Bombardier
Recreational Products Inc.

ski-doo Snowmobiles

MODEL NAME	SERIAL NUMBER

PREDELIVERY CHECK LIST

THIS CHECK LIST MUST BE USED IN CONJUNCTION WITH THE *PREDELIVERY BULLETIN* OF THE APPLICABLE SNOWMOBILE.

NOTE PERTAINING TO THE DESS
(Digitally Encoded Security System)

The use of the following tool is mandatory for programming:

MPEM programmer (P/N 529 035 878) with version 3.5 and up (all liquid cooled models with DESS, except 4-TEC, SDI and POWER T.E.K. models).

OR

VCK (Vehicle Communication Kit) (P/N 529 035 981) and the B.U.D.S. (Bombardier* Utility and Diagnostic Software) (4-TEC and SDI models as well as all liquid cooled models with DESS). Make sure to obtain the latest version of B.U.D.S. available on BOSSWeb.

NOTE: For detailed information pertaining to the use of the VCK, use the help menu inside the B.U.D.S. software or if using the MPEM programmer, refer to the guide that is shipped with it.

When programming, first start by erasing the previously factory programmed keys.

NOTE: Some items only apply to certain vehicles. For specific items refer to appropriate *Predelivery Bulletin*.

PARTS TO BE INSTALLED	✓
Battery (full charged)	
Steering pad/cover/holding strap	
Skis	
Bumper, front/rear (w/molding)	
Front/rear suspension components	
Backrest	
Drive belt	
Windshield	
Snow guard	
Any other equipment as required by law ①	
Passenger's seat (if not installed)	
30 amp. fuse (SDI only)	
Other	

① In some areas, some equipments are required by law like a left side rear-view mirror and a speedometer. Check local regulations.

OPTIONS/ACCESSORIES	✓
High/low altitude kit	
Other	

LIQUIDS	✓
Brake fluid	
Engine oil (4-TEC)	
Fuel	
Injection oil (fill and bleed)	
Coolant	
Chaincase/gearbox oil	
Grease/lubricant	

ADJUSTMENTS	✓
Handlebar	
Track tension/alignment	
Front and rear suspensions	
Speedometer reading (miles or kilometers)	
Other	

FINAL INSPECTION	✓
Inspect movement and operation of:	
Throttle/brake lever/parking brake	
Ignition/emergency stop/tether cut-out switches	
Headlamp/taillight/brake light	
Dimmer switch/pilot lamps	
Accessories	
Test run snowmobile.	
Clean and polish snowmobile.	

AT SALE, EXPLAIN TO OWNER	✓
The *Operator's Guide*, *Safety Videocassette*, all on-product warning labels, Bombardier Extended Service Terms program (B.E.S.T.) and limited warranty policy and give same to customer. Advise the owner that some equipments are required by law to use this vehicle.	

AT DELIVERY	✓
Complete and return warranty registration signed by owner.	

PREPARED BY:	DATE: month / day / year
DEALER NO.:	
INSPECTED BY:	DATE: month / day / year
DEALER SIGNATURE: ✗	

The dealer named on this document has instructed me on the operation, maintenance, safety features and warranty policy, all of which I understand. The Bombardier Extended Service Terms program (B.E.S.T.) has been presented to me. I am also satisfied with the predelivery set-up and inspection of my snowmobile.

OWNER SIGNATURE: ✗	DATE: month / day / year
PRINT:	

For SDI Models Only

init. ☐	The dealer has informed me of the importance of using the XP-S synthetic 2-stroke oil (replacing Formula XP-S II synthetic injection oil).
init. ☐	The dealer has verified that the injection oil reservoir has been filled with XP-S synthetic 2-stroke oil.
OWNER SIGNATURE: ✗	

For 4-TEC Models Only

init. ☐	The dealer has informed me of the importance of using the XP-S 0W40 Synthetic 4-Stroke engine oil (replacing Bombardier 4-Stroke engine oil 0W40).
init. ☐	The dealer has verified that the engine has been filled with XP-S 0W40 Synthetic 4-Stroke engine oil.
OWNER SIGNATURE: ✗	

NOTE: File this document in vehicle file. Give a copy to owner.

Printed in Canada. (Mbl2005-001a.fm SC)

Please route to:

Init.

- Service
- Sales
- Parts

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **January 13, 2004** Subject: **MX Z 600 HO (R) SDI** No. **2005-1**

YEAR	MODEL	PACKAGE	MODEL NUMBER	PREDELIVERY KIT P/N	SERIAL NUMBER
2005	MX Z 600 HO (R) SDI	Renegade	BX5A/BX5B	549 011 174	All

TABLE OF CONTENTS

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products inc. BRP however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

PREDELIVERY KIT

No. 1 (549 011 174)

NOTE: Predelivery kits contains parts for various models, all parts may not be necessary for all vehicles, refer to the following table for proper parts usage.

Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Plug	414 916 600	2	6
Rear Suspension	YES	Wheel Cap	570 063 600	2	17
Front Suspension	YES	Ski Stopper	505 070 671	2	7
	YES	Washer	732 900 049	2	7
	YES	Elastic Flanged Nut M10	732 610 084	2	7
	YES	Elastic Flanged Nut M10	233 201 414	4	6
Steering	YES	Hexagonal Flanged Bolt M6 x 20	207 662 084	1	11
	YES	Washer 6 mm	234 061 410	4	11
	YES	Elastic Nut M6	232 561 414	1	11
Windshield	YES	Screw M6 x 16	250 000 129	4	12
	YES	Nut M6	250 000 135	4	12
	YES	Nylon Washer	517 302 736	4	12
	NO	Rivet	293 150 089	3	N/A

UNCRATING

Crate Cover

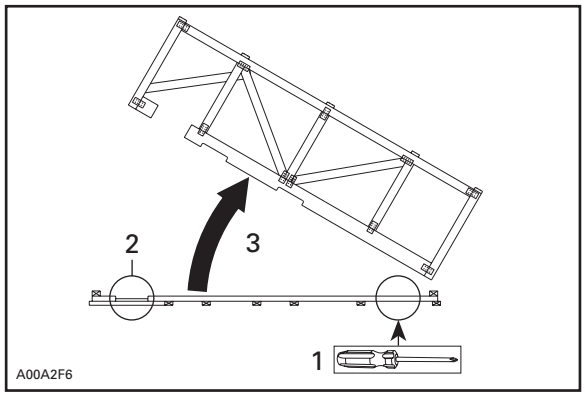
- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

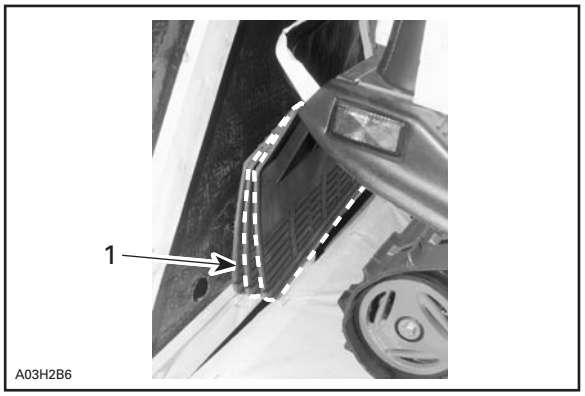
- Using a drill or a screwdriver, remove all screws [1] retaining crate cover to crate base.
- Tilt [3] the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle [2].

- Lift the crate cover slowly to avoid damaging the vehicle.



NOTE: On some models, if cover is tilted toward the front of the vehicle, snow guard may interfere with crate cover, push on snow guard **[**1**]** when lifting cover.

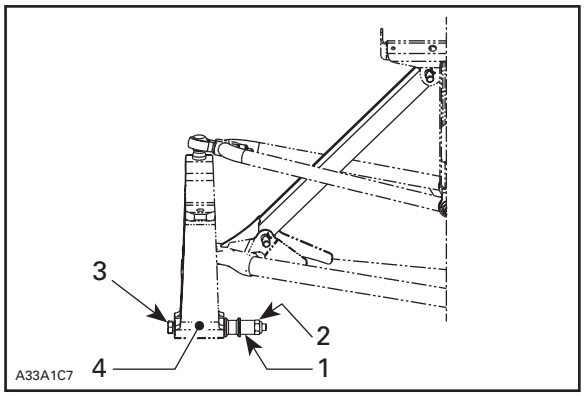


- Remove polyethylene foam protective sheets.
- If applicable, remove from vehicle or crate base:
  - drive belt (engine compartment)
  - detach windshield from seat
  - predelivery boxes
  - skis (discard bolts and washers)

Crate Brackets

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

- Cut locking ties and remove ski leg wood protectors.
- Detach ski legs from crate shipping brackets.
- Discard shipping spacers **[**1**]** and nuts **[**2**]**.
- Keep ski leg bolts **[**3**]** and slider cushions **[**4**]** for skis installation.



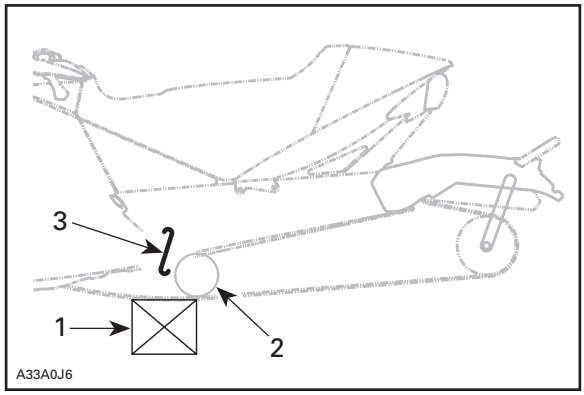
- Using a pry bar, remove wood blocks retaining the track to the crate base.
- Remove the vehicle from the crate base.

Front Hook(s)

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Apply the parking brake.
- Lift the rear of the vehicle so that a block or a box **[**1**]** can be positioned under the front idler wheel **[**2**]**.
- Cut the locking tie retaining the front hook **[**3**]**.
- Ask another person to apply pressure onto the rear suspension.
- Remove front hook(s) from suspension.



⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

Rear Hook

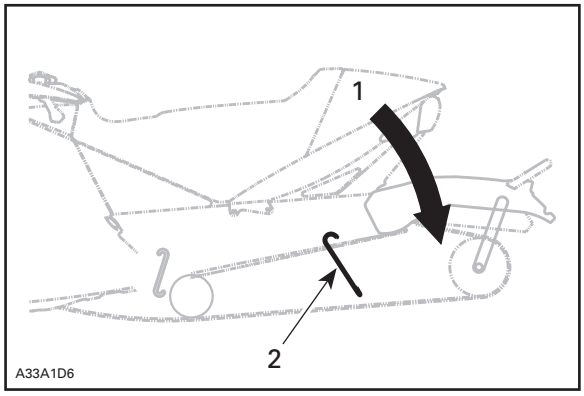
⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Make sure that parking brake is applied.
- Lift the front of the vehicle to position bumper approximately 1 meter upward (35 to 40 inches).
- Standing on footwells, sit roughly to apply pressure **[**1**]** onto the rear suspension to free the rear hook **[**2**]**.

CAUTION: To avoid any damage to the seat, always sit on the seating surface.

- Remove the rear hook from the suspension.



⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

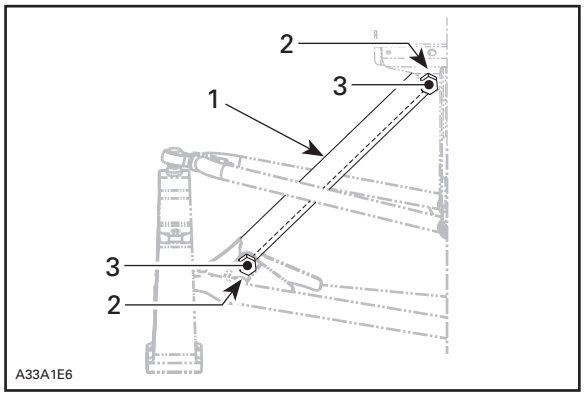
SET-UP

Shipping Brackets

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to. Where specified, install new locking devices (e.g. lock tabs, elastic stop nuts). If the efficiency of a locking device is impaired, it must be renewed.

- Make sure that parking brake is applied.
- Remove and discard the shipping brackets **[**1**]** from the front suspension.
- Discard the spring clips **[**2**]**.
- Keep the hexagonal bolts **[**3**]** for the front shocks installation.



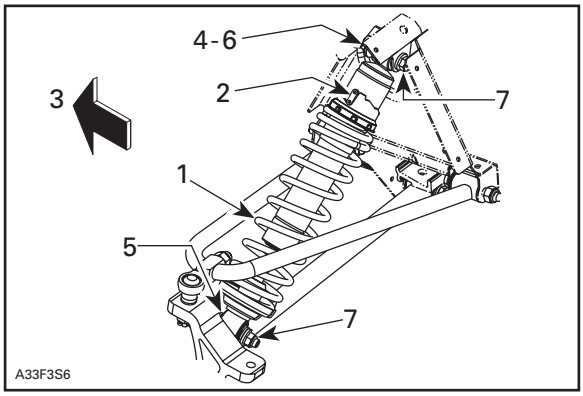
Front Shocks

- Position front shock absorbers **[**1**]** in place with their adjustment ring at the top **[**2**]**.

NOTE: **[**3**]** indicates the front of the vehicle.

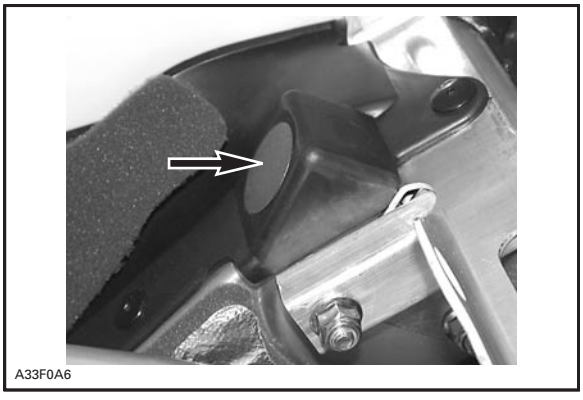
- Secure each shock absorber to suspension using:

  - **[**4**]** hexagonal bolt M10 x **60** (previously removed)
  - **[**5**]** hexagonal bolt M10 x **55** (previously removed)
  - **[**6**]** washer (previously removed)
  - **[**7**]** 2 elastic flanged nuts M10 (predelivery kit).

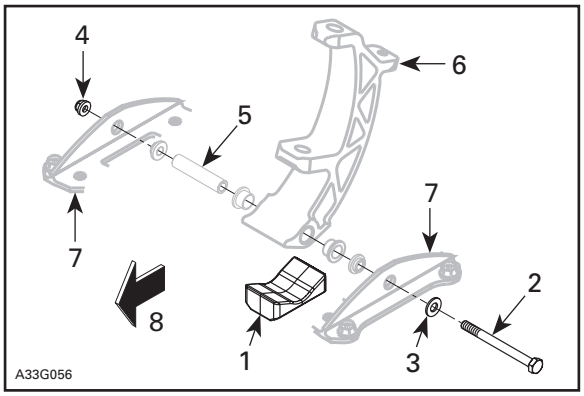


Bottom Pan Caps

- Install plastic caps provided in the predelivery kit on the bottom pan.



Skis



- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**7**]** to ski leg **[**6**]** using:
  - **[**2**]** hexagonal bolt M10 x 110 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit)

NOTE: **[**8**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Battery Preparation

All vehicles with SDI engine and **without** electric starting are equipped with a **YT4L-BS** type battery that requires a specific charging procedure at predelivery.

- Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area.
Never charge or boost battery while installed on vehicle.
Do not open the sealed caps during charging.
Do not place battery near open flame.

- These sealed batteries have to be tested with a voltmeter.
- Batteries with a voltage of 12.8 volts and above, no charge is required
- Batteries with a voltage of 12.7 volts and below must be charged as follows:

BATTERY TYPE	STANDARD CHARGE	QUICK CHARGE
YT4L-BS	0.4 Amps/hour for 5 to 10 hours	4.0 Amps/hour for 30 min.

Battery Removal

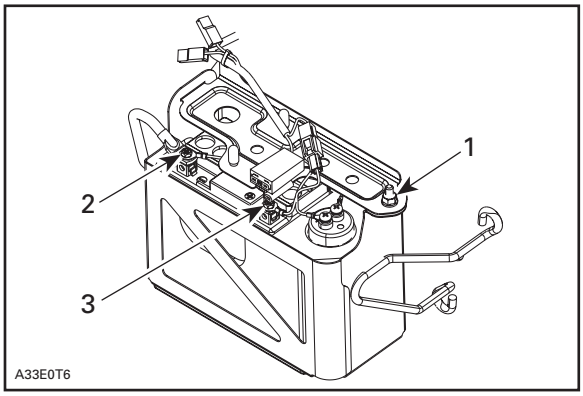
⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

- Open the right side panel of the vehicle.
- Remove the bracket by unscrewing the bracket retaining nut [1].
- Remove the battery plastic cover.
- Disconnect BLACK negative cable [2] from the terminal.
- Disconnect RED positive cable [3] from the terminal.
- Remove the battery.



Battery Installation

- Properly position the battery on its rack.
- Connect RED positive cable it to positive battery terminal.
- Connect RED wire (coming from 30 A fuse).
- Connect BLACK negative cable LAST.
- Connect ground wire from harness.
- Apply silicone dielectric grease (P/N 293 550 004) on battery posts and connectors.
- Install the battery plastic cover.
- Install the bracket and screw the bracket retaining nut.

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

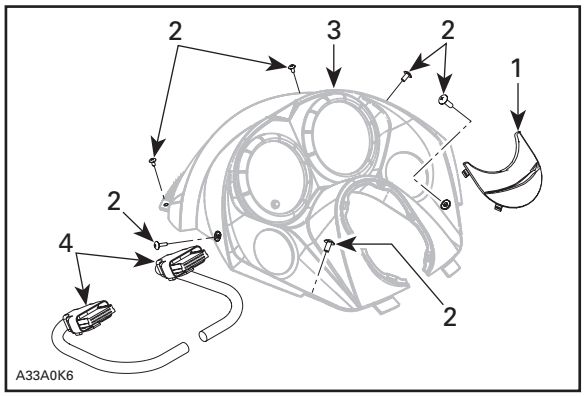
Never charge or boost battery while installed on vehicle.

Fuse Installation

- Located on the top of the battery support bracket, remove the 30 A fuse from its plastic bag and install it into the fuse holder located on the battery support bracket.

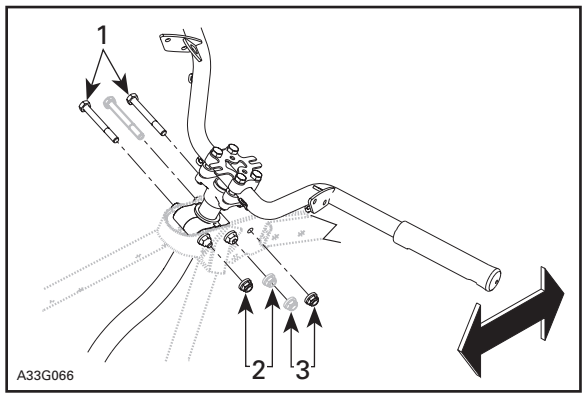
Steering Column Adjustment

- Steering column position is adjustable fore and aft.
- At the factory, steering column is adjusted in **forward** position.
- If you prefer to adjust the steering column in forward or rearward position, proceed as follows.
- Remove console cap **[**1**]**.
- Remove the 6 screws **[**2**]** retaining the console.
- Slightly lift the console **[**3**]** to gain access to the electrical connector housing(s).
- Unplug the large connector housing(s) **[**4**]**.



- Remove the 2 bolts **[**1**]** retaining the top of the steering column.
- Adjust the steering column according to customer riding style:

  - **[**2**]** for **forward** position
  - **[**3**]** for **rearward** position.



NOTE: Should rearward position be selected, it is mandatory, while changing column position, to relocate fuel tank vent hose as per following procedure.

- Locate blue check valve **[**1**]**.
- Disconnect fuel tank vent hose from blue check valve.
- Reroute fuel tank vent hose under upper cross member.

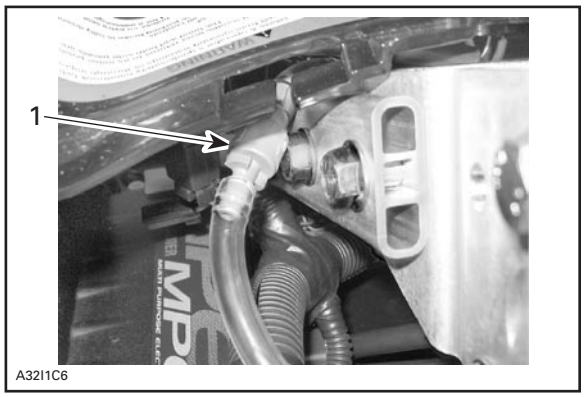
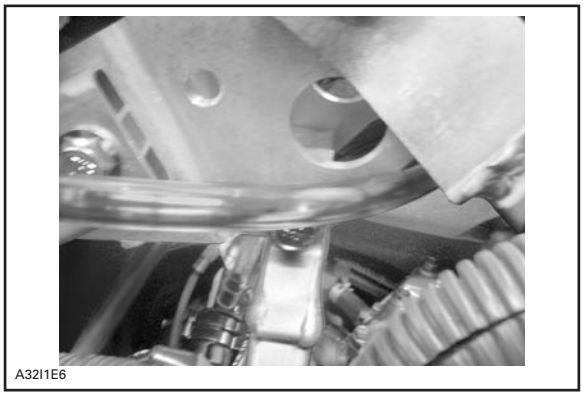


Photo shows routing with forward position steering column.


A32I1D6

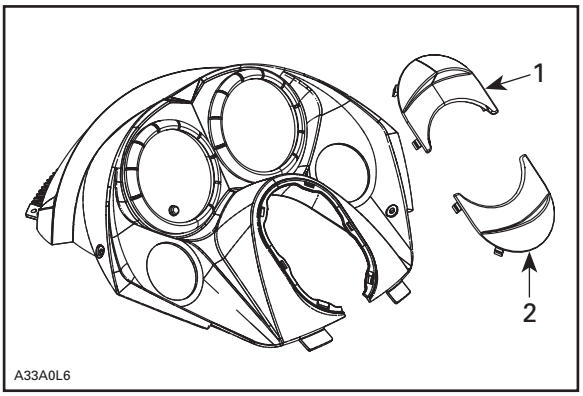
Photo shows routing with rearward position steering column.


A32I1E6

- Reconnect fuel tank vent hose to blue check valve.
- Reinstall the 2 bolts and elastic nuts.

Torque the elastic nuts to 24 N•m (**18** lbf•ft)**.**

- Plug in the large connector housing(s) previously unplugged.
- Reinstall the console and secure with previously removed screws.
- Position of console cap will be:
  - **[**1**] above** steering column for rearward steering position
  - **[**2**] beneath** steering column for forward steering position.



A33A0L6

Handlebar

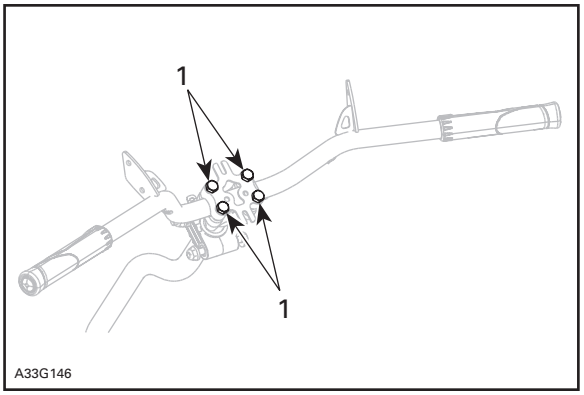
- Loosen bolts **[**1**]** retaining the handlebar to the steering column.

NOTE: On some models, remove connectors from steering column to have a better access to bolts.

- Adjust the handlebar so that the brake fluid reservoir is level.
- Secure the handlebar to the steering column.

Torque to 24 N•m (**18** lbf•ft)**.**

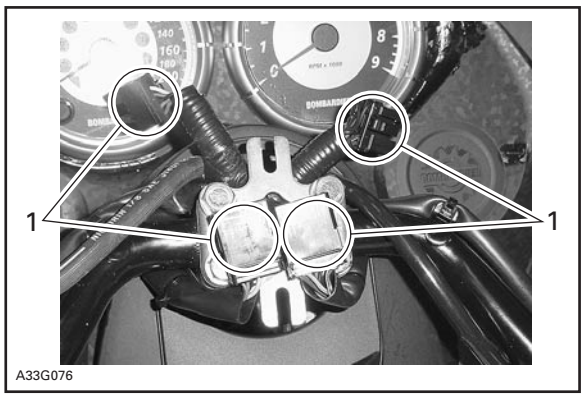
- If applicable, reinstall the steering harness connectors on the steering column brackets.



A33G146

Steering Column Connectors

- On some models, clip the main harness connectors on the steering column brackets.
- Connect **[**1**]** main harness to steering harness.

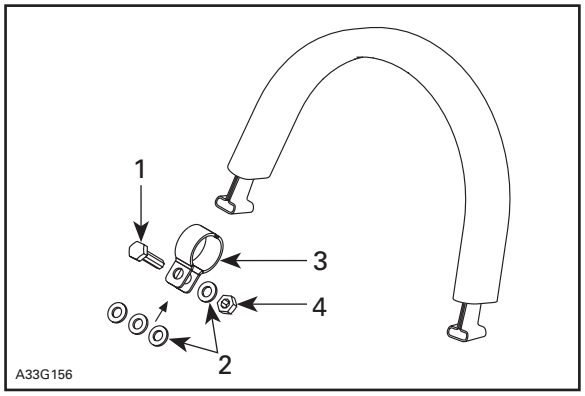


Steering Holding Strap/Cover

- Cut the locking tie retaining the holding strap end to the handlebar.
- Secure the holding strap end to the handlebar using:

NOTE: Retaining clip and hardware should be installed in the same position as the opposite side strap end.

- **[**1**]** hexagonal flanged bolt (predelivery kit)
- **[**2**]** 4 flat washers (predelivery kit)
- **[**3**]** retaining clip (previously removed)
- **[**4**]** elastic nut (predelivery kit)



Torque to 11 N•m (**97** lbf•**in**)**.**

NOTE: Wires route along the handlebar. To avoid pinching them, take care to keep wires out of retaining clip.

Steering Cap

- Clip steering cap in place (predelivery box).

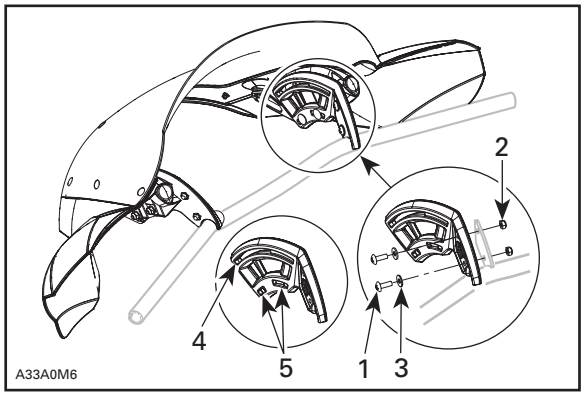
Windshield

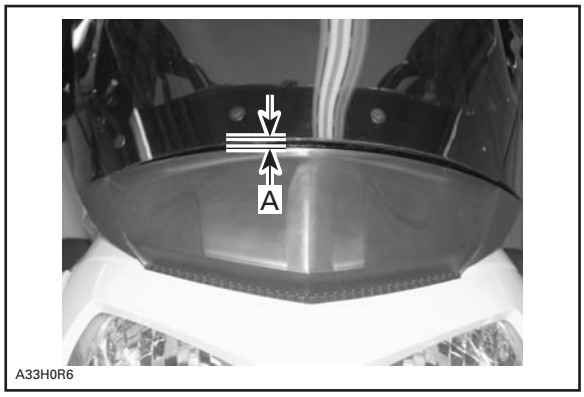
- Remove protective films from windshield.
- Position windshield in place.
- Secure windshield to handlebar using:
  - [1] 4 screws M6 x 16 (predelivery kit)
  - [2] 4 elastic nuts M6 (predelivery kit)
  - [3] 4 nylon washers (predelivery kit)

NOTE: Screws toward the inside of the vehicle.

- Two slots are provided for installation with forward [5] or rearward [4] handlebar position.
- Turn the handlebar completely from side to side to make sure there is no contact with hood.

NOTE: For a good fit, a gap [A] of 8 to 12 mm (3/8 to 1/2 in) between windshield and moulding is suggested.



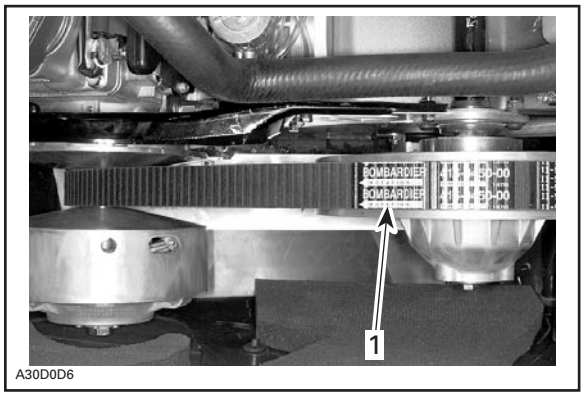


Drive Belt

- Clean pulleys and disc brake before installing the drive belt.

NOTE: Use a suitable cleaner such as Pulley flange cleaner (P/N 413 711 809).

CAUTION: The arrow [1] is indicating the direction of rotation (see typical illustration).



FINAL PREPARATION

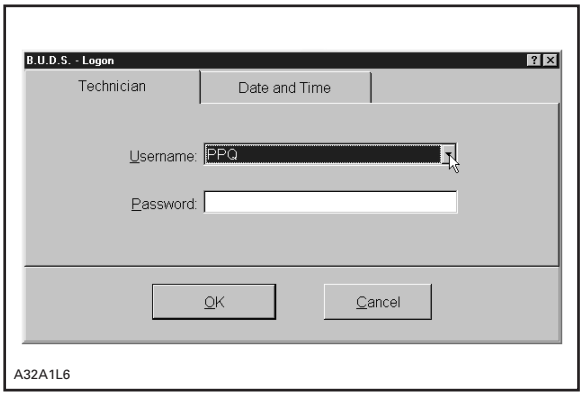
B.U.D.S. Version

- Make sure to use the latest B.U.D.S. version **G2.1.0**.

Important: This newest version of B.U.D.S. will require a **new access code** when initially using your VCK after it is installed. Contact your service representative for this code.

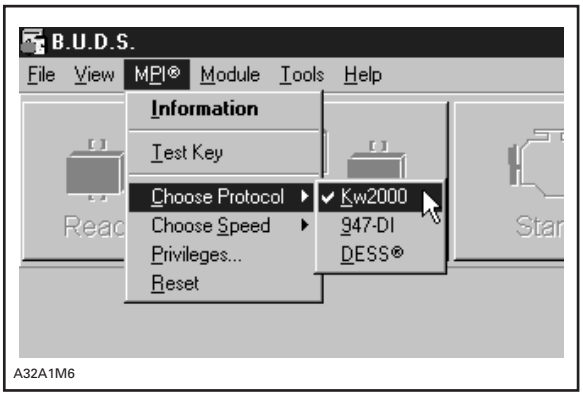
MPI (Connecting)

- Start B.U.D.S.



A32A1L6

- Select the vehicle's Protocol (Kw2000) in *Choose Protocol* from the MPI menu.
- Wait a few seconds while B.U.D.S. loads the protocol into the MPI.



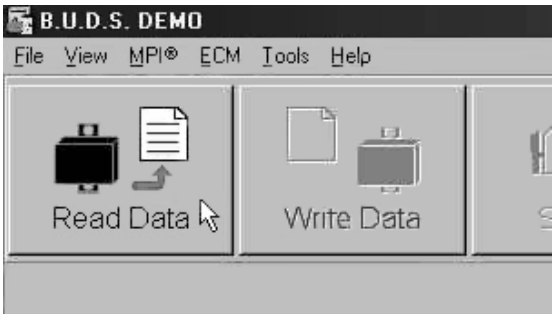
A32A1M6

- Connect the 6–pin adapter to the diagnostic connector of the vehicle.
- Insert the *Grey* DESS key (P/N 529 035 896) on the DESS post.
- Push the engine cut-out switch to the lower OFF position.
- Press the *Start* button of the vehicle to wake up the ECM.

NOTE: You have 30 seconds to start communication before the ECM shuts down.


A32A1N6

- Click on *Read Data* from the tool bar to initiate communication and to read the content of the ECM.

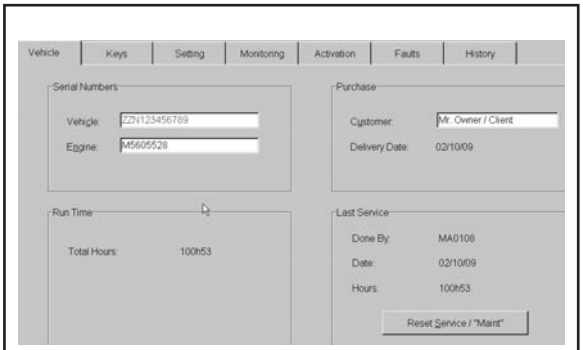


A32A1O6

B.U.D.S. (Customer Name)

- Click on the *Vehicle* tab to open the vehicle information page.
- Type the name of the customer in the *Customer* zone.

NOTE: After you are finished typing the name, B.U.D.S. automatically updates the delivery date on the screen.



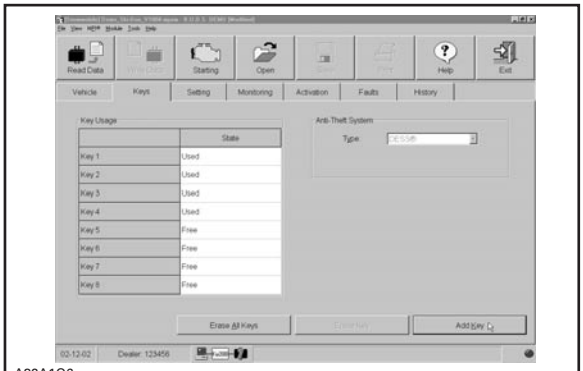
A32A1P6

B.U.D.S. (Programing a DESS Key)

- Click on the *Keys* tab to open the DESS keys page.
- Click on *Erase All Keys*.
- Click on *Add Key*.

NOTE: A dialog box opens and asks you to insert a key on the MPI DESS post.

- If the key that you inserted on the MPI DESS post was successfully read and added to the document, message box will appear.
- Click on *OK*.
- Repeat steps *3* to *5* for each DESS key you want to program into the vehicle.
- Write the document into the vehicle by clicking on *Write Data* from the tool bar.
- Wait for B.U.D.S. signal then remove the *Grey* key from the vehicle DESS.



A32A1Q6

Recommended Oil

CAUTION: Use only oil that flows at - 40°C (- 40°F).

- Oil is contained in the injection oil reservoir.
- Use only two-stroke engine injection oil, sold by authorized SKI-DOO dealers.

OIL TYPE
†BOMBARDIER FORMULA XP-S II synthetic injection oil [1]

CAUTION: [1] The BOMBARDIER Formula XP-S II oil is specially formulated and tested for the severe requirements of this engine. Use of any other brand two-stroke oil may void the limited warranty. Use only BOMBARDIER FORMULA XP-S II oil. There is no known equivalent on the market for the moment. If a high quality equivalent were available, it could be used.

The BOMBARDIER FORMULA XP-S II synthetic injection oil provides superior lubrication, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. This synthetic injection oil meets the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

CAUTION: Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard two-stroke engine oils or ashless two-stroke engine oils. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

⚠ WARNING
Wipe off any oil spills. Oil is highly flammable.

Break-in Period

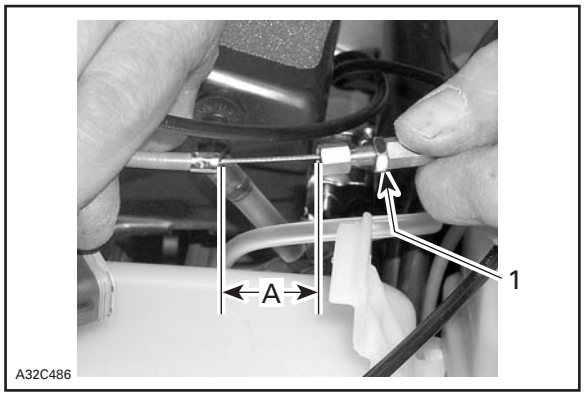
- To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz) of BOMBARDIER Formula XP-S II synthetic injection oil (P/N 293 600 045 – 12 x 1 L) should be added to fuel for the first full filling of fuel tank.

NOTE: Always remove and clean spark plugs after engine break-in.

Oil Pump Adjustment

Oil injection pump is factory set. However, if adjustment needs to be checked or modified, stretch cable sheath to fully open oil pump.

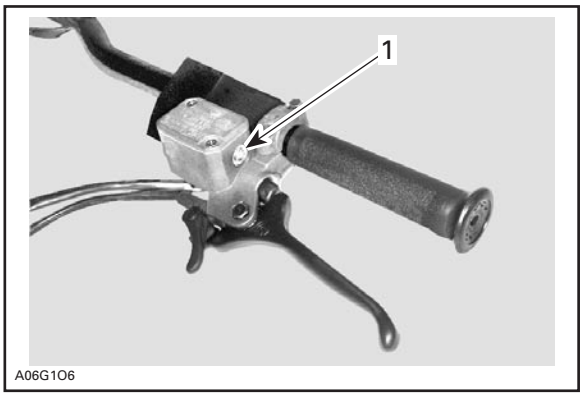
- Wire length **[**A**]** must be 18 mm (11/16 in).
- If necessary, turn the adjustment nut **[**1**]** to reach this mesure.



Brake Fluid Level

- Check brake fluid in reservoir for proper level **[**1**]**.
- Add brake fluid (DOT 4) as required.
  - Use SRF (DOT 4) (P/N 293 600 063)
  - or GTLMA (DOT 4) (P/N 293 600 062).

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Do not store or use a started bottle of brake fluid.



Track

- Refer to *Shop Manual* to adjust track tension and alignment.

NOTE: Track deflection is 30 to 35 mm (1-3/16 to 1-3/8 in) with a downward pull of 7.3 kg (16 lb).

- Install caps provided in Predelivery Kit.

NOTE: If lubricant is needed to help cap installation, use lens cleaner instead of soapy water to avoid cap to get out from its location due to soap residual.

Disk Brake

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

DELIVERY TO CUSTOMER

Speedometer

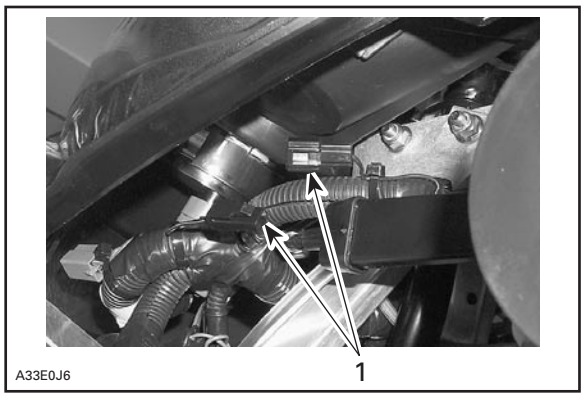
This model is equipped with an electronic speedometer, it may show speed in km/h or MPH.

NOTE: At the factory speedometer, odometer and trip meter is adjusted for miles reading.

- Proceed as follow to change units from miles to kilometers.

NOTE: At a speed of 90 km/h (55 MPH) and more, the LCD mode screen will show speed only instead of the selected mode.

- Stop engine and open hood.
- Cut locking ties.
- Plug connectors **[**1**]** together to change units from miles to kilometers.
- Unplug to return to miles reading.
- Fasten connector to harness with locking ties.



Heated Carburetor Valve

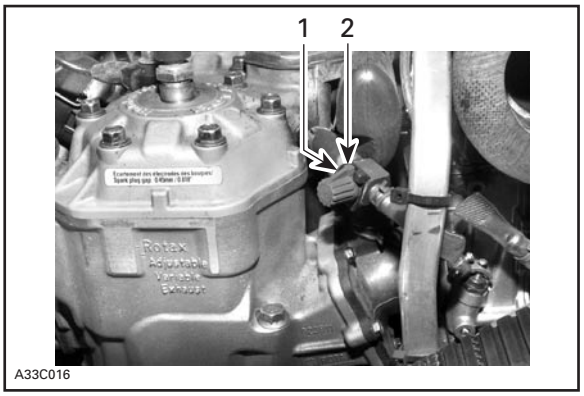
Heated carburetor valve position:

- **ON [**1**]**
- **OFF [**2**]**.

- The heated carburetor valve should be closed **[**2**]** except:

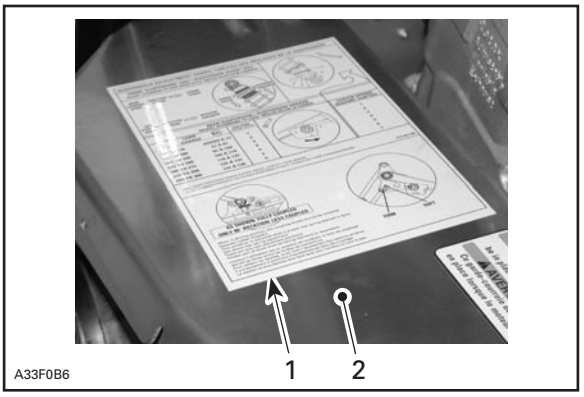
  - When riding between - 5°C and 5°C (23°F and 41°F) in a high relative humidity.
  - When riding in deep powder snow.
  - When following another snowmobile which makes snow dust .

CAUTION: When operating the snowmobile above 5°C (41°F), move the carburetor heating valve to the **OFF [**2**]** position.



Rear Suspension Adjustments

- Rear suspension is calibrated at factory. At predelivery, mechanics should perform suspension adjustments according to customer riding style and vehicle load as described on suspension adjustment chart **[**1**]** which is located on pulley guard **[**2**]**.



SPECIFICATIONS

Technical Data

The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile.

- Vehicles used at high altitudes, above 600 m (2000 ft) should be fitted with a high altitude kit. Further inquiries should be directed to your distributor service representative.

MODEL		MX Z 600 HO (R) SDI
ENGINE		
Engine Type		593 HO SDI
Maximum HP RPM [1] ±100 RPM		8000
FUEL SYSTEM		
Throttle Body Type		Dell'Orto without IACV
Sensors Typical Resistance	Throttle Position (TPS)	1.6 kΩ – 2.4 kΩ
	Coolant Temperature Sensor (CTS)	2.28 kΩ – 2.74 kΩ @ 20°C
	Air Temperature Sensor (ATS)	2.28 kΩ – 2.74 kΩ @ 20°C
	Exhaust Temperature Sensor	18.0 Ω – 22.0 Ω @ 20°C ± 3°C
Idle Speed RPM ± 200 RPM		1500
Gas Grade/Pump Octane Number (R + M)/2		Premium unleaded/91
Gas/Oil Ratio		Oil Injection
ELECTRICAL		
Magneto Generator Output W		486
Ignition System Type		CDI
Ignition Timing BTDC [2] [3] [6] mm/in		5.390 (0.2122)
Spark Plug	Make and type	[5] BR9ECS
	± 0.05 mm (± .002 in)	0.80 (.032) [6]
TRANSMISSION		
Gear Ratio Teeth		TRACK 1.25: 21/43 TRACK 1.75: 19/43
Engagement Speed ± 100 RPM		3800
Drive Pulley Calibration Screw Position		3
Pulley Distance	Z [4] ± 0.5 mm (± .020 in)	19.0 (0.748)
Offset	X ± 0.5 mm (± .020 in)	37.0 (1.457)
	Y ± 0.5 mm (± .020 in)	Dimension Y must exceed X of 1.50 mm (.059 in)
Driven Pulley Preload ± 0.7 kg (± 1.5 lbf)		0.0 (0.0)
Drive Chain Tension		Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

[1] Engine speed at which maximum power is achieved.

[2] At 4000 RPM (engine cold) with headlamp turned on.

[3] During the first 8 hours, the timing curve is retarded between 4500 RPM and maximum RPM. Because checking ignition timing is done at lower RPM, this will not affect the 4000 RPM timing specification.

[4] Z dimension without torque rod preload. After Z dimension adjustment, hand tight torque rod until plastic pad cannot be turned, then turn torque rod an additional half turn. Lock jam nut.

CAUTION: [5] Do not attempt to adjust gap on spark plug BR 9 ECS.

[6] With air pressure sensor disconnected.

Please route to :

Init.

- ☐ Service ☐
- ☐ Sales ☐
- ☐ Parts ☐

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **April 23, 2004** Subject: **Tundra** No. **2005-2**

YEAR	MODEL	MODEL NUMBER	PREDELIVERY KIT P/N	SERIAL NUMBER
2005	Tundra™	FK5A/FK5B	549 011 172	All

TABLE OF CONTENTS

Printed in Canada. (mbl2005-003 DR / SG)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

PREDELIVERY KIT

Parts List

NOTE: Predelivery kits contains parts for various models, all parts may not be necessary for all vehicles, refer to the following table for proper parts usage.

549 011 172					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Ski	YES	Elastic Stop Nut M10	233 601 416	2	4
Front Bumper	YES	Elastic Stop Nut M8	232 581 414	4	5
	YES	Bushing (Short)	517 250 700	2	5
	YES	Bushing (Long)	517 250 600	2	5
Hood	YES	Windshield Latch	570 023 800	9	6

UNCRATING

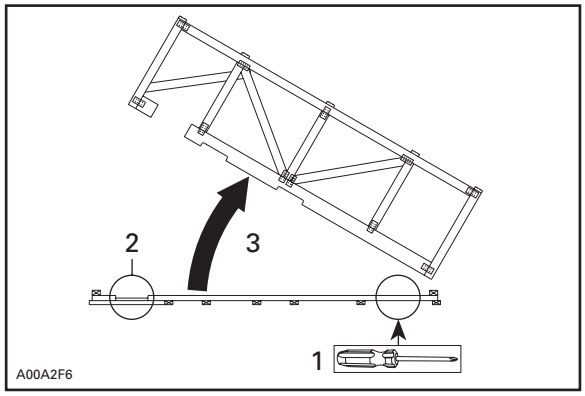
Crate Cover

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

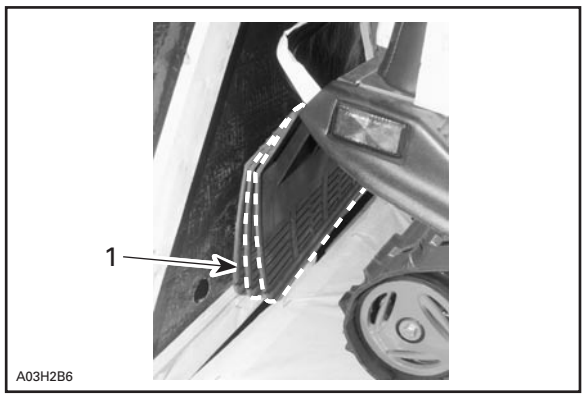
- Using a drill or a screwdriver, remove all screws [1] retaining crate cover to crate base.
- Tilt [3] the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle [2].



- Lift the crate cover slowly to avoid damaging the vehicle.

NOTE: On some models, if cover is tilted toward the front of the vehicle, snow guard may interfere with crate cover, push on snow guard [1] when lifting cover.



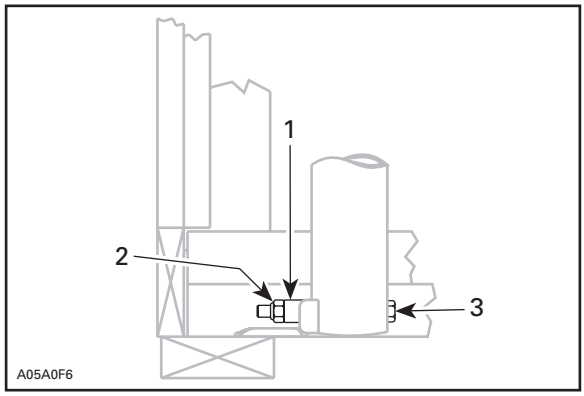
- Remove polyethylene foam protective sheets.
- If applicable, remove from vehicle or crate base:

  - drive belt (engine compartment)
  - detach windshield from seat
  - front bumper
  - skis (discard bolts and washers)
  - steering cap (clipped upside down on handlebar).

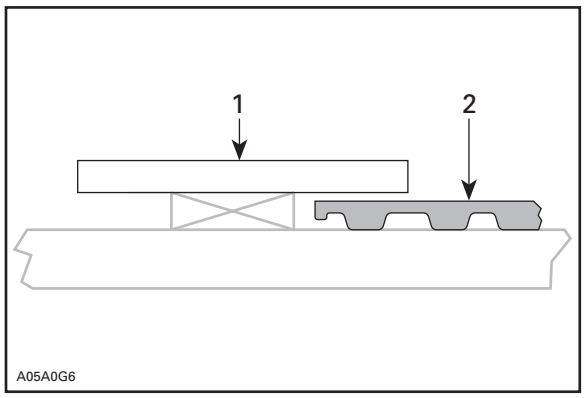
Crate Brackets

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

- Detach ski legs from crate shipping brackets.
- Discard shipping spacers **[**1**]** and nuts **[**2**]**.
- Keep ski leg bolts **[**3**]** for skis installation.



- Using a pry bar, remove wood blocks **[**1**]** retaining the track **[**2**]** to the crate base.
- Remove the vehicle from the crate base.



SET-UP

Ski

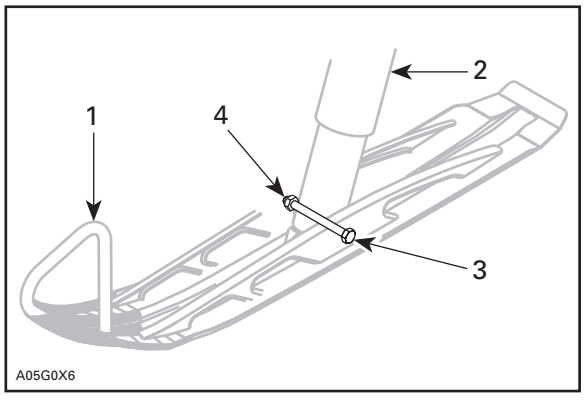
- Install skis **[**1**]** to ski legs **[**2**]**.

NOTE: Ski handle **[**1**]** towards the front.

- Secure skis to ski legs using:

  – **[**3**]** 2 hexagonal bolts M10 x 110 (previously removed)
  – **[**4**]** 2 elastic nuts M10 (predelivery kit).

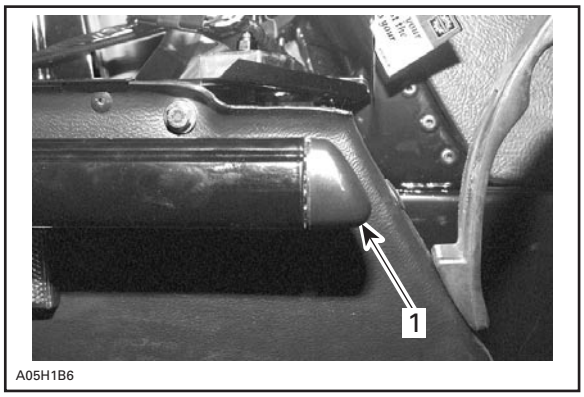
Torque elastic nuts [4] **to 29** N•m (**21** lbf•ft)



Front Bumper

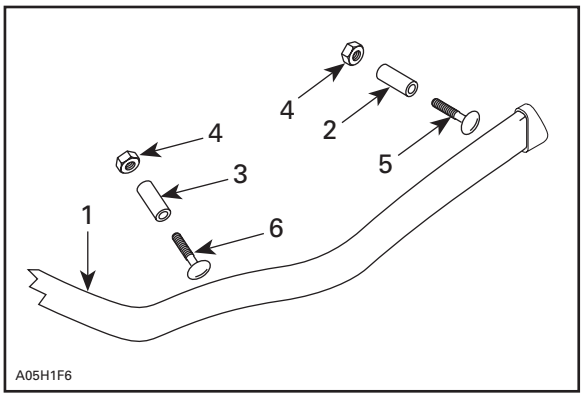
- Unwrap the front bumper.
- Keep bolts for the front bumper installation.

NOTE: Take care to install the bumper with the plastic ends pointing downward **[**1**]**.



- Install the bumper **[**1**]** to the bottom pan with:
  - **[**2**]** 2 bushings (short) (predelivery kit)
  - **[**3**]** 2 bushings (long) (predelivery kit)
  - **[**4**]** 4 elastic nuts M8 (predelivery kit)
  - **[**5**]** 2 carriage bolts M8 x 55 (included with the bumper)
  - **[**6**]** 2 carriage bolts M8 x 75 (included with the bumper).

