900 074	1
24 x 0.114	486 900 055	1
220lbs/in Center spring	503 192 744	1
240lbs/in Center spring	486 130 025	1

Part description	Part #	QTY
34 x 0.203	486 900 086	2
18 x 0.152	486 900 062	2
28 x 0.114	486 900 059	2
34 x 0.152	486 900 073	4
16 x 0.203	486 900 074	1
Spring 1.33N.m/deg	503 191 186	1
Spring 1.33N.m/deg	503 191 188	1

mmc2013-001-018

MXZ 600RS SHOCK SPARE PARTS LIST (C-40)		
BRP part number	**Description**	**Where used**
505 072 565	Front Shock assy L/H	
505 072 564	Front Shock assy R/H	
503 191 923	Shock assy Center	
503 191 925	Shock assy Rear	
486 900 032	Rubber bushing (Top eye)	Front shock RH/LH
486 900 034	Valve assy's (Base valve ajuster)	Front shock RH/LH
486 900 043	Valve assy's (Base valve ajuster)	Center/Rear
486 900 035	Bearing comp. (Seal head)	All 4 shocks
486 140 040	O-ring (Remote cover)	All 4 shocks
486 140 041	Stop ring (Remote cover)	All 4 shocks
486 140 042	Guide (Remote cover)	All 4 shocks
486 140 043	O-ring (Air valve)	All 4 shocks
486 140 044	Screw (Air valve)	All 4 shocks
486 140 045	Air valve comp.	All 4 shocks
486 140 046	Piston ring (Floating)	All 4 shocks
486 140 047	O-ring (Foating)	All 4 shocks
486 140 048	Free piston comp	All 4 shocks
486 900 036	Cylinder comp guide LH	Front shock LH
486 900 037	Cylinder comp guide RH	Front shock RH
486 900 038	Cylinder comp guide center	Center
486 900 039	Cylinder comp guide rear	Rear
486 900 040	Cylinder	Front shock RH/LH
486 900 041	Cylinder	Center
486 900 042	Cylinder	Rear
486 900 033	Front Piston rod assy's	Front shock RH/LH
486 900 045	Center Piston rod assy's	Center
486 900 046	RearPiston rod assy's	Rear
486 500 025	Bolt (Purge bolt - All 4)	All 4 shocks
486 500 026	O'ring (Purge bolt - All 4)	All 4 shocks
486 800 081	Front shock rubber cushion	Front shock RH/LH

mmc2014-001-014

KYB shims 12mm I.D. for C-40 shocks						
D \ T	0.114	0.152	0.203	0.254	0.305	0.700
15	n/a	n/a	n/a	n/a	n/a	486 900 113
16	486 900 047	n/a	486 900 074	n/a	n/a	486 900 114
17	486 900 048	n/a	n/a	n/a	n/a	486 900 115
18	486 900 049	486 900 062	486 900 075	486 900 087	486 900 099	486 900 116
19	486 900 050	n/a	n/a	486 900 088	486 900 100	486 900 117
20	486 900 051	486 900 063	486 900 076	486 900 089	486 900 101	486 900 118
21	486 900 052	486 900 064	486 900 077	486 900 090	486 900 102	486 900 119
22	486 900 053	486 900 065	486 900 078	486 900 091	486 900 103	n/a
23	486 900 054	486 900 066	486 900 079	486 900 092	486 900 104	n/a
24	486 900 055	486 900 067	486 900 080	486 900 093	486 900 105	n/a
25	486 900 056	486 900 068	486 900 081	486 900 094	486 900 106	n/a
26	486 900 057	486 900 069	486 900 082	486 900 095	486 900 107	n/a
27	486 900 058	486 900 070	486 900 083	n/a	486 900 108	n/a
28	486 900 059	486 900 071	486 900 084	486 900 096	486 900 109	n/a
29	486 900 060	n/a	n/a	n/a	486 900 110	n/a
30	486 900 061	486 900 072	486 900 085	486 900 097	486 900 111	n/a
32						
34	486 900 120	486 900 073	486 900 086	486 900 098	486 900 112	n/a
36						
38						
40						

Piston C-40 Size (hole/slit)	P/N
no bleed	486 010 007
1slit	
0.9mm	486 010 008

Shock purging service tool	486 900 135

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PRODUCTION

SERVICE TOOLS

Description	Part Number	Page
gas fill tool kit	503 190 102	71
floating piston pilot	529 026 600	68
spring removal tool	529 036 007	65

SERVICE PRODUCTS

Description	Part Number	Page
Loctite 271	293 800 005	67
molykote paste	413 703 700	68–69
pulley flange cleaner	413 711 809	71
silicone grease Dow Corning MS4	420 897 061	68–69

REBUILT PROCEDURE

NOTE: Commercially available through compressed gas dealers.

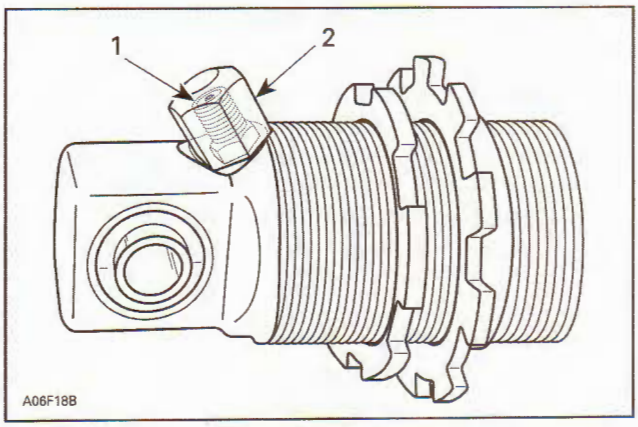
Disassembly and Assembly

Release N2 (nitrogen) pressure from the damper Schrader valve on any HPG T/A with IFP.

NOTE: When rebuilding a gas emulsion shock, mount the shock vertically in a vice with the schrader valve up and let it sit for 5 minutes before releasing the gas. This 5 minute period will allow most of the gas to separate from the oil and minimize oil spray.

⚠ WARNING

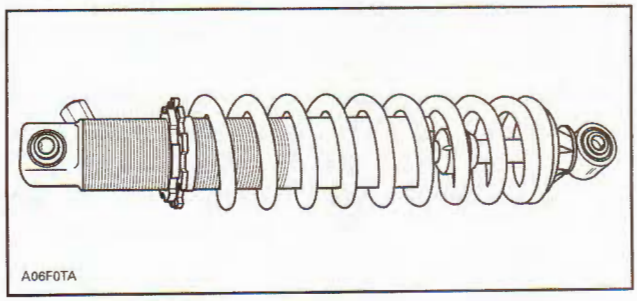
Nitrogen gas is under extreme pressure. Use caution when releasing this gas volume. Protective eye wear should be used.



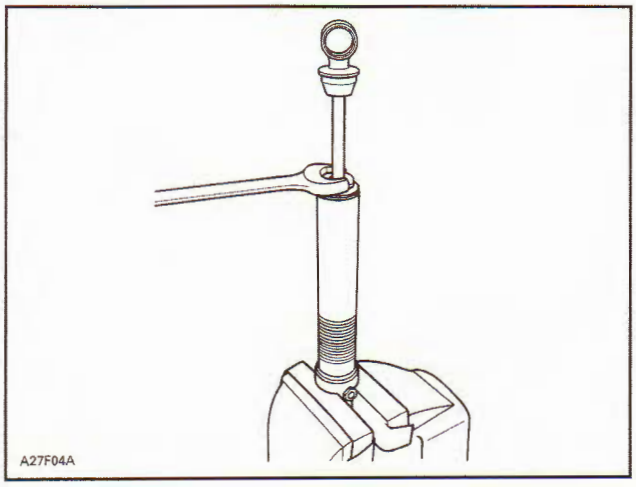
*1. Schrader valve 1.5 – 2 N•m (13–17 lbf•**in**)*
*2. Schrader cap 5 — 5.5 N•m (44–57 lbf•**in**)*

NOTE: Before unscrewing pre load rings, measure the compressed length of the installed spring and mark position for reinstallation. For factory adjustment refer to the end of this section.

Use tools (P/N 861 743 900) to remove damper spring by unthreading spring pre load rings, then removing spring retainer or use the spring removal tool (P/N 529 036 007).

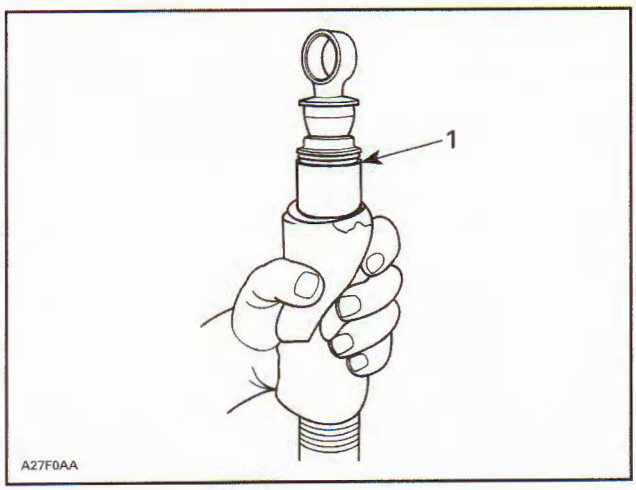


Holding damper assembly in bench vise with aluminum jaw protectors, unthread seal assembly from damper body using a 32 mm (1.25 in) spanner wrench. This assembly uses a right hand thread.



With the seal assembly removed, slowly lift and remove damper rod assembly from the damper body.

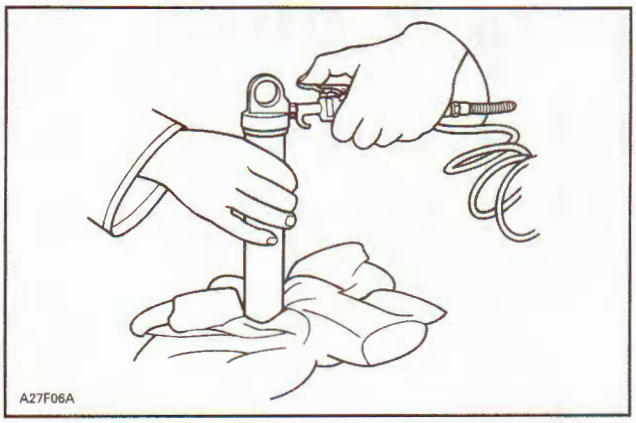
NOTE: Remove damper rod assembly slowly to reduce oil spillage and prevent piston seal damage by damper body threads. Wrap the damper body with a shop cloth to capture possible overflow oil while removing the damper piston.



1. Oil flows

Discard old oil into storage container. Never reuse damper oil during shock rebuild.

Remove Schrader valve core. Using compressed air pressure, carefully remove floating piston from damper body. Hold shop cloth over damper body opening to catch released floating piston. Allow room for floating piston to leave damper body.



TYPICAL

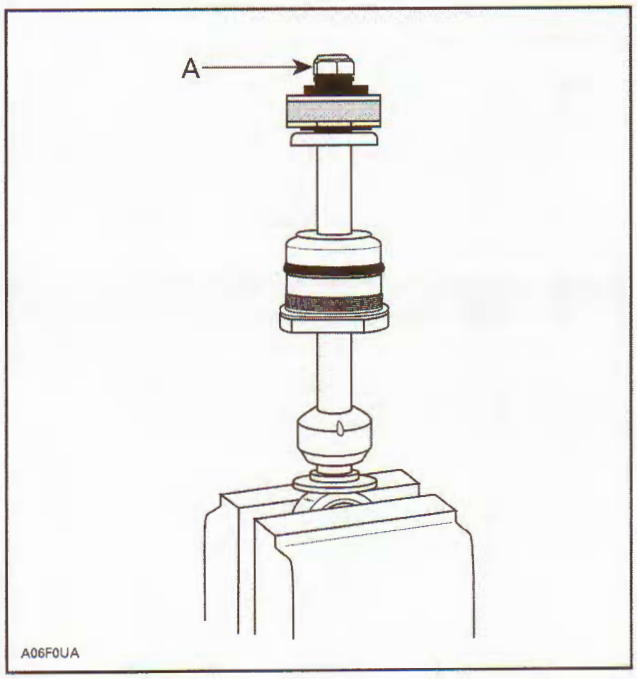
⚠ WARNING

Whenever using compressed air, use an O.S.H.A. approved air gun and wear protective eye wear.

Thoroughly clean, with a typical cleaning solution, and blow dry using low pressure air. Carefully inspect the damper body for any imperfections or signs of wear in the damper bore.

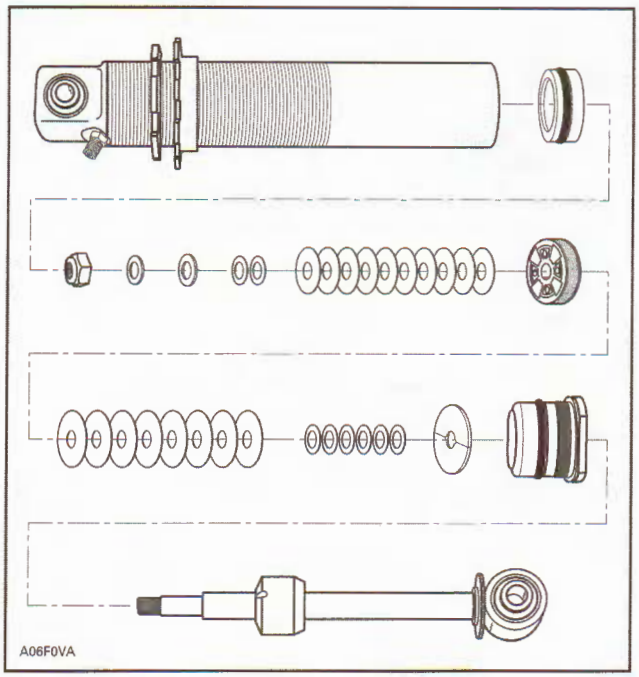
Replace damper body if wear is identified.

Holding the damper rod assembly in a bench vise, begin piston and valve removal.



A. Remove damper nut

Always arrange parts removed in the sequence of disassembly.



NOTE: As a general rule we suggest replacing the damper rod lock nut after 4 rebuilds to ensure good locking friction and use Loctite 271 (P/N 293 800 005) each time.

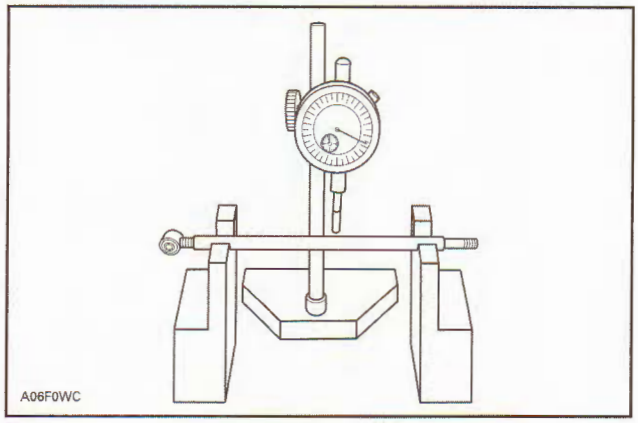
NOTE: If revalving is to be done, it is imperative that you identify the original shim pack (size and number of shims). The seal carrier need not be removed if only revalving is to be done.

Shims can be measured by using a vernier caliper or a micrometer.

NOTE: All shims should be carefully inspected and any bent or broken shims must be replaced for the shock to function properly.

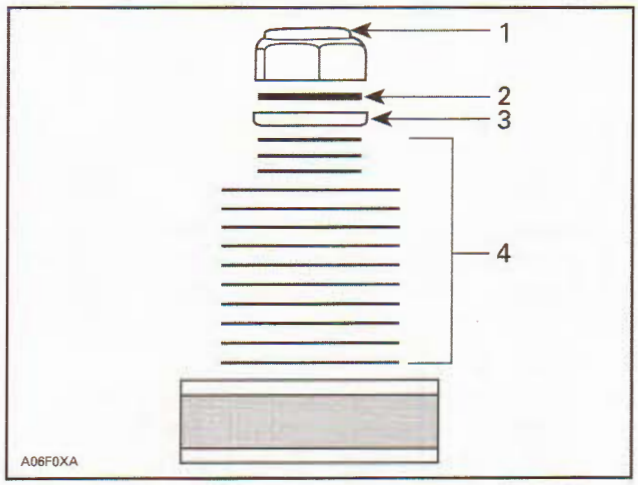
The damper rod is constructed of a plated shaft design. This damper shaft must be inspected for any visible wear on the surface of the damper rod.

Another check that must be completed if damper seal leakage has been noticed, is damper rod run out. This damper rod run out must not exceed 0.025 mm (.001 in).



MAXIMUM DEFLECTION 0.025 MM (.001 IN)

After the new or replacement shim pack has been selected, reassemble in the reverse order of disassembly. Torque piston nut 11 13 N•m (97 115 lbf•**in**). Use Loctite 271 (P/N 293 800 005).



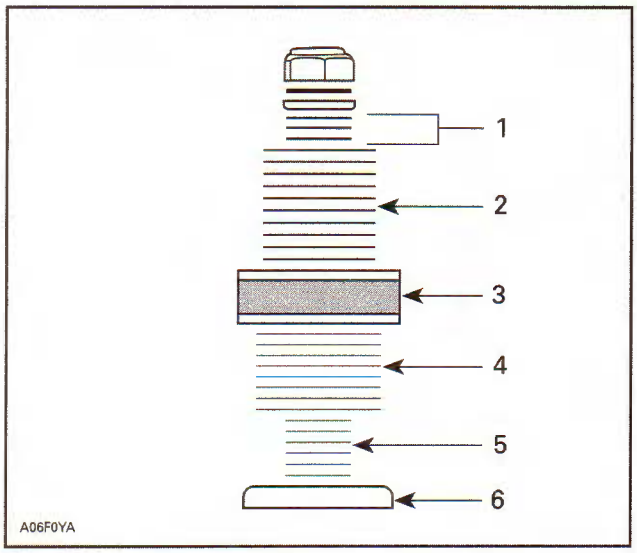
1. *Damper nut*
2. *Spacer*
3. *Washer*
4. *Shim pack*

CAUTION: The damper rod nut can only be reused 4 times, then, must be replaced. Do not substitute this part for non – O.E.M. use Loctite 271 (P/N 293 800 005) on nut each time.

This spacer washer(s) (P/N 414 888 309) must be used as shown to ensure damper rod nut does not bottom out or contact shaft threads.

Rebound valve stopper with round edge facing shim stack.

NOTE: Rebound shim stack must not reach into threads of damper shaft. Washer under damper shaft nut is used to prevent damper shaft nut from bottoming on threads.



1. *Rebound dampening shim pack*
2. *Rebound dampening shim pack*
3. *Piston*
4. *Compression dampening shim*
5. *Compression dampening shim pack*
6. *Stopper*

Rebound

A minimum of 0.203 mm (.008 in) clearance must be allowed between shim stack and rebound valve stopper. Use at least one shim of 12 x .203 mm.

Whenever tuning for more rebound damping always use 26 mm (1.02 in) shims against piston to properly close piston orifice holes. More thin shims will offer more control than a few thick shims of the same overall thickness.

NOTE: When tuning for less dampening it is important to remember, never use less than 3 26 mm (1.02 in) shims against piston. This will guard against fatigue breakage.

Piston options include 5 pistons; 0, 1, 2, 4 and 6 slits for rebound dampening bleeds.

Compression

Whenever tuning for more compression dampening always use 30 mm (1.18 in) shims against piston to properly close piston orifice holes. Two thin shims will offer more control than one thick shim of the equal thickness.

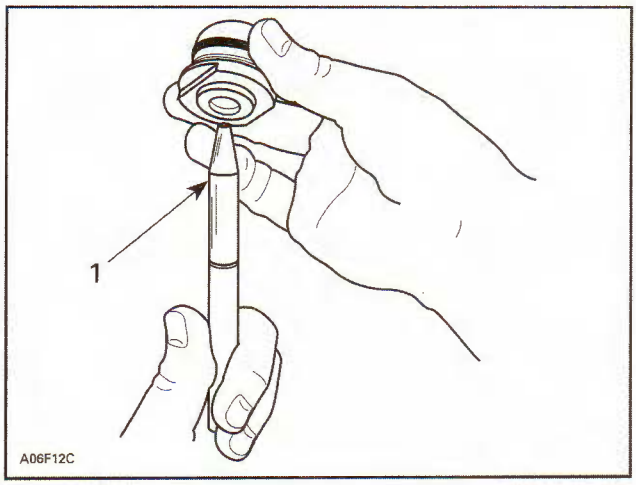
NOTE: When tuning for less dampening it is important to remember, never use less than 3 shims against piston. This will guard against fatigue breakage.

Fewer spacer shims will result in more high speed dampening. A minimum of 0 114 mm (.0045 in) clearance should be allowed between shim stack and compression valve stopper. Use at least one shim of 12 x .114.

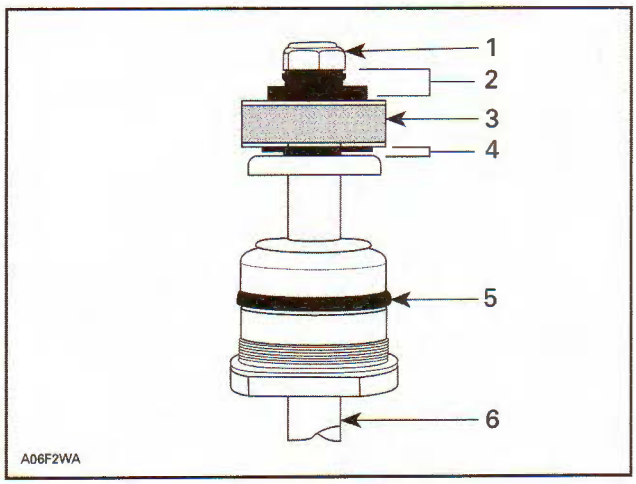
If the seal carrier assembly is replaced, use seal pilot to guide seal over damper shaft. Lubricate seal carrier guide pilot before use.

CAUTION: Failure to use seal pilot will result in seal damage.

Reassemble damper rod assembly, taking care to properly assemble shim packs as required for your dampening needs Ensure that the shaft piston is installed with the slits/larger intake holes facing the rebound shim stack.



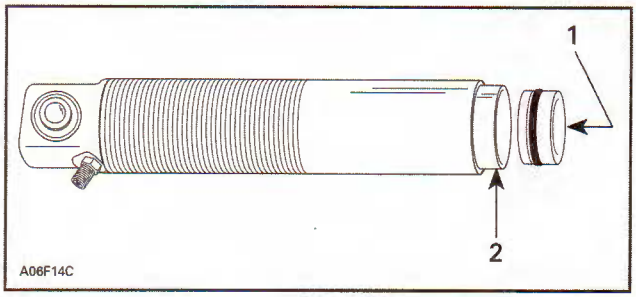
1. *Pilot (P/N 529 026 902)*



1. *Damper nut torque 11 13 N•m (97 115 lbf•in) use Loctite 271*
2. *Rebound shim pack*
3. *Piston*
4. *Compression shim pack*
5. *O ring visual inspection seal carrier assembly*
6. *Damper rod*

Reinstall floating piston into damper body (ensure that Schrader valve core has been removed). Use molybdenum disulfide grease (example: molykote paste (P/N 413 703 700) or silicone grease Dow Corning MS4 (P/N 420 897 061) to ease O ring past damper body threads with floating piston pilot (P/N 529 026 600).

CAUTION: Failure to install IFP correctly could result in shock damage.

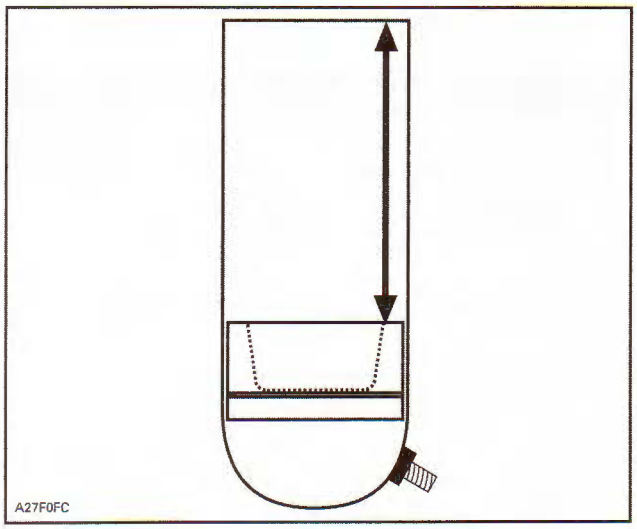


1. Push (slowly) by hand
2. Floating piston guide (P/N 529 026 600)

NOTE: Lubricate inside of piston guide with molykote GN paste (P/N 413 703 700) or MS4 silicone grease (P/N 420 897 061).

Install floating piston to the proper depth.

On all HPG take apart shocks from 1996 on. The floating piston is installed hollow side up.



Required distance for floating piston installation.

NOTE: If the floating piston is installed too far into the damper body, light air pressure through Schrader valve (with core removed) will move piston outward.

NOTE: Reinstall Schrader valve core after IFP has been installed at correct height and before adding oil.

⚠ WARNING

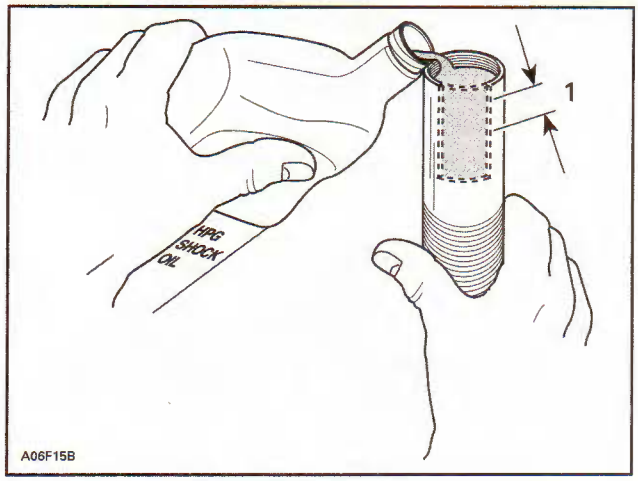
Whenever using compressed air exercise extreme caution, cover damper opening with shop cloth to reduce chance of possible injury.

CAUTION: Moisture laden compressed air will contaminate the gas chamber and rust floating piston.

⚠ WARNING

Always wear protective eye wear whenever using compressed air.

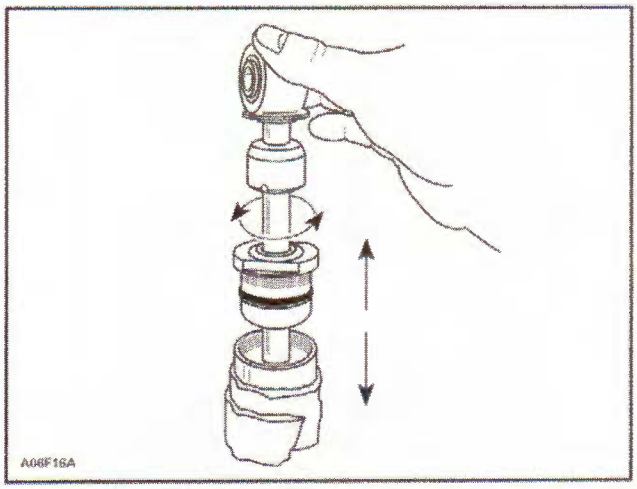
Fill the shock with Bombardier HPG shock oil to approximately 10 mm (.393 in), from the base of seal carrier threads.



1. Fill to 10 mm (.393 in)

NOTE: Although we do not measure the exact amount of oil added to the damper, approximately 106 ml (3.58 oz U.S.) will be used.

Carefully insert damper rod into the damper body. Install damper rod assembly into the damper body. Lightly oil damper piston seal ring with shock oil to ease installation.



NOTE: Some shock oil will overflow when installing damper. Wrap damper with shop cloth to catch possible overflow oil.

CAUTION: Use care when passing piston into damper body at damper body threads.

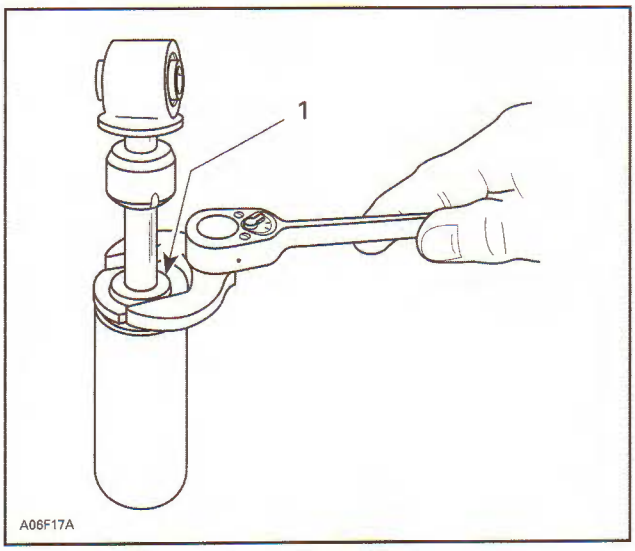
Slight oscillation of damper rod may be required to allow piston to enter damper body bore.

Slowly push piston into damper body. Slight up and down movement may be required to allow all air to pass through piston assembly. The gentle tapping of a small wrench, on the shock eye, may help dislodge air trapped in the submersed piston. Be careful not to drive the shaft any deeper into the oil than is necessary to just cover the shim stack.

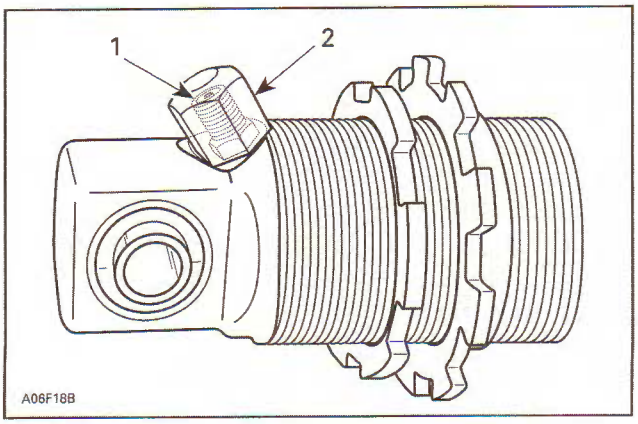
NOTE: Fast installation of the damper rod may displace the floating piston from its original position. This must not occur if the damper is expected to perform as designed.

With damper rod piston into oil, TOP OFF damper oil volume. Oil level should be to damper body thread base.

Seal carrier assembly can now be threaded into damper body. This should be done slowly to allow weapage of oil and to minimize IFP displacement. After the seal carrier is fully in place avoid pushing the shaft into the body until the nitrogen charge is added.



1. Torque seal carrier to 88 89 N•m (65 66 lbf•ft)



1. Schrader valve 1.5 2 N•m (13 17 lbf•in)
2. Schrader cap 5 6.5 N•m (44 57 lbf•in)

Adding Gas Pressure

Nitrogen (N2) can now be added to damper body.

NOTE: Never substitute another gas for nitrogen. Nitrogen has been selected for its inert qualities and will not contaminate the gas chamber of the shock.

Preset your pressure regulator to 2070 kPa (300 PSI) nitrogen (N2), this gas pressure will restore the correct pressure for your damper.

CAUTION: Do not exceed the recommended pressure values.

When removing and retightening the Schrader valve acorn nut use minimal torque. When the cap is over tightened and subsequently removed it may prematurely break the seal of the Schrader valve to the shock body and cause a loss of nitrogen charge without being noticed. If you suspect this has happened then recharge the shock as a precaution. Inspect the acorn cap before installation to ensure that the internal rubber gasket is in its proper position.

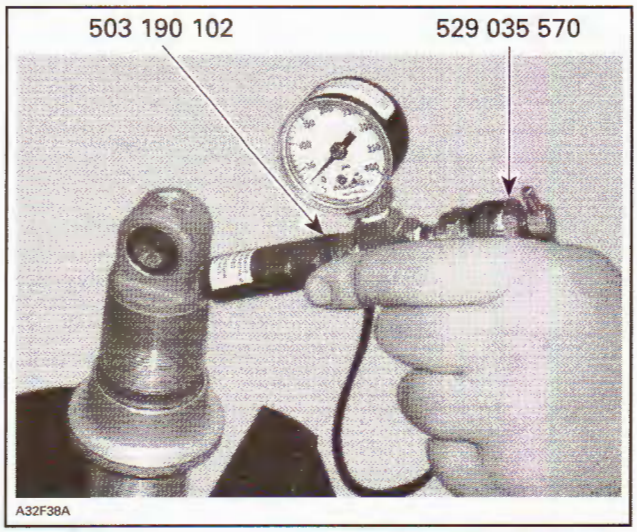
⚠ WARNING

Whenever working with high pressure gas, use eye wear protection. Never direct gas pressure toward anybody.

NOTE: Carefully inspect damper for gas or oil leaks. Any leaks must be corrected before continuing.

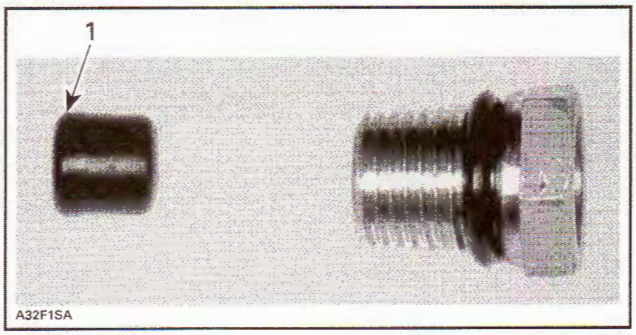
Damper gas pressure cannot be confirmed by using a pressure gauge. The volume of gas in the shock is very small, and the amount lost during gauge installation will lower the pressure too much and require refilling.

After recharging is complete and before installing the spring the rebuilt shock should be bench tested. Stroke the shock to ensure full travel and smooth compression and rebound action. If the shaft moves in or out erratically this could indicate too much air is trapped inside. If the shaft will not move or has partial travel then it may be hydraulically locked. In either event the shock must be rebuilt again. Pay particular attention to the placement of the IFP, quantity of oil and shim stack/piston assembly.



NOTE: For replacement of the needle or filling the shock, carefully follow the instructions provided with the gas fill tool kit (P/N 503 190 102).

On some models, rubber may pop out of needle valve when inserting tool needle. If so, remove valve core and rubber then, reinstall rubber with its larger diameter last.



1. Larger diameter

Carefully inspect damper for gas or oil leaks. Any leaks must be corrected before continuing. If no leak is detected, install the screw on top of the valve and clean the shock with the pulley flange cleaner (P/N 413 711 809).

Front - Take Apart	
MXZ TNT - RAS-ESR (XS/XR)	
Renegade Adren - RAS-ESR (XS/XR)	
505073237 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	2 x 30 x .203
1 x 15 x .114	1 x 15 x .152
3 x 26 x .152	3 x 30 x .152
1 x 16 x .254	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = 167mm	
Extended length = 431mm	
Compressed length = 285mm	
RAS-ESR XP/XS Spring rate = 90 lbs/in	
RAS-ESR XR Spring rate = 120 lbs/in	

Front - Take Apart	
MXZ X - RAS-ESR (XS/XR)	
Renegade X - RAS-ESR (XS/XR)	
505073117 - HPG Plus R	
Valve spec	
REB.	COMP.
1 x 26 x .254	3 x 30 x .203
1 x 15 x .114	1 x 15 x .114
3 x 26 x .203	3 x 30 x .152
1 x 15 x .254	1 x 26 x .114
	1 x 16 x .152
No slit piston	
IFP height = 164mm	
Extended length = 440mm	
Compressed length = 302.7mm	
RAS-ESR XP/XR Spring rate = 90 lbs/in	
RAS-ESR XR Spring rate = 120 lbs/in	

Front - Take Apart	
MXZ XRS - RAS-ESR (XS-RS)	
505073093/094 - KYB Pro 40 R Easy Adjust	
Valve spec	
REB.	COMP.
1 x 30 x .203	3 x 34 x .152
1 x 16 x .114	1 x 26 x .114
1 x 26 x .114	1 x 18 x .254
4 x 30 x .203	
1 x 17 x .114	
No slit piston	
IFP height = 52mm	
Extended length = 456mm	
Compressed length = 305mm	
RAS-ESR XP Spring rate = 90 lbs/in	

Front - Take Apart	
Summit X - RAS-ESR (XM)	
505073349 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .152	4 x 30 x .152
1 x 15 x .114	1 x 15 x .152
2 x 26 x .152	2 x 30 x .152
1 x 15 x .203	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = 161mm	
Extended length = 420mm	
Compressed length = 280mm	
RAS-ESR XP Spring rate = 75 lbs/in	

Front - Take Apart	
Freeride 137.38.4/40.1 - RAS-ESR (XM-RS)	
Freeride 146/154 38.4/40.1 - RAS-ESR (XM-RS)	
505073123/124 - KYB Pro 40 R Easy Adjust	
Valve spec	
REB.	COMP.
1 x 30 x .203	3 x 34 x .152
1 x 16 x .114	1 x 18 x .152
1 x 24 x .114	1 x 28 x .114
3 x 30 x .203	3 x 34 x .152
1 x 18 x .152	1 x 26 x .114
	1 x 24 x .114
	1 x 16 x .203
No slit piston	
IFP height = 52mm	
Extended length = 431mm	
Compressed length = 293 mm	
RAS-ESR RS XP Spring rate = 90 lbs/in	

Front - Take Apart	
Renegade X (Europe) - RAS-ESR (XS/XR)	
505073555 - HPG Plus R	
Valve spec	
REB.	COMP.
1 x 26 x .254	3 x 30 x .203
1 x 15 x .114	1 x 18 x .114
3 x 26 x .203	3 x 30 x .203
1 x 15 x .254	1 x 26 x .114
	1 x 16 x .152
No slit piston	
IFP height = 164mm	
Extended length = 440mm	
Compressed length = 302.7mm	
RAS-ESR XP/XR Spring rate = 90 lbs/in	
RAS-ESR XR Spring rate = 120 lbs/in	

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Center - Take Apart	
MXZ TNT - rMotion (XS/XR)	
MXZ X - rMotion (XS/XR)	
Renegade X - rMotion (XS/XR)	
503193283 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	1 x 30 x .203
1 x 15 x .114	1 x 14 x .152
3 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .254
1 slit piston (2 x 0.3)	
IFP height = 133mm	
Extended length = 366mm	
Compressed length = 260mm	
XS/XR Spring rate = 190/175 lbs/in	

Center - Take Apart	
MXZ XRS - rMotion (XS-RS)	
Freeride - rMotion 137 38.4/40.1 (XM-RS)	
Freeride - tMotion 146/154 38.4/40.1 (XM-RS)	
503192783 - KYB Pro 40 Easy Adjust	
Valve spec	
REB.	COMP.
1 x 30 x .254	2 x 34 x .203
1 x 16 x .114	1 x 22 x .114
1 x 26 x .114	1 x 34 x .203
3 x 30 x .203	1 x 28 x .114
1 x 17 x .114	1 x 26 x .114
	1 x 18 x .254
0.9mm hole piston	
IFP height = 52mm	
Extended length = 366mm	
Compressed length = 260mm	
XS-RS/XM-RS Spring rate = 190/197 lbs/in	

Center - Take Apart	
Renegade X - rMotion (XS/XR)	
503191797 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	2 x 30 x .203
1 x 15 x .114	1 x 17 x .152
3 x 26 x .254	10 x 30 x .152
1 x 16 x .203	1 x 26 x .114
	1 x 22 x .114
1 slit piston (2 x 0.3)	
IFP height = 119.5mm	
Extended length = 331mm	
Compressed length = 238mm	
XS/XR Spring rate = 180 lbs/in	

Center - Take Apart	
Summit X - tMotion (XM)	
503193528 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	1 x 30 x .203
1 x 15 x .114	1 x 14 x .152
4 x 26 x .254	4 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .203
1 slit piston (2 x 0.3)	
IFP height = 133mm	
Extended length = 366mm	
Compressed length = 260mm	
XM Spring rate = 150 lbs/in	

Center - Take Apart	
MXZ Sport (Europe) - rMotion (XP)	
503193534 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	5 x 30 x .203
1 x 15 x .114	1 x 15 x .152
3 x 26 x .254	3 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .254
1 slit piston (2 x 0.3)	
IFP height = 119.5mm	
Extended length = 331mm	
Compressed length = 238mm	
XP Spring rate = 135 lbs/in	

Center - Take Apart	
Renegade X (Europe) - rMotion (XS/XR)	
503193536 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	5 x 30 x .203
1 x 15 x .114	1 x 15 x .152
3 x 26 x .254	3 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .254
1 slit piston (2 x 0.3)	
IFP height = 133mm	
Extended length = 366mm	
Compressed length = 260mm	
XS/XR Spring rate = 190/275 lbs/in	

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Rear - Take Apart	
MXZ TNT - rMotion (XS/XR)	
503193284 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	4 x 30 x .203
1 x 16 x .114	1 x 15 x .152
4 x 26 x .203	2 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = 171.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80deg	

Rear - Take Apart	
MXZ X - rMotion (XS/XR)	
503192456 - KYB Pro 36 Easy Adjust	
Valve spec	
REB.	COMP.
1 x 26 x .203	3 x 30 x .152
1 x 15 x .114	1 x 15 x .152
3 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
BASE VALVE single speed	
IFP height = 54.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80deg	

Rear - Take Apart	
MXZ X - rMotion SAK (XS/XR)	
503193172 - KYB Pro 36 Easy Adjust	
Valve spec	
REB.	COMP.
1 x 26 x .203	3 x 30 x .152
1 x 15 x .114	1 x 15 x .152
3 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
BASE VALVE single speed	
IFP height = 54.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80deg	
SAK = Suspension Adjustability Kit	

Rear - Take Apart	
MXZ XRS - rMotion (XS-RS)	
503192908 - KYB Pro 40 Easy Adjust	
Valve spec	
REB.	COMP.
1 x 30 x .203	3 x 34 x .203
1 x 16 x .114	1 x 22 x .114
4 x 30 x .254	2 x 34 x .203
1 x 17 x .305	1 x 28 x .114
	1 x 26 x .114
	1 x 18 x .254
0.9mm hole piston	
IFP height = 54.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS-RS Spring rate = 1.35-80 deg	

Rear - Take Apart	
MXZ XRS - rMotion SAK (XS-RS)	
503193173 - KYB Pro 40 Easy Adjust	
Valve spec	
REB.	COMP.
1 x 30 x .203	3 x 34 x .203
1 x 16 x .114	1 x 22 x .114
4 x 30 x .254	2 x 34 x .203
1 x 17 x .305	1 x 28 x .114
	1 x 26 x .114
	1 x 18 x .254
0.9mm hole piston	
IFP height = 54.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS-RS Spring rate = 1.35-80 deg	
SAK = Suspension Adjustability Kit	

Rear - Take Apart	
Renegade X - rMotion (XS/XR)	
503193031 - KYB Pro 36 Easy Adjust	
Valve spec	
REB.	COMP.
2 x 26 x .203	3 x 30 x .203
1 x 16 x .114	1 x 15 x .152
4 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = 54.5mm	
Extended length = 551mm	
Compressed length = 400mm	
XS/XR Spring rate = 1.35-80 deg	

Rear - Take Apart	
Renegade X - rMotion SAK (XS/XR)	
503193177 - KYB Pro 36 Easy Adjust	
Valve spec	
REB.	COMP.
2 x 26 x .203	3 x 30 x .203
1 x 16 x .114	1 x 15 x .152
4 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = 54.5mm	
Extended length = 551mm	
Compressed length = 400mm	
XS/XR Spring rate = 1.35-80 deg	
SAK = Suspension Adjustability Kit	

Rear - Take Apart	
Freeride 137 - rMotion (XM-RS)	
503193530 - KYB Pro 40 Easy Adjust	
Valve spec	
REB.	COMP.
2 x 30 x .203	2 x 34 x .203
1 x 16 x .114	1 x 22 x .114
5 x 30 x .254	1 x 34 x .203
1 x 17 x .305	1 x 28 x .114
	1 x 26 x .114
	1 x 18 x .254
0.9mm hole piston	
IFP height = 54.5mm	
Extended length = 551mm	
Compressed length = 413mm	
XM-RS Spring rate = 1.33-80 deg	

Rear - Take Apart	
Freeride 146/154 38.4/40.1 - tMotion (XM-RS)	
503192964 - KYB Pro 40 Easy Adjust	
Valve spec	
REB.	COMP.
1 x 30 x .254	2 x 34 x .203
1 x 16 x .114	1 x 20 x .114
5 x 30 x .203	1 x 34 x .203
1 x 17 x .305	1 x 28 x .114
	1 x 26 x .114
	1 x 18 x .254
0.9mm hole piston	
IFP height = 54.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XM-RS Spring rate = 1.35-80 deg	

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Rear - Take Apart	
Summit X - tMotion (XM)	
503193529 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	6 x 30 x .203
1 x 15 x .114	1 x 15 x .152
4 x 26 x .254	4 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = 171.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XM Spring rate = 1.27-80 deg	

Rear - Take Apart	
MXZ Sport (Europe) - rMotion SAK (XS/XR)	
503193535 - HPG Plus	
Valve spec	
REB.	COMP.
1 x 26 x .203	7 x 30 x .203
1 x 16 x .114	1 x 17 x .152
4 x 26 x .254	4 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = 171.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80 deg	

Rear - Take Apart	
MXZ X (Europe) - rMotion SAK (XS/XR)	
503193470 - KYB Pro 36 Easy Adjust	
503193471 - KYB Pro 36 Easy Adjust	
Valve spec	
REB.	COMP.
1 x 26 x .254	5 x 30 x .203
1 x 16 x .114	1 x 20 x .114
5 x 26 x .254	3 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
BASE VALVE single speed	
IFP height = 54.5mm	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80 deg	
SAK = Suspension Adjustability Kit	

Rear - Take Apart	
Renegade X (Europe) - rMotion (XS/XR)	
503193800 - KYB Pro 36 Easy Adjust	
Valve spec	
REB.	COMP.
2 x 26 x .254	5 x 30 x .203
1 x 18 x .114	1 x 16 x .152
4 x 26 x .254	3 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
BASE VALVE single speed	
IFP height = 54.5mm	
Extended length = 551mm	
Compressed length = 400mm	
XS/XR Spring rate = 1.35-80 deg	

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Optional Soft Valving		Rear T/A - Standard Valving		Optional Hard Valving	
MXZ TNT - rMotion (XS/XR)		MXZ TNT - rMotion (XS/XR)		MXZ TNT - rMotion (XS/XR)	
503193284 - HPG Plus		503193284 - HPG Plus		503193284 - HPG Plus	
Valve spec		Valve spec		Valve spec	
REB.	COMP.	REB.	COMP.	REB.	COMP.
1 x 26 x .203	2 x 30 x .203	1 x 26 x .203	4 x 30 x .203	1 x 26 x .203	5 x 30 x .254
1 x 16 x .114	1 x 15 x .152	1 x 16 x .114	1 x 15 x .152	1 x 16 x .114	1 x 15 x .152
4 x 26 x .203	1 x 30 x .203	4 x 26 x .203	2 x 30 x .203	4 x 26 x .203	2 x 30 x .254
1 x 16 x .203	1 x 26 x .114	1 x 16 x .203	1 x 26 x .114	1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152		1 x 16 x .152		1 x 16 x .152
1 slit piston (2 x 0.3)		1 slit piston (2 x 0.3)		1 slit piston (2 x 0.3)	
IFP height = 171.5mm		IFP height = 171.5mm		IFP height = 171.5mm	
Extended length = 437.5mm		Extended length = 437.5mm		Extended length = 437.5mm	
Compressed length = 288.5mm		Compressed length = 288.5mm		Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80deg		XS/XR Spring rate = 1.35-80deg		XS/XR Spring rate = 1.35-80deg	

Optional Soft Valving		Rear T/A - Standard Valving		Optional Hard Valving	
MXZ X - rMotion (XS/XR)		MXZ X - rMotion (XS/XR)		MXZ X - rMotion (XS/XR)	
503192456 - KYB Pro 36 Easy Adjust		503192456 - KYB Pro 36 Easy Adjust		503192456 - KYB Pro 36 Easy Adjust	
503193172 - KYB Pro 36 Easy Adjust (SAK)		503193172 - KYB Pro 36 Easy Adjust (SAK)		503193172 - KYB Pro 36 Easy Adjust (SAK)	
Valve spec		Valve spec		Valve spec	
REB.	COMP.	REB.	COMP.	REB.	COMP.
1 x 26 x .203	2 x 30 x .152	1 x 26 x .203	3 x 30 x .152	1 x 26 x .254	5 x 30 x .203
1 x 15 x .114	1 x 15 x .152	1 x 15 x .114	1 x 15 x .152	1 x 16 x .114	1 x 20 x .114
3 x 26 x .254	1 x 30 x .152	3 x 26 x .254	1 x 30 x .203	5 x 26 x .254	3 x 30 x .203
1 x 16 x .203	1 x 26 x .114	1 x 16 x .203	1 x 26 x .114	1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152		1 x 16 x .152		1 x 16 x .152
1 slit piston (2 x 0.3)		1 slit piston (2 x 0.3)		1 slit piston (2 x 0.3)	
BASE VALVE single speed		**BASE VALVE single speed**		**BASE VALVE single speed**	
IFP height = 54.5mm		IFP height = 54.5mm		IFP height = 54.5mm	
Extended length = 437.5mm		Extended length = 437.5mm		Extended length = 437.5mm	
Compressed length = 288.5mm		Compressed length = 288.5mm		Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80 deg		XS/XR Spring rate = 1.35-80 deg		XS/XR Spring rate = 1.35-80 deg	

Optional Soft Valving		Rear T/A - Standard Valving		Optional Hard Valving	
Renegade X - rMotion (XS/XR)		Renegade X - rMotion (XS/XR)		Renegade X - rMotion (XS/XR)	
503193031 - KYB Pro 36 Easy Adjust		503193031 - KYB Pro 36 Easy Adjust		503193031 - KYB Pro 36 Easy Adjust	
Valve spec		Valve spec		Valve spec	
REB.	COMP.	REB.	COMP.	REB.	COMP.
2 x 26 x .203	1 x 30 x .203	2 x 26 x .203	3 x 30 x .203	2 x 26 x .203	5 x 30 x .254
1 x 16 x .114	1 x 14 x .152	1 x 16 x .114	1 x 15 x .152	1 x 16 x .114	1 x 15 x .152
4 x 26 x .254	1 x 30 x .152	4 x 26 x .254	1 x 30 x .203	4 x 26 x .254	2 x 30 x .254
1 x 16 x .203	1 x 26 x .114	1 x 16 x .203	1 x 26 x .114	1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152		1 x 16 x .152		1 x 16 x .152
1 slit piston (2 x 0.3)		1 slit piston (2 x 0.3)		1 slit piston (2 x 0.3)	
IFP height = 54.5mm		IFP height = 54.5mm		IFP height = 54.5mm	
Extended length = 551mm		Extended length = 551mm		Extended length = 551mm	
Compressed length = 400mm		Compressed length = 400mm		Compressed length = 400mm	
XS/XR Spring rate = 1.35-80 deg		XS/XR Spring rate = 1.35-80 deg		XS/XR Spring rate = 1.35-80 deg	

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Front - Non Take Apart	
Summit SP RAS-ESR (XM)	
505073236 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .152	4 x 30 x .152
1 x 15 x .114	1 x 15 x .152
2 x 26 x .152	2 x 30 x .152
1 x 15 x .203	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 420mm	
Compressed length = 280mm	
RAS-ESR Spring rate = 75 lbs/in	

Front - Non Take Apart	
GSX & GTX LE RAS-ESR (XS/XR)	
505073235 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	1 x 30 x .203
1 x 15 x .114	1 x 14 x .152
2 x 26 x .152	4 x 30 x .152
1 x 15 x .254	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 431mm	
Compressed length = 285mm	
RAS-ESR Spring rate = 90 lbs/in	

Front - Non Take Apart	
GSX & GTX SE RAS-ESR (XR)	
505073139 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	3 x 30 x .203
1 x 15 x .114	1 x 15 x .152
4 x 26 x .152	3 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 431mm	
Compressed length = 285mm	
RAS-ESR Spring rate = 120 lbs/in	

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Center - Non Take Apart	
Renegade Adren - rMotion (XS/XR)	
GSX SE & GTX SE - rMotion (XR)	
503193208 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	1 x 30 x .203
1 x 15 x .114	1 x 14 x .152
3 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .254
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 331mm	
Compressed length = 238mm	
E-TEC Spring rate = 190/175 lbs/in	
4-TEC Spring rate = 190/275 lbs/in	

Center - Non Take Apart	
Renegade Adren - rMotion (XS/XR)	
503192984 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	2 x 30 x .203
1 x 15 x .114	1 x 17 x .152
3 x 26 x .254	10 x 30 x .152
1 x 16 x .203	1 x 26 x .114
	1 x 22 x .114
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 331mm	
Compressed length = 238mm	
XS/XR Spring rate = 180 lbs/in	

Center - Non Take Apart	
Summit SP tMotion (XM)	
503193207 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	1 x 30 x .203
1 x 15 x .114	1 x 14 x .152
4 x 26 x .254	4 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .203
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 366mm	
Compressed length = 260mm	
XP/XM Spring rate = 150 lbs/in	

Center - Non Take Apart	
Tundra Extreme - SC-5U (XU)	
503192991 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .254	1 x 30 x .203
1 x 15 x .114	1 x 14 x .152
4 x 26 x .254	5 x 30 x .203
1 x 16 x .203	1 x 28 x .114
	1 x 24 x .114
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 331mm	
Compressed length = 238mm	
XU Spring rate = 215/275 lbs/in	

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Rear - Non Take Apart	
GSX LE - rMotion (XS/XR)	
503193645 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	3 x 30 x .203
1 x 16 x .114	1 x 15 x .152
4 x 26 x .203	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XS/XR Spring rate = 1.35-80 deg	

Rear - Non Take Apart	
Renegade Adren - rMotion (XS/XR)	
503193775 - HPG	
Valve spec	
REB.	COMP.
2 x 26 x .203	5 x 30 x .203
1 x 16 x .114	1 x 15 x .152
4 x 26 x .203	2 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 551mm	
Compressed length = 400mm	
XS/XR Spring rate = 1.35-80 deg	

Rear - Non Take Apart	
Summit Sport tMotion (XP)	
Summit SP tMotion (XM)	
503193189 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	6 x 30 x .203
1 x 15 x .114	1 x 15 x .152
4 x 26 x .254	4 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 437.5mm	
Compressed length = 288.5mm	
XP/XM Spring rate = 1.27-80 deg	

Rear - Non Take Apart	
GTX Sport - SC-5M (XP)	
503193190 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	4 x 30 x .152
1 x 16 x .114	1 x 15 x .152
4 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 477mm	
Compressed length = 335mm	
XP Spring rate = 1.66-80 deg	

Rear - Non Take Apart	
GTX LE (E-TEC & 1200 4-TEC) - rMotion (XR)	
503193646 - HPG-VR	
Valve spec	
REB.	COMP.
3 x 26 x .203	2 x 30 x .203
1 x 15 x .114	1 x 15 x .152
4 x 26 x .203	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .254
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 551mm	
Compressed length = 400mm	
XR Spring rate = 1.94-90 deg	

Rear - Non Take Apart	
GTX LE (900 ACE) - rMotion (long rail) (XR)	
503193647 - HPG	
Valve spec	
REB.	COMP.
2 x 26 x .203	5 x 30 x .203
1 x 15 x .114	1 x 15 x .152
4 x 26 x .203	1 x 30 x .203
1 x 16 x .203	1 x 26 x .114
	1 x 16 x .254
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 581mm	
Compressed length = 430mm	
XR Spring rate = 1.94-90 deg	

Rear - Non Take Apart	
Tundra Sport - SC-5M (XU)	
503193187 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	2 x 30 x .152
1 x 16 x .114	1 x 16 x .152
3 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 477mm	
Compressed length = 335mm	
XU Spring rate = 1.27-80 deg	

Rear - Non Take Apart	
Tundra LT - SC-5U (XU)	
503193191 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	3 x 30 x .152
1 x 16 x .114	1 x 16 x .152
3 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 551mm	
Compressed length = 413mm	
XU Spring rate = 1.35-80 deg	

Rear - Non Take Apart	
Tundra Extreme - SC-5U (XU)	
503193192 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	4 x 30 x .203
1 x 16 x .114	1 x 16 x .152
4 x 26 x .254	2 x 30 x .203
1 x 16 x .203	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 551mm	
Compressed length = 413mm	
XU Spring rate = 1.35-80 deg	

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Rear - Non Take Apart	
Expedition Sport - SC-5U (XP/XS)	
503193193 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .203	4 x 30 x .152
1 x 16 x .114	1 x 16 x .152
4 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 16 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 551mm	
Compressed length = 413mm	
XP/XS Spring rate = 1.66-80 deg	

Rear - Non Take Apart	
Expedition LE - SC-5U (XU)	
Skandic WT & SWT - SC-5U (XU)	
503192410 - HPG	
Valve spec	
REB.	COMP.
1 x 26 x .254	4 x 30 x .203
1 x 16 x .114	1 x 14 x .152
5 x 26 x .254	1 x 30 x .203
1 x 16 x .203	1 x 18 x .152
1 slit piston (2 x 0.3)	
IFP height = not t/a	
Extended length = 551mm	
Compressed length = 413mm	
Expedition LE Spring rate = 1.92-75 deg	
Skandic WT Spring rate = 1.92-75 deg	
Skandic SWT Spring rate = 2.45-75 deg	

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KYB HPG SHIMS 9MM ID FOR C36 SHOCKS				
diameter mm	THICKNESS			
	0.114	0.152	0.203	0.254
12	415 038 800	414 888 339	414 888 338	503 189 538
13	486 600 034	415 128 699	486 600 035	486 600 036
14	415 128 685	415 128 686	415 128 687	486 600 037
15	414 888 337	414 888 336	414 888 335	414 888 334
16	415 038 900	414 888 333	414 888 332	414 888 331
17	486 600 038	415 128 847	486 600 039	486 600 040
18	486 600 041	414 888 330	414 888 329	486 600 042
19	486 600 043	486 600 044	486 600 045	486 600 046
20	414 888 328	414 888 327	414 888 326	486 600 047
21	414 888 340	486 600 048	486 600 049	486 600 050
22	486 600 051	414 888 325	414 888 324	486 600 052
24	486 600 053	486 600 054	486 600 055	486 600 056
26	486 600 057	414 888 323	414 888 322	415 039 000
28	486 600 058	414 888 321	414 888 320	486 600 059
30		414 888 319	414 888 318	415 039 100

C 36 HPG

Pistons

P/N	SIZE	MOQ (MINIMUM ORDER QUANTITY)
414 888 304	0 slit	1
414 888 305	2 slits	2
414 888 306	4 slits	1
414 888 307	6 slits	1

2014SHOCK CALIBRATION CHARTS

European shock calibrations

The European shock calibrations are included in this section. As a general rule these calibrations will be considerably firmer as their riding conditions generally do not include groomed trails.

Nitrogen pressure

The Nitrogen pressure is listed at 20 bar, for those unfamiliar with this measuring system 1 bar = 1 atmosphere of pressure, which equates to kPa (14.7 PSI). Consequently 20 bar of pressure equates to 294 PSI. Just use 300 PSI of Nitrogen to recharge the shocks, the same pressure we list in other manuals.

Shim stack order

One other important note, in most of our shock calibration charts we list the order of the shim stack be it compression or rebound, from the largest diameter to the smallest. As an example on a C 36 shock the first valve or shim against the piston will always be a 30 mm on the compression side and a 26 mm dia. on the rebound side. On some of the newer shock calibration charts you may notice that the calibration shims are listed as they are actually positioned in the shock. The piston will be listed in the center of the calibration chart as it would be in the actual shock body. This could be confusing to someone not aware that the largest diameter shim or valve must ALWAYS be placed against the piston first.

2014SKI DOO SHOCKS AND FEATURES	
SHOCK TYPE	FEATURES
HPG	KYB steel body with high pressure gas
HPG VR	KYB steel body with high pressure gas – variable rate
HPG Plus	KYB aluminum body rebuildable shock
HPG Plus R	KYB aluminum body rebuildable shock with rebound clicker adjustment
KYB Pro 36	KYB aluminum body 36 mm rebuildable shock with low speed & high speed compression adjustment
KYB Pro 40	KYB aluminum body 40 mm rebuildable shock with low speed & high speed compression adjustment
KYB Pro 40 R	KYB aluminum body 40 mm rebuildable shock with low speed & high speed compression adjustment and rebound damping adjustment

SUSPENSION SPRING CHART

▶TEXT(S) BETWEEN ARROWS IS (ARE) MODIFIED ELEMENT(S) TO THE PREVIOUS PUBLICATION.◀

MODIFICATION OVERVIEW	
MODEL	MODIFICATION
GSX SE 600 HO E-TEC	▶In Front Springs table: Model added in GSX Series (same values as GSX SE 800R E-TEC and GSX LE 600 HO E-TEC)
GSX LE 900 ACE	In Front Springs table: P/N Softer (P/N 505 072 119) P/N Standard (P/N 505 072 767) P/N Harder (P/N 505 072 993)
MX Z RACING 600 RS	In Front Springs table: P/N Softer (P/N 505 073 315) P/N Standard (P/N 505 073 537) P/N Harder (P/N N.A.)
Renegade Sport 550F / 600 ACE	In Front Springs table: P/N Softer (P/N 505 072 763) P/N Standard (P/N 505 072 265) P/N Harder (P/N 505 072 993)
Renegade Adrenaline 600 HO E-TEC/800R E-TEC Renegade Sport EUR 550F/600 ACE	In Front Springs table: P/N Softer (P/N 505 072 526) P/N Standard (P/N 505 072 537) P/N Harder (P/N 505 072 528)
Renegade Adrenaline 900 ACE	In Front Springs table: P/N Standard (P/N 505 073 332)
Renegade Adrenaline 1200 4-TEC	In Front Springs table: P/N Softer (P/N 505 072 537) P/N Standard (P/N 505 072 528)
Renegade Backcountry X 600 HO E-TEC/800R E-TEC	In Front Springs table: P/N Standard (P/N 505 072 726) P/N Harder (P/N 505 072 537)
Renegade Sport EUR 550F/600 ACE	In Front Springs table: P/N Standard (P/N 505 072 526)

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MODIFICATION OVERVIEW	
MODEL	MODIFICATION
Tundra LT EUR 600 ACE	In Front Springs table: P/N Softer (P/N 505 072 745) P/N Standard (P/N 505 073 327) P/N Harder (P/N 505 073 204)
GSX LE 900 ACE	In Center Springs table: P/N Softer (P/N N.A.) P/N Standard (P/N 503 193 480) (P/N 503 193 067) P/N Harder (P/N 503 191 343) (P/N 503 192 279)
Renegade Adrenaline 1200 4-TEC / Renegade X 1200 4-TEC	In Center Springs table: P/N Softer (P/N 503 193 480) (P/N 503 193 067) P/N Standard (P/N 503 193 480)◀

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2014	All	All	All

This bulletin is divided into 3 main sections:

Section 1: Spring Identification

- Spring identification guideline. Gives information on color codes, part number and spring shape.

Section 2: Spring Applications

- Quick reference chart which provides authorized spring application for each Ski-Doo model. It contains the standard spring part number (in gray shading) as installed at the factory, as well as 1 softer spring and 1 harder spring recommendation.

Section 3: Spring Specifications

- Refers to spring specifications table.

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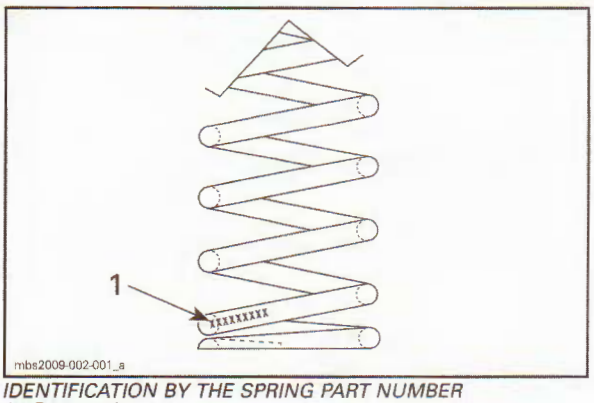
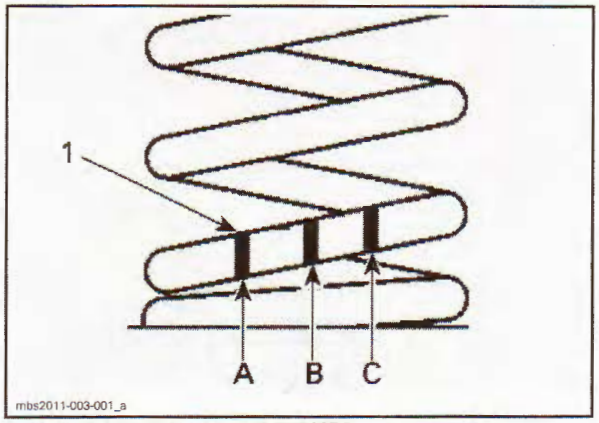
SECTION 1: SPRING IDENTIFICATION

Coil Spring Identification

Spring identification is done by color code stripes **or** by its part number printed on the spring with white ink within the first 1-1/4 coils.



IDENTIFICATION BY THE SPRING PART NUMBER
1. Part number



IDENTIFICATION BY COLOR STRIPES
1. Color stripes when spring is upright with the stripes down
A. 1st stripe
B. 2nd stripe
C. 3rd stripe

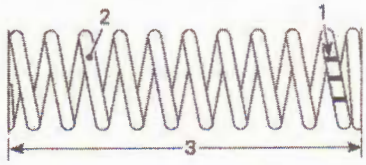
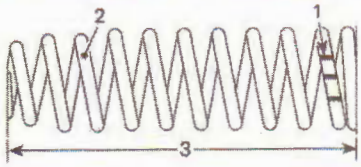
Color Code Legend

COLOR CODE					
BL	—	BLUE	PI	—	PINK
BK	—	BLACK	RD	—	RED
GD	—	GOLD	SI	—	SILVER
GN	—	GREEN	WH	—	WHITE
OR	—	ORANGE	YL	—	YELLOW

Coil Spring Types

All call-outs below each following illustrations (except torsion springs) refer to:

1. Color code stripes
2. Wire diameter
3. Free length
4. Positioning tab (where applicable).

Spring type		
Type R (straight at both ends)	Single Rate Spring	
Type S (barrel shape at one end)	Single Rate Spring	

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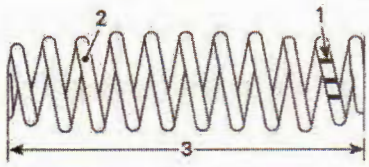
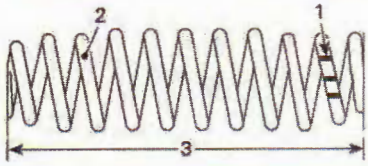
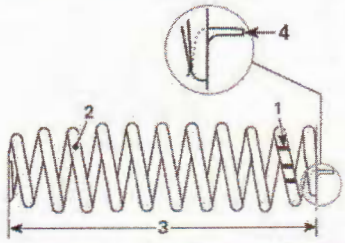
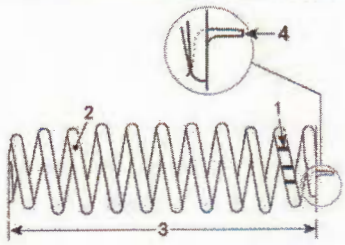
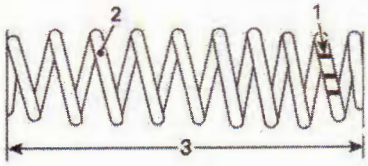
Spring type		
Type T (barrel shape at both ends)	Single Rate Spring	
Type V (barrel shape at both ends)	Single Rate Spring	
Type Y (barrel shape at both ends with positioning tab at the identification code coils end)	Single Rate Spring	
Type Z (barrel shape at both ends with positioning tab at identification code coils end and 2 different diameter ends)	Single Rate Spring	
Type 2 (barrel shape at both ends)	Dual Rate Spring	

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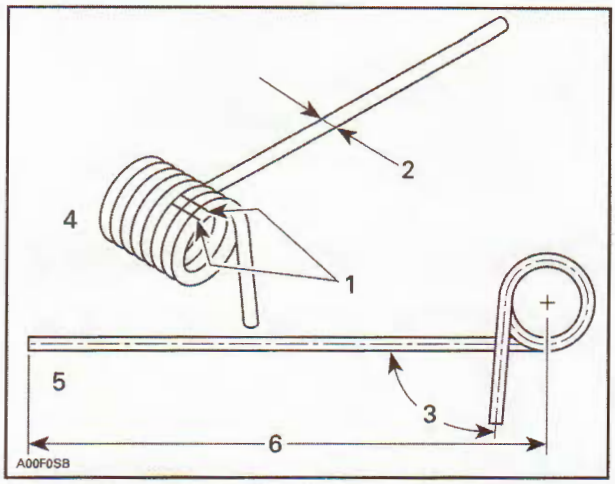
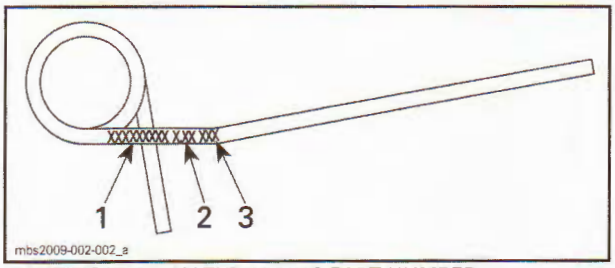
Torsion Spring Identification



IDENTIFICATION BY COLOR STRIPES
1. *Color code stripes*
2. *Wire diameter*
3. *Opening angle (°)*
4. *Left hand (LH)*
5. *Right hand (RH)*
6. *Length*

Spring identification is done by color code stripes (as shown above) **or** by its part number printed on the spring with white ink (as shown below).



IDENTIFICATION BY THE SPRING PART NUMBER
1. *Spring Part Number*
2. *Spring rate*
3. *Angle dimension*

Color Code Legend

COLOR CODE					
BL	—	BLUE	PI	—	PINK
BK	—	BLACK	RD	—	RED
GD	—	GOLD	SI	—	SILVER
GN	—	GREEN	WH	—	WHITE
OR	—	ORANGE	YL	—	YELLOW

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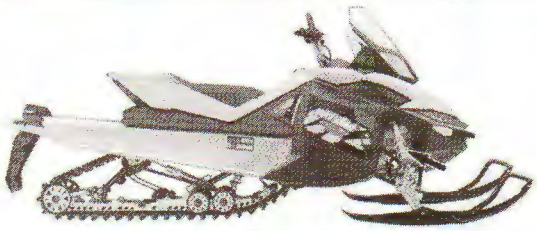
SECTION 2: SPRING APPLICATIONS

FRONT SPRINGS



MODEL	(PART NUMBER) SOFTER	(PART NUMBER) STANDARD	(PART NUMBER) HARDER
Freeride			
Freeride 137 - 146 - 154	N.A.	505 072 760	505 073 315
GSX Series			
GSX SE 800R E-TEC / LE 600 HO E-TEC▶ / SE 600 HO E-TEC◀	505 072 792	505 072 119	505 072 993
▶GSX LE 900 ACE	505 072 119	505 072 767	505 072 993◀
GSX SE 1200 4-TEC / LE 1200 4-TEC	505 072 119	505 072 993	N.A.
Grand Touring Series			
Grand Touring Sport 550F/600/600 ACE	505 072 668	505 072 897	505 072 518
Grand Touring LE 600 HO E-TEC	505 072 414	505 071 842	505 072 518
Grand Touring LE 900 ACE	505 072 897	505 071 849	505 072 518
Grand Touring LE 1200 4-TEC / Grand Touring SE 1200 4-TEC (Black)	505 071 842	505 072 518	N.A.
Grand Touring SE 1200 4-TEC (Black and Hybrid White)	N.A.	505 073 255	N.A.
MX Z Series			
▶MX Z RACING 600 RS	505 073 315	505 073 537	N.A.◀
MX Z Sport 550F/600/600 ACE	505 072 763	505 073 265	505 072 116
MX Z Sport 600 ACE EUR/550F EUR	505 072 526	505 072 537	505 072 528
MX Z TNT 600 HO E-TEC/800R E-TEC	505 072 526	505 072 537	505 072 528
MX Z TNT 900 ACE	505 072 537	505 073 332	505 072 528
MX Z TNT 1200 4-TEC	505 072 537	505 072 528	N.A.
MX Z X 1200 4-TEC	505 072 741	505 072 761	N.A.
MX Z X 600 HO E-TEC/800R E-TEC	505 072 846	505 072 741	505 072 761
MX Z X-RS 600 HO E-TEC/800R E-TEC	N.A.	505 072 760	505 073 315
Renegade Series			
Renegade Sport 550F/600ACE	▶505 072 763	505 072 265	505 072 993◀
Renegade Adrenaline 600 HO E-TEC/800R E-TEC	▶505 072 526	505 072 537	505 072 528◀
Renegade Adrenaline 900 ACE	505 072 537	▶505 073 332◀	505 072 528
Renegade Adrenaline 1200 4-TEC	▶505 072 537	505 072 528◀	N.A.
Renegade Back Country X 600 HO E-TEC/800R E-TEC	N.A.	▶505 072 726	505 072 537◀
Renegade Back Country X	505 072 726	505 072 846	505 072 741
Renegade X 600 HO E-TEC/800R E-TEC	505 072 846	505 072 741	505 072 761
Renegade X 1200 4-TEC	505 072 741	505 072 761	N.A.
Renegade Sport EUR 550F/600 ACE	▶505 072 526	505 072 537	505 072 528◀

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FRONT SPRINGS

MODEL	(PART NUMBER) SOFTER	(PART NUMBER) STANDARD	(PART NUMBER) HARDER
SUMMIT Series			
Summit Sport 600	505 072 792	505 072 763	505 072 791
Summit Sport 800R PTEK	505 072 792	505 072 763	505 072 791
Summit SP 600 HO E-TEC/800R E-TEC	N.A.	505 072 792	505 072 119
Summit X 800R E-TEC	N.A.	505 072 726	505 072 741
Expedition Series			
Expedition Sport 550F/600 ACE	505 072 668	505 072 897	505 072 518
Expedition Sport 900 ACE	505 072 897	505 073 521	N.A.
Expedition LE 600 HO E-TEC / Expedition SE 600 HO E-TEC	N.A.	503 192 286	505 072 882
Expedition LE 1200 4-TEC / Expedition SE 1200 4-TEC	503 192 286	505 072 882	505 072 879
Skandic Series			
Skandic WT 550F/600 ACE/600 HO E-TEC	505 072 557	505 072 745	505 073 327
Skandic SWT 600 ACE/600 HO E-TEC	505 072 557	505 072 745	505 073 209
Tundra LT 550F / Tundra Sport 550F	N.A.	505 072 557	505 072 745
Tundra Sport 600 ACE	505 072 557	505 072 745	505 073 327
Tundra LT 600 ACE	505 072 557	505 072 745	505 073 327
▶ Tundra LT EUR 600 ACE	505 072 745	505 073 327	505 073 204 ◀
Tundra Xtreme (CAN / USA)	505 072 745	505 073 327	505 073 204
Tundra Xtreme (EUR)	505 073 327	505 073 204	N.A.

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CENTER SPRINGS

MODEL	(PART NUMBER) SOFTER	(PART NUMBER) STANDARD	(PART NUMBER) HARDER
Freeride			
Freeride 137 - 146 - 154	N.A.	503 193 479 503 193 065	503 192 724 503 192 744
GSX Series			
GSX LE 600 HO E-TEC	N.A.	503 193 480 503 193 067	503 191 343 503 192 279
▶GSX LE 900 ACE	N.A.	503 193 480 503 193 067	503 191 343 503 192 279◀
GSX LE 1200 4-TEC / GSX SE 1200 4-TEC	503 193 480 503 193 067	503 193 480 503 193 160	503 191 343 503 192 279
GSX SE 600 HO E-TEC/800R E-TEC	N.A.	503 193 480 503 193 067	503 191 343 503 192 279
Grand Touring Series			
Grand Touring Sport 550F/600/600 ACE	503 191 879	503 191 882	503 191 880
Grand Touring LE 600 HO E-TEC	N.A.	503 193 480 503 193 067	503 191 343 503 192 279
Grand Touring LE 1200 4-TEC / GTX SE 1200 4-TEC / LE 900	503 193 480 503 193 067	503 193 480 503 193 160	503 191 343 503 192 279
MX Z Series			
MX Z Sport 550F/600	503 191 476	503 191 329	503 191 879
MX Z Sport 600 ACE	503 191 329	503 191 879	503 191 882
MX Z TNT/ MX Z X 600 HO E-TEC/800R E-TEC	N.A.	503 193 480 503 193 067	503 191 343 503 192 279
MX Z TNT 1200 4-TEC/ MX Z 1200 4-TEC	503 193 480 503 193 067	503 193 480 503 193 160	503 191 343 503 192 279
MX Z X-RS 600 HO E-TEC/800R E-TEC	N.A.	503 193 479 503 193 065	503 192 724 503 192 744
Renegade Series			
Renegade Sport 550F/600 ACE	503 191 879	503 191 882	503 191 880
Renegade Adrenaline/Backcountry/Backcountry X 600 HO E-TEC/800R E-TEC / 900 ACE	N.A.	503 193 480 503 193 067	503 191 343 503 192 279
Renegade Adrenaline 1200 4-TEC / Renegade X 1200 4-TEC	▶503 193 480 503 193 067◀	▶503 193 480◀ 503 193 160	503 191 343 503 192 279
SUMMIT Series			
Summit Sport & SP	503 191 879	503 191 882	503 191 880
Summit X	N.A.	503 193 249	N.A.
Expedition Series			
Expedition Sport 550F	503 191 879	503 191 882	503 191 880
Expedition Sport 600 ACE / 900 (CAN / US)	503 191 882	503 191 880	503 189 686

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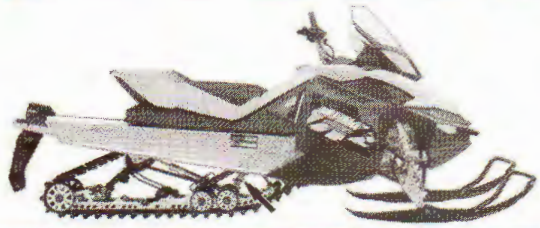
CENTER SPRINGS



MODEL	(PART NUMBER) SOFTER	(PART NUMBER) STANDARD	(PART NUMBER) HARDER
Expedition Series (cont'd)			
Expedition LE 600 HO E-TEC / Expedition SE 600 HO E-TEC	503 191 882	503 191 880	503 189 686
Expedition LE 1200 4-TEC / Expedition SE 1200 4-TEC	503 191 880	503 189 686	N.A.
Skandic Series			
Skandic WT 550F/600ACE/600 HO E-TEC	503 191 882	503 191 880	503 189 686
Skandic SWT 600 ACE/600 HO E-TEC	503 191 882	503 191 880	503 189 686
Tundra LT 550F/ Tundra Sport 550F	503 191 879	503 191 882	503 191 880
Tundra Sport 600 ACE	503 191 882	503 191 880	503 189 686
Tundra LT 600 ACE	503 191 882	503 191 880	503 189 686
Tundra Xtreme / Expedition Sport 900 ACE (EUR)	503 190 476 503 190 478	503 191 343 503 192 279	503 190 982 503 190 854

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REAR SPRINGS

MODEL	(PART NUMBER) SOFTER	(PART NUMBER) STANDARD	(PART NUMBER) HARDER
Freeride			
Freeride 137	505 192 137 (right) 503 192 136 (left)	503 192 104 (right) 503 192 105 (left)	503 192 270 (right) 503 192 271 (left)
Freeride 146/154	503 192 080 (right) 503 192 081 (left)	503 192 137 (right) 503 192 136 (left)	503 192 270 (right) 503 192 271 (left)
GSX Series			
GSX LE 600 HO E-TEC	503 192 080 (right) 503 192 081 (left)	503 193 159 (right) 503 193 158 (left)	503 192 270 (right) 503 192 271 (left)
GSX LE 1200 4-TEC	503 192 080 (right) 503 192 081 (left)	503 193 159 (right) 503 193 158 (left)	503 192 270 (right) 503 192 271 (left)
GSX SE 600 HO E-TEC/800R E-TEC/1200 4-TEC	N.A.	503 193 636 (right) 503 193 637 (left)	503 193 159 (right) 503 193 158 (left)
Grand Touring Series			
Grand Touring Sport 550F/600/600 ACE	503 191 287 (right) 503 191 289 (left)	503 192 270 (right) 503 192 271 (left)	503 191 247 (right) 503 191 249 (left)
Grand Touring LE	503 192 270 (right) 503 192 271 (left)	503 193 538 (right) 503 193 539 (left)	503 191 481 (right) 503 191 483 (left)
Grand Touring SE	503 193 159 (right) 503 193 158 (left)	503 192 270 (right) 503 192 271 (left)	503 193 538 (right) 503 193 539 (left)
MX Z Series			
MX Z Sport	N.A.	503 191 612 (right) 503 191 613 (left)	503 191 614 (right) 503 191 615 (left)
MX Z XRS EUR	503 193 158 503 193 159	503 192 270 503 192 271	503 191 247 503 191 249
MX Z X 600 HO E-TEC/800R E-TEC / X TNT E-TEC	503 192 080 (right) 503 192 081 (left)	503 193 159 (right) 503 193 158 (left)	503 192 270 (right) 503 192 271 (left)
MX Z X 1200 4-TEC / X TNT 1200 / 900 ACE	503 192 080 (right) 503 192 081 (left)	503 193 159 (right) 503 193 158 (left)	503 192 270 (right) 503 192 271 (left)
MX Z X-RS 600 HO E-TEC/800R E-TEC	503 192 080 (right) 503 192 081 (left)	503 193 159 (right) 503 193 158 (left)	503 192 270 (right) 503 192 271 (left)
Renegade Series			
Renegade Sport 550F/600 ACE	N.A.	503 192 080 (right) 503 192 081 (left)	503 192 270 (right) 503 192 271 (left)
All Renegade Adrenaline / Backcountry / Backcountry X E-TEC/ 1200	503 192 080 503 192 081	503 193 159 (right) 503 193 158 (left)	503 192 270 (right) 503 192 271 (left)
SUMMIT Series			
All Summit	503 190 712 (right) 503 190 714 (left)	503 193 002 (right) 503 193 003 (left)	503 191 287 (right) 503 191 289 (left)

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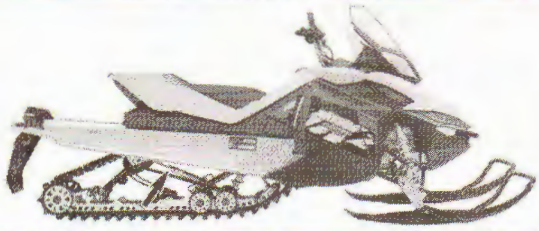
REAR SPRINGS



MODEL	(PART NUMBER) SOFTER	(PART NUMBER) STANDARD	(PART NUMBER) HARDER
Expedition Series			
Expedition Sport 550F/600 ACE / 900 ACE	503 191 287 (right) 503 191 289 (left)	503 192 270 (right) 503 192 271 (left)	503 191 247 (right) 503 191 249 (left)
Expedition LE 600 HO E-TEC / Expedition SE 600 HO E-TEC	N.A.	503 192 377 (right) 503 192 378 (left)	N.A.
Expedition LE 1200 4-TEC / Expedition SE 1200 4-TEC	N.A.	503 192 377 (right) 503 192 378 (left)	N.A.
Skandic Series			
Skandic WT 550F/600 ACE/600 HO E-TEC	N.A.	503 192 377 (right) 503 192 378 (left)	503 192 910 (right) 503 192 911 (left)
Skandic SWT 600 ACE/600 HO E-TEC	503 192 377 (right) 503 192 378 (left)	503 192 910 (right) 503 192 911 (left)	N.A.
Tundra Sport 550F/600 ACE	N.A.	503 192 080 (right) 503 192 081 (left)	503 192 270 (right) 503 192 271 (left)
Tundra LT /Tundra Xtreme	503 192 080 (right) 503 192 081 (left)	503 192 136 (right) 503 192 137 (left)	503 192 270 (right) 503 192 271 (left)

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SECTION 3: SPRING SPECIFICATIONS

Coil Springs Specifications

(PART NUMBER)	TYPE	SPRING RATE (LB/IN) ±10	FREE LENGTH (MM) ±3	WIRE DIAMETER (MM) ±.05	COLOR CODE	COLOR OF SPRING
503 190 471	R	215	64	6.35	WH/WH/YL	BLACK
503 190 476	R	210	64.6	6.65	BL/SI/YL	BLACK
503 190 478	S	240	178	9.19	GN/SI/YL	BLACK
503 190 546	2	125	250	8.25	RD/WH/RD	BLACK
503 190 854	R	325	189	8.84	SI/WH/YL	BLACK
503 190 982	R	319	72	7.14	GD/YL/RD	BLACK
503 191 135	T	135	242	7.92	SI/YL/RD	BLACK
503 191 327	T	275	184	8.25	GD/BL/WH	BLACK
503 191 329	T	110	242	6.95	GD/RD/RD	BLACK
503 191 343	R	223	56	5.94	SI/RD/RD	BLACK
503 191 347	Y	125	264	8.25	SI/BL/RD	BLACK
503 191 356	T	105	242	6.65	SI/WH/BL	BLACK
503 191 476	T	90	242	6.65	GD/RD/GN	BLACK
503 191 488	T	135	201	7.14	GD/WH/GN	BLACK
503 191 879	T	135	242	7.49	detail "A" WH/WH/OR	BLACK
503 191 880	T	180	242	8.25	detail "A"	BLACK
503 191 882	T	150	242	7.77	detail "A"	BLACK
503 192 064	V	175	210	8.25	detail "A"	BLACK
503 192 217	V	135	205	7.49	detail "A"	BLACK
503 192 279	T	275	184	8.71	detail "A"	BLACK
503 192 724	S	275	155	9.19	detail "A"	BLACK
503 192 744	R	222	59	6.17	detail "A"	BLACK
503 193 065	S	190	162	8.25	detail "A"	BLACK
503 193 066	R	197	52	5.94	detail "A"	BLACK
503 193 067	S	190	189	7.92	detail "A"	BLACK
503 193 068	R	175	51	5.54	detail "A"	BLACK
503 193 160	V	275	189	9.19	detail "A"	BLACK
▶503 193 480	R	175	51	5.54	=	◀
505 071 461	T	75	280	7.49	GN/SI/BK	YELLOW
505 071 492	T	105	280	7.77	WH/RD/GN	YELLOW
505 071 642	Y	75	280	7.49	GN/GN/GN	YELLOW
505 071 647	Y	105	280	7.77	WH/RD/RD	YELLOW
505 071 830	T	125	280	7.77	RD/SI/RD	YELLOW
505 071 833	T	90	280	7.77	WH/WH/BL	YELLOW
505 071 838	T	105	280	7.77	WH/SI/BK	RED
505 071 840	T	105	280	7.77	SI/GD/BK	VIPER RED
505 071 842	T	90	280	7.77	WH/GD/RD	FULL MOON
505 071 844	T	75	280	7.49	WH/WH/GN	SATURN ORANGE
505 071 845	T	75	280	7.49	GD/GD/RD	FULL MOON

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(PART NUMBER)	TYPE	SPRING RATE (LB/IN) ±10	FREE LENGTH (MM) ±3	WIRE DIAMETER (MM) ±.05	COLOR CODE	COLOR OF SPRING
505 071 849	T	105	280	7.77	GD/WH/RD	FULL MOON
505 072 022	T	75	280	7.14	SI/GN/BL	RED
505 072 023	Y	75	280	7.14	SI/BL/GN	RED
505 072 024	T	75	280	7.14	WH/YL/GN	FULL MOON
▶505 072 119	I	90	280	7.77	WH/SI/BL	◀
505 072 219	T	90	280	7.77	GD/BL/GN	RED
505 072 230	Y	90	280	7.47	WH/SI/GD	YELLOW
505 072 233	Y	80	280	7.14	SI/SI/GN	YELLOW
505 072 319	T	80	280	7.14	SI/BD/GN	YELLOW
505 072 413	T	80	280	7.14	GD/WH/GD	BLACK
505 072 414	T	80	280	7.14	WH/BK/GD	FULL MOON
505 072 430	Y	75	280	7.14	SI/GN/WH	YELLOW
505 072 431	T	75	208	7.14	SI/SI/WH	YELLOW
505 072 514	Y	120	280	8.25	detail "A"	YELLOW
505 072 515	T	120	280	8.25	detail "A"	YELLOW
505 072 518	T	120	280	8.25	detail "A"	FULL MOON
505 072 526	Y	80	280	7.14	detail "A"	BLACK
505 072 528	Y	120	280	8.25	detail "A"	BLACK
505 072 530	Y	75	280	7.14	detail "A"	ROYAL BLUE
505 072 532	Y	75	280	7.14	detail "A"	BLACK
505 072 537	Y	90	280	7.49	detail "A"	BLACK
505 072 557	T	70	263	5.94	detail "A"	BLACK
505 072 667	T	80	300	7.49	–	YELLOW
505 072 668	T	80	300	7.49	–	FULL MOON
505 072 726	Z	75	280	7.14	detail "A"	BLACK
505 072 735	Y	120	280	8.25	detail "A"	VIPER RED
505 072 739	Y	90	280	7.49	detail "A"	VIPER RED
505 072 741	Z	90	280	7.49	detail "A"	BLACK
505 072 745	T	60	263	6.17	detail "A"	BLACK
505 072 760	V	90	280	7.49	detail "A"	BLACK
505 072 761	Z	120	280	8.25	detail "A"	BLACK
505 072 763	T	80	300	7.49	detail "A"	BLACK
▶505 072 767	I	105	280	7.92	–	◀
505 072 791	T	90	300	7.92	detail "A"	YELLOW
505 072 792	T	75	280	7.14	detail "A"	BLACK
505 072 800	Z	95	280	7.49	detail "A"	BLACK
505 072 846	Z	80	280	7.14	detail "A"	BLACK
505 072 897	T	90	300	7.92	detail "A"	FULL MOON
505 072 916	T	90	300	7.92	detail "A"	VIPER RED
505 072 953	Z	90	280	7.49	detail "A"	YELLOW
505 072 956	Z	120	280	8.25	detail "A"	YELLOW
505 072 963	Y	80	280	7.14	detail "A"	VIPER RED
505 072 968	V	90	280	7.42	detail "A"	CASINO GOLD

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(PART NUMBER)	TYPE	SPRING RATE (LB/IN) ±10	FREE LENGTH (MM) ±3	WIRE DIAMETER (MM) ±.05	COLOR CDDE	COLOR OF SPRING
505 072 990	Z	120	280	8.25	detail "A"	VIPER RED
505 072 993	T	120	280	8.25	detail "A"	BLACK
505 073 067	Z	80	280	7.14	detail "A"	VIPER RED
505 073 071	V	75	280	7.14	detail "A"	CASINO GOLD
505 073 073	T	90	280	7.49	detail "A"	YELLOW
505 073 088	Z	90	280	7.49	detail "A"	VIPER RED
505 073 144	V	165	300	9.52	detail "A"	CASINO GOLD
505 073 204	T	88	266	6.65	detail "A"	BLACK
505 073 255	T	120	280	8.25	detail "A"	PURE MAGNESIUM
505 073 262	V	90	280	7.49	detail "A"	PODIUM BRONZE
505 073 265	T	90	280	7.92	detail "A"	BLACK
505 073 272	V	165	280	9.52	detail "A"	PODIUM BRONZE
505 073 315	V	105	280	7.92	detail "A"	BLACK
505 073 327	T	80	266	6,65	detail "A"	BLACK
505 073 332	Y	105	280	7,92	detail "A"	BLACK
505 073 521	T	105	300	8,25	detail "A"	FULL MOON

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Torsion Springs Specifications

Torsion Springs for SC-5M and rMotion Suspensions

(PART NUMBER)	WIRE DIAMETER (MM)	OPENING ANGLE ± 7°	COLOR CODE	COLOR OF SPRING	CONSTANT (N•MM / DEGREE)
503 190 712 (RIGHT) 503 190 714 (LEFT)	8.85 (SQUARE)	75°	BL/BL	BLACK	1.13
503 191 251 (Right) 503 191 253 (Left)	9.86 (square)	100°	WH/WH	BLACK	1.84
503 191 287 (Right) 503 191 289 (Left)	9.525 (square)	80°	GN/YL/YL	BLACK	1.44
503 191 358 (Right) 503 191 357 (Left)	9.0 (square)	80°	YL/RD/YL	BLACK	1.35
503 191 477 (Right) 503 191 479 (Left)	9.86 (square	80°	WH/RD	BLACK	1.66
503 191 481 (Right) 503 191 483 (Left)	11.0 x 9.25 (rectangular)	100°	WH/BL	BLACK	2.30
503 192 080 (Right) 503 192 081 (Left)	8.85 (square)	80°	detail "B"	BLACK	1.27
503 192 104 (Right) 503 192 105 (Left)	9.525 (square)	90°	detail "B"	BLACK	1.50
503 192 137 (Right) 503 192 136 (Left)	9.0 (square)	80°	detail "B"	BLACK	1.35
503 192 270 (Right) 503 192 271 (Left)	9.86 (square)	80°	detail "B"	BLACK	1.66
503 193 002 (Right) 503 193 003 (Left)	8.46 (square)	80°	detail "B"	BLACK	1.27
503 193 159 (Right) 503 193 158 (Left)	9.14 (square)	80°	detail "B"	BLACK	1.35
503 193 538 (Right) 503 193 539 (Left)	11.0 x 9,25 (Rectangular)	90°	detail "B"	BLACK	1.94
503 193 636 (Right) 503 193 637 (Left)	8.46 (square)	90°	detail "B"	BLACK	1,13

Torsion Springs for SC-5 Suspension

(PART NUMBER)	WIRE DIAMETER (MM)	OPENING ANGLE ± 7°	COLOR CODE	COLOR OF SPRING	CONSTANT (N•MM / DEGREE)
503 191 612 (Right) 503 191 613 (Left)	8.85 (square)	95°	GN/RD/YL	BLACK	1.28
503 191 614 (Right) 503 191 615 (Left)	9.53 (square)	100°	GN/BL/YL	BLACK	1.56

Torsion Springs for SC-5U Suspension

(PART NUMBER)	WIRE DIAMETER (MM)	OPENING ANGLE ± 7°	COLOR CODE	COLOR OF SPRING	CONSTANT (N•MM / DEGREE)
503 192 377 (Right) 503 192 378 (Left)	11 x 9.25 (rectangular)	75°	detail "B"	BLACK	1.92
503 192 910 (Right) 503 192 911 (Left)	11 x 11 (square)	75°	detail "B"	BLACK	2.45

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OPTIONAL SPRINGS 600RS MY2012-2013-2014

SKI	COLOR CODE	PN	Wire diameter (mm)	Free lenght (mm)
90 lbs/in	N/A	505 072 968	7,49	280
110 lbs/in	white/pink	486 900 125	8,25	270
135 lbs/in	white/yellow	486 900 123	8,84	285
145 lbs/in	N/A	505 072 687	9,20	290
Ti 145 lbs/in	white/gold	486 900 002	10,00	272
155 lbs/in	white/silver	486 900 124	9,20	290
165 lbs/in	(2012)spring gold	505 072 845	9,52	300
165 lbs/in	(2013)spring bronze	505 073 272	9,52	300
175 lbs/in	white/orange	486 900 174	9,52	290
185 lbs/in	**(2014) Black**	**505 073 537**	**9,98**	**305**
190 lbs/in	white/green	486 010 012	9,98	305

CENTER	COLOR CODE	PN	Wire diameter (mm)	Free lenght (mm)
222 lbs/in	N/A	503 192 744	6,17	59
350 lbs/in	N/A	503 192 725	6,95	56
732lbs/in	N/A	503 193 112	8,41	51
830 lbs/in	**(2014) N/A**	**503 193 751**	**8,71**	**52**
240 lbs/in	(2012) N/A	503 193 113	8,71	160
275 lbs/in	**(2013-14) N/A**	**503 192 724**	**9,19**	**155**
325 lbs/in	4 x silver	486 010 069	9,19	145

REAR	COLOR CODE	PN	Square Wire (mm)
1.28N.m/deg	green/red/yellow	503 191 612 RH	8,85
95°		503 191 613 LH	
1.33N.m/deg	yellow/yellow/yellow	503 191 186 RH	8,85
100°		503 191 188 LH	
1.56N.m/deg	green/blue/yellow	503 191 614 RH	9,525
100°		503 191 615 LH	
1.73N.m/deg	**green/green/yellow**	**503 191 616 RH**	**9,855**
100°		**503 191 617 LH**	
2.02N.m/deg	green/gold/yellow	503 191 892 RH	11
100°		503 191 893 LH	

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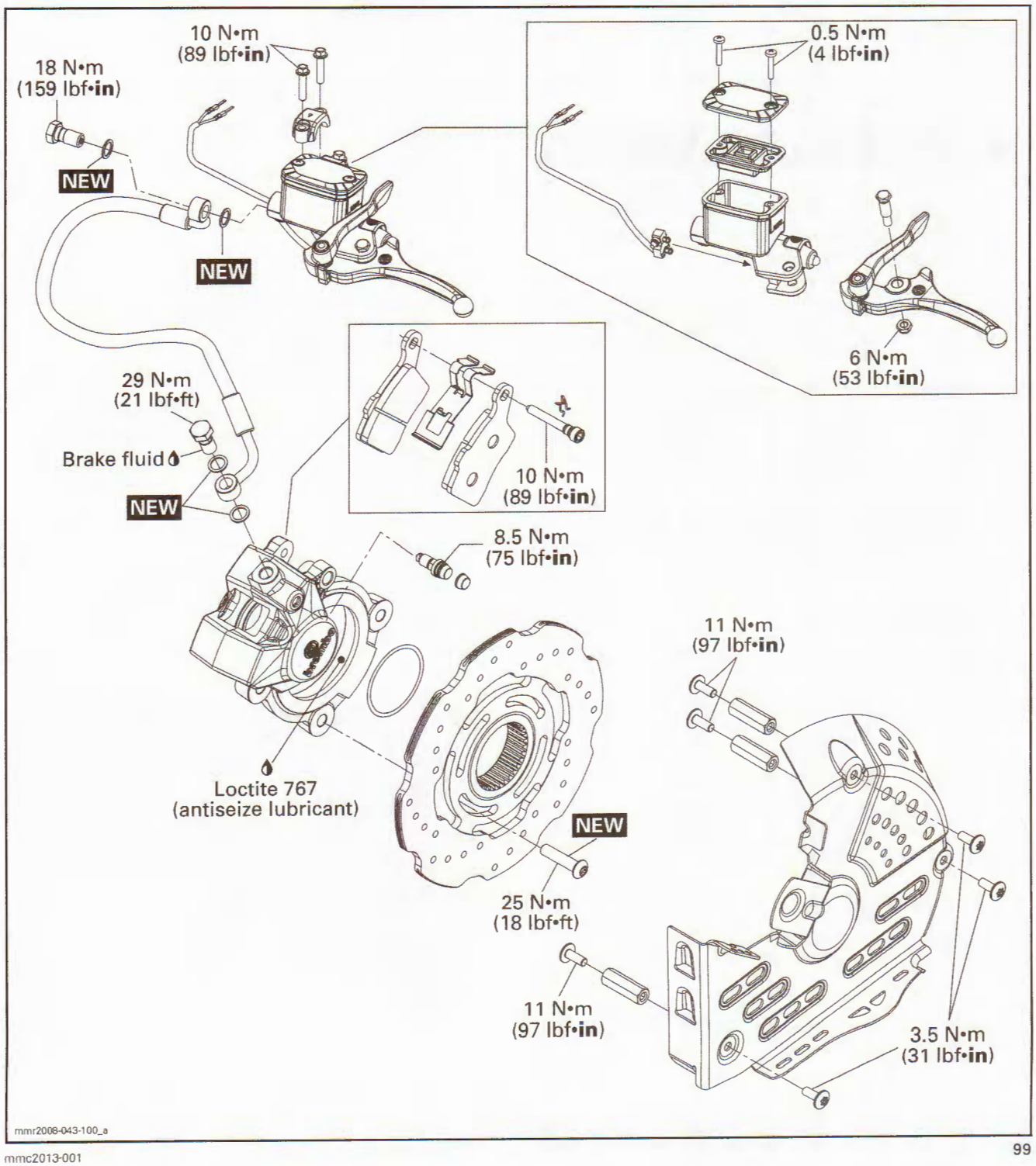
BRAKE

SERVICE PRODUCTS

Description	Part Number	Page
DOT 4 brake fluid GTLMA	293 600 131	100
Loctite 767 (antiseize lubricant)	293 800 070	103



GENERAL

During assembly/installation, use torque values and service products as in the exploded view.

