MAGNESIUM DRIVE PULLEY CLUTCH LEVER (P/N 417 011 012)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

This kit applies to MX Zx 440 LC models only.

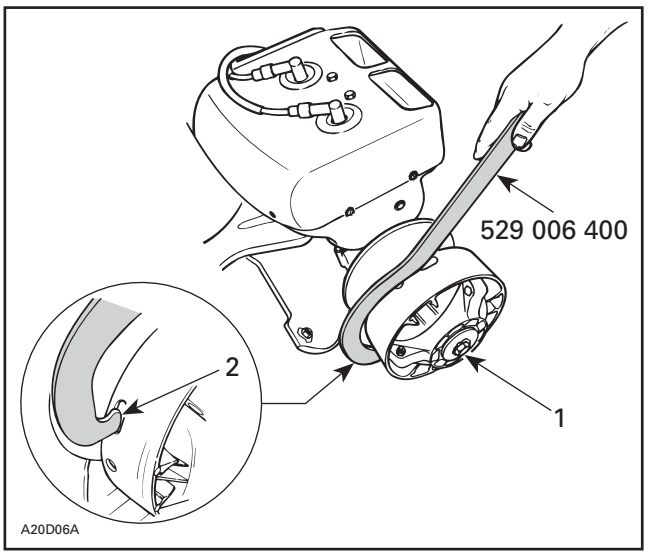
⚠ WARNING

Any drive pulley repairs must be performed by an authorized Ski-Doo snowmobile dealer, or other such qualified person. Sub-component installation and assembly tolerances require strict adherence to procedures detailed.

REMOVAL

Conical Spring Washer and Screw

Use holder (P/N 529 006 400).



TYPICAL

1. *Retaining screw*
2. *Insert in any slot*

⚠ 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).

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.

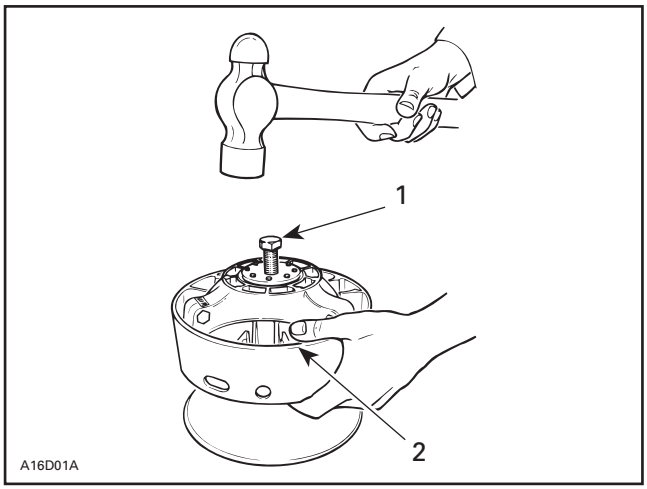
Install puller in pulley shaft then tighten.

DISASSEMBLY

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.



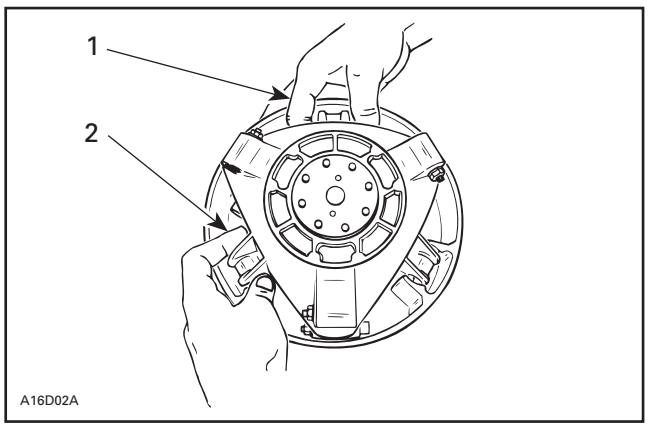
1. *Puller*
2. *Holding sliding half*

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

Slider Shoe and Governor Cup

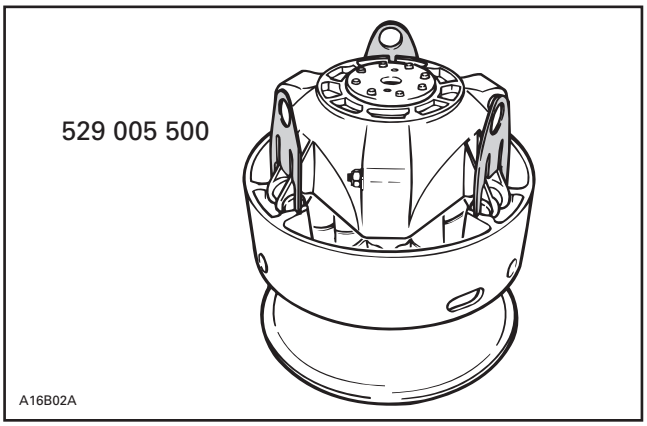
Carefully lift governor cup until slider shoes come at their highest position into guides.

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

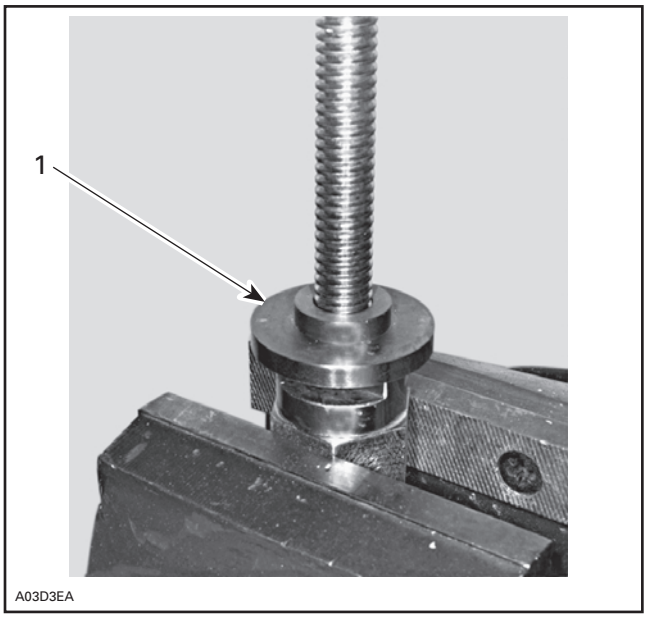
It is pushed by clutch spring pressure.

⚠ WARNING

Clutch spring is very strong. Never attempt to remove spring cover without the recommended tools.

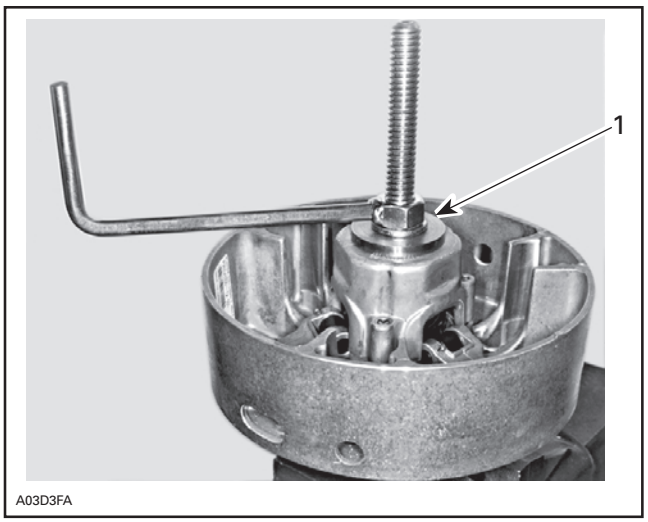
Use spring compressor (P/N 529 035 524).

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 (IF REQUIRED)

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.

Sliding Half and Spring Cover Bushing

Visually inspect coating. Replace if worn.

Sliding Half Bushing Replacement

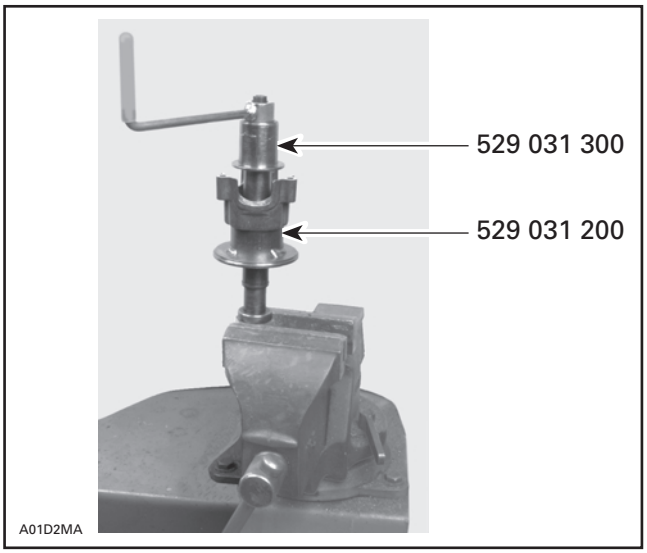
This bushing is not replacable. If worn out, replace sliding half ass'y.

Spring Cover Bushing Replacement

Under normal use there is no need to replace this bushing.

Mount compressor (P/N 529 035 524) in a vise.

Use tools (P/N 529 031 300 and 529 031 200) to remove old bushing.



CAUTION: Bushing must be bonded with retaining compound.

Apply retaining compound Loctite† 609 outside of bushing then press it down to counterbore from outside end.

CAUTION: Insert bushing from sliding half side (inner side) of spring cover.

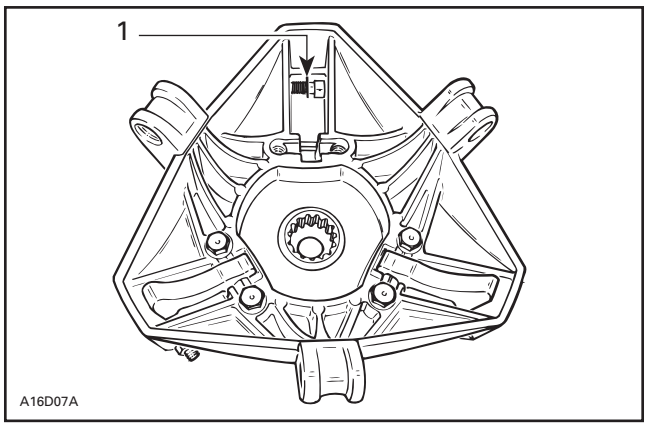
ASSEMBLY

NOTE: This drive pulley is lubrication free. **Do not lubricate** any component.

† Loctite is a registered trademark of Loctite Corporation

Calibration Screw, Washer and Locking Nut

When installing calibration screw, make sure to install washer as shown.



1. Washer

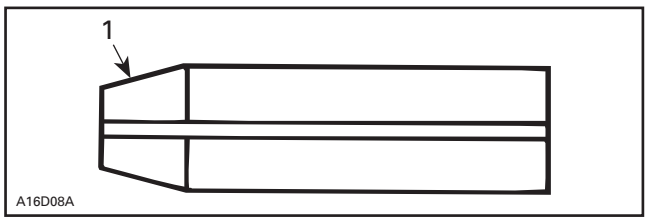
Torque locking nut to 10 N•m (89 lbf•**in**).

Pin

Always use the same type of pin as originally installed when servicing. Different types have different weights for calibration purpose. Refer to TECHNICAL DATA (where a *Shop Manual* is available).

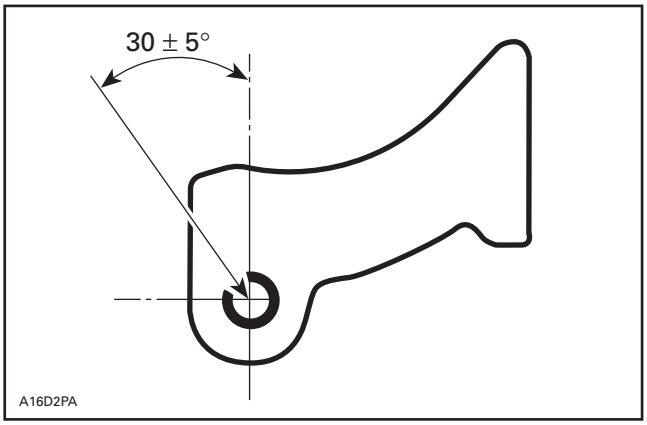
Screw, Dowel Tube and Ramp

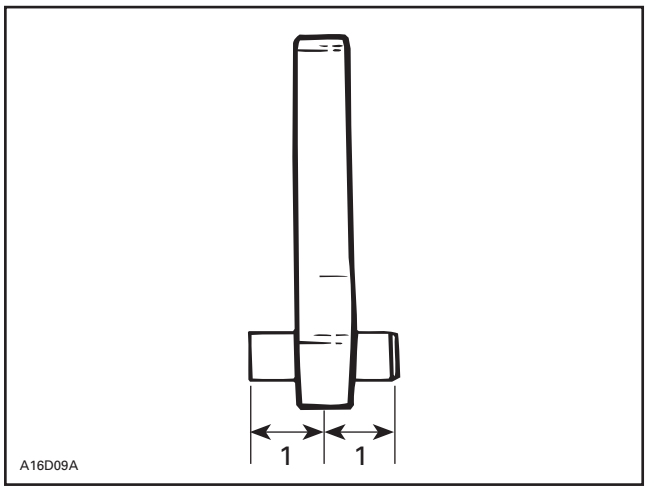
Insert dowel tube from chamfered side. Make sure ramp is centered on dowel tube.



1. Chamfered side

Position dowel tube split at the illustrated angle.





1. Equal distance

Torque screws to 10 N•m (89 lbf•**in**).

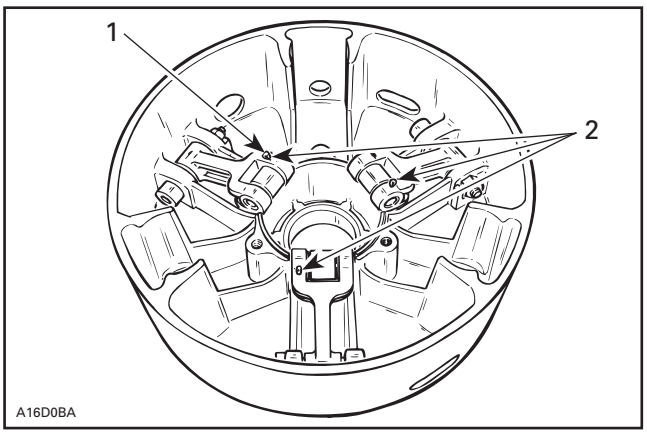
Screw, Lever Ass'y, Nut and Cotter Pin

Install new magnesium clutch levers.

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.



1. Head on top
2. All on the same side

CAUTION: Lever assemblies must be installed so that cotter pins are on the same side.

Torque nuts to 12 N•m (106 lbf•**in**).

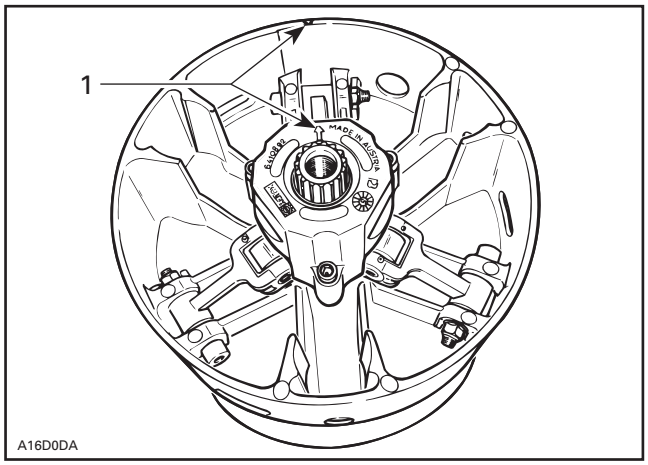
CAUTION: Lever ass'y and rollers must move easily after installation.

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.

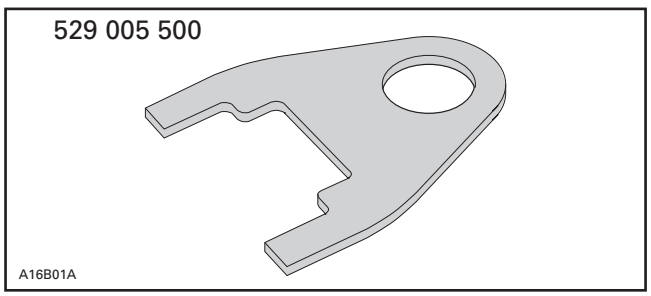


1. Align

Install and torque screws to 13 N•m (115 lbf•**in**).

Sliding Half, Slider Shoe and Governor Cup

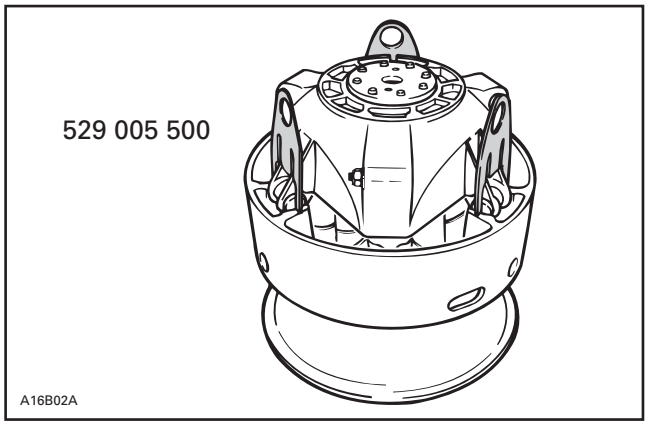
To install governor cup, use following tool:



Insert spring and slider shoes into governor cup so that groove in each slider shoe is vertical to properly slide in guides.

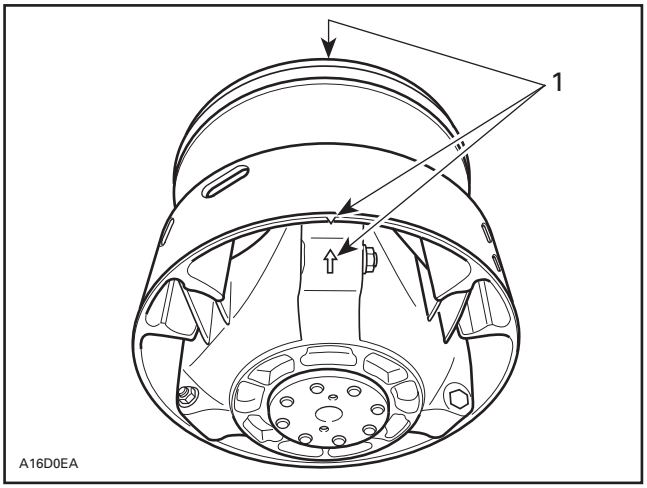
CAUTION: Make sure O-rings are installed on slider shoes and their grooves are positioned vertically.

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.



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.



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 as described in CLEANING above.

Drive Pulley Ass'y

The installation procedure must be strictly adhered to as follows.

Install drive pulley on crankshaft extension.

Install conical washer with its concave side towards drive pulley then install screw.

⚠ WARNING

Never substitute conical washer and/or screw with jobber ones. Always use Bombardier genuine parts for this particular case.

Use holder. See removal procedure.

Torque screw to 90 to 100 N•m (66 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.

Recheck the torque of 90 to 100 N•m (66 to 74 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 given in TECHNICAL DATA (refer to *Shop Manual* where available).

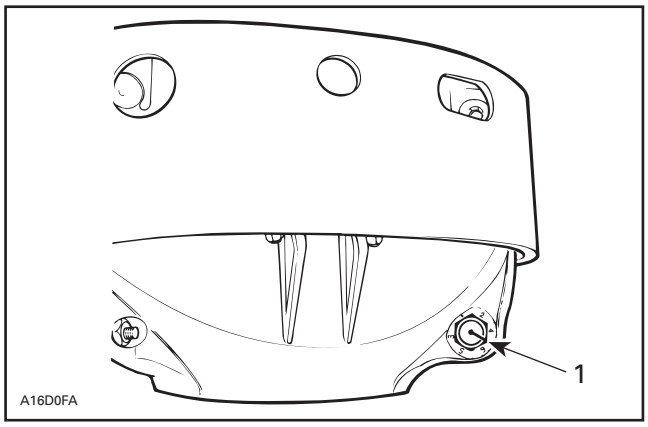
NOTE: Use precision digital tachometer for engine RPM adjustment.

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

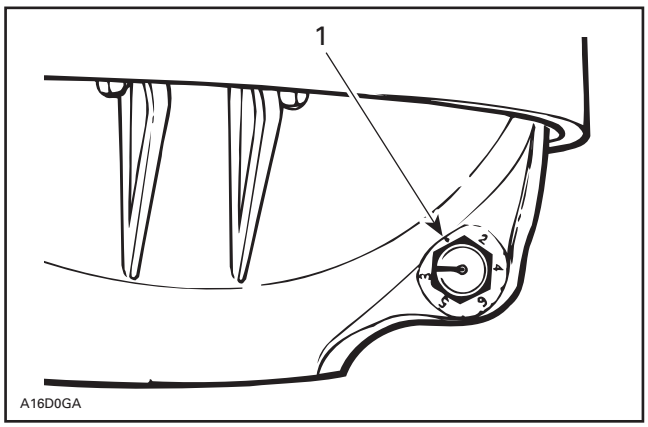
Calibration screw has a notch on top of its head.



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 (refer to *Shop Manual* where available) for original setting.



1. Position 1 (not numbered)

Each number modifies maximum engine RPM by about 200 RPM.

Lower numbers decrease engine RPM in steps of 200 RPM and higher numbers increase it in steps of 200 RPM.

Example:

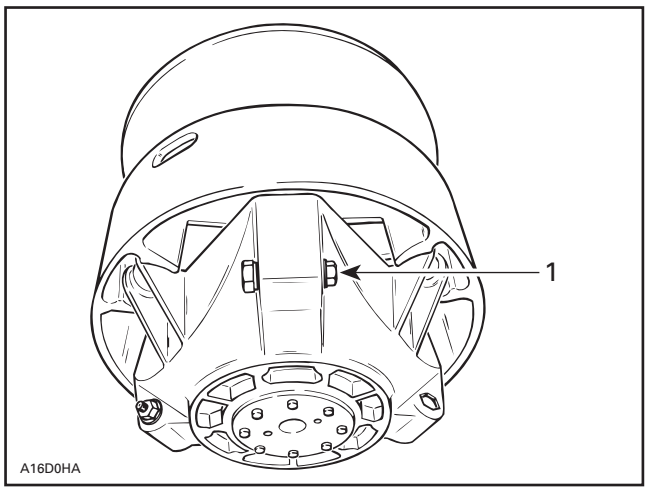
Calibration screw is set at position 3 and is changed to position 5. So maximum engine RPM is increased by about 400 RPM.

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.



1. Loosen just enough to permit rotating of calibration screw

CAUTION: Drive belt and pulley adjustments must always be checked whenever pulleys have been removed, replaced or disassembled.

PULLEY DISTANCE AND ALIGNMENT

GENERAL

The pulley distance we will refer to in this section, is the space separating the drive and driven pulley outside diameters (Z measurement).

This basic distance is provided as an assembly guide and indicates the dimensions between which satisfactory belt deflection will be obtained.

Both pulley distance adjustment and pulley alignment must be carried out to ensure the highest efficiency of the transmission system. Furthermore, optimum drive belt operation and minimal wear will be obtained only with proper pulley alignment.

CAUTION: Before checking pulley adjustment, the rear suspension must be mounted on the vehicle and track tension/alignment must be done. Always check pulley adjustment after suspension is adjusted.

⚠ WARNING

Failure to correctly perform pulley alignment may cause the vehicle to creep forward at idle.

All pulley alignment specifications refer to:

X = Distance between straight bar and drive pulley fixed half edge, **measured between pulleys**.

Y = Distance between straight bar and drive pulley fixed half edge, **measured at the end of straight bar**.

Z = Distance between outside diameter of pulleys.

GENERAL PROCEDURE

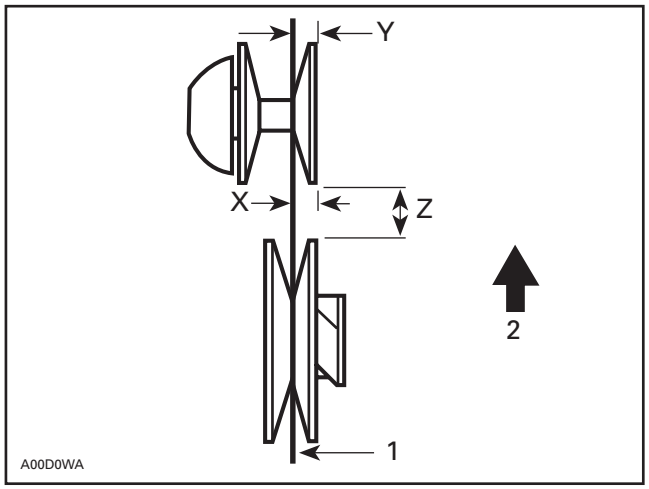
Remove guard and drive belt.

By turning and pushing the sliding half, open the driven pulley. Insert a straight bar 9.5 mm (.375 in) square, 48 cm (19 in) long or the proper alignment template into the opened driven pulley.

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.

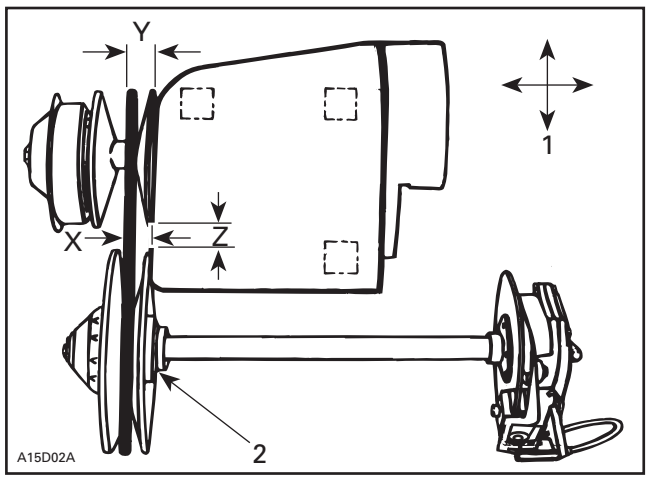
Drive Belt Deflection

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

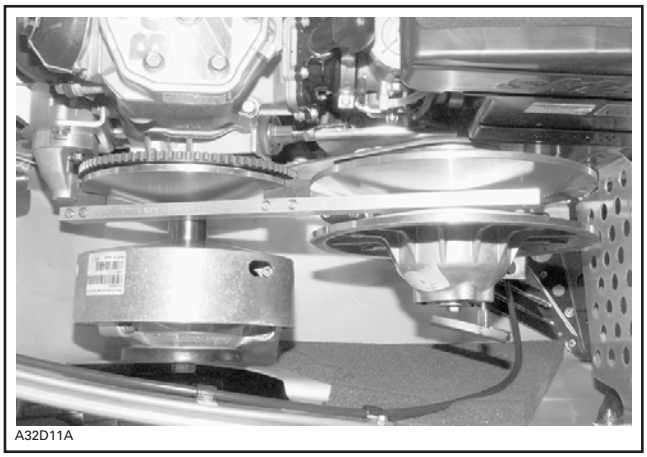
MODEL	PULLEY DISTANCE	OFFSET		ALIGNMENT TEMPLATE ① P/N
	Z	X	Y-X	
	± 0.50 mm (.020 in)	± 0.50 mm (.020 in)	± 0.5 mm (.020 in)	
All	16.5 (.650)	35.50 (1.398)	1.5 (.060)	529 026 700

① Alignment templates have been made according to pulley alignment nominal values. However, they do not take into account allowed tolerances for alignment specifications. They are used as GO/NO GO gauges for quick alignment and pulley distance check and as templates to reach alignment nominal values.



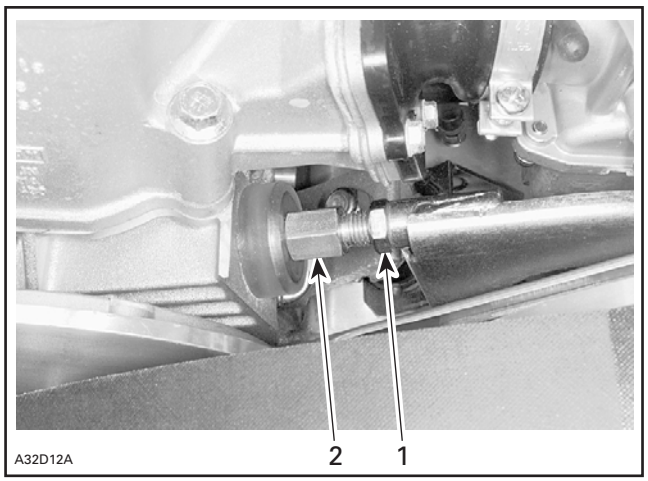
TYPICAL

1. *Engine movement*
2. *Contact*



ALIGNMENT BAR IN PULLEYS

NOTE: Prior to performing pulley adjustment, loosen torque rod nut to allow engine movement. Engine supports have tendency to stick to frame, work engine loose prior to aligning.



1. *Loosen lock nut first*
2. *Loosen*

Pulley Distance Adjustment Method

Engine Movement

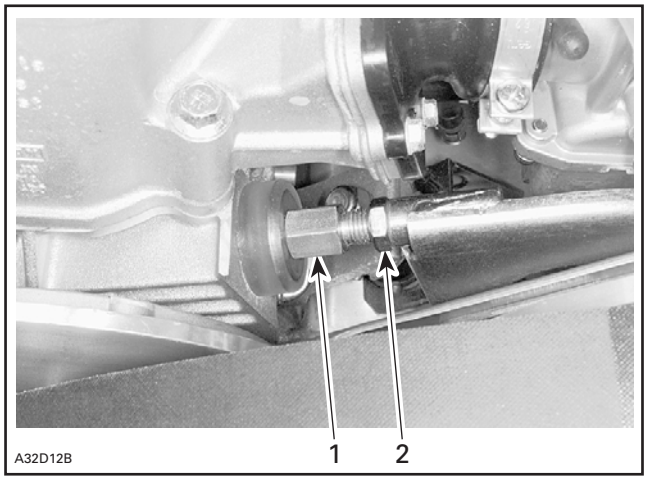
The engine support has slotted mounting holes. Move engine to obtain specified distance between pulleys.

Pulley Alignment Method

Engine Movement

Loosen the 4 bolts retaining engine support to the frame. Position engine to obtain the specified alignment.

NOTE: After alignment, adjust torque rod so it slightly contacts stopper plate. Do not over tighten, it will disalign pulleys. Re torque the 4 bolts retaining engine support to the frame.



1. *Slightly tighten*
2. *Retighten*

Reinstall drive belt and belt guard.

DRIVE BELT DEFLECTION MEASUREMENT

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 m.).

Before checking the belt deflection, ensure vehicle has the proper belt.

Adjust pulley distance and alignment. Refer to PULLEY DISTANCE AND ALIGNMENT.

To obtain maximum vehicle performance, the belt tension must be adjusted according to specifications shown in the accompanying chart.

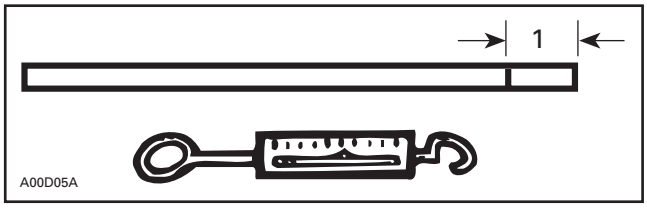
MODEL	DEFLECTION mm (in)	FORCE kg (lb)	HEIGHT† OVER DRIVEN PULLEY
All models	32 ± 5 (1.260 ± .197)	11.5 (25)	0 - 1.5 mm (0 - 1/16 in)

† FOR REFERENCE ONLY

To Check Tension

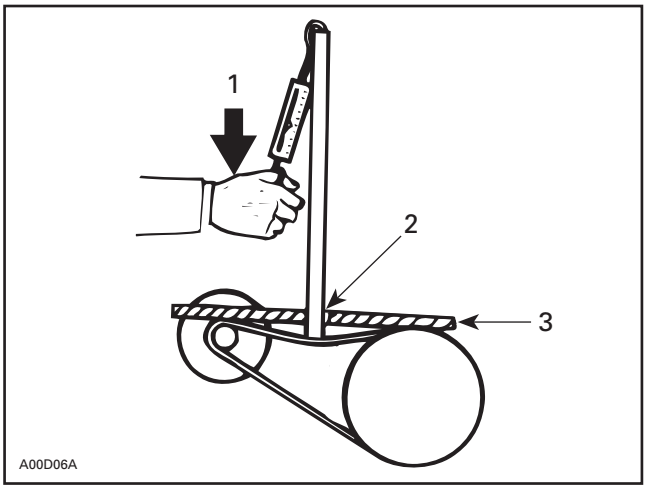
Position a reference rule on drive belt.

Wooden Stick and Spring Scale Method



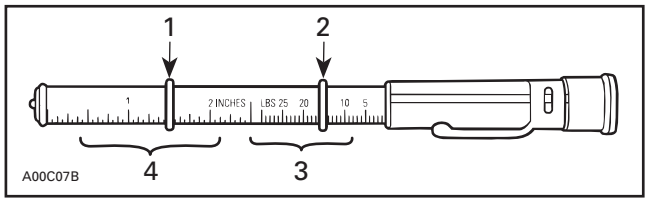
1. *Mark specified deflection*

Using spring scale and stick, apply specified force on drive belt halfway between pulleys as shown.



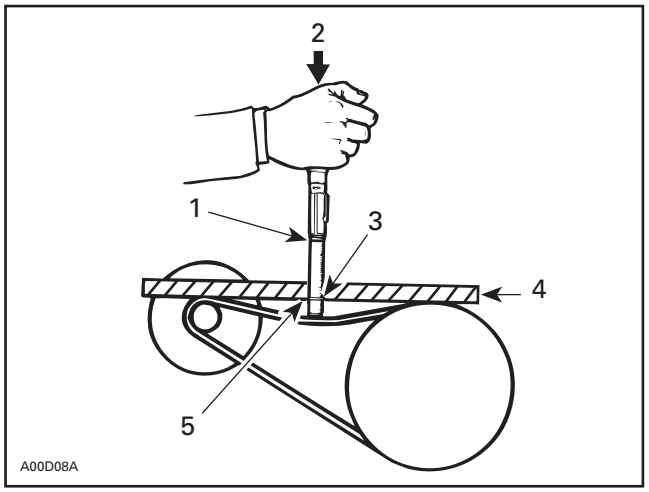
1. *Force*
2. *Read deflection here*
3. *Reference rule*

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*

DEFLECTION ADJUSTMENT

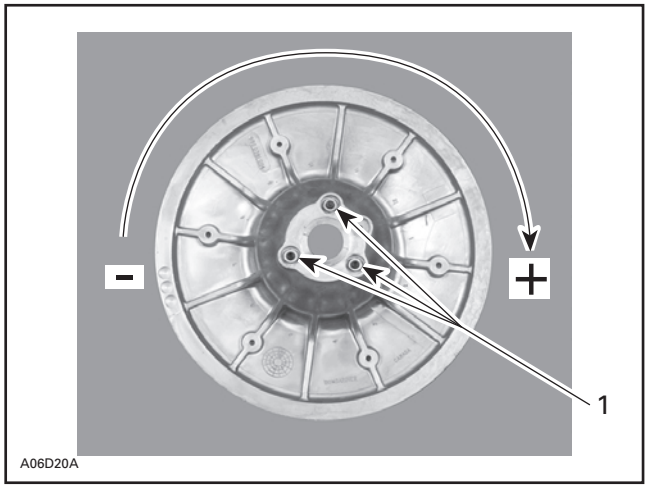
Adjust pulley distance according to specification, refer to PULLEY DISTANCE AND ALIGNMENT.

Adjust drive belt deflection using Allen screws, as shown.

To increase deflection: turn Allen screws clockwise.

To decrease deflection: turn Allen screws counter-clockwise.

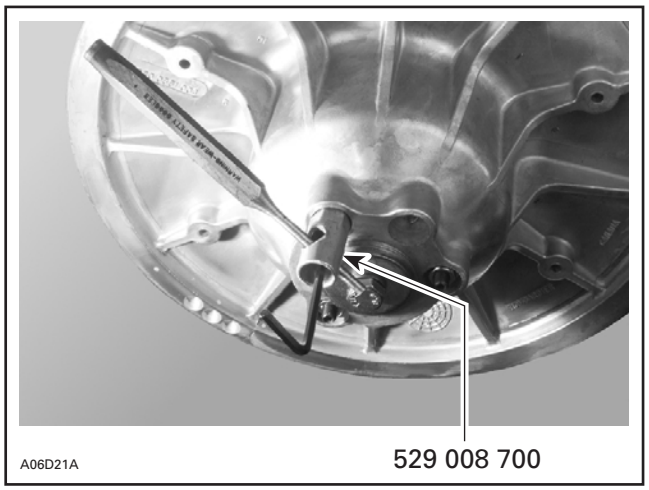
NOTE: Turn Allen screws 1/4 turn at a time, then rotate driven pulley to allow drive belt to settle in pulley. Check deflection, repeat as required.



TYPICAL

1. *Allen screw with jam nut*

Allen screws must be restrained while tightening jam nut to prevent throwing adjustment out. Use drive belt tension adjuster (P/N 529 008 700).



TYPICAL

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

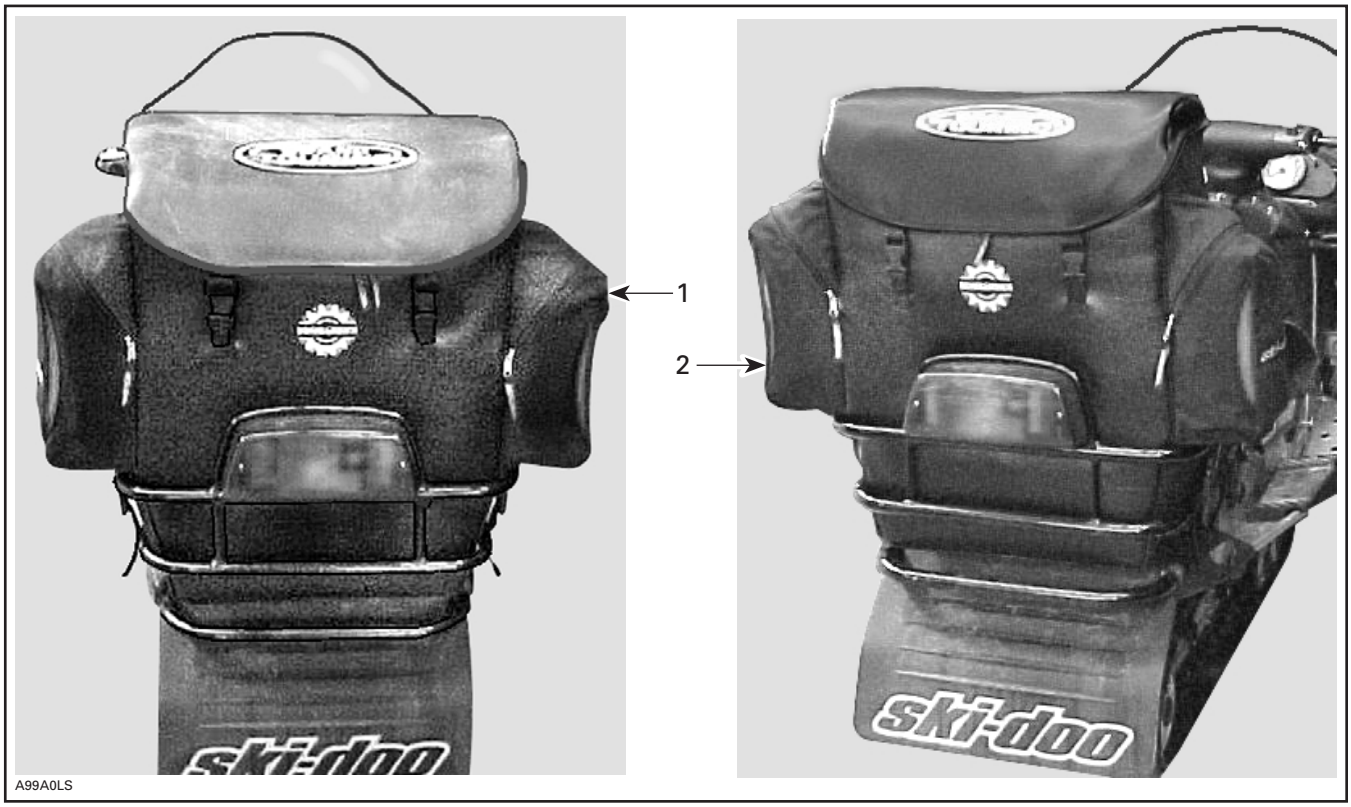
HIGH VOLUME RACK BAG (Black/Brown) (P/N 480 500 001)
HIGH VOLUME RACK BAG (Black) (P/N 480 500 002)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. This instruction sheet should be given to the purchaser. This kit is designed for specific applicable models only. It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.1** hour.

PARTS TO BE INSTALLED



1. High Volume Rack Bag (Black/Brown)
2. High Volume Rack Bag (Black)

INSTALLATION

Unlatch shoulder straps.

Place bag in luggage rack.

Wrap side straps around rack tubes. Buckle, then pull on strap to tighten.

Pass shoulder straps around backrest. Buckle, then pull on strap to tignten.

NOTE: Do not overtighten straps. The same tension should be applied on each strap of the bag.

CAUTION: Heavy objects should be placed at the bottom of bag in order to be contained by the rack structure. Bottom of bag must lay on the rack to make the rack support the bag load.

SUMMIT RACK BAG
(P/N 480 500 003)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. This instruction sheet should be given to the purchaser. This kit is designed for specific applicable models only. It is not recommended for units other than those for which it was sold.

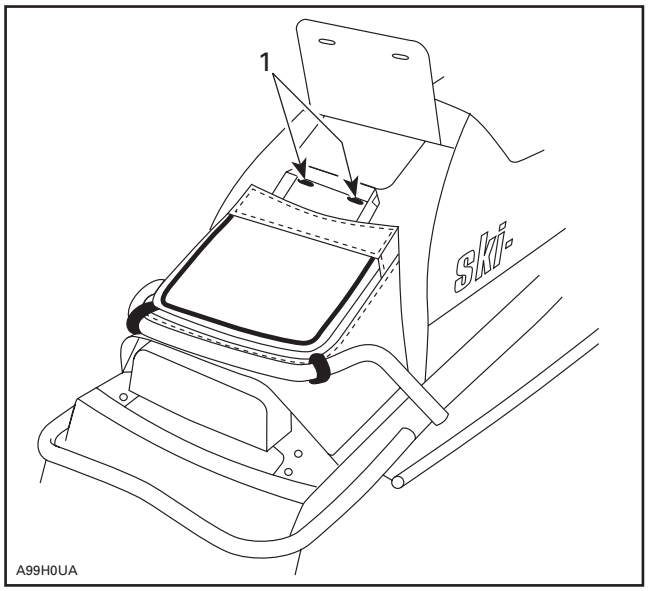
NOTE: Installation time is approximately **0.1** hour.

PARTS TO BE INSTALLED

1. Rack Bag

INSTALLATION

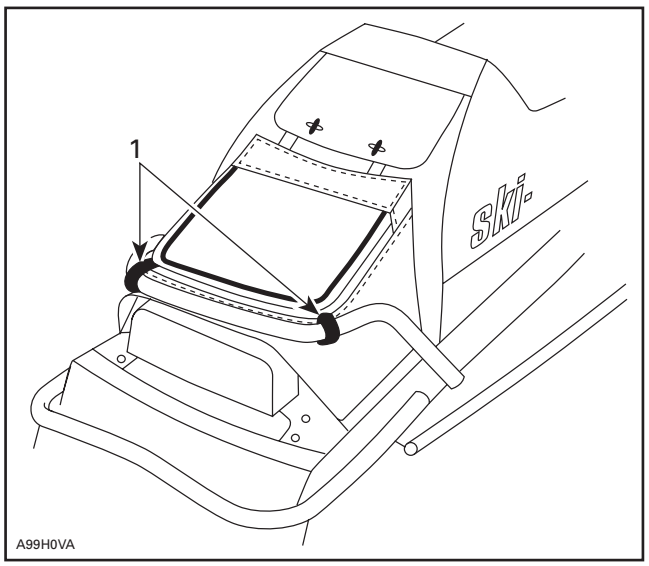
Open storage compartment and hang bag strap on latches.



1. Storage compartment latches

Close storage compartment.

Wrap velcro strips around rack tube.



1. Velcro strips

POLYCARBONATE HOOD
(P/N 486 106 300)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

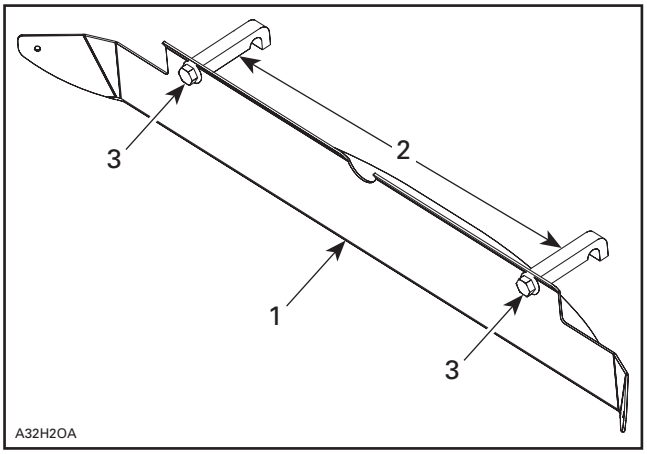
This kit is designed for racing purpose only and consists of:

1. Clear Polycarbonate Hood
2. Hinge Plate
   Hinge Pin (2)
   M6 x 16 Flanged Hexagonal Bolt (2)
3. 4.8 mm (3/16 in) Rivet (3)

INSTRUCTION

Assemble hinge pins to the hinge plate using M6 x 16 flanged hexagonal bolts; apply Loctite† 243 inside hinge pin threads.

Make sure to align hinge pins as per following illustration.

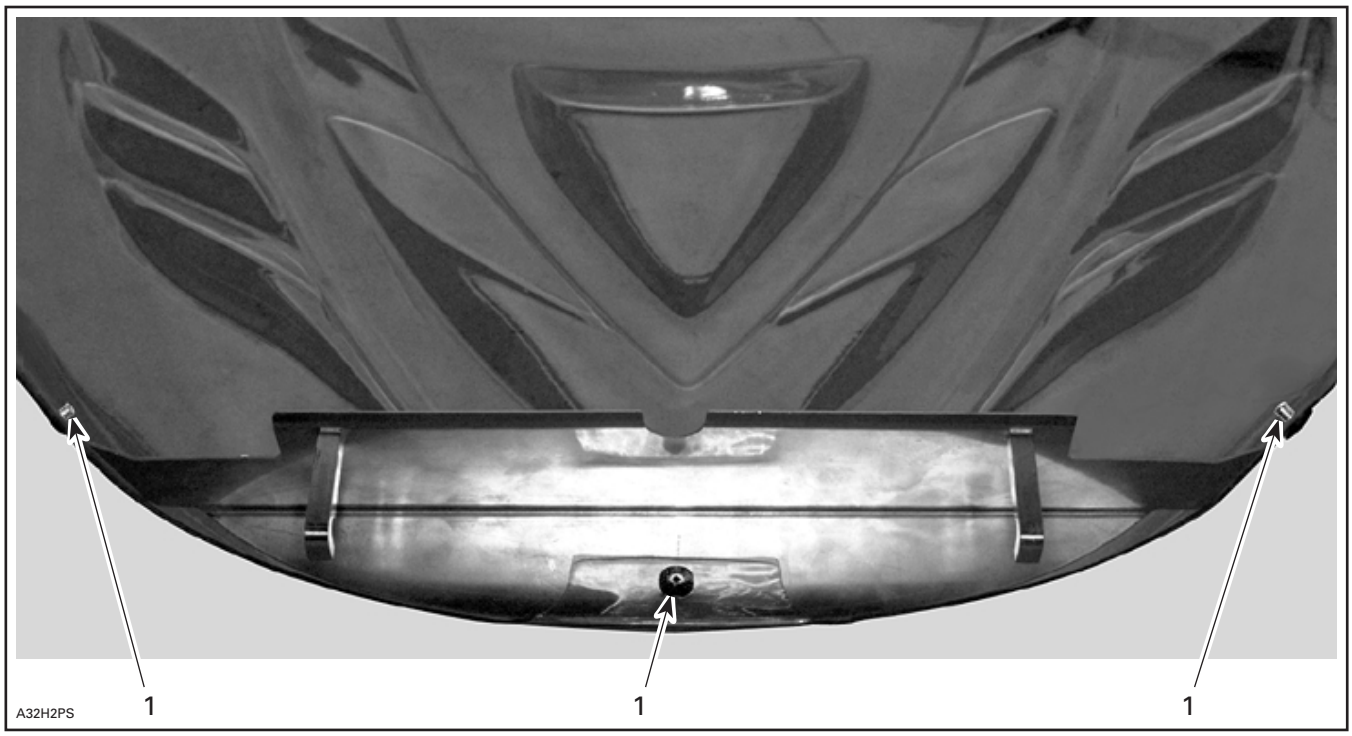


1. Hinge plate
2. Hinge pin
3. M6 x 16 flanged hexagonal bolt

Remove existing hood from snowmobile.

† Loctite is a registered trademark of Loctite Corporation.

Center hinge assembly with forward edge of clear polycarbonate hood and mark rivets positioning.



1. Rivets positioning

Drill 4.8 mm (3/16 in) holes and rivet hinge assembly to hood.

Hood is now ready to be installed on snowmobile. Make sure it is properly fitted onto bottom pan before securing it.

Remove windshield, headlamp molding, headlamp and hood latches from old hood and install them on new hood.

Installation is now complete.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

"J" HOOK / CROCHET EN «J»
(P/N - N/P 506 151 502 / 503 / 504 / 505 / 519 / 520)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer.

This kit is designed for specific applicable models only (dealer will confirm models).
It is not recommended for units other than those for which it was sold.

INSTRUCTION

Cut handle grip at the edge of either right or left handlebar end.
Insert "J" hook with its end pointing down.

Torque allen screw from 11.3 to 13.9 N•m (100 to 123 lbf•**in**).

NOTE: "J" hooks are available in both 45° and 90° angles, ask your dealer.

⚠ AVERTISSEMENT

Pour des raisons de sécurité, ce nécessaire doit être installé par un concessionnaire autorisé de motoneiges Ski-Doo®.

Ce nécessaire a été conçu pour des modèles particuliers (le concessionnaire confirmera lesquels).
Il n'est pas recommandé de l'installer sur les motoneiges autres que celles pour lesquelles il a été vendu.

INSTRUCTIONS

Couper le bout de la poignée de caoutchouc, au choix, à l'extrémité gauche ou droite du guidon.

Insérer le crochet en «J» de sorte qu'il pointe vers le bas.

Serrer la vis Allen de 11.3 à 13.9 N•m (de 100 à 123 lbf•**po**).

REMARQUE: Deux modèles de crochets en «J» sont offerts, soit un dont l'angle est de 45° et l'autre de 90°. Consultez votre concessionnaire.

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X-TEAM SEAT COVER
(P/N 510 003 996/510 003 997)
(P/N 510 004 000/510 004 001)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 0.7 hour.

PARTS TO BE INSTALLED

This kit consists of:
1. Seat Cover
2. Front Padding
3. Right Side Padding
4. Left Side Padding

INSTRUCTION

Remove seat and disconnect wire.

Remove taillight.

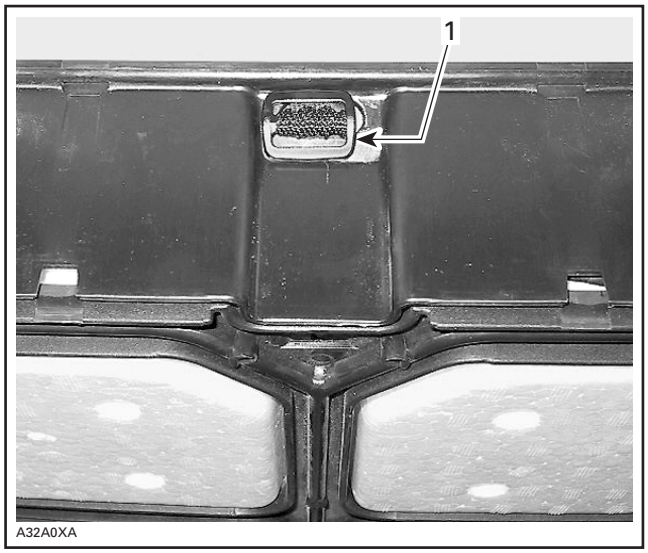
Remove existing seat cover.

Install padding no. 2 at the front.

Hook up front section of seat cover no. 1 stapling it in 2 or 3 places to hold it in place and align it all along seat.

Insert belt in rear slot and secure with buckle in plastic frame opening.

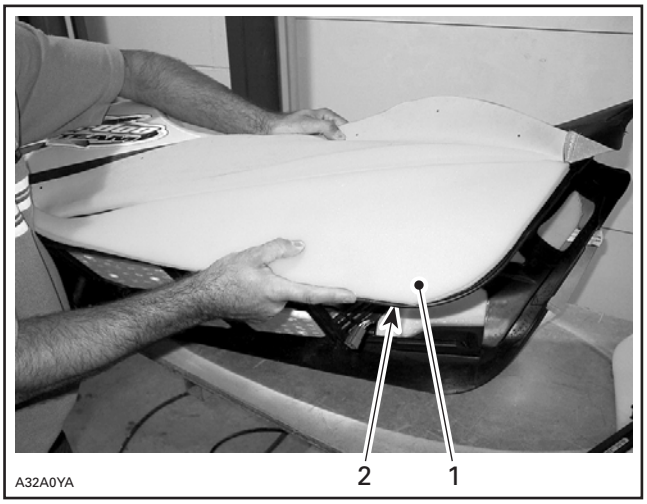
1. Belt inserted in rear slot



1. Belt secured with buckle

Staple both rear corners making sure to place guide holes 6 mm to 9.5 mm (1/4 to 3/8 inch) from inside plastic edge.

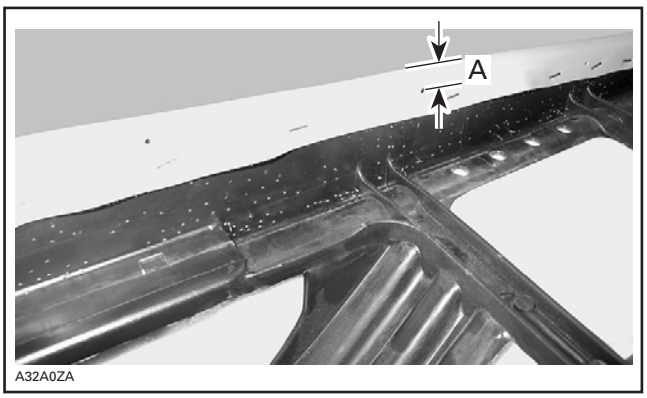
Insert right side padding **no. 3** with its soft surface outside and in line with front lower plastic edge. Staple into plastic reinforcement.



1. Right side padding
2. In line with plastic edge

Repeat procedure with left side padding **no. 4**.

Staple seat cover all around making sure guiding holes are placed 6 mm to 13 mm (1/4 to 1/2 inch) from inside plastic edge.



A. 6 to 13 mm (1/4 to 1/2 in)

Once seat cover is stapled all around, cut cover for taillight hole and staple all around it, then cut excess of material.

TAILLIGHT HOLE

Reinstall taillight.

Reconnect wire and install seat in place.

Installation is now complete.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

REAR SUSPENSION
QUICK ADJUSTMENT KIT
(P/N 860 306 500)

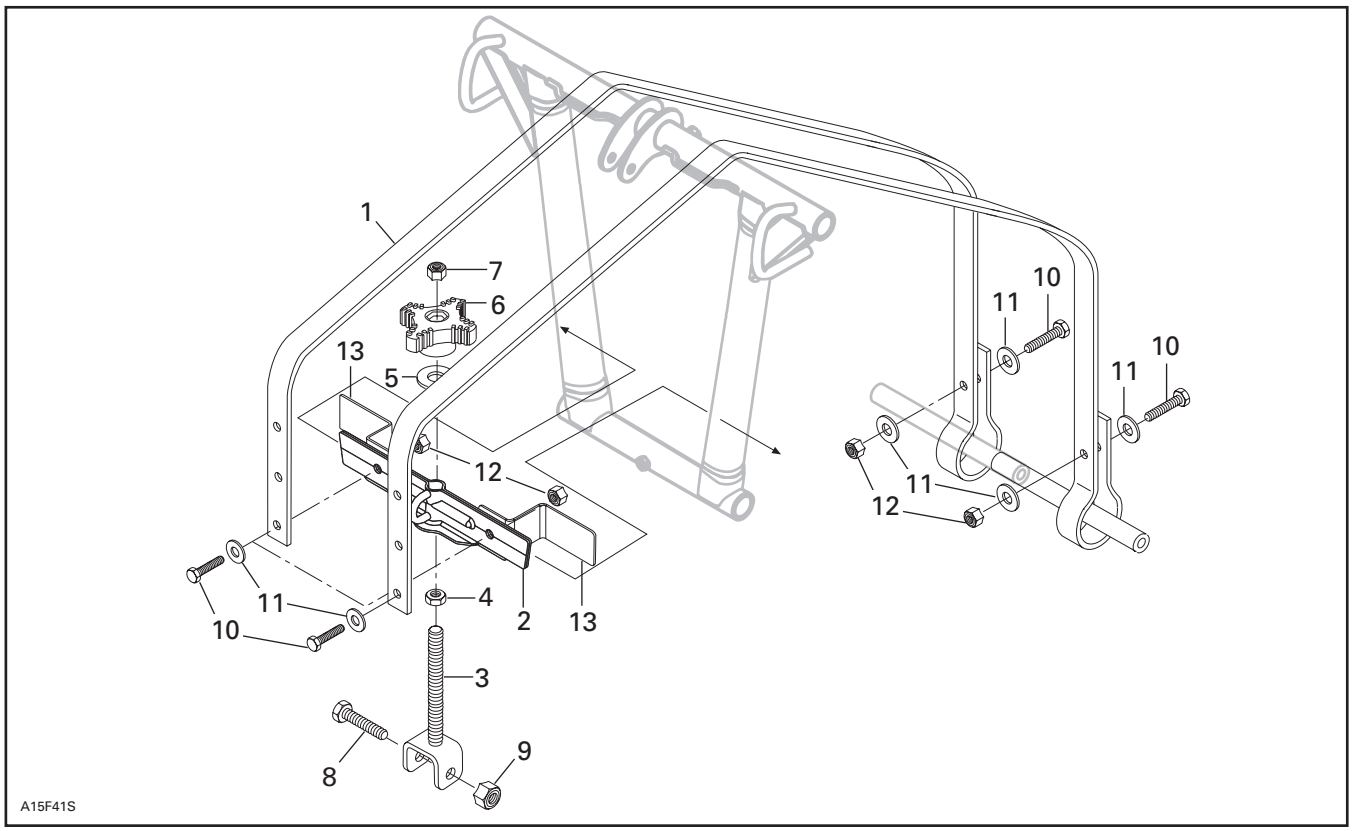
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 1.5 hours.