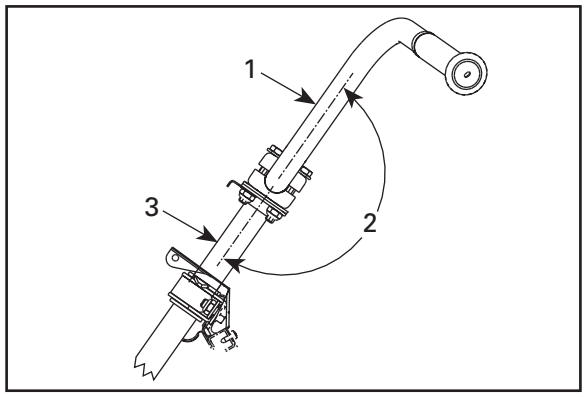
NOTE: Slide bolts and bushings in position prior to installing bumper.



Torque elastic nuts to 15 N•m (**133** lbf•**in**)**.**

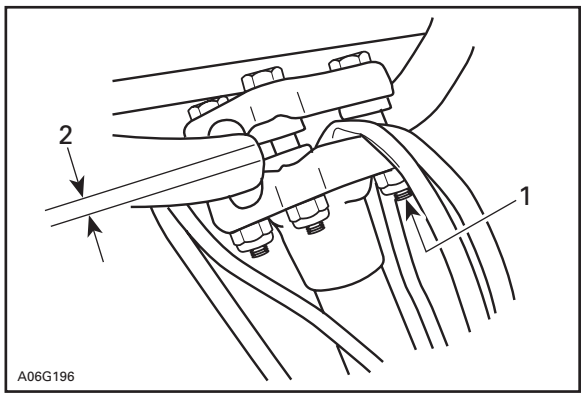
Handlebar

- Pull on the handlebar **[**1**]** until it is aligned **[**2**]** with the handlebar main tube **[**3**]**.



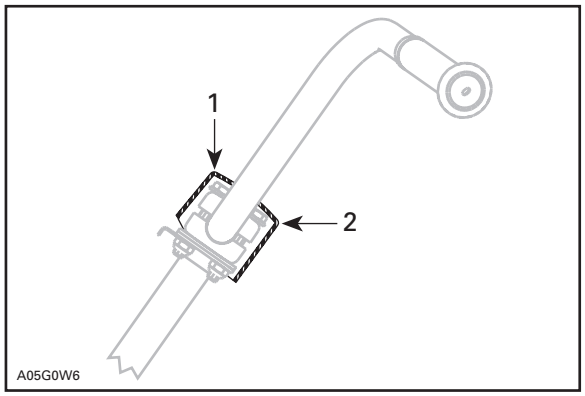
Torque the handlebar nuts [1] **to 26** N•m (**19** lbf•ft)**.**

NOTE: Gap **[**2**]** must be equal on both sides (both clamps).



Steering Pad

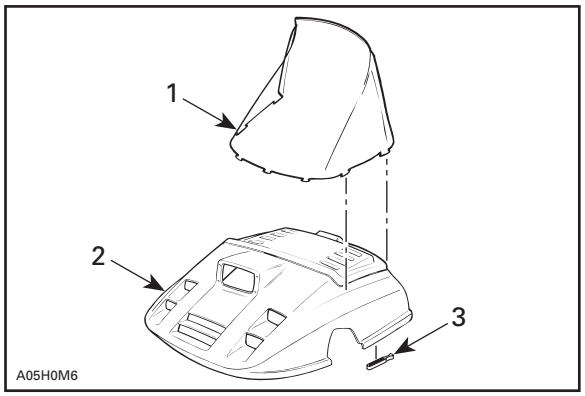
- Install the steering cover **[**1**]** on the handlebar with the longest side towards the driver **[**2**]**.



Windshield

- Remove the windshield plastic protective films.
- Secure the windshield **[**1**]** to the vehicle hood **[**2**]** with:

  - **[**3**]** 9 latches (predelivery kit).

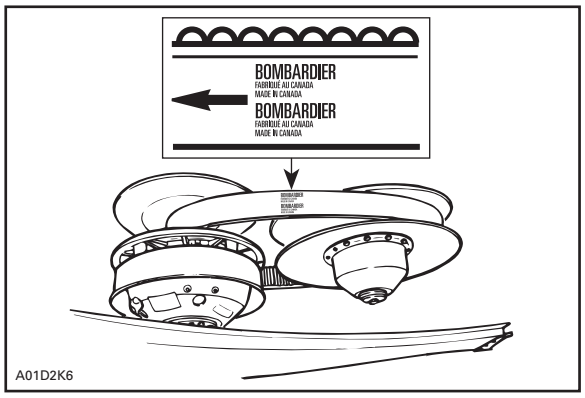


Drive Belt

At the factory a protective coating for the shipping is applied on the pulleys and disc brake. This protective coating must be removed at predelivery.

- Clean the pulleys and the brake disc with a suitable cleaner such as pulley flange cleaner (P/N 413 711 809) before installing the drive belt.
- Make sure that the entire surface of the drive belt travel is clean; open and separate the driven pulley halves as required for cleaning.

CAUTION: Do not install a new drive belt without properly cleaning the pulleys, the arrow on the drive belt indicates the direction of rotation.



FINAL PREPARATION

Break-In Period

To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz) of XP-S mineral injection oil (P/N 413 802 900 — 12 x 1 L) should be added to fuel for the first full filling of fuel tank.

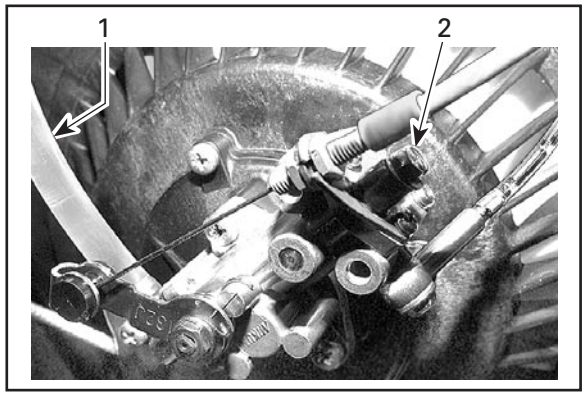
NOTE: Always remove and clean spark plugs after engine break-in.

Oil Pump Bleeding Procedure

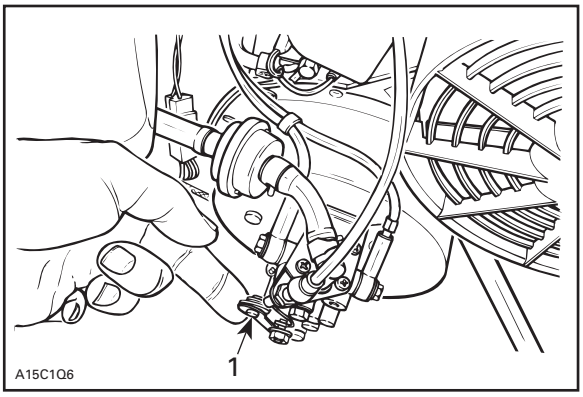
NOTE: Oil pump bleeding have been performed at the factory. However, it is recommended to verify that no air bubble remains in lubrication system.

- Bleed main oil line **[**1**]** (between tank and pump) by loosening the bleeder screw **[**2**]** until all air has escaped from the line.

CAUTION: If air remains in lines, oil may not flow freely and thus damages to engine will occur.



- Bleed the small line between pump and intake manifold by running engine at idle while holding the pump lever in fully open position **[**1**]**.
- Check also for proper oil level adjustment.
- Mark on oil pump lever must stand from 0 to 2 mm (0 to 5/64 in) over mark on pump body when throttle lever is activated just enough to take all cable play.



Track Adjustments

NOTE: It is recommended to ride the snowmobile in snow 15 to 20 minutes prior to adjusting track tension.

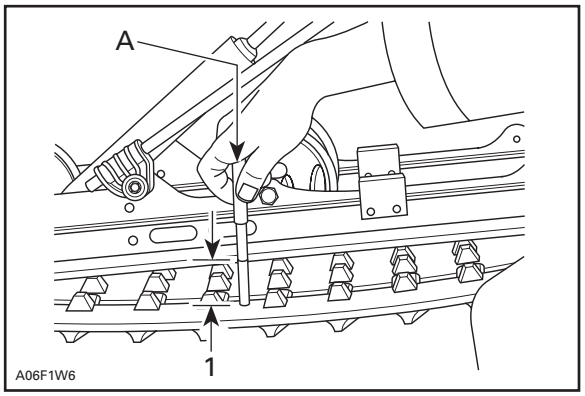
- Lift the rear of the vehicle and support with a mechanical stand.
- Allow the suspension to extend normally.

NOTE: If the track is too loose, it will have a tendency to thump.

- With a force **[**A**]** of 7.4 kg (16 lb), check track deflection half-way along slider shoe.
- Track deflection **[**1**]** must be 35 to 40 mm (1-3/8 to 1-9/16 in).

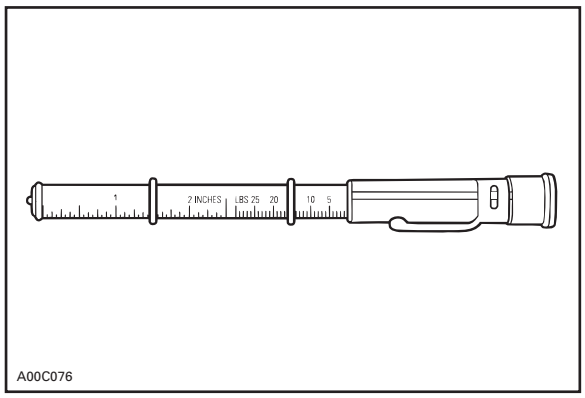
CAUTION: Too much tension will result in power loss and excessive stresses on suspension components.

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



If track adjustments is needed proceed as follows:

- Loosen the rear idler wheel retaining bolts.
- Turn adjustments screws to adjust.
- Retighten idler wheel bolts.



SPECIFICATIONS

Technical Data

			MODEL	TUNDRA R
ENGINE				
Type				277
Maximum HP RPM [1]			± 100 RPM	6900
CARBURETION				
Carburetor type				VM 34
Main jet				200
Needle jet				O-8 (159)
Pilot jet				40
Needle identification — clip position				6DH4–3
Slide cut-away				2.5
Float adjustment			± 1 mm (± .04 in)	23.9 (.94)
Air screw adjustment			± 1/16 turn	1
Idle speed			± 200 RPM	1650
Gas grade Octane number [2]			(R + M)/2	Regular unleaded 87
Gas/oil ratio				Oil injection
ELECTRICAL				
Ignition timing BTDC [3]			mm (in)	3.61 (0.142)
Trigger coil air-gap			mm (in)	0.5 - 0.7 (0.20 -0.28)
TRANSMISSION				
Engagement speed			± 100 RPM	3000
Pulley distance	Z		(+ 0, - 1.5) mm ((+ 0, - 1/16) in)	37.0 (1–29/64)
Offset	X		± 1.0 mm (± 1/32 in)	36.0 (1–27/64)
	Y		± 0.75 mm (± 1/32 in)	Dimension Y must exceed X by 0.75 mm (1/32 in)
Drive belt adjustment	Deflection		± 5 mm (± 13/64 in)	32 (1–1/4)
	Force [4]		kg (lbf)	6.8 (15)
Driven pulley preload			± 0.7 kg (± 1.5 lbf)	0.00
Drive chain tension				Automatic (spring loaded)
Track adjustment	Deflection [5]		mm (in)	35 - 40 (1.378 - 1.575)

[1] Engine Speed at which maximum power is achieved.
[2] In most service station pump octane number corresponds to (R + M)/2 octane number.
[3] At 3500 RPM (engine cold) with headlamp turned on.
[4] Force applied midway between pulleys to obtain specified deflection.
[5] Deflection with a 7.3 kg (16 lb) downward pull.

Please route to:

Init.

- Service
- Sales
- Parts

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **April 23, 2004** Subject: **Legend V-1000 Models** No. **2005-3**

YEAR	MODEL	PACKAGE	MODEL NUMBER	PREDELIVERY KIT P/N	SERIAL NUMBER
2005	Legend V-1000	SE	FN5A	549 011 167	All
2005	Legend V-1000	SE G.T.	FM5A, FM5B	549 011 166 and 549 011 167	All
2005	Legend V-1000	Sport	FT5A	549 011 167	All
2005	Legend V-1000	Sport G.T.	FS5A	549 011 166 and 549 011 167	All

TABLE OF CONTENTS

Printed in Canada. (mbl2005-004 SG/DR)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Safety Handbook*, *Predelivery Check List* signed copy and *Safety Videocassette*.

NOTE: There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

PREDELIVERY KITS

Parts List

NOTE: Predelivery kits contains parts for various models, all parts may not be necessary for all vehicles, refer to the following tables for proper parts usage.

Models(s): All

549 011 167					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	Yes	Nylon Cap	414 916 600	4	7
Idle Wheels	Yes	Wheel Cap	570 063 600	2	18
Skis	Yes	Ski Stopper	506 151 233	2	7
	Yes	10 mm Washer	732 900 049	2	7
	Yes	M10 Hexagonal Flanged Nut	732 610 084	2	7
Front Shocks	Yes	M10 Elastic Nut	233 601 416	4	7
Handlebar	Yes (G.T. only)	Lever	506 151 188	1	11
	Yes (G.T. only)	M4 x 12 Allen Screw	205 041 284	1	11
	Yes (SE only)	Keyway (Long)	572 106 200	1	11
	Yes (SE only)	Keyway (Short)	506 151 661	1	11
	Yes (SE only)	M5 x 20 Cylindrical Phillips Head Screw	208 652 044	2	11
	Yes (SE only)	M5 Elastic Flanged Nut	233 251 414	2	11
Windshield	Yes	Windshield Latch	570 023 800	2	12
Rear View Mirror	Yes	4 mm Flat Washer	517 124 300	4	13
	Yes	M4 Elastic Nut	232 541 414	4	13
	Yes	Retaining Plate	517 303 057	2	13
Console	Yes	Heated Visor Extension Cord	515 175 971	1	12

Models(s): with G.T. Package only

549 011 166					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Backrest	Yes	Lever Assembly	580 602 900	2	13
	Yes	Guide	517 257 300	2	13
	Yes	Black Spacer	517 251 300	2	13
	Yes	Rubber Spacer	570 027 400	2	13
	Yes	Washer	414 819 500	2	13
	Yes	Square Nut	517 250 000	2	13
	Yes	M8 x 25 Hexagonal Bolt	207 182 584	2	13
	Yes	M8 Flat Washer	234 081 670	2	13
	Yes	M8 Elastic Nut	232 581 414	2	13
	Yes	Plastic Washer	414 819 600	2	13
	Yes	Pop Rivet	293 150 108	4	13

UNCRATING

4-TEC Models

CAUTION: Never lift front of 4-TEC models by the front bumper.

- Lift front of vehicle by the front cross member.

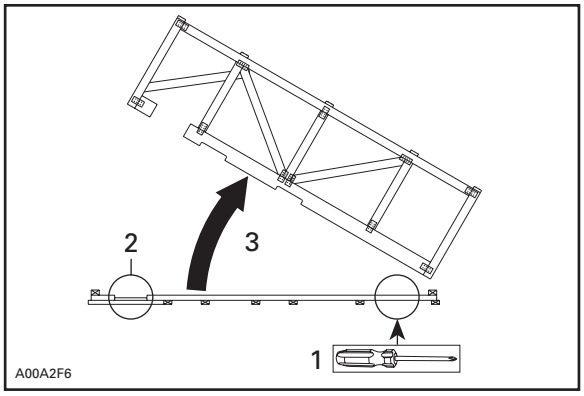
Crate Cover

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

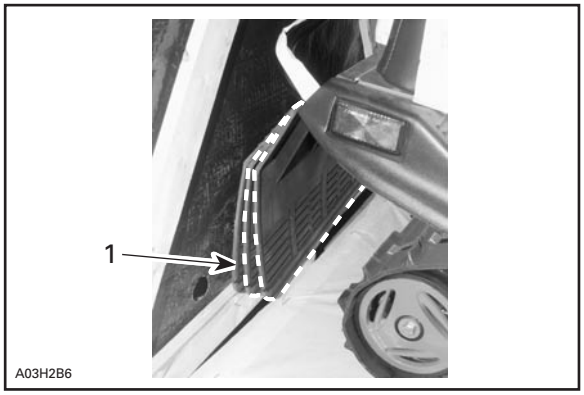
- Using a drill or a screwdriver, remove all screws [1] retaining crate cover to crate base.
- Tilt [3] the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle [2].



- Lift the crate cover slowly to avoid damaging the vehicle.

NOTE: On some models, if cover is tilted toward the front of the vehicle, snow guard may interfere with crate cover, push on snow guard [1] when lifting cover.



- Detach windshield from seat.

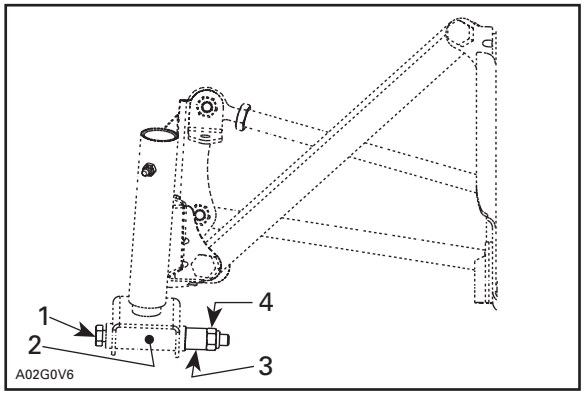
NOTE: Keep windshield latches for further installation.

- Remove the predelivery box.
- Remove parts to be installed from engine compartment.
- Remove the skis from crate base.
- Discard bolts and washers.

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

CAUTION: Never lift front of 4-TEC models by the front bumper, lift front of vehicle by the front cross member, see photo at the beginning of the uncrating section.

- Detach ski legs from crate shipping brackets.
- Keep bolts [1] and slider cushions [2] from ski legs.
- Discard spacers [3] and nuts [4].
- Remove blocks retaining the track to the crate base.
- Remove the vehicle from the crate base.
- Remove the parts to be installed and the predelivery kit from the predelivery box.



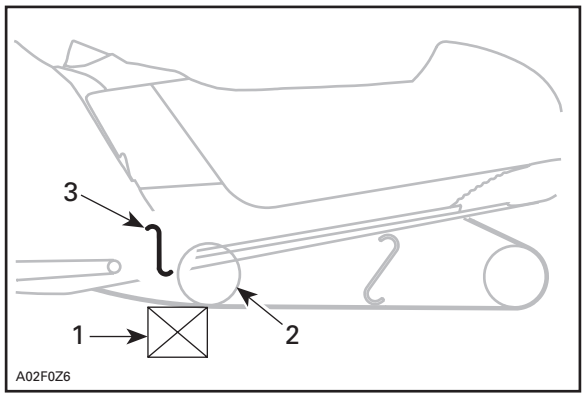
NOTE: Front shock absorbers are behind the predelivery box double bottom.

Front Hook

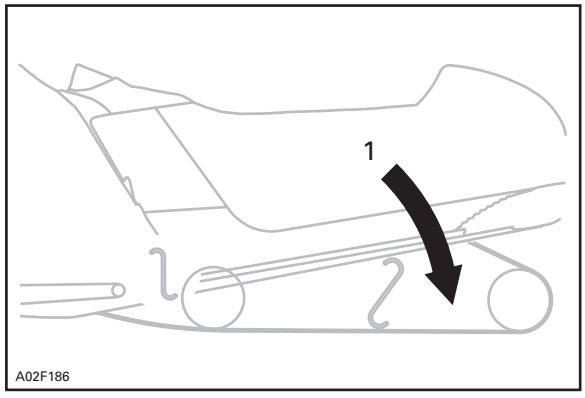
⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Apply the parking brake.
- Lift the rear of the vehicle so that a block or a box [1] can be positioned under the front idler wheel [2].
- Cut the locking tie retaining the front hook [3].



- Ask another person to apply pressure [1] onto the rear suspension.
- From the left side of the vehicle, remove front hook from the suspension.



⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

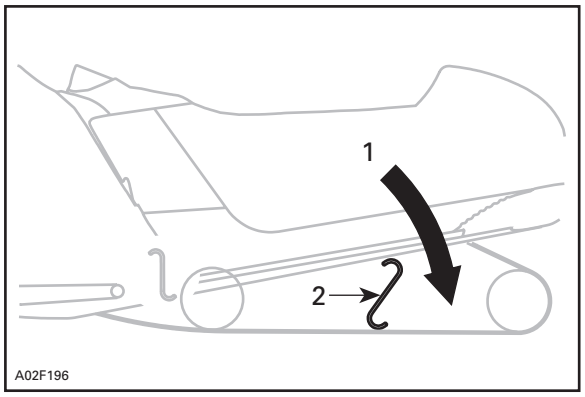
Rear Hook

CAUTION: Never lift front of 4-TEC models by the front bumper, lift front of vehicle by the front cross member, see photo at the beginning of the uncrating section.

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Make sure that parking brake is applied.
- Lift the front of the vehicle to position bumper approximately 1 meter upward (35 to 40 inches).
- Standing on footwells, sit roughly to apply pressure **[**1**]** onto the rear suspension to free the rear hook **[**2**]**.



CAUTION: To avoid any damage to the seat, always sit on the seating surface.

NOTE: To help squeezing the rear suspension, ask another person push down on the rear bumper.

- Remove the rear hook from the suspension.

⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

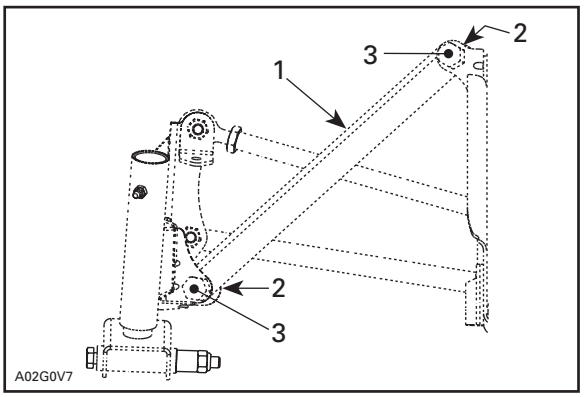
SET-UP

Shipping Brackets

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to. Where specified, install new locking devices (e.g. lock tabs, elastic stop nuts). If the efficiency of a locking device is impaired, it must be renewed.

- Make sure that parking brake is applied.
- Remove and discard the shipping brackets **[**1**]** from the front suspension.
- Discard the spring clips **[**2**]**.
- Keep the hexagonal bolts **[**3**]** for the front shocks installation.

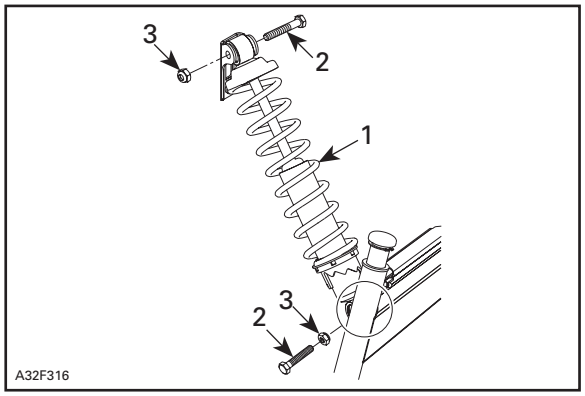


Front Shocks

- Position the front shock absorbers **[**1**]** in place with their adjustment ring at the bottom.
- Secure the front shock absorbers with the existing M10 x 55 hexagonal bolts **[**2**]** and four M10 elastic nuts **[**3**]** provided in the predelivery kit.

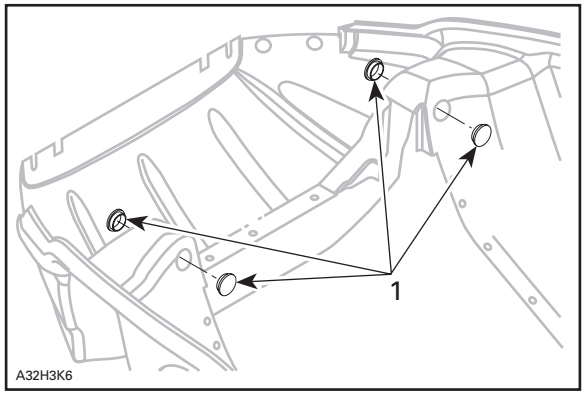
Model(s): Europe Only

- Position the front shock absorbers **[**1**]** in place with their adjustment ring at the **top**.



Bottom Pan Caps

- Install caps **[**1**]** provided in the predelivery kit on bottom pan.



Skis

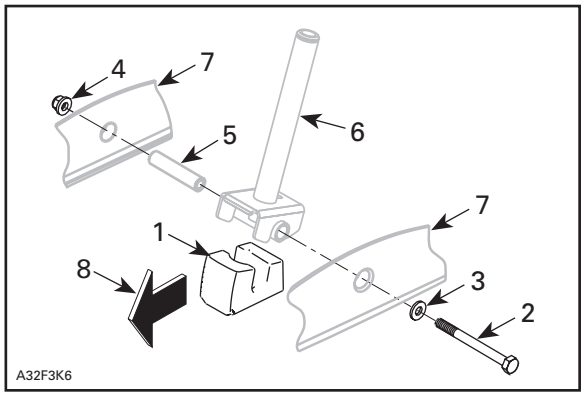
NOTE: Ensure the ski leg bushing **[**5**]** is still on the ski leg **[**6**]**.

- Insert the ski stopper **[**1**]** from predelivery kit with the higher side toward the front **[**8**]** into the ski.
- Install the ski **[**7**]** to ski leg **[**6**]**.
- Secure the ski to ski leg with :
- the existing M10 x 110 hexagonal bolt **[**2**]**.

NOTE: Make sure that the hexagonal bolt head is toward the outside of the vehicle.

- 10 mm flat washer **[**3**]** from the predelivery kit.
- M10 elastic flanged nut **[**4**]** from the predelivery kit.

Torque to 32 N•m (**24** lbf•ft)**.**



NOTE: Repeat the same procedure on the opposite ski.

- Put the vehicle back on the ground.

Battery Preparation

All electric starting equipped vehicles using a **YTX20L-BS** or **YTX24L-BS** type battery require a specific charging procedure at predelivery.

- Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area. Never charge or boost battery while installed on vehicle. Do not open the sealed caps during charging. Do not place battery near open flame.

CAUTION: If battery becomes hot, stop charging and allow it to cool before continuing.

NOTE: Sealed VRLA batteries have an internal safety valve. If battery pressure increases due to overcharging, the valve opens to release excess pressure, preventing battery damage.

An automatic charger is the fastest and most convenient way for error-proof charging.

Battery Voltage below 12.8 V and above 11.5 V

STANDARD CHARGING (recommended)		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	4 – 9 hours	2 A
YTX24HL-BS	5 – 10 hours	

QUICK CHARGING		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	50 minutes	10 A
YTX24HL-BS	1 hour	

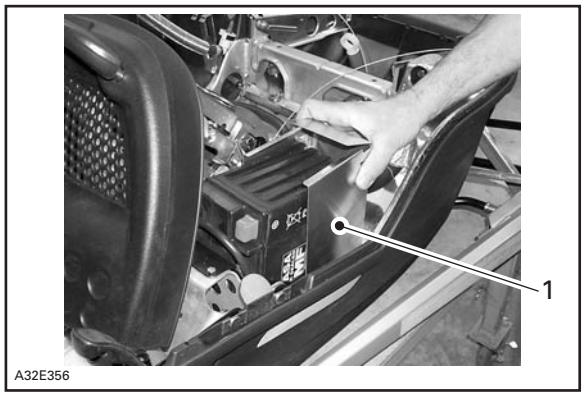
Battery Voltage below 11.5 V

Batteries with voltage below 11.5 V requires special procedures to recharge. In charging an overdischarged battery, its internal resistance may be too high to charge at a normal charging voltage. Therefore, it may be necessary to raise the voltage of the battery initially to 25 V as a maximum, and charge for approximately 5 minutes.

If the charger ammeter shows no change in current after 5 minutes, you need a new battery. Current flowing into the battery at high voltage can become excessive. Monitor amperage and adjust voltage as necessary to keep current at the battery's standard amp rating. Charge for approximately 20 hours.

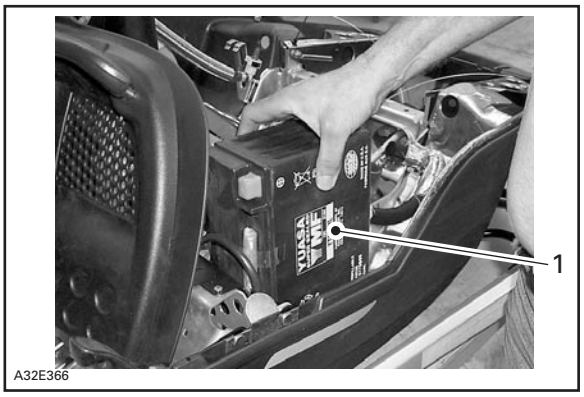
Battery Removal

- Unhook the battery strap.
- Remove the battery deflector **[**1**]**.

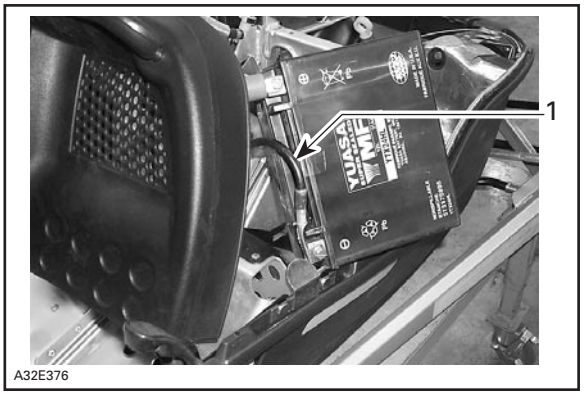


- Lift the battery **[**1**]** slowly.

NOTE: At the factory, the BLACK negative cable is connected to the negative post.

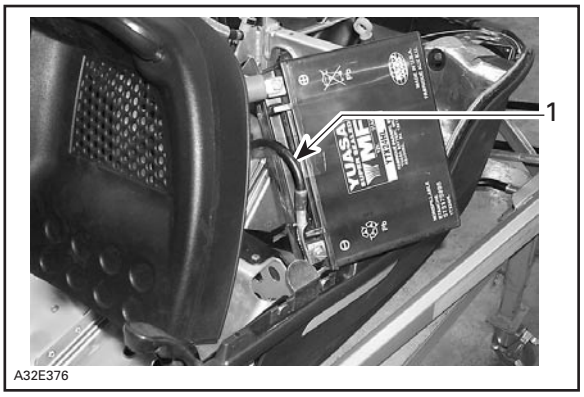


- Disconnect the BLACK negative cable **[**1**]** from the battery negative post.

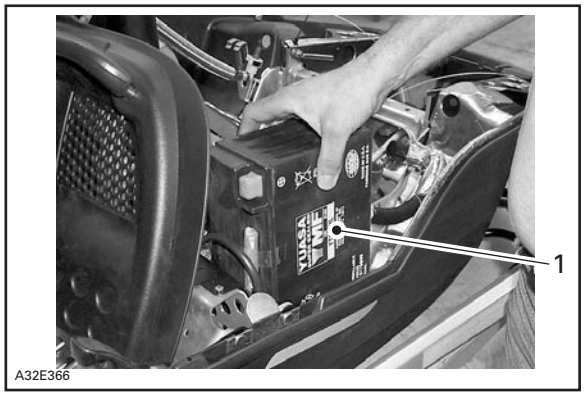


Battery Installation

- Connect BLACK negative cable **[**1**]** to battery negative post.
- Apply silicone dielectric grease (P/N 293 550 004) on battery negative connection.



- Install the battery **[**1**]** in its support with the battery posts facing rearward.

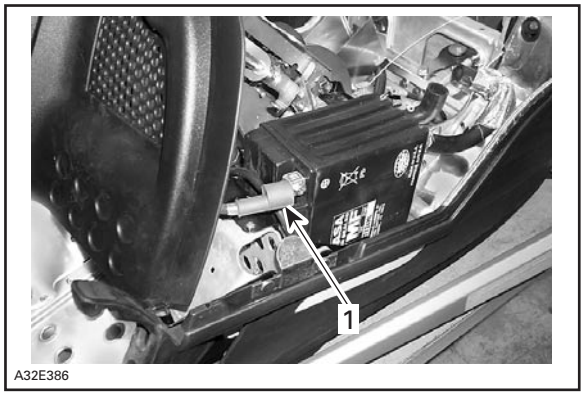


- Connect RED positive cable **[**1**]** to battery positive post.

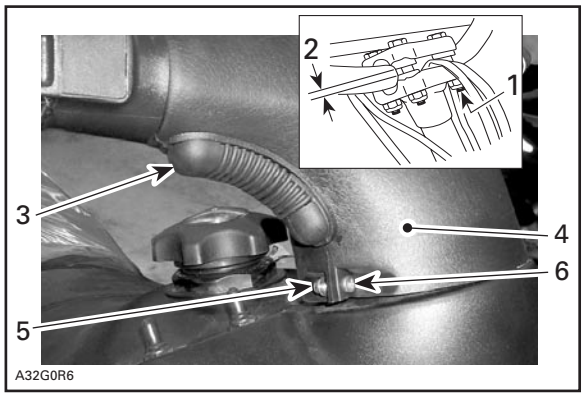
⚠ WARNING

During connection, do not touch any other element than the positive connector with the wrench.

- Apply silicone dielectric grease (P/N 293 550 004) on battery positive connection.
- Cover the RED positive connection with rubber boot.



Steering Pad



- Adjust the handlebar so that the brake fluid reservoir is levelled, and tighten handlebar nuts **[**1**]** loosely for now.
- Install the steering pad **[**4**]** temporarily, and adjust it to have the proper fit with the console.
- Remove the steering pad.

Torque the handlebar nuts [1] **to 24** N•m (**18** lbf•ft)**.**

NOTE: Gap **[**2**]** must be equal on both sides (both clamps).

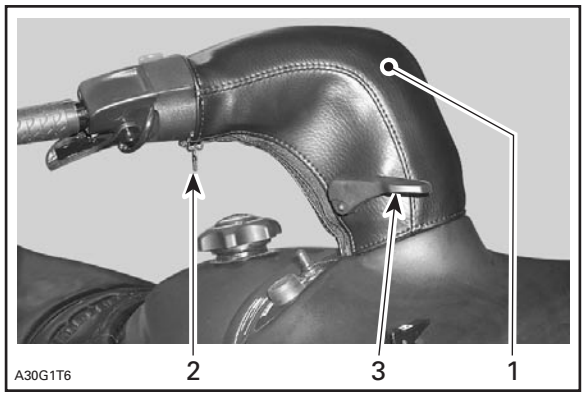
- Reinstall and adjust the steering pad **[**4**]**.
- Secure steering pad **[**4**]** with:
  - two keyways **[**3**]** from predelivery kit (LH: short, RH: long)
  - two M5 x 20 Phillips screws **[**5**]** from predelivery kit
  - two M5 nuts **[**6**]** from predelivery kit.

NOTE: Hardware for the steering pad should be seat tighten only, without deformation of rubber.

Adjustable Steering

Model(s): SE GT Only

CAUTION: Never hang snowmobile by the handlebar. This can impair the adjustable steering mechanism.



- Adjust the handlebar when the mechanism is in the middle position.
- Install the steering foam properly to make it fit with the console.
- Cover the steering foam with the steering pad **[**1**]** and zip it **[**2**]** both sides.
- Install from the predelivery kit, the lever **[**3**]** with screw using an Allen key.

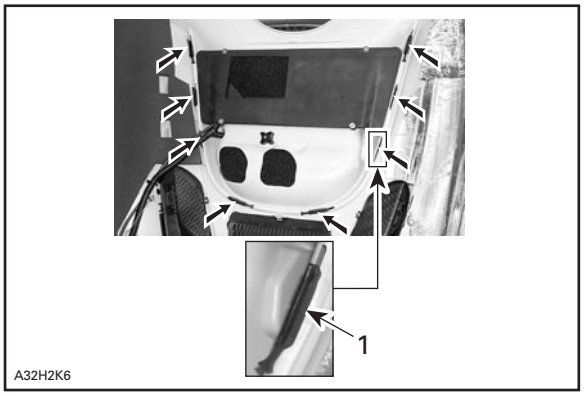
Torque to 2.5 to 3.0 N•m (**23 to 27** lbf•**in**)**.**

Windshield

- Remove the headlamp protector **[**1**]** from hood.
- Unclip the inner protector **[**3**]** from the headlamp protector **[**1**]**.
- Remove protective films from the windshield **[**2**]**.
- Insert tabs of headlamp protector **[**1**]** in windshield square holes.
- Clip the inner protector **[**3**]** in place.

- Secure the windshield assembly to hood with :

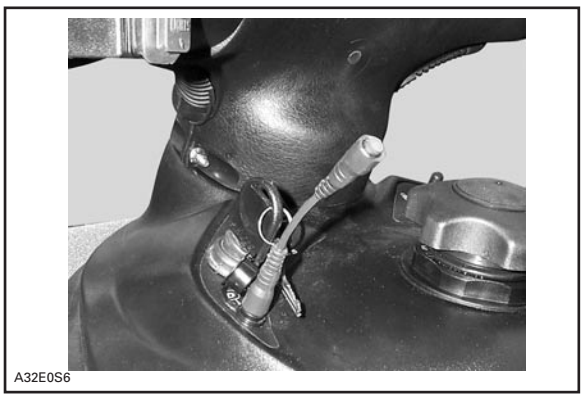
  - 2 latches **[**1**]** already on the windshield
  - 2 latches **[**1**]** from predelivery kit.



Windshield installed (typical)

Heated Visor Extension Cord

- Lift cap on the left side of handlebar.
- Install heated visor extension cord supplied in predelivery kit.



Mirrors

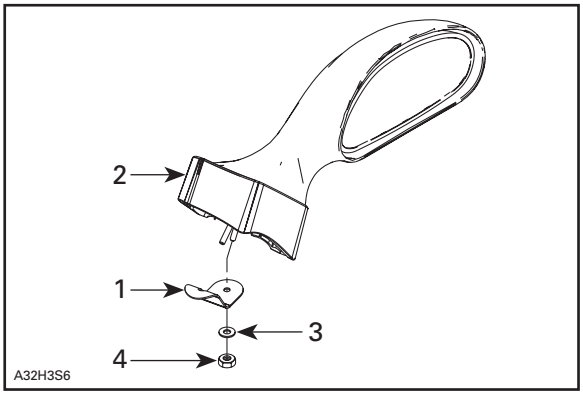
- Place the retaining plate **[**1**]** from the predelivery kit underneath the hood facing rear view mirror holes.

NOTE: The retaining plate shape must fit the hood shape.

- Install mirrors **[**2**]** in place.
- Secure mirrors to hood with :

  - Four 4 mm flat washers **[**3**]** from predelivery kit
  - Four M4 elastic nuts **[**4**]** from predelivery kit.

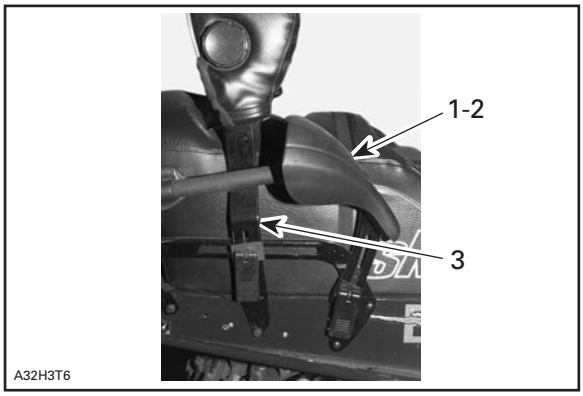
Torque to 2 N•m (**18** lbf•**in**).



Backrest

Model(s): Grand Touring

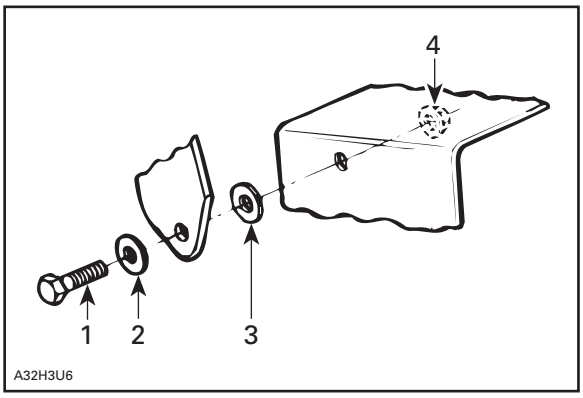
- Remove the backrest from its box.
- Install hand protectors **[**1**]** (predelivery box) with rivets **[**2**]** from predelivery box onto luggage rack rail.
- Place the backrest frame **[**3**]** on the tunnel.



- Secure the backrest frame to the tunnel with:

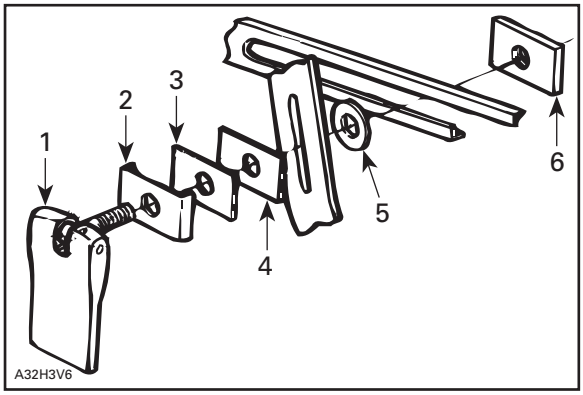
  - 2 hexagonal bolts **[**1**]** from predelivery kit
  - 2 flat washers **[**2**]** from predelivery kit
  - 2 plastic washers **[**3**]** from predelivery kit
  - 2 elastic nuts **[**4**]** from predelivery kit.

Torque to 9 N•m (**80** lbf•**in**).



- Secure the backrest frame to the luggage rack rail with :

  - 2 lever assembly **[**1**]** from predelivery kit
  - 2 guides **[**2**]** from predelivery kit
  - 2 rubber spacers **[**3**]** from predelivery kit
  - 2 spacers **[**4**]** from predelivery kit
  - 2 washers **[**5**]** from predelivery kit
  - 2 square nuts **[**6**]** from predelivery kit.



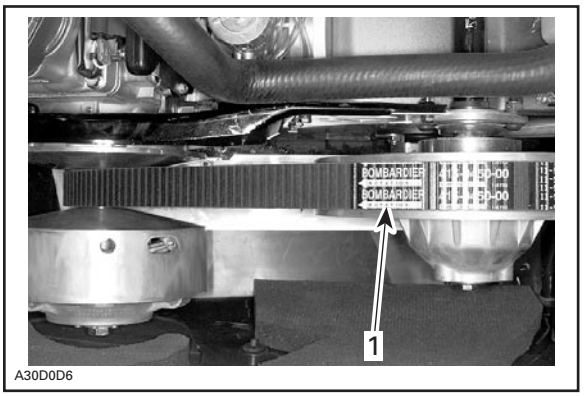
- Turn the adjustment knob left or right to adjust backrest cushion position.

Drive Belt

- Clean pulleys and disc brake before installing the drive belt.

NOTE: Use a suitable cleaner such as pulley flange cleaner (P/N 413 711 809).

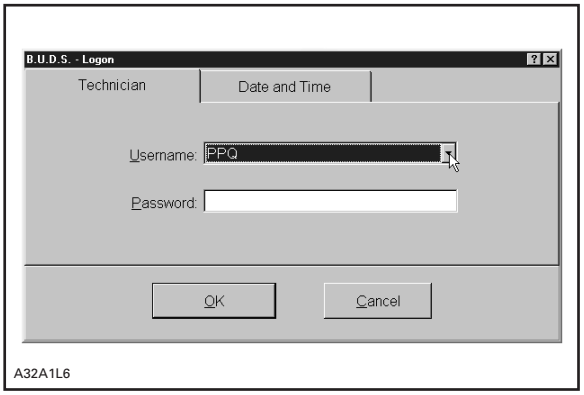
CAUTION: The arrow [1] is indicating the direction of rotation (see typical illustration).



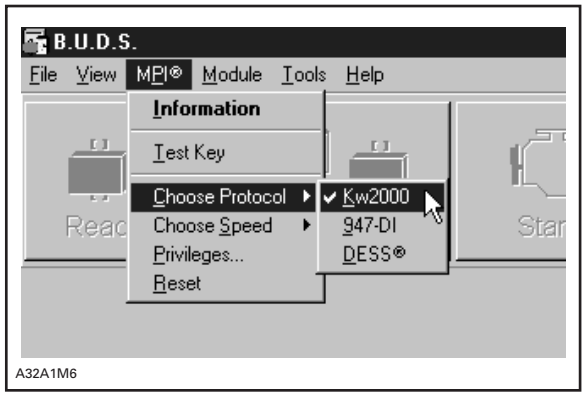
FINAL PREPARATION

MPI (Connecting)

- Start B.U.D.S.



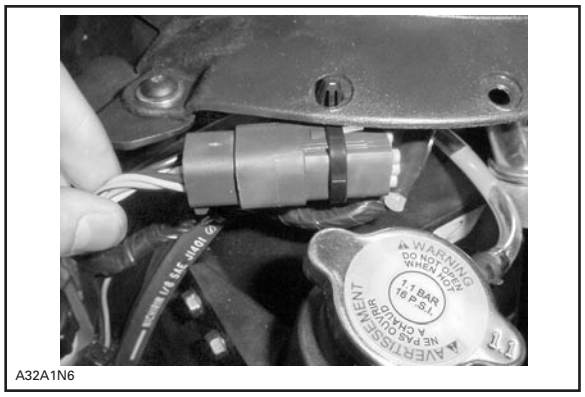
- Select the vehicle's Protocol (Kw2000) in *Choose Protocol* from the MPI menu.
- Wait a few seconds while B.U.D.S. loads the protocol into the MPI.



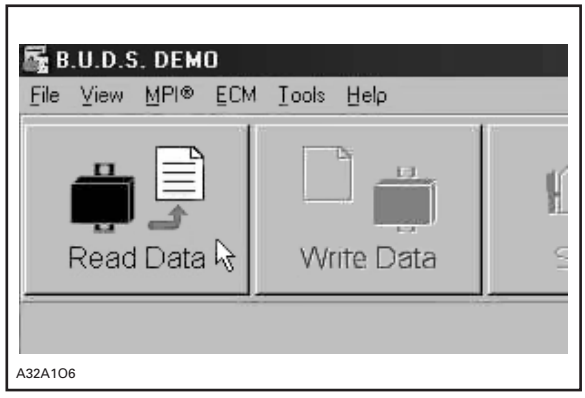
A32A1M6

- Connect the 6-pin adapter to the diagnostic connector of the vehicle.
- Insert the *Grey* DESS key (P/N 529 035 896) on the DESS post.
- Push the engine cut-out switch to the lower OFF position.
- Press the *Start* button of the vehicle to wake up the ECM.

NOTE: You have 30 seconds to start communication before the ECM shuts down.


A32A1N6

- Click on the *Read Data* from the tool bar to initiate communication and to read the content of the ECM.



A32A1O6

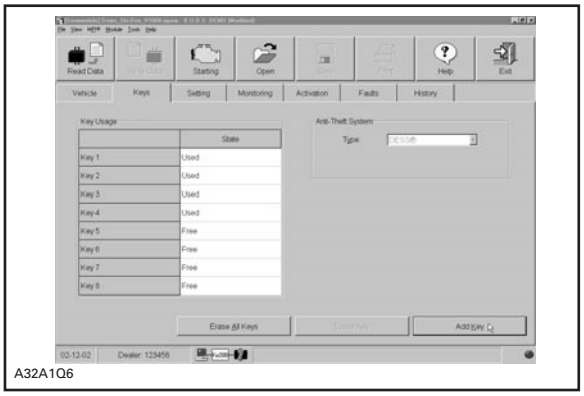
B.U.D.S. (Customer Name)

- Click on the *Vehicle* tab to open the vehicle information page.
- Type the name of the customer in the *Customer* zone.

NOTE: After you are finished typing the name, B.U.D.S. automatically updates the delivery date on the screen.

A32A1P6

B.U.D.S. (Programing a DESS Key)



A32A1Q6

- Read the content of the vehicle's MPEM by clicking on *Read Data* from the tool bar.
- Click on the *Keys* tab to open the DESS keys page.
- Click on *Erase All Keys*.
- Click on *Add Key*.

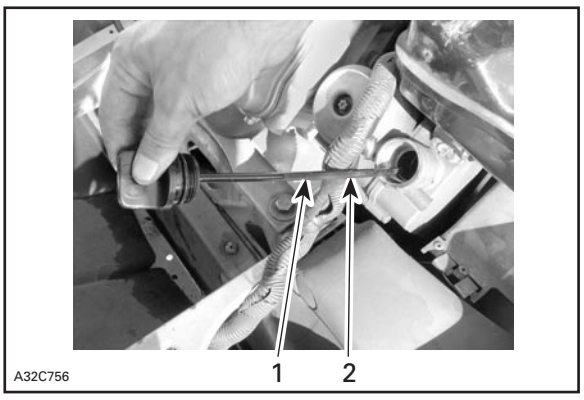
NOTE: A dialog box opens and asks you to insert a key on the MPI DESS post.

- If the key that you inserted on the MPI DESS post was successfully read and added to the document, message box will appear.
- Click on *OK*.
- Repeat steps *3* to *5* for each DESS key you want to program into the vehicle.
- Write the document into the vehicle by clicking on *Write Data* from the tool bar.
- Remove the *Grey* key from the vehicle DESS.

Engine Oil Level

NOTE: These models are equipped with 4-stroke engine. Use XP-S 0W–40 synthetic 4-stroke oil (P/N 293 600 054 – 12 x 1L).

CAUTION: Vehicle must be on a level surface before checking any fluid level.



A32C756

- Make sure engine is at operating temperature
- Leave engine running at idle for 30 seconds.
- Stop the engine and wipe the dipstick.

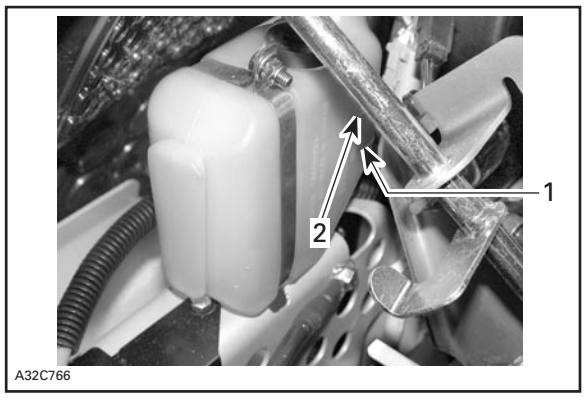
NOTE: Dipstick must be completely screwed in before checking oil level.

- Oil level must be between minimum **[**2**]** and maximum **[**1**]** marks on dipstick.
- There is a capacity of 500 mL (17 U.S. oz) between the two marks.

Engine Coolant Level

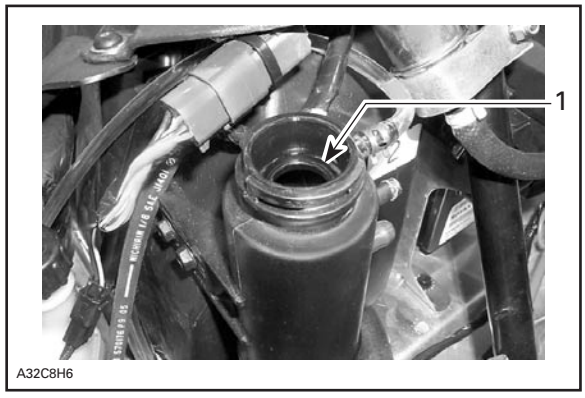
CAUTION: Vehicle must be on a level surface before checking any fluid level.

- Check coolant level in the overflow coolant tank.
- When the engine is cold, the level must be between minimum **[**1**]** and maximum **[**2**]** marks.
- Use a blend of 50/50 distilled water and ethylene-glycol (P/N 219 700 362 – 16 x 1L).



- Check coolant level in the coolant tank.
- Fill coolant tank to maximum level line **[**1**]** if necessary.
- Use a blend of 50/50 distilled water and ethylene-glycol (P/N 219 700 362 – 16 x 1L).

NOTE: That blend will protect the system from freezing as low as - 37°C (-35°F).