Clean threads before applying a threadlocker. Refer to *SELF LOCKING FASTENERS* and *LOCTITE APPLICATION* at the beginning of this manual for complete procedure.

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to.
Locking devices (e.g.: locking tabs, elastic stop nuts, cotter pins, etc.) must be replaced with new ones.

⚠ WARNING

A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean contaminated disc with a high quality brake degreasing agent.

CAUTION: Avoid spilling brake fluid on plastic, rubber or painted parts. Protect these parts with a rag when servicing brake system.

CAUTION: To avoid serious damage to the brake system, use only DOT 4 brake fluid from a sealed container. Do not use brake fluid taken from old or already opened containers, nor mix different fluids for topping off.

CAUTION: Sealing washers must be discarded and replaced with NEW ones every time a Banjo fitting is unscrewed.

PROCEDURES

BRAKE FLUID

The brake fluid must be changed in accordance with the maintenance chart.

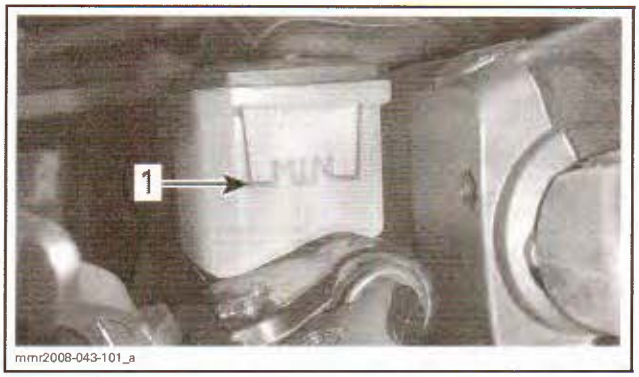
Recommended Brake Fluid

Always use brake fluid meeting the specification DOT 4 such as DOT 4 brake fluid GTLMA (P/N 293 600 131) sold by BRP.

Brake Fluid Level

With the vehicle on a level surface, position steering in straight ahead position to ensure reservoir is level.

Brake fluid must always be above the MIN line when brake lever is squeezed.

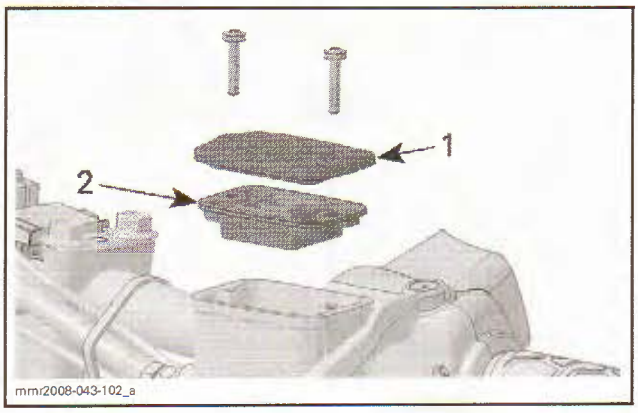


1. MINIMUM line

Brake Fluid Replacement

Draining

Remove reservoir cover with its diaphragm.

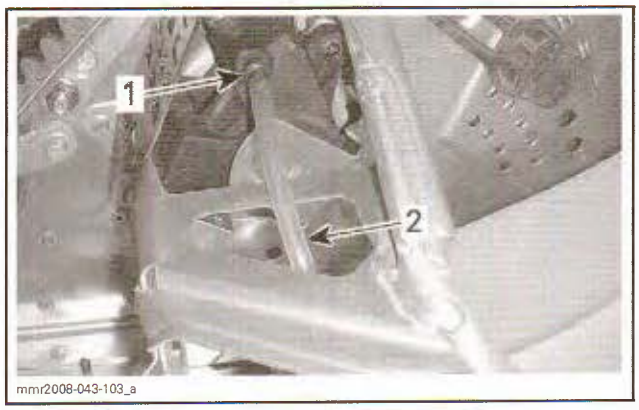


1. Reservoir cover
2. Diaphragm

Connect a clear hose to caliper bleeder.

Place the other end of hose in a container.

Loosen bleeder and pump brake lever until no more fluid flows out of bleeder.



1. Bleeder
2. Clear hose to catch used brake fluid

Filling and Bleeding

To fill brake circuit when it is empty do the following:

- Ensure reservoir cover is removed.
- Using a big syringe, push brake fluid slowly into the caliper.

- Continue to push brake fluid until reservoir is half full.
- Close bleeder.
- Add brake fluid into reservoir.
- Squeeze brake lever. It should be firm.

If so, tighten bleeder to 8.5 N•m (75 lbf•**in**) and install cover on reservoir.

If not, bleed brake circuit as per the following procedure:

- Install a clear hose on bleeder.
- Pump up circuit pressure with brake lever until lever resistance is felt.
- Squeeze brake lever and open bleeder. When lever touches the handlebar, do not release lever and close bleeder.
- Release brake lever slowly.
- Repeat the procedure until no more air bubbles appear in hose and lever is firm.

NOTE: Check fluid level often to prevent air from being pumped into the circuit.

If the lever is still spongy, push back brake pads and squeeze brake lever before repeating the procedure.

- Repeat until brake lever is firm.
- Tighten bleeder to 8.5 N•m (75 lbf•**in**).
- Install diaphragm and cover on reservoir.

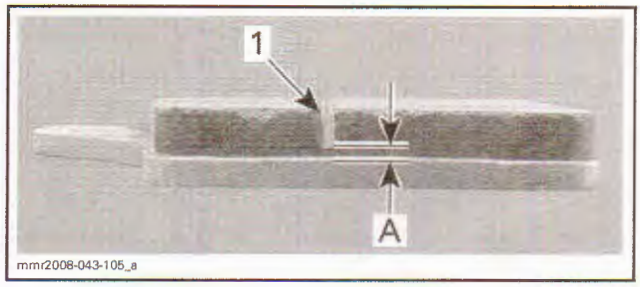
BRAKE PADS

Brake Pads Inspection

Measure brake pad lining thickness.

SERVICE LIMIT	
Brake pad thickness	1 mm (.04 in)

CAUTION: Brake pads must always be replaced in pairs.

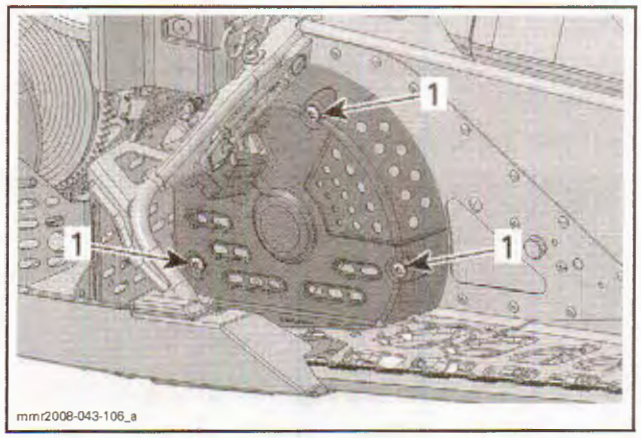


1. Groove on pad lining
A. Brake pad minimum thickness 1 mm (1/32 in)

Inspect brake disc at the same time.

Brake Pads Replacement

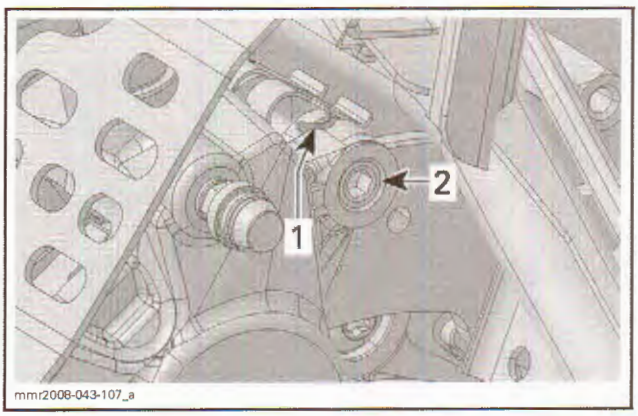
Remove the disc brake protective cover.



1. Screws

Remove the clip securing pad pin.

Unscrew and remove the pad pin.

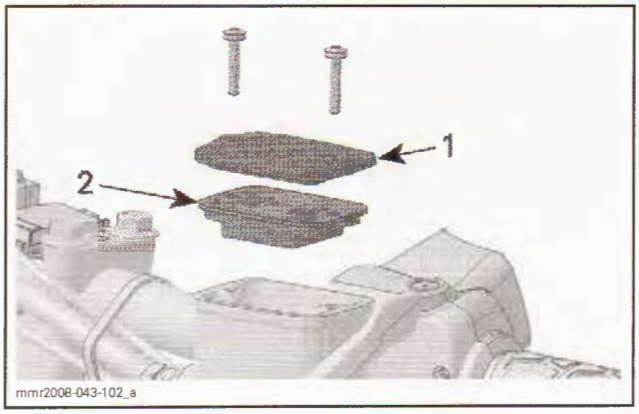


1. Clip
2. Brake pad pin

NOTE: 2010 600 RS pad :(P/N 507 032 489) hard compound.

NOTE: 2010 XP XR pad: (P/N 507 032 473) soft compound.

Remove reservoir cover with its diaphragm.



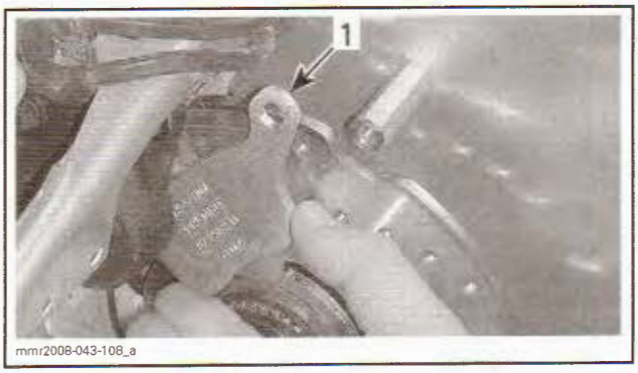
1. Reservoir cover
2. Diaphragm

Using a flat screwdriver, depress pistons into their bores.

CAUTION: Pay attention to avoid scratching brake disc.

Remove brake pads.

Install **NEW** brake pads with tabs upward.



1. Brake pad tab

Install brake pad pin.

Tighten pin to 10 N•m (89 lbf•**in**).

Install clip on brake pad pin. If the clip seems loose, replace it with a **NEW** one.

Install the reservoir cover.

Depress brake lever to seat brake pads against disc brake.

Install the disc brake protective cover.

Ride the vehicle a few minutes to make sure the repair is successful.

CALIPER

Caliper Removal

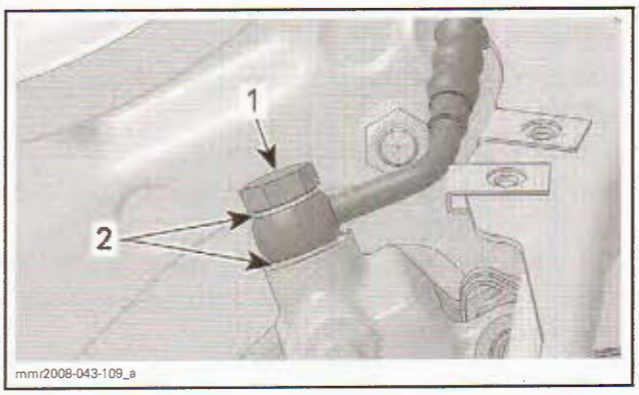
Open RH side panel.

Remove drive belt guard support. Refer to *DRIVE BELT* section.

NOTE: If the caliper is not replaced, omit the next steps concerning the brake system draining and brake hose removal.

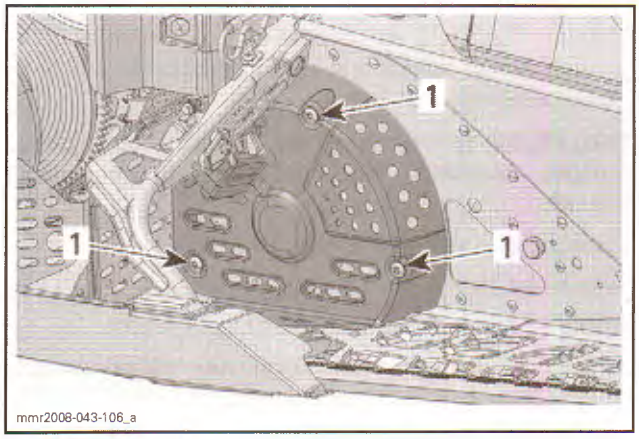
Drain the brake system, refer to *BRAKE FLUID REPLACEMENT* in this section.

Remove the Banjo fitting and discard the sealing washers.



1. Banjo fitting
2. Sealing washers

Remove the brake disc protective cover.

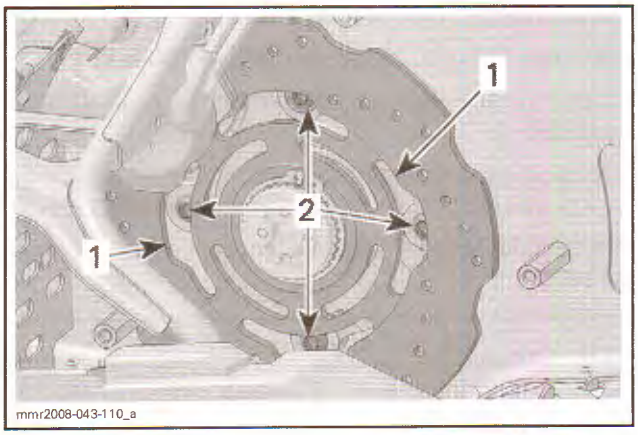


1. Screws

Lift the rear of vehicle and release track tension completely.

Turn driven pulley to align brake disc slots with caliper bracket screws.

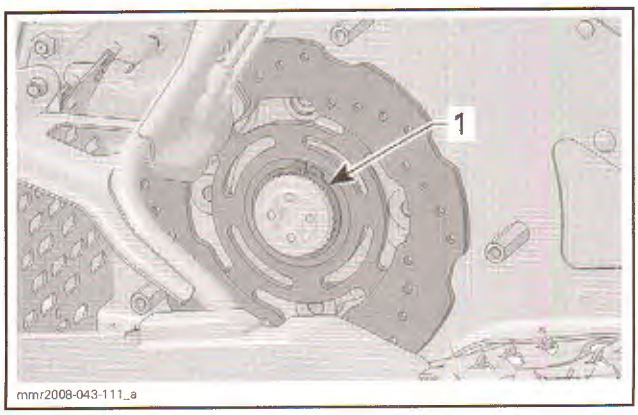
Remove caliper screws (4) behind disc brake.



1. Brake disc slots
2. Caliper screws behind disc brake

Remove *BRAKE PADS*, see procedure in this section.

Remove the circlip securing disc brake to drive shaft.



1. Brake disc circlip

Pull brake disc and caliper.

When brake disc is out of splines, remove it.

Remove caliper.

CAUTION: Do not let caliper hangs by the hose and do not stretch or twist the hose.

Caliper Inspection

Check pistons for:
- Rust
- Scratches
- Leaks.

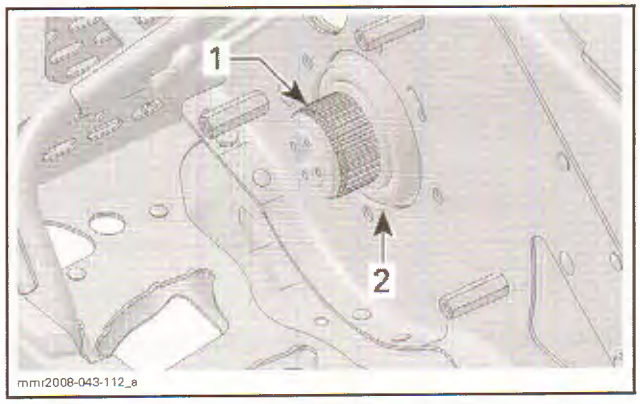
Check caliper bracket for:
- Cracks
- Rust on bearing shoulder (clean with a steel wool).

Replace caliper if required.

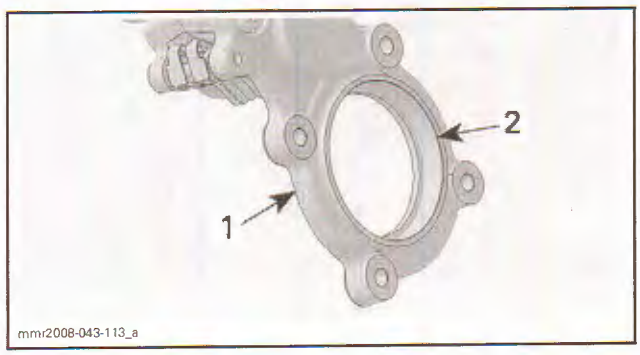
Caliper Installation

Using a small piece of wood, push both pistons into their bores.

Apply Loctite 767 (antiseize lubricant) (P/N 293 800 070) on drive shaft splines and on caliper bracket bearing shoulder.

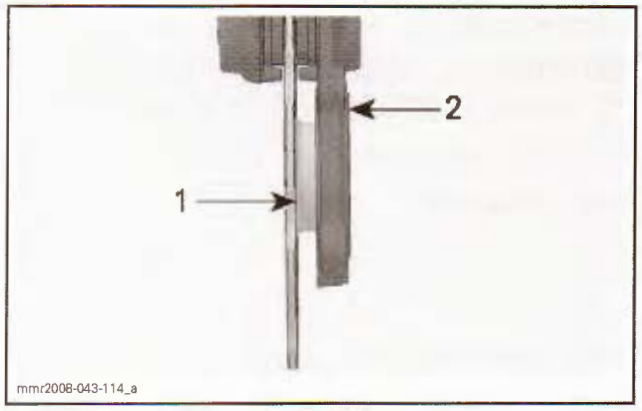


1. Drive shaft splines
2. Drive shaft bearing



1. Caliper bracket
2. Bearing shoulder

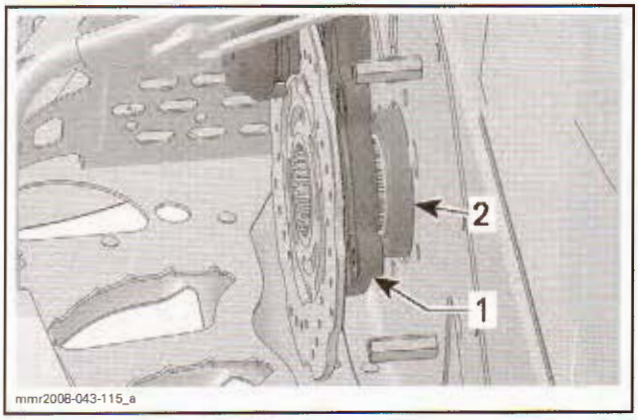
Insert brake disc into caliper. The brake disc collar must pointed toward the frame.



1. Brake disc collar
2. Caliper bracket

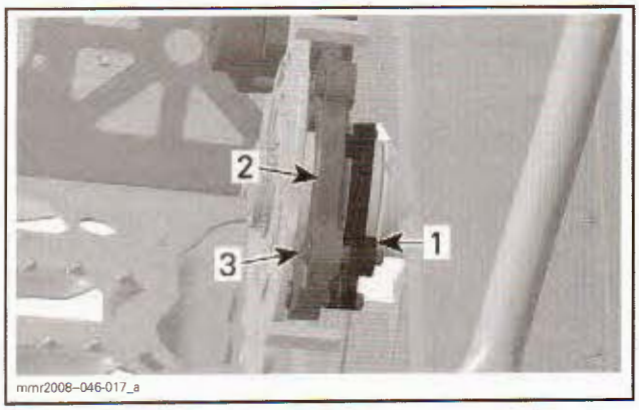
Align brake disc splines with drive shaft splines and push the disc on the shaft.

Push the caliper bracket over drive shaft bearing.



1. Caliper bracket
2. Drive shaft bearing

Align caliper bracket holes with bearing flange holes and install caliper screws.



1. Bearing flange (inside frame)
2. Caliper bracket
3. Caliper screws

HAND TORQUE each caliper bracket screws in a criss cross sequence until bracket is correctly positioned against frame.

CAUTION: Never use an air tool to tighten caliper screws. The caliper bracket could cracked.

Torque screws to 25 N•m (18 lbf•ft).

Install the brake disc circlip.

Apply brake fluid on Banjo fitting threads.

Install the Banjo fitting with two **NEW** sealing washers.

Torque Banjo fitting to 29 N•m (21 lbf•ft).

Fill and bleed the brake system. Refer to *BRAKE FLUID REPLACEMENT* in this section.

BRAKE DISC

Brake Disc Inspection

Prior Brake Disc Removal

Remove the disc brake protective cover.

Check for scoring, cracking or bending, replace as required.

Measure brake disc thickness. If the brake disc is out of specification, replace it with a new one.

CAUTION: Brake disc should never be machined.

BRAKE DISC THICKNESS	
Minimum thickness	4.5 mm (.177 in)

After Brake Disc Removal

Check brake disc splines and drive shaft splines for wear or other damages. Replace defective parts.

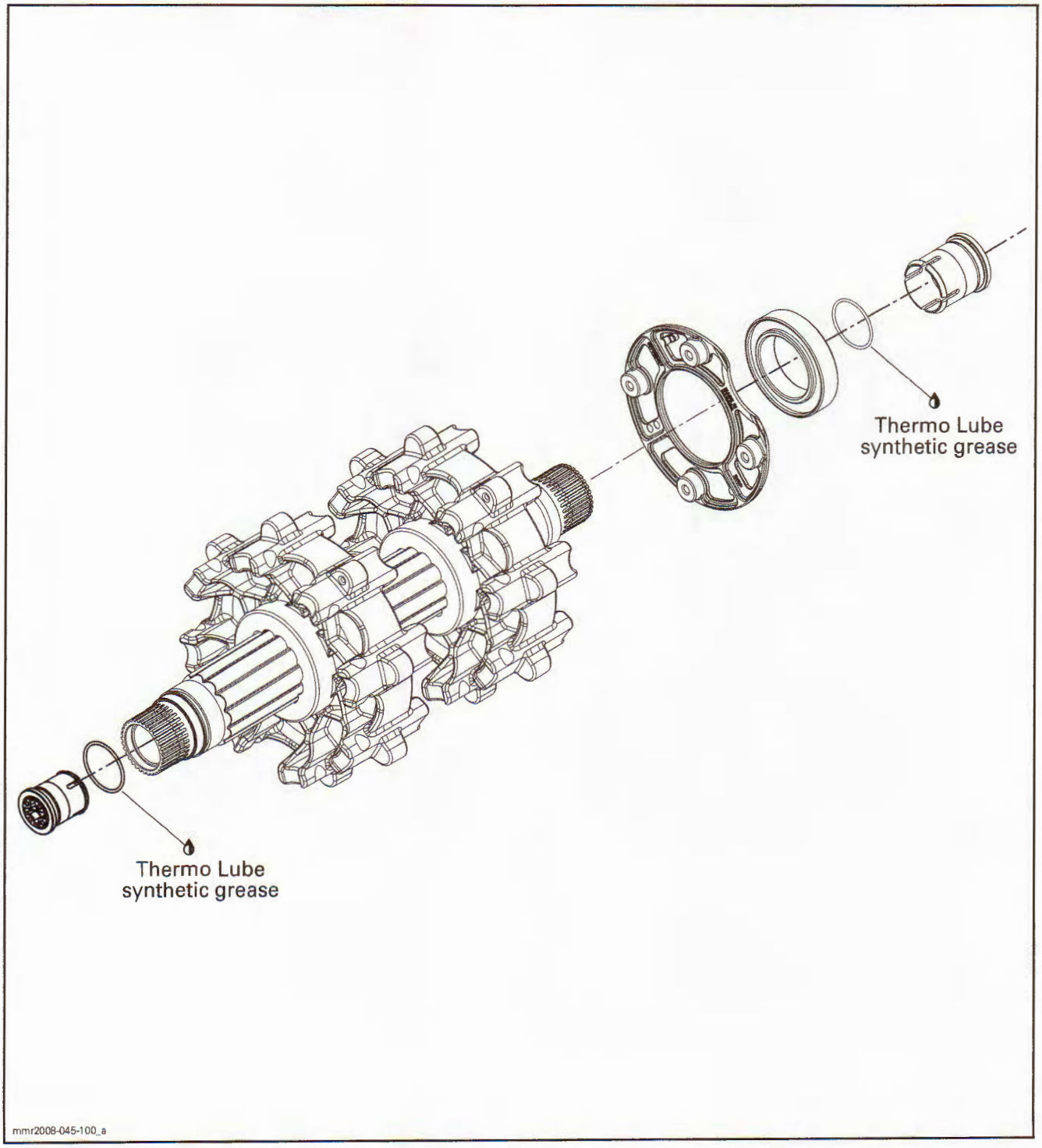
Brake Disc Removal and Installation

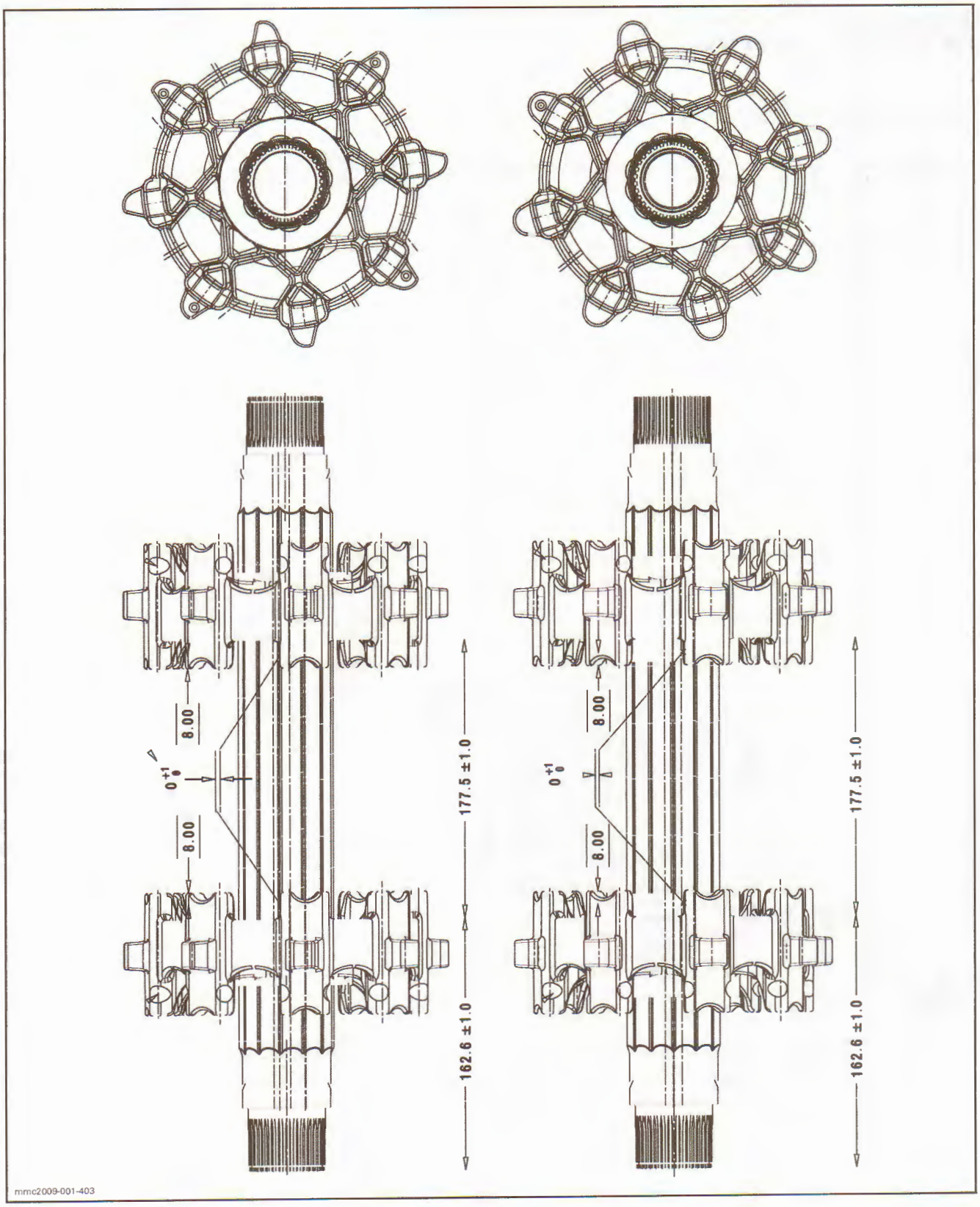
Use the same procedure as for the caliper.

DRIVE AXLE

SERVICE PRODUCTS

Description	Part Number	Page
Thermo Lube synthetic grease	219 700 417	109




8.00
0 +1 0
8.00
177.5 ±1.0
162.6 ±1.0
8.00
0 +1 0
8.00
177.5 ±1.0
162.6 ±1.0
mmc2009-001-403

GENERAL

During assembly/installation, use torque values and service products as in the exploded view.

Clean threads before applying a threadlocker. Refer to *SELF LOCKING FASTENERS* and *LOCTITE APPLICATION* at the beginning of this manual for complete procedure.

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to.
Locking devices (e.g.: locking tabs, elastic stop nuts, cotter pins, etc.) must be replaced with new ones.

PROCEDURES

DRIVE AXLE

Drive Axle Removal

Remove the rear suspension. Refer to *REAR SUSPENSION* section.

On LH Side

Remove the caliper. Refer to *BRAKE* section.

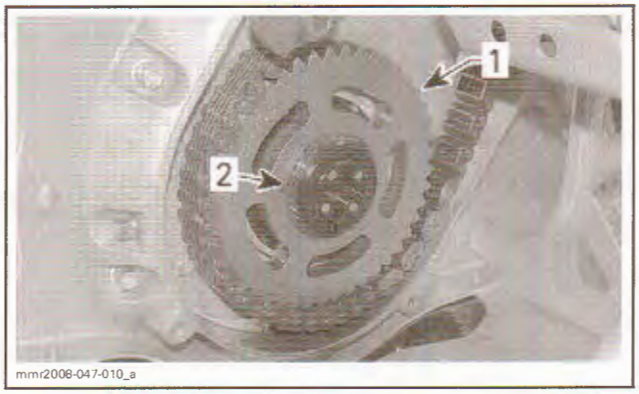
On RH Side

Remove the chaincase cover. Refer to *CHAINCASE* section.

Release tension from drive chain by unscrewing the tensioner adjustment screw.

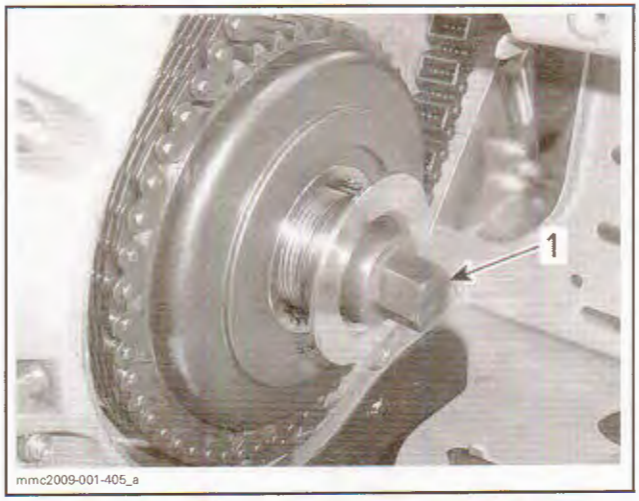
1. Tensioner adjustment screw

Remove the lower sprocket circlip.



1. Lower sprocket
2. Circlip

Remove lower gear and drive chain.

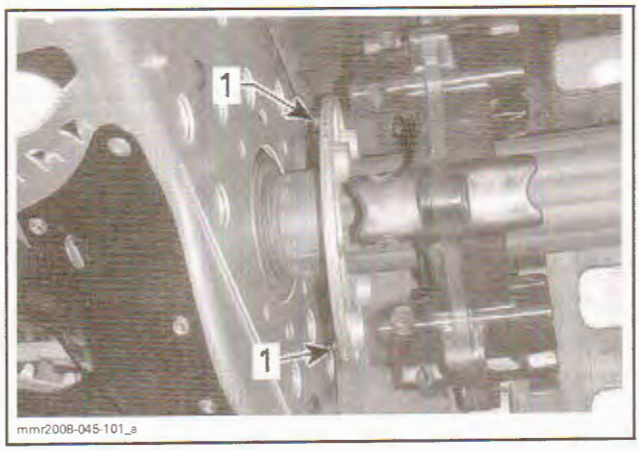


1. Slip gear and removing tool P/N 529 036 122 for 600 RS only

Torque to 45 55 N.m 33 40 lbf.ft

Under Frame

Turn the LH bearing flange counterclockwise to unlock it from frame.



1. Bearing flange locking tabs

Release drive axle sprockets from track and at the same time, push the drive axle toward the **LEFT** side.

Move the drive axle towards the right side to remove it from vehicle.

Drive Axle Inspection

Check if bearing turns smoothly and freely. Replace bearing if necessary.

Check if bearing seals are not damaged. Replace bearing if necessary.

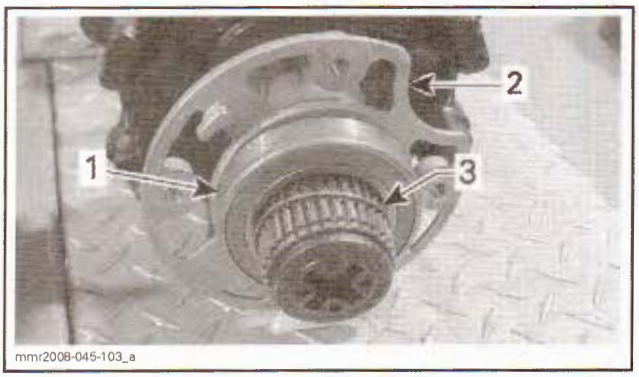
Check if the bearing flange is cracked, bent or otherwise damaged. Replace it if required.

Replace drive axle if one of the following situations is detected:

- Cracked, worn or damaged drive axle
- Worn or damaged drive axle splines
- Worn or damaged sprockets
- Worn bearing journal.

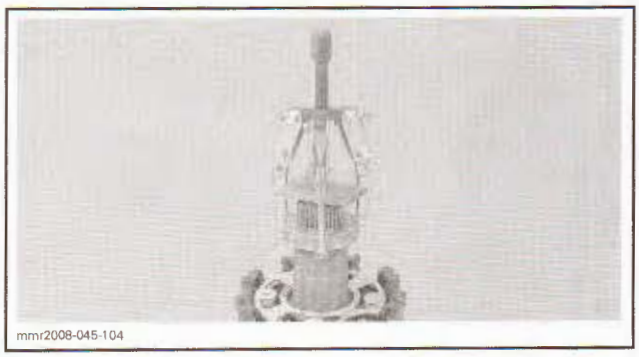
Drive Axle Bearing Removal

Remove the O ring.



1. Drive axle bearing
2. Bearing flange
3. O ring

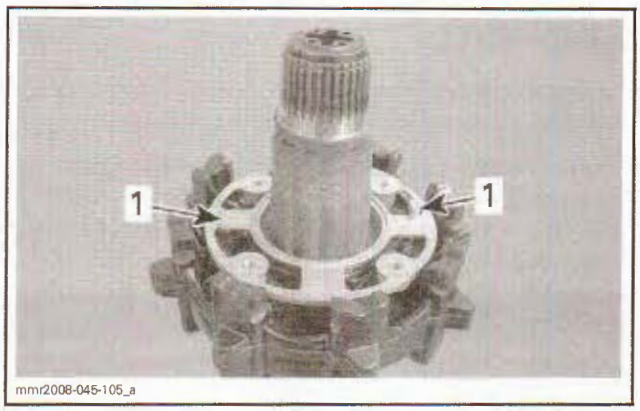
Using a puller, remove the drive axle bearing.



Remove the bearing flange.

Drive Axle Bearing Installation

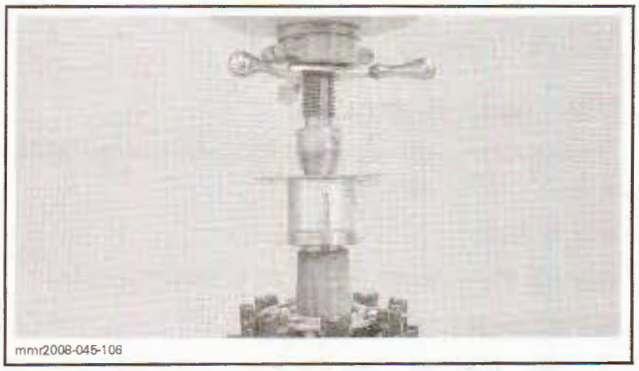
Install bearing flange on drive axle.



1. Locking tabs outwards

Using a press and a suitable pipe, push the bearing.

CAUTION: Always push the bearing by inner race.

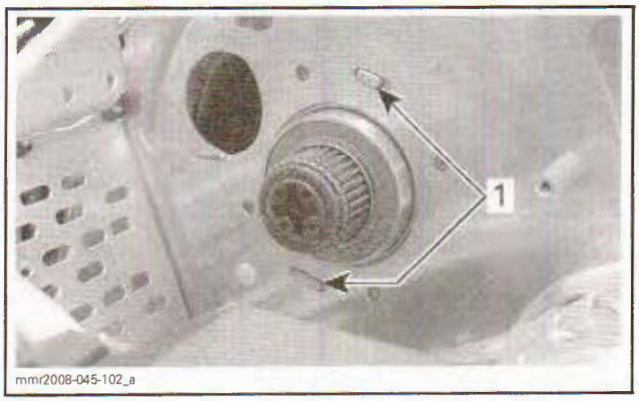


Drive Axle Installation

The installation is the reverse of the removal procedure. However, pay attention to the following.

Install drive axle then lock the bearing flange on frame.

NOTE: Ensure bearing flange is properly locked. Tabs must be properly inserted in frame.



VIEW FROM OUTSIDE FRAME
1. Bearing flange locking tabs

To install the caliper and the disc brake, refer to *BRAKE* section for the specific procedure.

Install all other removed parts. Refer to the appropriate sections.

MAGNETIC CAP

Magnetic Cap Removal

Remove brake disc protective cover. Refer to *BRAKE* section.

Remove the chaincase cover. Refer to *CHAINCASE* section.

Using two screwdrivers or pliers, pry or pull the magnetic cap out of drive axle end.

Discard the magnetic cap.

Magnetic Cap Installation

Apply Thermo Lube synthetic grease (P/N 219 700 417) on O ring.

Insert the magnetic cap into drive axle.

Install all other removed parts.

TRACK

SERVICE TOOLS

Description	Part Number	Page
belt tension tester	414 348 200	112
narrow cleat installer	529 036 044	111

TRACK

Track Inspection

Visually inspect track for:
- Cuts and abnormal wear
- Broken rods
- Broken or missing track cleats
- Perforations in the track
- Tears in the track (particularly around traction product holes)
- Lugs that are broken or torn off, exposing portion of rods
- Delamination of the rubber
- Broken studs
- Bent studs
- Studs that are torn off the track
- Missing track guide(s).

If track is damaged or rods are broken, replace track. For damaged or missing cleats, replace by new ones.

⚠ WARNING

Do not operate a snowmobile with a cut, torn or damaged track.

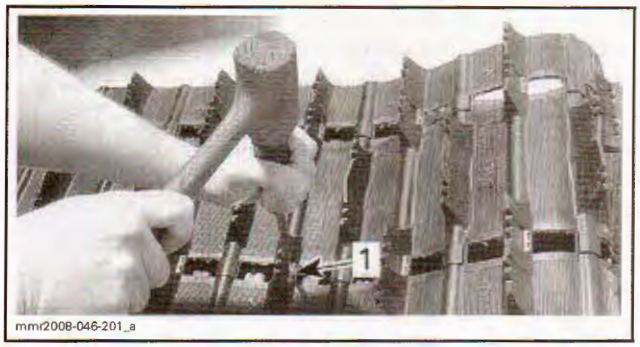
Track Cleat Replacement

Raise rear of vehicle off the ground.

Lift snow guard.

Rotate track to expose a cleat to be replaced.

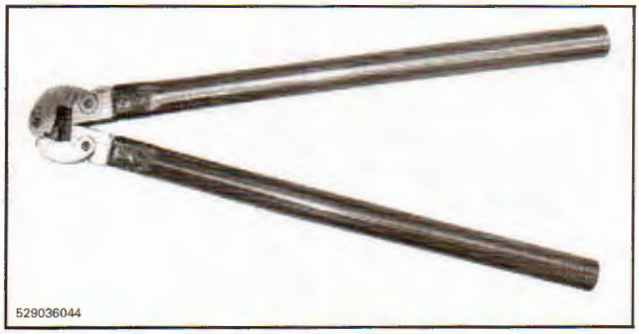
Remove cleat from track using plastic hammer and a big screwdriver.



TYPICAL
1. Cleat

Place new cleat in position on the track.

Secure cleat using the narrow cleat installer (P/N 529 036 044).



Bend cleat and push tabs into rubber.

TYPICAL
1. Narrow cleat installer

Reopen narrow cleat installer.

Position cleat tabs on open end of tool.

Squeeze tabs until they are indented in rubber.

Track Removal

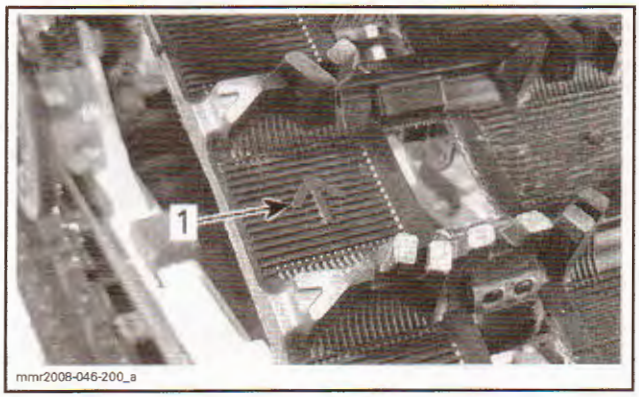
Remove rear suspension from vehicle. Refer to *REAR SUSPENSION.*

Remove track from rear suspension.

Track Installation

Reverse the removal procedure.

NOTE: When installing the track, respect rotation direction indicated by an arrow on track thread.



1. Arrow pointing forwards

Track Adjustment 600 RS

Track tension and alignment are interrelated. Do not adjust one without checking the other. Track tension procedure must be carried out prior to track alignment.

Tension

NOTE: After track adjustment, ride the snowmobile in snow about 15 to 20 minutes and recheck track tension.

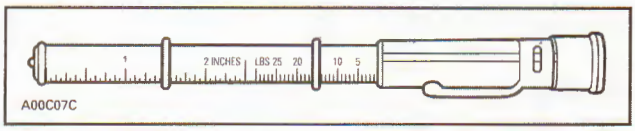
Lift snowmobile by a rope, chain or lift strap hooked to rear bumper.

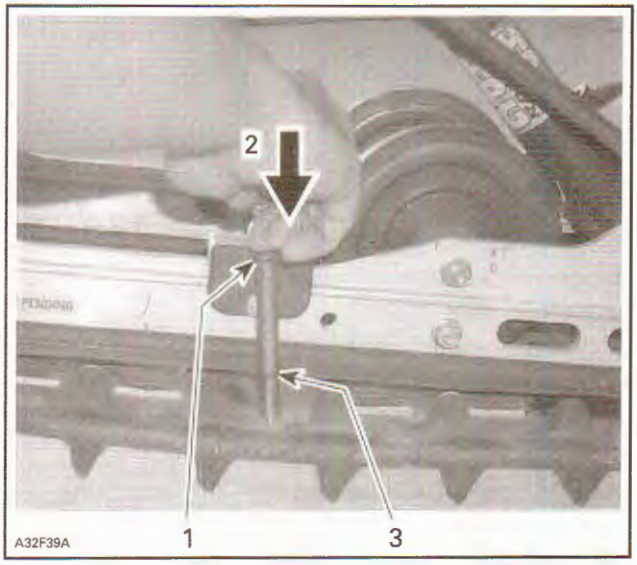
Allow the rear suspension to fully extend and check gap halfway between front and rear idler wheels.

Measure between slider shoe bottom and inside of track. The gap should be as given in the following table.

TRACK ADJUSTMENT	
Track adjustment force	7.3 kgf (16 lbf)
Track deflection	30 to 35 mm (1.181 to 1.378 in)

The belt tension tester (P/N 414 348 200) may be used to measure deflection as well as force applied.





1. Tool top O ring positioned at 7.3 kgf (16 lbf)
2. Apply pressure on tool until it contacts the upper O ring
3. Measured track deflection

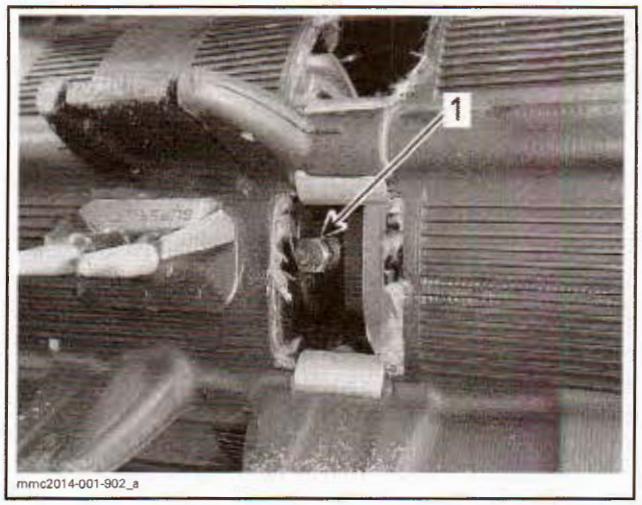
CAUTION: Too much tension will result in power loss and excessive stresses on suspension components.

To adjust tension, do the following:

- Lift rear of vehicle and support it off the ground.

1. Loose the hexagon nut only.

- Loose the hexagon nut only.
- Unscrew and remove rear axle screws (one each side).



1. Adjustment screw

- Tighten or loosen both adjustment screws to increase or decrease track tension.

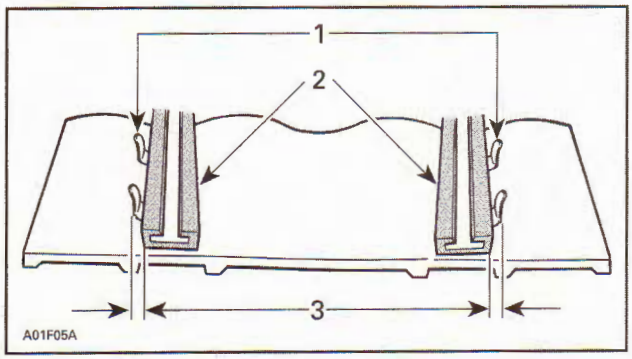
Alignment

⚠ WARNING

Before checking track alignment, ensure that the track is free of all particles which could be thrown out while track is rotating. Keep hands, tools, feet and clothing clear of track. Ensure no one is standing in close proximity to the vehicle. Never rotate at high speed.

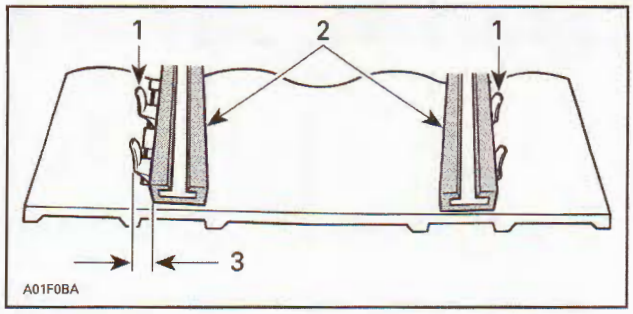
Start the engine and accelerate slightly so that track barely turns. This must be done in a short period of time (1 to 2 minutes).

Check that the track is well centered; equal distance on both sides between edges of track guides and slider shoes.



1. Guides
2. Slider shoes
3. Equal distance

To correct, stop engine, loosen rear wheel screws, then tighten the adjustment screw on side where the slider shoe is the farthest from the track insert guides.



1. Guides
2. Slider shoes
3. Tighten on this side

Restart engine, rotate track slowly and recheck alignment.

If the satisfactory alignment is achieved, then tighten the idler wheel retaining screws to 54 N•m (40 lbf•ft).

Reinstall the wheel caps.

TRACTION ENHANCING PRODUCTS (STUDS)

Important Safety Rules

All REV XP tracks use special single ply of fabric track to reduce weight and rolling resistance. The conventional track design is a 2 layers of fabric and one layer of high strength tensile cord. The new REV XP tracks design is a single layer of fabric and one layer of tensile cord. This results in a thinner track and if studded, absolutely requires the use of the 286 Phantom series designed studs.

NOTE: Make sure to check with your race association on studding specifications and rules on traction control.

⚠ WARNING

REV XP platform require special studs. Use only the 286 phantom series studs and support plates on the REV XP tracks. The use of other kinds of studs on REV XP tracks may cause risks of injuries.

⚠ WARNING

Installing an incorrect number of studs or an improper installation could reduce the track life and possibly resulting in serious injury or death.

⚠ WARNING

Never stud a track that has not been approved for studs. Installing studs on an unapproved track could increase the risk of the track tearing or severing, possibly resulting in serious injury or death. Approved tracks can be identified by a stud symbol molded into the track surface.
Studs should only be installed in the locations indicated by molded bulges in the track surface.
Never stud a track with a profile of 35 mm (1.375 in) or more.
The maximum allowable stud penetration range is 6.4 to 9.5 mm (1/4 to 3/8 in).
The number of studs installed must match the number of molded bulges in the track.
Strictly adhere to the specified tightening torque.

⚠ WARNING

To prevent serious injury to individuals near the snowmobile:
- **NEVER stand behind or near a moving track.**
- **ALWAYS use a wide base snowmobile stand with a rear deflector panel.**
- **When the track is raised off the ground, only run it at lowest possible speed.**

Centrifugal force could cause debris, damaged or loose studs, pieces of torn track, or an entire severed track to be violently thrown backwards out of the tunnel with tremendous force, possibly resulting in the loss of a leg or other serious injury.

Effects of Studding on the Life of the Snowmobile

The use of traction enhancing products can increase the load and the stress on certain snowmobile components, as well as the vibration level. This can cause premature wear on parts such as belts, brake lining, bearings, chain, and chaincase sprockets, and shorten track life. For this reason, it is even more important to follow the detailed maintenance program given in the *MAINTENANCE CHART.*

Studs can also cause serious damage to the snowmobile if it is not equipped with the tunnel protectors designed for the particular model. Damage to the electrical wiring or perforation of the heat exchangers are potential hazards, that could cause the engine to overheat and be severely damaged.

Studs and Track Inspection

A visual inspection of the track should be performed before each use. Refer to *TRACK INSPECTION.*

Replace broken or damaged studs immediately. If the track shows signs of deterioration, it must be replaced immediately. In doubt, replace the track.

⚠ WARNING

Riding with a damaged track or studs could lead to loss of control, resulting in a risk of serious injury or death.

Stud Installation Tables

Use the following table for appropriate size and quantity of studs.

APPROVED STUDS ACCORDING TO TRACK LUG HEIGHT		
LUG HEIGHT	STUD SIZE	QTY OF STUDS (120" TRACK)
1.000"	1.075"	84

Use the following table for appropriate tunnel protector kits.

TUNNEL PROTECTOR KITS		
CHASSIS	TRACK	KIT P/N
REV XP	All	860 200 068

Stud Installation Procedure

Refer to manufacturer's instruction for complete installation procedure.

TRACK APPLICATION

Sno-X, track optional

2009 600RS track has been approved to run on 2008 600RS (P/N 504 152 883).
15" X 120" lug height 1.750" pitch 2.86".

2011, 2012 and 2013 MXZ 550 Fan Camoplast Ripsaw (P/N 9159C).
15" X 120" lug height 1.500" pitch 2.86".

Cross country, track optional

2008, 2009 and 2010 (P/N 504 152 606).
15" X 120" lug height 1.250" pitch 2.86".

2011, 2012 and 2013 Camoplast Ripsaw (P/N 9149H).
15" X 120" lug height 1.250" pitch 2.86".

2014 600RS Camoplast Ripsaw II (P/N 9237H).
15" X 129" lug height 1.250" pitch 2.86"

2014 600RS Camoplast Ripsaw II (P/N 9215H).
15" X 128" lug height 1.250" pitch 2.52".

Ice & Grass, Drag track

2008, 2009, 2010, 2011, 2012 and 2013 (P/N 486 700 025).
14" X 120" lug height 0.525" pitch2.86".

2014 600RS Camoplast (P/N 9902R).
13.5" X 128" lug height 0.525" pitch 2.52".

NOTE: The optional tracks with 2.52" pitch will need to be installed with the drive axle ass'y (P/N 486 800 051).

STEERING SYSTEM

GENERAL

When removing or replacing a part of steering system (except handle grips and handlebar), perform the steering alignment, refer to *STEERING ALIGNMENT* in this section.

During assembly/installation, use the torque values and service products as in the exploded views.

Clean threads before applying a threadlocker. Refer to *SELF LOCKING FASTENERS* and *LOCTITE APPLICATION* at the beginning of this manual for complete procedure.

⚠ WARNING

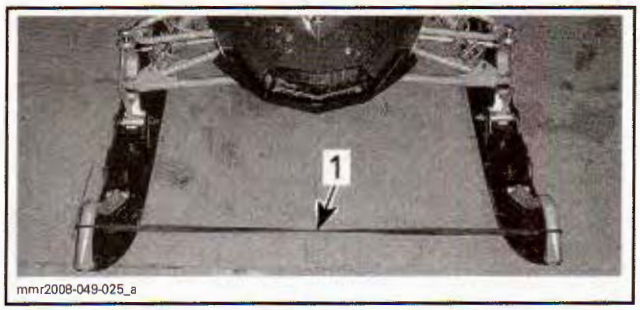
Torque wrench tightening specifications must be strictly adhered to.
Locking devices (e.g.: locking tabs, elastic stop nuts, cotter pins, etc.) must be replaced with a new ones.

ADJUSTMENT

STEERING ALIGNMENT

Ski alignment is performed by adjusting length of left and right tie rods. To do this, use the following procedure:

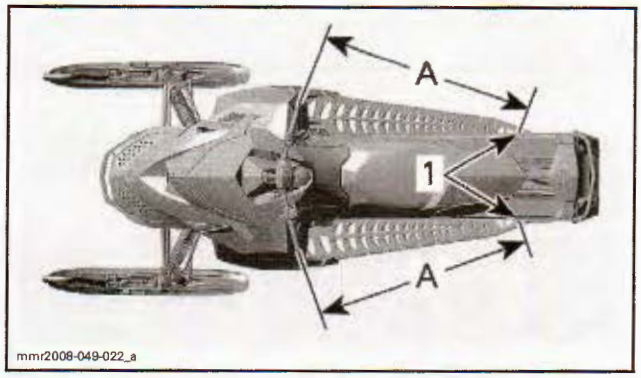
- Leave the vehicle on the ground on its own weight.
- Attach ski handles together with a bungee cord.



1. Bungee cord

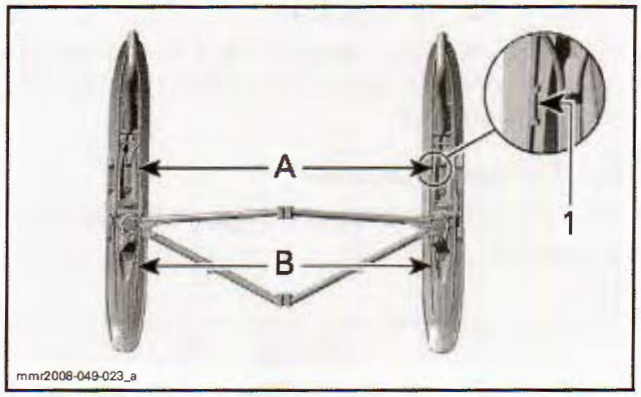
- Position handlebar so that it is straight ahead position by measuring from the extremities of the grips to the rear most edge of the tunnel, as shown.

NOTE: The reference point must be the same to each side.



1. Same reference point
A. Equal distance on each side

- Verify if skis are in straight ahead position by placing a straight edge against adjusted track and measuring distance between front and rear ski recesses and straight edge.
- When skis are in straight ahead position, adjust the toe out.
- Measure the distance between front and rear ski recesses.
- Use the following illustration and this equation to determine the perfect steering adjustment.



1. Recesses
A – B = 5 mm (.197 in)

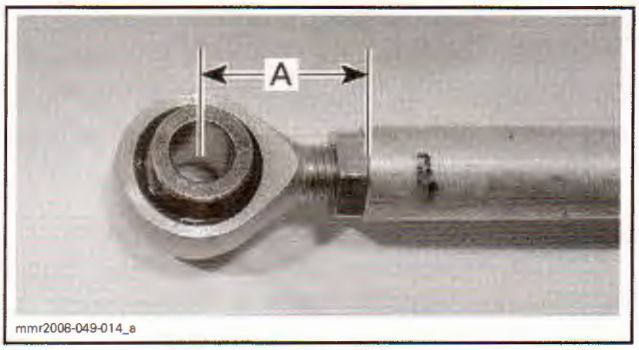
STEERING ALIGNMENT	
Toe out	5 mm (.197 in)

- If adjustment is needed, loosen tie rod jam nuts then turn tie rods to change their length.
- Tighten jam nuts and torque them to 18 N•m (159 lbf•**in**).

NOTE: It is recommended to check maximum allowed width with your association.

1. Jam nut

NOTE: The maximum tie rod end length not engaged in the tie rod must not exceed 34 mm (1.339 in).



A. 34 mm (1.339 in) maximum

PROCEDURES

SKI RUNNER

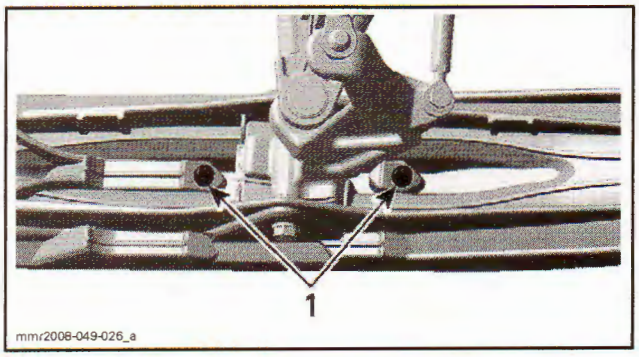
Ski Runner Inspection

Lift the front of vehicle and check ski runners for wear or damages (missing or broken carbide). Replace if necessary.

Ski Runner Removal

Lift the front of vehicle and support it off ground.

Unscrew the ski runner nuts then remove ski runners.



1. Ski runner nuts

Ski Runner Installation

The installation is the reverse of the removal procedure. Pay attention to the following.

Torque ski runner nuts to 8 N•m (71 lbf•**in**).

SKI

Ski Inspection

Inspect ski for excessive wear or other damage. Replace if necessary.

Ski Removal

Lift front of vehicle and support it off ground.

Unscrew nut then pull ski bolt out.

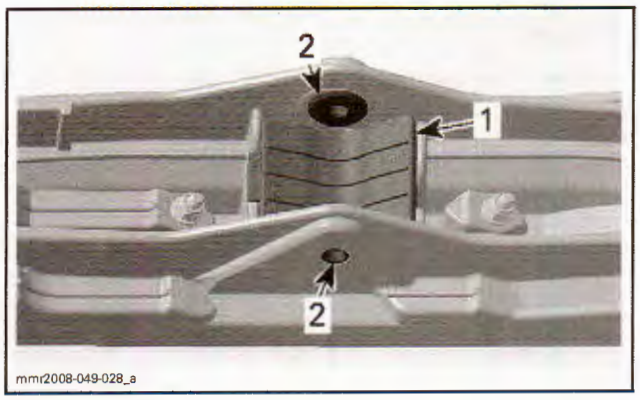
1. Ski bolt
2. Washer
3. Nut
4. Ski leg

Remove ski from vehicle.

Ski Installation

Make sure bushings are installed in ski holes.

Install the ski stopper. Position indicator in front and make sure the bump in the ski is in the groove of the ski stopper.



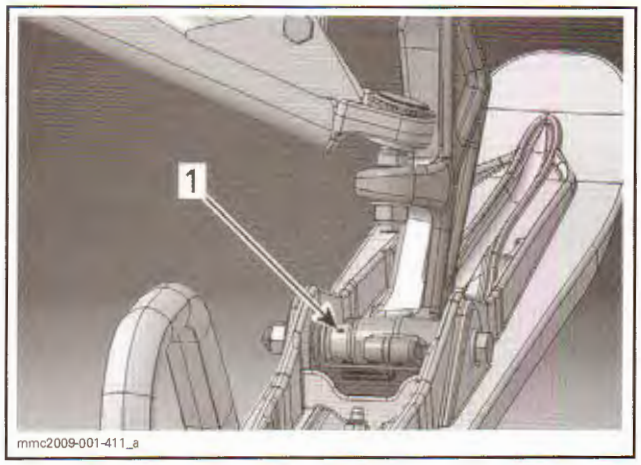
1. Ski stopper
2. Bushings

- Install ski bolt and torque it to 32 N•m (24 lbf•ft).

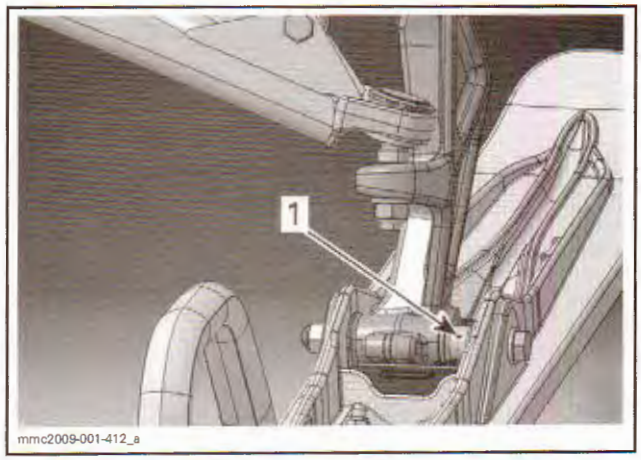
SKI WIDTH ADJUSTMENT

The ski width is adjustable one the 600 RS. For completion, use wider setting, (check with your race association), for trail application use narrow ski setting.

NOTICE **This vehicle is designed for special purposes and may exceed provincial/state width limitations for trail riding. Riders must get all relevant information on local width limitations.**



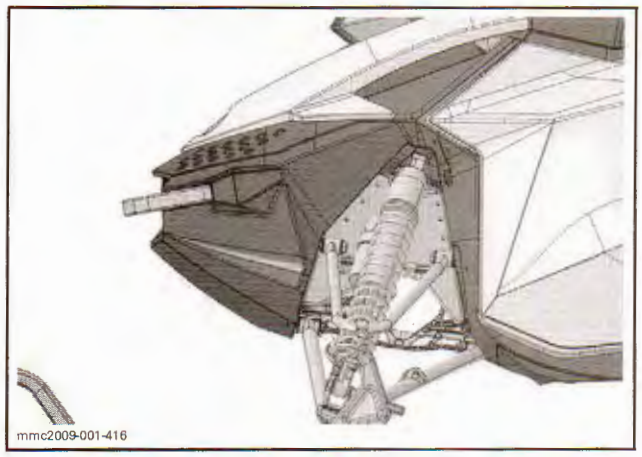
NARROWER
1. Spacer (1) P/N 505 072 807



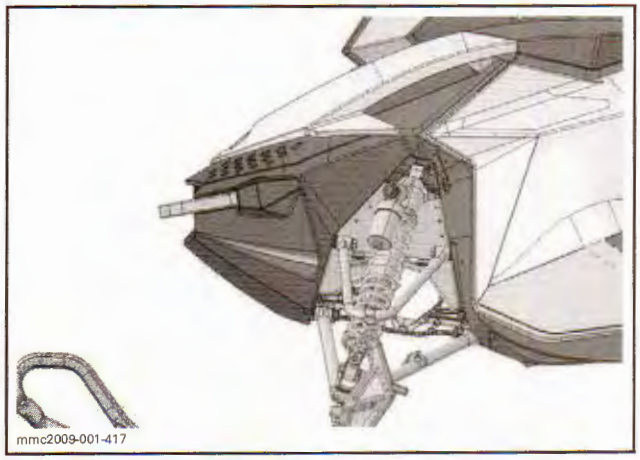
WIDER
1. Spacer (1) P/N 505 072 807

2013 FRONT SHOCK INSTALLATION

Make sure front shocks are installed properly, damage to suspension components or shocks may occur.



600 RS



XP (STD)

BASIC FUNCTIONS OF THE SYSTEM

THE TRA CLUTCH

We call it a clutch but that set of pulleys is a lot more than simply a clutch. Once the system reaches its low ratio speed, the clutch function ends and the pulleys become a completely automatic transmission searching for the highest gear ratio that can be pulled at the engine's given output. In the case of our TRA clutch, the pulleys will begin shifting from a 3.8:1 ratio in low gear to a .8:1 overdrive ratio in high gear. That is a lot of ratio change. A typical six speed motorcycle gearbox, for instance, will change from a 2.38:1 ratio in low gear to a .96:1 overdrive ratio in high gear.

The ratio changing is done by opening and closing a drive and driven pulley and forcing a fixed length drive belt to turn around different diameters on each pulley. The force used to **close** the engine or drive pulley is centrifugal force. It is the job of the ramps, rollers and lever arms to convert and control the centrifugal force.

Each engine will produce its maximum horsepower at a particular RPM. Power will decrease at engine speeds on either side of the peak power RPM. The usable width of the power band will dictate where the clutch must be calibrated to keep the engine performing at its peak. In the power curve a mildly tuned engine has a lower power peak and RPM as well as a wider power band, whereas a race tuned engine has a higher power peak as well as higher RPM but has a much narrower power band. Therefore a race tuned engine will have to have a much more accurately calibrated clutch system to be able to keep the engine within its power band compared to a mildly tuned motor.

The goal of clutch calibration is to keep the engine, at full throttle at its peak horsepower RPM and, at the same time, to select the highest possible gear ratio as dictated by the load on the drive axle. In calibrating the clutches, the objective will be to maintain as horizontal a line as possible between the low ratio and high ratio lines. This transition line or shift speed must be as close as possible to the engine peak horsepower RPM.

Engagement speed of the clutch is always set as **low** as possible to avoid track slippage and to prolong drive belt life. The clutch must be engaged at an RPM that is high enough, however, that the engine will be producing enough horsepower to overcome drag and allow acceleration without bogging. During this time the rollers in the clutch are on the initial angles of the clutch ramps and the drive belt is actually slipping in the engine pulley as engine and vehicle speeds increase. The transmission then begins upshifting to the high ratio at a constant engine. Engine speed should not increase above the calibration RPM until the high ratio is achieved. If the engine RPM exceeds the calibration RPM once the high gear position is achieved, it is an indication that the chaincase gearing is too low. If clutch calibration is accurate, engine speed should never vary more than 250 RPM (depending on engine output) from the peak power RPM. This is the optimum shift curve. The following section will discuss each of the tunable components of both the drive and driven pulleys and provides some insight and data necessary for tuning the system.

EFFECTS OF THE DRIVE PULLEY LEVER ARM, ROLLER AND ROLLER PIN WEIGHT

As you have seen in the formula defining centrifugal force, the force increases directly with the weight of the components involved. If you want to increase the centrifugal force, therefore, the shift force, it is a simple matter to increase the weight of the pressure levers. If the overall RPM is too high, a heavier lever arm or roller pin could be installed. The opposite would apply if the RPM is too low.

The major factor controlling centrifugal force is engine RPM. Because the force increases with the square of this speed, you can quickly have too much force if heavy weights are used on a clutch fitted to a high RPM engine. Because of this relationship, you will find heavy weights used on low RPM, high torque engine types and much lighter weights used on the high RPM engines.

The effect of the weights will always be greater at high RPM, and at higher ratios. This is true because of the relation of the force to the square of the engine speed. Also the radius from the axis of rotation to the center of mass of the counterweights increases as the roller is allowed to move down the ramps. As this radius increases, the centrifugal force increases directly. Addition of weight will affect engagement speed very little compared to the effect the weight will have at mid range to top speed.

Minor changes in weight are accomplished by using various weight roller pins. The effects of adding weight are illustrated in the following illustration. The three curves show the engine RPM increasing from engagement speed (5000 RPM) to about 8000 RPM which is achieved at about 30 MPH. From this point on, if calibration is accurate, there is no change in engine RPM as the vehicle speed increases. From the machine standing at rest to about 30 MPH, belt slippage and other factors are involved that allow the engine to get on the power.

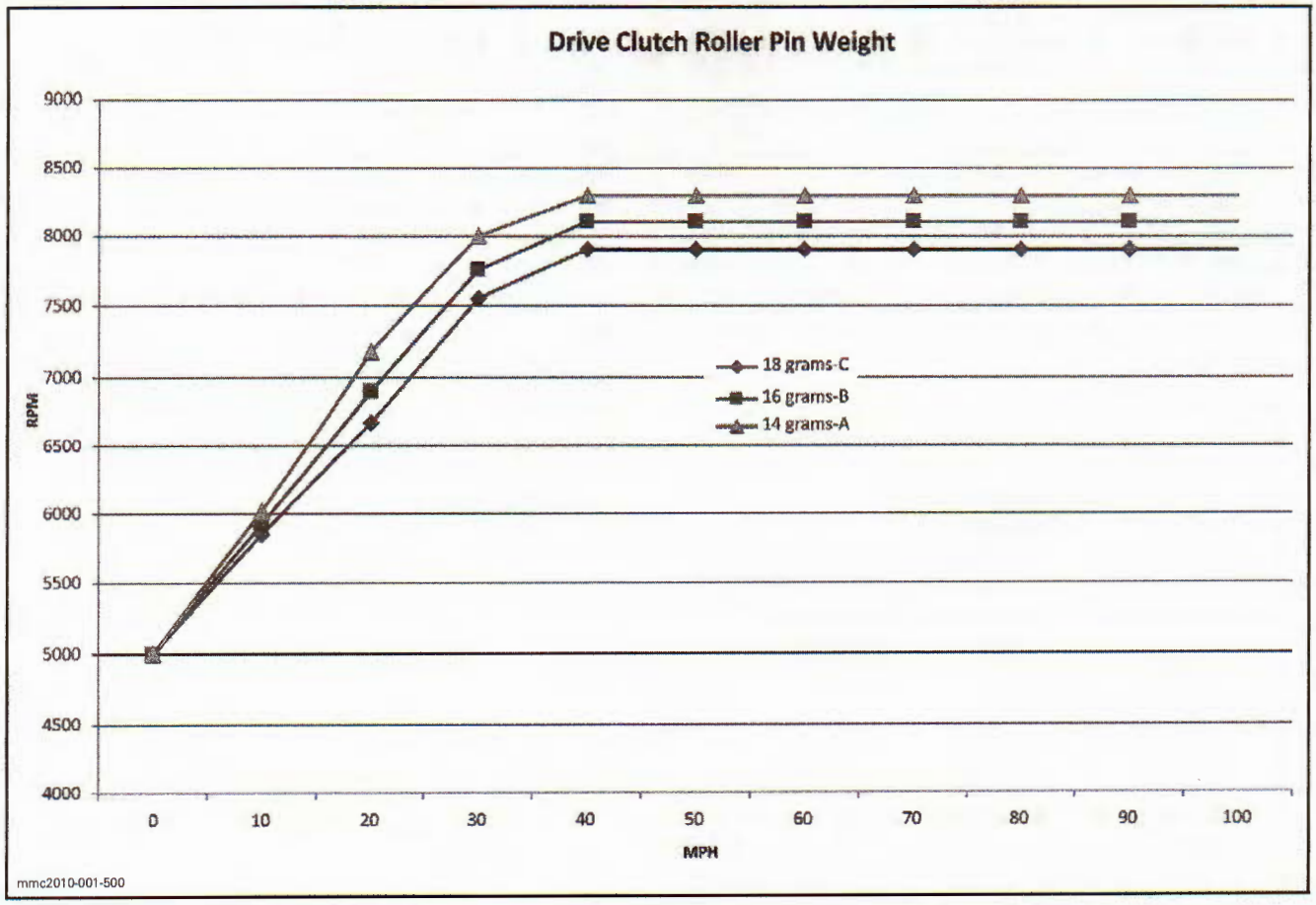
Curve **A** shows a clutch set up with three 14 gram type roller pins. This amount of weight will govern the engine to 8300 RPM and allow engagement of the clutch at 5000 RPM.

Curve **B** illustrates the effect of exchanging the three 14 gram pins for three 16 gram roller pins. The additional weight has virtually no effect on engagement speed but pulls the peak RPM of the engine down to 8100 RPM.

Curve **C** illustrates the effect of using three 18 gram roller pins. Again, the additional weight has little effect on the engagement RPM but further reduces the top RPM to 7900 RPM. For example, by adding 2 grams per arm for a total weight increase of 6 grams on an engine turning at around 8000 RPM, there would be about a 200 RPM decrease in full power engine speed approximately the same effect as going 1 clicker position lower.

On a high RPM race engine it may only take a 1 gram, increase per arm to see a 200 RPM decrease in peak operating RPM.

Drive Clutch Roller Pins



KIT TRA III WEIGHT SET UP FOR PIN

TRA PINS

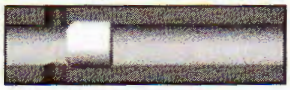
PART DESCRIPTION	P/N	WEIGHT (g)
Hollow steel	417 004 309	10
Solid steel	417 004 308	16
Solid long	417 222 594	18.8
Threaded steel short	417 222 477	10.8
Threaded steel long	417 222 595	12.4

ADJUSTABLE PINS KIT

From 12.4 to 22.15 Grams

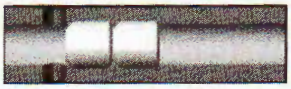
(P/N 486 400 003)			
Part description	p/n	weight (g)	Kit QTY
Pin 35.75 mm	417 222 595	12.4	3
Slug 14 mm	486 400 004	5.044	3
Slug 23 mm	486 400 005	8.287	3
Set screw 6 mm	206 260 699	0.73	9
Set screw 12 mm	206 261 299	1.68	3
Set screw 16 mm	206 261 699	2.35	3
Set screw 20 mm	206 262 099	3.02	3
Set screw 25 mm	206 262 599	3.81	3

13.13 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	1



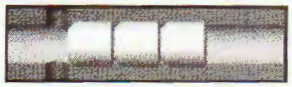
A32D3FA

13.86 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	2



A32D3A4

14.59 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	3

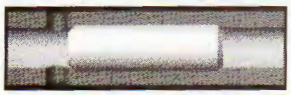


A32D3G4

14.81 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	1
Set screw 12 mm	206 261 299	1.68	1

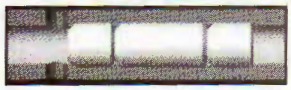
A32D3B4

15.42 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 20 mm	206 262 099	3.02	1



A32D3H4

15.54 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	2
Set screw 12 mm	206 261 299	1.68	1



A32D3C4

16.15 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 20 mm	206 262 099	3.02	1
Set screw 6 mm	206 260 699	0.73	1

A32D3I4

16.21 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 25 mm	206 262 599	3.81	1

A32D3D4

16.27 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	3
Set screw 12 mm	206 261 299	1.68	1

A32D3J4

16.43 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 16 mm	206 261 699	2.35	1
Set screw 12 mm	206 261 299	1.68	1

A32D3E4

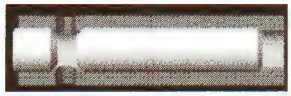
16.88 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 20 mm	206 262 099	3.02	1
Set screw 6 mm	206 260 699	0.73	2

A32D3K4

16.94 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 25 mm	206 262 599	3.81	1
Set screw 6 mm	206 260 699	0.73	1



A32D3L4

17.16 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	1
Set screw 16 mm	206 261 699	2.35	1
Set screw 12 mm	206 261 299	1.68	1

A32D3Q4

18.17 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	1
Slug 14 mm	486 400 004	5.044	1

A32D3M4

18.90 GRAMS SET UP

PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	2
Slug 14 mm	486 400 004	5.044	1

A32D3R4

19.63 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	3
Slug 14 mm	486 400 004	5.044	1

A32D3N4

19.85 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	1
Set screw 12 mm	206 261 299	1.68	1
Slug 14 mm	486 400 004	5.044	1

A32D3S4

20.52 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	1
Set screw 16 mm	206 261 699	2.35	1
Slug 14 mm	486 400 004	5.044	1

A32D3O4

21.42 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	1
Slug 23 mm	486 400 005	8.287	1

A32D3T4

22.15 GRAMS SET UP			
PART DESCRIPTION	P/N	WEIGHT (g)	QTY
Pin 35.75 mm	417 222 595	12.4	1
Set screw 6 mm	206 260 699	0.73	2
Slug 23 mm	486 400 005	8.287	1

A32D3P4

The weight of the lever arms will have a similar effect on the shift RPM.

By adding or removing weight to or from the arms, we can fine tune the shift RPM to the engine power peak.

If you increase the horsepower of the engine at the same RPM, you would normally add more weight to keep the engine pulling as hard as possible and not over rev.

If you lighten the weights on the arms, you will be increasing the shifting RPM. However, your vehicle will not **pull** as hard, since less centrifugal force is being generated.

EFFECTS OF RAMP PROFILE ON THE SHIFT FORCE

The shift force is the component or part of the centrifugal force that is used to actually move the sliding half of the drive pulley. This force is applied to the sliding half at the three lever arm pivot points. The ramp profiles are used to control the size of this shift force.

As the clutch rotates around the center line of the crankshaft, the axis of rotation, centrifugal forces begin building and act on the center of mass of the lever arm, roller combination trying to pull the lever away from the axis of rotation. The center of mass of the lever arm assembly is the point where all the centrifugal force acts.

The ramp provides an angled surface for the roller to push against and the angle of the ramp at the point of contact with the roller determines how much of the centrifugal force is translated into axial force. The axial force pushes the sliding half in and the remainder of the centrifugal force is unused and absorbed by the integrity of the sliding half. A steeper ramp angle gives less shift force, while a smaller angle gives more shift force.

The angle of the ramp varies constantly from start to finish. The angle varies to achieve the proper axial force to transmit a given amount of torque through the drive belt at each diameter of the pulley.

As discussed before, the centrifugal force generated by the lever arm assembly increases at higher ratios. This is why the ramp profile is much steeper at the high ratio end. This reduces the shift force in order to maintain the correct load on the belt.

Remember, it is the angle of the ramp at the point of roller contact that will help determine the shift force at any given ratio. Think of the ramp profile as a hill that the roller must climb. A small angle or hill can be overcome easily thus providing a faster shift out to a higher ratio which will lower the engine RPM. If the hill is steeper (the ramp angle is larger) the roller will not be able to climb it as quickly thus staying in a lower ratio longer which will keep the engine RPM higher.

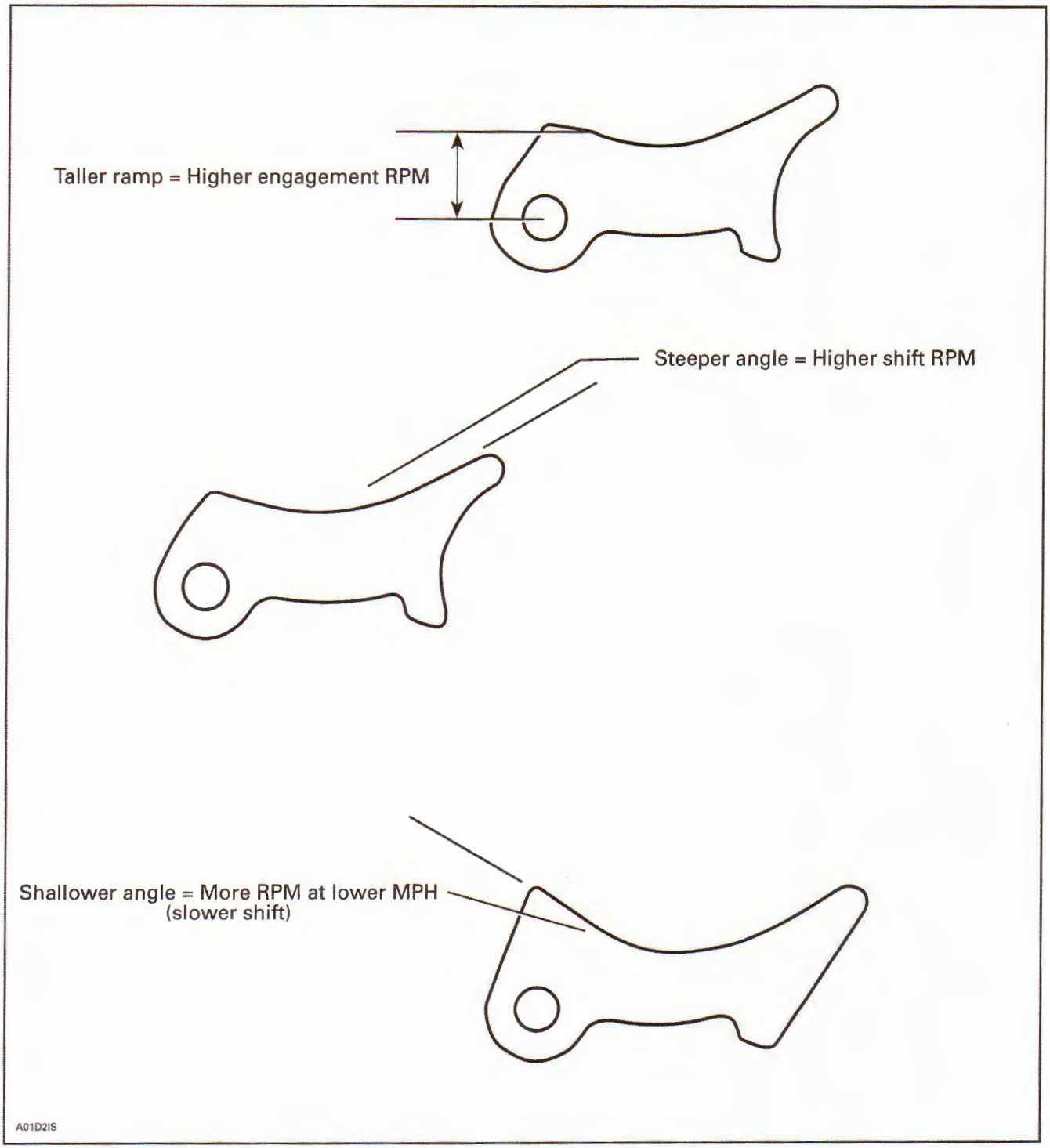
Note that at engagement and very low ratios, many ramp angles actually go downhill. These are generally used on engines with good low RPM power. Engines with narrower power bands and less low RPM power will usually have a flatter angle at engagement and low speed. A ramp with a small bump at engagement is used to raise the engagement RPM. Again, the steeper the "hill" the roller must overcome, the higher the RPM will be before the clutch shifts out. If the spring selection cannot give the desired engagement RPM, then use a ramp with a bump or grind a notch at the point where the roller sits at engagement. Of course if the shift profile was good at higher ratios, then you would want to use a ramp with only changes at the low speed area.