PARTS TO BE INSTALLED



1. Strap (2)
2. Strap Link
3. Adjustment Screw
4. M10 Hexagonal Nut
5. M10 Flat Washer
6. Adjuster Knob
7. M10 Elastic Stop Nut
8. M10 x 55 Hexagonal Bolt
9. M10 Elastic Stop Nut
10. M8 x 25 Hexagonal Bolt (4)
11. M8 Flat Washer (6)
12. M8 Elastic Stop Nut (4)
13. L-Shape Plate (2)

INSTRUCTIONS

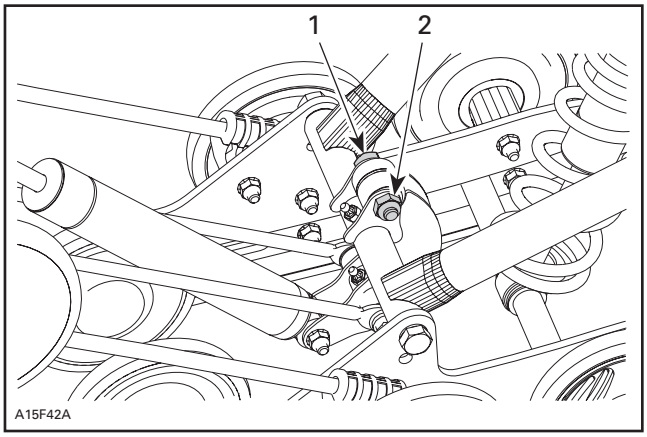
Preparation

Remove rear suspension. Refer to REAR SUSPENSION section of the appropriate *Shop Manual.*

Installation

Install M10 hexagonal nut **no. 4** on adjustment screw **no. 3**, screw till the end but do not tighten.

Remove and discard existing front arm lower bracket M10 retaining bolt and elastic nut. Refer to following illustration.



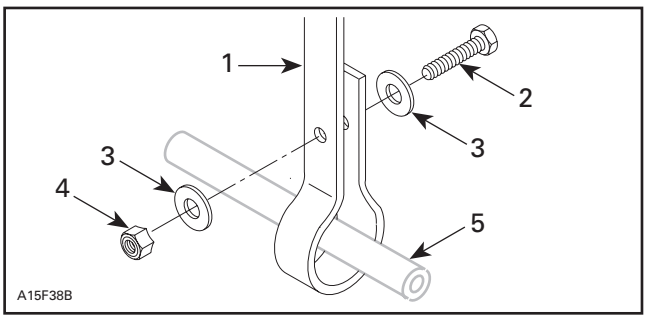
1. *Remove and discard this bolt*
2. *Remove and discard this elastic nut*

Secure adjustment screw to front arm lower bracket with M10 x 55 hexagonal bolt **no. 8** and M10 elastic stop nut **no. 9**.

Insert adjustment screw into strap link **no. 2** center hole.

Remove and discard existing straps.

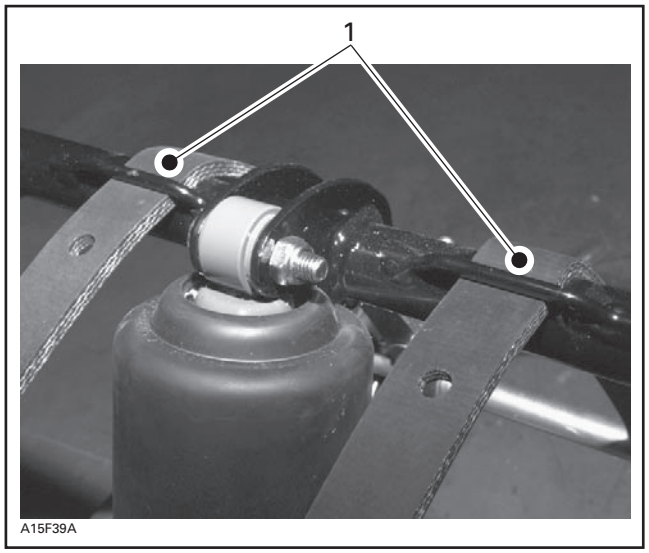
Install new straps **no. 1** with M8 x 25 hexagonal bolt **no. 10**, M8 flat washers **no. 11** and M8 elastic stop nuts **no. 12**. Refer to the following illustration.



LEFT HAND SIDE SHOWN, IDENTICAL ON RIGHT HAND SIDE

1. *Strap*
2. *M8 x 25 hexagonal bolt*
3. *M8 flat washers*
4. *M8 elastic stop nut*
5. *Front axle*

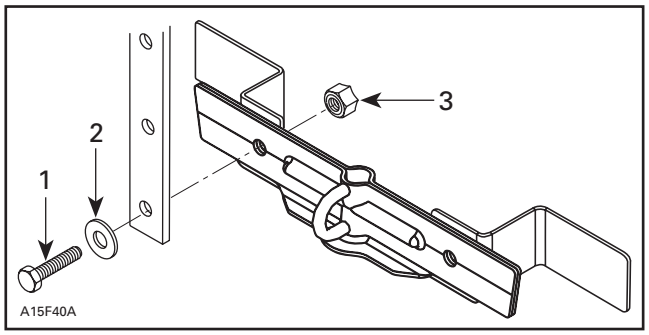
Route straps over and pass them through brackets of front arm upper axle, as shown on the next photo.



1. *Straps properly routed into brackets of front arm upper axle*

Secure straps and L-shape plates **no. 13** to strap link with M8 x 25 hexagonal bolt **no. 10** M8 flat washers **no. 11** and M8 elastic stop nuts **no. 12**.

To ease this final step of the installation, insert hexagonal bolt into flat washer, strap and strap link, lean strap link onto front arm and insert L-shape plate on the other side into hexagonal bolt then, secure everything with elastic stop nut. Repeat for both sides. Refer to following illustration.

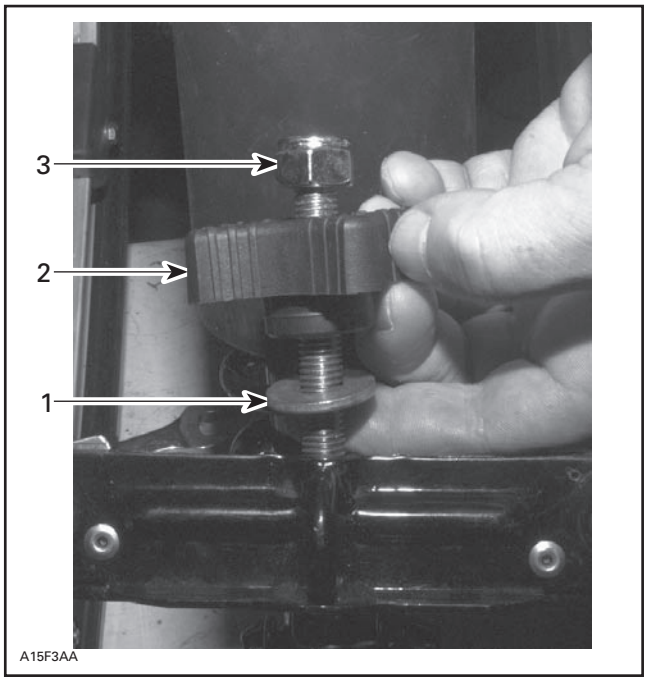


LEFT HAND SIDE SHOWN, IDENTICAL ON RIGHT HAND SIDE

1. *M8 x 25 hexagonal bolt*
2. *M8 flat washer*
3. *M8 elastic stop nut*

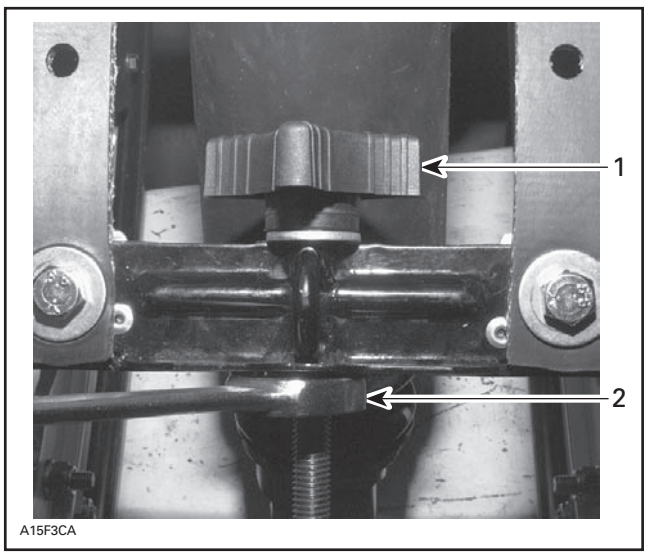
CAUTION: Ensure that strap link assembly is properly positioned. L-shape plate under front arm and strap link over front arm.

Install M10 flat washer **no. 5**, adjuster knob **no. 6** and M10 elastic stop nut **no. 7**, as shown in the next photo.



1. M10 flat washer
2. Adjuster knob
3. M10 elastic stop nut

Adjust suspension with adjuster knob and secure with nut, as shown on the next photo.



1. Adjuster knob
2. Secure with nut

Reinstall rear suspension onto snowmobile.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

860 306 500

1.	570 049 700	Strap (2)	Courroie (2)
2.	503 188 400	Strap Link	Tendeur de courroie
3.	503 190 119	Adjustment Screw	Vis de réglage
4.	232 006 414	M10 Hexagonal Nut	Écrou hexagonal M10
5.	224 002 251	M10 Flat Washer	Rondelle plate M10
6.	572 034 000	Adjuster Knob	Bouton de réglage
7.	233 601 416	M10 Elastic Stop Nut	Écrou d'arrêt élastique M10
8.	207 005 544	M10 x 55 Hexagonal Bolt	Boulon hexagonal M10 x 55
9.	233 601 416	M10 Elastic Stop Nut	Écrou d'arrêt élastique M10
10.	207 182 544	M8 x 25 Hexagonal Bolt (4)	Boulon hexagonal M8 x 25 (4)
11.	234 082 410	M8 Flat Washer (6)	Rondelle plate M8(6)
12.	232 581 414	M8 Elastic Stop Nut (4)	Écrou d'arrêt élastique M8 (4)
13.	503 188 500	L-Shape Plate (2)	Plaque en «L» (2)

REAR SUSPENSION WHEELS KIT
(P/N 860 306 800)

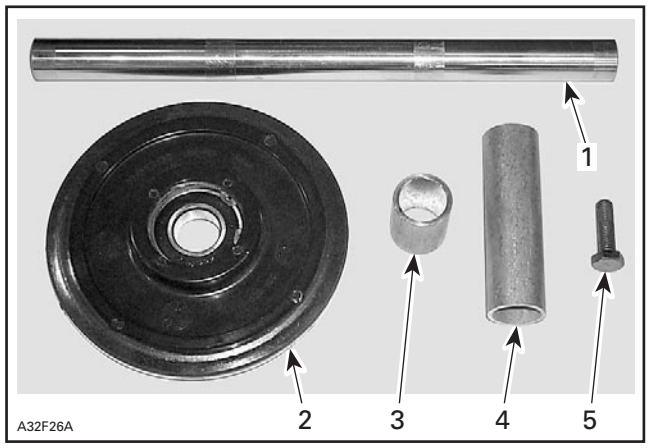
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.5** hour.

PARTS TO BE INSTALLED

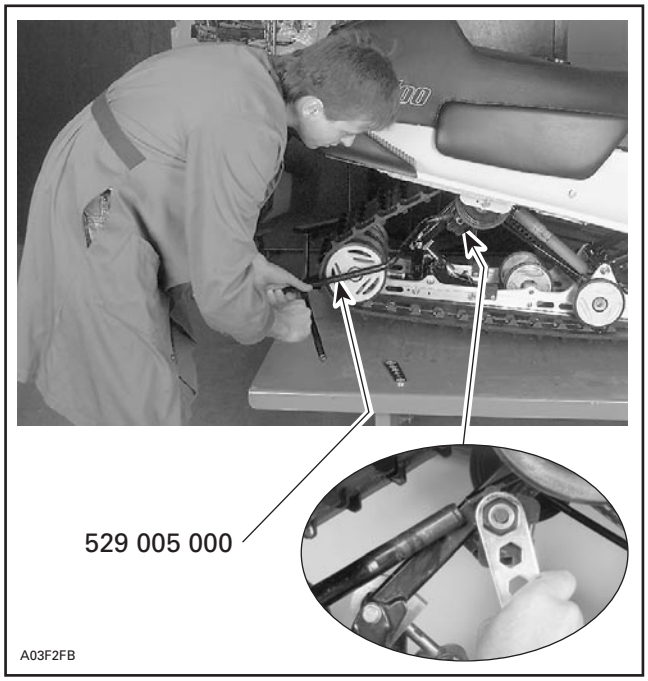


1. Rear Axle
2. Thin 165 Wheel (2)
3. Short Inner Spacer
4. Center Spacer
5. Hexagonal Bolt with Nylon Patch (2)

PROCEDURE

Decrease spring preload by turning cams accordingly.

Slightly turn adjusting cam to expose spring end. Using spring installer (P/N 529 005 000), remove both springs from adjusting cams.



TYPICAL

Lift rear of vehicle and support it off the ground.

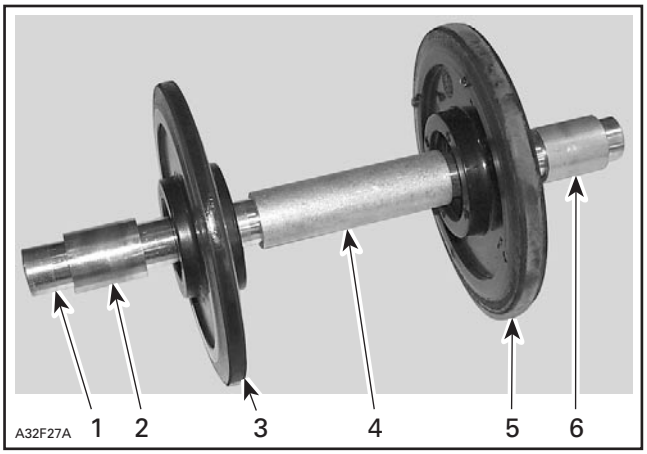
Loosen track tension.

Remove idler wheel cap.

Unbolt idler wheels and remove wheels and axle. Keep outer slotted bushings, short inner spacer and brass washers.

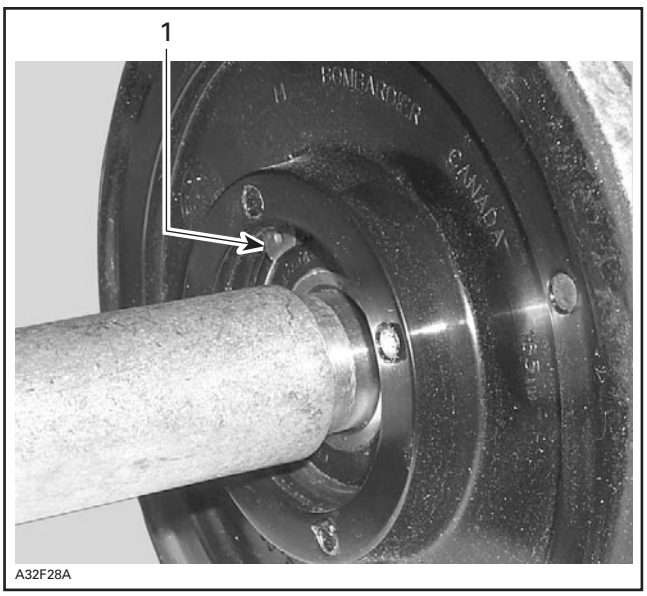
Install the new rear axle **no. 1** along with spacers and wheels in the runner rear slot in the following order:

– brass washer
– short inner spacer **no. 3**
– thin 165 wheel **no. 2**
– center spacer **no. 4**
– thin 165 wheel **no. 2**
– short inner spacer
(removed from older axle assembly)
– brass washer.



1. *Axle **no. 1***
2. *Short inner spacer **no. 3***
3. *Thin 165 wheel **no. 2***
4. *Center spacer **no. 4***
5. *Thin 165 wheel **no. 2***
6. *Short inner spacer (removed from older axle assembly)*

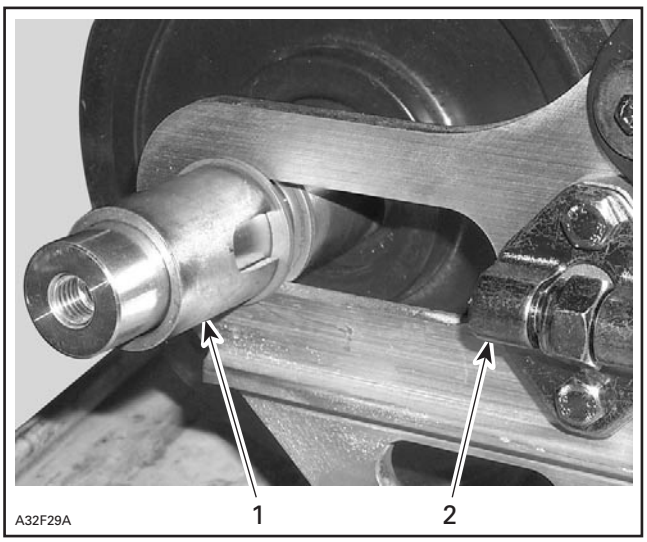
NOTE: At installation, circlip must face inner side of wheels.



1. *Circlip on inner side*

On each side, place both remaining brass washers on axle, outside runners.

On each side, install slotted spacers with holes facing adjustment screws. See photo.



1. *Slotted spacer*
2. *Adjustment bracket and screw*

Reinstall outer wheels and secure them with hexagonal bolts **no. 5**. Refer to proper *Ski-Doo Shop Manual* for procedure.

Reinstall idler wheel caps.

Align track and adjust its tension. Refer to proper *Ski-Doo Shop Manual* for procedure.

Reinstall both springs and turn cams according to customer's preferences.

Put vehicle back on ground.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

860 306 800

1.	503 167 900	Rear Axle	Essieu arrière
2.	503 189 579	Thin 165 Wheel (2)	Roue 165 mince (2)
3.	503 182 900	Short Inner Spacer	Entretoise interne courte
4.	503 156 000	Center Spacer	Entretoise centrale
5.	250 000 019	Hexagonal Bolt with Nylon Patch (2)	Boulon hexagonal et pièce de nylon (2)

COUNTERSHAFT
(P/N 860 424 100)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

This instruction sheet tells you how to install racing type transmission countershaft (P/N 504 151 955) on the MX Zx 440 LC only.

INSTRUCTION

– Remove belt guard, belt and driven pulley.
– Remove air silencer.
– Unbolt bearing support from chassis.
– Unbolt caliper from chaincase.
– Open chaincase and remove upper sprocket.
– Pull countershaft toward driven pulley side to free from chaincase and disc.
– Remove disc.

NOTE: Clean all metal components in a general purpose solvent. Thoroughly dry all components before assembling.

– Reverse disassembly procedure to install racing type transmission countershaft (P/N 504 151 955) and then, proceed with pulley distance check and alignment as per following procedure.

GENERAL

The pulley distance we will refer to in this procedure, is the space separating the drive and driven pulley outside diameters (Z measurement).

This basic distance is provided as an assembly guide and indicates the dimensions between which satisfactory belt deflection will be obtained.

Both pulley distance adjustment and pulley alignment must be carried out to ensure the highest efficiency of the transmission system. Furthermore, optimum drive belt operation and minimal wear will be obtained only with proper pulley alignment.

CAUTION: Before checking pulley adjustment, the rear suspension must be mounted on the vehicle and track tension/alignment must be done. Always check pulley adjustment after suspension is adjusted.

⚠ WARNING

Failure to correctly perform pulley alignment may cause the vehicle to creep forward at idle.

All Pulley Alignment Specifications Refer to:

X = Distance between straight bar and drive pulley fixed half edge, **measured between pulleys**.

Y = Distance between straight bar and drive pulley fixed half edge, **measured at the end of straight bar**.

Z = Distance between outside diameter of pulleys.

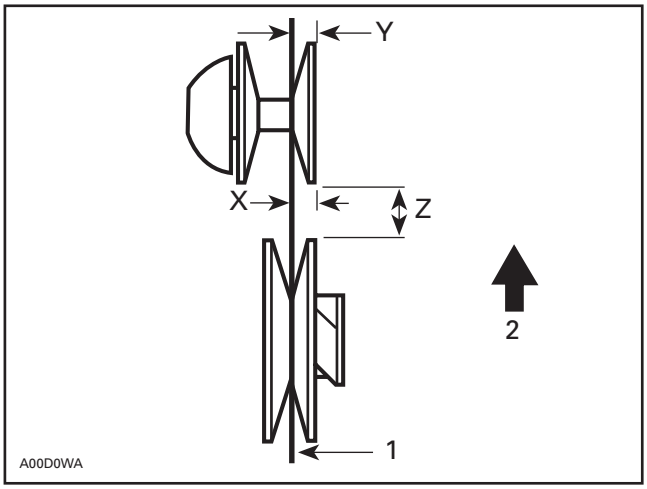
With guard and drive belt removed, proceed as follows.

By turning and pushing the sliding half, open the driven pulley. Insert a straight bar 9.5 mm (.375 in) square, 48 cm (19 in) long or the proper alignment template into the opened driven pulley.

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

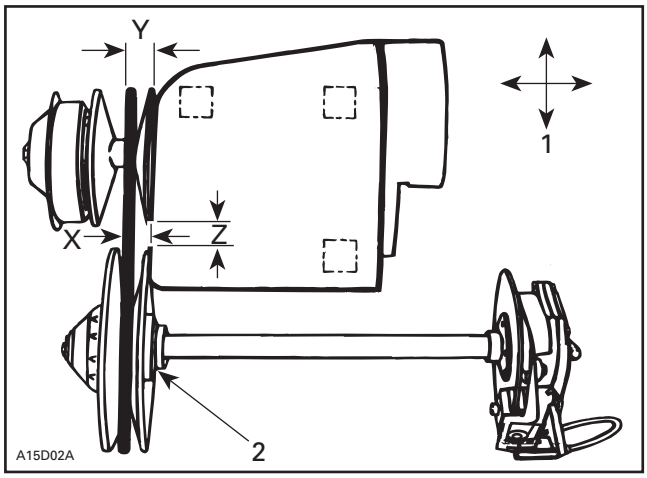
1. *Straight bar*
2. *Front of vehicle*

The distance Y **must** exceed distance X to compensate for the twist due to the engine torque.

PULLEY ALIGNMENT AND DISTANCE SPECIFICATIONS CHART

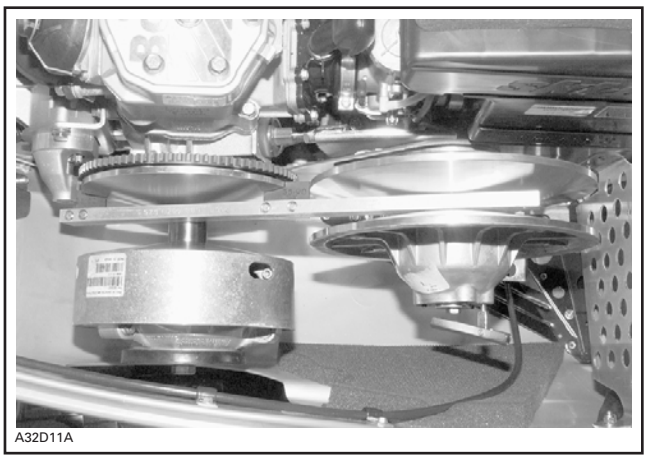
MODEL	PULLEY DISTANCE	OFFSET		ALIGNMENT TEMPLATE ① P/N
	Z	X	Y-X	
	± 0.50 mm (.020 in)	± 0.50 mm (.020 in)	± 0.5 mm (.020 in)	
All	16.5 (.650)	35.50 (1.398)	1.5 (.060)	529 026 700

① Alignment templates have been made according to pulley alignment nominal values. However, they do not take into account allowed tolerances for alignment specifications. They are used as GO/NO GO gauges for quick alignment and pulley distance check and as templates to reach alignment nominal values.



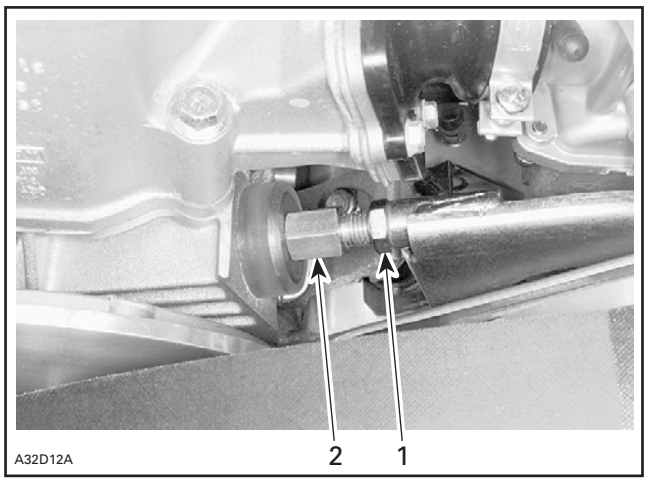
TYPICAL

1. *Engine movement*
2. *Contact*



ALIGNMENT BAR IN PULLEYS

NOTE: Prior to performing pulley adjustment, loosen torque rod nut to allow engine movement. Engine supports have tendency to stick to frame, work engine loose prior to aligning.



1. *Loosen lock nut first*
2. *Loosen*

Pulley Distance Adjustment Method

Engine Movement

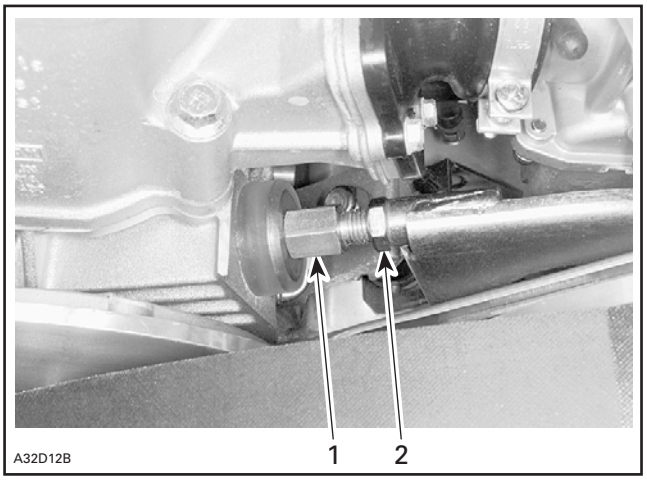
The engine support has slotted mounting holes. Move engine to obtain specified distance between pulleys.

Pulley Alignment Method

Engine Movement

Loosen the 4 bolts retaining engine support to the frame. Position engine to obtain the specified alignment.

NOTE: After alignment, adjust torque rod so it slightly contacts stopper plate. Do not over tighten, it will disalign pulleys.



1. *Slightly tighten*
2. *Retighten*

NOTE: When pulley distance and alignment are adjusted to specifications, refer to following procedure to adjust drive belt deflection.

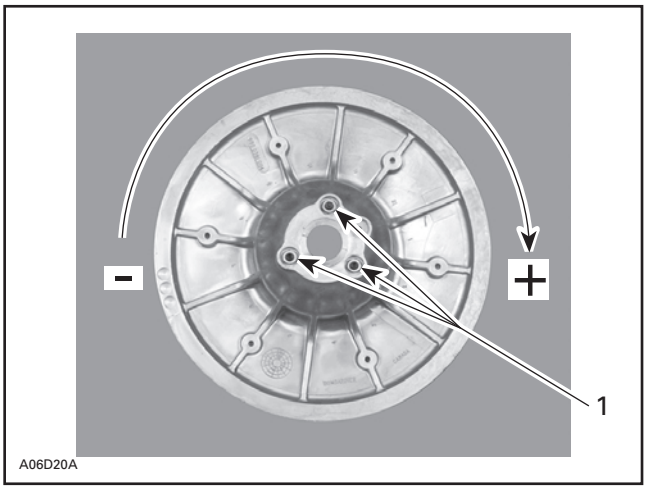
DEFLECTION ADJUSTMENT

Adjust drive belt deflection using Allen screws, as shown.

To increase deflection: turn Allen screws clockwise.

To decrease deflection: turn Allen screws counterclockwise.

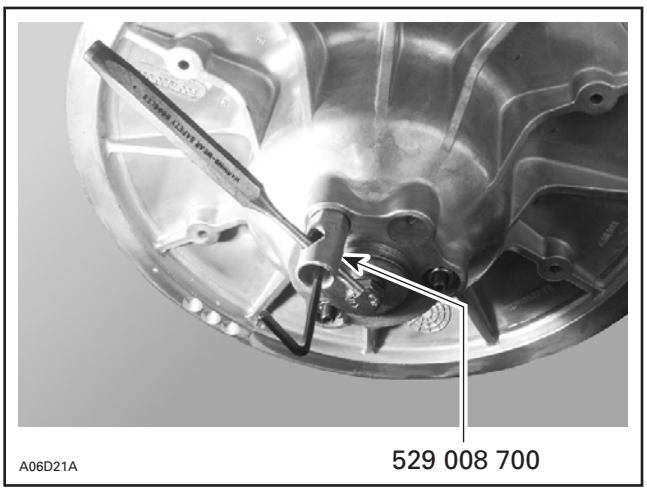
NOTE: Turn Allen screws 1/4 turn at a time, then rotate driven pulley to allow drive belt to settle in pulley. Check deflection, repeat as required.



TYPICAL

1. Allen screw with jam nut

Allen screws must be restrained while tightening jam nut to prevent throwing adjustment out. Use drive belt tension adjuster (P/N 529 008 700).



TYPICAL

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
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22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
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81	M12	60
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83	M12	61
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124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

DRIVE PULLEY TITANIUM SPRING
(P/N 860 424 200/300/400/500)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

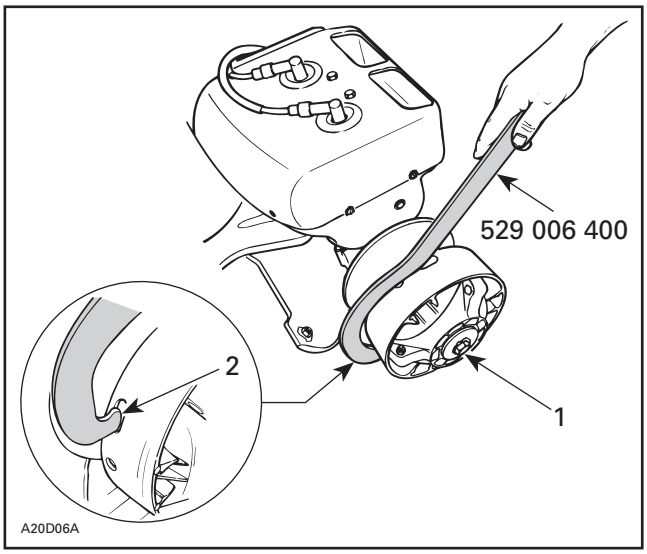
This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

This instruction sheet applies to the MX Zx 440 LC only.

INSTRUCTION

Remove belt guard and drive belt.

Use holder (P/N 529 006 400).



TYPICAL

1. *Retaining screw*
2. *Insert in any slot*

⚠ 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).

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.

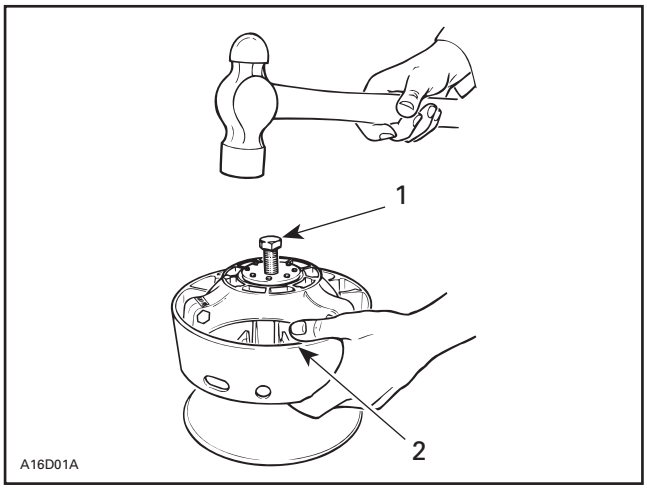
Install puller in pulley shaft then tighten.

DISASSEMBLY

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.



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.

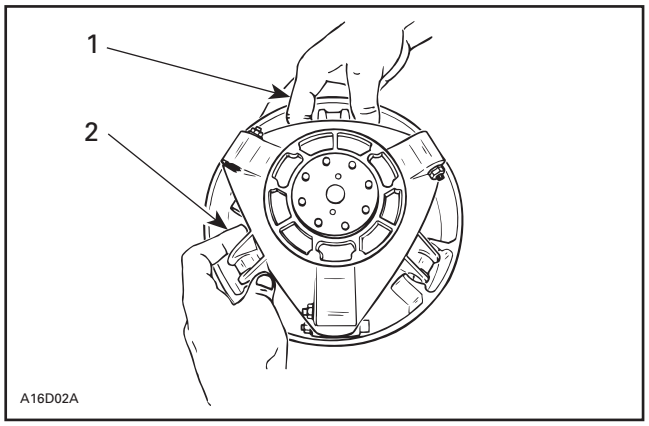
Cushion Drive

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

Slider Shoe and Governor Cup

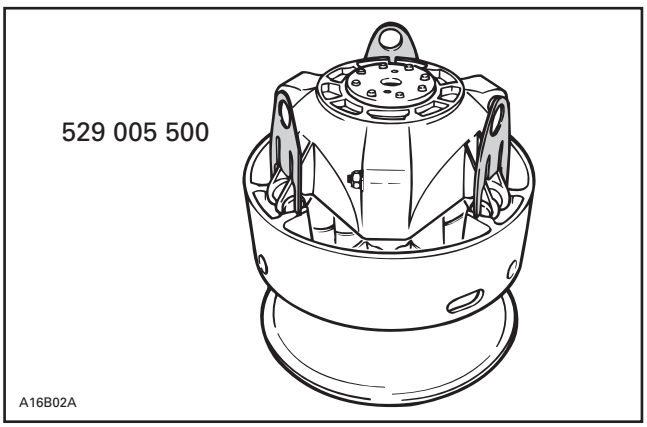
Carefully lift governor cup until slider shoes come at their highest position into guides.

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

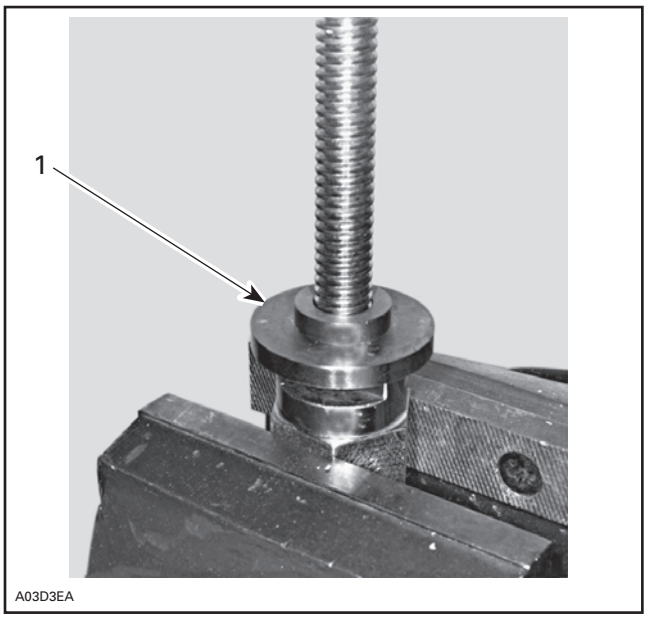
It is pushed by clutch spring pressure.

⚠ WARNING

Clutch spring is very strong. Never attempt to remove spring cover without the recommended tools.

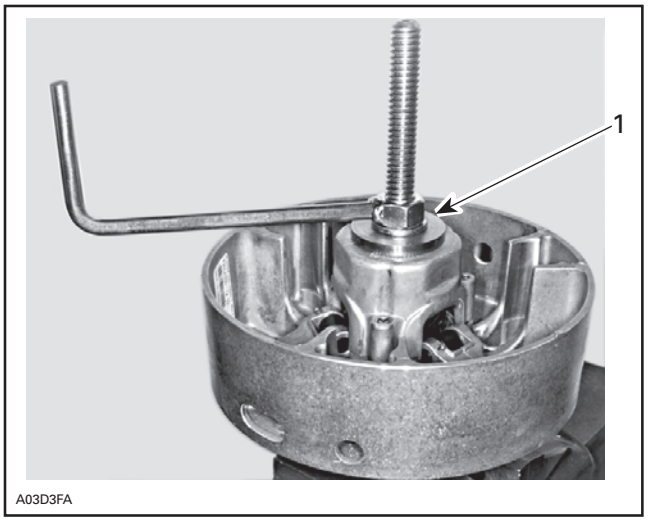
Use spring compressor (P/N 529 035 524).

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 (IF REQUIRED)

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.

Sliding Half and Spring Cover Bushing

Visually inspect coating. Replace if worn.

Sliding Half Bushing Replacement

This bushing is not replacable. If worn out, replace sliding half ass'y.

Spring Cover Bushing Replacement

Under normal use there is no need to replace this bushing.

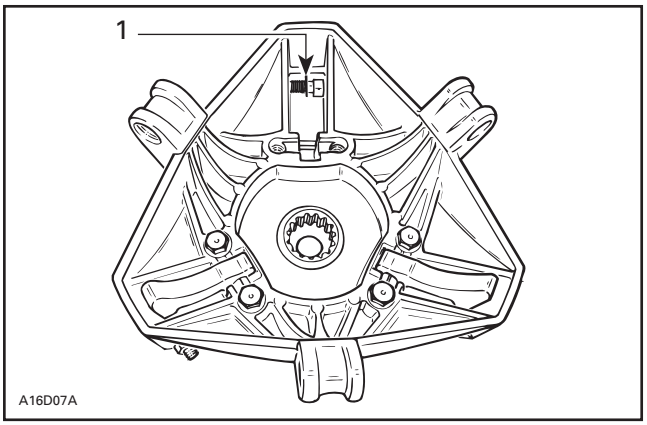
This bushing is not replacable. If worn out, replace spring cover ass'y.

ASSEMBLY

NOTE: This drive pulley is lubrication free. **Do not lubricate** any component.

Calibration Screw, Washer and Locking Nut

When installing calibration screw, make sure to install washer as shown.



1. Washer

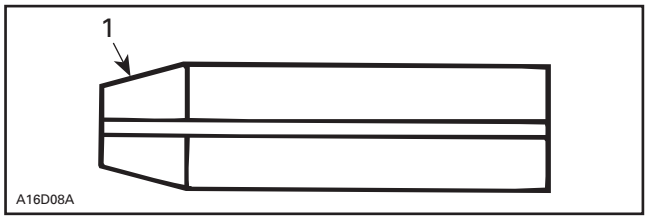
Torque locking nut to 10 N•m (89 lbf•**in**).

Pin

Always use the same type of pin as originally installed when servicing. Different types have different weights for calibration purpose. Refer to TECHNICAL DATA where *Shop Manual* is available.

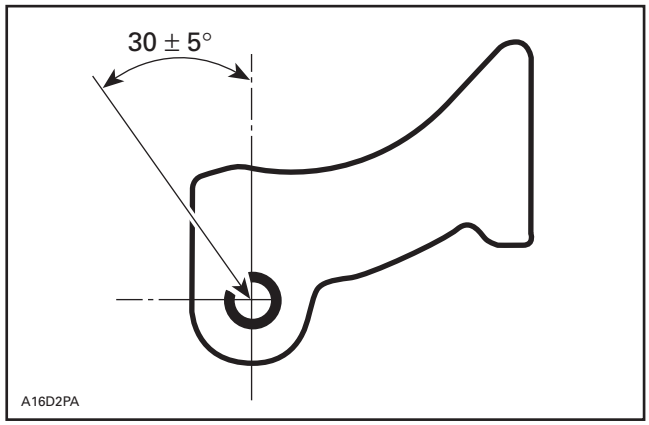
Ramp, Dowel Tube and Screw

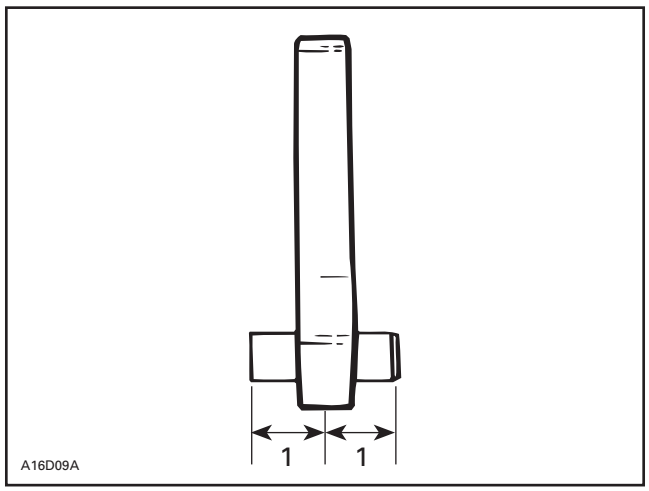
Insert dowel tube from chamfered side. Make sure ramp is centered on dowel tube.



1. Chamfered side

Position dowel tube split at the illustrated angle.





1. Equal distance

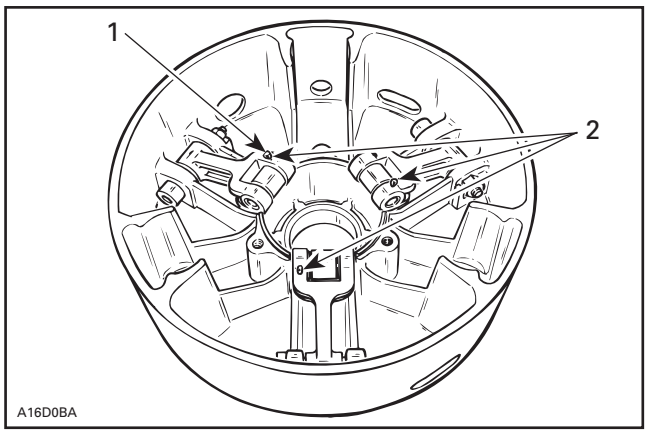
Torque screws to 10 N•m (89 lbf•**in**).

Screw, Lever Ass'y, Nut and Cotter Pin

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.



1. Head on top
2. All on the same side

CAUTION: Lever assemblies must be installed so that cotter pins are on the same side.

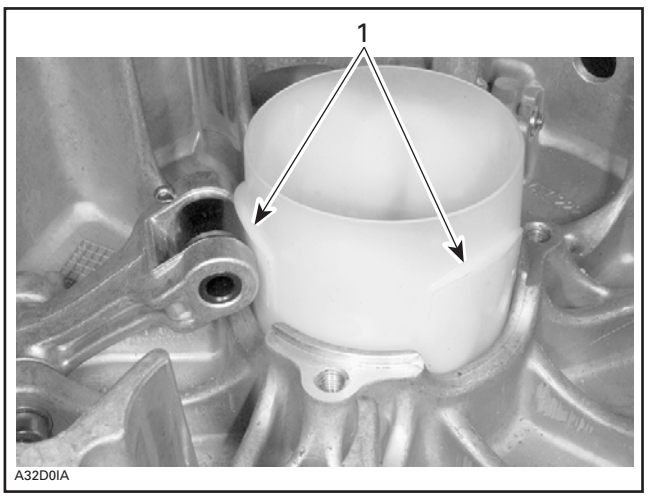
Torque nuts to 12 N•m (106 lbf•**in**).

CAUTION: Lever ass'y and rollers must move easily after installation.

Guard

Some Models Only

Install guard with its reinforcements in line with levers.



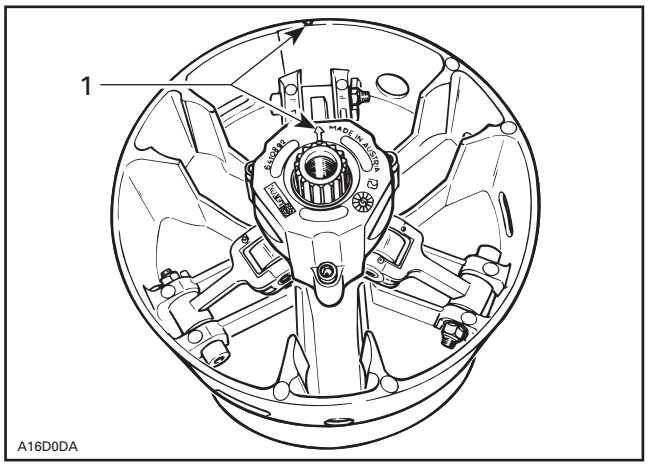
1. Reinforcements

Fixed Half, Sliding Half, Spring, Spring Cover and Screw

Install titanium spring.

To install spring cover, use spring compressor (P/N 529 035 524). Align indexing arrows.

Assemble fixed and sliding halves.

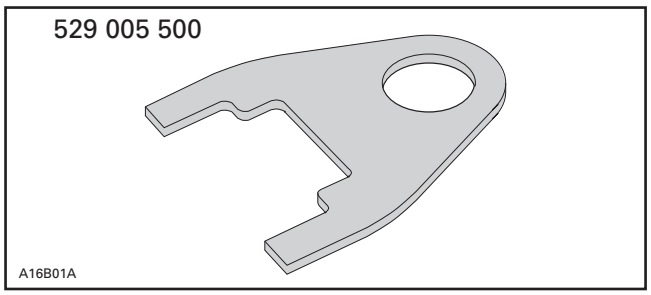


1. Align

Install and torque screws to 13 N•m (115 lbf•**in**) for 593 engine equipped models and to 16 N•m (142 lbf•**in**) for 693 and 793 engine equipped models.

Sliding Half, Slider Shoe and Governor Cup

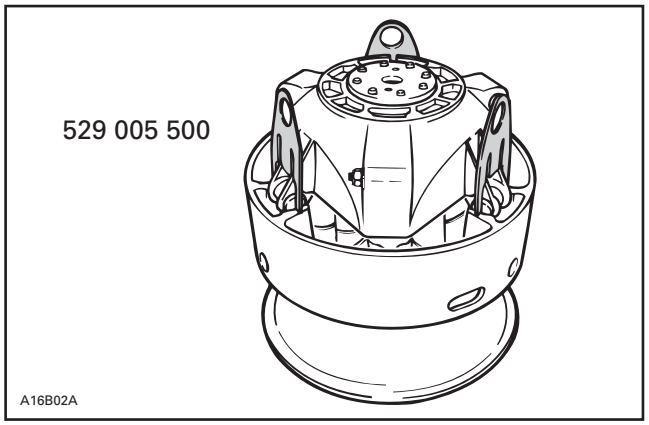
To install governor cup, use following tool:



Insert spring and slider shoes into governor cup so that groove in each slider shoe is vertical to properly slide in guides.

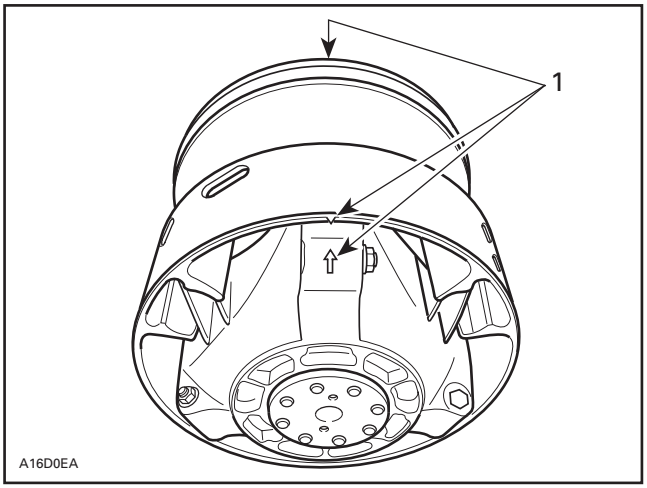
CAUTION: Make sure O-rings are installed on slider shoes and their grooves are positioned vertically.

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.



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.



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 as described in CLEANING above.

Drive Pulley Ass'y

The installation procedure must be strictly adhered to as follows.

Install drive pulley on crankshaft extension.

Install conical washer with its concave side towards drive pulley then install screw.

⚠ WARNING

Never substitute conical 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.

Titanium spring installation is now done but proper procedure also requires the following.

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.

Recheck the torque of 90 to 100 N•m (66 to 74 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 given in TECHNICAL DATA.

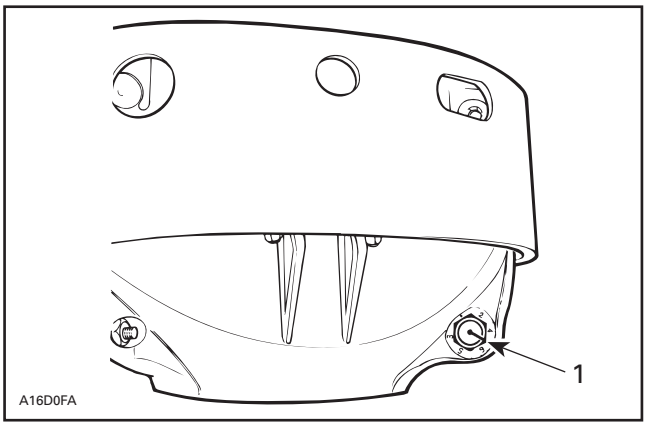
NOTE: Use precision digital tachometer for engine RPM adjustment.

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

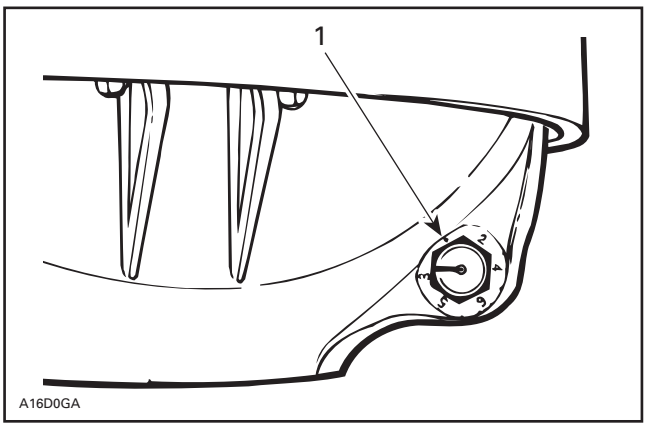
Calibration screw has a notch on top of its head.



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 where a *Shop Manual* is available.



1. Position 1 (not numbered)

Each number modifies maximum engine RPM by about 200 RPM.

Lower numbers decrease engine RPM in steps of 200 RPM and higher numbers increase it in steps of 200 RPM.

Example:

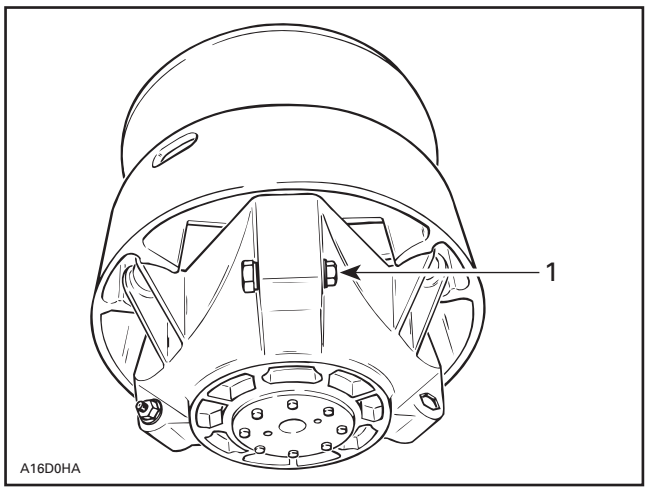
Calibration screw is set at position 3 and is changed to position 5. So maximum engine RPM is increased by about 400 RPM.

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.



1. Loosen just enough to permit rotating of calibration screw

PULLEY DISTANCE AND ALIGNMENT

GENERAL

The pulley distance we will refer to in this section, is the space separating the drive and driven pulley outside diameters (Z measurement).

This basic distance is provided as an assembly guide and indicates the dimensions between which satisfactory belt deflection will be obtained.

Both pulley distance adjustment and pulley alignment must be carried out to ensure the highest efficiency of the transmission system. Furthermore, optimum drive belt operation and minimal wear will be obtained only with proper pulley alignment.

CAUTION: Before checking pulley adjustment, the rear suspension must be mounted on the vehicle and track tension/alignment must be done. Always check pulley adjustment after suspension is adjusted.

⚠ WARNING

Failure to correctly perform pulley alignment may cause the vehicle to creep forward at idle.

All Pulley Alignment Specifications Refer to:

X = Distance between straight bar and drive pulley fixed half edge, **measured between pulleys**.

Y = Distance between straight bar and drive pulley fixed half edge, **measured at the end of straight bar**.

Z = Distance between outside diameter of pulleys.

GENERAL PROCEDURE

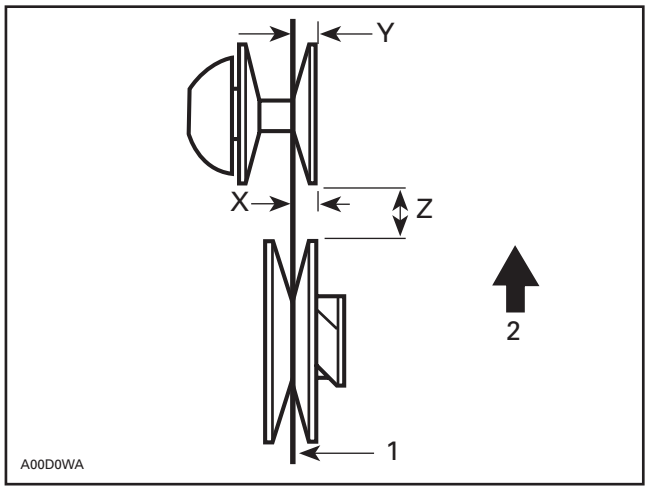
Remove guard and drive belt.

By turning and pushing the sliding half, open the driven pulley. Insert a straight bar 9.5 mm (.375 in) square, 48 cm (19 in) long or the proper alignment template into the opened driven pulley.

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

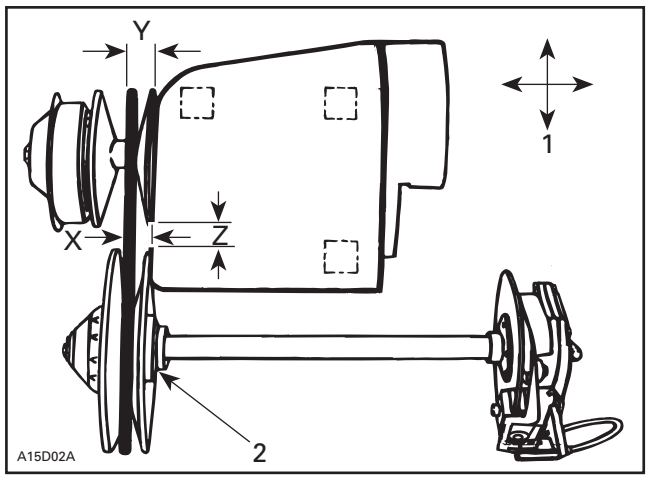
NOTE: When pulley distance and alignment are adjusted to specifications, refer to DRIVE BELT (where a *Shop Manual* is available) to adjust drive belt deflection.

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

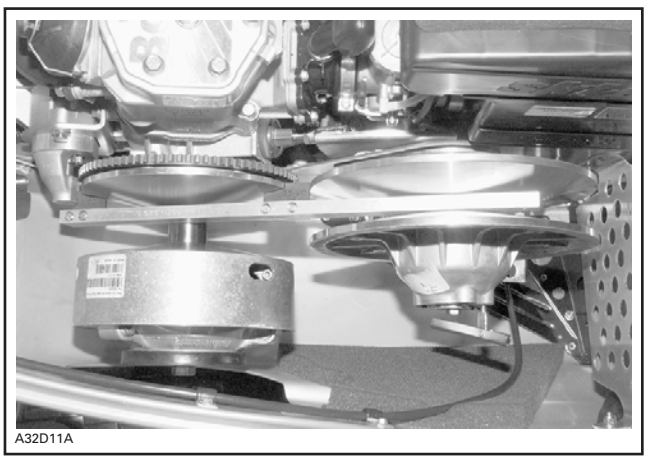
MODEL	PULLEY DISTANCE	OFFSET		ALIGNMENT TEMPLATE ① P/N
	Z	X	Y-X	
	± 0.50 mm (.020 in)	± 0.50 mm (.020 in)	± 0.5 mm (.020 in)	
All	16.5 (.650)	35.50 (1.398)	1.5 (.060)	529 026 700

① Alignment templates have been made according to pulley alignment nominal values. However, they do not take into account allowed tolerances for alignment specifications. They are used as GO/NO GO gauges for quick alignment and pulley distance check and as templates to reach alignment nominal values.



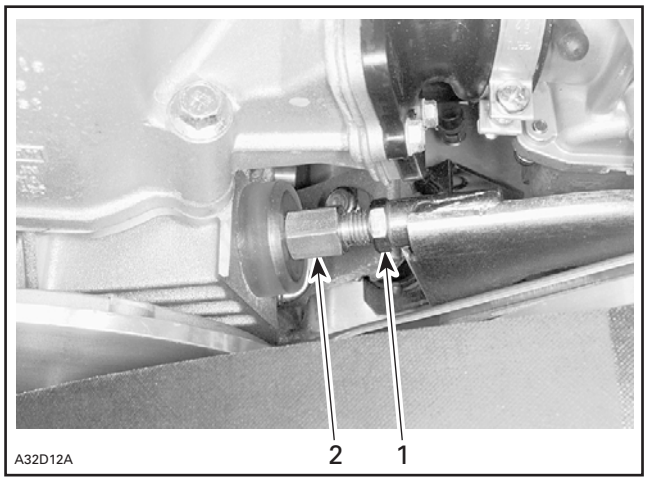
TYPICAL

1. *Engine movement*
2. *Contact*



ALIGNMENT BAR IN PULLEYS

NOTE: Prior to performing pulley adjustment, loosen torque rod nut to allow engine movement. Engine supports have tendency to stick to frame, work engine loose prior to aligning.



1. *Loosen lock nut first*
2. *Loosen*

Pulley Distance Adjustment Method

Engine Movement

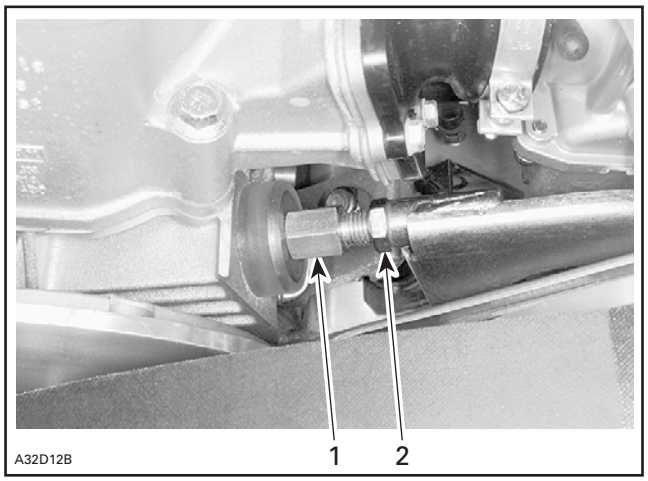
The engine support has slotted mounting holes. Move engine to obtain specified distance between pulleys.