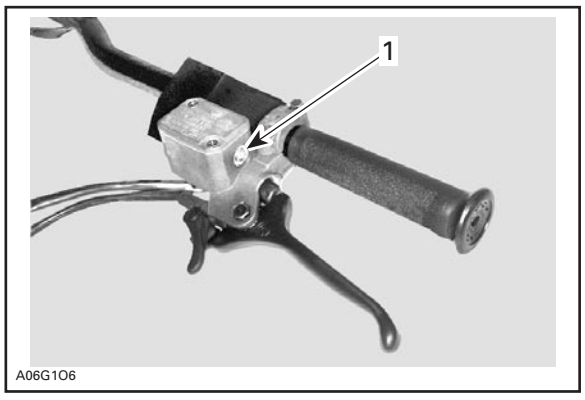


Brake Fluid Level

- Check brake fluid in reservoir for proper level **[**1**]**.
- Add brake fluid (DOT 4) as required.

  - Use SRF (DOT 4) (P/N 293 600 063)
  - or GTLMA (DOT 4) (P/N 293 600 062).

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Do not store or use a started bottle of brake fluid.



Track Adjustments

- Refer to *Shop Manual* to adjust track tension and alignment.

NOTE: Track deflection is 30 to 35 mm (1-3/16 to 1-3/8 in) with a downward pull of 7.3 kg (16 lb).

- Install caps provided in the predelivery kit.

NOTE: If lubricant is needed to help cap installation, use lens cleaner instead of soapy water to avoid the cap coming off of its location due to residual soap.

Brake Disk

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

Driven Pulley

- It is usual to experience spring settings during break-in period of a new spring.
- The factory spring preload is slightly higher to compensate for springs settings.
- Specifications in *TECHNICAL DATA* are applicable after break-in period (about 10 hours of use).

DELIVERY TO CUSTOMER

Speedometer

This model is equipped with an electronic speedometer, it may show speed in km/h or MPH.

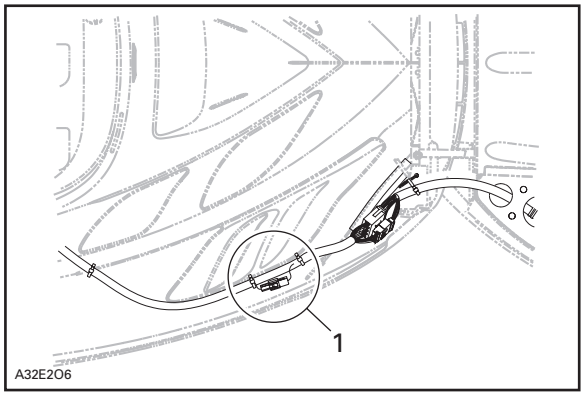
NOTE: At the factory speedometer, odometer and trip meter is adjusted for miles reading.

- Proceed as follow to change units from miles to kilometers.

NOTE: At a speed of 90 km/h (55 MPH) and more, the LCD mode screen will show speed only instead of the selected mode.

A33E096

- Stop engine and open hood.
- Cut locking ties.
- Plug connectors **[**1**]** together to change units from miles to kilometers.
- Unplug to return to miles reading.
- Fasten connector to harness with locking ties.

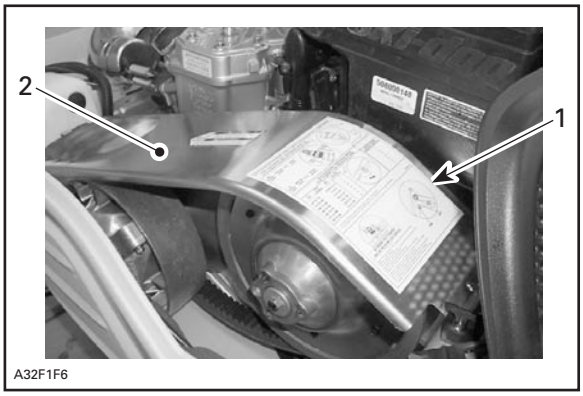


A32E206

Rear Suspension Adjustment

NOTE: Rear suspension is calibrated at the factory.

At predelivery, mechanics should perform suspension adjustments according to customer riding style and vehicle load as described on the suspension adjustment chart **[**1**]** which is located on the belt guard **[**2**]**.



SPECIFICATIONS

Technical Data

The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile.

NOTE: Vehicles used at high altitudes, above 600 m (2000 ft) should be fitted with a high altitude kit. Further inquiries should be directed to your distributor service representative.

			MODEL / Legend
ENGINE			
Engine type			1004 (4-TEC)
Maximum HP RPM [1]			6000 to 7250 progressive [4] [5]
FUEL SYSTEM			
Fuel injection type			Multipoint Fuel Injection, Single Throttle Body (52 mm)
Sensors typical resistance	Throttle position (TPS)		1.6 kΩ - 2.4 kΩ
	Crankshaft position (CPS)		0.7 Ω - 1.1 Ω
	Coolant temperature sensor (CTS)		2.28 kΩ - 2.74 kΩ @ 20°C
	Air temperature sensor (ATS)		2.28 kΩ - 2.74 kΩ @ 20°C
	Oil pressure sensor (OPS)		0.0 Ω [2]
Fuel injector			13.8 Ω - 15.2 Ω
Gas grade/octane number		(R + M)/2	Regular unleaded/87
ELECTRICAL			
Ignition system type			Digital, inductive type
Spark plug		Make and type	NGK DCPR8E
	Gap	± 0.05 mm (± .002 in)	0.75 (.0295)
Ignition timing BTDC			Non adjustable timing

TRANSMISSION			
Gear Ratio		Teeth	21/44
Engagement Speed		± 100 RPM	2500
Drive Pulley Calibration Screw Position			3 [6]
Pulley Distance	Z [3]		20.0 (0.787)
Offset	X	± 0.5 mm (± 1/64 in)	37.0 (1-15/32)
	Y	± 0.75 mm (± 1/32 in)	Dimension Y must exceed X from 1.5 mm (0.059 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	5.7 (12.6)
Drive Chain Tension			Fully tighten adjusting screw by HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

[1] Engine speed at which maximum power is achieved.
[2] If the oil pressure is less than 0,2 Bar.
[3] Z dimension without torque rod preload. After Z dimension adjustment, hand tight torque rod until plastic pad cannot be turned, then turn torque rod an additional half turn. Lock jam nut.
[4] Do not attempt to reach these RPM's using the TRA IV adjustment screws.
[5] 6000 RPM will be reach in normal acceleration and progressively 7250 RPM will be reached at top speed.
[6] From factory, TRA drive pulley adjustment screws are set to position 3. This allows the best compromise between acceleration, top speed and fuel economy.
- – Position 1 or 2 would provide the best fuel economy. Top speed would be reduced.
- – Position 4 would give the best acceleration. Fuel economy would be reduced.

– BTDC : Before Top Dead Center
– TRA : Total Range Adjustable

Please route to:

Init.

- ☐ Service ☐
- ☐ Sales ☐
- ☐ Parts ☐

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **February 14, 2005** Subject: **REV Models (except SDI)** No. **2005-4**

REVISION 1 <=

YEAR	MODEL	MODEL NUMBER	PREDELIVERY KIT P/N
2005	GSX 500 SS	DC5A, DC5B	549 011 179
2005	GSX 600 HO	DB5A, DB5B	549 011 179
2005	GSX 800 HO	DA5A, DA5B	549 011 179
2005	GTX 500 SS	ED5A, ED5B, ED5C	549 011 214
2005	GTX 600 HO	EC5A, EC5B	549 011 214
2005	GTX 800 HO	EA5A, EA5B, EA5C	549 011 214
>2005	MX Z 500 SS	BF5A, BF5B, BF5C, BF5G, BF5H, BF5J, BF5L, BH5A, BH5B, BH5C, BH5D, BH5E	549 011 191
>2005	MX Z 600 HO	BC5A, BC5C, BC5F, BC5G, BC5H, BC5J, BC5K, BC5L, BC5M, BE5A, BE5B, BE5C, BE5G, BE5H, BE5J, BE5K, BE5L, BE5M, BE5N, BG5A, BG5B, BV5A, BV5B, BV5C, BV5D	549 011 174 or 549 011 191
>2005	MX Z 800 HO	BB5A, BB5B, BB5C, BB5D, BB5F, BB5G, BB5H, BB5J, BB5K, BB5L, BB5M, BB5N, BD5A, BD5B, BD5C, BD5G, BD5H, BD5J, BD5K, BD5L, BD5M, BS5C, BS5D, BS5E, BS5F, BS5G, BS5H, BS5J, BS5K, BS5L, BS5M, BS5N, BU5A, BU5B, BU5C, BU5D	549 011 174 or 549 011 191
>2005	SUMMIT 600 HO	CL5A, CL5B, CL5C	549 011 243
>2005	SUMMIT 800 HO	CG5A, CG5B, CG5C, CG5D, CH5A, CH5B, CH5C, CH5D, CJ5A, CJ5B, CJ5C, CK5A, CK5B, CP5A, CP5B, CP5C, CP5D	549 011 243

TABLE OF CONTENTS

Printed in Canada. (mbl2005-005 DR)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

PREDELIVERY KIT

Parts List

NOTE: Predelivery kits contains parts for various models, all parts may not be necessary for all vehicles, refer to the following tables for proper parts usage.

GSX: 549 011 179					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Bumper	YES	Hex. Flanged Bolt M5 x 20	207 682 044	4	18
Rear Suspension	YES	Wheel Cap	570 063 600	2	23
Ski	YES	Ski Stopper	505 070 671	2	9
	YES	Washer	732 900 049	2	9
	YES	Hex. Flanged Nut M10	732 610 084	2	9
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7
Windshield	YES	Torx Screw M6 x16	250 000 129	4	17
	YES	Nut M6	250 000 135	4	17
	YES	Nylon Washer	517 302 736	4	17
Mirror	YES	Hex. Flanged Bolt M6 x 40	207 664 044	2	18
	YES	Elastic Flanged Nut M6	233 261 494	2	18
	YES	Mirror Cap	517 302 716	2	18
Console	YES	Heated Visor Extension Cord	515 175 851	1	18
Rear Bumper	YES	Bumper Cap	520 000 397	1	18
	YES	Bumper Cap	520 000 398	1	18

GTX: 549 011 214					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Suspension	YES	Wheel Cap	570 063 600	2	23
Ski	YES	Ski Stopper	505 070 671	2	9
	YES	Washer	732 900 049	2	9
	YES	Hex. Flanged Nut M10	732 610 084	2	9
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7
Mirror	YES	Hex. Flanged Bolt M6 x 40	207 664 044	2	18
	YES	Elastic Flanged Nut M6	233 261 494	2	18
	YES	Mirror Cap	517 302 716	2	18
Console	YES	Heated Visor Extension Cord	515 175 851	1	18

MX Z: 549 011 191					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Bumper	YES	Hex. Flanged Bolt M5 x 20	207 682 044	4	18
Rear Suspension	YES	Wheel Cap	570 063 600	2	23
Ski	YES	Ski Stopper	505 070 671	2	9
	YES	Washer	732 900 049	2	9
	YES	Hex. Flanged Nut M10	732 610 084	2	9
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7, 8
Windshield	YES (Except X)	Torx Screw M6 x16	250 000 129	4	17
	YES (Except X)	Nut M6	250 000 135	4	17
	YES (Except X)	Nylon Washer	517 302 736	4	17
	YES (X Only)	Plastic Rivet	293 150 089	3	17
Rear Bumper	YES	Bumper Cap	520 000 397	1	18
	YES	Bumper Cap	520 000 398	1	18

MX Z Renegade: 549 011 174					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Suspension	YES	Wheel Cap	570 063 600	2	23
Ski	YES	Ski Stopper	505 070 671	2	9
	YES	Washer	732 900 049	2	9
	YES	Hex. Flanged Nut M10	732 610 084	2	9
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7, 8
Handlebar Strap	YES	Hex. Flanged Bolt M6 x 20	207 662 084	1	16
	YES	Flat Washer 6 mm	234 061 410	4	16
	YES	Elastic Nut M6	232 561 414	1	16
Windshield	YES (Except X)	Torx Screw M6 x16	250 000 129	4	17
	YES (Except X)	Nut M6	250 000 135	4	17
	YES (Except X)	Nylon Washer	517 302 736	4	17
	YES (X Only)	Plastic Rivet	293 150 089	3	17

Summit: 549 011 243					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Suspension	YES	Wheel Cap	570 063 600	2	23
Ski	YES	Ski Stopper	505 071 632	2	9
	YES	Washer 10 mm	234 002 410	2	9
	YES	Hex. Flanged Nut M10	732 610 084	2	9
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7, 8
Handlebar Strap	YES	Hex. Flanged Bolt M6 x 20	207 662 084	1	16
	YES	Flat Washer 6 mm	234 061 410	4	16
	YES	Elastic Nut M6	232 561 414	1	16
Windshield	YES	Windshield Support	517 303 197	1	16

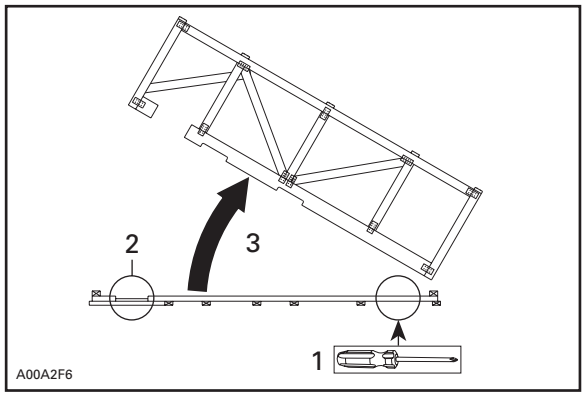
UNCRATING

Crate Cover

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

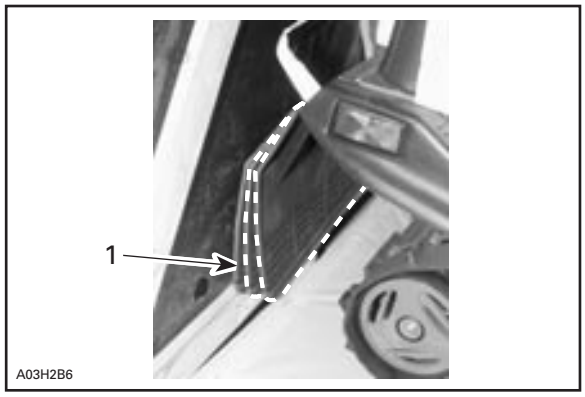
- Using a drill or a screwdriver, remove all screws **[**1**]** retaining crate cover to crate base.
- Tilt **[**3**]** the crate cover toward the front or the rear of the vehicle.



NOTE: There is a notch at the front of the crate that indicates the front of the vehicle **[**2**]**.

- Lift the crate cover slowly to avoid damaging the vehicle.

NOTE: On some models, if cover is tilted toward the front of the vehicle, snow guard may interfere with crate cover, push on snow guard **[**1**]** when lifting cover.



- Remove polyethylene foam protective sheets.
- If applicable, remove from vehicle or crate base:

  - drive belt (engine compartment)
  - detach windshield from seat
  - predelivery boxes
  - skis (discard bolts and washers)
  - 2+1 seat and passenger's seat (GTX).

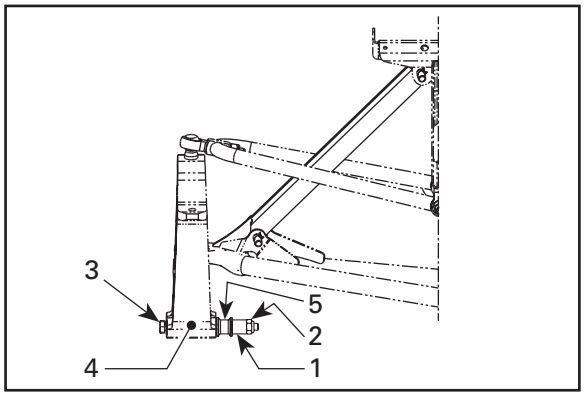
Crate Brackets

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

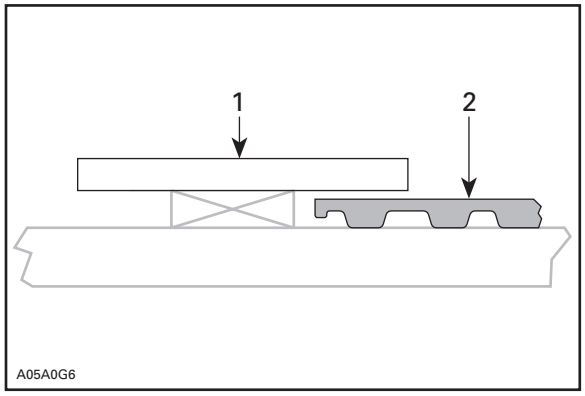
- If applicable, cut locking ties and remove ski leg wood protectors.
- Detach ski legs from crate shipping brackets.
- Discard shipping spacers **[**1**]** and nuts **[**2**]**.
- Keep ski leg bolts **[**3**]** and slider cushions **[**4**]** for skis installation.

Model(s): Summit

- Keep ski stance spacers **[**5**]** for skis installation.



- Using a pry bar, remove wood blocks retaining the track to the crate base.
- Remove the vehicle from the crate base.



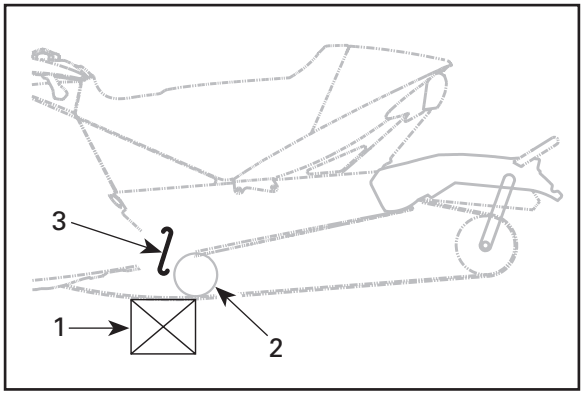
Shipping Hook(s)

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Apply the parking brake.
- Lift the rear of the vehicle so that a block or a box [1] can be positioned under the front idler wheel [2].

NOTE: On some models, the front arm is secured with 2 hooks.



- Cut the locking tie retaining the front hook(s) [3].
- If applicable, cut locking ties retaining rear suspension straps.
- Ask another person to apply pressure onto the rear suspension.
- Remove front hook(s) from suspension.

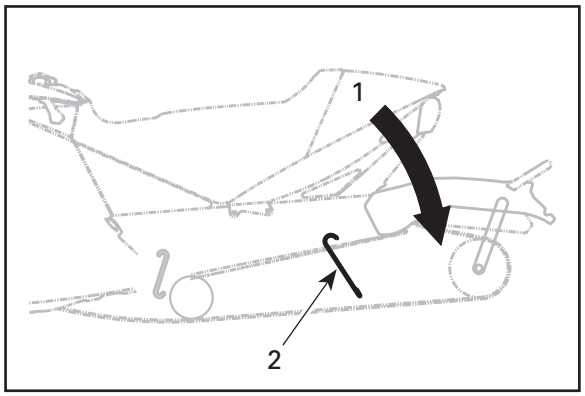
⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

Model(s): MX Z (Renegade)/Summit/GTX

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.



- Make sure that parking brake is applied.
- Lift the front of the vehicle to position bumper approximately 1 meter upward (35 to 40 inches).
- Standing on footwells, sit roughly to apply pressure [1] onto the rear suspension to free the rear hook(s) [2].

NOTE: On some models, the rear arm is secured with 2 hooks.

CAUTION: To avoid any damage to the seat, always sit on the seating surface.

- Remove the rear hook(s) from the suspension.

⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

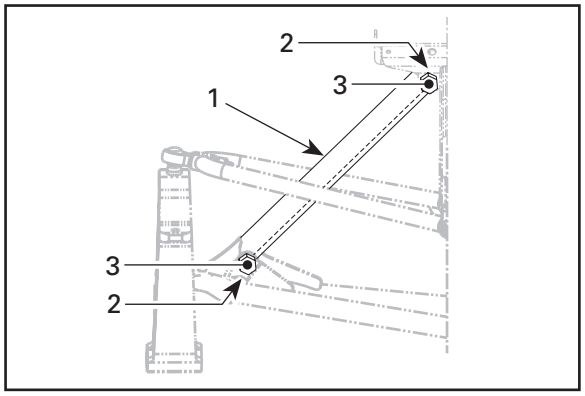
SET-UP

Shipping Brackets

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to. Where specified, install new locking devices (e.g. lock tabs, elastic stop nuts). If the efficiency of a locking device is impaired, it must be renewed.

- Make sure that parking brake is applied.
- Remove and discard the shipping brackets **[**1**]** from the front suspension.
- Discard the spring clips **[**2**]**.
- Keep the hexagonal bolts **[**3**]** for the front shocks installation.



Front Shocks

Model(s):

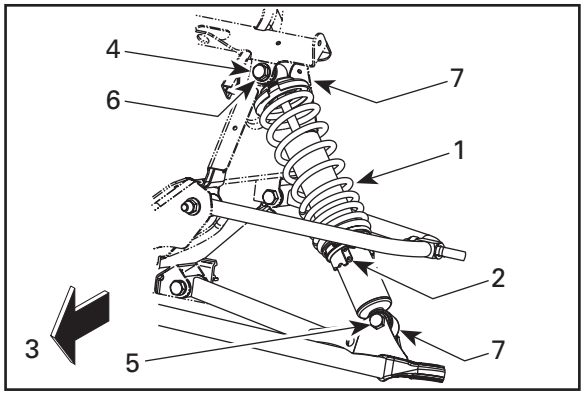
– GSX/GTX
– MX Z (Adrenaline/Renegade/Trail)
– Summit (Adrenaline)

- Position front shock absorbers **[**1**]** in place with their adjustment ring at the bottom **[**2**]**.

NOTE: **[**3**]** indicates the front of the vehicle.

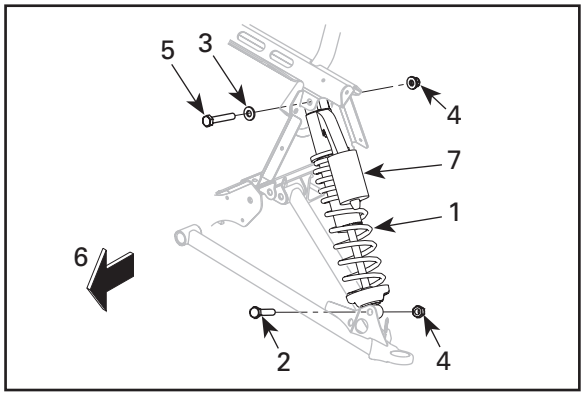
- Secure each shock absorber to suspension using:

- **[**4**]** hexagonal bolt M10 x **60** (previously removed)
- **[**5**]** hexagonal bolt M10 x **55** (previously removed)
- **[**6**]** washer (previously removed)
- **[**7**]** 2 elastic flanged nuts M10 (predelivery kit).



Model(s):

– MX Z (X/Renegade X)
– MX Z (Adrenaline/Trail/X – Europe)



- Position front shock absorbers **[**1**]** in place with their adjustment ring at the top.

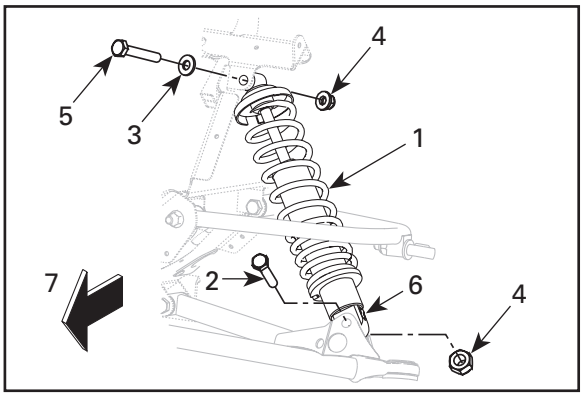
NOTE: When shock absorbers are installed, shock reservoir **[**7**]** should be tilted toward the front of the vehicle.

NOTE: [6**]** indicates the front of the vehicle.

- Secure each shock absorber to suspension using:

- **[**5**]** hexagonal bolt M10 x **60** (previously removed)
- **[**2**]** hexagonal bolt M10 x **55** (previously removed)
- **[**3**]** washer (previously removed)
- **[**4**]** 2 elastic flanged nuts M10 (predelivery kit).

Model(s): Summit X



- Position front shock absorbers **[**1**]** in place with their adjustment ring at the bottom and brass fitting **[**6**]** facing outward.

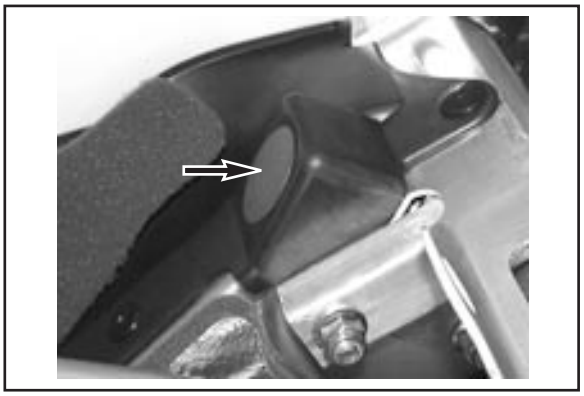
NOTE: [7**]** indicates the front of the vehicle.

- Secure each shock absorber to suspension using:

- **[**5**]** hexagonal bolt M10 x **60** (previously removed)
- **[**2**]** hexagonal bolt M10 x **55** (previously removed)
- **[**3**]** washer (previously removed)
- **[**4**]** 2 elastic flanged nuts M10 (predelivery kit).

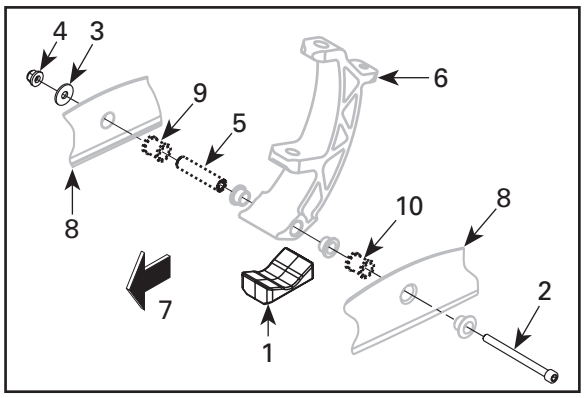
Bottom Pan Caps

- Install plastic caps provided in the predelivery kit on the bottom pan.



Skis

Model(s): Summit



- It is possible to change the ski stance from narrow to wide or vise versa, follow the procedure as given below.

NOTE: At the factory, ski stance is adjusted in narrow position.

- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**8**]** to ski leg **[**6**]** using:
  - **[**2**]** socket head screw M10 x 125 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit).

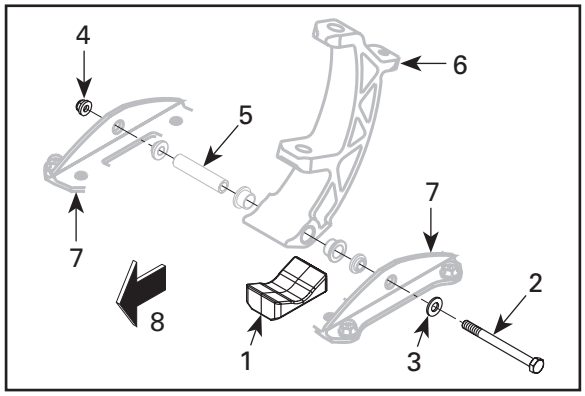
Ski Stance Adjustment

- narrow: place spacer in position **[**9**]**
- wide: place spacer in position **[**10**]**.

NOTE: **[**7**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Model(s): All Except Summit



- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**7**]** to ski leg **[**6**]** using:
  - **[**2**]** hexagonal bolt M10 x 110 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit)

NOTE: **[**8**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Battery Preparation

Model(s): With Electric Starting

All electric starting equipped vehicles using a **YTX20L-BS** or **YTX24L-BS** type battery require a specific charging procedure at predelivery.

- Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area. Never charge or boost battery while installed on vehicle. Do not open the sealed caps during charging. Do not place battery near open flame.

CAUTION: If battery becomes hot, stop charging and allow it to cool before continuing.

NOTE: Sealed VRLA batteries have an internal safety valve. If battery pressure increases due to overcharging, the valve opens to release excess pressure, preventing battery damage.

An automatic charger is the fastest and most convenient way for error-proof charging.

Battery Voltage below 12.8 V and above 11.5 V

STANDARD CHARGING (recommended)		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	4 – 9 hours	2 A
YTX24HL-BS	5 – 10 hours	

QUICK CHARGING		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	50 minutes	10 A
YTX24HL-BS	1 hour	

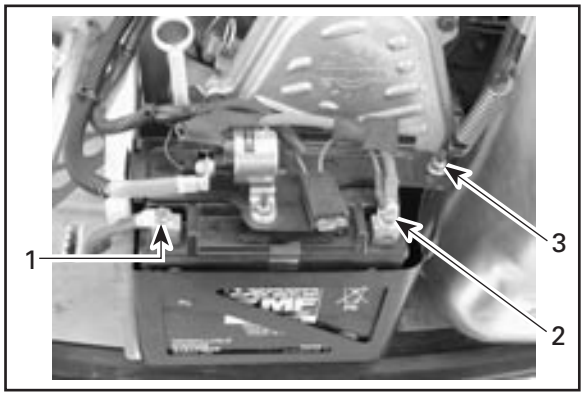
Battery Voltage below 11.5 V

Batteries with voltage below 11.5 V requires special procedures to recharge. In charging an overdischarged battery, its internal resistance may be too high to charge at a normal charging voltage. Therefore, it may be necessary to raise the voltage of the battery initially to 25 V as a maximum, and charge for approximately 5 minutes.

If the charger ammeter shows no change in current after 5 minutes, you need a new battery. Current flowing into the battery at high voltage can become excessive. Monitor amperage and adjust voltage as necessary to keep current at the battery's standard amp rating. Charge for approximately 20 hours.

Battery Removal

Model(s): With Electric Starting



⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

- Open the right side panel of the vehicle.
- Disconnect BLACK negative cable **[**1**]** from the terminal.
- Slide off the rubber boot from the RED cable and disconnect the RED cable **[**2**]**.
- Remove the bracket by unscrewing the bracket retaining nut **[**3**]**.
- Remove the battery.

Battery Installation

Model(s): With Electric Starting

- Install the bracket and screw the bracket retaining nut.
- Connect RED positive cable it to positive battery terminal.
- Connect RED wire (coming from 30 A fuse).
- Connect BLACK negative cable LAST.

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

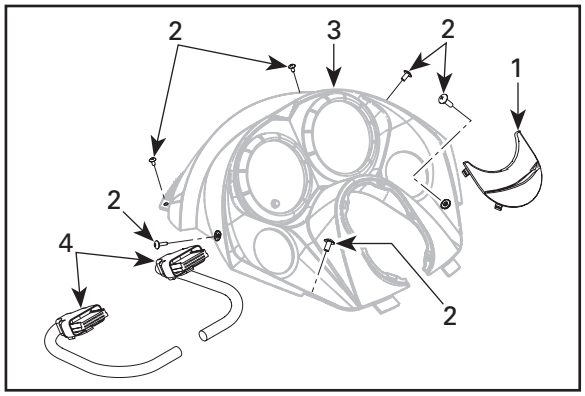
Never charge or boost battery while installed on vehicle.

- Cover the RED positive terminal with rubber boot.
- Apply silicone dielectric grease (P/N 293 550 004) on battery posts and connectors.

Steering Column Adjustment

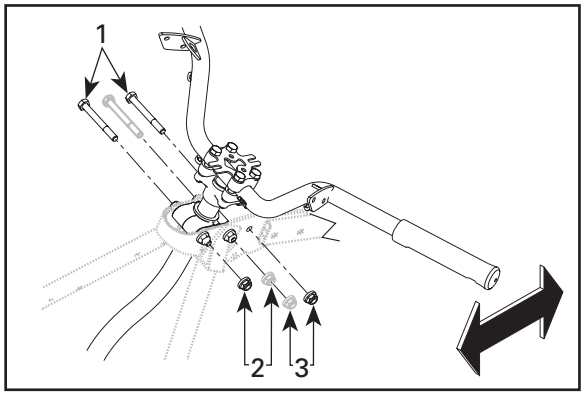
Model(s): Liquid Cooled with Adjustable Windshield Only

- Steering column position is adjustable fore and aft.
- If you prefer to adjust the steering column in forward or rearward position, proceed as follows.
- Remove console cap **[**1**]**.
- Remove the 6 screws **[**2**]** retaining the console.
- Slightly lift the console **[**3**]** to gain access to the electrical connector housing(s).
- Unplug the large connector housing(s) **[**4**]**.

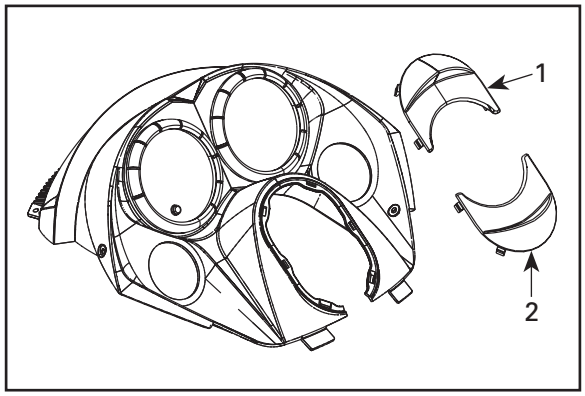


- Remove the 2 bolts **[**1**]** retaining the top of the steering column.
- Adjust the steering column according to customer riding style:
  - **[**2**]** for **forward** position
  - **[**3**]** for **rearward** position.
- Reinstall the 2 bolts and elastic nuts.

Torque the elastic nuts to 24 N•m (**18** lbf•ft)**.**

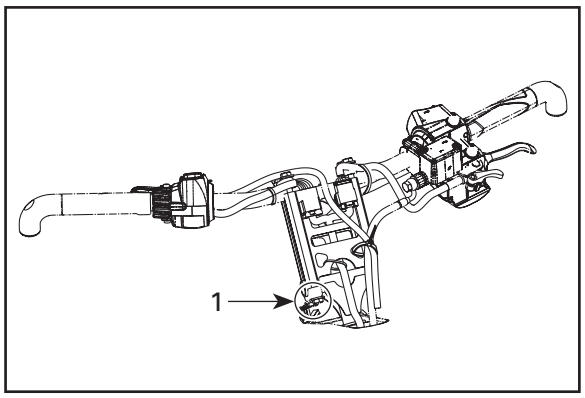


- Plug in the large connector housing(s) previously unplugged.
- Reinstall the console and secure with previously removed screws.
- Position of console cap will be:
  - **[**1**] above** steering column for rearward steering position
  - **[**2**] beneath** steering column for forward steering position.



Handlebar

Model(s): X Package Only



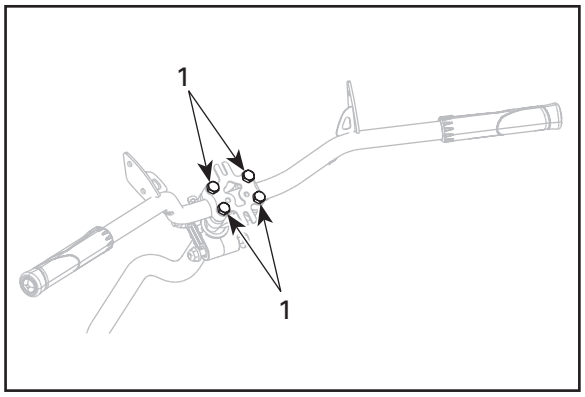
- Loosen bolts **[**1**]** retaining the steering extension to the steering column.
- Lift steering extension until it comes in contact with the steering column thrust.
- On some models, adjust the handlebar so that the brake fluid reservoir is level.
- Secure steering extension to the steering column.

Torque to 24 N•m (**18** lbf•ft)**.**

- Secure if necessary the handlebar to the steering extension.

Torque to 24 N•m (**18** lbf•ft)**.**

Model(s): All Except X Package



- Loosen bolts **[**1**]** retaining the handlebar to the steering column.

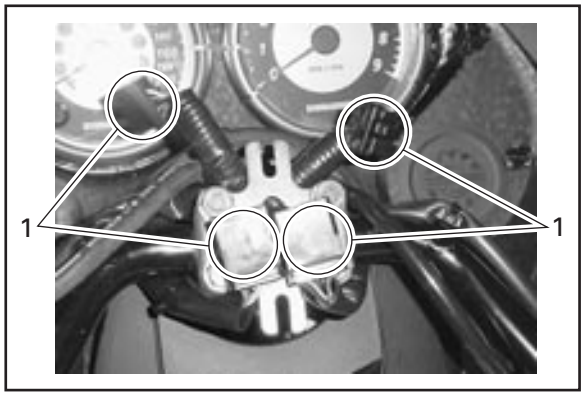
NOTE: On some models, remove connectors from steering column to have a better access to bolts.

- Adjust the handlebar so that the brake fluid reservoir is level.
- Secure the handlebar to the steering column.

Torque to 24 N•m (**18** lbf•ft)**.**

- If applicable, reinstall the steering harness connectors on the steering column brackets.

Steering Column Connectors



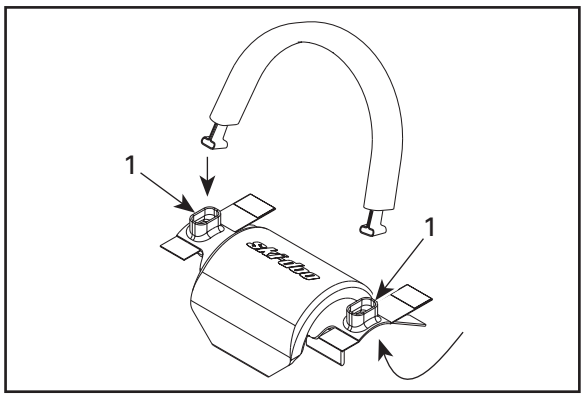
- On some models, clip the main harness connectors on the steering column brackets.
- Connect **[**1**]** main harness to steering harness.

Steering Holding Strap/Cover

Model(s): MX Z (Renegade)/Summit

NOTE: Steering pad is included in the predelivery box.

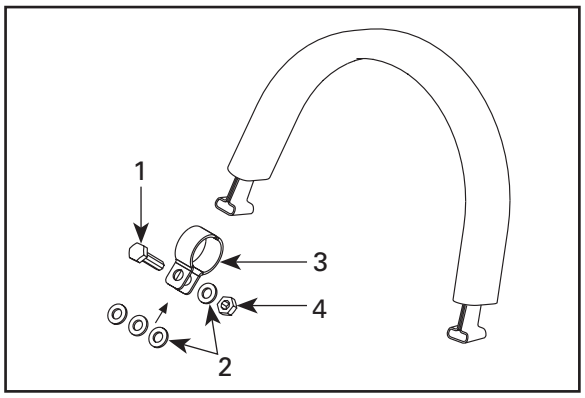
- Cut the locking tie retaining the holding strap end to the handlebar.
- If applicable, insert strap through steering pad holes **[**1**]**.



- Secure the holding strap end to the handlebar using:

NOTE: Retaining clip and hardware should be installed in the same position as the opposite side strap end.

- **[**1**]** hexagonal flanged bolt (predelivery kit)
- **[**2**]** 4 flat washers (predelivery kit)
- **[**3**]** retaining clip (previously removed)
- **[**4**]** elastic nut (predelivery kit)



Torque to 11 N•m (**97** lbf•**in**)**.**

NOTE: Wires route along the handlebar. To avoid pinching them, take care to keep wires out of retaining clip.

Steering Cap

Model(s): Plastic Cap

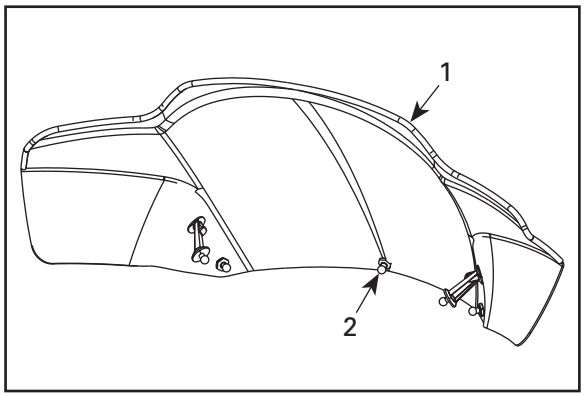
- Clip steering cap in place (predelivery box).

Model(s): Padded Cap

- Properly position steering padding in place and secure with Velcro strips or zippers.

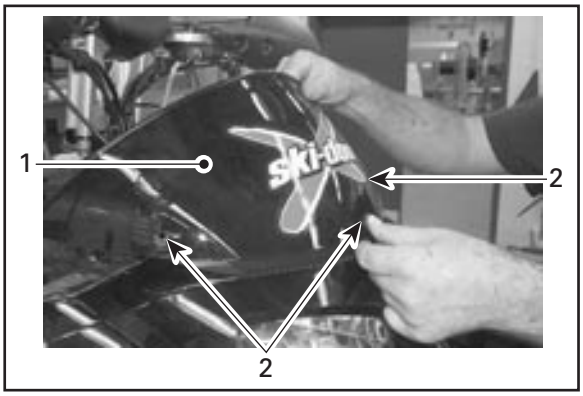
Windshield

Model(s): Summit/GTX



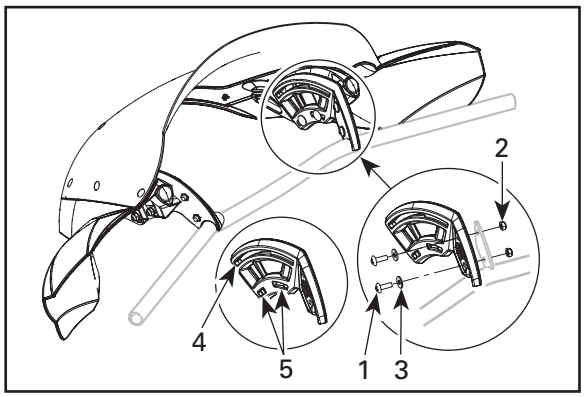
- Remove protective films from windshield.
- Install windshield support from predelivery kit onto the console provided hole (Summit Only).
- Position windshield **[**1**]** in place.
- Secure windshield to console using windshield knobs **[**2**]**.

Model(s): MX Z (X/Renegade X)



- Remove protective films from windshield.
- Position windshield **[**1**]** in place.
- Secure windshield to console using rivets **[**2**]** from the predelivery kit.

Model(s): GSX/MX Z



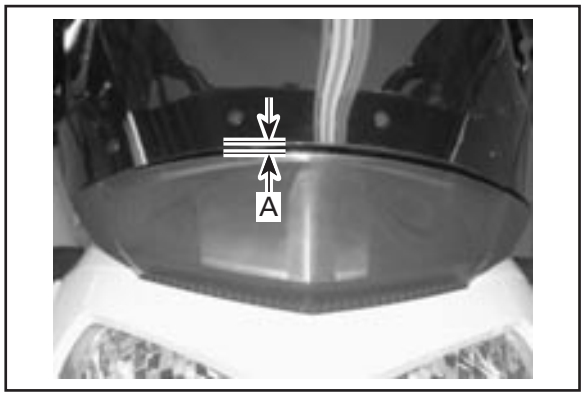
- Remove protective films from windshield.
- Position windshield in place.
- Secure windshield to handlebar using:

  - **[**1**]** 4 screws M6 x 16 (predelivery kit)
  - **[**2**]** 4 elastic nuts M6 (predelivery kit)
  - **[**3**]** 4 flat washers (predelivery kit)

NOTE: Screws toward the inside of the vehicle.

- Two slots are provided for installation with forward **[**5**]** or rearward **[**4**]** handlebar position.
- Turn the handlebar completely from side to side to make sure there is no contact with hood.

NOTE: For a good fit, a gap **[**A**]** of 8 to 12 mm (3/8 to 1/2 in) between windshield and moulding is suggested.



Mirrors

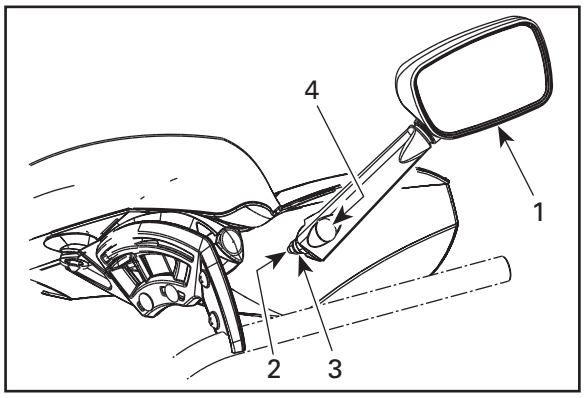
Model(s): GSX/GTX

NOTE: Mirrors are included in the predelivery box.

- Remove the existing cap from windshield supports (GSX only).
- Position and secure mirrors **[**1**]** using:

NOTE: For the GTX models, mirrors are mounted on the handlebar.

- **[**2**]** 2 hexagonal screws (predelivery kit)
- **[**3**]** 2 nuts (predelivery kit)
- **[**4**]** 2 caps (predelivery kit)



Heated Visor Extension Cord

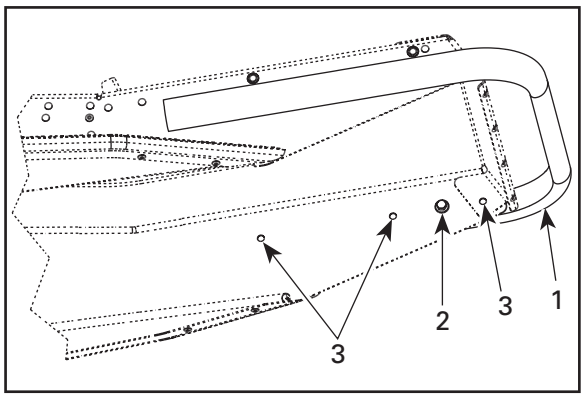
Model(s): GSX/GTX

NOTE: Heated visor extension cord is included in the predelivery kit.

- Lift cap on the left side of the console.
- Install the heated visor extension cord.

Rear Bumper

Model(s): All Except MX Z (Renegade)/GTX and Summit



- Remove and keep the hexagonal bolts **[**2**]** retaining rear bumper to frame.
- Pull gently on rear bumper **[**1**]** until holes of rear bumper are aligned with frame holes **[**3**]**.
- Secure rear bumper to frame using:
  - 4 hexagonal bolts M8 x 20 (predelivery kit).
  - 2 hexagonal bolts M8 x 20 (previously removed).

Torque to 15 N•m (**133** lbf•**in**)**.**

- Install bumper caps (predelivery kit).

2+1 Seat/Passenger's Seat

Model(s): GTX

- Install 2+1 seat.
- Install passenger's seat.

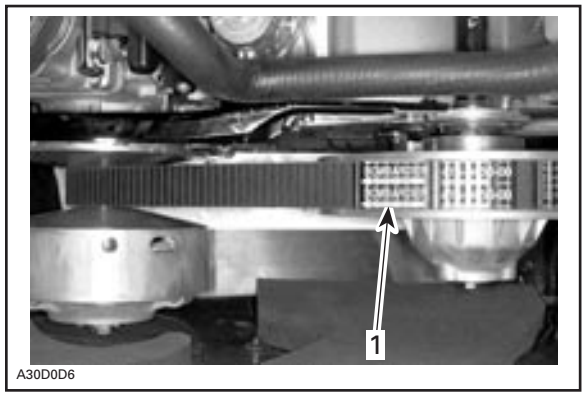
NOTE: Refer to the GTX *Operator's Guide* for the complete installation instructions.

Drive Belt

- Clean pulleys and disc brake before installing the drive belt.

NOTE: Use a suitable cleaner such as Pulley flange cleaner (P/N 413 711 809).

CAUTION: The arrow **[**1**]** is indicating the direction of rotation (see typical illustration).



FINAL PREPARATION

Recommended Oil

CAUTION: Use only injection oil that flows at - 40°C (- 40°F).

- Oil is contained in the injection oil reservoir.
- Use only two-stroke engine injection oil sold by authorized SKI-DOO dealers.

MODEL	OIL TYPE [1]
All	XP-S synthetic 2-stroke oil or XP-S 2-stroke synthetic blend or XP-S mineral injection oi

[1] All XP-S injection oils are compatible, they can be mixed together.

The XP-S 2-stroke synthetic blend and XP-S synthetic 2-stroke injection oil **provide superior lubrication**, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. These synthetic injection oils meet the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

CAUTION: Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard two-stroke engine oils or ashless two-stroke engine oils. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

⚠ WARNING

Wipe off any oil spills. Oil is highly flammable.

Break-in Period

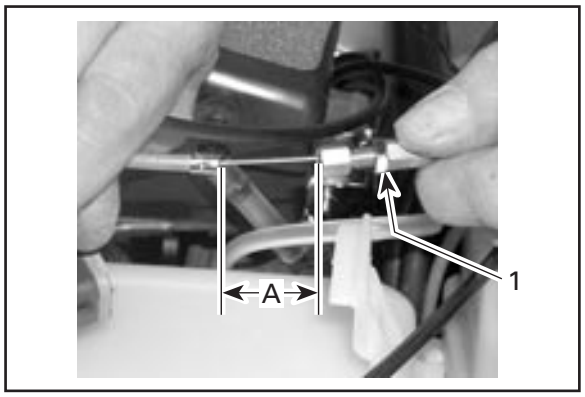
- To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz) of the recommended injection oil should be added to fuel for the first full filling of fuel tank.

NOTE: Always remove and clean spark plugs after engine break-in.

Oil Pump Adjustment

Oil injection pump is factory set. However, if adjustment needs to be checked or modified, stretch cable sheath to fully open oil pump.

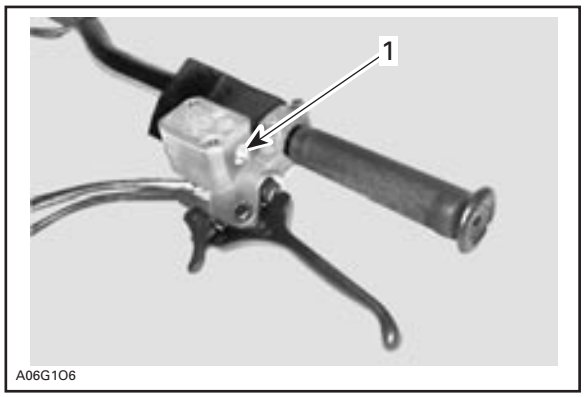
- Wire length [A] must be 18 mm (11/16 in).
- If necessary, turn the adjustment nut [1] to reach this mesure.



Brake Fluid Level

- Check brake fluid in reservoir for proper level [1].
- Add brake fluid (DOT 4) as required.
  - Use SRF (DOT 4) (P/N 293 600 063)
  - or GTLMA (DOT 4) (P/N 293 600 062).

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Do not store or use a started bottle of brake fluid.



Track

- Refer to *Shop Manual* to adjust track tension and alignment.

NOTE: Track deflection is 30 to 35 mm (1-3/16 to 1-3/8 in) with a downward pull of 7.3 kg (16 lb).

- Install caps provided in Predelivery Kit.

NOTE: If lubricant is needed to help cap installation, use lens cleaner instead of soapy water to avoid cap to get out from its location due to soap residual.

Disk Brake

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

DELIVERY TO CUSTOMER

Speedometer

Model(s): If So Equipped

This model is equipped with an electronic speedometer, it may show speed in km/h or MPH.

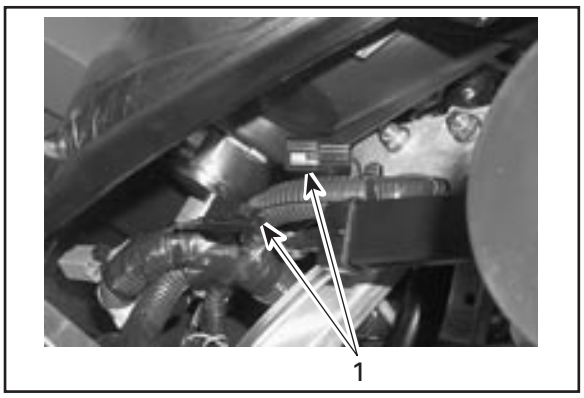
NOTE: At the factory speedometer, odometer and trip meter is adjusted for miles reading.

- Proceed as follow to change units from miles to kilometers.

NOTE: At a speed of 90 km/h (55 MPH) and more, the LCD mode screen will show speed only instead of the selected mode.

- Stop engine and open hood.
- Cut locking ties.
- Plug connectors **[**1**]** together to change units from miles to kilometers.
- Unplug to return to miles reading.
- Fasten connector to harness with locking ties.