Also, a thicker or taller ramp will provide higher RPM than a thinner ramp with the same profile because the lever arm assembly is tucked in further by the taller ramp.

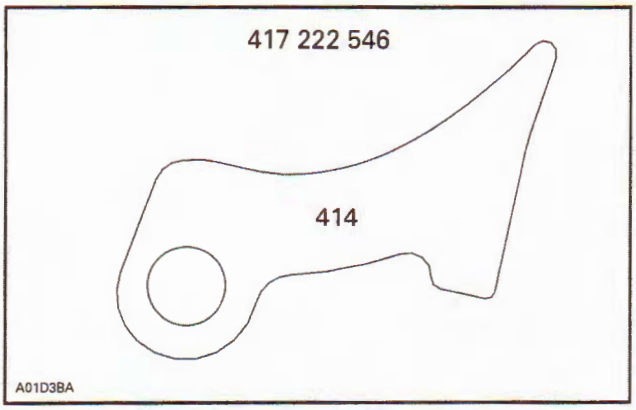
The TRA clutch allows you to fine tune the ramp profile by using the adjusters provided. The adjusters are cams which allow you to raise and lower the outer end of the ramp through six different positions. Moving the ramp end toward the lever arm makes the ramp angles steeper, thereby raising engine speed and slowing the upshift. As the ramp is adjusted away from the lever arm, the engine speed is lowered and the upshift is faster.

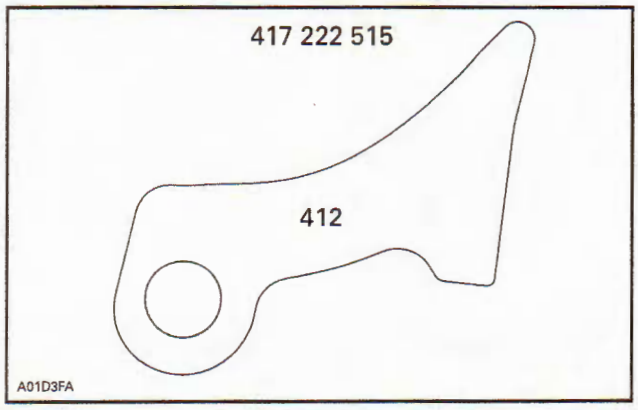
In clinical condition such as on a dynamometer, moving the adjusters up will result in a 150 to 200 RPM increase with each position change. Lowering the adjuster positions will result in a decrease of 150 to 200 RPM with each number. On the snowmobile, however, depending on the operating conditions, a change of one adjuster position may not show up on the tachometer, but the shift speed of the pulley will have changed. The upshift or downshift, depending on which way you moved the adjusters, will be faster and your acceleration rate and top speed will have changed. When using the TRA adjusters, the acceleration rate and speed should be checked as well as the engine RPM.

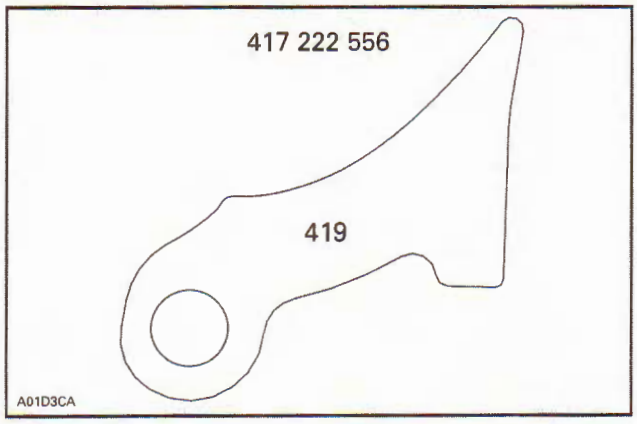
RAMP CHARACTERISTICS

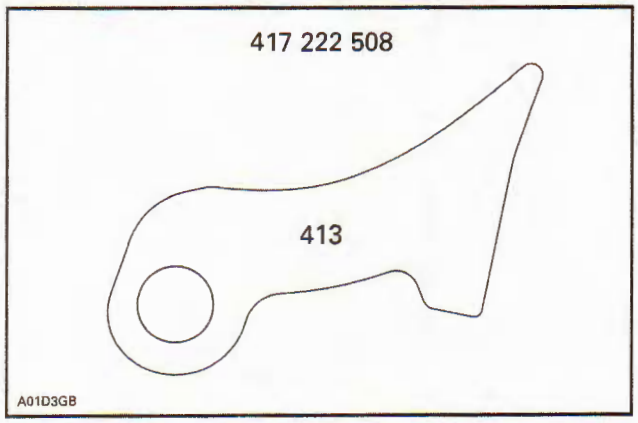


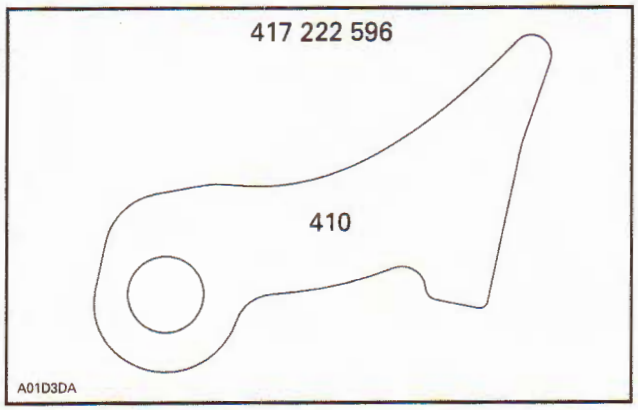
TRA III/IV/VII RAMP PROFILE

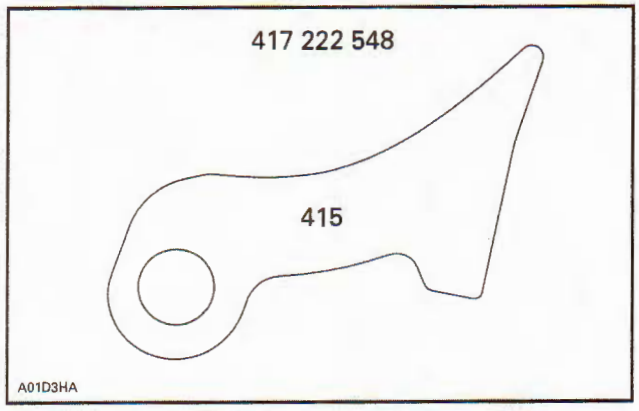


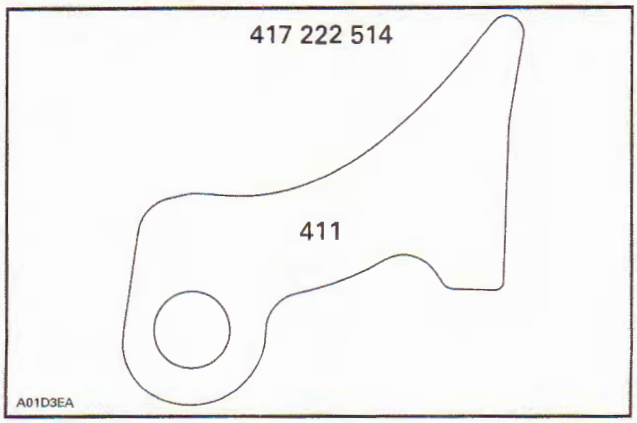


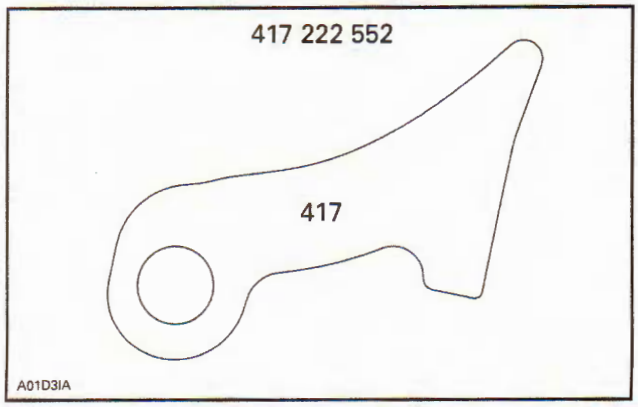


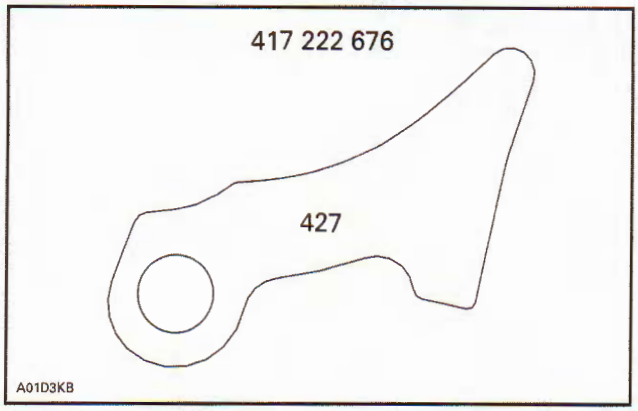








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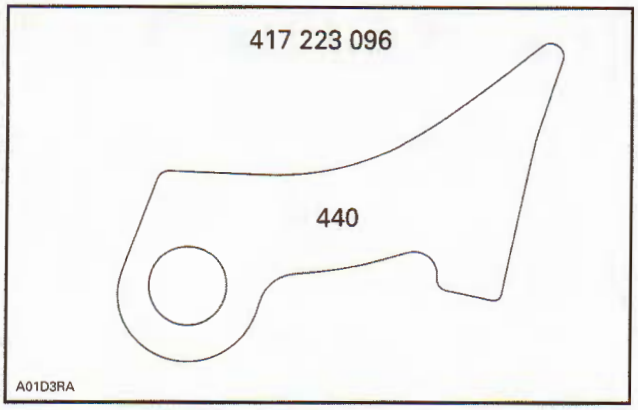
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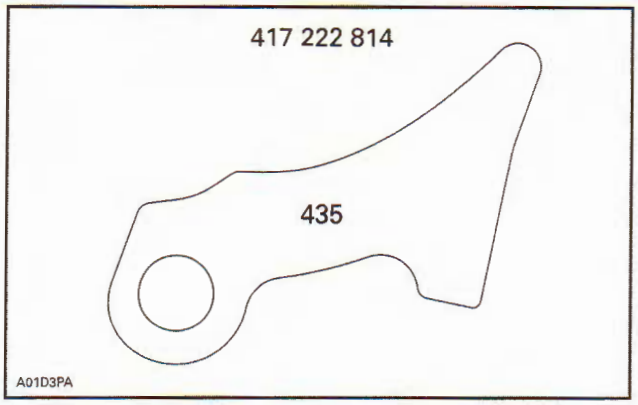
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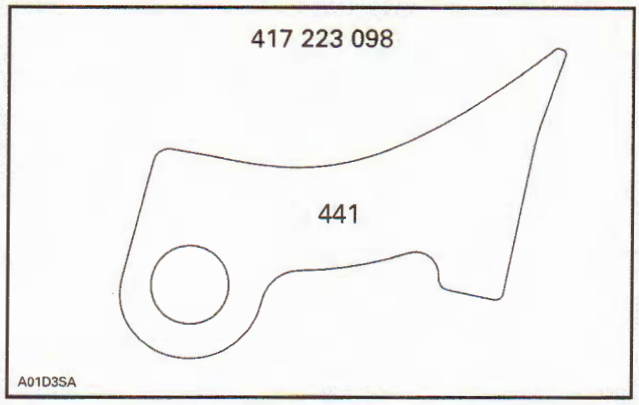
435
A01D3PA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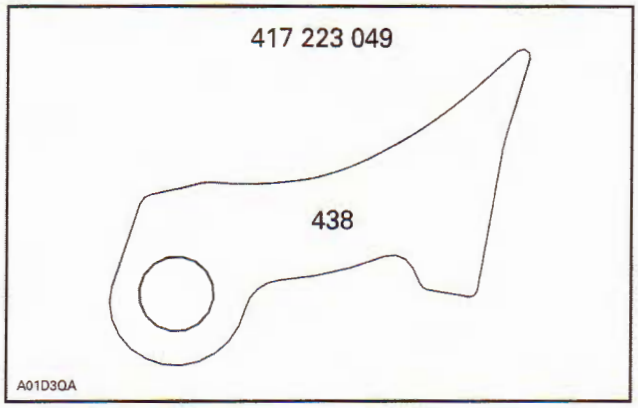
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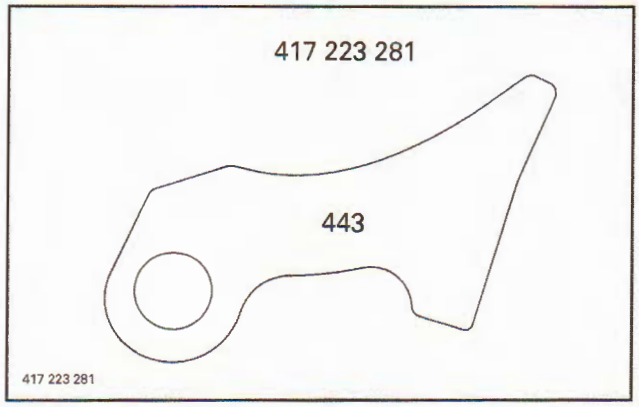
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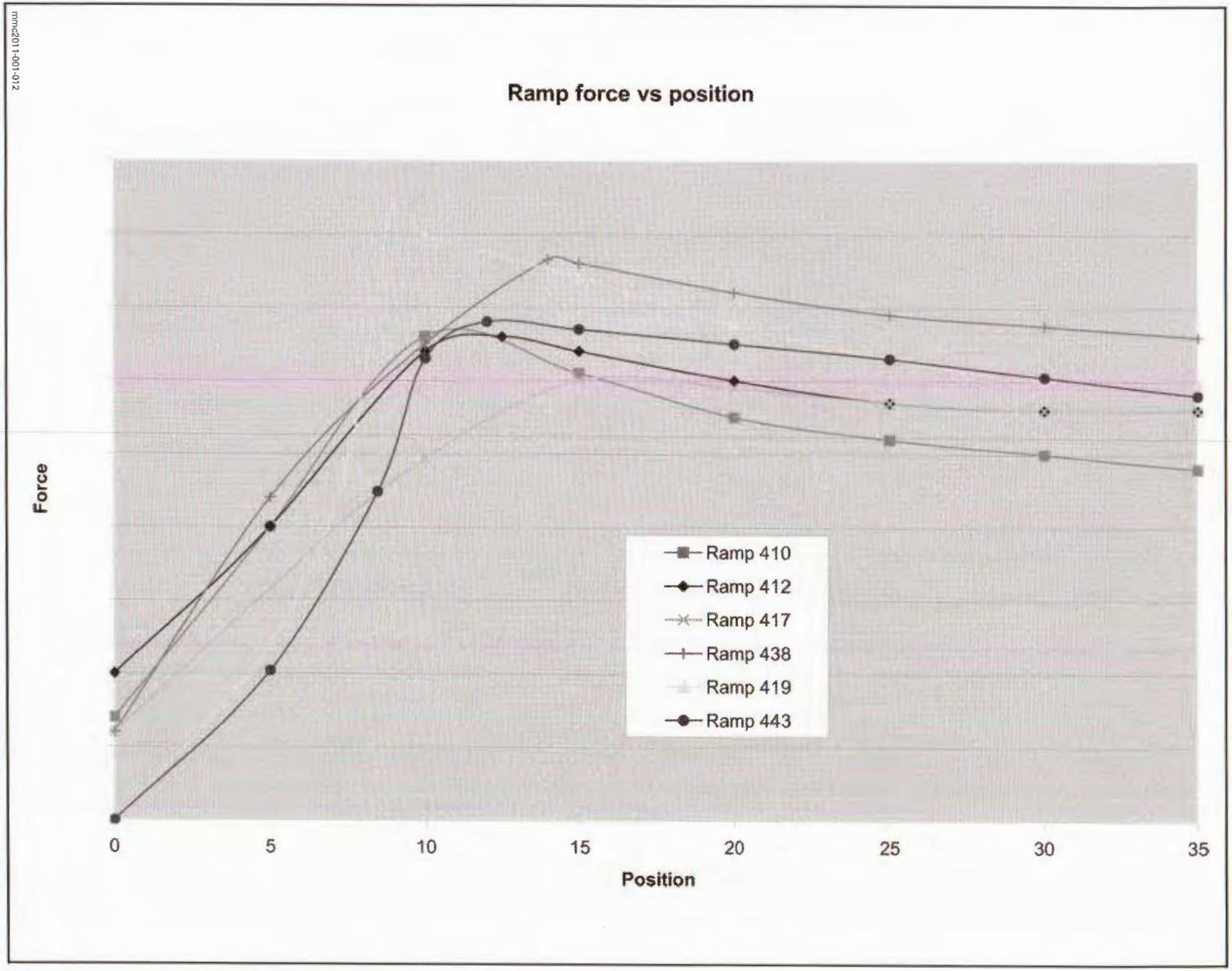
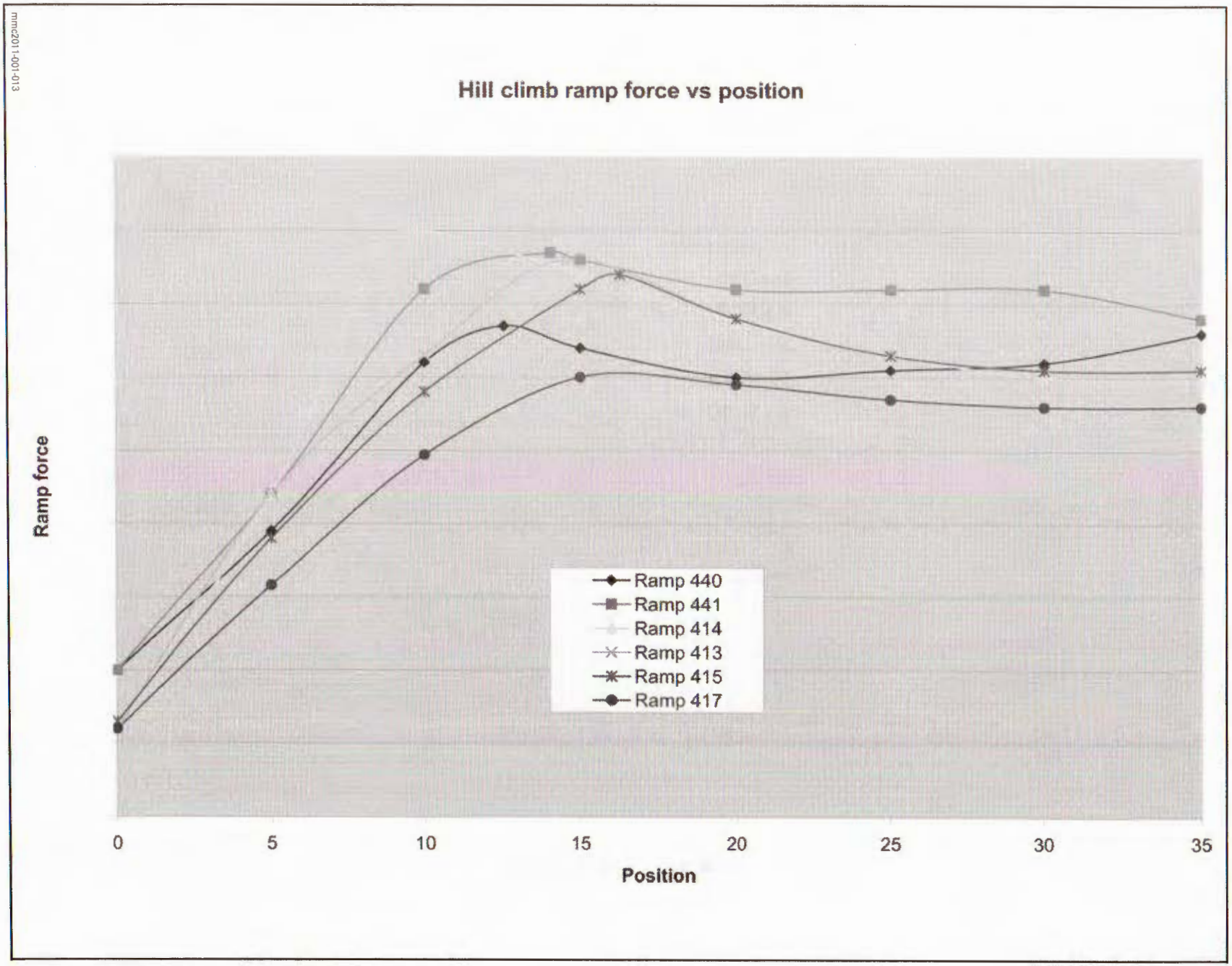
443
417 223 281


Ramp force vs position
Force
Position
0
5
10
15
20
25
30
35
Ramp 410
Ramp 412
Ramp 417
Ramp 438
Ramp 419
Ramp 443
mmc2011-001-012


Hill climb ramp force vs position
Ramp force
Position
0
5
10
15
20
25
30
35
Ramp 440
Ramp 441
Ramp 414
Ramp 413
Ramp 415
Ramp 417
mmc2011-001-013

EFFECTS OF THE DRIVE PULLEY SPRING

The purpose of the clutch release spring is to return the sliding half of the engine pulley and the associated moving parts to the disengaged or neutral position at low engine RPM. The spring tension is calibrated to work with the pressure levers and ramp angles to allow clutch engagement at the desired RPM. As the engine speed increases, centrifugal forces increase and eventually overcome the tension of the release spring and allow the pulley halves to contact the drive belt. As engine speed decreases, centrifugal forces decrease and the clutch spring returns the sliding half toward the neutral position.

As the clutch shifts out to a higher ratio, the spring balances the shift forces being generated by the levers and ramps.

The spring tension will affect the entire shifting sequence of the engine pulley. The effect that it has will depend upon the construction of the spring. Three things must be known about the spring to be able to predict its effect in the clutch: 1. The spring free length; 2. The spring pressure when compressed to 74 mm (2.9 in); 3. The spring pressure when compressed to 41 mm (1.6 in). These three factors are listed on the accompanying sheet.

The spring free length will give you an idea of the condition of the spring. If the spring has lost more than 6.35 mm (1/4 in) of its listed free length, the spring is fatigued or has taken too great a set. The spring should be replaced. The free length of the spring is its overall length when resting freely on a table top.

In the TRA clutch, the installed length of the clutch release spring is 74 mm (2.9 in) This is the length of the spring when the pulley is in its neutral position. The pressure that the spring applies at this length is the factor that controls the engagement speed (all other things kept constant). When the engine pulley is in its highest ratio position, the spring will be compressed to 41 mm (1.6 in). The pressure the spring applies at this length will determine the RPM required to reach high gear; again, with all other tunable factors kept constant.

As you look through the spring chart, you will see that springs are available with equal pressures at 74 mm (2.9 in), but very different pressures at 41 mm (1.6 in). You will also note varying pressures at 74 mm (2.9 in) and equal pressures at 41 mm (1.6 in). Simply by working with the spring charts, one can easily see how the shift speed (the speed with which the change from one gear ratio to the next is made) and the engagement speed can be altered.

As the pressure of the spring when 74 mm (2.9 in) long is increased, the clutch engagement speed will increase. As the spring rate is increased, the engine will be required to turn more RPM to achieve a given gear ratio. Again, these facts hold true when all other tunable components are kept constant.

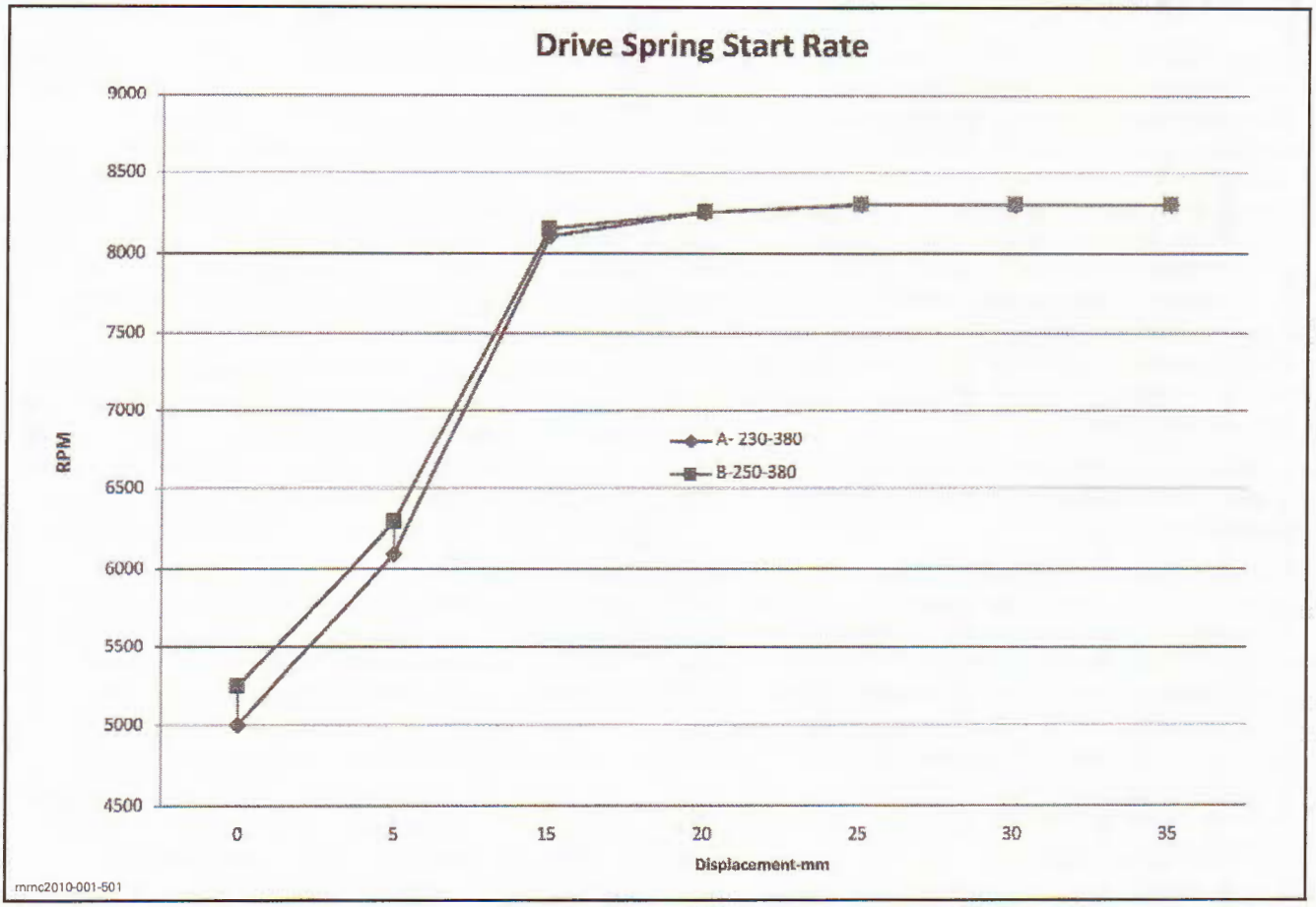
On *DRIVE SPRING START RATE* the spring **A** has a pressure of 230 lb at 74 mm (2.9 in) and a pressure of 380 lb when compressed to 41 mm (1.6 in). With no other changes made in the clutch, spring **B** was installed. The spring has a preload of 250 lb at 74 mm (2.9 in) and a pressure of 380 lb at 41 mm (1.6 in). As the chart indicated, the engagement RPM increased while the shift curve from 30 MPH up remained relatively unchanged.

On *DRIVE SPRING FINISH RATE* the effect of keeping the spring preload pressure at 74 mm (2.9 in) constant and increasing the pressure at the 41 mm (1.6 in) length. In this example, spring **A** has a pressure of 250 lb at 74 mm (2.9 in) and a pressure of 380 lb at 41 mm (1.6 in). Spring **B** also has a pressure of 250 lb at 74 mm (2.9 in) but increases to 420 lb at 41 mm (1.6 in). The projected effect of this spring change is shown on chart 2. Since the preload pressure at 74 mm (2.9 in) is equal for springs **A** and **B**, the engagement speed is not affected. At 95 MPH, however, there is a loss of RPM with spring **A** in place.

NOTE: TRA drive springs are identified with stripes or color codes down, left to right.

DRIVE CLUTCH SPRING

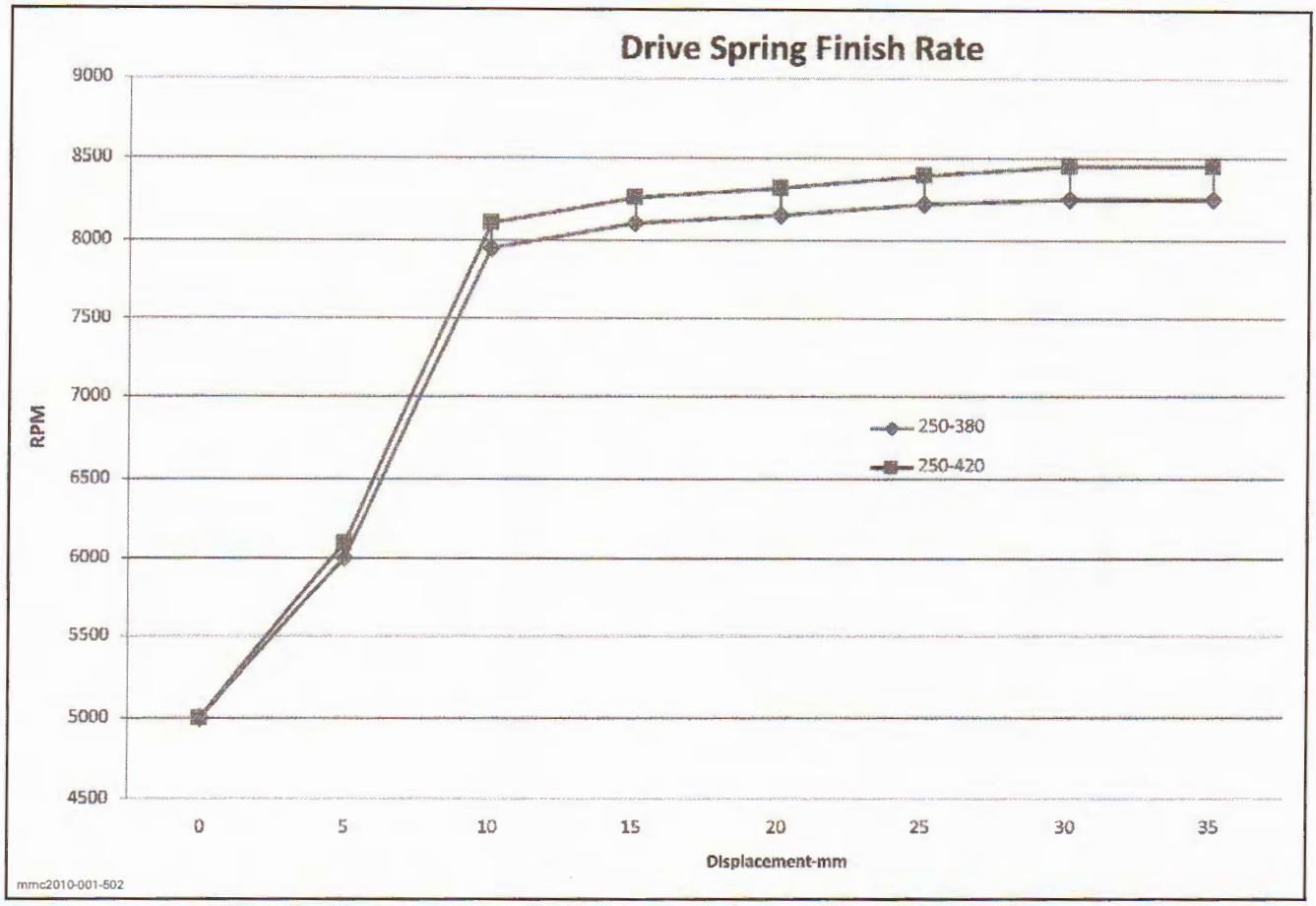
Effect at Engagement



	LOAD AT 74 mm (2.9 in)	LOAD AT 41 mm (1.6 in)
A	1023 N (230 lb)	1690 N (380 lb)
B	1112 N (250 lb)	1690 N (380 lb)

DRIVE CLUTCH SPRING

Effect at Top Speed



	LOAD AT 74 mm (2.9 in)	LOAD AT 41 mm (1.6 in)
A	1112 N (250 lb)	1690 N (380 lb)
B	1112 N (250 lb)	1868 N (420 lb)

TRA DRIVE SPRINGS

NOTE: To read springs correctly, place spring stripes down and read LEFT to RIGHT.

TRA DRIVE CLUTCH SPRING						
P/N	FORCE (lbs) 74 mm	41 mm	RATE LENGTH lbs/inch	FREE LENGTH mm	COLOR CODE	MATERIAL
414 689 800	70	170	77	97	RD/RD	ST
414 817 500	70	230	123	88	RD/YL	ST
414 701 000	70	320	192	89	RD/PL	ST
414 993 000	100	170	54	121	YL/RD	ST
414 689 700	100	200	77	106	YL/OR	ST
414 748 600	100	230	100	99	YL/YL	ST
414 742 100	100	260	123	95	YL/GN	ST
414 639 000	130	200	54	134	BL/OR	ST
414 689 500	130	230	77	115	BL/YL	ST
414 817 700	130	260	100	105	BL/GN	ST
414 689 400	130	290	123	100	BL/BL	ST
414 817 800	130	320	246	97	BL/PL	ST
414 916 300	130	350	169	94	BL/PK	ST
415 015 300	160	230	54	158	PL/YL	ST
415 015 400	160	260	77	134	PL/GN	ST
415 034 900	160	290	100	115	PL/BL	ST
414 817 900	160	320	123	107	PL/PL	ST
414 949 500	160	350	146	102	PL/PK	ST
417 222 703	160	380	169	99	PL/WH	ST
415 019 500	185	410	173	105	BK	ST
414 768 200	200	290	69	147	GN/BL	ST
486 600 014	200	290	69	147	GN/BL	HTS
414 762 800	200	320	94	130	GN/PL	ST
414 756 900	200	350	116	118	GN/PK	ST
417 222 371	200	380	139	111	GN/WH	ST
414 754 200	230	320	69	155	PK/PL	ST
415 074 800	230	350	92	137	PK/PK	ST
414 991 400	230	380	116	125	PK/WH	ST

TRA DRIVE CLUTCH SPRING						
P/N	FORCE (lbs) 74 mm	41 mm	RATE LENGTH lbs/inch	FREE LENGTH mm	COLOR CODE	MATERIAL
415 019 700	230	410	139	120	RD	ST
417 222 958	240	370	100	135	GY/GY	HTS
486 010 010	240	370	101	135	WH/GY/GY	LS 002
415 019 800	240	430	146	120	BL	ST
417 222 004	250	380	100	137	WH/WH	ST
415 019 900	250	460	162	116	PK	ST
417 222 164	260	420	123	128	WH/SI	ST
417 223 610	265	405	108	136	WH/GN/GN	LS 002
486 010 010	240	370	101	135	WH/GY/GY	LS 002
486 011 002	280	450	131	128	WH/GR/PK	LS 002
486 011 003	310	480	131	134	WH/PK/PK	LS 002
415 020 100	280	420	108	148	GN/GN	ST
415 020 200	280	460	139	132	RD/RD	ST
417 223 050	280	460	145	125	BR/BR	HTS
415 020 300	280	510	177	121	BL/BL	ST
415 020 400	310	460	116	148	PK/PK	ST
415 020 500	310	510	154	132	GD/GD	ST

BRP / TEAM SECONDARY SPRING						
P/N	FORCE (lbs) 74 mm	41 mm	RATE LENGTH lbs/inch	FREE LENGTH mm	COLOR CODE	MATERIAL
486 011 004	200	260	55	149	WH/WH/BL	LS 002

COLOR CODE				
RD=RED	PK=PINK	PL=PURPLE	GN=GREEN	OR=ORANGE
SI=SILVER	BL=BLUE	GY=GRAY	WH=WHITE	YL=YELLOW
GD = GOLD	BG= BEIGE	BR= BROWN	BK= BLACK	

MATERIAL	ST=STEEL	HTS=HIGH TENSILE STEEL

VSA

The TRA III has Variable Sheave Angle (VSA). The machined angle of both sheaves varies from 12 degrees at the bottom to 14 degrees at the top. This provides better efficiency through out the entire range of shift. With the improved efficiency, belt life is also extended. The TRA III clutch must be matched with a VSA type driven clutch and belt to achieve maximum performance.

DRIVE PULLEY ADJUSTMENT

⚠ WARNING

Remove the tether cord cap (DESS key) before performing any maintenance or adjustment, unless otherwise specified. Vehicle must be parked in a safe place, away from the trail.

General

The drive pulley is factory calibrated to transmit maximum engine power at a predefined RPM. Factors such as ambient temperature, altitude or surface condition may vary this critical engine RPM thus affecting snowmobile efficiency.

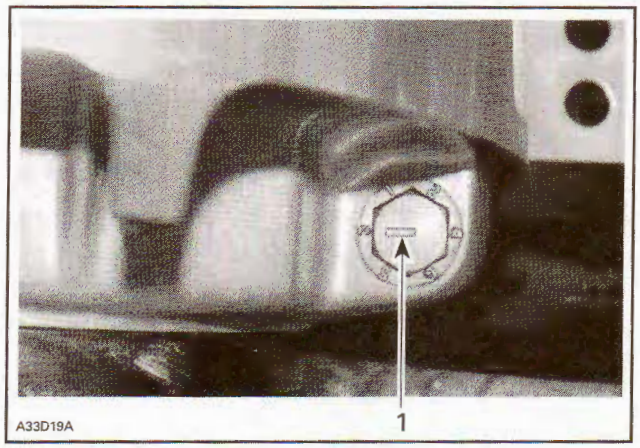
This adjustable drive pulley allows setting maximum engine RPM to maintain maximum power.

Calibration screws should be adjusted so that actual maximum engine RPM matches the maximum horsepower RPM.

ENGINE	MAXIMUM HORSEPOWER RPM
600 RS	8500 RPM (± 100)
550 FC	6800 RPM (± 100)
500SS	8000 RPM (± 100)
600 HO E TEC	8100 RPM (± 100)
800R	8150 RPM (± 100)
800 E TEC	7900 RPM (± 100)

NOTE: Use precision digital tachometer for engine RPM adjustment.

Calibration screw has a notch on top of its head.



TYPICAL
1. Notch

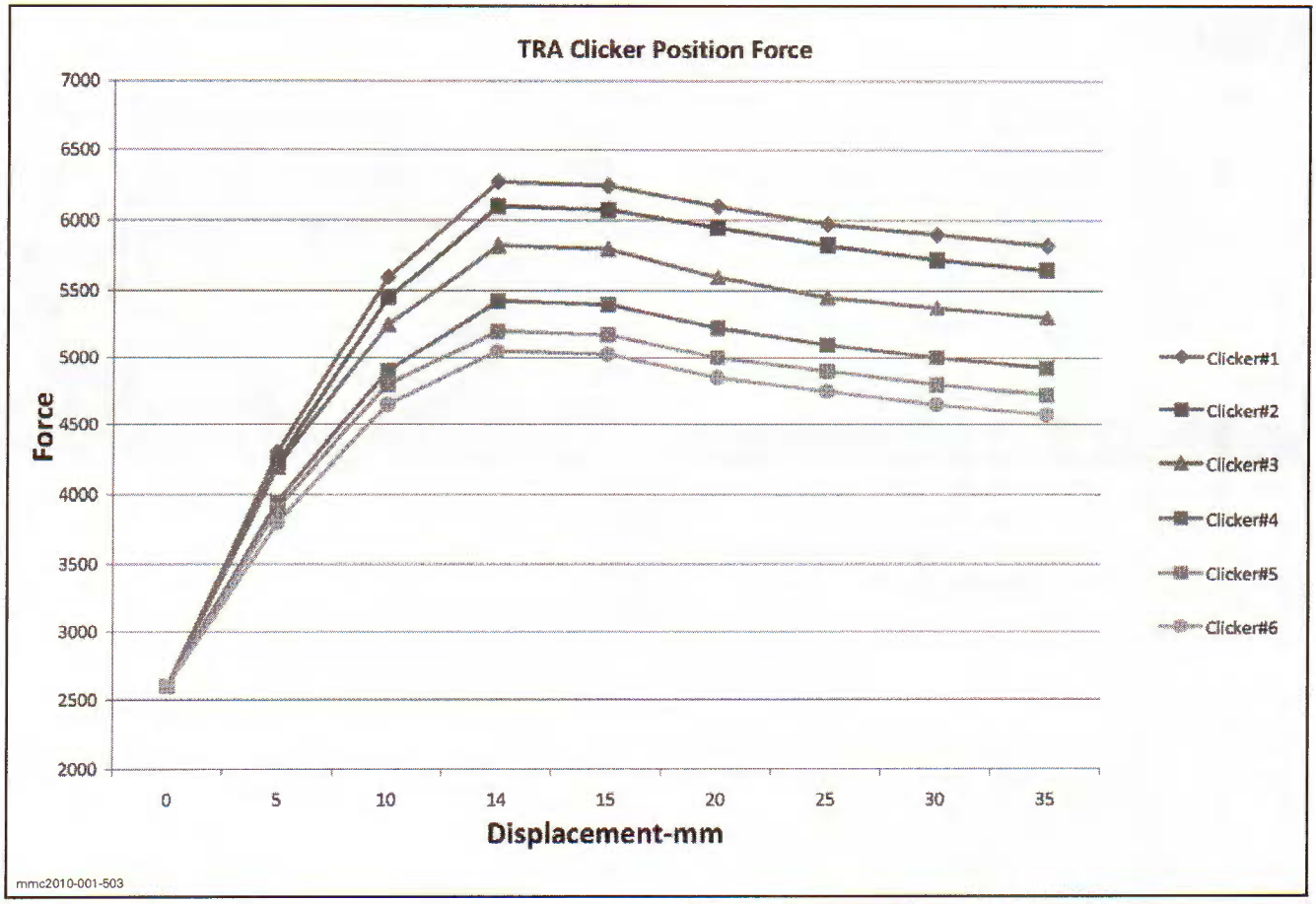
There are 6 positions numbered 1 to 6.

Each position modifies maximum engine RPM by about 150 RPM.

Lower position numbers decrease engine RPM in steps of 150 RPM and higher position numbers increase it in steps of 150 RPM.

Example:

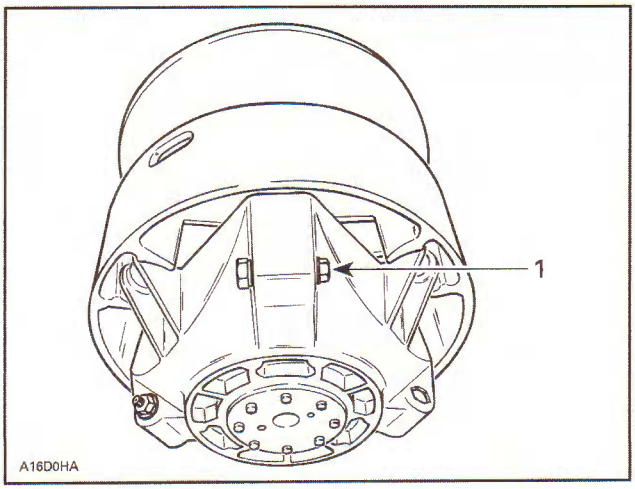
Calibration screw is set at position 4 and is changed to position 6. So maximum engine RPM is increased by 300 RPM.



Adjustment

Just loosen locking nut enough to pull calibration screw partially out and adjust to desired position. Do not completely remove the locking nut. Torque locking nuts to 10 N•m (89 lbf•**in**).

CAUTION: Do not completely remove calibration screw otherwise internal washers will fall off. Always adjust all 3 calibration screws and make sure they are all set to the same position.



TYPICAL
1. Loosen just enough to permit rotating of calibrate screw

⚠ WARNING

NEVER disassemble or modify the drive pulley.
Improper assembly or modifications could cause the pulley to explode violently under the stress generated by the high rotational speed. This could lead to serious injury including the possibility of death.
See your SKI DOO dealer to maintain or service the drive pulley. Improper servicing or maintenance may affect performance and reduce belt life. Always respect maintenance schedules.

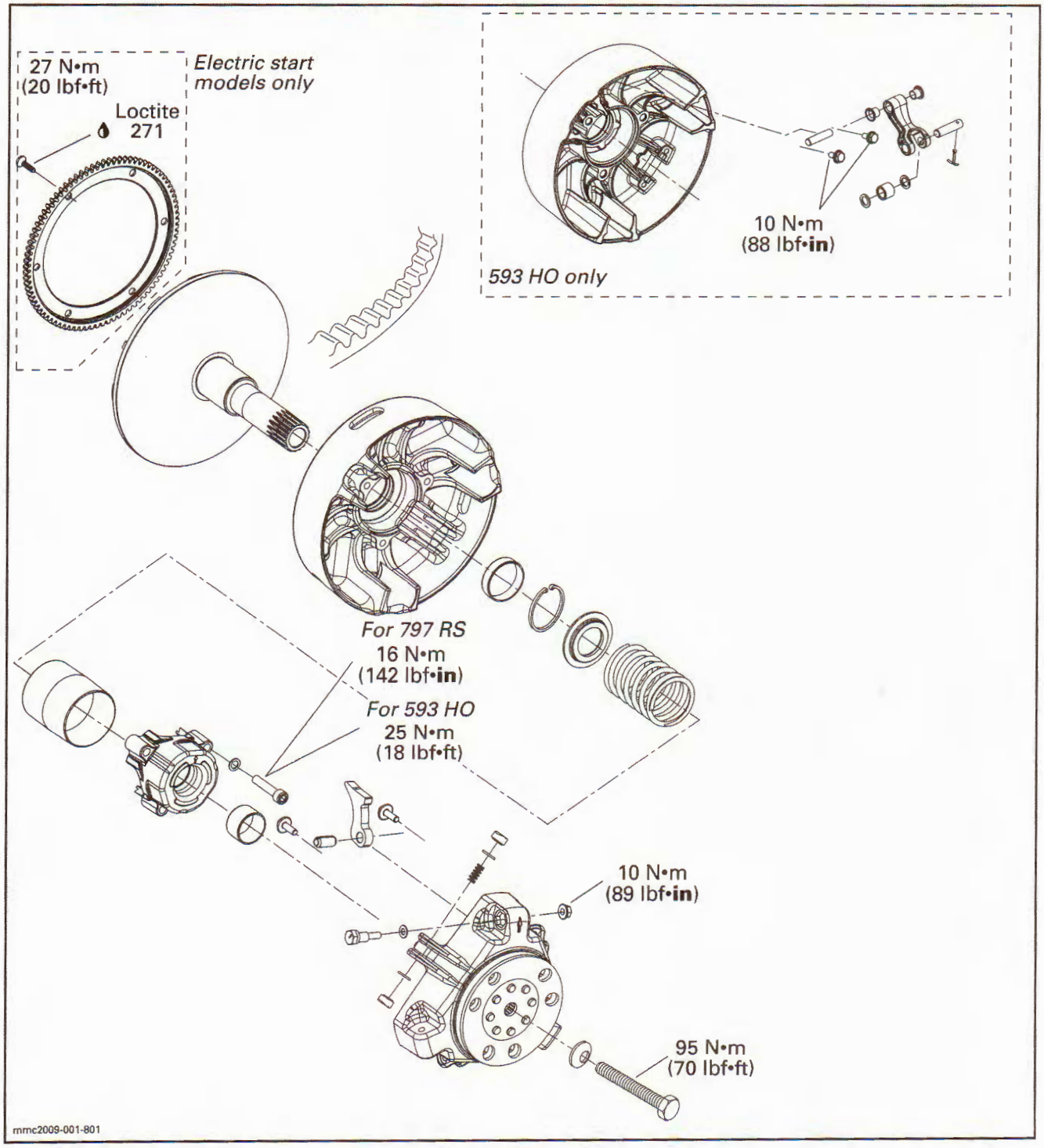
⚠ WARNING

NEVER operate engine:
- without shields and belt guard securely installed
- with hood and/or side panels opened or removed.

NEVER attempt to make adjustments to moving parts while engine is running.

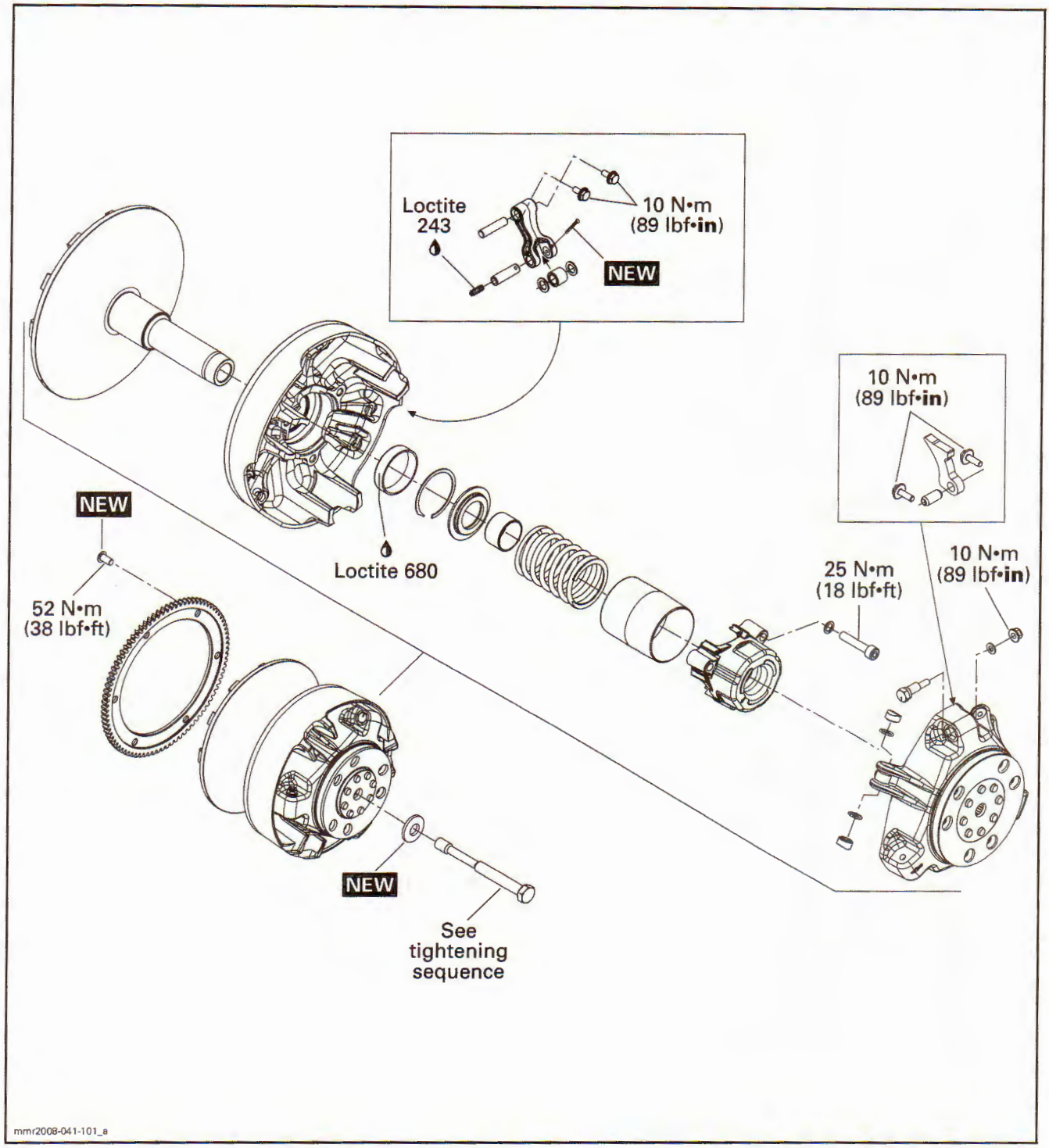
DRIVE PULLEY TRA III

NOTE: This is a lubrication free drive pulley. Always refer to appropriate *PARTS CATALOG* for replacement part.



TRA VII

800R


Loctite
243
10 N•m
(89 lbf•in)
NEW
10 N•m
(89 lbf•in)
NEW
52 N•m
(38 lbf•ft)
Loctite 680
25 N•m
(18 lbf•ft)
10 N•m
(89 lbf•in)
NEW
See
tightening
sequence
mmr2008-041-101_a

DRIVE CLUTCH SERVICE PROCEDURE

SERVICE TOOLS

Description	Part Number	Page
forks	529 005 500	150, 154
puller	529 022 400	149
spring compressor	529 035 524	150, 153
holder	529 035 674	149

SERVICE PRODUCTS

Description	Part Number	Page
Loctite 271	413 702 900	152

Some drive pulley components (return spring, ramp) can be changed to improve vehicle performance in high altitude regions.

CAUTION: Such modifications should only be performed by experienced mechanics since they can greatly affect vehicle performance. Verify spring specifications before installation. Do not only refer to the spring color code.

NOTE: TRA drive pulley stands for Total Range Adjustable drive pulley.

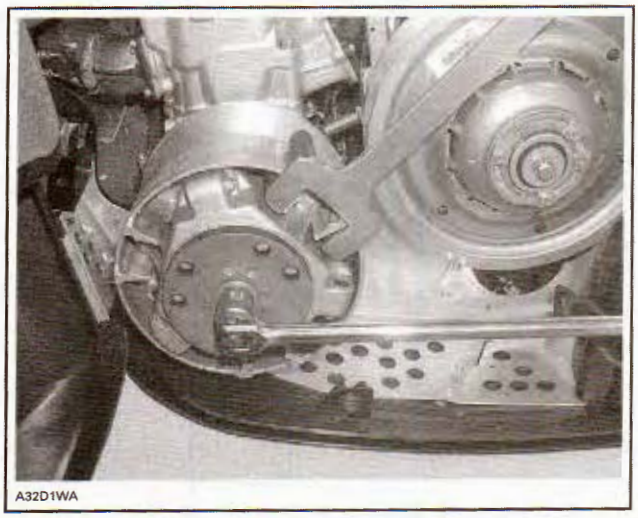
⚠ WARNING

Any drive pulley repairs must be performed by an authorized Bombardier snowmobile dealer. Sub component installation and assembly tolerances require strict adherence to procedures detailed.

REMOVAL

Conical Spring Washer and Screw

Use holder (P/N 529 035 674).



INSERT THE TOOL IN SLIDING FLANGE TOWER

⚠ WARNING

Never use any type of impact wrench at drive pulley removal and installation.

Remove retaining screw.

To remove drive pulley ass'y and/or fixed half from engine, use puller (P/N 529 022 400) for liquid cooled models.

CAUTION: These pulleys have metric threads. Do not use imperial threads puller. Always tighten puller by hand to ensure that the drive pulley has the same type of threads (metric vs imperial) prior to fully tightening.

To Remove Drive Pulley Ass'y

Retain drive pulley with clutch holder.

Install puller in pulley shaft then tighten.

DISASSEMBLY

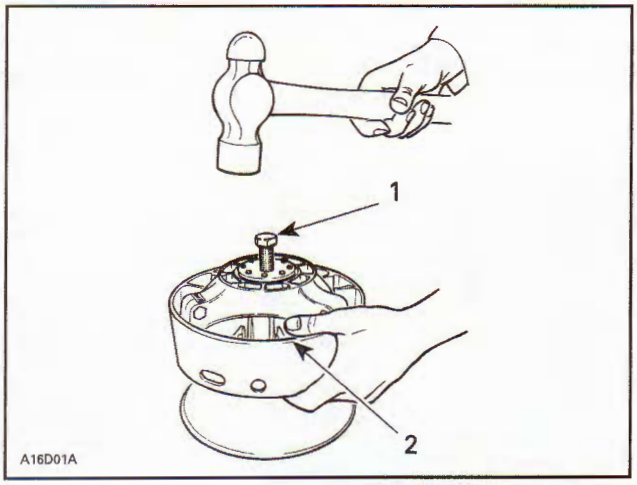
Screw and Ring Gear

CAUTION: Retaining screws must be heated before disassembly. Do not exceed 150°C (300°F).

Fixed and Sliding Half

CAUTION: Do not tap on governor cup.

Screw puller into fixed half shaft about 13 mm (1/2 in). Raise drive pulley and hold it by the sliding half while knocking on puller head to disengage fixed half.



TYPICAL
1. Puller
2. Holding sliding half

NOTE: No components marking is required before disassembling this drive pulley since it has factory mark and arrows as indexing reference.

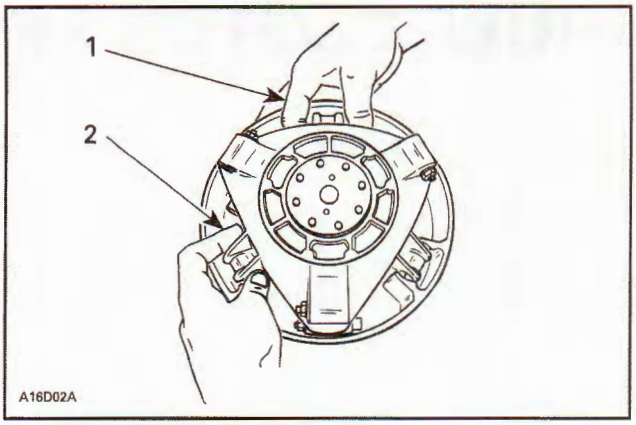
Cushion Drive

CAUTION: Do not disassemble cushion drive. Governor cup and cushion drive are factory balanced as an assembly.

Slider Shoe and Governor Cup

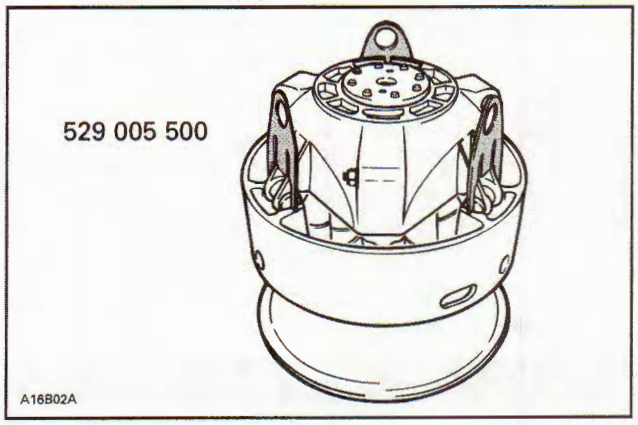
Carefully lift governor cup until slider shoes come at their highest position into guides.

Hold a slider shoe set then carefully lift its housing and remove slider shoes. Proceed the same way for other housings lifting one at a time.



1. Hold slider shoes
2. Lift one housing at a time

NOTE: To ease disassembly, forks (P/N 529 005 500) should be used to hold slider shoes prior to removing governor cup.



Spring Cover Ass'y

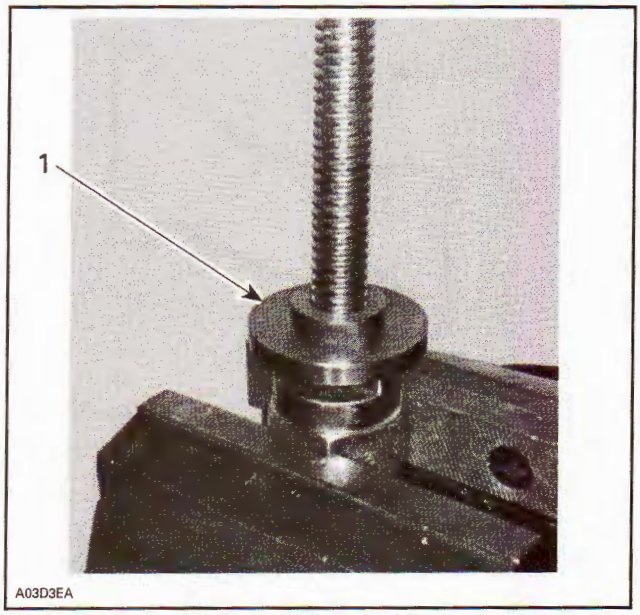
It is pushed by clutch spring pressure.

⚠ WARNING

Clutch spring is very strong. Never attempt to remove spring cover without the recommended tools.

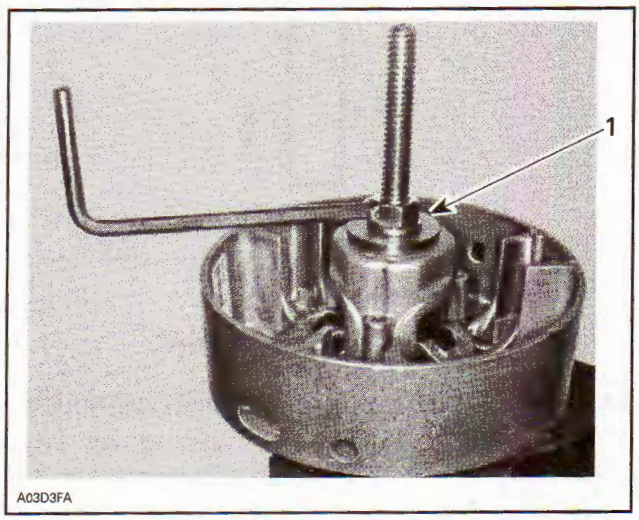
Use spring compressor (P/N 529 035 524).

Install support guide.



1. Support guide

Install sliding half then a second support guide. These support guides will prevent bushing damages.



1. Support guide

Remove 3 Allen screws retaining spring cover then unscrew compressor.

CLEANING

Fixed and Sliding Half

Clean pulley faces and shaft with fine steel wool and dry cloth.

Fixed Half and Crankshaft End

Parts must be at room temperature before cleaning.

Using a paper towel with cleaning solvent, clean crankshaft tapered end and the taper inside the fixed half of the drive pulley, crankshaft threads and retaining screw threads.

⚠ WARNING

This procedure must be performed in a well ventilated area.

CAUTION: Avoid contact between cleaner and crankshaft seal because damage may occur.

Remove all hardened oil deposits that have baked on crankshaft and pulley tapered surfaces with coarse or medium steel wool and/or sand paper no. 600.

CAUTION: Do not use any other type of abrasive.

Reclean mounting surfaces with paper towel and cleaning solvent.

Wipe off the mounting surfaces with a clean, dry paper towel.

CAUTION: Mounting surfaces must be free of any oil, cleaner or towel residue.

Bushing

Only use petrol base cleaner when cleaning bushings.

CAUTION: Do not use acetone to clean bushing.

INSPECTION

Drive pulley should be inspected annually.

Thrust Washer and Roller

Check roller for roundness of external diameter. Check thrust washer for thickness wear. Replace as required.

CAUTION: Ensure rollers are in good condition. Replace as required.

Fitting Bolt Ass'y and Flanged Bushing

Check for wear, replace as required.

O Ring and Slider Shoe

Check if O rings are cracked, cut or crushed. Replace as required.

Check slider shoes for wear. Replace if groove is not apparent on top.

Fixed Half and Governor Cup

Inspect splines and free play between both parts. Maximum free play is 0.5 mm (.020 in) measured at calibration screw radius. Replace if required.

ASSEMBLY

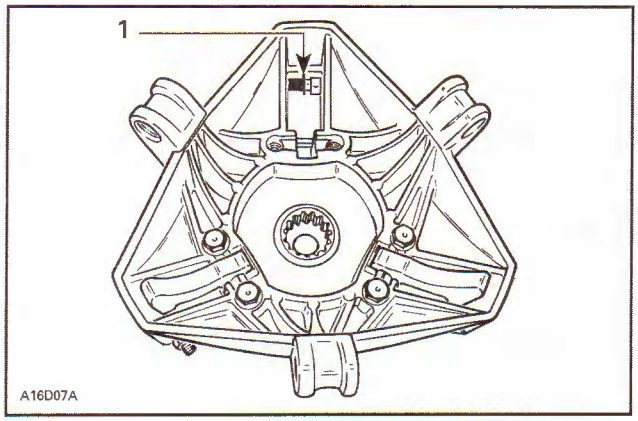
NOTE: This drive pulley is lubrication free. **Do not lubricate** any component.

Screw, Ring Gear and Loctite 271

Apply Loctite 271 (P/N 413 702 900) on threads and then torque to 27 N•m (20 lbf•ft).

Calibration Screw, Washer and Locking Nut

When installing calibration screw, make sure to install washer as shown.



1. Washer

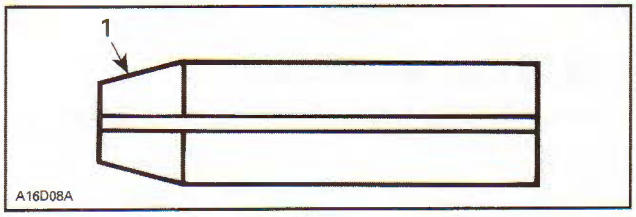
Torque locking nut to 10 N•m (89 lbf•**in**).

Pin

Always use the same type of pin as originally installed when servicing. Different types have different weights for calibration purpose.

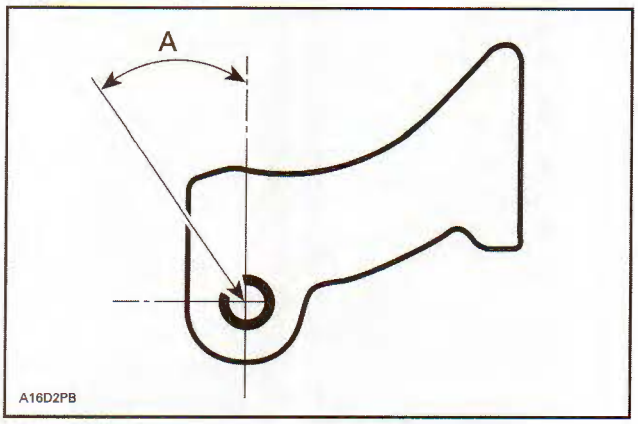
Screw, Dowel Tube and Ramp

Insert dowel tube from chamfered side. Make sure ramp is centered on dowel tube.

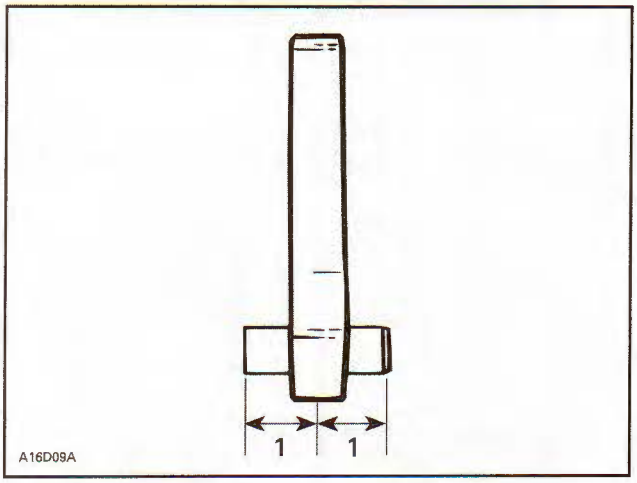


1. Chamfered side

Position dowel tube split at the angle A.



MODEL	ANGLE (A)
With TRA III	45 ± 3°



1. Equal distance

Torque screws to 10 N•m (89 lbf•**in**).

Screw, Lever Ass'y, Nut and Cotter Pin

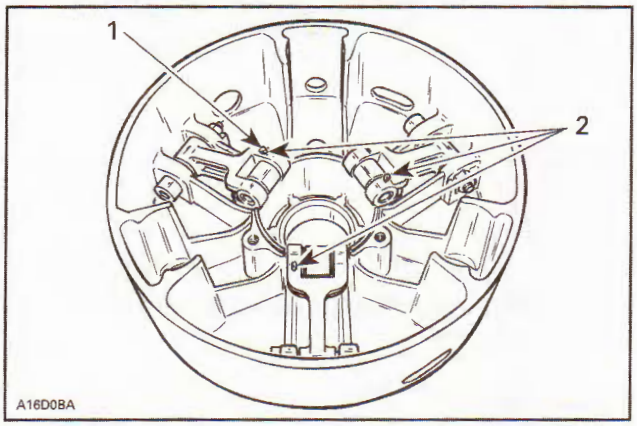
NOTE: While installing lever assemblies make sure that the curved sides of the levers are outwards as shown.

Always install lever assemblies so that cotter pins are on the shown side. Besides install cotter pin head on top when lever is sat at bottom of sliding half. Bend cotter pin ends to sit perfectly against lever.

⚠ WARNING

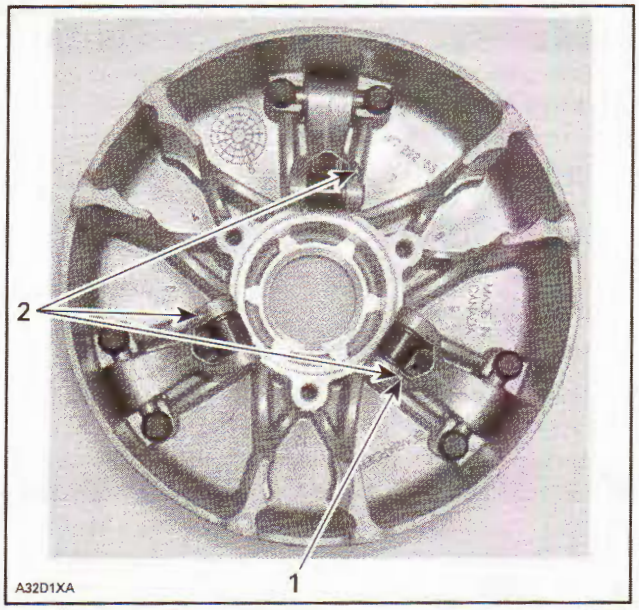
Whenever replacing centrifugal levers, always replace all 3 at the same time. Otherwise, drive pulley misbalancing will occur because of levers difference.

797 Engine Equipped Models Only



TYPICAL
1. Head on top
2. All on the same side

593 HO Engine Equipped Models Only



1. Head on top
2. All on the same side

All Models

CAUTION: Lever assemblies must be installed so that cotter pins are on the same side.

Torque nuts to 12 N•m (106 lbf•**in**).

CAUTION: Lever ass'y and rollers must move easily after installation.

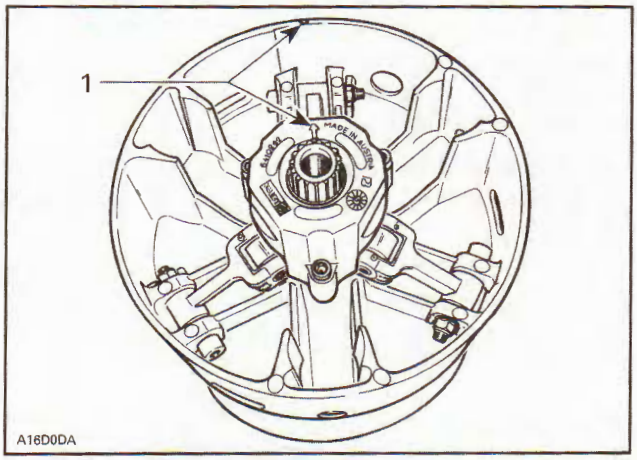
Fixed Half, Sliding Half, Spring, Spring Cover and Screw

To install spring cover, use spring compressor (P/N 529 035 524).

Assemble fixed and sliding halves. Note that fixed halves have different cone angle. Match cone angle with crankshaft.

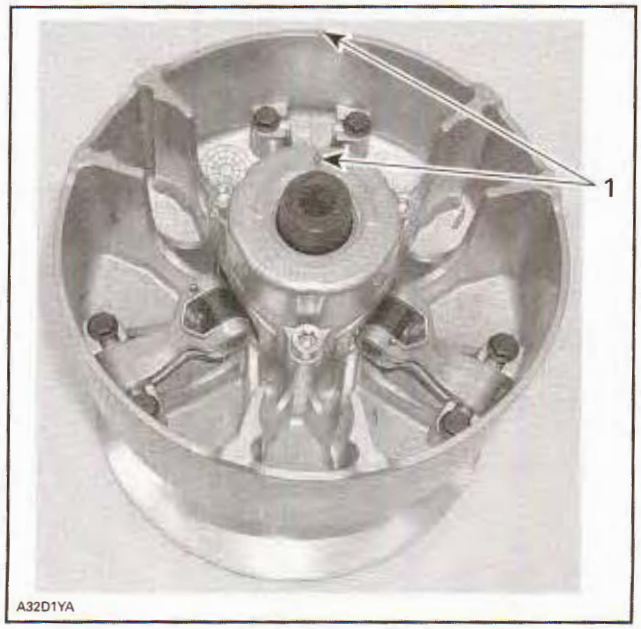
Lift sliding half against spring cover and align spring cover arrow with sliding half mark.

797 Engine Equipped Models Only



TYPICAL
1. Align

593 HO Engine Equipped Models Only



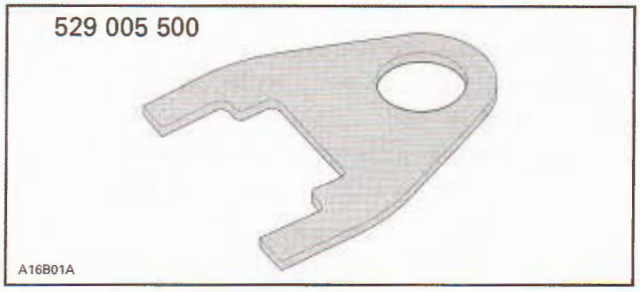
1. Align

All Models

Tighten screws to proper torque as mentioned in exploded view.

Sliding Half, Slider Shoe and Governor Cup

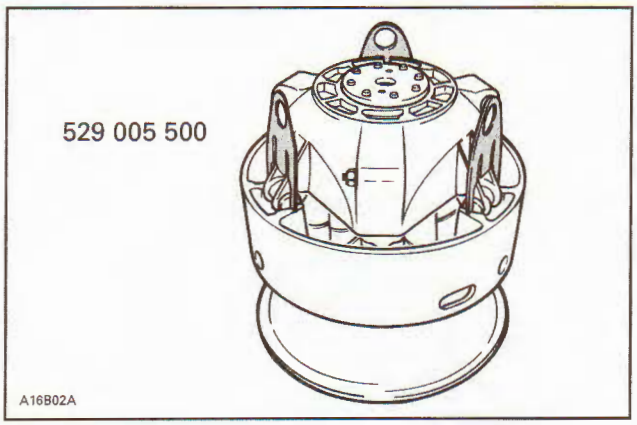
To install governor cup, use following tool:



Insert spring and slider shoes into governor cup so that groove in each slider shoe is vertical to properly slide in guides.

CAUTION: Make sure O rings are installed on slider shoes and that grooves are positioned vertically.

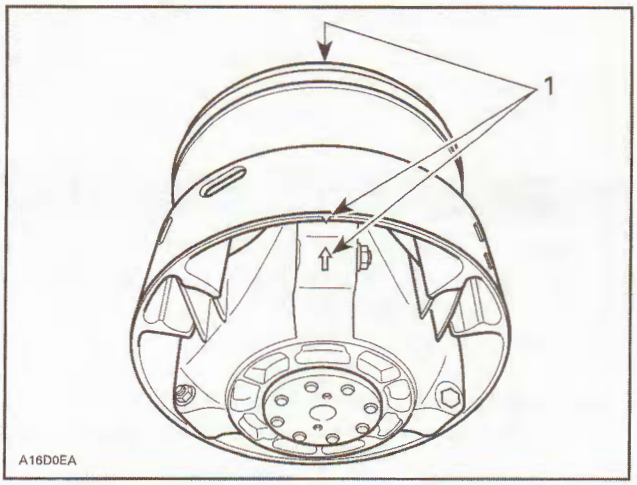
Install fork (P/N 529 005 500) into slider shoe grooves to maintain them for governor cup installation. Proceed on 3 set of slider shoes.



TYPICAL

Make sure to align governor cup arrow with sliding half and fixed half mark.

NOTE: If fixed half has no mark, align governor cup mark with segment no. 1 of inner half. Segments are identified on engine side.



TYPICAL
1. Align

Carefully slide governor cup into sliding half. Align mark of governor cup with mark of fixed half.

Remove forks and push governor cup so that its splines engage with fixed half shaft splines.

CAUTION: Make sure splines of both parts are fully engaged.

INSTALLATION

⚠ WARNING

Do not apply anti seize or any lubricant on crankshaft and drive pulley tapers.

⚠ WARNING

Never use any type of impact wrench at drive pulley removal and installation.

Clean mounting surfaces.

Drive Pulley Ass'y

The following installation procedure must be strictly adhered to.

Install drive pulley on crankshaft extension.

Install a new conical spring washer with its concave side towards drive pulley then install screw.

⚠ WARNING

Never substitute conical spring washer and/or screw with jobber ones. Always use Bombardier genuine parts for this particular case.

Use holder. See removal procedure.

Torque screw to 80 to 100 N•m (59 to 74 lbf•ft).

Install drive belt and guard.

Raise and block the rear of the vehicle and support it with a mechanical stand.

⚠ WARNING

Ensure that the track is free of particles which could be thrown out while track is rotating. Keep hands, tools, feet and clothing clear of track. Ensure nobody is standing near the vehicle.

Accelerate the vehicle at low speed (maximum 30 km/h (20 MPH)) and apply the brake, repeat 5 times.

Retorque screw to 120 N•m (88 lbf•ft).

⚠ WARNING

After 10 hours of operation the transmission system of the vehicle must be inspected to ensure the retaining screw is properly torqued.

DRIVE PULLEY ADJUSTMENT

The drive pulley is factory calibrated to transmit maximum engine power at a predefined RPM. Factors such as ambient temperature, altitude or surface condition may vary this critical engine RPM thus affecting snowmobile efficiency.

This adjustable drive pulley allows setting maximum engine RPM in the vehicle to maintain maximum power.

Calibration screws should be adjusted so that actual maximum engine RPM in vehicle matches with the maximum horsepower RPM.

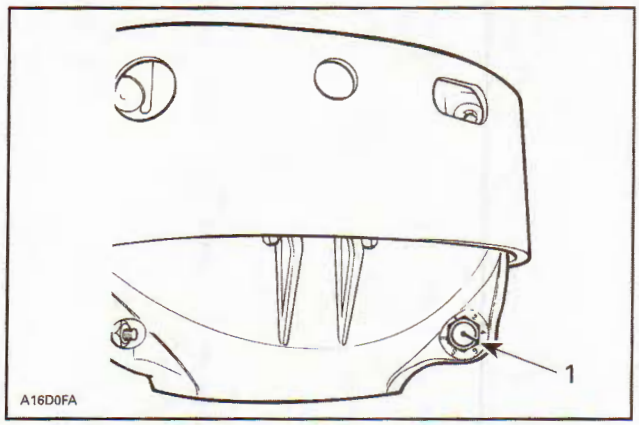
NOTE: Use precision digital tachometer for engine RPM adjustment.

NOTE: The adjustment has an effect on high RPM only.

To adjust, modify ramp end position by turning calibration screws.

Calibration Screw, Locking Nut and Governor Cup

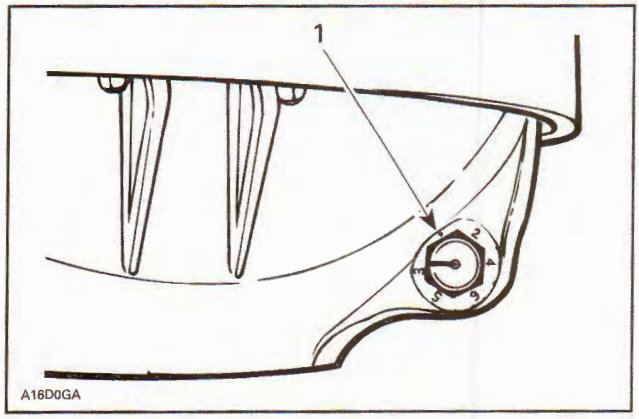
Calibration screw has a notch on top of its head.



1. Notch

Governor cup has 6 positions numbered 2 to 6. Note that in position 1 there is no stamped number (due to its location on casting).

See *TECHNICAL DATA* for original setting.



1. Position 1 (not numbered)

Each number modifies maximum engine RPM by about 150 RPM.

Lower numbers decrease engine RPM in steps of 150 RPM and higher numbers increase it in steps of 150 RPM.

Example:

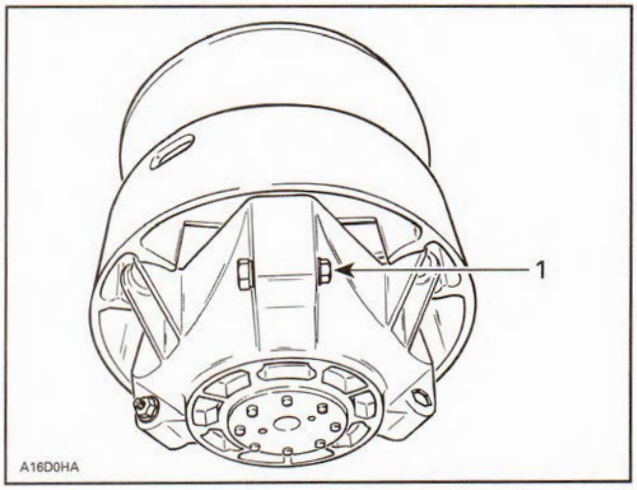
Calibration screw is set at position 3 and is changed to position 5. So maximum engine RPM is increased by about 300 RPM.

To Adjust:

Just loosen locking nut enough to pull calibration screw **partially** out and adjust to desired position. Do not completely remove the locking nut. Torque locking nuts to 10 N•m (89 lbf•**in**).

CAUTION: Do not completely remove calibration screw otherwise its inside washer will fall off.

CAUTION: Always adjust all 3 calibration screws and make sure they are all set at the same number.

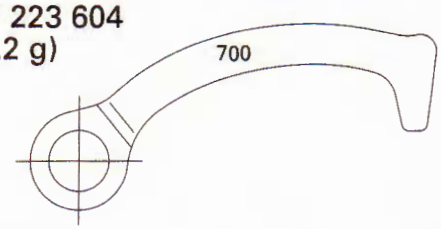


TYPICAL
1. Loosen just enough to permit rotating of calibration screw

E-DRIVE II

E-DRIVE II (CLUTCH SPRING)						
	FORCE LB		RATE LENGHT	FREE LENGHT		
P/N	60 mm	28 mm	lb/in	mm	COLOR CODE	MATERIAL
417223745	80	150	56	98	RD/RD	ST
417223746	110	190	64	105	YL/OR	ST
417223747	80	135	44	108	RD/WH	ST
417223748	80	177	77	87	RD/YL	ST
417223749	80	190	87	84	RD/OR	ST
417223750	80	210	103	81	RD/GN	ST
417223751	100	155	44	120	YL/RD	ST
417223760	108	190	65	103	YL/OR	ST

417 223 604
(31.2 g)



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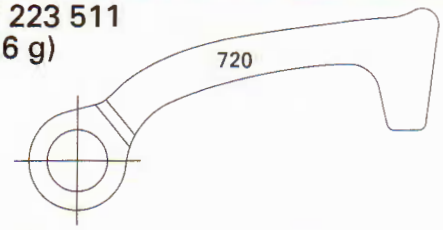
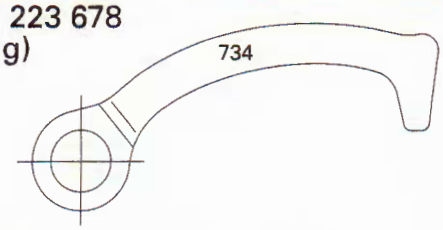
417 223 511
(32.6 g)



mmc2013-001-025_a

417 223 678
(28 g)



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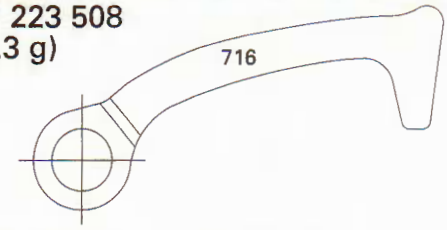
417 223 508
(33.3 g)



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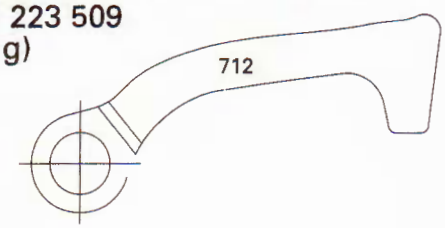
417 223 509
(39 g)



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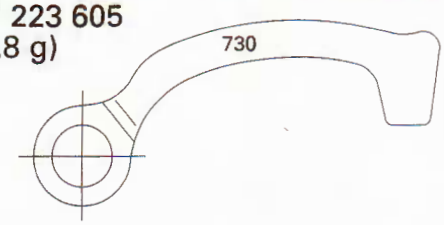
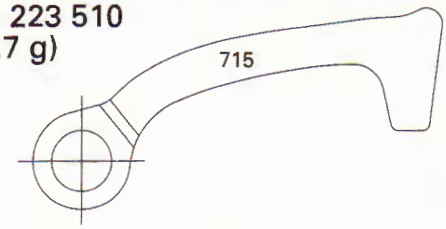
417 223 605
(28.8 g)



mmc2013-001-027_a

417 223 510
(35.7 g)



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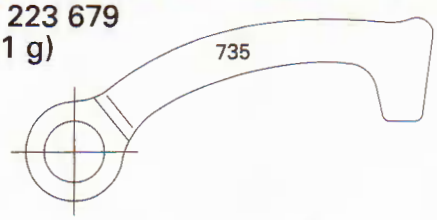
417 223 679
(37.1 g)



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DRIVEN PULLEY

The driven pulley is the torque sensing component of the CVT transmission. The driven pulley sliding half is influenced by a spring and cam arrangement that react to varying load conditions of the vehicles drive axle. The driven pulley halves are held together by a spring located between the sliding half pulley and a cam mounted on the end of the fixed pulley shaft. In order for the drive belt to up shift it has to overcome the side force that is being applied to it by the driven pulley sheaves. The tension of the belt in the driven pulley sheaves causes the driven pulley to rotate and begin to operate as soon as the drive pulley engages. As the RPM increases, the belt rises between the sheaves of the drive pulley. This increases the belt tension and the belt is pulled tighter into the sheaves of the driven. As the belt tension increases, the sides of the belt have an increased leverage against the driven sheaves. This allows the sheaves to separate and the belt to move lower between the two pulley halves. The ratio between the drive and driven pulley changes as it begins to up shift. The combination of the spring tension, and the angle of the cam (or helix) work together to control the speed of the up shift. The leverage of the belt sides against the driven sheaves is what the driven pulley is reacting to, this also called torque input. Belt side angles, sheave side angles, belt durometer (or compound), belt tension, belt/ sheave heat and the tuning of the driven pulley all have inputs on as how the driven pulley reacts to the torque input. The cooler the pulleys and the belt run, the more efficient the system is. Another part not to be overlooked is the system backshifts. If the rpms of the driven pulley is reduced because of less throttle input or higher loads on the vehicles drive axle, the belt tension will be reduced and the pulley system will backshift into a lower ratio. The spring tension and cam angle have an effect on how the driven pulley back shifts, as the sheaves side force on the belt varies with engine RPM and drive axle load conditions.

It should be noted that as the drive pulley opens, the sliding half of the driven pulley is moving in three directions, forward with the belt rotation, backward against the cam and laterally along the driven pulley shaft. The forward travel is created by the driving direction of the belt. The lateral movement occurs as the driven pulley up shifts or down shifts and the sheaves separate or come back together. Since the slider shoes or rollers of the sliding half pulley are resting on the fixed cam, the lateral movement must also follow the contour of the cam angle surface. As this happens, this lateral movement is also a backward movement.

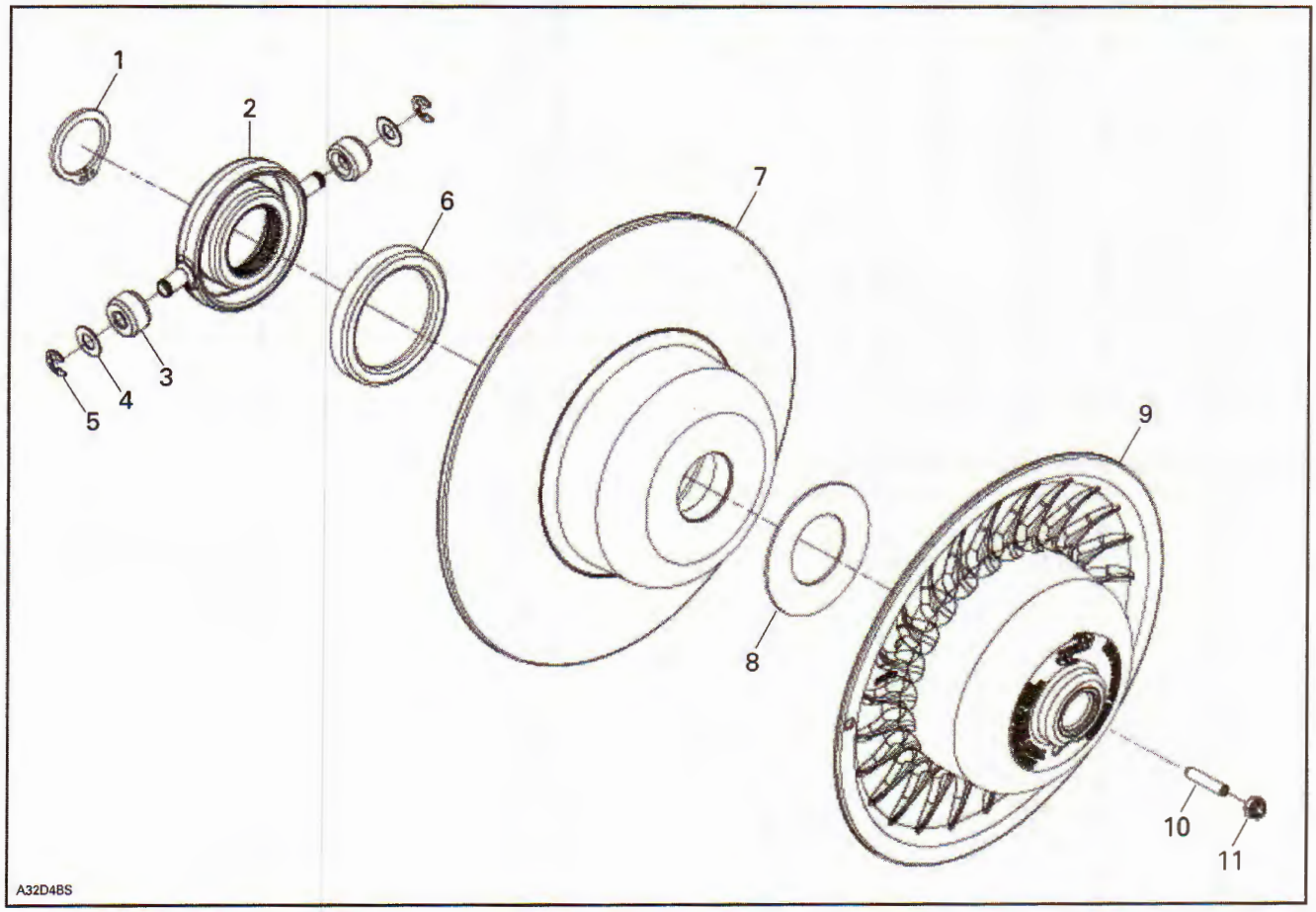
While the drive pulley for the most part controls the up shift of the vehicle and maintains the engine RPM, the driven pulley for the most part controls the backshift while the vehicles drive axle speed is reduced or put under heavier load. Although keep in mind, the drive and driven pulleys calibrations work in conjunction of each other. This is based on two matched and tuned calibrations that work together to achieve the best up shift, downshift and efficiency for the application. The overall efficiency of the CVT system is influenced greatly by the driven pulley. The efficiency achieved by the driven pulley is maintained by the proper side force against the drive belt. If there is too much side force, the engine through the drive pulley will have to work harder to up shift the belt. If there is insufficient side pressure the belt may slip. In either case the belt will overheat and efficiency will be lost. Signs of overheating will be noticed by inspecting the sides of the belt for glazed appearance, cords pulling out the sides or top or actual delamination of the belt. Other signs of overheating or slippage could be pulleys hot to touch or an excessive amount of belt dust scattered in belly pan of vehicle.