Pulley Alignment Method

Engine Movement

Loosen the 4 bolts retaining engine support to the frame. Position engine to obtain the specified alignment.

NOTE: After alignment, adjust torque rod so it slightly contacts stopper plate. Do not over tighten, it will disalign pulleys.



1. *Slightly tighten*
2. *Retighten*

Reinstall drive belt and belt guard.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

DRIVEN PULLEY TITANIUM SPRING
(P/N 860 424 600)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

This spring applies to the MX Z®x 440 LC only.

PROCEDURE

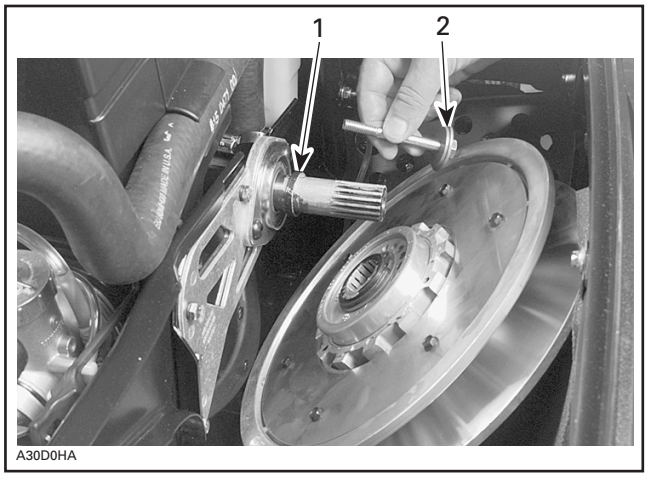
Driven Pulley Removal

Remove belt guard and drive belt from vehicle.

Remove cap screw and shouldered washer then pull the driven pulley off the countershaft.

Note shouldered washer position for reinstallation.

Be careful not to lose spacer.

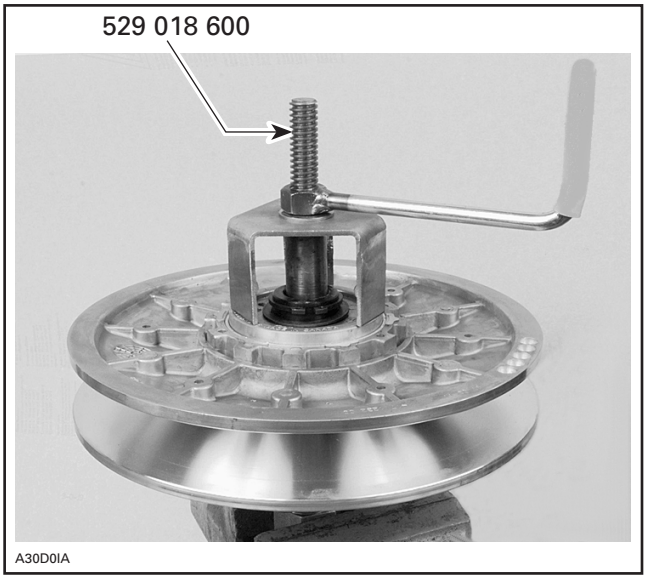


TYPICAL

1. *Spacer*
2. *Shoulder on this side*

Driven Pulley Disassembly

Use spring compressor (P/N 529 018 600).

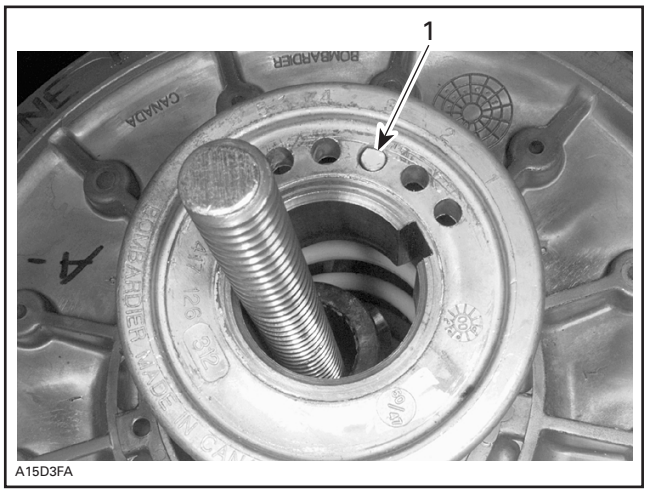


Remove snap ring and washer to disassemble the cam.

⚠ WARNING

Driven pulley cam is spring loaded. Make sure that parts do not pop out when unscrewing the above-mentioned tool.

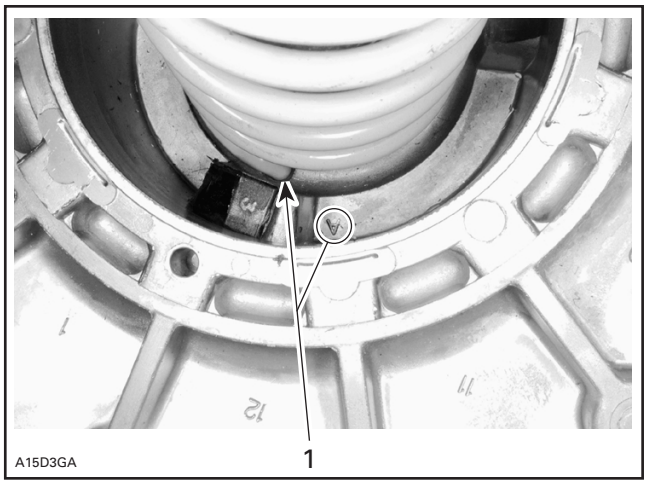
Note spring position in cam and remove cam.



1. Spring position in cam

Take care not to lose key.

Note spring position in driven pulley sliding half then remove spring.



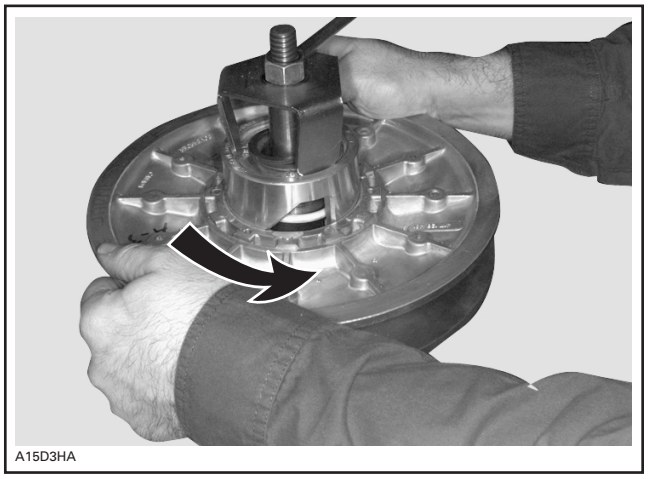
1. Spring position in driven pulley sliding half

Insert new spring in cam making sure to select proper positioning hole and that spring is properly inserted. If spring end is hard to push in hole, try other end of spring.

Align cam slot with key and insert other end of spring in proper positioning hole of sliding half.

Using spring compressor, slowly insert cam in sliding half.

Turn sliding half approximately a 1/4 of a turn counterclockwise to align cam angle with rollers and then lower cam enough to secure snap ring.



TURN COUNTERCLOCKWISE APPROXIMATELY 1/4 OF A TURN

Spring Torsional Pre-Load

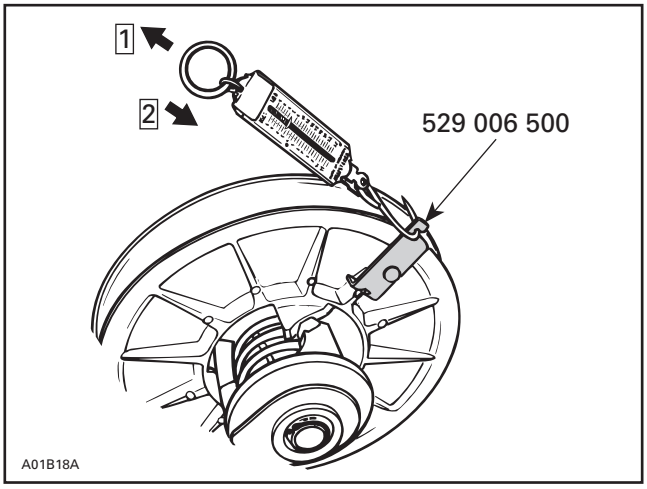
To check spring pre-load adjustment, use spring scale hook (P/N 529 006 500) and a spring scale.

Install the hook on the sliding half. Preventing fixed half from turning, pull sliding half with the spring scale perpendicularly with pulley axle.

Take 1st measurement when sliding half begins to turn. Rotate sliding half to 10 mm (3/8 in) of rotation. Hold spring scale at this position. Slowly release tension from spring scale and take 2nd measurement when sliding half begins to return. Spring pre-load is the average measurement between these two.

$$\frac{\text{1st measurement (when opening)} + \text{2nd measurement (when closing)}}{2} = \text{Spring pre-load}$$

Example: $\frac{\text{9.5 kg (21 lb) (when opening)} + \text{6.8 kg (15 lb) (when closing)}}{2} = \text{8.1 kg (18 lb) Actual spring pre-load}$

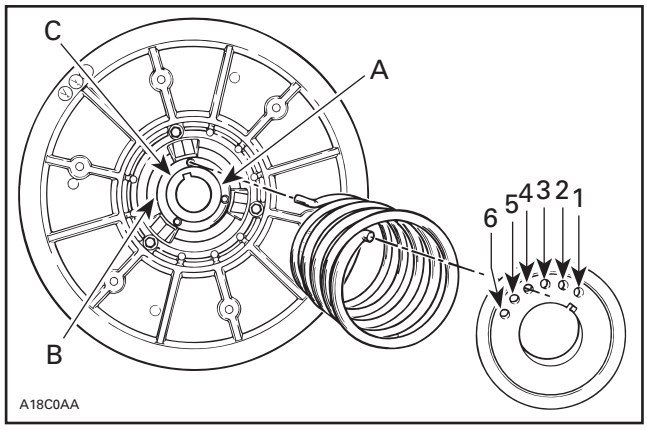


TYPICAL

Step 1: 1st measurement
Step 2: 2nd measurement

To adjust spring pre-load, relocate spring end in cam, moving it clockwise to increase the pre-load and counterclockwise to decrease it.

NOTE: If spring pre-load cannot be adjusted, try to relocate the other end of spring in sliding pulley (holes A, B and C).



TYPICAL

Letters and numbers shown in illustration are actual letters and numbers embossed on parts

NOTE: Always recheck torsional pre-load after adjusting.

NOTE: For high altitude regions, refer to *High Altitude Specifications Service Bulletin no. 2001-2* for information about calibration.

Reinstall driven pulley, properly install shouldered washer and snap ring and tighten pulley retaining screw to 22 N•m (16 lbf•ft).

Reinstall drive belt and belt guard.

ADJUSTMENT

Pulley Alignment and Drive Belt Deflection

CAUTION: Drive belt and pulley adjustments must always be checked whenever pulleys have been removed, replaced or disassembled.

PULLEY DISTANCE AND ALIGNMENT

GENERAL

The pulley distance we will refer to is the space separating the drive and driven pulley outside diameters (Z measurement).

This basic distance is provided as an assembly guide and indicates the dimensions between which satisfactory belt deflection will be obtained.

Both pulley distance adjustment and pulley alignment must be carried out to ensure the highest efficiency of the transmission system. Furthermore, optimum drive belt operation and minimal wear will be obtained only with proper pulley alignment.

CAUTION: Before checking pulley adjustment, the rear suspension must be mounted on the vehicle and track tension/alignment must be done. Always check pulley adjustment after suspension is adjusted.

⚠ WARNING

Failure to correctly perform pulley alignment may cause the vehicle to creep forward at idle.

All Pulley Alignment Specifications Refer to:

X = Distance between straight bar and drive pulley fixed half edge, **measured between pulleys**.

Y = Distance between straight bar and drive pulley fixed half edge, **measured at the end of straight bar**.

Z = Distance between outside diameter of pulleys.

GENERAL PROCEDURE

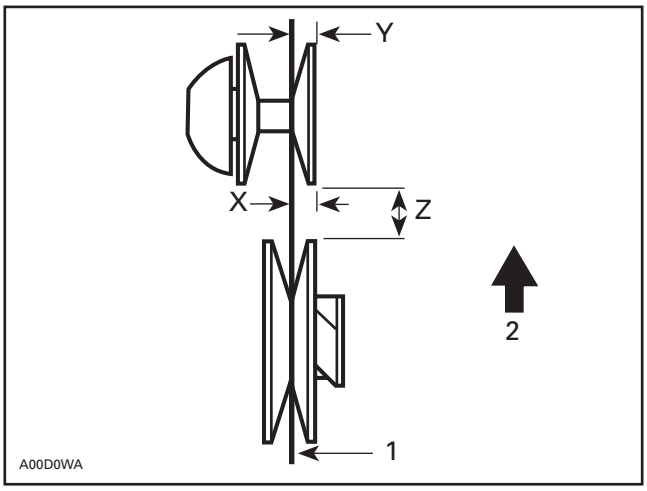
Remove guard and drive belt.

By turning and pushing the sliding half, open the driven pulley. Insert a straight bar 9.5 mm (.375 in) square, 48 cm (19 in) long or the proper alignment template into the opened driven pulley.

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

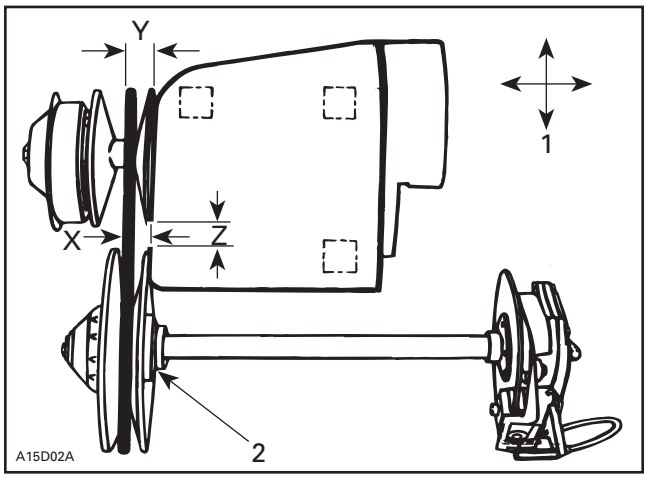
1. *Straight bar*
2. *Front of vehicle*

The distance Y **must** exceed distance X to compensate for the twist due to the engine torque.

PULLEY ALIGNMENT AND DISTANCE SPECIFICATIONS CHART

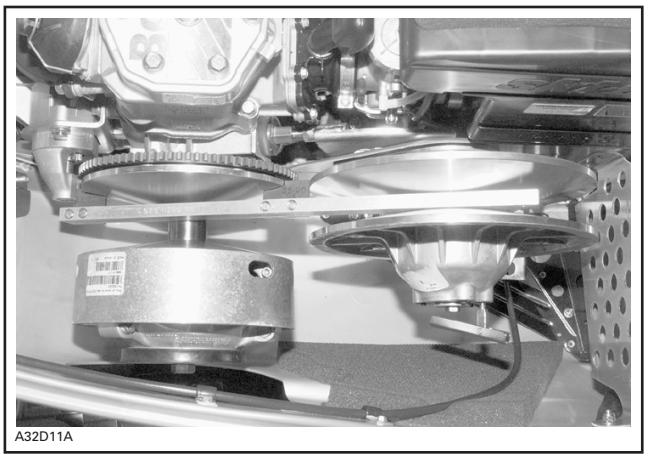
MODEL	PULLEY DISTANCE	OFFSET		ALIGNMENT TEMPLATE ① P/N
	Z	X	Y-X	
	± 0.50 mm (.020 in)	± 0.50 mm (.020 in)	± 0.5 mm (.020 in)	
All	16.5 (.650)	35.50 (1.398)	1.5 (.060)	529 026 700

① Alignment templates have been made according to pulley alignment nominal values. However, they do not take into account allowed tolerances for alignment specifications. They are used as GO/NO GO gauges for quick alignment and pulley distance check and as templates to reach alignment nominal values.



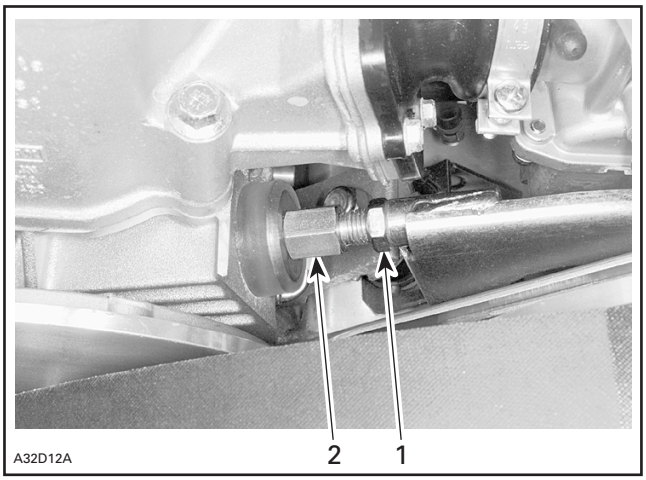
TYPICAL

1. *Engine movement*
2. *Contact*



ALIGNMENT BAR IN PULLEYS

NOTE: Prior to performing pulley adjustment, loosen torque rod nut to allow engine movement. Engine supports have tendency to stick to frame, work engine loose prior to aligning.



1. *Loosen lock nut first*
2. *Loosen*

Pulley Distance Adjustment Method

Engine Movement

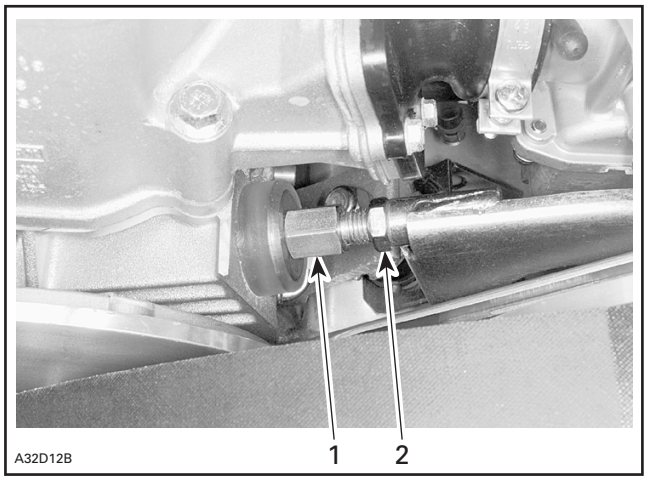
The engine support has slotted mounting holes. Move engine to obtain specified distance between pulleys.

Pulley Alignment Method

Engine Movement

Loosen the 4 bolts retaining engine support to the frame. Position engine to obtain the specified alignment.

NOTE: After alignment, adjust torque rod so it slightly contacts stopper plate. Do not over tighten, it will disalign pulleys. Retorque the 4 bolts retaining engine support to the frame.



1. *Slightly tighten*
2. *Retighten*

Reinstall drive belt and belt guard.

DRIVE BELT DEFLECTION MEASUREMENT

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 m.).

Before checking the belt deflection, ensure vehicle has the proper belt (refer to the *Application Chart*).

Adjust pulley distance and alignment. Refer to PULLEY DISTANCE AND ALIGNMENT.

To obtain maximum vehicle performance, the belt tension must be adjusted according to specifications shown in the accompanying chart.

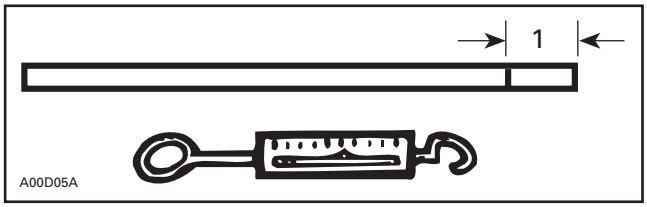
MODEL	DEFLECTION mm (in)	FORCE kg (lb)	HEIGHT † OVER DRIVEN PULLEY
All models	32 ± 5 (1.260 ± .197)	11.5 (25)	0 - 1.5 mm (0 - 1/16 in)

† FOR REFERENCE ONLY

To Check Tension

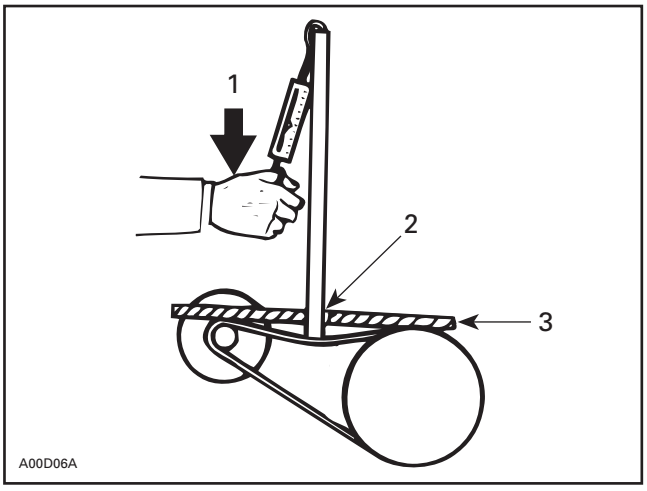
Position a reference rule on drive belt.

Wooden Stick and Spring Scale Method



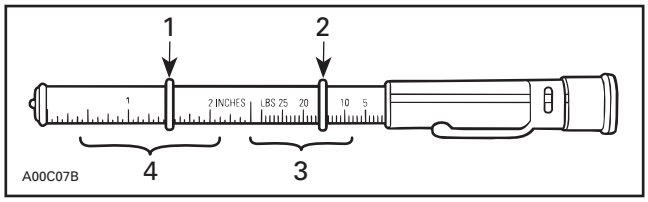
1. *Mark specified deflection*

Using spring scale and stick, apply specified force on drive belt halfway between pulleys as shown.



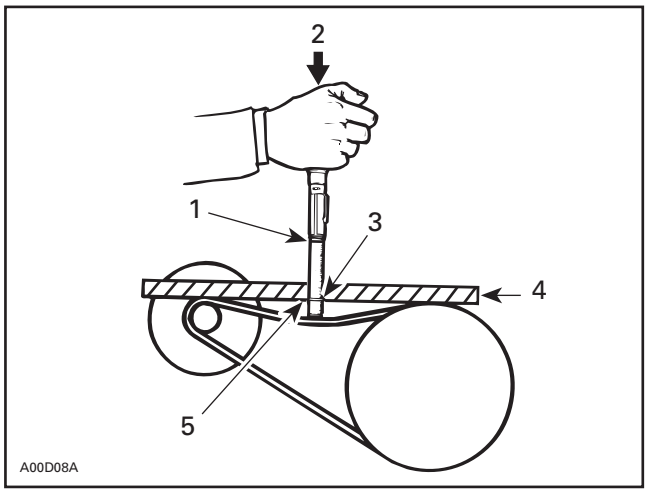
1. *Force*
2. *Read deflection here*
3. *Reference rule*

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*

DEFLECTION ADJUSTMENT

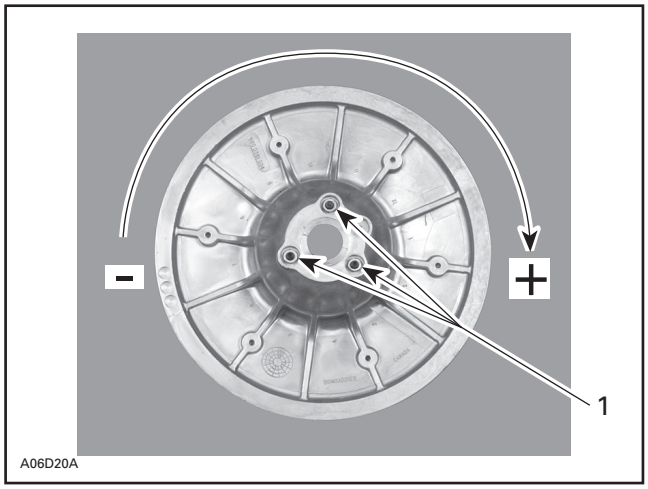
Adjust pulley distance according to specification, refer to PULLEY DISTANCE AND ALIGNMENT.

Adjust drive belt deflection using Allen screws, as shown.

To increase deflection: turn Allen screws clockwise.

To decrease deflection: turn Allen screws counterclockwise.

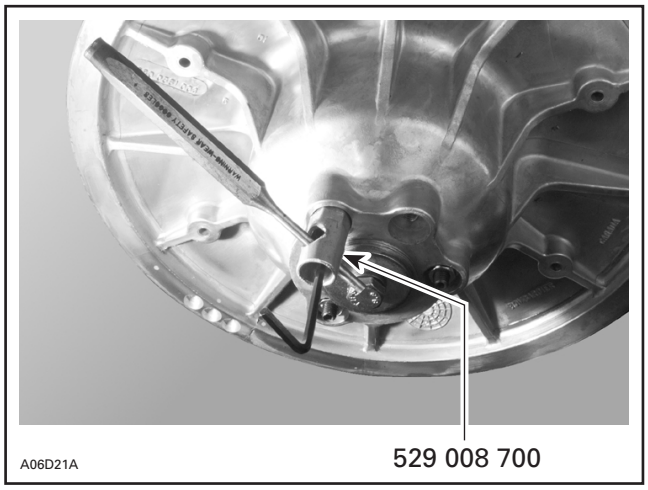
NOTE: Turn Allen screws 1/4 turn at a time, then rotate driven pulley to allow drive belt to settle in pulley. Check deflection, repeat as required.



TYPICAL

1. *Allen screw with jam nut*

Allen screws must be restrained while tightening jam nut to prevent throwing adjustment out. Use drive belt tension adjuster (P/N 529 008 700).



TYPICAL

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

DRIVEN PULLEY
ALUMINUM CAM
(P/N) SEE BELOW

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

This instruction sheet applies to the MX Zx 440 LC only.

KIT P/N — CAM P/N

KIT P/N	CAM P/N	ANGLE
860 424 700	486 074 700	37°
860 424 800	486 074 800	40°
860 424 900	486 074 900	42°
860 425 000	486 075 000	44°
860 425 100	486 075 100	47°
860 425 200	486 075 200	50°
860 425 300	486 075 300	53°
860 425 400	486 077 500	40-37°
860 425 500	486 077 400	40-44°
860 425 600	486 077 300	42-37°
860 425 700	486 099 600	43-47°
860 425 800	486 077 200	44-37°
860 425 900	486 077 100	44-40°
860 426 000	486 077 000	47-37°
860 426 100	486 076 900	47-40°
860 426 200	486 076 800	47-42°
860 426 300	486 076 700	47-44°
860 426 400	486 076 600	50-37°
860 426 500	486 076 500	50-40°
860 426 600	486 076 400	50-42°
860 426 700	486 076 300	50-44°
860 426 800	486 076 200	50-47°
860 426 900	486 076 100	53-40°
860 427 000	486 076 000	53-42°
860 427 100	486 075 900	53-44°
860 427 200	486 075 800	53-47°
860 427 300	486 075 700	53-50°
860 427 400	486 075 600	56-44°
860 427 500	486 075 500	56-47°
860 427 600	486 075 400	56-50°

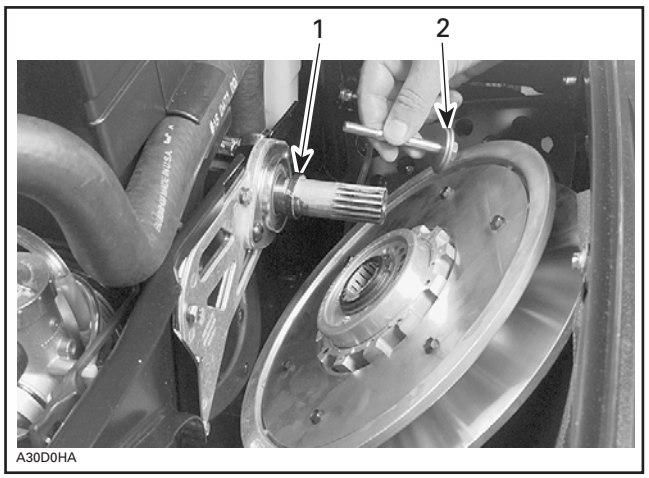
REMOVAL

Remove guard and drive belt from vehicle.

Remove cap screw and shouldered washer then pull the driven pulley from the countershaft.

Note shouldered washer position for reinstallation.

Take care not to loose spacer .

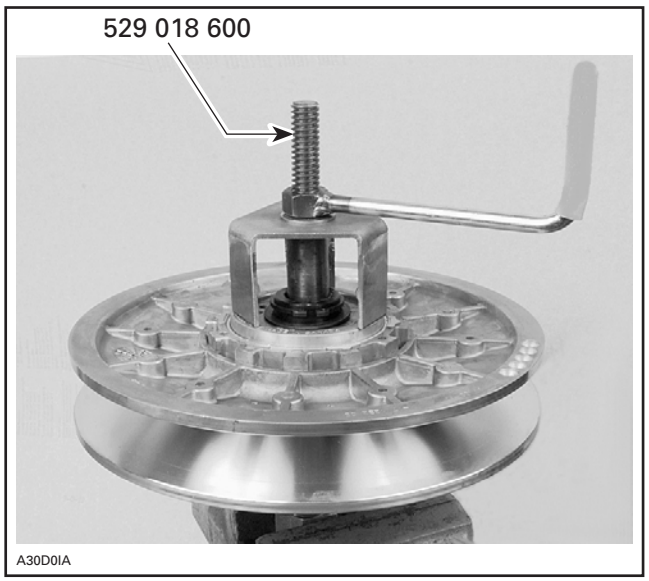


TYPICAL

1. *Spacer*
2. *Shoulder on this side*

DISASSEMBLY

Use spring compressor (P/N 529 018 600).



Remove snap ring and washer to disassemble the cam and the two pulley halves.

⚠ WARNING

Driven pulley cam is spring loaded, use above-mentioned tool.

CLEANING (IF REQUIRED)

Large Bushing and Small Bushing

During break-in period (about 10 hours of use), teflon from bushing moves to cam or shaft surface. A teflon over teflon running condition occurs, leading to low friction. So it is normal to see gray teflon deposit on cam or shaft. Do not remove that deposit, it is not dust.

When a dust deposit has to be removed from the cam or the shaft, use dry cloth to avoid removing transferred teflon.

Pulley Half Cleaning

Use Parts Cleaner (P/N 413 711 809).

INSPECTION

Bushings

Check for cracks, scratch and for free movement when assembled to fixed half.

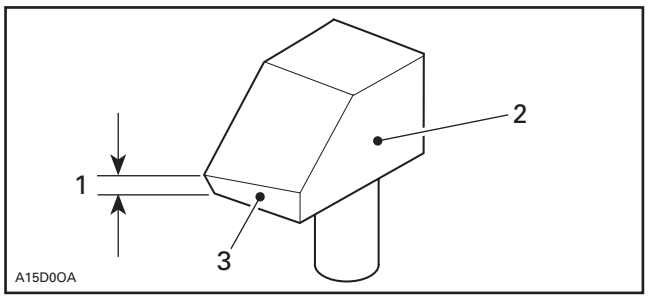
Using a dial bore gauge measure bushing diameter. Measuring point must be at least 5 mm (1/4 in) from bushing edge.

Replace bushing(s) if worn more than specified.

DRIVEN PULLEY BUSHING WEAR LIMIT mm (in)	
Small bushing	38.30 (1.508)
Large bushing	89.15 (3.510)

Slider Shoe

Check cam slider shoes for wear. Replace when inside edge of cam slider shoe slope base is worn to 1 mm (.039 in) or less.



1. Measure thickness of slope base here
2. Sliding pulley side
3. Slope base

ASSEMBLY

Cam Slider Shoe

When replacing slider shoes, always install a new set (three shoes) to maintain equal pressure on the cam.

Assemble driven pulley components by reversing the disassembly procedure.

Cam

Install selected aluminum cam according to degree angle as per table of page 1. Coat cam interior with anti-seize lubricant.

Pulley Retaining Screw

Torque to 22 N•m (16 lbf•ft).

ADJUSTMENT

Refer to PULLEY DISTANCE AND ALIGNMENT, where a *Shop Manual* is available, to adjust pulley distance. Adjust drive belt height in driven pulley to obtain specified belt deflection. Turn Allen screws equally accordingly.

Spring

General

It is usual to experience spring setting during break-in period of a new spring. The factory spring preload is slightly higher (about 1 kg (2 lb)) to compensate for spring setting. Specifications in TECHNICAL DATA, where a *Shop Manual* is available, are applicable after break-in period (about 10 hours of use).

Spring Torsional Pre-Load

To check spring pre-load adjustment, use spring scale hook (P/N 529 006 500) and a spring scale.

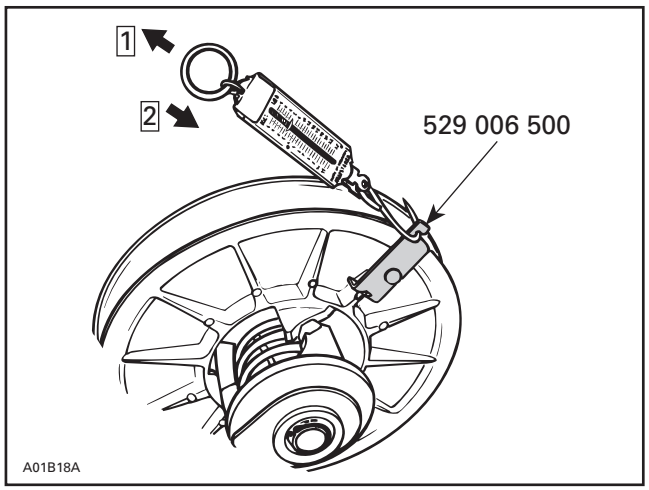
Remove drive belt.

Install the hook on the sliding half. Preventing fixed half from turning, pull sliding half with the spring scale perpendicularly with pulley axle.

Take 1st measurement when sliding half begins to turn. Rotate sliding half to 10 mm (3/8 in) of rotation. Hold fish scale at this position. Slowly release tension from fish scale and take 2nd measurement when sliding half begins to return. Spring pre-load is the average measurement between these two.

$$\frac{\text{1st measurement (when opening)} + \text{2nd measurement (when closing)}}{2} = \text{Spring pre-load}$$

Example: $\frac{\text{3.8 kg (8.4 lb) (when opening)} + \text{3.4 kg (7.5 lb) (when closing)}}{2} = \text{3.6 kg (8 lb) Actual spring pre-load}$

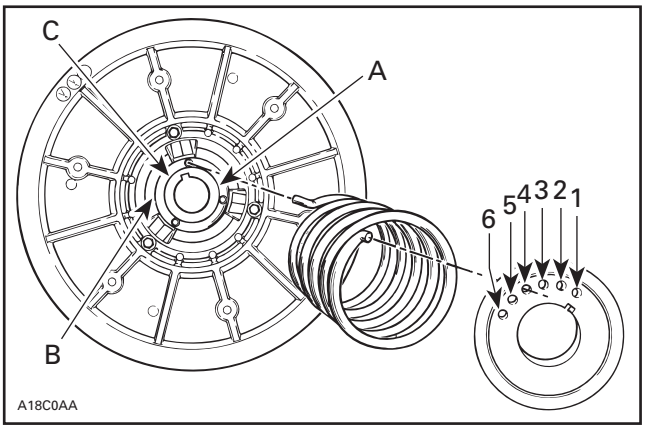


TYPICAL

Step 1: 1st measurement
Step 2: 2nd measurement

To adjust spring pre-load, relocate spring end in cam, moving it clockwise to increase the pre-load and counterclockwise to decrease it. Refer to TECHNICAL DATA, where a *Shop Manual* is available.

NOTE: If spring pre-load can not be adjusted, try to relocate the other end of spring in sliding pulley (holes A, B and C).



TYPICAL

Letters and numbers shown in illustration are actual letters and numbers embossed on parts

NOTE: Always recheck torsional pre-load after adjusting.

Pulley Alignment and Drive Belt Deflection

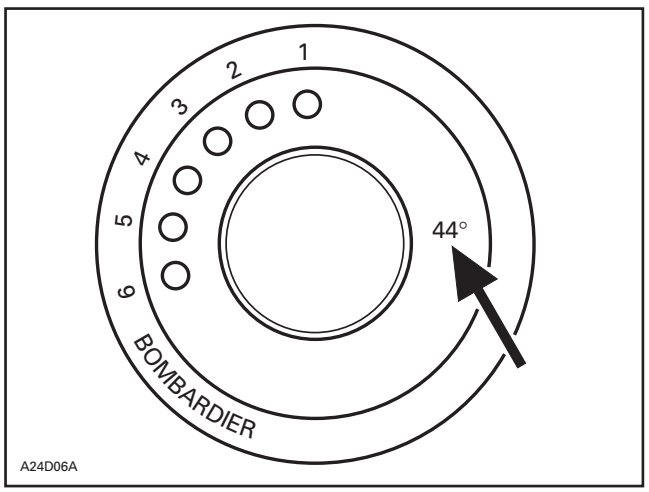
Refer to PULLEY DISTANCE AND ALIGNMENT and DRIVE BELT, where a *Shop Manual* is available, to perform adjustments.

CAUTION: Drive belt and pulley adjustments must always be checked whenever pulleys have been removed, replaced or disassembled.

5, Cam

Make sure to install proper cam. Refer to TECHNICAL DATA, where a *Shop Manual* is available.

Cam angle is identified on cam.



NOTE: For high altitude regions, a service bulletin will give information about calibration according to altitude.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

DRIVEN PULLEY CAM SLIDER SHOE
(P/N 860 427 700)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

This kit is designed for MX Z® x 440 LC model only.

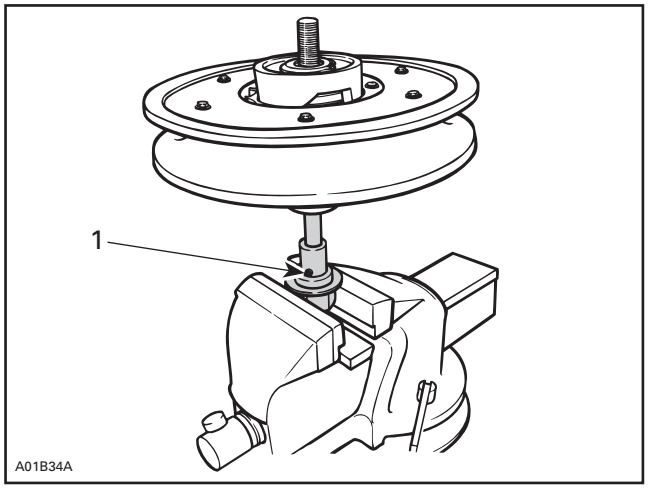
REMOVAL

Remove guard and drive belt from vehicle.

Remove the cap screw, lock washer, washer, extension and shims then pull the driven pulley from the countershaft.

DISASSEMBLY

Use spring compressor (P/N 529 035 524).



TYPICAL

1. Insert this pin in keyway

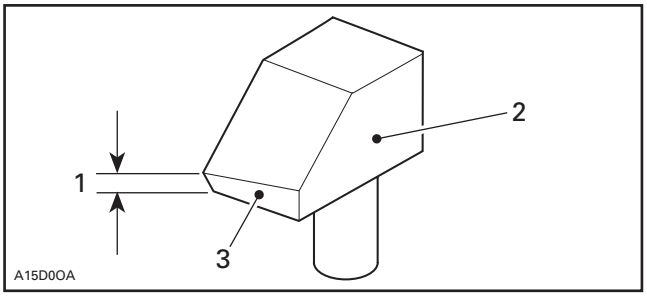
Remove snap ring and washer to disassemble the outer cam and the 2 pulley halves.

⚠ WARNING

Driven pulley cam is spring loaded, use above-mentioned tool.

Slider Shoe

Cam slider shoes should be replaced when inside edge thickness of cam slider shoe slope base is 1 mm (.039 in) or less.



1. Measure thickness of slope base here
2. Sliding pulley side
3. Slope base

When replacing slider shoes, always install a new set (3 shoes) to maintain equal pressure on the cam.

Install new slider shoes.

Assemble driven pulley components by reversing the disassembly procedure.

CAUTION: Drive belt and pulley adjustments must always be checked whenever pulleys have been removed, replaced or disassembled.

PULLEY DISTANCE AND ALIGNMENT

GENERAL

The pulley distance we will refer to in this section, is the space separating the drive and driven pulley outside diameters (Z measurement).

This basic distance is provided as an assembly guide and indicates the dimensions between which satisfactory belt deflection will be obtained.

Printed in Canada (msi2002-012a.fm MD)

Both pulley distance adjustment and pulley alignment must be carried out to ensure the highest efficiency of the transmission system. Furthermore, optimum drive belt operation and minimal wear will be obtained only with proper pulley alignment.

CAUTION: Before checking pulley adjustment, the rear suspension must be mounted on the vehicle and track tension/alignment must be done. Always check pulley adjustment after suspension is adjusted.

⚠ WARNING

Failure to correctly perform pulley alignment may cause the vehicle to creep forward at idle.

All Pulley Alignment Specifications Refer to:

X = Distance between straight bar and drive pulley fixed half edge, **measured between pulleys**.

Y = Distance between straight bar and drive pulley fixed half edge, **measured at the end of straight bar**.

Z = Distance between outside diameter of pulleys.

GENERAL PROCEDURE

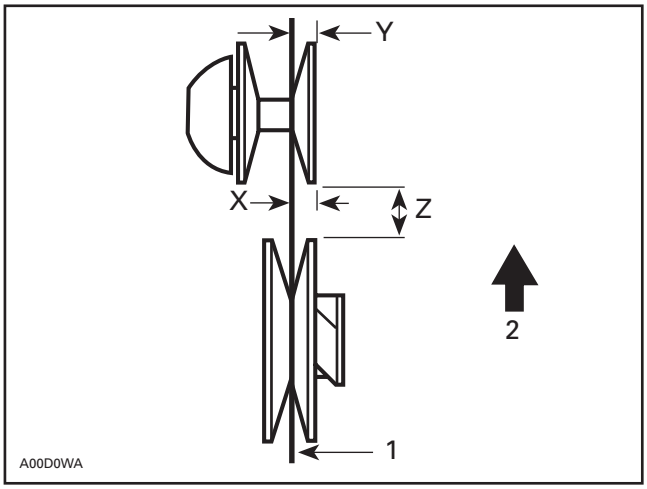
Remove guard and drive belt.

By turning and pushing the sliding half, open the driven pulley. Insert a straight bar 9.5 mm (.375 in) square, 48 cm (19 in) long or the proper alignment template into the opened driven pulley.

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

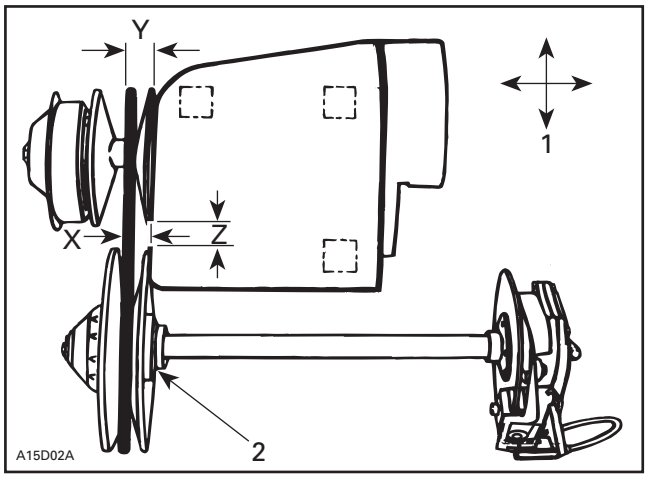
1. *Straight bar*
2. *Front of vehicle*

The distance Y **must** exceed distance X to compensate for the twist due to the engine torque.

PULLEY ALIGNMENT AND DISTANCE SPECIFICATIONS CHART

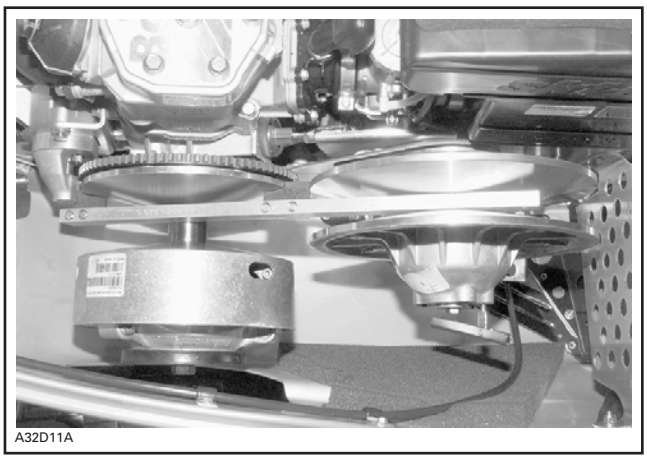
MODEL	PULLEY DISTANCE	OFFSET		ALIGNMENT TEMPLATE ① P/N
	Z	X	Y-X	
	± 0.50 mm (.020 in)	± 0.50 mm (.020 in)	± 0.5 mm (.020 in)	
All	16.5 (.650)	35.50 (1.398)	1.5 (.060)	529 026 700

① Alignment templates have been made according to pulley alignment nominal values. However, they do not take into account allowed tolerances for alignment specifications. They are used as GO/NO GO gauges for quick alignment and pulley distance check and as templates to reach alignment nominal values.



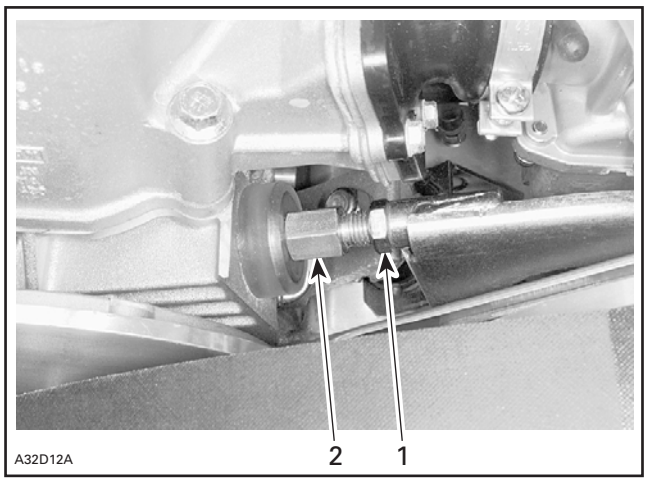
TYPICAL

1. *Engine movement*
2. *Contact*



ALIGNMENT BAR IN PULLEYS

NOTE: Prior to performing pulley adjustment, loosen torque rod nut to allow engine movement. Engine supports have tendency to stick to frame, work engine loose prior to aligning.



1. *Loosen lock nut first*
2. *Loosen*

Pulley Distance Adjustment Method

Engine Movement

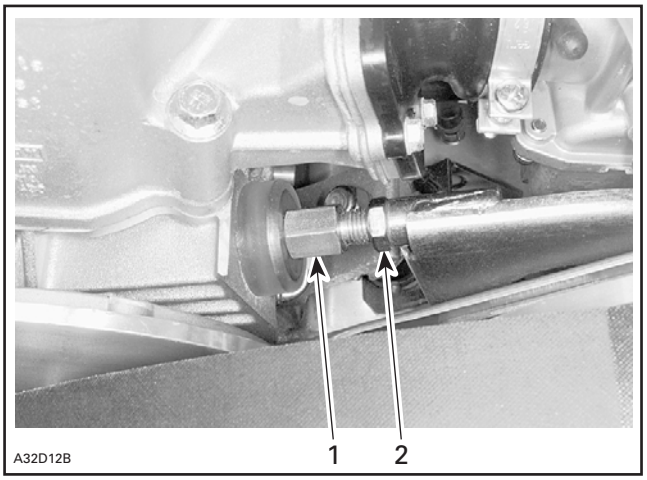
The engine support has slotted mounting holes. Move engine to obtain specified distance between pulleys.

Pulley Alignment Method

Engine Movement

Loosen the 4 bolts retaining engine support to the frame. Position engine to obtain the specified alignment.

NOTE: After alignment, adjust torque rod so it slightly contacts stopper plate. Do not over tighten, it will disalign pulleys. Retorque the 4 bolts retaining engine support to the frame.



1. *Slightly tighten*
2. *Retighten*

Reinstall drive belt and belt guard.

DRIVE BELT DEFLECTION MEASUREMENT

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 m.).

Before checking the belt deflection, ensure vehicle has the proper belt (refer to the *Application Chart*).

Adjust pulley distance and alignment. Refer to PULLEY DISTANCE AND ALIGNMENT.

To obtain maximum vehicle performance, the belt tension must be adjusted according to specifications shown in the accompanying chart.

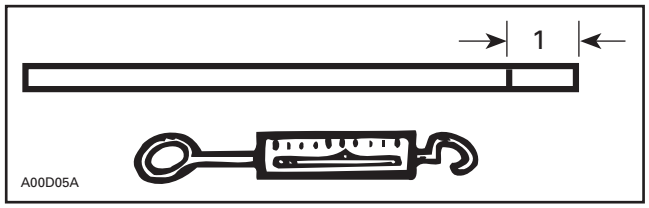
MODEL	DEFLECTION mm (in)	FORCE kg (lb)	HEIGHT† OVER DRIVEN PULLEY
All models	32 ± 5 (1.260 ± .197)	11.5 (25)	0 - 1.5 mm (0 - 1/16 in)

† FOR REFERENCE ONLY

To Check Tension

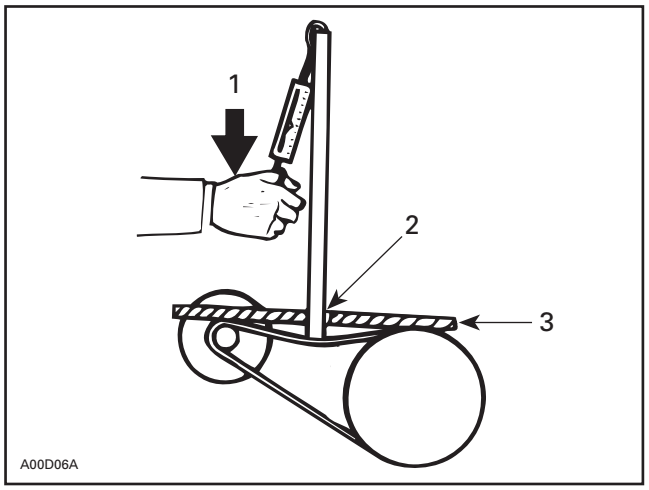
Position a reference rule on drive belt.

Wooden Stick and Spring Scale Method



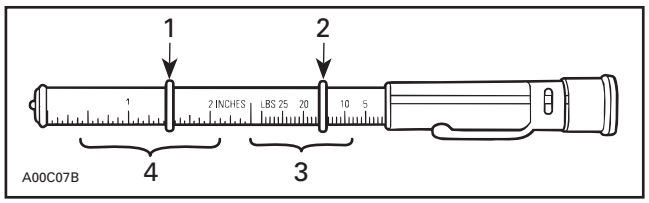
1. Mark specified deflection

Using spring scale and stick, apply specified force on drive belt halfway between pulleys as shown.



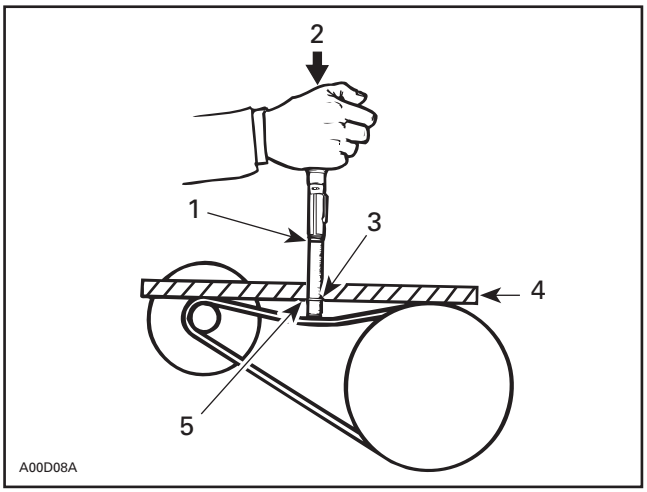
1. Force
2. Read deflection here
3. Reference rule

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

DEFLECTION ADJUSTMENT

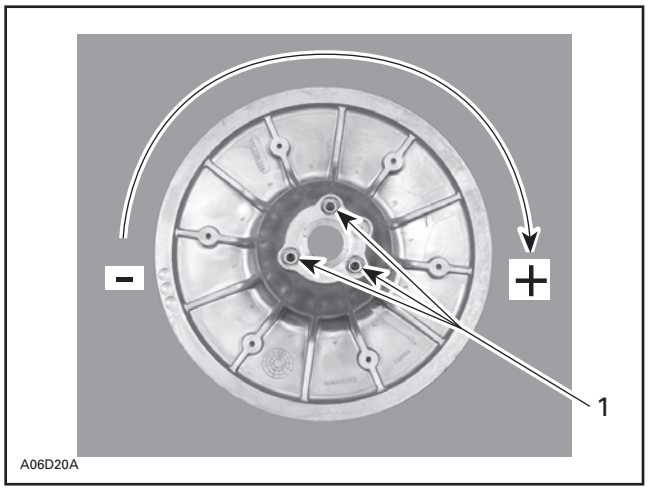
Adjust pulley distance according to specification, refer to PULLEY DISTANCE AND ALIGNMENT.

Adjust drive belt deflection using Allen screws, as shown.

To increase deflection: turn Allen screws clockwise.

To decrease deflection: turn Allen screws counterclockwise.

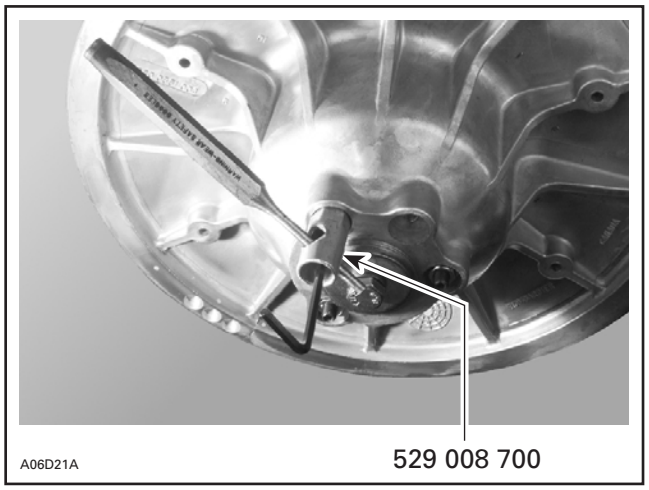
NOTE: Turn Allen screws 1/4 turn at a time, then rotate driven pulley to allow drive belt to settle in pulley. Check deflection, repeat as required.



TYPICAL

1. Allen screw with jam nut

Allen screws must be restrained while tightening jam nut to prevent throwing adjustment out. Use drive belt tension adjuster (P/N 529 008 700).



TYPICAL

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

DRIVEN PULLEY SLIDING HALF
(P/N 860 427 800)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

This kit is designed for MX Z® x 440 LC model only.

PROCEDURE

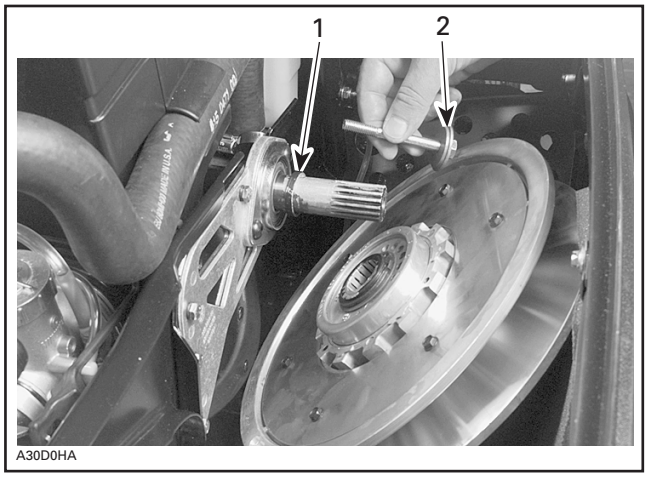
Driven Pulley Removal

Remove belt guard and drive belt from vehicle.

Remove cap screw and shouldered washer then pull the driven pulley off the countershaft.

Note shouldered washer position for reinstallation.

Be careful not to lose spacer.

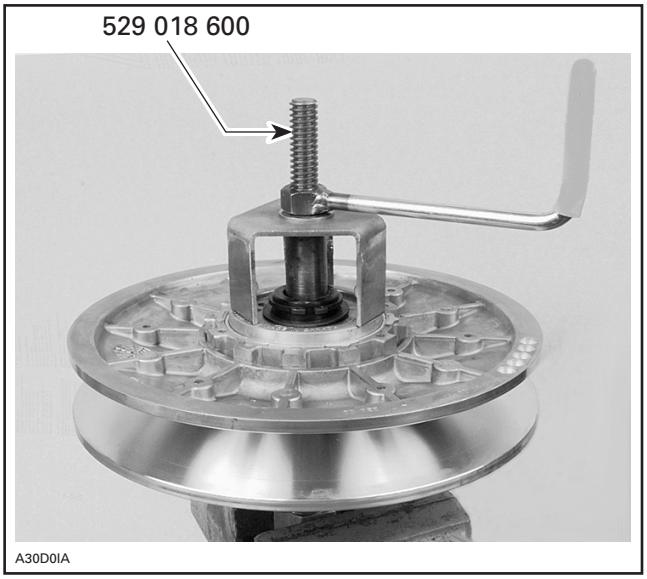


TYPICAL

1. *Spacer*
2. *Shoulder on this side*

Driven Pulley Disassembly

Use spring compressor (P/N 529 018 600).

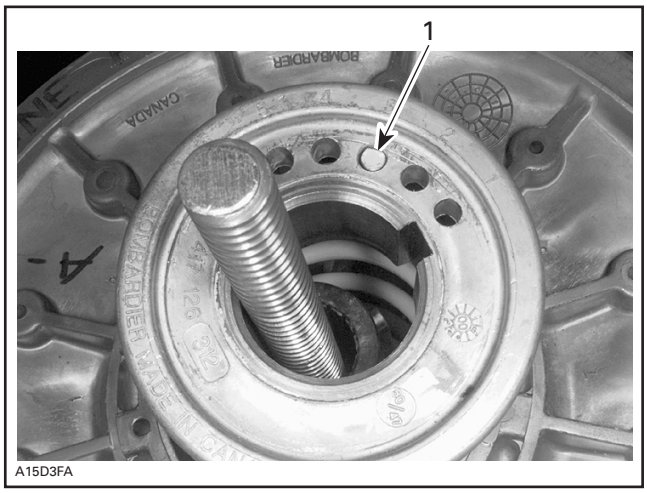


Remove snap ring and washer to disassemble the cam and the 2 pulley halves.

⚠ WARNING

Driven pulley cam is spring loaded. Make sure that parts do not pop out when unscrewing the above-mentioned tool.