A33E096



Heated Carburetor Valve

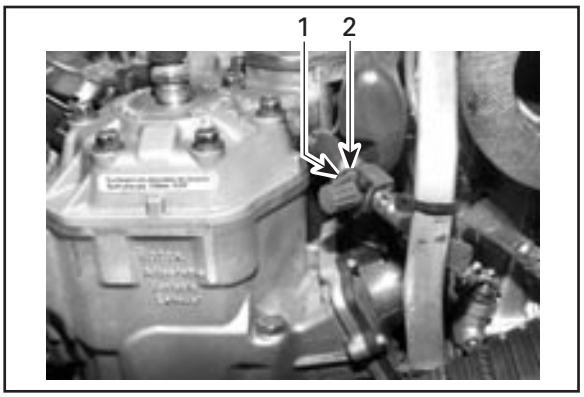
Model(s): With Heated Carburetors

Heated carburetor valve position:

- **ON [**1**]**
- **OFF [**2**]**.

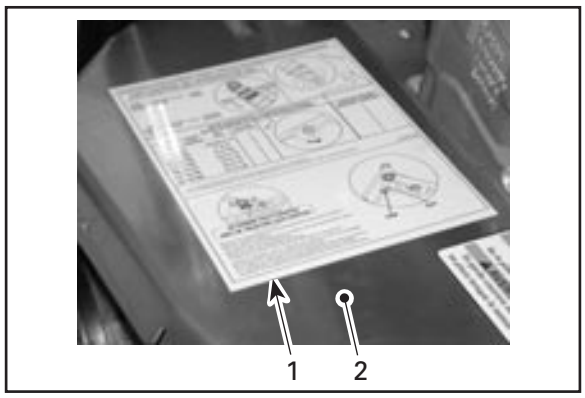
- The heated carburetor valve should be closed **[**2**]** except:
  - When riding between - 5°C and 5°C (23°F and 41°F) in a high relative humidity.
  - When riding in deep powder snow.
  - When following another snowmobile which makes dust snow.

CAUTION: When operating the snowmobile above 5°C (41°F), move the carburetor heating valve to the **OFF [**2**]** position.



Rear Suspension Adjustments

- Rear suspension is calibrated at factory. At predelivery, mechanics should perform suspension adjustments according to customer riding style and vehicle load as described on suspension adjustment chart **[**1**]** which is located on pulley guard **[**2**]**.



SPECIFICATIONS

Technical Data

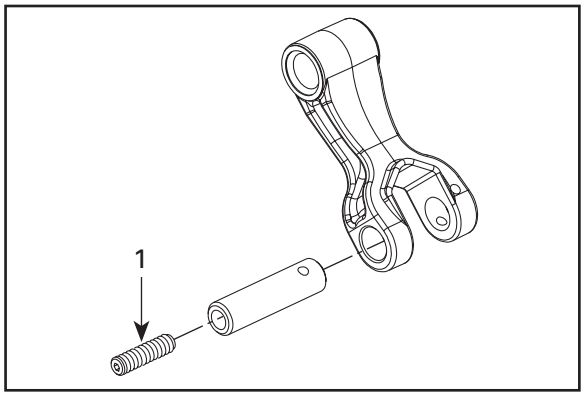
The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile.

Model(s): All Except Summit

- Vehicles used at high altitudes, above 600 m (2000 ft) should be fitted with a high altitude kit. Further inquiries should be directed to your distributor service representative.

Model(s): Summit Only

- **From the factory, Summit models are calibrated to run from 600 m (2000 ft) to 2500 m (8000 ft).**
- **If vehicle is to be used at altitudes higher than 2500 m (8000 ft), remove socket set screw [**1**] inside pin assembly of TRA III drive pulley.**



MODEL			GSX/GTX		
ENGINE					
Engine Type			593	593 HO	793 HO
Maximum HP RPM [1]		±100 RPM	8000	8000	7850
FUEL SYSTEM					
Carburetor Type			TM 40–B313	TM 40–B316	TM 40–B322
Main Jet			360	380	440
Needle Jet			P-0M	P-0M	P-0M
Pilot Jet			17.5	17.5	17.5
Needle Identification — Clip Position			9DGM15–58 — 1	9DHI14–58 — 1	9EGI04–58 [5]
Slide Cut-Away			2.0	2.0	2.0
Air or Pilot Screw Adjustment			—	—	—
Idle Speed RPM		± 200 RPM	1600	1600	1500
Throttle Slide Height at Idle		± 0.1 mm	1.5	1.6	1.7
Gas Grade/Pump Octane Number		(R + M)/2	Regular unleaded/87	Regular unleaded/87	Regular unleaded/87
Gas/Oil Ratio			Oil Injection	Oil Injection	Oil Injection
ELECTRICAL					
Ignition Timing BTDC [2] [3]		mm (in)	2.49 (.0980)	2.79 (.1098)	2.37 (.0933)
Trigger Coil Air Gap		mm (in)	0.55 - 1.45 (.022 - .057)	0.55 - 1.45 (.022 - .057)	0.55 - 1.45 (.022 - .057)
TRANSMISSION					
Gear Ratio		Teeth	22/43 GTX: 21/43	22/43 GTX: 21/43	23/43 GTX: 23/45
Engagement Speed		± 100 RPM	3400	3800	3600
Drive Pulley Calibration Screw Position			4	3	3
Pulley Distance	Z [4]	± 0.5 mm (± .020 in)	19.0 (3/4)	20.0 (25/32)	20.0 (25/32)
Offset	X	± 0.5 mm (± .020 in)	37.0 (1-15/32)	37.0 (1-15/32)	37.0 (1-15/32)
	Y	± 0.5 mm (± .020 in)	Dimension Y must exceed X of 0.82 mm (.032 in)	Dimension Y must exceed X of 0.82 mm (.032 in)	Dimension Y must exceed X of 0.82 mm (.032 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Drive Chain Tension			Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation	Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation	Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

MODEL			MX Z		
ENGINE					
Engine Type			593	593 HO	793 HO
Maximum HP RPM [1]		±100 RPM	8000	8000	7850
FUEL SYSTEM					
Carburetor Type			TM 40–B313	TM 40–B316	TM 40–B322 ADR: TM 40–B319
Main Jet			360	380	400
Needle Jet			P-0M	P-0M	P-0M
Pilot Jet			17.5	17.5	17.5
Needle Identification — Clip Position			9DGM15–58 — 1	9DHI14–58 — 1	9EGI04–58 [5] ADR: 9DGI16–58 — 1
Slide Cut-Away			2.0	2.0	2.0
Air or Pilot Screw Adjustment			—	—	—
Idle Speed RPM		± 200 RPM	1600	1600	1500
Throttle Slide Height at Idle		± 0.1 mm	1.5	1.6	1.7
Gas Grade/Pump Octane Number		(R + M)/2	Regular unleaded/87	Regular unleaded/87	Regular unleaded/87
Gas/Oil Ratio			Oil Injection	Oil Injection	Oil Injection
ELECTRICAL					
Ignition Timing BTDC [2] [3]		mm (in)	2.49 (.0980)	2.79 (.1098)	2.37 (.0933)
Trigger Coil Air Gap		mm (in)	0.55 - 1.45 (.022 - .057)	0.55 - 1.45 (.022 - .057)	0.55 - 1.45 (.022 - .057)
TRANSMISSION					
Gear Ratio		Teeth	22/43 Trail (EUR): 21/43	22/43 Renegade (track: 1.25): 21/43	25/45 Renegade (track: 1.25): 23/43 Renegade X (track: 1.75): 21/43
Engagement Speed		± 100 RPM	3800	3800	3800
Drive Pulley Calibration Screw Position			3	3	3
Pulley Distance	Z [4]	± 0.5 mm (± .020 in)	19.0 (3/4)	20.0 (25/32)	20.0 (25/32)
Offset	X	± 0.5 mm (± .020 in)	37.0 (1-15/32)	37.0 (1-15/32)	37.0 (1-15/32)
	Y	± 0.5 mm (± .020 in)	Dimension Y must exceed X of 0.82 mm (.032 in)	Dimension Y must exceed X of 0.82 mm (.032 in)	Dimension Y must exceed X of 0.82 mm (.032 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Drive Chain Tension			Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation	Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation	Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

MODEL			SUMMIT	
ENGINE				
Engine Type			593 HO	793 HO
Maximum HP RPM [1]		±100 RPM	8000	7850
FUEL SYSTEM				
Carburetor Type			TM 40–B325	TM 40–B328
Main Jet			380	400
Needle Jet			P-0M	P-0M
Pilot Jet			17.5	17.5
Needle Identification — Clip Position			9DGK11–58 — 3	9EGY2–58 — 3
Slide Cut-Away			2.0	2.0
Air or Pilot Screw Adjustment			—	—
Idle Speed RPM		± 200 RPM	1600	1500
Throttle Slide Height at Idle		± 0.1 mm	1.6	2.0
Gas Grade/Pump Octane Number		(R + M)/2	Regular unleaded/87	Premium unleaded/91
Gas/Oil Ratio			Oil Injection	Oil Injection
ELECTRICAL				
Ignition Timing BTDC [2] [3]		mm (in)	2.79 (.1098)	2.37 (.0933)
Trigger Coil Air Gap		mm (in)	0.55 - 1.45 (.022 - .057)	0.55 - 1.45 (.022 - .057)
TRANSMISSION				
Gear Ratio		Teeth	19/45	19/45 ADR (EUR): 24/45
Engagement Speed		± 100 RPM	3800 ADR (EUR): 3600	3800
Drive Pulley Calibration Screw Position			1 ADR (EUR): 3	1 ADR (EUR): 3
Pulley Distance	Z [4]	± 0.5 mm (± .020 in)	20.0 (25/32)	20.0 (25/32)
Offset	X	± 0.5 mm (± .020 in)	37.0 (1-15/32)	37.0 (1-15/32)
	Y	± 0.5 mm (± .020 in)	Dimension Y must exceed X of 0.82 mm (.032 in)	Dimension Y must exceed X of 0.82 mm (.032 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	0.0 (0.0)	0.0 (0.0)
Drive Chain Tension			Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation	Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

[1] Engine speed at which maximum power is achieved.

[2] At 3500 RPM (engine cold) with headlamp turned on.

[3] During the initial engine break-in, the timing curve is retarded between 4500 RPM and maximum RPM. Because checking ignition timing is done at lower RPM, this will not affect the 3500 RPM timing specification.

[4] Z dimension without torque rod preload. After Z dimension adjustment, hand tight torque rod until plastic pad cannot be turned, then turn torque rod an additional half turn. Lock jam nut.

[5] Needle with one groove only (no adjustment).

- BTDC : Before Top Dead Center
- PTO : Power Take OFF side
- MAG : Magneto side

Please route to:

Init.

- ☐ Service ☐
- ☐ Sales ☐
- ☐ Parts ☐

ski-doo®

SNOWMOBILES

D

PREDELIVERY Bulletin

Date: **August 25, 2004** Subject: **REV (Fan Cooled)** No. **2005-5**

YEAR	MODEL	MODEL NUMBER	PREDELIVERY KIT P/N
2005	GSX 380F	DG5B	549 011 227
2005	GSX 550F	DF5A	549 011 227
2005	GTX 380F	EM5A, EM5B	549 011 223
2005	GTX 550F	EL5A, EL5B	549 011 223
2005	MX Z 380F	BR5A, BR5B, BR5C	549 011 227
2005	MX Z 550F	BP5A, BP5B, BP5C	549 011 227
2005	†SUMMIT 550F (CAN/U.S.)	CM5A	549 011 234
2005	SUMMIT 550F (Europe)	CM5B	549 011 234
2005	EXPEDITION 550F	FJ5A, FJ5B	549 011 223

† **This vehicle is factory calibrated to be ridden at 1800 m (6000 ft); if not re calibrated for proper altitude use, severe engine damage may occur.**

TABLE OF CONTENTS

Printed in Canada. (mbl2005-007 DR)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

PREDELIVERY KIT

Parts List

NOTE: Predelivery kits contains parts for various models, all parts may not be necessary for all vehicles, refer to the following tables for proper parts usage.

GTX/EXPEDITION: 549 011 223					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	7
Rear Suspension	YES	Wheel Cap	570 063 600	2	16
Ski	YES	Ski Stopper	505 071 304	2	8
	YES	Washer	234 001 410	2	8
	YES	Hex. Flanged Nut M10	233 201 414	2	8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7
Windshield	YES	Windshield Support	517 303 197	1	12
Mirror	YES	Hex. Flanged Bolt M6 x 40	207 663 544	2	13
	YES	Elastic Flanged Nut M6	233 261 494	2	13
	YES	Mirror Cap	517 302 716	2	13
Console	YES	Heated Visor Extension Cord	515 175 851	1	13

MX Z/GSX: 549 011 227					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	7
Rear Bumper	YES	Hex. Flanged Bolt M5 x 20	207 682 044	4	14
Rear Suspension	YES	Wheel Cap	570 063 600	2	16
Ski	YES	Ski Stopper	505 071 304	2	8
	YES	Washer	234 001 410	2	8
	YES	Hex. Flanged Nut M10	233 201 414	2	8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7
Windshield	YES	Torx Screw M6 x16	250 000 129	4	12
	YES	Nut M6	250 000 135	4	12
	YES	Nylon Washer	517 302 736	4	12
Mirror	YES (GSX Only)	Hex. Flanged Bolt M6 x 40	207 664 044	2	13
	YES (GSX Only)	Elastic Flanged Nut M6	233 261 494	2	13
	YES (GSX Only)	Mirror Cap	517 302 716	2	13
Console	YES (GSX Only)	Heated Visor Extension Cord	515 175 851	1	13
Rear Bumper	YES	Bumper Cap	520 000 397	1	14
	YES	Bumper Cap	520 000 398	1	14

Summit: 549 011 234					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	7
Rear Suspension	YES	Wheel Cap	570 063 600	2	16
Ski	YES	Ski Stopper	505 071 632	2	8
	YES	Washer 10 mm	234 002 410	2	8
	YES	Hex. Flanged Nut M10	732 610 084	2	8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7
Handlebar Strap	YES	Hex. Flanged Bolt M6 x 20	207 662 084	1	11
	YES	Flat Washer 6 mm	234 061 410	4	11
	YES	Elastic Nut M6	232 561 414	1	11
Windshield	YES	Windshield Support	517 303 197	1	12

UNCRATING

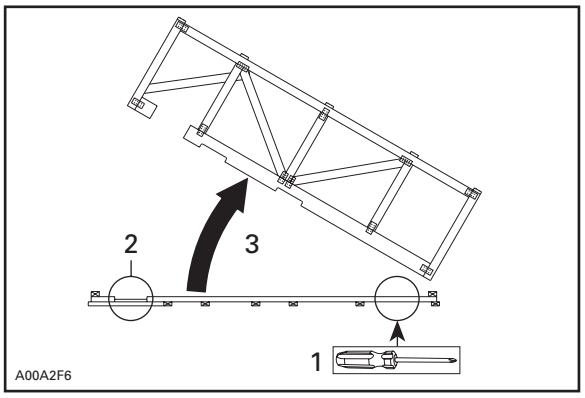
Crate Cover

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

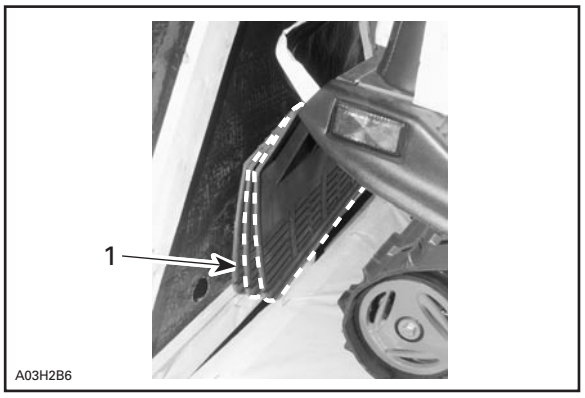
- Using a drill or a screwdriver, remove all screws **[**1**]** retaining crate cover to crate base.
- Tilt **[**3**]** the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle **[**2**]**.



- Lift the crate cover slowly to avoid damaging the vehicle.

NOTE: On some models, if cover is tilted toward the front of the vehicle, snow guard may interfere with crate cover, push on snow guard **[**1**]** when lifting cover.



- Remove polyethylene foam protective sheets.
- If applicable, remove all parts to be installed from vehicle or crate base:

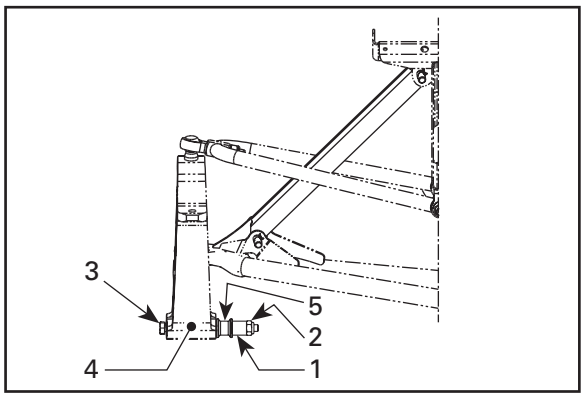
Crate Brackets

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

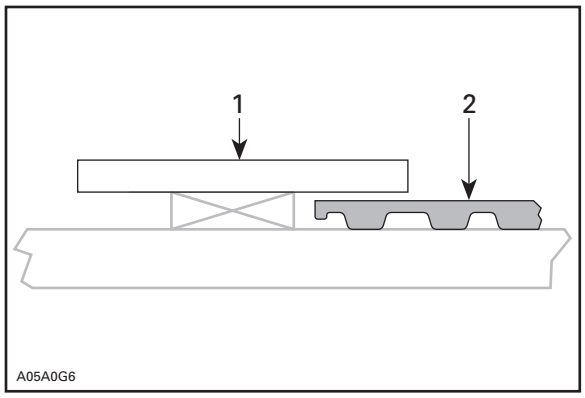
- If applicable, cut locking ties and remove ski leg wood protectors.
- Detach ski legs from crate shipping brackets.
- Discard shipping spacers [1] and nuts [2].
- Keep ski leg bolts [3] and slider cushions [4] for skis installation.

Model(s): Summit

- Keep ski stance spacers [5] for skis installation.



- Using a pry bar, remove wood blocks retaining the track to the crate base.
- Remove the vehicle from the crate base.



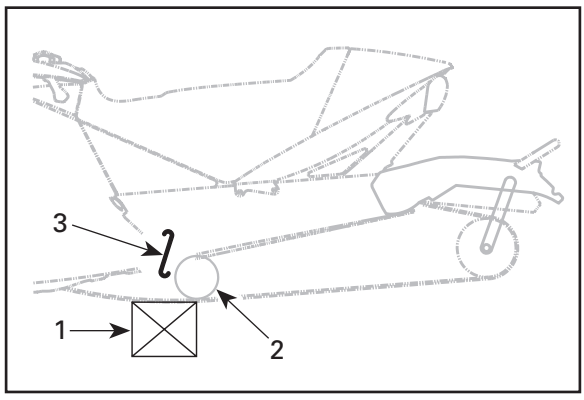
Shipping Hook(s)

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Apply the parking brake.
- Lift the rear of the vehicle so that a block or a box [1] can be positioned under the front idler wheel [2].

NOTE: On some models, the front arm is secured with 2 hooks.



- Cut the locking tie retaining the front hook(s) [3].
- If applicable, cut locking ties retaining rear suspension straps.
- Ask another person to apply pressure onto the rear suspension.
- Remove front hook(s) from suspension.

⚠ WARNING

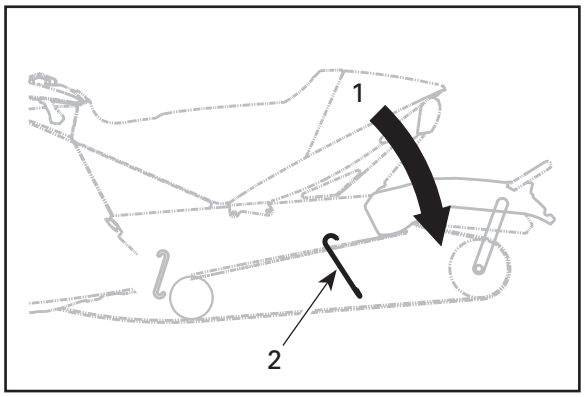
Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

Model(s): Summit/GTX

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Make sure that parking brake is applied.
- Lift the front of the vehicle to position bumper approximately 1 meter upward (35 to 40 inches).
- Standing on footwells, sit roughly to apply pressure **[**1**]** onto the rear suspension to free the rear hook(s) **[**2**]**.



NOTE: On some models, the rear arm is secured with 2 hooks.

CAUTION: To avoid any damage to the seat, always sit on the seating surface.

- Remove the rear hook(s) from the suspension.

⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

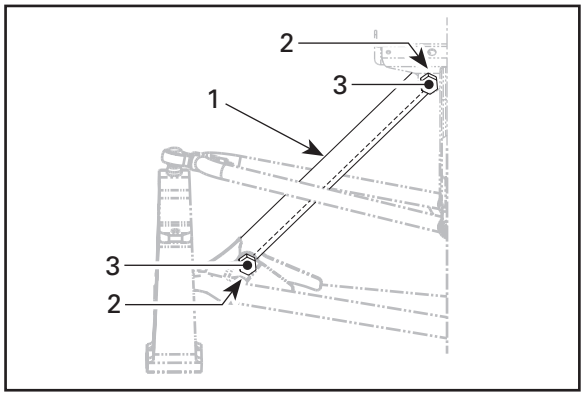
SET-UP

Shipping Brackets

⚠ WARNING

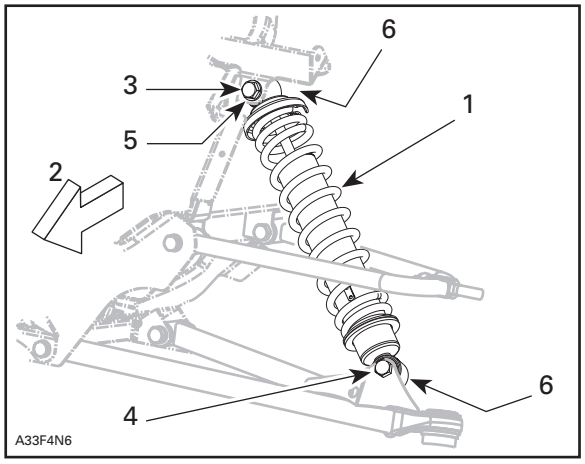
Torque wrench tightening specifications must be strictly adhered to. Where specified, install new locking devices (e.g. lock tabs, elastic stop nuts). If the efficiency of a locking device is impaired, it must be renewed.

- Make sure that parking brake is applied.
- Remove and discard the shipping brackets **[**1**]** from the front suspension.
- Discard the spring clips **[**2**]**.
- Keep the hexagonal bolts **[**3**]** for the front shocks installation.



Front Shocks

Model(s): All Except MX Z Europe



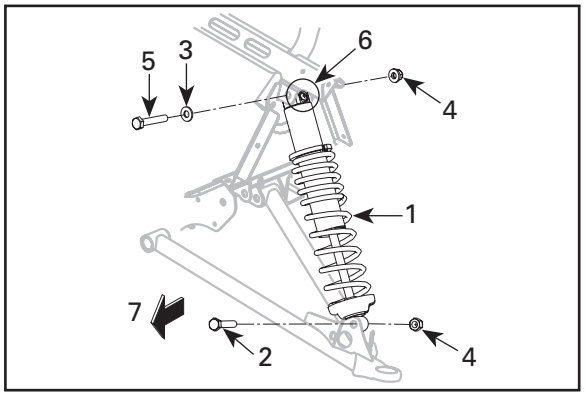
- Position front shock absorbers **[**1**]** in place as per illustration.

NOTE: [2**]** indicates the front of the vehicle.

- Secure each shock absorber to suspension using:

  - **[**3**]** hexagonal bolt M10 x **60** (previously removed)
  - **[**4**]** hexagonal bolt M10 x **55** (previously removed)
  - **[**5**]** washer (previously removed)
  - **[**6**]** 2 elastic flanged nuts M10 (predelivery kit).

Model(s): MX Z Europe Only



- Position front shock absorbers **[**1**]** in place with their adjustment ring at the top and brass fitting **[**6**]** facing outward.

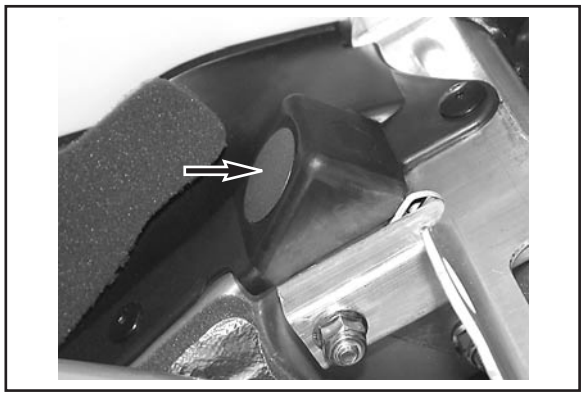
NOTE: [7**]** indicates the front of the vehicle.

- Secure each shock absorber to suspension using:

  - **[**5**]** hexagonal bolt M10 x **60** (previously removed)
  - **[**2**]** hexagonal bolt M10 x **55** (previously removed)
  - **[**3**]** washer (previously removed)
  - **[**4**]** 2 elastic flanged nuts M10 (predelivery kit).

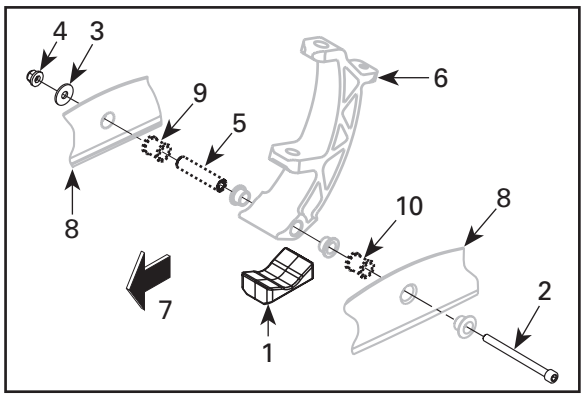
Bottom Pan Caps

- Install plastic caps provided in the predelivery kit on the bottom pan.



Skis

Model(s): Summit



- It is possible to change the ski stance from narrow to wide or vise versa, follow the procedure as given below.

NOTE: At the factory, ski stance is adjusted in narrow position.

- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**8**]** to ski leg **[**6**]** using:
  - **[**2**]** socket head screw M10 x 125 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit).

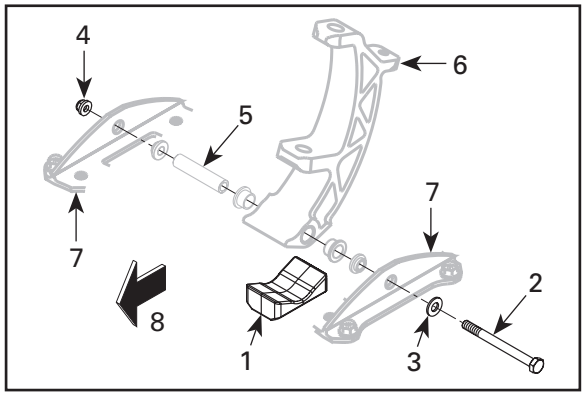
Ski Stance Adjustment

- narrow: place spacer in position **[**9**]**
- wide: place spacer in position **[**10**]**.

NOTE: **[**7**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Model(s): All Except Summit



- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**7**]** to ski leg **[**6**]** using:
  - **[**2**]** hexagonal bolt M10 x 110 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit)

NOTE: **[**8**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Battery Preparation

Model(s): With Electric Starting

All electric starting equipped vehicles using a **YTX20L-BS** or **YTX24L-BS** type battery require a specific charging procedure at predelivery.

- Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area. Never charge or boost battery while installed on vehicle. Do not open the sealed caps during charging. Do not place battery near open flame.

CAUTION: If battery becomes hot, stop charging and allow it to cool before continuing.

NOTE: Sealed VRLA batteries have an internal safety valve. If battery pressure increases due to overcharging, the valve opens to release excess pressure, preventing battery damage.

An automatic charger is the fastest and most convenient way for error-proof charging.

NOTE: If battery cannot be recharged using the following charging chart, replace battery.

Battery Voltage below 12.8 V

STANDARD CHARGING (recommended)		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	4 – 9 hours	2 A
YTX24HL-BS	5 – 10 hours	

QUICK CHARGING		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	50 minutes	10 A
YTX24HL-BS	1 hour	

Battery Removal

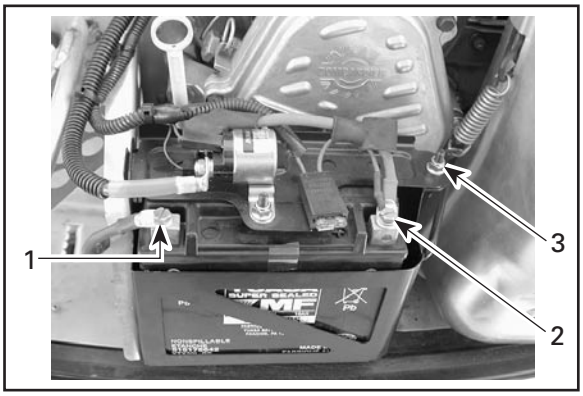
Model(s): With Electric Starting

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.



- Open the right side panel of the vehicle.
- Disconnect BLACK negative cable [1] from the terminal.
- Slide off the rubber boot from the RED cable and disconnect the RED cable [2].
- Remove the bracket by unscrewing the bracket retaining nut [3].
- Remove the battery.

Battery Installation

Model(s): With Electric Starting

- Install the bracket and screw the bracket retaining nut.
- Connect RED positive cable it to positive battery terminal.
- Connect RED wire (coming from 30 A fuse).
- Connect BLACK negative cable LAST.

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

- Cover the RED positive terminal with rubber boot.
- Apply silicone dielectric grease (P/N 293 550 004) on battery posts and connectors.

Handlebar

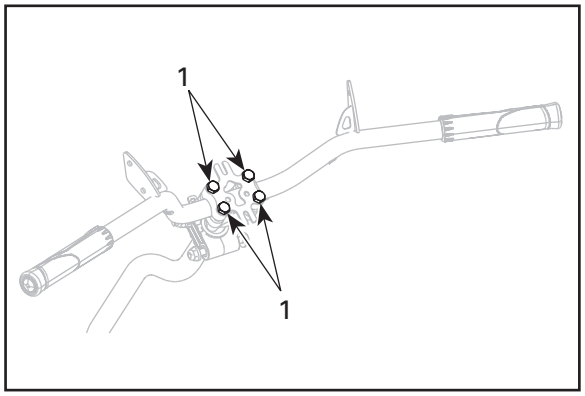
- Loosen bolts **[**1**]** retaining the handlebar to the steering column.

NOTE: On some models, remove connectors from steering column to have a better access to bolts.

- Adjust the handlebar so that the brake fluid reservoir is level.
- Secure the handlebar to the steering column.

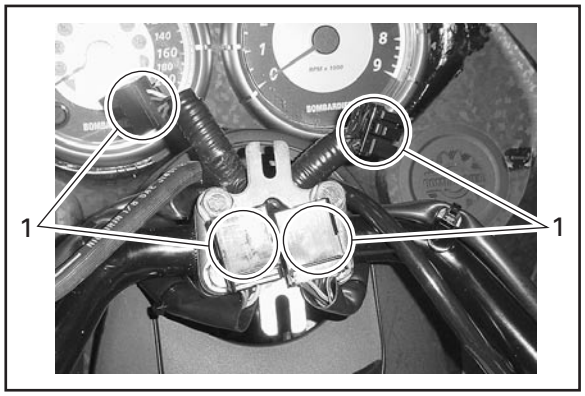
Torque to 24 N•m (**18** lbf•ft)**.**

- If applicable, reinstall the steering harness connectors on the steering column brackets.



Steering Column Connectors

- On some models, clip the main harness connectors on the steering column brackets.
- Connect **[**1**]** main harness to steering harness.



Steering Holding Strap/Cover

Model(s): Summit

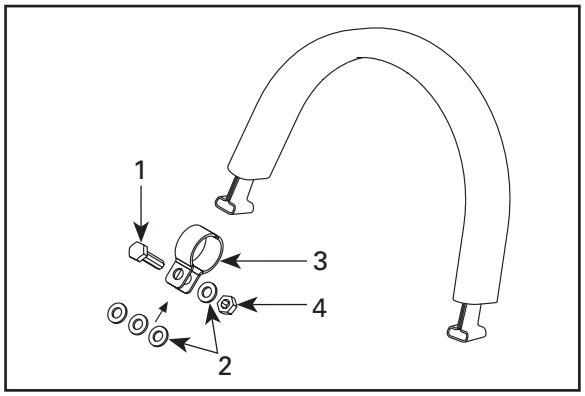
- Cut the locking tie retaining the holding strap end to the handlebar.
- Secure the holding strap end to the handlebar using:

NOTE: Retaining clip and hardware should be installed in the same position as the opposite side strap end.

- **[**1**]** hexagonal flanged bolt (predelivery kit)
- **[**2**]** 4 flat washers (predelivery kit)
- **[**3**]** retaining clip (previously removed)
- **[**4**]** elastic nut (predelivery kit)

Torque to 11 N•m (**97** lbf•**in**)**.**

NOTE: Wires route along the handlebar. To avoid pinching them, take care to keep wires out of retaining clip.



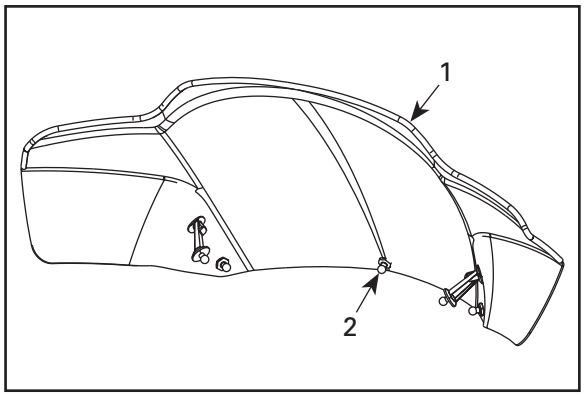
Steering Cap

- Clip steering cap in place (predelivery box).

Windshield

Model(s): Summit/GTX/Expedition

- Remove protective films from windshield.
- Install windshield support from predelivery kit onto the console provided hole.
- Position windshield **[**1**]** in place.
- Secure windshield to console using windshield knobs **[**2**]**.



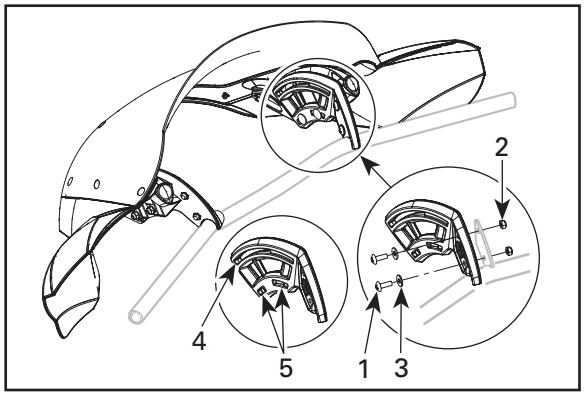
Model(s): GSX/MX Z

- Remove protective films from windshield.
- Position windshield in place.
- Secure windshield to handlebar using:

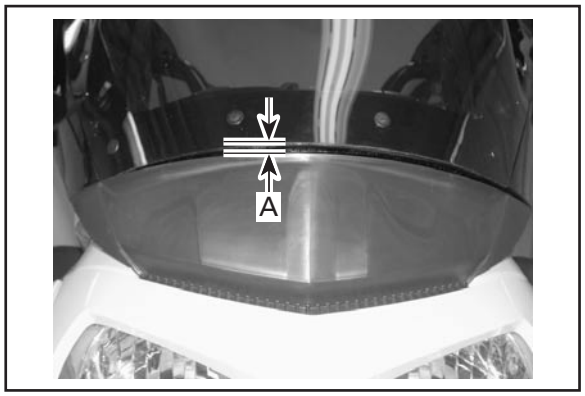
  - **[**1**]** 4 screws M6 x 16 (predelivery kit)
  - **[**2**]** 4 elastic nuts M6 (predelivery kit)
  - **[**3**]** 4 flat washers (predelivery kit)

NOTE: Screws toward the inside of the vehicle.

- Two slots are provided for installation with forward **[**5**]** or rearward **[**4**]** handlebar position.
- Turn the handlebar completely from side to side to make sure there is no contact with hood.



NOTE: For a good fit, a gap **[**A**]** of 8 to 12 mm (3/8 to 1/2 in) between windshield and moulding is suggested.



Mirrors

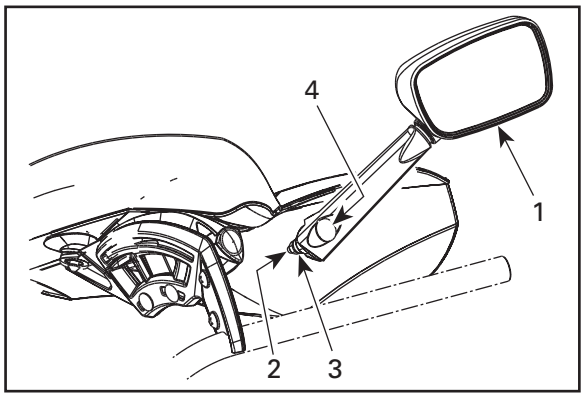
Model(s): GSX/GTX

NOTE: Mirrors are included in the predelivery box.

- Remove the existing cap from windshield supports (GSX only).
- Position and secure mirrors **[**1**]** using:

NOTE: For the GTX models, mirrors are mounted on the handlebar.

- **[**2**]** 2 hexagonal screws (predelivery kit)
- **[**3**]** 2 nuts (predelivery kit)
- **[**4**]** 2 caps (predelivery kit)



Heated Visor Extension Cord

Model(s): GSX/GTX

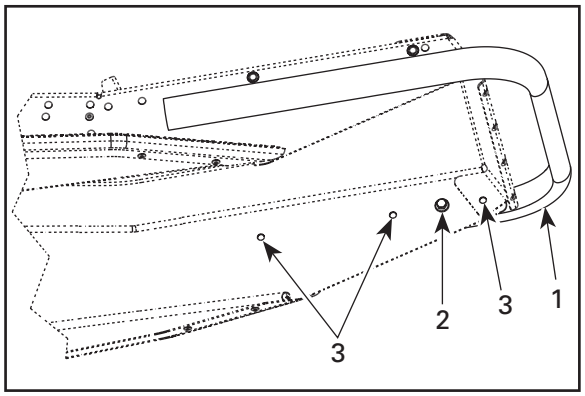
NOTE: Heated visor extension cord is included in the predelivery kit.

- Lift cap on the left side of the console.
- Install the heated visor extension cord.

Rear Bumper

Model(s): MX Z/GSX

- Remove and keep the hexagonal bolts **[**2**]** retaining rear bumper to frame.
- Pull gently on rear bumper **[**1**]** until holes of rear bumper are aligned with frame holes **[**3**]**.



- Secure rear bumper to frame using:

  - 4 hexagonal bolts M8 x 20 (predelivery kit).
  - 2 hexagonal bolts M8 x 20 (previously removed).

Torque to 15 N•m (**133** lbf•**in**)**.**

- Install bumper caps (predelivery kit).

Passenger's Seat

Model(s): GTX

- Install passenger's seat.

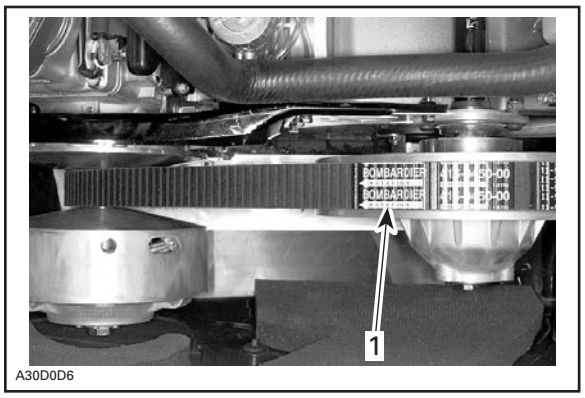
NOTE: Refer to the GTX *Operator's Guide* for the complete installation instructions.

Drive Belt

- Clean pulleys and disc brake before installing the drive belt.

NOTE: Use a suitable cleaner such as Pulley flange cleaner (P/N 413 711 809).

CAUTION: The arrow [1] is indicating the direction of rotation (see typical illustration).



A30D0D6

FINAL PREPARATION

Recommended Oil

CAUTION: Use only injection oil that flows at - 40°C (- 40°F).

- Oil is contained in the injection oil reservoir.
- Use only two-stroke engine injection oil sold by authorized SKI-DOO dealers.

MODEL	OIL TYPE [1]
All	XP-S synthetic 2-stroke oil or XP-S 2-stroke synthetic blend or XP-S mineral injection oil

[1] All XP-S injection oils are compatible, they can be mixed together.

The XP-S 2-stroke synthetic blend and XP-S synthetic 2-stroke injection oil **provide superior lubrication**, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. These synthetic injection oils meet the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

CAUTION: Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard two-stroke engine oils or ashless two-stroke engine oils. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

⚠ WARNING

Wipe off any oil spills. Oil is highly flammable.

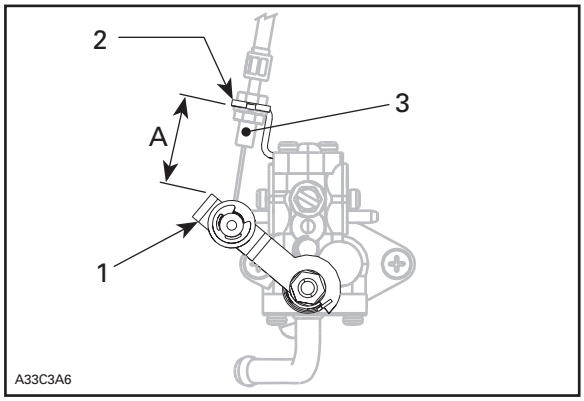
Break-in Period

- To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz) of the recommended injection oil should be added to fuel for the first full filling of fuel tank.

NOTE: Always remove and clean spark plugs after engine break-in.

Oil Pump Adjustment

Oil injection pump is factory set. However, if adjustment needs to be checked or modified, refer to the following procedure.



- Make sure there is a sufficient amount of recommended oil in the injection oil reservoir.
- Make sure there is no air in the main oil line (between tank and pump) and the small oil lines (between pump and intake manifold).
- If any air is found in those lines, make sure to bleed oil system properly.
- With throttle lever fully depressed, measure distance **[**A**]** between oil pump lever **[**1**]** and throttle cable support **[**2**]**, see illustration.

- If necessary, loosen lock nuts and turn the adjustment device **[**3**]** to reach the appropriate measure, see table.

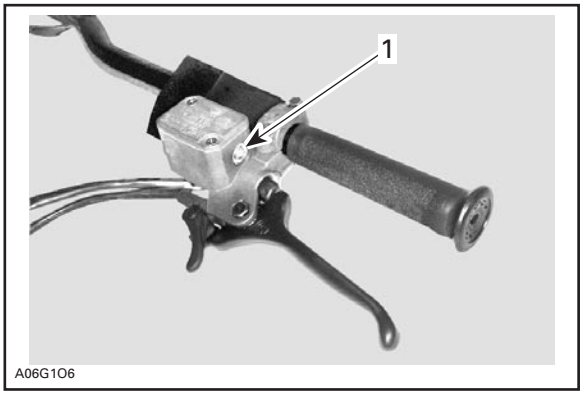
ENGINE	DIMENSION "A"
380	39.5 mm (1.56 in)
550	32 mm (1.26 in)

Brake Fluid Level

- Check brake fluid in reservoir for proper level **[**1**]**.
- Add brake fluid (DOT 4) as required.

  - Use SRF (DOT 4) (P/N 293 600 063)
  - or GTLMA (DOT 4) (P/N 293 600 062).

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Do not store or use a started bottle of brake fluid.



Track

- Refer to *Shop Manual* to adjust track tension and alignment.

NOTE: Track deflection is 30 to 35 mm (1-3/16 to 1-3/8 in) with a downward pull of 7.3 kg (16 lb).

- Install caps provided in Predelivery Kit.

NOTE: If lubricant is needed to help cap installation, use lens cleaner instead of soapy water to avoid cap to get out from its location due to soap residual.

Disk Brake

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

DELIVERY TO CUSTOMER

Speedometer

This model is equipped with an electronic speedometer, it may show speed in km/h or MPH.

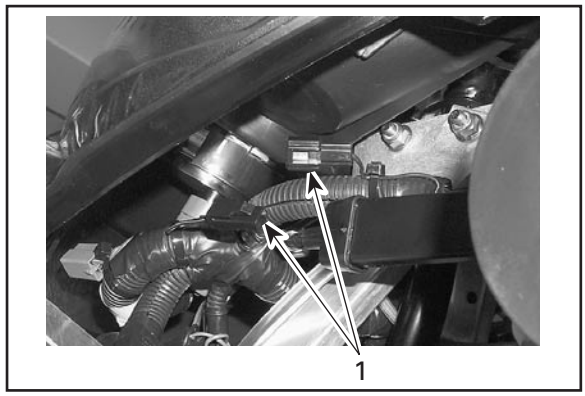
NOTE: At the factory speedometer, odometer and trip meter is adjusted for miles reading.

- Proceed as follow to change units from miles to kilometers.

NOTE: At a speed of 90 km/h (55 MPH) and more, the LCD mode screen will show speed only instead of the selected mode.

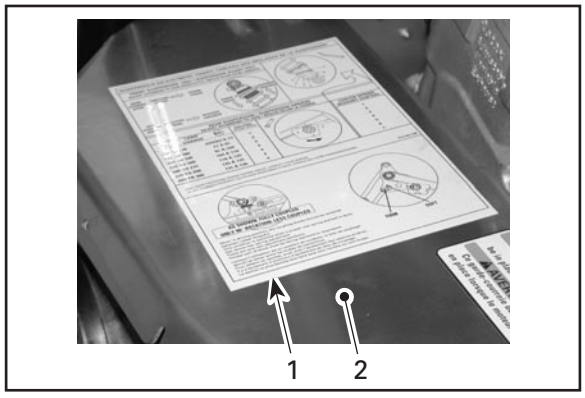
A33E096

- Stop engine and open hood.
- Cut locking ties.
- Plug connectors **[**1**]** together to change units from miles to kilometers.
- Unplug to return to miles reading.
- Fasten connector to harness with locking ties.



Rear Suspension Adjustments

- Rear suspension is calibrated at factory. At predelivery, mechanics should perform suspension adjustments according to customer riding style and vehicle load as described on suspension adjustment chart **[**1**]** which is located on pulley guard **[**2**]**.



SPECIFICATIONS

Technical Data

The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile.

MODEL			GSX/GTX/EXPEDITION 550F	
ENGINE				
Engine Type			377	552
Maximum HP RPM [1]		±100 RPM	7000	7000
FUEL SYSTEM				
Carburetor Type			VM 30–213	VM 34–617
Main Jet			195	260
Needle Jet			Q-2	P-7
Pilot Jet			35	45
Needle Identification			6DEY13–3	6BCY40–4
Slide Cut-Away			2.0	2.5
Air or Pilot Screw Adjustment			—	—
Idle Speed RPM		± 200 RPM	1650	1650
Throttle Slide Height at Idle		± 0.1 mm	1.7	1.6
Gas Grade/Pump Octane Number		(R + M)/2	Regular unleaded/87	Regular unleaded/87
Gas/Oil Ratio			Oil Injection	Oil Injection
ELECTRICAL				
Ignition Timing BTDC [2] [3]		mm (in)	2.79 (.1098)	2.77 (.1091)
Trigger Coil Air Gap		mm (in)	0.4 - 1.1 (.016 - .043)	0.4 - 1.1 (.016 - .043)
TRANSMISSION				
Gear Ratio		Teeth	19/45	19/43 GTX: 21/45 GTX (EUR): 19/43
Engagement Speed		± 100 RPM	3300	EXP: 3300 GSX: 3500 GTX: 3000
Drive Pulley Calibration Screw Position			—	—
Pulley Distance	Z [4]	± 0.5 mm (± .020 in)	17.5 (11/16)	17.5 (11/16)
Offset	X	± 0.5 mm (± .020 in)	33.4 (1-5/16)	33.4 (1-5/16)
	Y	± 0.5 mm (± .020 in)	Dimension Y must exceed X of 0.46 mm (.018 in)	Dimension Y must exceed X of 0.46 mm (.018 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	0.0 (0.0)	0.0 (0.0)
Drive Chain Tension			Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation	Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

MODEL			MX Z	
ENGINE				
Engine Type			377	552
Maximum HP RPM [1]		±100 RPM	7000	7000
FUEL SYSTEM				
Carburetor Type			VM 30–213	VM 34–617
Main Jet			195	260
Needle Jet			Q-2	P-7
Pilot Jet			35	45
Needle Identification			6DEY13–3 EUR: 6BCY40–4	6BCY40–4 EUR: 6DEY13–3
Slide Cut-Away			2.0	2.5
Air or Pilot Screw Adjustment			—	—
Idle Speed RPM		± 200 RPM	1650	1650
Throttle Slide Height at Idle		± 0.1 mm	1.7	1.6
Gas Grade/Pump Octane Number		(R + M)/2	Regular unleaded/87	Regular unleaded/87
Gas/Oil Ratio			Oil Injection	Oil Injection
ELECTRICAL				
Ignition Timing BTDC [2] [3]		mm (in)	2.79 (.1098)	2.77 (.1091)
Trigger Coil Air Gap		mm (in)	0.4 - 1.1 (.016 - .043)	0.4 - 1.1 (.016 - .043)
TRANSMISSION				
Gear Ratio		Teeth	19/45	19/43
Engagement Speed		± 100 RPM	3300	3500
Drive Pulley Calibration Screw Position			—	—
Pulley Distance	Z [4]	± 0.5 mm (± .020 in)	17.5 (11/16)	17.5 (11/16)
Offset	X	± 0.5 mm (± .020 in)	33.4 (1-5/16)	33.4 (1-5/16)
	Y	± 0.5 mm (± .020 in)	Dimension Y must exceed X of 0.46 mm (.018 in)	Dimension Y must exceed X of 0.46 mm (.018 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	0.0 (0.0)	0.0 (0.0)
Drive Chain Tension			Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation	Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

		MODEL	SUMMIT 550F
ENGINE			
Engine Type			552
Maximum HP RPM [1]		±100 RPM	7000
FUEL SYSTEM			
Carburetor Type			VM 34–616 EUR: VM34–617
Main Jet			220 EUR: 260
Needle Jet			P-7
Pilot Jet			45
Needle Identification			6BCY40–3 EUR: 6BCY40–4
Slide Cut-Away			2.5
Air or Pilot Screw Adjustment			—
Idle Speed RPM		± 200 RPM	1650
Throttle Slide Height at Idle		± 0.1 mm	1.9 EUR: 1.6
Gas Grade/Pump Octane Number		(R + M)/2	Regular unleaded/87
Gas/Oil Ratio			Oil Injection
ELECTRICAL			
Ignition Timing BTDC [2] [3]		mm (in)	2.77 (.1091)
Trigger Coil Air Gap		mm (in)	0.4 - 1.1 (.0157 - .0433)
TRANSMISSION			
Gear Ratio		Teeth	19/43
Engagement Speed		± 100 RPM	3300 EUR: 3000
Drive Pulley Calibration Screw Position			—
Pulley Distance	Z [4]	± 0.5 mm (± .020 in)	17.5 (11/16)
Offset	X	± 0.5 mm (± .020 in)	33.40 (1-5/16)
	Y	± 0.5 mm (± .020 in)	Dimension Y must exceed X of 0.46 mm (.018 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	0.0 (0.0)
Drive Chain Tension			Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

[1] Engine speed at which maximum power is achieved.

[2] At 3500 RPM (engine cold) with headlamp turned on.

[3] During the initial engine break-in, the timing curve is retarded between 4500 RPM and maximum RPM. Because checking ignition timing is done at lower RPM, this will not affect the 3500 RPM timing specification.

[4] Z dimension without torque rod preload. After Z dimension adjustment, hand tight torque rod until plastic pad cannot be turned, then turn torque rod an additional half turn. Lock jam nut.

[5] Needle with one groove only (no adjustment).

- BTDC : Before Top Dead Center
- PTO : Power Take OFF side
- MAG : Magneto side

Please route to :

	Init.
☐ Service	☐
☐ Sales	☐
☐ Parts	☐

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **September 10, 2004** Subject: **Mini Z** No. **2005-6**

YEAR	MODEL	MODEL NUMBER	PREDELIVERY KIT P/N	SERIAL NUMBER
2005	Mini Z	FL5A	549 010 961	All

TABLE OF CONTENTS

Printed in Canada. (mbl2005-008 DR)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function.