The side force of the driven pulley sheaves on the belt sides and the tuned relationship between the drive and driven applications is carefully determined by the calibration engineers and should not be adjusted for the average rider, however there are a wide assortment of driven springs and cams available for the qualified and experienced technician to experiment with as conditions may change.

TEAM PERFORMANCE DRIVEN

SERVICE TOOLS

Description	Part Number	Page
1/8" Allen wrench	920001	163
Torx Wrench	920002	164
compression tool	930001	165
belt installation tool	930002	164



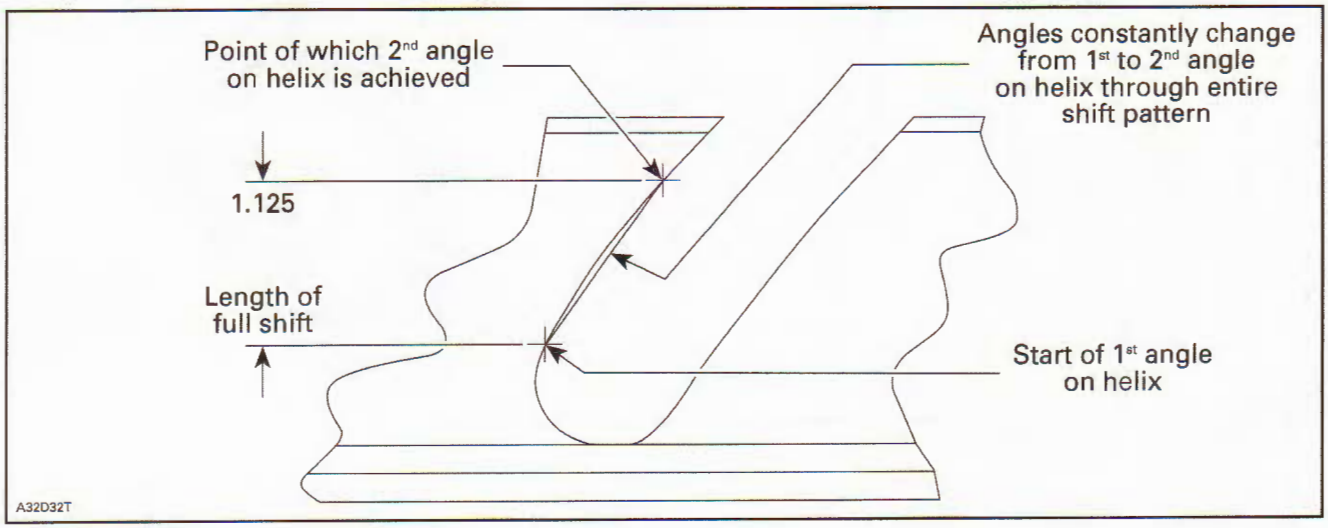
TEAM RAPID REACTION SNOW CLUTCH BREAKDOWN

ITEM NO.	P/N	QUANTITY	DESCRIPTION	SERVICEABLE
1	130032	1	Ring, Retaining Basic Ext. 1.500	Yes
2	285275	1	Spider, 38T 10.75 Mach.	No
3	460079	2	Roller, Clutch	Yes
4	150151	2	Washer, Thrust	Yes
5	130059	2	Ring, Retaining E Ring Ext..375	Yes
6	430063	1	Washer, Thrust	Yes
7	410488	1	Subassembly Moveable Sheave	Bushing Only
8	150175	1	Spacer	Yes
9	410489	1	Subassembly Stationary Sheave	No
10	105100	1	Screw, Set Hex. SKT 1/4 20 x 1.25	Yes
11	110003	1	Nut, 1/4 20 UNC Flexlock	Yes

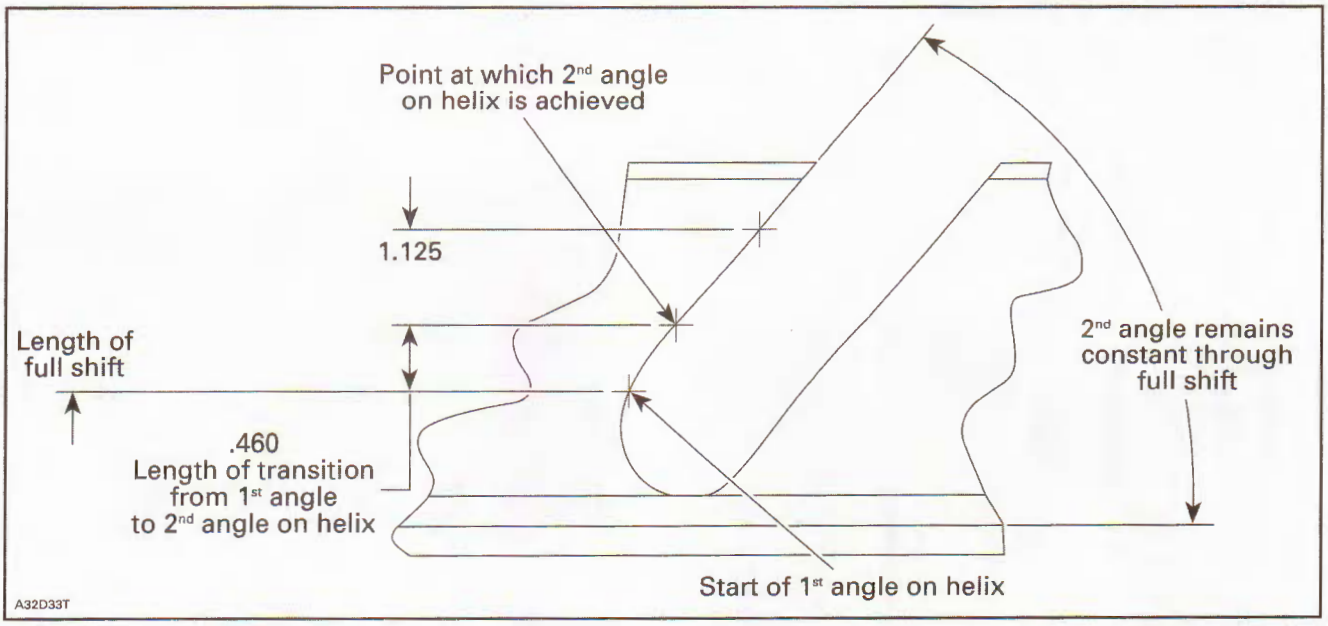
The two pictures shown below are showing how the helix angles are called out and how they are measured. The first picture shown is a full progressive stamped as "F" on a helix (example 54 40 F). The second picture refers to a partial or .46 as most of our helix's are called out (example 58 44.46). During the transition zone the angle is constantly changing.

The angle will remain constant once the shift pattern passes through the transition zone.

Full Progressive Twin Trax Helix



Partial Progressive Twin Trax Helix



CVT OPERATION

Each clutch comes from TPS with the proper internal components installed for its specific engine model. Therefore, modifications or variations of components at random are never recommended. Relationship Between Drive Clutch Weights And Spring In Maintaining Operating RPM. The drive clutch is RPM and torque sensing unit designed to transfer the maximum amount of horsepower from the engine to the ground. This is accomplished by weights and a spring inside the unit which react to the centrifugal force from the engine RPM.

The spring and weights work in combination. In a properly set up clutch, the maximum desired operating RPM will be reached immediately after clutch engagement, under full throttle conditions. To gain optimum power this RPM should be maintained. As centrifugal force pushes the weight against the rollers, the movable sheave will force the belt to climb up the drive clutch sheave and increase vehicle speed.

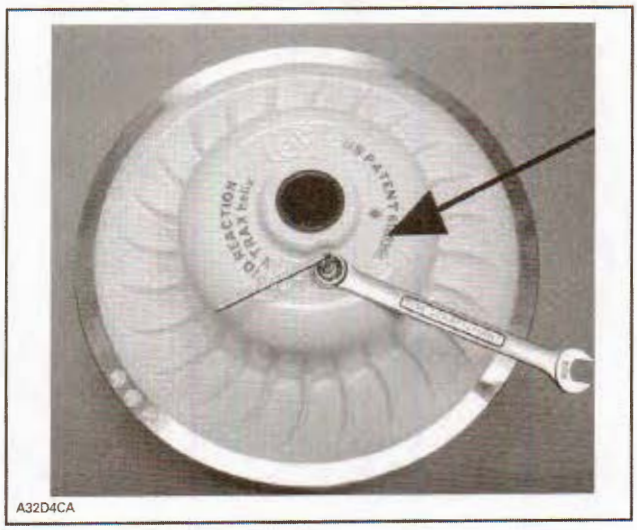
If the weights are too light, or the spring rate too high, the engine will overspin and the clutches won't be able to shift all the way out. If the weights are too heavy or the spring is too light, the desired engine RPM will not be achieved. The result of either condition will be dramatic loss of horsepower and torque.

ADJUSTING BELT DEFLECTION ON THE TEAM ROLLER SECONDARY

1. To adjust the sheaves, loosen the 7/16" jam nut on the belt width adjuster.
2. Using a 1/8" Allen wrench (P/N 920001), adjust the threaded set screw as needed.

NOTE: Turn the set screw in (clockwise) to increase the distance between the sheaves and out (counterclockwise) to decrease the distance.

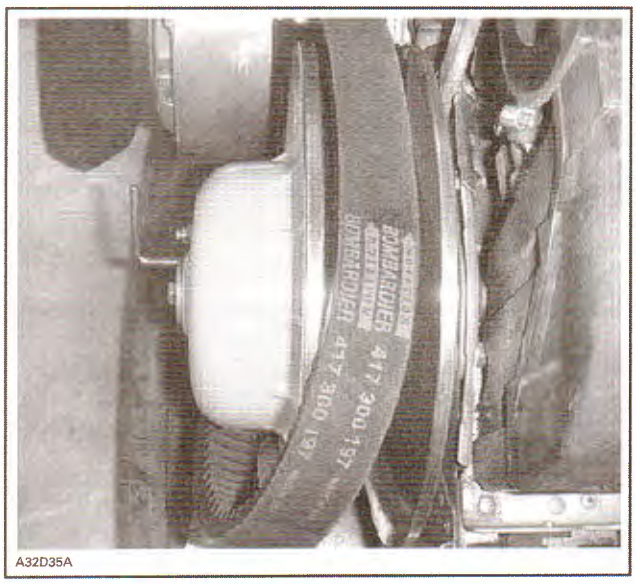
3. Tighten the jam nut after the belt adjustment has been made. See arrow.



BELT REMOVAL ON TEAM ROLLER SECONDARY

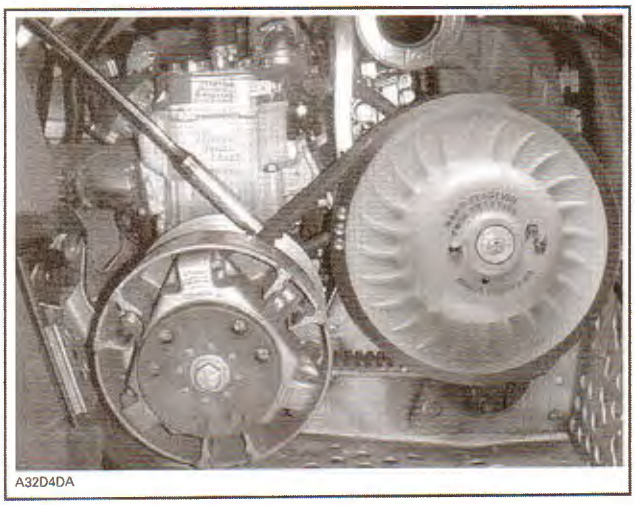
1. Thread the belt installation tool (P/N 930002) into the open hole next to the belt width adjuster bolt.
2. Thread the tool into the hole until the sheaves separate enough to remove the drive belt.

(If the tool turns hard, rotate the moveable back and forth to ensure that the roller is not locked in the ER notch.)


A32D35A

Too Much Belt Deflection

If the belt is too long or the center distance is too short, the initial starting ratio will be too high, resulting in performance loss. This is due to the belt rising too high in the drive clutch sheaves upon engagement. (Belt riding below top of sheave.)


A32D4DA

Not Enough Belt Deflection (belt too tight)

If the drive belt is too short or the center distance is too long, the ratio will again be incorrect. In addition, the machine may creep when the engine idles, causing damage to the internal face of the drive belt.


A32D4EA

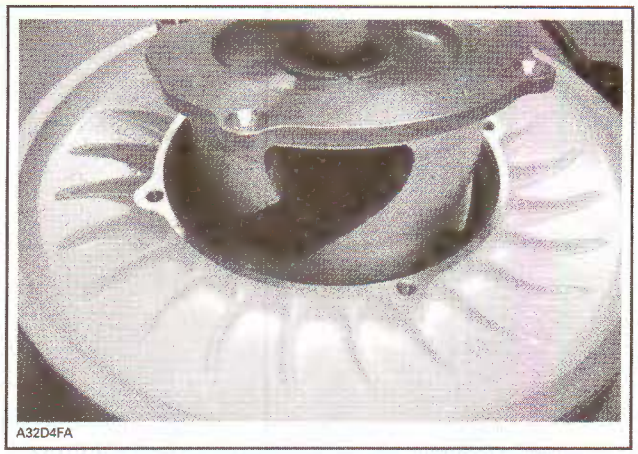
MEASURING BELT DEFLECTION

IMPORTANT NOTE: Do not apply excessive pressure to force belt into driven sheaves. This will result in an improper measurement. If belt deflection cannot be adjusted within specification using methods below, inspect center distance and compare to specification on page.

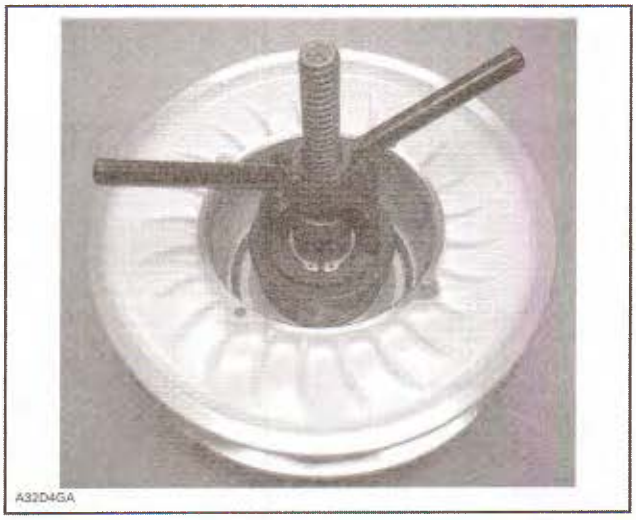
1. Measure belt deflection with both clutches at rest and in their full neutral position.
2. Place a straight edge on the belt and apply downward pressure while measuring at the point shown.
   Belt Deflection 1 1/4 in (3.2 cm).

TEAM SECONDARY CLUTCH MAINTENANCE/ADJUSTMENT

1. Remove clutch from vehicle.
2. Remove the screws that hold the helix in place, (Torx Wrench (P/N 920002).
3. Pull and twist upward to remove helix from the clutch.
   NOTE: If changing helix angles move the helix 90 degrees to the desired combination and reinstall holding screws.


A32D4FA

1. Place the compression tool (P/N 930001) through the clutch shaft and twist handle down to compress spring.


A32D4GA

2. Once you have tension on the spider assembly, remove the snap ring.
3. Back off the compression tool and remove the spider assembly.
4. Note the location of the skip tooth on the spider assembly for installation. The skip tooth is marked with an X on the spider that should match the skip tooth found on the clutch shaft. The X should also line up with the stamped "X" on the moveable sheave.
5. Inspect spring rate at proper load heights with spring compression scale (all TPS secondary springs measured at load heights of 2.2" and 1.1"). If spring rate measures less than 10% at specified load heights it should be replaced.
6. Inspect roller assembly for unusual wear or damage (flatspots or dia. less then .925).
7. Inspect shaft for nicks or burrs.
8. Measure ID of moveable bushing, clearance to shaft should not exceed .010". If this condition exists replace bushing. Part No. 180165.
9. With air hose or clean dry rag wipe or blow all components free of all loose contaminants.

Reassemble In Reverse Order

- **Make sure that the "X" on the spider and the stamped "X" on the moveable sheave are aligned prior to installing the helix. This ensures proper balance!!!**

INSTALLATION

1. Install proper number of spacer washers on jackshaft between clutch and jackshaft bearing.
2. Inspect jackshaft bearing.
3. Excessive vibration or abnormal drive belt wear can be caused by a worn bearing or jackshaft on the driven clutch side. To inspect bearing fit, watch the bearing area closely as you try to force the jackshaft up and down. If movement is detected, disassemble to determine which parts are worn. Replace the jackshaft if the new bearing is loose on the shaft. The bearing should be greased at 1000 mile (1600 km) intervals and before storage.

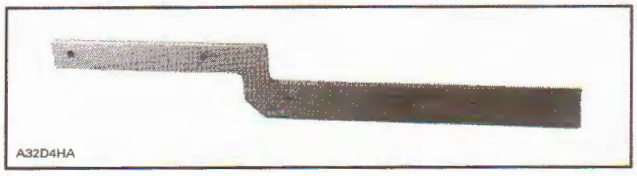
NOTE: Spacer washers between driven clutch and jackshaft bearing set the offset.

4. Lightly grease jackshaft keyway or spline. With square key in place slide clutch onto jackshaft.
5. Install spacer, bolt and washer to hold driven clutch in place.
6. Team roller clutches should float from side to side (.040 .080" (1 2 mm)). Without a slight free float, jackshaft bearings could be side loaded, causing premature bearing failure. Note this only pertains to Polaris, Arctic Cat and Yamaha machines.
7. See belt installation instructions.

TROUBLESHOOTING

1. Always make sure to use the OEM belt that is specified for your sled. Using the incorrect belt can result in RPM fluctuation. **It is very important when tuning to ensure the proper belt width, compound, and length.** This is one of the most common causes of poor performance.
2. If the sled consistently has incorrect RPM's make sure that the setup has the specified components that were sent with the kit.
3. Verify weights and spring in primary are correct first. If performance problems still exist, look to the secondary.

4. Helix angle selection. Starting angle will effect how fast the clutch opens from a dead stop. Ex. (70 44.46, a 70° starting angle will shift extremely fast). If the sled will not pull RPM until farther out in the shift pattern this angle may be too steep. The second number, (as in example 44°) will affect the shift rate from approximately 1/3 of the shift on. If there is a problem with the helix, this is normally the culprit. If your engine is over revving and the sled is not going anywhere, the angle is probably too shallow. If you can't achieve desired RPM or the sled goes flat towards top end, the angle is very likely too steep.
5. Secondary springs can also affect the RPM and shift rate. It is best to start with a lower rate spring and move up from there. Stiff springs can cure some problems and create others at the same time. Heat can be one of the biggest problems when running stiff springs. Heat will rob performance extremely fast. The lighter the spring you can run and still achieve the results you want the better. Spring rate will also affect back shifting. For most flat land applications start with a 140 200 spring, mountain setups 140 240.
6. Every season the clutches should be taken apart and wiped clean of any foreign material. Make sure not to use any solvents or lubricants on bushings or rollers during this process. At this time it is recommended that the spring is measured for correct operating loads.
7. Alignment has a huge role on performance and belt life. Make sure to use the proper TEAM rapid reaction clutch alignment tool.
   – Ski-Doo 930721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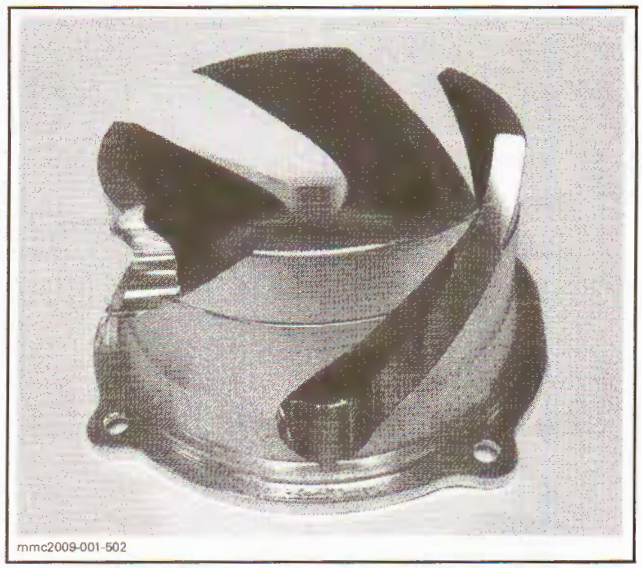
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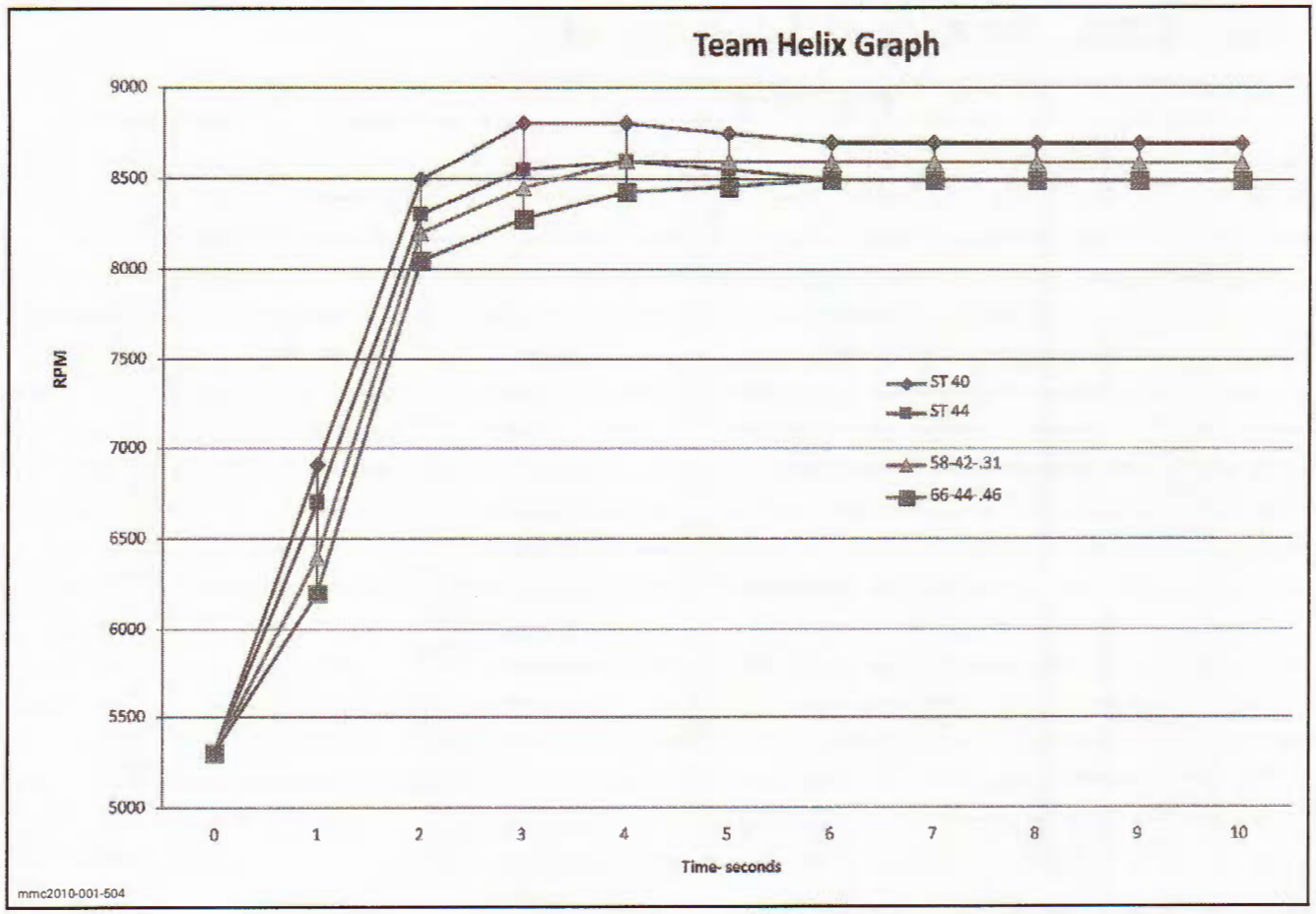
TEAM TWIN TRAX HELIX

Available from Valcourt Race Shop

TEAM NO.#	#1 ANGLE	#2 ANGLE	RACING NO. #
LW 420423	**34 STR**	**36 STR**	**USE TEAM #**
LW 420440	36 STR	38 STR	USE TEAM #
LW 420562	38 STR	42 STR	USE TEAM #
LW 421101	40 STR	42 STR	USE TEAM #
LW 420563	40 STR	44 STR	USE TEAM #
LW 420453	42 STR	44 STR	USE TEAM #
LW 420564	42 STR	46 STR	USE TEAM #
LW 420565	44 STR	48 STR	USE TEAM #
LW 420721	46 STR	48 STR	USE TEAM #
LW 420567	48 STR	52 STR	USE TEAM #
LW 420568	50 STR	54 STR	USE TEAM #
LW 421127	56-40x.31	58-42x.31	USE TEAM #
custom	64-40x.33	64-42x.33	486 014 002
custom	52-40x.40	56-40x.40	486 014 003
custom	64-40x.40	64-44x.40	486 014 004
custom	68-42x.40	64-44x.40	486 014 005
custom	60-44x.40	64-44x.40	486 014 006
custom	70-44x.46	68-46x.46	486 014 007
custom	64-40x.40	64-42x.42	486 014 008

NOTE: TEAM Industries has more selection of helixes.

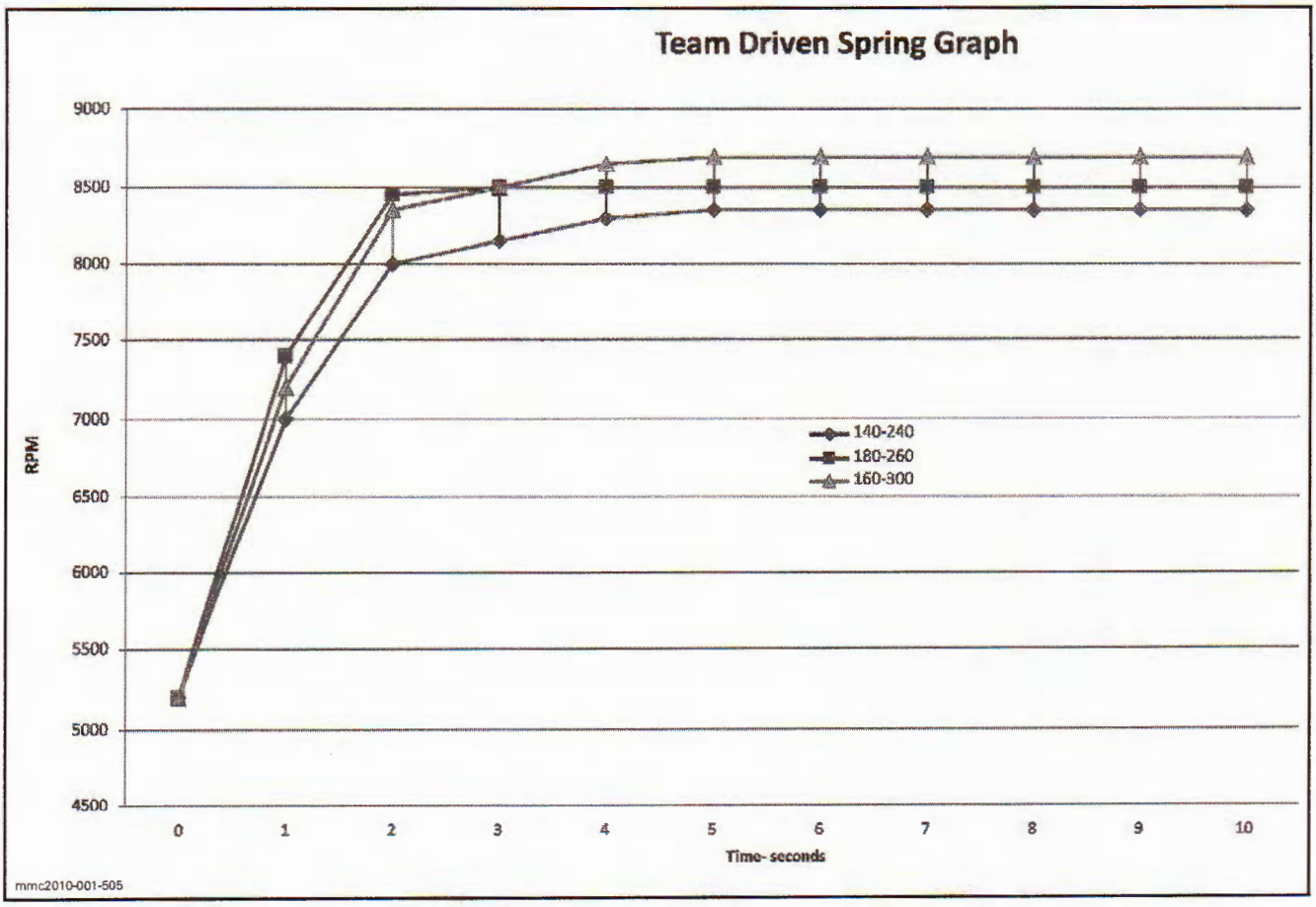

Team Helix Graph
9000
8500
8000
7500
7000
6500
6000
5500
5000
RPM
0
1
2
3
4
5
6
7
8
9
10
Time- seconds
ST 40
ST 44
58-42-.31
66-44-.46
mmc2010-001-504

TEAM STEEL DRIVEN SPRINGS (TSS 04)

TEAM PT #	FORCE (LBS) @		SPRING COLOR	COLOR CODE
	2.2"	1.1"		
210180	100	150	Red	Yellow
210178	100	200	Red	White
210183	120	200	Blue	Black
210177	120	220	Red	Green
210179	125	175	Red	Gray
210181	140	200	Red	Dark Blue
210186	140	220	Black	Green
210176	140	240	Red	Black
210184	140	260	Red	Pink
210182	155	222	Black	X
210193	160	240	Black	Purple
210185	160	260	Black	White
210279*	160	280	Black	Silver
210278*	160	300	Black	Gold
955557	175	240	Gold	Black
955556*	180	260	Black	Yellow
210280*	180	280	Black	Orange
210281*	180	300	Black	Lime Green

BRP STEEL DRIVEN SPRING (TSS 04)

486011004	200	260	Black	WH/WH/BL
NOTE: TEAM steel driven springs are available at Valcourt Race Dept. or Team Industries.				


Team Driven Spring Graph
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
RPM
0
1
2
3
4
5
6
7
8
9
10
Time- seconds
140-240
180-260
160-300
mmc2010-001-505

EFFECTS OF DRIVEN PULLEY SPRING

The driven pulley spring is needed to keep the slider shoes or rollers in contact with the cam and provide enough side force on the belt in the low gear position to allow initial acceleration while the torque rises to a point where the torque sensing cam begins to take over. At full load, the driven pulley spring has less effect on the driven pulley shifting sequence than does the cam, especially at slow shifting ratios.

Increases in the driven pulley spring preload will bring the engine RPM up before the pulley starts shifting and will help backshift the clutch quicker. Decreasing the preload will allow the driven clutch to up shift faster and bring engine RPM down, also a slower back shift will be experienced.

SKI–DOO DRIVEN SPRINGS

P/N	FORCE @		Color Code (or) Ink Marquing	Free Lenght ± 4mm	Tabs
	61mm	35,2mm			
417127039	700 N (157 lb)	1350 N (303 lb)	Black	89	n/a
417127061	708N (114 lb)	803 N (180 lb)	Brown	105	n/a
417127062	1028 N (231 lb)	1350 N (303 lb)	Purple	143	n/a
417127118	700 N (157 lb)	1350 N (221 lb)	Blue	124	n/a
417127137	800 N (180 lb)	1350 N (303 lb)	Green	98	n/a
	FORCE @				
	63,5mm	37,7mm			
417127242	300 N (67 lb)	557 N (125 lb)	Beige 2	104	Yes short
417127243	468 N (105 lb)	674 N (152 lb)	White 2	117	Yes short
417127421	182 N (41 lb)	323 N (73 lb)	Pink 4	104	Yes short
486600015	482 N (108 lb)	682 N (153 lb)	Blue (Drag)	140	Yes short

Note: Springs with tabs are used for Drag & four Stroke models.

EFFECTS OF THE DRIVEN PULLEY CAM

The purpose of the driven pulley cam is to sense the torque requirements of the drive axle and feed a portion of the engine torque, which has been applied to the driven pulley, back to the sliding half of the pulley. It is this side force that signals the downshift and provides side thrust to give traction to the drive belt.

The cam is acting like a screw pushing against the sliding half of the pulley. A large cam angle will act like a coarse thread while a small cam angle will act similar to a fine thread. The smaller the cam angle, the greater the side force on the sliding half of the pulley and the slower the upshift will be. This will result in higher engine RPM.

A larger cam angle will allow the pulley to upshift at a lower engine speed. Less side force will be exerted on the sliding half of the pulley and the pulley will upshift more rapidly.

On downshift, a smaller cam angle will backshift more easily and, again, tend to keep the engine RPM higher. A larger cam angle will be harder to downshift and will load the engine and reduce the RPM.

If all other variables in the pulleys are kept constant, a cam change with a smaller angle will result in a slower upshift and a faster downshift. Engine RPM will remain higher. A change to a cam with a larger angle will result in a faster upshift and the downshift will be slower. Engine RPM will be lower.

Remember the drive pulley signals or controls the upshift of the transmission while the driven pulley signals the downshift largely because of the effect of the cam.

The standard factory cam will probably work well for most **woods** type cross countries, while a smaller angled cam may prove to be better for high speed lake cross countries.

Top speed and low ET's are drag racers' and radar runners' most important concerns. Because backshifting is not at all important in these races, most racers experiment with larger cam angles for the fastest possible upshift.

Multi angle cams are sometimes used by racers needing a good holeshot. They generally work best on vehicles where no track spin is encountered. As a vehicle idles on the starting line, the exhaust temperature cools thus slightly lowering the optimum HP RPM of the engine. Because of this, a steeper (larger) angle cam can be used to upshift more quickly, and lower the RPM to work with the cooler exhaust. As the exhaust heats up, the optimum HP RPM increases. A multi angle cam reduces to a shallower (smaller) angle as the clutch shift out and the RPM is increased to match the **hot** HP curve of the engine. This phenomena is more pronounced on engines with narrower powerbands.

Oval and snowcross racers need the best of both worlds. A good holeshot is critical but backshifting must be quick in order to have good response out of the corners. They may have to change cam angles depending on what type of track layout is encountered.

Driven pulley cams are helices. A helix is measured in lead. Lead is the distance a point moves along the axis of rotation in one revolution of the helix. (Screw threads are a helix).

XP QRS HELIXES

mmc2009-001-501

P/N	HELIX ANGLE	PREDRILLED HOLES FOR TORSION SPRING
417 127 112	50 47 degrees	
417 127 146	50 44 degrees	X
417 127 142	50 40 degrees	X
417 127 148	47 44 degrees	X
417 127 190	47 40 degrees	X
417 127 169	44 degrees	X
417 126 976	46 42 degrees	
417 127 085	46 35 degrees	
417 127 086	46 33 degrees	
417 126 973	44 42 degrees	
417 126 974	44 40 degrees	
417 126 975	44 33 degrees	
417 127 133	43 47 degrees	
417 127 106	42 40 degrees	
417 127 235	41 45 degrees	X
417 127 084	50 degrees	
417 127 083	48 degrees	
417 127 082	46 degrees	
417 127 224	42 degrees	X
417 127 225	40 degrees	X
417 126 962	38 degrees	
To order a helix with holes predrilled for use with torsion springs, prefix the part # with the letter M. These helixes **MUST** be ordered from the race shop only.		

DRIVEN PULLEY AND COUNTERSHAFT

SERVICE TOOLS

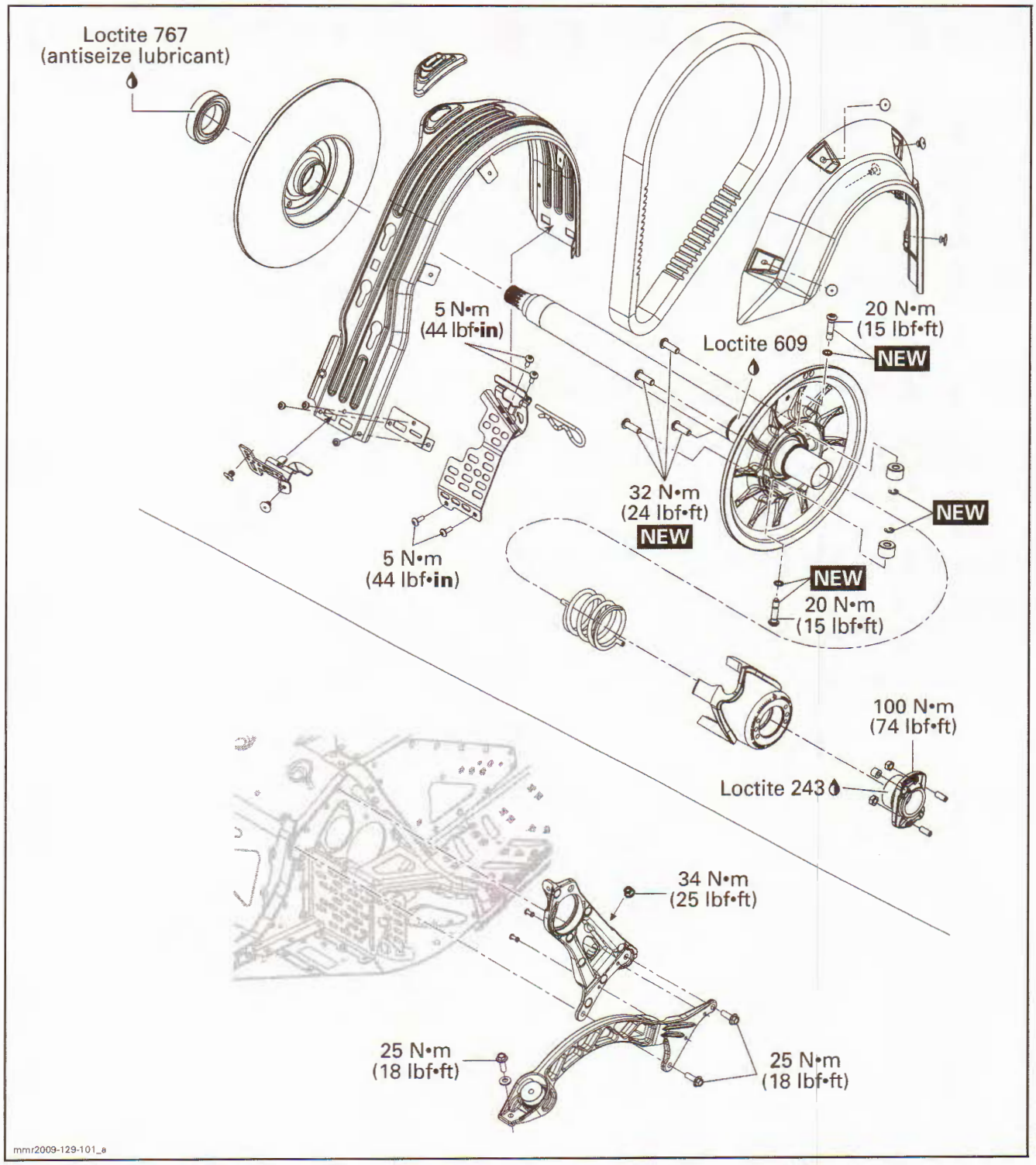
Description	Part Number	Page
countershaft bearing remover	529 036 065	182
countershaft bearing installer	529 036 066	183
countershaft support	529 036 067	182
upper gear retaining tool	529 036 110	177
driven spring compressor	529 036 182	178

SERVICE TOOLS – OTHER SUPPLIER

Description	Part Number	Page
rotor clip applicator	A 150	181

SERVICE PRODUCTS

Description	Part Number	Page
Loctite 767 (antiseize lubricant)	293 800 070	182
Loctite 609	413 703 100	182
pulley flange cleaner	413 711 809	180, 182


Loctite 767
(antiseize lubricant)
5 N•m
(44 lbf•in)
20 N•m
(15 lbf•ft)
Loctite 609
NEW
32 N•m
(24 lbf•ft)
NEW
NEW
5 N•m
(44 lbf•in)
NEW
20 N•m
(15 lbf•ft)
100 N•m
(74 lbf•ft)
Loctite 243
34 N•m
(25 lbf•ft)
25 N•m
(18 lbf•ft)
25 N•m
(18 lbf•ft)
mmr2009-129-101_a

GENERAL

During assembly/installation, use the torque values and the service products as in the exploded view.

Clean threads before applying a threadlocker. Refer to *SELF LOCKING FASTENERS* and *LOCTITE APPLICATION* at the beginning of this manual for complete procedure.

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to.
Locking devices (e.g.: locking tabs, elastic stop nuts, cotter pins, etc.) must be replaced with new ones.

⚠ WARNING

Never start engine when the pulley guard is removed.

PROCEDURES

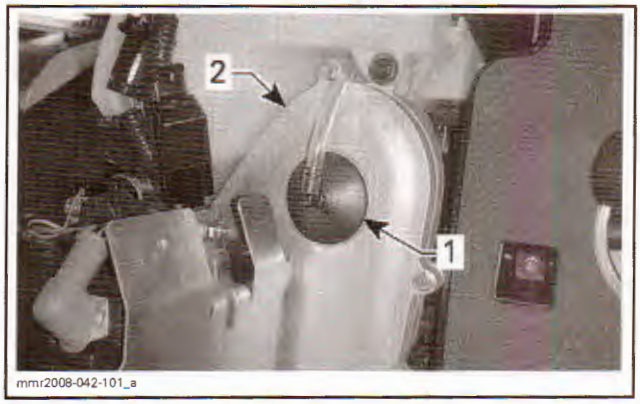
DRIVEN PULLEY

Driven Pulley Removal

Open left side panel.

Remove the muffler.

Remove the filling plug.

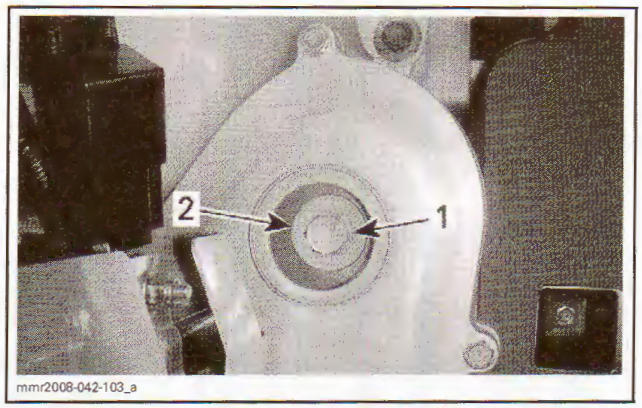


1. *Filling plug*
2. *Chaincase cover*

Release drive chain tension by unscrewing tensioner adjustment screw.

1. *Tensioner adjustment screw*
2. *Lock nut*

Remove the upper gear screw and the conical spring washer.



1. *Upper gear screw*
2. *Conical spring washer*

Install the upper gear retaining tool (P/N 529 036 110) on countershaft end.

1. *Upper gear retaining tool*

Open right side panel.

Remove the drive belt.

Behind driven pulley, remove screw securing the countershaft bearing flange.

1. Driven pulley
2. Countershaft bearing flange

Pull the driven pulley to disengage countershaft and upper gear.

NOTE: If necessary, tap the upper gear retaining tool with a plastic hammer.

Unscrew countershaft from the upper gear retaining tool. Do not remove tool.

NOTE: While countershaft is removed from vehicle, the upper gear retaining tool keeps the drive chain and the upper gear in position inside chaincase.

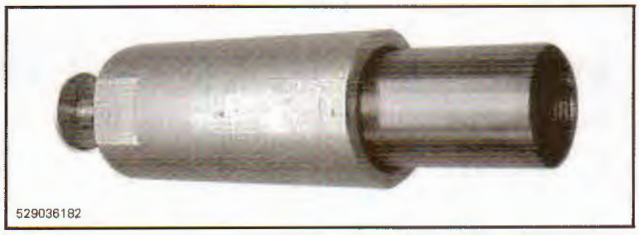
Driven Pulley Disassembly

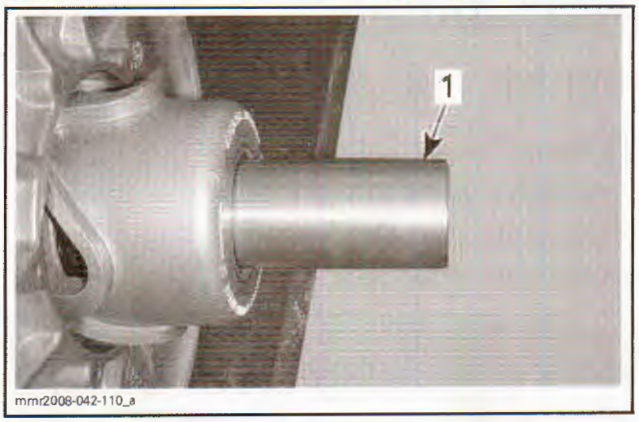
Cam and Spring

Unscrew and remove the adjustment ring.

1. Adjusting ring

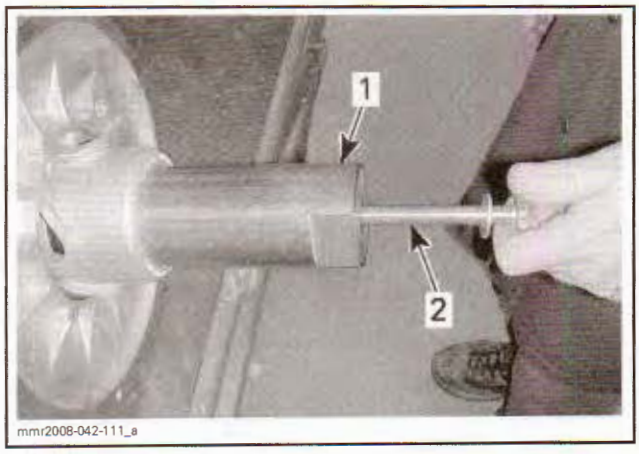
Install the threaded adapter of the driven spring compressor (P/N 529 036 182) at the end of driven pulley.





1. Threaded adapter

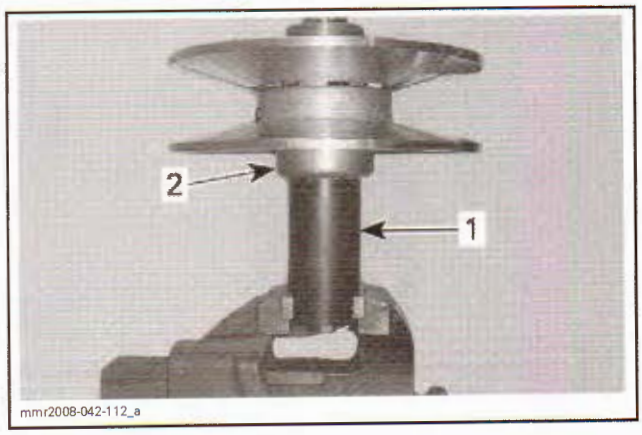
Install the external sleeve over the threaded adapter and secure sleeve with the driven spring compressor screw.



1. *External sleeve*
2. *Driven spring compressor screw*

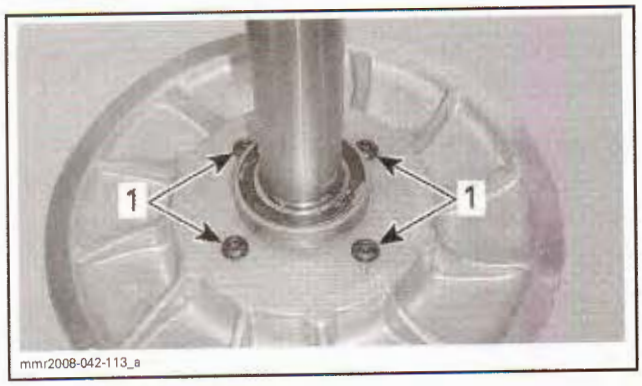
Tighten the driven spring compressor screw to compress the cam.

Install the driven spring compressor in a vice.



1. *Driven spring compressor*
2. *Driven pulley*

Using a heat gun, heat cam screws to break the thread locker.



1. *Heat cam screws*

Remove and discard cam screws.

Unscrew the driven spring compressor screw completely. Remove cam and spring.

Sliding Sheave

Remove the cam and spring.

Remove the countershaft bearing.

Remove sliding sheave.

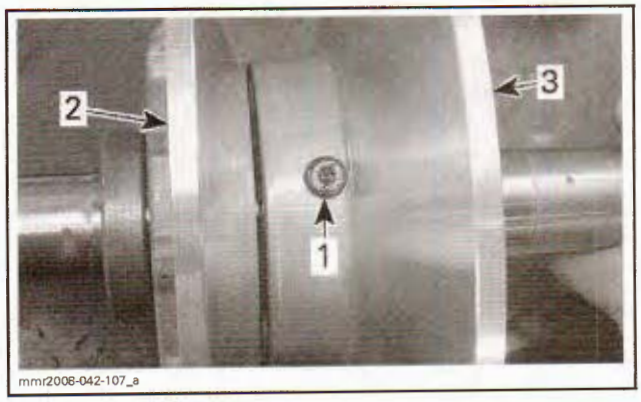
Fixed Sheave

The fixed sheave and countershaft are sold as an assembly. They are not available separately.

Driven Pulley Rollers

Move apart sliding and fixed sheaves.

Remove and **discard** pivot screws.



1. *Pivot screw*
2. *Sliding sheave*
3. *Fixed sheave*

Remove rollers.

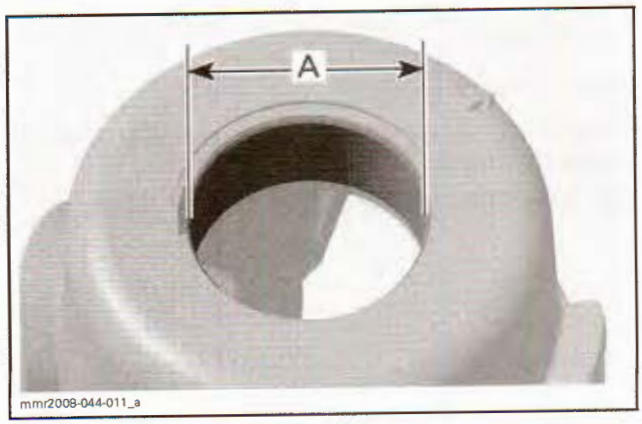
Discard E clips.

Driven Pulley Inspection

Cam and Spring

Verify contact surfaces of cam for visible damages. Replace cam if necessary.

Using a dial bore gauge, measure the inner diameter of cam bushing. Measuring point must be at least 5 mm (1/4 in) from bushing edge.



A. *Inner diameter of cam bushing*

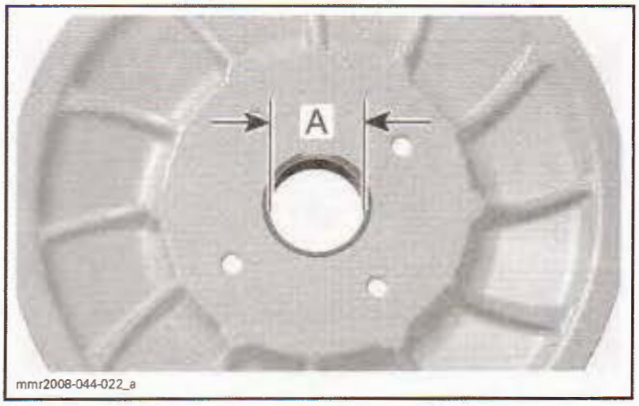
BUSHING	SERVICE LIMIT
Cam bushing	41.5 mm (1.634 in)

Replace the cam if the inner diameter of bushing is out of specification.

Sliding Sheave

Inspect pulley sheave for marks or scratches.

Using a dial bore gauge, measure the inner diameter of sliding sheave bushing. Measuring point must be at least 5 mm (1/4 in) from bushing edge.



A. Inner diameter of sliding sheave bushing

BUSHING	SERVICE LIMIT
Sliding sheave bushing	41.5 mm (1.634 in)

Replace the sliding sheave if the inner diameter of bushing is out of specification.

Fixed Sheave

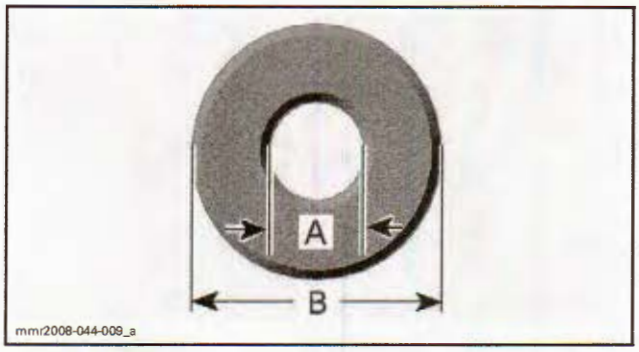
Replace fixed sheave and countershaft if one of the following problem is detected:

- Marks or scratches on pulley sheave
- Bent, twisted or otherwise damaged countershaft
- Defective splines and threads at the end of countershaft.

Driven Pulley Rollers

Check the rollers for flat spots, cracks or other visible damages. Replace if necessary.

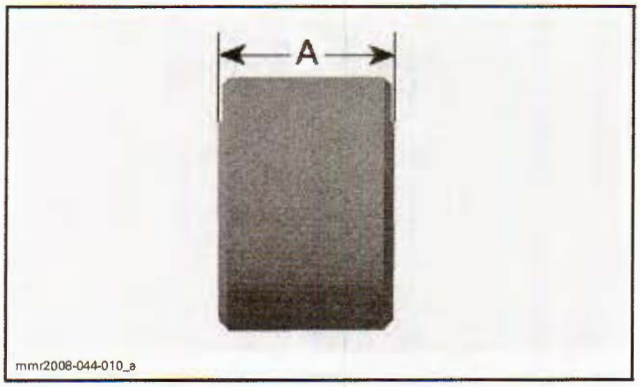
Measure inner and outer diameter of rollers.



A. Inner diameter
B. Outer diameter

ROLLER DIAMETER	SERVICE LIMIT
Inner diameter	8.5 mm (.335 in)
Outer diameter	21.5 mm (.846 in)

Measure the roller thickness.



A. Thickness of roller

ROLLER THICKNESS	
SERVICE LIMIT	14.75 mm (.581 in)

If a roller is out of specifications, replace both rollers at the same time.

Driven Pulley Cleaning

Use the pulley flange cleaner (P/N 413 711 809) and a clean rag to clean pulley sheaves.

Cam and Spring

During break in period, teflon from bushing moves to cam or countershaft surface. A teflon over teflon running condition occurs, leading to low friction. So it is normal to see gray teflon deposit on cam or countershaft. Do not remove this deposit.

When a dust deposit has to be removed from the cam or the countershaft, use dry cloth to avoid removing transferred teflon.

Driven Pulley Assembly

Driven Pulley Rollers

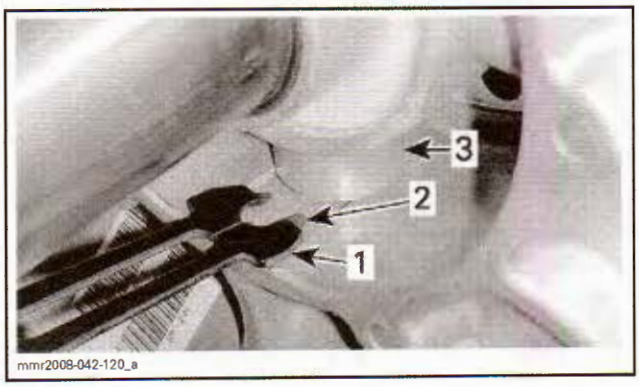
Using a screw tap, clean pivot screw threaded holes into fixed sheave.

Using **NEW** pivot screws, install rollers into fixed sheave.

CAUTION: Always use new pivot screws with pre applied threadlocker.

Torque pivot screws to 14 N•m (124 lbf•**in**).

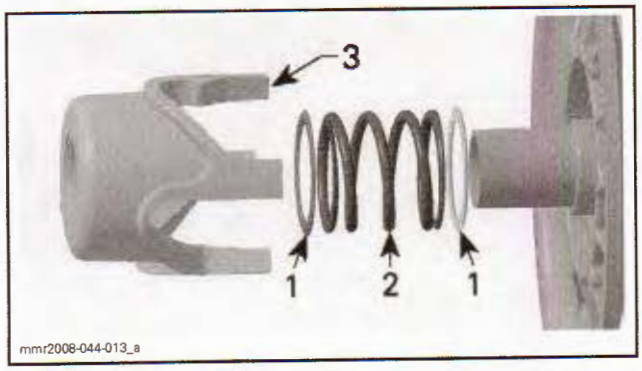
Using a rotor clip applicator (P/N A 150), install NEW E clips to lock pivot screws.



1. *E clip applicator*
2. *E clip*
3. *Roller*

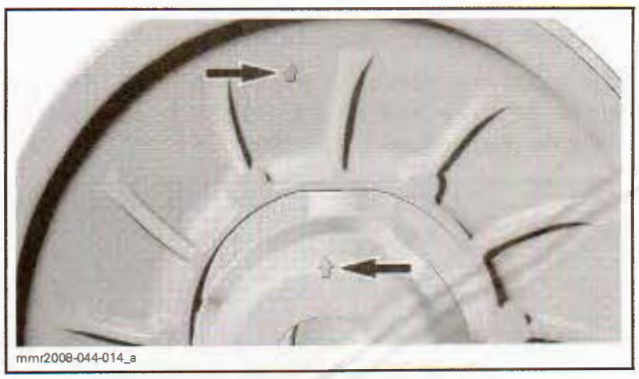
Cam and Spring

Install a spring stopper, the spring, the other spring stopper and the cam.



1. *Spring stopper*
2. *Spring*
3. *Cam*

Align the arrow on cam with the arrow on fixed sheave. At the end of cam installation, the arrow on the cam should be move clockwise (± 30°).



Install the driven spring compressor sleeve and tighten the driven spring compressor screw until cam is completely pressed against sliding sheave.

Behind sliding sheave, install 4 **NEW** cam screws.

Torque cam screws to 32 N•m (24 lbf•ft).

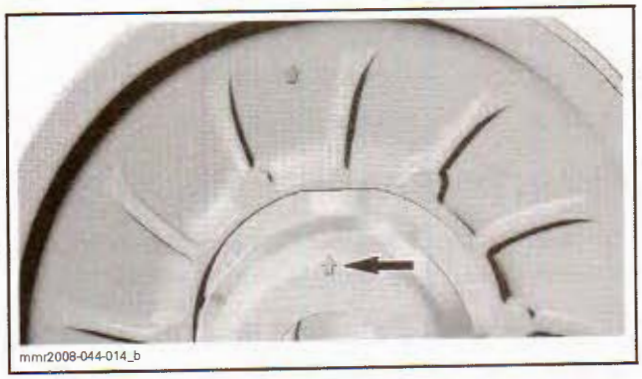
Remove the driven spring compressor.

Sliding Sheave

The assembly of sliding sheave is the reverse of the disassembly. However, pay attention to the following.

When installing sliding sheave, make sure to align its arrow with the arrow on cam.

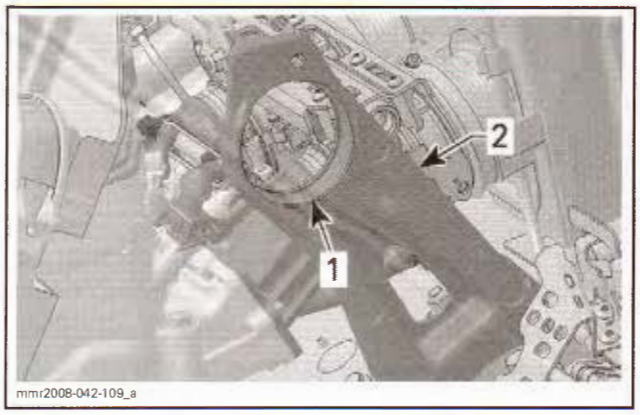
SLIDING SHEAVE ARROW



CAM ARROW

Driven Pulley Installation

Using sand paper (600 grit or 1000 grit) or steel wool, remove any rust on bearing shoulder of countershaft bearing support.



1. Bearing shoulder
2. Countershaft bearing support

Apply a thin layer of Loctite 767 (antiseize lubricant) (P/N 293 800 070) on bearing shoulder.

Insert countershaft through countershaft bearing support.

Fasten the end of countershaft to upper gear retaining tool.

Align countershaft splines with upper gear splines.

Using the upper gear retaining tool as a puller, install countershaft into upper gear. Ensure countershaft bearing is installed properly into countershaft bearing support.

Remove the upper gear retaining tool.

Install the upper gear screw and the conical spring washer.

NOTE: The conical spring washer must be installed with its concave side towards upper gear.

Tighten upper gear screw to 48 N•m (38 lbf•ft).

Install filling plug.

On LH side, install the bearing flange.

Tighten nut to 15 N•m (133 lbf•**in**).

Install all other removed parts.

COUNTERSHAFT

The countershaft and the fixed sheave are sold as an assembly. They are not available separately.

Countershaft Removal and Installation

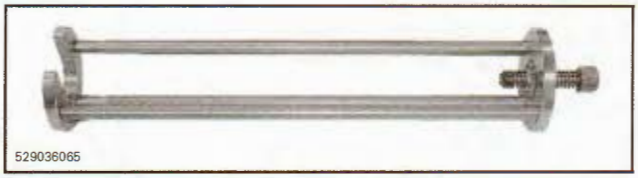
Refer to *DRIVEN PULLEY* for the procedures.

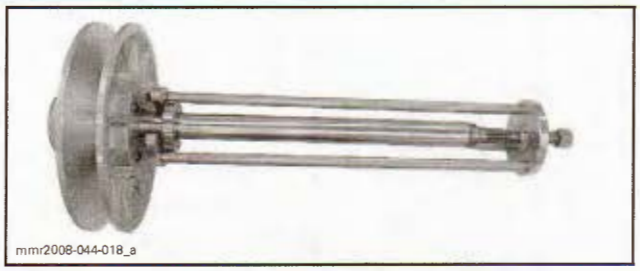
COUNTERSHAFT BEARING

Countershaft Bearing Removal

Remove *DRIVEN PULLEY.*

Install the countershaft bearing remover (P/N 529 036 065) on countershaft.



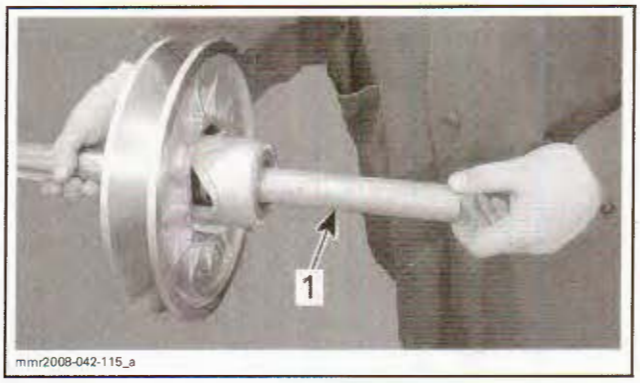


Tighten the screw at the end of tool to extract the bearing. Discard the bearing.

Countershaft Bearing Installation

Remove the adjustment ring on cam.

Insert the countershaft support (P/N 529 036 067) into countershaft.



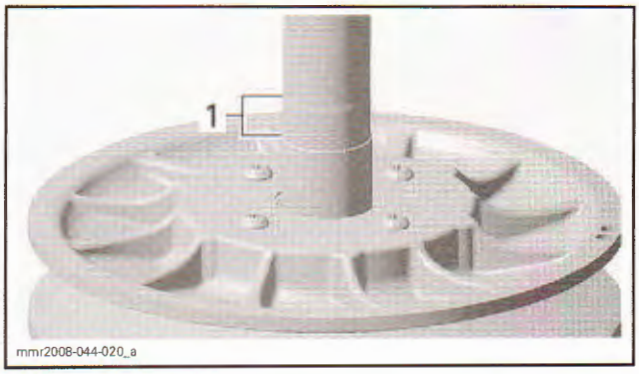
1. Countershaft support

CAUTION: The countershaft support is mandatory to avoid damaging the countershaft threaded end and the cam during bearing installation.

Using pulley flange cleaner (P/N 413 711 809), clean residues on countershaft bearing surface.

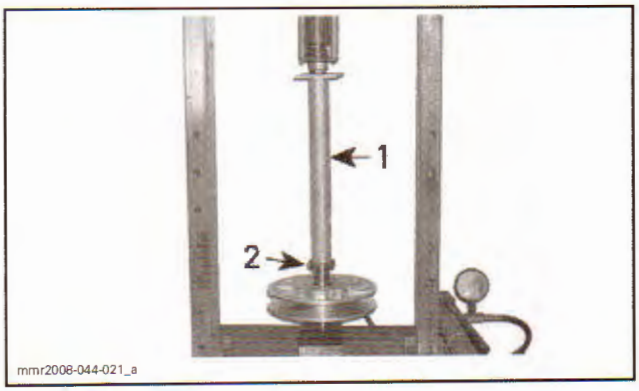
Check countershaft bearing surface for wear.

Apply Loctite 609 (P/N 413 703 100) on countershaft bearing surface.



1. Apply Loctite 609 in this region

Using a press and the countershaft bearing installer (P/N 529 036 066), install the **NEW** bearing on countershaft.



1. Countershaft bearing installer
2. NEW bearing

CAUTION: Use a press only, never tap on countershaft bearing installer with an hammer to avoid damaging bearing and countershaft.

Clean the surplus of Loctite with a rag to avoid having Loctite on sliding sheave bushing.

DRIVE BELT

DRIVE BELT INSPECTION

Inspect belt for cracks, fraying or abnormal wear (uneven wear, wear on one side, missing cogs, cracked fabric). If abnormal wear is noted, probable cause could be pulley misalignment, excessive RPM with frozen track, fast starts without warm up period, burred or rusty sheave, oil on belt or distorted spare belt. Contact an authorized SKI DOO dealer.

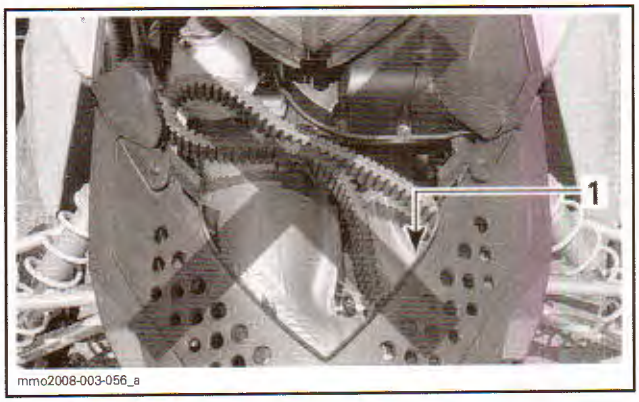
SPARE DRIVE BELT HOLDER

A spare drive belt can be stored in holder.

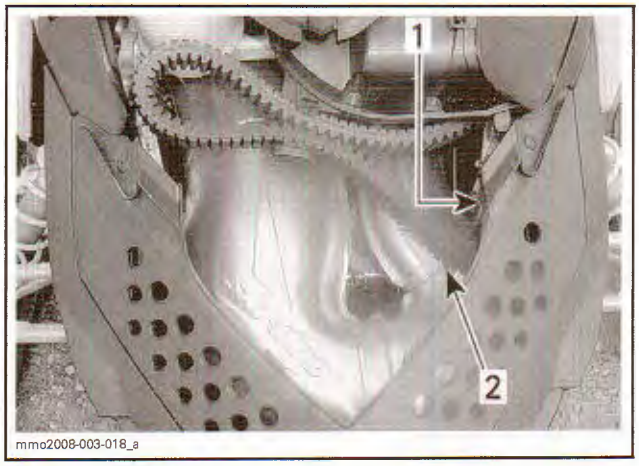
NOTE: Spare drive belt is not supplied with the snowmobile.

Properly install spare belt and secure with Velcro strap as shown.

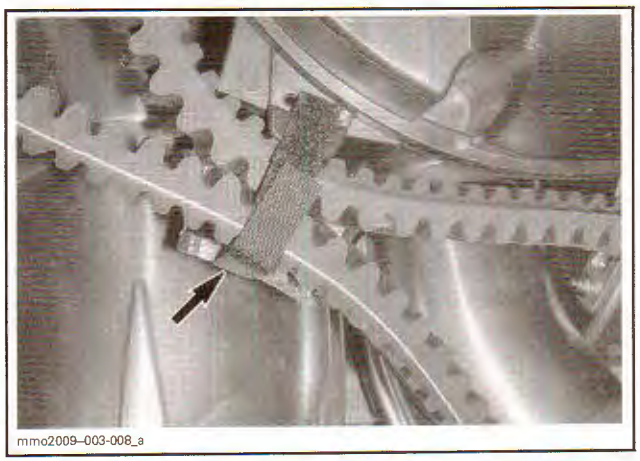
NOTICE **To avoid damages to the drive belt, ensure that belt does not come in contact with tuned pipe when installed in its support.**



DRIVEN PULLEY
1. *Locking nut*
2. *Adjustment ring*



INSTALLED CORRECTLY
1. *Drive belt over bumper*
2. *Ensure there is no contact with tuned pipe*



SECURE WITH VELCRO STRAP

DRIVE BELT

Drive Belt Inspection

Inspect belt for cracks, fraying or abnormal wear (uneven wear, wear on one side, missing cogs, cracked fabric). If abnormal wear is noted, probable cause could be pulley misalignment, excessive RPM with frozen track, fast starts without warm up period, burred or rusty sheave, oil on belt or distorted spare belt. Contact an authorized Ski Doo dealer.

Drive Belt Replacement (Screw Type and Ring Type Adjuster)

Drive Belt Removal

- Remove D.E.S.S. key from post.
- Open LH side panel.
- Remove belt guard.
- Insert the driven pulley expander provided in the tool kit in the threaded hole on the adjuster hub as shown.

SCREW TYPE PULLEY ADJUSTER

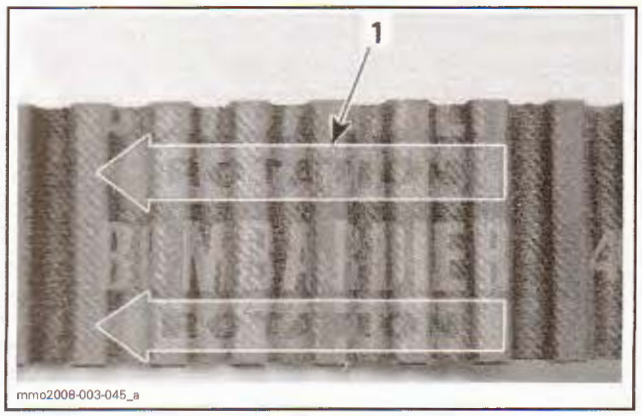
- Open the driven pulley by screwing the tool in.
- Remove the belt by slipping it over the top of the driven pulley, then over the drive pulley.

Drive Belt Installation

- Slip the belt over the drive pulley, then over the driven pulley.

NOTICE **Do not force or use tools to pry the belt into place, as this could cut or break the cords in the belt.**

NOTE: The maximum drive belt life span is obtained when belt is installed with arrows in the direction of rotation.



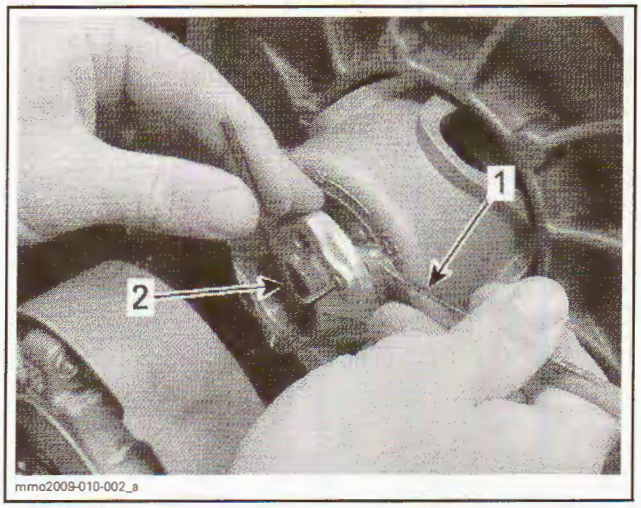
1. To be pointed in the direction of rotation

- Unscrew and remove the driven pulley expander from the pulley.
- Rotate the driven pulley several times to properly set the belt between the sheaves.
- If a new belt was installed, adjust the belt height.
- Install belt guard.

Drive Belt Height Adjustment (Screw Type Pulley Adjuster)

The drive belt height must be checked every time a new belt is installed.

- Remove D.E.S.S. key from post.
- Open LH side panel.
- Remove belt guard.
- Keep the set screws from turning using a 3 mm Allen key and loosen both lock nuts using a 10 mm open wrench.

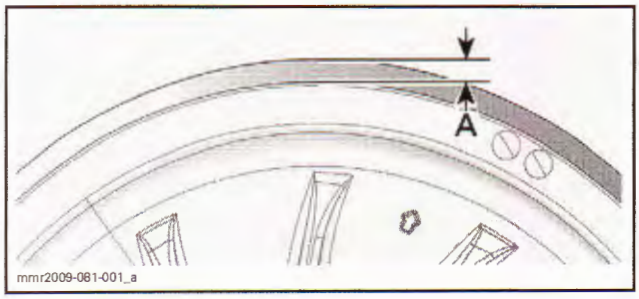


LOOSEN THE LOCK NUTS
1. 3 mm Allen key
2. 10 mm open wrench

- Turn one set screw 1/4 turn at a time then rotate the driven pulley to properly set the belt between the pulley sheaves.

Belt without External Cogs

Repeat last step until the external surface of drive belt exceeds driven pulley edge by 2 mm (.079 in).

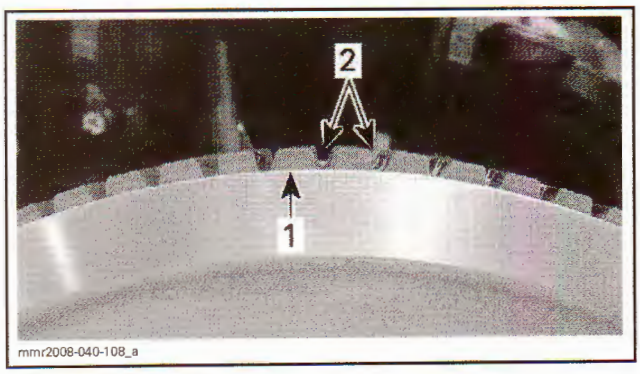


PRELIMINARY SETTING

A. 2 MM (.079 IN)

Belt with External Cogs

Repeat last step until the bottom of grooves on the external side of drive belt are flush with the driven pulley edges.

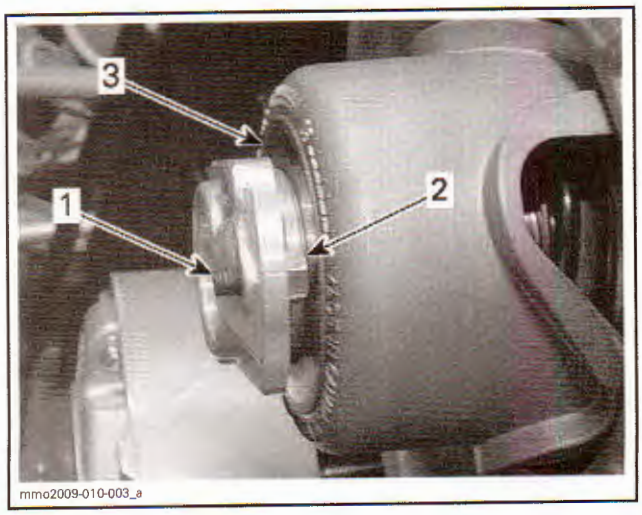


PRELIMINARY SETTING
1. *Driven pulley edge*
2. *External drive belt grooves*

All Drive Belt Types

NOTE: Turning the set screws clockwise lowers the belt in the pulley. Turning the set screws counterclockwise raises the belt in the pulley.

- Set the other set screw so that it rests on the steel ring.



1. *Set screw*
2. *Lock nut*
3. *Steel ring*

mmc2013-001

- Keep the set screws from turning and tighten the lock nuts towards the adjuster hub to 7 Nm +/– 1 Nm (62 lbf in +/ 9 lbf in)
- Install belt guard.
- Close side panel.

NOTE: This setting is correct as a preliminary adjustment for most models and belt types. In some cases, when starting the engine, the vehicle could creep, indicating that the belt is too tight.

If the vehicle creeps, lower the drive belt height from the preliminary setting. Repeat procedure until creeping stops.

Reverse Activation

NOTE: The reverse may not activate or may be harder to activate if the belt is positioned too high in the driven pulley. If reverse activation does not work properly, ensure the drive belt is properly adjusted. Adjust the drive belt lower in the driven pulley if needed.

PULLEY DISTANCE AND ALIGNMENT

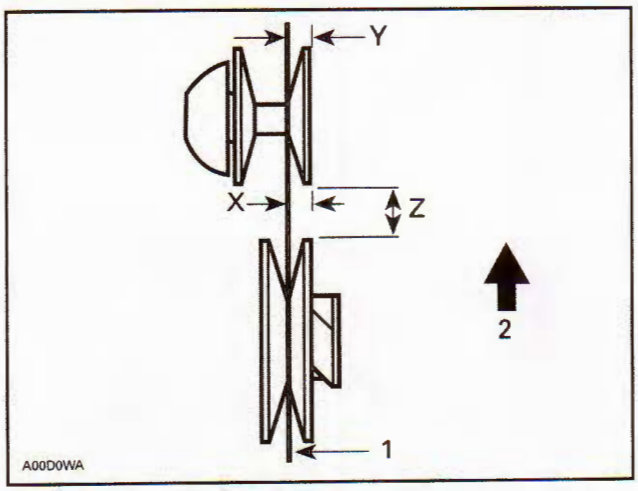
SERVICE TOOLS

Description	Part Number	Page
belt tension tester	414 348 200	193

Measuring Procedure

Using Straight Bar

Always measure distances X and Y from the farther straight bar side (including its thickness to the fixed half edge).



TYPICAL
1. *Straight bar*
2. *Front of vehicle*

The distance Y **must** exceed distance X to compensate for the twist due to the engine torque.

Drive Belt Deflection

NOTE: When pulley distance and alignment are adjusted to specifications, refer to *DRIVE BELT* to adjust drive belt deflection.

CAUTION: This section deals mainly with adjustment procedures. For complete assembly requirements, refer to the proper *ENGINE* or *TRANSMISSION* installation section.

Pulley Alignment and Distance Specifications Chart

MODEL	DRIVE CLUTCH	DRIVEN CLUTCH	CENTER TO CENTER	X	Y	Z
Fan Cool	E-DRIVE	QRS-SS	258.7±0.5mm	37.2±0.5mm	1.34±0.93mm of X	21.0mm
All MXZ, GSZ & Renegade	TRA & TRA 7	QRS	258.7±0.5mm	36.4±1.8mm	3.0±0.93mm of X	20.9mm
All Summit, Freeride & Tundra Extreme	TRA & TRA 7	QRS	258.7±0.5mm	39.4±1.8mm	3.0±0.93mm of X	20.9mm
600 ACE	E-DRIVE II	QRS-SS	259.1±2.8mm	37.2±0.5mm	1.9±0.93mm of X	21.4mm
900 ACE	E-DRIVE II	QRS-SS	259.1±2.8mm	37.2±0.5mm	1.9±0.93mm of X	21.4mm
XR 1203	E-DRIVE II	QRS	259.1±2.8mm	36.9±1.3mm	1.9±0.93mm of X	21.4mm
600RS	TRA 3	TEAM	258.7±0.5mm	39.0±0.5mm	1.57±0.93mm of X	19.5mm
NOTE: Offset adjustment for Team Driven 600RS						
Add or remove shims on jackshaft behind the driven clutch to achieve offset (X). When the bolt is installed and tightened, adjust to have a free play of 2.0mm by adding or removing shims on the bolt side.						

ALIGNMENT BAR IN PULLEYS

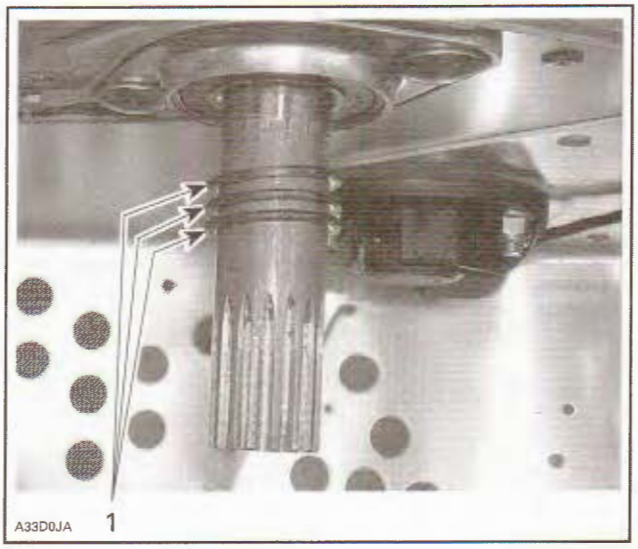
NOTE: Prior to performing pulley adjustment, loosen torque rod and lock nut.

Pulley Distance Adjustment Method

Pulley distance adjustment cannot be done on REV series models.

Pulley Alignment Method

Remove pulley and add or remove spacer(s) as required to obtain the specified alignment.



1. Spacers

NOTE: After alignment hand tighten torque rod so it slightly contacts engine crankcase. Do not over tighten, it will disalign pulleys.

DRIVE BELTS

The drive belt is the critical link in transmitting power from one clutch to the other. The changes in belt technology and materials have allowed us to take for granted the kind of reliability and efficiency that not many years ago we all only dreamed about.

One of the more important changes in drive belts has been the introduction of Kevlar® Fiber B to replace fiberglass or polyester cord in the tensile layer of modern drive belts. This material is much stronger, more flexible, and allows a better adhesive bond with the various rubber compounds used to build a drive belt.

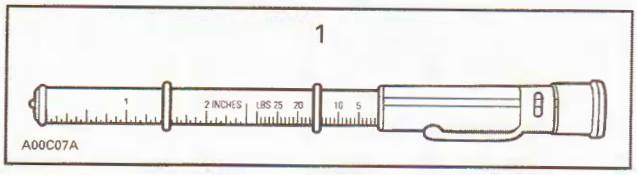
Another important change in drive belts is the increase in width. The extra width allows us to add more Kevlar cords in the tensile layer for strength with today's high output sleds.

Use only the specific Bombardier drive belt listed for your application. The drive belt is a calibrated part of the transmission system. Different belts with different compounds or angles will change how your transmission shifts.

Drive belts can vary ± 6 mm (1/4 in) length from belt to belt. Because of this manufacturing tolerance, we recommend measuring your drive belts and marking their length on the outer cover. Try to use only belts that are the same length while racing to keep your clutch set up as consistent as possible.

Always break in a new belt by running it easy for 10 15 miles. Vary the vehicle speed and throttle setting without going over 2/3 throttle. It is also a good idea to mark the direction of rotation on the belt. Once the belt has been used, always run it in the same direction.

Be careful not to bend sharply or coil up these new hard compound drive belts since they are much more prone to cracking in cold weather than earlier belts.



1. Use Ski Doo tool (P/N 414 348 200)

Proper belt deflection and alignment are extremely important. Included is a page on proper alignment procedures and deflection measurement methods for your use.

Do not forget about the torque limiter rod on most models. This bolt is located between the jackshaft and the engine on the left side. It should be lightly snugged **after** the proper alignment and center to center distances have been set.

NOTE: Do not overtighten, it will misalign pulleys.

Proper deflection, setup, alignment, and break in will help insure maximum performance and longevity from the drive belt.

DRIVE BELT APPLICATION CHART

2013 Drive Belt Specifications

PART NUMBER	COMPOUND	THICKNESS	WIDTH	LENGTH	DEGREES
Regular Fiber					
414 860 700	soft (no top cog)	14.8 mm	35.3 mm	1106 mm	25
417 300 367	soft (no top cog)	14.6 mm	36.8 mm	1098 mm	25
417 300 197	medium (no top cog)	14.5 mm	37.6 mm	1106 mm	26
417 300 127	hard (top cog)	16.4 mm	36.3 mm	1118 mm	25
417 300 383	hard (top cog)	16.4 mm	38.5 mm	1118 mm	26
High Performance Fiber					
417 300 297	soft (top cog)	16.7 mm	38.2 mm	1112 mm	26
417 300 288	medium (top cog)	16.7 mm	37.7 mm	1117 mm	26
417 300 425	medium (top cog)	16.7 mm	38 mm	1117 mm	26
417 300 391	hard (top cog)	16.7 mm	38.3 mm	1117 mm	26
417 300 189	hard (top cog)	16.7 mm	38.3 mm	1129 mm	26

Note: These measurements are OEM specifications, depending on how and where you measure the belt, results may vary.

INSPECTION

Inspect belt for cracks, fraying or abnormal wear (uneven wear, wear on one side, missing cogs, cracked fabric). If abnormal wear is noted, probable cause could be pulley misalignment, excessive RPM with frozen track, fast starts without warm up period, burred or rusty sheave, oil on belt or distorted spare belt.

Check drive belt width. Replace the drive belt if width is under minimum recommended width (see table above).

CHECKING NEUTRAL FUNCTION

⚠ WARNING

Always check neutral function when servicing.

Apply parking brake. Vehicle must be on the ground and on a plane level surface. No one should be in front of vehicle.

Attach vehicle tether cord to your clothing. Stand aside of vehicle, then start engine.

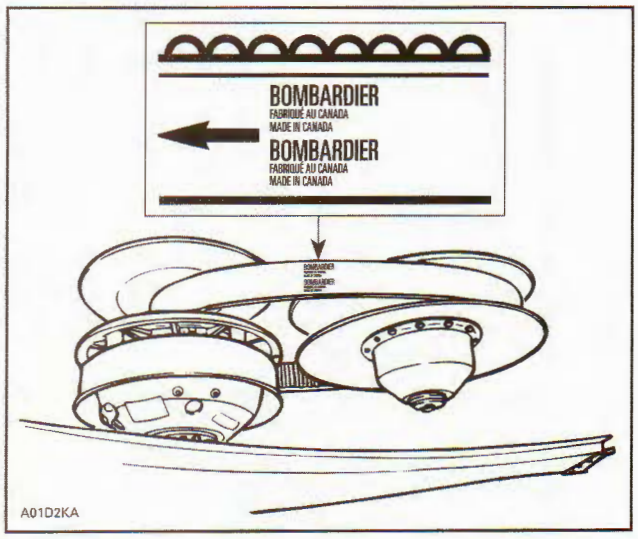
⚠ WARNING

Do not sit on vehicle.

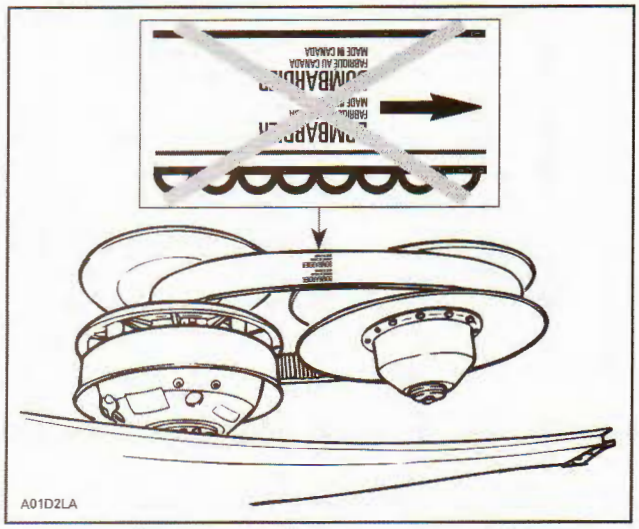
Release parking brake. Vehicle must not creep when engine is idling. Otherwise, make sure that:
- idle speed is as specified
- proper belt is installed
- pulley center to center is as specified
- belt deflection is as specified.

ROTATION DIRECTION

The maximum drive belt life span is obtained when the drive belt is installed as shown. This will ensure that correct direction of rotation is respected.



CORRECT



INCORRECT

NOTE: For used drive belt, mark and reinstall in the same position.

DRIVE BELT HEIGHT MEASUREMENT AND ADJUSTMENT

Measurement

NOTE: The drive belt height measurement must be performed each time a new drive belt is installed.

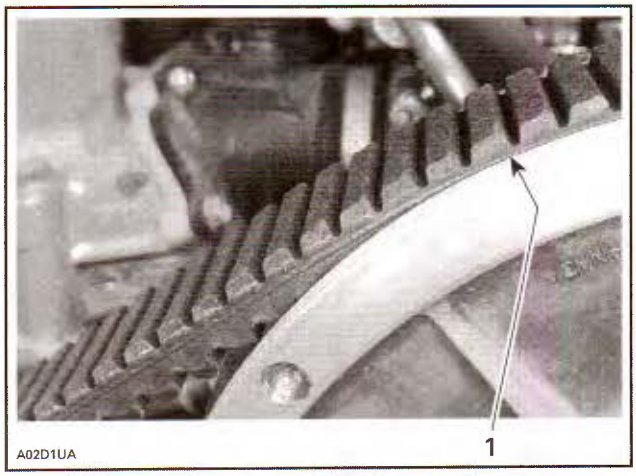
NOTE: To obtain an accurate drive belt height measurement, it is suggested to allow a break in period of 50 km (30 mi).

Before checking the belt height, ensure that a good condition proper belt is installed.

Adjust pulley distance and alignment.

To obtain maximum vehicle performance, the belt height must be adjusted according to specifications shown in the accompanying chart.

MODEL	BELT HEIGHT
All models	Top edge of drive belt cord should be flush with driven pulley edge



1. *Flush*

Adjustment

Before adjusting the belt height, ensure that a good condition proper belt is installed.

Adjust pulley distance according to specification.

Models Equipped with Formula VSA Type Driven Pulley

Adjust drive belt height using Allen screws, as shown.

To lower belt in driven pulley: turn Allen screws clockwise.

To raise belt in driven pulley: turn Allen screws counterclockwise.

NOTE: Turn Allen screws 1/4 turn at a time, then rotate driven pulley to allow drive belt to settle in pulley. Check height, repeat as required.