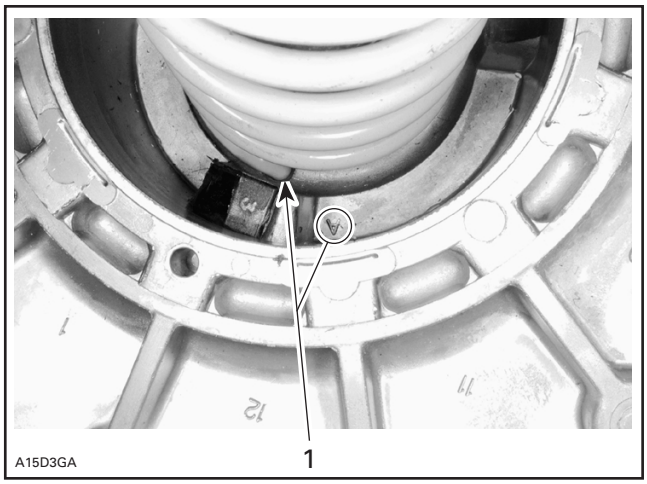
Note spring position in cam and remove cam.



1. Spring position in cam

Take care not to lose key.

Note spring position in driven pulley sliding half then remove spring and sliding half.



1. Spring position in driven pulley sliding half

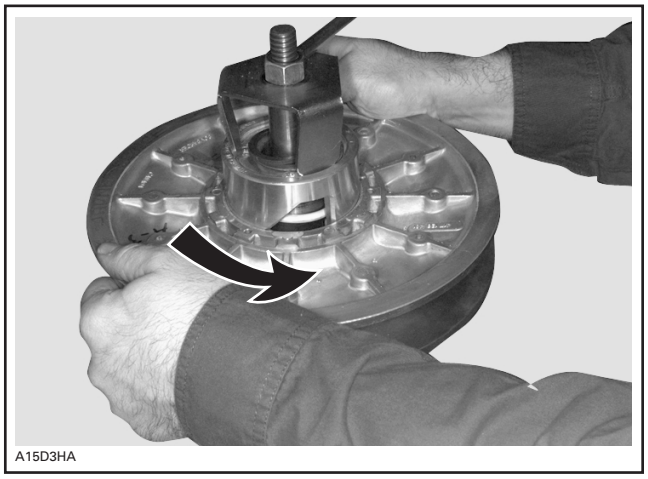
Install new roller sliding half.

Insert spring in cam making sure to select proper positioning hole and that spring is properly inserted. If spring end is hard to push in hole, try other end of spring.

Align cam slot with key and insert other end of spring in proper positioning hole of sliding half.

Using spring compressor, slowly insert cam in sliding half.

Turn sliding half approximately a 1/4 of a turn counterclockwise to align cam angle with rollers and then lower cam enough to secure snap ring.



TURN COUNTERCLOCKWISE APPROXIMATELY 1/4 OF A TURN

Spring Torsional Pre-Load

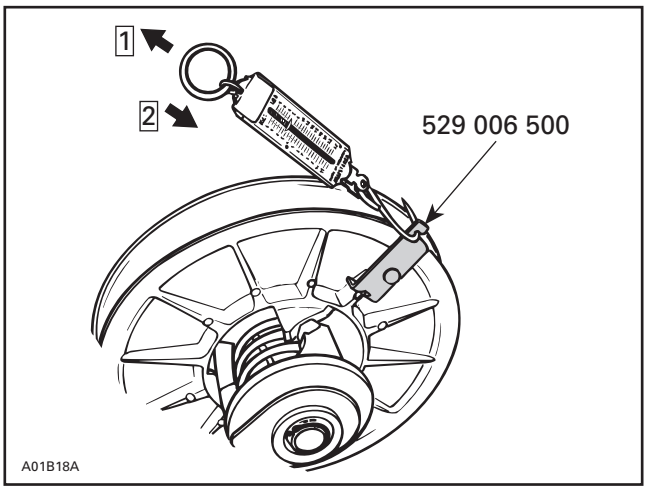
To check spring pre-load adjustment, use spring scale hook (P/N 529 006 500) and a spring scale.

Install the hook on the sliding half. Preventing fixed half from turning, pull sliding half with the spring scale perpendicularly with pulley axle.

Take 1st measurement when sliding half begins to turn. Rotate sliding half to 10 mm (3/8 in) of rotation. Hold spring scale at this position. Slowly release tension from spring scale and take 2nd measurement when sliding half begins to return. Spring pre-load is the average measurement between these two.

$$\frac{1^{st}\text{ measurement (when opening)} + 2^{nd}\text{ measurement (when closing)}}{2} = \text{Spring pre-load}$$

Example: $\frac{9.5\text{ kg (21 lb) (when opening)} + 6.8\text{ kg (15 lb) (when closing)}}{2} = 8.1\text{ kg (18 lb) Actual spring pre-load}$



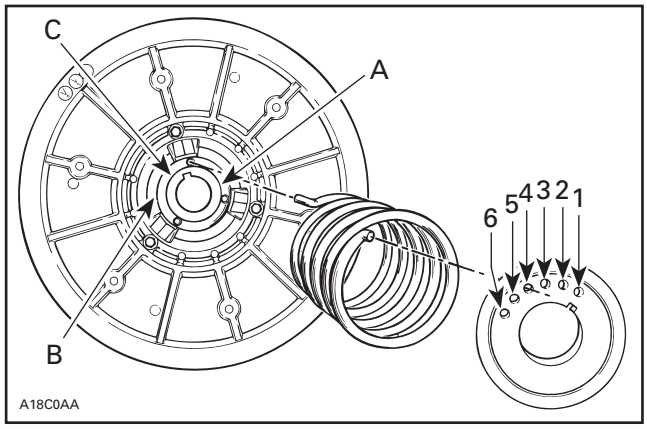
TYPICAL

Step 1: 1st measurement
Step 2: 2nd measurement

Adjust spring pre-load to specification.

To adjust spring pre-load, relocate spring end in cam, moving it clockwise to increase the pre-load and counterclockwise to decrease it.

NOTE: If spring pre-load cannot be adjusted, try to relocate the other end of spring in sliding pulley (holes A, B and C).



TYPICAL

Letters and numbers shown in illustration are actual letters and numbers embossed on parts

NOTE: Always recheck torsional pre-load after adjusting.

NOTE: For high altitude regions, refer to *High Altitude Specifications Service Bulletin No. 2001-2* for information about calibration.

Reinstall driven pulley, properly install shouldered washer and snap ring and tighten pulley retaining screw to 22 N•m (16 lbf•ft).

Reinstall drive belt and belt guard.

ADJUSTMENT

Refer to PULLEY DISTANCE AND ALIGNMENT to adjust pulley distance. Adjust drive belt height in driven pulley to obtain specified belt deflection. Turn Allen screws equally accordingly.

PULLEY DISTANCE AND ALIGNMENT

The pulley distance is the space separating the drive and driven pulley outside diameters (Z measurement).

This basic distance is provided as an assembly guide and indicates the dimensions between which satisfactory belt deflection will be obtained.

Both pulley distance adjustment and pulley alignment must be carried out to ensure the highest efficiency of the transmission system. Furthermore, optimum drive belt operation and minimal wear will be obtained only with proper pulley alignment.

CAUTION: Before checking pulley adjustment, the rear suspension must be mounted on the vehicle and track tension/alignment must be done. Always check pulley adjustment after suspension is adjusted.

⚠ WARNING

Failure to correctly perform pulley alignment may cause the vehicle to creep forward at idle.

All Pulley Alignment Specifications Refer to:

X = Distance between straight bar and drive pulley fixed half edge, **measured between pulleys**.

Y = Distance between straight bar and drive pulley fixed half edge, **measured at the end of straight bar**.

Z = Distance between outside diameter of pulleys.

GENERAL PROCEDURE

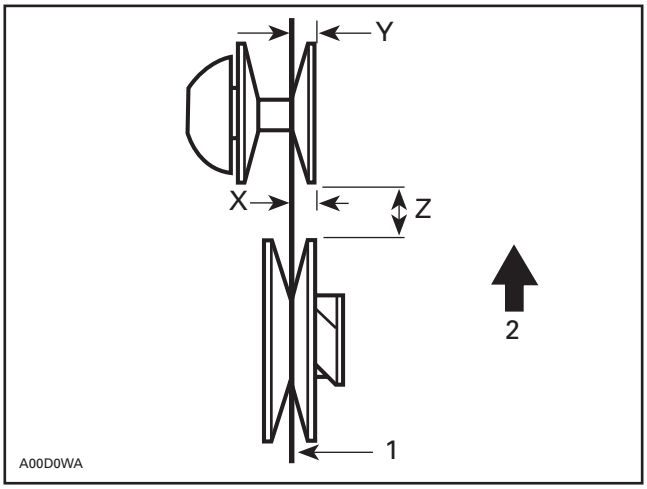
Remove guard and drive belt.

By turning and pushing the sliding half, open the driven pulley. Insert a straight bar 9.5 mm (.375 in) square, 48 cm (19 in) long or the proper alignment template into the opened driven pulley.

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

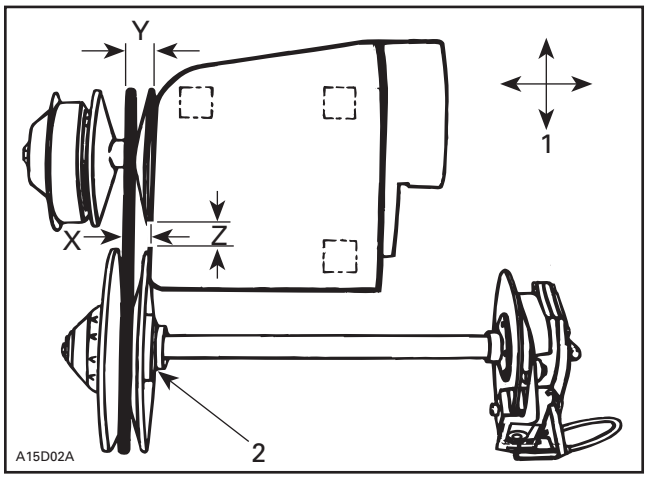
NOTE: When pulley distance and alignment are adjusted to specifications, refer to DRIVE BELT to adjust drive belt deflection (described at the end of this instruction sheet).

CAUTION: This section deals mainly with adjustment procedures. For complete assembly requirements, refer to the proper ENGINE or TRANSMISSION installation section (where a *Shop Manual* is available).

PULLEY ALIGNMENT AND DISTANCE SPECIFICATIONS CHART

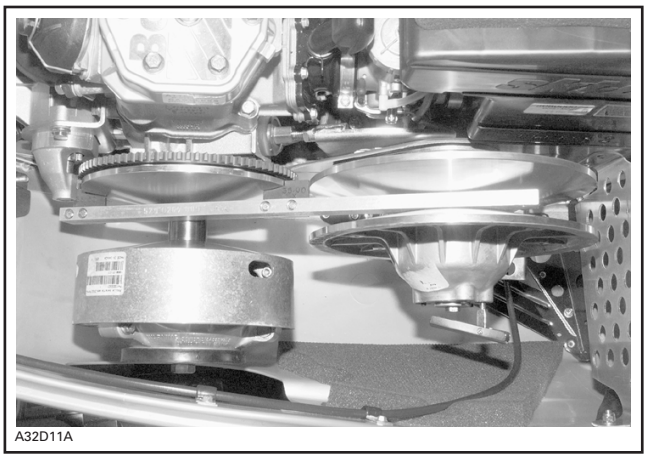
MODEL	PULLEY DISTANCE	OFFSET		ALIGNMENT TEMPLATE ① P/N
	Z	X	Y-X	
	± 0.50 mm (.020 in)	± 0.50 mm (.020 in)	± 0.5 mm (.020 in)	
All	16.5 (.650)	35.50 (1.398)	1.5 (.060)	529 026 700

① Alignment templates have been made according to pulley alignment nominal values. However, they do not take into account allowed tolerances for alignment specifications. They are used as GO/NO GO gauges for quick alignment and pulley distance check and as templates to reach alignment nominal values.



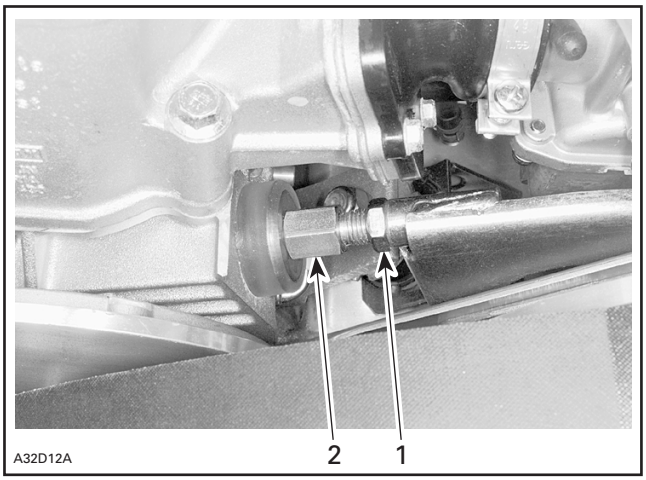
TYPICAL

1. *Engine movement*
2. *Contact*



ALIGNMENT BAR IN PULLEYS

NOTE: Prior to performing pulley adjustment, loosen torque rod nut to allow engine movement. Engine supports have tendency to stick to frame, work engine loose prior to aligning.



1. *Loosen lock nut first*
2. *Loosen*

Pulley Distance Adjustment Method

Engine Movement

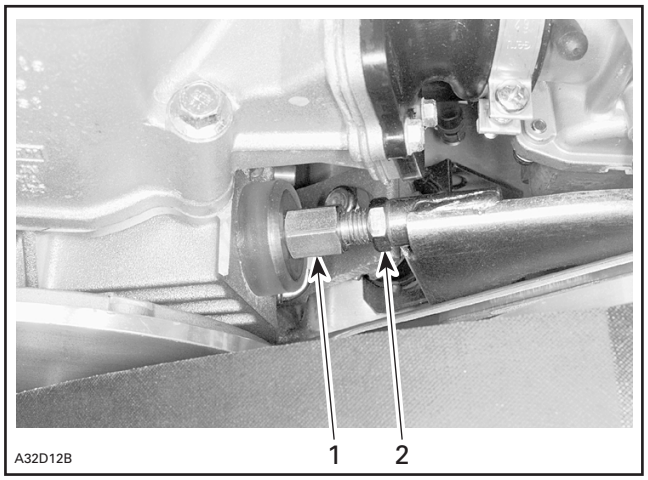
The engine support has slotted mounting holes. Move engine to obtain specified distance between pulleys.

Pulley Alignment Method

Engine Movement

Loosen the 4 bolts retaining engine support to the frame. Position engine to obtain the specified alignment.

NOTE: After alignment, adjust torque rod so it slightly contacts stopper plate. Do not over tighten, it will disalign pulleys. Re torque the 4 bolts retaining engine support to the frame.



1. *Slightly tighten*
2. *Retighten*

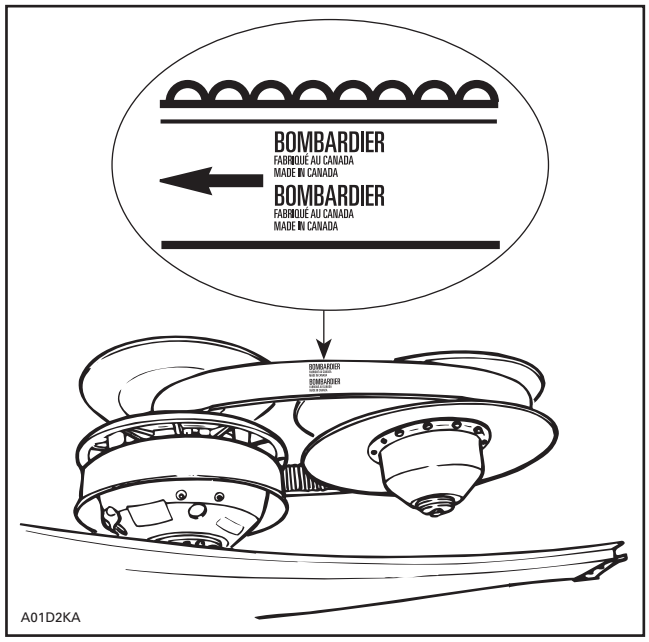
DRIVE BELT INSPECTION

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.

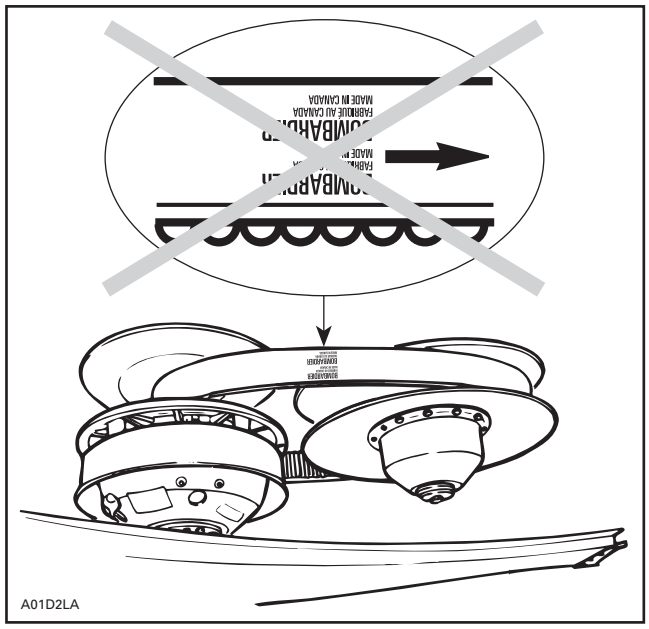
Check the drive belt width. Replace the drive belt if width is less than the minimum width recommended.

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 DEFLECTION MEASUREMENT

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 m.).

Before checking the belt deflection, ensure vehicle has the proper belt.

Pulley distance adjustment and alignment must have been performed. Refer to PULLEY DISTANCE AND ALIGNMENT above.

To obtain maximum vehicle performance, the belt tension must be adjusted according to specifications shown in the accompanying chart.

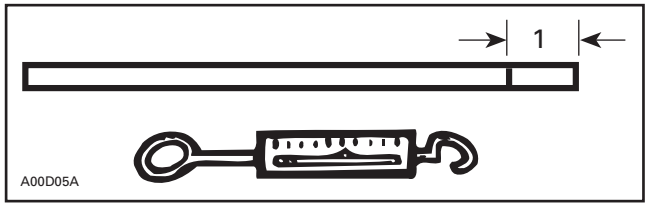
MODEL	DEFLECTION mm (in)	FORCE kg (lb)	HEIGHT† OVER DRIVEN PULLEY
All models	32 ± 5 (1.260 ± .197)	11.5 (25)	0 - 1.5 mm (0 - 1/16 in)

† FOR REFERENCE ONLY

To Check Tension

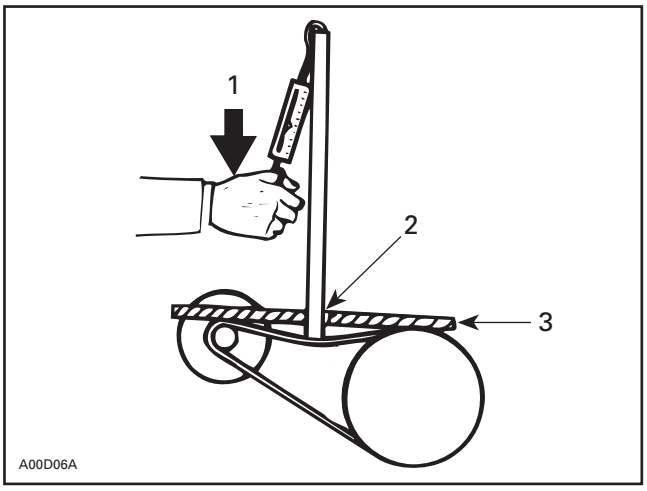
Position a reference rule on drive belt.

Wooden Stick and Spring Scale Method



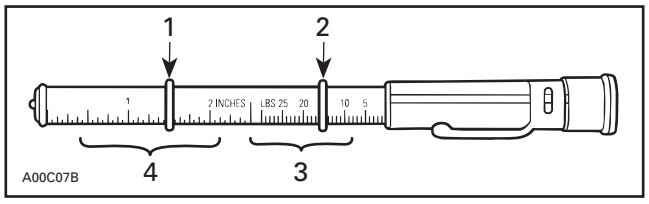
1. Mark specified deflection

Using spring scale and stick, apply specified force on drive belt halfway between pulleys as shown.



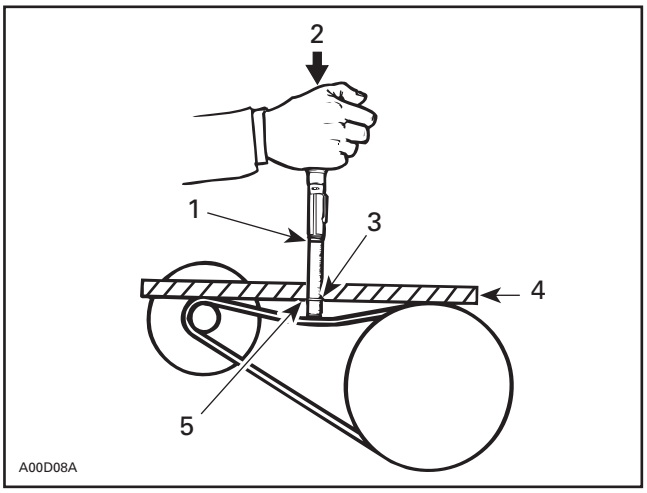
1. Force
2. Read deflection here
3. Reference rule

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

DEFLECTION ADJUSTMENT

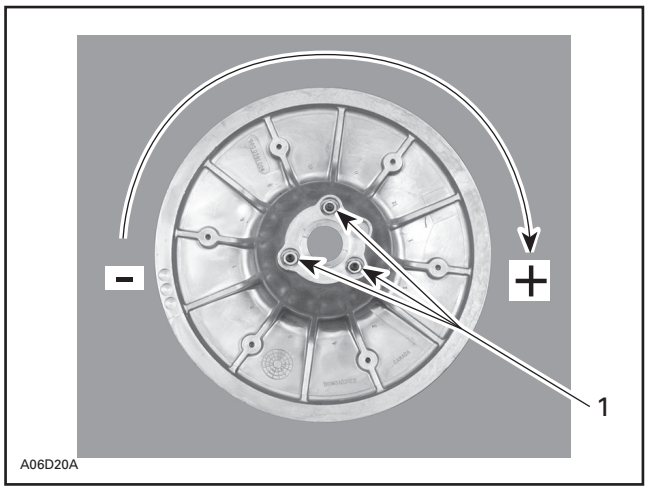
Pulley distance must have been adjusted according to specification, refer to PULLEY DISTANCE AND ALIGNMENT above.

Adjust drive belt deflection using Allen screws, as shown.

To increase deflection: turn Allen screws clockwise.

To decrease deflection: turn Allen screws counterclockwise.

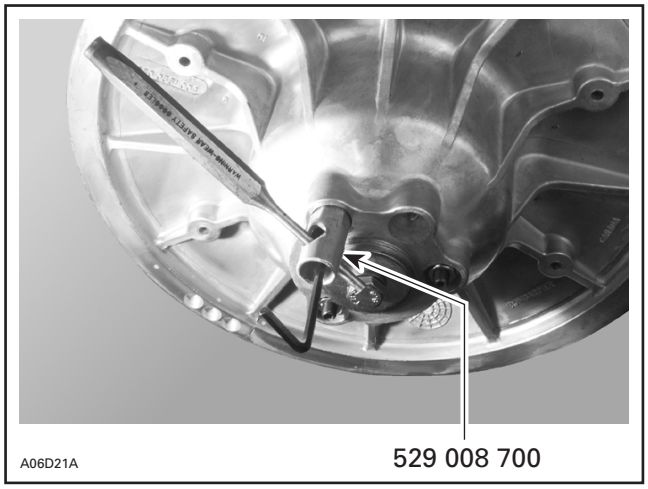
NOTE: Turn Allen screws 1/4 turn at a time, then rotate driven pulley to allow drive belt to settle in pulley. Check deflection, repeat as required.



TYPICAL

1. Allen screw with jam nut

Allen screws must be restrained while tightening jam nut to prevent throwing adjustment out. Use drive belt tension adjuster (P/N 529 008 700).



TYPICAL

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

SKI FLEX FASTENING KIT
(P/N 860 504 500)

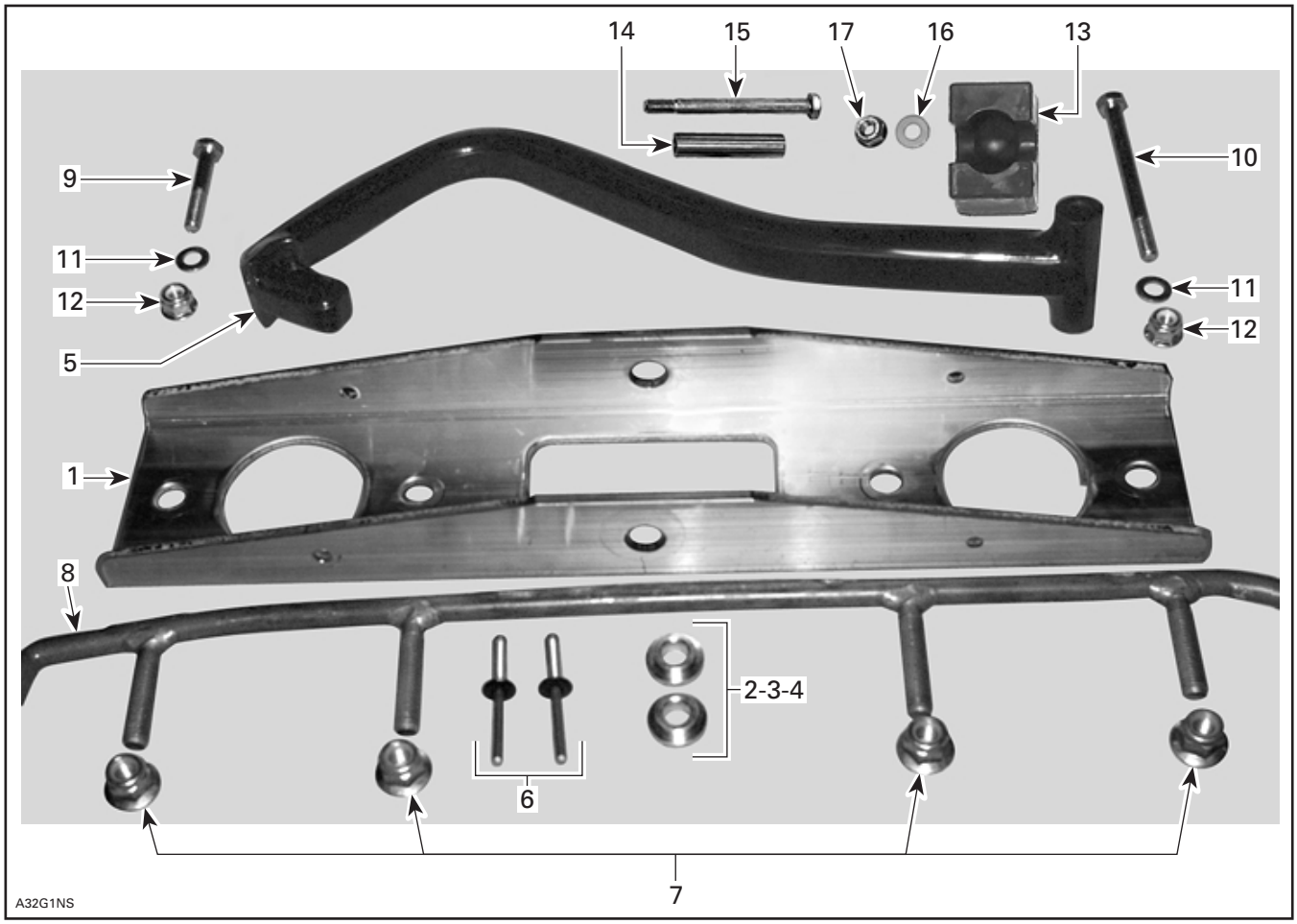
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.5** hour

PARTS TO BE INSTALLED



1. Bridge
2. Bushing (2)
3. Bushing (2)
4. Bushing (2)
5. Plastic Handle
6. 1/4 in Black Rivet (2)
7. M10 Flanged Elastic Nut (4)
8. Carbide Runner
9. M8 x 50 Hexagonal Bolt
10. M8 x 100 Hexagonal Bolt
11. M8 Flat Washer (2)
12. M8 Flanged Elastic Nut (2)
13. Ski Stopper
14. Spacer
15. M10 x 110 Hexagonal Bolt
16. M10 Flat Washer
17. M10 Flanged Nut
18. M12 x 120 Hexagonal Bolt (not illustrated)
19. M12 Flat Washer (2) (not illustrated)
20. M12 Elastic Stop Nut (not illustrated)

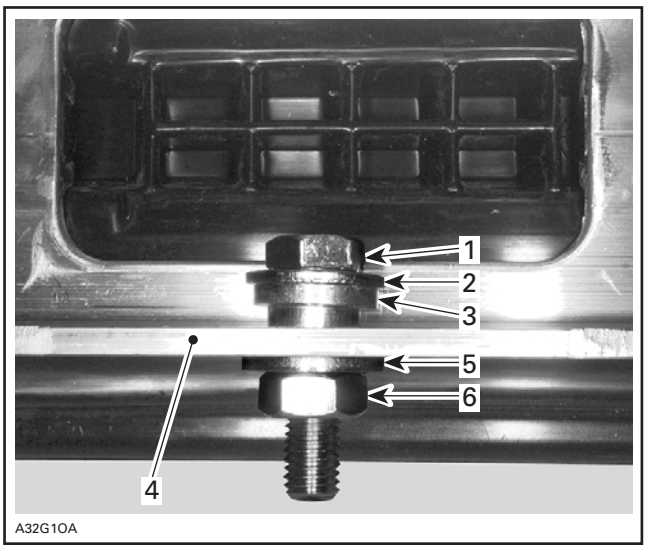
PROCEDURE

NOTE: This kit is made to be assembled on one ski only (sold separately). Many ski colors are available according to customer's preferences.

Install bushings on bridge (according to the next table).

PART	APPLICABLE MODELS	HOLE DIAMETER
NO. 2	All liquid cooled models with 10 mm diameter bolts (P/N 505 070 001)	10 mm (3/8 in)
NO. 3	All liquid cooled models with 12 mm diameter bolts (P/N 505 070 939)	12 mm (15/32 in)
NO. 4	All fan cooled models (P/N 505 070 854)	10 mm (3/8 in)

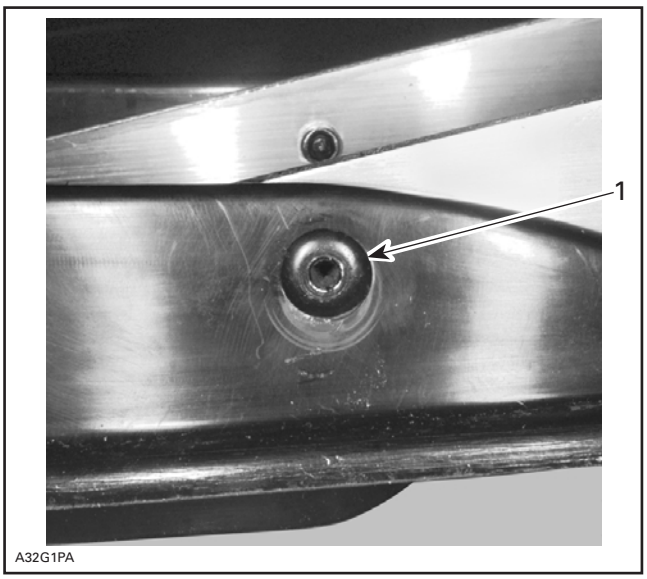
A good way to install bushings is to press fit the bushing with two washers, a bolt and a nut as seen on the next photo.



1. Bolt
2. Washer
3. Bushing
4. Bridge
5. Washer
6. Nut

Install bridge **no. 1** and carbide runner **no. 8** on ski. Secure runner with M10 flanged elastic nuts **no. 7**.

Secure bridge on ski using 1/4 in black rivets **no. 6**. Place rivet head on the outside surface. See photo.



1. Rivet head outside

Install plastic handle **no. 5** using M8 x 50 hexagonal bolt **no. 9**, M8 flat washer **no. 11** and M8 flanged elastic nut **no. 12** to secure it on the tip of the ski and M8 x 100 hexagonal bolt **no. 10**, M8 flat washer **no. 11** and M8 flanged elastic nut **no. 12** to secure handle on the ribs of the ski.

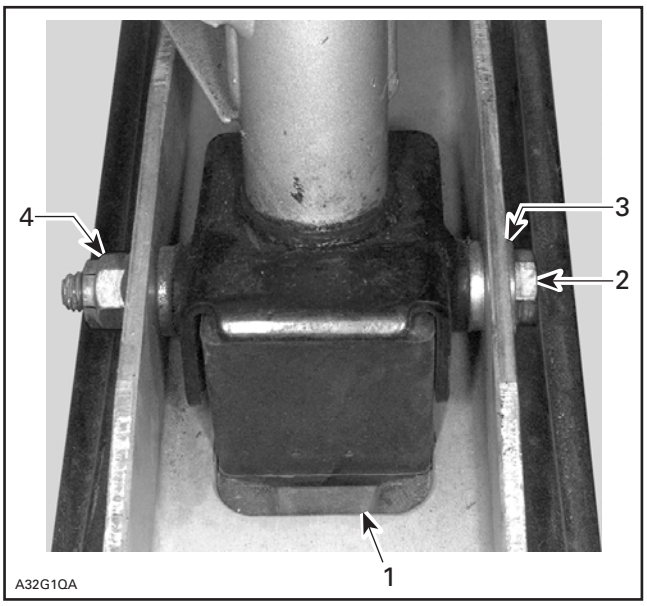
NOTE: Install washer on bolt head side.

Place ski stopper **no. 13** in bridge hole with higher side toward front of ski.

Coat spacer **no. 14** with synthetic grease (P/N 413 711 500) and insert it into ski leg.

Place ski on ski leg and, with previously installed **no. 2** or **no. 4** bushings (M10), secure with M10 hexagonal bolt **no. 15** (bolt head toward outside of vehicle), M10 flat washer **no. 16** (on bolt head side) and M10 flanged nut **no. 17**. Torque to 32 N•m (27 lbf•ft).

With previously installed **no. 3** bushings (M12), secure with M12 hexagonal bolt **no. 18** (bolt head toward outside of vehicle), M12 flat washer **no. 19** (on bolt head side and on nut side) and M12 elastic stop nut **no. 20**. Torque to 32 N•m (27 lbf•ft).



LEFT SIDE SHOWN

1. *Ski stopper with higher side toward front*
2. *M10 x 110 or M12 x 120 hexagonal bolt*
3. *M10 flat washer installed on bolt head side or M12 flat washer on bolt head side and on nut side*
4. *M10 flanged nut or M12 elastic stop nut. Torque to 32 N•m (27 lbf•ft)*

Installation is now complete.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

860 504 500

1.	505 070 000	Bridge	Pont
2.	505 070 001	Bushing (2)	Coussinet (2)
3.	505 070 939	Bushing (2)	Coussinet (2)
4.	505 070 854	Bushing (2)	Coussinet (2)
5.	572 101 000	Plastic Handle	Poignée de plastique
6.	390 911 100	1/4 in Black Rivet (2)	Rivet noir de 1/4 po (2)
7.	233 201 414	M10 Flanged Elastic Nut (4)	Écrou élastique à épaulement M10 (4)
8.	505 070 248	Carbide Runner	Lisse au carbure
9.	207 085 044	M8 x 50 Hexagonal Bolt	Boulon hexagonal M8 x 50
10.	230 080 044	M8 x 100 Hexagonal Bolt	Boulon hexagonal M8 x 100
11.	234 081 410	M8 Flat Washer (2)	Rondelle plate M8 (2)
12.	233 281 414	M8 Flanged Elastic Nut (2)	Écrou élastique à épaulement M8 (2)
13.	506 151 233	Ski Stopper	Butée de ski
14.	506 133 300	Spacer	Entretoise
15.	250 000 001	M10 x 110 Hexagonal Bolt	Boulon hexagonal M10 x 110
16.	732 900 049	M10 Flat Washer	Rondelle plate M10
17.	732 610 084	M10 Flanged Nut	Écrou à épaulement M10
18.	230 022 044	M12 x 120 Hexagonal Bolt (not illustrated)	Boulon hexagonal M12 x 120 (non illustré)
19.	234 021 410	M12 Flat Washer (2) (not illustrated)	Rondelle plate M12 (2) (non illustrée)
20.	232 521 414	M12 Elastic Stop Nut (not illustrated)	Écrou d'arrêt élastique M12 (non illustré)

PRECISION SKI FASTENING KIT
(P/N 860 504 700)

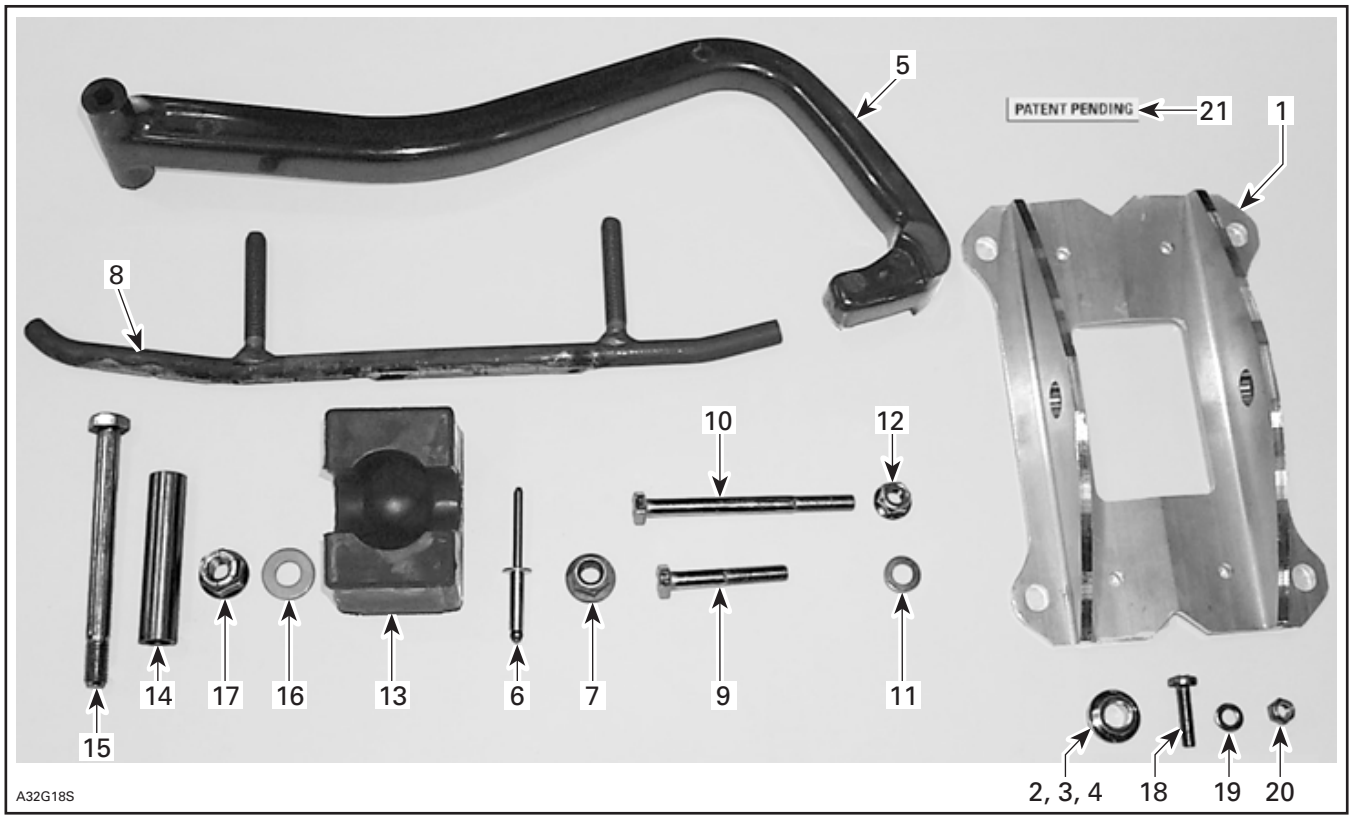
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.5** hour.

PARTS TO BE INSTALLED



1. Bridge
2. Bushing (2)
3. Bushing (2)
4. Bushing (2)
5. Plastic Handle
6. 1/4 in Pop Rivet (4)
7. M10 Elastic Flanged Nut (4)
8. Carbide Runner (2)
9. M8 x 50 Hexagonal Bolt
10. M8 x 90 Hexagonal Bolt
11. M8 Flat Washer (2)
12. M8 Elastic Flanged Nut (2)
13. Ski Stopper
14. Spacer
15. M10 Hexagonal Screw
16. M10 Washer (2)
17. M10 Flanged Nut
18. M6 Screw (4)
19. M6 Flat Washer (4)
20. M6 Elastic Stop Nut (4)
21. Label

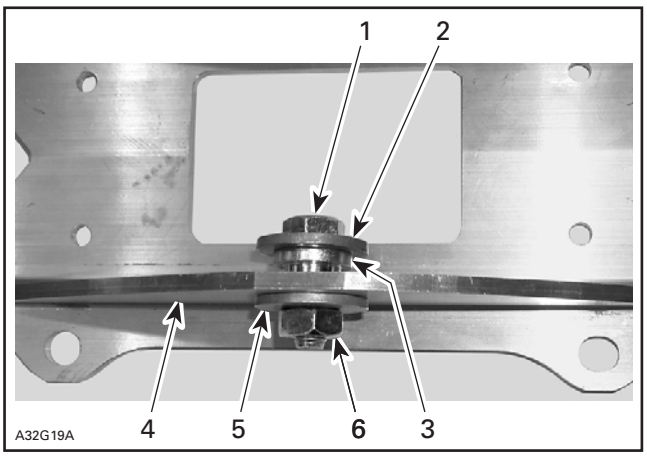
PROCEDURE

NOTE: This kit is made to be assembled on one ski only (sold separately). Many ski colors are available according to customer's preferences.

Install bushings (according to the next table) on bridge.

PART	APPLICABLE MODELS	HOLE DIAMETER
No. 2	All liquid cooled models with 10 mm bolts (P/N 505 070 001)	10 mm (3/8 in)
No. 3	All liquid cooled models with 12 mm bolts (P/N 505 070 939)	12 mm (15/32 in)
No. 4	All fan cooled models (P/N 505 070 854)	10 mm (3/8 in)

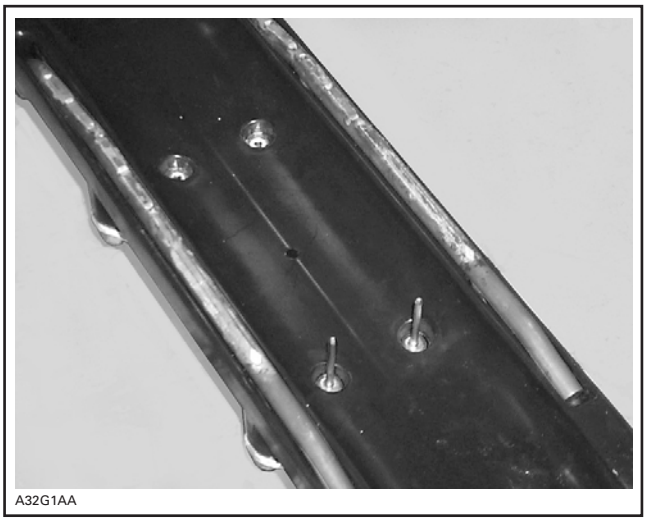
A good way to install bushings is to press fit the bushing with two washers, a bolt and a nut as seen on the next photo.



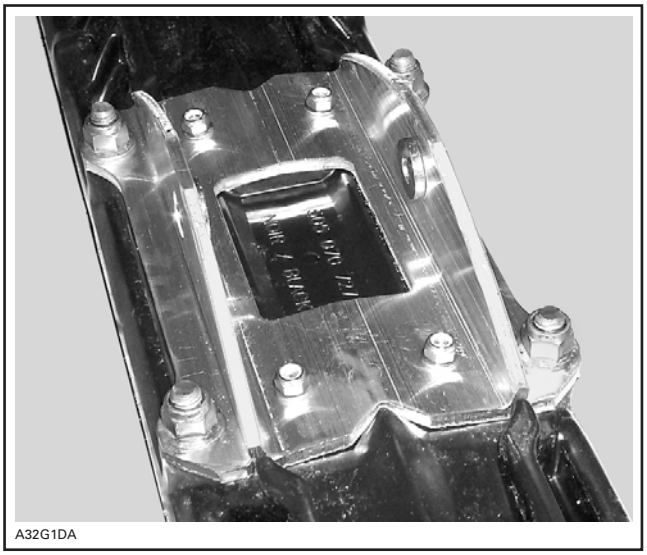
1. *Bolt*
2. *Washer*
3. *Bushing*
4. *Bridge*
5. *Washer*
6. *Nut*

Install bridge **no. 1** and carbide runners **no. 8** on ski. Secure runners with M10 elastic flanged nuts **no. 7**.

Secure bridge on ski using 1/4 in pop rivets **no. 6**. Place rivet head on sole side. See photo.



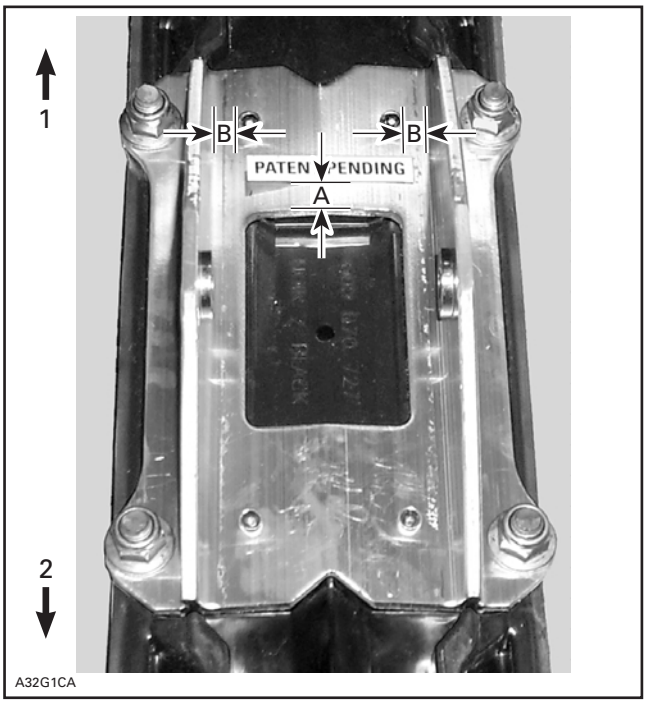
If 1/4 in pop rivet tool is not available, M6 screws **no. 18**, M6 flat washers **no. 19** and M6 elastic stop nuts **no. 20** are provided to replace rivets.



Install plastic handle **no. 5** using M8 x 50 hexagonal bolt **no. 9**, M8 flat washer **no. 11** and M8 elastic flanged nut **no. 12** to secure it on the tip of the ski and M8 x 90 hexagonal bolt **no. 10**, M8 flat washer **no. 11** and M8 elastic flanged nut **no. 12** to secure handle on the ribs of the ski.

NOTE: Install washer on bolt head side. See photo.

Peel off label **no. 21** and install it on ski bridge. Refer to next photo for positioning.

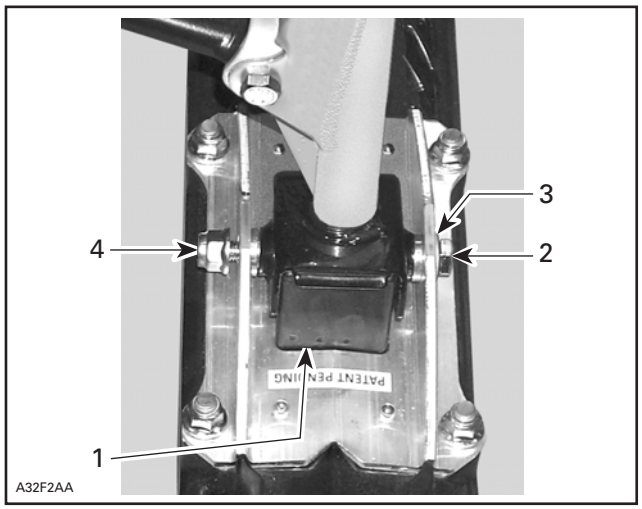


1. Ski shovel
2. Ski tail
A. 10 mm (3/8 in)
B. Equal distance between bridge ribs

Place ski stopper **no. 13** in bridge hole with higher side toward front of ski.

Coat spacer **no. 14** with synthetic grease (P/N 413 711 500) and insert it into ski leg.

Place ski on ski leg and secure with M10 hexagonal screw **no. 15** (bolt head toward outside of vehicle), M10 washer **no. 16** (on bolt head side) and M10 flanged nut **no. 17**. Torque to 32 N•m (27 lbf•ft).



LEFT SIDE SHOWN

1. Ski stopper with higher side toward front
2. M10 hexagonal screw
3. Washer installed on bolt head side
4. M10 flanged nut. Torque to 32 N•m (27 lbf•ft)

Installation is now complete.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

860 504 700

1.	505 070 765	Bridge	Pont
2.	505 070 001	Bushing (2)	Coussinet (2)
3.	505 070 939	Bushing (2)	Coussinet (2)
4.	505 070 854	Bushing (2)	Coussinet (2)
5.	572 101 000	Plastic Handle	Poignée de plastique
6.	293 150 090	1/4 in Pop Rivet (4)	Rivet aveugle de 1/4 po (4)
7.	233 201 414	M10 Elastic Flanged Nut (4)	Écrou élastique à épaulement M10 (4)
8.	505 070 806	Carbide Runner (2)	Lisse au carbure (2)
9.	207 085 044	M8 x 50 Hexagonal Bolt	Boulon hexagonal M8 x 50
10.	207 089 044	M8 x 90 Hexagonal Bolt	Boulon hexagonal M8 x 90
11.	234 081 410	M8 Flat Washer (2)	Rondelle plate M8 (2)
12.	233 281 414	M8 Elastic Flanged Nut (2)	Écrou élastique à épaulement M8 (2)
13.	506 151 233	Ski Stopper	Butée de ski
14.	506 133 300	Spacer	Entretoise
15.	250 000 001	M10 Hexagonal Screw	Vis hexagonale M10
16.	732 900 049	M10 Washer (2)	Rondelle M10 (2)
17.	732 610 084	M10 Flanged Nut	Écrou à épaulement M10
18.	208 662 560	M6 Screw (4)	Vis M6 (4)
19.	234 061 600	M6 Flat Washer (4)	Rondelle plate M6 (4)
20.	232 561 600	M6 Elastic Stop Nut (4)	Écrou d’arrêt élastique M6 (4)
21.	418 003 000	Label	Étiquette

BOMBARDIER
RECREATIONAL PRODUCTS

ski-doo Snowmobiles

90° CARBIDE RUNNERS (P/N 860 505 100)
60° CARBIDE RUNNERS (P/N 860 505 200)

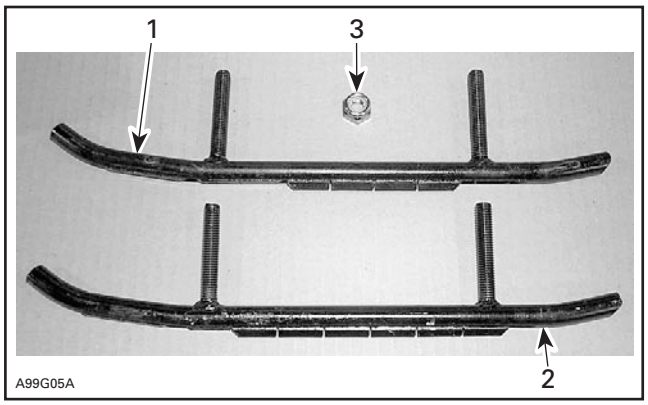
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.2** hour.

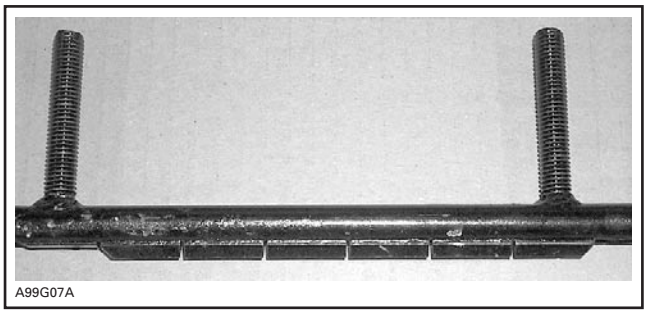
PARTS TO BE INSTALLED



1. 4-Inch Carbide Runner
2. 6-Inch Carbide Runner
3. Elastic Stop Nut (4)

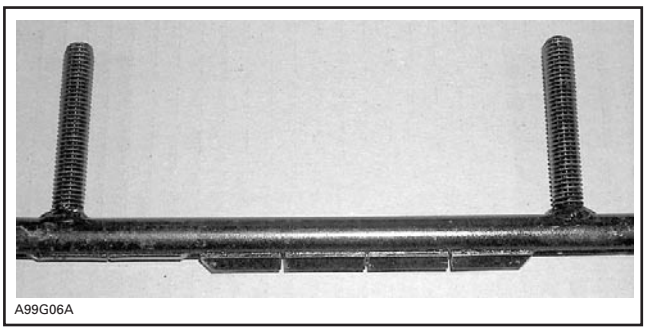
PROCEDURE

On each ski, remove outside runner and replace it with new 6 inches carbide runners **no. 2**. Secure with elastic stop nut **no. 3**.



RUNNER WITH 6 — 1 INCHES CARBIDES

Remove inside runners and replace with new 4 inches carbide runners **no. 1**. Secure with elastic stop nut **no. 3**.



RUNNER WITH 4 — 1 INCHES CARBIDES

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
80	**M12**	59
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

HANDLE BAR EXTENSION
(P/N 860 601 000/100/200/300)

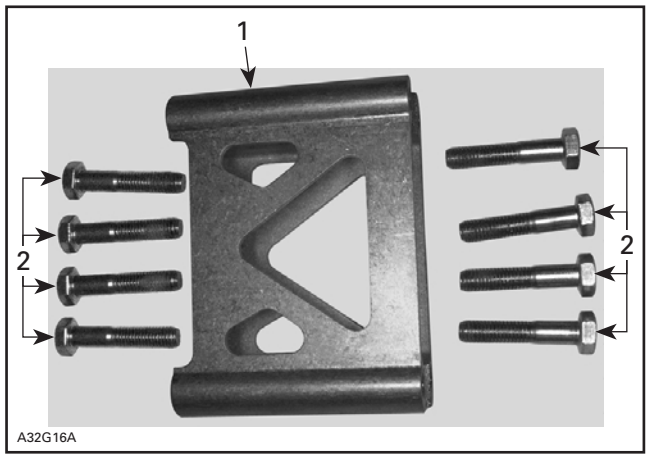
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.2** hour.

PARTS TO BE INSTALLED

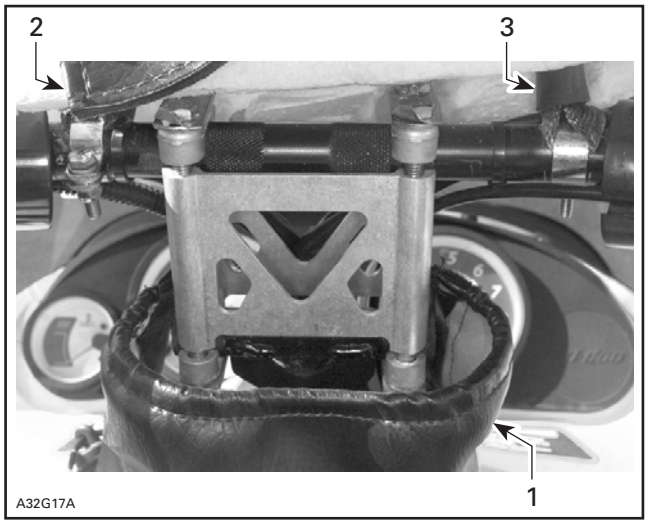


1. Extension
2. M8 x 40 Hexagonal screw (8)

INSTRUCTION

Remove console cover and steering pad.

NOTE: Lift steering pad on models equipped with a grab handle.



1. Console cover
2. Steering pad
3. Grab handle

Unscrew and discard upper hexagonal retaining screws.

Remove lock tabs (if so equipped), reinforcements and steering supports; note their positioning for reinstallation purpose.

Set handle bar aside.

Unscrew and discard lower hexagonal retaining screws.

Remove lock tabs (if so equipped), reinforcements and steering supports; note their positioning for reinstallation purpose.

Install selected extension at desired angle and reinstall all lower previously removed parts with new retaining screws.

Position handle bar.

Reinstall all upper previously removed parts with new retaining screws.

Align handle bar before giving final torque to upper retaining screws.

Reposition console cover and steering pad.

Installation is now complete.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

860 601 000

1.	506 151 432	105 mm (4-9/64 in) Extension	Rallonge de 105 mm (4-9/64 po)
2.	250 000 074	M8 x 40 Hexagonal Screw (8)	Vis hexagonale M8 x 40 (8)

860 601 100

1.	506 151 428	130 mm (5-1/8 in) Extension	Rallonge de 130 mm (5-1/8 po)
2.	250 000 074	M8 x 40 Hexagonal Screw (8)	Vis hexagonale M8 x 40 (8)

860 601 200

1.	506 151 517	50 mm (1-31/32 in) Extension	Rallonge de 50 mm (1-31/32 po)
2.	250 000 074	M8 x 40 Hexagonal Screw (8)	Vis hexagonale M8 x 40 (8)

860 601 300

1.	506 151 413	80 mm (3-9/64 in) Extension	Rallonge de 80 mm (3-9/64 po)
2.	250 000 074	M8 x 40 Hexagonal Screw (8)	Vis hexagonale M8 x 40 (8)

GRAND TOURING SIDE BAG KIT (P/N 861 000 600)
GRAND TOURING SE SIDE BAG KIT (P/N 861 000 700)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. This instruction sheet should be given to the purchaser. This kit is designed for specific applicable models only. It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.1** hour.