The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

UNCRATING

Crate Cover

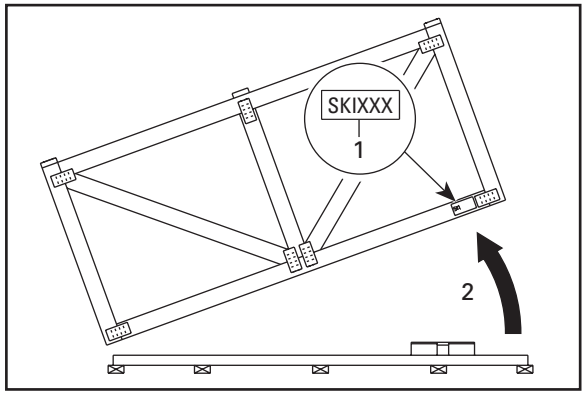
- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

- Remove all screws retaining cover to crate base.
- Tip cover toward rear of vehicle **[**2**]**.

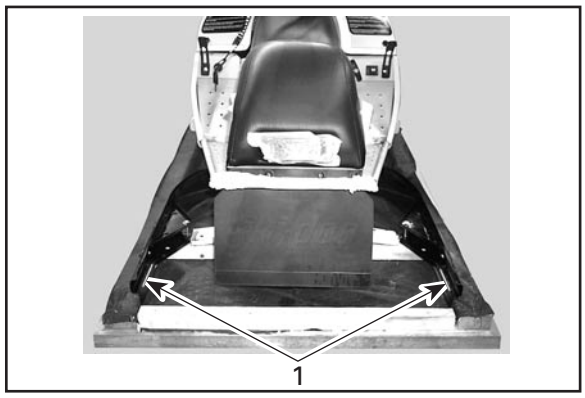
NOTE: There is a stamping on bottom side of crate **[**1**]** that indicates the front of the vehicle. See photo.

CAUTION: If crate cover is tilted toward front of the vehicle, damage could be done to the rear bumper and the seat.



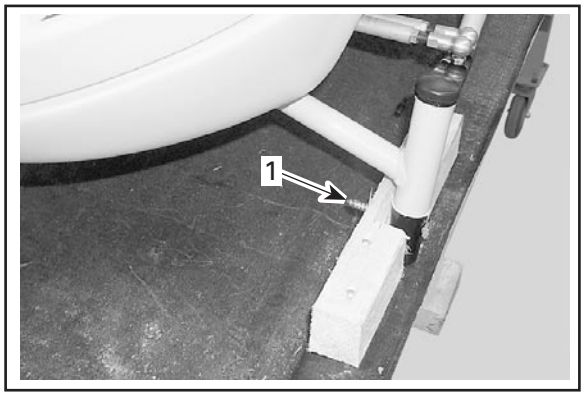
Skis

- Remove predelivery bag from engine compartment.
- Make sure vehicle is properly supported before removing ski legs from crate brackets.
- Detach skis **[**1**]** from the crate base.



Shipping Bracket

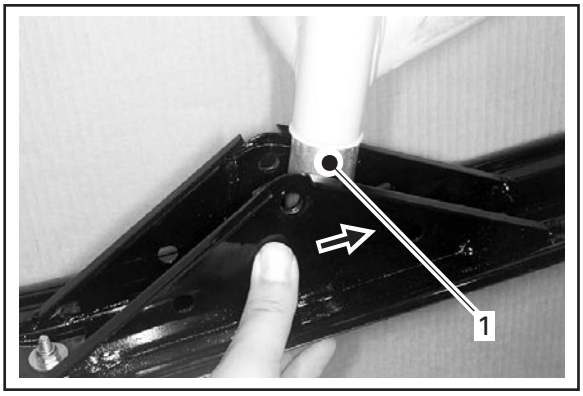
- Detach ski legs from crate.
- Discard screws **[**1**]**.



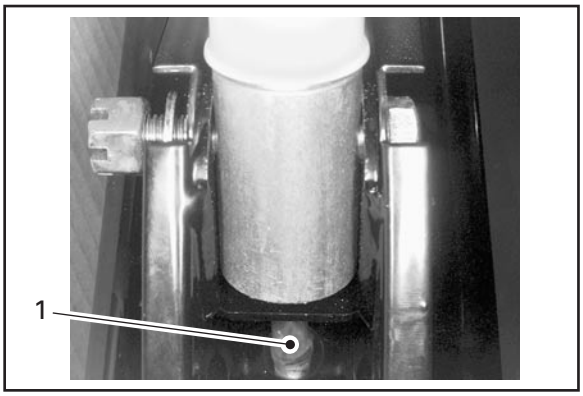
SET-UP

Skis Installation

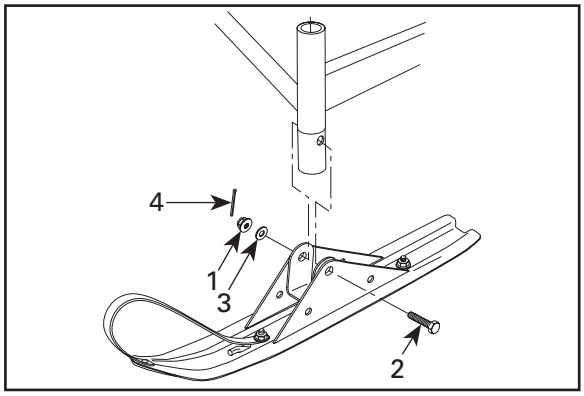
- Lift front of vehicle to install skis.
- Make sure that ski leg spacers are still on ski legs.
- Slide ski on ski leg **[**1**]**, see photo.



- Ensure that ski pin **[**1**]** is properly centered into ski leg, see photo.



- Install ski bolt **[**2**]**, washer **[**3**]**, nut **[**1**]** and cotter pin **[**4**]**.
- Replace vehicle on ground.



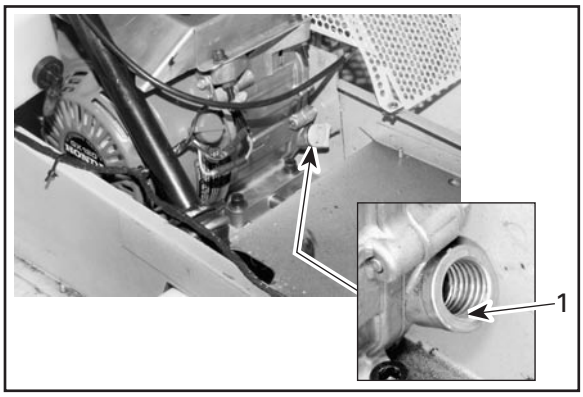
Windshield

- Peel off protective film from windshield.

FINAL PREPARATION

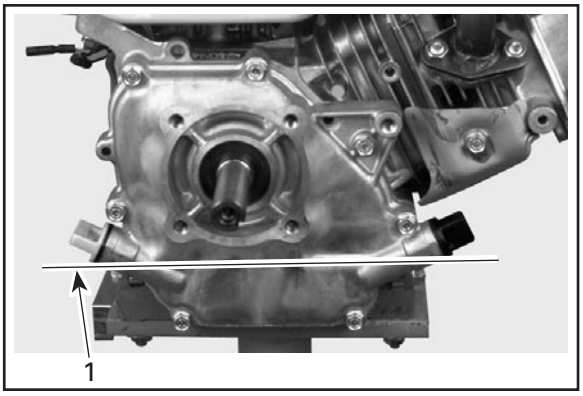
Engine Oil Level

- Check engine oil level.
- Add SAE 5W/30 recommended oil as required.
- Add oil until it reaches the top of the oil filler neck **[**1**]**.



CAUTION: When checking engine oil level in crankcase, ensure vehicle is on level ground.

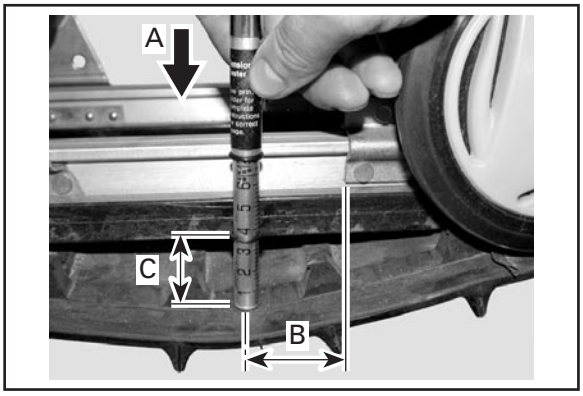
- Proper oil level **[**1**]**



Track Tension

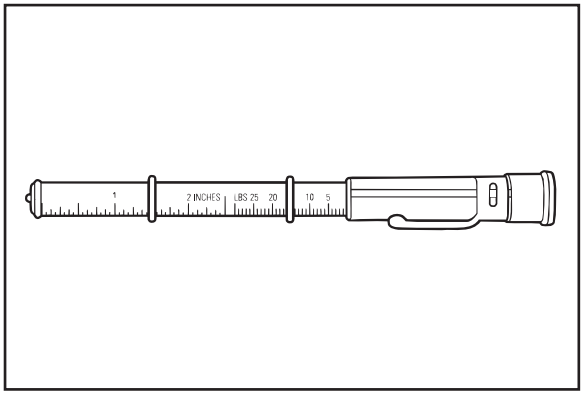
NOTE: It is recommended to ride the snowmobile in snow about 15 to 20 minutes prior to adjusting track tension.

- Lift rear of snowmobile and support it with a wide-base snowmobile mechanical stand.
- Allow the suspension to extend normally and check gap 60 mm (2-3/8 in) **[**B**]** from rear idler wheel bracket.
- With a force **[**A**]** of 7.4 kg (16 lb), track deflection **[**C**]** must be 35 mm (1-3/8 in).
- If the track tension is too loose, track will have a tendency to thump.



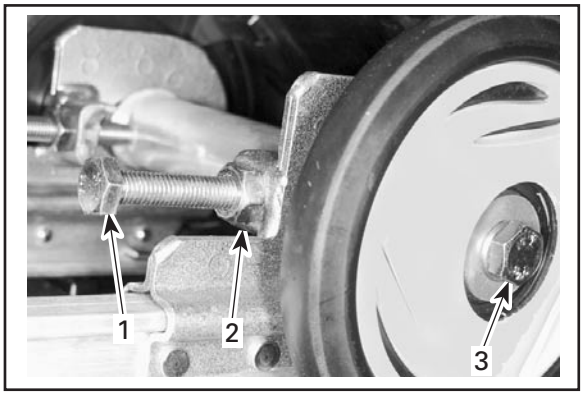
CAUTION: Too much tension will result in power loss and excessive stresses on suspension components.

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



Track Tension Adjustment

- Loosen the rear idler wheel retaining screws **[**3**]**.
- Loosen the lock nuts **[**2**]** then turn adjustment screws **[**1**]** to adjust.

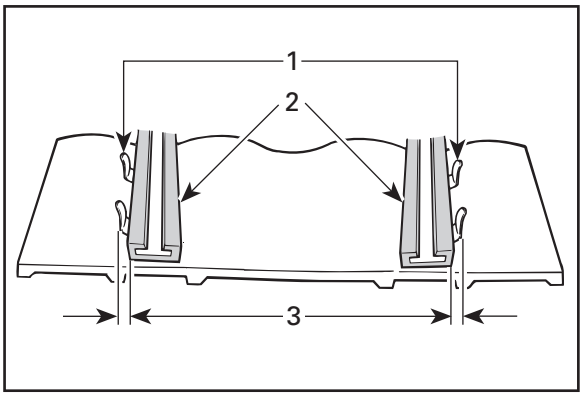


Track Alignment

NOTE: Track tension and alignment are interrelated. Do not adjust one without the other.

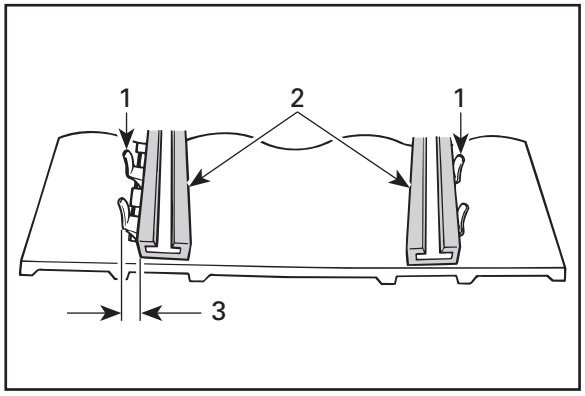
⚠ WARNING

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

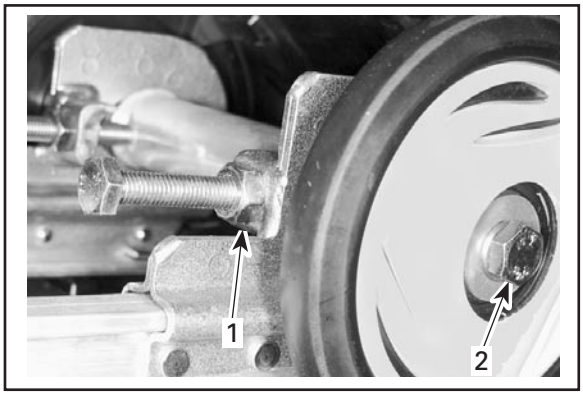


- Start the engine and accelerate slightly so that track barely rotates.
- This must be done in a short period of time (15 to 20 seconds).
- Check that the track is well centered; equal distance on both sides **[**3**]** between edges of track guides **[**1**]** and slider shoes **[**2**]**.

- To correct, **stop the engine**: Loosen the lock nuts and tighten the adjustment screw on side where the slider shoe **[**2**]** is the farthest **[**3**]** from the track guides **[**1**]**.



- Tighten lock nuts **[**1**]** and rear idler wheel retaining screws **[**2**]**.



⚠ WARNING

If lock nuts or retaining screws are not tightened properly, the adjusting screws could loosen causing the track to become extremely loose and, under some operating conditions, allow the idler wheels to climb over the track lugs forcing the track against the tunnel causing the track to "lock".

- Restart engine and rotate track slowly to recheck alignment.
- Reposition snowmobile on the ground.

SPECIFICATIONS

Technical Data

MODEL			MINI Z
ENGINE			
Type			4-stroke, overhead valves single cylinder, inclined at 25°, QB26, model GX120K1 by Honda
Maximum HP/RPM			4.0 HP at 4000 RPM
Lubricating system/oil capacity			Splash type (oil bath)/0.6 L
CARBURETION			
Carburetor type			Horizontal type, butterfly valve
Main jet			# 68 (externally vented carb. bowl)
Float height			13.7 mm (.539 in)
Pilot screw opening			2 turns out (externally vented carb. bowl)
Idle speed RPM		± 150	1400 (RPM)
Gas grade/Octane number	Inside North America	(R + M)/2	Regular unleaded/87
	Outside North America	RON	Regular unleaded/91
ELECTRICAL			
Ignition timing			25° (fixed)
Spark plug type/gap			NGK BPR6 ES/ 0.7 - 0.8 mm (.028 - .031 in)
TRANSMISSION			
Drive sprocket/driven sprocket		teeth	10/48
Drive sprocket diameter			101.6 (4.0)
Clutch type			Automatic centrifugal
Chain type			Standard rollers type 40/78
Chain pitch			12.7 (0.5)
Track alignment			Equal distance between edges of track guides and slider shoes
Track deflection			35 mm (1-3/8 in) measure gap between slider shoe and bottom inside of track when pushing the track down with a force of 7.3 kg (16 lb) to the track

Please route to:

Init.

- Service
- Sales
- Parts

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **December 8, 2004** Subject: **Skandic/Expedition** No. **2005-7**

REVISION =>1

YEAR	MODEL	PACKAGE	MODEL NUMBER	SERIAL NUMBER
2005	EXPEDITION V-1000	TUV	FA5A, FA5B	All
2005	EXPEDITION 600 HO SDI	TUV	FB5A, FB5B	All
2005	SKANDIC 440 Fan	LT	FH5A, FH5B	All
2005	SKANDIC 440 (E) Fan	LT	FH5C, FH5D	All
2005	SKANDIC 550 (E) Fan	SUV	FD5A, FD5B, FD5C, FD5D	All
2005	SKANDIC 550 (E) Fan	SWT	FE5A, FE5B	All
2005	SKANDIC 550 (E) Fan	WT	FG5A, FG5B	All
2005	SKANDIC 600 (E)	SUV	FC5A, FC5B, FC5C, FC5D	All
2005	SKANDIC 600 (E)	WT LC	FF5A, FF5B	All

TABLE OF CONTENTS

Printed in Canada. (mbl2005-006 PM)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function.

The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

UNCRATING

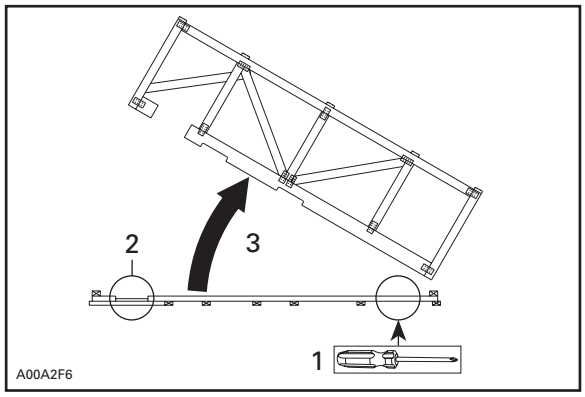
Procedure

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

- Using a drill or a screwdriver, remove all screws [1] retaining crate cover to crate base.
- Tilt [3] the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle [2].

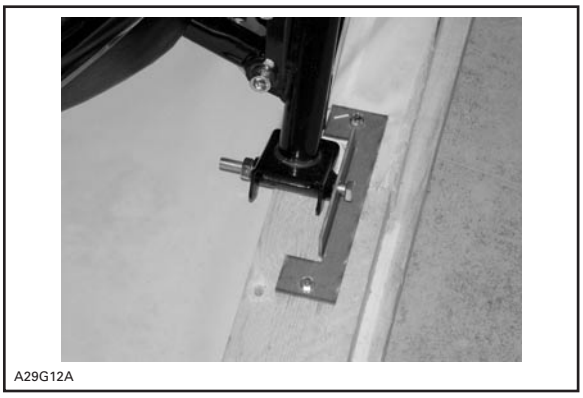


- Lift the crate cover slowly to avoid damaging the vehicle.
- Remove the predelivery kit and parts to be installed from part box or from under the seat compartment according to the model.
- Detach skis from crate base.
- Discard screws and washers.
- Remove polyethylene foam protective sheets.
- If applicable, detach windshield from seat.

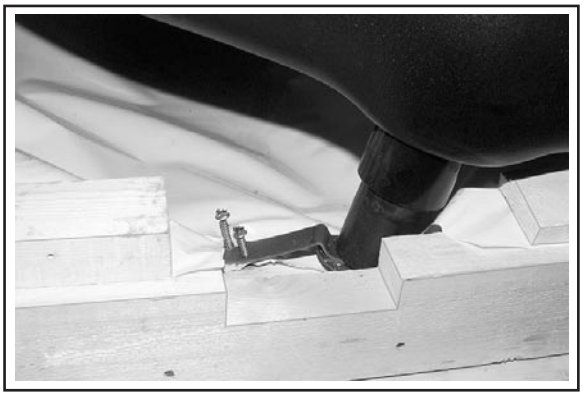
CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

- Detach the ski legs from the crate base.
- Discard screws.

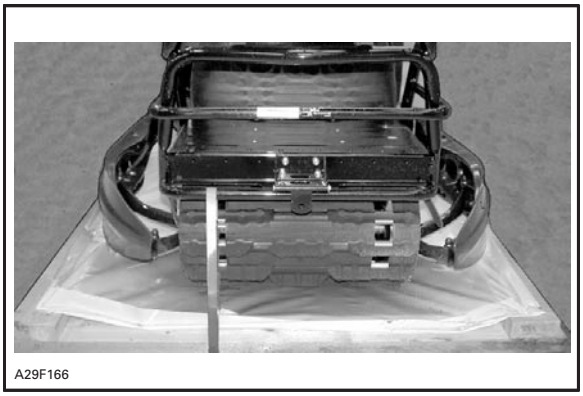
Model(s): TUV and SUV


A29G12A

Model(s): All Models except TUV and SUV



- Remove the rear retaining strap.


A29F166

- Cut locking tie retaining hook.
- Lay on seat and ask another person to apply pressure onto rear bumper.
- Remove hook from suspension.


A06F2Q6

⚠ WARNING

Before removing hook always verify that vehicle is properly supported and that parking brake is applied.

⚠ WARNING

Hook must be removed to have snowmobile suspension operational.

- Remove the vehicle from the crate base.

SET-UP

Battery Preparation

Model(s): All except LT

All electric starting equipped vehicles using a **YTX20L-BS** or **YTX24L-BS** type battery require a specific charging procedure at predelivery.

- Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area. Never charge or boost battery while installed on vehicle. Do not open the sealed caps during charging. Do not place battery near open flame.

CAUTION: If battery becomes hot, stop charging and allow it to cool before continuing.

NOTE: Sealed VRLA batteries have an internal safety valve. If battery pressure increases due to overcharging, the valve opens to release excess pressure, preventing battery damage.

An automatic charger is the fastest and most convenient way for error-proof charging.

NOTE: If battery cannot be recharged using the following charging chart, replace battery.

Battery Voltage below 12.8 V

STANDARD CHARGING (recommended)		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	4 – 9 hours	2 A
YTX24HL-BS	5 – 10 hours	

QUICK CHARGING		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	50 minutes	10 A
YTX24HL-BS	1 hour	

Model(s): LT Only

During preparation, the battery can be activated as described in last year appropriate *Ski-Doo Shop Manual*.

CAUTION: Prior to charging the battery, always remove it from the vehicle to prevent electrolyte spillage.

Battery Removal

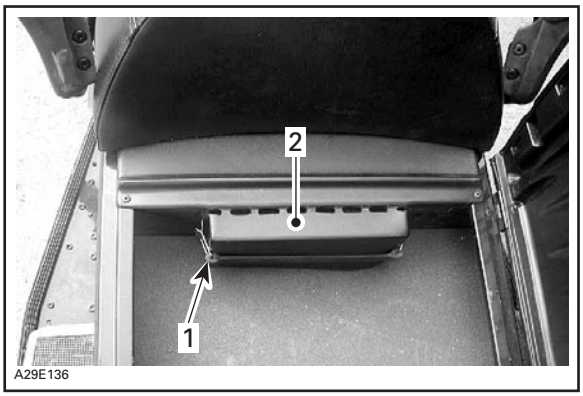
Model(s): TUV

NOTE: Battery is located under the seat.

- Unhook battery cover strap **[**1**]** from its support.
- Open battery cover **[**2**]**.
- Remove battery.

Model(s): All Models except TUV

- Remove air silencer.
- Unhook the battery strap or undo steel strips nut and screw holding battery.
- Remove the battery.



Battery Installation

- Properly position the battery on its rack.

⚠ WARNING

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

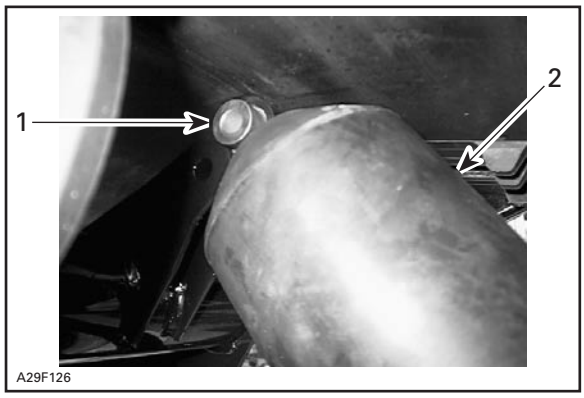
- Connect RED positive cable to battery positive post.
- Apply silicone dielectric grease (P/N 293 550 004) on battery positive connection.
- Cover the RED positive connection with rubber boot.
- Connect BLACK negative cable to battery negative post.
- Apply silicone dielectric grease (P/N 293 550 004) on battery negative connection.

NOTE: Place the BLACK negative cable under the battery strap.

- Close battery cover (if applicable)
- Secure battery with steel strips or rubber strap.
- Reinstall previously removed parts if applicable.

Rear Suspension Rear Shock

Model(s): TUV and SUV Only



- Lift up rear side of snowmobile.
- Install shock absorber bearing bushings in place **[**1**]**.
- Install shock absorber in place (with protector upward and adjustments handle towards the rear) **[**2**]**.
- Secure shock to upper arm using:

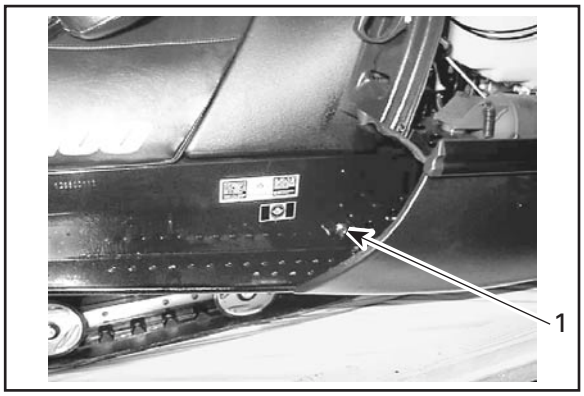
  - one hexagonal bolt M10 x 50
  - one nut M10.

- Secure shock to rear arm using:

  - two hexagonal bolts M10 x 40
  - two lock washers
  - two shims
  - two circlips
  - one rear shock shaft.

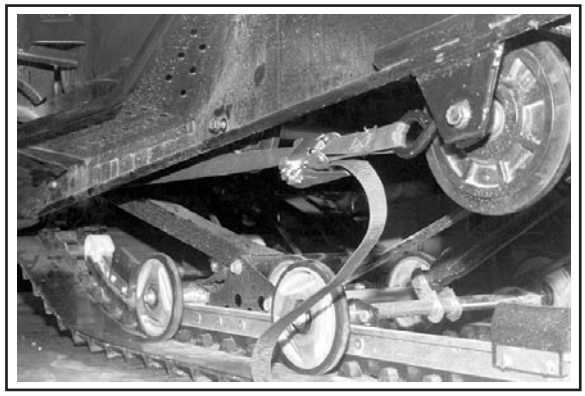
Torque to 45 N•m (**33** lbf•ft)**.**

Model(s): SWT/WT/WT LC Only



- Secure front arm upper axle of rear suspension using two M10 x 30 screws **[**1**]** in plastic bag under the seat.
- Apply Loctite 243 (P/N 293 800 060) on threads.

NOTE: Use a tie-down between the front arm and spring axle to ease the installation of the front arm screws.



Torque screws to 58 N•m (**43** lbf•ft)**.**

- Secure rear arm using previously removed screws.
- Apply Loctite 243 (P/N 293 800 060) on threads.

Torque screws to 58 N•m (**43** lbf•ft)**.**

Model(s): WT/WT LC Only

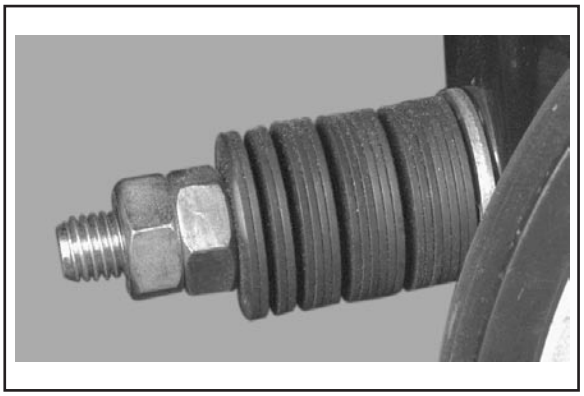
NOTE: For single driving condition use upper hole and for two person driving condition or load in rack, use lower hole.

- Apply Loctite 243 (P/N 293 800 060) on threads.

Torque screws to 58 N•m (**43** lbf•ft)**.**

Model(s): All except TUV and SUV

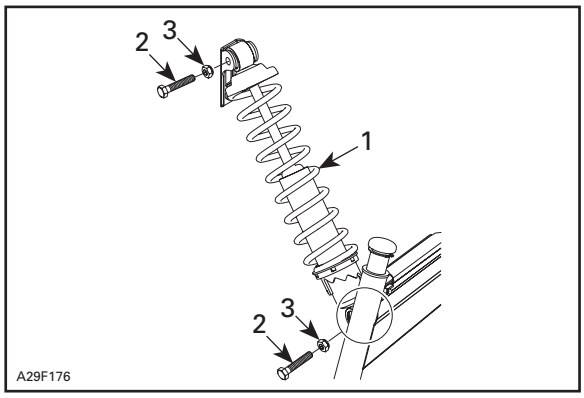
NOTE: Also in shrink pack are 4 horse shoe type washers that are used to adjust rear suspension for trail riding according to load (refer to the appropriate *Shop Manual* for proper procedure); they are to be put in the tool box for further use.



Front Suspension Shocks

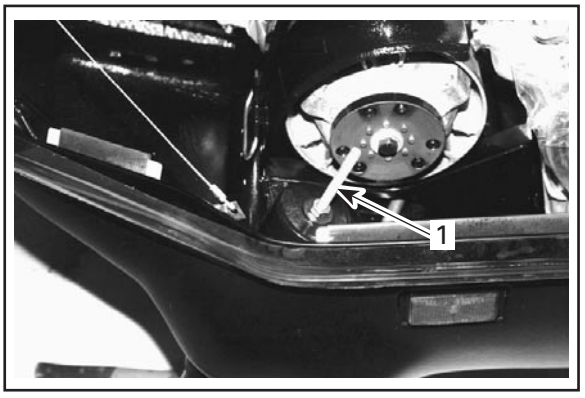
Model(s): TUV and SUV Only

- Lift front of vehicle and block safely.
- Remove and discard shipping brackets from suspension.
- Discard spring clips, keep screws.
- Remove air intake silencer.
- Install shock absorbers to suspension with their adjusting ring at bottom.
- Secure with hexagonal bolts and nuts provided in predelivery kit.

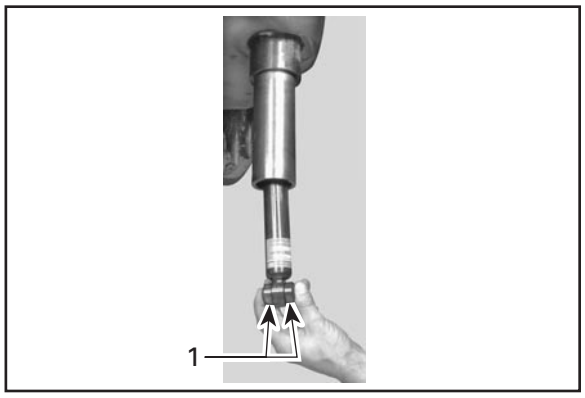


Model(s): WT/WT LC/SWT Only

- Remove long bolts **[**1**]** that compress front suspension on both sides.



- Install 2 plastic bushings **[**1**]** into shock absorber eyelets.
- Stretch shock to its maximum.
- Slide shock absorber into bottom of ski leg until shock rod goes through cap hole.
- Loosely install conical spring washer, concave surface inside, and M10 nut on shock rods, keeping at least 1/4 in (5 mm) of free play.
- Install stop bounding on ski with its highest portion toward front.
- Install skis on snowmobile using bolts, nuts, washers and rubber bushings supplied in the predelivery kit.



Torque to 13 N•m (**115** lbf•**in**)**.**

Skis

Model(s): TUV and SUV Only

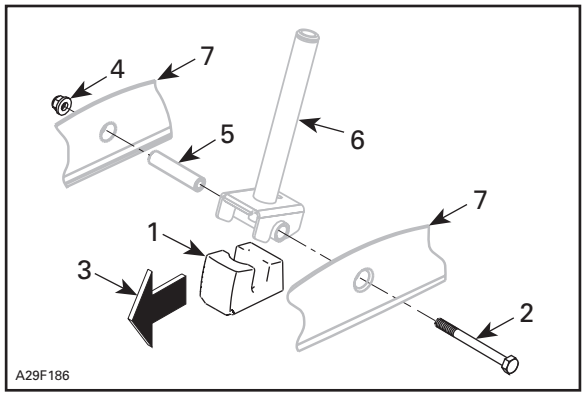
NOTE: Ensure the ski leg bushing **[**5**]** is still on the ski leg **[**6**]**.

- Insert the ski stopper **[**1**]** from the predelivery kit with the higher side toward the front **[**3**]** into the ski.
- Install the ski **[**7**]** to ski leg **[**6**]**.
- Secure the ski to ski leg with:

  - the existing M10 hexagonal bolt **[**2**]**.

NOTE: Make sure that the hexagonal bolt head is toward the outside of the vehicle.

  - M10 elastic flanged nut **[**4**]** from the predelivery kit.



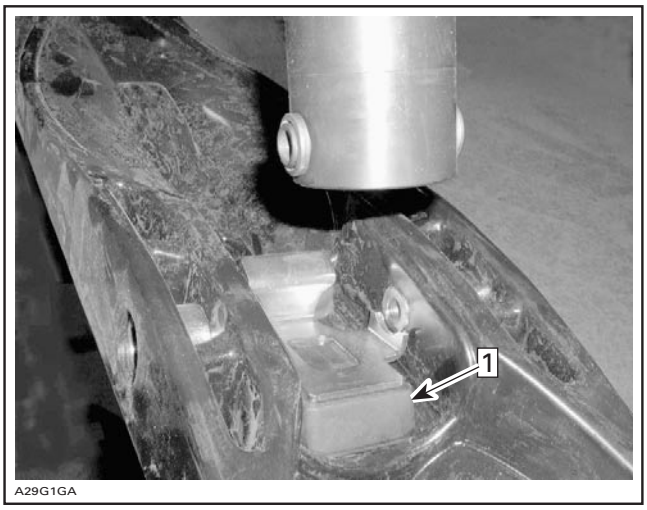
Torque to 32 N•m (**24** lbf•ft)**.**

NOTE: Repeat the same procedure on the opposite ski.

- Put the vehicle back on the ground.

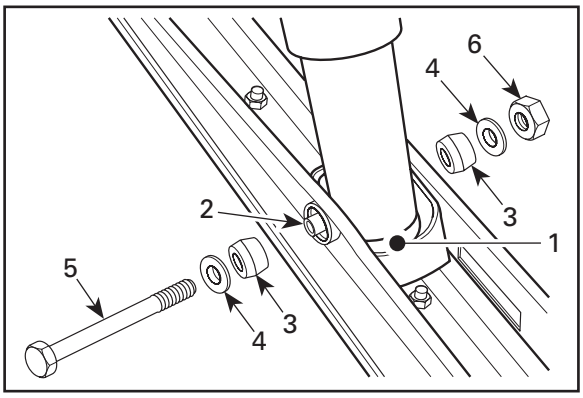
Model(s): => All except TUV and SUV

- Install stop bounding **[**1**]** on skis with its highest portion toward front.
- On some models, a support plate should be installed as per photo.



A29G1GA

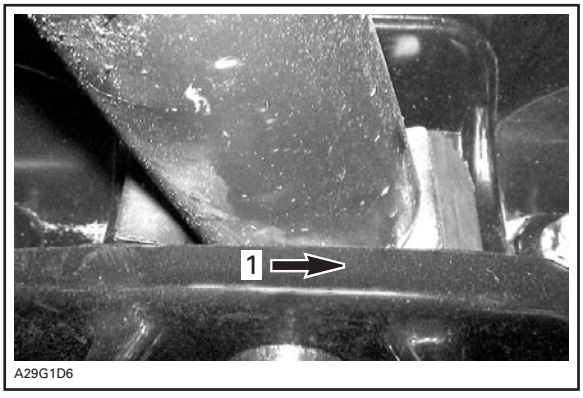
- Install skis on vehicle using the following parts from the predelivery kit:
  - **[**1**]** stop bounding (already installed)
  - **[**2**]** sleeve
  - **[**3**]** rubber bushings
  - **[**4**]** conical spring washers (concave surface inside) (SWT only)
  - **[**5**]** bolts
  - **[**6**]** nuts.



NOTE: [1**]** Front of the vehicle.

Torque ski leg nuts to 48 N•m (**35** lbf•ft)**.**

Torque shock rod top nuts to 30 N•m (**22** lbf•ft)**.**



A29G1D6

Handlebar

Model(s): Already Installed on Steering Column


A29G0Q6

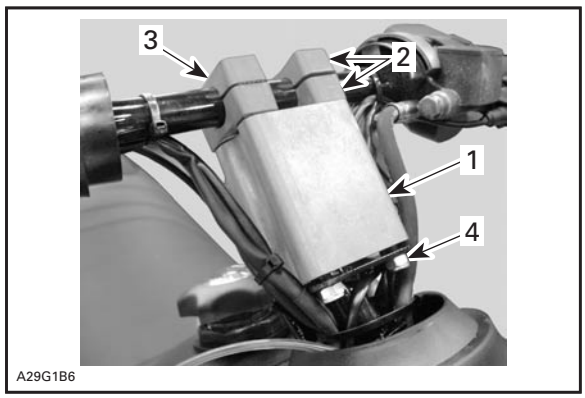
- Adjust handlebar and set both clamps to have equal gap on each side.

NOTE: Use handlebar wire hole as a guide to center.

- Master cylinder brake fluid reservoir must be levelled.

Torque nuts from 21 to 28 N•m (**16 to 21** lbf•ft)**.**

Model(s): To be Installed on Steering Column



A29G1B6

- Assemble handlebar with extension **[**1**]** and clamps **[**2**]** on steering column.
- Secure temporarily with:
  - **[**3**]** 2 hexagonal bolts (predelivery kit)
  - **[**4**]** 2 elastic nuts (predelivery kit).
- Adjust handlebar and set both clamps to have equal gap on each side.

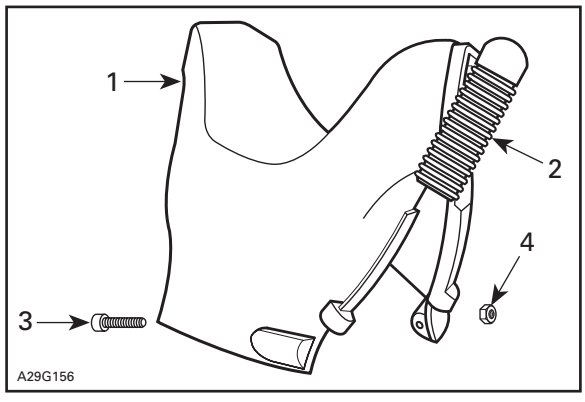
NOTE: Use handlebar wire hole as a guide to center.

- Master cylinder brake fluid reservoir must be levelled.

Torque nuts from 21 to 28 N•m (**16 to 21** lbf•ft)**.**

Steering Pad

Model(s): Steering Pad with Keyway



A29G156

- Loosen throttle and brake handle housings.
- Install steering pad.
- Adjust both throttle and brake handle housings to match steering pad.
- Secure steering pad **[**1**]** to handlebar with:
  - 2 keyways **[**2**]**

NOTE: Use liquid soap to ease installation if necessary.

- 2 screws M5 x 20 **[**3**]**
- 2 nuts M5 **[**4**]**.

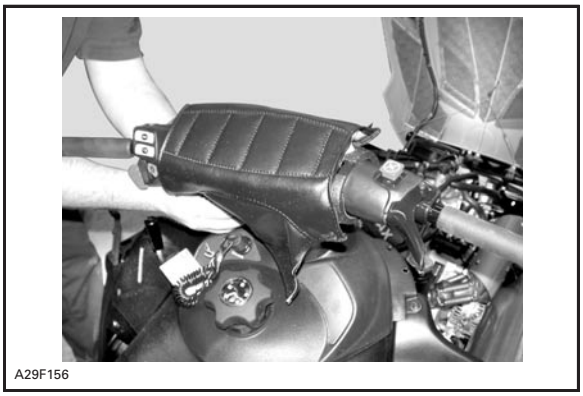
NOTE: Item **[**3**]** and **[**4**]** seat tighten only, no deformation of rubber.

Model(s): Steering Pad with Zipper

- Properly position foam in place.

NOTE: Steering foam can be secured in place with a device such as filament tape to ease the installation.

- Fit steering padding and set in place with zippers.


A29F156

Holding Strap

Model(s): If so Equipped

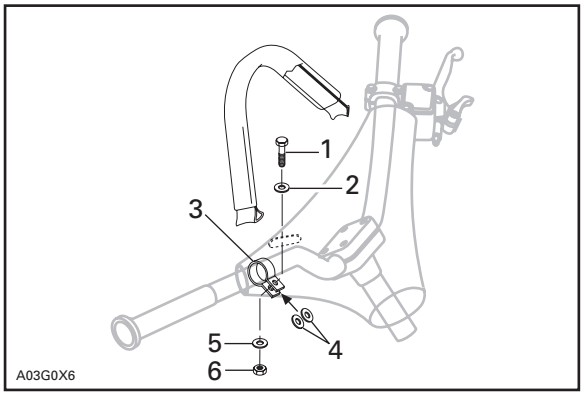
- Cut locking tie retaining right side strap end.
- If applicable, insert strap through holes provided in steering padding.


A29G146

- Secure right side strap end with retaining clip **[**3**]**.
- Tighten firmly using:
  - hexagonal bolts **[**1**]**
  - nuts **[**6**]**
  - flat washers **[**2**]** and **[**5**]**
  - flat washers (spacer) **[**4**]**.

Torque to 10 - 12 N•m (**89 - 106** lbf•**in**)**.**

NOTE: A wire route along handlebar. To avoid pinching it, make sure to keep wire out of retaining clip.

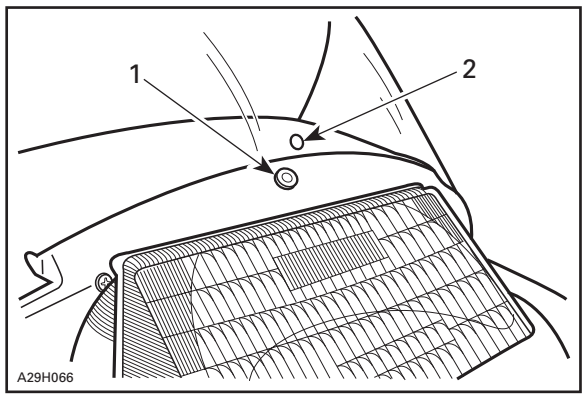


A03G0X6

Windshield

Model(s): All except TUV

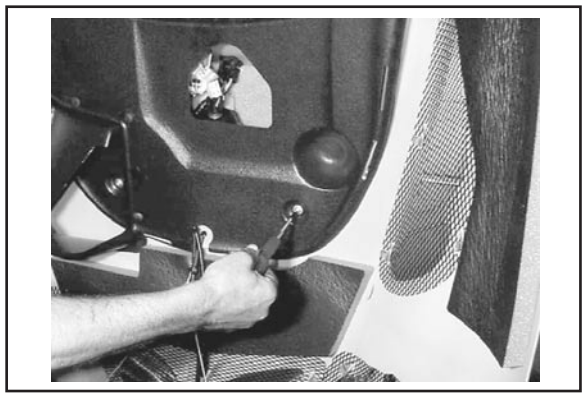
- Remove headlamp molding.
- Install rubber expansion nut **[**1**]** in hole above head light.
- Line up hole in windshield **[**2**]** with rubber expansion nut and install screw with cup.
- Tighten slightly so that rubber expands inside hood.



NOTE: Skandic SUV model have two rubber expansion nuts.

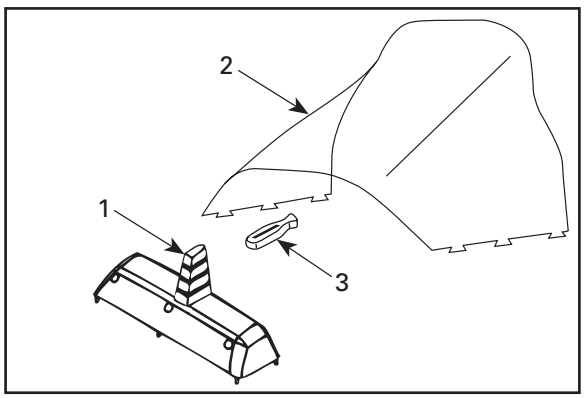
Model(s): WT/SWT/WT LC Only

- Remove plastic plate from hood.



- Install air intake cover with filter and rubber support assembly in predrilled holes on the hood.
- Retain with 4 supplied push nuts, using 2 end pins on each side.

- Pry out headlamp molding.
- Install air intake cover with filter, rubber support and push nuts **[**1**]**.
- Install windshield **[**2**]**.
- Install latches (10) **[**3**]**.



Model(s): All except TUV

- Install windshield and secure with latches inside hood.
- Reinstall plastic plate.
- Secure with latches, clips and nuts (for rubber expansion nuts).
- Reinstall headlamp molding.
- Make sure to properly position lower edge of plastic molding under head lamp.

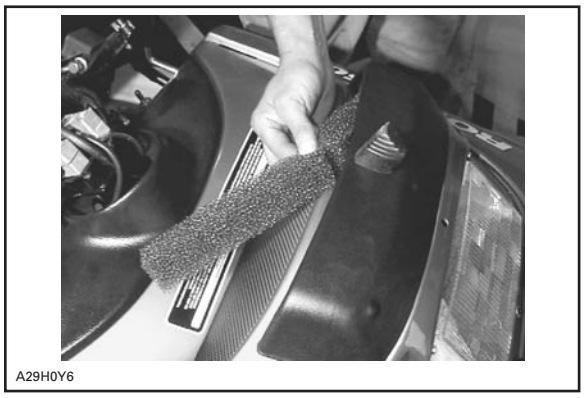

A29H0X6

Model(s): WT/SWT/WT LT Only

- Secure inside plastic hood with supplied green clips (if not already secured).

Model(s): All except TUV

- Add foam inside cover.
- Take care to position foam correctly.


A29H0Y6

Model(s): TUV 600 HO SDI Only

- Install and secure air intake dashboard cover using 4 screws from predelivery kit.


A29H1D6

Model(s): All TUV

- Remove the headlamp protector **[**1**]** from hood.
- Unclip the inner protector **[**3**]** from the headlamp protector **[**1**]**.
- Remove protective films from the windshield **[**2**]**.
- Insert tabs of headlamp protector **[**1**]** in windshield square holes.
- Clip the inner protector **[**3**]** in place.

A32H2M6

Model(s): TUV 600 HO SDI Only

NOTE: Take care to slide the windshield support underneath the air intake dashboard cover.

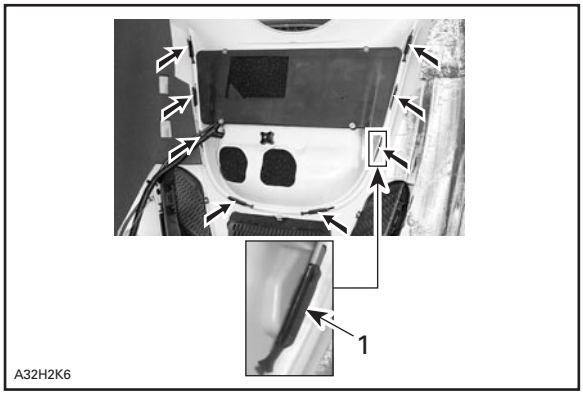

A29H1E6

- Add foam.


A29H1F6

Model(s): All TUV

- Secure windshield assembly to hood using latches from predelivery kit.



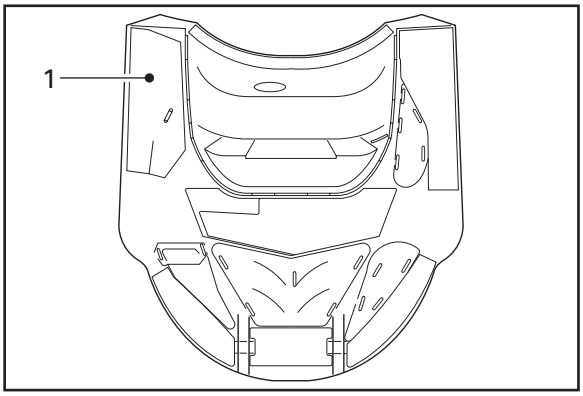
A32H2K6

- Remove part between mirror housing and adaptor.


A29H1G6

Aluminum Foil Heatshield

Model(s): SWT Only



- Found in seat compartment, an aluminum foil heatshield has to be installed on hood inner surface **[**1**]**.
- Remove backing from heatshield.
- Align inside hood above braking mechanism (disc), and stick in place, see photo.

NOTE: This heatshield has to be installed over the duct in order to protect both the duct and the hood from heat. Do not remove duct since this heatshield goes over it.

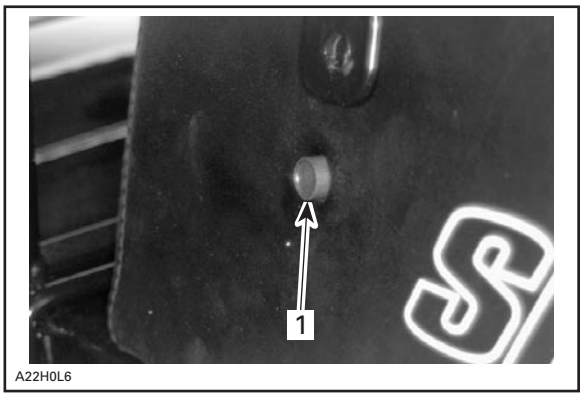
Seat Belt

Model(s): SWT/LT Only

- A seat belt can be found in luggage compartment.
- Install it on seat using belt lugs each side of seat base.

Backrest

Model(s): SUV/WT/WT LC Only



- Install spacers **[**1**]** (included in shrink kit) in rear seat holes for backrest.
- Install backrest in its proper position.
- Secure rear arms of backrest using 2 M8 x 30 screws found in shrink pack.
- Align front arms of backrest and secure with M8 x 20 screws included in the shrink pack.

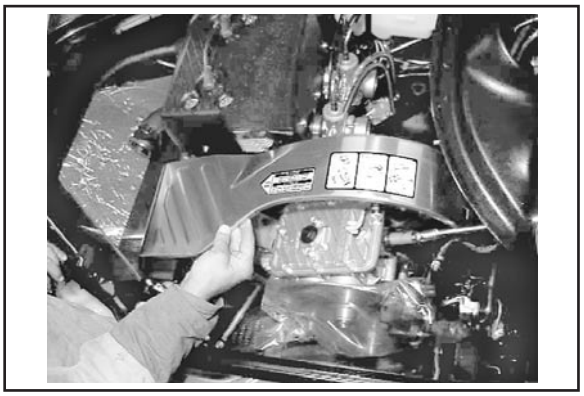
- Install backrest in its proper position.
- Secure rear arms of backrest using screws found in shrink pack.

Drive Belt

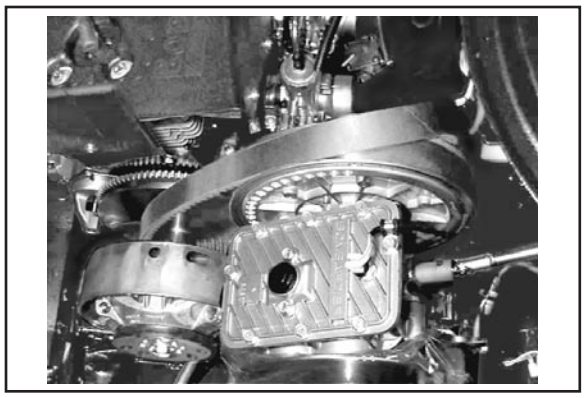
Model(s): All except 4-TEC

⚠ WARNING

Engine should be running only when belt guard is secured in place.



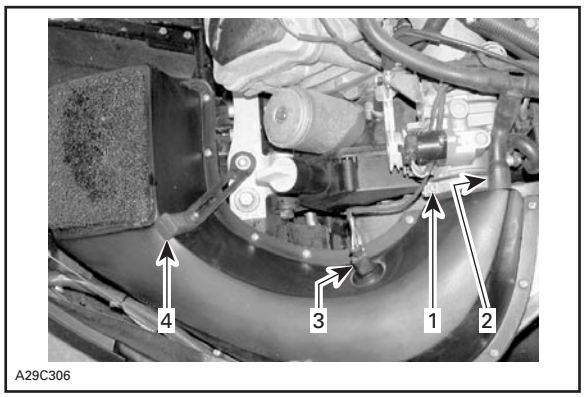
- Remove belt guard.
- Clean pulleys and disk brake with a suitable cleaner such as pulley flange cleaner (P/N 413 711 809).
- Install drive belt in its proper rotation direction, arrow pointing at front.



Model(s): 4-TEC Only

⚠ WARNING

Engine should be running only when belt guard is secured in place.



A29C306

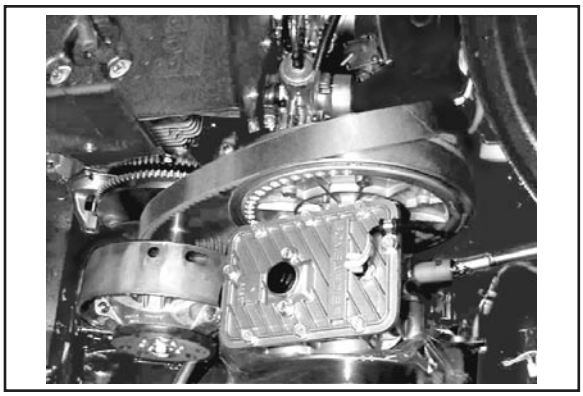
NOTE: Belt guard is purposely made slightly oversize to maintain tension on its pins and retainers preventing undue noise and vibration. It is important that this tension be maintained when reinstalling.