DRIVE BELT DEFLECTION MEASUREMENT (reference only)

NOTE: The drive belt deflection measurement must be performed each time a new drive belt is installed.

NOTE: To obtain an accurate drive belt deflection measurement, it is suggested to allow a break in period of 50 km (30 mi).

Before checking the belt deflection, ensure vehicle has the proper belt.

Adjust pulley distance and alignment.

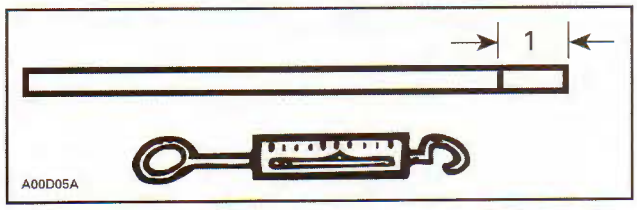
To obtain maximum vehicle performance, the belt tension must be adjusted according to specifications shown in the accompanying chart.

MODEL	DEFLECTION† mm (in)	FORCE KG (LB)
All models	32 ± 5 (1.260 ± .197)	11.5 (25)
† FOR REFERENCE ONLY		

To Check Tension

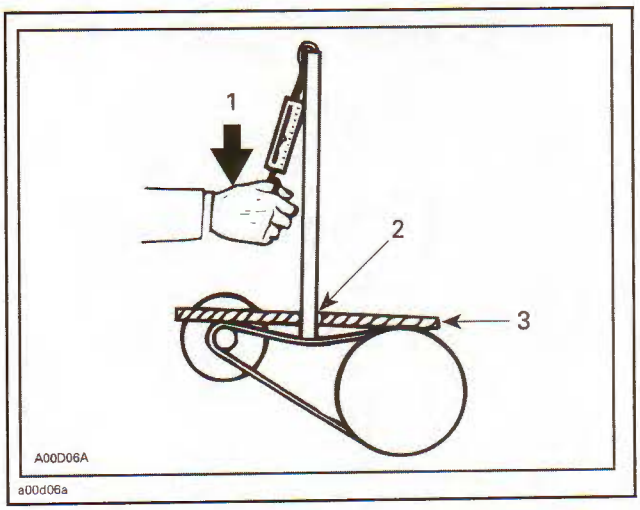
Position a reference rule on drive belt.

Wooden Stick and Spring Scale Method



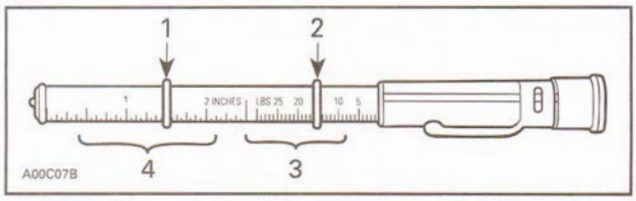
1. *Mark specified deflection*

Using spring scale and stick, apply specified force on drive belt halfway between pulleys as shown.



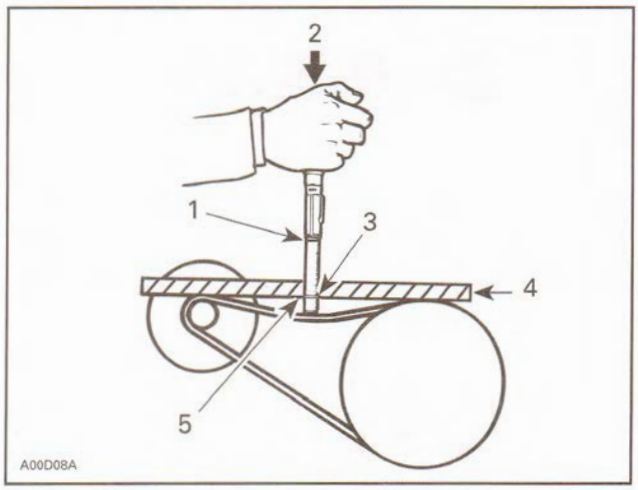
1. *Force*
2. *Read deflection here*
3. *Reference rule*

Or use the belt tension tester (P/N 414 348 200).



1. Lower O ring
2. Upper O ring
3. Force (read down)
4. Deflection (read up)

1. Slide lower O ring of deflection scale to specified measure.
2. Slide upper O ring to 0 (zero) on the force scale.
3. Apply pressure until lower O ring is flush with edge of rule and read force on the upper scale at top edge of O ring.



1. Upper O ring — force
2. Force
3. Lower O ring — deflection
4. Reference rule
5. Deflection

CHAINCASE GEARING

Contrary to popular belief, small gear changes do not directly affect top speed as long as the clutches are functioning properly. Gearing one or two teeth taller on the top will not generally make the vehicle any faster on top end unless the clutches are fully shifted out and the engine is starting to overrev.

With the TRA clutch, we have about 20 percent more shift ratio available compared to other designs. Because of this, we have been able to lower the gearing in our chaincase considerably. Yet, we still have the same overall top gear ratio because of the 0.8:1 top ratio of the TRA clutch.

This gives us better belt life by allowing our clutches to **slip** for a shorter period of time at engagement. It also provides more torque to the drive axle for acceleration.

Most snowmobiles are geared on the **high** side from the factory. They are usually geared for 8 16 km/h (5 10 MPH) more than they would reach in average conditions. Because of this, the belt does not seem to go all the way to the top of the drive clutch. This is a normal situation. Snowmobiles run under widely varying conditions. If all snowmobiles were geared to attain a full shift under average conditions and then the vehicle were run on a perfectly smooth frozen surface, it would easily shift out to its geared top speed. Since the drag is so low under these conditions, the engine would begin to over rev, eventually lose power, possibly damage the engine, and you will not achieve top speed.

There are other factors involved here also. As clutches shift through their range, the efficiency with which they transmit power decreases as the clutch ratio exceeds about 1.5:1. Efficiency also drops as belt speed (RPM) increases. For optimum chaincase performance ensure that you use the synthetic chaincase oil.

Because newer clutch designs shift beyond a 1:1 ratio, belt speed increases dramatically and the diameter that the belt follows around the driven pulley decreases considerably. This wastes energy and efficiency as the belt is being bent around a smaller diameter and centrifugal force is trying to pull the belt into a circular path instead of following the pulleys.

This is why for years manufacturers kept their clutch ratios around 1:1 to keep belt speeds down.

Now with the advent of larger displacement, high torque, lower RPM engines, we can use overdrive transmissions and still keep our belt speeds within reason.

As we mentioned, as belt speeds go up, efficiency drops. This is one reason many radar runners gear extremely high sometimes even approaching 1:1 in the chaincase. They have found through diligent testing that they can achieve a higher top speed without shifting their clutches all the way out because of a decrease in belt speed which means an increase in transmission efficiency. That is their bottom line.

For oval racing, the small benefit you may achieve in top end speed would probably be lost by the loss of acceleration on the start and out of the corners on a tight oval circuit.

This holds true for cross country and snow crossers also. Top speed is not as important as quick acceleration out of the corners and ditches.

You can easily check your gearing selection by marking your drive clutch with a black marker with straight lines from bottom to top on the belt surfaces of the clutch. Go out and ride your sled under your normal conditions and stop to see how far the belt has rubbed the marker off the clutch surfaces. If it has shifted the belt all the way to the top, you may be able to pull one or two more teeth on the top sprocket. Experiment!

If it is down about 1/2 in or more from the top, you could consider trying a one tooth smaller top gear depending upon your type of racing.

The best combination of gearing for speed and acceleration you can achieve is far more important than shifting the belt **all the way to the top** of the clutches.

The following formula can be used to calculate the theoretical top speed of your Ski Doo. The formula assumes the transmission is shifted out to its top gear ratio. Make sure you use the correct track pitch and transmission ratio for your machine.

TRA clutch top ratio = .83

A little known fact that can seriously impair a racer's performance is the misconception that the factory stated peak horsepower RPM or the peak power point you find on a dyno is the correct figure to clutch your race sled to.

Generally, this is not the case. The figures that are printed by the factory are determined on a dynamometer in clinical test conditions.

CHAINCASE GEARS AND CHAINS

13 WIDE XP GEARS

TOP GEAR		BOTTOM GEAR	
TEETH	P/N	TEETH	P/N
18	486 070 500	43	504 152 726
19	504 152 030	45	504 152 593
20	486 070 700	49	504 152 627
21	504 139 300	51	504 152 971
22	504 083 500		
23	504 085 400	49C	504 152 655
24	504 139 700	C: Clutch Pak Gear	
25 (1)	504 084 300		
26 (1)	504 085 300		
27 (1)	504 148 400		

(1) Powder metal

13 WIDE XP CHAINS

LINKS	P/N
102	504 152 579
104	504 152 629
106	504 152 630
108	504 152 631
110	N/A

XP Chain Applications

TOP GEAR	BOTTOM GEAR	RATIO	CHAIN
20	45	2.25	102
21	45	2.14	102
22	45	2.05	104
23	45	1.96	104
24	45	1.88	104
25	45	1.80	104
26	45	1.73	106
27	45	1.67	106
20	49	2.45	104
21	49	2.33	104
22	49	2.23	106
23	49	2.13	106
24	49	2.04	106
25	49	1.96	106
26	49	1.88	108
27	49	1.81	108

TOP SPEED CALCULATION

CLUTCH RATIO	NUMBER OF DRIVE SPROCKET TEETH	TRACK PITCH	CONSTANT
1 : 1	8	2.86	46.1
1 : 1	9	2.52	46.6
1 : 1	10	2.52	41.8
.83 : 1	8	2.86	38.4
.83 : 1	9	2.52	38.6
.83 : 1	10	2.52	34.7

Bottom Gear/Top Gear = Gear Ratio

Engine RPM/Gear Ratio/Constant = MPH

.83 : 1 ratio is Maximum overdrive

<u>EXAMPLE: 2011 MX Z X 600 RS</u>

Engine RPM – 8500
Top Gear – 23
Bottom Gear – 49
Gear Ratio – 49/23 = 2.13
Clutch Ratio – 1 : 1
Track Pitch – 2.86"
Constant # – 46.1
Formula = 8500/2.13/46.1 = 86.5 MPH

XP CHAIN AND SPROCKET CROSS REFERENCE CHART

XP Gear Ratio

Top gear	Bottom gear	Ratio	Chain link	MPH @ 7800 RPM 1:1 ratio	MPH @ 8000 RPM 1:1 ratio	MPH @ 8200 RPM 1:1 ratio	MPH @ 8400 RPM 1:1 ratio	MPH @ 8600 RPM 1:1 ratio
19	43	2.26	100	74.8	76.7	78.6	80.5	82.4
20	43	2.15	102	78.7	80.7	82.7	84.8	86.8
21	43	2.05	102	82.6	84.8	86.9	89.0	91.1
22	43	1.95	102	86.6	88.8	91.0	93.2	95.4
23	43	1.87	102	90.5	92.8	95.1	97.5	99.8
26	43	1.65	104	102.3	104.9	107.6	110.2	112.8
27	43	1.59	104	106.2	109.0	111.7	114.4	117.1
29	43	1.48	106	114.1	117.0	120.0	122.9	125.8
19	45	2.37	102	71.4	73.3	75.1	76.9	78.8
20	45	2.25	102	75.2	77.1	79.1	81.0	82.9
21	45	2.14	102	79.0	81.0	83.0	85.0	87.1
24	45	1.88	104	90.2	92.6	94.9	97.2	99.5
25	45	1.80	104	94.0	96.4	98.8	101.2	103.6
27	45	1.67	106	101.5	104.1	106.7	109.3	111.9
28	45	1.61	106	105.3	108.0	110.7	113.4	116.1
29	45	1.55	106	109.0	111.8	114.6	117.4	120.2
22	47	2.14	104	79.2	81.2	83.3	85.3	87.3
23	47	2.04	104	82.8	84.9	87.0	89.2	91.3
25	47	1.88	106	90.0	92.3	94.6	96.9	99.2
26	47	1.81	106	93.6	96.0	98.4	100.8	103.2
27	47	1.74	106	97.2	99.7	102.2	104.7	107.2
28	47	1.68	108	100.8	103.4	106.0	108.6	111.1
29	47	1.62	108	104.4	107.1	109.8	112.4	115.1
19	49	2.58	104	65.6	67.3	69.0	70.7	72.3
20	49	2.45	104	69.1	70.8	72.6	74.4	76.1
23	49	2.13	106	79.4	81.5	83.5	85.5	87.6
24	49	2.04	106	82.9	85.0	87.1	89.2	91.4
25	49	1.96	106	86.3	88.5	90.8	93.0	95.2
26	49	1.88	108	89.8	92.1	94.4	96.7	99.0
27	49	1.81	108	93.2	95.6	98.0	100.4	102.8
28	49	1.75	108	96.7	99.2	101.6	104.1	106.6
29	49	1.69	108	100.1	102.7	105.3	107.8	110.4

mmc2011-001-004

TRANSMISSION CALIBRATION PROCEDURE

1. A new vehicle should be broken in before fine tuning the transmission 200 300 miles will allow things like bearings and the track to loosen up. This will allow the sled to roll much freer which may slightly change the clutch calibration.
2. Set up the chassis configuration (lowering, weight transfer, traction).
3. Adjust the carburetor calibration to match the condition of the day.
4. Pick the chain case ratio.
5. Define the driven pulley calibration. Stock is a good starting point. Drag racers may consider trying a larger cam angle. Use multi angle cams only for fine tuning after working with the drive clutch.
6. Choose the drive belt (compound, length, width).
7. Define the TRA calibration.
   - Start with the stock ramp in position #3.
   - For most forms of racing, a higher engagement RPM can be utilized. The better the traction, the higher the engagement that can be used. The easiest way to raise engagement is to use a spring with a higher start load and a similar finish load. Remember, the stiffer spring at start will also affect the shift curve at 0 to 1/2 ratio.
   - For most forms of racing, a higher engagement RPM can be utilized. The better the traction, the higher the engagement that can be used. The easiest way to raise engagement is to use a spring with a higher start load and a similar finish load. Remember, the stiffer spring at start will also affect the shift curve at 0 to 1/2 ratio.
   - If the stiffer spring slowed down the shift at low ratios, try more roller pin weight. The pin weight will not change engagement much but will shift faster. Utilize the threaded roller pins to achieve pin weights in between the hollow steel and solid steel pin.
   - Fine tune the shift curve by trying different adjuster positions. Use the lowest adjuster number that still allows you to maintain RPM.– Pin weight and ramp angle are interrelated, but can be varied to achieve certain results. A 16.5 gram pin and the adjuster set in #5 may produce the same full throttle RPM as a 14.5 gram pin with the adjuster set in #3, but the lighter pin will be revving higher at part throttle setting at low ratios. This may work better for snowcross or woods racing whereas the heavier pin may be better in a drag race. Some ramp profiles will achieve better top speed with the adjusters set in lower numbers (1 4). If you are in position 5 or 6, try a slightly lighter pin weight (1.5 to 2 grams) and lower the adjuster position.
   - If your shift curve is perfect but the engagement is too low, a flat or notch can be ground in the ramp right where the roller sits at neutral position. This is a touchy procedure and should only be attempted as a last resort. Be prepared to scrap some ramps during the learning procedure.
8. The best way to test clutching is with a set of timing lights or side by side comparison with a similar vehicle. Leave one machine as a base line reference while tuning the test vehicle. Don't change things on both vehicles at the same time or you won't know if you are gaining or losing. Also, only change one parameter at time on your test vehicle so you know exactly what results from the change.
9. For drag racers, try running the engine down to several hundred RPM below the stated power peak. When the exhaust is cold, the peak power RPM drops. How much lower depends on the engine type, exhaust type, jetting and underhood temperature. Summer and fall grass draggers should especially try lower RPM.
10. This is where the winners become winners. Test, test, test and then go test some more.
11. **KEEP DETAILED NOTES OF ALL YOUR TESTINGS!!!** No matter how good you think your memory is, after you test your hundredth combination, things can get overwhelming.

SNOCROSS OPEN MOD KITS SPECIFICATIONS

2014

OPEN MOD SNOCROSS ENGINE SPECIFICATIONS

593 RS (ROTAX)

2 CYLINDERS

THIS KIT MUST BE USED ONLY FOR RACING PURPOSES, IN A CLOSED CIRCUIT

Incomplete document:
More details will be provided upon delivery of kit

mmc2014-001-020_1

OPEN MOD SNOCROSS ENGINE SPECIFICATIONS
593 RS – 2014 (ROTAX) - 2 CYLINDERS

8/29/2013

- Bore — 72 mm
- Stroke — 73 mm
- C C — 594.4cc
- C R — 16.8
- Squish — 1.1 to 1.2 mm (.044 to 047)
- Combustion chamber - flat plate — 19.80± .5cc
- Combustion chamber – installed — 18.85± .5cc
- ☞ Base gasket .7 mm — Part # 420 450 182
- ☞ Base gasket .8 mm — Part # 420 450 183
- ☞ Cylinder head cup: — Part # 420 623 357 (16.8 RC) Open mod
- Cylinder head cup holder: — Part # 420 623 545

Ignition — 360 watts

☞ Electronic box — Calibrated: — Part # 486 014 044

Magneto ass'y — Part # 420 891 543

Stator — Part # 420 893 060

Ignition coil — Part # 512 059 968

Spark plug wire (375 mm) — Part # 512 060 291

Rave spring — 0,9 x 48 mm Part # 420 239 944

No thermostat

Cylinder — Part # 420 623 483

Piston pin bearing — With cage # 420 832 445 (prod RS)

mmc2014-001-020_2

☞ O'ring (for cup) small Part # 420 430 370

Square o'ring Part # 420 931 590

O'ring (cylinder) Part # 420 850 540

Piston Part # 420 893 303 (dia. 71.87)

Piston Ring (CN) Part # 420 815 295

Piston Pin Part # 420 916 413

Cir clip Part # 420 845 106

Base gasket available

- .5mm # 420 450 180
- .6mm # 420 450 181
- .7mm # 420 450 182
- .8mm # 420 450 183
- .9mm # 420 450 184
- 1mm # 420 450 185

Crankshaft Part # 420 891 636

Crankcase Part # 420 893 291

Spark plug BR9ECS-5 (gap .018") Part # 512 059 533

Carburation TMX 40 mm

☞ MJ 300 PTO - 300 MAG (at 0° F)
We strongly recommend VP C14+ fuel or equivalent

- Power Jet 160

- JN 6FDY2-2 Part #
- ✓ JN (optional) 6FDY1-58 ***(leaner)*** Part # 404 162 114
- ✓ JN (optional) 6FDY1-59 ***(leaner)*** Part # 404 162 118
- ☞ NJ 633 P8 Part # 486 400 013
  NJ (optional) P2 = 486 600 026
  NJ (optional) P3 = 486 011 021
  NJ (optional) P4 = 486 600 027
  NJ (optional) P5 = 486 011 022

mmc2014-001-020_3

NJ (optional)	P6 = 404 162 135
NJ (optional)	P7 = 486 011 023
NJ (optional)	P8 = 486 400 013
NJ (optional)	P9 = 486 011 024
NJ (optional)	Q0 = 404 162 105
NJ (optional)	Q2 = 486 228 000
NJ (optional)	Q4 = 486 228 100
NJ (optional)	Q6 = 486 228 200
NJ (optional)	Q8 = 486 228 300
NJ (optional)	Q2 = 486 228 000

- CA 4.0 — Part # 404 162 106
- AS .75 turn
- ☞ PJ 60 — Part # 486 230 400
  - ✓ PJ (optional) 35 = 707 200 168
  - ✓ PJ (optional) 40 = 707 200 136
  - ✓ PJ (optional) 45 = 404 162 107
  - ✓ PJ (optional) 50 = 486 230 200
  - ✓ PJ (optional) 55 = 404 162 134
  - ✓ PJ (optional) 65 = 486 230 500
- VS 1.5 — Part # 404 161 868

Idle adjustment — 3.0 mm

☞ Air box (mod) — 486 800 008
☞ Hose — 486 900 137
☞ Clamp (2) — 514 052 924

Reed valve (V Force 3) — Part # 486 800 092 (petals only)

Intake socket — Part # 420 667 500

☞ **= Parts in the kit or have to be readjusted**

mmc2014-001-020_4

Pulley calibration

	PART #
Drive pulley forged ass'y	**417 223 551**
☞ Ramp 443 Pos. 5	417 223 281
Spring 265/405 WH/GN/GN	417 223 610
Std lever	417 222 671
Pin 12.4 grams	417 222 595
☞ Add 1 allen set screw M6x16 mm weight grams 2.35 in each lever	206 261 699
☞ Add 1 allen set screw M6x12 mm weight grams 1.68 in each lever	206 261 299
☞ Add 1 allen set screw M6x 6 mm weight grams 0.73 in each lever	206 260 699
Driven team	417 127 425
☞ Team driven cam °66-44X.40(opt 68-42x.40)	486 014 005
>> both angle are on the same cam	
Spring (180-280) (black/orange)	210180
Belt MBL	417 300 425
Gear 21	504 139 300
Gear 49	504 153 196
Chain 106 links	504 152 630
Chain 102 links optional	504 152 579
Chain 104 links optional	504 152 629
Chain 108 links optional	504 152 631
☞ Belt guard (meet rules)	486 800 006

Optional Parts

• **Optional kit weight pin from 12.4 to 22.15 grams**	486 400 003
• **Optional tungsten pin**	
14 mm weight grams 5.044	486 400 004
23mm weight grams 8.3	486 400 005
• **Optional allen set screw**	
M6x6mm weight grams 0.73	206 260 699
M6x12mm weight grams 1.68	206 261 299
M6x16mm weight grams 2.35	206 261 699
M6x20mm weight grams 3.02	206 262 099
M6x25mm weight grams 3.81	206 262 599

☞ = **Parts in the kit or have to be readjusted**

mmc2014-001-020_5

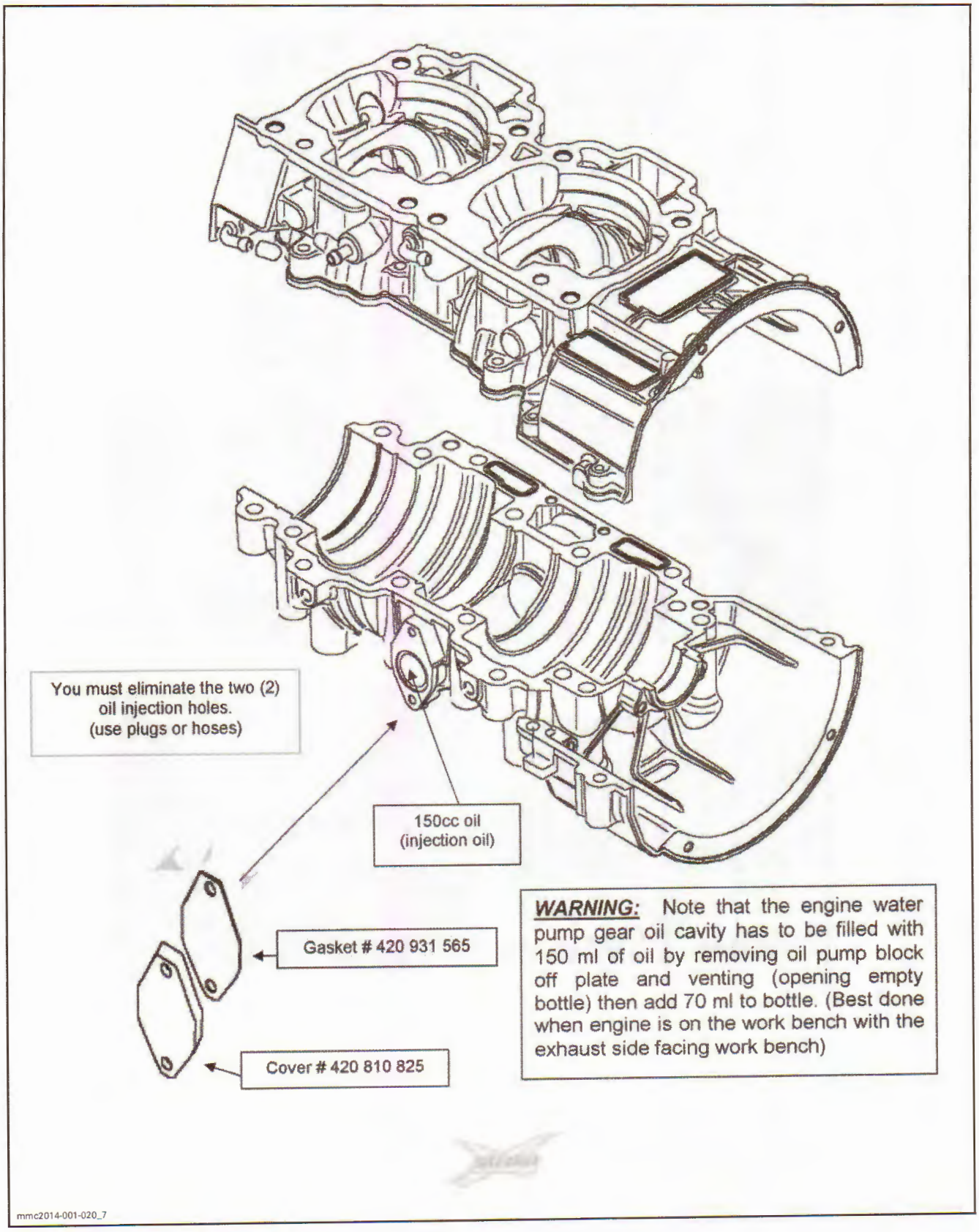
	Engine Type:	593		Engine Type:	593
	STROKE:	73		STROKE:	73
	C.R. Length:	132		C.R. Length:	132
Degree	**Piston Pos. (mm)**	**Piston Pos. (inch)**	***Degree***	**Piston Pos. (mm)**	**Piston Pos. (inch)**
0	0	0,000	*26*	4,67	0,184
1	0,01	0,000	*27*	5,02	0,198
2	0,03	0,001	*28*	5,39	0,212
3	0,06	0,003	*29*	5,77	0,227
4	0,11	0,004	*30*	6,16	0,242
5	0,18	0,007	*31*	6,56	0,258
6	0,26	0.010	*32*	6,97	0,274
7	0,35	0,014	*33*	7,39	0,291
8	0,45	0,018	*34*	7,83	0,308
9	0,57	0,023	*35*	8,27	0,326
10	0,71	0,028	*36*	8,73	0,344
11	0,85	0,034	*37*	9,19	0,362
12	1,02	0,040	*38*	9,66	0,380
13	1,19	0,047	*39*	10,15	0,400
14	1,38	0,054	*40*	10,64	0,419
15	1,58	0,062	*41*	11,14	0,439
16	1,80	0,071	*42*	11,65	0,459
17	2,03	0,080	*43*	12,17	0,479
18	2,27	0,089	*44*	12,70	0,500
19	2,52	0,099	*45*	13.24	0,521
20	2,79	0,110	*46*	13,78	0,543
21	3,07	0.121	*47*	14,33	0,564
22	3,37	0,133	*48*	14,89	0,586
23	3,67	0,145	*49*	15,46	0,609
24	3,99	0,157	*50*	16,03	0,631
25	4,32	0,170			

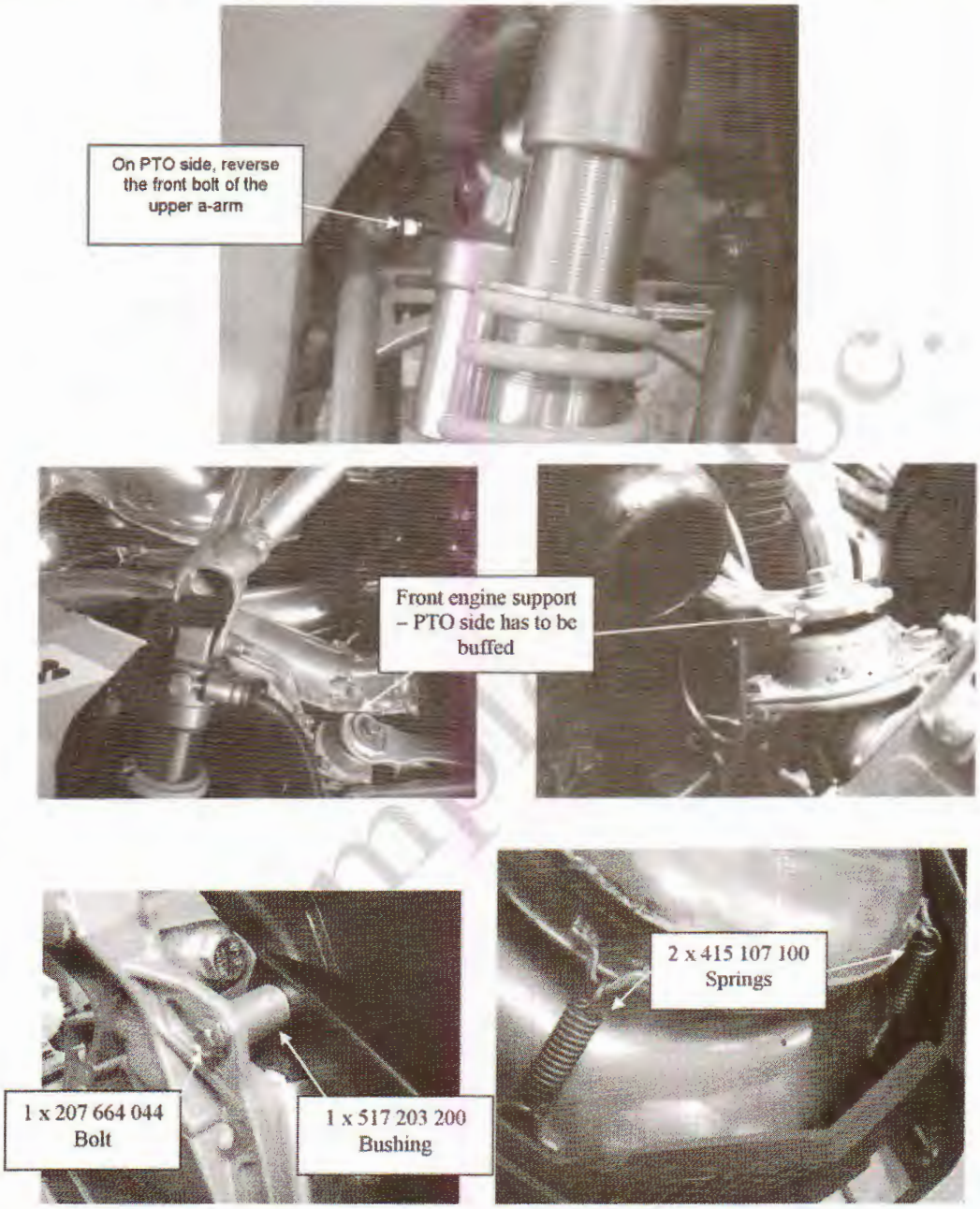
Recommended fuel: Use Racing fuel $\frac{R+M}{2}$ *114 octane*

with pre-mix oil 25 to 1 (good quality of synthetic oil)

Performance: max hp @ 8600-8700 RPM

mmc2014-001-020_6


You must eliminate the two (2) oil injection holes. (use plugs or hoses)
150cc oil (injection oil)
Gasket # 420 931 565
Cover # 420 810 825
WARNING: Note that the engine water pump gear oil cavity has to be filled with 150 ml of oil by removing oil pump block off plate and venting (opening empty bottle) then add 70 ml to bottle. (Best done when engine is on the work bench with the exhaust side facing work bench)
mmc2014-001-020_7



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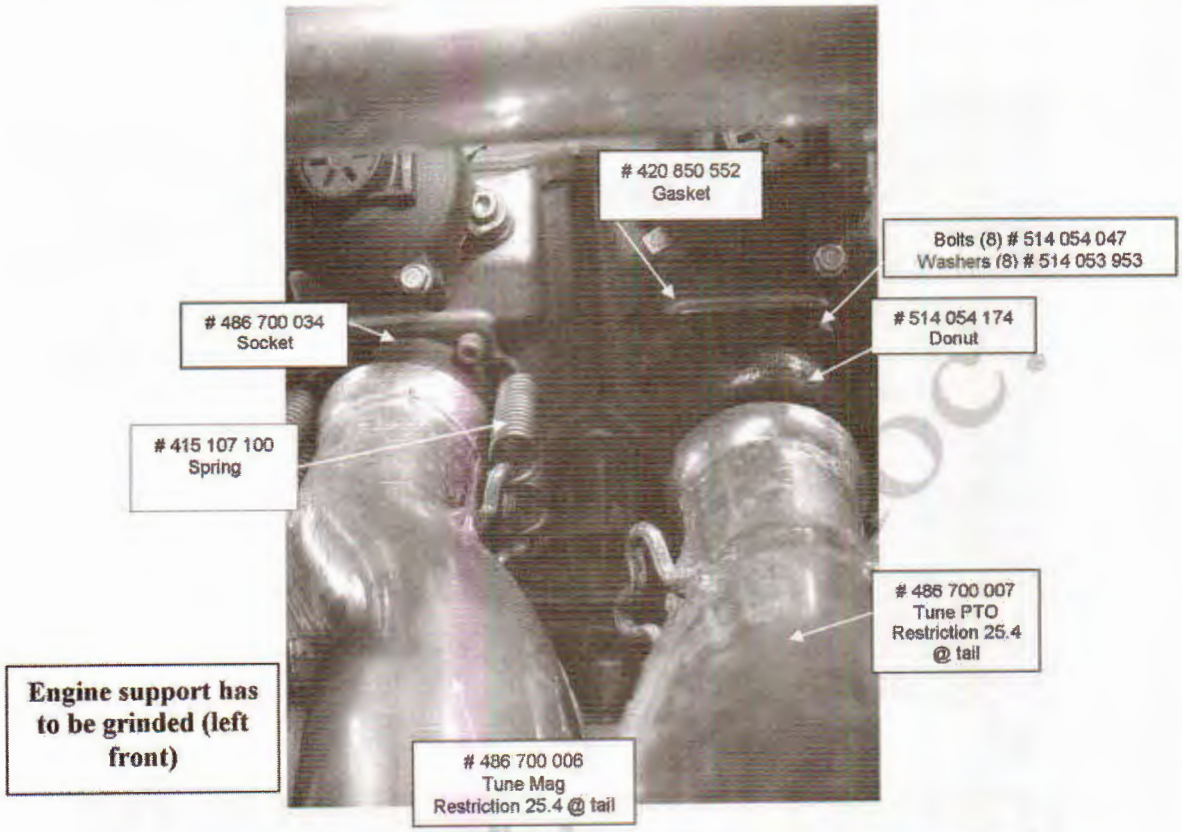

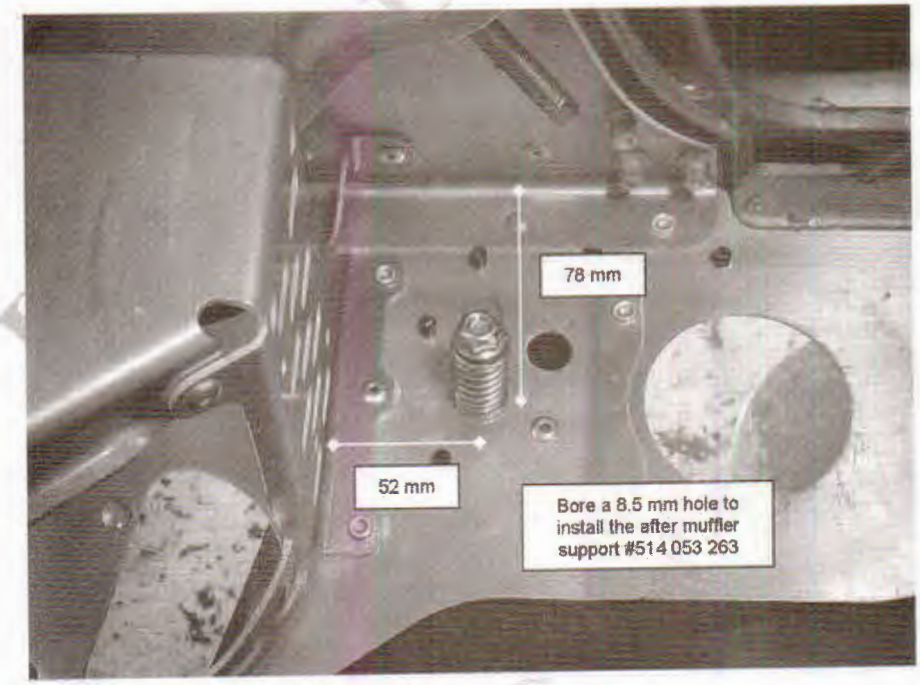

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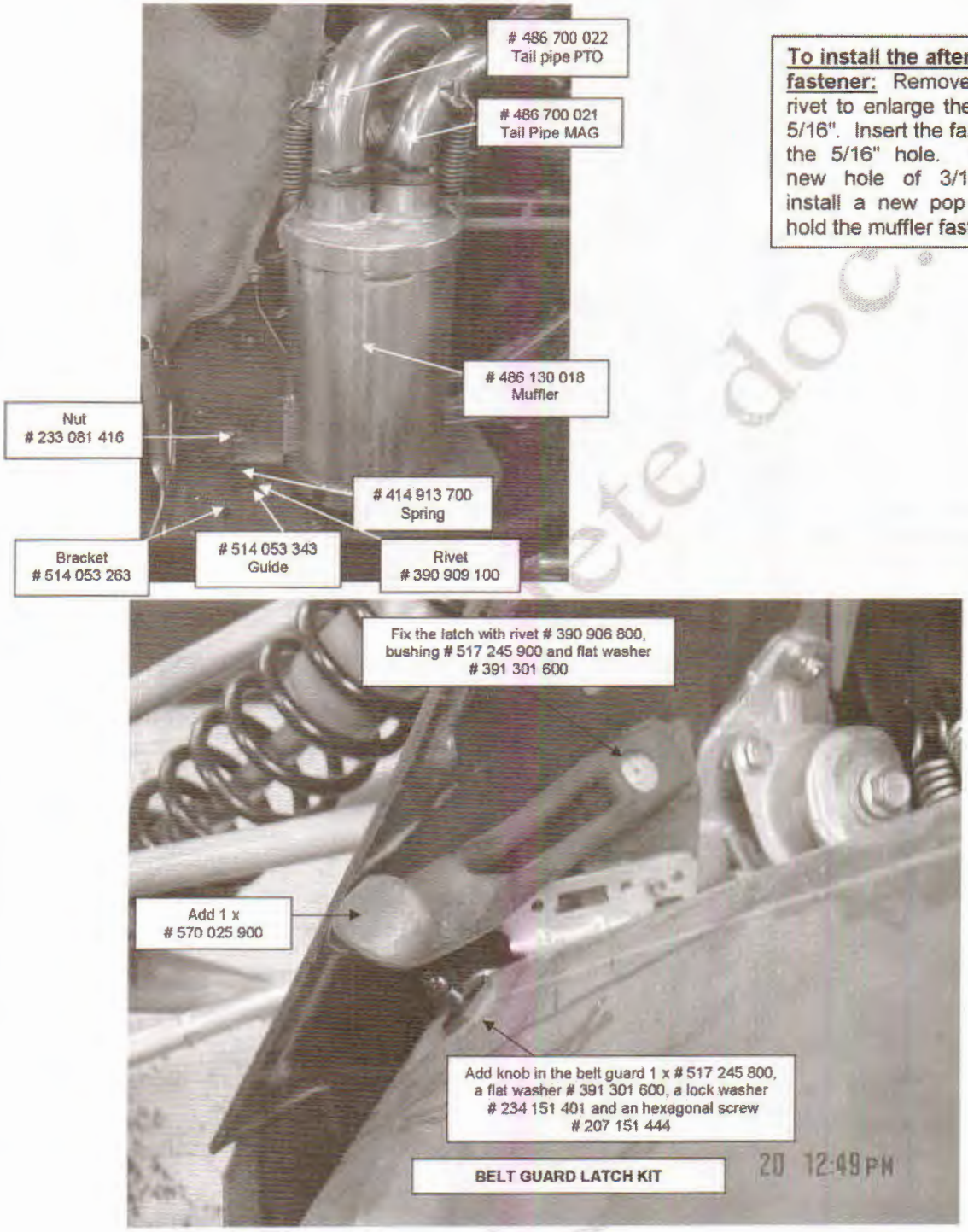
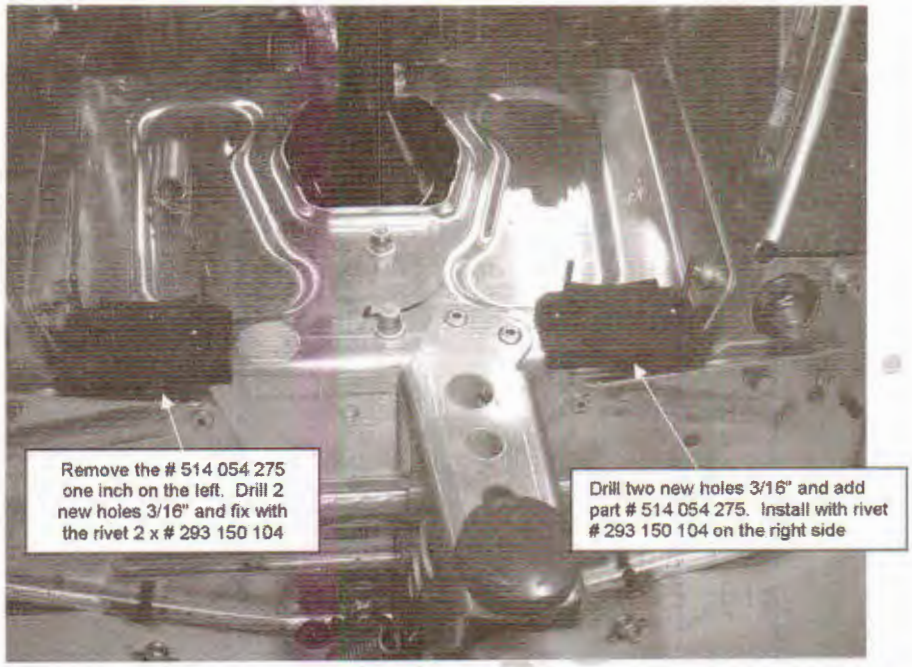
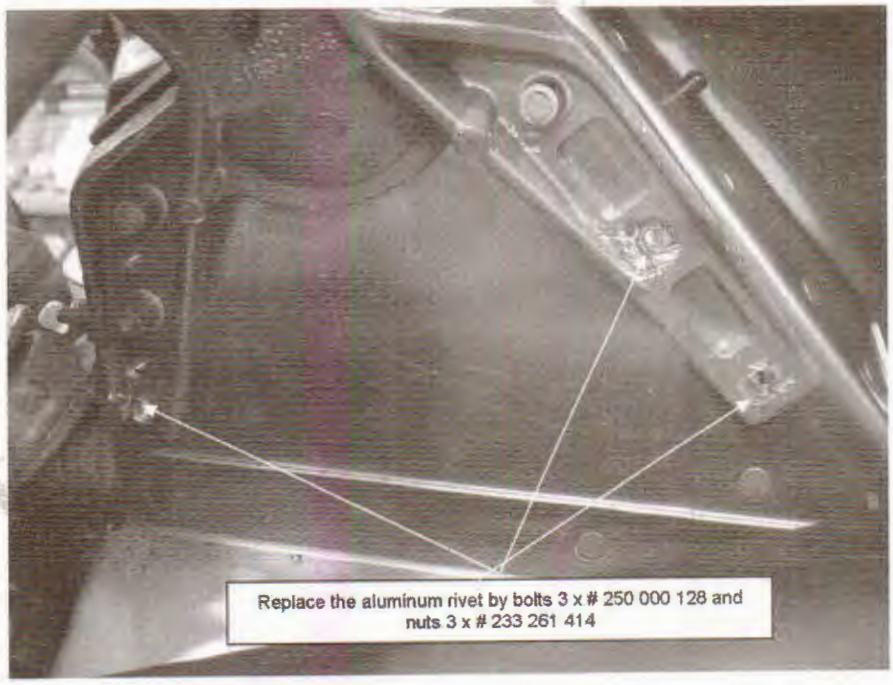


To install the after muffler fastener: Remove a pop rivet to enlarge the hole to 5/16". Insert the fastener in the 5/16" hole. Make a new hole of 3/16" then install a new pop rivet to hold the muffler fastener.

mmc2014-001-020_10





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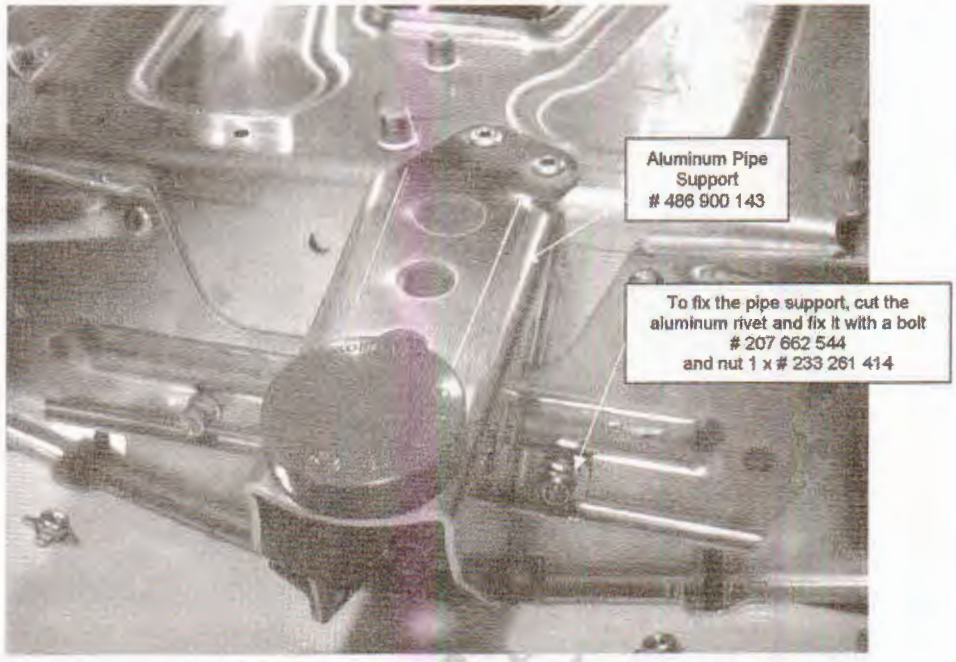

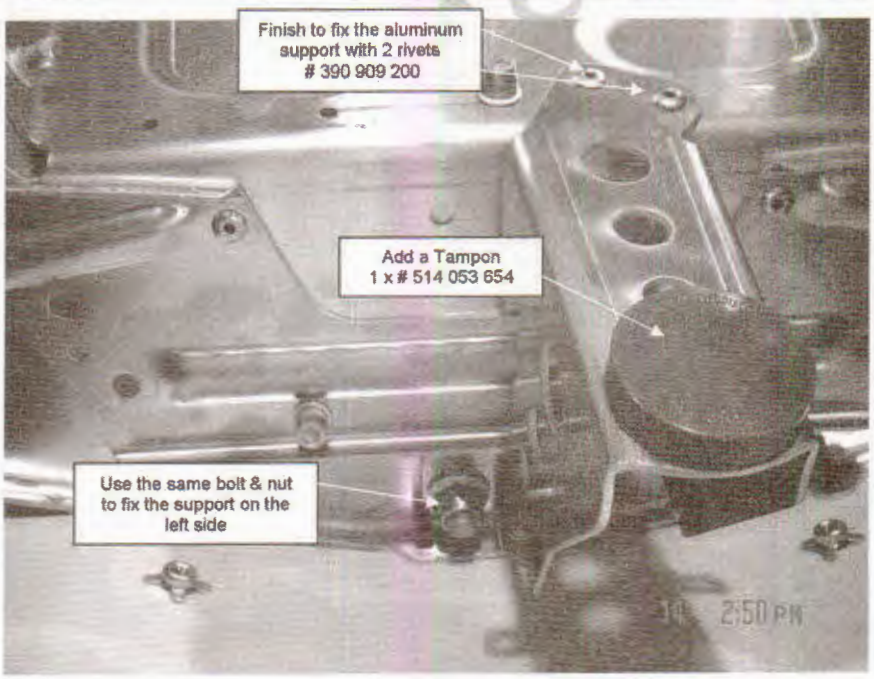

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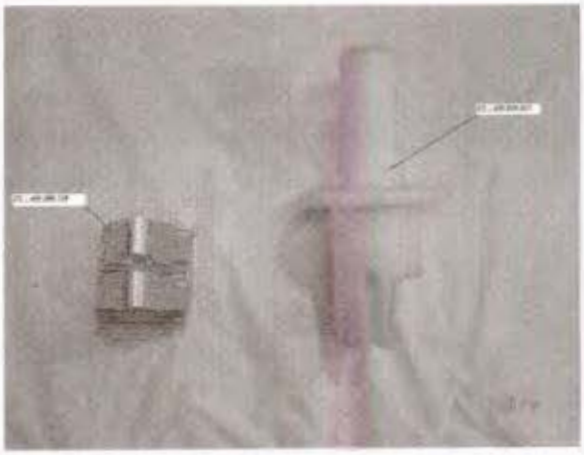
JUNIOR HALF THROTTLE KIT

Junior Half Throttle Kit



Parts	N/P	DESCRIPTION	QTY
P1	486 900 170	Throttle housing	1
P2	486 010 017	adjustment tool	1

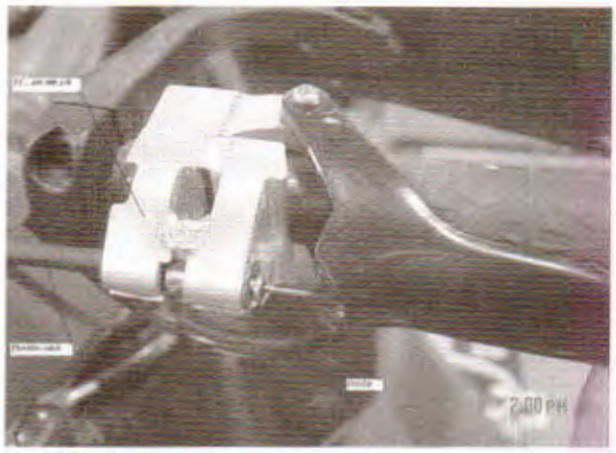
IMPORTANT

It is important to set the TPS before you change the throttle housing.
NOTE: See instruction procedure for TPS adjustment in section 3 in the 2010 Racing Handbook.

- Remove the circlip that holds the cable on the throttle housing.
- Remove the throttle cable from the housing.
- Remove the lower housing (PN 512 059 537) and install the new lower housing (PN 486 900 170).

mmc2010-001-540_1

- Reinstall the throttle cable in the new lower housing (PN 486 900 170) and reinstall the circlip.



- Check and make sure that both throttle slides are synced and open evenly. With the adjustment tool (PN 486 010 017) check to make sure the slides are opening to the correct height. Adjust if necessary.

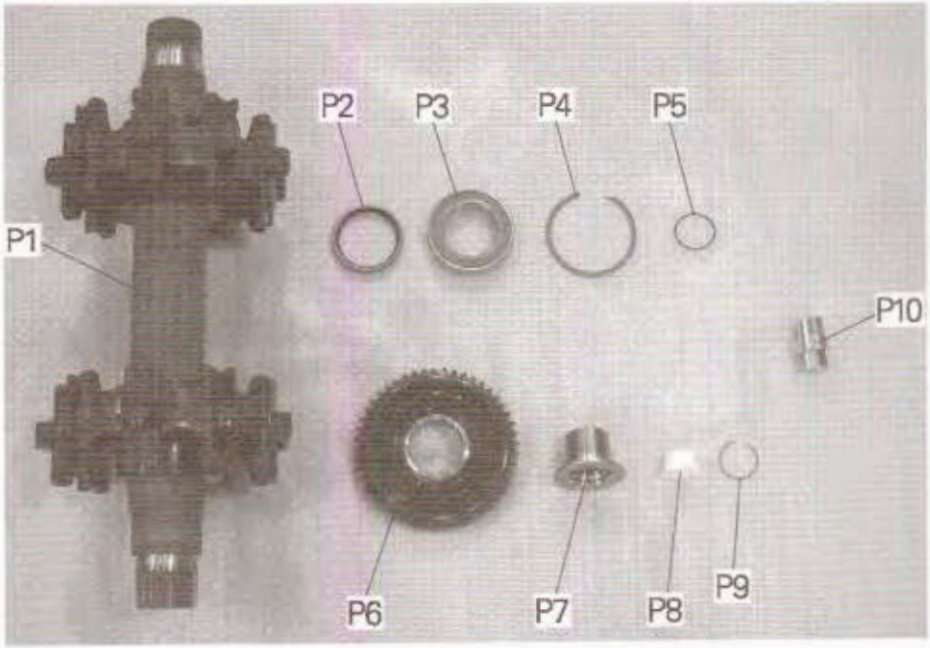
- Note : Always check slide heights with handelbars straight.

- Note : It is critical that the driver/mechanic frequently check and maintains correct throttle slide height.

mmc2010-001-540_2

SLIP GEAR KIT FOR XP CHASSIS

Slip-Gear Kit For XP Chassis
486 010 024



Parts	N/P	Description	Qts
P-1	504153084	Drive axel Ass'y	1
P-2	504152571	Seal	1
P-3	293350059	Ball Bearing	1
P-4	504152582	Circlip	1
P-5	293300122	O-Ring	1
P-6	504152880	49 Teeth Sprocket	1
P-7	504152802	Threaded Cap	1
P-8	504152794	Magnetic Adaptor	1
P-9	293370052	Circlip	1
P-10	529036122	Screw Cap Socket	1

mmc2013-001-007

KIT X COUNTRY FOR 600 RS

Kit (x-country) for 600RS 2014
 # 486 014 009

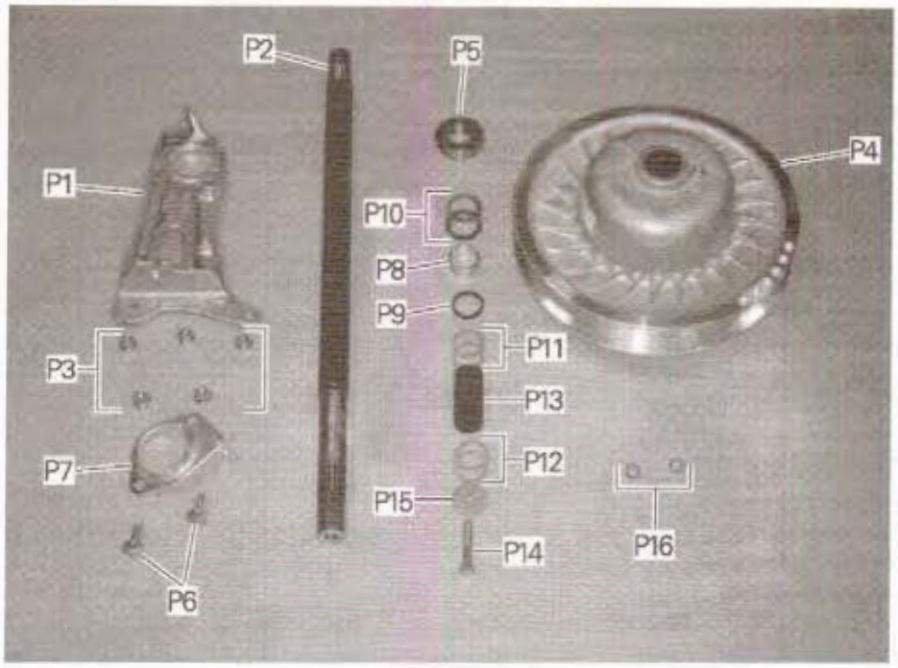
include parts:

Item	P/N	Description
1	860 200 696	Tall windshield
2	9237H	Camoplast 129" Track (Lug=1.250" Pitch=2.86")
	9215H *	Camoplast 128" Track (Lug=1.250" Pitch=2.52")
3	860 200 407	Fuel tank 40 liters (10.5 gal.)
4		Carburation calib. Parts (same as production) M.J.=280 P.J.=55 N.Jet=P-6 Needle= FDY2-2 A.S.=1.5
5		Clucth calib. Parts (Tip sheet to come)
6		Chain & gear (Tip sheet to come)
7		Shock & spring (Tip sheet to come)

*** Note:** The Camoplast track (9215H) will need to be installed with the drive axle ass'y # 486 800 051.

mmc2014-001-008

Kit Driven pulley Team for X-Country
486 010 015



Parts	N/P	Description	QTY
P1	518 326 651	Driven support	1
P2	504 153 166	Countershaft	1
P3	233 281 414	Flanged Nut M8	5
P4	417 127 291	Driven pulley	1
P5	293 350 074	Bearing	1
P6	207 783 044	Carriage bolt M8 X 30	2
P7	504 153 089	Flange	1
P8	417 300 399	Spacer	1
P9	504 149 100	Spacer	1
P10	417 300 252	Spacer	@
P11	417 300 265	Spacer	@
P12	504 112 000	Spacer	@
P13	417 127 300	Bushing	1
P14	207 584 544	Screw M8 X 45	1
P15	503 183 100	Washer	1
P16	414 920 600	Brake Line (Washer cop.)	2

mmc2013-001-009_1

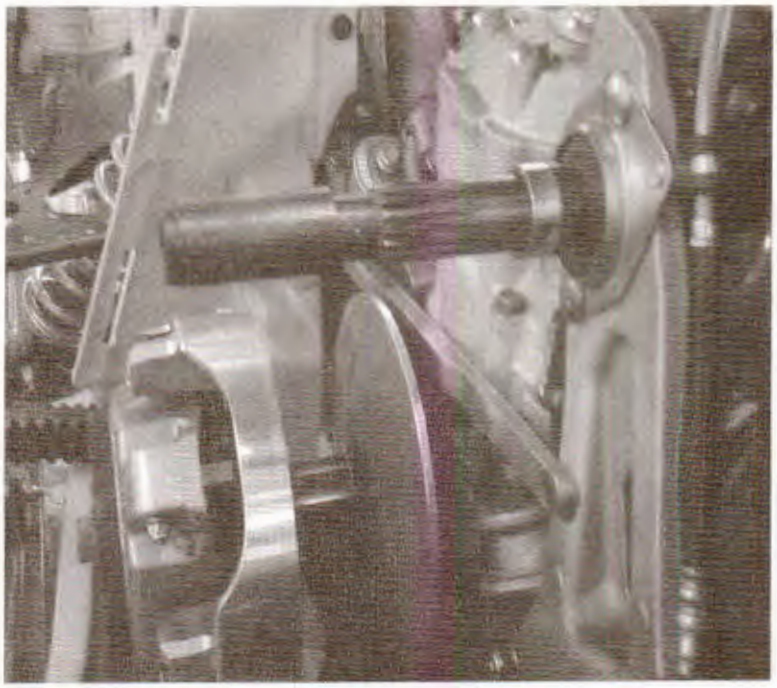
Instruction to change the QRS Driven on XP models for Team Driven

- Remove the chaincase cover and the top sprocket. Remove the driven pulley, the countershaft (section 5) and driven support.

mmc2013-001-009_2

-Install the new driven support (PN 518 326 651) and put the new Flanged Nut M8 (233 281 414)

Caution: When you re-install the brake line, be sure you put the new copper washer and the hose is clear from the driven.

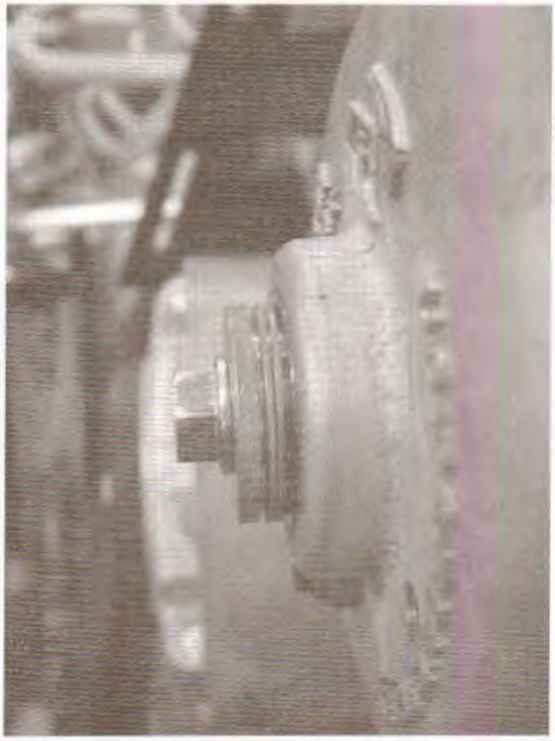


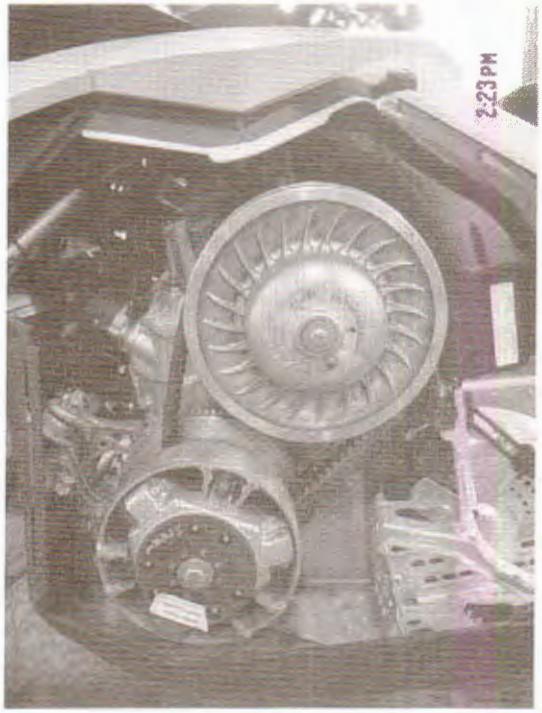
mmc2013-001-009_3

- On new countershaft (PN 504 153 166) install the new bearing. (PN 293 350 074) Re-install the countershaft in the support driven with the flange, (PN 504 153 089) the screws (PN 207 783 044) and the nuts. (PN 233 281 414)

- Install the chain, the top sprocket and the chaincase cover.
  - **NOTE**: Tighten the top sprocket 48Nm-(38 lbf.ft) and put new chaincase oil. (PN 413 803 300)

mmc2013-001-009_4

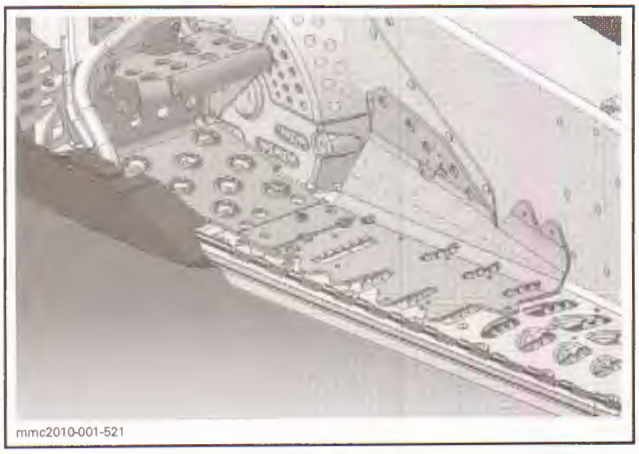




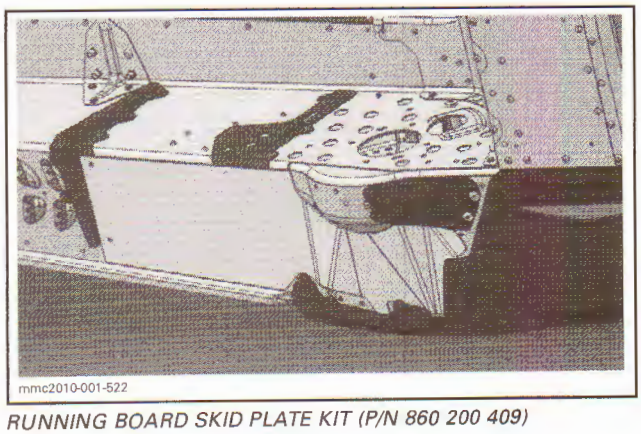
- Install the new driven pulley with the new bushing (PN 417 127 300) and check the alignment specifications for the 600RS in the section 5.

mmc2013-001-009_5

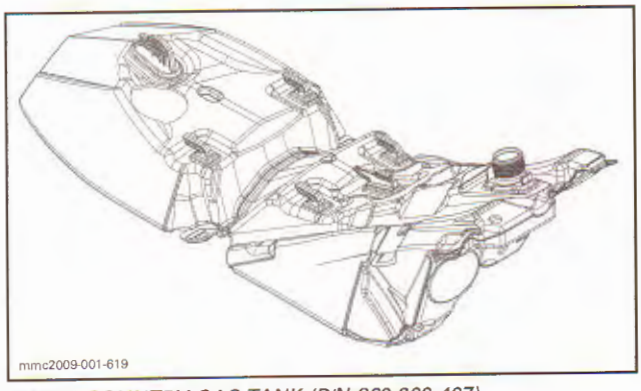
ACCESSORIES RACING



RUNNING BOARD REINFORCEMENT KIT (P/N 860 200 408)

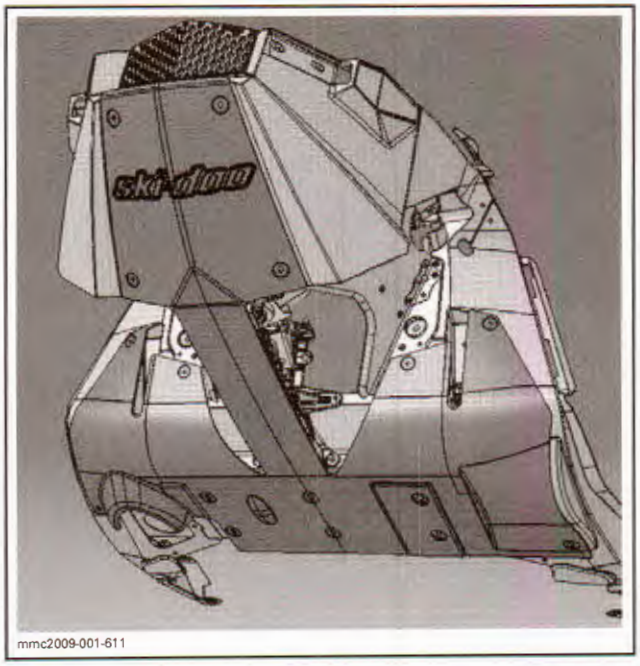


RUNNING BOARD SKID PLATE KIT (P/N 860 200 409)

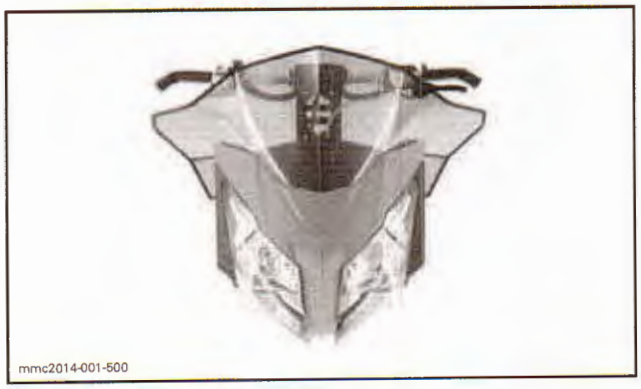


CROSS COUNTRY GAS TANK (P/N 860 200 407)

ACCESSORIES FOR 600 RS

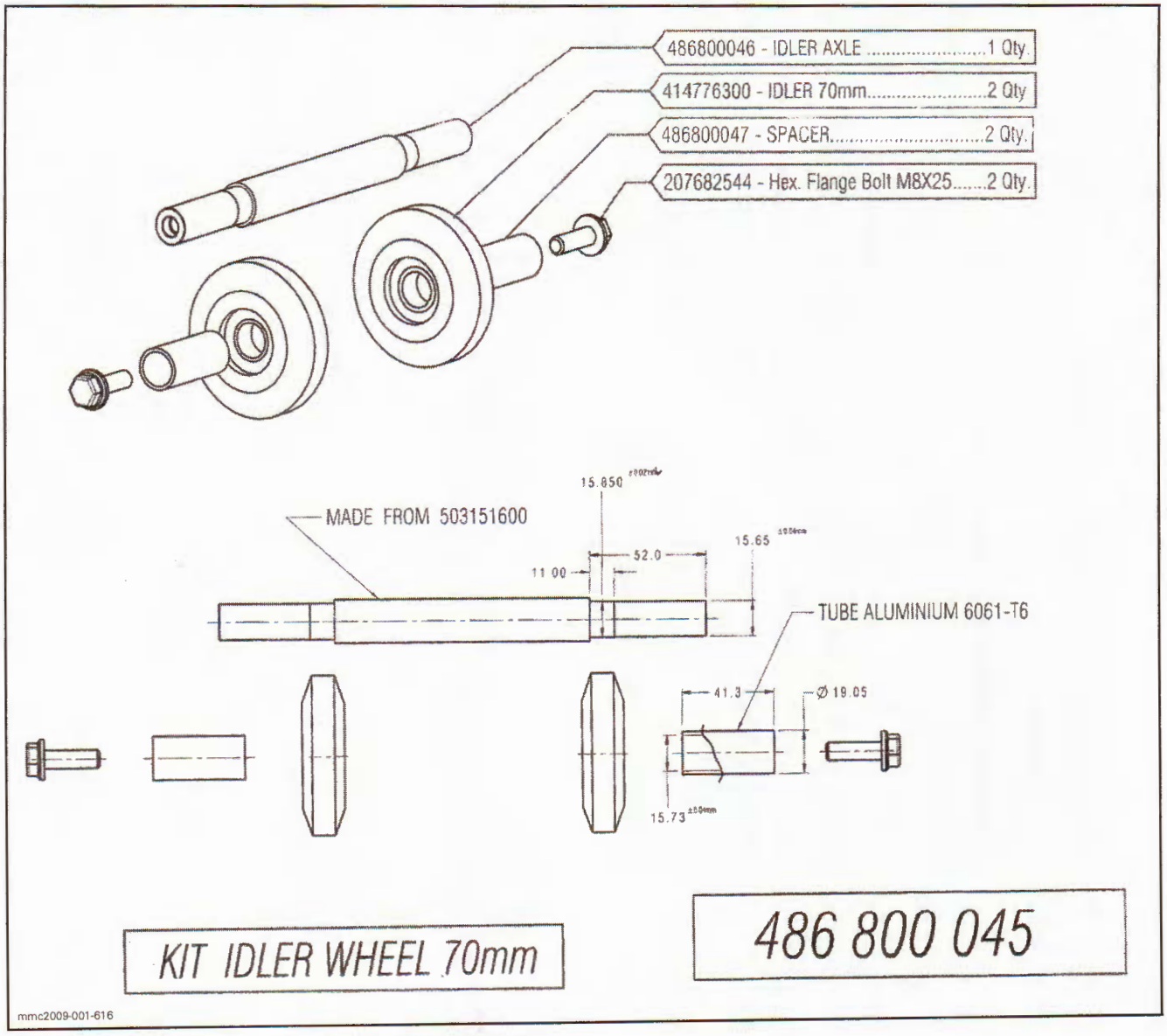


EXTREME SKID PLATE (P/N 860 200 606)

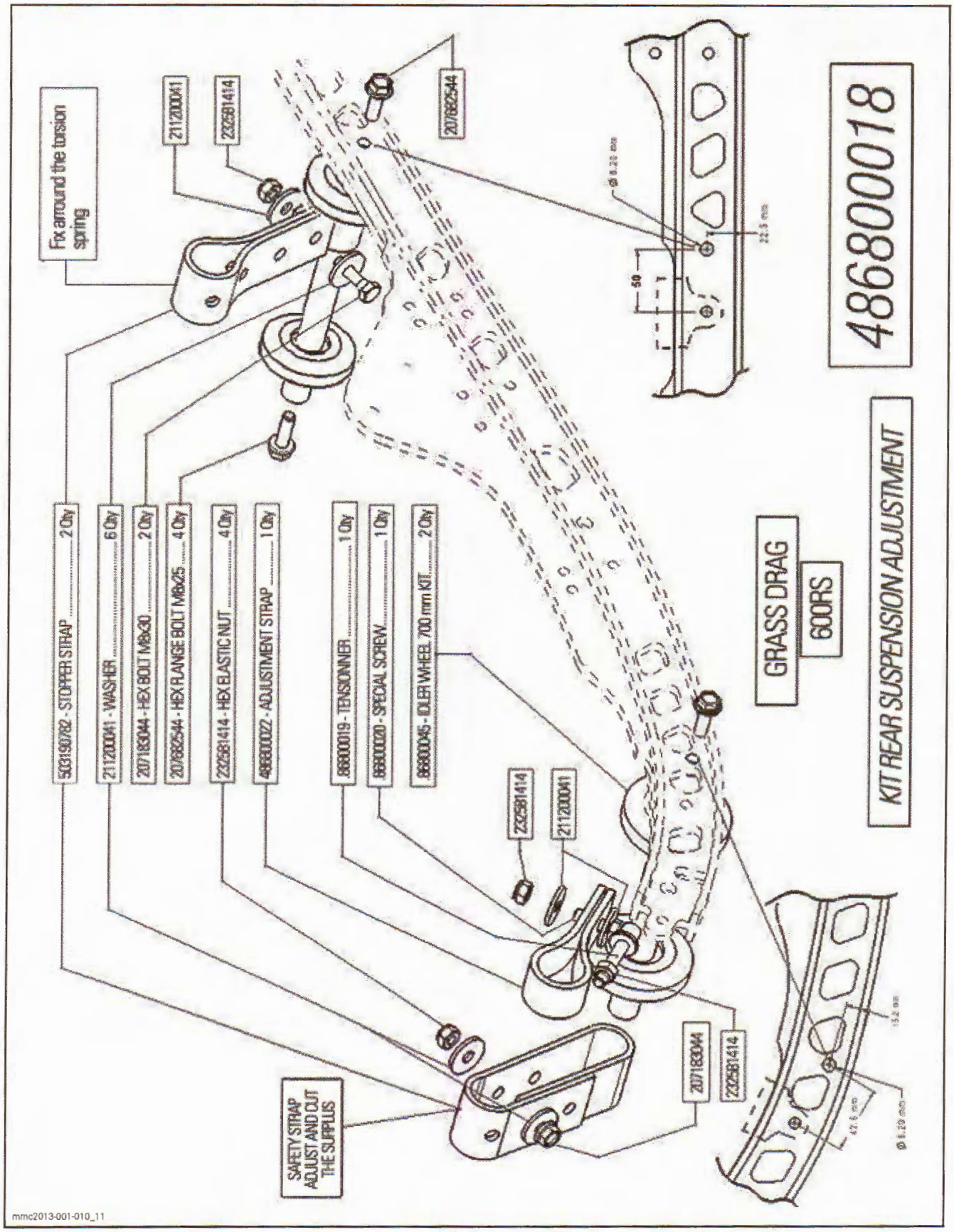


WINDSHIELD (P/N 860 200 696)

GRASS DRAG WHEEL KIT



NOTE: This kit is included in (P/N 486 800 018)


Fix around the torsion spring
211200041
232581414
207682544
503190782 - STOPPER STRAP ..... 2 Qty
211200041 - WASHER ..... 6 Qty
207185044 - HEX BOLT M8x30 ..... 2 Qty
207682544 - HEX FLANGE BOLT M8x25 ..... 4 Qty
232581414 - HEX ELASTIC NUT ..... 4 Qty
486800022 - ADJUSTMENT STRAP ..... 1 Qty
86600019 - TENSIONNER ..... 1 Qty
86600020 - SPECIAL SCREW ..... 1 Qty
86600045 - IDLER WHEEL 700 mm KIT ..... 2 Qty
232581414
211200041
207183044
232581414
SAFETY STRAP ADJUST AND CUT THE SURPLUS
GRASS DRAG
600RS
KIT REAR SUSPENSION ADJUSTMENT
486800018
mmc2013-001-010_11

TOOLS

Year	Model
All	All

BRP is proud to introduce its latest Service Tools Bulletin. These special tools were designed to help you efficiently service BRP vehicles.
Please always make sure to use special tools along with the appropriate Shop Manual(s) and respect all safety measures.

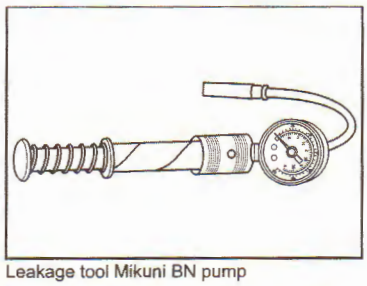
Mandatory Tools: These tools are absolutely needed to perform certain service procedures.
They will be automatically shipped to dealerships. They do not need to be ordered separately.

Recommended Tools: These tools will facilitate the Technicians work. They will not be automatically shipped to dealerships. They need to be ordered separately.

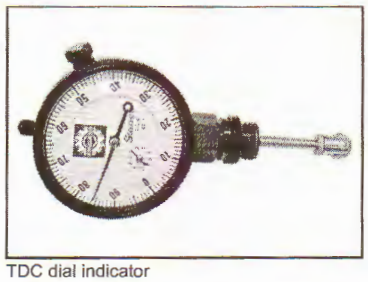
Table of contents

Tools by System:

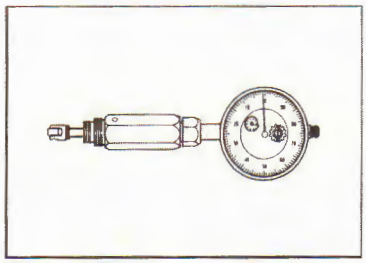
Engine



Leakage tool Mikuni BN pump
P/N 295 000 114 Recommended
All carbureted engines
To leak test carburetor pop-off pressure.

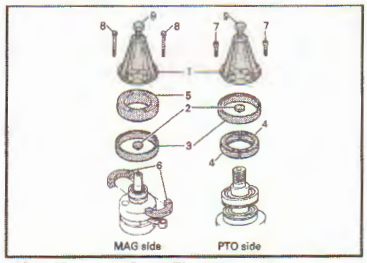


TDC dial indicator
P/N 295 000 143 Recommended
2-stroke engines except DI, 1203

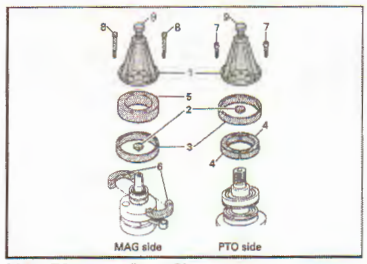


TDC dial indicator
P/N 414 104 700 Recommended
For ignition timing static measurement

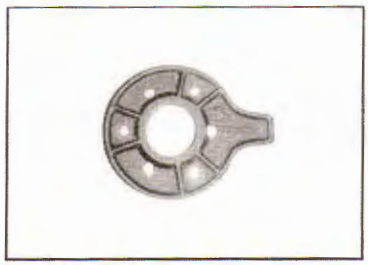
Half-ring puller MAG
P/N 420 276 025 Recommended
717 engine
To remove crankshaft bearings.



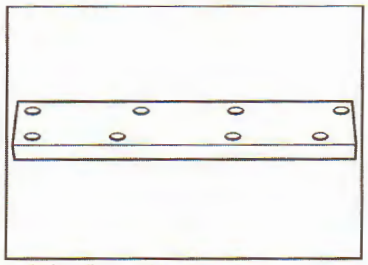
M8 x 40 screw (item 7)
P/N 420 840 681 Recommended
All 2-stroke engines



M8 x 70 screw (item 8)
P/N 420 841 201 Recommended
All 2-stroke engines
To be used with P/N 420 877 635.

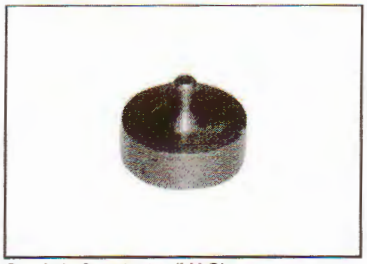


Magneto puller ring
P/N 420 876 081 **Mandatory**
All 2-strokes



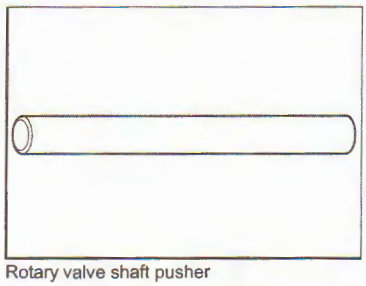
Cylinder alignment tool
P/N 420 876 171 Recommended
377f, 440f
To use on exhaust side

Crankshaft protector (PTO)
P/N 420 876 552 Recommended
All 2-stroke, 1203
Use with 420877635



Crankshaft protector (MAG)
P/N 420 876 557 Recommended
717 / 787 RFI / 800R / 800 HO

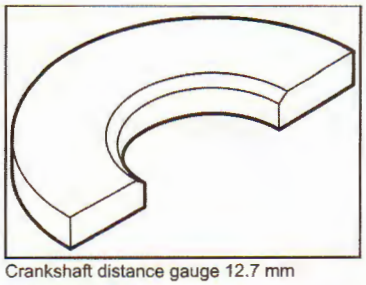
Crankshaft distance ring (MAG)
P/N 420 876 569 Recommended
All 2-stroke engines



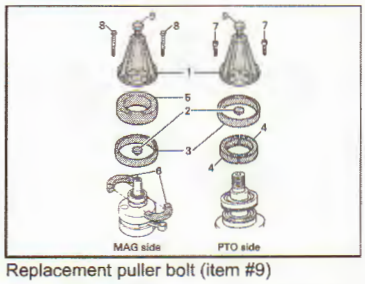
Rotary valve shaft pusher
P/N 420 876 612 Recommended
Engines with 10 mm rotary shaft

Engine

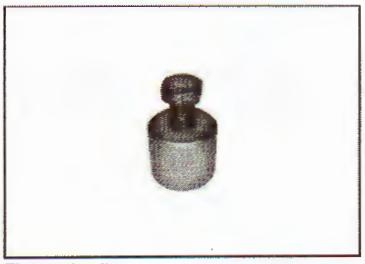
Gear holder
P/N 420 876 695 Recommended
277F, 377F, 447 and 503
To hold the oil pump gear



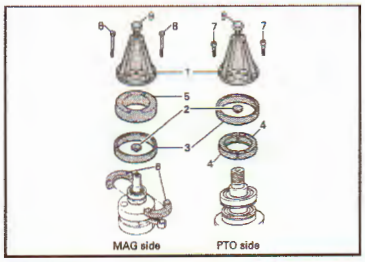
Crankshaft distance gauge 12.7 mm
P/N 420 876 824 Recommended
503F



Replacement puller bolt (item #9)
P/N 420 940 755 Recommended
All 2-stroke engines
To use with puller P/N 420 877 635.

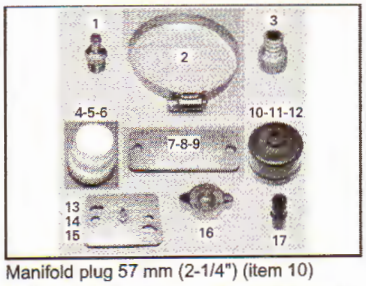


Flywheel puller
P/N 420 976 235 Recommended
247, 787, 787 RFI, 947 and 947 DI eng.
Replacement bolt P/N 529 035 549.

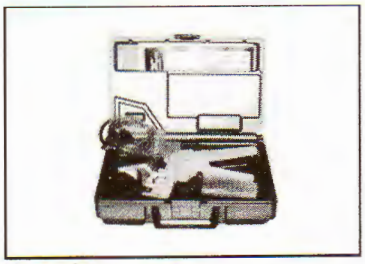


Half-rings
P/N 420 977 479 Recommended
599, 699, 779, 809
3 cylinders crankshaft bearing remover; to use with 420877635

Circlip installer
P/N 529 016 900 Recommended
Replaced by 529035562

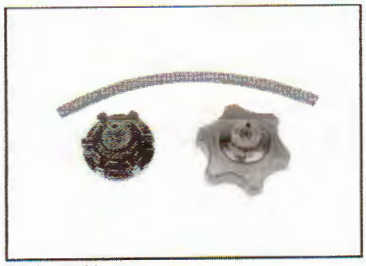


Manifold plug 57 mm (2-1/4") (item 10)
P/N 529 021 100 Recommended
All 2-stroke engines
Replacement part for item included in kit 861749100

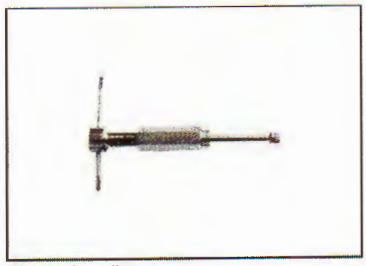


Vacuum/pressure pump
P/N 529 021 800 Recommended
All models

Magneto puller
P/N 529 022 500 Recommended
Replaced by 529035547



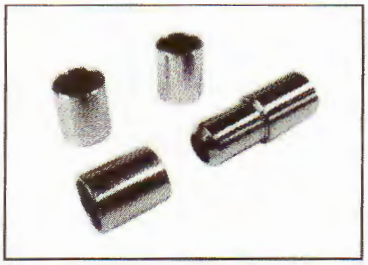
Leak test kit
P/N 529 033 100 **Mandatory**
All models



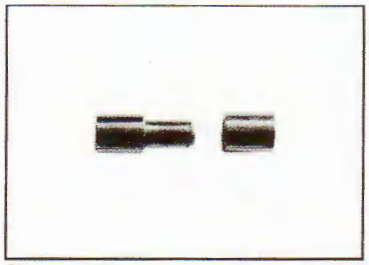
Piston pin puller
P/N 529 035 503 Recommended
All 2-stroke engines

Replacement protector sleeve
P/N 529 035 513 Recommended
To be used with P/N 529 035 503.

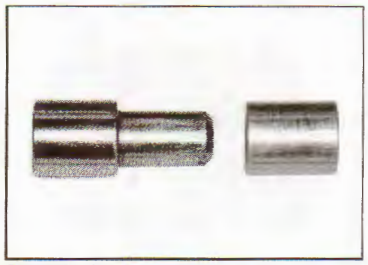
Engine



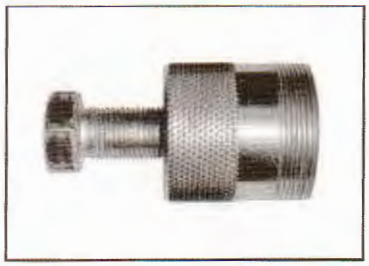
Sleeve kit 18 mm
P/N 529 035 541 **Mandatory**
Ski-Doo 277, Sea-Doo 587
To install cageless bearings. Used with 529035503



Sleeve kit 20 mm
P/N 529 035 542 **Mandatory**
717, 787 RFI, 600, 800 HO
Used with 529035503

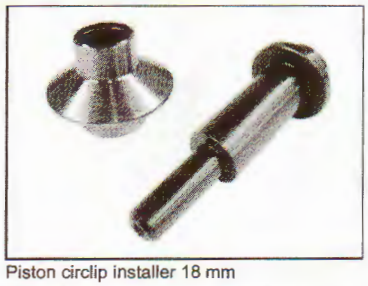


Sleeve kit 21 mm
P/N 529 035 543 **Mandatory**
947, 947 DI, 800 R engines
To install cageless bearings. Used with 529035503



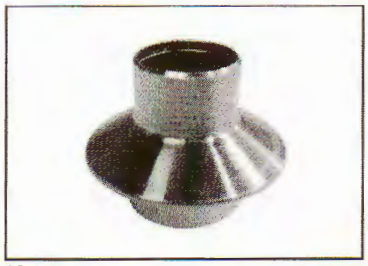
Magneto puller
P/N 529 035 547 **Mandatory**
Replacement bolt 529035549. Use 20876081/295000125/420841591/290847220

Bolt M16 x 1.5 x 65 mm
P/N 529 035 549 Recommended
DS 450
Goes with 529 035 547 & 420 976 235.

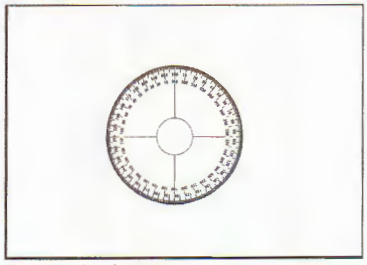


Piston circlip installer 18 mm
P/N 529 035 561 Recommended
Sea-Doo 587, Ski-Doo 277 engines

Circlip insertion tool 20 mm
P/N 529 035 562 Recommended
593, 670, 693, 717, 787 & 787 RFI engine
Sleeve without groove P/N 529 035 567 also available.

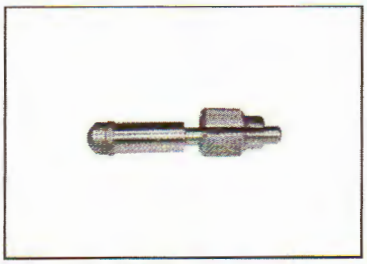


20 mm sleeve
P/N 529 035 567 Recommended
Use with 529 035 562.

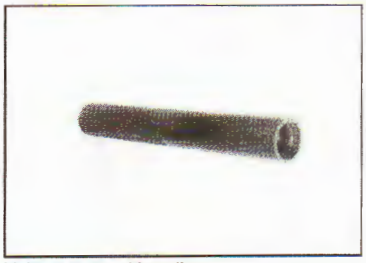


Degree wheel
P/N 529 035 607 **Mandatory**
All rotairy valve engines

Engine leak down test kit
P/N 529 035 661 Recommended
All 4-stroke engines
To perform a leak down test on engine.



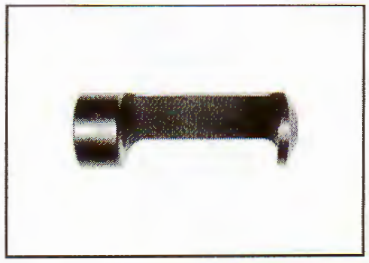
Piston circlip installer
P/N 529 035 686 **Mandatory**
All engines with tab type circlip



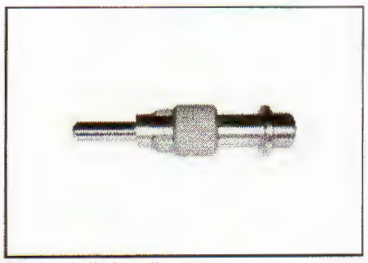
Valve stem seal installer
P/N 529 035 687 Recommended
1503, 991 engine

Engine

Valve spring compressor
P/N 529 035 724 Recommended
4-TEC engines
To be used with valve spring compressor cup 529 035 764 and 529 036 073

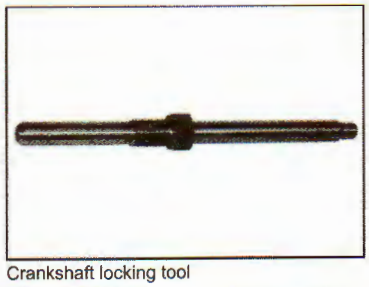


Valve spring compressor cup
P/N 529 035 764 Recommended
330/400/490/660/810/1004/1010
To be used with valve spring compressor 529 035 724.