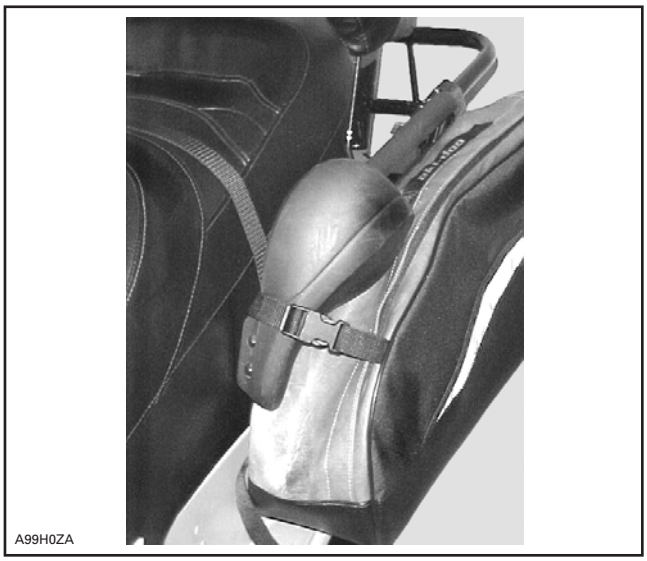
PARTS TO BE INSTALLED

1. Right Side Bag (Grand Touring model)
2. Left Side Bag (Grand Touring SE model)
3. Quick Release Buckle (2) (not shown)
4. Rivet (2) (not shown)

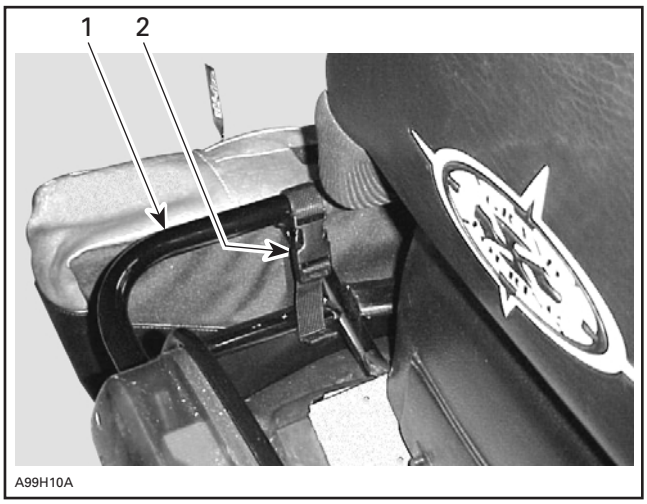
INSTALLATION

Place bag on footboard. Position it correctly under arm.

Secure front strap. Pass it around arm, over deflector and buckle it.

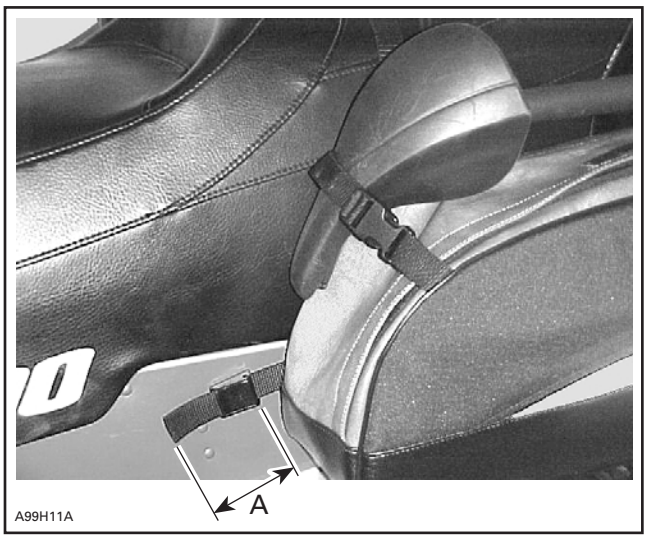


Secure rear strap. Pass it around both tubes of luggage rack and buckle it.



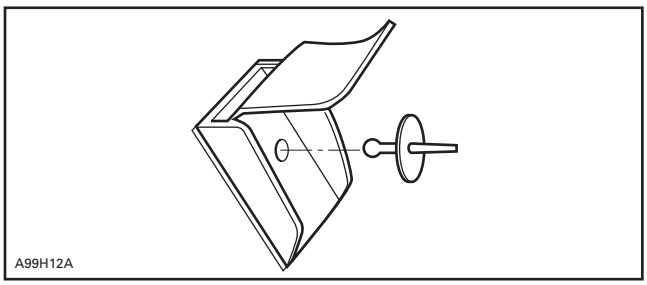
1. Rack tubes
2. Strap buckled

Mark quick release buckle location. Stretch lower front strap and position no. 3 buckle in order to make strap sick out 3 inches from buckle.



A. 75 mm (3 in)

Drill a 4.75 mm (3/16 in) hole and rivet quick release buckle **no. 3** in place using the provided rivet **no. 4**.



NOTE: Take care to install buckle at the right angle.

Insert strap in quick release buckle and secure in place.

861 000 600

1.	480 500 004	Right Side Bag	Sacoche de droite
2.	480 500 005	Left Side Bag	Sacoche de gauche
3.	—	Quick Release Buckle (2)	Boucle à dégagement rapide (2)
4.	—	Rivet (2)	Rivet (2)

861 000 700

1.	480 500 006	Right Side Bag	Sacoche de droite
2.	480 500 007	Left Side Bag	Sacoche de gauche
3.	—	Quick Release Buckle Buckle (2)	Boucle à dégagement rapide (2)
4.	—	Rivet (2)	Rivet (2)

ELECTRIC STARTER KIT
(P/N 861 506 900)

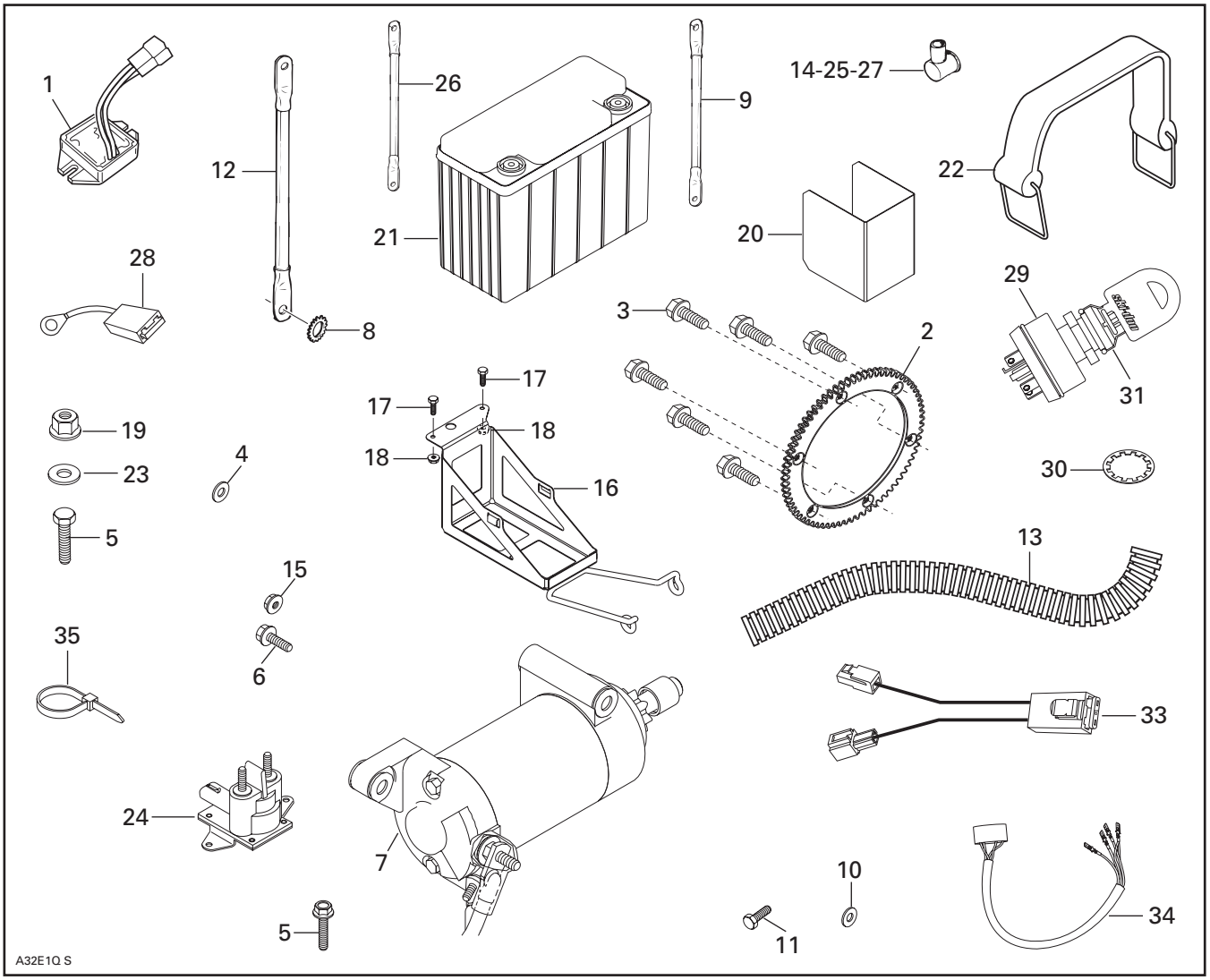
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **2.5** hours.

PARTS TO BE INSTALLED



1. Voltage Regulator
2. Ring Gear
3. M8 x 16 Self-Tapping Screw (6)
4. M8 Flat Washer with Teflon (3)
5. M8 x 75 Flanged Hexagonal Screw (with Scotch Grip)
6. M8 x 30 Flanged Hexagonal Screw (with Scotch Grip) (2)
7. Starter
8. Internal/External Tooth Lock Washer (3)
9. Small Ground Cable (2)
10. M6 Flat Washer (4)
11. M6 x 16 Hexagonal Screw (with Scotch Grip) (2)
12. RED Positive Cable
13. Protector Tubing (914 mm (3 ft))
14. Protector Cap
15. M6 Elastic Stop Nut (4)
16. Battery Support
17. M5 x 14 Hexagonal Screw (4)
18. M5 Flanged Elastic Nut (4)
19. M10 Flanged Elastic Nut (2)
20. Deflector
21. Battery
22. Battery Strap
23. M10 Flat Washer (2)
24. Solenoid
25. Protector Cap (2)
26. Small RED Positive Cable
27. Protector Cap
28. Fuse Wiring Harness
29. Ignition Switch
30. Internal Tooth Lock Washer
31. Face Nut
32. Switch Protector Cap (not illustrated)
33. Fuse-Ground Harness
34. Switch Harness
35. Locking Tie (10)

INSTRUCTIONS

Battery Testing and Activation

After having got the battery ready as per the instructions supplied with battery, check its charge condition using a multimeter.

With a multimeter, voltage readings appear instantly to show the state of charge. Always respect polarity. A fully charged battery will have a reading of 12.6 Vdc.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

If not charged, connect a 10 A battery charger for a few hours.

⚠ WARNING

Gases given off by a battery being charged are highly explosive. Always charge in a well ventilated area. Keep battery away from cigarettes or open flames. Always turn battery charger off prior to disconnecting cables. Otherwise a spark will occur and battery might explode.

NOTE: It is recommended to verify the battery charge once a month. If necessary, fully recharge it.

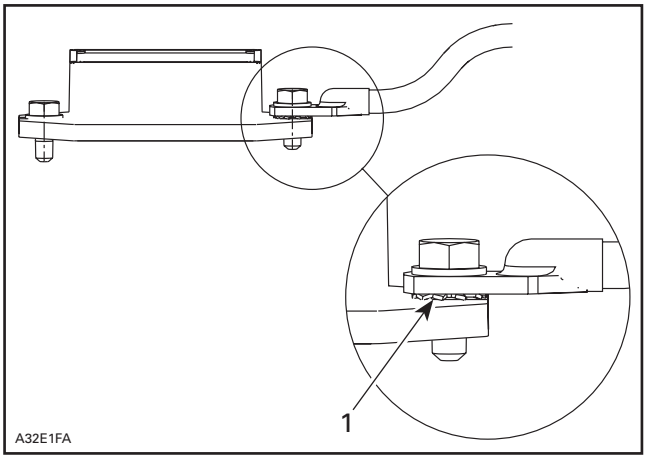
Vehicle Preparation

Remove tuned pipe, muffler, belt guard, drive belt, air intake silencer.

Loosen drive pulley retaining screw for later removal.

Voltage Regulator and Front Ground Cable

Remove original regulator/rectifier, located along RH side member of frame. Secure voltage regulator **no. 1** on both sides with same self-tapping screws, with wires coming out, on the outside. On inner side, install 1 small ground cable **no. 9** and 1 M6 internal/external tooth lock washer **no. 8**, taking care to put lock washer between regulator and cable terminal. Refer to following illustration.



1. M6 internal/external tooth lock washer positioning

Apply silicone dielectric grease (P/N 293 550 004) in voltage regulator connector and then connect it to vehicle harness connector. Secure connectors with a locking tie **no. 35**.

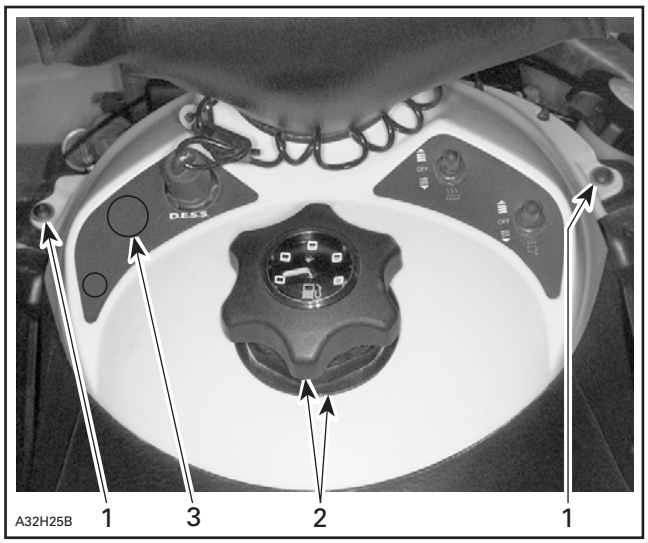
Ignition Switch

Remove steering pad.

Remove upper screw retaining both left and right consoles.

Remove fuel tank cap and retaining ring using console tightening wrench (P/N 529 035 603).

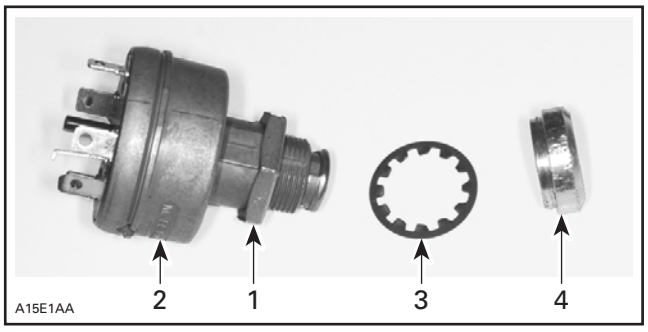
Using template (last page of this procedure), mark center hole for switch location, beside DESS connector.



1. *Remove these screws*
2. *Remove cap and retaining ring*
3. *Use this space*

Using a 19 mm (3/4 in) hole saw, drill through dash.

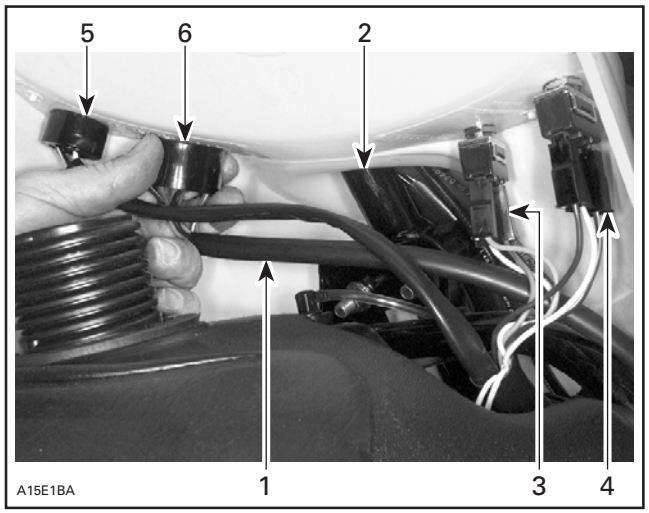
Tighten nut onto ignition switch **no. 29**, slide internal tooth lock washer **no. 30** onto switch then insert switch through hole from underneath and secure on top with face nut **no. 31**.



1. *Nut*
2. *Ignition switch*
3. *Internal tooth lock washer*
4. *Face nut*

Install switch protector cap **no. 32** (not shown) on top of switch.

Connect switch harness **no. 34** to ignition switch then, lift dash and route switch harness behind steering column but in front of heated thumb/handle connectors, leading toward multi-connector. Secure ignition switch harness onto handle support with a locking tie **no. 35**.

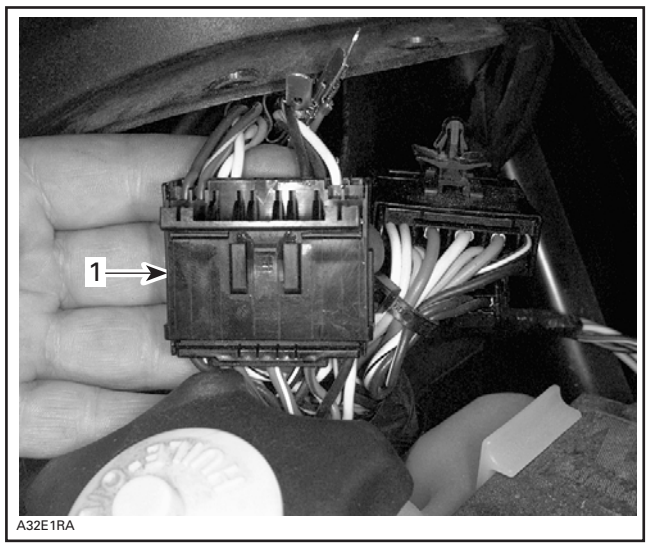


1. *Switch harness*
2. *Steering column*
3. *Heated handle connector*
4. *Heated thumb connector*
5. *DESS connector*
6. *Ignition switch connector*

Open multi-connector and insert terminals in proper holes as follows:

- BLACK wire in hole 15
- BLACK/YELLOW wire in hole 14
- RED/BLUE wire in hole 13
- RED/WHITE wire in hole 12
- RED/GREEN wire in hole 11.

Close multi-connector.



1. *Use this multi-connector*

Ring Gear

Remove drive pulley. Refer to appropriate *Shop Manual* to perform drive pulley disassembly/assembly procedures and to proceed with pulley alignment.

Secure ring gear **no. 2** on inner half using M8 x 16 self- tapping screws **no. 3**. Apply Loctite† 271 (red) on screw threads.

CAUTION: Loctite 271 (red) must be applied to safely assemble ring gear.

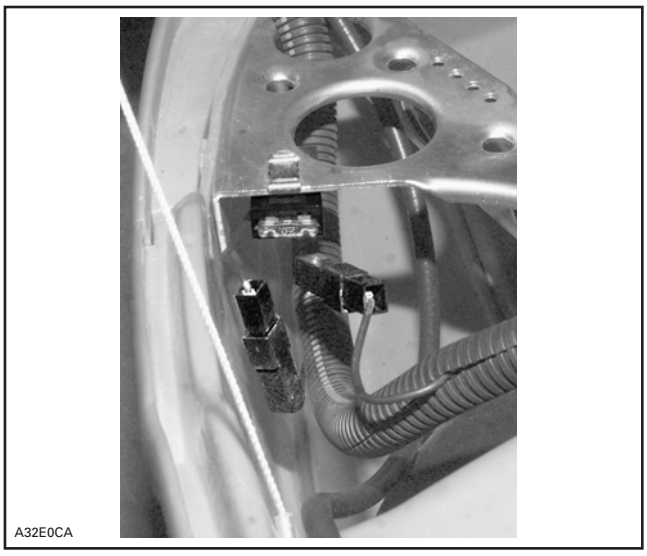
Torque screws in a criss-cross sequence to 27 N•m (20 lbf•ft).

Do not reinstall drive pulley at this time.

Protection Fuse

Disconnect connector on hood electrical harness. Clip fuse-ground harness **no. 33** (with fuse) on frame.

Connect fuse-ground harness wires to connector housings. Refer to following photo.



INSTALLATION COMPLETED

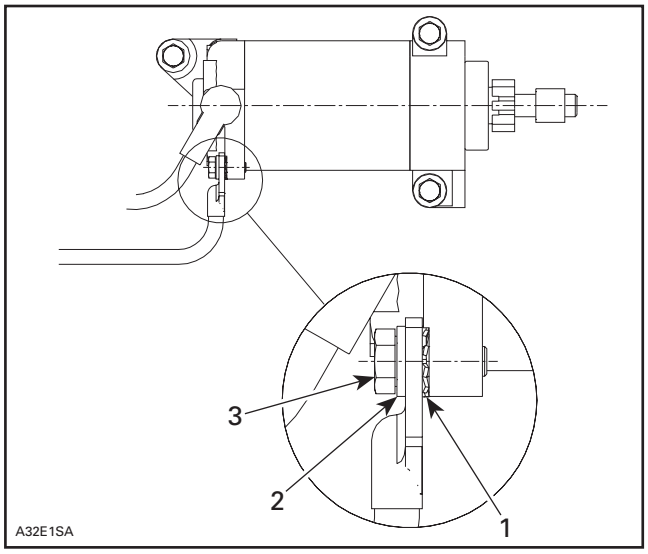
Electric Starter

Install electric starter **no. 7** and secure it using M8 x 75 flanged hexagonal screw (with Scotch Grip) **no. 5** on PTO side and M8 flat washer with Teflon **no. 4**.

Secure MAG side to engine with M8 x 30 flanged hexagonal screws (with Scotch Grip) **no. 6**, and M8 flat washers with Teflon **no. 4**.

Wire/Cable Connections and Routing

Connect small ground cable coming from voltage regulator to starter with an internal/external tooth lock washer **no. 8**, an M6 flat washer **no. 10** and an M6 x 16 hexagonal screw (with Scotch Grip) **no. 11**. Note that lock washer goes between starter and cable terminal while flat washer goes between cable terminal and screw. Refer to following illustration.



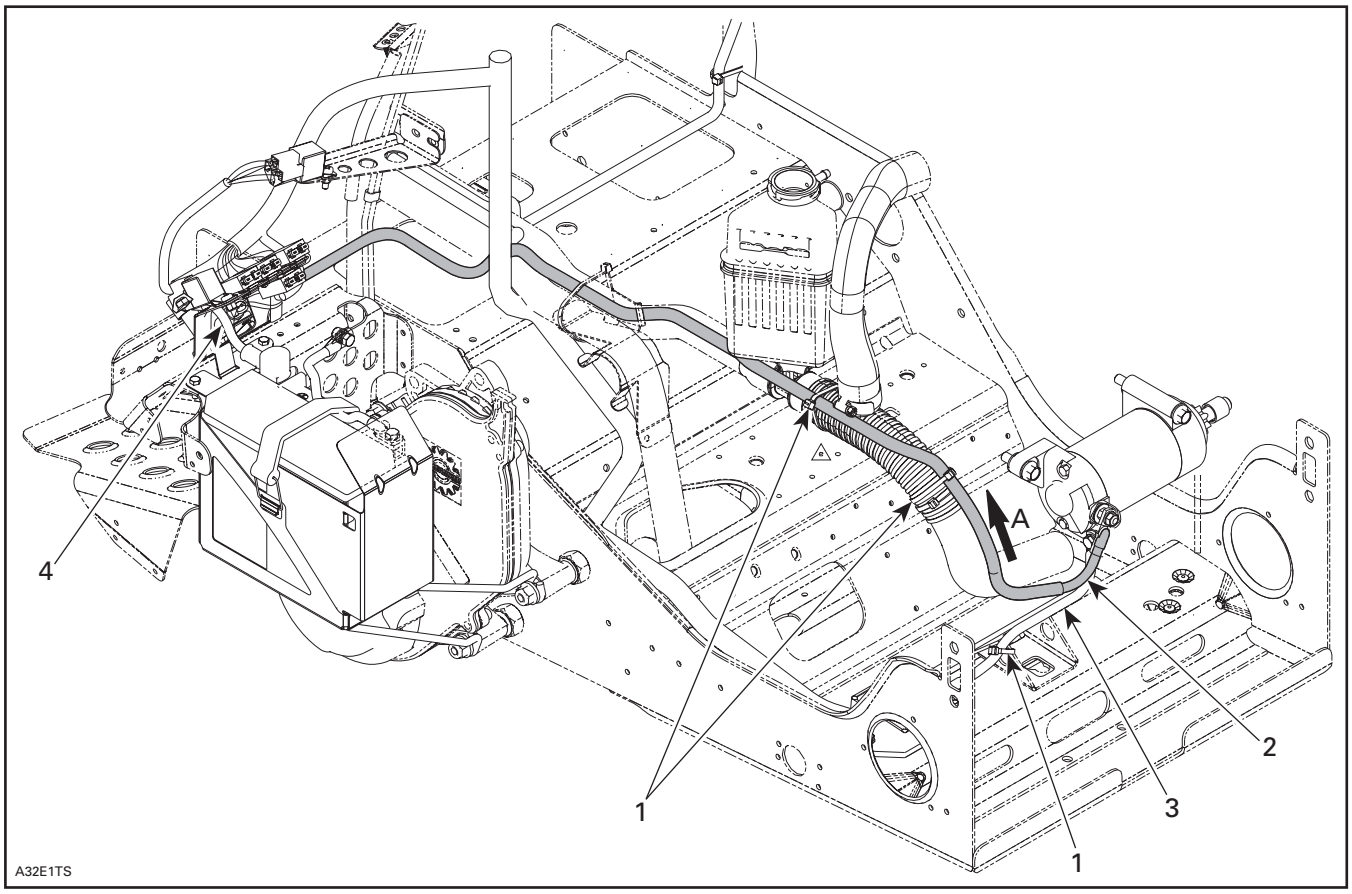
1. *Internal/external tooth lock washer*
2. *Flat washer*
3. *M6 x 16 hexagonal screw (with Scotch Grip)*

Secure small ground cable to engine support using a locking tie **no. 35**.

Insert RED positive cable **no. 12** into protector tubing **no. 13**. Starting from starter location, route RED cable with tubing toward solenoid location along cooling hose, between fuel tank and oil tank and under starter rope. Note that bent terminal connects onto solenoid.

Secure RED cable with tubing on cooling hose with locking ties **no. 35** every 150 mm (6 in) more or less. Refer to following illustration.

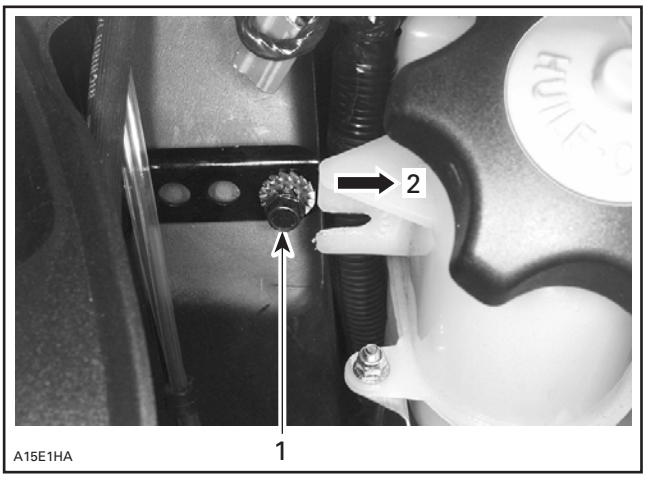
† Loctite is a registered trademark of Loctite Corporation



1. *Locking tie*
2. *RED positive cable*
3. *BLACK ground cable*
4. *Small RED positive cable, from solenoid to battery*

A. *Heading to solenoid*

To ease cable routing, undo coolant reservoir upper retaining screw just enough to push reservoir forward a bit.



1. *Loosen this bolt*
2. *Move a bit forward*

Slide protector cap **no. 14** (starter end of cable) on RED positive cable. Connect cable terminal to starter, using an M6 flat washer **no. 10** and an M6 elastic stop nut **no. 15**. Cover terminal with previously installed protector cap.

⚠ WARNING

Ensure all terminals are properly crimped on wires/cables and that all connector housings are properly fastened. Keep wires away from any rotating, moving, heating, vibrating and sharp edge parts. Use proper fastening devices as required.

Solenoid

Secure solenoid **no. 24** onto right side footrest, console side, using M5 x 14 hexagonal screws **no. 17**, and M5 flanged elastic nuts **no. 18**.

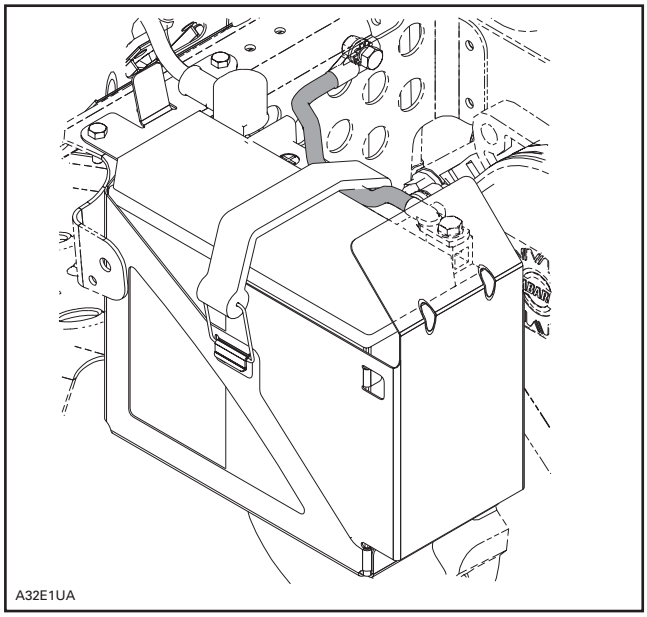
Slide a protector cap **no. 25** (solenoid end of cable) and connect RED positive cable coming from starter onto inner solenoid contact using an M6 flat washer **no. 10** and an M6 elastic stop nut **no. 15**. Cover terminal with previously installed protector cap.

Slide a protector cap **no. 25** onto the solenoid side of the small RED positive cable **no. 26**. Slide protector cap **no. 27** at the other end. Connect small RED positive cable, bent terminal side, onto outer solenoid contact using an M6 flat washer **no. 10** and an M6 elastic stop nut **no. 15**. Cable must be directed straight towards battery.

Rear Ground Cable

Connect second small ground cable **no. 9** onto footrest inner wall through already existing hole, using an M6 x 16 hexagonal screw (with Scotch Grip) **no. 11**, an internal/external tooth lock washer **no. 8** and an M6 elastic stop nut **no. 15**.

Cable must be directed horizontally towards battery. Refer to following illustration.

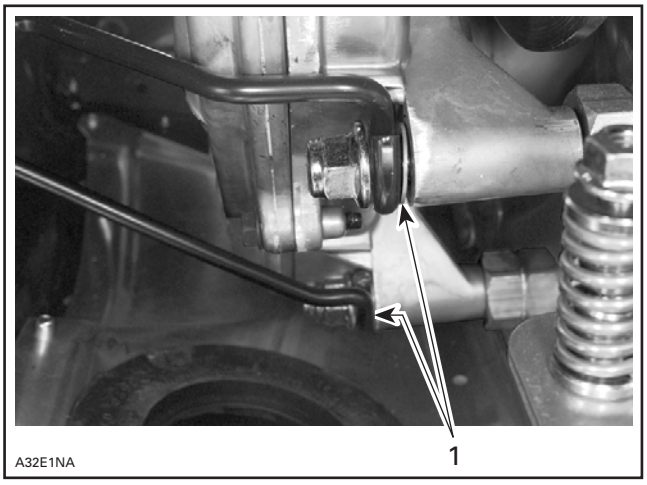


SMALL GROUND CABLE ROUTING (REAR)

Battery and Rack

Remove 2 lower nuts retaining chaincase cover.

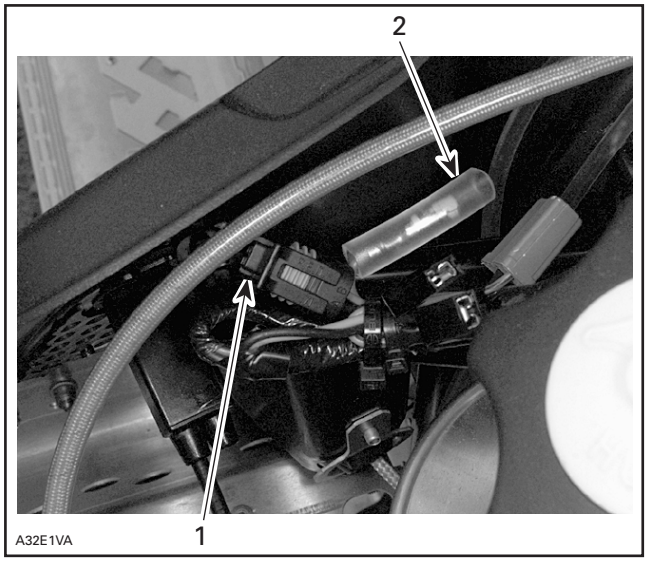
Install M10 flat washers **no. 23** between chaincase cover and battery rack rods. Install battery support **no. 16** as shown and secure with 2 M5 x 14 hexagonal screws **no. 17** and 2 M5 flanged elastic nuts **no. 18** on top of right front foot rest and reinstall new chaincase cover M10 flanged elastic nuts **no. 19**. Refer to following photo.



1. Flat washer positioning

Install battery **no. 21** in rack, posts on engine side, with deflector **no. 20**.

Cut locking ties from console strand and set RED/WHITE wire into fuse wiring harness **no. 28**. Refer to following photo.



1. Connects into solenoid
2. Connects into fuse wiring harness

Connect RED positive cable and RED wire with fuse (from console harness) to battery and cover terminal with previously installed protector cap, then connect BLACK ground cable. Coat battery posts and connectors with silicone dielectric grease (P/N 413 701 700).

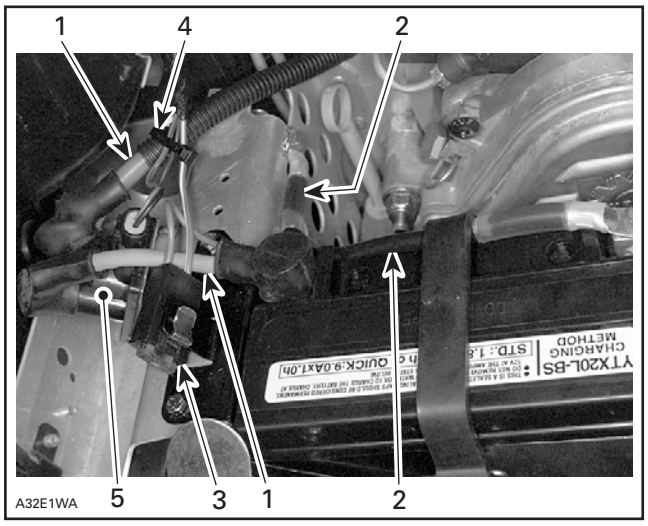
⚠ WARNING

Always connect the battery cables exactly in the specified order. Connect RED positive cable first, then BLACK negative ground cable.

Secure battery in place with battery strap **no. 22**. Secure also BLACK ground cable in strap, engine side.

Clip fuse wiring harness onto battery rack rearward bracket.

Fasten battery cables using a locking tie **no. 35**.



1. RED positive cable
2. BLACK ground cable
3. Fuse wiring harness
4. Locking tie
5. Solenoid

Finalizing Assembly

Refer to the appropriate *Ski-Doo Shop Manual* for proper reinstallation procedure.

Reinstall drive pulley.

Check pulley alignment.

⚠ WARNING

Drive pulley alignment must always be checked whenever pulleys have been removed, replaced or disassembled.

Reinstall remaining removed parts not forgetting to secure coolant reservoir retaining screw.

NOTE: Apply Dow Corning sealer no. 736 RTV on exhaust manifold ball joint.

Test electrical starting and ignition cut-out systems as per normal starting procedure for electric starter models.

The following table is to be consulted if and when a tightening torque is required but not specified.

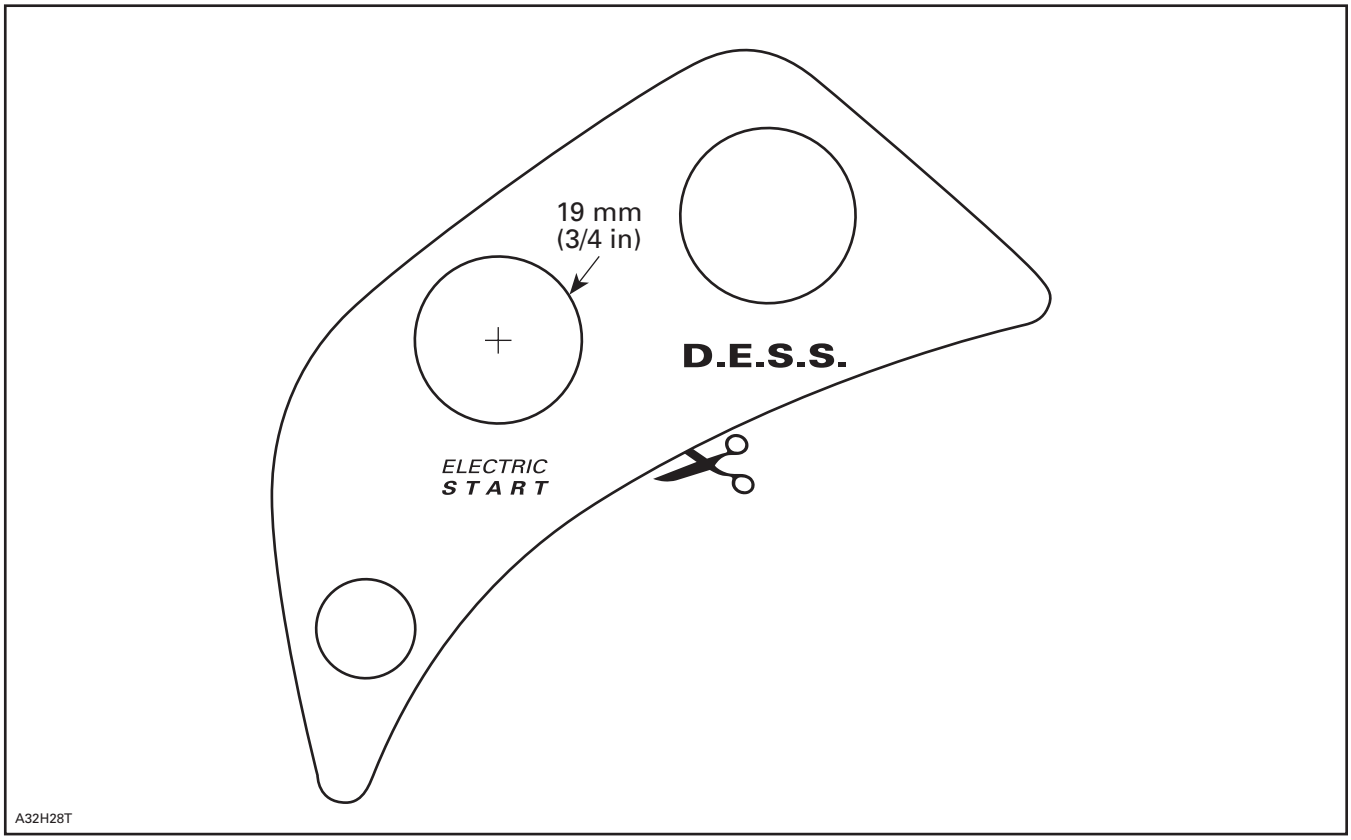
Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

TEMPLATE



861 506 900

1.	515 175 217	Voltage Regulator	Régulateur de tension
2.	417 300 057	Ring Gear	Couronne de lancement
3.	236 281 684	M8 x 16 Self-Tapping Screw (6)	Vis autotaraudeuse M8 x 16 (6)
4.	250 200 008	M8 Flat Washer with Teflon (3)	Rondelle plate M8 avec Teflon (3)
5.	207 587 544	M8 x 75 Flanged Hexagonal Screw (with Scotch Grip)	Vis hexagonale à épaulement M8 x 75 (avec Scotch Grip)
6.	207 583 044	M8 x 30 Flanged Hexagonal Screw (with Scotch Grip) (2)	Vis hexagonale à épaulement M8 x 30 (avec Scotch Grip) (2)
7.	515 175 562	Starter	Démarreur
8.	250 200 000	Internal/External Tooth Lock Washer (3)	Rondelle-frein à dents extérieures/ intérieures (3)
9.	515 175 483	Small Ground Cable (2)	Petit câble de masse (2)
10.	234 061 410	M6 Flat Washer (4)	Rondelle plate M6 (4)
11.	207 361 644	M6 x 16 Hexagonal Screw (with Scotch Grip) (2)	Vis hexagonale M6 x 16 (avec Scotch Grip) (2)
12.	515 175 586	RED Positive Cable	Câble positif ROUGE
13.	409 901 700	Protector Tubing (914 mm (3 ft))	Tube protecteur (914 mm (3 pi))
14.	278 000 020	Protector Cap	Capuchon de protection
15.	232 561 414	M6 Elastic Stop Nut (4)	Écrou d'arrêt élastique M6 (4)
16.	515 175 625	Battery Support	Support de batterie
17.	207 151 444	M5 x 14 Hexagonal Screw (4)	Vis hexagonale M5 x 14 (4)
18.	233 251 414	M5 Flanged Elastic Nut (4)	Écrou élastique à épaulement M5 (4)
19.	233 201 414	M10 Flanged Elastic Nut (2)	Écrou élastique à épaulement M10 (2)
20.	515 175 643	Deflector	Déflecteur
21.	515 175 759	Battery	Batterie
22.	515 175 475	Battery Strap	Courroie de batterie
23.	503 175 800	M10 Flat Washer (2)	Rondelle plate M10 (2)
24.	278 001 641	Solenoid	Solénoïde
25.	570 064 200	Protector Cap (2)	Capuchon de protection (2)
26.	515 175 555	Small RED Positive Cable	Petit câble positif ROUGE
27.	570 151 000	Protector Cap	Capuchon de protection
28.	515 175 489	Fuse Wiring Harness	Faisceau de fils à fusibles
29.	410 113 602	Ignition Switch	Interrupteur d'allumage
30.	394 103 300	Internal Tooth Lock Washer	Rondelle-frein à dents intérieures
31.	410 112 100	Face Nut	Écrou
32.	570 013 700	Switch Protector Cap (not illustrated)	Cache-interrupteur (non illustré)
33.	515 175 490	Fuse-Ground Harness	Faisceau de fils fusible/masse
34.	515 175 541	Switch Harness	Faisceau de fils de l'interrupteur
35.	414 115 200	Locking Tie (10)	Attache (10)

ELECTRIC STARTER KIT
(P/N 861 507 000)

⚠ WARNING

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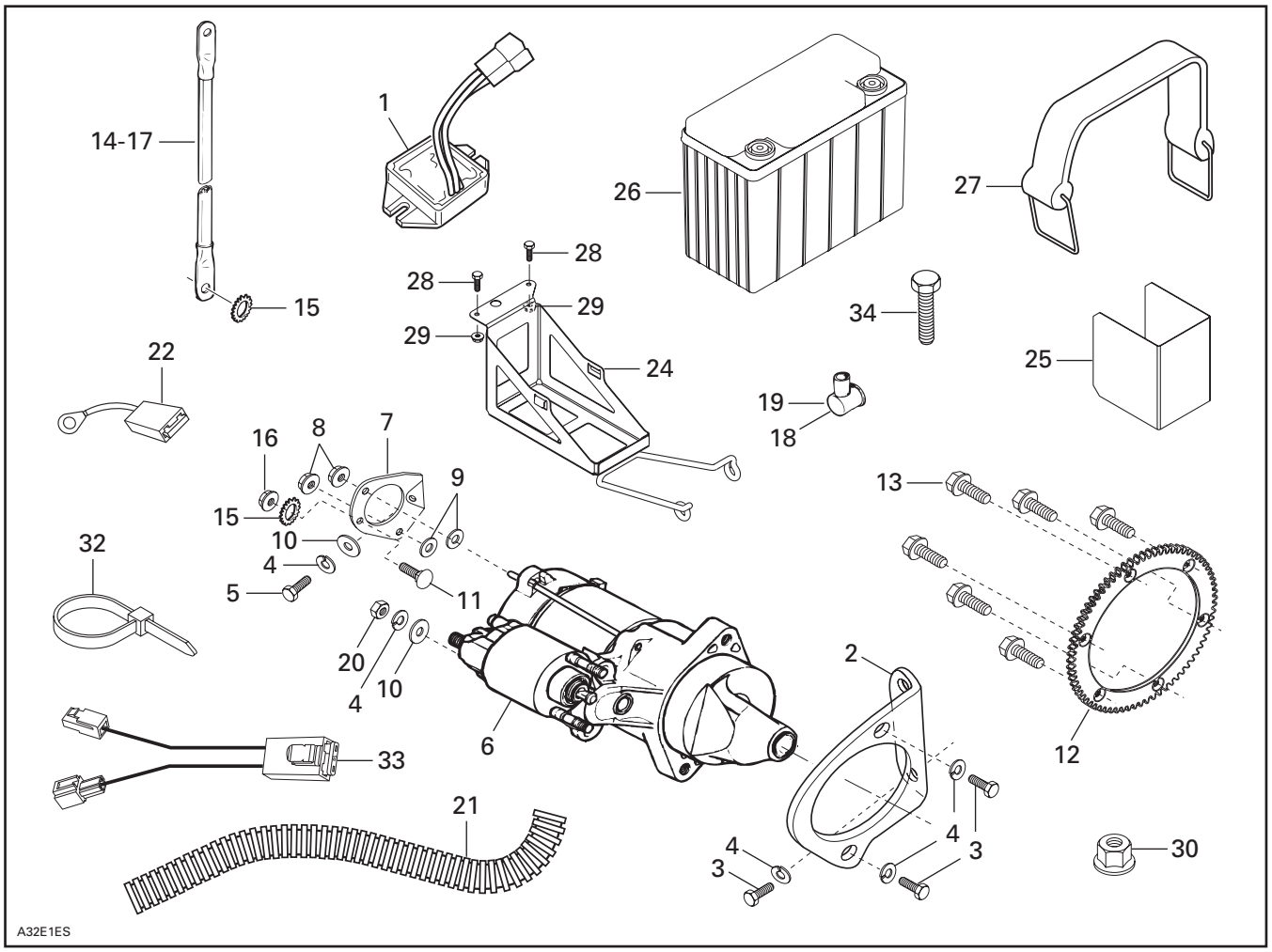
This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **2.5** hours.

PARTS TO BE INSTALLED



1. Voltage Regulator
2. PTO Side Starter Support
3. M8 x 20 Socket Screw (4)
4. M8 Lock Washer (6)
5. M8 x 20 Socket Screw
6. Starter
7. Starter Support MAG Side
8. M5 Flanged Elastic Nut (2)
9. M6 Flat Washer (2)
10. M8 Flat Washer (2)
11. M6 x 20 Carriage Bolt
12. Ring Gear
13. M8 x 16 Self-Tapping Screw (6)
14. BLACK Negative Ground Cable (2)
15. M6 Star Washer (3)
16. M6 Flanged Elastic Nut (2)
17. RED Positive Battery Cable
18. Protector Cap
19. Protector Cap
20. M8 Hexagonal Nut
21. 9 mm (11/32 in) Tubing (1.2 m (48 in))
22. Fuse Holder
23. Locking Tie Mounting Dart (2) (not illustrated)
24. Battery Support
25. Deflector
26. Battery
27. Battery Strap
28. M5 Hexagonal Screw (2)
29. M5 Flanged Elastic Nut (2)
30. M10 Flanged Elastic Nut (2)
31. Flat Washer (2) (not illustrated)
32. Locking Tie (10)
33. Fuse-Ground Harness
34. M6 x 16 Hexagonal Bolt

INSTRUCTIONS

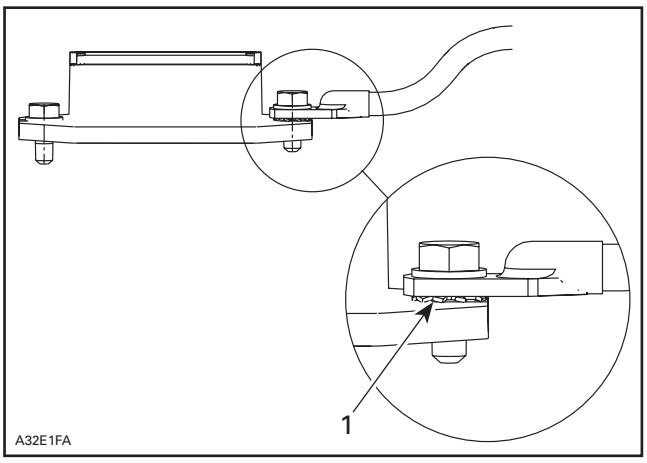
Vehicle Preparation

Remove tuned pipe, muffler, belt guard, drive belt and air intake silencer.

Loosen drive pulley retaining screw for later removal.

Voltage Regulator

Remove original regulator/rectifier, located along RH side member of frame. Secure voltage regulator **no. 1** on both sides with same self-tapping bolts. On the inside bolt, install BLACK negative ground cable **no. 14** and M6 star washer **no. 15**. Refer to following photo.



1. Star washer positioning

Cut locking tie holding connector to main harness.

Apply silicone dielectric grease (P/N 293 550 004, tube of 150 g) in voltage regulator connector and then connect it to vehicle harness connector. Secure connectors with locking ties **no. 32**.

Ring Gear

Remove drive pulley. Refer to appropriate *Shop Manual* to perform drive pulley disassembly/assembly procedure and to align pulley.

Secure ring gear **no. 12** on inner half using self-tapping screws **no. 13**. Apply Loctite† 271 on screw threads.

CAUTION: Loctite 271 must be applied to securely assemble ring gear.

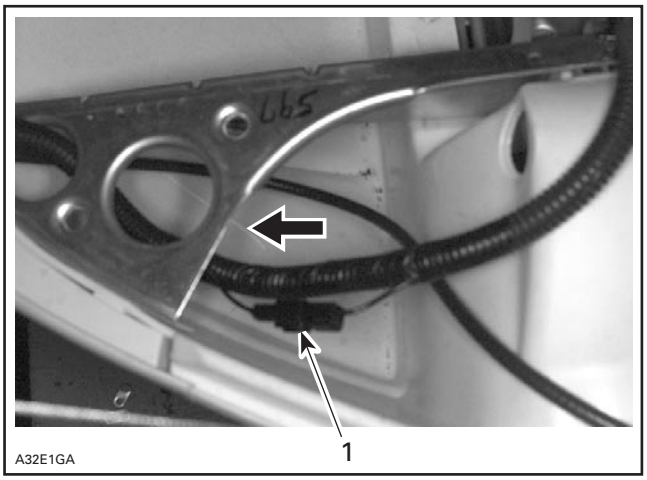
Torque screws in a criss-cross sequence to 27 N•m (20 lbf•ft).

Do not reinstall drive pulley at this time.

† Loctite is a trademark of Loctite Corporation.

Protection Fuse

Disconnect chassis electrical harness connector. See following photo.



ARROW SHOWS FRONT OF VEHICLE

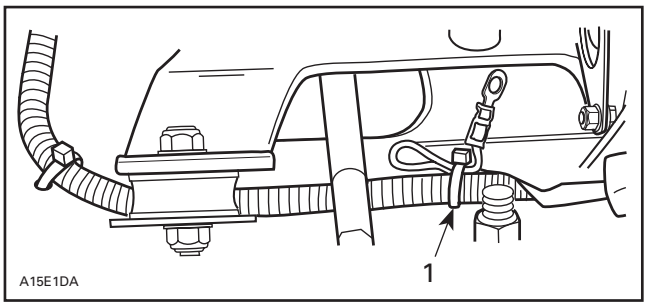
1. Connector involved

Clip fuse-ground harness **no. 33** (with fuse) on frame.

Connect fuse-ground harness wires to chassis harness connector housings.

Electric Starter

From main harness underneath engine cut locking tie and pull out RED wire with the eyelet terminal toward the starter position.



1. Locking tie

Assemble starter support MAG side **no. 7** to starter **no. 6** after having inserted M6 x 20 carriage bolt **no. 11** and M6 flat washers **no. 9** onto starter through bolts; secure with M5 flanged elastic nuts **no. 8** but do not tighten at this time.

Secure PTO side starter support **no. 2** to engine using socket screws **no. 3** and lock washers **no. 4**. Tighten firmly.

Install electric starter on PTO side, bottom bolt first and secure it using M8 x 20 socket screws **no. 3** and M8 lock washers **no. 4** without tightening.

Secure MAG side support to engine with M8 x 20 socket screw **no. 5**, M8 flat washer **no. 10** and M8 lock washer **no. 4**.

Tighten both screws holding starter to PTO side support.

Tighten screw holding MAG side support to engine and tighten flanged elastic nuts to MAG side support.

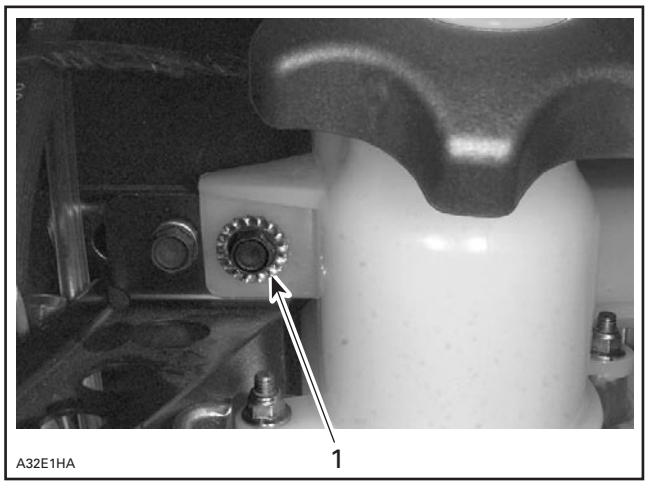
Wire/Cable Connections and Routing

Insert RED positive battery cable **no. 17** into protective tubing **no. 21**.

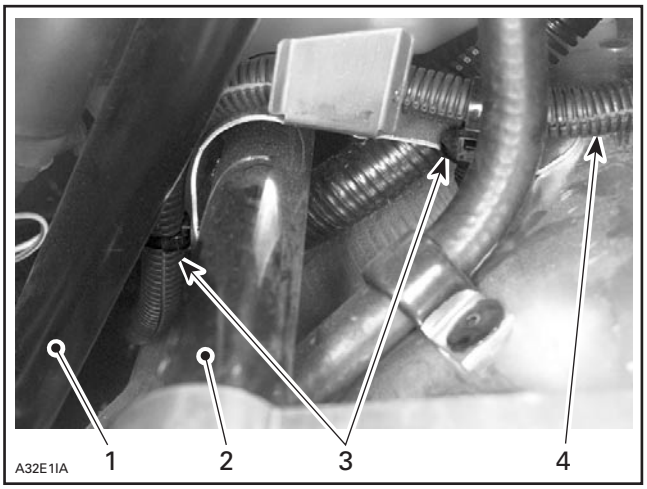
NOTE: The biggest hole of the RED positive cable connects to the starter.

From starter location, route cable toward battery location along main wiring harness, underneath oil reservoir, above countershaft, and below rewind starter rope.

To ease cable routing, undo oil reservoir upper retaining screw and loosen its lower retaining screw just enough to move reservoir a bit. This will also permit the installation of both locking tie mounting darts **no. 23** into protective bracket holes found behind reservoir and over countershaft.



1. Remove this bolt and loosen bottom one



1. *Steering column*
2. *Countershaft*
3. *Darts* ***no. 23***
4. *RED positive battery cable*

Slide a protector cap **no. 19** (starter end of cable) and another protector cap **no. 18** (battery end of cable) on RED positive battery cable. Connect cable to starter solenoid, using M8 flat washer **no. 10**, M8 lock washer **no. 4** and M8 hexagonal nut **no. 20**. Cover terminal with previously installed protector cap.

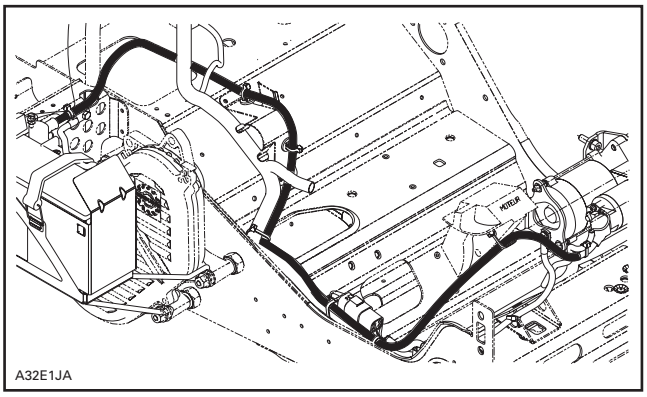
Connect and secure RED wire with eyelet terminal, previously pulled from main harness, to starter solenoid.

Connect the other end of BLACK negative cable coming from voltage regulator to starter bracket carriage bolt using M6 star washer **no. 15** between bracket and terminal; secure with M6 flanged elastic nut **no. 16**.

⚠ WARNING

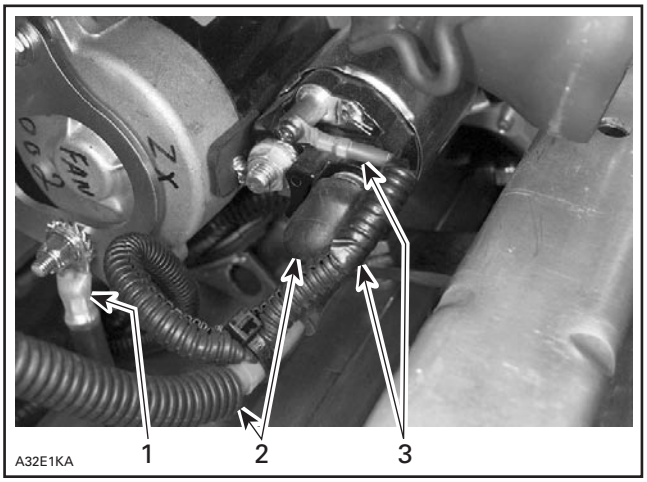
Ensure all terminals are properly crimped on wires/cables and that all connector housings are properly fastened. Keep wires away from any rotating, moving, heating, vibrating and sharp edged parts. Use proper fastening devices as required.

Refer to following illustration for proper RED positive battery cable routing.