- Remove tether cord cap.
- Open engine compartment.
- Loosen collar screw **[**1**]** on air silencer grommet.
- Disconnect engine vent hose **[**2**]** from air silencer.
- Disconnect air temperature sensor **[**3**]**.
- Unhook latch **[**4**]** from air silencer.
- Remove air intake silencer.

NOTE: At installation do not forget to connect air temperature sensor otherwise a trouble code will appear.

- Remove belt guard.

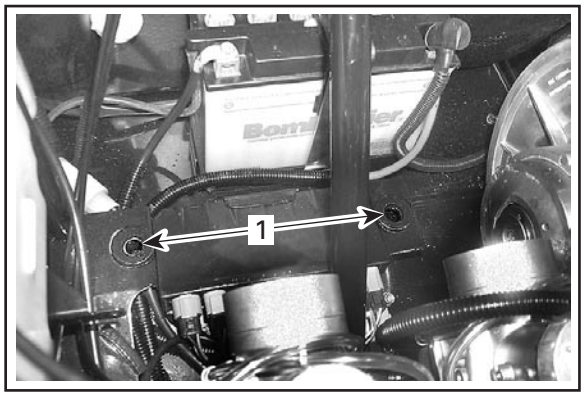
- Clean pulleys and disk brake with a suitable cleaner such as pulley flange cleaner (P/N 413 711 809).
- Install drive belt in its proper rotation direction, arrow pointing at front.



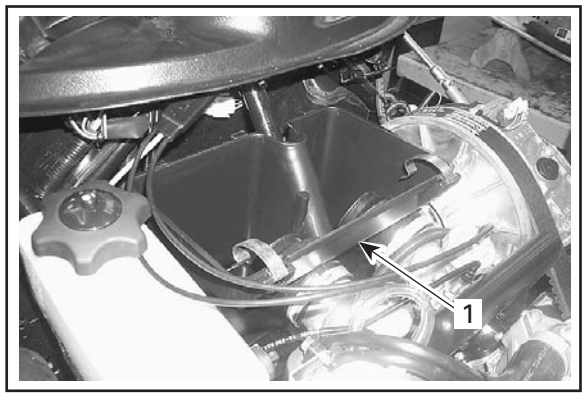
Air Intake Silencer

Model(s): All except TUV

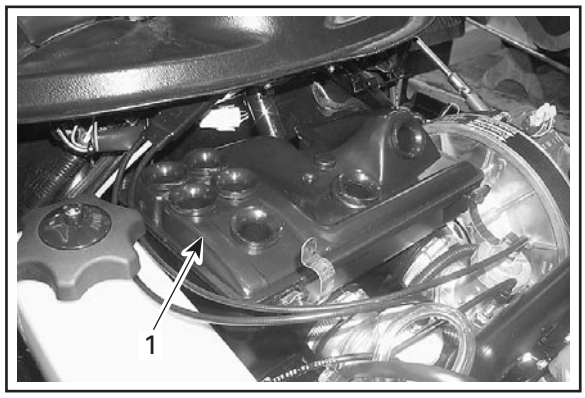
- This part consist of three separate pieces.
- First fasten the bottom of air silencer.
- Check that guide pins are in the provided holes.
- Guide pins must be into these holes **[**1**]**.



- Bottom part of air silencer installed **[**1**]**.

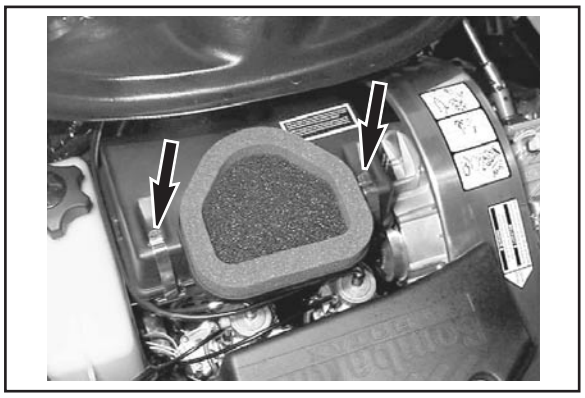


- Install the middle part of air silencer **[**1**]**.



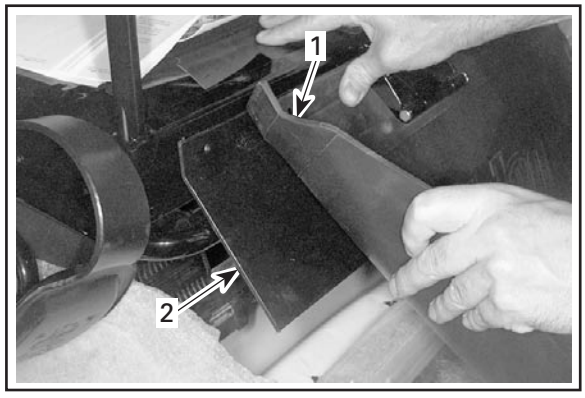
- Mount the upper part of the air silencer.
- Install the back side first and check that brackets are on right position.
- Fasten air silencer pieces together with provided clamps.
- Make sure air silencer rubber extension and carburetors fit well.

NOTE: While installing air silencer, take care to route throttle cable the right way.



Snow Guard

- Install snow guard **[**1**]** with extra plastic support **[**2**]** (in luggage compartment if applicable) using rivets supplied in its packaging.

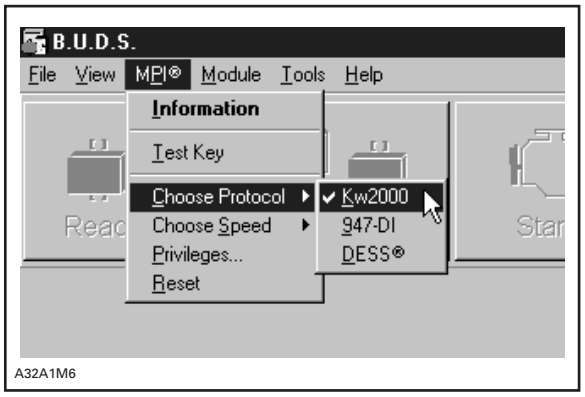


FINAL PREPARATION

=>MPI (Connecting)

Model(s): TUV Only

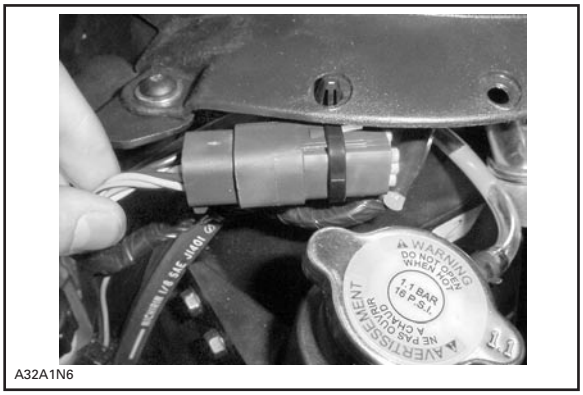
- Start B.U.D.S.
- Select the vehicle's Protocol (Kw2000) in *Choose Protocol* from the MPI menu.
- Wait a few seconds while B.U.D.S. loads the protocol into the MPI.



A32A1M6

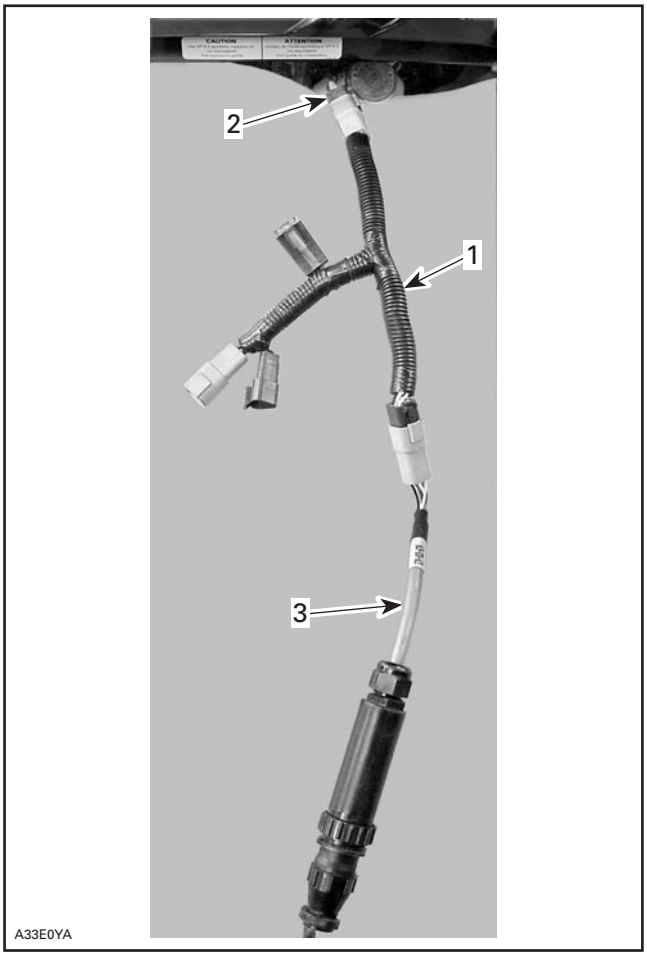
- Connect power supply harness **[**1**]**, (P/N 529 035 869), to 6 pin connector **[**2**]**.
- Connect the 6 pin diagnostic cable **[**3**]** to power supply harness **[**1**]** (P/N 529 035 869).

NOTE: Injection vehicles already have a 12 V battery; they do not need any external 9 V or 12 V power to allow programming and troubleshooting.

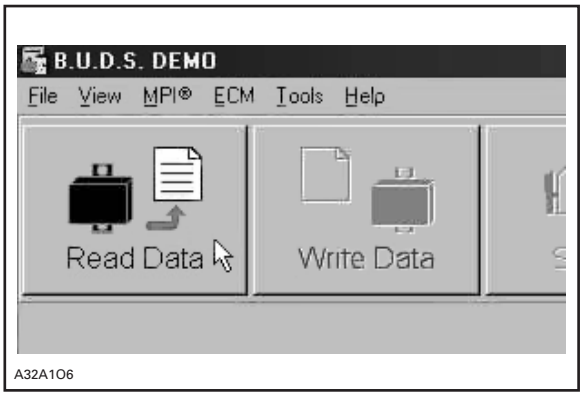

A32A1N6

NOTE: The use of the power supply harness **[**1**]** will keep the vehicle's ECM ON. Not using it will make the ECM shut off after a few seconds.

- Select the vehicle's protocol in Choose Protocol from the MPI menu. The protocol is KW 2000.
- Turn the engine shutdown switch to the engine off position.
- Insert the grey DESS cap (P/N 529 035 896) onto the vehicle DESS post.
- Press the start/stop button to wake up the ECM.



- Click on the *Read Data* from the tool bar to initiate communication and to read the content of the ECM.



B.U.D.S. (Customer Name)

Model(s): TUV Only

- Click on the *Vehicle* tab to open the vehicle information page.
- Type the name of the customer in the *Customer* zone.

NOTE: After you are finished typing the name, B.U.D.S. automatically updates the delivery date on the screen.

A32A1P6

B.U.D.S. (Programing a DESS Key)

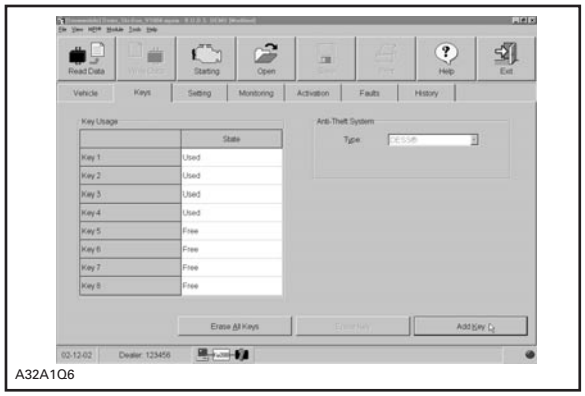
Model(s): TUV Only

- Read the content of the vehicle's MPEM by clicking on *Read Data* from the tool bar.
- Click on the *Keys* tab to open the DESS keys page.
- Click on *Erase All Keys*.
- Click on *Add Key*.

NOTE: A dialog box opens and asks you to insert a key on the MPI DESS post.

- If the key that you inserted on the MPI DESS post was successfully read and added to the document, message box will appear.
- Click on *OK*.
- Repeat steps *3* to *5* for each DESS key you want to program into the vehicle.
- Write the document into the vehicle by clicking on *Write Data* from the tool bar.
- Remove the *Grey* key from the vehicle DESS.

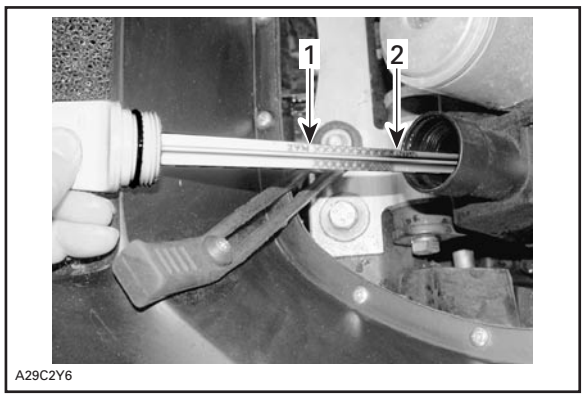
NOTE: If the B.U.D.S. system loses communication while connected, press the start/stop button or turn briefly the ignition switch to the START position to reactivate communication.



A32A1Q6

Engine Oil Level

Model(s): TUV 4-TEC Only



NOTE: These models are equipped with 4-stroke engine. Use XP-S™ 0W40 synthetic 4-stroke oil (P/N 293 600 054 – 12 x 1L).

CAUTION: Vehicle must be on a level surface before checking any fluid level.

- Make sure engine is at operating temperature
- Leave engine running at idle for 30 seconds.
- Stop the engine and wipe the dipstick.

NOTE: Dipstick must be completely screwed in before checking oil level.

- Oil level must be between minimum **[2]** and maximum **[1]** marks on dipstick.
- There is a capacity of 500 mL (17 U.S. oz) between the two marks.

Recommended Oil

Model(s): All Models except 4-TEC

CAUTION: Use only oil that flows at - 40°C (- 40°F).

- Oil is contained in the injection oil reservoir.
- Use only two-stroke engine injection oil, sold by authorized SKI-DOO dealers.

MODEL	OIL TYPE
2-TEC SDI [1]	XP-S synthetic 2-stroke oil or XP-S 2-stroke synthetic blend
All others	XP-S synthetic 2-stroke oil or XP-S 2-stroke synthetic blend or XP-S mineral injection oil

CAUTION: [1] XP-S™ synthetic 2-stroke oil and XP-S 2-stroke synthetic blend oil are specially formulated and tested for the severe requirements of these engines. Use of any other brand two-stroke oil may void the limited warranty. Use only XP-S™ synthetic 2-stroke oil or XP-S 2-stroke synthetic blend. There is no known equivalent on the market for the moment. If a high quality equivalent were available, it could be used.

XP-S™ mineral injection oil is a special blend of basic oil and additives especially selected to ensure

unequalled lubrication, engine cleanliness and minimum spark plug fouling.

The XP-S™ 2-stroke synthetic blend and XP-S™ synthetic 2-stroke oil **provides superior lubrication**, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. These synthetic and synthetic blend injection oil meets the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

CAUTION: Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard two-stroke engine oils or ashless two-stroke engine oils. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

⚠ WARNING

Wipe off any oil spills. Oil is highly flammable.

Model(s): => 4-TEC Models

These models are equipped with a 4-stroke engine.

Use XP-S 0W40 synthetic 4-stroke oil (P/N 293 600 054) — 12 x 1L), or a high quality equivalent.

=>Break-in Period

Model(s): All Models except 4-TEC and 600 HO SDI

- To assure additional protection during the initial engine break-in, 500 mL (18 imp. oz.) of recommended injection oil should be added to fuel for the first full filling of fuel tank. Always remove and clean spark plugs after engine break-in.

Model(s): 4-TEC and 600 HO SDI

- For fuel injection engines, no oil needs to be added to the first fuel tank.

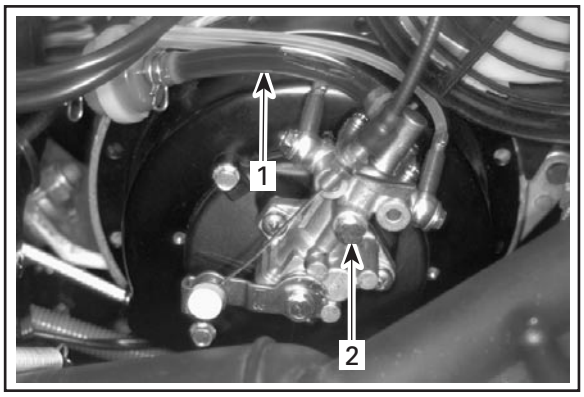
Oil Injection Pump Bleeding

Model(s): All except TUV

- Remove muffler if needed.
- Bleed main oil line (between tank and pump) by loosening the bleeder screw **[**2**]** until all air has escaped from the line **[**1**]**.

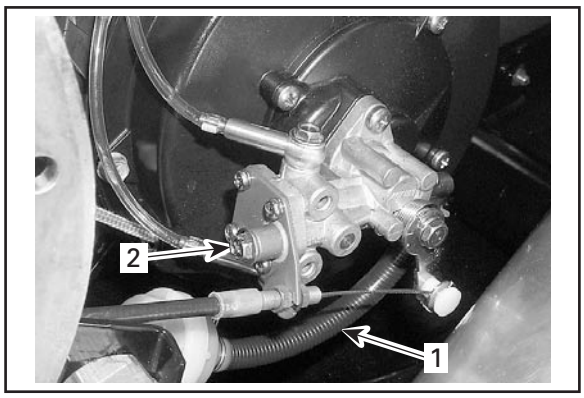
▪ Add injection oil as required.

Model(s): WT/SWT Only



[1**]** No air in main line
[2**]** Bleeder screw

Model(s): LT Only

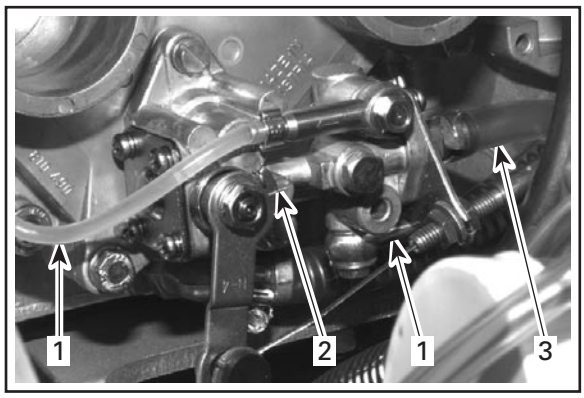


[1**]** No air in main line
[2**]** Bleeder screw

▪ Check also for proper oil lever adjustment; mark on lever must align with mark on pump body when throttle lever is activated just enough to take all cable free-play.

▪ Bleed the small oil lines between pump and intake manifold by running engine at idle while holding the pump lever in fully open position.

Model(s): WT LC Only



[1**]** Small oil line
[2**]** Mark on lever must be from 1 to 2 mm (0.040 to 0.080 in)
[3**]** Main oil line

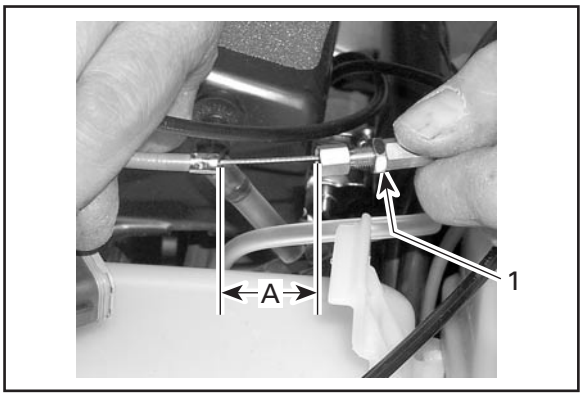
IMPORTANT: Oil pump is set at factory. However adjustment can be done according to *Predelivery Bulletin 2000-14*.

CAUTION: When adjusting oil injection pump lever, be sure to place mirror so that there is no parallax error. Such an error may lead to serious engine damages.

Model(s): TUV 600 HO SDI Only

Oil injection pump is factory set. However, if adjustment needs to be checked or modified, stretch cable sheath to fully open oil pump.

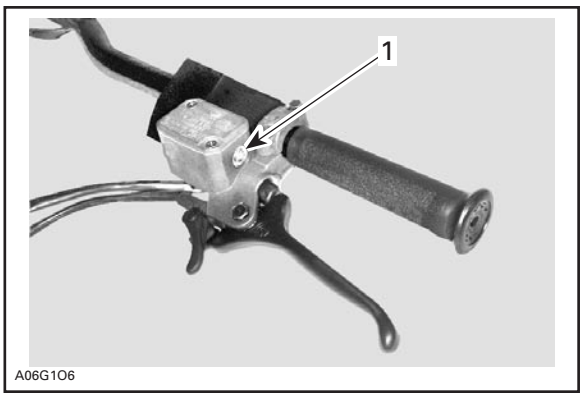
- Wire length **[**A**]** must be 20 mm (0.7874 in).
- If necessary, turn the adjustment nut **[**1**]** to reach this measure.



Brake Fluid Level

Model(s): All except LT

- Check brake fluid in reservoir for proper level **[**1**]**.
- Add brake fluid as required.
- Use brake fluid:
  - SRF (DOT 4) (P/N 293 600 063) or
  - GTLMA (DOT 4) (P/N 293 600 062).
- Use only (DOT 4) brake fluid from a sealed container. Do not use fluid taken from old or already opened containers.



Coolant Reservoir Level

Model(s): Liquid Cooled Only

CAUTION: Vehicle must be on a level surface before checking any fluid level.

- Check coolant level in the overflow coolant tank.
- When the engine is cold, the level must be between minimum **[**2**]** and maximum **[**1**]** marks.
- Use a blend of 50/50 distilled water and ethylene-glycol (P/N 293 600 038 – 16 x 1L).

CAUTION: To prevent rust formation or freezing conditions, always use ethylene glycol antifreeze containing corrosion inhibitors specially recommended for aluminum engines. Always use 50% antifreeze and 50% water for this particular type of snowmobile.

Track Adjustments

- Refer to *Shop Manual* and to TECHNICAL DATA section at the end of this bulletin to adjust track tension and alignment.

Brake Disk

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

Driven Pulley

Model(s): All except LT

- It is usual to experience spring settings during break-in period of a new spring.
- The factory spring preload is slightly higher to compensate for springs settings.
- Specifications in *TECHNICAL DATA* are applicable after break-in period (about 10 hours of use).

DELIVERY TO CUSTOMER

=> Predelivery Check List

Make sure to complete the "Predelivery Check List" before delivering the vehicle.

Speedometer

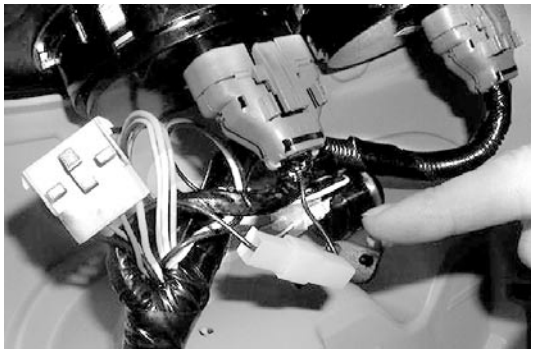
Model(s): TUV Only

This model is equipped with an electronic speedometer, it may show speed in km/h or MPH.

NOTE: At the factory speedometer, odometer and trip meter is adjusted for miles reading.

- Proceed as follow to change units from miles to kilometers.

- Stop engine and open hood.
- Remove latches retaining plastic cover.
- Temporary reinstall the top two latches to retain windshield.
- Plug connectors together to change units from miles to kilometers.
- Unplug to return to miles reading.
- Reinstall plastic cover.


A29E126

NOTE: At a speed of 90 km/h (55 MPH) and more, the LCD mode screen will show speed only instead of the selected mode.

Rear Suspension Adjustments

Model(s): All Models

- Rear suspension is calibrated at factory. At predelivery, mechanics should perform suspension adjustments according to customer riding style and vehicle load.

SPECIFICATIONS

Technical Data

The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile. Vehicles used at high altitudes, above 600 m (2000 ft) should be fitted with a high altitude kit. Further inquiries should be directed to your distributor service representative.

MODEL			SKANDIC LT	SKANDIC WT/SWT/SUV	SKANDIC SUV/WT LC
ENGINE					
Type			443	552	593
Maximum HP RPM [1]		± 100 RPM	6900	6950	7000
Reed Valve		P/N	N/A	420 924 519	420 924 519
CARBURETION					
Carburetor type			VM 32	2 x VM 34	2 x VM 38
Main jet			180	190	330
Needle jet			O-0 (159)	P-0 (159)	P-9 (480)
Pilot jet			50	40	40
Needle identification — clip position			6DGY12-3	6DH4-2	6DFHL24-3
Slide cut-away			3	2.5	2.5
Float adjustment		± 1 mm (± .04 in)	35.5 (1.392)	23.9 (.94)	18.1 (.710)
Air screw adjustment		± 1/16 turn	1.5	0.5	2.0
Idle speed		± 200 RPM	1650	1650	1900
Gas grade/Octane number [2]		(R + M)/2	Regular unleaded/87		
Gas/oil ratio			Oil injection		
ELECTRICAL					
Ignition timing BTDC [3]		mm (in)	2.79 (.110)	2.77 (.109)	3.0 (.118)
Trigger coil air-gap		mm (in)	0.45 - 0.55 (.018 -.022)	0.40 - 0.60 (.016 -.024)	N.A.
TRANSMISSION					
Gear ratio			1: 2.59	1st gear 1: 2.93 2nd gear 1: 2.04 R gear 1: 3.57	1st gear 1: 2.82 2nd gear 1: 1.7 R gear 1: 3.44
Engagement speed		± 100 RPM	3200	2500	2500
Drive pulley calibration screw position			—	—	3
Pulley distance	Z	mm (in)	39 ± 0.75 (1.535 ± .030)	41.8 ± 0.75 (1.647 ± .030)	35.5 ± 0.75 (1.398 ± .030)
Offset	X	± 0.75 mm (± .030 in)	37.0 (1.457)	35.0 (1.380)	37.0 (1.457)
	Y		Dimension Y must exceed X by 0.75 mm (.03 in) to 2.25 mm (.09 in)		
Driven pulley preload		± 0.7 kg (± 1.5 lbf)	Not applicable	7.5 (16.5)	7.5 (16.5)
Drive belt adjustment	Deflection	± 5 mm (± 13/64 in)	32 (1-1/4)	32 (1-1/4	40 to 50 (1.6 to 2.0)
	Force [4]	kg (lbf)	11.3 (25)		
Track adjustment	Deflection	mm (in)	40 – 50 (1-9/16 – 1-3132)		
	Force [5]	kg (lbf)	7.3 (16)		

MODEL			SKANDIC EXPEDITION	
			600 H.O. SDI	V-1000
ENGINE				
Type			Bombardier-Rotax, 2-TEC	Bombardier-Rotax, 4-TEC
Number of cylinder			2	
Displacement			594,4 cc (36.27 cu. in.)	995.90 cc (60.774 cu. in.)
Bore		mm (in)	72 (2.83)	100 (3.937)
Stroke		mm (in)	73 (2.87)	63.40 (2.496)
Maximum power engine speed [1]		±100 RPM	8000	7250
DRIVE BELT				
Part number			605 348 425	
Wear limit width		mm (in)	35.5 (1.398)	
ELECTRICAL				
Magneto/Alternator	Type		480 W	
Spark plug	Make		NGK	
	Number		2	
	Type		BR 9 ECS [6]	DCPR8E
	Gap	mm (in)	0.75 to 0.85 (.026 to .036)	
Headlamp bulb			60/55	
Taillight bulb			8/27	
Fuses	Starter solenoid		5 A	
	Starting System		30 A	
TRANSMISSION				
Gear ratio		1st	1: 2.82	
		2nd	1: 1.70	1: 1.89
		R	1: 3.44	
Engagement speed		± 100 RPM	3000	2500
Drive pulley calibration screw position			3	4
Pulley distance	Z	mm (in)	41.8 ± 0.75 (1.647 ± 0.030)	
Offset	X	± 0.75 mm (± .030 in)	35.0 (1.380)	
	Y	mm (in)	Dimension Y must exceed X by 0.75 (.03) to 2.25 (.09)	
Driven pulley preload		± 0.7 kg (± 1.5 lbf)		7.9/7.0
Drive belt adjustment	Deflection	± 5 mm (± 13/64 in)		32 (1-1/4)
	Force [4]	kg (lbf)		11.3 (25)
Track adjustment	Deflection	mm (in)		40 - 50 (1-9/16 –1-31/32)
	Force [5]	kg (lbf)		7.3 (16)
SUSPENSION				
Front	Type		SUV type	
	Travel	mm (in)	200 (7.87)	
Rear	Type		SUV type	
	Travel	mm (in)	290 (11.4)	

MODEL			SKANDIC EXPEDITION	
			600 H.O. SDI	V-1000
TRACK				
Tension		mm (in)	40 – 50 (1-9/16 – 1-31/32) [5]	
Alignment			Equal distance between edges of track guides and slider shoes	
DIMENSION				
Dry mass		kg (lbf)	325 (717)	345 (761)
Overall length		mm (in)	3060 (120.5)	
Overall width		mm (in)	1220 (48)	
LIQUIDS and GREASES				
Engine oil			XP-S synthetic 2-stroke oil or XP-S 2-stroke synthetic blend oil	XP-S 0W40 synthetic 4-stroke oil (P/N 293 600 054)
Coolant			Premixed coolant (P/N 219 700 362) or ethylene-glycol/water mix (50% coolant, 50% distilled water)	
Fuel	Type		Premium unleaded gasoline	Regular unleaded gasoline
	Octane	(R + M)/2	91	87
Chaincase/Gearbox			XP-S synthetic chaincase oil (P/N 413 803 300)	
Brake			SRF (DOT 4) (P/N 293 600 063) or GTLMA (DOT 4) (P/N 293 600 062)	
CAPACITY				
Engine oil	Engine	L (U.S. oz)	N.A.	3.4 (115)
	Reservoir	L (U.S. oz)	2.5 (84.5)	N.A.
Coolant		L (U.S. oz)	4.5 (15.2)	
Fuel tank		L (U.S. gal)	42 (11)	
Chaincase/Gearbox oil		mL (U.S. oz)	400 (13.5)	
Brake Fluid		mL (U.S. oz)	500 (17)	

[1] Engine Speed at which maximum power is achieved.

[2] In most service station pump octane number corresponds to (R + M)/2 octane number.

[3] At 3500 RPM (engine cold) with headlamp turned on.

[4] Force applied midway between pulleys to obtain specified deflection.

[5] Deflection with a 7.3 kg (16 lb) downward pull.

[6] CAUTION: Do not attempt to adjust gap on spark plug BR 9 ECS. The specification is given for verification purpose only. If found out of specification, replace with a new one.

Please route to:

Init.

- Service
- Sales
- Parts

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **November 29, 2004** Subject: **600 HO SDI REV Models Only** No. **2005-8**

REVISION =>1

YEAR	MODEL	MODEL NUMBER	PREDELIVERY KIT P/N
2005	GSX 600 HO SDI	DD5A, DD5B, DE5A, DE5B	549 011 179
2005	GTX 600 HO SDI	EH5A, EH5B, EJ5A, EJ5B, EJ5C	549 011 214
2005	MX Z 600 HO SDI	BL5A, BL5B, BL5C, BX5C, BX5D, BW5C, BW5F, BK5A, BK5B, BK5C, BK5D, BK5F, BK5N, BL5G, BL5H, BL5J, BL5K, BL5L, BL5M, BX5E, BX5F, BX5G, BW5G, BW5H, BW5J, BW5K, BW5L, BW5M, BK5G, BK5H, BK5J, BK5K, BK5L, BK5M	549 011 191

TABLE OF CONTENTS

Printed in Canada. (mbl2005-009 DR)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

PREDELIVERY KIT

Parts List

NOTE: Predelivery kits contains parts for various models, all parts may not be necessary for all vehicles, refer to the following tables for proper parts usage.

GSX: 549 011 179					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Bumper	YES	Hex. Flanged Bolt M5 x 20	207 682 044	4	15
Rear Suspension	YES	Wheel Cap	570 063 600	2	19
Ski	YES	Ski Stopper	505 070 671	2	8
	YES	Washer	732 900 049	2	8
	YES	Hex. Flanged Nut M10	732 610 084	2	8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7
Windshield	YES	Torx Screw M6 x16	250 000 129	4	14
	YES	Nut M6	250 000 135	4	14
	YES	Nylon Washer	517 302 736	4	14
Mirror	YES	Hex. Flanged Bolt M6 x 40	207 664 044	2	14
	YES	Elastic Flanged Nut M6	233 261 494	2	14
	YES	Mirror Cap	517 302 716	2	14
Console	YES	Heated Visor Extension Cord	515 175 851	1	15
Rear Bumper	YES	Bumper Cap	520 000 397	1	15
	YES	Bumper Cap	520 000 398	1	15

GTX: 549 011 214					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Suspension	YES	Wheel Cap	570 063 600	2	19
Ski	YES	Ski Stopper	505 070 671	2	8
	YES	Washer	732 900 049	2	8
	YES	Hex. Flanged Nut M10	732 610 084	2	8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	8
Windshield	YES	Windshield Support	517 303 197	1	13
Mirror	YES	Hex. Flanged Bolt M6 x 40	207 663 544	2	14
	YES	Elastic Flanged Nut M6	233 261 494	2	14
	YES	Mirror Cap	517 302 716	2	14
Console	YES	Heated Visor Extension Cord	515 175 851	1	15

MX Z: 549 011 191					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Bumper	YES	Hex. Flanged Bolt M5 x 20	207 682 044	4	15
Rear Suspension	YES	Wheel Cap	570 063 600	2	19
Ski	YES	Ski Stopper	505 070 671	2	8
	YES	Washer	732 900 049	2	8
	YES	Hex. Flanged Nut M10	732 610 084	2	8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	8
Windshield	YES (Except X)	Torx Screw M6 x16	250 000 129	4	14
	YES (Except X)	Nut M6	250 000 135	4	14
	YES (Except X)	Nylon Washer	517 302 736	4	14
	YES (X Only)	Plastic Rivet	293 150 089	3	13
Rear Bumper	YES	Bumper Cap	520 000 397	1	15
	YES	Bumper Cap	520 000 398	1	15

MX Z Renegade: 549 011 174					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	8
Rear Suspension	YES	Wheel Cap	570 063 600	2	23
Ski	YES	Ski Stopper	505 070 671	2	9
	YES	Washer	732 900 049	2	9
	YES	Hex. Flanged Nut M10	732 610 084	2	9
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	7, 8
Handlebar Strap	YES	Hex. Flanged Bolt M6 x 20	207 662 084	1	16
	YES	Flat Washer 6 mm	234 061 410	4	16
	YES	Elastic Nut M6	232 561 414	1	16
Windshield	YES (Except X)	Torx Screw M6 x16	250 000 129	4	17
	YES (Except X)	Nut M6	250 000 135	4	17
	YES (Except X)	Nylon Washer	517 302 736	4	17
	YES (X Only)	Plastic Rivet	293 150 089	3	17

UNCRATING

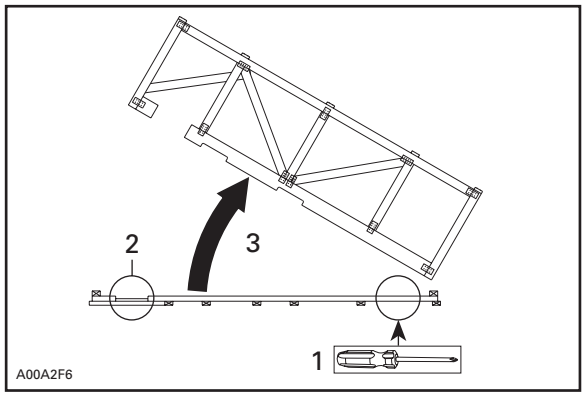
Crate Cover

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

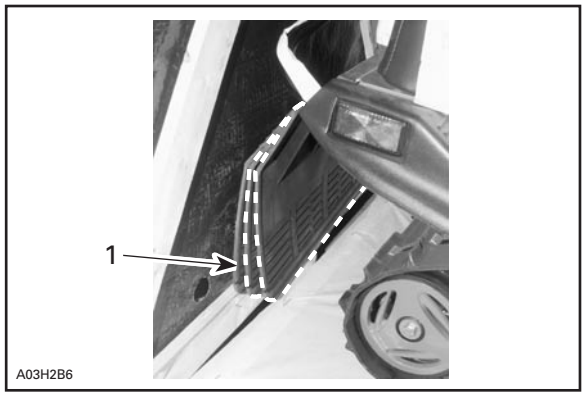
- Using a drill or a screwdriver, remove all screws [1] retaining crate cover to crate base.
- Tilt [3] the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle [2].



- Lift the crate cover slowly to avoid damaging the vehicle.

NOTE: On some models, if cover is tilted toward the front of the vehicle, snow guard may interfere with crate cover, push on snow guard [1] when lifting cover.

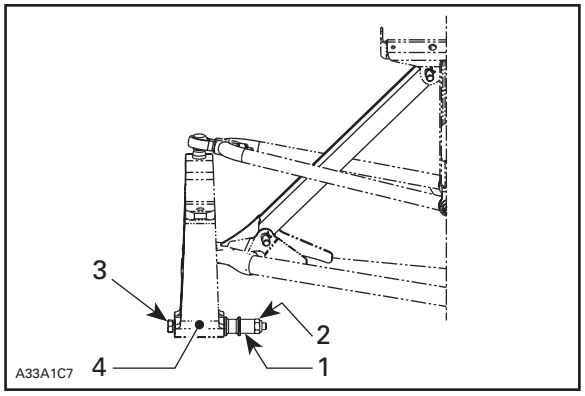


- Remove polyethylene foam protective sheets.
- Remove parts to be installed from vehicle or crate base.

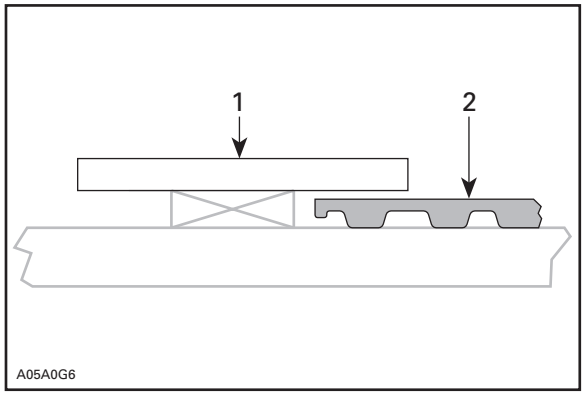
Crate Brackets

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

- If applicable, cut locking ties and remove ski leg wood protectors.
- Detach ski legs from crate shipping brackets.
- Discard shipping spacers [1] and nuts [2].
- Keep ski leg bolts [3] and slider cushions [4] for skis installation.



- Using a pry bar, remove wood blocks retaining the track to the crate base.
- Remove the vehicle from the crate base.



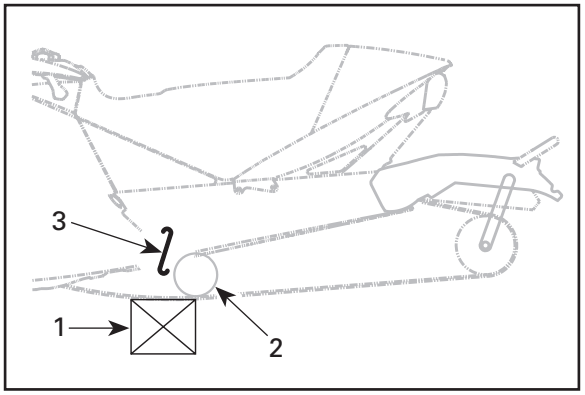
Shipping Hook(s)

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Apply the parking brake.
- Lift the rear of the vehicle so that a block or a box [1] can be positioned under the front idler wheel [2].

NOTE: On some models, the front arm is secured with 2 hooks.



- Cut the locking tie retaining the front hook(s) [3].
- If applicable, cut locking ties retaining rear suspension straps.
- Ask another person to apply pressure onto the rear suspension.
- Remove front hook(s) from suspension.

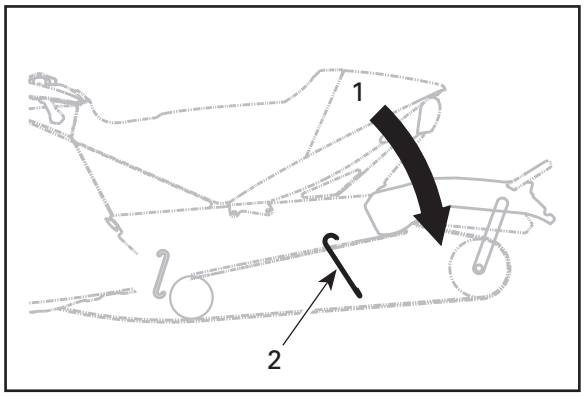
⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

Model(s): MX Z (Renegade)/GTX

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.



- Make sure that parking brake is applied.
- Lift the front of the vehicle to position bumper approximately 1 meter upward (35 to 40 inches).
- Standing on footwells, sit roughly to apply pressure [1] onto the rear suspension to free the rear hook(s) [2].

NOTE: On some models, the rear arm is secured with 2 hooks.

CAUTION: To avoid any damage to the seat, always sit on the seating surface.

- Remove the rear hook(s) from the suspension.

⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

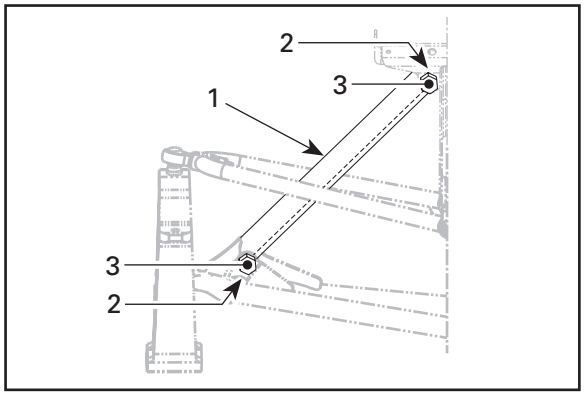
SET-UP

Shipping Brackets

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to. Where specified, install new locking devices (e.g. lock tabs, elastic stop nuts). If the efficiency of a locking device is impaired, it must be renewed.

- Make sure that parking brake is applied.
- Remove and discard the shipping brackets **[**1**]** from the front suspension.
- Discard the spring clips **[**2**]**.
- Keep the hexagonal bolts **[**3**]** for the front shocks installation.



Front Shocks

Model(s):

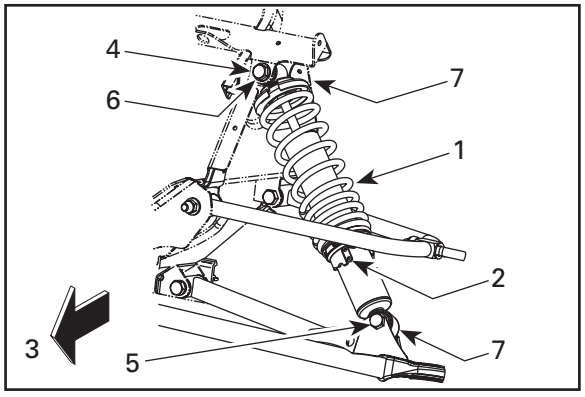
– GSX (Sport)/GTX (Sport)
– MX Z (Renegade)

- Position front shock absorbers **[**1**]** in place with their adjustment ring at the bottom **[**2**]**.

NOTE: **[**3**]** indicates the front of the vehicle.

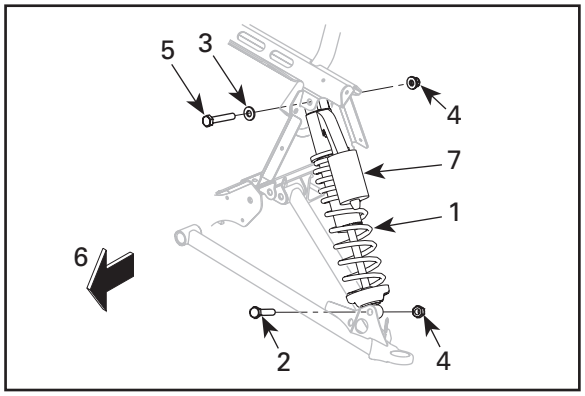
- Secure each shock absorber to suspension using:

- **[**4**]** hexagonal bolt M10 x **60** (previously removed)
- **[**5**]** hexagonal bolt M10 x **55** (previously removed)
- **[**6**]** washer (previously removed)
- **[**7**]** 2 elastic flanged nuts M10 (predelivery kit).



Model(s):

– MX Z (X/Renegade X)
– MX Z (X – Europe)



▪ Position front shock absorbers **[**1**]** in place with their adjustment ring at the top.

NOTE: When shock absorbers are installed, shock reservoir **[**7**]** should be tilted toward the front of the vehicle.

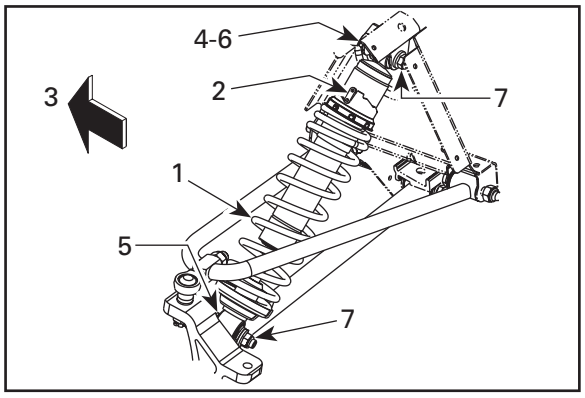
NOTE: [6**]** indicates the front of the vehicle.

▪ Secure each shock absorber to suspension using:

- **[**5**]** hexagonal bolt M10 x **60** (previously removed)
- **[**2**]** hexagonal bolt M10 x **55** (previously removed)
- **[**3**]** washer (previously removed)
- **[**4**]** 2 elastic flanged nuts M10 (predelivery kit).

Model(s):

– GSX (Limited)
– GTX (Limited)
– MX Z (Adrenaline)



▪ Position front shock absorbers **[**1**]** in place with their adjustment ring at the top **[**2**]**.

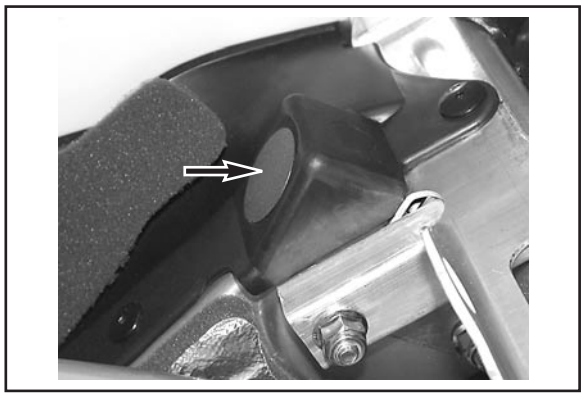
NOTE: [3**]** indicates the front of the vehicle.

▪ Secure each shock absorber to suspension using:

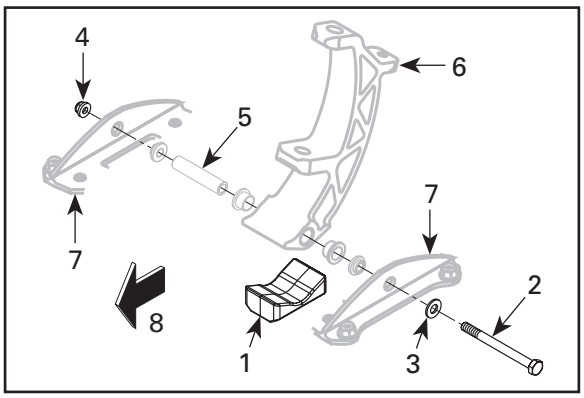
- **[**4**]** hexagonal bolt M10 x **60** (previously removed)
- **[**5**]** hexagonal bolt M10 x **55** (previously removed)
- **[**6**]** washer (previously removed)
- **[**7**]** 2 elastic flanged nuts M10 (predelivery kit).

Bottom Pan Caps

▪ Install plastic caps provided in the predelivery kit on the bottom pan.



Skis



- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**7**]** to ski leg **[**6**]** using:
  - **[**2**]** hexagonal bolt M10 x 110 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit)

NOTE: **[**8**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Battery Preparation

Model(s): With Electric Starting

All electric starting equipped vehicles using a **YTX20L-BS** or **YTX24L-BS** type battery require a specific charging procedure at predelivery. Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area. Never charge or boost battery while installed on vehicle. Do not open the sealed caps during charging. Do not place battery near open flame.

CAUTION: If battery becomes hot, stop charging and allow it to cool before continuing.

NOTE: Sealed VRLA batteries have an internal safety valve. If battery pressure increases due to overcharging, the valve opens to release excess pressure, preventing battery damage.

An automatic charger is the fastest and most convenient way for error-proof charging.

NOTE: If battery cannot be recharged using the following charging chart, replace battery.

Battery Voltage below 12.8 V

STANDARD CHARGING (recommended)		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	4 – 9 hours	2 A
YTX24HL-BS	5 – 10 hours	

QUICK CHARGING		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	50 minutes	10 A
YTX24HL-BS	1 hour	

Model(s): SDI without Electric Starting

All vehicles with SDI engine and **without** electric starting are equipped with a **YT4L-BS** type battery that requires a specific charging procedure at predelivery.

- Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area.
Never charge or boost battery while installed on vehicle.
Do not open the sealed caps during charging.
Do not place battery near open flame.

- These sealed batteries have to be tested with a voltmeter.
- Batteries with a voltage of 12.8 volts and above, no charge is required
- Batteries with a voltage of 12.7 volts and below must be charged as follows:

BATTERY TYPE	STANDARD CHARGE	QUICK CHARGE
YT4L-BS	0.3 Amps/hour for 5 to 10 hours	3.0 Amps/hour for 30 min.

Battery Removal

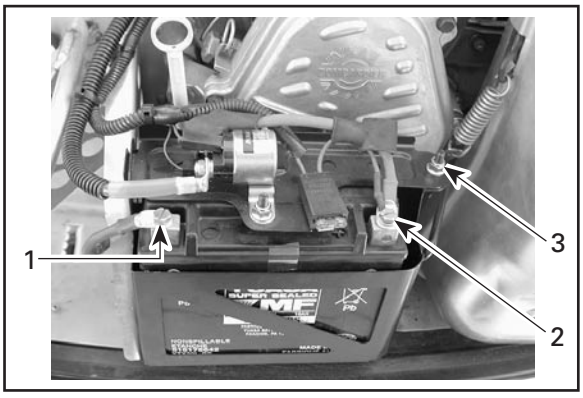
Model(s): With Electric Starting

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.



- Open the right side panel of the vehicle.
- Disconnect BLACK negative cable [1] from the terminal.

- Slide off the rubber boot from the RED cable and disconnect the RED cable [2].
- Remove the bracket by unscrewing the bracket retaining nut [3].
- Remove the battery.

Model(s): SDI without Electric Starting

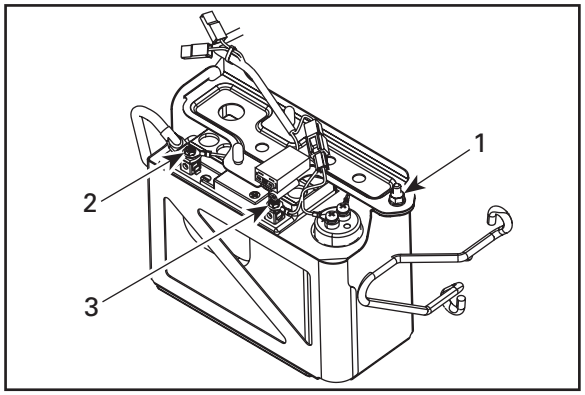
⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

- Open the right side panel of the vehicle.
- Remove the bracket by unscrewing the bracket retaining nut [1].
- Remove the battery plastic cover.
- Disconnect BLACK negative cable [2] from the terminal.
- Disconnect RED positive cable [3] from the terminal.
- Remove the battery.