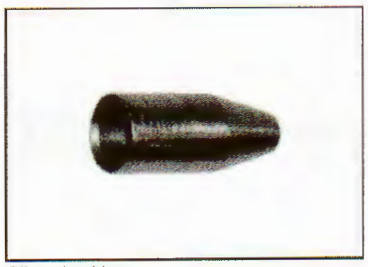


Piston circlip installer
P/N 529 035 765 Recommended
610/500/1503/V-1000 engines

Seal pusher
P/N 529 035 766 Recommended
All V-twin, 330/400, 610/500 eng.
Use with 529 036 130

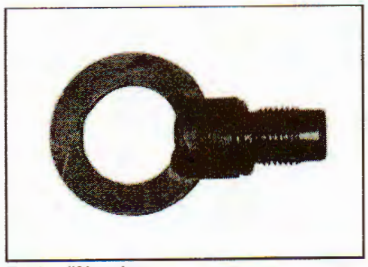


Crankshaft locking tool
P/N 529 035 821 Recommended
4-TEC 1503 engines



Oil seal guide
P/N 529 035 822 Recommended
4-TEC 1503 engines

Engine lifting hook
P/N 529 035 829 **Mandatory**
REV, RT



Engine lifting ring
P/N 529 035 830 **Mandatory**
2-stroke engines with 14 mm spark plugs

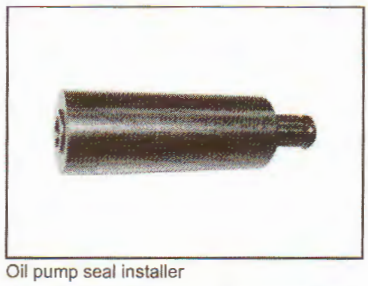
Camshaft locking tool
P/N 529 035 839 Recommended
V1000, V1300 and 1503 engines

Suction pump
P/N 529 035 880 Recommended

Crankshaft locking tool
P/N 529 035 900 Recommended
V-1000, V-1300

PTO cover oil seal installer
P/N 529 035 910 Recommended
V1000, V-1300

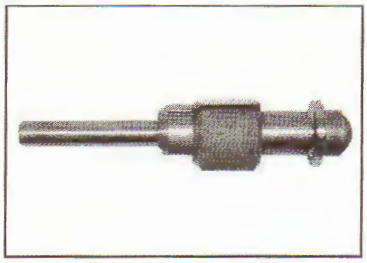
Engine



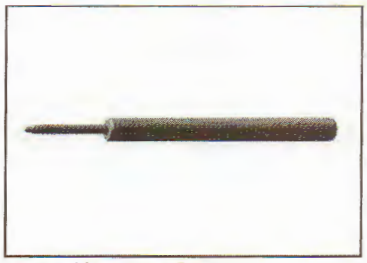
Oil pump seal installer
P/N 529 035 911 Recommended
4-TEC V1000

Pusher 32/42 mm
P/N 529 035 914 Recommended
V1000, V1300

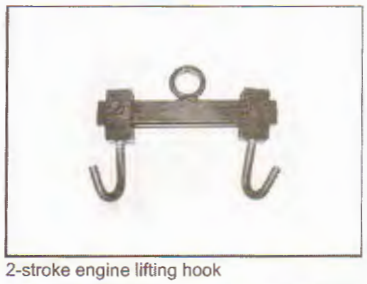
Piston ring compressor
P/N 529 035 919 Recommended
V-810 and V-1010 engines



Piston circlip installer
P/N 529 035 921 **Mandatory**
330, 400, 500, 650, 800 engines



Valve guide remover 5 mm
P/N 529 035 924 Recommended
400, V-490, V-660, V-810, V-1010 engines



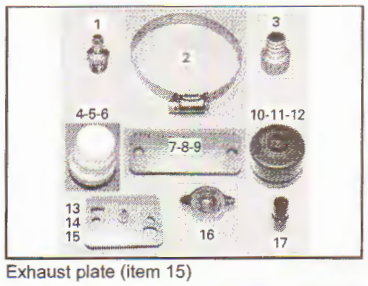
2-stroke engine lifting hook
P/N 529 035 940 Recommended
All 2-stroke engines

Support sleeve
P/N 529 035 944 Recommended
V1000, V1300

Torque flange remover
P/N 529 035 958 Recommended
Elite

4-tooth socket
P/N 529 035 960 Recommended
Elite

Manifold plug 63 mm (2-1/2")
P/N 529 035 961 Recommended
All 2-stroke engines
Replacement part for item included in kit 861749100



Exhaust plate (item 15)
P/N 529 035 962 Recommended
All 2-stroke engines
Replacement part for item included in kit 861749100

Intake plug (item 6)
P/N 529 035 963 Recommended
All 2-stroke engines
Replacement part for item included in kit 861749100

6/30

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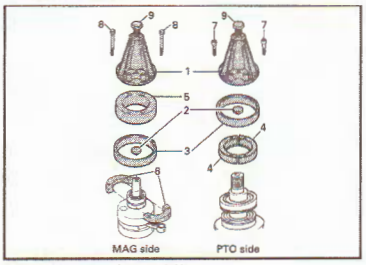
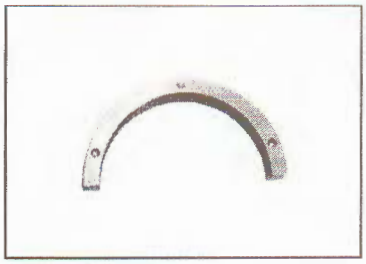
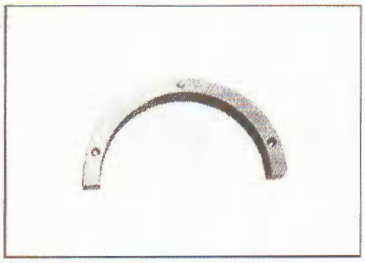
Engine



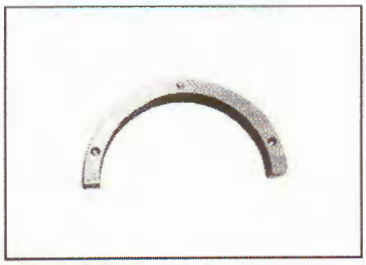
Distance ring (item 14)
P/N 529 035 964 Recommended
693, 793
To be used with 420877635, for MAG side bearing



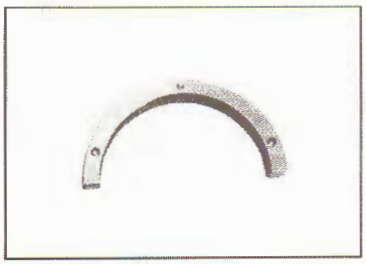
Crankshaft distance gauge
P/N 529 035 965 Recommended
552
To be used with 529035876



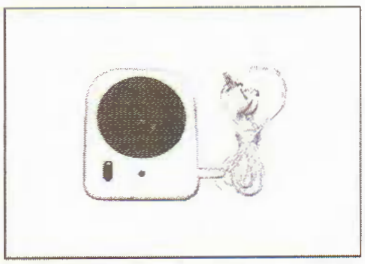
Crankshaft distance gauge
P/N 529 035 966 Recommended
493 and 593
To be used with item 529035976



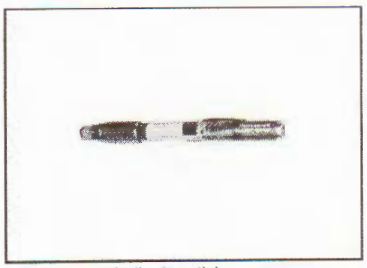
Crankshaft distance gauge
P/N 529 035 967 Recommended
593HO, 593 SDI, 693 and 793
To be used with 529035976



Crankshaft distance gauge
P/N 529 035 968 Recommended
793 HO and 793 HO SDI
To be used with 529035976



Bearing heater
P/N 529 035 969 **Mandatory**
All



Temperature indicator stick
P/N 529 035 970 **Mandatory**
All

RAVE plate (item 8)
P/N 529 035 971 Recommended
All 2-stroke engines
Replacement part for item included in kit 861749100

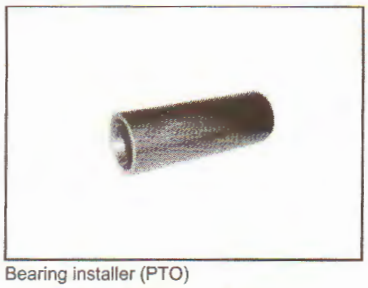
Resonator plug (item 17)
P/N 529 035 973 Recommended
All 2-stroke engines
Replacement part for item included in kit 861749100

Support plate
P/N 529 035 976 Recommended
3 series and 552 engines
Used with 529035964, 965, 966, 967 and 968

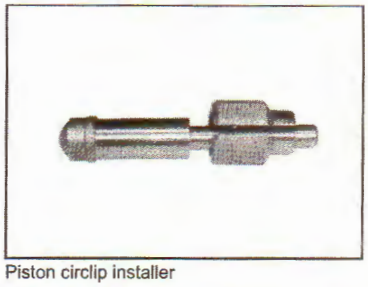
Crankshaft MAG bearing installer
P/N 529 035 979 Recommended
493, 593 engines

Crankshaft bearing installer (MAG)
P/N 529 035 980 Recommended
552, 593HO, 693, 793 engines

Engine

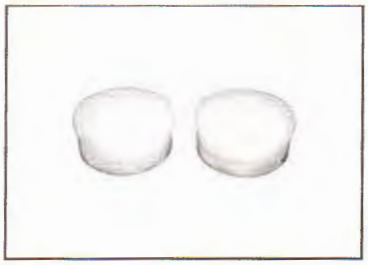


Bearing installer (PTO)
P/N 529 035 990 Recommended
552, 593 HO, 693, 793 engines



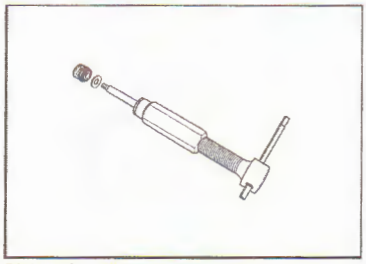
Piston circlip installer
P/N 529 035 998 Recommended
995 SDI

Exhaust plate
P/N 529 035 999 Recommended
995 SDI
For leak test.



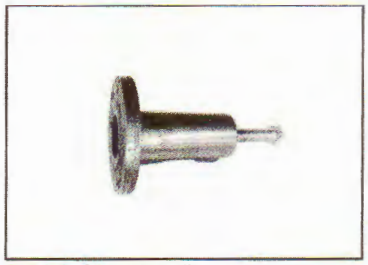
Intake plug
P/N 529 036 000 Recommended
995 SDI
For leak test.

Magneto puller ring
P/N 529 036 001 Recommended
995 SDI



Piston pin puller
P/N 529 036 002 Recommended
995 SDI

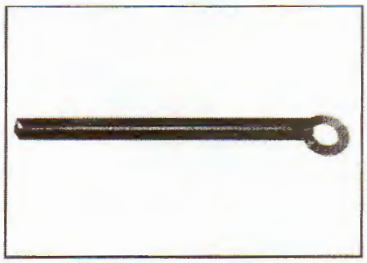
RAVE Plate
P/N 529 036 003 Recommended
995 SDI
For leak test.



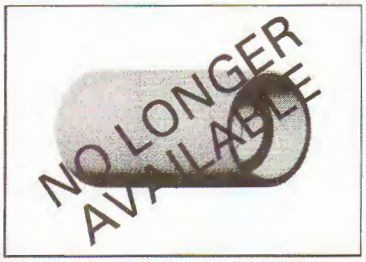
Crankshaft bearing puller
P/N 529 036 004 Recommended
2-stroke engines
substitute 420877635

Crank protector
P/N 529 036 011 Recommended
995 SDI

Ceramic seal installer
P/N 529 036 014 Recommended
All LC's engines without rotary valve



Engine lifting tool
P/N 529 036 022 Recommended
All V twin engines



Drive shaft oil seal installer
P/N 529 036 028 Recommended
V-490, V-660 and V-810 engines
Replaced by 529036222

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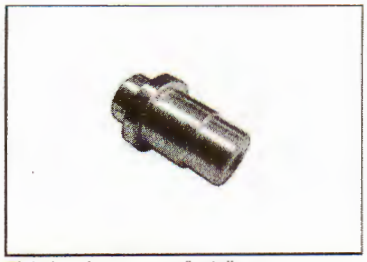
Engine

Drive shaft oil seal protector
P/N 529 036 029 Recommended
V-490, V-660, V-810, V-1010 engines

Crankcase support MAG/PTO
P/N 529 036 031 Recommended
V-490, V-660, V-810, V-1010 engines



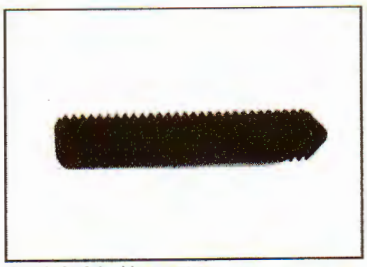
Plain bearing remover/installer
P/N 529 036 032 Recommended
V-490, V-660, V-810, V-1010 engines

PTO cover oil seal installer
P/N 529 036 033 Recommended
V-490, V-660, V-810, V-1010 engines

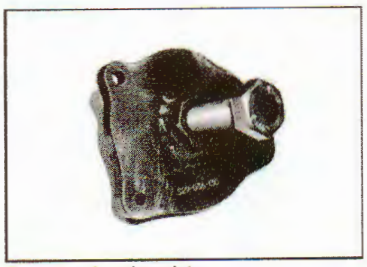
Crankshaft protector
P/N 529 036 034 Recommended
V-490, V-660, V-810, V-1010 engines

Distance gauge
P/N 529 036 060 Recommended
797

Gear holder
P/N 529 036 061 Recommended
552 Fan
To hold oil pump gear.



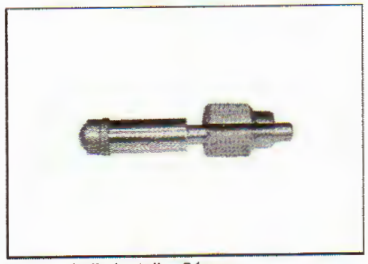
Crankshaft locking screw
P/N 529 036 107 **Mandatory**
449 engine



Rotary seal pusher plate
P/N 529 036 130 Recommended
V-490, V-660, V-810, V-1010 engines
Use with seal installer 529035766

Engine lifting tool
P/N 529 036 131 **Mandatory**
E-TEC

Dial indicator adapter
P/N 529 036 132 **Mandatory**
E-TEC



Piston circlip installer 21mm
P/N 529 036 138 **Mandatory**
797

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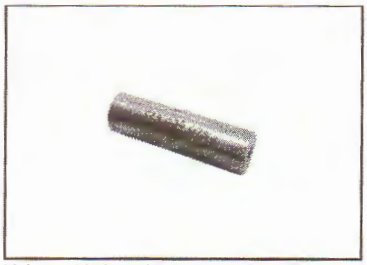
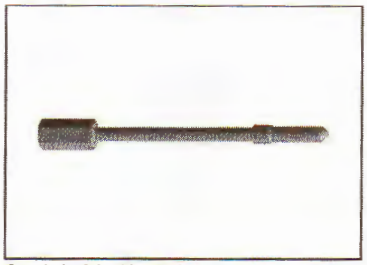
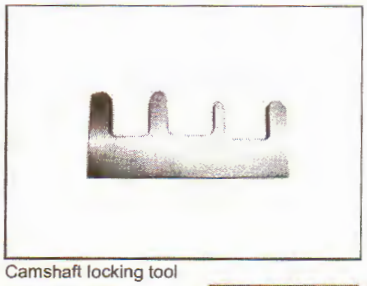
Engine



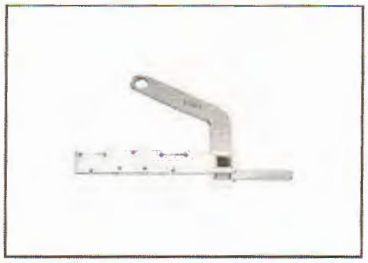
Valve guide installer
P/N 529 036 140 Recommended
V-490, V-660, V-810, V-1010 engines
replace 529035853



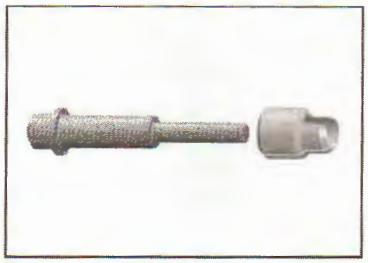
Crankshaft locking bolt
P/N 529 036 148 **Mandatory**
1203



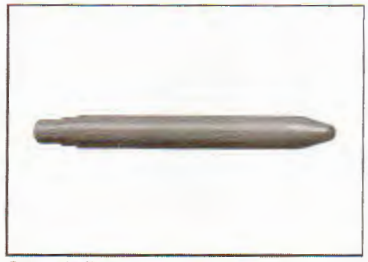
Camshaft locking tool
P/N 529 036 149 **Mandatory**
1203



Engine lifting tool
P/N 529 036 151 Recommended
REV-XR



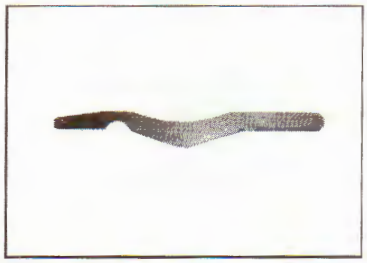
Piston circlip installer
P/N 529 036 153 Recommended
1203, V-1010



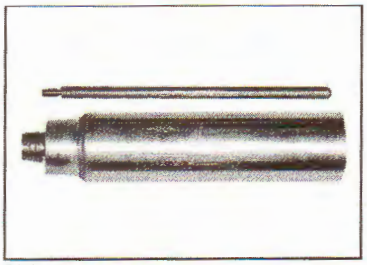
Center bolt
P/N 529 036 154 Recommended
1203

Oil seal installer
P/N 529 036 155 Recommended
1203

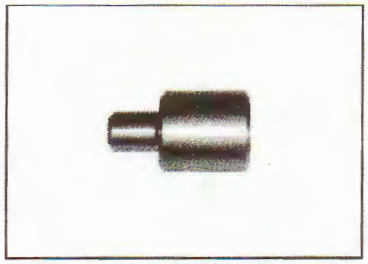
Piston ring compressor
P/N 529 036 156 Recommended
1203



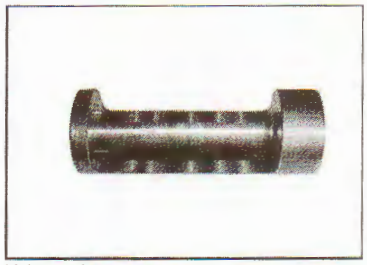
Alignment bar
P/N 529 036 157 **Mandatory**
REV-XP, XR, XU



Dial indicator adapter
P/N 529 036 159 Recommended
1203
Used with 295000143



Crankshaft protector (MAG side)
P/N 529 036 160 Recommended
1203



Valve spring compressor cup
P/N 529 036 161 Recommended
1203

10/30

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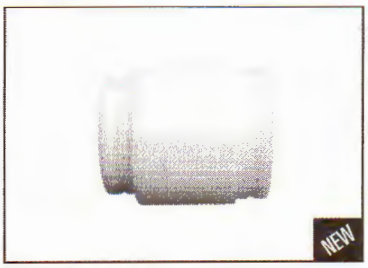
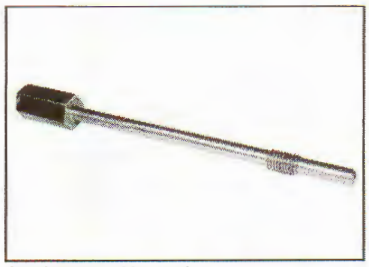
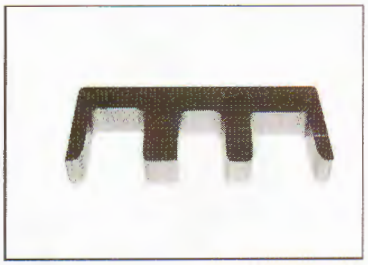
Engine



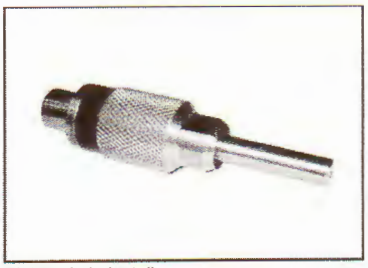
Intake plug
P/N 529 036 203 Recommended
E-TEC



Crankshaft locking tool
P/N 529 036 205 **Mandatory**
602 ACE



Camshaft locking tool
P/N 529 036 206 **Mandatory**
602 ACE

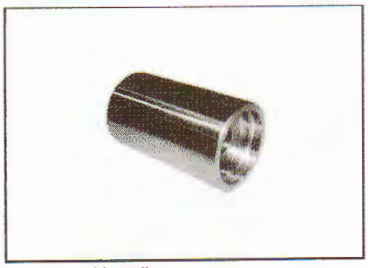


Piston circlp installer
P/N 529 036 207 **Mandatory**
602 ACE

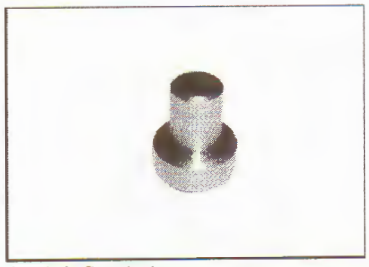
Piston ring compressor
P/N 529 036 208 Recommended
602 ACE

Valve spring compressor cup
P/N 529 036 209 Recommended
602 ACE

Oil seal pusher
P/N 529 036 210 Recommended
602 ACE



Rotary seal installer
P/N 529 036 211 Recommended
602 ACE



Crankshaft protector
P/N 529 036 213 Recommended
602 ACE

Piston projection
P/N 529 036 215 Recommended
E-TEC

PTO oil seal installer
P/N 529 036 216 Recommended
600 ACE

Engine lifting tool
P/N 529 036 217 Recommended
600 ACE

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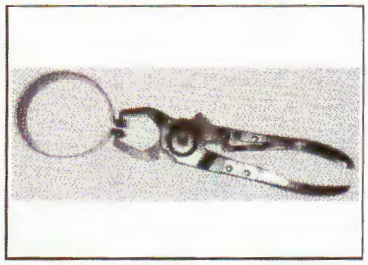
Engine

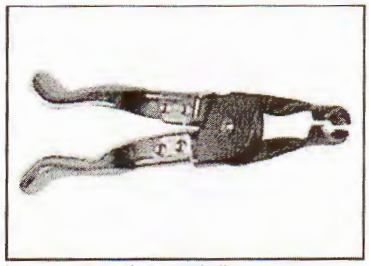
Oil seal/bearing pusher
P/N 529 036 284 Recommended
903

Engine leak test kit
P/N 861 749 100 **Mandatory**
All
To use with hand pump 529021800



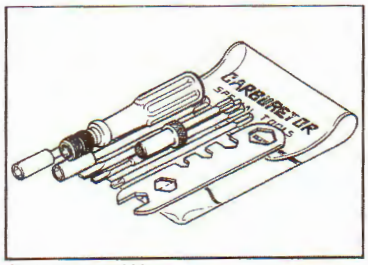
Piston ring compressor
P/N Snap-on RC 980 Recommended
4-TEC
Not sold by BRP

Torque angle gauge
P/N Snap-on TA362 Recommended
Used on most 4-stroke engines
Not sold by BRP



Valve stem seal removal plier
P/N Snap-on YA 8230 Recommended
1503, 991 engines, DS650
Not sold by BRP

Fuel



Carburetor tool kit
P/N 404 112 000 Recommended

Pressure gauge
P/N 529 035 709 **Mandatory**
Injection type engines
Use with 529035652, 529035714 and 529036023

Disconnect tool
P/N 529 035 714 **Mandatory**
Injection models
Used also with gauge P/N 529 035 709, 529 035 652 and 529 036 023

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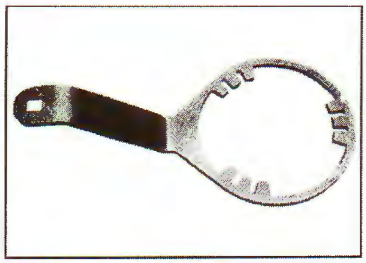
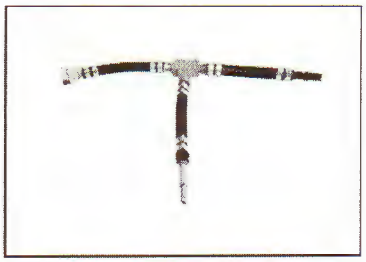
Fuel

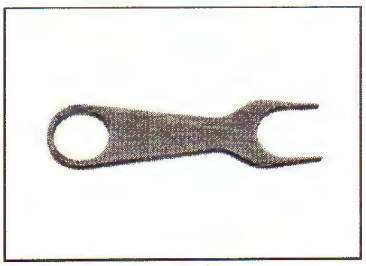
Console nut wrench
P/N 529 035 891 Recommended
REV, REV-XP, RT and RF



Fuel pump nut tool
P/N 529 035 899 Recommended
2-TEC SDI and 4-TEC engines

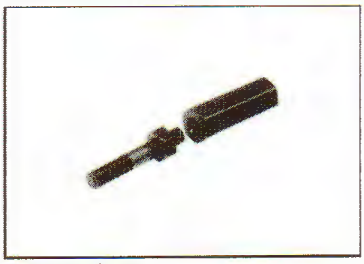


Fuel hose adapter
P/N 529 036 023 **Mandatory**
Injection type vehicles
To be used with 529 035 709.
Replacement clip 513 033 135

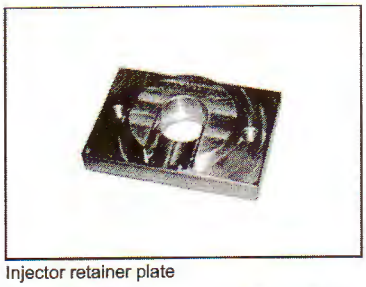


Fuel hose disconnect tool
P/N 529 036 037 Recommended
1503, 1203
To disconnect fuel hose.

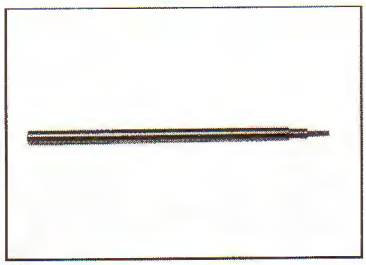
Fuel pump nut tool
P/N 529 036 118 **Mandatory**
REV-XP, XR
Replaced by 529036214



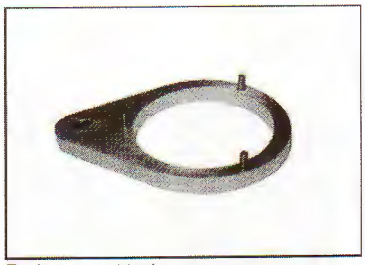
Extractor adaptor
P/N 529 036 136 Recommended
E-TEC, V-twin



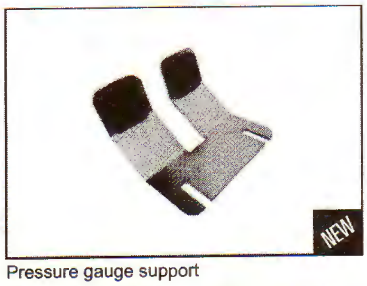
Injector retainer plate
P/N 529 036 137 Recommended
E-TEC



Choke adjuster tool
P/N 529 036 163 Recommended
Carburator VM type

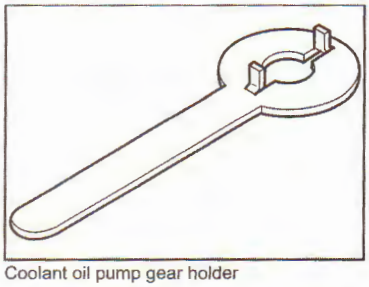


Fuel pump nut tool
P/N 529 036 214 **Mandatory**
602, 1203

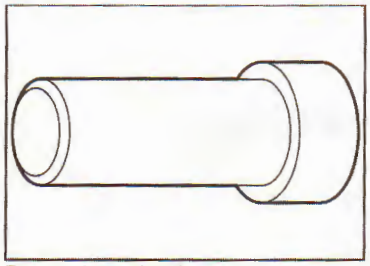


Pressure gauge support
P/N 529 036 256 Recommended
Model with fuel pressure pump

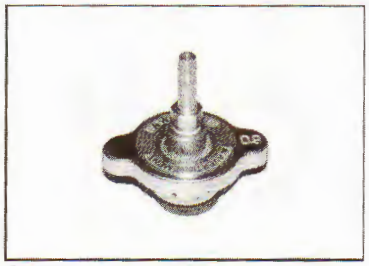
Cooling



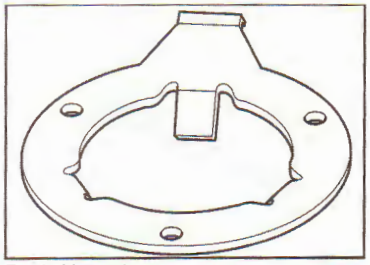
Coolant oil pump gear holder
P/N 420 277 905 Recommended
717, 583, 670, 599, 699, 779, 809 engine



Rotary valve seal pusher
P/N 420 876 607 Recommended
500lc, 583, 670



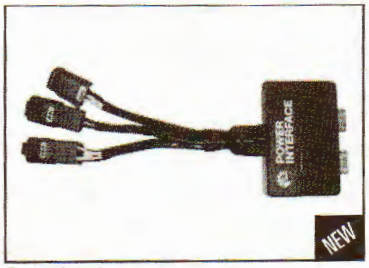
Test cap
P/N 529 035 991 Recommended
All models
To be used with vacuum/pressure pump 529 021 800.



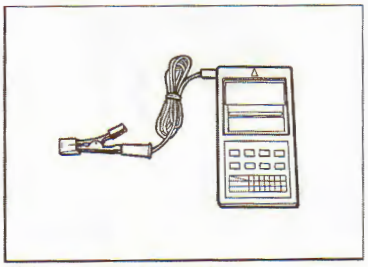
Fan holder tool
P/N 529 036 006 **Mandatory**
552F

Electrical

ECM adapter tool
P/N 420 277 010 Recommended
All models
All injected 2-TEC & 4-TEC with VDO ECM



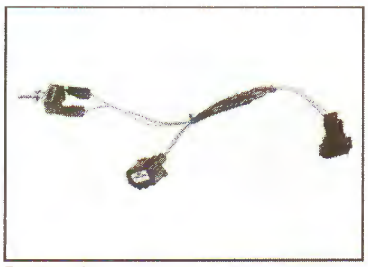
Power interface
P/N 515 177 223 **Mandatory**
All
replace 529035869



Digital induction tachometer
P/N 529 014 500 Recommended
All models

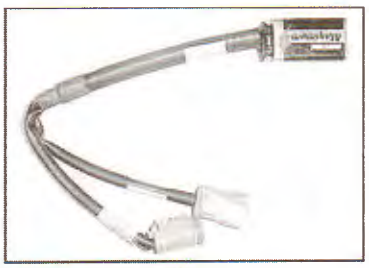
Electrical

Stroboscopic timing light
P/N 529 031 900 Recommended
All 2-stroke

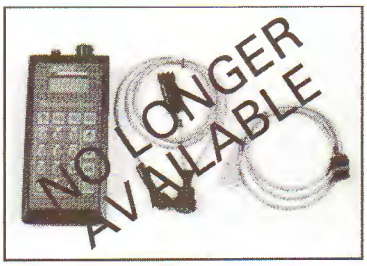


Bypass wire
P/N 529 033 300 Recommended
CK3 with magneto 360 W

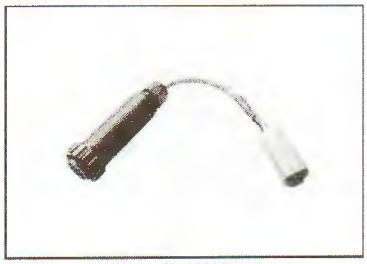
Choke nut removal tool
P/N 529 034 600 Recommended
Replaced by 529035943



9 V battery supply cable
P/N 529 035 675 Recommended
All DESS equipped
Used with 529035869

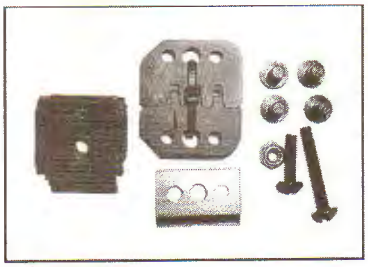


MPI communication Kit
P/N 529 035 676 Recommended
Replaced by MPI-2

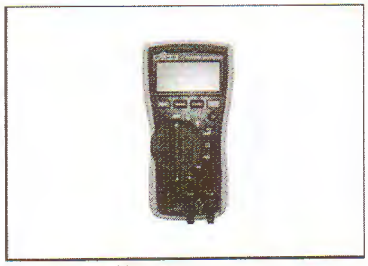


Diagnostic adaptor for VCK
P/N 529 035 679 Recommended
To be used with the MPI, connects to 529 035 807.

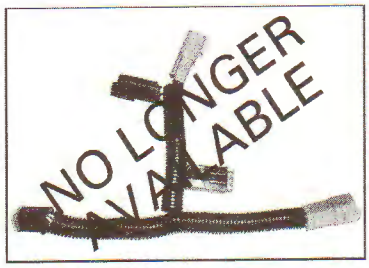
Magneto puller
P/N 529 035 748 Recommended
All V-twin



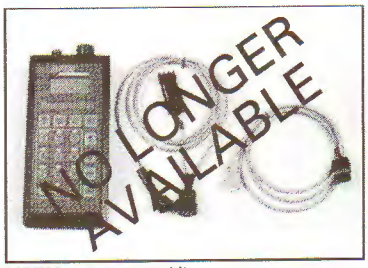
Multilock 070 die
P/N 529 035 828 Recommended
For small connectors of AMP Multilock co
To use with crimping tool P/N 529035909



Fluke 115 multimeter
P/N 529 035 868 Recommended
All models



T-harness
P/N 529 035 869 **Mandatory**
All D.E.S.S. equipped
replaced by 517177223

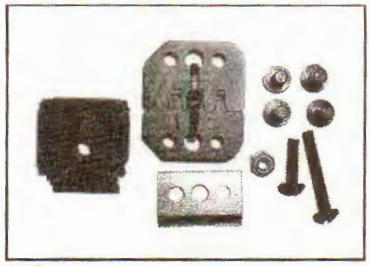


MPEM programmer kit
P/N 529 035 878 Recommended
All 2-stroke models
No longer sold, replaced by MPI-2, P/N 529 036 018.

B.U.D.S. D.E.S.S. Key
P/N 529 035 896 Recommended
MY 2004 with D.E.S.S.
To wake up MPEM

Electrical

Kostal Die
P/N 529 035 906 Recommended
All models with Kostal ECM connectors
To use with crimping tool 529 035 909 to crimp ECU connectors

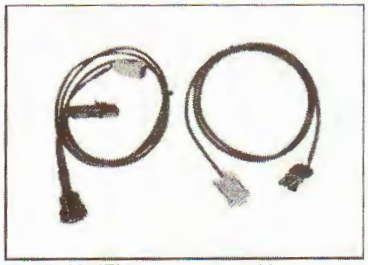


AMP die
P/N 529 035 908 Recommended
All models with AMP connectors
To use with crimping tool 529 035 909 to crimp Deutsch connectors.

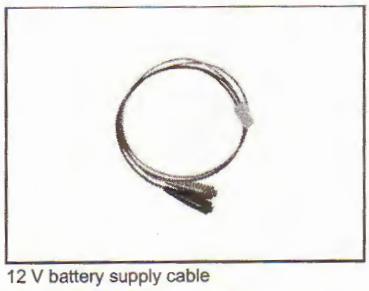
Crimping tool (Kostal)
P/N 529 035 909 Recommended
To use with compatible die to crimp different connectors

D.E.S.S. Post Remover
P/N 529 035 943 Recommended
All D.E.S.S. equipped models

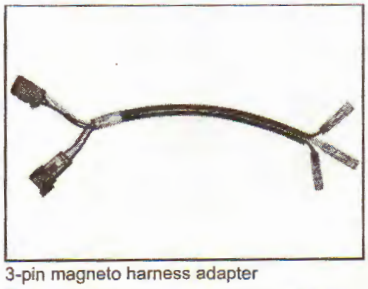
MPI communication kit
P/N 529 035 981 Recommended
Spare cables are still available. See MPI-2



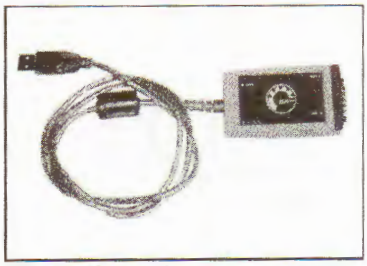
Handheld MEM programmer cable
P/N 529 035 993 Recommended
6 pin connector.



12 V battery supply cable
P/N 529 035 997 Recommended
Used with 529035869



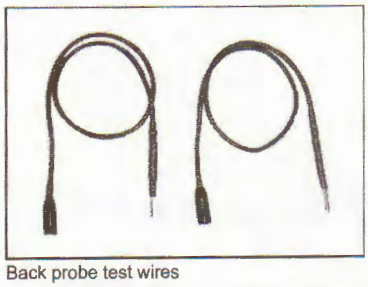
3-pin magneto harness adapter
P/N 529 036 016 Recommended
1503, 449
To test the magneto.



MPI-2 interface card
P/N 529 036 018 **Mandatory**
Replaces the MPI.

D.E.S.S. post interface
P/N 529 036 019 **Mandatory**
To programm D.E.S.S. keys with the MPI-2.

4-pin magneto diagnostic harness
P/N 529 036 062 Recommended
V810



Back probe test wires
P/N 529 036 063 Recommended
All models
To back probe various connectors.

16/30

mmc2014-001-010_16

Electrical

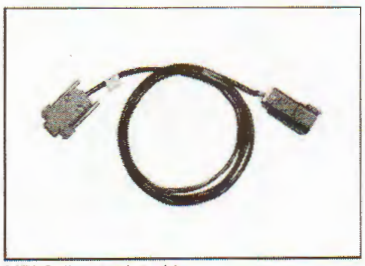
Ignition timing tool
P/N 529 036 129 Recommended
REV-XP

Ignition timing tool 500/600
P/N 529 036 143 Recommended
REV-XP

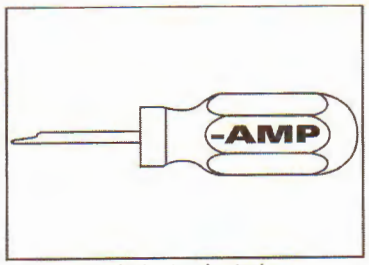
ECM adapter tool
P/N 529 036 166 **Mandatory**
ECM BOSCH

ECM terminal remover 3.36
P/N 529 036 174 Recommended
All models

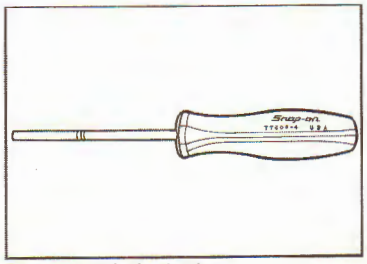
ECM terminal remover 2.25
P/N 529 036 175 Recommended
All models



MPI-2 diagnostic cable
P/N 710 000 851 **Mandatory**
All D.E.S.S. equipped vehicles

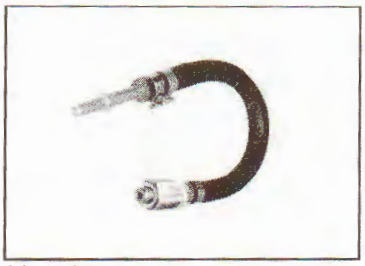


Multilock terminal extraction tool
P/N AMP 755430-2 Recommended
Not sold by BRP



Packard terminal extractor
P/N Snap-on TT600-4 Recommended
Not sold by BRP

Lubrication

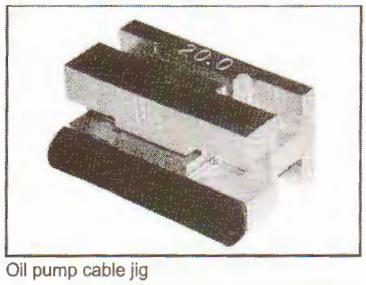


Adapter hose
P/N 529 035 652 Recommended
4-stroke engines
Used with 529 035 709.

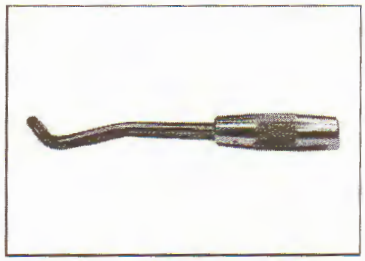
Oil filter cover extractor
P/N 529 036 038 Recommended
4-TEC 1503

Distance gauge
P/N 529 036 042 Recommended
Replacement part for 861205900

Oil pump adjustment procedure card
P/N 529 036 043 Recommended
Replacement part for 861205900



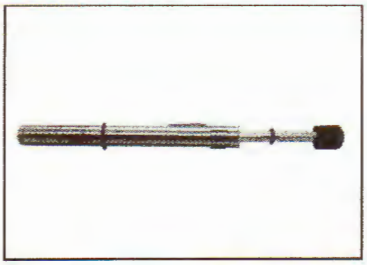
Oil pump cable jig
P/N 529 036 045 Recommended
Replacement part for 861205900



Oil filter cover puller
P/N 529 036 108 Recommended
1503
Used with 529 036 038.

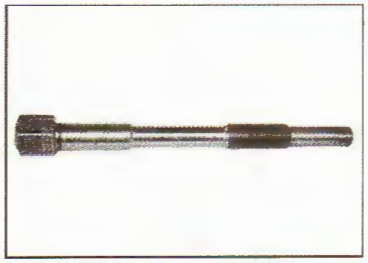
Oil pressure test cap
P/N 529 036 158 Recommended
1203
used with 529035652 and 529035709

Transmission / Propulsion



Tensiometer
P/N 414 348 200 **Mandatory**
All

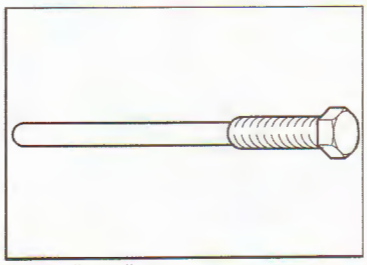
Drive pulley puller
P/N 529 000 063 Recommended
800 E-TEC
Replaced by 529000064



Drive pulley puller
P/N 529 000 064 **Mandatory**
2003 and up Bombardier Lite and TRA

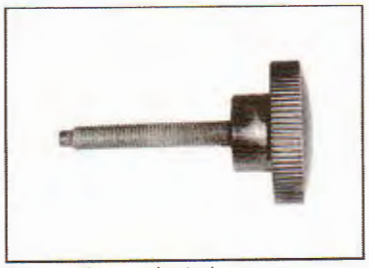
Slider shoe fork
P/N 529 005 500 **Mandatory**
All vehicles with TRA drive pulley

Drive pulley holder (CVT)
P/N 529 006 400 Recommended

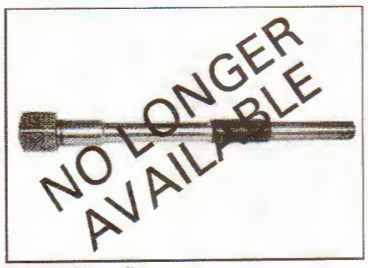


Drive pulley puller
P/N 529 007 900 **Mandatory**
443, 467, 503, 536 and 537 TRA

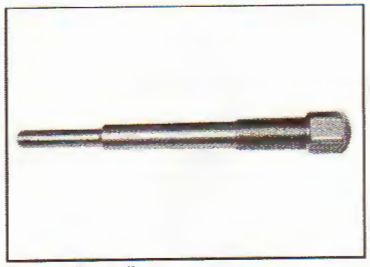
Drive belt tension adjuster
P/N 529 008 700 Recommended
Formula and LPV 27 driven pulley
1: 420878730, 2: 529015000; available as a kit only.



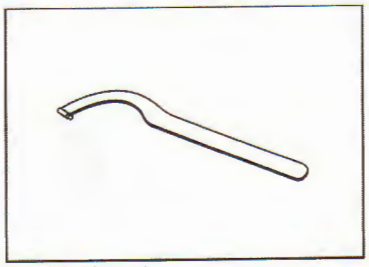
Driven pulley opening tool
P/N 529 017 200 Recommended
Almost all models



Drive pulley puller
P/N 529 022 400 **Mandatory**
2003 and up Bombardier Lite and TRA
Replaced by 529000064



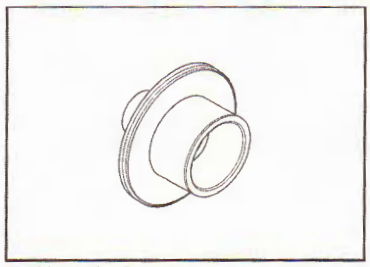
Drive pulley puller
P/N 529 025 000 Recommended
Skandic 440 LT



Clutch holder tool
P/N 529 027 600 Recommended
Bombardier Lite

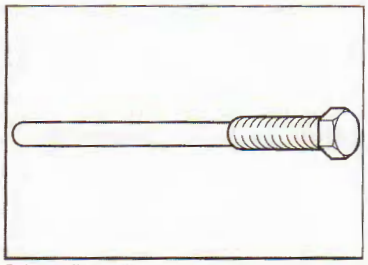
Track cleat installer
P/N 529 028 800 Recommended
1994 and newer models
Replaced by 529036044.

Transmission / Propulsion



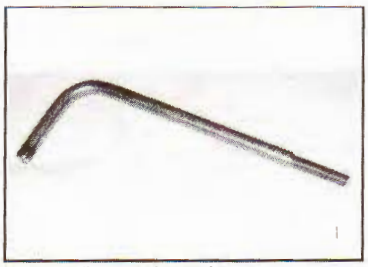
Bushing puller/installer
P/N 529 031 200 Recommended
All
Except Tundra R, Skandic WT/SWT/WT LC, S series

Bushing extractor/installer
P/N 529 031 300 Recommended
TRA cover with replacable bushing

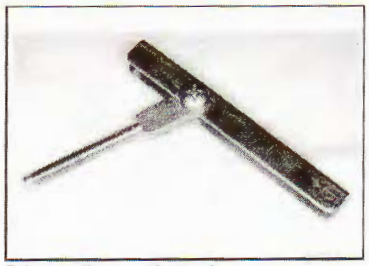


Drive pulley puller
P/N 529 031 400 Recommended
277F, 377F
2002 and older Bombardier Lite equipped vehicles

Chaincase seal pusher
P/N 529 032 300 Recommended
Replaced by 529035584

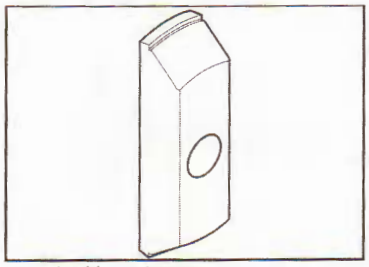


Driven pulley opening tool
P/N 529 034 200 Recommended
Tundra R up to 2005

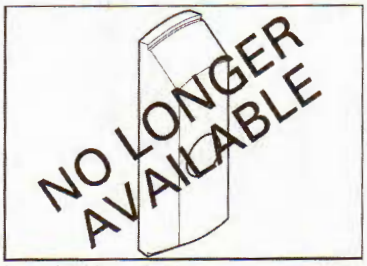


Driven pulley opening tool
P/N 529 035 501 Recommended
HPV, LPV and some Formula pulley

Pulley spring compressor
P/N 529 035 524 Recommended
All
This tool has been replaced by 529036012

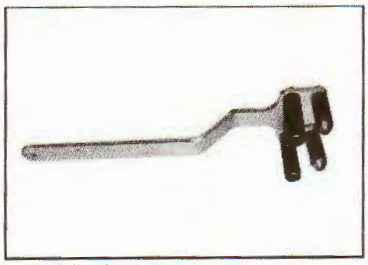


Large bushing extractor
P/N 529 035 575 Recommended
LPV27 driven pulley
To be used with 529035524



Large bushing extractor
P/N 529 035 576 Recommended
Formula type driven pulley
To be used with 529035524

Replacement part for puller
P/N 529 035 588 Recommended
For 529036012



Drive pulley holder
P/N 529 035 674 **Mandatory**
All TRA

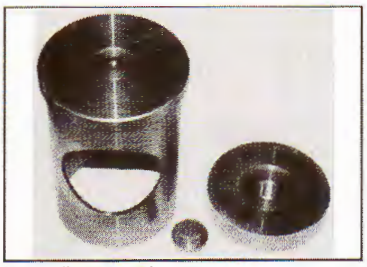
Tapered tool
P/N 529 035 826 Recommended
Skandic 440 LT
Replacement tool from kit 529025400

Transmission / Propulsion

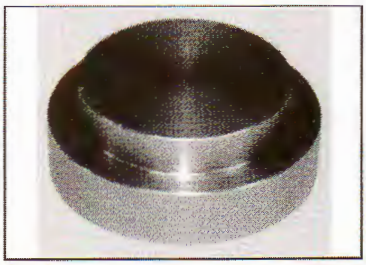
Universal alignement bar
P/N 529 035 831 **Mandatory**
All except CK3 and ELITE

Gouvernor cup remover
P/N 529 035 894 Recommended
TRA IV

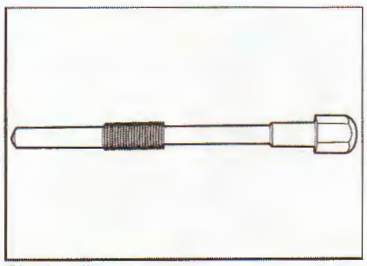
Bushing remover/installer
P/N 529 035 931 Recommended
TRA III and TRA IV



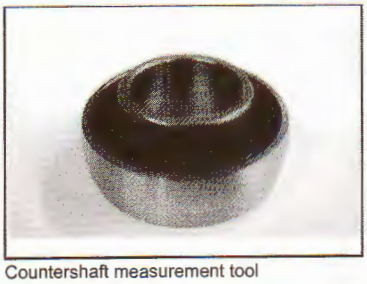
Hydraulic gauge kit
P/N 529 035 939 Recommended
TRA IV



Clutch support
P/N 529 035 942 Recommended
TRA IV

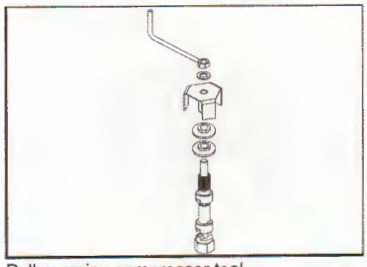


Clutch puller
P/N 529 035 959 Recommended
Elite



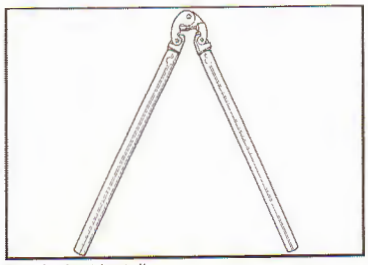
Countershaft measurement tool
P/N 529 036 009 Recommended
RT

Countershaft bearing remover/installer b
P/N 529 036 010 Recommended
RT, DS 450

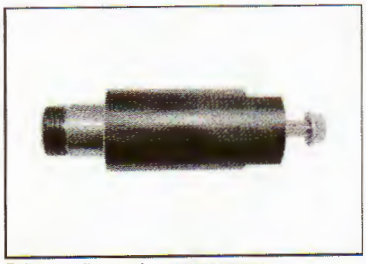


Pulley spring compressor tool
P/N 529 036 012 **Mandatory**
Most drive and driven pulleys

Driven spring compressor
P/N 529 036 035 Recommended
RF 277F 2006 only
To take apart the driven



Track cleat installer
P/N 529 036 044 Recommended
1994 and newer models
Stronger version of tool 529028800. For newer track design.



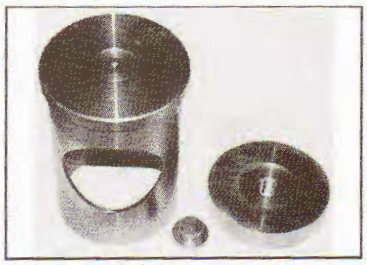
Driven pulley spring compressor
P/N 529 036 064 **Mandatory**
REV-XP

Transmission / Propulsion

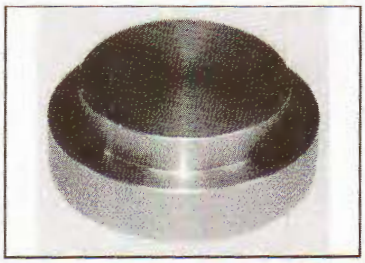
Universal alignement bar
P/N 529 035 831 **Mandatory**
All except CK3 and ELITE

Gouvernor cup remover
P/N 529 035 894 Recommended
TRA IV

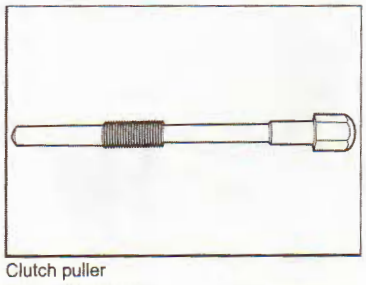
Bushing remover/installer
P/N 529 035 931 Recommended
TRA III and TRA IV



Hydraulic gauge kit
P/N 529 035 939 Recommended
TRA IV



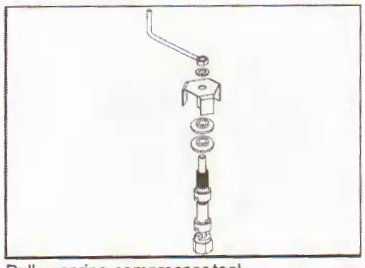
Clutch support
P/N 529 035 942 Recommended
TRA IV



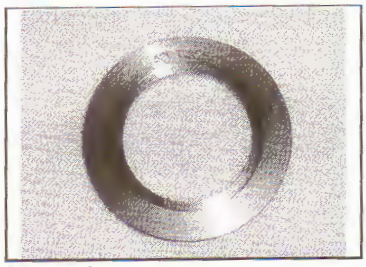
Clutch puller
P/N 529 035 959 Recommended
Elite

Countershaft measurement tool
P/N 529 036 009 Recommended
RT

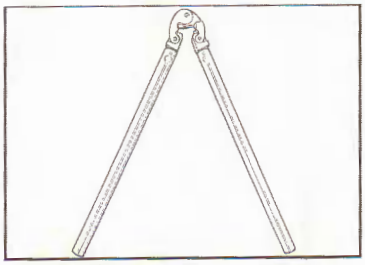
Countershaft bearing remover/installer b
P/N 529 036 010 Recommended
RT, DS 450



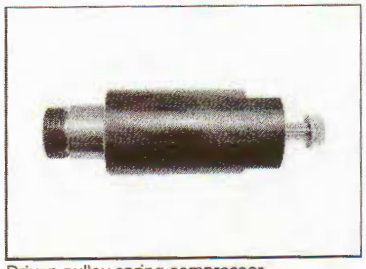
Pulley spring compressor tool
P/N 529 036 012 **Mandatory**
Most drive and driven pulleys



Driven spring compressor
P/N 529 036 035 Recommended
RF 277F 2006 only
To take apart the driven

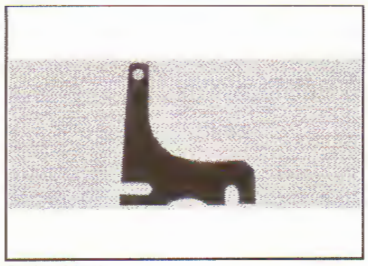


Track cleat installer
P/N 529 036 044 Recommended
1994 and newer models
Stronger version of tool 529028800. For newer track design.

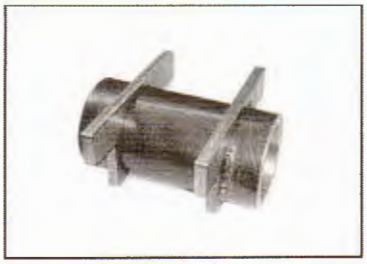


Driven pulley spring compressor
P/N 529 036 064 **Mandatory**
REV-XP

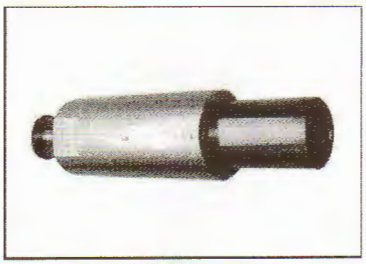
Transmission / Propulsion



Preload tester
P/N 529 036 164 Recommended
REV-XR

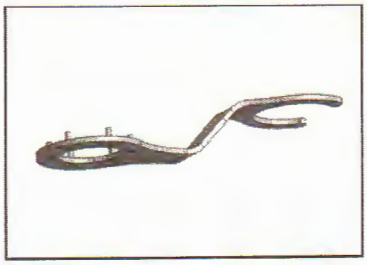


Countershaft retaining tool
P/N 529 036 165 Recommended
REV-XP, XR, XU

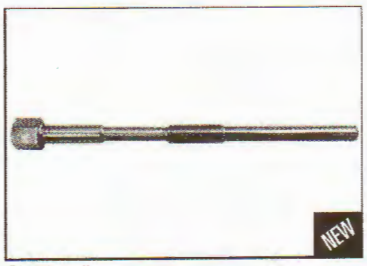


Driven pulley spring compressor
P/N 529 036 182 **Mandatory**
REV-XP
2010

Splined shaft
P/N 529 036 185 Recommended
LFF

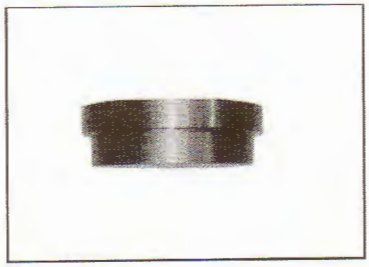


Clutch holder
P/N 529 036 235 Recommended
550F (2012), 600ACE, 1203



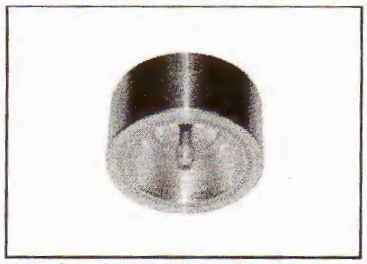
Clutch puller
P/N 529 036 275 **Mandatory**
900 ACE

Brake

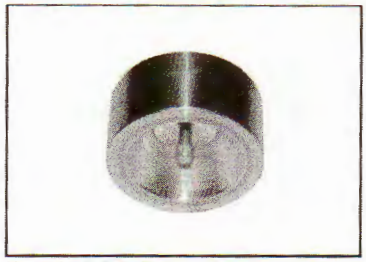


Protective cap
P/N 529 036 150 Recommended
REV-XP, REV-XR

Steering



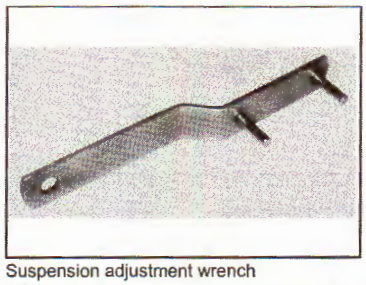
Heated grip installer
P/N 529 035 897 Recommended
Straight grips



Heated grip installer
P/N 529 035 936 Recommended
Models with J-hooks

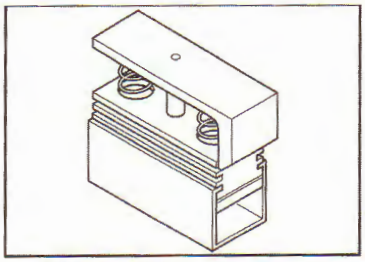
Suspension

Gas fill tool kit
P/N 503 190 102 Recommended
T/A shocks
To be used with P/N 529035570. Spare needle P/N 529035930.

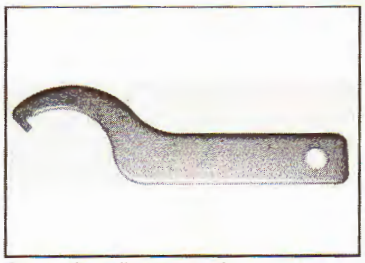


Suspension adjustment wrench
P/N 520 000 126 Recommended
SC-10 II and III

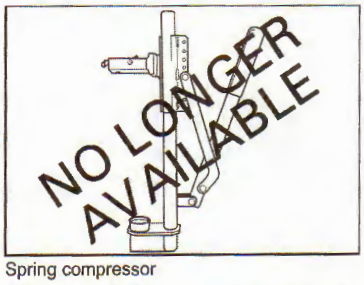
Ball joint installer
P/N 529 000 012 **Mandatory**
REV, RT, DS 650, DS 450



Track tension adjuster
P/N 529 021 500 Recommended
All except Élan

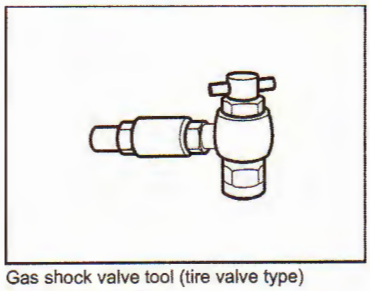


Suspension adjustment tool
P/N 529 034 100 Recommended
CK3 series

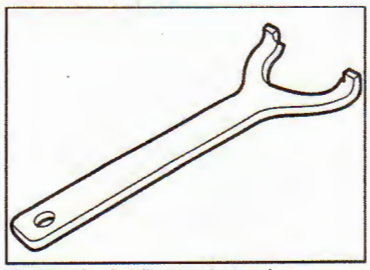


Spring compressor
P/N 529 035 504 Recommended
No longer sold, replaced by P/N 529 036 007.

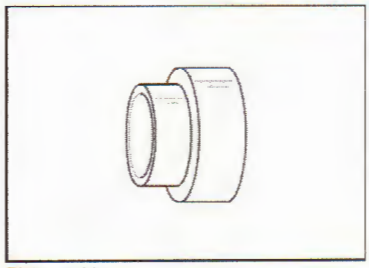
Suspension



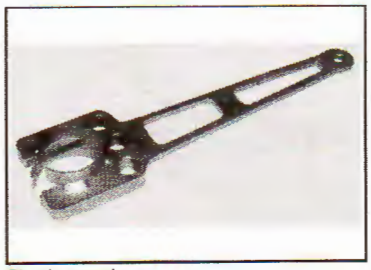
Gas shock valve tool (tire valve type)
P/N 529 035 570 Recommended
T/A shocks



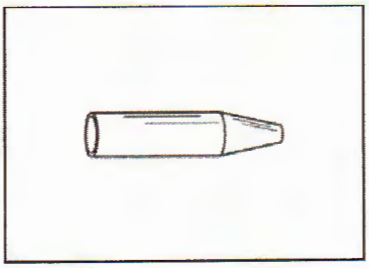
Kayaba shock adjustment wrench
P/N 529 035 582 Recommended
C-7 suspension



Piston guide
P/N 529 035 608 Recommended
C-46 HPG T/A shock



Shock wrench
P/N 529 035 727 Recommended
All T/A shocks

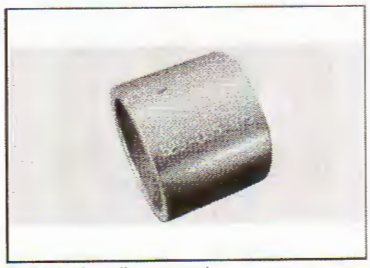


Dome guide
P/N 529 035 728 Recommended
C-46 HPG T/A shocks

Shock retainer tool
P/N 529 035 769 Recommended
All HPG shock

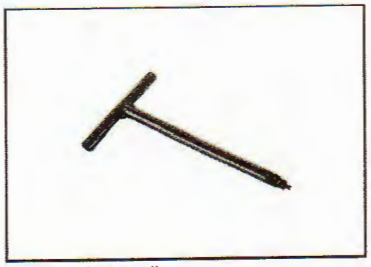
Ball joint extractor
P/N 529 035 827 **Mandatory**
REV, RT

Ball joint remover support
P/N 529 035 873 **Mandatory**
REV, RT
Replaced by 529036121

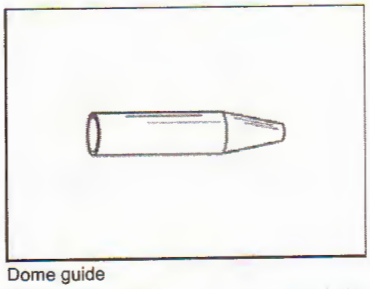


Ball joint installer support
P/N 529 035 875 **Mandatory**
REV, RT, Outlander

A-arm nut wrench
P/N 529 035 876 Recommended
REV, RT



Floating piston puller
P/N 529 035 901 Recommended
HPG T/A shock with external reservoir



Dome guide
P/N 529 035 902 Recommended
ZX X 440

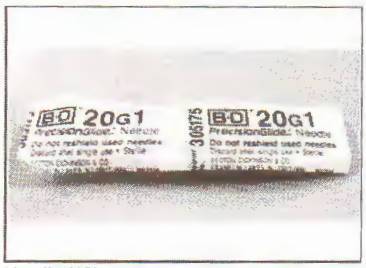
25/30

mmc2014-001-010_25

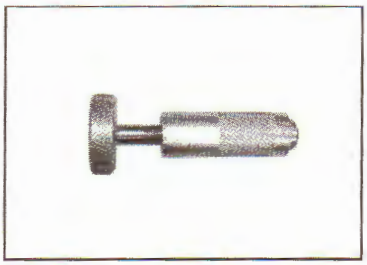
Suspension

Floating piston support
P/N 529 035 903 Recommended
ZX X 440

Floating piston puller
P/N 529 035 907 Recommended
MX Z X 440



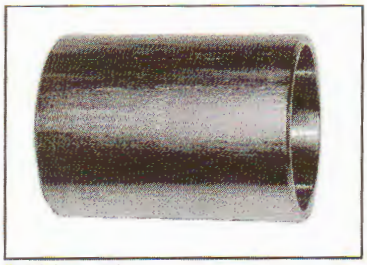
Needle (10) spare
P/N 529 035 930 Recommended
Used with 503190102



Ball joint lock
P/N 529 035 945 Recommended
REV, RT

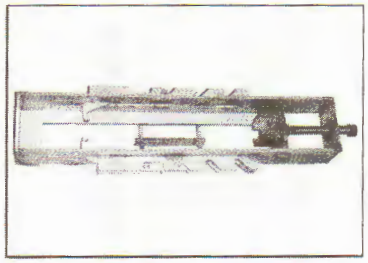
Ball joint installer
P/N 529 035 975 Recommended
REV-XP, Roadster

Spring remover
P/N 529 036 007 Recommended
All models
Replace by 529036184

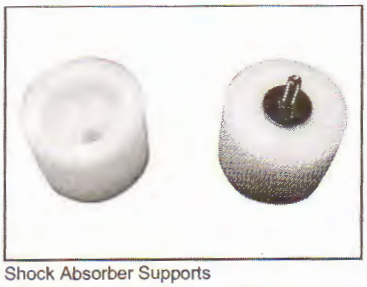


Ball joint installer
P/N 529 036 020 Recommended
Outlander/Renegade

Ball joint remover support
P/N 529 036 121 Recommended
REV, ATV, TSS, roadster
Replaces 529035873



Spring compressor
P/N 529 036 184 Recommended
All models
To remove coil spring from shock.

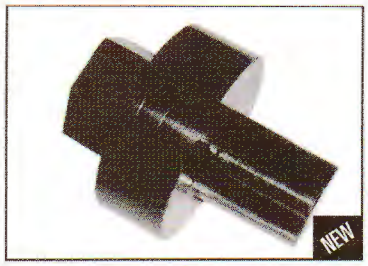


Shock Absorber Supports
P/N 529 036 186 Recommended
All

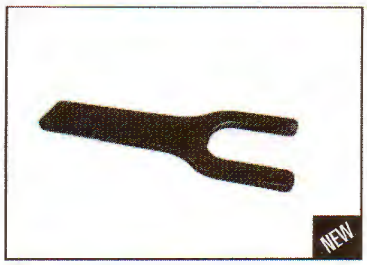
rMotion suspension tool
P/N 529 036 234 Recommended
R-motion
Replaced by 529036240

rMotion suspension tool
P/N 529 036 240 Recommended
rMotion

Suspension



Hydraulic adjuster socket
P/N 529 036 241 Recommended
rMotion



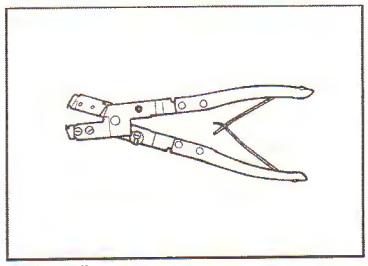
rMotion master cylinder key
P/N 529 036 254 Recommended
rMotion suspension

rMotion socket
P/N 529 036 255 Recommended
rMotion suspension

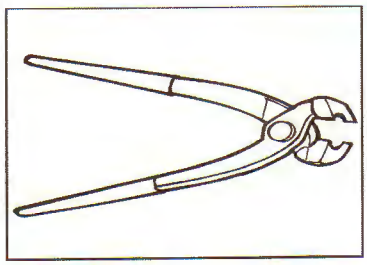
Body

Console nut wrench
P/N 529 036 183 Recommended
REV-XP
2010

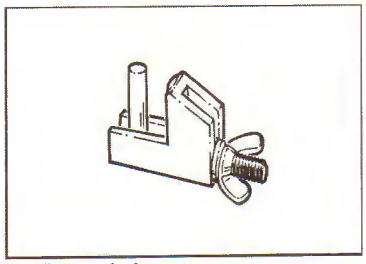
Various



Oetiker pliers
P/N 295 000 069 Recommended
All models

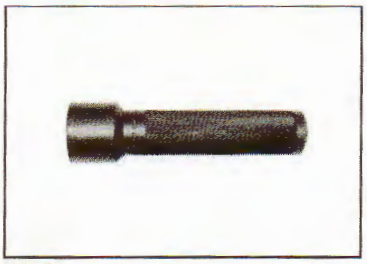


Oetiker pliers
P/N 295 000 070 Recommended
All models

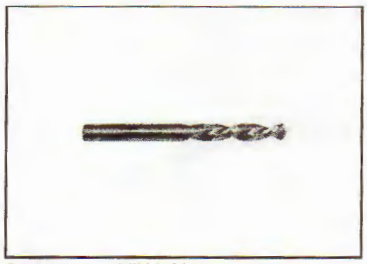


Small hose pincher
P/N 295 000 076 **Mandatory**
All models

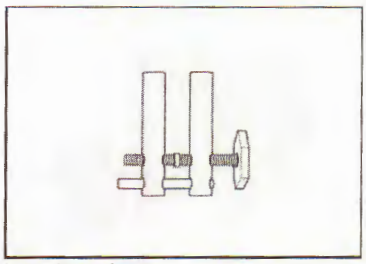
Various



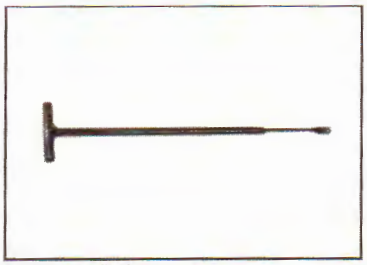
Handle
P/N 420 877 650 Recommended
All models
Can be used with many types of pushers.



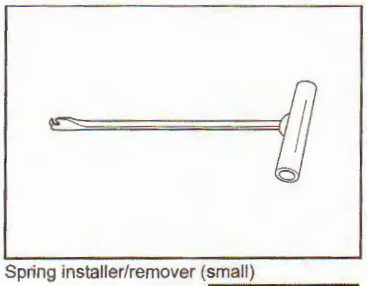
Supertanium drill bit 3/16"
P/N 529 031 800 Recommended
To drill/remove many kinds of rivets.



Large hose pincher
P/N 529 032 500 Recommended
All models



Spring installer/remover
P/N 529 035 983 **Mandatory**
All models



Spring installer/remover (small)
P/N 529 035 989 **Mandatory**

Blind hole bearing puller set
P/N 529 036 117 Recommended
All models
Replaced by 529036056

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TABLE OF CONTENTS

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The illustrations figuring in this parts catalog show typical construction of the different assemblies and, in all cases, may not reproduce the full detail or exact shape of the parts shown. However, they represent parts which have the same or similar function.

Les illustrations contenues dans ce catalogue indiquent la disposition des pièces les unes par rapport aux autres. Il est donc possible qu'elles ne rendent pas compte de la forme exacte de ces pièces ainsi que de leurs détails de fabrication. Ces illustrations ont pour but d'identifier des pièces qui remplissent la même fonction ou une fonction identique.

SYMBOLS USED IN THIS CATALOG

@	In «Quantity» column means «Use as Required».
Opt	In «Quantity» column means «Optional».
XXX	Parts marked with «XXX» are not available as spare parts.

SYMBOLES UTILISÉS DANS CE CATALOGUE

@	Dans la colonne «Quantité» signifie «Au besoin».
Opt	Dans la colonne «Quantité» signifie «En option».
XXX	Les articles marqués d'un «XXX» ne sont pas disponibles comme pièces de remplacement.

mmc2014-001-029_0

00- Model Numbers (00M1438) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Note - English	Note - French	Additional Note - English	Additional Note - French
1	BMEA	MXZ, X (Racing), Black-Black	MXZ, X (Racing), Noir-Noir	North America	Amérique Du Nord	600RS, REV-XS RS 128"	600RS, REV-XS RS 128"
2	BMEB	MXZ, X (Racing), Black-Black	MXZ, X (Racing), Noir-Noir	Europe	Europe	600RS, REV-XS RS 128"	600RS, REV-XS RS 128"

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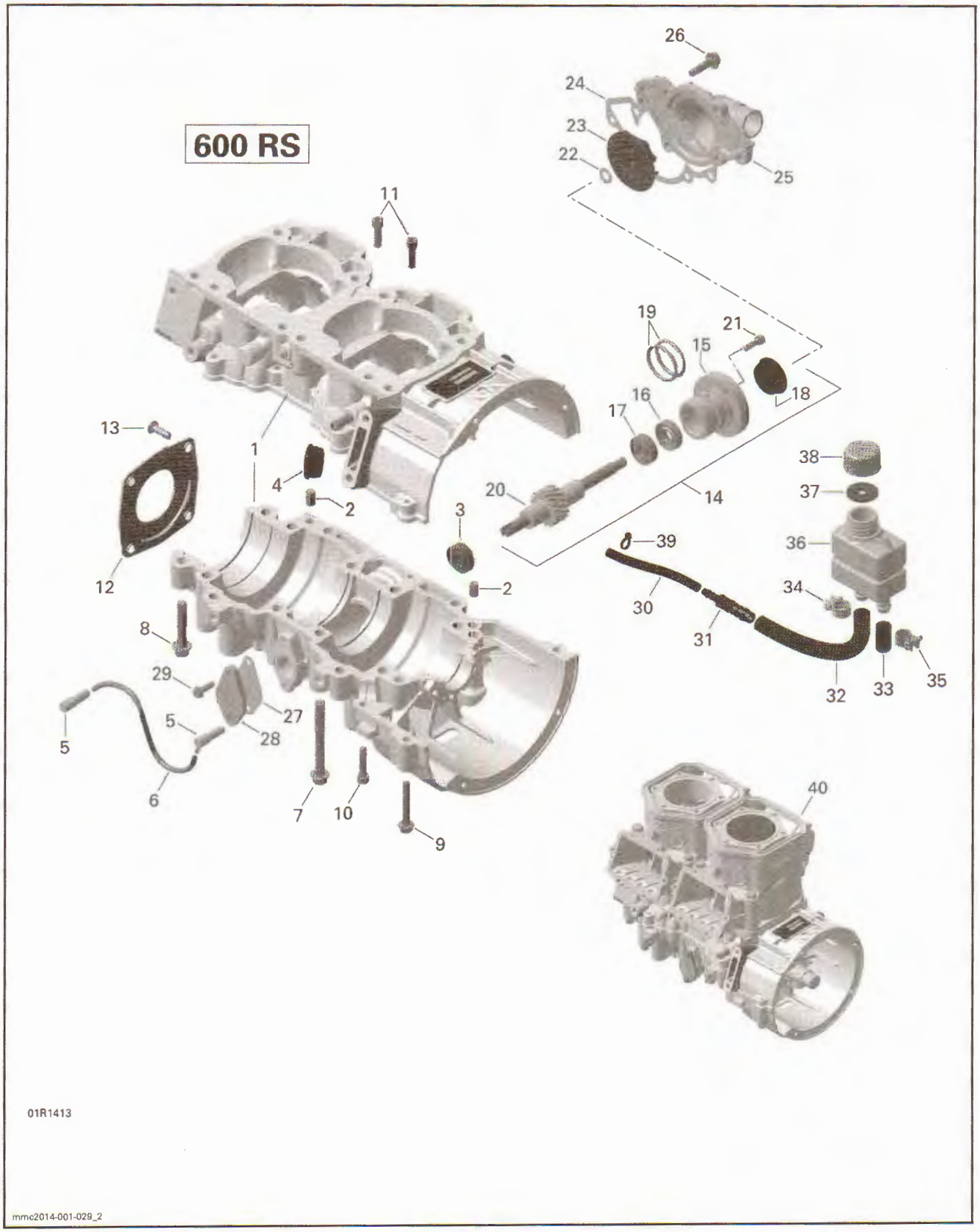
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01R1413
mmc2014-001-029_2

01- Crankcase (01R1413) 593 RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	420893291	Crankcase Ass'y	Carter Ass.	1	Includes 1 to 6	Inclus 1 à 6
2	420632010	Center Pin 8 X 12	Goujon De Centrage 8 X 12	2		
3	420232100	Ball Bearing	Roulement À Billes	1		
4	420860965	Cable Grommet	Passe-Câble	1		
5	420956510	Check Valve	Soupape De Retenue	2		
6	414413800	Oil Hose	Boyau d'Huile	1		
7	420640836	Hex. Collar Screw M8 X 75	Vis Hex. À Épaulement M8 X 75	10		
8	420640431	Hex. Collar Screw M8 X 45	Vis Hex. À Épaulement M8 X 45	6		
9	420640311	Hex. Collar Screw M6 X 45	Vis Hex. À Épaulement M6 X 45	2		
10	205063044	Socket Head Screw M6 X 30	Vis Creuse À 6 Pans M6 X 30	1		
11	420840401	Socket Head Screw M6 X 22	Vis Allen M6 X 22	2		
12	420812420	Cover	Couvercle	1		
13	420941436	Socket Head Screw M6 X 20	Vis Creuse À 6 Pans M6 X 20	4		
14	420837421	Water Pump/Oil Pump Ass'y	Pompe À Eau/Huile Ass.	1	Includes 14 to 20	Inclus 14 à 20
15	XXX	Step Collar	Collet	1		
16	420230195	Oil Seal	Anneau Étanche	1		
17	420232100	Ball Bearing	Roulement À Billes	1		
18	420650370	Rotary Seal	Joint Rotatif	1		
19	420950890	O-Ring	Joint Torique	2		
20	XXX	Water Pump/Oil Pump Shaft	Arbre Pompe À Eau /Huile	1		
21	420840511	Socket Head Screw M5 X 16	Vis Creuse À 6 Pans M5 X 16	2		
22	420227945	Washer	Rondelle	1		
23	420222505	Water Impeller	Turbine À Eau	1		
24	420931810	Gasket	Joint	1		
25	420922630	Water Pump Housing	Logement De Pompe À Eau	1		
26	420240034	Hex. Screw M6 X 25	Vis Hex. M6 X 25	6		
27	420931566	Gasket	Joint	1		
28	420810825	Cover Plate	Couvercle	1		
29	420941925	Tapping Screw M5 X 16	Vis Hex. À Épaulement M5 X 16	2		
30	415110000	Polyurethane Hose 5.2 mm	Boyau De Polyuréthane 5.2 mm	1		
31	420874370	Fitting	Raccord	1		
32	420956239	Oil Tube	Conduit	1		
33	420960279	Closure Cap	Couvercle	1		
34	420951260	Clamp	Bride	1		
35	420951241	Clamp	Bride	1		
36	420956240	Oil Tank Ass'y	Réservoir Huile Ass.	1	Includes 36 to 38	Inclus 36 à 38
37	420850350	Rubber Gasket	Joint De Caoutchouc	1		
38	420956250	Oil Tank Cap	Bouchon De Réservoir d'Huile	1		
39	420866710	Tie Rap	Attache	1		
40	420059323	Short Block 593 RS	Moteur Semi-Assemblé 593 RS	1		

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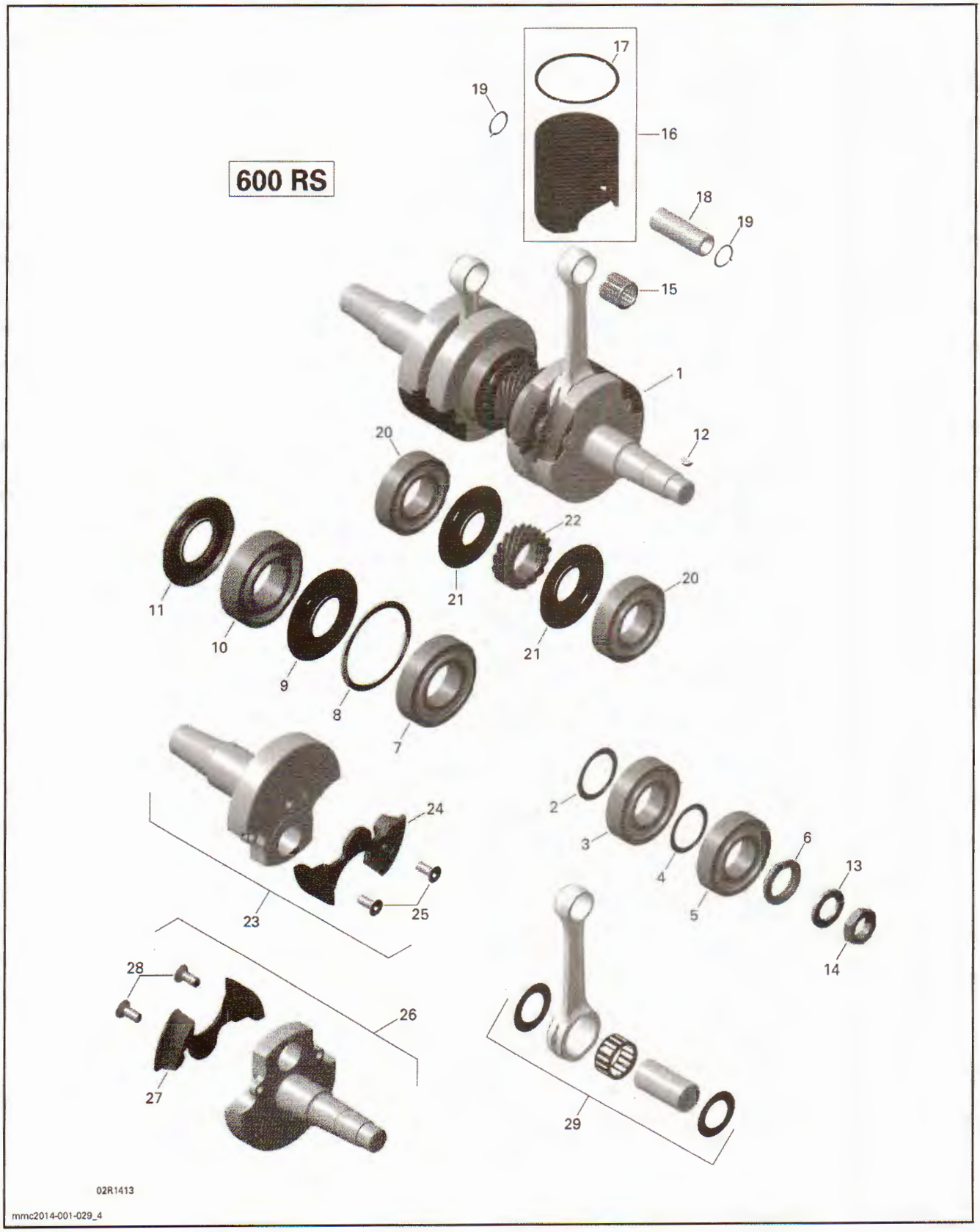
600 RS
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02R1413
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01- Crankshaft And Pistons (02R1413) 593 RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	420891636	Crankshaft Ass'y	Vilebrequin Ass.	1	Includes 1 to 12	Inclus 1 à 12
2	420827767	Shim	Cale d'Épaisseur	1		
3	420832575	Ball Bearing	Roulement À Billes	1		
4	420427502	Adjustment Washer	Rondelle Ajustement	1		
5	420832575	Ball Bearing	Roulement À Billes	1		
6	420931795	Oil Seal	Anneau Étanche	1		
7	420832600	Ball Bearing 6208	Roulement À Billes 6208	1		
8	420926190	Washer	Rondelle	1		
9	420931910	Oil Seal	Anneau Étanche	1		
10	420832603	Ball Bearing	Roulement À Billes	1		
11	420931284	Oil Seal	Anneau Étanche	1		
12	420246015	Woodruff Key	Clavette	1		
13	420945759	Lock Washer, 22 mm	Rondelle-Frein, 22 mm	1		
14	420842239	Hex. Nut, M22 X 1.5	Écrou Hex., M22 X 1.5	1		
15	420832445	Needle Bearing	Roulement À Aiguille	2		
16	420893303	Piston Ass'y, 71.87 mm	Piston Ass., 71.87 mm	2	Includes 16 to 17	Inclus 16 à 17
17	420815295	Semi-Trapez Ring	Segment Semi-Trapézoïdal	2		
18	420916413	Piston Pin	Axe De Piston	2		
19	420845106	Piston Circlip	Circlip De Piston	4		
20	420832575	Ball Bearing	Roulement À Billes	2		
21	420931455	Oil Seal	Anneau Étanche	2		
22	420834355	Central Gear	Engrenage Central	1		
23	XXX	Crankshaft Ass'y, PTO Side	Vilebrequin Ass., Côté PDM	1	Includes 23 to 25	Inclus 23 à 25
24	XXX	Volume Compensation Adapter	Embout De Compensateur De Volume	1		
25	420641406	Screw M8 X 20	Vis M8 X 20	2		
26	XXX	Crankshaft Ass'y, MAG Side	Vilebrequin Ass., Côté MAG	1	Includes 26 to 28	Inclus 26 à 28
27	XXX	Volume Compensation Adapter	Embout De Compensateur De Volume	1		
28	XXX	Screw M8 X 20	Vis M8 X 20	2		
29	420890958	Rod Repair Kit, PTO Side	Ens. De Tige De Réparation, Côté PDM	1		
29	420890959	Rod Repair Kit, MAG Side	Ens. De Tige De Réparation, Côté MAG	1		

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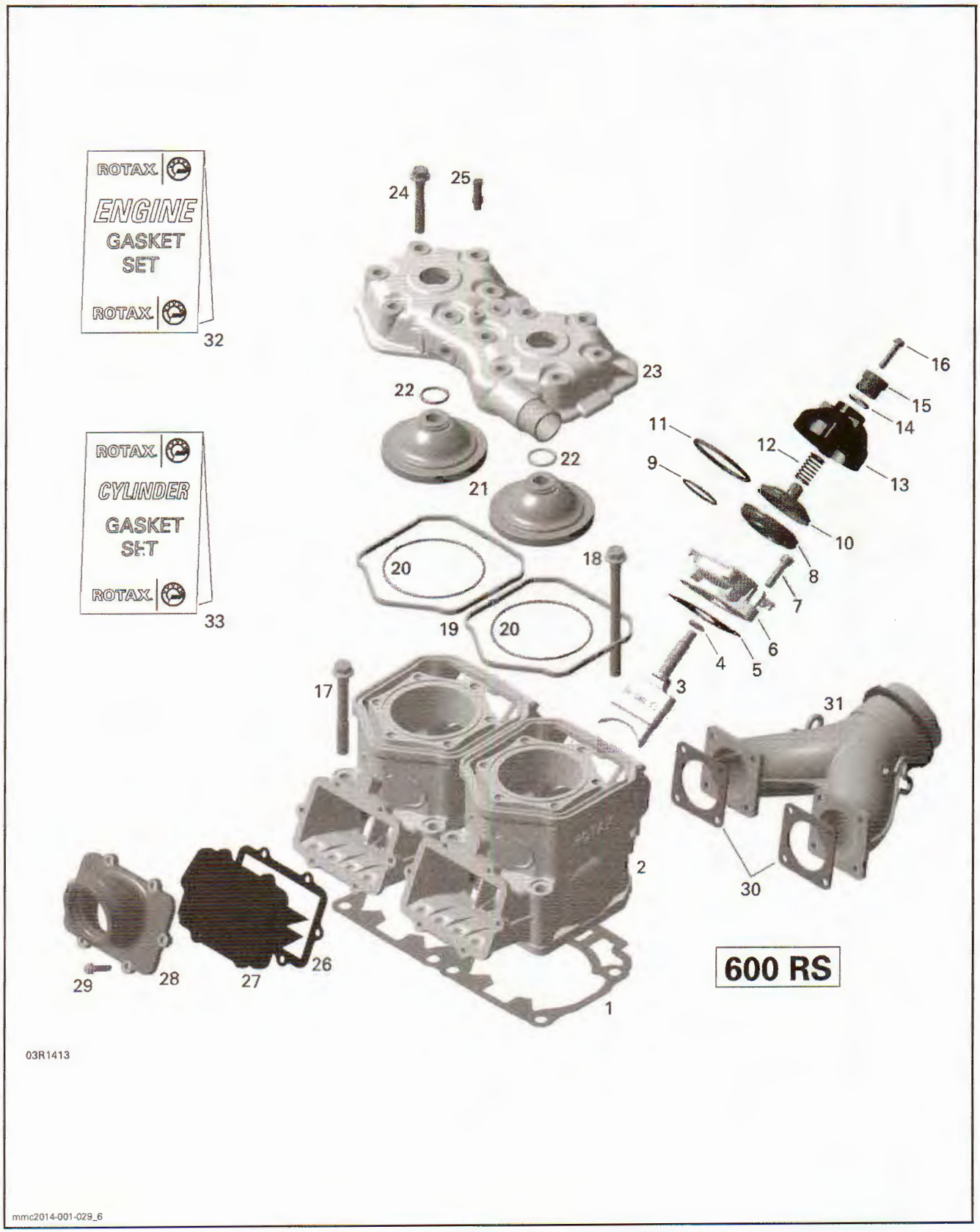

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01- Cylinder, Exhaust Manifold And Reed Valve (03R1413) 593 RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	420450180	Gasket 0.5 mm	Joint 0.5 mm	1		
1	420450181	Gasket 0.6 mm	Joint 0.6 mm	1		
1	420450182	Gasket 0.7 mm	Joint 0.7 mm	1		
1	420450183	Gasket 0.8 mm	Joint 0.8 mm	1		
2	420623483	Cylinder	Cylindre	2		
3	420854650	Exhaust Valve	Soupape d'Échappement	2		
4	420931542	Gasket	Joint	2		
5	420430110	O-Ring	Joint Torique	2		
6	420854455	Valve Housing	Boîtier De Valve	2		
7	205062544	Socket Head Screw M6 X 25	Vis Creuse À 6 Pans M6 X 25	4		
8	420260729	Bellows	Manchon De Soupape d'Échappement	2		
9	420838255	Hose Spring	Ressort	2		
10	420854449	Exhaust Valve	Soupape d'Échappement	2		
11	420939280	Hose Spring	Ressort	2		
12	420239944	Spring	Ressort	2		
13	420911558	Valve Cover	Couvercle De Soupape	2		
14	420430220	O-Ring	Joint Torique	2		
15	420241221	Adjuster Screw	Vis d'Ajustement	2		
16	420241270	Hex. Taptite Screw M5 X 25	Vis Hex. À Épaulement M5 X 25	4		
17	420640524	Hex. Collar Screw	Vis Hex. À Épaulement	4		
18	420640534	Hex. Collar Screw	Vis Hex. À Épaulement	4		
19	420931590	Rubber Ring	Bague De Caoutchouc	2		
20	293300026	O-Ring	Joint Torique	2		
21	420623358	Combustion Chamber Insert	Ajout De Chambre De Combustion	2		
22	420430370	O-Ring	Joint Torique	2		
23	420623545	Cylinder Head Cover	Couvercle De Cylindre	2		
24	420941627	Hex. Screw M8 X 56.5	Vis Hex. M8 X 56.5	1		
25	420924720	Hose Nipple	Raccord De Boyau	1		
26	420630815	Gasket	Joint Étanche	2		
27	420924791	Reed Valve Ass'y	Soupape Clapets Ass'y	2		
28	420667500	Intake Socket	Tubulure d'Admission	2		
29	420241270	Hex. Taptite Screw M5 X 25	Vis Hex. À Épaulement M5 X 25	12		
30	420850552	Gasket	Joint	2		
31	420673422	Exhaust Manifold	Collecteur d'Échappement	1		
32	420889930	Gasket Set, Engine	Ens. De Joint d'Étanchéité, Moteur	1		
33	420889935	Gasket Set, Cylinder	Ens. De Joint d'Étanchéité, Cylindrer	1		