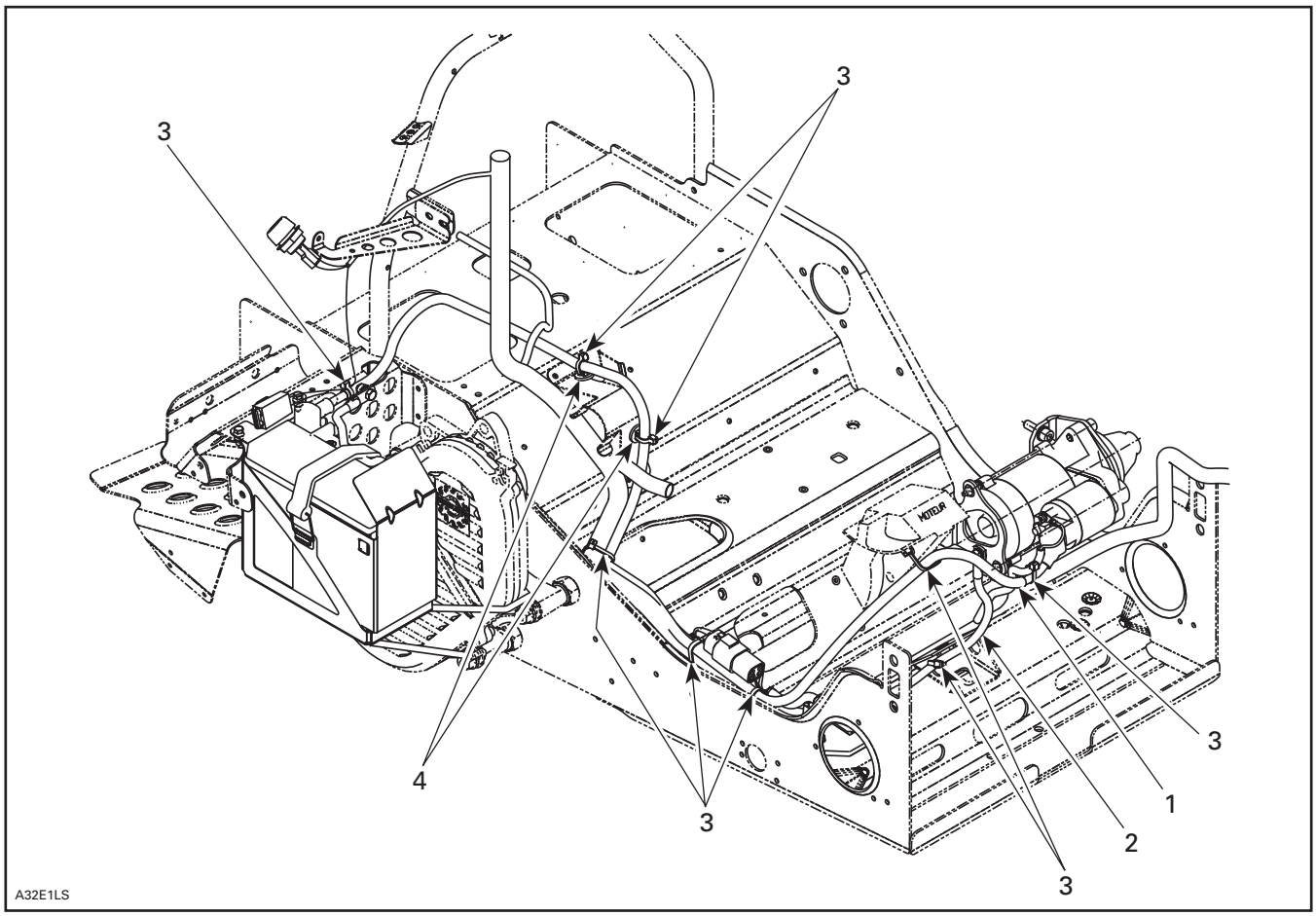
RED POSITIVE BATTERY CABLE ROUTING

Refer to following photo for proper cables/wiring connections at solenoid.



1. *BLACK negative ground cable*
2. *RED positive battery cable*
3. *RED wire from underneath engine*

Refer to following illustration for proper locking ties **no. 32** positioning.



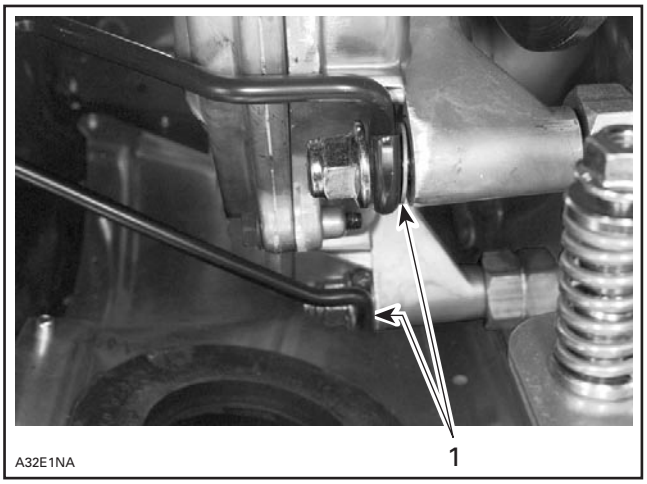
1. *RED positive battery cable*
2. *BLACK negative ground cable*
3. *Locking ties* ***no. 32***
4. *Locking tie mounting darts* ***no. 23***

Battery and Rack

Remove 2 lower nuts retaining chaincase housing.

Install battery support **no. 24** and secure with 2 M5 hexagonal screws **no. 28** and 2 M5 flanged elastic nuts **no. 29** on top of right foot rest. Secure with new chaincase housing M10 flanged elastic nuts **no. 30**.

NOTE: Make sure flat washers **no. 31** are installed as shown in next photo.



1. Flat washer positioning

Battery Testing and Activation

Check battery charge condition using a multimeter.

With a multimeter, voltage readings appear instantly to show the state of charge. Always respect polarity. A fully charged battery will have a reading of 12.6 Vdc.

⚠ WARNING

Never charge or boost battery while installed in vehicle.

If not fully charged, connect a 10 A battery charger until completely charged.

⚠ WARNING

Gases given off by a battery being charged are highly explosive. Always charge in a well ventilated area. Keep battery away from cigarettes or open flames. Always turn battery charger off prior to disconnecting cables. Otherwise a spark will occur and battery might explode.

NOTE: It is recommended to verify the battery charge once a month. If necessary, fully recharge.

Install charged battery **no. 26** in rack, posts on engine side, with deflector **no. 25**.

Cut locking ties from console harness and insert RED/WHITE wire into fuse holder **no. 22**.

Secure BLACK ground cable **no. 14** to footrest hole with M6 x 16 hexagonal bolt **no. 34**, M6 star washer **no. 15** and M6 flanged elastic nut **no. 16**.

Connect RED positive battery cable and RED wire from fuse holder to battery post then connect BLACK ground cable; cover terminal with previously installed protector cap. Apply silicone dielectric grease (P/N 293 550 004, tube of 150 g) on battery posts and connectors.

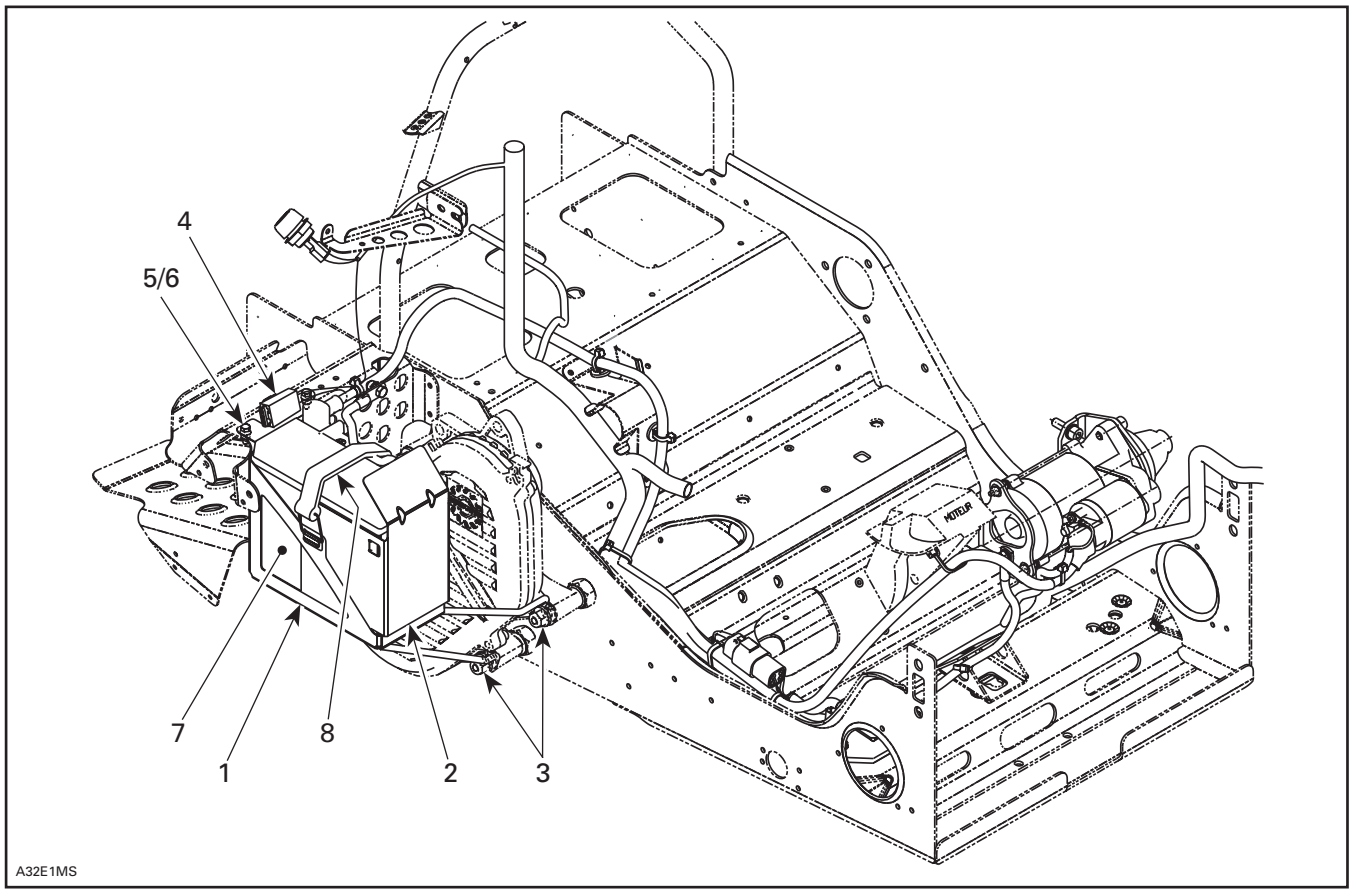
⚠ WARNING

Always connect the battery cables exactly in the specified order. Connect RED positive cable first, then BLACK negative ground cable.

Secure battery in place with battery strap **no. 27**. Secure also BLACK negative cable under strap on engine side.

Hook fuse holder to battery support frame.

Refer to following illustration.



1. *Battery support* **no. 24**
2. *Deflector* **no. 25**
3. *M10 flanged elastic nuts* **no. 30**
4. *Fuse holder* **no. 22**
5. *M5 Hexagonal screw* **no. 28**
6. *M5 Flanged elastic nut* **no. 29**
7. *Battery* **no. 26**
8. *Battery strap* **no. 27**

Finalizing Assembly

Re-secure oil reservoir.

Reinstall drive pulley.

Check pulley alignment.

⚠ WARNING

Drive pulley alignment must always be checked whenever pulleys have been removed, replaced or disassembled.

Refer to the appropriate *Ski-Doo Shop Manual* for proper reinstallation of air intake silencer, drive belt, belt guard, muffler and tuned pipe.

NOTE: Apply Dow Corning sealer no. 736 RTV on exhaust manifold ball joint.

Test electrical starting and ignition cut-out systems as per normal starting procedure for electric starter models.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 grade)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 grade)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58

N•m	FASTENER SIZE (8.8 grade)	Lbf•ft
80	**M12**	59
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

861 507 000

1.	515 175 656	Voltage Regulator	Régulateur de tension
2.	515 175 652	PTO Side Starter Support	Support de démarreur, côté PDM
3.	205 082 044	M8 x 20 Socket Screw (4)	Vis à tête creuse M8 x 20 (4)
4.	234 181 401	M8 Lock Washer (6)	Rondelle-frein M8 (6)
5.	205 082 044	M8 x 20 Socket Screw	Vis à tête creuse M8 x 20
6.	515 175 795	Starter	Démarreur
7.	515 175 633	Starter Support MAG side	Support de démarreur, côté MAG
8.	233 251 414	M5 Flanged Elastic Nut (2)	Écrou élastique à épaulement M5 (2)
9.	391 301 700	M6 Flat Washer (2)	Rondelle plate M6 (2)
10.	234 081 410	M8 Flat Washer (2)	Rondelle plate M8 (2)
11.	207 762 044	M6 x 20 Carriage Bolt	Boulon de carrosserie M6 x 20
12.	417 300 057	Ring Gear	Couronne de lancement
13.	236 281 684	M8 x 16 Self-Tapping Screw (6)	Vis autotaraudeuse M8 x 16 (6)
14.	515 175 483	BLACK Negative Ground Cable (2)	Câble de masse négatif (NOIR) (2)
15.	250 200 000	M6 Star Washer (3)	Rondelle en étoile M6 (3)
16.	233 261 414	M6 Flanged Elastic Nut (2)	Écrou élastique à épaulement M6 (2)
17.	515 175 634	RED Positive Battery Cable	Câble positif de batterie (ROUGE)
18.	570 151 000	Protector Cap	Capuchon de protection
19.	278 000 020	Protector Cap	Capuchon de protection
20.	232 081 414	M8 Hexagonal Nut	Écrou hexagonal M8
21.	409 901 700	9 mm (11/32 in) Tubing (1.2 m (48 in))	Tube de 9 mm (11/32 po) de diamètre (1.2 m (48 po) de long)
22.	515 175 489	Fuse Holder	Porte-fusibles
23.	293 730 018	Locking Tie Mounting Dart (2) (not illustrated)	Dard de fixation d'attache (2) (non illustré)
24.	515 175 718	Battery Support	Support de batterie
25.	515 175 643	Deflector	Déflecteur
26.	410 301 203	Battery	Batterie
27.	515 175 475	Battery Strap	Courroie de batterie
28.	207 151 444	M5 Hexagonal Screw (2)	Vis hexagonale M5 (2)
29.	233 251 414	M5 Flanged Elastic Nut (2)	Écrou élastique à épaulement M5 (2)
30.	233 201 414	M10 Flanged Elastic Nut (2)	Écrou élastique à épaulement M10 (2)
31.	503 175 800	Flat Washer (2) (not illustrated)	Rondelle plate (2) (non illustrée)
32.	414 115 200	Locking Tie (10)	Attache (10)
33.	515 175 490	Fuse-Ground Harness	Faisceau de fils fusible/masse
34.	207 161 644	M6 x 16 Hexagonal Bolt	Boulon hexagonal M6 x 16

ELECTRIC STARTER KIT
(P/N 861 507 100)

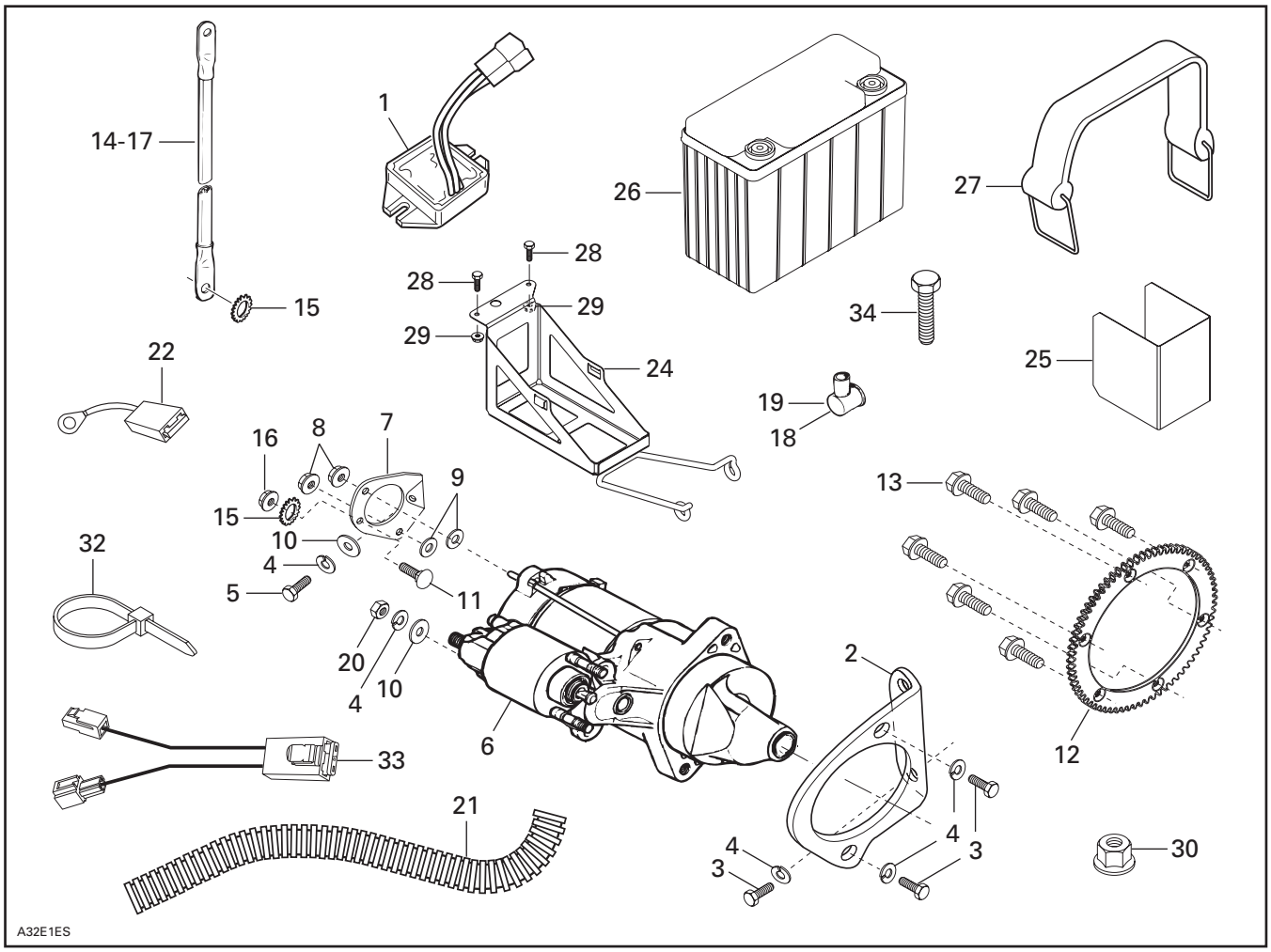
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **2.5** hours.

PARTS TO BE INSTALLED



1. Voltage Regulator
2. Starter Support PTO Side
3. M8 x 20 Socket Screw (4)
4. M8 Lock Washer (6)
5. M8 x 20 Socket Screw
6. Starter
7. Starter Support MAG Side
8. M5 Flanged Elastic Nut (2)
9. M6 Flat Washer (2)
10. M8 Flat Washer (2)
11. M6 x 20 Carriage Bolt
12. Ring Gear
13. M8 x 16 Self-Tapping Screw (6)
14. BLACK Negative Ground Cable (2)
15. M6 Star Washer (3)
16. M6 Flanged Elastic Nut (2)
17. RED Positive Battery Cable
18. Protector Cap
19. Protector Cap
20. M8 Hexagonal Nut
21. 9 mm (11/32 in) Tubing (1.2 m (48 in))
22. Fuse Holder
23. Locking Tie Mounting Dart (2) (not illustrated)
24. Battery Support
25. Deflector
26. Battery
27. Battery Strap
28. M5 Hexagonal Screw (2)
29. M5 Flanged Elastic Nut (2)
30. M10 Flanged Elastic Nut (2)
31. Flat Washer (2) (not illustrated)
32. Locking Tie (10)
33. Fuse-Ground Harness
34. M6 x 16 Hexagonal Bolt

INSTRUCTIONS

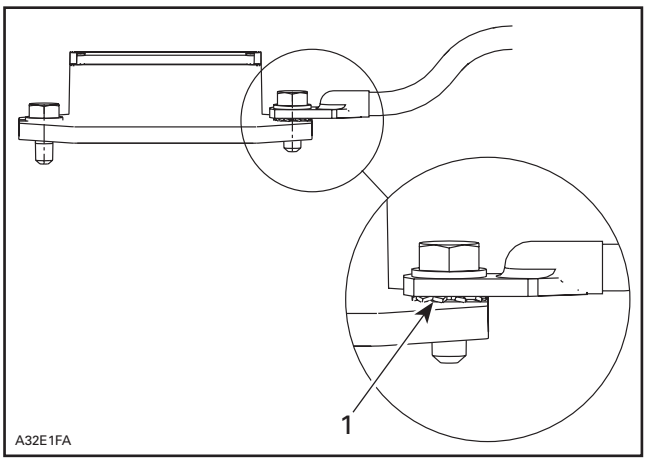
Vehicle Preparation

Remove tuned pipe, muffler, belt guard, drive belt and air intake silencer.

Loosen drive pulley retaining screw for later removal.

Voltage Regulator

Remove original regulator/rectifier, located along RH side member of frame. Secure voltage regulator **no. 1** on both sides with same self-tapping bolts. On the inside bolt, install BLACK negative ground cable **no. 14** and M6 star washer **no. 15**. Refer to following photo.



1. Star washer positioning

Cut locking tie holding connector to main harness.

Apply silicone dielectric grease (P/N 293 550 004, tube of 150 g) in voltage regulator connector and then connect it to vehicle harness connector. Secure connectors with locking ties **no. 32**.

Ring Gear

Remove drive pulley. Refer to appropriate *Shop Manual* to perform drive pulley disassembly/assembly procedure and to align pulley.

Secure ring gear **no. 12** on inner half using self-tapping screws **no. 13**. Apply Loctite† 271 on screw threads.

CAUTION: Loctite 271 must be applied to securely assemble ring gear.

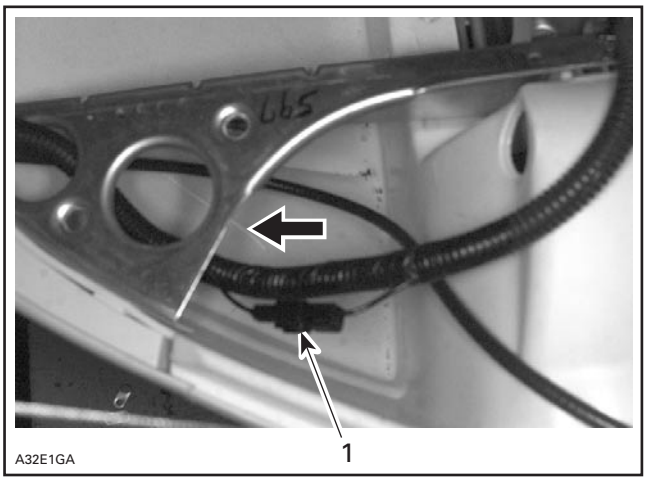
Torque screws in a criss-cross sequence to 27 N•m (20 lbf•ft).

Do not reinstall drive pulley at this time.

Protection Fuse

Disconnect chassis electrical harness connector. See following photo.

† Loctite is a trademark of Loctite Corporation.



ARROW SHOWS FRONT OF VEHICLE

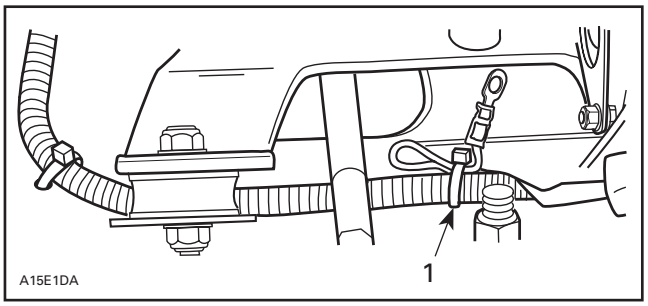
1. *Connector involved*

Clip fuse-ground harness **no. 33** (with fuse) on frame.

Connect fuse-ground harness wires to chassis harness connector housings.

Electric Starter

From main harness underneath engine cut locking tie and pull out RED wire with the eyelet terminal toward the starter position.



1. *Locking tie*

Assemble starter support MAG side **no. 7** to starter **no. 6** after having inserted M6 x 20 carriage bolt **no. 11** and M6 flat washers **no. 9** onto starter through bolts; secure with M5 flanged elastic nuts **no. 8** but do not tighten at this time.

Secure starter support PTO side **no. 2** to engine using socket screws **no. 3** and lock washers **no. 4**. Tighten firmly.

Install electric starter on PTO side support, bottom bolt first and secure it using M8 x 20 socket screws **no. 3** and M8 lock washers **no. 4** without tightening.

Secure MAG side support to engine with M8 x 20 socket screw **no. 5**, M8 flat washer **no. 10** and M8 lock washer **no. 4**.

Tighten both screws holding starter to PTO side support.

Tighten screw holding MAG side support to engine and tighten flanged elastic nuts to MAG side support.

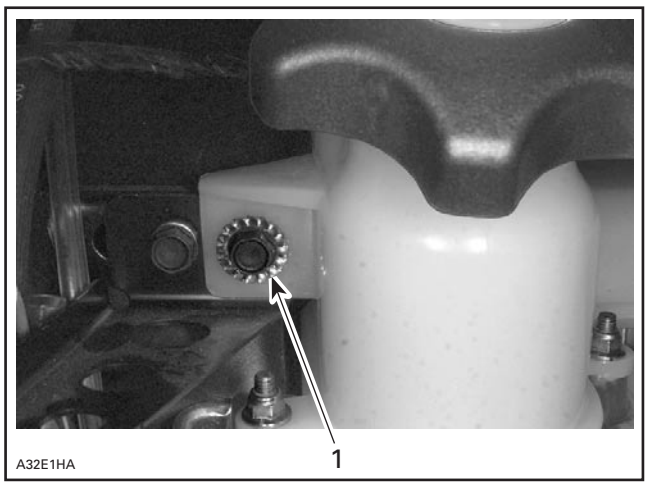
Wire/Cable Connections and Routing

Insert RED positive battery cable **no. 17** into protective tubing **no. 21**.

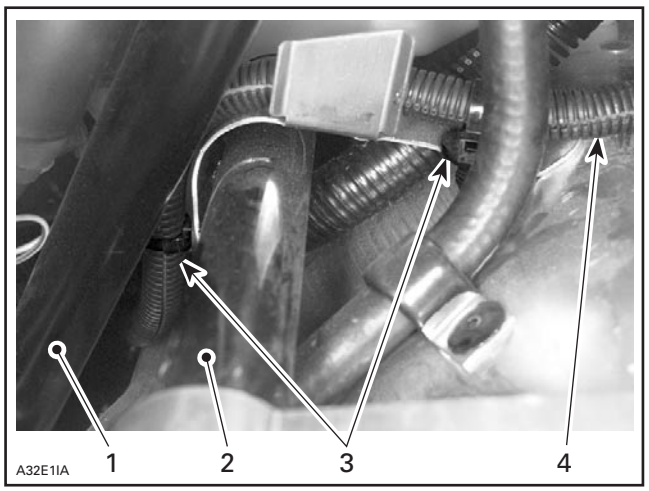
NOTE: The biggest hole of the RED positive cable connects to the starter.

From starter location, route cable toward battery location along main wiring harness, underneath oil reservoir, above countershaft, and below rewind starter rope.

To ease cable routing, undo oil reservoir upper retaining screw and loosen its lower retaining screw just enough to move reservoir a bit. This will also permit the installation of both locking tie mounting darts **no. 23** into protective bracket holes found behind reservoir and over countershaft.



1. *Remove this bolt and loosen bottom one*



1. *Steering column*
2. *Countershaft*
3. *Darts **no. 23***
4. *RED positive battery cable*

Slide a protector cap **no. 19** (starter end of cable) and another protector cap **no. 18** (battery end of cable) on RED positive battery cable. Connect cable to starter solenoid, using M8 flat washer **no. 10**, M8 lock washer **no. 4** and M8 hexagonal nut **no. 20**. Cover terminal with previously installed protector cap.

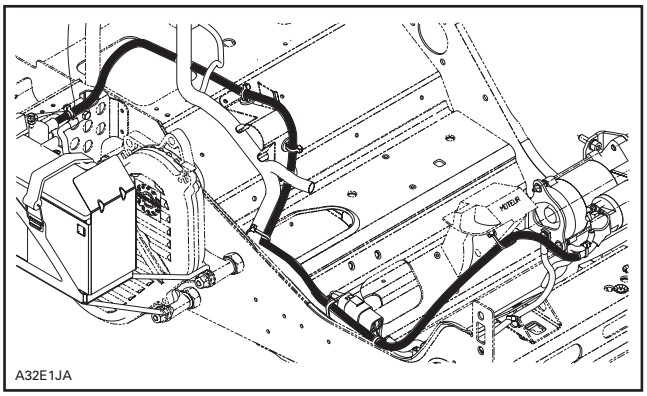
Connect and secure RED wire with eyelet terminal, previously pulled from main harness, to starter solenoid.

Connect the other end of BLACK negative cable coming from voltage regulator to starter bracket carriage bolt using M6 star washer **no. 15** between bracket and terminal; secure with M6 flanged elastic nut **no. 16**.

⚠ WARNING

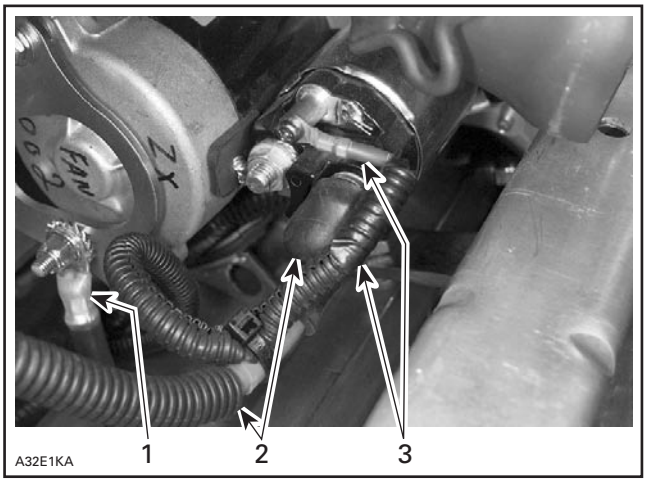
Ensure all terminals are properly crimped on wires/cables and that all connector housings are properly fastened. Keep wires away from any rotating, moving, heating, vibrating and sharp edged parts. Use proper fastening devices as required.

Refer to following illustration for proper RED positive battery cable routing.



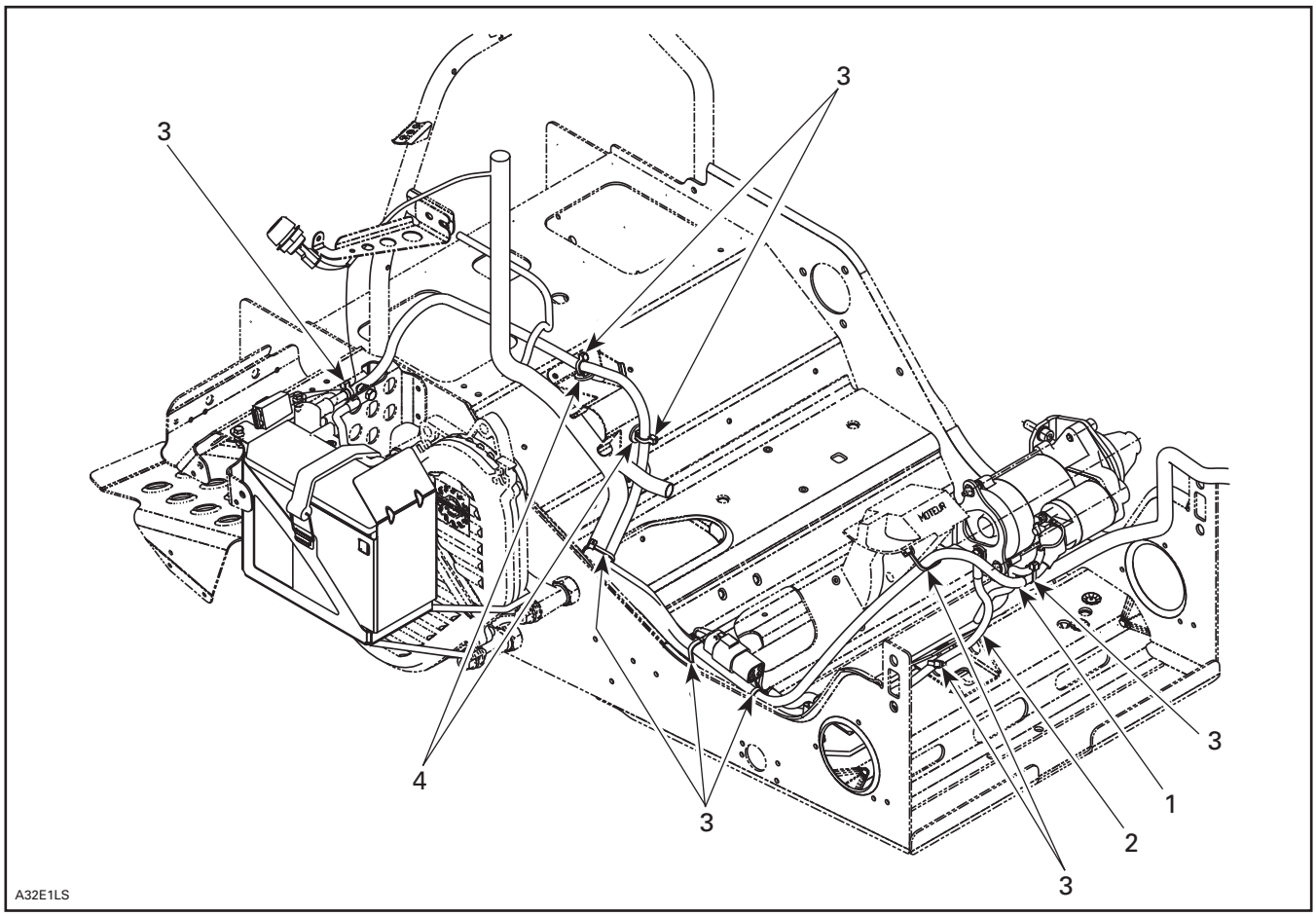
RED POSITIVE BATTERY CABLE ROUTING

Refer to following photo for proper cables/wiring connections at solenoid.



1. BLACK negative ground cable
2. RED positive battery cable
3. RED wire from underneath engine

Refer to following illustration for proper locking ties **no. 32** positioning.



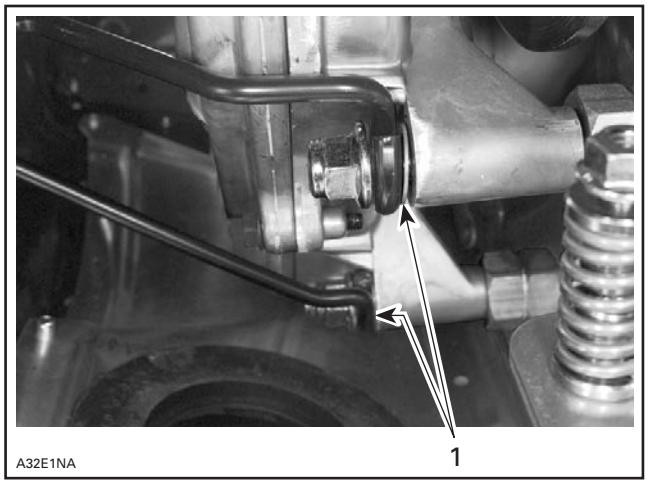
1. *RED positive battery cable*
2. *BLACK negative ground cable*
3. *Locking ties* ***no. 32***
4. *Locking tie mounting darts* ***no. 23***

Battery and Rack

Remove 2 lower nuts retaining chaincase housing.

Install battery support **no. 24** and secure with 2 M5 hexagonal screws **no. 28** and 2 M5 flanged elastic nuts **no. 29** on top of right foot rest. Secure with new chaincase housing M10 flanged elastic nuts **no. 30**.

NOTE: Make sure flat washers **no. 31** are installed as shown in next photo.



1. *Flat washer positioning*

Battery Testing and Activation

Check battery charge condition using a multimeter.

With a multimeter, voltage readings appear instantly to show the state of charge. Always respect polarity. A fully charged battery will have a reading of 12.6 Vdc.

⚠ WARNING

Never charge or boost battery while installed in vehicle.

If not fully charged, connect a 10 A battery charger until completely charged.

⚠ WARNING

Gases given off by a battery being charged are highly explosive. Always charge in a well ventilated area. Keep battery away from cigarettes or open flames. Always turn battery charger off prior to disconnecting cables. Otherwise a spark will occur and battery might explode.

NOTE: It is recommended to verify the battery charge once a month. If necessary, fully recharge.

Install charged battery **no. 26** in rack, posts on engine side, with deflector **no. 25**.

Cut locking ties from console harness and insert RED/WHITE wire into fuse holder **no. 22**.

Secure BLACK negative ground cable **no. 14** to footrest hole with M6 x 16 hexagonal bolt **no. 34**, M6 star washer **no. 15** and M6 flanged elastic nut **no. 16**.

Connect RED positive battery cable and RED wire from fuse holder to battery post then connect BLACK ground cable; cover terminal with previously installed protector cap. Apply silicone dielectric grease (P/N 293 550 004, tube of 150 g) on battery posts and connectors.

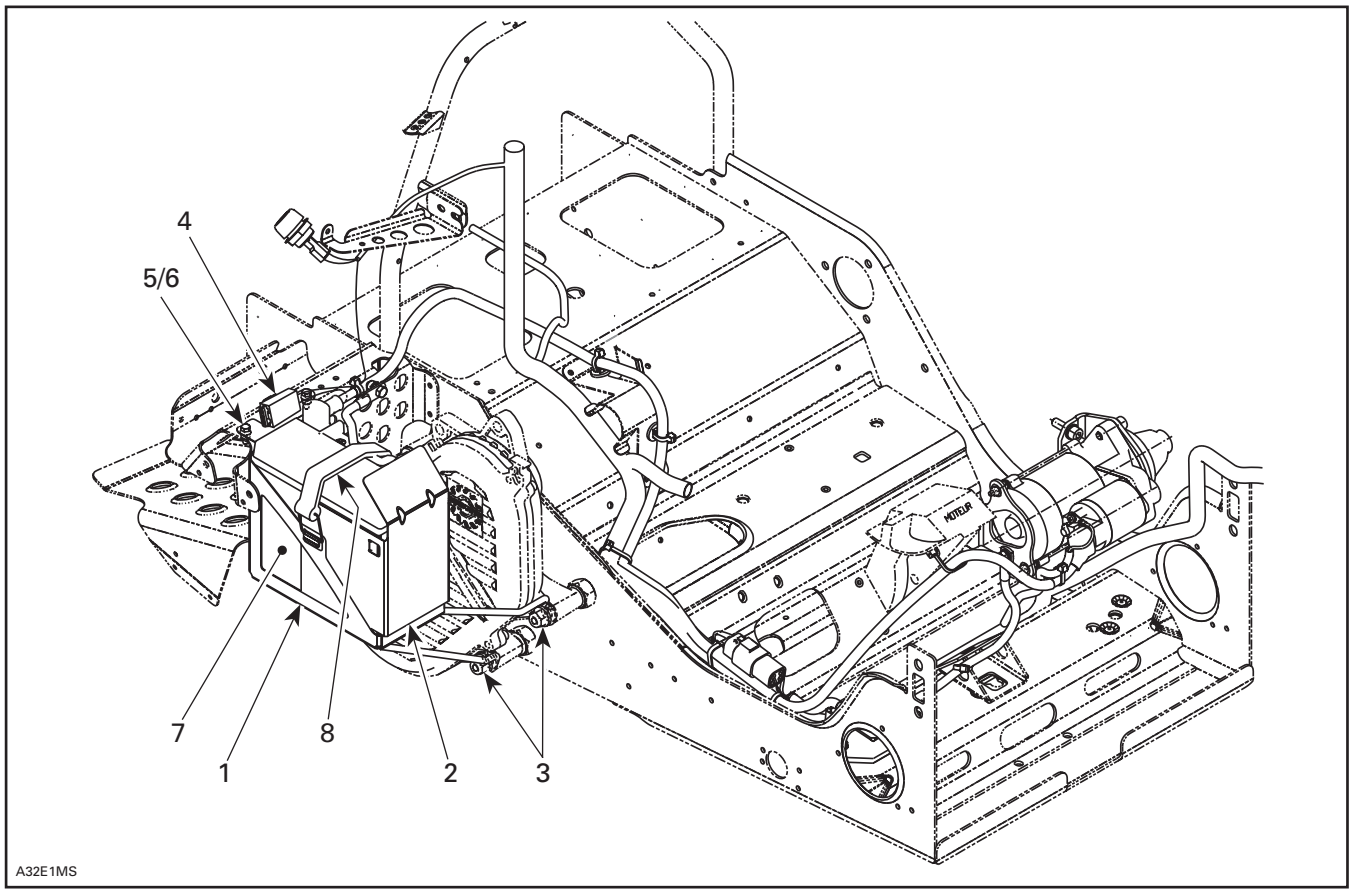
⚠ WARNING

Always connect the battery cables exactly in the specified order. Connect RED positive cable first, then BLACK negative ground cable.

Secure battery in place with battery strap **no. 27**. Secure also BLACK negative cable under strap on engine side.

Hook fuse holder to battery support frame.

Refer to following illustration.



1. *Battery support* ***no. 24***
2. *Deflector* ***no. 25***
3. *M10 flanged elastic nuts* ***no. 30***
4. *Fuse holder* ***no. 22***
5. *M5 Hexagonal screw* ***no. 28***
6. *M5 Flanged elastic nut* ***no. 29***
7. *Battery* ***no. 26***
8. *Battery strap* ***no. 27***

Finalizing Assembly

Re-secure oil reservoir.

Reinstall drive pulley.

Check pulley alignment.

⚠ WARNING

Drive pulley alignment must always be checked whenever pulleys have been removed, replaced or disassembled.

Refer to the appropriate *Ski-Doo Shop Manual* for proper reinstallation of air intake silencer, drive belt, belt guard, muffler and tuned pipe.

NOTE: Apply Dow Corning sealer no. 736 RTV on exhaust manifold ball joint.

Test electrical starting and ignition cut-out systems as per normal starting procedure for electric starter models.

861 507 100

1.	515 175 656	Voltage Regulator	Régulateur de tension
2.	515 175 659	Starter Support PTO Side	Support de démarreur, côté PDM
3.	205 082 044	M8 x 20 Socket Screw (4)	Vis à tête creuse M8 x 20 (4)
4.	234 181 401	M8 Lock Washer (6)	Rondelle-frein M8 (6)
5.	205 082 044	M8 x 20 Socket Screw	Vis à tête creuse M8 x 20
6.	515 175 795	Starter	Démarreur
7.	515 175 660	Starter Support MAG side	Support de démarreur, côté MAG
8.	233 251 414	M5 Flanged Elastic Nut (2)	Écrou élastique à épaulement M5 (2)
9.	391 301 700	M6 Flat Washer (2)	Rondelle plate M6 (2)
10.	234 081 410	M8 Flat Washer (2)	Rondelle plate M8 (2)
11.	207 762 044	M6 x 20 Carriage Bolt	Boulon de carrosserie M6 x 20
12.	417 300 057	Ring Gear	Couronne de lancement
13.	236 281 684	M8 x 16 Self-Tapping Screw (6)	Vis autotaraudeuse M8 x 16 (6)
14.	515 175 483	BLACK Negative Ground Cable (2)	Câble de masse négatif (NOIR) (2)
15.	250 200 000	M6 Star Washer (3)	Rondelle en étoile M6 (3)
16.	233 261 414	M6 Flanged Elastic Nut (2)	Écrou élastique à épaulement M6 (2)
17.	515 175 634	RED Positive Battery Cable	Câble positif de batterie (ROUGE)
18.	570 151 000	Protector Cap	Capuchon de protection
19.	278 000 020	Protector Cap	Capuchon de protection
20.	232 081 414	M8 Hexagonal Nut	Écrou hexagonal M8
21.	409 901 700	9 mm (11/32 in) Tubing (1.2 m (48 in))	Tube de 9 mm (11/32 po) de diamètre (1.2 m (48 po) de long)
22.	515 175 489	Fuse Holder	Porte-fusibles
23.	293 730 018	Locking Tie Mounting Dart (2) (not illustrated)	Dard de fixation d'attache (2) (non illustré)
24.	515 175 718	Battery Support	Support de batterie
25.	515 175 643	Deflector	Déflecteur
26.	410 301 203	Battery	Batterie
27.	515 175 475	Battery Strap	Courroie de batterie
28.	207 151 444	M5 Hexagonal Screw (2)	Vis hexagonale M5 (2)
29.	233 251 414	M5 Flanged Elastic Nut (2)	Écrou élastique à épaulement M5 (2)
30.	233 201 414	M10 Flanged Elastic Nut (2)	Écrou élastique à épaulement M10 (2)
31.	503 175 800	Flat Washer (2) (not illustrated)	Rondelle plate (2) (non illustrée)
32.	414 115 200	Locking Tie (10)	Attache (10)
33.	515 175 490	Fuse-Ground Harness	Faisceau de fils fusible/masse
34.	207 161 644	M6 x 16 Hexagonal Bolt	Boulon hexagonal M6 x 16

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value)

Consulter le tableau suivant pour connaître les couples de serrage qui pourraient ne pas être précisés dans le texte.

Les valeurs en caractères gras représentent la valeur nominale (valeur moyenne).

N•m	FASTENER SIZE (8.8 GRADE) *TAILLE DE L'ATTACHE (8.8)*	Lbf•**in** *Lbf•**po***
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE) *TAILLE DE L'ATTACHE (8.8)*	Lbf•ft *Lbf•pi*
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56

N•m	FASTENER SIZE (8.8 GRADE) *TAILLE DE L'ATTACHE (8.8)*	Lbf•ft *Lbf•pi*
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

12-V POWER OUTLET
(P/N 861 507 200)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 0.4 hour.

PARTS TO BE INSTALLED

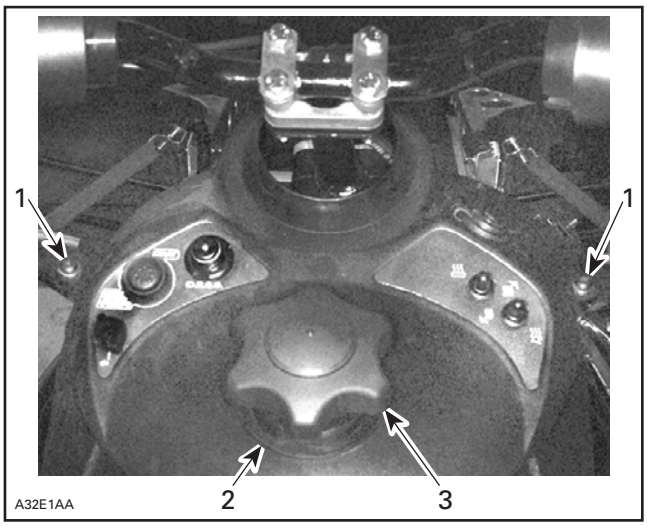
This kit consists of:
1. 12-V Power Outlet (P/N 710 000 024)
   and applies to battery equipped models ***only****.*

INSTRUCTION

Remove steering padding.

Remove both center console upper retaining screws.

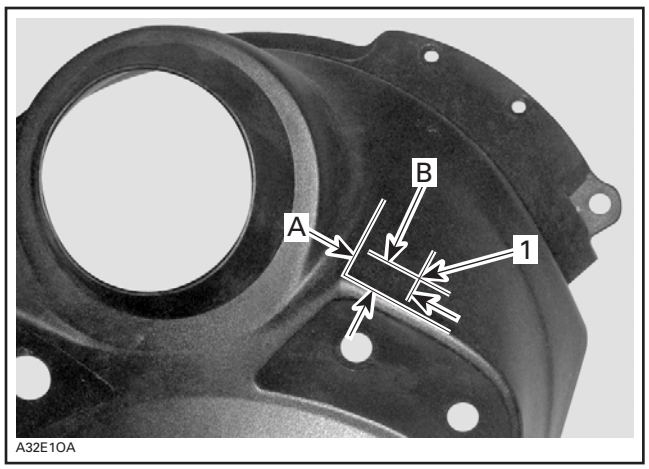
Remove fuel tank cap and retaining nut.



STEERING PADDING REMOVED
1. *Remove these screws*
2. *Fuel tank cap retaining nut*
3. *Fuel tank cap*

Lifting up center console will give enough space to perform 12-V power outlet installation.

Locate center of hole to be drilled into center console as per the following illustration.



1. *Drill a 29 mm (1-9/64 in) hole*
A. *22 mm (7/8 in)*
B. *15 mm (19/32 in)*

Install 12-V power outlet and secure in place with its plastic nut.

From main harness, pull out BLACK wire and RED/YELLOW wire and connect them to 12-V outlet.

Reinstall center console, fuel tank cap retaining nut and fuel tank cap.

Reinstall both center console upper retaining screws.

Reinstall steering padding.

Installation is now complete.

Printed in Canada (msi2002-010a.fm MD)

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

BOMBARDIER
RECREATIONAL PRODUCTS

ski-doo Snowmobiles

ELECTRIC STARTER REPLACEMENT KIT (P/N 861 507 300)

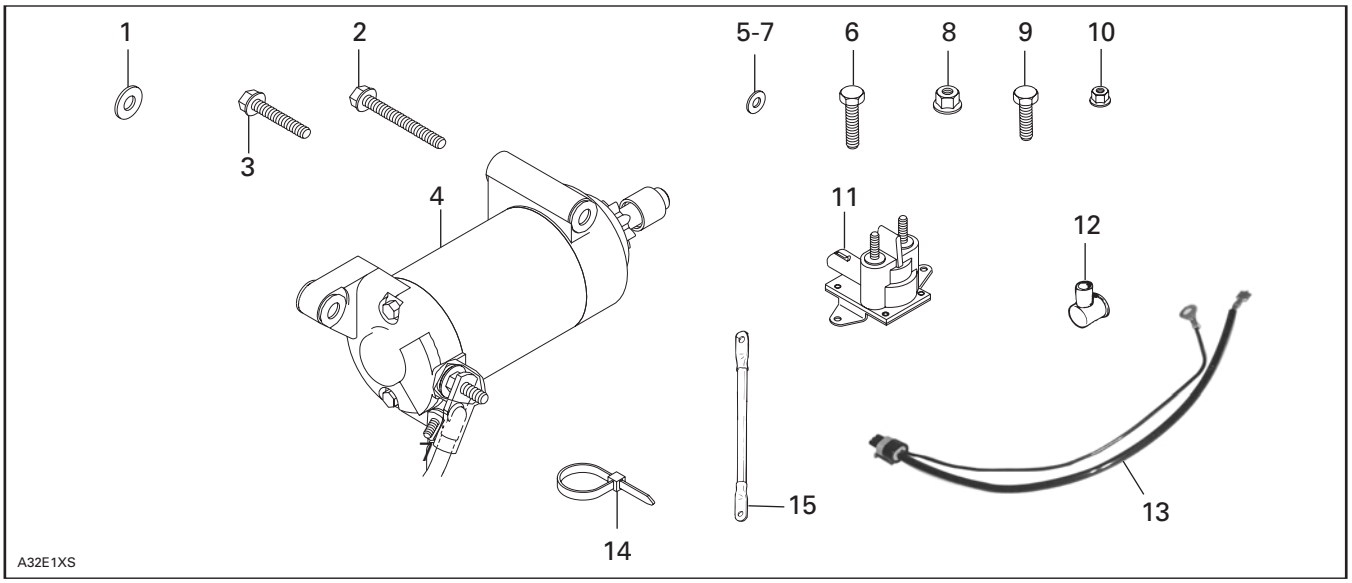
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 1.5 hours.

PARTS TO BE INSTALLED



1. M8 Flat Washer with Teflon (3)
2. M8 x 75 Flanged Hexagonal Bolt (with Scotch Grip)
3. M8 x 30 Flanged Hexagonal Bolt (with Scotch Grip) (2)
4. Starter
5. M6 Flat Washer (3)
6. M6 x 16 Hexagonal Bolt (with Scotch Grip)
7. M6 Flat Washer
8. M6 Elastic Stop Nut (3)
9. M5 x 14 Hexagonal Bolt (2)
10. M5 Flanged Elastic Nut (2)
11. Starter Solenoid
12. Protector Cap (2)
13. Solenoid Wiring Harness
14. Locking Tie (4)
15. RED Positive Cable (short)

INSTRUCTION

Vehicle Preparation

Open hood.

Disconnect BLACK ground cable from battery.

Disconnect RED positive cable from battery.

⚠ WARNING

Ground cable must always be disconnected first and connected last.

Remove tuned pipe, muffler, belt guard and air intake silencer.

Starter Removal

Remove and set aside protector plate (if so equipped) located on frame at front of starter; this will ease starter removal and installation.

Disconnect all cables and wires attached to starter and solenoid. Keep ground cable star lock washer for re-use.

Isolate RED wire coming from harness underneath engine with electrical tape, secure same to harness with a locking tie and relocate harness underneath engine.

Remove and discard existing starter with its brackets.

Starter Installation

Position new starter **no. 4** and secure on PTO side with the M8 x 75 flanged hexagonal bolt **no. 2** and an M8 flat washer with teflon **no. 1**.

Secure starter on MAG side with M8 x 30 flanged hexagonal bolts **no. 3** and M8 flat washers with teflon **no. 1**.

Reinstall previously removed protector plate on frame at front of starter.

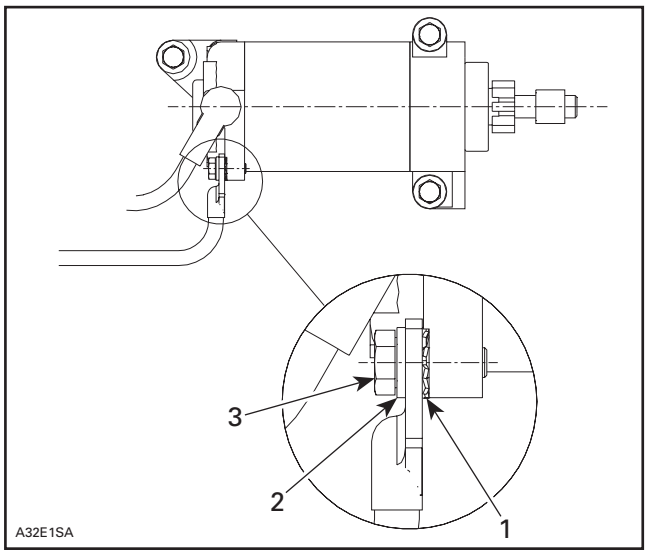
Cables and Wires Connection at Front

Connect RED cable terminal to starter, using an M6 flat washer **no. 5** and an M6 elastic stop nut **no. 8**. Cover terminal with already existing protector cap.

⚠ WARNING

Ensure all terminals are properly crimped on wires/cables and that all connector housings are properly fastened. Keep wires away from any rotating, moving, heating, vibrating and sharp edge parts. Use proper fastening devices as required.

Connect small ground cable coming from voltage regulator to starter with kept star lock washer, the M6 flat washer **no. 7** and the M6 x 16 hexagonal bolt (with Scotch Grip) **no. 6**. Note that star lock washer goes between starter and cable terminal while flat washer goes between cable terminal and bolt. Refer to following illustration.



TYPICAL

1. *Star lock washer*
2. *Flat washer*
3. *M6 x 16 hexagonal bolt (with Scotch Grip)*

Secure small ground cable to engine support using a locking tie **no. 14**.

Solenoid Installation

NOTE: On some models, right side footrest does not have pre-drilled holes. Remove right side console, position solenoid and drill 5 mm (3/16 in) holes in footrest.

Secure solenoid **no. 11** onto right side footrest, using M5 x 14 hexagonal bolts **no. 9**, and M5 flanged elastic nuts **no. 10**.

Connect RED positive cable coming from starter onto inner solenoid contact using an M6 flat washer **no. 5** and an M6 elastic stop nut **no. 8**. Cover terminal with already existing protector cap.

Slide a protector cap **no. 12** at both ends of the small RED positive cable **no. 15**. Connect small RED positive cable, bent terminal side, onto outer solenoid contact using the M6 flat washer **no. 5** and an M6 elastic stop nut **no. 8**. Cable must be directed straight towards battery.

Cables and Wires Connection at Rear

All Models

Connect RED positive cable from solenoid and small RED wire from fuse wiring harness to battery and cover terminal with previously installed protector cap.

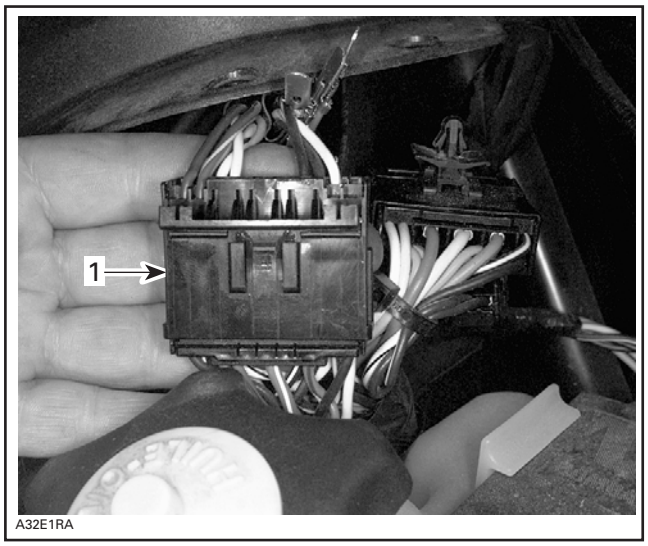
2001 Model Year Units

Cut locking tie securing console wiring harness and route harness to reach solenoid.

Insert connector into solenoid.

Connect BLACK ground cable to battery.

2000 and Previous Model Year Units



1. Use this multi-connector

Remove RED/GREEN wire from position 11 of multi-connector and insert RED/GREEN wire of solenoid wiring harness no. 13.

Insert solenoid wiring harness connector into solenoid and bring BLACK wire of solenoid wiring harness near battery negative post.

Connect BLACK ground cable with BLACK wire of solenoid wiring harness to battery.

All Models

Secure cables/wires where needed, using locking ties no. 14.

Coat battery posts and connectors with silicone dielectric grease (P/N 413 701 700).

⚠ WARNING

Always connect the battery cables exactly in the specified order. Connect RED positive cable first, then BLACK negative ground cable.

Replacement is now complete.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

861 507 300

1.	250 200 008	M8 Flat Washer with Teflon (3)	Rondelle plate M8 avec Téflon (3)
2.	207 587 544	M8 x 75 Flanged Hexagonal Bolt (with Scotch Grip)	Boulon hexagonal à épaulement M8 x 75 (avec Scotch Grip)
3.	207 583 044	M8 x 30 Flanged Hexagonal Bolt (with Scotch Grip) (2)	Boulon hexagonal à épaulement M8 x 30 (avec Scotch Grip) (2)
4.	515 175 562	Starter	Démarreur
5.	234 061 410	M6 Flat Washer (3)	Rondelle plate M6 (3)
6.	207 361 644	M6 x 16 Hexagonal Bolt (with Scotch Grip)	Boulon hexagonal M6 x 16 (avec Scotch Grip)
7.	224 061 121	M6 Flat Washer	Rondelle plate M6
8.	232 561 414	M6 Elastic Stop Nut (3)	Écrou d'arrêt élastique M6 (3)
9.	207 151 444	M5 x 14 Hexagonal Bolt (2)	Boulon hexagonal M5 x 14 (2)
10.	233 251 414	M5 Flanged Elastic Nut (2)	Écrou élastique à épaulement M5 (2)
11.	278 001 766	Starter Solenoid	Solénoïde
12.	570 064 200	Protector Cap (2)	Capuchon de protection (2)
13.	515 175 836	Solenoid Wiring Harness	Faisceau de fils de solénoïde
14.	414 115 200	Locking Tie (4)	Attache (4)
15.	515 175 555	RED Positive Cable (short)	Câble positif ROUGE (court)

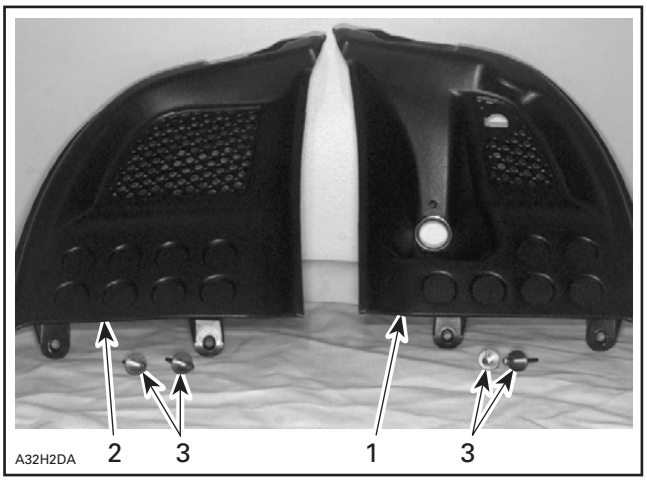
SIDE CONSOLE KIT
(P/N 861 778 300) RED
(P/N 861 778 400) YELLOW

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. This instruction sheet should be given to the purchaser. This kit is designed for specific applicable models only. It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 0.8 hour.