Battery Installation

Model(s): With Electric Starting

- Install the bracket and screw the bracket retaining nut.
- Connect RED positive cable it to positive battery terminal.
- Connect RED wire (coming from 30 A fuse).
- Connect BLACK negative cable LAST.

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

- Cover the RED positive terminal with rubber boot.
- Apply silicone dielectric grease (P/N 293 550 004) on battery posts and connectors.

Model(s): SDI without Electric Starting

- Properly position the battery on its rack.
- Connect RED positive cable it to positive battery terminal.
- Connect RED wire (coming from 30 A fuse).
- Connect BLACK negative cable LAST.
- Connect ground wire from harness.
- Apply silicone dielectric grease (P/N 293 550 004) on battery posts and connectors.
- Install the battery plastic cover.
- Install the bracket and screw the bracket retaining nut.

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

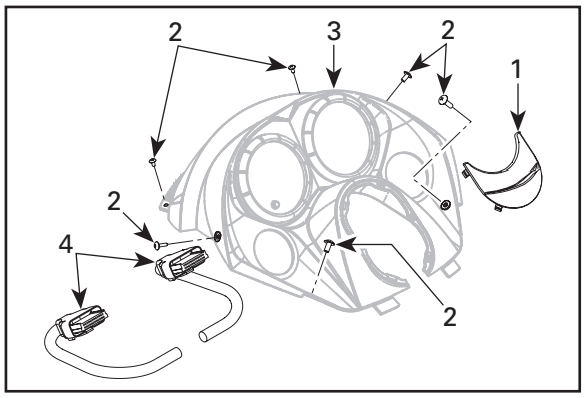
⚠ WARNING

Never charge or boost battery while installed on vehicle.

Steering Column Adjustment

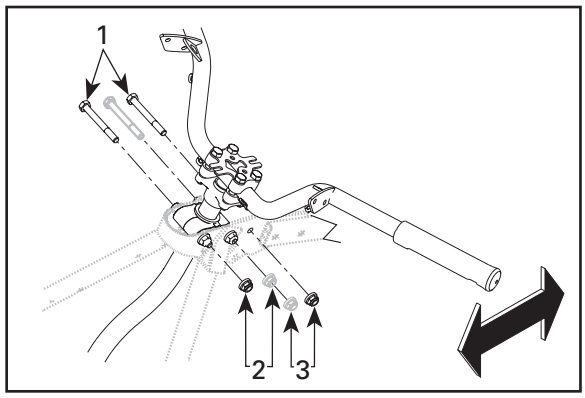
Model(s): with Adjustable Windshield Only

- Steering column position is adjustable fore and aft.
- If you prefer to adjust the steering column in forward or rearward position, proceed as follows.
- Remove console cap **[**1**]**.
- Remove the 6 screws **[**2**]** retaining the console.
- Slightly lift the console **[**3**]** to gain access to the electrical connector housing(s).
- Unplug the large connector housing(s) **[**4**]**.

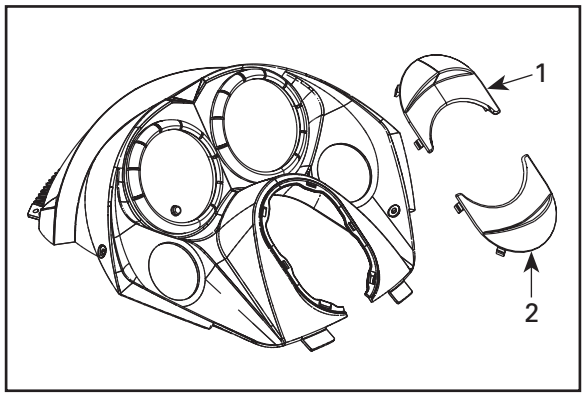


- Remove the 2 bolts **[**1**]** retaining the top of the steering column.
- Adjust the steering column according to customer riding style:
  - **[**2**]** for **forward** position
  - **[**3**]** for **rearward** position.
- Reinstall the 2 bolts and elastic nuts.

Torque the elastic nuts to 24 N•m (**18** lbf•ft)**.**



- Plug in the large connector housing(s) previously unplugged.
- Reinstall the console and secure with previously removed screws.
- Position of console cap will be:
  - **[**1**] above** steering column for rearward steering position
  - **[**2**] beneath** steering column for forward steering position.

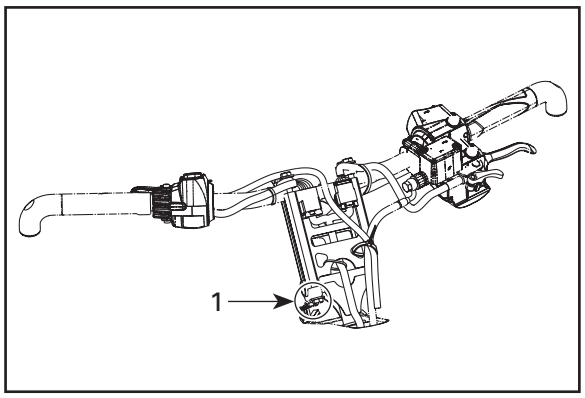


Handlebar

Model(s): X Package Only

- Loosen bolts **[**1**]** retaining the steering extension to the steering column.
- Lift steering extension until it comes in contact with the steering column thrust.
- On some models, adjust the handlebar so that the brake fluid reservoir is level.
- Secure steering extension to the steering column.

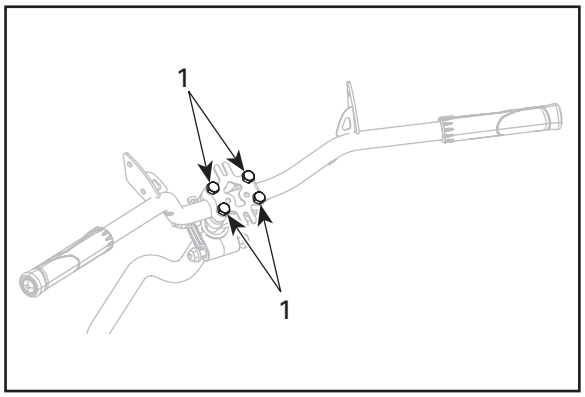
Torque to 24 N•m (**18** lbf•ft)**.**



- Secure if necessary the handlebar to the steering extension.

Torque to 24 N•m (**18** lbf•ft)**.**

Model(s): All Except X Package



- Loosen bolts **[**1**]** retaining the handlebar to the steering column.

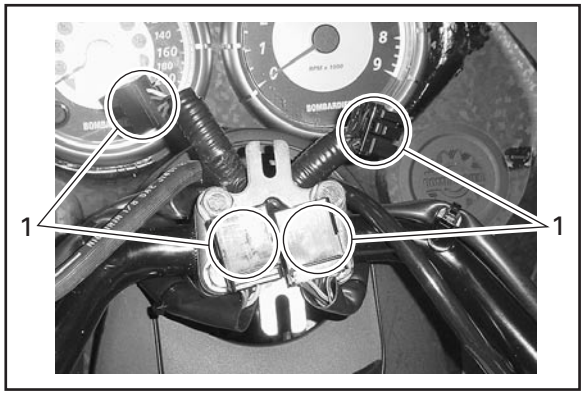
NOTE: On some models, remove connectors from steering column to have a better access to bolts.

- Adjust the handlebar so that the brake fluid reservoir is level.
- Secure the handlebar to the steering column.

Torque to 24 N•m (**18** lbf•ft)**.**

- If applicable, reinstall the steering harness connectors on the steering column brackets.

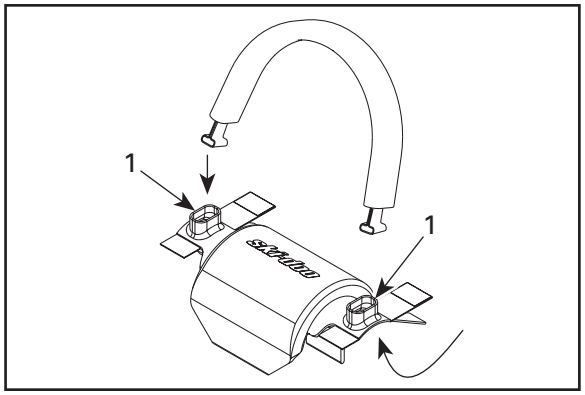
Steering Column Connectors



- On some models, clip the main harness connectors on the steering column brackets.
- Connect **[**1**]** main harness to steering harness.

Steering Holding Strap/Cover

Model(s): MX Z (Renegade)



NOTE: Steering pad is included in the predelivery box.

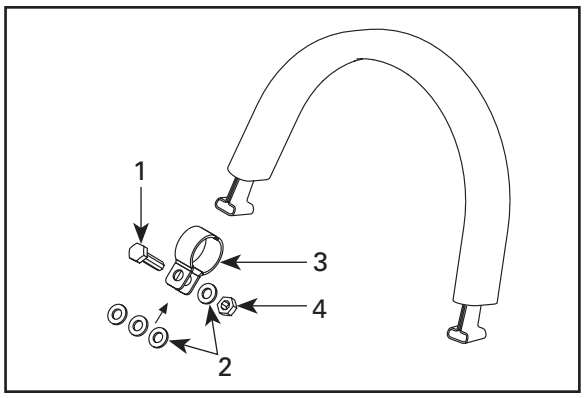
- Cut the locking tie retaining the holding strap end to the handlebar.
- If applicable, insert strap through steering pad holes **[**1**]**.

- Secure the holding strap end to the handlebar using:

NOTE: Retaining clip and hardware should be installed in the same position as the opposite side strap end.

- **[**1**]** hexagonal flanged bolt (predelivery kit)
- **[**2**]** 4 flat washers (predelivery kit)
- **[**3**]** retaining clip (previously removed)
- **[**4**]** elastic nut (predelivery kit)

Torque to 11 N•m (**97** lbf•**in**)**.**



NOTE: Wires route along the handlebar. To avoid pinching them, take care to keep wires out of retaining clip.

Steering Cap

Model(s): Plastic Cap

- Clip steering cap in place (predelivery box).

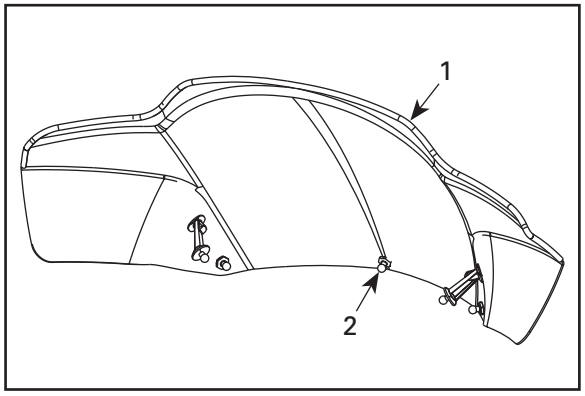
Model(s): Padded Cap

- Properly position steering padding in place and secure with Velcro strips or zippers.

Windshield

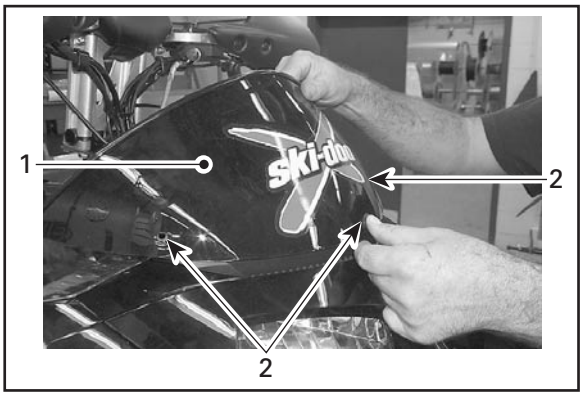
Model(s): GTX

- Remove protective films from windshield.
- Install windshield support from predelivery kit onto the console provided hole.
- Position windshield **[**1**]** in place.
- Secure windshield to console using windshield knobs **[**2**]**.



Model(s): MX Z (X/Renegade X)

- Remove protective films from windshield.
- Position windshield **[**1**]** in place.
- Secure windshield to console using rivets **[**2**]** from the predelivery kit.



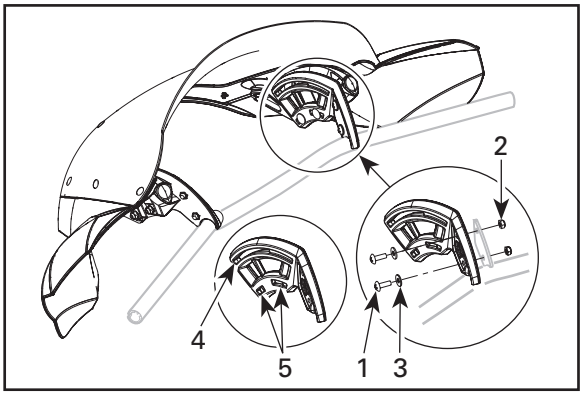
Model(s): GSX/MX Z

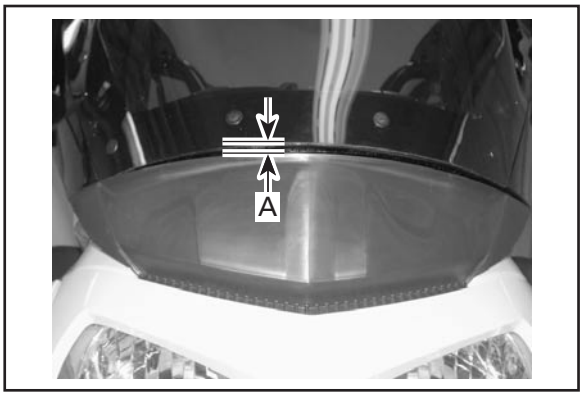
- Remove protective films from windshield.
- Position windshield in place.
- Secure windshield to handlebar using:
  - **[**1**]** 4 screws M6 x 16 (predelivery kit)
  - **[**2**]** 4 elastic nuts M6 (predelivery kit)
  - **[**3**]** 4 flat washers (predelivery kit)

NOTE: Screws toward the inside of the vehicle.

- Two slots are provided for installation with forward **[**5**]** or rearward **[**4**]** handlebar position.
- Turn the handlebar completely from side to side to make sure there is no contact with hood.

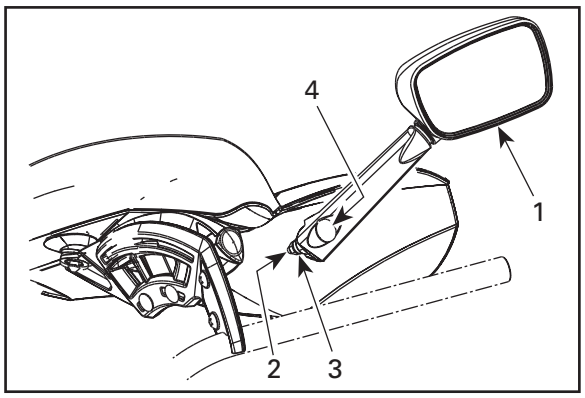
NOTE: For a good fit, a gap **[**A**]** of 8 to 12 mm (3/8 to 1/2 in) between windshield and moulding is suggested.





Mirrors

Model(s): GSX



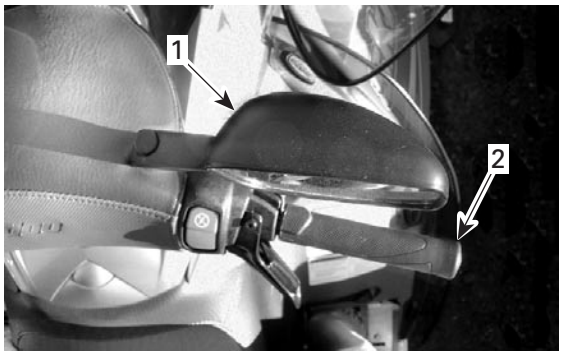
NOTE: Mirrors are included in the predelivery box.

- Remove the existing cap from windshield supports.
- Position and secure mirrors **[**1**]** using:

  - **[**2**]** 2 hexagonal screws (predelivery kit)
  - **[**3**]** 2 nuts (predelivery kit)
  - **[**4**]** 2 caps (predelivery kit).

Torque to 11 N•m (**97** lbf•**in**)**.**

Model(s): GTX



A33H806

NOTE: Mirrors are included in the predelivery box.

- Position and secure mirrors **[**1**]** to handlebar brackets using:

NOTE: Use steering padding existing hole.

  - **[**2**]** 2 hexagonal screws (predelivery kit)
  - **[**3**]** 2 nuts (predelivery kit)
  - **[**4**]** 2 caps (predelivery kit).

Torque to 11 N•m (**97** lbf•**in**)**.**

NOTE: Make sure that mirrors **[**1**]** are in line with the handlebar **[**2**]**, see photo.

⚠ WARNING

Make sure that handlebar turns freely in both directions.

Heated Visor Extension Cord

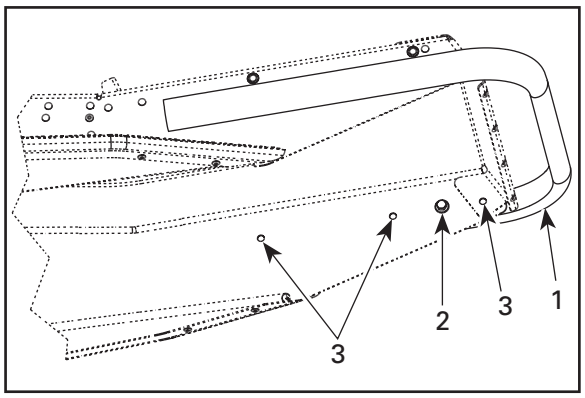
Model(s): GSX/GTX

NOTE: Heated visor extension cord is included in the predelivery kit.

- Lift cap on the left side of the console.
- Install the heated visor extension cord.

Rear Bumper

Model(s): All Except MX Z (Renegade)/GTX



- Remove and keep the hexagonal bolts **[**2**]** retaining rear bumper to frame.
- Pull gently on rear bumper **[**1**]** until holes of rear bumper are aligned with frame holes **[**3**]**.
- Secure rear bumper to frame using:

  - 4 hexagonal bolts M8 x 20 (predelivery kit).
  - 2 hexagonal bolts M8 x 20 (previously removed).

Torque to 15 N•m (**133** lbf•**in**)**.**

- Install bumper caps (predelivery kit).

2+1 Seat/Passenger's Seat

Model(s): GTX Limited

- Install 2+1 seat.
- Install passenger's seat.

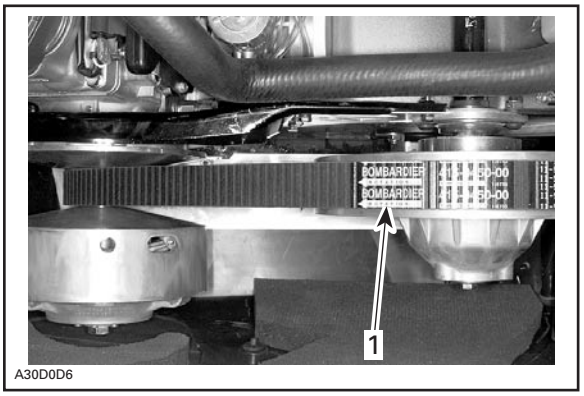
NOTE: Refer to the GTX *Operator's Guide* for the complete installation instructions.

Drive Belt

- Clean pulleys and disc brake before installing the drive belt.

NOTE: Use a suitable cleaner such as Pulley flange cleaner (P/N 413 711 809).

CAUTION: The arrow **[**1**]** is indicating the direction of rotation (see typical illustration).



A30D0D6

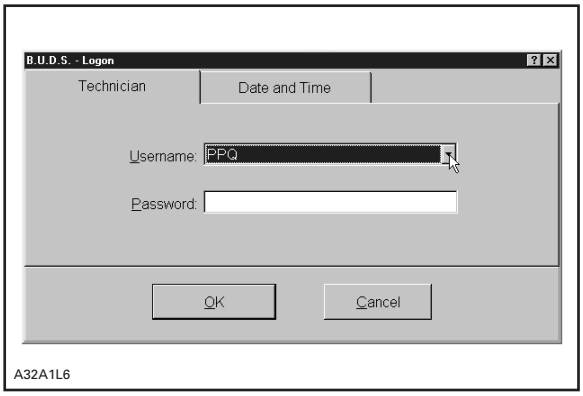
FINAL PREPARATION

B.U.D.S. Version

- Make sure to use the latest B.U.D.S. version available in BOSSWeb.

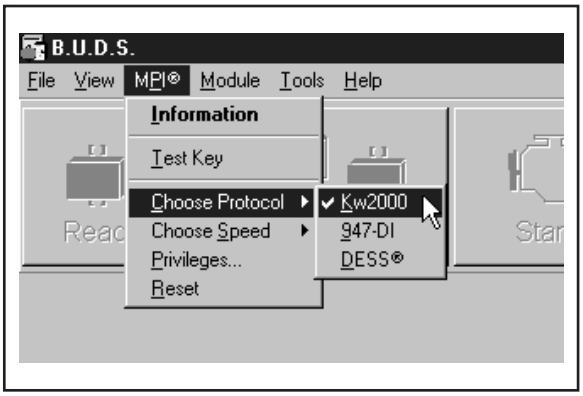
MPI (Connecting)

- Start B.U.D.S.



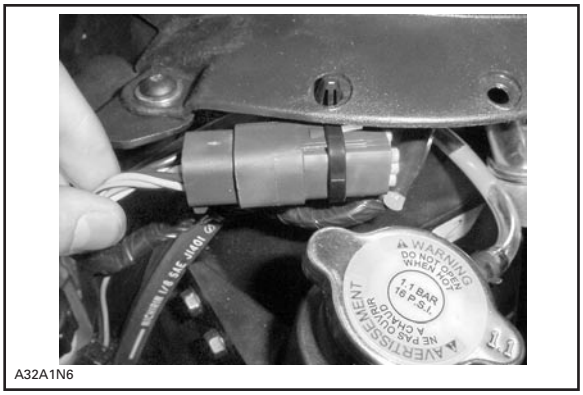
A32A1L6

- Select the vehicle's Protocol (Kw2000) in *Choose Protocol* from the MPI menu.
- Wait a few seconds while B.U.D.S. loads the protocol into the MPI.

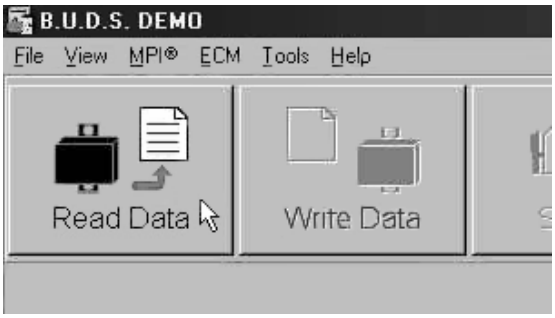


- Connect the 6–pin adapter to the diagnostic connector of the vehicle.
- Insert the *Grey* DESS key (P/N 529 035 896) on the DESS post.
- Push the engine cut-out switch to the lower OFF position.
- Press the *Start* button of the vehicle to wake up the ECM.

NOTE: You have 30 seconds to start communication before the ECM shuts down.


A32A1N6

- Click on *Read Data* from the tool bar to initiate communication and to read the content of the ECM.



A32A1O6

B.U.D.S. (Customer Name)

- Click on the *Vehicle* tab to open the vehicle information page.
- Type the name of the customer in the *Customer* zone.

NOTE: After you are finished typing the name, B.U.D.S. automatically updates the delivery date on the screen.

A32A1P6

B.U.D.S. (Programing a DESS Key)

- Click on the *Keys* tab to open the DESS keys page.
- Click on *Erase All Keys*.
- Click on *Add Key*.

NOTE: A dialog box opens and asks you to insert a key on the MPI DESS post.

- If the key that you inserted on the MPI DESS post was successfully read and added to the document, message box will appear.
- Click on *OK*.
- Repeat steps *3* to *5* for each DESS key you want to program into the vehicle.
- Write the document into the vehicle by clicking on *Write Data* from the tool bar.
- Wait for B.U.D.S. signal then remove the *Grey* key from the vehicle DESS.

A32A1Q6

Recommended Oil

CAUTION: Use only injection oil that flows at - 40°C (- 40°F).

- Oil is contained in the injection oil reservoir.
- Use only two-stroke engine injection oil sold by authorized SKI-DOO dealers.

MODEL	OIL TYPE [1]
All	XP-S synthetic 2-stroke oil or XP-S 2-stroke synthetic blend

[1] All XP-S injection oils are compatible, they can be mixed together.

The XP-S 2-stroke synthetic blend and XP-S synthetic 2-stroke injection oil provide superior lubrication, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. These synthetic injection oils meet the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

CAUTION: Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard two-stroke engine oils or ashless two-stroke engine oils. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

⚠ WARNING

Wipe off any oil spills. Oil is highly flammable.

=>Break-in Period

- For the first 3–1/2 hours, the ECM will retard timing and will increase fuel delivery for a smooth brake-in period. The mapping will progressively convert to normal during that period.

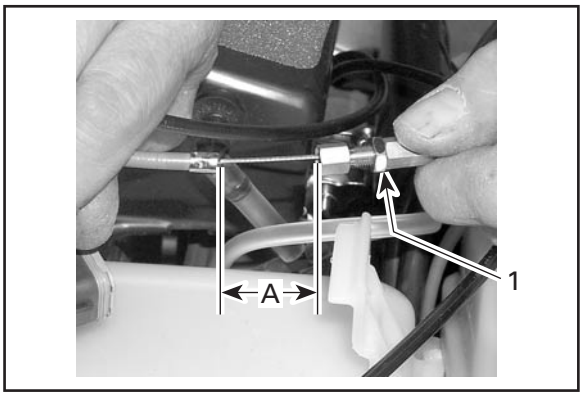
For fuel injection engines, no oil needs to be added to the first fuel tank.

=>Oil Pump Adjustment

Oil injection pump is factory set. However, if adjustment needs to be checked or modified, refer to *Service Bulletin 2005–8* for the complete instructions regarding the oil pump cable adjustment procedure.

NOTE: If you are well aware of the new oil pump cable adjustment procedure, refer to the following table for quick reference.

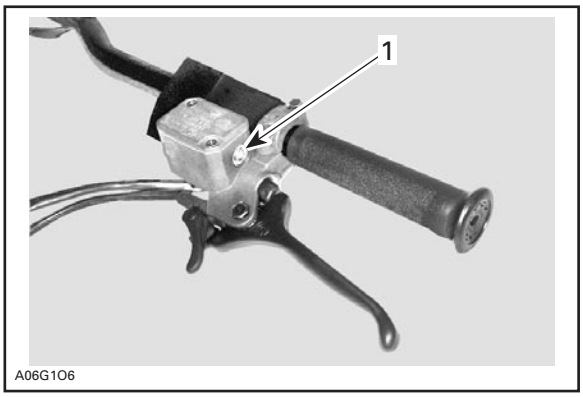
Measure distance between throttle lever and cable housing end.
and ADD
Oil pump specification: 18 mm (0.709 in)
=
Oil pump adjustment "A"



Brake Fluid Level

- Check brake fluid in reservoir for proper level [1].
- Add brake fluid (DOT 4) as required.
  - Use SRF (DOT 4) (P/N 293 600 063)
  - or GTLMA (DOT 4) (P/N 293 600 062).

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Do not store or use a started bottle of brake fluid.



Track

- Refer to *Shop Manual* to adjust track tension and alignment.

NOTE: Track deflection is 30 to 35 mm (1-3/16 to 1-3/8 in) with a downward pull of 7.3 kg (16 lb).

- Install caps provided in Predelivery Kit.

NOTE: If lubricant is needed to help cap installation, use lens cleaner instead of soapy water to avoid cap to get out from its location due to soap residual.

Disk Brake

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

DELIVERY TO CUSTOMER

Speedometer

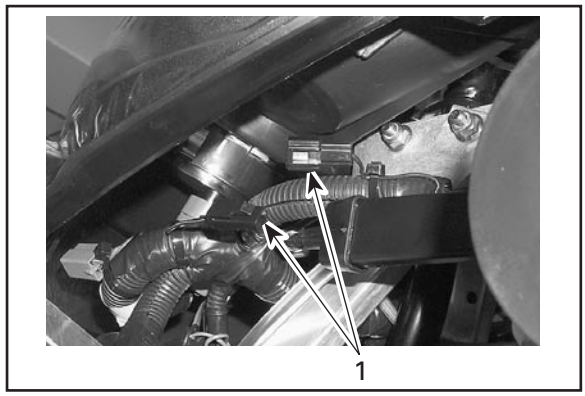
This model is equipped with an electronic speedometer, it may show speed in km/h or MPH.

NOTE: At the factory speedometer, odometer and trip meter is adjusted for miles reading.

- Proceed as follow to change units from miles to kilometers.

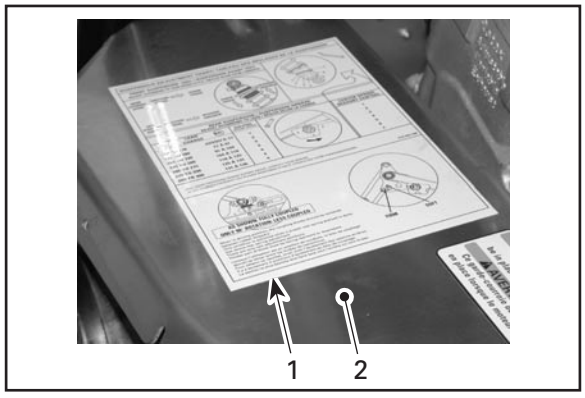
NOTE: At a speed of 90 km/h (55 MPH) and more, the LCD mode screen will show speed only instead of the selected mode.

- Stop engine and open hood.
- Cut locking ties.
- Plug connectors **[**1**]** together to change units from miles to kilometers.
- Unplug to return to miles reading.
- Fasten connector to harness with locking ties.



Rear Suspension Adjustments

- Rear suspension is calibrated at factory. At predelivery, mechanics should perform suspension adjustments according to customer riding style and vehicle load as described on suspension adjustment chart **[**1**]** which is located on pulley guard **[**2**]**.



SPECIFICATIONS

Technical Data

The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile.

MODEL			GSX/GTX MX Z
ENGINE			
Engine Type			593 HO SDI
Maximum HP RPM [1]		±100 RPM	8100
FUEL SYSTEM			
Throttle Body Type			Dell'Orto without IACV
Sensors Typical Resistance	Throttle Position (TPS)		1.6 kΩ – 2.4 kΩ
	Coolant Temperature Sensor (CTS)		2.28 kΩ – 2.74 kΩ @ 20°C
	Air Temperature Sensor (ATS)		2.28 kΩ – 2.74 kΩ @ 20°C
	Exhaust Temperature Sensor		18.0 Ω – 22.0 Ω @ 20°C ± 3°C
Idle Speed RPM		± 200 RPM	1500
Gas Grade/Pump Octane Number	Inside North America	(R + M)/2	Premium unleaded/91
	Outside North America	RON	Premium unleaded/95
Gas/Oil Ratio			Oil Injection
ELECTRICAL			
Magneto Generator Output		W	486
Ignition System Type			CDI
Ignition Timing BTDC [2] [3] [6]		mm/in	5.390 (0.2122)
Spark Plug		Make and type	[5] BR9ECS
		± 0.05 mm (± .002 in)	0.80 (.032) [6]
TRANSMISSION			
Gear Ratio		Teeth	GSX/MX Z: 22/43 GTX: 21/43 Renegade: 21/43 Renegade X: Track 1.25: 21/43 Track 1.75: 19/43
Engagement Speed		± 100 RPM	3800
Drive Pulley Calibration Screw Position			4
Pulley Distance	Z [4]	± 0.5 mm (± .020 in)	19.0 (0.748)
Offset	X	± 0.5 mm (± .020 in)	37.0 (1.457)
	Y	± 0.5 mm (± .020 in)	Dimension Y must exceed X of 1.50 mm (.059 in)
Driven Pulley Preload		± 0.7 kg (± 1.5 lbf)	0.0 (0.0)
Drive Chain Tension			Fully tighten adjusting screw BY HAND then back OFF only far enough for hair pin installation
Track Adjustment	Deflection	mm (in)	30 to 35 (1-3/16 to 1-3/8) with a 7.3 kg (16 lb) downward pull

[1] Engine speed at which maximum power is achieved.

[2] At 3500 RPM (engine cold) with headlamp turned on.

[3] During the initial engine break-in, the timing curve is retarded between 4500 RPM and maximum RPM. Because checking ignition timing is done at lower RPM, this will not affect the 3500 RPM timing specification.

[4] Z dimension without torque rod preload. After Z dimension adjustment, hand tight torque rod until plastic pad cannot be turned, then turn torque rod an additional half turn. Lock jam nut.

CAUTION: [5] Do not attempt to adjust gap on spark plug BR 9 ECS.

[6] With air pressure sensor disconnected.

- BTDC : Before Top Dead Center
- PTO : Power Take OFF side
- MAG : Magneto side

Please route to:

Init.

- Service
- Sales
- Parts

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **October 13, 2004** Subject: **MX Z X 440** No. **2005-9**

YEAR	MODEL	PACKAGE	MODEL NUMBER	PREDELIVERY KIT P/N	SERIAL NUMBER
2005	MX Z X 440	Racing	BM5A, BM5B	549 011 185 549 011 246	All

TABLE OF CONTENTS

Page

Printed in Canada. (mbl2005-011 DR)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

UNCRATING

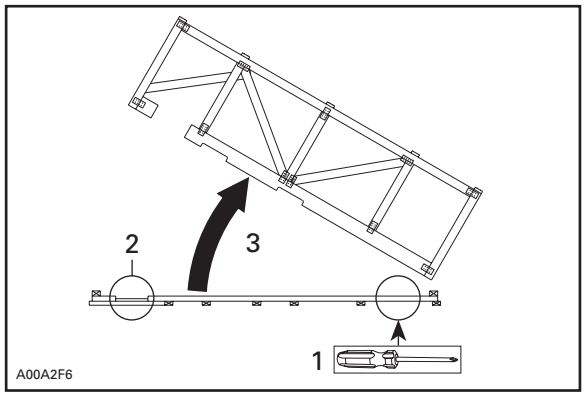
Crate Cover

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

- Using a drill or a screwdriver, remove all screws [1] retaining crate cover to crate base.
- Tilt [3] the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle [2].

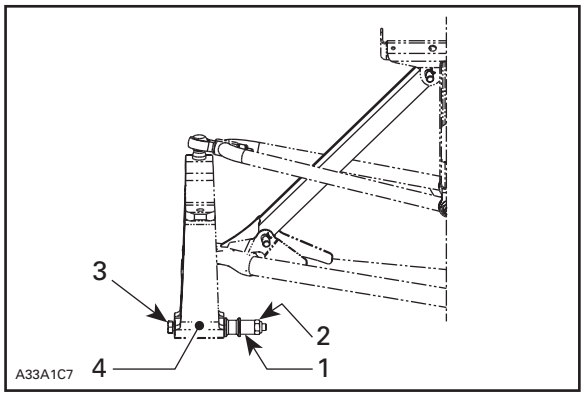


- Lift the crate cover slowly to avoid damaging the vehicle.
- Remove polyethylene foam protective sheets.
- Remove parts to be installed from vehicle or crate base.

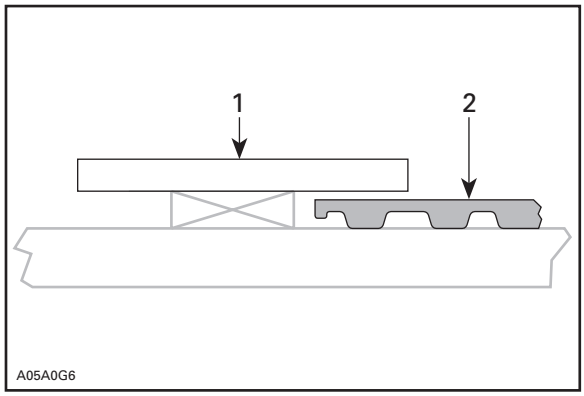
Crate Brackets

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

- If applicable, cut locking ties and remove ski leg wood protectors.
- Detach ski legs from crate shipping brackets.
- Discard shipping spacers [1] and nuts [2].
- Keep ski leg bolts [3] and slider cushions [4] for skis installation.



- Using a pry bar, remove wood blocks [1] retaining the track [2] to the crate base.
- Remove the vehicle from the crate base.

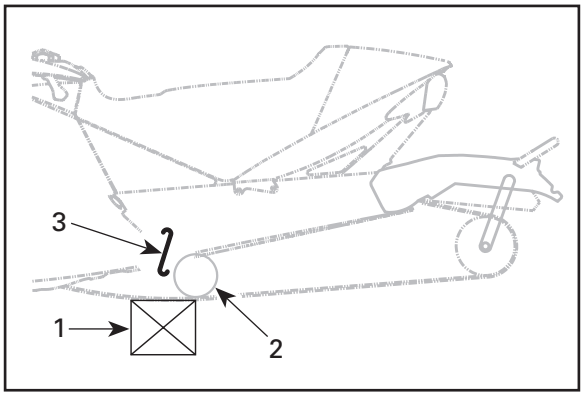


Front Hook(s)

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Apply the parking brake.
- Lift the rear of the vehicle so that a block or a box [1] can be positioned under the front idler wheel [2].



NOTE: On some models, the front arm is secured with 2 hooks.

- Cut the locking tie retaining the front hook(s) [3].
- If applicable, cut locking ties retaining rear suspension straps.
- Ask another person to apply pressure onto the rear suspension.
- Remove front hook(s) from suspension.

⚠ WARNING

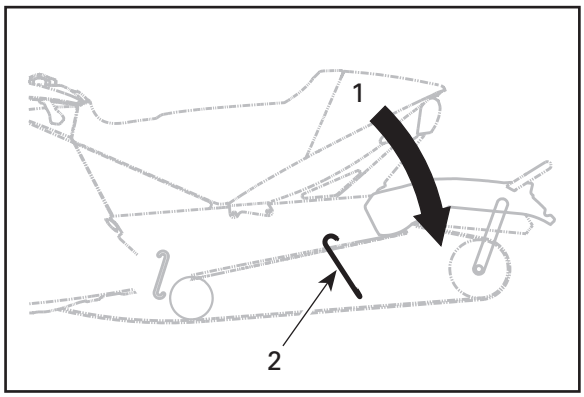
Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

Rear Hook

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

- Make sure that parking brake is applied.
- Lift the front of the vehicle to position bumper approximately 1 meter upward (35 to 40 inches).
- Standing on footwells, sit roughly to apply pressure [1] onto the rear suspension to free the rear hook [2].



CAUTION: To avoid any damage to the seat, always sit on the seating surface.

- Remove the rear hook from the suspension.

⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

SET-UP

Combustion Chamber Inserts

CAUTION: Installation of the standard inserts validates the limited warranty coverage.

IMPORTANT NOTICE
The 2005 MX Z X 440 snowmobile is shipped with a set of high CR combustion chamber inserts.

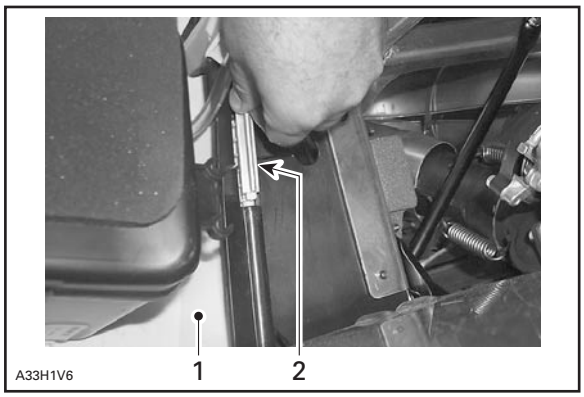
CAUTION: These high compression inserts are installed in the vehicle and require racing fuel.

Refer to Warranty Bulletin 2005-2 for operation with fuel rating lower than 100 octane, complete instructions on adjustment and recalibration to be done to validate warranty.

For racing dedicated snowmobiles, a decal on belt guard provides information needed for jetting adjustment.

Side Panels Removal

- Remove hinge locks [2] holding RH and LH side panel [1] to vehicle.
- Remove side panels.

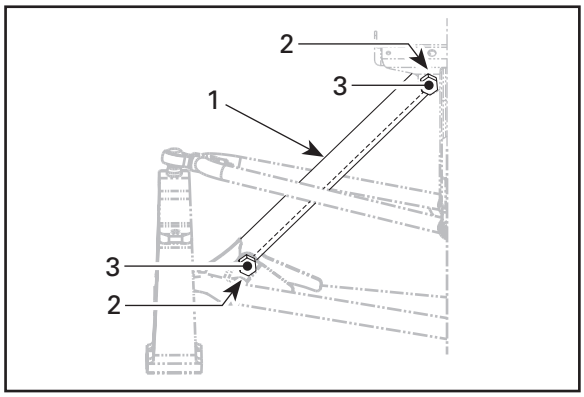


Shipping Brackets

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to. Where specified, install new locking devices (e.g. lock tabs, elastic stop nuts). If the efficiency of a locking device is impaired, it must be renewed.

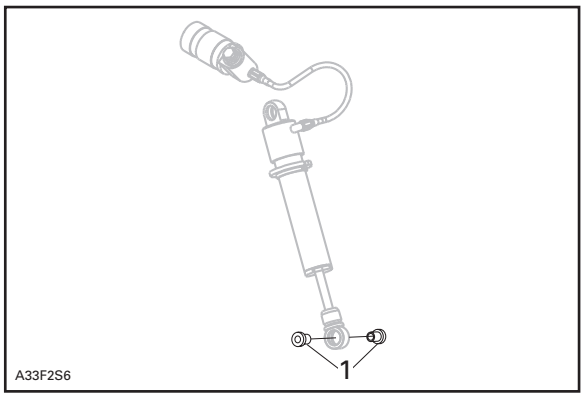
- Make sure that parking brake is applied.
- Remove and discard the shipping brackets **[**1**]** from the front suspension.
- Discard the spring clips **[**2**]**.
- Keep the hexagonal bolts **[**3**]** for the front shocks installation.



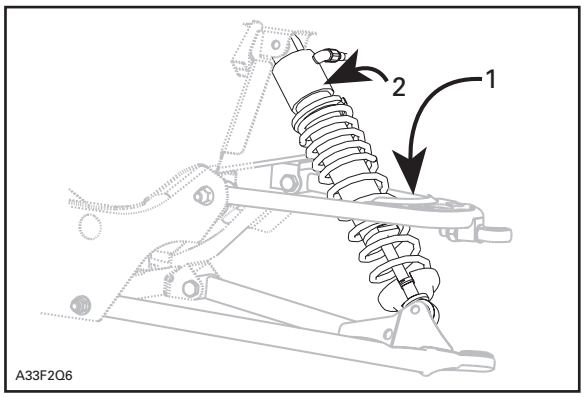
Front Shocks

IMPORTANT: If stabilizer bar is to be installed, it should be done before the installation of the front shocks, see procedure further in this document.

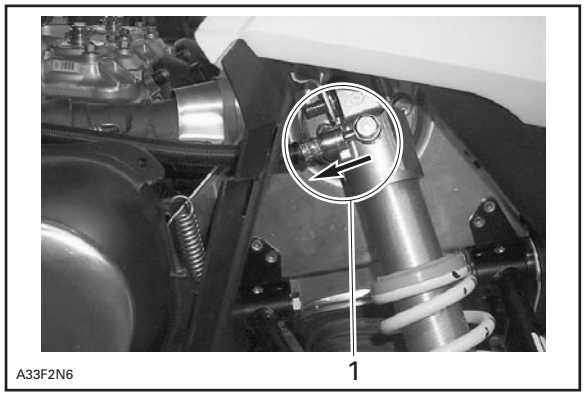
- On both shocks, cut locking tie retaining bushings.
- Install bushings **[**1**]** on shock, see illustration.



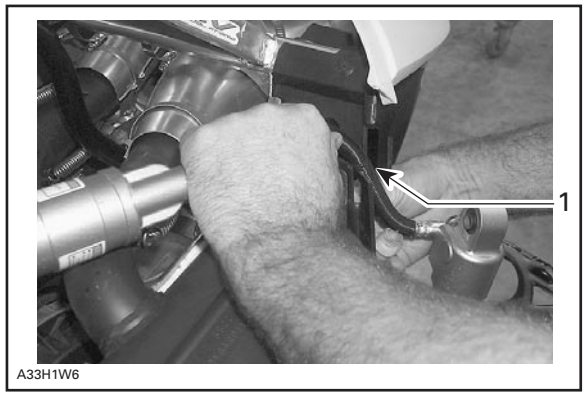
- **[**1**]** Insert shock absorber inside front suspension lower and upper arm.
- Secure shock temporarily to lower arm.
- **[**2**]** Position shock absorber in place.



NOTE: When shock absorber is installed, elbow fitting should be toward rear of vehicle **[**1**]**.



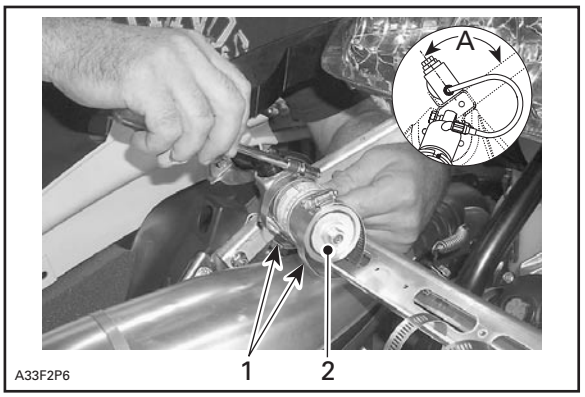
- Insert shock absorber hose thru slot **[**1**]** of front bottom pan.



- Move shock absorber reservoir inside engine compartment as per next photo.

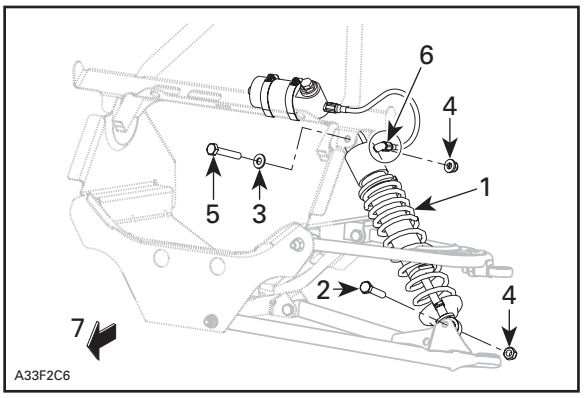
- Position shock absorber reservoir at 90° **[**A**]**.
- Secure shock absorber reservoir **[**2**]** to frame with existing clamps **[**1**]**.

Torque clamps to 3.5 N•m (**31** lbf•**in**)**.**



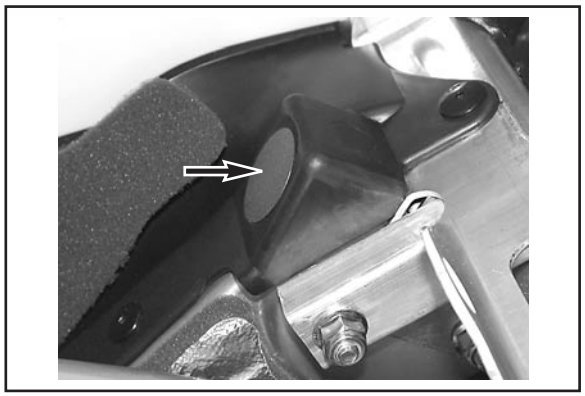
NOTE: **[**7**]** indicates the front of the vehicle.
[6**]** indicates elbow fitting toward the rear of the vehicle.

- Secure each shock absorber **[**1**]** to suspension using:
  - **[**5**]** hexagonal bolt M10 x **60** (previously removed)
  - **[**2**]** hexagonal bolt M10 x **55** (previously removed)
  - [3] washer (previously removed)
  - **[**4**]** 2 elastic flanged nuts M10 (predelivery kit).



Bottom Pan Caps

- Install plastic caps provided in the predelivery kit on the bottom pan.

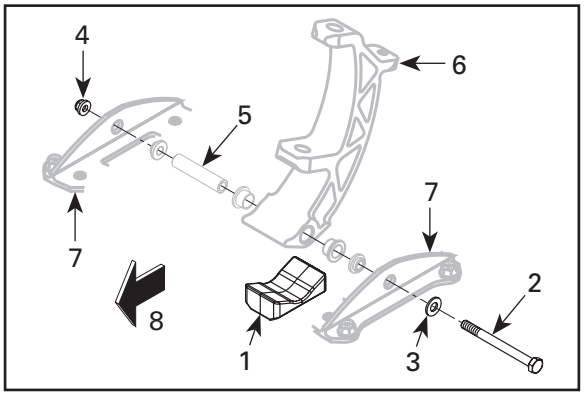


Skis

- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**7**]** to ski leg **[**6**]** using:
  - **[**2**]** hexagonal bolt M10 x 110 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit)

NOTE: **[**8**]** indicates the front of the vehicle.

Torque flanged nut to 27.5 N•m (**20** lbf•ft)**.**



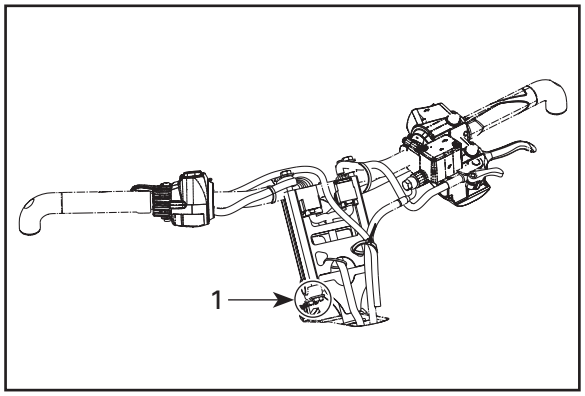
Handlebar

- Loosen bolts **[**1**]** retaining the steering extension to the steering column.
- Lift steering extension until it comes in a vertical position.
- Adjust the handlebar so that the brake fluid reservoir is level.
- Secure steering extension to the steering column.

Torque to 24 N•m (**18** lbf•ft)**.**

- Secure if necessary the handlebar to the steering extension.

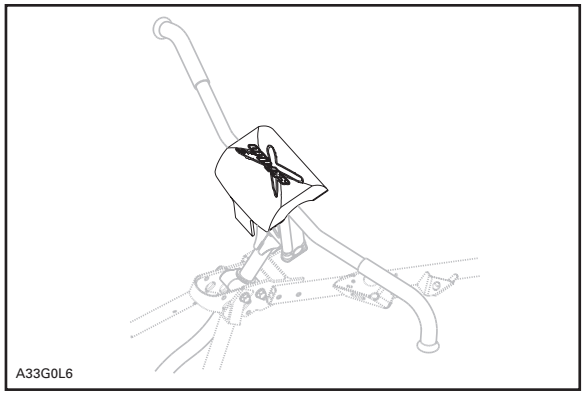
Torque to 24 N•m (**18** lbf•ft)**.**



Steering Cap

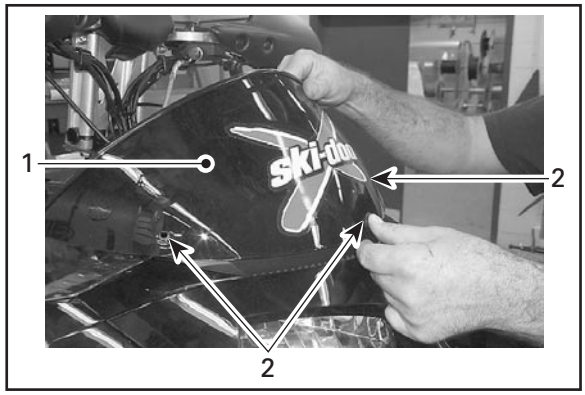
Model(s): Padded Cap

- Properly position steering padding in place and secure with push buttons.



Windshield

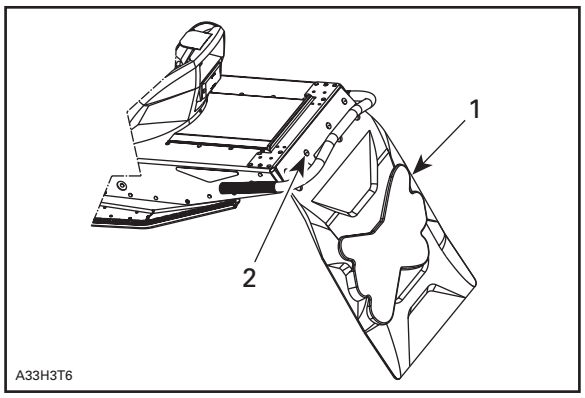
- Remove protective films from windshield.
- Position windshield **[**1**]** in place.
- Secure windshield to console using plastic rivets **[**2**]** from the predelivery kit.



Snow Guard Installation

- Position snow guard **[**1**]** on rear frame.
- Secure snow guard with rivets **[**2**]** and washers from predelivery kit.