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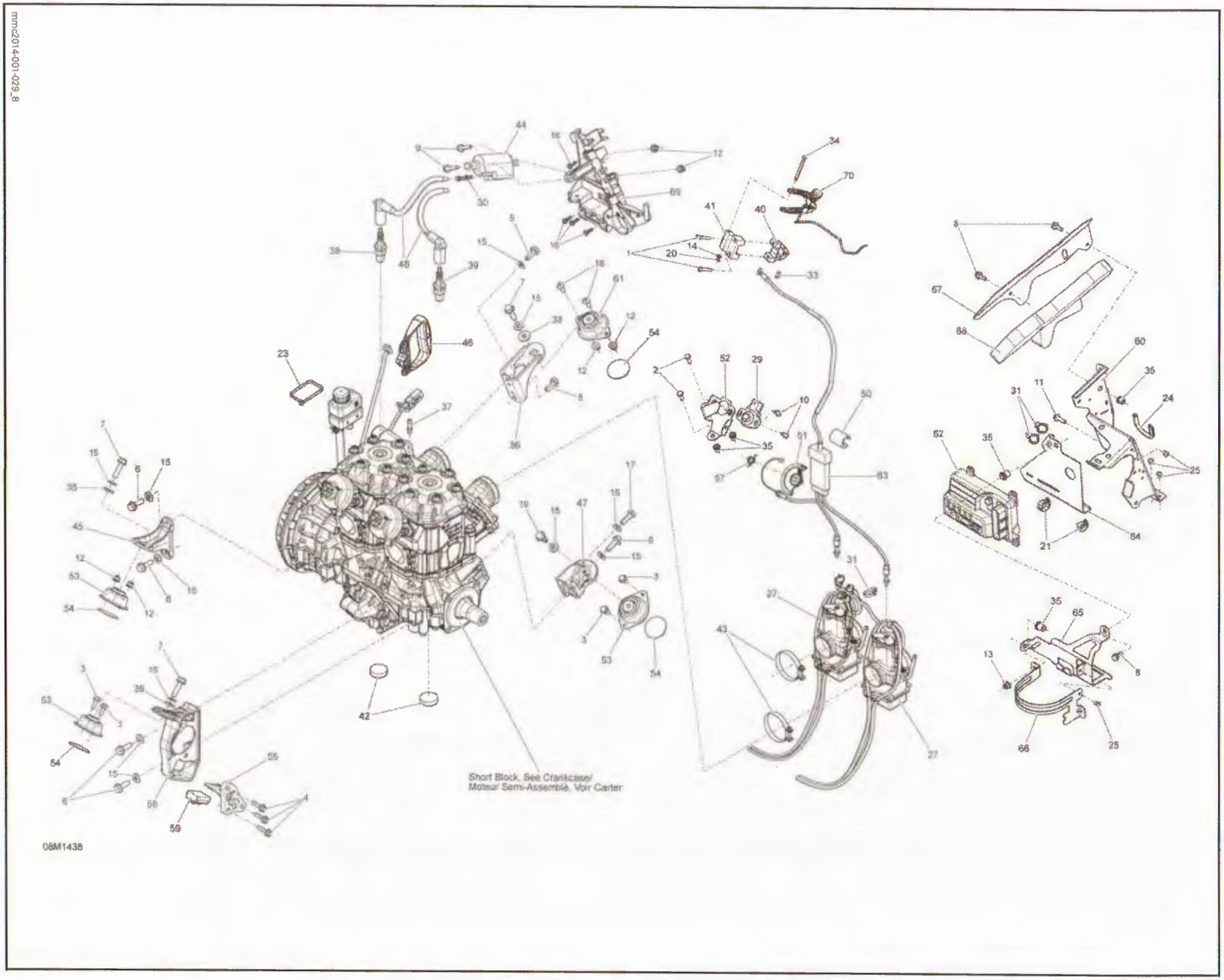

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01- Engine And Engine Support _08M1438 (08M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	205052544	Socket Screw M5 X 25	Vis Creuse 6 Pans M5 X 25	2		
2	207361644	Hex. Screw M6 X 16, Scotch Grip	Vis Hex. M6 X 16, Scotch Grip	2		
3	207561644	Hex. Flanged Screw M6 X 16, Scotch Grip	Vis Hex. Épaulement M6 X 16, Scotch Grip	4		
4	207562544	Hex. Flanged Screw M6 X 25, Scotch Grip	Vis Hex. Épaulement M6 X 25, Scotch Grip	3		
5	207582044	Hex. Flanged Screw M8 X 20, Scotch Grip	Vis Hex. Épaulement M8 X 20, Scotch Grip	2		
6	207582586	Hex. Flanged Screw M8 X 25, Scotch Grip	Vis Hex. Épaulement M8 X 25, Scotch Grip	5		
7	207583086	Flanged Hex. Screw M8 X 30, Scotch Grip	Vis Hex. Épaulement M8 X 30, Scotch Grip	3		
8	207661644	Hex. Flanged Screw M6 X 16	Vis Hex. À Épaulement M6 X 16	3		
9	207663034	Hex. Flanged Screw M6 X 30	Vis Hex. À Épaulement M6 X 30	2		
10	208651241	Phillips Screw M5 X 12	Vis Cruciforme M5 X 12	2		
11	210262080	Hex. Forming Screw M6 X 20	Vis Hex. À Épaulement M6 X 20	1		
12	233261414	Hex. Flanged Elastic Nut M6	Écrou Hex. Élastique À Épaulement M6	6		
13	233261416	Elastic Flanged Nut M6	Écrou Élastique À Épaulement M6	1		
14	234051600	Flat Washer M5, Stainless	Rondelle Plate M5, Inoxydable	1		
15	234281474	Conical Spring Washer M8	Rondelle-Ressort Conique M8	11		
16	241151640	Hex. Flanged Screw K50 X 16	Vis Hex. À Épaulement K50 X 16	4		
17	250000248	Torx Screw M8 X 25, Scotch Grip	Vis Hexalobulaire M8 X 25, Scotch Grip	1		
18	250000335	Socket Head Screw M6 X 20	Vis Creuse À 6 Pans M6 X 20	2		
19	250000570	Hex. Screw M8	Vis Hex. M8	1		
20	293370050	Circlip	Anneau De Retenue	1		
21	293650172	Tridon Gear Clamp	Bride De Serrage Tridon	2		
23	293750008	Tie-Rap 350 mm	Attache 350 mm	1		
24	414506600	Trim	Moulure	1		
25	390909200	Avex Rivet	Rivet Avex	4		
27	403138818	Carburator, TMX39-1Z1	Carburateur, TMX39-1Z1	2		
29	404162079	Sensor Ass'y	Capteur Ass.	1		
30	410914600	Plastic Clip, Spark Plug Wire	Attache, Fil De Bougie	1		
31	414115200	Tie-Rap 180 mm	Attache 180 mm	3		
33	414274500	Circlip	Circlip	1		
34	414438700	Lever Pin	Goupille De Levier	1		
35	293450275	Insert	Ajout	5		
37	420924724	Hose Nipple	Raccord De Boyau	1		
38	503183200	Washer, Yellow	Rondelle, Jaune	3		
39	512059552	Spark Plug, NGK BR9ECS-5	Bougie, NGK BR9ECS-5	2		
40	512059537	Lower Housing	Logement Inférieur	1		
41	512059538	Upper Housing	Logement Supérieur	1		
42	512059738	Stopper	Butée	2		
43	512059835	Gemi Clamp	Bride De Serrage Gemi	2		
44	512059968	Ignition Coil	Bobine d'Allumage	1		
45	512060108	Front Support, MAG	Attache Moteur Avant, MAG	1		
46	512060136	Starter Grip	Poignée De Démarreur	1		
47	512060173	Rear Support, PTO	Attache Moteur Arrière, PTO	1		
48	512060291	Cable	Câble	2		
50	512060313	Protector	Protecteur	1		
51	512060335	Cap Cam	Came Capteur	1		
52	512060336	TPS Support	Support De Capteur	1		

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mmc2014-001-029_10

01- Engine And Engine Support _08M1438 (08M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
53	512060385	Rubber Mount	Tampon d'Ancrage	3		
54	512060410	Rubber Washer	Rondelle De Caoutchouc	4		
55	512060576	Stopper Support	Support De Butée	1		
56	512060568	Rear Engine Support, MAG	Attache Moteur Arrière, MAG	1		
57	512060638	Cam Spring	Ressort De Cam	1		
58	512060699	Front Support, PTO	Attache Moteur Avant, PDM	1		
59	512060766	Stopper	Butée	1		
60	512060770	Grip Support	Support De Poignée	1		
61	512060772	Rubber Mount	Tampon d'Ancrage	1		
62	512060962	Calibrated Module 600RS	Module Calibré 600RS	1		
63	512060895	Throttle Cable	Cable d'Accélérateur	1		
64	512060904	ECM Support	Support ECM	1		
65	512060905	Support	Support	1		
66	512060916	Strap	Lanière	1		
67	512060917	Noise Shield	Plaque Acoustique	1		
68	512060918	Noise Foam	Mousse Acoustique	1		
69	512060925	Coils Support	Support De Bobines	1		
70	512060960	Handle Ass'y	Manette Ass.	1		

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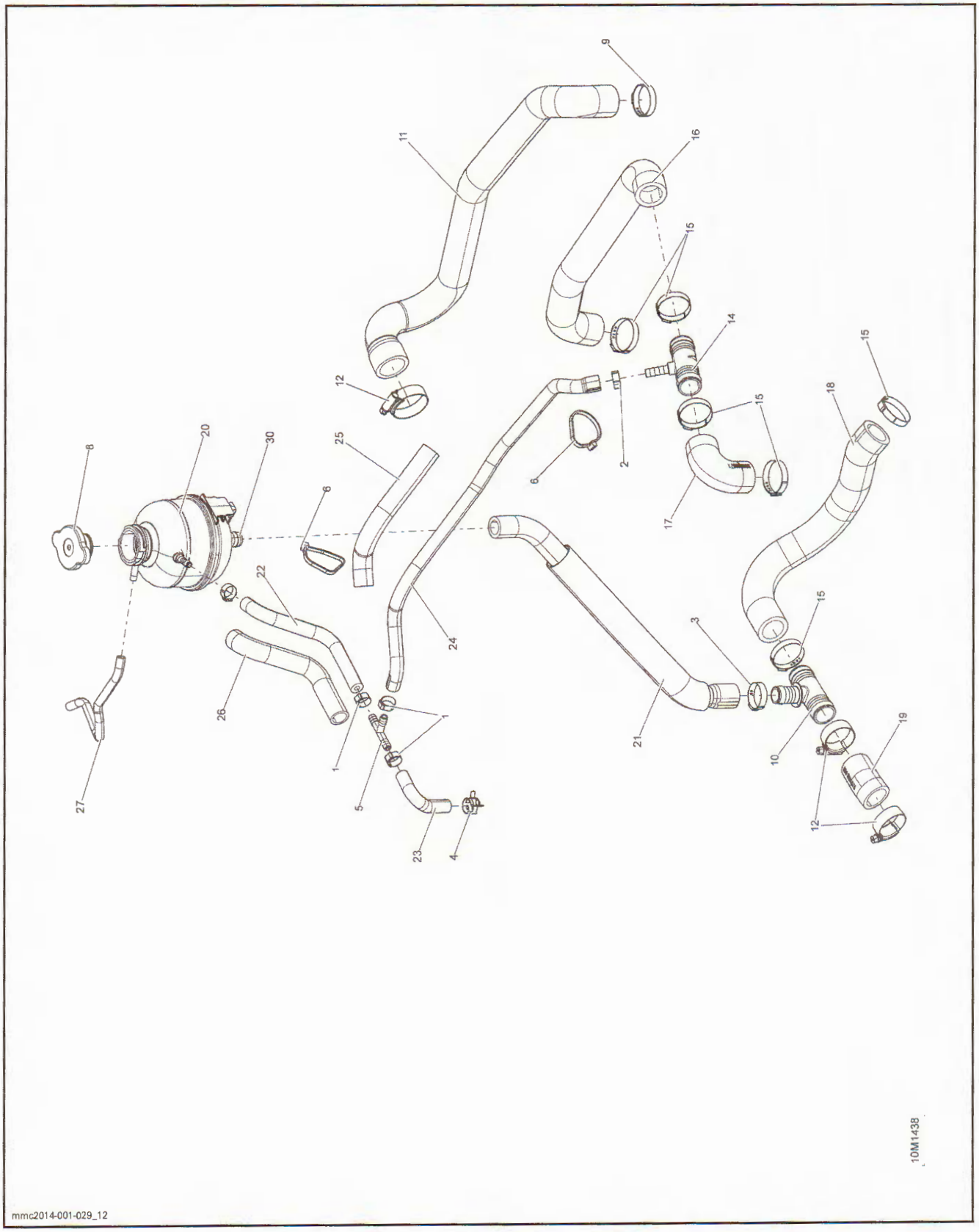

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01- Cooling System _10M1438 (10M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	293650046	Oetiker Clamp	Bride De Serrage Oetiker	4		
2	293650047	Crimp Clamp	Collet À Sertir	1		
3	293650099	Crimp Clamp	Collet À Sertir	1		
4	293650210	Spring Clamp	Collet À Ressort	1		
5	293710024	T-Fitting	Raccord En T	1		
6	414115200	Tie-Rap 180 mm	Attache 180 mm	2		
8	509000180	Pressure Cap	Bouchon De Radiateur	1		
9	509000181	Oetiker Gear Clamp	Bride De Serrage Oetiker	1		
10	509000372	T-Fitting	Raccord En T	1		
11	509000431	Engine Outlet Hose	Boyau De Sortie Moteur	1		
12	509000443	Aba Gear Clamp	Bride De Serrage Aba	3		
14	509000510	T-Fitting	Raccord En T	1		
15	509000529	Oetiker Gear Clamp	Bride De Serrage Oetiker	6		
16	509000670	Radiator Hose	Boyau De Radiateur	1		
17	509000671	Radiator Hose	Boyau De Radiateur	1		
18	509000673	Radiator Hose	Boyau De Radiateur	1		
19	509000675	Engine Inlet Hose	Boyau d'Entrée Moteur	1		
20	509000802	Coolant Tank	Réservoir À Antigel	1		
21	509000901	Filling Hose	Boyau De Remplissage	1		
22	509000902	Breather Hose	Boyau De Purge	1		
23	509000904	Breather Hose	Boyau De Purge	1		
24	509000905	Rear Breather Hose	Boyau De Purge Arrière	1		
25	415080000	Tubing 16 mm	Gaine 16 mm	1		
26	415080000	Tubing 16 mm	Gaine 16 mm	1		
27	276000048	Hose 6 mm	Boyau 6 mm	1		
30	293650124	Norma Gear Clamp	Bride De Serrage Norma	1		

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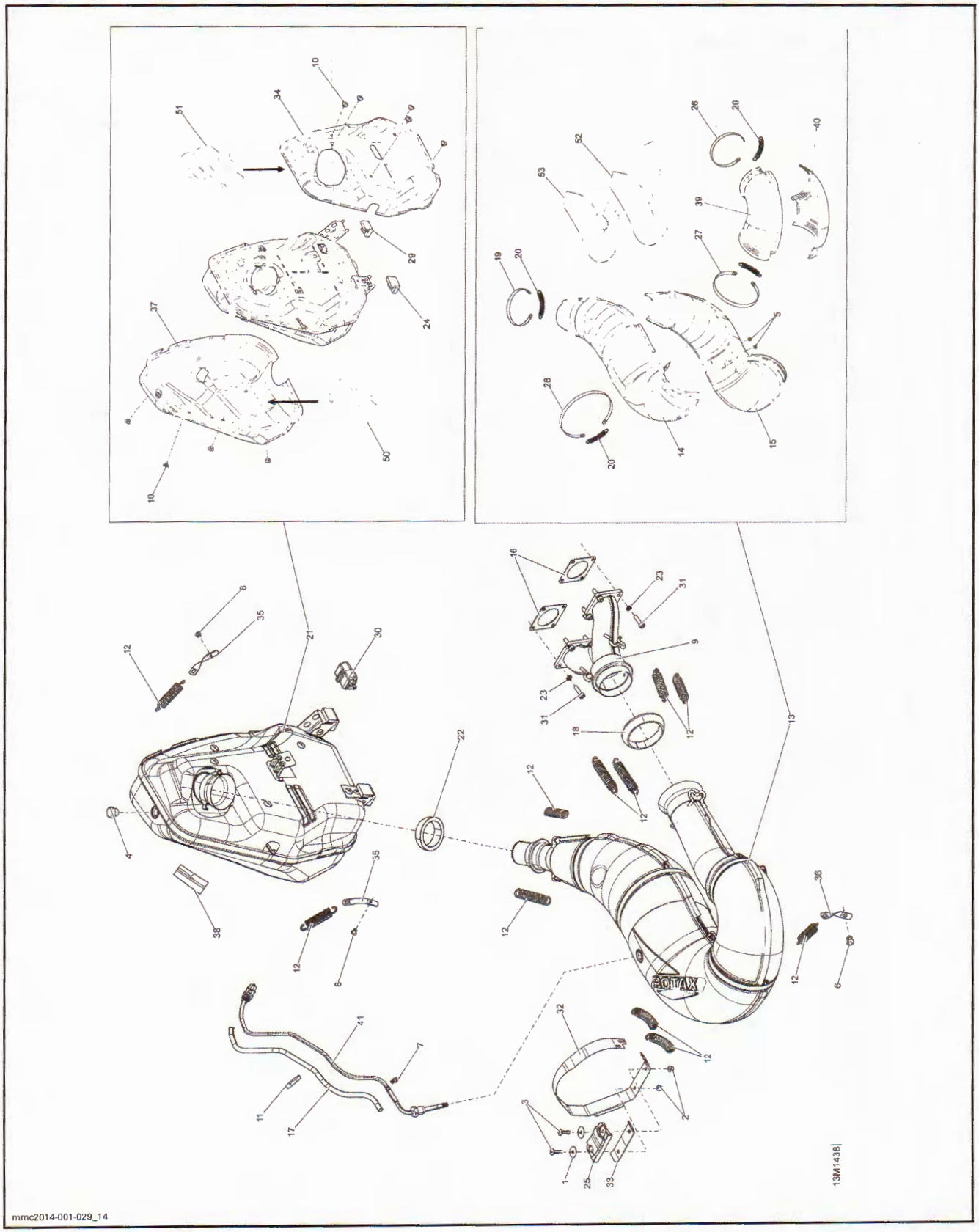

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01- Exhaust System _13M1438 (13M1438_F)

MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	224060201	Flat Washer	Rondelle Plate	2		
2	233251414	Hex. Flanged Elastic Nut M5	Écrou Hex. À Épaulement Élastique M5	2		
3	250000130	Torx Screw M5 X 20	Vis Hexalobulaire M5 X 20	2		
4	250100074	Hexagonal Head Pipe Plug M14	Bouchon Fileté Hexagonal M14	1		
5	293150091	Henrob Rivet	Rivet Henrob	4		
6	293150147	Hemlock Rivet	Rivet Hemlock	1		
7	293750001	Tie-Rap 94 mm	Attache 94 mm	1		
8	390402200	Pop Rivet 3/16"	Rivet Pop 3/16"	2		
9	420673422	Exhaust Manifold	Collecteur d'Échappement	1		
10	390910000	Pop Rivet 3/16"	Pop Rivet 3/16"	11		
11	414115200	Tie-Rap 180 mm	Attache 180 mm	1		
12	415107100	Spring	Ressort	11		
13	514055068	Tune Pipe Ass'y	Tuyau Calibré Ass.	1		
14	514055067	Rear Upper Half Enveloppe	Demi Enveloppe Supérieure Arrièrre	1		
15	514054990	Rear Lower Half Enveloppe	Demi Enveloppe Inférieure Arrièrre	1		
16	420850552	Gasket	Joint	2		
17	515175442	Tubing 6 mm	Gaine 6 mm	1		
18	514053487	Exhaust Gasket	Joint d'Échappement	1		
19	514053499	Retaining Strap	Languette	1		
20	514053643	Spring	Ressort	4		
21	514055083	Muffler Ass'y	Silencieux Ass.	1		
22	514053812	Exhaust Gasket	Joint d'Échappement	1		
23	514053953	Washer	Rondelle	8		
24	514054274	Lower Stopper	Butée Inférieure	1		
25	514054275	Bumper	Butoir	1		
26	514054408	Retaining Strap	Languette De Retenue	1		
27	514054409	Retaining Strap	Languette De Retenue	1		
28	514054410	Retaining Strap	Languette De Retenue	1		
29	514054496	Lower Stopper	Butée Inférieure	1		
30	514054606	Upper Stopper	Butée Supérieure	1		
31	514054626	Socket Screw M6 X 22, Scotch Grip	Vis Creuse 6 Pans M6 X 22, Scotch Grip	8		
32	514054637	Retaining Strap	Languette De Retenue	1		
33	514054638	Reinforcement Plate	Plaque De Renfort	1		
34	514054967	LH Deflector	Déflecteur GA	1		
35	514054974	Spring Bracket	Attache Ressort	2		
36	514054975	Spring Bracket	Attache Ressort	1		
37	514054986	RH Deflector	Déflecteur DR	1		
38	514054987	Heat Shield	Feuille Réflectrice	1		
39	514054992	Front Upper Half Enveloppe	Demi Enveloppe Supérieure Avant	1		
40	514054993	Front Lower Half Enveloppe	Demi Enveloppe Inférieure Avant	1		
41	514054870	Temperature Sensor	Capteur De Température	1		
50	514054711	RH Insulating Wool	Laine Isolante DR	1		
51	514054299	LH Insulating Wool	Laine Isolante GA	1		
52	514054487	Insulating Wool	Laine Isolante	1		
53	514054553	Insulating Wool	Laine Isolante	1		

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mmc2014-001-029_16

02- Fuel System _14M1438 (14M1438_F)

MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	207162044	Hex. Screw M6 X 20	Vis Hex. M6 X 20	1		
2	207661644	Hex. Flanged Screw M6 X 16	Vis Hex. À Épaulement M6 X 16	2		
3	224060201	Flat Washer	Rondelle Plate	1		
4	233261414	Hex. Flanged Elastic Nut M6	Écrou Hex. Élastique À Épaulement M6	3		
7	293650025	Oetiker Gear Clamp	Bride De Serrage Oetiker	6		
8	293650025	Oetiker Gear Clamp	Bride De Serrage Oetiker	1		
9	293650043	Oetiker Gear Clamp	Bride De Serrage Oetiker	8		
10	293650053	Crimp Clamp	Collet À Sertir	4		
11	293650125	Oetiker Clamp	Bride De Serrage Oetiker	2		
12	293750002	Tie-Rap 142 mm	Attache 142 mm	2		
14	414115200	Tie-Rap 180 mm	Attache 180 mm	2		
16	414222400	T-Fitting	Raccord En T	1		
17	414227300	Clip	Pince	1		
18	414415200	Spring Clamp	Bride À Ressort	1		
19	414872100	Fuel Filter	Crépine	1		
20	414872700	Male Connector	Raccord Mâle	1		
21	415119300	T-Fitting	Raccord En T	1		
22	513033010	Norma Spring Clamp	Bride À Ressort Norma	2		
23	513033029	Universal Spring Clamp	Bride À Ressort Universal	1		
24	513033103	Fuel Tank Cap	Bouchon De Réservoir À Essence	1		
25	513033111	Formed Hose	Boyau Formé	1		
26	513033326	Shoulder Bushing	Douille À Épaulement	2		
27	409901800	Tubing 13 mm	Gaine 13 mm	1		
28	513033418	RH Cap	Capuchon DR	1		
29	513033419	LH Cap	Capuchon GA	1		
30	513033435	Grommet	Passe-Fils	1		
31	513033439	Formed Hose	Boyau Formé	1		
32	513033441	Primer	Amorceur	1		
33	513033444	Hose	Boyau	1		
34	513033423	Hose	Boyau	2		
36	415080000	Tubing 16 mm	Gaine 16 mm	1		
37	513033332	Hose	Boyau	1		
41	513033517	Male Connector	Raccord Mâle	2		
42	409901800	Tubing 13 mm	Gaine 13 mm	1		
45	513033528	Foam	Mousse	1		
46	414506600	Trim	Moulure	1		
47	513033565	Hose	Boyau	1		
50	513033596	Grommet	Passe-Fils	2		
51	513033669	Fuel Pump	Pompe À Essence	1		
52	513033672	Y Connector	Raccord en Y	1		
53	513033565	Hose	Boyau	1		

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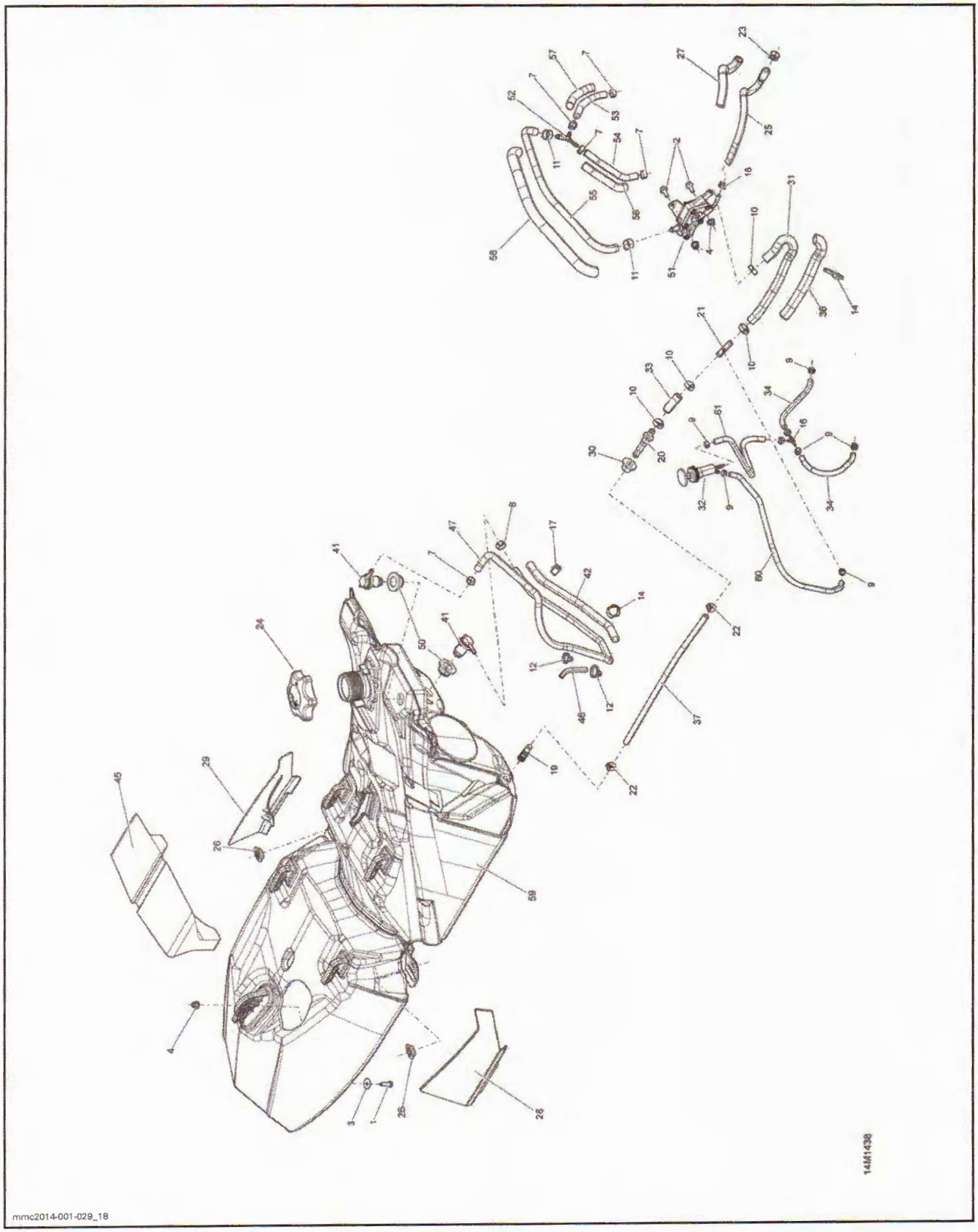

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02- Fuel System _14M1438 (14M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
54	513033565	Hose	Boyau	1		
55	415129492	Hose	Boyau	@		
56	409901800	Tubing 13 mm	Gaine 13 mm	1		
57	409901800	Tubing 13 mm	Gaine 13 mm	1		
58	415080000	Tubing 16 mm	Gaine 16 mm	1		
59	513033697	Fuel Tank	Réservoir À Essence	1		
60	513033423	Hose	Boyau	1		
61	513033423	Hose	Boyau	1		

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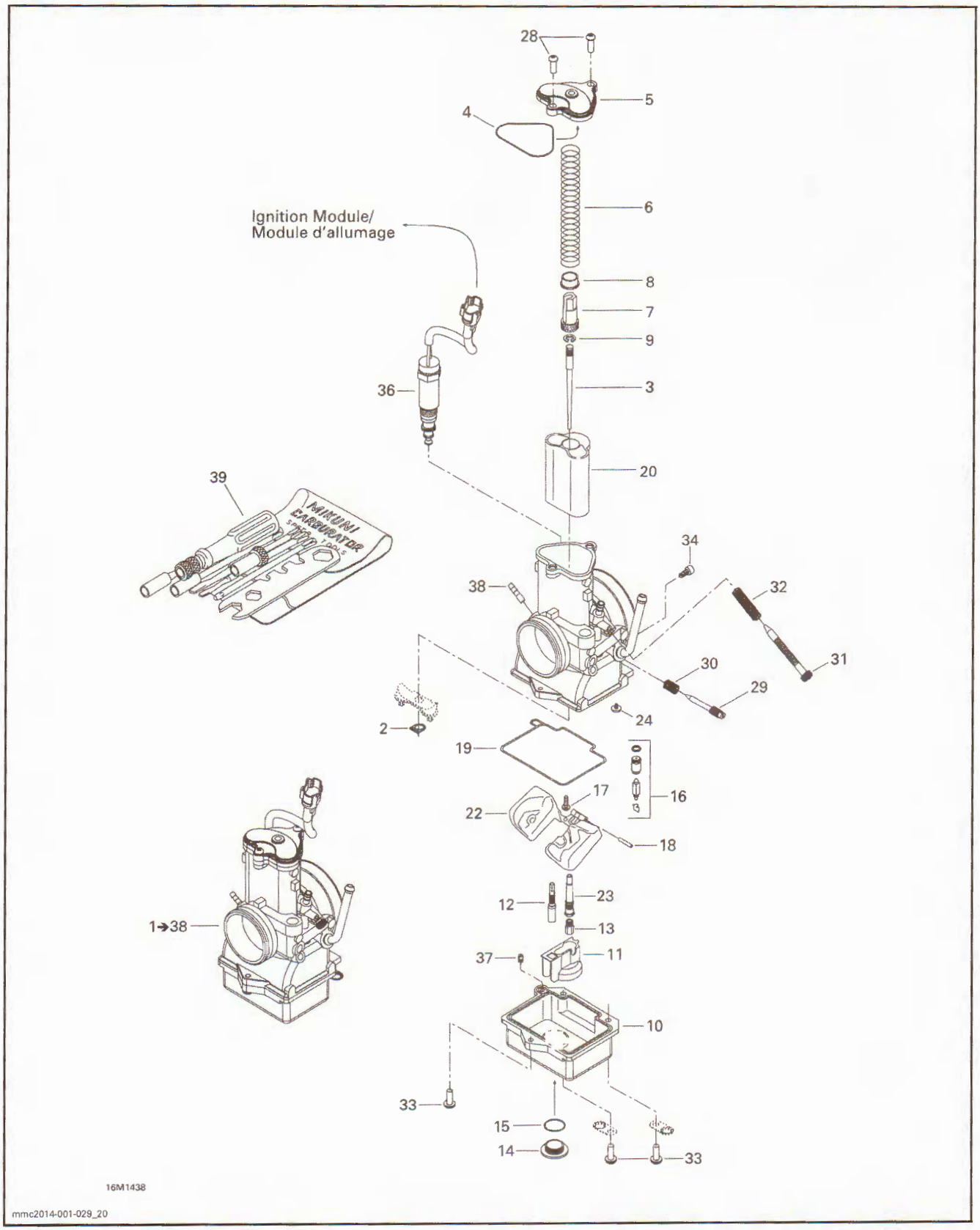
28
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Ignition Module/
Module d'allumage
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MIKUNI
CARBURATOR
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02- Carburetor _16M1438 (16M1438_F)

MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	403138818	Carburator, TMX39-1Z1	Carburateur, TMX39-1Z1	2		
2	404161865	Packing	Joint Tampon	1		
3	404162141	Needle	Aiguille	1		
4	404162111	O-Ring	Joint Torique	1		
5	404162142	Top Cap	Couvercle	1		
6	404162109	Spring	Ressort	1		
7	404162108	Holder Guide	Guide De Retenue	1		
8	404161863	Ring	Bague	1		
9	404152200	E-Ring	Rondelle En E	1		
10	404162121	Float Body	Corps De Flotte	1		
11	404161855	Holder	Guide	1		
12	404162134	Pilot Jet 55	Gicleur De Ralenti 55	1		
13	404162140	Main Jet 280	Gicleur MJ 280	1		
14	404107400	Drain Plug Screw	Vis De Bouchon De Vidange	1		
15	404107300	O-Ring	Joint Torique	1		
16	404161868	Needle Valve 1.5	Pointeau 1.5	1		
17	404138600	Screw	Vis	1		
18	404161860	Pin	Goupille	1		
19	404161993	O-Ring	Joint Torique	1		
20	404162106	Piston Valve 4.0	Tiroir Accélérateur 4.0	1		
22	404161859	Float	Flotte	1		
23	486400012	Jet Needle	Gicleur À Aiguille	1		
24	404161861	Screw	Vis	1		
28	404138700	Screw	Vis	2		
29	404161866	Adjuster	Adjusteur	1		
30	404132400	Spring	Ressort	1		
31	404161850	Adjuster	Adjusteur	1		
32	404161849	Spring	Ressort	1		
33	404161848	Screw	Vis	3		
34	404162100	Screw	Vis	1		
36	404161998	Selenoid	Solénoïde	1		
37	404162098	Power Jet 160	Gicleur De Puissance 160	1		
38	404162123	Nipple	Raccord	1		
39	404112000	Tool Kit	Ens. d'Outils	1		

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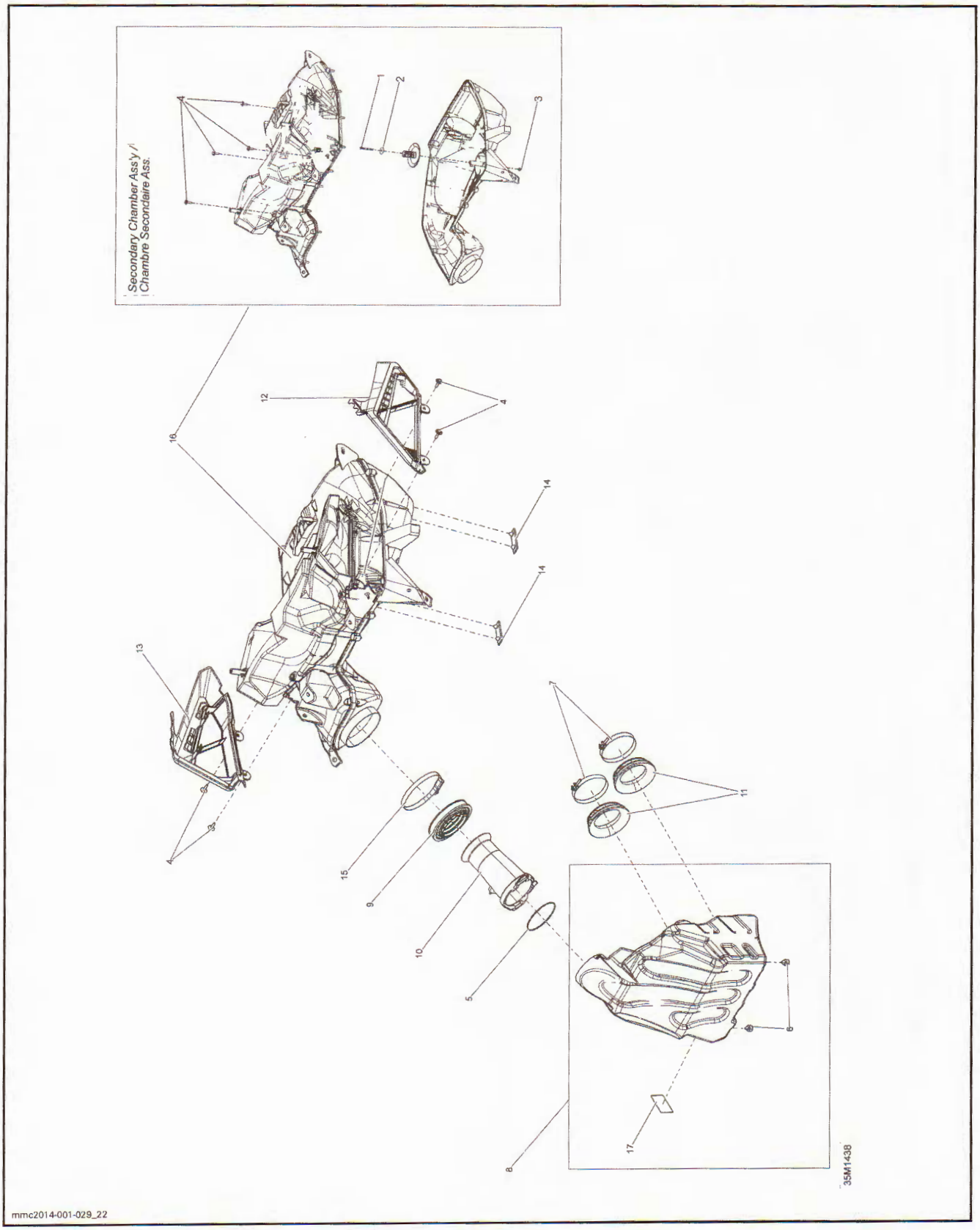

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02- Air Intake System _35M1438 (35M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	205444086	Socket Head Screw M4 X 40	Vis Creuse À 6 Pans Bombée M4 X 40	1		
2	224060201	Flat Washer	Rondelle Plate	1		
3	232541414	Elastic Stop Nut M4	Écrou Hex. Élastique M4	1		
4	250000113	Screw M4 X 16, Type K-40	Vis M4 X 16, Type K-40	8		
5	293300115	O-Ring	Joint Torique	1		
6	293830005	Rubber Bumper	Butée De Caoutchouc	2		
7	508000346	Gemi Clamp	Bride De Serrage Gemi	2		
8	508000535	Primary Chamber Ass'y	Chambre Primaire Ass.	1		
9	508000567	Boot	Raccord	1		
10	508000662	Flute	Flûte	1		
11	508000721	Intake Adapter	Adaptateur d'Admission	2		
12	508000730	RH Air Filter	Filtre d'Admission DR	1		
13	508000731	LH Air Filter	Filtre d'Admission GA	1		
14	508000744	Stopper	Butée De Caoutchouc	2		
15	514052924	Norma Clamp	Bride De Serrage Norma	1		
16	508000722	Secondary Chamber Ass'y	Chambre Secondaire Ass.	1		
17	516005876	Notice Decal, Air Intake Silencer	Décalque Avis, Silencieux d'Admission	1		

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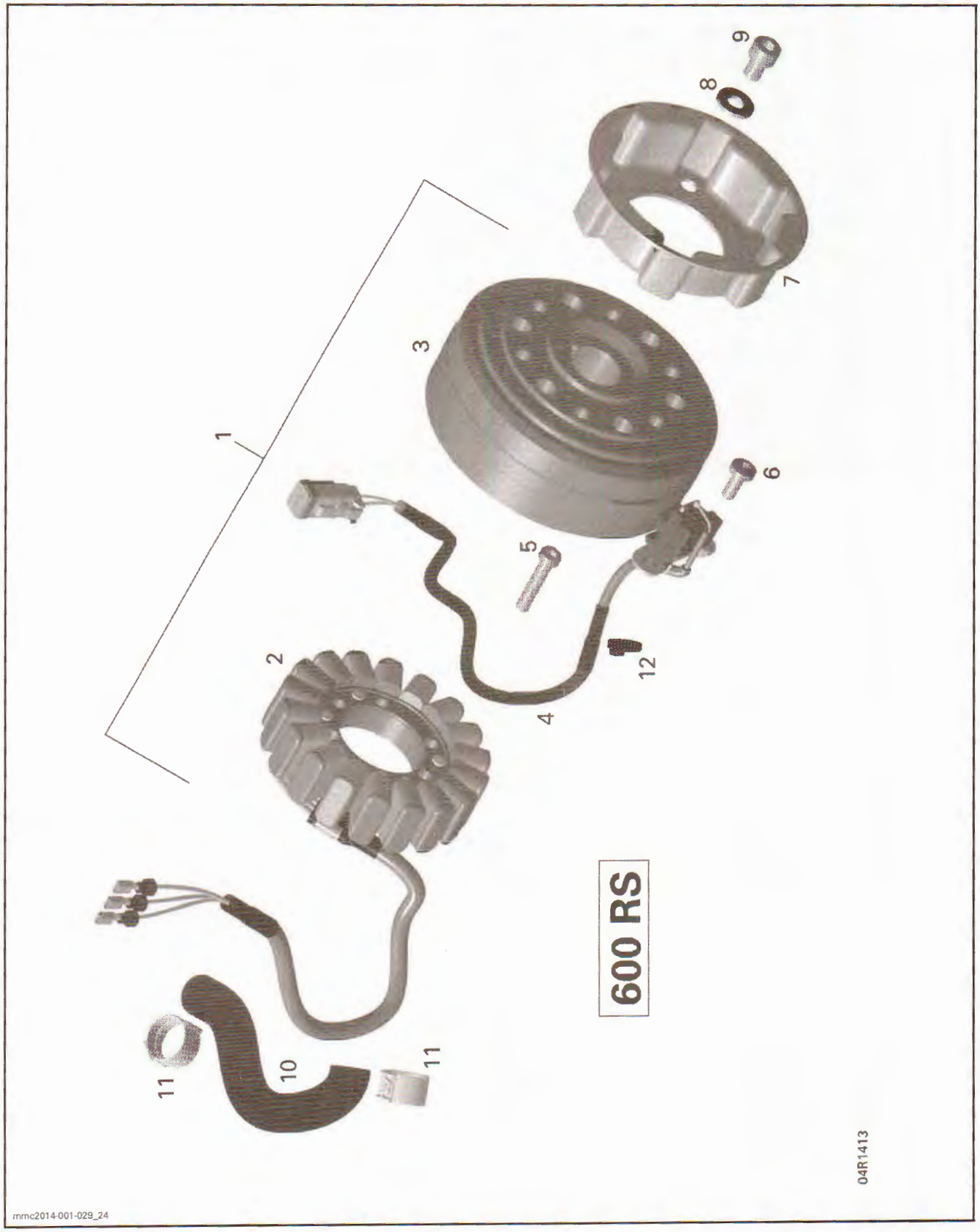

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03- Magneto (04R1413) 593 RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	XXX	Magneto Generator Ass'y, 12 V, 360 W	Magnéto Générateur Ass., 12 V, 360 W	1	Includes 1 to 4	Inclus 1 à 4
2	420893060	Stator Plate	Plaque Réacteur	1		
3	420665725	Flywheel	Volant Moteur	1		
4	410922951	Pick-Up	Capteur	1		
5	420840886	Socket Head Screw M6 X 30	Vis Creuse À 6 Pans M6 X 30	5		
6	420640324	Torx Screw M6 X 16	Vis Hexalobulaire M6 X 16	2		
7	420852590	Starting Pulley	Poulie De Démarrage	1		
8	420827405	Flat Washer	Rondelle Plate	3		
9	420841520	Socket Head Screw M8 X 12	Vis Creuse À 6 Pans M8 X 12	3		
10	420460871	Tube	Tube	1		
11	420960896	Conduit Clip	Bride De Serrage	2		
12	420866714	Tie Rap	Attache	1		

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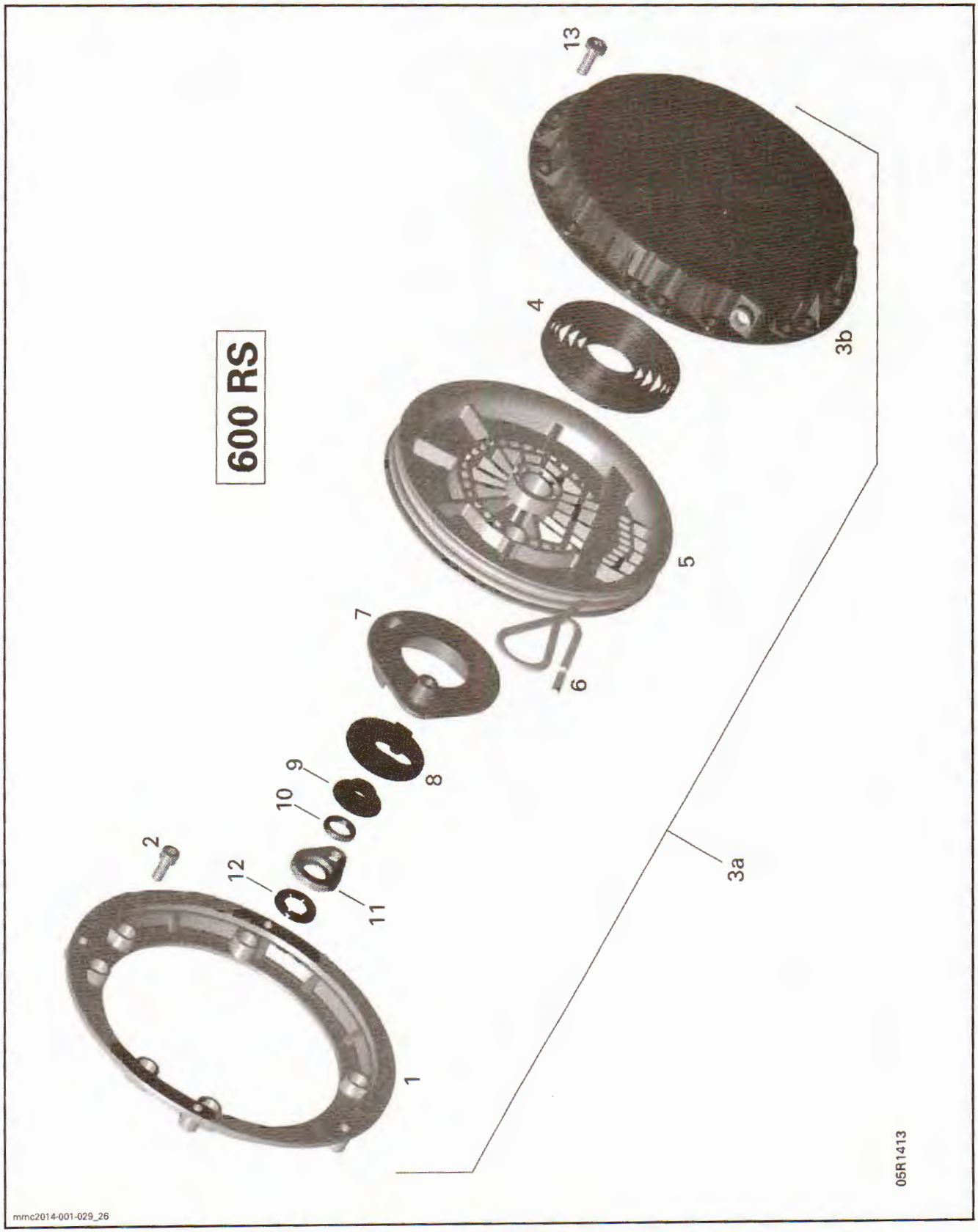

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04- Rewind Starter (05R1413) 593 RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	420810868	Flange Connector	Flasque Connecteur	1		
2	420241236	Socket Head Screw M6 X 16	Vis Creuse À 6 Pans M6 X 16	4		
3a	420892619	Rewind Starter Ass'y	Démarreur De Rappel Ass.	1	Includes 3a to 13	Inclus 3a à 13
3b	420910256	Starter Housing	Boîtier De Démarreur	1		
4	420939115	Rewind Spring	Ressort À Rappel	1		
5	420852288	Rope Sheave	Poulie De Démarrage	1		
6	412500200	Starter Rope, Meter	Corde De Démarreur, Mètre	1		
7	420852633	Pawl	Cliquet	1		
8	420852640	Pawl Lock	Barrure De Cliquet	1		
9	420847926	Stage Sleeve	Douille	1		
10	420250407	O-Ring	Joint Torique	1		
11	420852520	Lock Ring	Bague d'Arrêt	1		
12	420845560	Locking Element	Barrure	1		
13	420941256	Hex. Collar Screw	Vis Hex. À Épaulement	4		

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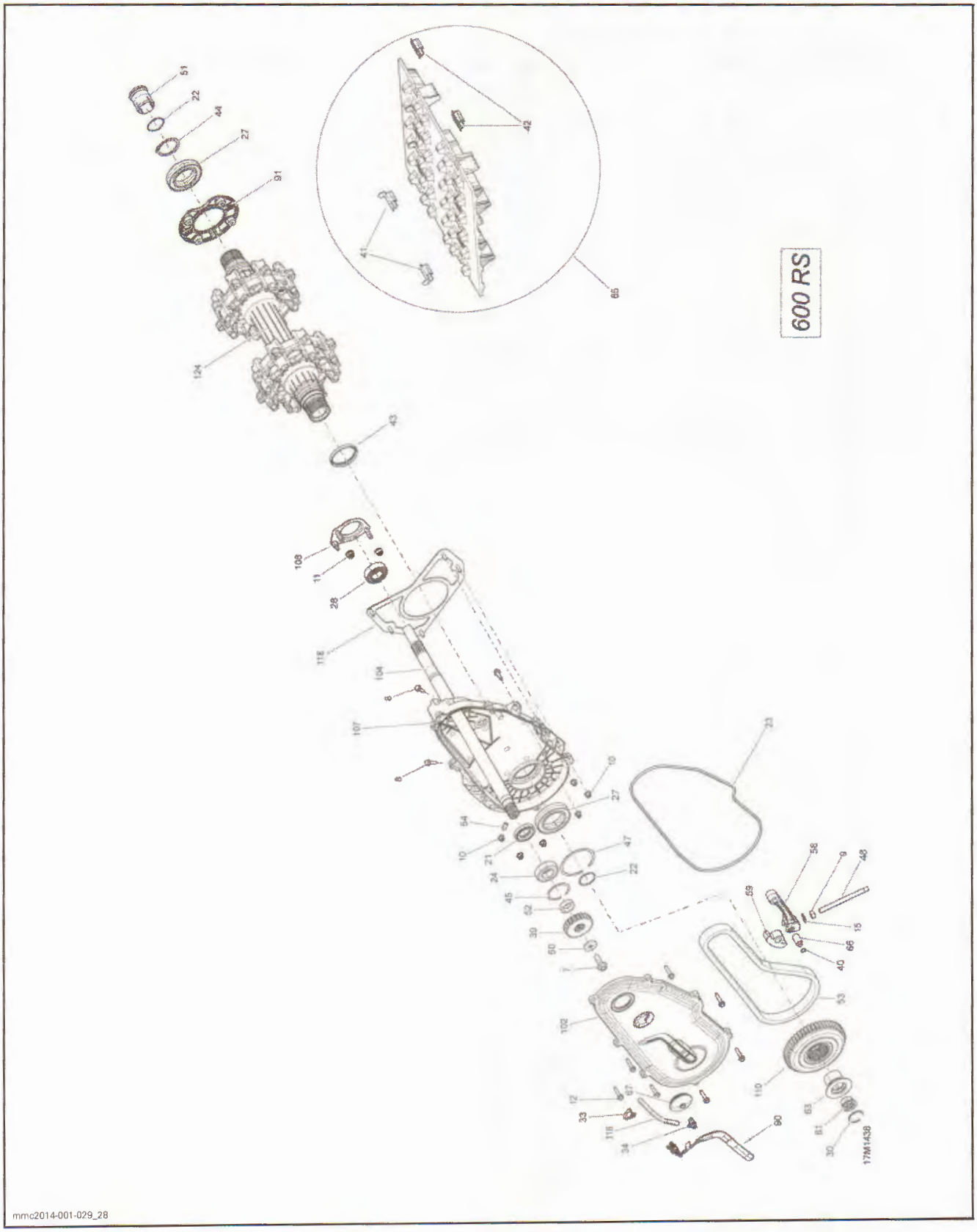

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05- Drive System _17M1438 (17M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
7	207503046	Hex. Flanged Screw M10 X 30, Scotch Grip	Vis À Épaulement M10 X 30, Scotch Grip	1		
8	207662034	Hex. Flanged Screw M6 X 20	Vis Hex. À Épaulement M6 X 20	@		
9	232006414	Hex. Nut M10	Écrou Hex. M10	1		
10	233261434	Flanged Elastic Nut M6	Écrou Élastique À Épaulement M6	6		
11	233281414	Hex. Flanged Elastic Nut M8	Écrou Élastique Hex. À Épaulement M8	2		
12	210263080	Hex. Flanged Screw M6 X 30	Vis Hex. À Épaulement M6 X 30	7		
15	250200100	Bonded Washer	Rondelle Avec Caoutchouc	1		
21	293250175	Oil Seal	Joint Étanche	1		
22	293300122	O-Ring	Joint Torique	2		
23	293300130	O-Ring	Joint Étanche	1		
24	293350055	Ball Bearing	Roulement À Bille	1		
27	293350059	Ball Bearing	Roulement À Billes	2		
28	293350074	Ball Bearing	Roulement À Billes	1		
30	293370052	Circlip	Anneau De Retenue	1		
33	414115200	Tie-Rap 180 mm	Attache 180 mm	1		
34	414580700	Male Connector	Raccord Mâle	1		
39	504139300	25 Tooth Sprocket (Large)	ROUE DENTEE 21 DENTS	1		
40	504152282	Circlip	Anneau De Retenue	1		
41	415129528	Track Guide	Segment-Guide	30		
42	504152651	Cleat	Agrafe	60		
43	504152571	Seal	Joint Étanche	1		
44	504152572	Circlip	Anneau De Retenue	1		
45	504152576	Circlip	Anneau De Retenue	1		
47	504152582	Circlip	Anneau De Retenue	1		
48	504152602	Adjustment Screw	Vis De Réglage	1		
51	504152619	Magnetic Cap	Capuchon Magnétique	1		
52	504152628	Shim	Cale d'Épaisseur	1		
53	504152630	Drive Chain, 106 Links	Chaîne d'Entraînement, 106 Mailles	1		
54	504152854	Magnetic Plug	Bouchon Magnétique	1		
58	504152685	Chain Tensioner	Tendeur De Chaîne	1		
59	504152739	Slider Chain	Glissière De Chaîne	1		
60	504152784	Spring Washer M10	Rondelle Ressort M10	1		
61	504152794	Magnetic Adaptor	Adaptateur Magnétique	1		
63	504152802	Threaded Cap	Capuchon Fileté	1		
65	504153259	Track Ass'y TR15X128X1.7R	Chenille Ass. TR15X128X1.7R	1		
66	504152841	Tensionner Axle	Axe De Tendeur	1		
67	504152860	Cap	Bouchon	1		
90	504152896	Sensor	Capteur De Rotation	1		
91	504152949	Housing Bearing	Logement De Roulement	1		
102	504153146	Chaincase Cover Ass'y	Couvercle De Carter À Chaîne Ass.	1		
104	504153166	Countershaft	Arbre De Renvoi	1		
107	504153180	Chaincase	Carter De Chaîne	1		
108	504153185	Bearing Housing	Logement De Roulement	1		
110	504153196	Sprocket, 49 Teeth	Roue Dentée, 49 Dents	1		
116	415080200	Hose, Polyurethane	Boyau, Polyuréthane	1		
118	518325816	Plate	Plaque	2		

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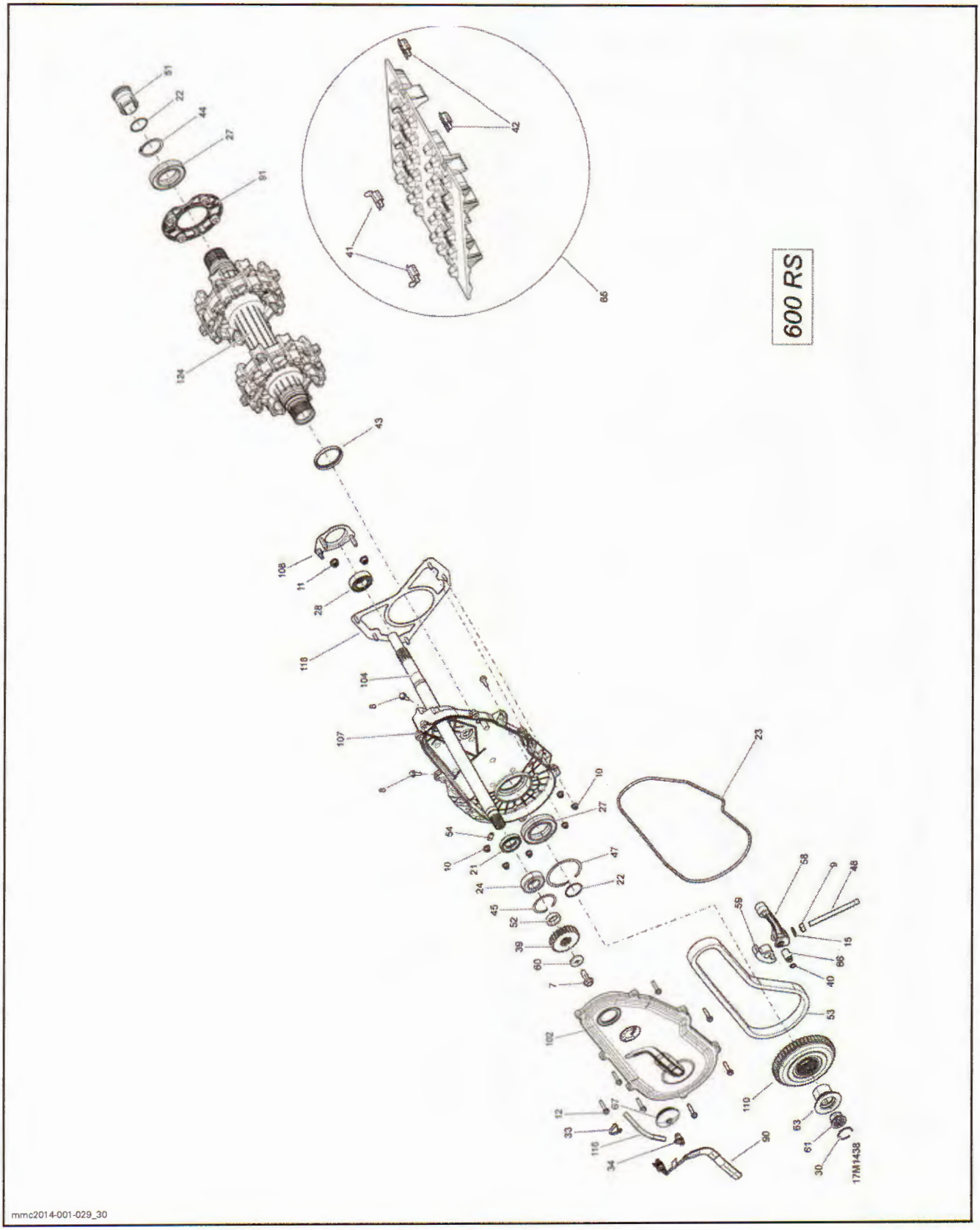

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05- Drive System _17M1438 (17M1438_F)

MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
124	504153084	Drive Axle Ass'y	Arbre d'Entraînement Ass.	1		

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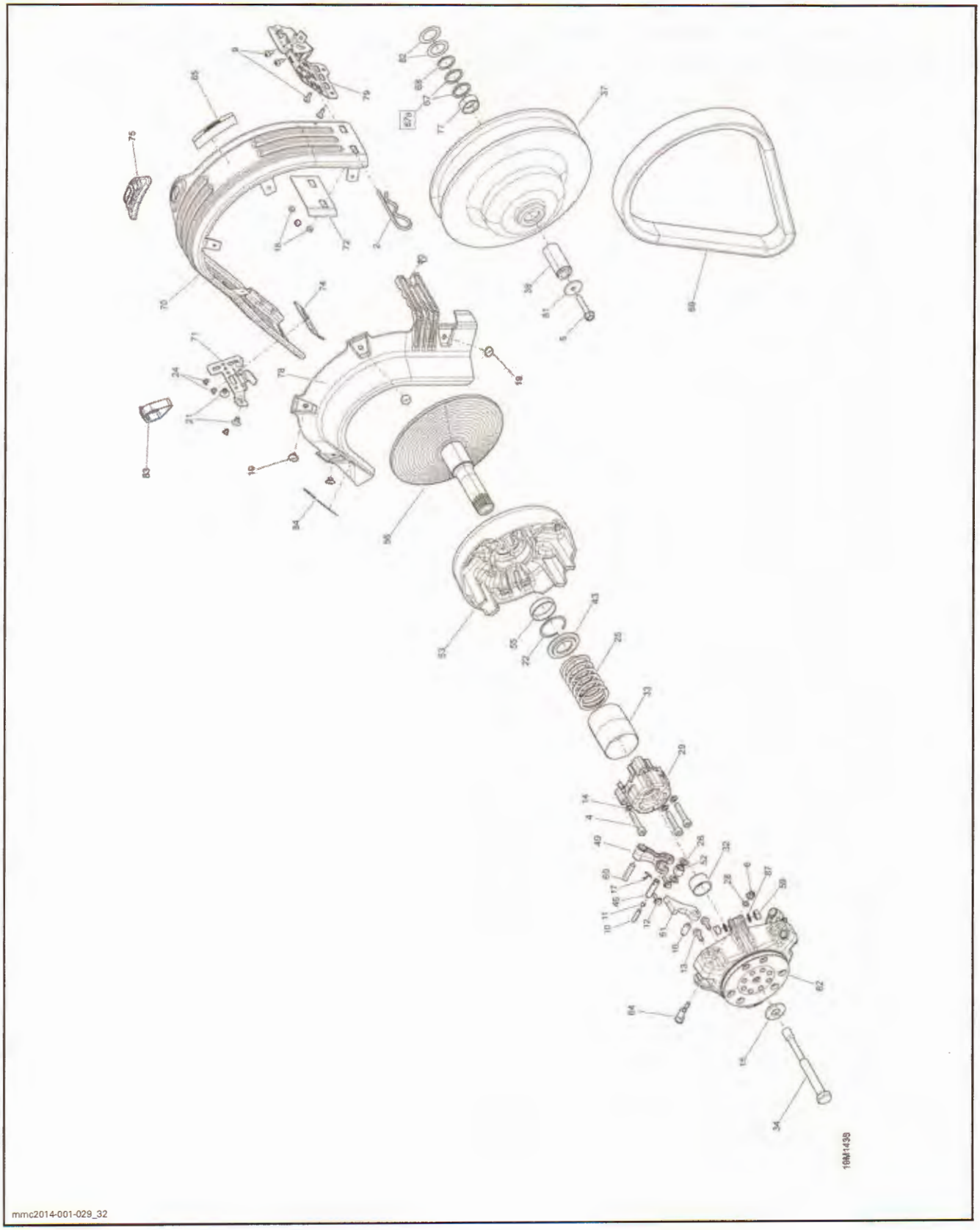

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05- Pulley System _19M1438 (19M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
2	114045200	Hair Pin	Goupille De Sûreté	1		
4	205084044	Socket Head Screw M8 X 40	Vis Creuse À 6 Pans M8 X 40	3		
5	207584544	Hex. Flanged Screw M8 X 45, Scotch Grip	Vis Hex. Épaulement M8 X 45, Scotch Grip	1		
6	233261414	Hex. Flanged Elastic Nut M6	Écrou Hex. Élastique À Épaulement M6	3		
9	250000145	Torx Screw M5 X 14	Vis Hexalobulaire M5 X 14	4		
10	250000408	Screw Socket Set DIN.913 S.Grip	Vis Pression Pointe Plate M6 X 25	1		
11	250000411	Socket Set Screw	Vis À Tête Creuse	3		
12	250000416	Serrated Hex. Flange Bolt M6	Vis Hex. À Épaulement Dentée	6		
13	250000418	Flanged Hex. Screw M6 X 18, Scotch Grip	Vis Hex. Épaulement M6 X 18, Scotch Grip	6		
14	250200009	Lock Washer 8 mm	Rondelle-Frein 8 mm	3		
15	250200144	Conical Spring Washer M14	Rondelle À Ressort Conique M14	1		
16	250400050	Spring Pin M10 X 22	Goupille Ressort M10 X 22	3		
17	250400060	Cotter Pin	Goupille Fendue	3		
18	293150091	Henrob Rivet	Rivet Henrob	3		
19	293150103	Pop Rivet 3/16"	Rivet Pop 3/16"	5		
21	293150104	Pop Rivet 3/16"	Rivet Pop 3/16"	2		
22	293370037	Circlip	Anneau De Retenue	1		
24	390909200	Avex Rivet	Rivet Avex	3		
25	417223610	Racing Spring	Ressort De Course	1		
25	414689800	Clutch Spring	Ressort d'embrayage	1		
26	417004302	Stopper Washer	Rondelle De Butée	6		
28	417005600	Washer	Rondelle	3		
29	417007500	Spring Cover Ass'y	Couvercle De Ressort Ass.	1		
32	417009204	Bushing	Douille	1		
33	417009205	Guard	Protecteur	1		
34	417120000	Drive Pulley Bolt	Boulon De Poulie Motrice	1		
37	417127425	Driven Pulley (Rapid Reaction)	Poulie Menée (Réaction Rapide)	1		
38	417127300	Bushing	Douille	1		
43	417222312	Spring Seat	Siège De Ressort	1		
46	417222595	Threaded Pin, M6	Goupille Filetée, M6	1		
49	417222671	Lever	Levier	3		
52	417222947	Roller	Rouleau	3		
53	417222971	Sliding Flange Ass'y	Flasque Coulissant Ass.	1		
55	417222758	Bushing	Douille	1		
56	417223012	Fixed Flange Ass'y	Flasque Fixe Ass.	1		
59	417223021	Slider Shoe	Glissière	6		
60	417223164	Lever Axle	Axe De Levier	3		
61	417223281	Ramp 443	Rampe 443	3		
62	417223366	Governor Cup Ass'y	Cuvette De Régulateur Ass.	1		
64	417223501	Calibration Screw	Vis De Calibration	3		
67	417300252	Spacer	Entretoise	2		
67a	504149100	Spacer	Entretoise	1		
68	417300265	Spacer	Entretoise	2		
69	417300425	Drive Belt	Courroie d'Entraînement	1		
70	417300357	Belt Guard	Garde Courroie	1		
71	417300360	Front Belt Guard Bracket	Attache Garde-Courroie Avant	1		
72	417300372	Plate	Plaque	1		
74	417300380	Reinforcement	Renfort	1		
75	417300381	Guide	Guide	1		
77	417300399	Spacer	Entretoise	1		
78	417300431	Lateral Protector Ass'y	Protecteur Latéral Ass.	1		

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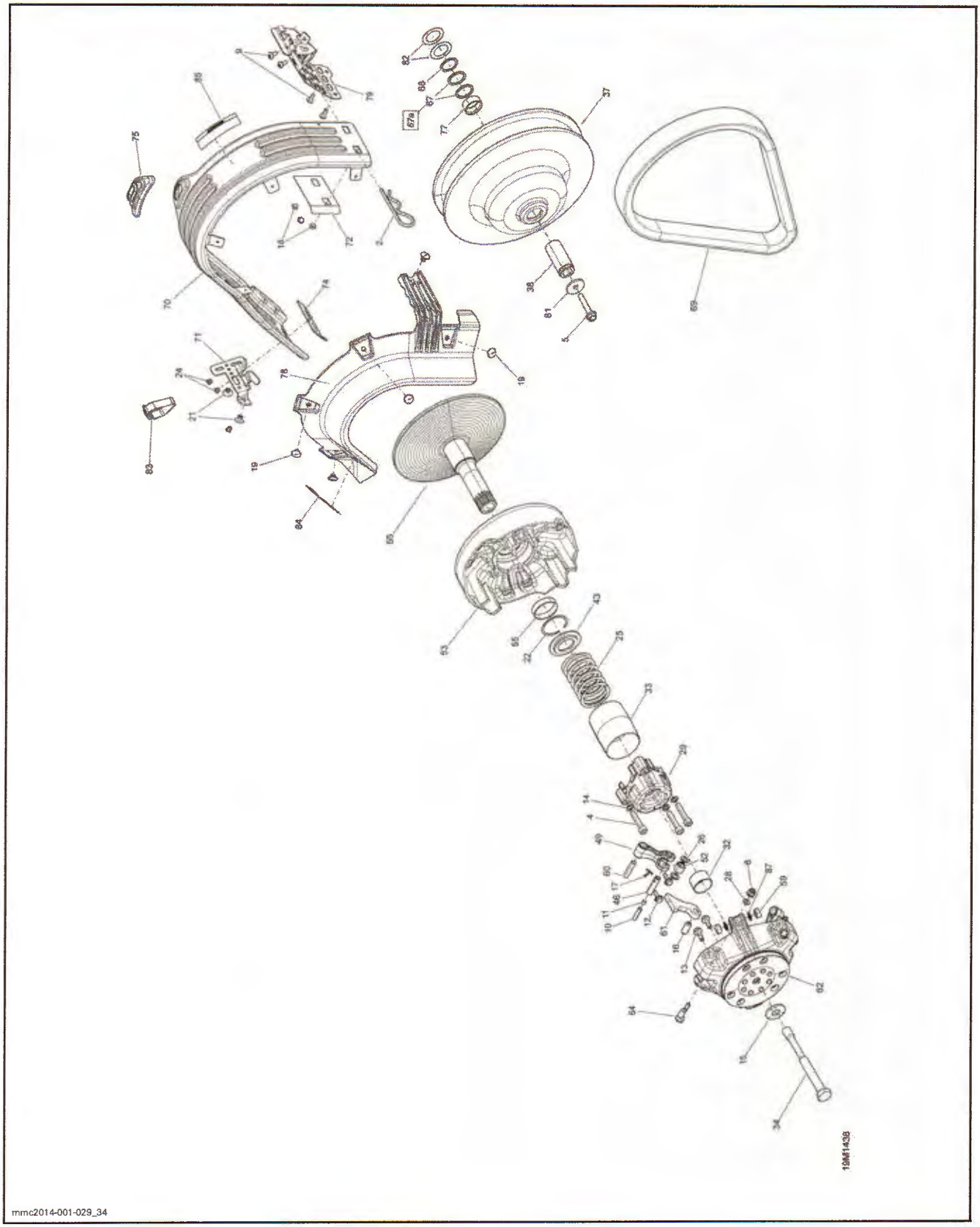

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05- Pulley System _19M1438 (19M1438_F)

MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
79	417300448	Belt Guard Bracket	Attache De Garde-Courroie	1		
81	503183100	Washer	Rondelle	1		
82	504112000	Shim	Cale d'Épaisseur	2		
83	508000599	Velcro Strip	Bande De Velcro	1		
84	516005503	Decal, English	Décalque, Anglais	1		
85	516005509	Safety Belt Guard Decal	Décalque Garde-Courroie	1		
87	732401030	O-Ring	Joint Torique	6		

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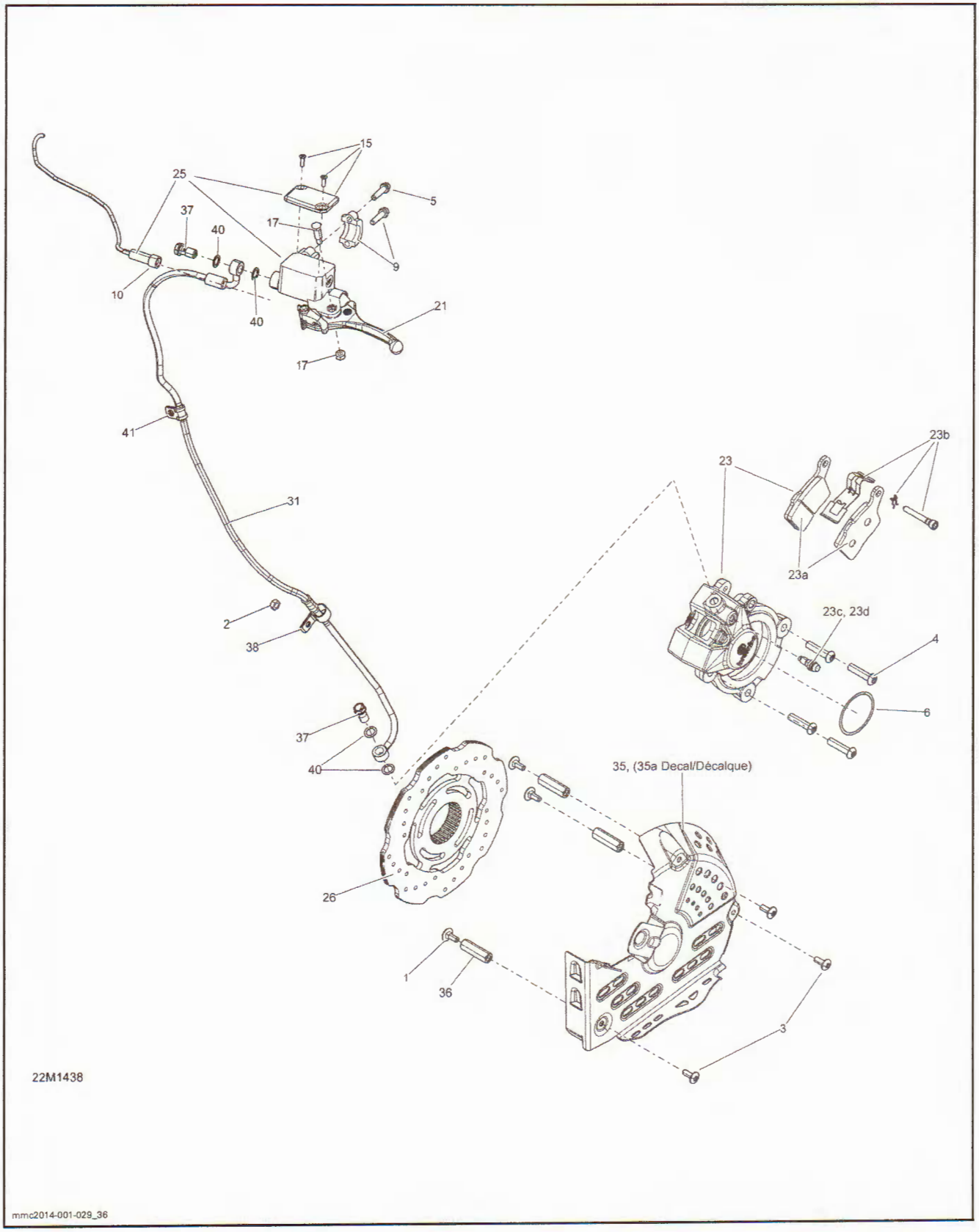

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06- Hydraulic Brakes _22M1438 (22M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	207761644	Carriage Bolt M6 X 16	Boulon De Carrosserie M6 X 16	3		
2	232561414	Elastic Stop Nut M6	Écrou Hex. Élastique M6	1		
3	250000223	Torx Screw M6 X 16	Vis Hexalobulaire Bombée M6 X 16	3		
4	250000301	Torx Screw M8 X 35, Scotch Grip	Vis Hexalobulaire M8 X 35, Scotch Grip	4		
5	250000447	Hex Flanged Screw M6 X 25	Vis Hex À Épaulement M6 X 25	2		
6	293300134	O-Ring	Joint Torique	1		
9	507032477	Clamp And Screw Kit	Ens. Bride Et Vis	1		
9	719000049	Clamps Kit	Ens. De Brides	1		
10	507032526	Microswitch	Micro-Contact	1		
15	415029900	Cap	Capuchon	1		
17	415030000	Pin Ass'y	Axe Ass.	1		
21	507032428	Lever	Levier	1		
23	507032501	Brake Caliper Ass'y	Étrier De Frein Ass.	1		
25	507032511	Cylinder MAster Ass'y	Maître Cylindre Ass.	1		
26	507032513	Disk	Disque	1		
31	507032528	Hose	Boyau	1		
35	507032531	Disk Protector, Aluminum	Protecteur De Disque, Aluminium	1		
36	507032533	Threaded Tube	Tube Fileté	3		
37	507032551	Banjo Bolt	Boulon Banjo	2		
38	518321570	Open Clamp	Attache Collier	1		
40	705600310	Copper Washer	Rondelle De Cuivre	4		
41	705600459	Clamp	Attache	1		
23a	507032489	Brake Pads Kit	Ens. De Plaquette De Frein	1		
23b	507032474	Pin, Clip & Spring Kit	Ens., Tige, Attache, Ressort	1		
23c	507032475	Bleeder	Vis De Purge	1		
23d	414989700	Boot	Capuchon	1		
35a	516005525	Warning Decal	Décalque Avertissement	1		
700	204470108	Fan Ass'y	Ventilateur Ass.	1		

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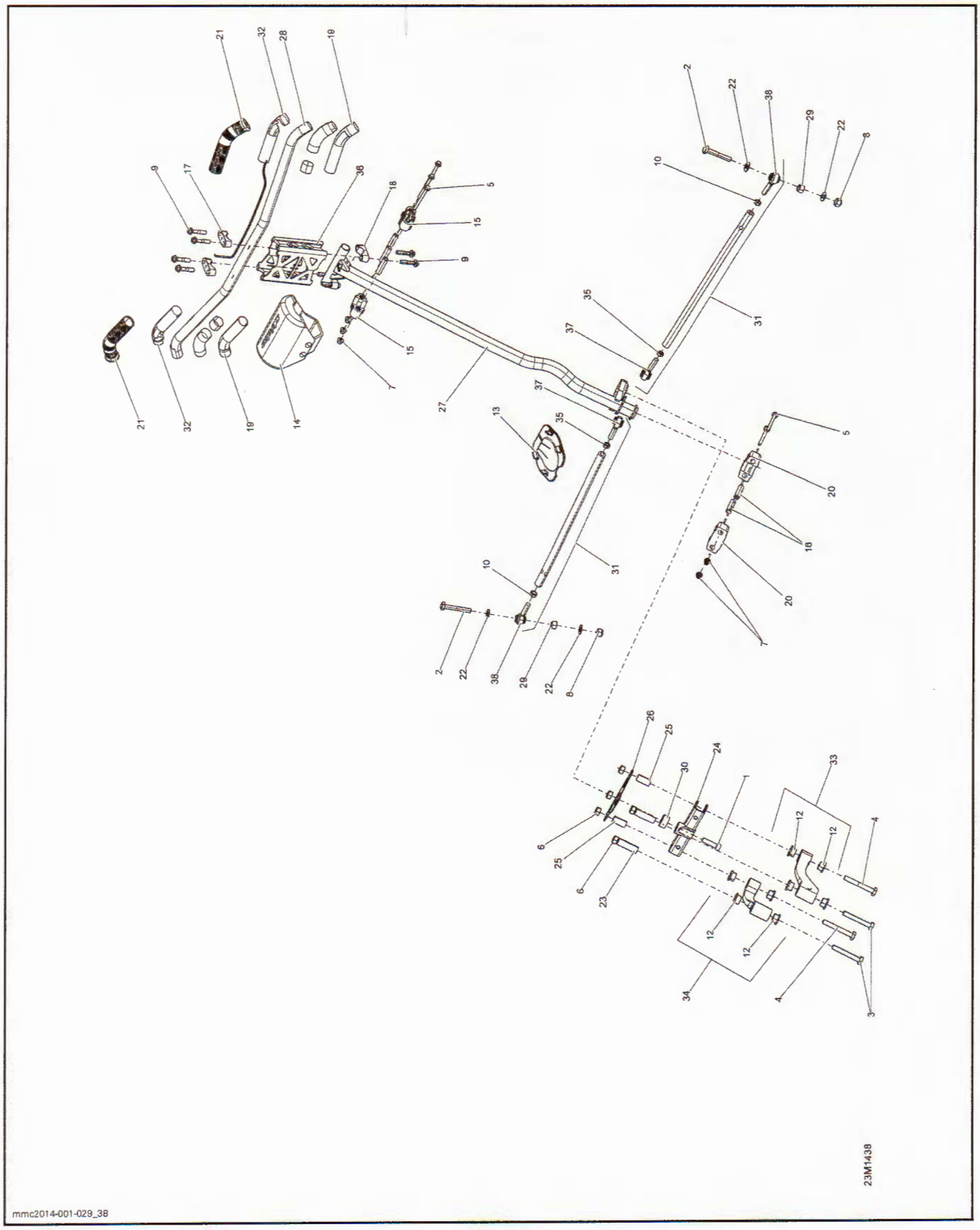

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07- Steering _23M1438 (23M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	205003544	Socket Screw M10 X 35	Vis Creuse À 6 Pans M10 X 35	1		
2	207006544	Hex. Screw M10 X 65	Vis Hex. M10 X 65	2		
3	207007044	Hex. Screw M10 X 70	Vis Hex. M10 X 70	2		
4	207007544	Hex. Screw M10 x 75	Vis Hexagonale M10 X 75	2		
5	207667086	Hex. Flanged Screw M6 x 70	Vis Hex. À Épaulement M6 x 70	5		
6	232500416	Elastic Stop Nut M10	Écrou Hex. Élastique M10	5		
7	233261416	Elastic Flanged Nut M6	Écrou Élastique À Épaulement M6	5		
8	233601466	Elastic Locking Nut M10	Écrou Autofreiné Élastique M10	2		
9	250000352	Hex. Flange Screw M8 X 40	Vis Hexagonale À Epaulement M8 X 40	8		
10	250100016	LH Hex. Jam Nut M10	Contre-Écrou Hex. M10 GA	1		
12	505072690	Leg Cushion	Coussinet De Jambe	8		
13	506152163	Plate	Plaque	1		
14	506152522	Steering Pad	Coussinet De Sécurité	1		
15	506152293	Half-Housing	Demi Logement	2		
16	506152297	Housing Bushing	Douille De Logement	5		
17	506152395	Steering Support	Support De Guidon	2		
18	506152395	Steering Support	Support De Guidon	2		
19	506152548	Insulant	Isolant	2		
20	506152549	Lower Half-Housing	Demi-Logement Inférieur	2		
21	506152560	Grip 148mm	Gaine 148mm	2		
22	506152582	Washer	Rondelle	4		
23	506152691	Swivel Pivot	Pivot De Bras	2		
24	506152693	Welded Swivel Bar	Barre Pivotante Soudée	1		
25	506152696	Swivel Pivot	Pivot De Bras	2		
26	506152697	Plate	Plaque	1		
27	506152699	Main Tube	Arbre De Direction	1		
28	506152712	Hand Bar (Painted)	Guidon Peint	1		
29	506152713	Washer	Rondelle	2		
30	506152714	Bearing	Roulement	1		
31	506152715	Rod Ass'y	Barre D'Accouplement Ass.	2		
32	506152674	Heating Element 20 WATT	Élément Chauffant 20 WATT	2		
33	506152719	LH Swivel Arm Ass'y	Bras Pivotant GA Ass.	1		
34	506152720	RH Swivel Arm Ass'y	Bras Pivotant DR Ass.	1		
35	732610010	RH Hex. Jam Nut M10	Contre-Écrou Hex. M10 DR	1		
36	506152616	Handlebar Extension, Black	Extension De Guidon, Noir	1		
37	506152081	LH Ball Joint	Joint À Rotule GA	1		
38	506152019	RH Ball Joint	Joint À Rotule DR	1		

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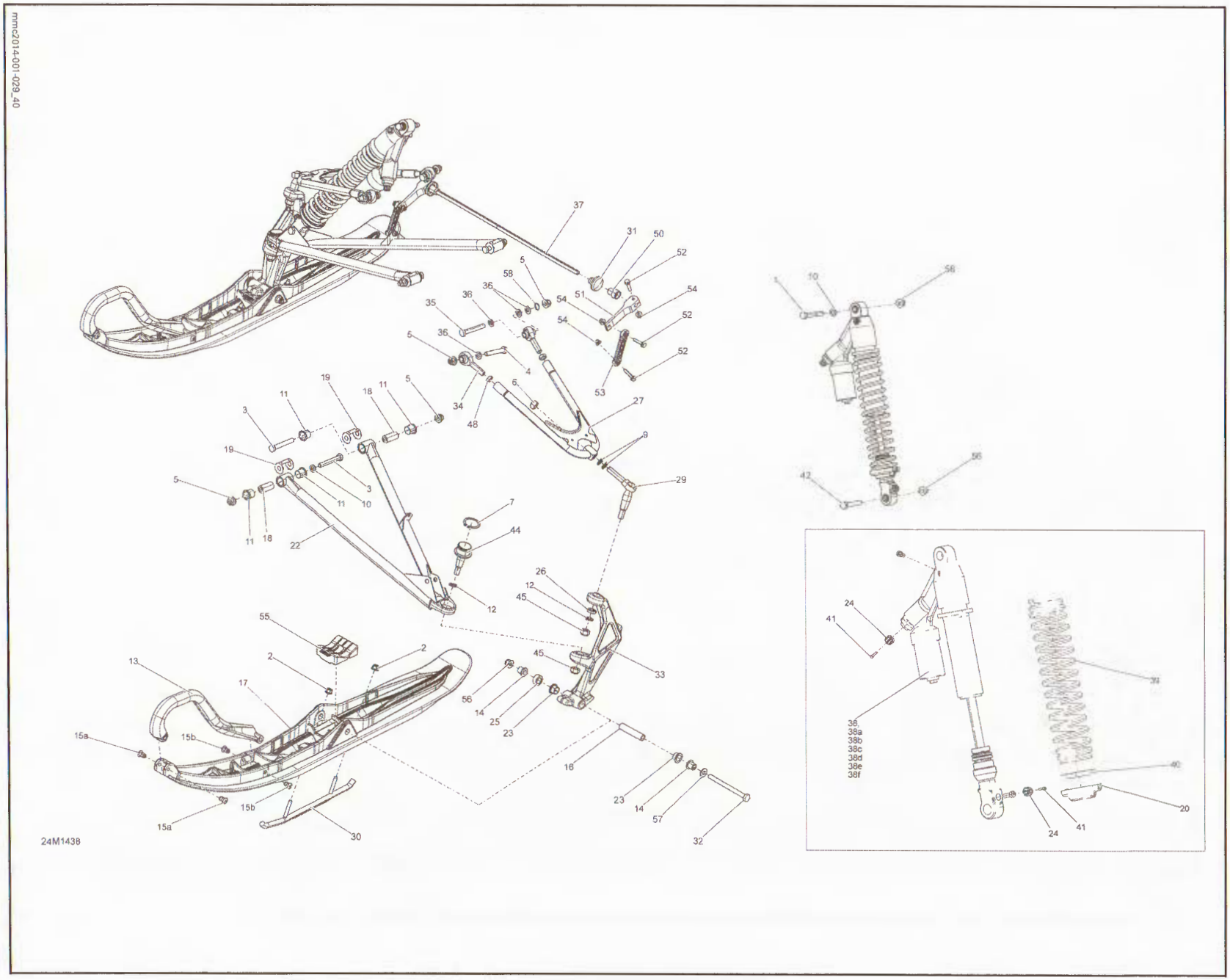
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07- Front Suspension And Ski _24M1438 (24M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	207006544	Hex. Screw M10 X 65	Vis Hex. M10 X 65	2		
2	233281414	Hex. Flanged Elastic Nut M8	Écrou Élastique Hex. À Épaulement M8	4		
3	250000291	Screw Hex. M10 X 70	Vis Hex. M10 X 70	4		
4	250000387	Screw Hex. M10 X 65	Vis Hex. M10 X 65	2		
5	250100165	Hex. Flanged Elastic Nut M10	Écrou Hex. À Épaulement Élastique M10	8		
6	250100089	Hex. Elastic Hex. Nut M12	Écrou Élastique Hex. M12	2		
7	293370035	Circlip	Circlip	2		
9	503189276	Washer	Rondelle	4		
10	503189564	Washer	Rondelle	4		
11	503191766	Cushion	Coussinet	8		
12	503192491	Washer	Rondelle	4		
13	505073138	Handle, Black	Poignée, Noir	1		
14	505071781	Cushion	Coussinet	2		
15a	505071812	Retainer	Attache De Poignée	2		
15b	505072133	Retainer	Attache	2		
16	506133300	Spacer	Entretoise	2		
17	505072205	Pilot Ski 5.7X	Ski Pilot 5.7X	1		
18	505072401	Aluminum Bushing	Douille d'Aluminium	4		
19	505072634	Wear Plate	Plaque d'Usure	4		
20	505072635	Spring Stopper	Butée De Ressort	2		
22	505072654	RH Lower Arm	Bras Inférieur DR	1		
22	505072655	LH Lower Arm	Bras Inférieur GA	1		
23	505072690	Leg Cushion	Coussinet De Jambe	4		
24	505072753	Adjustment Knob	Bouton d'Ajustement	4		
25	505072807	Spacer	Entretoise	2		
26	505073506	Spacer	Entretoise	2		
27	505073527	LH Upper Arm	Bras Supérieur GA	1		
27	505073528	RH Upper Arm	Bras Supérieur DR	1		
29	505073561	Upper Ball Joint	Joint A Rotule Supérieur	2		
30	860201043	Round Carbide Runner	Lisse Ronde Au Carbure	2		
31	572091300	Cap	Bouchon	2		
32	230003054	Hex Screw M10 X 130	Vis Hex. M10 X 130	2		
33	505073362	LH Leg Ski, Black	Jambe De Ski GA, Noir	1		
33	505073363	RH Leg Ski, Black	Jambe De Ski DR, Noir	1		
34	505073532	Ball Joint	Joint A Rotule	4		
35	250000387	Screw Hex. M10 X 65	Vis Hex. M10 X 65	2		
36	234001410	Flat Washer 10 mm	Rondelle Plate 10 mm	8		
37	505072602	Stabilisator	Stabilisateur	1		
38	505073270	RH Front Shock Ass'y	Amortisseur Avant DR Ass.	2	Includes 38a To 38f	Inclus 38a à 38f
38a	415093807	O-Ring	Joint Torique	2		
38b	415093806	Piston Ring	Bague	2		
38c	505070398	Air Valve	Soupape À Air	2		
38d	505070399	Screw	Vis	2		
38e	505070400	O-Ring	Joint Torique	2		
38f	415093804	O-Ring	Joint Torique	2		
39	505073537	Spring	Ressort	2		
40	706200793	Cap	Capuchon	2		