PARTS TO BE INSTALLED



1. Right Side Console
2. Left Side Console
3. 4.8 mm (3/16 in) Rivet (4)
4. 4 mm (5/32 in) Rivet (2) (not illustrated)

INSTRUCTION

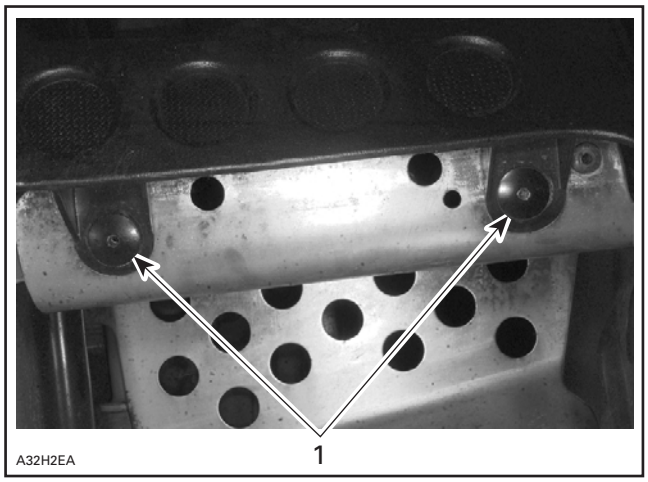
Right Side Console

Open hood.

Remove rewind starter handle making sure to secure rope so it won't unwind.

Remove choke cable from existing console.

Using a 4.8 mm (3/16 in) bit, drill out both lower console retaining rivets. Refer to following photo.



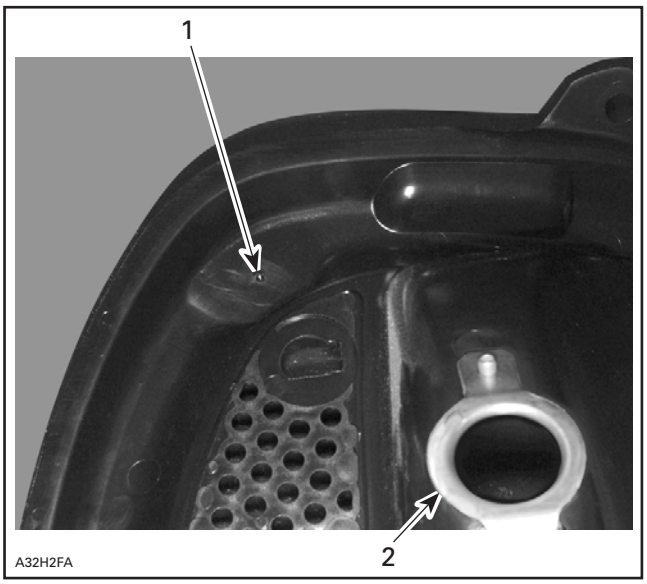
1. Drill out these 2 rivets

Remove and keep upper console retaining screw and flat washer.

Models with Mechanical Reverse System

Remove handle grip to slide out existing console, by twisting while pulling. If resistance is felt, apply air hose tip between lever and handle grip while pulling it out.

Drill required size hole (13 mm (1/2 in)) in new console **no. 1** using already punched hole at the back of console as a starting hole. Refer to following photo.



1. Already punched hole (starting hole)
2. Rope guide

Models with Electronic Reverse System

Remove push button to free up and remove existing console.

Drill required size hole (22 mm (7/8 in)) in new console **no. 1** using already punched hole at the back of console as a starting hole.

All Models

Using a 4 mm (5/32 in) bit, drill out both rope guide rivets from existing console.

Install rope guide and rubber stopper on new console using 4 mm (5/32 in) rivets **no. 4**.

Install new console and secure at top with kept screw and flat washer and at bottom with 4.8 mm (3/16 in) rivets **no. 3**.

Reinstall, where relevant, either mechanical reverse system handle grip or electronic reverse system push button.

Reinstall rewind starter handle and choke cable.

Left Side Console

Using a 4.8 mm (3/16 in) bit, drill out both lower console retaining rivets.

Remove and keep upper console retaining screw and flat washer.

Remove existing console, install new console **no. 2** and secure same at top with kept screw and flat washer and at bottom with 4.8 mm (3/16 in) rivets **no. 3**.

Installation is now complete.

861 778 300 (RED/ROUGE)

1.	—	Right Side Console	Console latérale droite
2.	—	Left Side Console	Console latérale gauche
3.	293 150 075	4.8 mm (3/16 in) Rivet (4)	Rivet de 4.8 mm (3/16 po) (4)
4.	390 409 400	4 mm (5/32 in) Rivet (2) (not illustrated)	Rivet de 4 mm (5/32 po) (2) (non illustré)

861 778 400 (YELLOW/JAUNE)

1.	—	Right Side Console	Console latérale droite
2.	—	Left Side Console	Console latérale gauche
3.	390 910 200	4.8 mm (3/16 in) Rivet (4)	Rivet de 4.8 mm (3/16 po) (4)
4.	390 409 400	4 mm (5/32 in) Rivet (2) (not illustrated)	Rivet de 4 mm (5/32 po) (2) (non illustré)

HITCH KIT
(P/N 861 778 800)

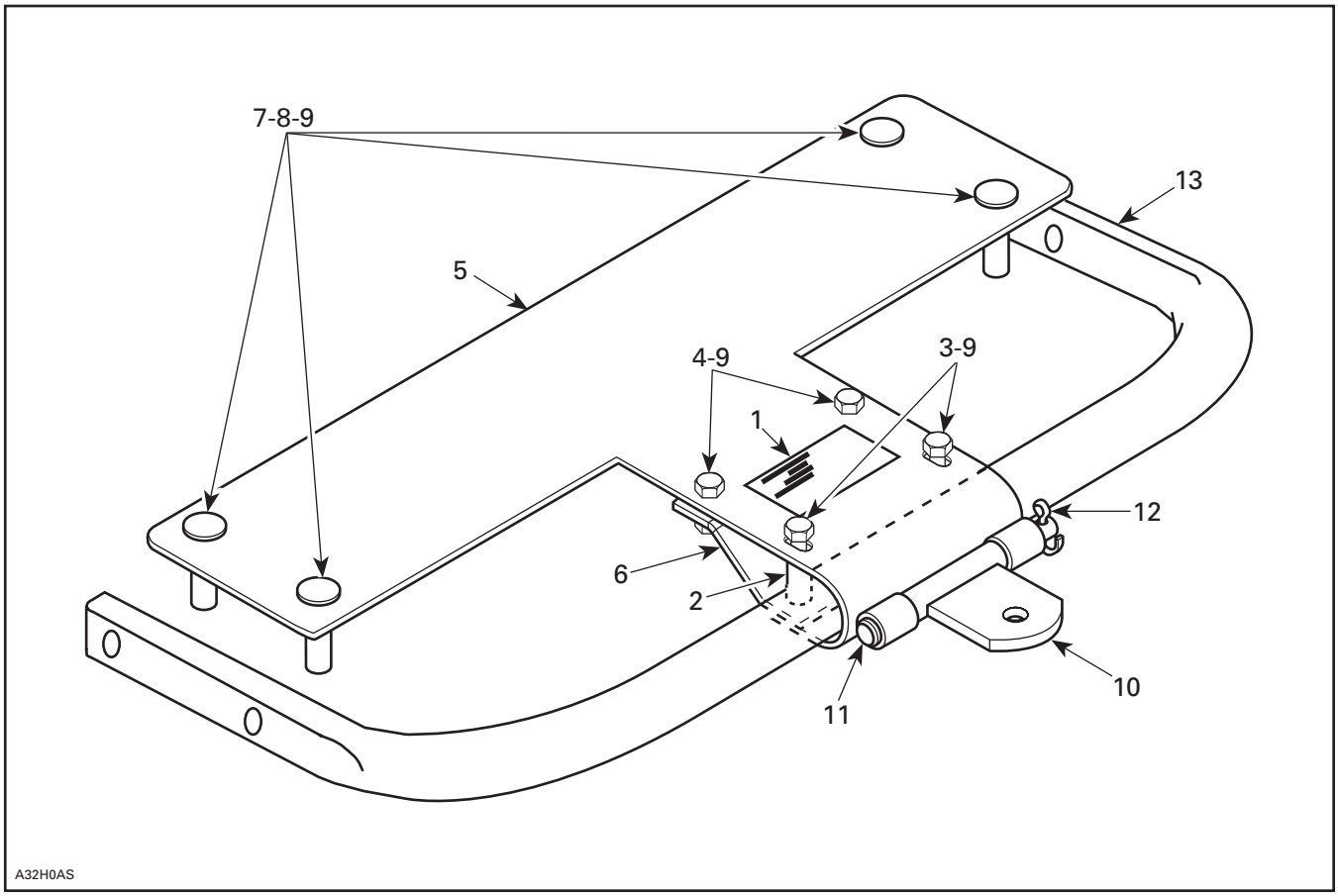
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.5** hour.

PARTS TO BE INSTALLED



1. Label
2. Spacer (2)
3. Bolt M6 x 50 (2)
4. Bolt M6 x 20 (2)
5. Support
6. Reinforcement Plate
7. Carriage Bolt M6 x 20 (4)
8. Flat Washer (4)
9. Elastic Flanged Nut M6 (8)
10. Hitch Plate
11. Clevis Pin
12. Cotter Pin
13. Rear Bumper

PROCEDURE

Remove rear bumper and rear side moldings. Keep bolts.

Cut rear snowguard along inside guidelines and remove plastic tab to provide hitch opening.

A32H2TA

TYPICAL — CUT ALONG THESE MARKS

Install new rear bumper **no. 13**.

Models with Luggage Rack

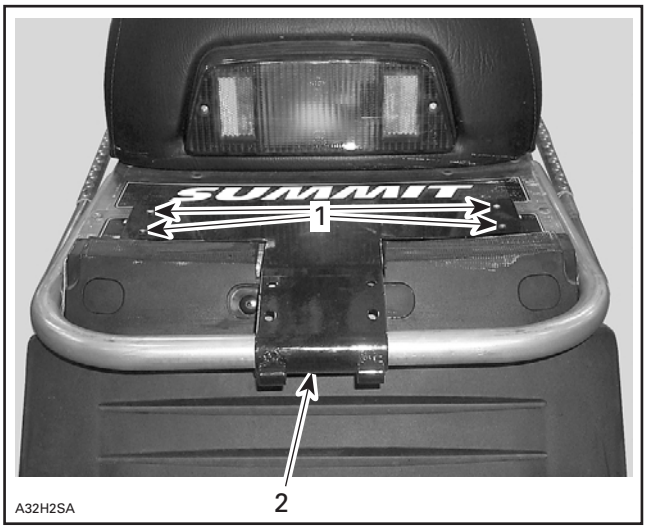
Unscrew rear part of luggage rack. Position support **no. 5** correctly: Slide the support under luggage rack, make it hang on bumper and lay in snowguard opening. Secure with the two existing bolts, two flat washers **no. 8** and new elastic flanged nuts **no. 9**. Using rear support holes as guide, drill through the tunnel using a 6.5 mm (1/4 in) drill bit.

CAUTION: Care must be taken to drill only in designated areas. Damage to the heat exchangers could occur if drilling outside this area.

Complete support installation with two carriage bolts **no. 7**, flat washers **no. 8** and elastic flanged nuts **no. 9**. Tighten all bolts.

Models without Luggage Rack

Using support holes as guide, drill through the tunnel using a 6.5 mm (1/4 in) drill bit. To position support correctly, make the support hang on bumper and lay in snowguard opening. See photo.



A32H2SA

TYPICAL

1. *Pre-drilled holes*
2. *The provided bumper should pass through the support hook*

CAUTION: Care must be taken to drill only in designated areas. Damage to the heat exchangers could occur if drilling outside this area.

Secure support **no. 5** with four carriage bolts **no. 7**, flat washers **no. 8** and elastic flanged nuts **no. 9**. Tighten all bolts.

All Models

Install reinforcement plate **no. 6** with support **no. 5**, spacers **no. 2**, bolts **no. 3** and bolts **no. 4**. Secure with elastic flanged nuts **no. 9** and tighten.

Secure support **no. 5** with carriage bolts **no. 7**, flat washers **no. 8** and elastic flanged nuts **no. 9**. Tighten all bolts.

Install hitch plate **no. 10** with clevis pin **no. 11** and cotter pin **no. 12**.

Reinstall rear moldings.

NOTE: Make sure hitch plate swings freely on hitch bracket.

Affix warning label **no. 1** to hitch.

NOTE: A hook-type hitch kit (P/N 861 778 700) is available for converting the present kit.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

861 778 800

1.	516 001 243	Label	Étiquette
2.	517 191 700	Spacer (2)	Entretoise (2)
3.	207 065 044	Bolt M6 x 50 (2)	Boulon M6 x 50 (2)
4.	207 162 044	Bolt M6 x 20 (2)	Boulon M6 x 20 (2)
5.	511 000 192	Support	Support
6.	511 000 022	Reinforcement Plate	Plaque de renfort
7.	207 762 044	Carriage Bolt M6 x 20 (4)	Boulon de carrosserie M6 x 20 (4)
8.	224 061 201	Flat Washer (4)	Rondelle plate (4)
9.	233 261 414	Elastic Flanged Nut M6 (8)	Écrou élastique à épaulement M6 (8)
10.	517 008 700	Hitch Plate	Plaque d'attelage
11.	505 001 700	Clevis Pin	Axe de chape
12.	371 800 200	Cotter Pin	Goupille fendue
13.	517 322 853	Rear Bumper	Pare-chocs arrière

LUGGAGE RACK
(P/N 861 779 000)

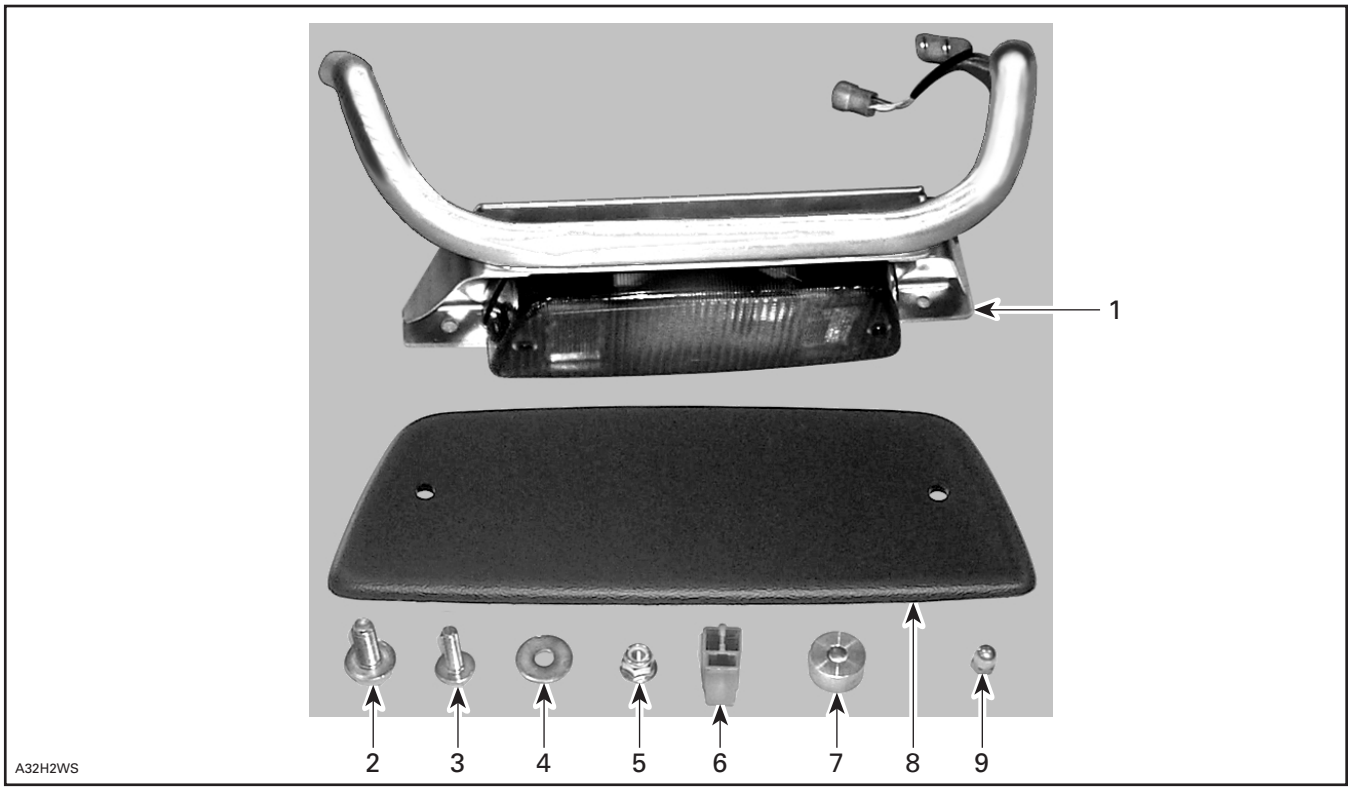
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 1.0 hour.

PARTS TO BE INSTALLED



1. Luggage Rack Ass'y
2. Hexagonal Screw (4)
3. Hexagonal Screw (2)
4. Flat Washer (2)
5. Flanged Elastic Nut (4)
6. Female Housing
7. Spacer (2)
8. Cover
9. Hexagonal Domed Nut (2)

VEHICLE PREPARATION

Remove the taillight assembly from the seat.

Remove the tab connectors from the taillight connector housing.

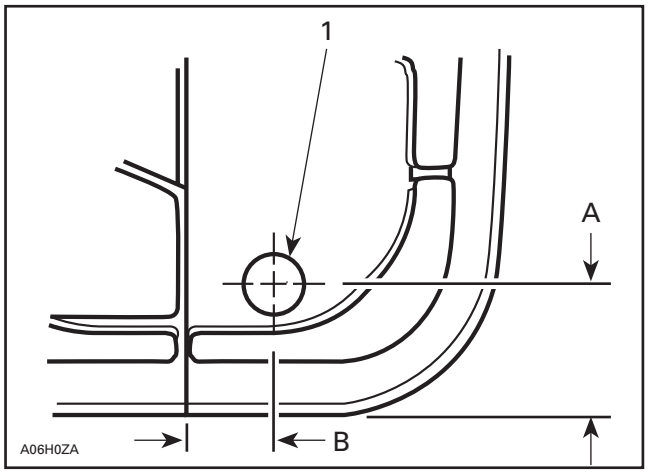
Remove side moldings.

WIRING INSTALLATION

Remove seat.

Remove staples from right rear corner of seat using care.

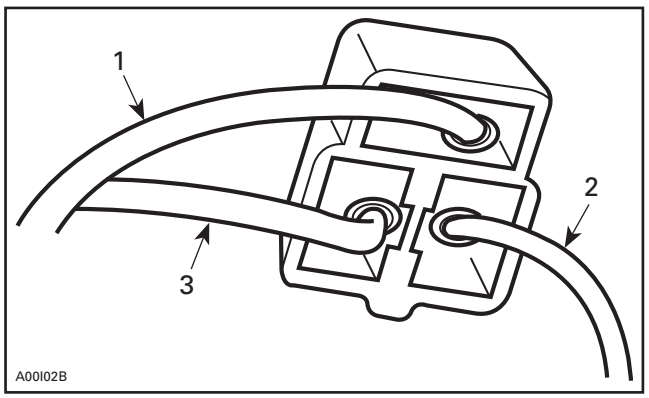
Drill a 25 mm (1 in) hole as illustrated.



1. Drill hole here
A. 50 mm (2 in)
B. 30 mm (1-3/16 in)

Reroute the wires that were previously removed to the newly drilled hole, underneath the seat.

Install the tab connectors as illustrated into new female housing **no. 6**.



1. YELLOW/BLACK
2. YELLOW
3. WHITE

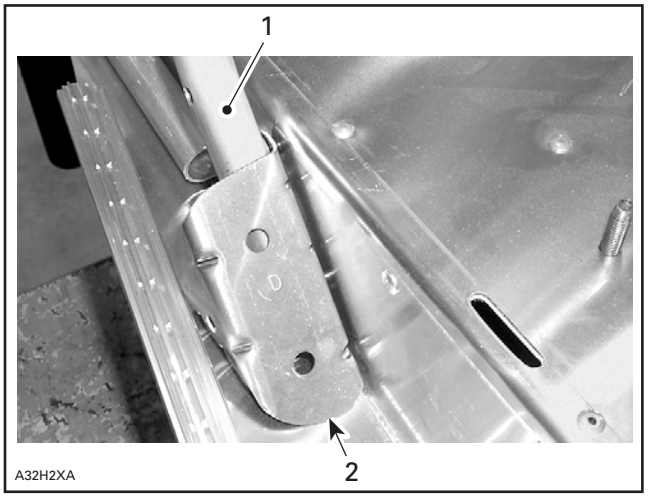
Restaple and reinstall seat.

RACK INSTALLATION

Remove bolts retaining molding backing strips.

Position luggage rack **no. 1** on frame using predrilled holes.

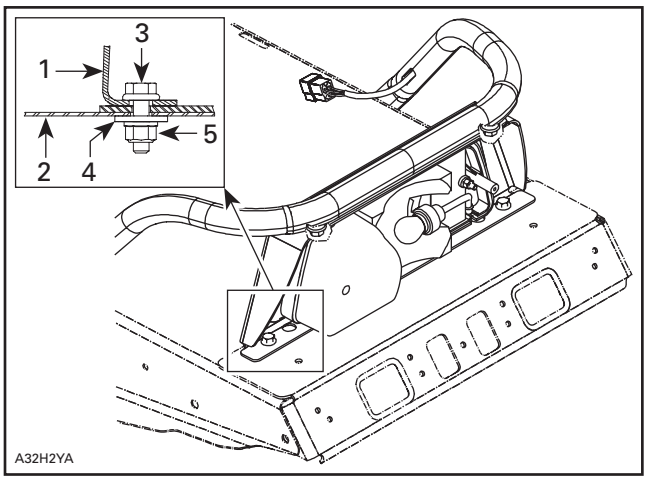
First, bolt front part of rack and molding backing strips with hexagonal screw **no. 2**.



1. Rack tube
2. Molding backing strip

Then secure rear part of rack with hexagonal screws **no. 3**, flat washers **no. 4** and flanged elastic nuts **no. 5**.

NOTE: If vehicle is equipped with a hitch, remove both carriage bolts and replace them with hexagonal screws **no. 3**, flat washers **no. 4** and flanged elastic nuts **no. 5**.



1. Luggage rack
2. Tunnel
3. Bolt
4. Washer
5. Nut

Cut moldings to fit around luggage rack tubes.

Plug the 2 connectors beneath the seat, then place them in the seat by passing them through the previously drilled hole. Assure to leave some slack in the wires.

Test taillight and stop light for proper operation.

Install spacers no. 7 between light ass'y and cover no. 8 using if necessary washers (not supplied).

Install hexagonal dome nuts no. 9.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

861 779 000

1.	511 000 185	Luggage Rack Ass'y	Porte-bagages (complet)
2.	207 682 044	Hexagonal Screw (4)	Vis hexagonale (4)
3.	207 662 044	Hexagonal Screw (2)	Vis hexagonale (2)
4.	224 061 201	Flat Washer (2)	Rondelle plate (2)
5.	233 261 414	Flanged Elastic Nut (4)	Écrou d'arrêt élastique à épaulement (4)
6.	409 204 300	Female Housing	Logement de raccord femelle
7.	517 223 600	Spacer (2)	Entretoise (2)
8.	510 003 846	Cover	Couvercle
9.	232 351 423	Hexagonal Domed Nut (2)	Écrou-capuchon hexagonal (2)

SC-10 LONG TRACK EXTENSION KIT
(P/N 861 779 500)

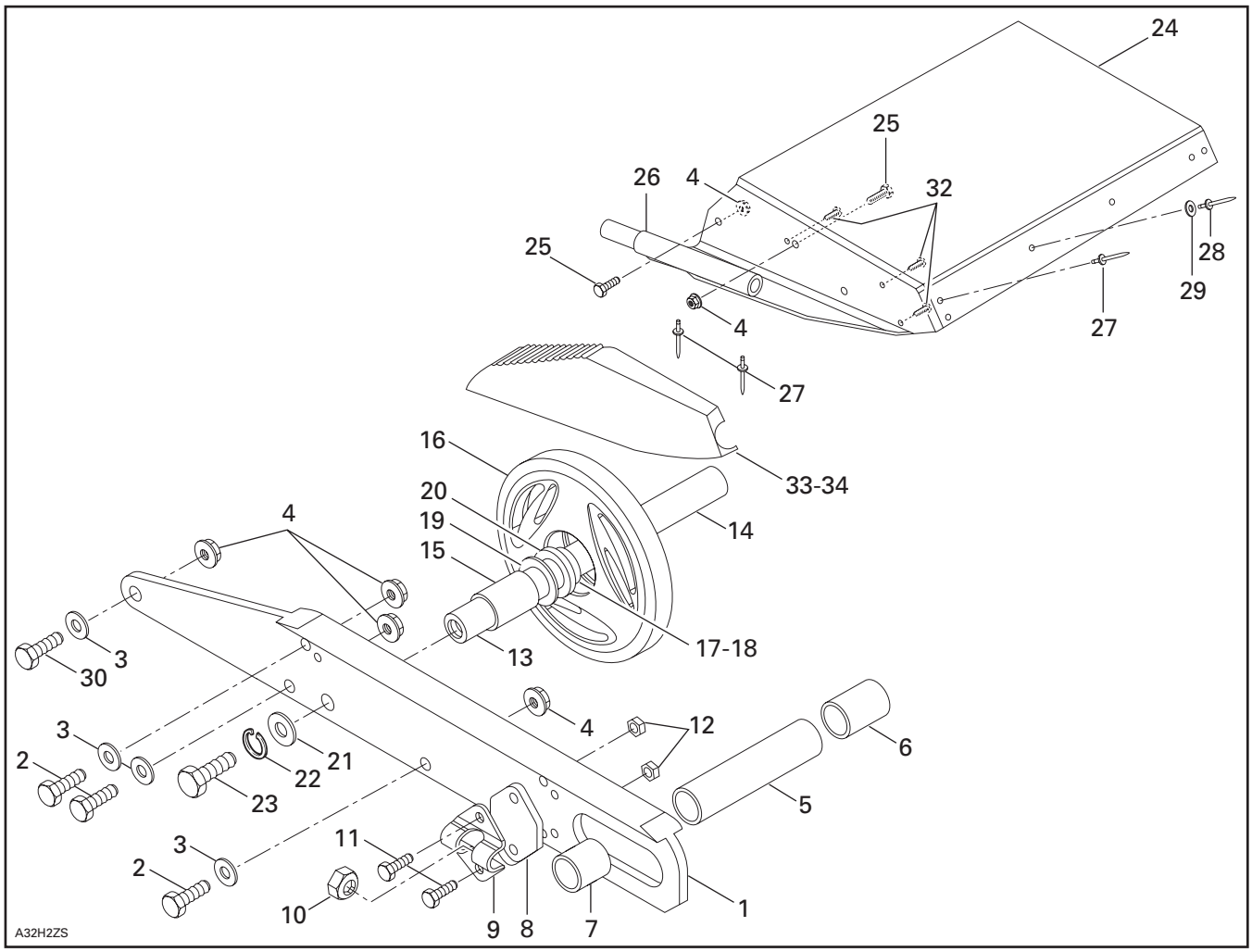
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **3.0** hours.

PARTS TO BE INSTALLED



1. Rail Extension (2)
2. M8 x 30 Hexagonal Bolt (6)
3. M8 Flat Washer (6)
4. M8 Flanged Elastic Nut (10)
5. Long Spacer
6. Short Spacer
7. Exterior Spacer (2)
8. Spacer Plate (2)
9. Tensioner (2)
10. M10 Elastic Lock Nut (2)
11. M6 x 25 Hexagonal Bolt (4)
12. M6 Elastic Lock Nut (4)
13. Axle
14. Spacer
15. Spacer (2)
16. Aluminum Bonded Wheel (2)
17. Ball Bearing (2)
18. Circlip (2)
19. Washer (4)
20. Cushion (4)
21. M10 Flat Washer (2)
22. M10 Spring Lock Washer (2)
23. M10 x 45 Hexagonal Bolt (2)
24. Tunnel Extension
25. M8 x 20 Hexagonal Bolt (4)
26. Tube (2)
27. 4.8 mm (3/16 in) Rivet (30)
28. 4.8 mm (3/16 in) Black Rivet (4)
29. Flat Washer (4)
30. M10 x 35 Hexagonal Bolt (2)
31. Warning Label (not illustrated)
32. 12 x 3/4 Self-Tapping Screw (6)
33. RH Moulding
34. LH Moulding
35. RH Reflector (not illustrated)
36. LH Reflector (not illustrated)

VEHICLE PREPARATION

Tunnel and Body

NOTE: Refer to your Ski-Doo *Shop Manual* for additional information.

CAUTION: Apply Loctite† 271 (P/N 293 800 005) on fasteners when reassembling and tighten with proper torques.

Raise rear of vehicle and block safely.

Remove rear suspension and track.

Discard track.

Remove seat.

Lower vehicle and support safely. Remove rear bumper and snow guard.

Remove rear mouldings if so equipped.

Models with Standard Rivets

Use a 5 mm (3/16 in) drill bit and drill out rivets retaining rear cap then remove it from tunnel.

Models with Self-Piercing Rivets

When drilling self-piercing rivets, use Supertanium™ drill bit (P/N 529 031 800), available in a 5 mm (3/16 in) size and shipped in packs of 2.

For proper drilling instructions and to prevent premature wear, follow the procedure below.

Always use a variable speed electric drill.

Maintain a slow to medium speed at all times when drilling. The proper speed is attained when a constant chip is ejected.

NOTE: To increase bit life, use Bombardier synthetic chaincase oil (P/N 413 803 300) as a cutting oil.

CAUTION: High speed drilling will cause excessive heat which may destroy the cutting edge of the bit, therefore avoid using pneumatic drills.

Partially drill rivet end — not the rivet head.


A03H2FA

Remove rivet using a chisel.

† Loctite is a registered trademark of Loctite Corporation.

Remove riveted part.

Drive out remaining of rivet using a punch.

PROCEDURE

Tunnel Extension Installation

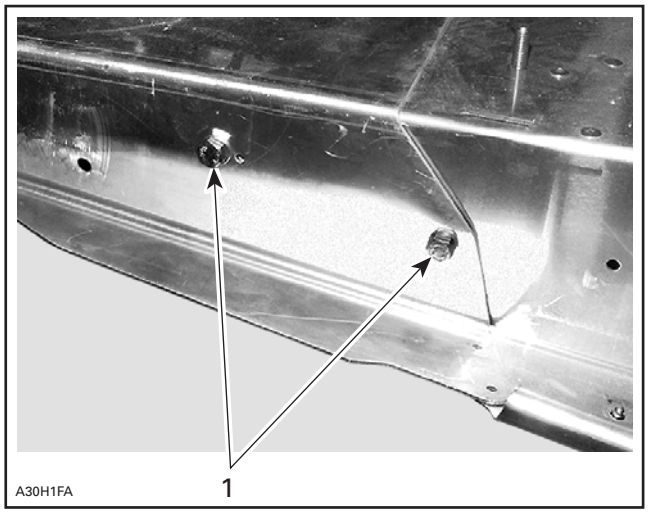
Racing Models

Use previously removed rear tunnel cap as a template to measure on the new tunnel extension the portion to cut in order to go around center radiator.

All Models

Position tunnel extension **no. 24** over tunnel. Screw extension on sides of tunnel with M8 x 20 hexagonal bolts **no. 25** and M8 flanged elastic nuts **no. 4**. Pass bolts through extension and tunnel.

NOTE: On models so equipped, remember to reinstall 90° black reinforcement plate before bolting.

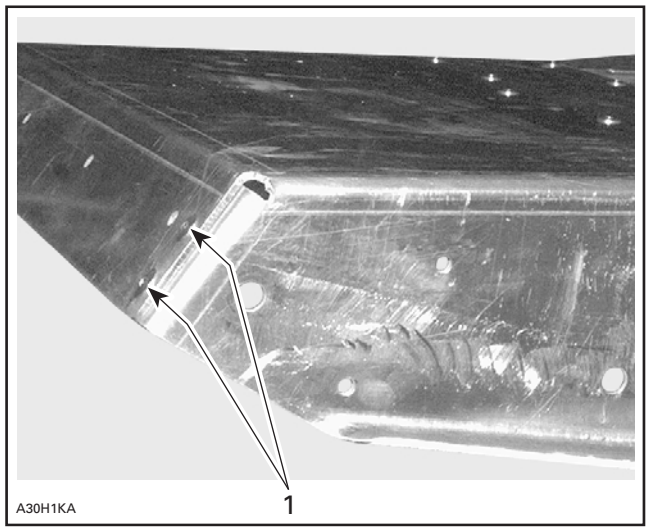


1. M8 bolts, washers and nuts

Tighten nuts on sides of tunnel extension.

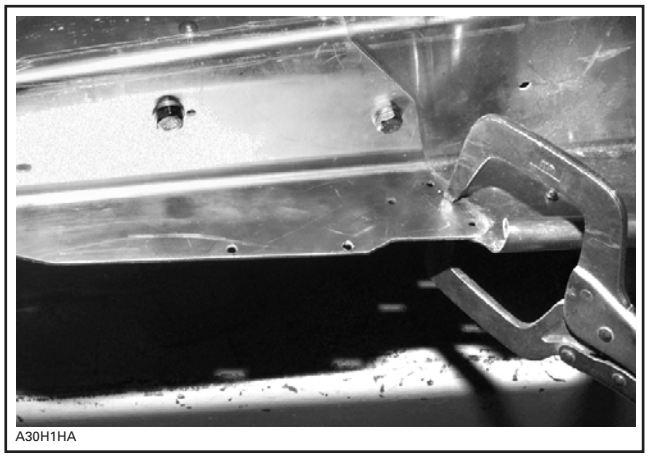
Using tunnel holes as a guide, drill holes in tunnel extension, from the inside, with a 5 mm (13/64 in) drill bit. Drill top holes and side holes.

Remove burrs then rivet extension to tunnel using 4.8 mm (3/16 in) rivets **no. 27**. Drill 2 holes in each rear corner of extension and rivet them.



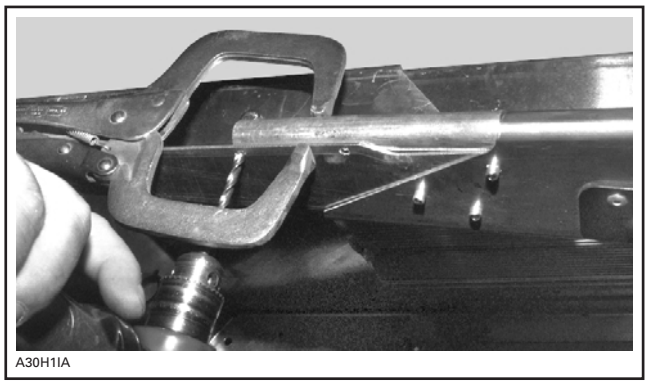
1. Drill two holes each side and install rivets

Using extension holes as a guide, drill holes in footboard and rivet tunnel extension to footboard.



Models with Rounded Footstep Edge Reinforcement

Insert tubes **no. 26** into the footstep edge reinforcements and drill them facing the holes of tunnel extension edge. Secure with rivets.



Install snow guard reinforcement and snow guard, and secure with new 4.8 mm (3/16 in) black rivets **no. 28** and flat washers **no. 29**.

Reinstall rear bumper using existing fasteners.

Install rear mouldings **no. 33** and **no. 34** using new 12 x 3/4 self-tapping screws **no. 32** sticking on their respective reflector **no. 35** and **no. 36**.

Round off front outer moulding corner.

Reinstall seat.

Install a new track with desired profile paying close attention to the direction of rotation.

Refill chaincase with Bombardier synthetic chaincase oil (P/N 413 803 300).

Rear Suspension

Remove rear axle and components.

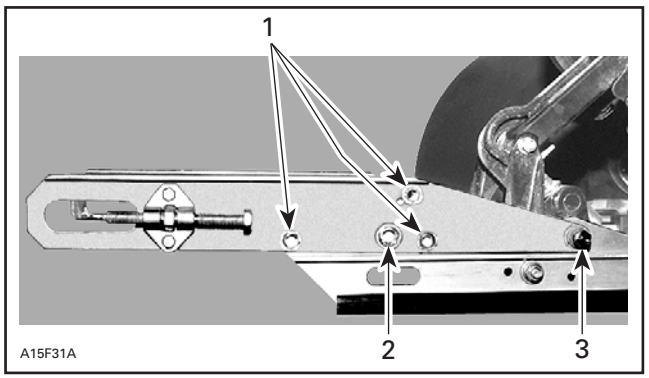
Discard the 4 bushings on rear axle.

Remove track adjuster and adjuster bolt. Bolt will be reinstalled on rail extension with new track adjuster.

Remove the two bolts holding rear arm lower shaft to side rails. Position rail extensions **no. 1** outside of suspension rail, one of each side. Align front hole of rail extension with lower shaft and secure with new M10 x 35 hexagonal bolts **no. 30**, using new M8 flat washers **no. 3**.

Ensure that both rail extension are touching all along rail.

Using an 8 mm (5/16 in) and 10 mm (13/32 in) drill bits, drill holes in rail using extension rail as a guide. Drill the smallest holes first.



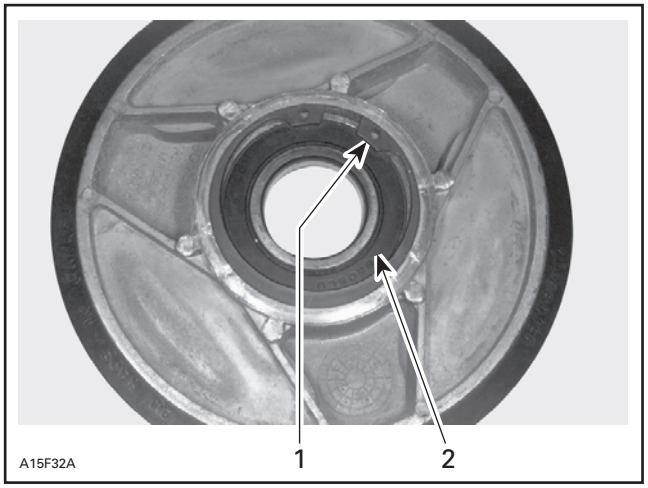
1. *Drill 8 mm holes (5/16 in)*
2. *Drill 10 mm holes (13/32 in)*
3. *Use new M8 x 30 hexagonal bolts*

Secure extension to rail with M8 x 30 hexagonal bolts **no. 2**, M8 flat washers **no. 3** and M8 flanged elastic nuts **no. 4**, then tighten.

Install spacer plate **no. 8** and tensioner **no. 9** onto extension rails. Secure with M6 x 25 hexagonal bolts **no. 11** and M6 elastic lock nuts **no. 12**.

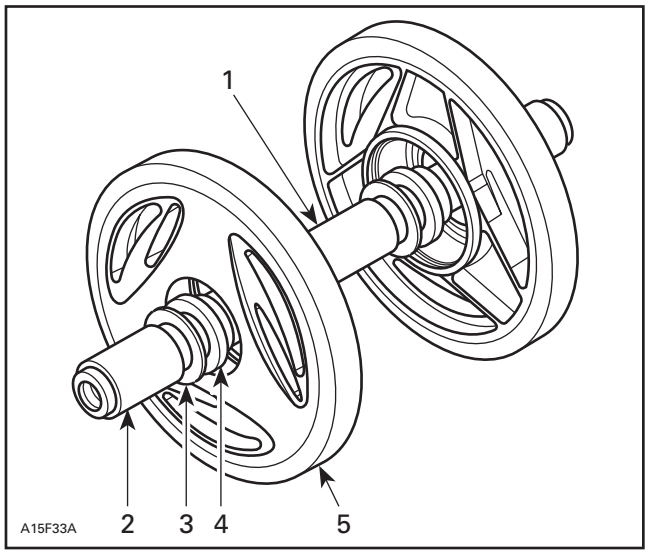
Install tension adjustment bolts and secure with M10 elastic lock nuts **no. 10**.

Install ball bearings **no. 17** into aluminum bonded wheels **no. 16**, retain bearings using circlips **no. 18**.



1. *Circlips*
2. *Ball bearing*

Install axle **no. 13**, spacer **no. 14**, washers **no. 19**, one cushion **no. 20** on both sides of each bonded wheel and spacers **no. 15** as per the following illustration.



1. *Spacer **no. 14***
2. *Spacers **no. 15***
3. *Washers **no. 19***
4. *Cushions **no. 20***
5. *Bonded wheel, bearing and circlip*

Install center axle ass'y in front of rear axle location. Secure with M10 x 45 hexagonal bolts **no. 23**, M10 spring lock washers **no. 22** and M10 flat washers **no. 21**.

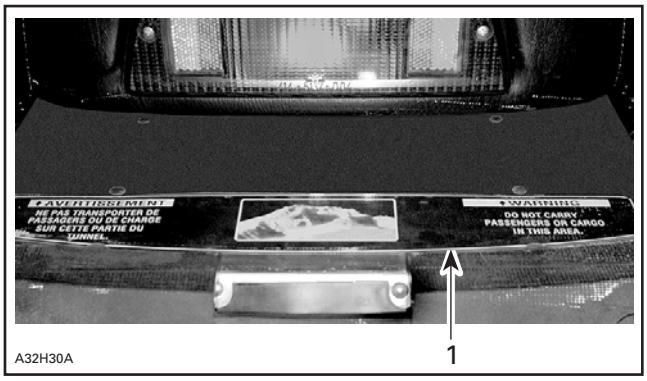
Reinstall rear axle with new spacers. Long spacer **no. 5**, short spacer **no. 6** and exterior spacer **no. 7**. Reuse other components. Apply Loctite 271 (red) to bolt threads.

Ensure to reinstall thin shims on each side of rails.

Suspension Reinstallation

Reinstall rear suspension in tunnel. Pay attention to secure suspension attachments in same holes.

Apply warning label **no. 31** on top of tunnel extension.



1. Warning label

Perform chain tension adjustment as well as track tension and alignment.

Test snowmobile.

⚠ WARNING

Do not carry passengers or cargo in this area.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

861 779 500

1.	503 172 000	Rail Extension (2)	Rallonge de porte-glissière (2)
2.	207 183 044	M8 x 30 Hexagonal Bolt (6)	Boulon hexagonal M8 x 30 (6)
3.	234 081 410	M8 Flat Washer (6)	Rondelle plate M8 (6)
4.	233 281 414	M8 Flanged Elastic Nut (10)	Écrou élastique à épaulement M8 (10)
5.	503 156 700	Long Spacer	Entretoise (longue)
6.	503 156 800	Short Spacer	Entretoise (courte)
7.	503 172 100	Exterior Spacer (2)	Entretoise (extérieure) (2)
8.	503 156 500	Spacer Plate (2)	Plaque d'écartement (2)
9.	503 155 300	Tensioner (2)	Tendeur (2)
10.	233 601 416	M10 Elastic Lock Nut (2)	Écrou autobloquant élastique M10 (2)
11.	207 162 544	M6 x 25 Hexagonal Bolt (4)	Boulon hexagonal M6 x 25 (4)
12.	232 561 414	M6 Elastic Lock Nut (4)	Écrou autobloquant élastique M6 (4)
13.	503 152 800	Axle	Essieu
14.	503 153 100	Spacer	Entretoise
15.	503 151 000	Spacer (2)	Entretoise (2)
16.	570 066 622	Aluminum Bonded Wheel (2)	Roue en aluminium (2)
17.	405 404 500	Ball Bearing (2)	Roulement à billes (2)
18.	371 901 700	Circlip (2)	Circlip (2)
19.	503 154 000	Washer (4)	Rondelle (4)
20.	503 189 534	Cushion (4)	Coussinet (4)
21.	234 001 410	M10 Flat Washer (2)	Rondelle plate M10 (2)
22.	234 100 602	M10 Spring Lock Washer (2)	Rondelle-frein à ressort M10 (2)
23.	222 004 565	M10 x 45 Hexagonal Bolt (2)	Boulon hexagonal M10 x 45 (2)
24.	503 172 300	Tunnel Extension	Rallonge de tunnel
25.	207 182 044	M8 x 20 Hexagonal Bolt (4)	Boulon hexagonal M8 x 20 (4)
26.	503 172 600	Tube (2)	Tube (2)
27.	390 402 200	4.8 mm (3/16 in) Rivet (30)	Rivet 4.8 mm (3/16 po) (30)
28.	390 909 600	4.8 mm (3/16 in) Black Rivet (4)	Rivet noir 4.8 mm (3/16 po) (4)
29.	517 225 900	Flat Washer (4)	Rondelle plate (4)
30.	207 103 544	M10 x 35 Hexagonal Bolt (2)	Boulon hexagonal M10 x 35 (2)
31.	516 000 635	Warning Label	Étiquette d'avertissement
32.	365 901 100	12 x 3/4 Self-Tapping Screw (6)	Vis autotaraudeuse 12 x 3/4 (6)
33.	572 097 300	RH Moulding	Enjoliveur droit
34.	572 097 400	LH Moulding	Enjoliveur gauche
35.	516 000 237	RH Reflector	Réflecteur droit
36.	516 000 238	LH Reflector	Réflecteur gauche

TUNNEL PROTECTOR KIT
(P/N 861 779 600)

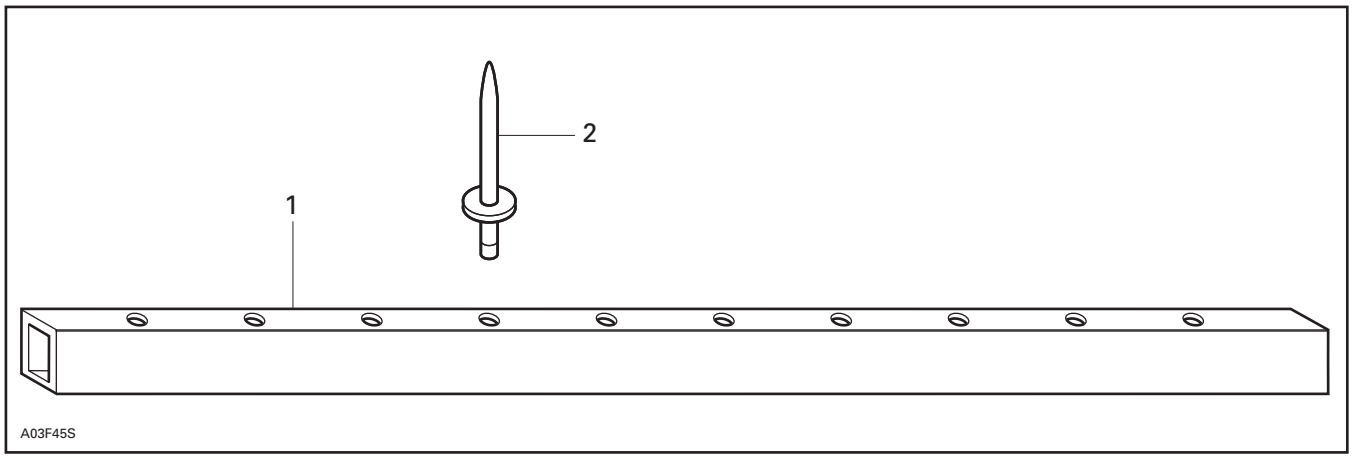
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 1.0 hour.

PARTS TO BE INSTALLED



1. Tunnel Protector (2) (N/P 518 322 958)
2. Rivet (14) (N/P 390 402 200)

PREPARATION

Vehicle

Remove seat.

Unplug fuel hose from fuel tank and squeeze it with a hose pincher, (P/N 295 000 076).

Remove both screws retaining center console on each side and remove fuel tank filler cap and filler neck nut in order to be able to lift console.

Unfasten fuel tank and slightly pull it rearwards then unplug vent tube.

Remove fuel tank.

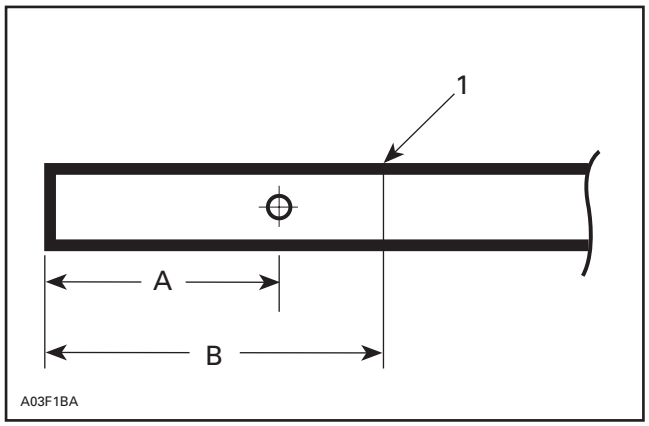
Remove rear suspension.

Tunnel Protector

On short track models shorten protector of 165 mm (6-1/2 in) from rear.

Rear end of protector has a first hole at 120 mm (4-3/4 in). Front end of protector has a first hole at 75 mm (3 in).

CAUTION: Keep front end of tunnel protector intact.

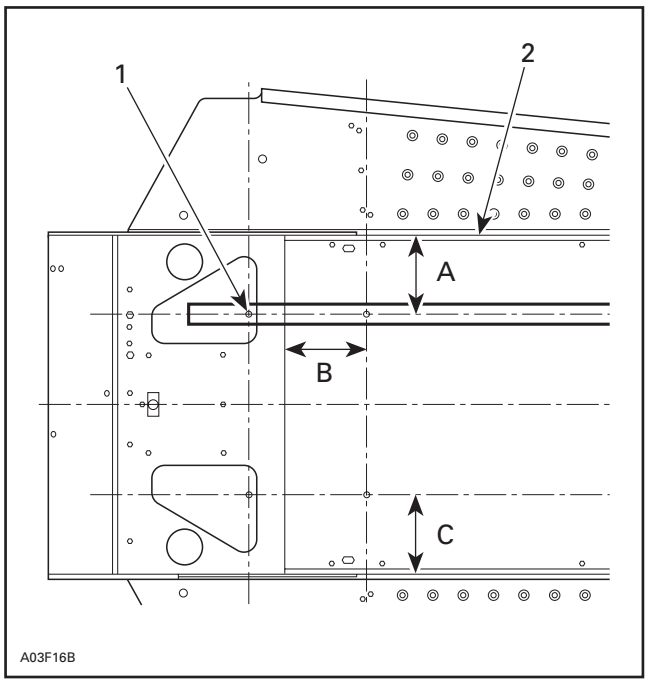


1. Cut here
A. 120 mm (4-3/4 in)
B. 165 mm (6-1/2 in)

On long track models, do not cut any length.

INSTALLATION

Tunnel Protector



1. Front hole at 75 mm (2-61/64) in from end
2. Outside edge of tunnel
A. 99 mm (3-29/32 in)
B. 102.7 mm (4-7/16 in)
C. 99 mm (3-29/32 in)

Install protectors **no. 1** on tunnel using rivets **no. 2**. Align protectors parallel to tunnel side.

Reinstall all parts.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

MIRROR KIT
(P/N 861 780 500)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. This instruction sheet should be given to the purchaser. This kit is designed for specific applicable models only. It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.5** hour.

PARTS TO BE INSTALLED

Kit, (not illustrated), consists of:

1. Mirror Assembly (RH) (P/N 517 302 679)
2. Mirror Assembly (LH) (P/N 517 302 681)
3. Flat Washer (4) (P/N 517 124 300)
4. Elastic Stop Nut (4) (P/N 232 541 414)
5. Retaining Plate (2) (P/N 517 302 539)

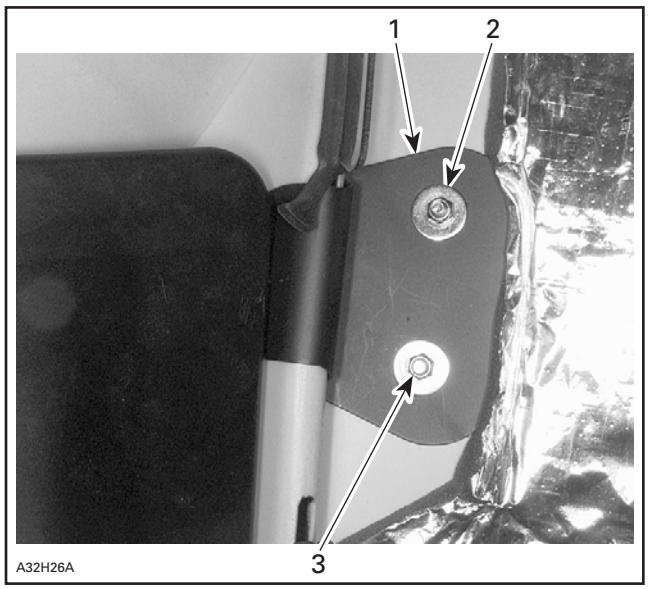
INSTRUCTIONS

Use template at the end of the present instruction sheet to locate and drill the two 5 mm (13/64 in) holes.

Install right side mirror **no. 1** on the outside and retaining plate **no. 5** on the inside and secure from underneath with flat washers **no. 3** and elastic stop nuts **no. 4**.

Repeat procedure with left side mirror **no. 2**.

Following illustration shows retaining plate installed:



1. *Retaining plate*
2. *Flat washer*
3. *Elastic stop nut*

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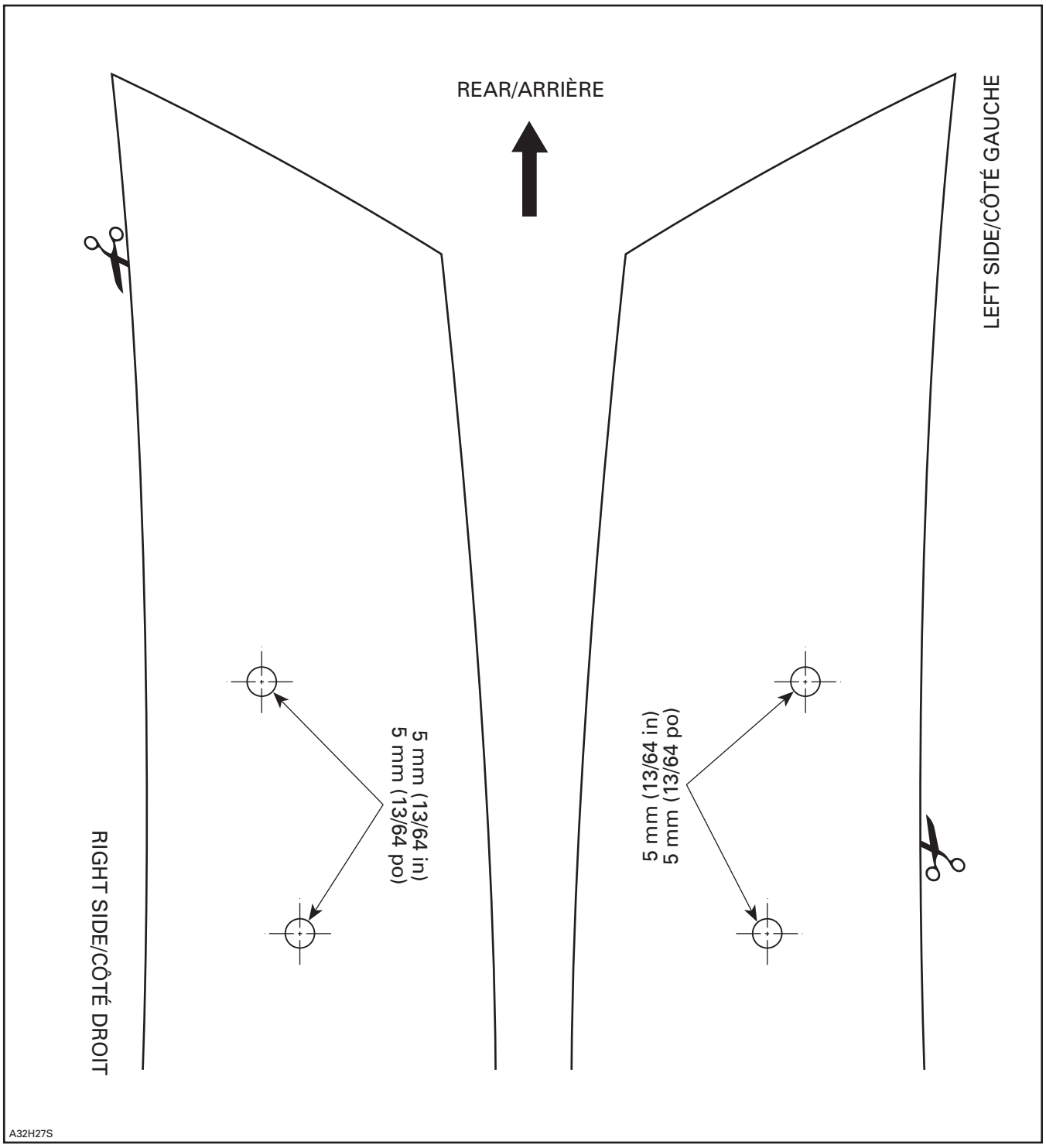
PURPOSELY BLANK

TEMPLATES


REAR/ARRIÈRE
LEFT SIDE/CÔTÉ GAUCHE
RIGHT SIDE/CÔTÉ DROIT
5 mm (13/64 in)
5 mm (13/64 po)
5 mm (13/64 in)
5 mm (13/64 po)
A32H27S

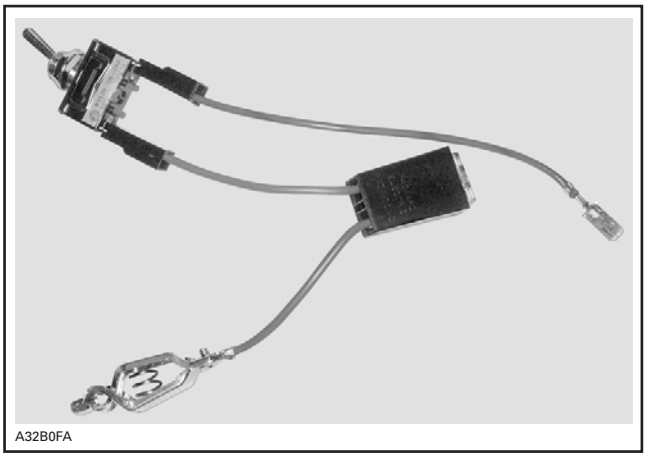
BYPASS WIRE KIT
(P/N 861 780 600)

⚠ WARNING

For safety reasons, this procedure must be done by an authorized Ski-Doo® snowmobile dealer.

This procedure is designed for specific applicable models only. It is not recommended for units other than those for which it was sold.

This kit consists of:
1. Bypass wire (P/N 529 035 786)
   and applies to 360-watt magneto equipped 2002 ZX models ***only****.*



BYPASS WIRE

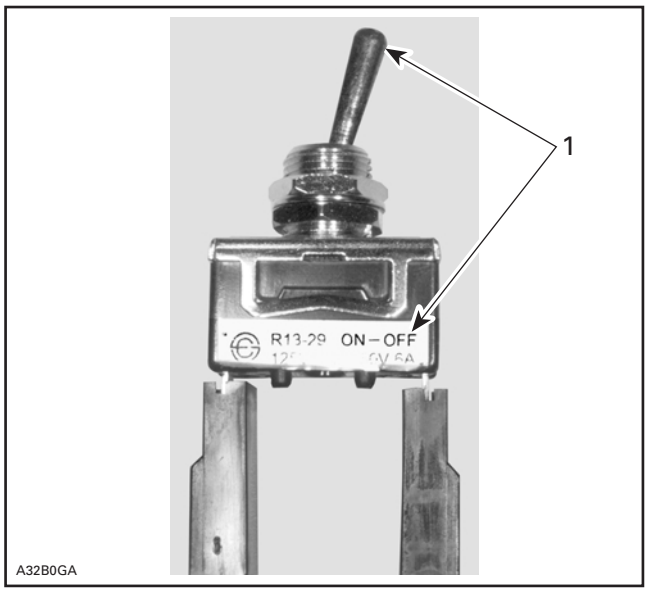
GENERAL

This bypass wire allows the 3 following operations without running the engine.
1. MPEM programming
2. Headlight system testing
3. Accessories testing

INSTRUCTION

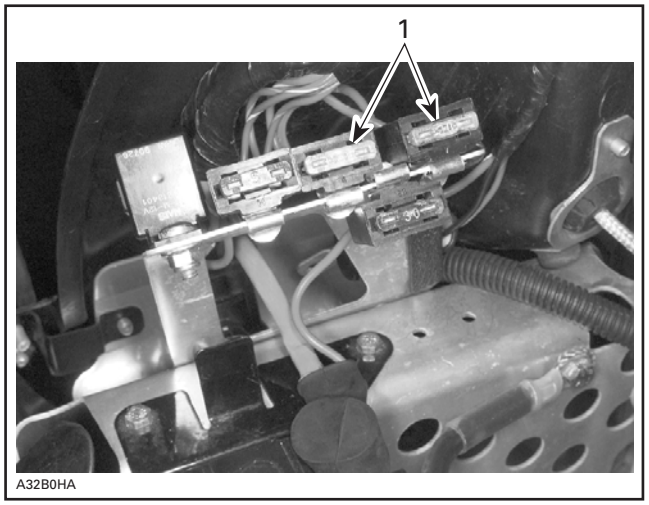
MPEM Programming

Ensure the switch on the bypass wire is in the OFF position. Refer to decal on switch.



1. OFF

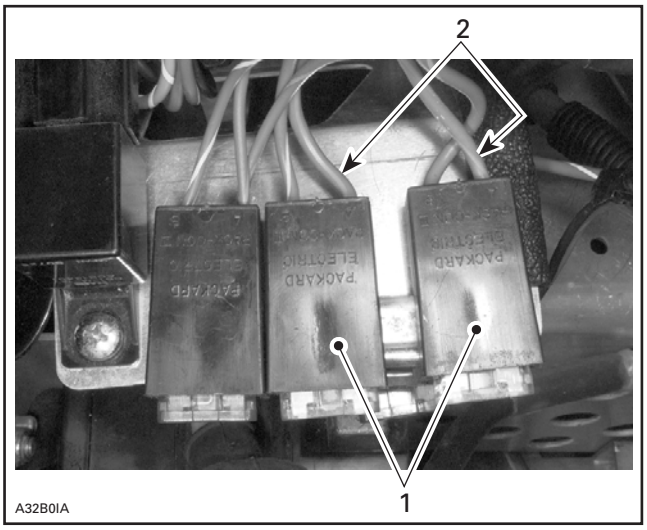
Remove both 20 A fuses.



1. 20 A fuses

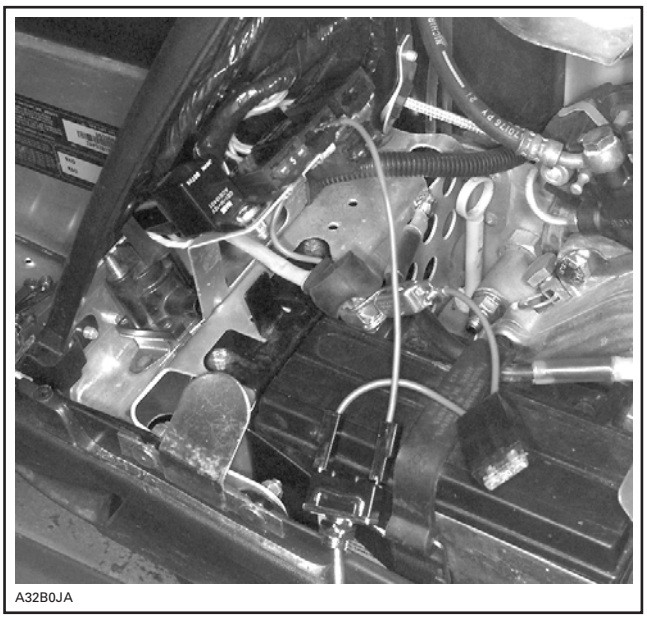
Connect the flat terminal of bypass wire in one of the 20 A fuse holders where a RED/BROWN wire comes in. Look at the back on one of 20 A fuse holders for a RED/BROWN wire.

NOTE: Both 20 A fuse holders have a RED/BROWN. Either one may be used.



TYPICAL — WIRES AND FUSE HOLDERS MAY BE INVERTED

1. *20 A fuse holders*
2. *RED/BROWN wires*



TYPICAL — FLAT TERMINAL CONNECTED TO A RED/BROWN WIRE

Connect the bypass wire alligator clip to the positive post of vehicle battery.

Once bypass wire is properly in place, put the bypass switch to the ON position.

As switch gets turned on a beeping signal from the reverse buzzer will be heard. This indicates that the MPEM is now ready to transfer programming operations.

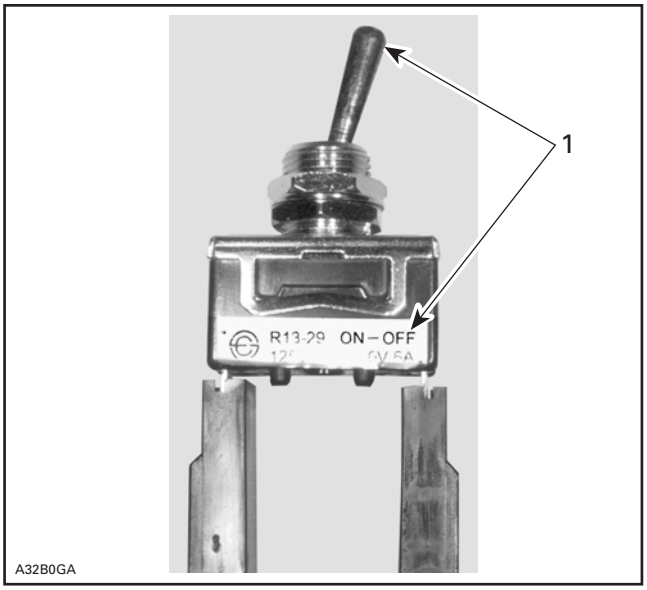
Proceed with programming as per *Shop Manual*.

If no beeping signal is heard when switch is turned on, check if either the headlight or the taillight is on. If this is the case, then the bypass wire was incorrectly installed. Turn switch off and re-verify that the flat terminal of bypass wire is connected to a RED/BROWN wire.

Once MPEM programming is done, turn switch off. Remove alligator clip from battery positive post. Remove flat terminal from fuse holder. Reinstall 20 A fuses.

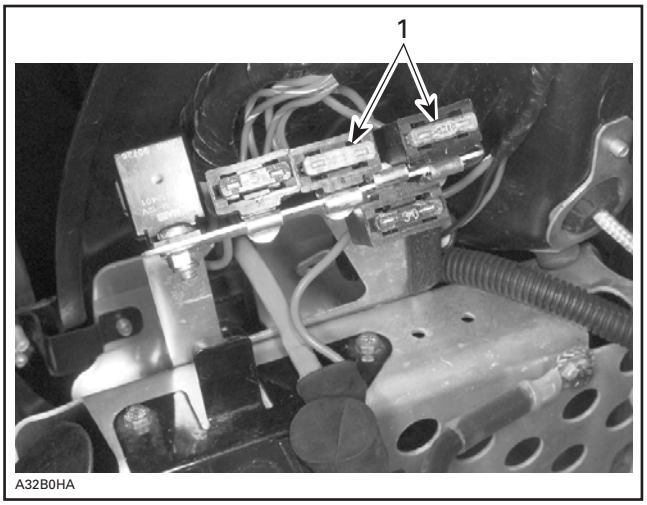
Headlight System Testing

Ensure the switch on the bypass wire is in the OFF position. Refer to decal on switch.



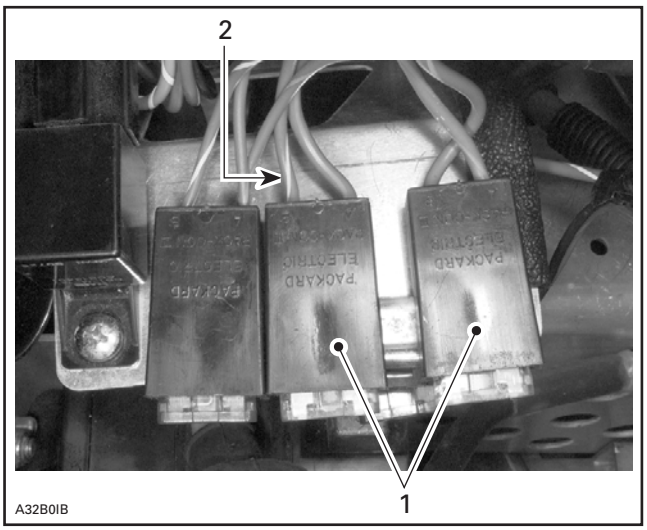
1. *OFF*

Remove both 20 A fuses.



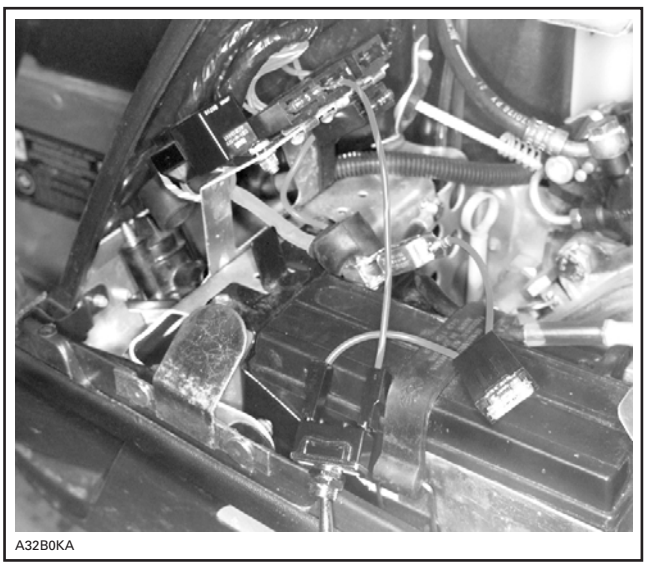
1. *20 A fuses*

Connect the flat terminal of bypass wire in one of the 20 A fuse holders where the RED/ORANGE wire comes in. Look at the back on one of 20 A fuse holders for the RED/ORANGE wire.



TYPICAL — WIRES AND FUSE HOLDERS MAY BE INVERTED

1. *20 A fuse holders*
2. *RED/ORANGE wire*



TYPICAL — FLAT TERMINAL CONNECTED TO THE RED/ORANGE WIRE

Connect the bypass wire alligator clip to the positive post of vehicle battery.

Once bypass wire is properly in place, put the bypass switch to the ON position.

Now the headlight system is supplied with 12 volts. Use appropriate wiring diagram found in *Shop Manual* to troubleshoot headlight system.

As switch gets turned on a beeping signal from the reverse buzzer **must not** be heard. Headlight system receives 12 volts and is ready to be tested.

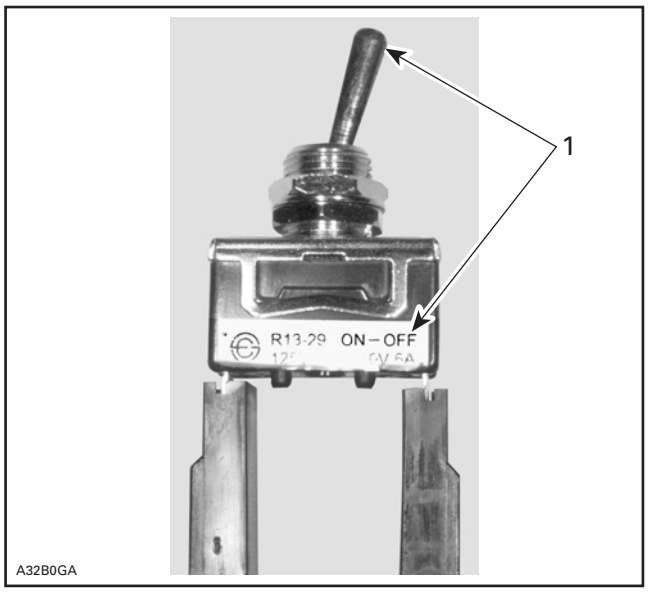
If a beeping signal is heard when switch is turned on, or the taillight is on, then the bypass harness was incorrectly installed. Turn switch off and reverify that the flat terminal of bypass wire is connected to a RED/ORANGE wire.

Once headlight system testing is done, turn switch off. Remove alligator clip from battery positive post. Remove flat terminal from fuse holder. Reinstall 20 A fuses.

Accessories Testing

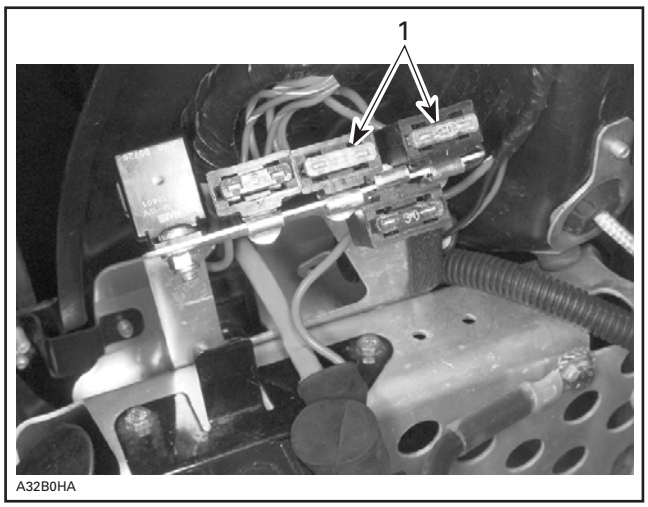
NOTE: Accessories include taillight, brake light, dash instruments, heated grips and throttle lever, BOSS shock electronics and air ride suspension when applicable.

Ensure the switch on the bypass wire is in the OFF position. Refer to decal on switch.



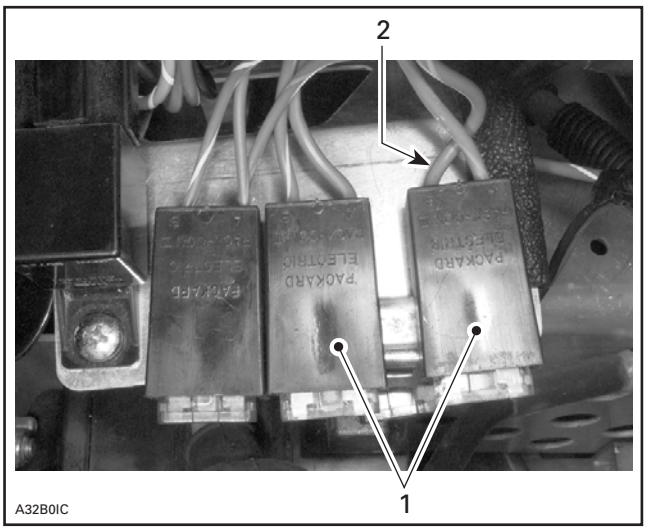
1. OFF

Remove both 20 A fuses.



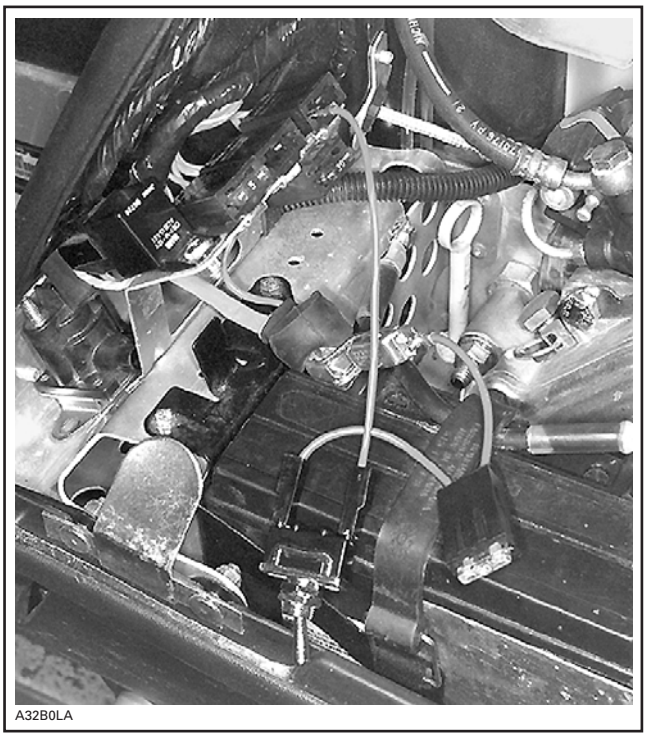
1. 20 A fuses

Connect the flat terminal of bypass wire in one of the 20 A fuse holders where the RED/YELLOW wire comes in. Look at the back on one of 20 A fuse holders for the RED/YELLOW wire.



TYPICAL — WIRES AND FUSE HOLDERS MAY BE INVERTED

1. *20 A fuse holders*
2. *RED/YELLOW wire*



TYPICAL — FLAT TERMINAL CONNECTED TO THE RED/YELLOW WIRE

Connect the bypass wire alligator clip to the positive post of vehicle battery.

Once bypass wire is properly in place, put the bypass switch to the ON position.

Now accessories are supplied with 12 volts. Use appropriate wiring diagram found in *Shop Manual* to troubleshoot a faulty accessory.

As switch gets turned on a beeping signal from the reverse buzzer **must not** be heard. All accessories receive 12 volts and are ready to be tested.

If a beeping signal is heard when switch is turned on, or if the headlight is on, then the bypass harness was incorrectly installed. Turn switch off and re-verify that the flat terminal of bypass wire is connected to a RED/YELLOW wire.

Once accessory testing is done, turn switch off. Remove alligator clip from battery positive post. Remove flat terminal from fuse holder. Reinstall 20 A fuses.

BOMBARDIER
RECREATIONAL PRODUCTS

ski-doo Snowmobiles

MIRROR KIT
(P/N 861 780 800)

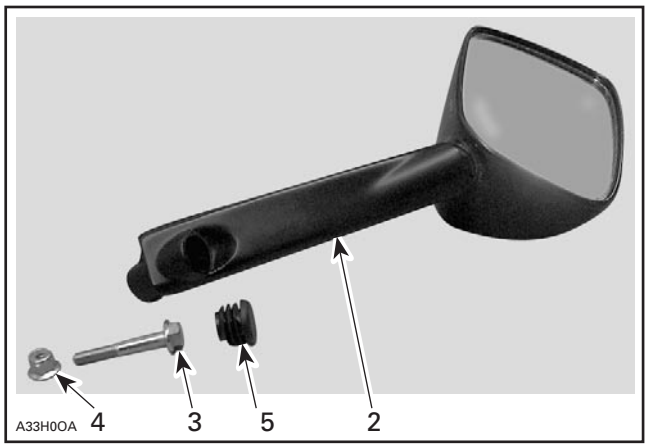
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **0.2** hour.

PARTS TO BE INSTALLED



1. RH Mirror (not illustrated)
2. LH Mirror
3. M6 x 40 Flanged Hexagonal Bolt (2)
4. M6 Flanged Elastic Nut (2)
5. Cap (2)

INSTRUCTION

Space is already provided to install both mirrors.

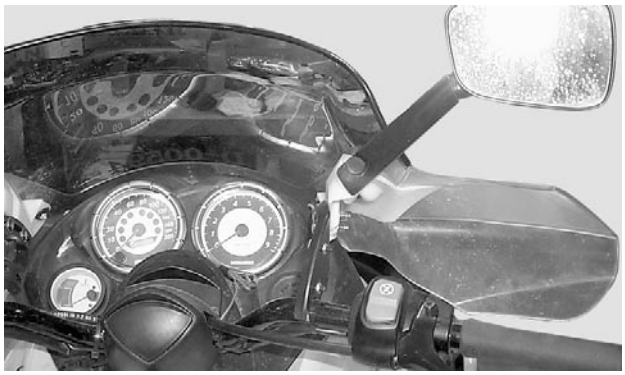
Use a small screwdriver to lift-up and remove right side existing cap; discard same.

Install RH mirror **no. 1**.

Secure mirror with an M6 x 40 flanged hexagonal bolt **no. 3** and an M6 flanged elastic nut **no. 4**. Torque to 4 N•m (35 lbf•**in**).

Install cap **no. 5** to cover hole.

Following photo shows RH side mirror installed.



Repeat for LH mirror **no. 2**.

Installation is now complete.

861 780 800

1.	517 302 449	RH Mirror (not illustrated)	Rétroviseur droit (non illustré)
2.	517 302 450	LH Mirror	Rétroviseur gauche
3.	207 664 044	M6 x 40 Flanged Hexagonal Bolt (2)	Boulon hexagonal à épaulement M6 x 40 (2)
4.	233 261 494	M6 Flanged Elastic Nut (2)	Écrou élastique à épaulement M6 (2)
5.	517 302 716	Cap (2)	Capuchon (2)

LIGHTWEIGHT SEAT
(P/N 861 782 200)

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

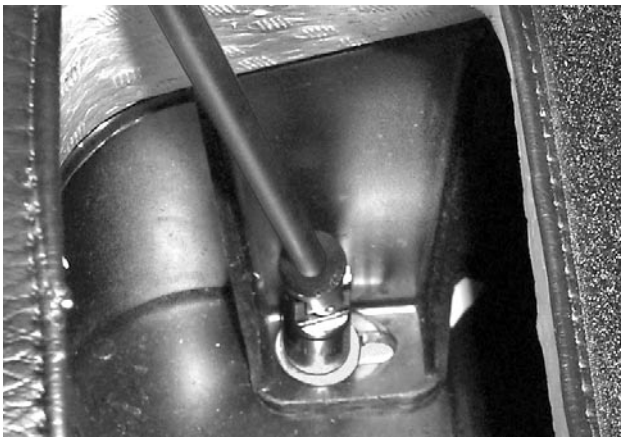
NOTE: Installation time is approximately **0.5** hour.

PARTS TO BE INSTALLED

1. Seat
2. 1/8 in pop rivet (10)

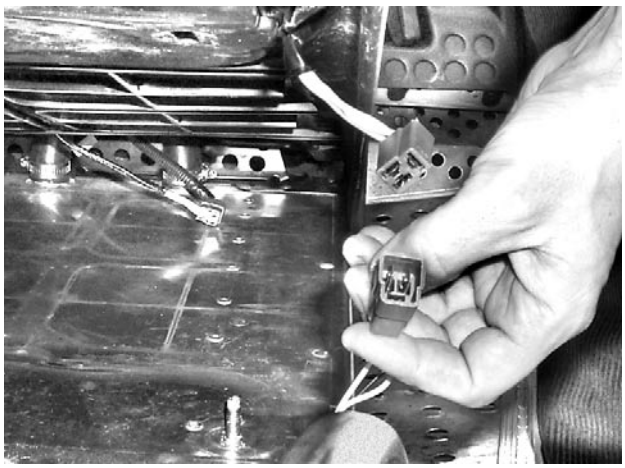
PROCEDURE

Remove the two nuts in the rear of seat. Lift up and pull back the seat.



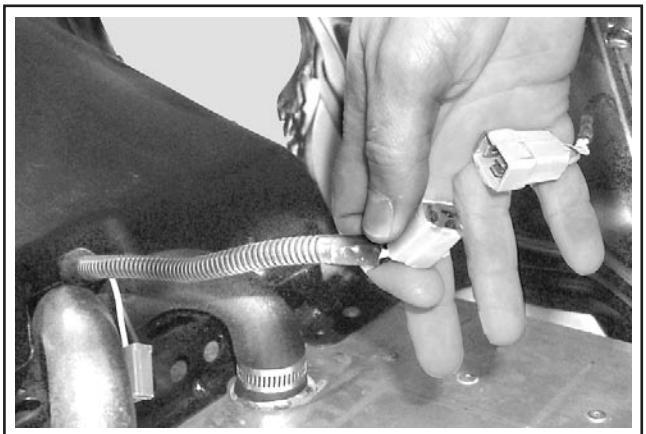
A32H31A

Disconnect taillight connectors.



A32I0BA

TAILLIGHT REAR CONNECTOR



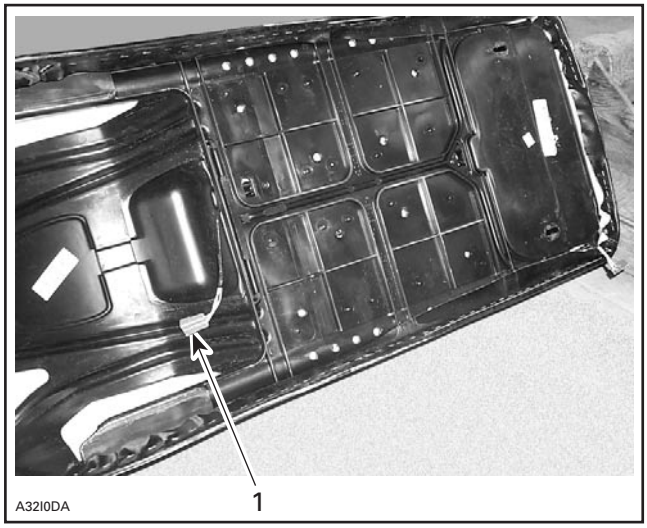
A32I0CA

TAILLIGHT FRONT CONNECTOR

To put taillight back on, retrieve wires from old seat.

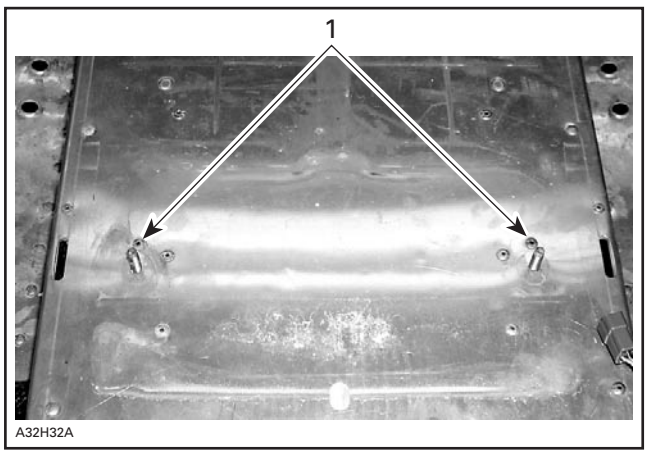
On one of the connectors, remember the wire positions, then carefully remove wires from connector.

Draw wires out of seat and reinstall wires into connector.



1. Undo connector and draw wires out

Drill rivets and remove seat studs.

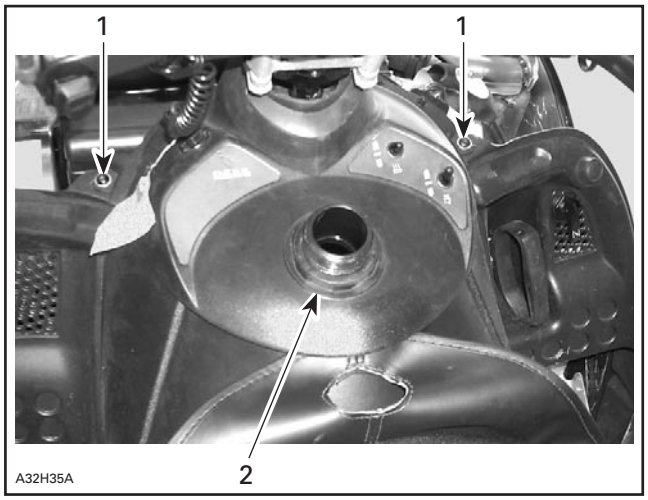


1. Drill rivets and remove studs

Clean the tunnel upper face using acetone or paint thinner.

Plug taillight harness. A piece of tape (such as duct tape) may be used to secure harness on tunnel.

Remove fuel cap and unscrew center console.

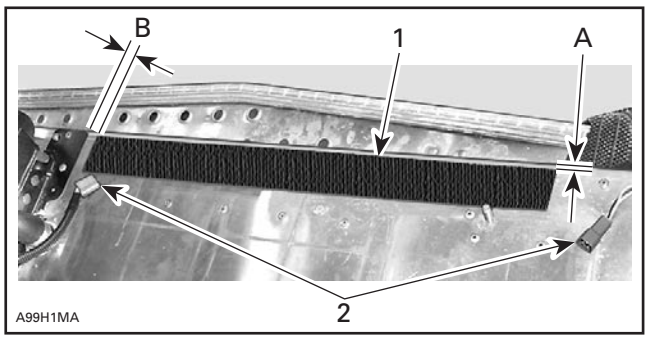


1. Remove screws
2. Remove console nut and washer

Install seat front flap around fuel tank neck, under center console.

Reinstall center console.

Take off Velcro bands from seat, remove protective sheets and install Velcro bands each side of upper face of tunnel.



1. Right velcro band in place
2. Plug and secure taillight harness here
A. 1 cm (1/2 in)
B. 2.5 cm (1 in)

Install seat in place.

Front Snaps Installation

Pull the snap flap forward (to pull all wrinkles out of seat) and down (to match the tunnel line).

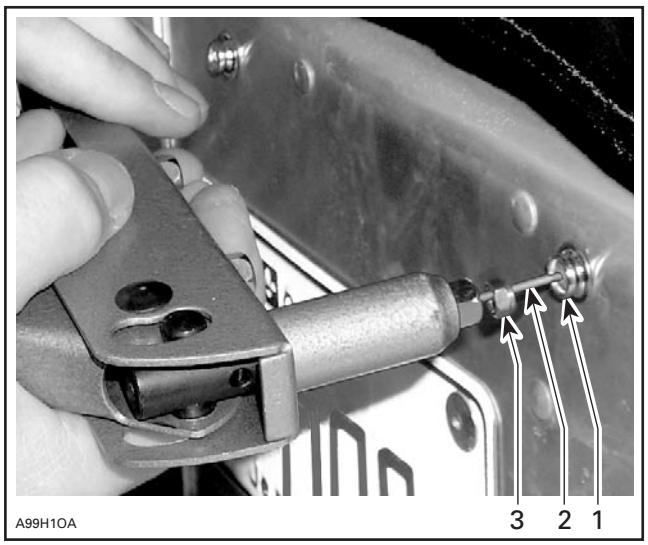
Mark the snap holes with a grease pencil or a marker.

A99H1NA

STRETCH SNAP FLAP AND MARK HOLE PLACES

Drill the holes and rivet the snap studs into place.

NOTE: For a good installation, rivet snap studs using a convex tip on riveting tool. if no convex tip is available, place a M5 elastic stop nut between rivet and riveting tool.



A99H1OA

1. *Snap stud*
2. *Rivet*
3. *M5 Elastic stop nut*

Install snap studs both sides.

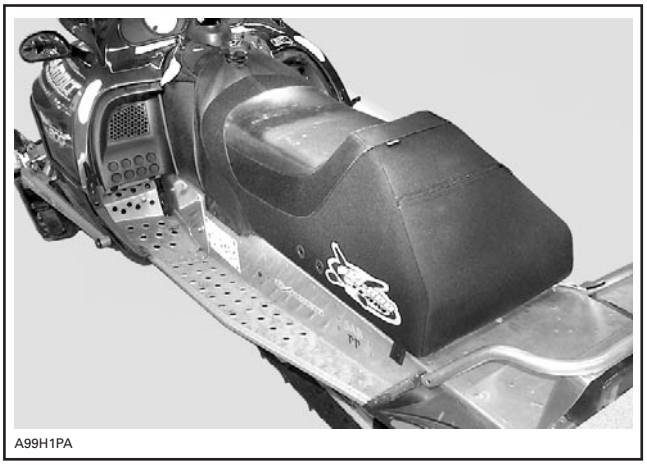
Rear Snaps Installation

Bring the rear snap flaps straight downward.

Mark the snap holes with a grease pencil or a marker.

Drill the holes and rivet the snap studs into place.

Install snap studs both sides.



A99H1PA

INSTALLATION COMPLETED

345 CM (136 IN) SC-10 TRACK EXTENSION KIT
(P/N 861 783 300)

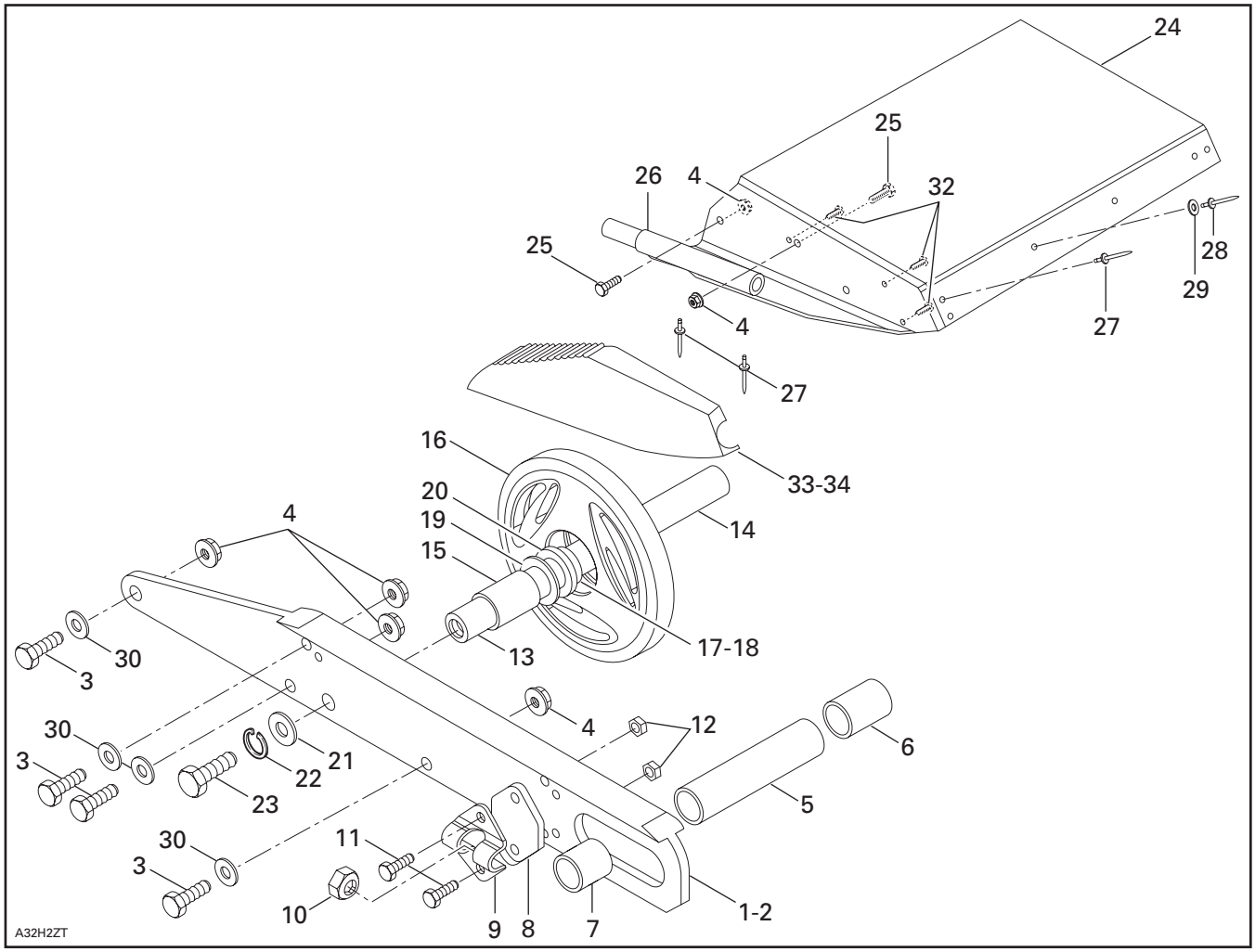
⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately **3.0** hours.

PARTS TO BE INSTALLED



1. RH Side Rail Extension
2. LH Side Rail Extension
3. M8 x 30 Hexagonal Bolt (8)
4. M8 Flanged Elastic Nut (12)
5. Long Spacer
6. Short Spacer
7. Exterior Spacer (2)
8. Spacer Plate (2)
9. Tensioner (2)
10. M10 Elastic Lock Nut (2)
11. M6 x 25 Hexagonal Bolt (4)
12. M6 Elastic Lock Nut (4)
13. Axle
14. Spacer
15. Spacer (2)
16. Aluminum Bonded Wheel (2)
17. Ball Bearing (2)
18. Circlip (2)
19. Washer (4)
20. Cushion (4)
21. M10 Flat Washer (2)
22. M10 Spring Lock Washer (2)
23. M10 x 45 Hexagonal Bolt (2)
24. Tunnel Extension
25. M8 x 20 Hexagonal Bolt (4)
26. Tube (2)
27. 4.8 mm (3/16 in) Rivet (30)
28. 4.8 mm (3/16 in) Black Rivet (4)
29. Flat Washer (4)
30. M8 Flat Washer (8)
31. Warning Label (not illustrated)
32. 12 x 3/4 Self-Tapping Screw (6)
33. RH Moulding
34. LH Moulding
35. RH Reflector (not illustrated)
36. LH Reflector (not illustrated)

VEHICLE PREPARATION

Tunnel and Body

NOTE: Refer to your *Ski-Doo Shop Manual* for additional information.

CAUTION: Apply Loctite† 271 (P/N 293 800 005) on fasteners when reassembling and tighten with proper torques.

Raise rear of vehicle and block safely.

Remove rear suspension and track.

Discard track.

Remove seat.

Lower vehicle and support safely. Remove rear bumper and snow guard.

Remove rear mouldings if so equipped.

Models with Standard Rivets

Use a 5 mm (3/16 in) drill bit and drill out rivets retaining rear cap then remove it from tunnel.

Models with Self-Piercing Rivets

When drilling self-piercing rivets, use Supertanium™ drill bit (P/N 529 031 800), available in a 5 mm (3/16 in) size and shipped in packs of 2.

For proper drilling instructions and to prevent premature wear, follow the procedure below.

Always use a variable speed electric drill.

Maintain a slow to medium speed at all times when drilling. The proper speed is attained when a constant chip is ejected.

NOTE: To increase bit life, use Bombardier synthetic chaincase oil (P/N 413 803 300) as a cutting oil.

CAUTION: High speed drilling will cause excessive heat which may destroy the cutting edge of the bit, therefore avoid using pneumatic drills.

Partially drill rivet end — not the rivet head.


A03H2FA

Remove rivet using a chisel.

Remove riveted part.

Drive out remaining of rivet using a punch.

PROCEDURE

Tunnel Extension Installation

Racing Models

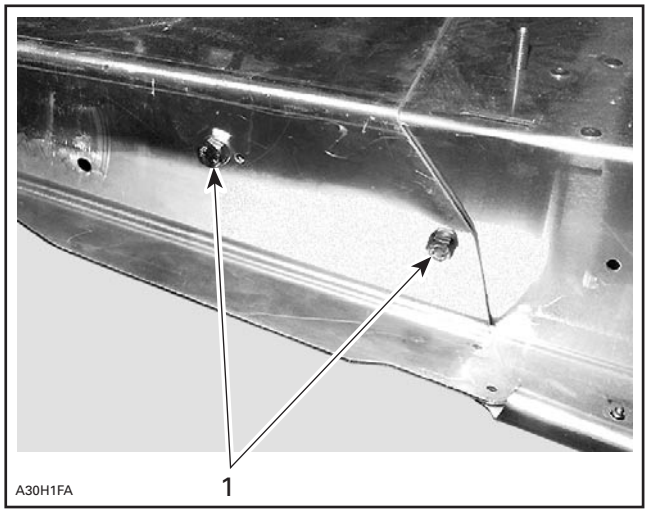
Use previously removed rear tunnel cap as a template to measure on the new tunnel extension the portion to cut in order to go around center radiator.

† Loctite is a registered trademark of Loctite Corporation.

All Models

Position tunnel extension **no. 24** over tunnel. Screw extension on sides of tunnel with M8 x 20 hexagonal bolts **no. 25** and M8 flanged elastic nuts **no. 4**. Pass bolts through extension and tunnel.

NOTE: On models so equipped, remember to reinstall 90° black reinforcement plate before bolting.

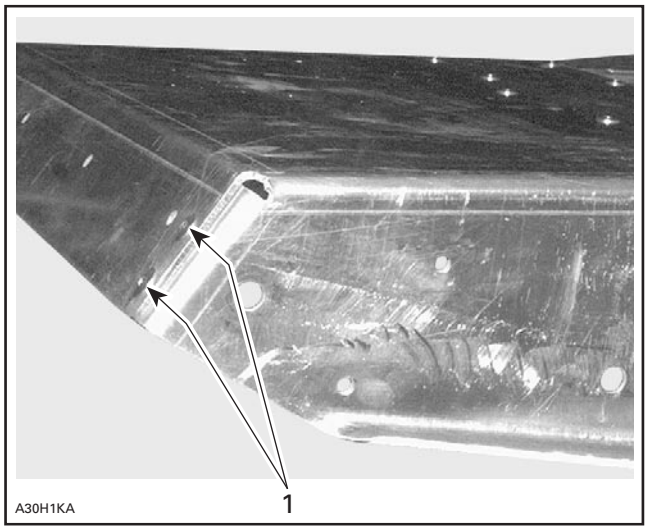


1. M8 bolts and nuts

Tighten nuts on sides of tunnel extension.

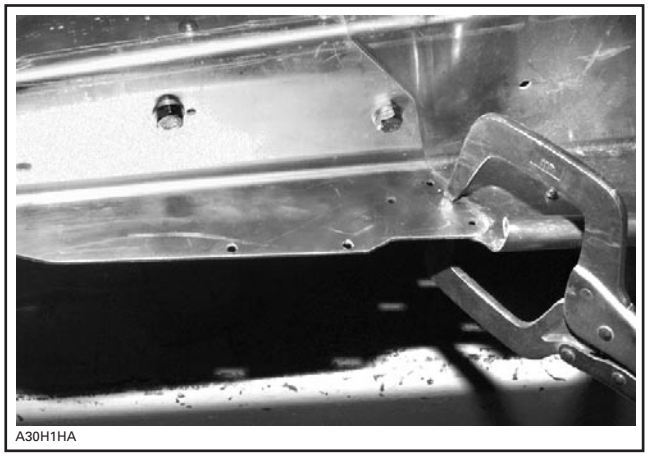
Using tunnel holes as a guide, drill holes in tunnel extension, from the inside, with a 5 mm (13/64 in) drill bit. Drill top holes and side holes.

Remove burrs then rivet extension to tunnel using 4.8 mm (3/16 in) rivets **no. 27**. Drill 2 holes in each rear corner of extension and rivet them.



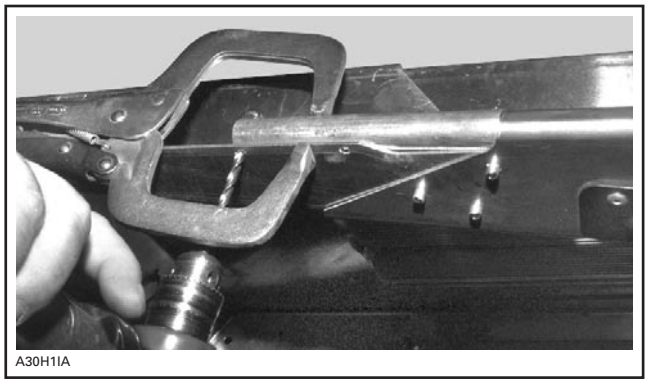
1. Drill two holes each side and install rivets

Using extension holes as a guide, drill holes in footboard and rivet tunnel extension to footboard.



Models with Rounded Footstep Edge Reinforcement

Insert tubes **no. 26** into the footstep edge reinforcements and drill them facing the holes of tunnel extension edge. Secure with rivets.



Aligning snow guard, used as a template, drill 4.8 mm (3/16 in) holes if necessary.

Install snow guard reinforcement and snow guard, and secure with new 4.8 mm (3/16 in) black rivets **no. 28** and flat washers **no. 29**.

Reinstall rear bumper using existing fasteners.

Install rear mouldings **no. 33** and **no. 34** using new 12 x 3/4 self-tapping screws **no. 32** sticking on their respective reflector **no. 35** and **no. 36**.

Reinstall seat.

Install a new track with desired profile paying close attention to the direction of rotation.

Refill chaincase with Bombardier synthetic chaincase oil (P/N 413 803 300).

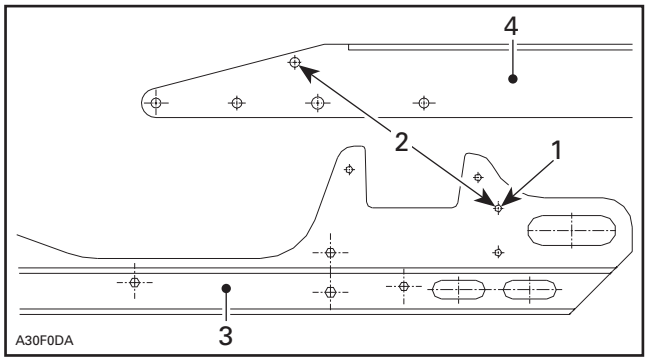
Rear Suspension

Remove rear axle and components.

Discard the 4 bushings on rear axle.

Remove track adjuster and adjuster bolt. Bolt will be reinstalled on rail extension with new track adjuster.

Remove the two bolts holding rear arm lower shaft to side rails. Enlarge hole of rail to 8 mm (5/16 in). Refer to following illustration.

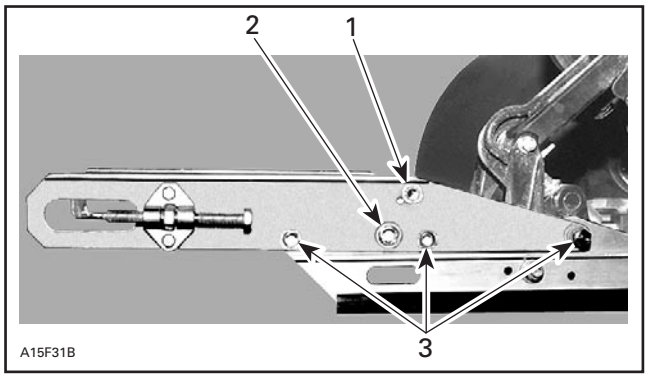


1. *Enlarge this hole to 8 mm (5/16 in)*
2. *Align these 2 holes*
3. *Rail*
4. *Rail extension*

Position both rail extensions **no. 1** and **no. 2** outside of suspension rails, one on each side. Align most forward upper hole of rail extension with lower shaft and secure with new M8 x 30 hexagonal bolts **no. 3**, using new M8 flat washers **no. 30** and new M8 flanged elastic nuts **no. 4**.

Ensure that both rail extensions are touching all along rails.

Using an 8 mm (5/16 in) and 10 mm (13/32 in) drill bits, drill holes in rail using rail extension as a guide. Drill the smallest holes first.



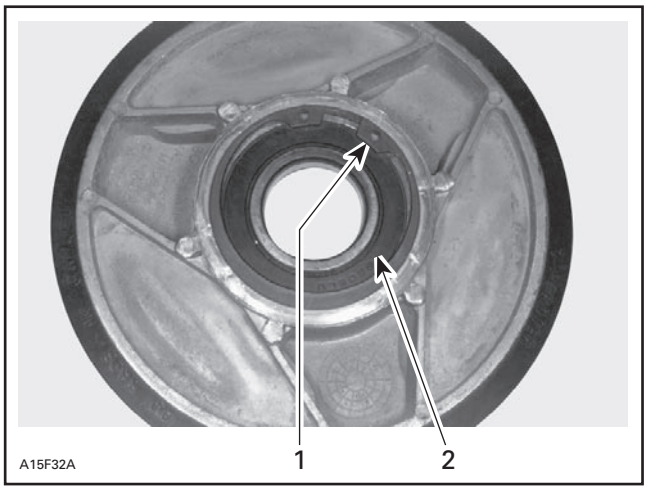
1. *Most forward upper hole*
2. *Drill 10 mm holes (13/32 in)*
3. *Use new M8 x 30 bolts*

Secure extension to rail with M8 x 30 hexagonal bolts **no. 3**, M8 flat washers **no. 30** and M8 flanged elastic nuts **no. 4**, then tighten.

Install spacer plate **no. 8** and tensioner **no. 9** onto extension rails. Secure with bolts M6 x 25 hexagonal **no. 11** and M6 elastic lock nuts **no. 12**.

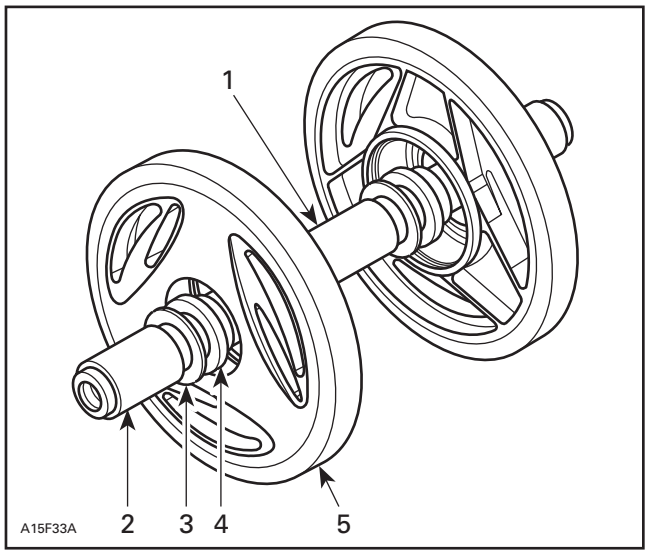
Install tension adjustment bolts and secure with M10 elastic lock nuts **no. 10**.

Install ball bearings **no. 17** into aluminum bonded wheels **no. 16**, retain bearings using circlips **no. 18**.



1. *Circlips*
2. *Ball bearing*

Install axle **no. 13**, spacer **no. 14**, washers **no. 19**, one cushion **no. 20** on both sides of each aluminum bonded wheel **no. 16** and spacers **no. 15** as per the following illustration.



1. *Center spacer **no. 14***
2. *Short spacers **no. 15***
3. *Washers **no. 19***
4. *Cushions **no. 20***
5. *Bonded wheel, bearing and circlip*

Install center axle ass'y in front of rear axle location. Secure with M10 x 45 hexagonal bolts **no. 23**, M10 spring lock washers **no. 22** and M10 flat washers **no. 21**.

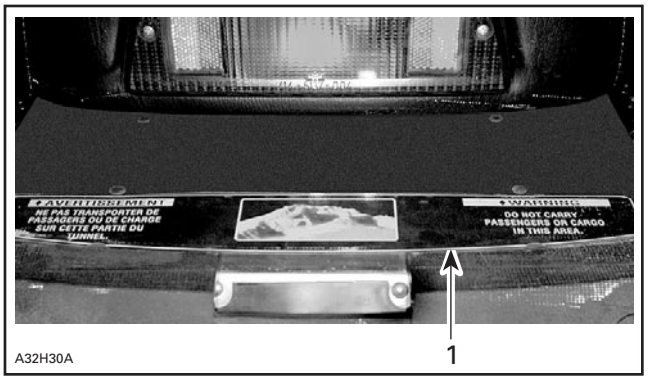
Reinstall rear axle with new spacers. Long spacer **no. 5**, short spacer **no. 6** and exterior spacer **no. 7**. Reuse other components. Apply Loctite 271 (red) to bolt threads.

Ensure to reinstall thin shims to each side of rails.

Suspension Reinstallation

Reinstall rear suspension in tunnel. Pay attention to secure suspension attachments in same holes.

Apply warning label **no. 31** on top of tunnel extension.



1. Warning label

Perform chain tension adjustment as well as track tension and alignment.

Test snowmobile.

⚠ WARNING

Do not carry passengers or cargo in this area.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 grade)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 grade)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59

N•m	FASTENER SIZE (8.8 grade)	Lbf•ft
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

861 783 300

1.	513 189 641	RH Side Rail Extension	Rallonge de porte-glissière droite
2.	513 189 642	LH Side Rail Extension	Rallonge de porte-glissière gauche
3.	207 183 044	M8 x 30 Hexagonal Bolt (8)	Boulon hexagonal M8 x 30 (8)
4.	233 281 414	M8 Flanged Elastic Nut (12)	Écrou élastique à épaulement M8 (12)
5.	503 156 700	Long Spacer	Entretoise (longue)
6.	503 156 800	Short Spacer	Entretoise (courte)
7.	503 172 100	Exterior Spacer (2)	Entretoise (extérieure) (2)
8.	503 156 500	Spacer Plate (2)	Plaque d'écartement (2)
9.	503 155 300	Tensioner (2)	Tendeur (2)
10.	233 601 416	M10 Elastic Lock Nut (2)	Écrou autobloquant élastique M10 (2)
11.	207 162 544	M6 x 25 Hexagonal Bolt (4)	Boulon hexagonal M6 x 25 (4)
12.	232 561 414	M6 Elastic Lock Nut (4)	Écrou autobloquant élastique M6 (4)
13.	503 152 800	Axle	Essieu
14.	503 153 100	Spacer	Entretoise
15.	503 151 000	Spacer (2)	Entretoise (2)
16.	570 066 622	Aluminum Bonded Wheel (2)	Roue en aluminium (2)
17.	405 404 500	Ball Bearing (2)	Roulement à billes (2)
18.	371 901 700	Circlip (2)	Circlip (2)
19.	503 154 000	Washer (4)	Rondelle (4)
20.	503 189 534	Cushion (4)	Coussinet (4)
21.	234 001 410	M10 Flat Washer (2)	Rondelle plate M10 (2)
22.	234 100 602	M10 Spring Lock Washer (2)	Rondelle-frein à ressort M10 (2)
23.	222 004 565	M10 x 45 Hexagonal Bolt (2)	Boulon hexagonal M10 x 45 (2)
24.	503 172 300	Tunnel Extension	Rallonge de tunnel
25.	207 182 044	M8 x 20 Hexagonal Bolt (4)	Boulon hexagonal M8 x 20 (4)
26.	503 172 600	Tube (2)	Tube (2)
27.	390 402 200	4.8 mm (3/16 in) Rivet (30)	Rivet 4.8 mm (3/16 po) (30)
28.	390 909 600	4.8 mm (3/16 in) Black Rivet (4)	Rivet noir 4.8 mm (3/16 po) (4)
29.	517 225 900	Flat Washer (4)	Rondelle plate (4)
30.	234 081 410	M8 Flat Washer (8)	Rondelle plate M8 (8)
31.	516 000 635	Warning Label (not illustrated)	Étiquette d'avertissement (non illustré)
32.	365 901 100	12 x 3/4 Self-Tapping Screw (6)	Vis autotaraudeuse 12 x 3/4 (6)
33.	572 097 300	RH Moulding	Enjoliveur droit
34.	572 097 400	LH Moulding	Enjoliveur gauche
35.	516 000 237	RH Reflector (not illustrated)	Réflecteur droit (non illustré)
36.	516 000 238	LH Reflector (not illustrated)	Réflecteur gauche (non illustré)

TUNNEL REINFORCEMENT
(P/N 861 801 200) YELLOW
(P/N 861 801 300) VIPER RED

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. Torque wrench tightening specifications must strictly be adhered to; refer to table at the end of this document. This instruction sheet should be given to the purchaser.

This kit is designed for specific applicable models only (your authorized Ski-Doo snowmobile dealer will confirm models). It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 0.4 hour.

PARTS TO BE INSTALLED

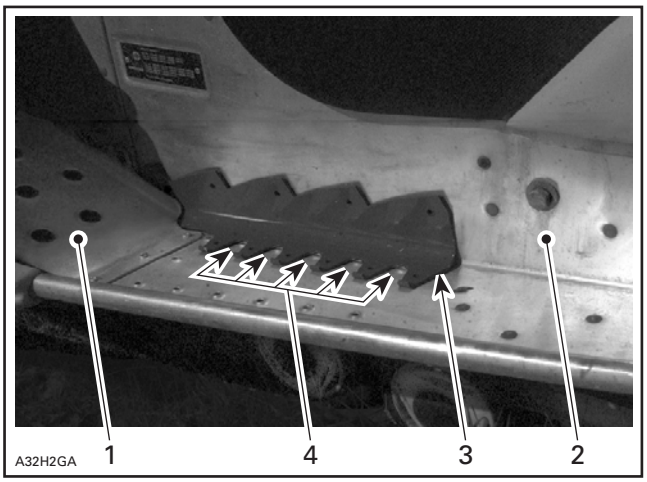
This kit consists of:

1. RH Tunnel Reinforcement
2. LH Tunnel Reinforcement
3. 4.7 mm (3/16 in) Rivet (22)

in either yellow (P/N 861 801 200) or viper red (P/N 861 801 300).

INSTRUCTION

Position left side reinforcement no. 2 at front between footrest and tunnel as per following photo.



1. Footrest
2. Tunnel
3. Reinforcement
4. Holes properly centered

NOTE: Holes must be centered in reinforcement openings so it properly sits on floor.

Use reinforcement as template to drill 4.7 mm (3/16 in) holes.

Secure in place with rivets no. 3.

Repeat on right side with reinforcement no. 1.

Installation is now complete.

The following table is to be consulted if and when a tightening torque is required but not specified.

Bold face size indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•**in**
2	**M4**	18
3	M4	27
4	**M5**	35
8	M6	71
9	M6	80
10	**M6**	89
11	**M6**	97
12	**M6**	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	**M8**	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	**M10**	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58
80	**M12**	59
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	**M14**	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

861 801 200
YELLOW/JAUNE

1.	518 322 817	RH Tunnel Reinforcement	Renfort de tunnel droit
2.	518 322 818	LH Tunnel Reinforcement	Renfort de tunnel gauche
3.	390 910 200	4.7 mm (3/16 in) Yellow Rivet (22)	Rivet jaune de 4.7 mm (3/16 po) (22)

861 801 300
VIPER RED/ROUGE VIPÈRE

1.	518 322 805	RH Tunnel Reinforcement	Renfort de tunnel droit
2.	518 322 806	LH Tunnel Reinforcement	Renfort de tunnel gauche
3.	390 909 800	4.7 mm (3/16 in) Viper Red Rivet (22)	Rivet rouge vipère de 4.7 mm (3/16 po) (22)