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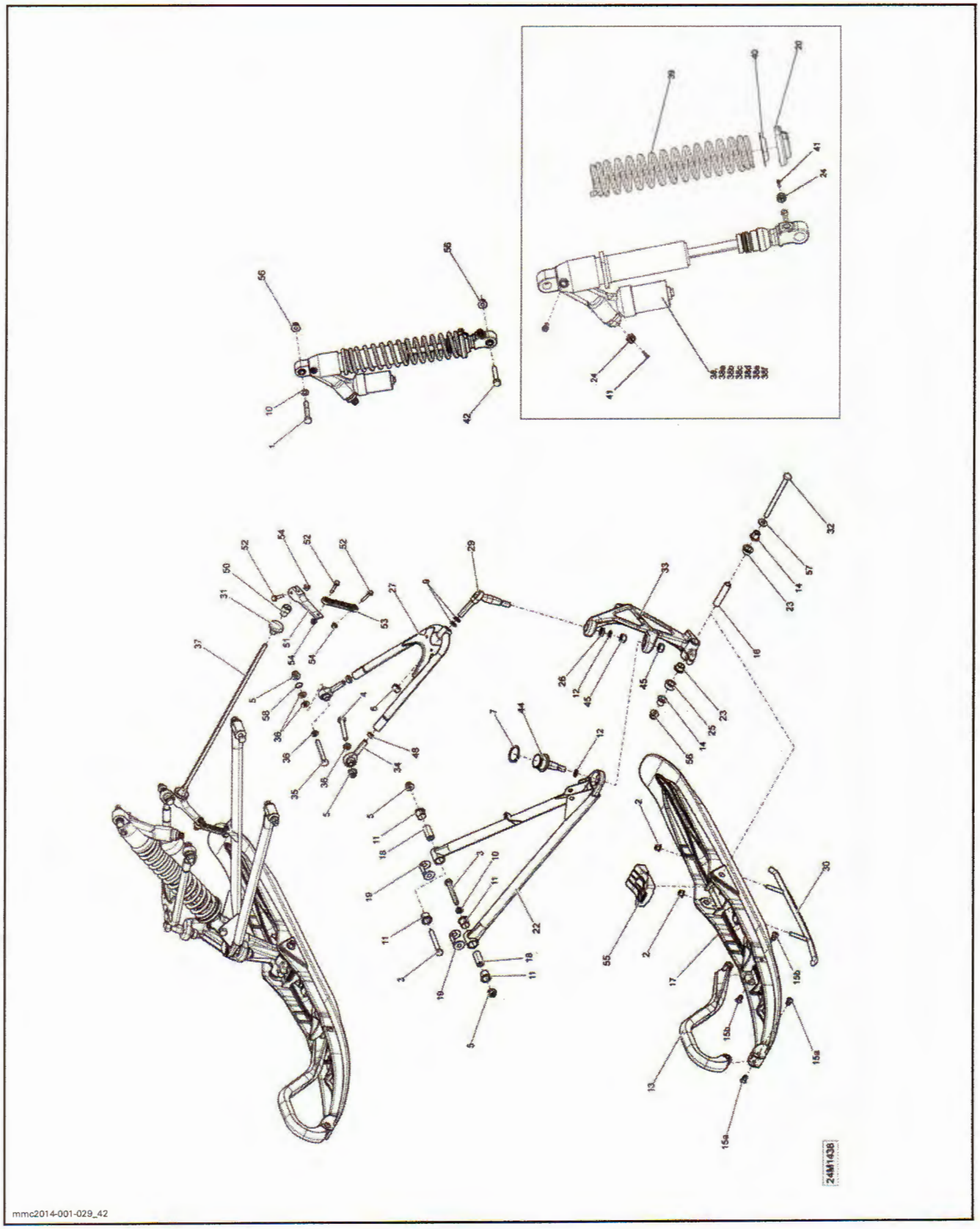

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07- Front Suspension And Ski _24M1438 (24M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
41	250000644	Allen Screw M3 X 10	Vis Allen M3 X 10	4		
42	207005554	Hex Screw M10 X 55	Vis Hex. M10 X 55	2		
44	505072682	Lower Ball Joint	Joint À Rotule Inférieur	2		
45	232521464	Hex Elastic Nut M12	Écrou Élastique Hex M12	4		
48	732610019	RH Hex. Jam Nut M12	Contre-écrou Hex. M12 DR	4		
50	505072064	Bushing	Coussinet	2		
51	505072394	Stabilisator Lever	Levier Stabilisateur	2		
52	207663056	Hex Flanged Screw M6 X 30	Vis Hex.a Épaulement M6 X 30	2		
53	505072204	Double Ball Joint Link	Joint À Rotule Double	2		
54	233261466	Hex. Flanged Elastic Nut M6	Écrou Hex. À Épaulement Élastique M6	6		
55	505072594	Ski Stopper	Butée De Ski	2		
56	233201464	Hex. Elast. Flanged Nut M10	Écrou Épaul. Hex, Élast. M10	6		
57	503192496	Washer	Rondelle	2		

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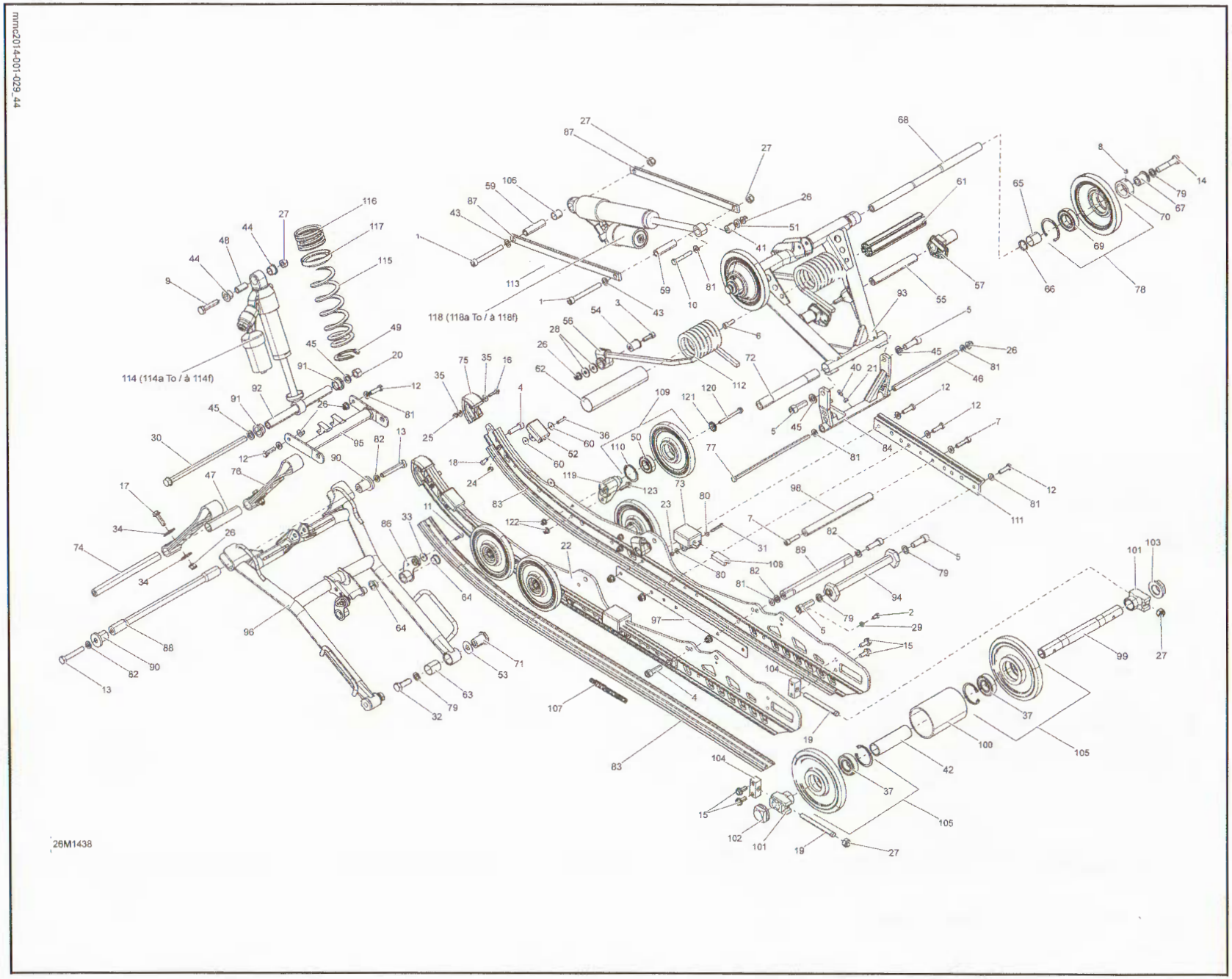

08- Rear Suspension _26M1438 (26M1438_F)

MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	205009044	Socket Screw M10 X 90	Vis Creuse 6 Pans M10 X 90	2		
2	205061260	Socket Head Screw M6 X 12	Vis Creuse À 6 Pans M6 X 12	1		
3	205082554	Socket Screw M8 X 25	Vis Creuse M8 X 25	2		
4	205503554	Socket Head Screw M10 X 35	Vis À Tête Creuse M10 X 35	4		
5	205523587	Socket Head Screw Scotch Grip Din.912	Vis Creuse 6 Pans Scotch Grip DIN.912	4		
6	205582544	Socket Head Screw M8 X 25, Scotch Grip	Vis Creuse 6 Pans M8 X 25, Scotch Grip	4		
7	205583544	Socket Head Screw M8 X 35, Scotch Grip	Vis Creuse À 6 Pans M8 X 35, Scotch Grip	2		
8	206260844	Socket Set Screw M6 X 8	Vis De Pression M6 X 8	2		
9	207005044	Hex. Screw M10 X 50	Vis Hex. M10 X 50	1		
10	207085586	Hex. Screw M8 X 55	Vis Hexagonale M8 X 55	1		
11	207152044	Hex. Screw M5 X 20	Vis Hex. M5 X 20	2		
12	207183054	Hex. Cap Screw M8 X 30	Vis Hex. M8 X 30	8		
13	207206534	Hex. Screw M10 X 65, Scotch Grip	Vis Hex. M10 X 65, Scotch Grip	2		
14	207226044	Hex. Screw M12 X 60, Scotch Grip	Vis Hex. M12 X 60, Scotch Grip	2		
15	207582044	Hex. Flanged Screw M8 X 20, Scotch Grip	Vis Hex. Épaulement M8 X 20, Scotch Grip	4		
16	207652544	Hex. Flanged Screw M5 X 25	Vis Hex. À Épaulement M5 X 25	2		
17	207683044	Hex. Flanged Screw M8 X 30	Vis Hex. À Épaulement M8 X 30	2		
18	208562531	Phillips Screw M6 X 25	Vis Cruciforme M6 X 25	1		
19	230100054	Hex Screw M10 x 100	Vis Hexagonal M10 x 100	2		
20	232021416	Hex. Nut M12	Écrou Hex. M12	1		
21	232061404	Hexagonal Nut	Écrou hexagonal	1		
22	503193602	Runner, Black	Rail, Noir	1		
23	232551414	Elastic Stop Nut M5	Écrou Hex. Élastique M5	2		
24	232561414	Elastic Stop Nut M6	Écrou Hex. Élastique M6	1		
25	233251414	Hex. Flanged Elastic Nut M5	Écrou Hex. À Épaulement Élastique M5	2		
26	233281466	Elastic Flang Nut M8	Écrou À Épaulement Élastique M8	14		
27	233601466	Elastic Locking Nut M10	Écrou Autofreiné Élastique M10	5		
28	234082410	Flat Washer 8 mm	Rondelle Plate 8 mm	4		
29	234161471	Lock Washer M6, Black	Rondelle-Frein M6, Noir	1		
30	250000229	Hex. Screw M12 X 252	Vis Hex. M12 X 252	1		
31	250000483	Hex. Cap Screw M5 X 35	Vis Hexagonale M5 X 35	2		
32	250000537	Hex. Cap Screw M12 X 35	Vis Hex. M12 X 35	2		
33	250200016	Washer	Rondelle	2		
34	250200128	Flat Washer 8 mm	Rondelle plate 8 mm	4		
35	250200140	Washer	Rondelle	4		
36	293150013	Pop Rivet 3/16"	Rivet Pop 3/16"	2		
37	293350055	Ball Bearing	Roulement À Bille	1		
40	408200700	Grease Fitting	Raccord De Graissage	2		
41	414936000	Cushion	Coussinet	1		
42	503156000	Center Spacer	Entretoise Central	1		
43	503175800	Washer	Rondelle	2		
44	503189117	Cushion	Coussinet	2		
45	503189148	Washer	Rondelle	4		
46	503189156	Pivot Arm Axle	Axe De Jumelle	1		
47	503189265	Spacer	Entretoise	1		
48	503189282	Bushing	Douille	1		
49	503190271	Spring Stopper	Butée De Ressort	1		
50	503190396	Ball Bearing	Roulement À Billes	1		
51	503190526	Spacer	Espaceur	1		
52	503190576	Rubber Stopper	Butée De Caoutchouc	2		
53	503190656	Washer	Rondelle	2		
54	503190754	Retainer Cushion	Coussinet De Retenue	2		
55	503191178	Spring Cam Axe	Axe Came De Ressort	1		

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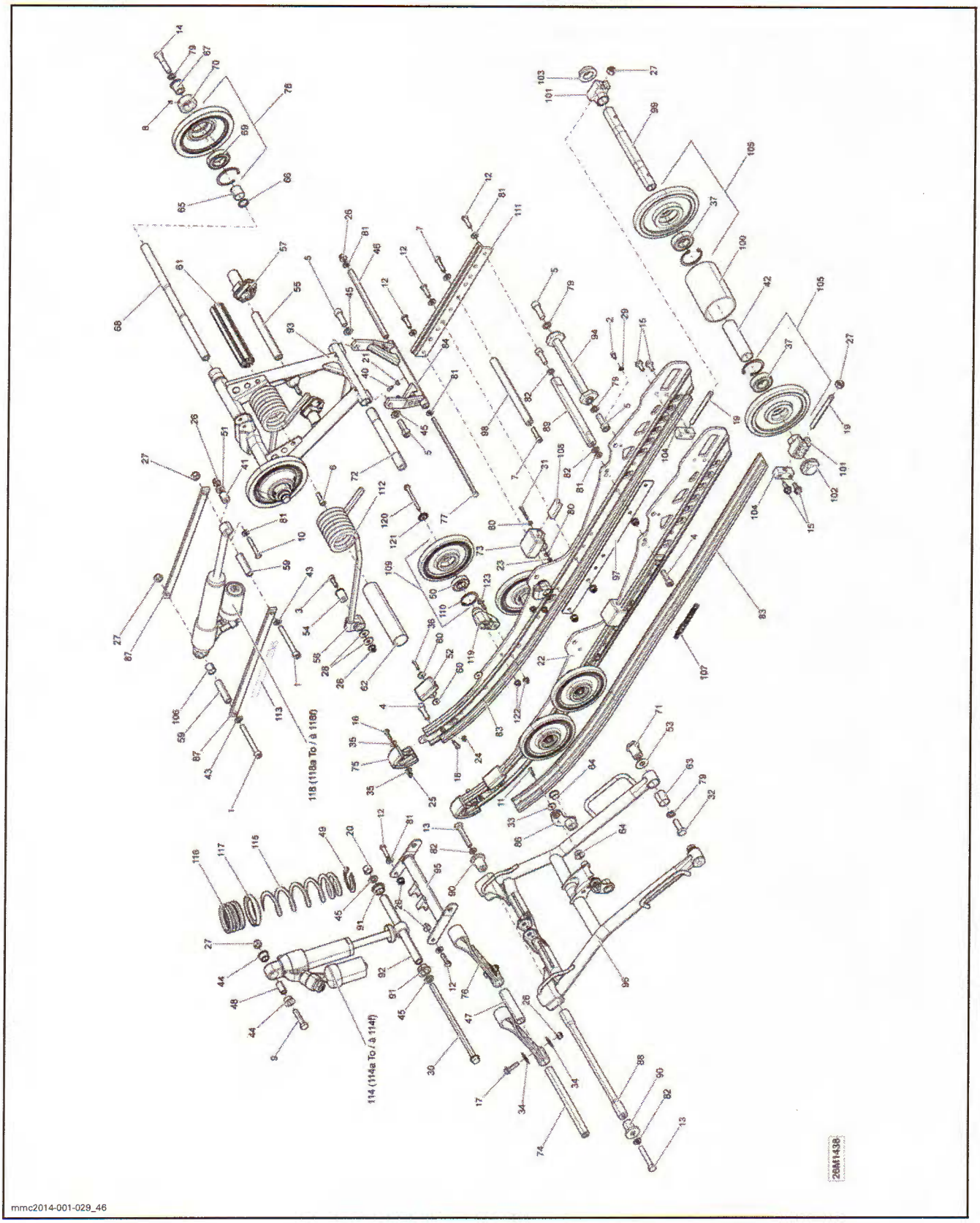

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08- Rear Suspension _26M1438 (26M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
56	503191183	Spring Support	Support De Ressort	2		
57	503191191	LH Spring Cam	Came De Ressort GA	1		
57	503191190	RH Spring Cam	Came De Ressort DR	1		
59	503191192	Bar Axle	Axe Des Tiges	2		
60	503191273	Washer	Rondelle	4		
61	503191344	Spring Axle	Axe De Ressort	1		
62	503191345	Plastic Bushing	Douille De Plastique	1		
63	503191554	Bushing	Coussinet	2		
64	503191555	Swivel Bushing	Coussinet De Pivot	6		
65	503191773	Bushing	Coussinet	2		
66	503191774	Washer	Rondelle	2		
67	503191775	Bushing	Coussinet	2		
68	503191776	Upper Shaft	Axe Supérieur	1		
69	503191778	Ball Bearing	Roulement À Billes	1		
70	503191782	Retaining Ring	Bague d'Appui	2		
71	503191966	Lower Axle	Axe Inférieur	2		
72	503192095	Lower Shaft	Axe Inférieur	1		
73	503192099	Rubber Stopper	Butée De Caoutchouc	1		
74	503192115	Runner Axel	Axe De Rails	1		
75	503192299	Runner Protector	Protecteur De Rail	2		
76	503192360	Stopper Strap	Courroie d'Arrêt	2		
77	503192440	Bolt M8 X 248mm	Boulon M8 X 248	1		
78	503192483	Wheel 155	Roue 155	2		
79	503192491	Washer	Rondelle	6		
80	503192493	Washer	Rondelle	4		
81	503192494	Washer	Rondelle	13		
82	503192496	Washer	Rondelle	6		
83	503192618	Slider 154	Glissière 154	1		
84	503192701	Pivot Arm	Jumelle	1		
86	503192706	LH Rocker Arm	Culbuteur GA	1		
86	503192707	RH Rocker Arm	Culbuteur DR	1		
87	503192712	Tie Rod	Tige d'Accouplement	2		
88	503192713	Slide Bushing	Axe De Glissement	1		
89	503192715	Limit Axle	Axe Limiteur	1		
90	503192721	Bushing	Coussinet	2		
91	503192726	Cushion	Coussinet	2		
92	503192809	Center Shaft Pivot	Arbre De Pivot Central	1		
93	503193126	Rear Arm	Bras Arrière	1		
94	503193129	Axle Cam	Axe De Came	1		
95	503193285	Adjusted Reinforcement	Renfort Ajusté	1		
96	503193685	Front Arm Ass'y	Bras Avant Ass.	1		
97	503193690	Reinforcement	Renfort De Rail Intérieur	2		
98	503193691	Axle	Axe	1		
99	503193692	Rear Axle	Essieu Arrière	1		
100	503193693	Bushing	Douille	1		
101	503193694	Spacer	Entretoise	2		
102	503193695	Nut	Ecrou	1		
103	503193696	Nut	Ecrou	1		
104	503193697	Tensioner	Tendeur	2		
105	503193719	Wheel 165 Ass'y, Black	Roue 165 Ass., Noire	2		
106	505072663	Leg Cushion	Coussinet De Jambe	1		
107	516004755	Runner Decal	Décalque De Rail	2		
108	572084800	Reinforcement Stopper	Renfort De Butée	1		

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08- Rear Suspension _26M1438 (26M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
109	503191316	Wheel 141 Ass'y	Roue 141 Ass.	1		
110	415129371	Retaining Ring	Anneau De Retenue	1		
111	503193855	Reinforcement, Black	Renfort De Rail, Noir	2		
112	503191617	LH Spring, Square	Ressort GA, Carré	1		
112	503191616	RH Spring, Square	Ressort DR, Carré	1		
113	516005609	Shock Position Decal	Décalque De Position d'Amortisseur	1		
114	503193750	Center Shock	Amortisseur Central	1	Includes 114a To 114f	Inclus 114a à 114f
114a	415093807	O-Ring	Joint Torique	1		
114b	415093806	Piston Ring	Bague	1		
114c	505070398	Air Valve	Soupape À Air	1		
114d	505070399	Screw	Vis	1		
114e	505070400	O-Ring	Joint Torique	1		
114f	415093804	O-Ring	Joint Torique	1		
115	503192724	Spring	Ressort	1		
116	503193751	Spring	Ressort	1		
117	503193131	Spring Spacer	Espaceur De Ressort	1		
118	503193752	Rear Shock	Amortisseur Arrière	1	Includes 118a To 118f	Inclus 118a à 118f
118a	415093807	O-Ring	Joint Torique	1		
118b	415093806	Piston Ring	Bague	1		
118c	505070398	Air Valve	Soupape À Air	1		
118d	505070399	Screw	Vis	1		
118e	505070400	O-Ring	Joint Torique	1		
118f	415093804	O-Ring	Joint Torique	1		
119	503193082	Casted Support	Support Moulée	4		
120	207667056	Hex. Flange Screw M6 X 70	Vis Hex. À Épaulement M6 X 70	4		
121	503191820	Wheel Cup M6	Coupole De Roue M6	4		
122	233261466	Hex. Flanged Elastic Nut M6	Écrou Hex. À Épaulement Élastique M6	8		
123	207662556	Hex. Flange Screw M6 X 25	Vis Hex. À Épaulement M6 X 25	4		

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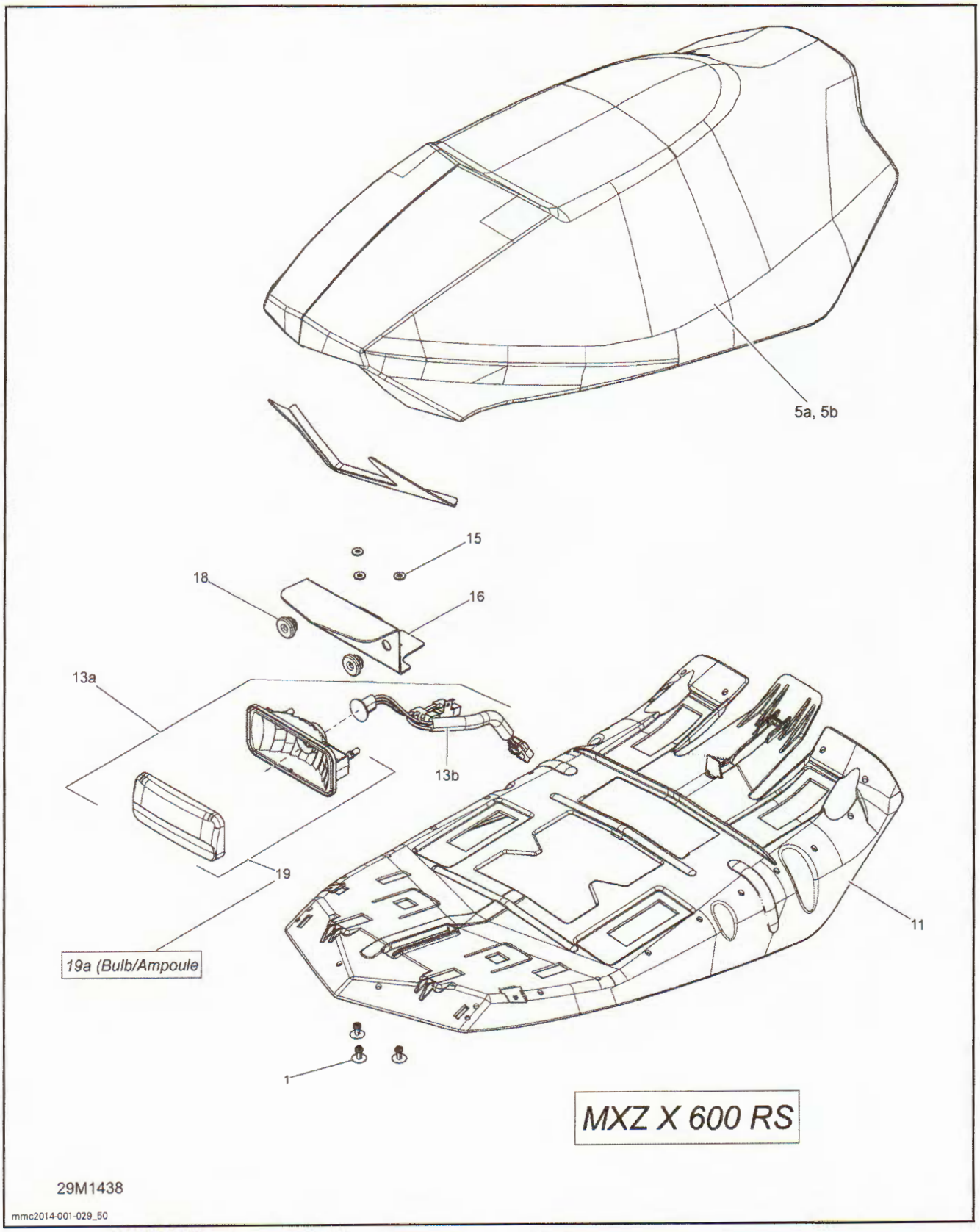
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09- Seat _29M1438 (29M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	293150104	Pop Rivet 3/16"	Rivet Pop 3/16"	3		
5a	510005122	Seat Foam	Mousse De Siège	1		
5b	510005403	Seat Cover	Housse De Siège	1		
6	N/A	Not available for this vehicle	Non disponible pour ce véhicule	1		
8	N/A	Not available for this vehicle	Non disponible pour ce véhicule	1		
10	N/A	Not available for this vehicle	Non disponible pour ce véhicule	1		
11	510005407	Seat Base	Base De Siège	1		
13a	511000507	Rear Light Ass'y	Feu Arrière Ass.	1		
13b	511000508	Wiring Harness	Câblage	1		
15	517297900	Flat Washer	Rondelle Plate	3		
16	520000890	Support	Support	1		
18	705003666	Rubber Grommet	Bague De Caoutchouc	2		
19	710000652	Rear Lens Box	Boîtier Feu Arrière	1		
19a	710000653	Bulb	Ampoule	1		

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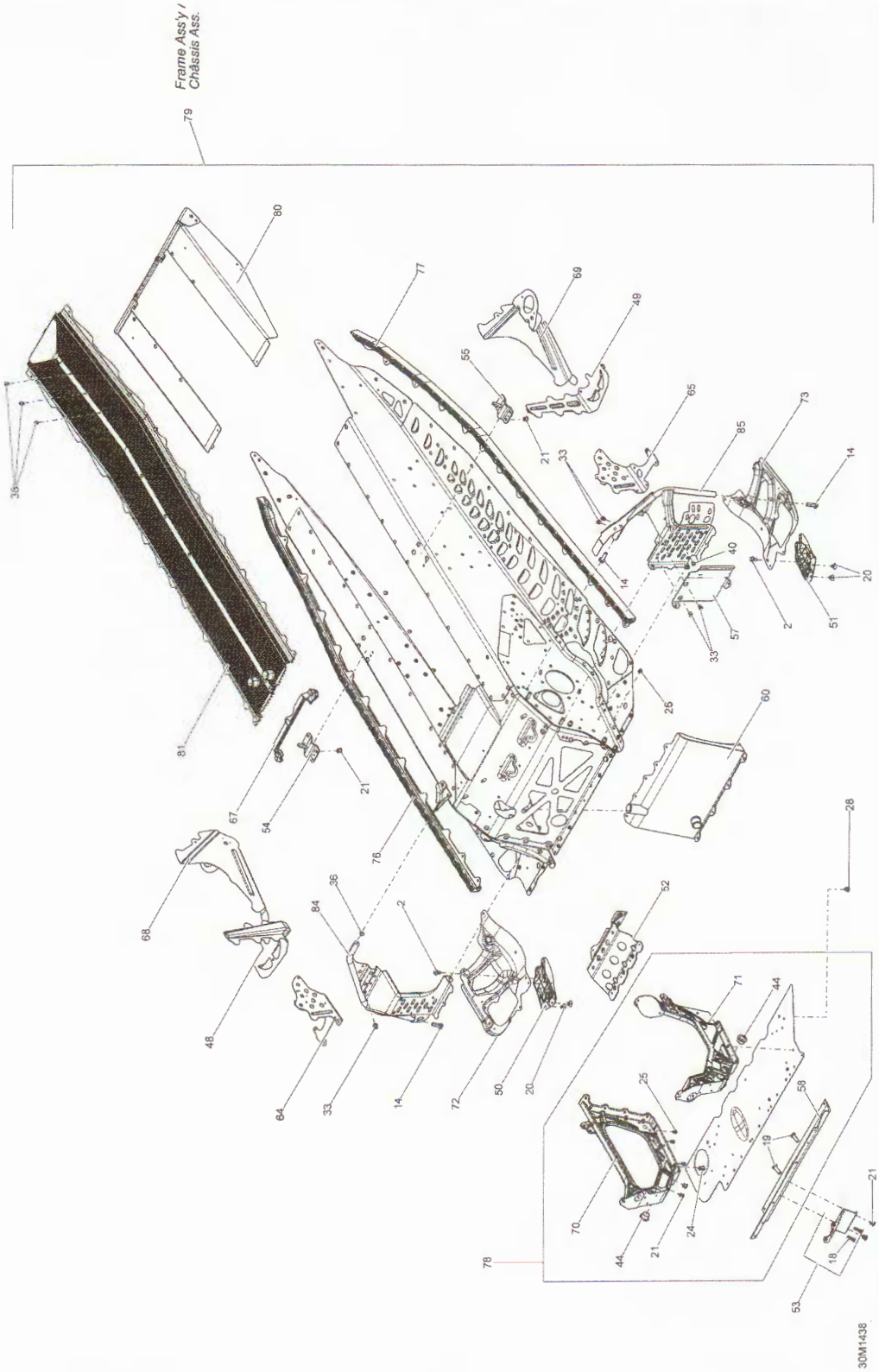

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09- Frame _30M1438 (30M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
2	207561244	Hex. Flanged Screw M6 X 12, Scotch Grip	Vis À Épaulement M6 X 12, Scotch Grip	2		
14	250000248	Torx Screw M8 X 25, Scotch Grip	Vis Hexalobulaire M8 X 25, Scotch Grip	3		
18	250300027	Clinch Stud M6 X 20	Goujon À Sertir M6 X 20	4		
19	250300038	Clinch Stud	Goujon À Sertir M8 X 25	4		
20	293150104	Pop Rivet 3/16"	Rivet Pop 3/16"	4		
21	293150119	Hemlock Rivet, 6.5 mm	Rivet Hemlock, 6.5 mm	@		
24	293150120	Hemlock Rivet 6.5 mm	Rivet Hemlock 6.5 mm	@		
25	293150144	Stavex Rivet	Rivet Stavex	@		
26	293150146	Henrob Rivet	Rivet Henrob	12		
28	293150174	Hemlock Rivet, 6.4 mm	Rivet Hemlock, 6.4 mm	1		
33	293450268	Insert	Ajout	5		
36	293730042	Dart	Dard	1		
38	390909100	Avex Rivet	Rivet Avex	3		
40	390909200	Avex Rivet	Rivet Avex	@		
44	505073317	Leg Cushion	Coussinet De Jambe	4		
48	518325747	RH Reinforcement	Renforcement DR	1		
49	518325748	LH Reinforcement	Renforcement GA	1		
50	518325782	RH Deflector	Déflecteur De Renfort DR	1		
51	518325783	LH Deflector	Déflecteur De Renfort GA	1		
52	518325796	Link Cross	Traverse Centrale	1		
53	518325943	MAG Engine Support	Support De Moteur MAG	1		
54	518325973	RH Rear Base	Base Arrière DR	1		
55	518325974	LH Rear Base	Base Arrière GA	1		
57	518326188	Plate	Plaque	1		
58	518326198	Front Member	Traverse Avant	2		
60	518326486	Front Radiator	Radiateur Avant	1		
64	518326616	RH Front Retainer	Attache Avant DR	1		
65	518326617	LH Front Retainer	Attache Avant GA	1		
67	518326656	Seal	Joint Étanche	1		
68	518326766	RH Rear Support	Attache Arrière DR	1		
69	518326767	LH Rear Support	Attache Arrière GA	1		
70	518326795	RH Member	Longeron DR	2		
71	518326796	LH Member	Longeron GA	2		
72	518326937	RH Reinforcement	Renfort De Marche-Pied DR	1		
73	518326938	LH Reinforcement	Renfort De Marche-Pied GA	1		
76	518327187	RH Roller	Rouleau DR	1		
77	518327188	LH Roller	Rouleau GA	1		
78	518327567	Front E Module	Module E Avant	1		
79	415129852	Frame Ass'y	Châssis Ass	1		
80	518327624	Rear Cap	Capuchon Arrière	1		
81	518327632	Rear Welded Radiator	Radiateur Arrière Soudé	1		
84	518327841	RH Stirup	Étrier DR	1		
85	518327937	LH Stirup	Étrier GA	1		

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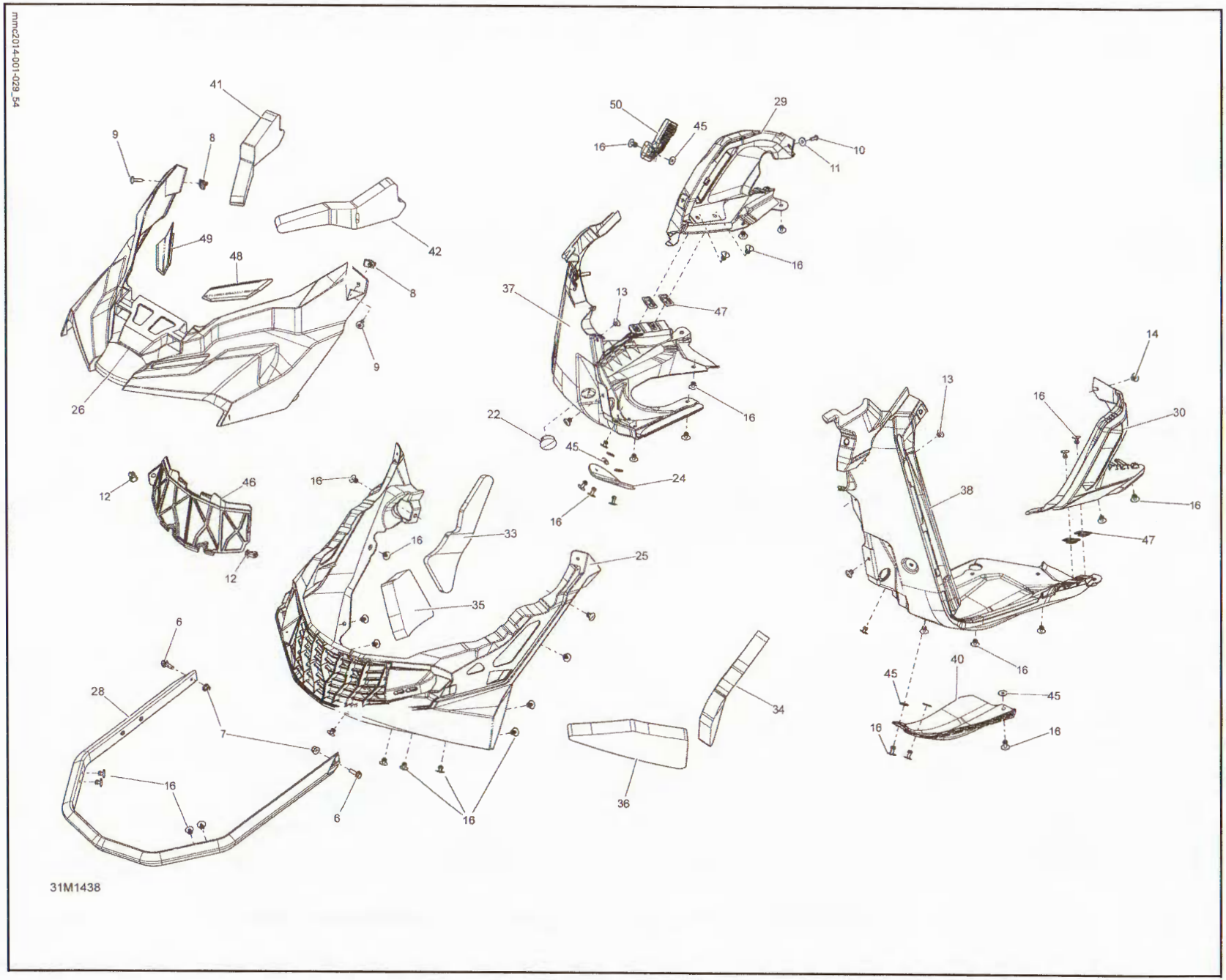
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31M1438

09- Bottom Pan _31M1438 (31M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
6	207662044	Hex. Flanged Screw M6 X 20	Vis Hex. À Épaulement M6 X 20	2		
7	233261414	Hex. Flanged Elastic Nut M6	Écrou Hex. Élastique À Épaulement M6	2		
8	250000079	Panel Nut M5 X 0.8	Écrou De Panneau M5 X 0.8	2		
9	250000587	Torx Screw M5 X 26	Vis Mécanique Hexalobulaire M5 X 26	2		
10	250000652	Socket Screw M5 X 16	Vis Creuse a 6 Pan M5 X 16	1		
11	250200025	Washer M5	Rondelle M5	1		
12	293150089	Tuflok Plastic Rivet	Rivet Plastique Tuflok	2		
13	293150103	Pop Rivet 3/16"	Rivet Pop 3/16"	2		
14	293150104	Pop Rivet 3/16"	Rivet Pop 3/16"	@		
22	414916600	Nylon Cap	Capuchon De Nylon	1		
24	502006935	Snow Deflector	Deflecteur De Neige	1		
25	502007349	Front Bottom Pan	Coque Avant	1		
26	502007330	Bottom Pan Cap	Capuchon De Coque	1		
28	502007176	Front Bumper	Pare-Chocs Avant	1		
29	502007224	RH Side Bottom Pan Panel	Panneau De Coque Latérale DR	1		
30	502007225	LH Side Bottom Pan Panel	Panneau De Coque Latérale GA	1		
33	502007243	RH Bottom Pan Upper Foam	Mousse Supérieure De Coque DR	1		
34	502007244	LH Bottom Pan Upper Foam	Mousse Supérieure De Coque GA	1		
35	502007245	RH Bottom Pan Lower Foam	Mousse Inférieure De Coque DR	1		
36	502007246	LH Bottom Pan Lower Foam	Mousse Inférieure De Coque GA	1		
37	502007253	RH Bottom Pan	Coque DR	1		
38	502007254	LH Side Bottom Pan	Coque Latérale GA	1		
40	502007261	Guard Plate	Plaque Protectrice	1		
41	502007263	RH Bottom Pan Cap Foam	Mousse De Capuchon De Coque DR	1		
42	502007264	LH Bottom Pan Cap Foam	Mousse De Capuchon De Coque GA	1		
45	517124300	Washer	Rondelle	@		
46	517305029	Pre-Filter	Préfiltre	1		
47	517305109	Rivet Plate	Plaque pour Rivet	4		
48	517305122	LH Cap	Capuchon GA	1		
49	517305123	RH Cap	Capuchon DR	1		
50	517305280	Stopper Bumper	Butoir	1		

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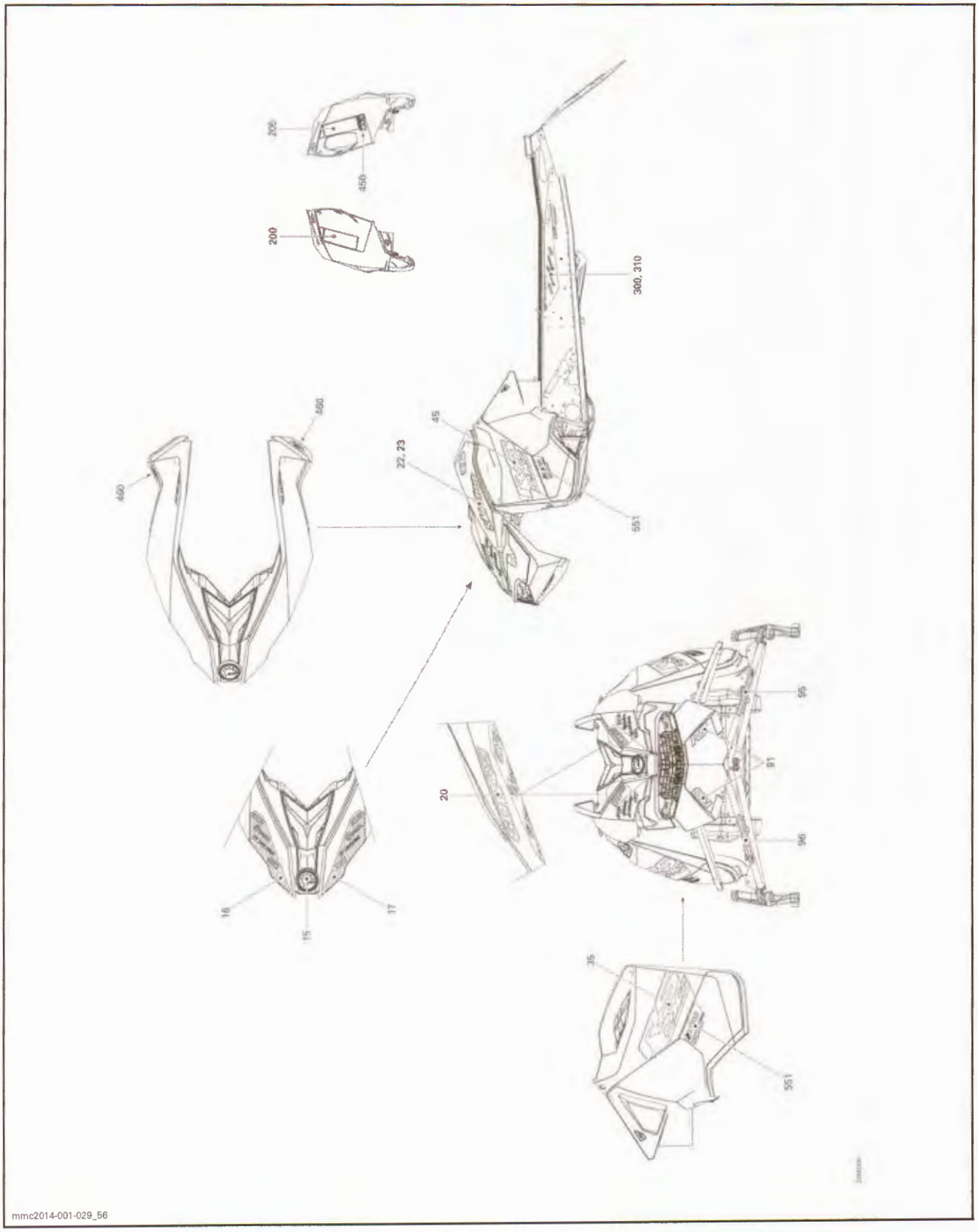

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09- Decals _32M1438 (32M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
15	219903609	BRP Logo, 68 mm	Logo BRP, 68 mm	1		
16	516006135	RH Hood Decal	Décalque Capot DR	1		
17	516006134	LH Hood Decal	Décalque Capot GA	1		
20	516006143	Decal, 600 RS	Décalque, 600 RS	2		
22	516006133	RH Hood Decal, Ski-Doo	Décalque Capot DR, Ski-Doo	1		
23	516006132	LH Hood Decal, Ski-Doo	Décalque Capot GA, Ski-Doo	1		
35	516006145	RH Side Decal	Décalque Latéral DR	1		
45	516006144	LH Side Decal	Décalque Latéral GA	1		
91	516006171	Bottom Pan Decal, RS	Décalque De Coque, RS	2		
95	516006169	LH Decal, RS	Décalque GA, RS	1		
96	516006170	RH Decal, RS	Décalque DR, RS	1		
200	516005055	Warning Decal, Security	Décalque Avertissement, Sécurité	1		
205	516005056	Warning Decal, Security	Décalque Avertissement, Sécurité	1		
300	516006384	RH Tunnel Decal, REV XS	Décalque Tunnel DR, REV XS	1		
310	516006383	LH Tunnel Decal, REV XS	Décalque Tunnel GA, REV XS	1		
450	516005226	Warning Decal, Pictogram	Décalque Avertissement, Pictogramme	1	Europe	Europe
460	516005280	Caution Decal, Hot Parts	Décalque Attention, Pièces Chaudes	2		
551	516006131	Decal, XPS Rotax Power	Décalque, XPS Rotax Power	2		

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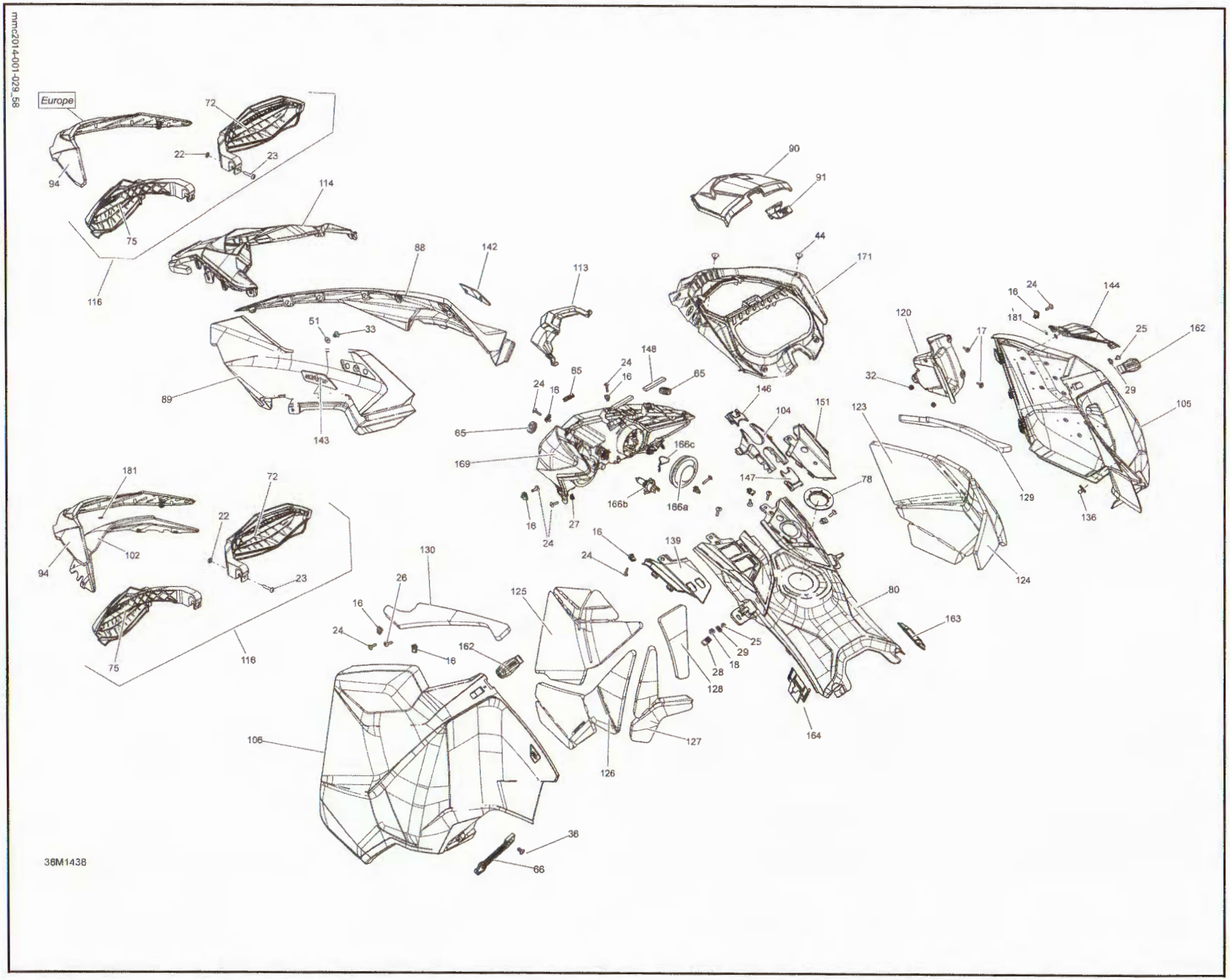
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36M1438

09- Hood, Windshield And Console _38M1438 (38M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
16	250000079	Panel Nut M5 X 0.8	Écrou De Panneau M5 X 0.8	@		
17	250000113	Screw M4 X 16, Type K-40	Vis M4 X 16, Type K-40	2		
18	250000128	Torx Truss Screw M6 X 20	Vis Bombée Hexalobulaire M6 X 20	2		
22	250000498	Square Nut M6	Écrou Carré M6	2		
23	250000501	Phillips Screw M6 X 35	Vis Mécanique Cruciforme M6 X 35	2		
24	250000528	Torx Screw M5 X 20	Vis Hexalobulaire M5 X 20	@		
25	250000565	Hexalob Screw M4 X 10	Vis Hexalob M4 X 10	2		
26	250000587	Torx Screw M5 X 26	Vis Mécanique Hexalobulaire M5 X 26	2		
27	250100035	Jack Nut M5	Écrou De Sertissage M5	2		
28	250100113	Panel Nut, M6 X 1.0	Écrou De Panneau, M6 X 1.0	2		
29	250100156	Weld Nut M4	Écrou À Souder M4	2		
32	275500241	Cap, Black	Bouchon, Noir	3		
33	293150104	Pop Rivet 3/16"	Rivet Pop 3/16"	8		
36	293150108	Pop Rivet 3/16"	Rivet Pop 3/16"	1		
44	414644300	Dart	Dard	2		
51	517124300	Washer	Rondelle	8		
65	517303756	Grommet	Rondelle Isolante	3		
66	517303808	LH Panel Latch	Loquet De Panneau GA	1		
72	517305042	RH Wind Deflector, Yellow	Deflecteur d'Air DR, Jaune	1		
75	517305043	LH Wind Deflector, Yellow	Deflecteur d'Air GA, Jaune	1		
78	517304518	Console Nut	Écrou De Console	1		
80	517304797	Rear Console	Console Arrière	1		
88	517305370	RH Hood	Capôt DR	1		
89	517305371	LH Hood	Capôt GA	1		
90	517304912	Upper Storage Access Cover	Couvercle De Boîte À Gants	1		
91	517304917	Cover Latch	Loquet De Couvercle	1		
94	517304922	Short Windshield Support	Support De Pare-Brise Court	1	Europe	Europe
102	517304931	Windshield 135	Pare-Brise 135	1		
104	517304970	Console Support	Support De Console	1		
105	517305508	RH Panel, Black	Panneau DR, Noir	1		
106	517305510	LH Panel, Black	Panneau GA, Noir	1		
113	517305010	Headlight Trim Cap	Enjoliveur De Phare	1		
114	517305382	Center Hood	Capôt Central	1		
116	860200710	Wind Deflector Kit, Yellow	Ens. Déflecteur d'Air, Jaune	1		
120	517305060	RH Console	Console DR	1		
123	517305082	RH Upper Panel Foam	Mousse De Panneau Supérieur DR	1		
124	517305085	RH Rear Panel Foam	Mousse De Panneau Arrière DR	1		
125	517305086	LH Upper Panel Foam	Mousse Supérieure De Panneau GA	1		
126	517305087	LH Center Panel Foam	Mousse De Panneau Centrale GA	1		
127	517305088	LH Lower Panel Foam	Mousse Inférieur Panneau GA	1		
128	517305089	LH Rear Panel Foam	Mousse De Panneau Arrière GA	1		

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09- Hood, Windshield And Console _38M1438 (38M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
129	517305090	RH Rear Hood Foam	Mousse De Capôt Arrière DR	1		
130	517305091	LH Rear Hood Foam	Mousse De Capôt Arrière GA	1		
136	517305504	Pin	Tige	@		
139	517305128	LH Front Console	Console Avant GA	1		
142	517305137	RH Hood Filler Plate	Plaque De Capôt DR	1		
143	517305138	LH Hood Filler Plate	Plaque De Capôt LH	1		
144	517305140	RH Panel Vent Grid	Grille d'Aération Panneau DR	1		
146	517305148	Support Console Cap	Capuchon Support De Console	1		
147	517305147	Support Console Cap	Capuchon Support De Console	1		
148	517305157	Seal Joint	Joint Étanche	2		
151	517305183	RH Front Console	Console Avant DR	1		
162	517305279	Panel Latch	Loquet De Panneau	2		
163	517305493	RH Clip	Attache DR	1		
164	517305494	LH Clip	Attache GA	1		
169	517305497	Headlamp	Phare	1		
171	517305512	Indicator Support	Support Indicateur	1		
181	732610072	Push Nut	Écrou À Pression	@		
181	250100158	Push Nut	Écrou À Pression	@		
166a	219400070	Cap	Bouchon	2		
166b	515176274	Halogen Bulb, 60/55 W, 12 V	Ampoule Halogène, 60/55 W, 12 V	2		
166c	219800282	Holder Bracket	Support De Fixation	2		

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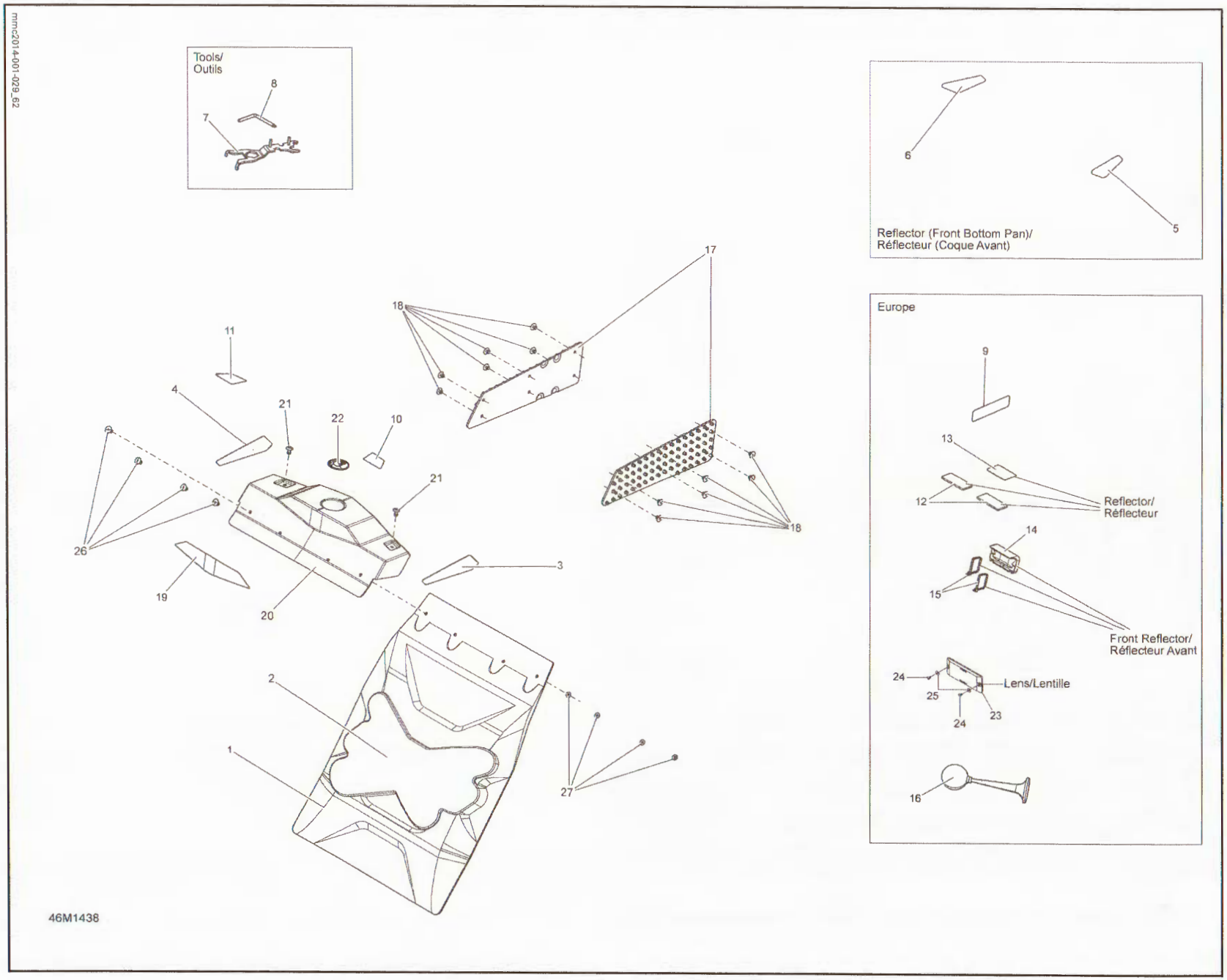
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Reflector (Front Bottom Pan)/
Réflecteur (Coque Avant)
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Réflecteur
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46M1438

09- Utilities _46M1438 (46M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	520001441	Snow Flap	Garde-Neige	1		
2	516003647	Decal X	Décalque X	1		
3	219903947	BRP Logo, 48 mm	Logo BRP, 48 mm	1		
4	511000810	Light Fairing	Support De Lumière	1		
5	241141340	Hex. Screw K40 X 13	Vis Hex. K40 X 13	2		
6	520001143	Rear Light	Feu Arrière	1		
7	250000113	Screw M4 X 16, Type K-40	Vis M4 X 16, Type K-40	2		
8	515177275	Wiring Harness Ass'y	Câblage Feu Arrière Ass.	1		
9	520000829	Radiator Trim	Moulure De Radiateur	1		
10	293750002	Tie-Rap 142 mm	Attache 142 mm	1		
11	520001239	RH Rear Reflector	Réflecteur Arrière DR	1	North America	Amérique Du Nord
11	520001241	RH Rear Reflector	Réflecteur Arrière DR	1	Europe	Europe
12	520001238	LH Rear Reflector	Réflecteur Arrière GA	1	North America	Amérique Du Nord
12	520001240	LH Rear Reflector	Réflecteur Arrière GA	1	Europe	Europe
13	520001237	RH Front Reflector	Réflecteur Avant DR	1		
14	520001236	LH Front Reflector	Réflecteur Avant GA	1		
15	520000988	Wrench Suspension	Clé De Suspension	1		
16	417127044	Belt Installation Tool	Outil d'Installation De Courroie	1		
17	516005873	"CE" Decal	Décalque "CE"	1	Europe	Europe
18	516005057	Warning Decal, Safety	Décal Avertissement, Sécurité	1		
19	516005058	Warning Decal, Safety	Décal Avertissement, Sécurité	1		
20	520000271	Reflector, Amber	Réflecteur, Ambre	2	Europe	Europe
21	415037900	Reflector, White	Réflecteur, Blanc	1	Europe	Europe
22	520000871	Reflector Support	Support De Réflecteur	1	Europe	Europe
23	293750018	Tie Rap 371 mm	Attache 371 mm	2	Europe	Europe
24	549011291	Horn	Avertisseur	1	Europe	Europe
25	860200164	Grip Plate Kit	Ensemble De Plaque d'Adhérence	1	Includes 26 to 26	Inclus 25 à 26
26	293150103	Pop Rivet 3/16"	Rivet Pop 3/16"	12		
27	510004350	Lens	Lentille	1	Europe	Europe
28	293150008	Pop Rivet 3/16"	Rivet Pop 3/16"	2	Europe	Europe
29	517124300	Washer	Rondelle	2	Europe	Europe
30	293150104	Pop Rivet 3/16"	Rivet Pop 3/16"	4		
31	517225900	Flat Washer	Rondelle	4		

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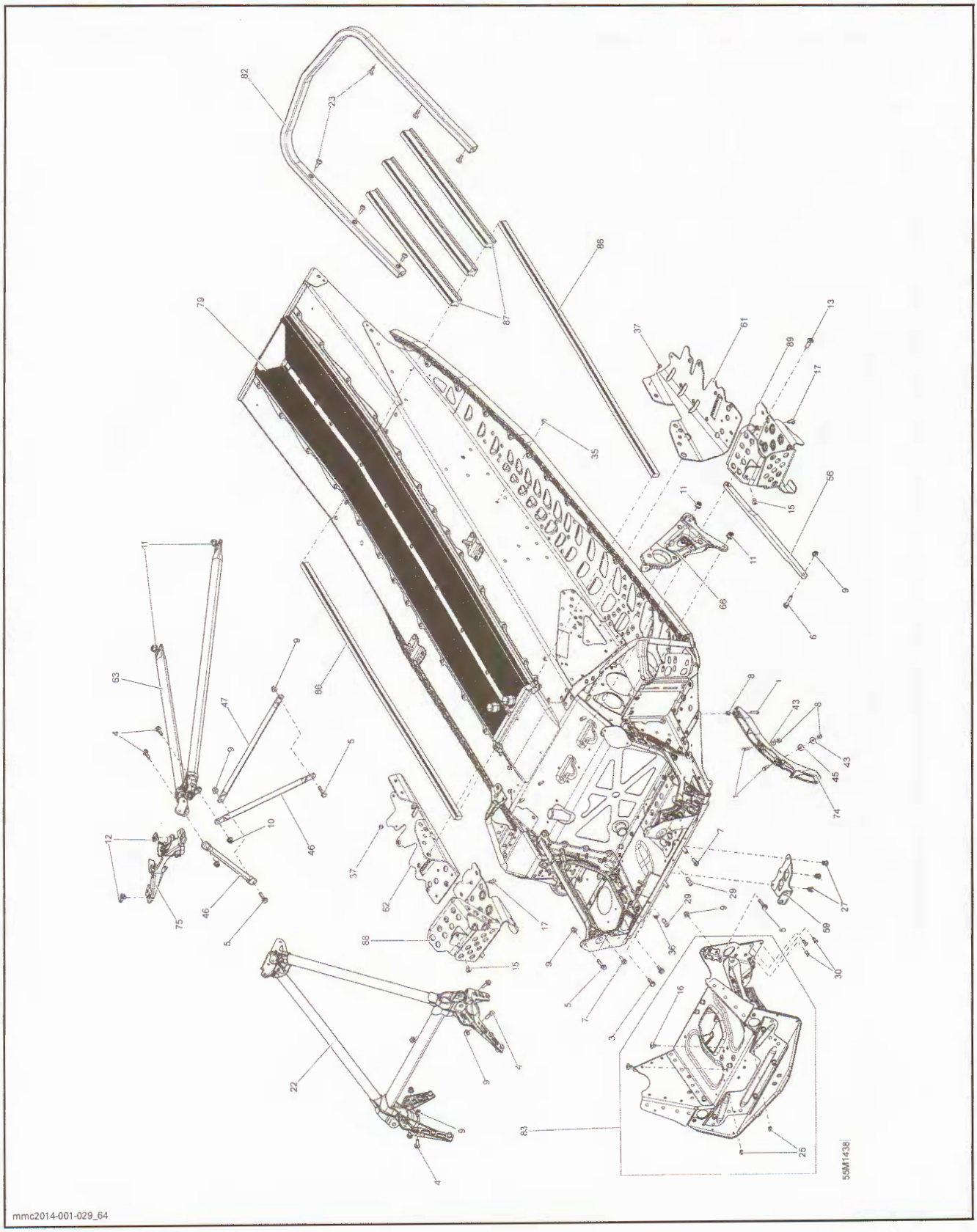

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09- Frame And Components _55M1438 (55M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	207152044	Hex. Screw M5 X 20	Vis Hex. M5 X 20	3		
3	207661644	Hex. Flanged Screw M6 X 16	Vis Hex. À Épaulement M6 X 16	2		
4	207662044	Hex. Flanged Screw M6 X 20	Vis Hex. À Épaulement M6 X 20	@		
5	207662544	Hex. Flanged Screw M6 X 25	Vis Hex. À Épaulement M6 X 25	4		
6	207663034	Hex. Flanged Screw M6 X 30	Vis Hex. À Épaulement M6 X 30	1		
7	210261680	Hex. Flanged Screw M6 X 16	Vis Hex. À Épaulement M6 X 16	2		
8	233251414	Hex. Flanged Elastic Nut M5	Écrou Hex. À Épaulement Élastique M5	3		
9	233261414	Hex. Flanged Elastic Nut M6	Écrou Hex. Élastique À Épaulement M6	9		
10	233261416	Elastic Flanged Nut M6	Écrou Élastique À Épaulement M6	2		
11	233281414	Hex. Flanged Elastic Nut M8	Écrou Élastique Hex. À Épaulement M8	7		
12	250000079	Panel Nut M5 X 0.8	Écrou De Panneau M5 X 0.8	2		
13	250000143	Torx Screw M8 X 25, Scotch Grip	Vis Hexalobulaire M8 X 25, Scotch Grip	1		
15	250000325	Torx Truss Screw M6 X 12	Vis Bombée Hexalobulaire M6 X 12	2		
16	250000349	Torx Truss Screw M6 X 10	Vis Méc. Bombée Hexalobulaire M6 X 10	4		
17	250000365	Torx Screw M6 X 16	Vis Hexalobulaire M6 X 16	2		
22	518327565	Front Member	Membrure Avant	1		
23	250000402	Torx-Truss Screw M6 X 18	Vis Mécanique Hexalobulaire M6 X 18	6		
25	293150144	Stavex Rivet	Rivet Stavex	2		
27	293150147	Hemlock Rivet	Rivet Hemlock	3		
29	293150182	Monobolt Rivet 6.4	Rivet Monobolt 6.4	2		
30	293150191	Monobolt Rivet, 4.8 mm	Rivet Monobolt, 4.8 mm	6		
35	293730047	Dart 8 mm, Black	Dard 8 mm, Noir	3	8 mm	8 mm
35	293730060	Dart 10 mm, Black	Dard 10 mm, Noir	2	10 mm	10 mm
36	293730053	Dart	Dard	3		
37	390402200	Pop Rivet 3/16"	Rivet Pop 3/16"	18		
43	391301600	Washer	Rondelle	3		
45	517124300	Washer	Rondelle	1		
46	518325114	Upper Column Support	Support De Colonne Latéral	2		
47	518325115	Center Column Support	Support De Colonne Central	1		
56	518326118	Link	Bretelle	1		
59	518326466	Module Reinforcement	Renfort De Module	1		
61	518327131	LH Bracket	Renfort GA	1		
62	518327132	RH Bracket	Renfort DR	1		
63	518326559	Rear Member	Membrure Arrière	1		
66	518326651	Pulley Support	Support De Poulie	1		
74	518326973	Front Protector	Protecteur De Tunnel Avant	1		
75	518327145	Sub A Support	Support Sub A	1		
79	415129852	Frame Ass'y	Châssis Ass	1		
82	518327637	Rear Bumper	Pare-Chocs Arrière	1		
83	518327766	S-Module	Module-S	1		
86	518328040	Front Protector	Protecteur Avant	2		
87	518328041	Rear Protector	Protecteur Arrière	3		
88	518328106	RH Footrest	Repose-Pied DR	1		
89	518328107	LH Footrest	Repose-Pied GA	1		

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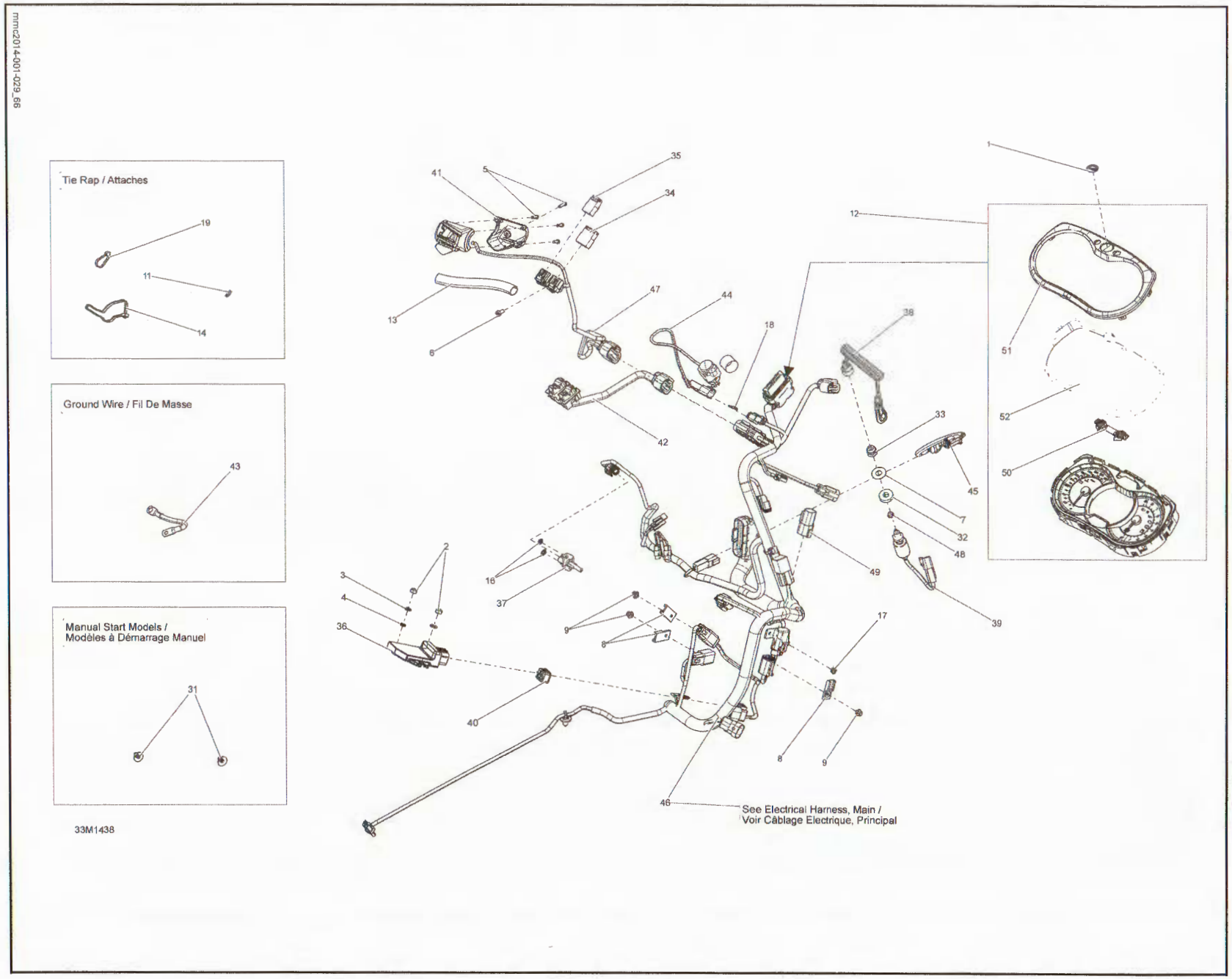

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10- Electrical System _33M1438 (33M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	219902677	Logo BRP, 20 mm	Logo BRP, 20 mm	1		
2	232561414	Elastic Stop Nut M6	Écrou Hex. Élastique M6	2		
3	234061410	Flat Washer 6 mm	Rondelle Plate 6 mm	2		
4	234461608	External Serrated Lock Washer 6 mm	Rondelle Chevauchante Extérieure 6 mm	1		
5	250000671	Torx Screw	Vis Hexalobulaire	4		
6	250000690	Pan Screw Forming, 7500C	Vis À Têtes Formée Creuse, 7500C	1		
7	250200032	Washer	Rondelle	1		
8	270000141	Clip	Clip	3		
9	293150037	Avdel Rivet 3/16"	Rivet Avdel 3/16"	3		
11	293750001	Tie-Rap 94 mm	Attache 94 mm	@		
12	515177659	Speedometer	Indicateur De Vitesse	1		
13	515177320	Corrugated Tube	Gaine Ondulée	1		
14	293750008	Tie-Rap 350 mm	Attache 350 mm	1		
16	389804300	Push Nut	Écrou À Pression	2		
17	390402200	Pop Rivet 3/16"	Rivet Pop 3/16"	1		
18	409207500	Male Lock, 2 Circuits	Vérrou Mâle, 2 Circuits	1		
19	414115200	Tie-Rap 180 mm	Attache 180 mm	@		
31	414644300	Dart	Dard	2		
32	510004418	Washer	Rondelle	1		
33	515145900	Switch Nut	Écrou Interrupteur	1		
34	515175662	Male Terminal Housing, 6 Circuits	Logement Terminal Mâle, 6 Circuits	1		
35	515175846	Male Terminal Housing, 4 Circuits	Logement De Terminal Mâle, 4 Circuits	2		
36	515176364	Voltage Regulator	Régulateur De Tension	1		
37	515176366	Air Temperature Sensor	Capteur De Température d'Air	1		
38	515176462	Cap Ass'y	Capuchon assemblé	1		
39	515175653	Brake Switch	Interrupteur De Frein	1		
40	515176681	Lock	Verrou	1		
41	515177149	LH Switch Housing Plate	Plaque De Logement d'Interrupteur GA	1		
42	515177154	Double Switch Module	Module Interrupteur Double	1		
43	515177289	Fil de Masse	Ground Wire	1		
44	515177454	Kill Switch	Interrupteur d'Urgence	1		
45	515177471	Temperature Sensor	Capteur De Température	1		
46	515177567	Main Harness	Câblage Principal	1		
47	515177678	LH Switch Housing	Logement Interrupteur GA	1		
48	570151100	Plunger Cap	Cap Plongeur	1		
49	710003006	Housing	Logement	1		
50	415129355	Speedometer Button	Bouton d'Indicateur De Vitesse	1		
51	415129348	Gauge Ring	Anneau De Cadran	1		
52	415129349	Lens	Lentille	1		

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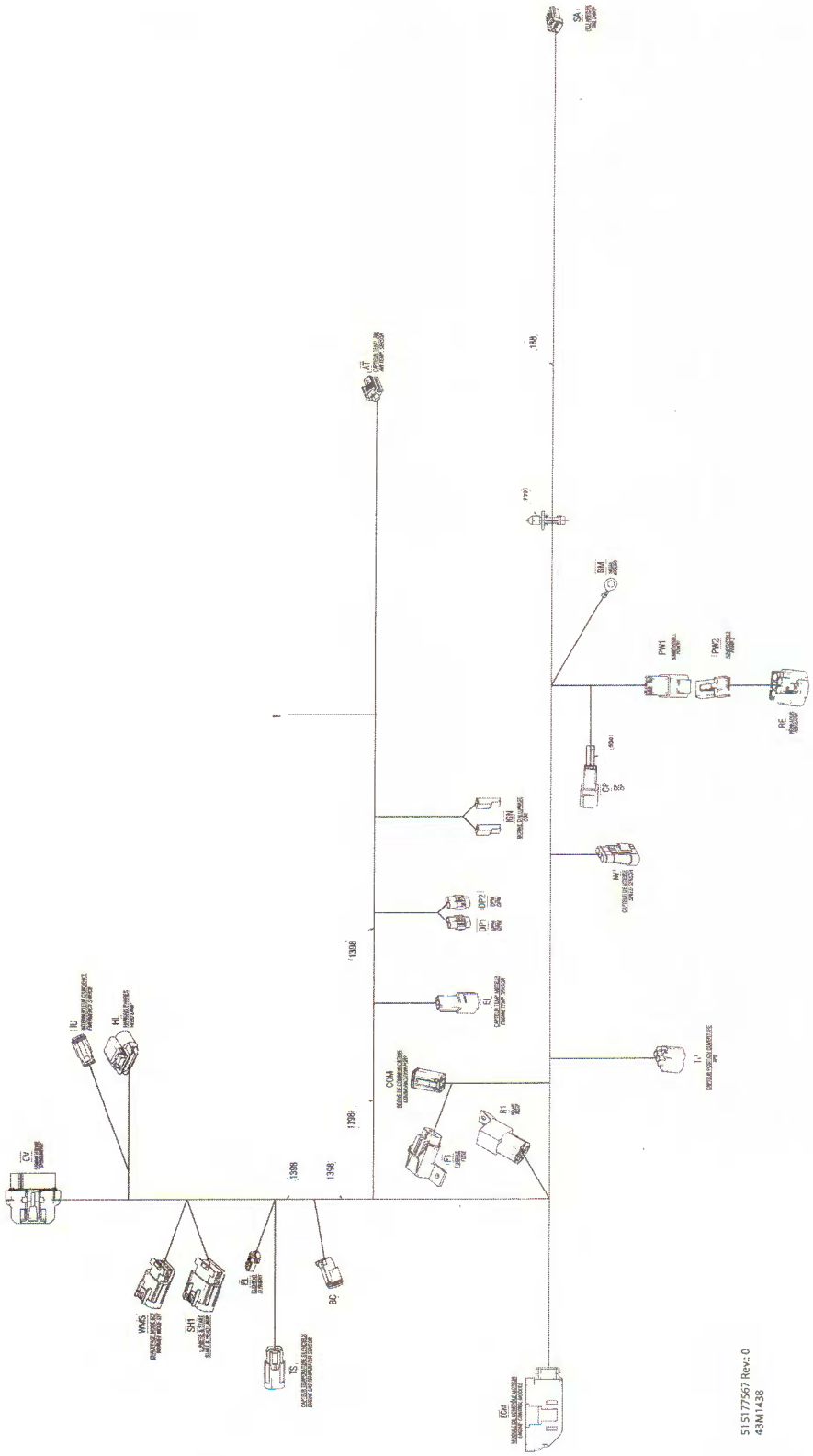

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10- Electrical Harness _43M1438 (43M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
1	515177567	Main Harness	Câblage Principal	1		
188	409902000	Tubing 12 mm	Gaine 12 mm	@		
775	293730040	Mount Dart	Dard d'Ancrage	@		
1398	515177320	Corrugated Tube	Gaine Ondulée	@		
AT	515176890	Female Terminal Housing	Logement De Terminal Femelle	@		
AT	710001163	Wire Seal	Joint De Fil	@		
AT	710001164	Female Terminal	Terminal Femelle	@		
BC	515175670	Female Terminal Housing, 2 Circuits	Logement Terminal Femelle, 2 Circuits	@		
BC	515175675	Female Lock, 2 Circuits	Vérrou Femelle, 2 Circuits	@		
BC	278000632	Female Terminal	Terminal Femelle	@		
BM	278000992	Open Barrel	Cosse À Anneau	@		
COM	278002896	Housing, 6 Circuits	Logement, 6 Circuits	@		
COM	515175678	Male Wedge, 6 Circuits	Cale Mâle, 6 Circuits	@		
COM	293000052	Sealing Cap	Bouchon Étanche	@		
COM	278001665	Female Terminal	Terminal Femelle	@		
CP	515175665	Male Terminal Housing, 2 Circuits	Logement Terminal Mâle, 2 Circuits	@		
CP	409207500	Male Lock, 2 Circuits	Vérrou Mâle, 2 Circuits	@		
CP	278000631	Male Terminal	Cosse Mâle	@		
CV	515175801	Female Housing, 24 Circuits	Logement Femelle, 24 Circuits	@		
CV	515175802	Retainer Block	Boîtier De Retenue	@		
CV	515175812	Plug	Bouchon	@		
CV	710000399	Female Housing	Logement Femelle	@		
CV	515175803	Wire Seal	Joint De Fil	@		
CV	515175806	Female Terminal	Cosse Femelle	@		
CV	710001131	Female Terminal	Terminal Femelle	@		
DP1	409012300	Seal	Joint	@		
DP1	409012100	Female Terminal	Cosse Femelle	@		
DP2	409012300	Seal	Joint	@		
DP2	409012100	Female Terminal	Cosse Femelle	@		
ECM	515176223	Female Terminal Housing, 36 Circuits	Logement Terminal Femelle, 36 Circuits	@		
ECM	515176224	Terminal Support	Support De Terminaux	@		
ECM	515175812	Plug	Bouchon	@		
ECM	515176221	Female Housing	Boîtier Femelle	@		
ECM	515176222	Wire Seal	Joint De Fil	@		
ECM	710001131	Female Terminal	Terminal Femelle	@		
ECM	515175806	Female Terminal	Cosse Femelle	@		
ECM	414115200	Tie-Rap 180 mm	Attache 180 mm	@		
EI	515175665	Male Terminal Housing, 2 Circuits	Logement Terminal Mâle, 2 Circuits	@		
EI	409207500	Male Lock, 2 Circuits	Vérrou Mâle, 2 Circuits	@		
EI	278000631	Male Terminal	Cosse Mâle	@		
EL	515175658	Female Housing, 2 Circuits	Logement Femelle, 2 Circuits	@		
EL	515175231	Female Terminal	Cosse Femelle	@		
F1	278001326	Fuse Holder Cap	Capuchon De Porte-Fusible	@		
F1	278000805	Cushion	Coussinet	@		
F1	409003900	Fuse, 20 Amperes	Fusible, 20 Ampères	@		
F1	278001325	Fuse Holder	Porte-Fusible	@		
F1	710000113	Female Terminal	Cosse Femelle	@		
HL	515177296	Female Housing	Logement Femelle	@		
HL	710001332	Seal Wire	Joint De Fil	@		

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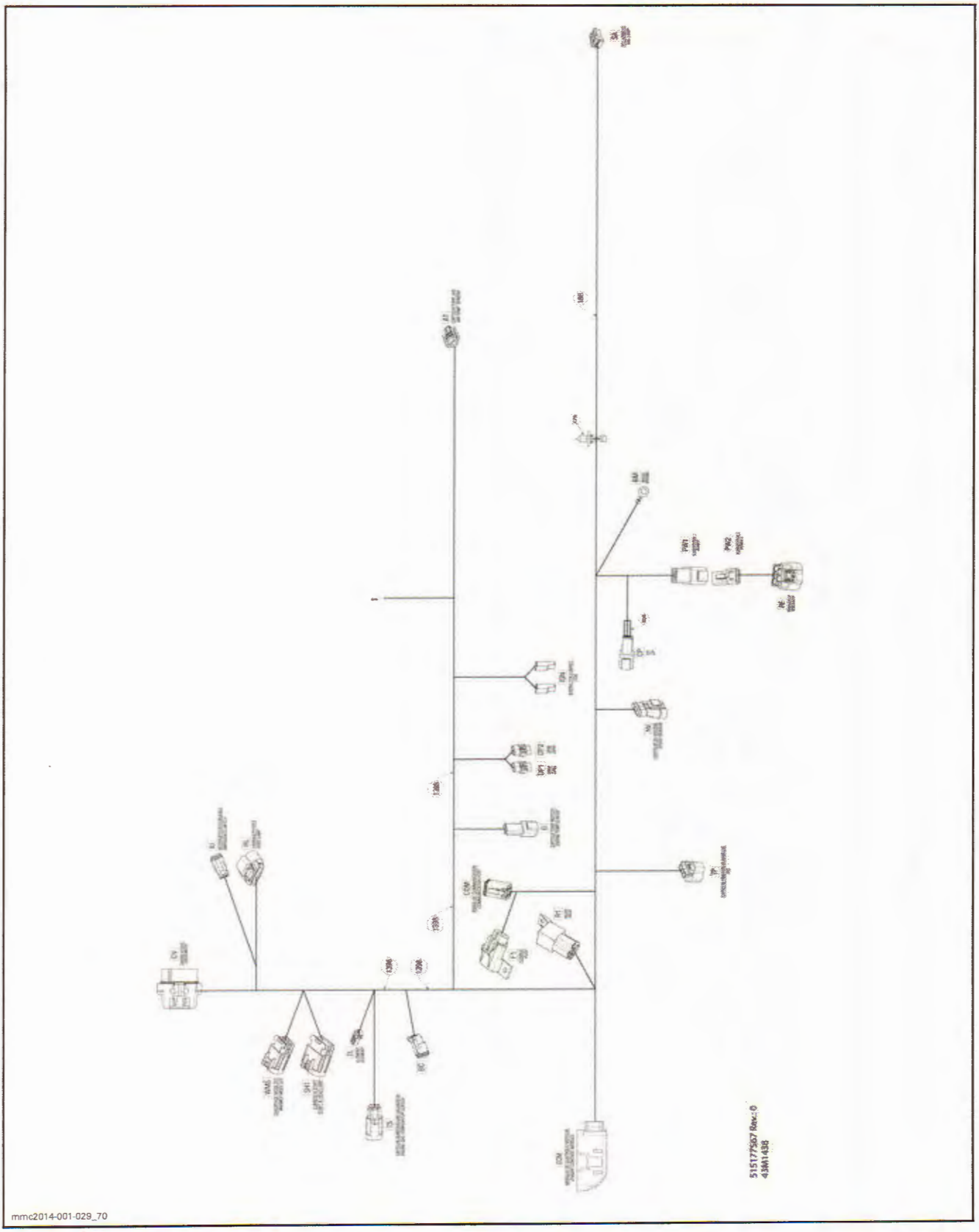

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10- Electrical Harness _43M1438 (43M1438_F) MXZ X, 600RS

Ref #	Part Number	Description - English	Description - French	Qty	Note - English	Note - French
HL	710001228	Terminal	Terminal	@		
IGN	409010400	Female Terminal Housing, 1 Circuit	Logement Terminal Femelle, 1 Circuit	@		
IGN	409010100	Female Terminal	Terminal Femelle	@		
IU	515175670	Female Terminal Housing, 2 Circuits	Logement Terminal Femelle, 2 Circuits	@		
IU	515175675	Female Lock, 2 Circuits	Vérrou Femelle, 2 Circuits	@		
IU	278000632	Female Terminal	Terminal Femelle	@		
NV	710000992	Clip	Clip	@		
NV	710000568	Housing	Logement	@		
NV	515176621	Wire Seal	Joint De Fil	@		
NV	515176164	Male Terminal	Terminal Mâle	@		
PW1	278001674	Mâle Terminal Housing, 2 Circuits	Logement De Terminal Mâle, 2 Circuits	@		
PW1	278001672	Male Lock, 2 Circuits	Verrou Mâle, 2 Circuits	@		
PW1	515175568	Male Terminal	Terminal Mâle	@		
PW2	278001673	Female Terminal Housing, 2 Circuits	Logement Terminal Femelle, 2 Circuits	@		
PW2	278001671	Female Lock, 2 Circuits	Vérrou Femelle, 2 Circuits	@		
PW2	515175567	Female Terminal	Terminal Femelle	@		
R1	409209900	Female Housing, 5 Circuits	Logement Femelle, 5 Circuits	@		
R1	515177041	Relay	Relais	@		
R1	561503100	Female Terminal	Cosse Femelle	@		
R1	561503100	Female Terminal	Cosse Femelle	@		
R1	293750002	Tie-Rap 142 mm	Attache 142 mm	@		
RE	515176530	Connector	Connecteur	@		
RE	515176594	Seal	Joint	@		
RE	515176531	Terminal	Terminal	@		
SA	515175495	Female Housing, 3 Circuits	Logement Femelle, 3 Circuits	@		
SA	515175231	Female Terminal	Cosse Femelle	@		
SH1	710001929	Housing, Packard	Logement, Packard	@		
SH1	710001225	Cap	Bouchon	@		
SH1	710001332	Seal Wire	Joint De Fil	@		
SH1	710001233	Seal	Joint	@		
SH1	710001224	Terminal	Terminal	@		
SH1	710001223	Terminal	Terminal	@		
TP	515176176	Female Terminal Housing, 3 Circuits	Logement De Terminal Femelle, 3 Circuits	@		
TP	710000402	Wire Seal	Joint De Fil	@		
TP	710000335	Female Terminal	Cosse Femelle	@		
TS	515177298	Housing Connector	Boitier Connecteur	@		
TS	710001233	Seal	Joint	@		
TS	710001224	Terminal	Terminal	@		
WMS	710001927	Housing	Logement	@		
WMS	710001225	Cap	Bouchon	@		
WMS	710001233	Seal	Joint	@		
WMS	710001224	Terminal	Terminal	@		

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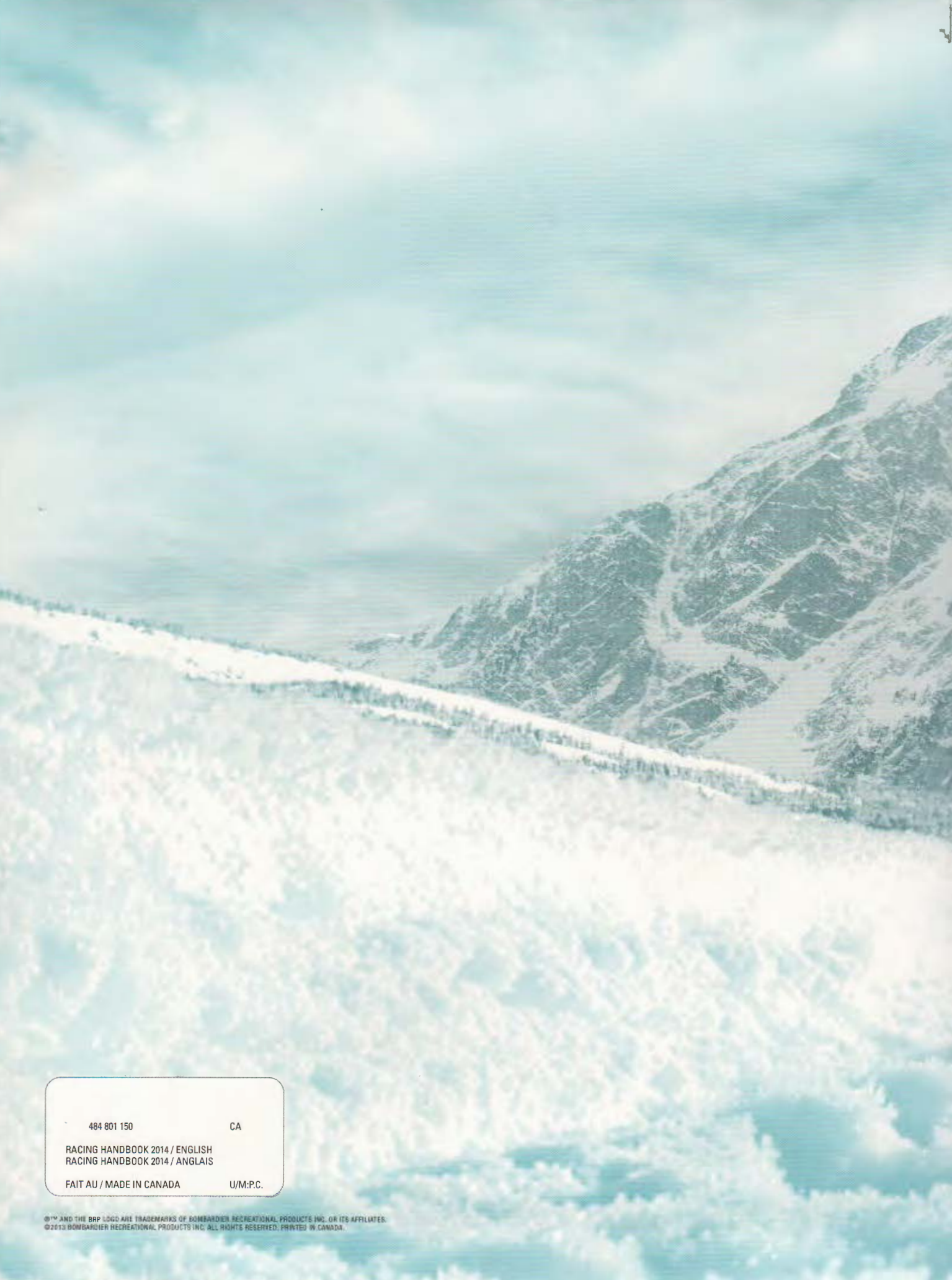

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