NOTE: Position rivets inside frame.

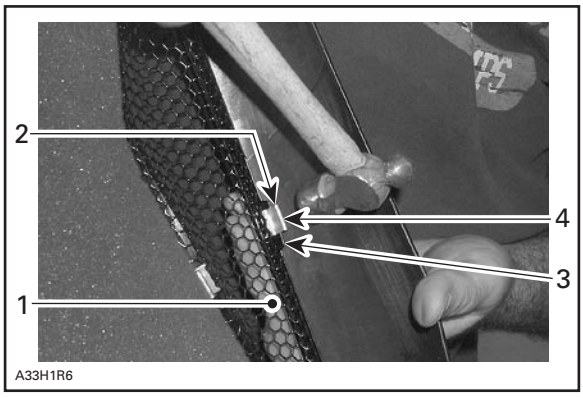


Hood Grill Installation

NOTE: The hood grills may be installed or not according to customer preference.

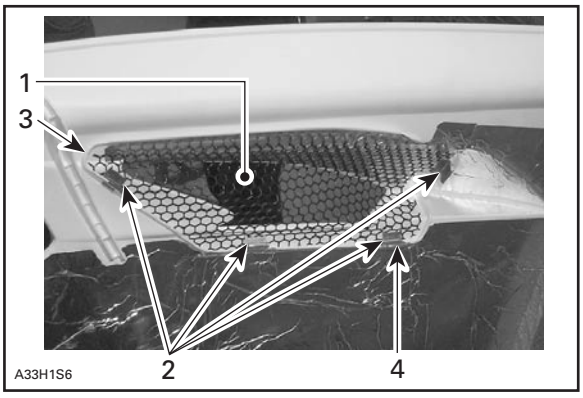
- Secure RH and LH grill **[**1**]** (predelivery box) to hood ribs **[**3**]** using clips **[**2**]** from the predelivery kit.

NOTE: Flat side of clip on this side **[**4**]**.



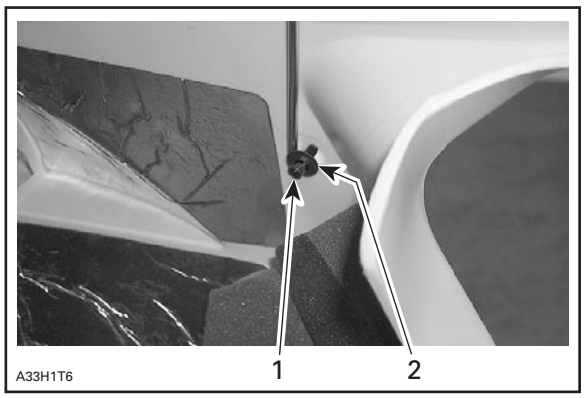
- Secure RH side panel grill **[**1**]** (predelivery box) to RH side panel ribs **[**3**]**using clips **[**2**]** from the predelivery kit.

NOTE: Flat side of clip on this side **[**4**]**.



Deflector Installation

NOTE: The deflectors may be installed or not according to customer preference.



- Remove air silencer inside LH side panel to have access to deflector holes.
- Remove push nut holding caps on side panels.
- Discard push nuts **[**2**]** and caps **[**1**]**.
- Install RH and LH deflector on side panels and secure them with:
  - Hexagonal flanged screw from the predelivery kit for the top portion of the deflector
  - Phillips Screw from the predelivery kit for the bottom portion of the deflector.

NOTE: Look inside the deflector for RH and LH side identification.

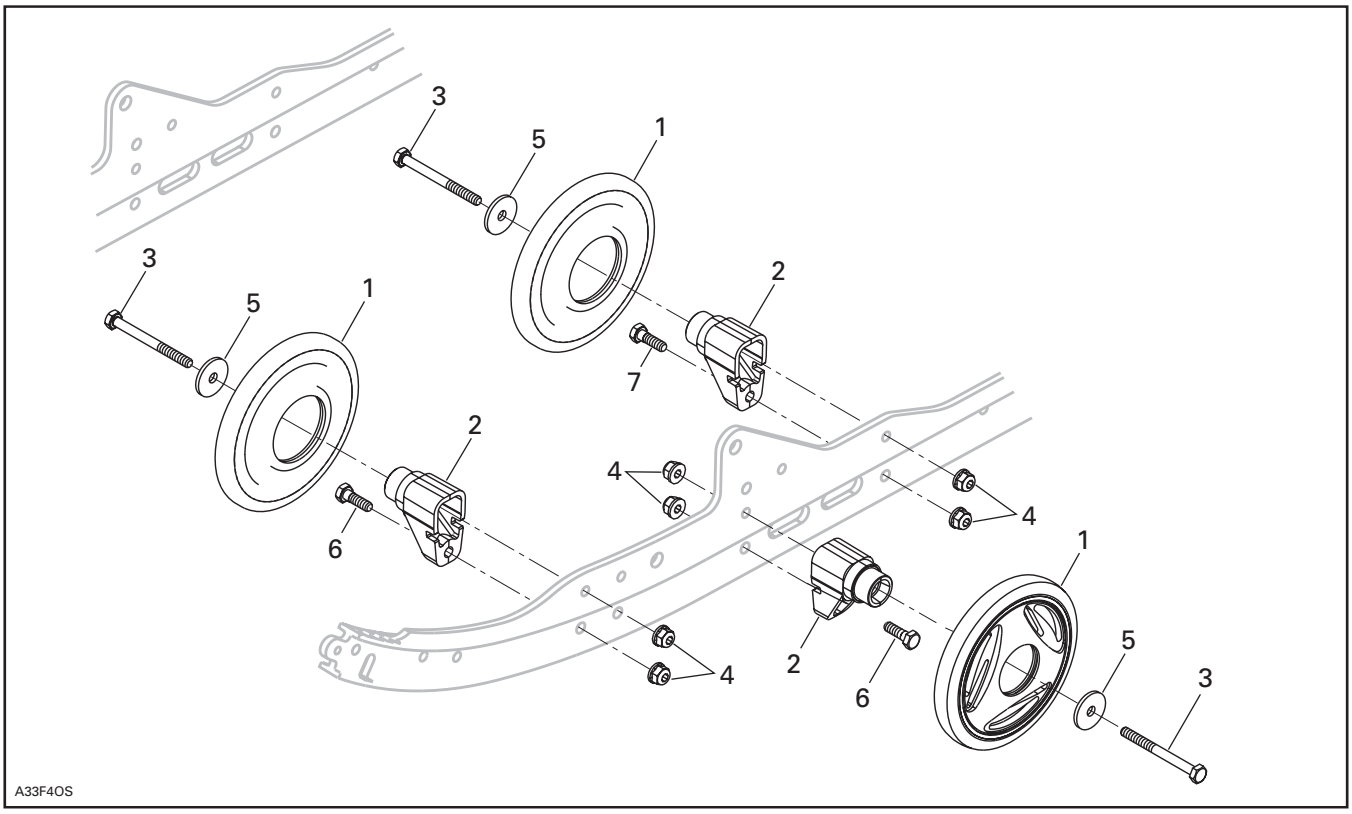
- Reinstall air silencer inside LH side panel.
- Installation completed.

Idler Wheel Installation

NOTE: The idler wheels may be installed or not according to customer preference.

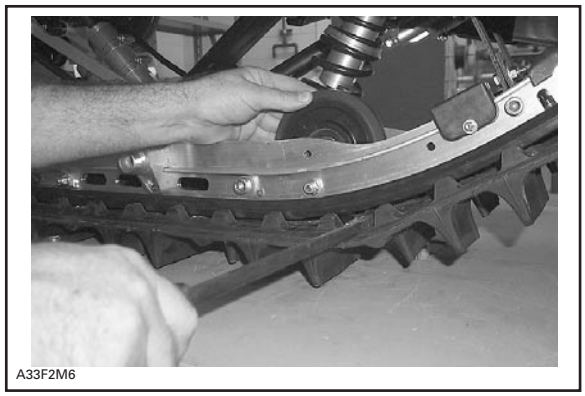
- Install idler wheels to rear suspension runners as per illustration.

NOTE: Idler wheel should be installed with circlip facing suspension runner.



[1] Idler wheel (predelivery box)
[2] Support (predelivery kit)
[3] M8 x 75 hexagonal bolt (predelivery kit)
[4] M8 elastic flanged stop nut (predelivery kit)
[5] Washer (predelivery kit)
[6] M8 x 25 hexagonal bolt (predelivery kit)
[7] M8 x 30 hexagonal bolt (already in place/discard existing washer)

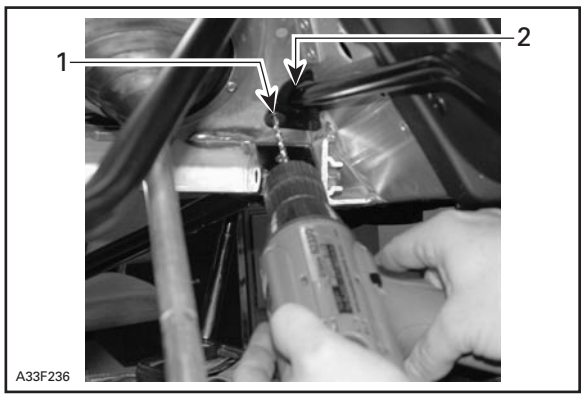
NOTE: You may use a tool such as a pry bar to ease installation of the front idler wheels to wheel supports.


A33F2M6

Stabilizer Bar

NOTE: The stabilizer bar (located inside engine compartment) may be installed or not according to customer preference.

- Remove front shocks if installed.
- Using a 4.8 mm (3/16 in) drill bit, drill rivet **[**1**]** out.
- Remove existing cap **[**2**]**.

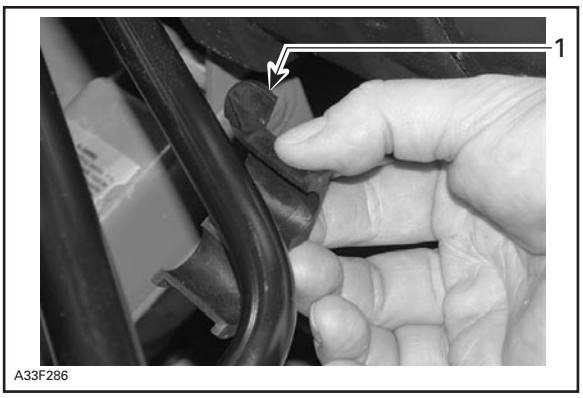


A33F236

- Lift front of vehicle enough so that stabilizer bar can be rotated downward to allow to slide it in.


A33F246

- Remove plastic cap in frame existing hole near LH stabilizer bar clamp location.
- Install the stabilizer bar bushing making sure to place its tab **[**1**]** over the access hole located on the LH side.



- Secure stabilizer bar **[**8**]** to frame using :

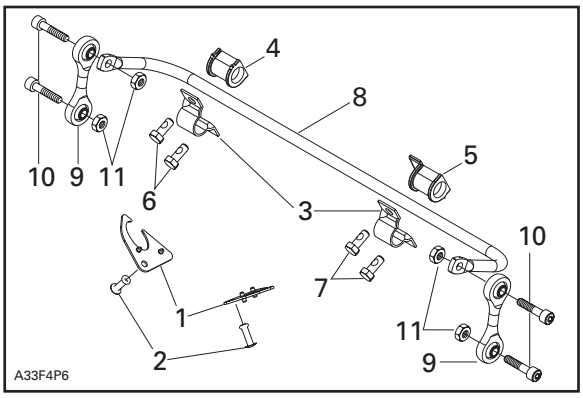
  - **[**3**]** 2 clamps (from predelivery kit)
  - **[**4**]** RH bushing (from predelivery kit)
  - **[**5**]** LH bushing (from predelivery kit)
  - **[**6**]** 2 hexagonal bolts (from predelivery kit)
  - **[**7**]** 2 hexagonal bolts (already in place)

Torque bolts to 17 N•m (**150** lbf•**in**)**.**

- Secure double ball joints **[**9**]** to stabilizer bar **[**8**]** and lower A-arms using:

  - **[**10**]** 4 socket head screws M8 x 30
  - **[**11**]** 4 Nut M8.

- Install new caps **[**1**]** (predelivery kit) and secure them with rivets **[**2**]** from (predelivery kit).

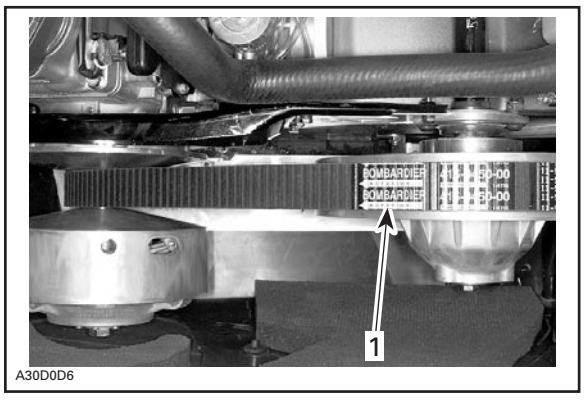


Drive Belt

- Clean pulleys and disc brake before installing the drive belt.

NOTE: Use a suitable cleaner such as Pulley flange cleaner (P/N 413 711 809).

CAUTION: The arrow [1] is indicating the direction of rotation (see typical illustration).



FINAL PREPARATION

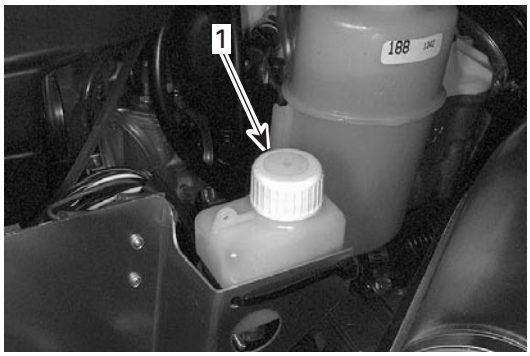
Recommended Oil

- Oil for the lubrication of the water pump gear is contained in this reservoir [1].
- Add oil as required.

CAUTION: Use only XP-S synthetic injection oil (P/N 413 710 500) (12 x 1 L).

⚠ WARNING

Wipe off any oil spills. Oil is highly flammable.



Recommended Fuel

Vehicles with Valid Warranty (Standard Compression Insert)

Use super unleaded gasoline, available from most service stations or oxygenated fuel containing less than 10% of ethanol or 5% of methanol.

The gasoline used must have an octane number (R + M)/2 of 91 or higher.

NOTE: In most service station pump octane number corresponds to (R + M)/2 octane number.

Vehicles without Warranty

Racing fuel must have an octane number (R + M)/2 of 108 or higher.

CAUTION: FUEL/OIL MIXTURE IS 33: 1.

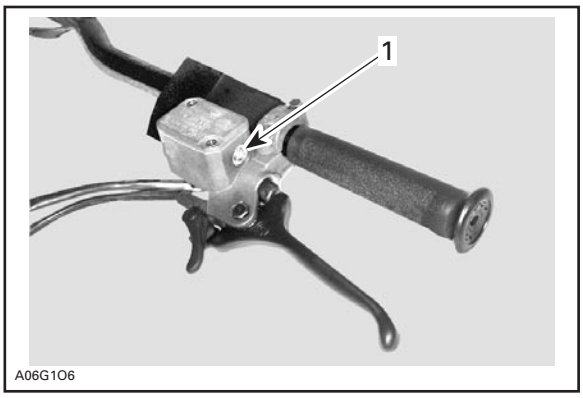
All Vehicles

CAUTION: Never experiment with other fuels or fuel ratios. The use of unrecommended fuel can result in snowmobile performance deterioration and damage to critical parts in the fuel system and engine components.

Brake Fluid Level

- Check brake fluid in reservoir for proper level [1].
- Add brake fluid (DOT 4) as required.
  - Use SRF Racing Brake Fluid (DOT 4) (P/N 293 600 063)
  - or GTLMA (DOT 4) (P/N 293 600 062).

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Do not store or use an open bottle of brake fluid.



Track

- Refer to *Shop Manual* to adjust track tension and alignment.

NOTE: Track deflection is 30 to 35 mm (1-3/16 to 1-3/8 in) with a downward pull of 7.3 kg (16 lb).

Disk Brake

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

SPECIFICATIONS

Technical Data/Wiring Diagram

The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile.

- Vehicles used at high altitudes, above 600 m (2000 ft) should be recalibrated for high altitude. Further inquiries should be directed to your distributor service representative.

			MODEL	MX Z X 440 Racing
ENGINE				
Engine type				453
Number of cylinders				2
Bore			mm (in)	65.0 (2.56)
Stroke			mm (in)	65.8 (2.59)
Displacement			cm^3 (in^3)	436.7 (26.6)
Maximum power engine speed [1]			±100 RPM	8400
Piston ring type			1st/	Semi-trapezoidal
			2nd	—
Ring end gap	New		mm (in)	0.4 (.0157)
	Wear Limit		mm (in)	1.0 (.040)
Ring/piston groove clearance	New		mm (in)	0.04 (.0016)
	Wear Limit		mm (in)	0.2 (.0079)
Piston/cylinder wall clearance	New		mm (in)	0.10 ±0.016 (.0039±0.0006)
	Wear Limit		mm (in)	0.2 (.0079)
Connecting rod big end axial play	New		mm (in)	0.39 (.0154)
	Wear Limit		mm (in)	1.2 (.0472)
Maximum crankshaft end-play [2]			mm (in)	0.3 (.0118)
Maximum crankshaft deflection at PTO			mm (in)	0.06 (.0024)
Reed Valve			P/N	420 924 810
FUEL SYSTEM				
Carburetor type			PTO/MAG	TMX 34-29/(Europe) TMX 34-33
Main jet			PTO/MAG	400/(Europe) 350
Needle jet				Q-6
Pilot jet				25
Needle identification — clip position				6EN29-61 — 3
Slide cut-away				4.0
Float adjustment			± 1 mm (± .040 in)	—
Air screw adjustment			± 1/16 Turn	1.0
Idle speed RPM			± 200 RPM	1600
Gas/oil ratio mixing oil				Premix 33: 1 / XP-S Synthetic oil
Vehicle with valid warranty (standard compression insert)				
Gas grade/pump octane number	Inside North America		(R + M)/2	91 or higher [7]
	Outsine North America		RON	95 [7]
Vehicle without warranty				
Gas grade/pump octane number			(R + M)/2	108 or higher [7]

			MODEL	MX Z X 440 Racing
ELECTRICAL				
Magneto generator output			W	290
Ignition type				CDI
Spark plug make and type				[8] NGK BR9ECS
Spark plug gap			± 0.05 mm (± 0.002 in)	0.45 (.018)
Ignition timing BTDC [3]			mm (in)	3.00 (.1181)
Trigger coil [4]			Ω	190 – 300
Generating coil [4]			Ω	17.5 – 42.5
Lighting coil [4]			Ω	0.1 – 0.4
High tension coil [4]	Primary		Ω	0.3 – 0.7
	Secondary		kΩ	8 - 16
Headlight			W	H4 60/55
Taillight and stoplight			W	8/27
Tachometer bulb			W	2 x 3
DRIVE				
Gear ratio			Teeth	21/45
Chain	Pitch		mm (in)	9.525 (.375)
	Type/Links Qty/Plates Qty			Silent 74 - 15
Type of drive pulley				TRA 3 Light
Ramp identification				435 [12]
Spring color				White/White
Spring length			± 1.5 mm (± 0.060 in)	137.44 (5.41)
Engagement speed			± 200 RPM	5400
Drive pulley calibration screw position or calibration disc quantity [12]				5
Pulley distance	Z			16.5 (0.650)
Offset	X		± 0.5 mm (± .020 in)	40.0 (1.575)
	Y		± 0.75 mm (± .030 in)	Y must exceed X of 0.86 mm (0.034 in)
Driven pulley spring preload cam angle			± 0.7 kg (± 1.5 lbf)	0.0
			Degree	44°/48°
Drive belt part number			P/N	417 300 288
Drive belt width (new) [9]			mm (in)	37.7 (1.484)
Drive belt adjustment	Deflection		± 5 mm (± 13/64 in)	32 (1-1/4)
	Force [5]		kg (lbf)	11.3 (25)
Track width			cm (in)	38.1 (15.0)
Track length			cm (in)	307 (121)
Track adjustment	Deflection		mm (in)	30 to 35 (1-3/16 to 1-3/8)
	Force [10]		kg (lbf)	7.3 (16)
Suspension type	Track			SC 4
	Ski			R.A.S. A-Arm

		MODEL
GENERAL SPECIFICATIONS		
Length	mm (in)	2882 (113)
Width	mm (in)	1217 (47.9)
Height	mm (in)	1022 (40)
Ski stance	mm (in)	1080 (42.5)
Mass (dry)	kg (lb)	199 (438)
Ground contact area	cm^2 (in^2)	6670 (1034)
Ground contact pressure	kPa (PSI)	2.93 (0.425)
Frame material		Aluminum
Bottom pan material		Impact Copolymer
Cab material/side panels		Surlyn/Polypropylene
CAPACITIES		
Fuel tank	L (U.S. gal)	21 (5.5)
Chaincase/gearbox	mL (U.S. oz)	250 (8.5)
Cooling system [11]	L (U.S. oz)	3.7 (125.1)
TIGHTENING TORQUE (engine cold)		
Drive pulley retaining screw		[5]
Exhaust manifold nuts or bolts		21.5 N•m (16 lbf•ft)
Magneto ring nut		125 N•m (92 lbf•ft)
Crankcase nuts or screws	M6	9 N•m (80 lbf•**in**)
	M8	29 N•m (21 lbf•ft)
Crankcase/engine support nuts or screws		35 N•m (26 lbf•ft)
Cylinder head screws		29 N•m (21 lbf•ft)

BTDC: Before Top Dead Center

CDI: Capacitor Discharge Ignition

K: Kilo (x 1000)

MAG: Magneto Side

PTO: Power Take Off Side

TRA: Total Range Adjustable

W: Watt

[1] The maximum horsepower RPM applicable on the vehicle. It may be different under certain circumstances and BRP reserves the right to modify it without obligation.

[2] Crankshaft end-play is not adjustable on these models. Specification is given for verification purposes only.

[3] At 3500 RPM (engine cold) with headlamp turned on.

[4] All resistance measurements must be performed with parts at room temperature (approx. 20°C (68°F)). Temperature greatly affects resistance measurements.

[5] Force applied midway between pulleys to obtain specified tension deflection.

[6] Drive pulley retaining screw: torque to 80 to 100 N•m (59 to 74 lbf•ft), install drive belt, 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).

[7] Recommended Fuel

Vehicles with Valid Warranty (Standard Compression Insert)

Use super unleaded gasoline, available from most service stations or oxygenated fuel containing less than 10% of ethanol or 5% of methanol. The gasoline used must have an octane number (R + M)/2 of 91 or higher.

NOTE: In most service station pump octane number corresponds to (R + M)/2 octane number.

Vehicles without Warranty

Racing fuel must have an octane number (R + M)/2 of 108+.

CAUTION: FUEL/OIL MIXTURE IS 33: 1.

All Vehicles

CAUTION: Never experiment with other fuels or fuel ratios. The use of unrecommended fuel can result in snowmobile performance deterioration and damage to critical parts in the fuel system and engine components.

CAUTION: [8] Do not attempt to adjust gap on spark plug BR 9 ECS.

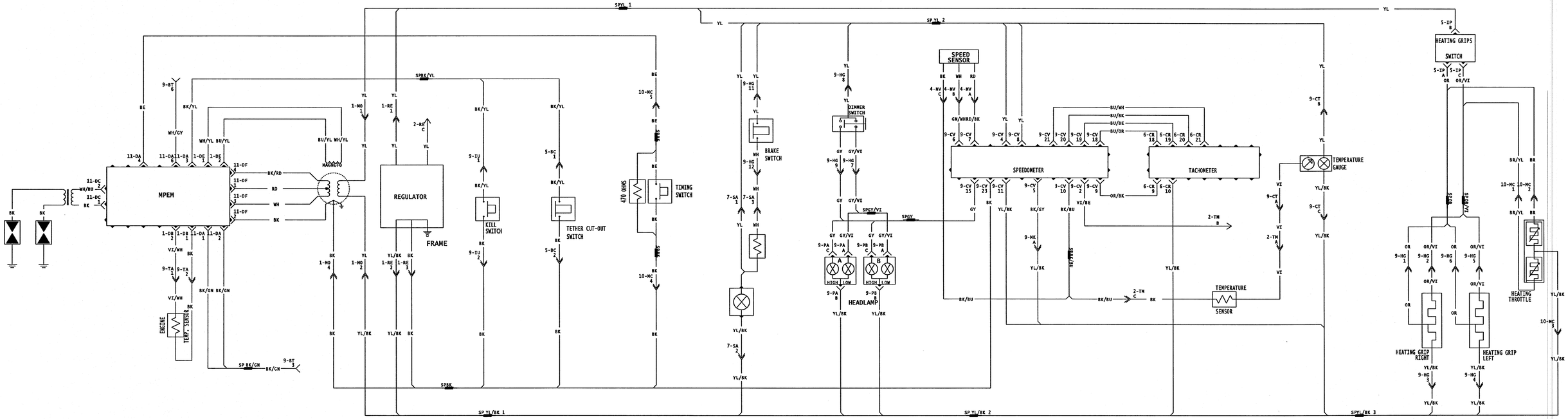
[9] Minimum allowable width may not be less than 3.0 mm (1/8 in) of new drive belt.

[10] Force or downward pull applied to track to obtain specified tension deflection.

[11] Coolant mixture: 50% antifreeze/50% water.

[12] Lever with roller pin (P/N 417 003 900).

2005 REV MX Z X 440



Please route to:

Init.

- Service
- Sales
- Parts

ski-doo®

SNOWMOBILES

D

PREDELIVERY
Bulletin

Date: **November 29, 2004** Subject: **RT Series** No. **2005-10**

REVISION =>1

YEAR	MODEL	PACKAGE	MODEL NUMBER	PREDELIVERY KIT P/N	SERIAL NUMBER
2005	Mach Z	Adrenaline	AB5A, AB5B, AB5C	549 011 214	All
2005	Summit	Highmark	CD5A, CD5B, CD5C	549 011 235	All
2005	Summit	Highmark X	CA5A, CA5B, CA5C, CA5D	549 011 235	All

TABLE OF CONTENTS

Printed in Canada. (mbl2005-010 DR)

IMPORTANT NOTICE

This bulletin must be used in conjunction with the check list enclosed in the bag with the *Operator's Guide*. Make sure that *Predelivery Check List* is completed and signed.

⚠ WARNING

To obtain limited warranty coverage, predelivery procedures must be performed by an authorized Ski-Doo® snowmobile dealer/distributor. Apply all necessary torques as indicated.

NOTE: The information and components/system descriptions contained in this document are correct at the time of publication. Bombardier Recreational Products Inc. (BRP) however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured. Due to late changes, there might be some differences between the manufactured product and the descriptions and/or specifications in this document. BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation. The illustrations in this document show the typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts. However, they represent parts that have the same or similar function. The content of this bulletin is designed as a guideline only. All mechanics performing predelivery procedures should have attended the current model year service training. Further information or inquiries should be directed to your distributor service representative and/or specific *Shop Manual* sections. Please complete the *Predelivery Check List* for each snowmobile and retain a customer signed copy. Make sure the customer receives the *Operator's Guide*, *Predelivery Check List* signed copy and *Safety Videocassette*.

There is a tag attached to the ignition key, only the customer must remove it. This label will remind the customer to ask dealer/distributor to perform suspension adjustments according to riding style and vehicle load.

PREDELIVERY KIT

NOTE: Predelivery kits contains parts for various models, all parts may not be necessary for all vehicles, refer to the following tables for proper parts usage.

MACH Z

549 011 214					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	7
Rear Suspension	YES	Wheel Cap	570 063 600	2	16
Ski	YES	Ski Stopper	505 070 671	2	7, 8
	YES	Washer	732 900 049	2	7, 8
	YES	Hex. Flanged Nut M10	732 610 084	2	7, 8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	6, 7
Windshield	YES	Windshield Support	517 303 197	1	14
Mirror	NO	Hex. Flanged Bolt M6 x 35	207 663 544	2	—
	NO	Elastic Flanged Nut M6	233 261 494	2	—
	NO	Mirror Cap	517 302 716	2	—
Console	NO	Heated Visor Extension Cord	515 175 851	1	—

SUMMIT

549 011 235					
Location	To be Installed	Description	P/N	QTY	Refer to Page
Bottom Pan	YES	Nylon Cap	414 916 600	2	7
Rear Suspension	YES	Wheel Cap	570 063 600	2	16
Ski	YES	Ski Stopper	505 071 632	2	7, 8
	YES	Washer 10 mm	234 002 410	2	7, 8
	YES	Hex. Flanged Nut M10	732 610 084	2	7, 8
Front Shock	YES	Elastic Flanged Nut M10	233 201 414	4	6, 7
Handlebar Strap	YES	Hex. Flanged Bolt M6 x 20	207 662 084	1	13
	YES	Flat Washer 6 mm	234 061 410	4	13
	YES	Elastic Nut M6	232 561 414	1	13
Luggage Rack	YES	Hexagonal Tapping Screw #8 x 5/8"	250 000 202	2	8, 9
	YES	Flat Washer	250 200 040	2	8, 9
	YES	Allen Screw M6 x 16	250 000 168	4	8, 9
	YES	Flat Washer	250 200 039	4	8, 9
	YES	Insert	511 000 260	4	8, 9

UNCRATING

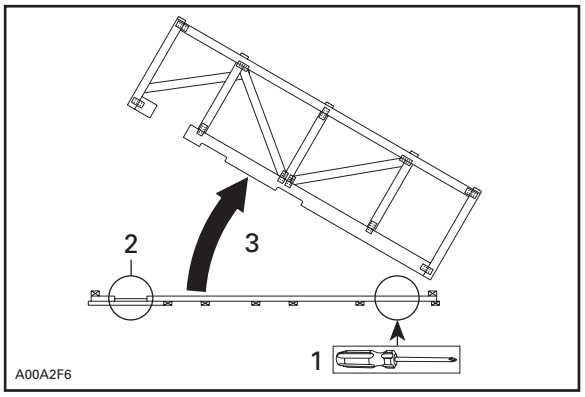
Crate Cover

- Carefully lay the crate on its bottom.

CAUTION: Allowing the crate to drop may cause serious damage to the vehicle.

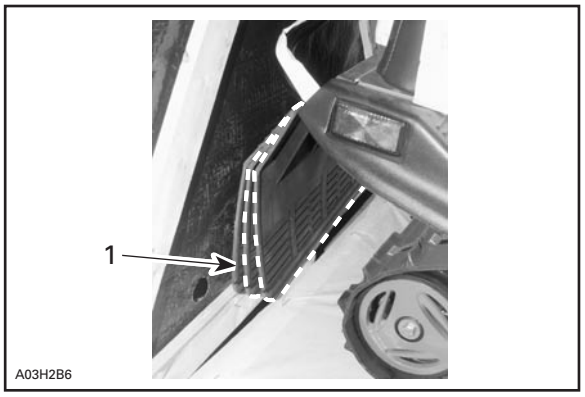
- Using a drill or a screwdriver, remove all screws **[**1**]** retaining crate cover to crate base.
- Tilt **[**3**]** the crate cover toward the front or the rear of the vehicle.

NOTE: There is a notch at the front of the crate that indicates the front of the vehicle **[**2**]**.



- Lift the crate cover slowly to avoid damaging the vehicle.

NOTE: On some models, if cover is tilted toward the front of the vehicle, snow guard may interfere with crate cover, push on snow guard **[**1**]** when lifting cover.



- Remove polyethylene foam protective sheets.
- Remove parts to be installed from vehicle or crate base.

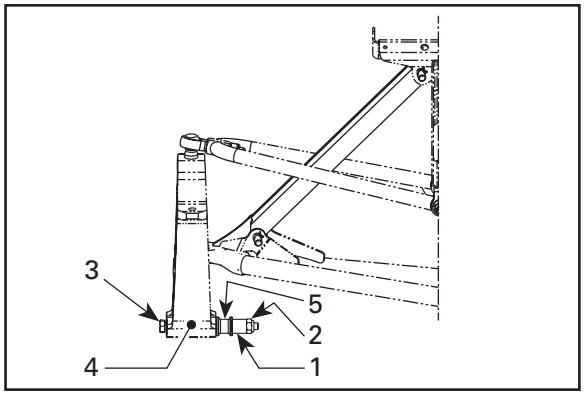
Crate Brackets

CAUTION: Make sure vehicle is properly supported before removing ski legs and rear suspension from crate brackets.

- If applicable, cut locking ties and remove ski leg wood protectors.
- Detach ski legs from crate shipping brackets.
- Discard shipping spacers **[**1**]** and nuts **[**2**]**.
- Keep ski leg bolts **[**3**]** and slider cushions **[**4**]** for skis installation.

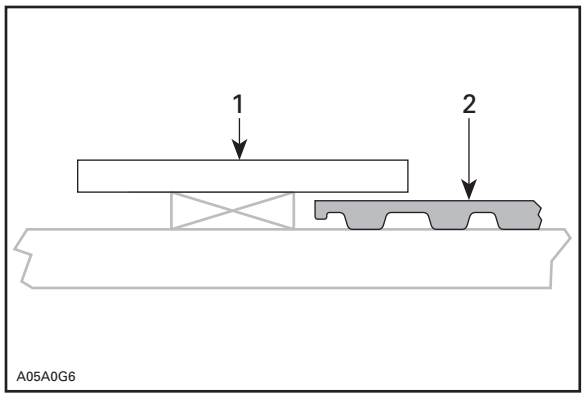
Model(s): Summit

- Keep ski stance spacers **[**5**]** for skis installation.



Model(s): All

- Using a pry bar, remove wood blocks retaining the track to the crate base.
- Remove the vehicle from the crate base.

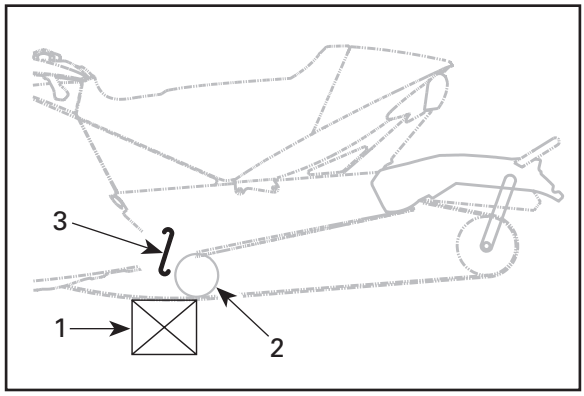


Shipping Hook(s)

⚠ WARNING

Shipping hooks must be removed to have the snowmobile suspension operational.

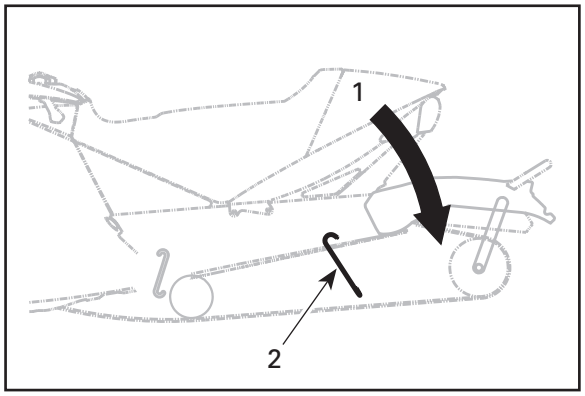
- Apply the parking brake.
- Lift the rear of the vehicle so that a block or a box [1] can be positioned under the front idler wheel [2].
- Cut the locking tie retaining the front hook [3].
- If applicable, cut locking ties retaining rear suspension straps.
- Ask another person to apply pressure onto the rear suspension.
- Remove front hook(s) from suspension.



⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

- Make sure that parking brake is applied.
- Lift the front of the vehicle to position bumper approximately 1 meter upward (35 to 40 inches).
- Standing on footwells, sit roughly to apply pressure [1] onto the rear suspension to free the rear hook(s) [2].



CAUTION: To avoid any damage to the seat, always sit on the seating surface.

- Remove the rear hook from the suspension.

⚠ WARNING

Before removing hook, always verify that vehicle is properly supported and that parking brake is applied.

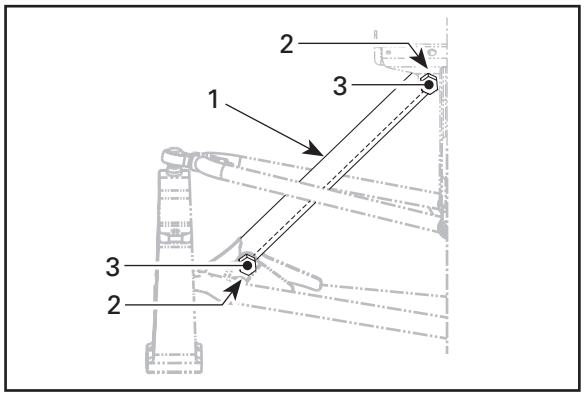
SET-UP

Shipping Brackets

⚠ WARNING

Torque wrench tightening specifications must be strictly adhered to. Where specified, install new locking devices (e.g. lock tabs, elastic stop nuts). If the efficiency of a locking device is impaired, it must be renewed.

- Make sure that parking brake is applied.
- Remove and discard the shipping brackets **[**1**]** from the front suspension.
- Discard the spring clips **[**2**]**.
- Keep the hexagonal bolts **[**3**]** for the front shocks installation.



Front Shocks

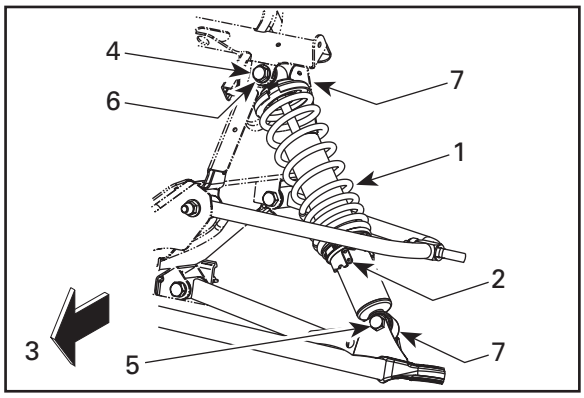
Model(s): Summit (Highmark)

- Position front shock absorbers **[**1**]** in place with their adjustment ring at the bottom **[**2**]**.

NOTE: **[**3**]** indicates the front of the vehicle.

- Secure each shock absorber to suspension using:

  - **[**4**]** hexagonal bolt M10 x **60** (previously removed)
  - **[**5**]** hexagonal bolt M10 x **55** (previously removed)
  - **[**6**]** washer (previously removed)
  - **[**7**]** 2 elastic flanged nuts M10 (predelivery kit).



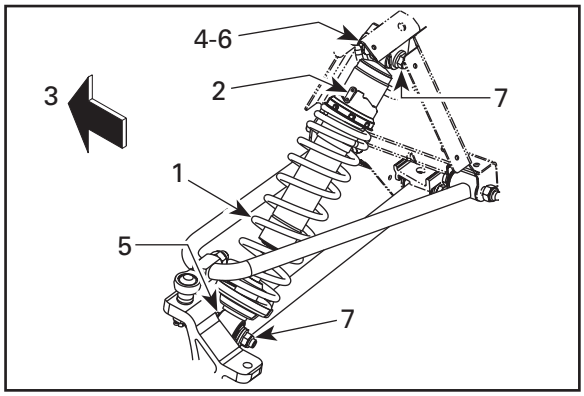
Model(s): Mach Z

- Position front shock absorbers **[**1**]** in place with their adjustment ring at the top **[**2**]**.

NOTE: **[**3**]** indicates the front of the vehicle.

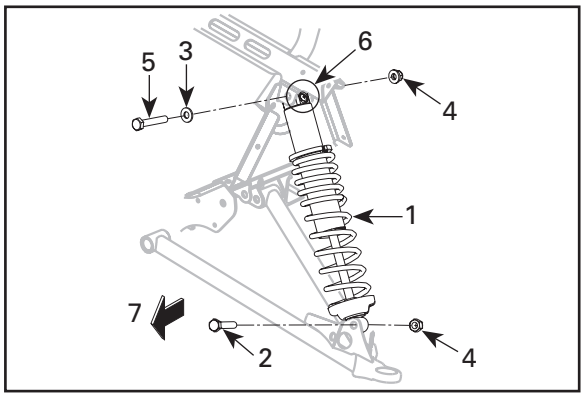
- Secure each shock absorber to suspension using:

  - **[**4**]** hexagonal bolt M10 x **60** (previously removed)
  - **[**5**]** hexagonal bolt M10 x **55** (previously removed)
  - **[**6**]** washer (previously removed)
  - **[**7**]** 2 elastic flanged nuts M10 (predelivery kit).



Model(s):

– Mach Z (Europe)
– Summit (Highmark X)
– Summit (Highmark Europe)



- Position front shock absorbers **[**1**]** in place with their adjustment ring at the top and valve **[**6**]** facing outward.

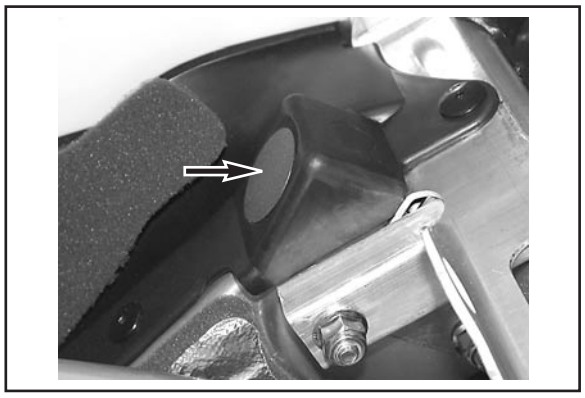
NOTE: [7**]** indicates the front of the vehicle.

- Secure each shock absorber to suspension using:

- **[**5**]** hexagonal bolt M10 x **60** (previously removed)
- **[**2**]** hexagonal bolt M10 x **55** (previously removed)
- **[**3**]** washer (previously removed)
- **[**4**]** 2 elastic flanged nuts M10 (predelivery kit).

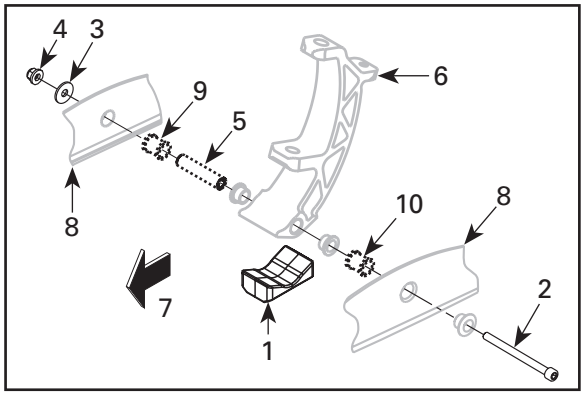
Bottom Pan Caps

- Install plastic caps provided in the predelivery kit on the bottom pan.



Skis

Model(s): Summit



It is possible to adjust the ski stance from narrow to wide or vise versa, follow the procedure as given below.

- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**8**]** to ski leg **[**6**]** using:

- **[**2**]** socket head screw M10 x 125 (previously removed)
- **[**3**]** flat washer (predelivery kit)
- **[**4**]** flanged nut M10 (predelivery kit).

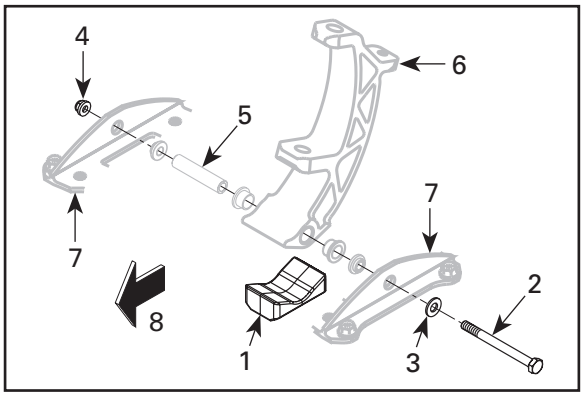
Ski Stance Adjustment

- **narrow (recommended)**: place spacer in position **[**9**]**
- **wide**: place spacer in position **[**10**]**.

NOTE: [7**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Model(s): Mach Z



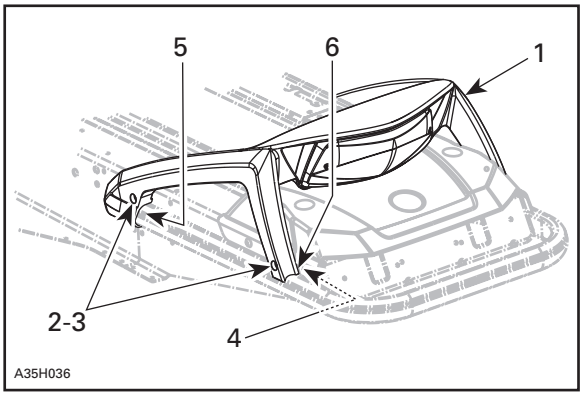
- Ensure ski leg bushings **[**5**]** are still on ski legs **[**6**]**.
- Install ski stopper **[**1**]** from predelivery kit on the ski.
- Secure ski **[**7**]** to ski leg **[**6**]** using:
  - **[**2**]** hexagonal bolt M10 x 110 (previously removed)
  - **[**3**]** flat washer (predelivery kit)
  - **[**4**]** flanged nut M10 (predelivery kit)

NOTE: [8**]** indicates the front of the vehicle.

Torque flanged nut to 32 N•m (**24** lbf•ft)**.**

Luggage Rack

Model(s): Summit



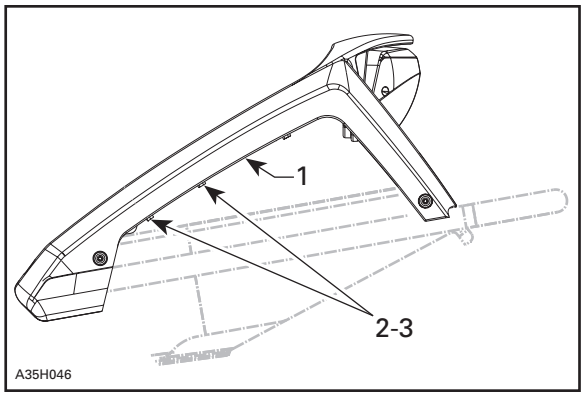
- Cut locking ties holding luggage rack to frame.
- Remove luggage rack from its position.

CAUTION: Luggage rack tail light is plugged to the vehicle.

- Remove protective sheets from luggage rack.
- Position luggage rack **[**1**]** on rear bumper.
- Insert rear bumper into closed ends **[**5**]** of luggage rack.
- Position open ends **[**6**]** of luggage rack onto rear bumper.
- Align luggage rack holes with frame holes and secure with:
  - **[**2**]** 4 Allen screws M6 x 16
  - **[**3**]** 4 flat washers
  - **[**4**]** 4 inserts.

- Position tail lamp harness inside luggage rack provided groove [1].
- Secure tail lamp harness with:

  - [2] 2 hexagonal tapping screws #8 x 5/8"
  - [3] 2 flat washers.



Battery Removal

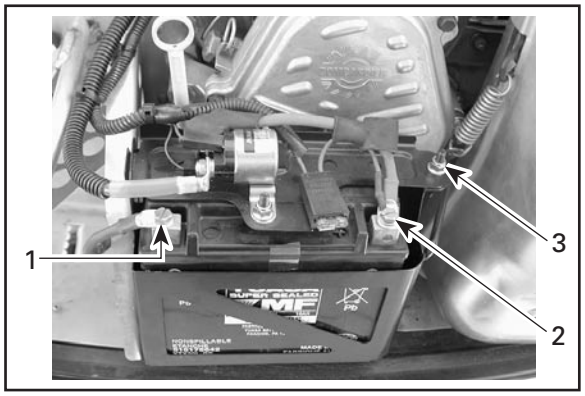
Model(s): With Electric Starting

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.



- Open the right side panel of the vehicle.
- Disconnect BLACK negative cable [1] from the terminal.
- Slide off the rubber boot from the RED cable and disconnect the RED cable [2].
- Remove the bracket by unscrewing the bracket retaining nut [3].
- Remove the battery.

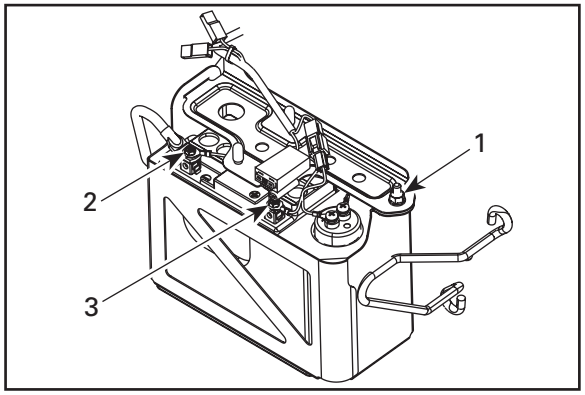
Model(s): Without Electric Starting

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.



- Open the right side panel of the vehicle.
- Remove the bracket by unscrewing the bracket retaining nut [1].
- Remove the battery plastic cover.
- Disconnect BLACK negative cable [2] from the terminal.

- Disconnect RED positive cable **[**3**]** from the terminal.
- Remove the battery.

Battery Preparation

Model(s): With Electric Starting

All electric starting equipped vehicles using a **YTX20L-BS** or **YTX24L-BS** type battery require a specific charging procedure at predelivery. Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area. Never charge or boost battery while installed on vehicle. Do not open the sealed caps during charging. Do not place battery near open flame.

CAUTION: If battery becomes hot, stop charging and allow it to cool before continuing.

NOTE: Sealed VRLA batteries have an internal safety valve. If battery pressure increases due to overcharging, the valve opens to release excess pressure, preventing battery damage.

An automatic charger is the fastest and most convenient way for error-proof charging.

NOTE: If battery cannot be recharged using the following charging chart, replace battery.

Battery Voltage below 12.8 V

STANDARD CHARGING (recommended)		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	4 – 9 hours	2 A
YTX24HL-BS	5 – 10 hours	

QUICK CHARGING		
BATTERY TYPE	TIME	CHARGE
YTX20L-BS	50 minutes	10 A
YTX24HL-BS	1 hour	

Model(s): Without Electric Starting

All vehicles with SDI engine and **without** electric starting are equipped with a **YT4L-BS** type battery that requires a specific charging procedure at predelivery.

- Follow the appropriate procedure as described below.

⚠ WARNING

Always wear safety glasses and charge in a ventilated area.
Never charge or boost battery while installed on vehicle.
Do not open the sealed caps during charging.
Do not place battery near open flame.

- These sealed batteries have to be tested with a voltmeter.
- Batteries with a voltage of 12.8 volts and above, no charge is required
- Batteries with a voltage of 12.7 volts and below must be charged as follows:

BATTERY TYPE	STANDARD CHARGE	QUICK CHARGE
YT4L-BS	0.3 Amps/hour for 5 to 10 hours	3.0 Amps/hour for 30 min.

Battery Installation

Model(s): With Electric Starting

- Install the bracket and screw the bracket retaining nut.
- Connect RED positive cable it to positive battery terminal.
- Connect RED wire (coming from 30 A fuse).
- Connect BLACK negative cable LAST.

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

- Cover the RED positive terminal with rubber boot.

- Apply silicone dielectric grease (P/N 293 550 004) on battery posts and connectors.

Model(s): Without Electric Starting

- Properly position the battery on its rack.
- Connect RED positive cable to positive battery terminal.
- Connect RED wire (coming from 30 A fuse).
- Connect BLACK negative cable LAST.
- Connect ground wire from harness.
- Apply silicone dielectric grease (P/N 293 550 004) on battery posts and connectors.
- Install the battery plastic cover.
- Install the bracket and screw the bracket retaining nut.

⚠ WARNING

Battery BLACK negative cable must always be disconnected first and connected last.

⚠ WARNING

Never charge or boost battery while installed on vehicle.

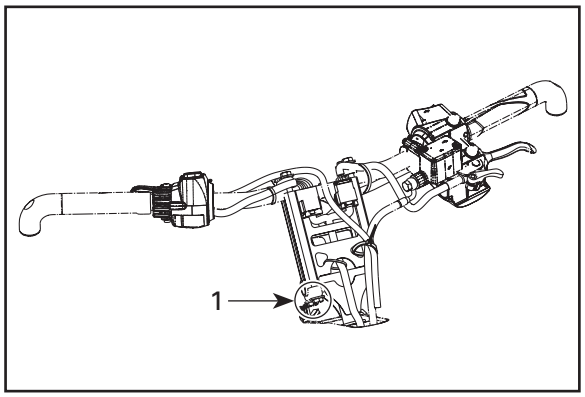
Fuse Installation

Model(s): Without Electric Starting

- Located on the top of the battery support bracket, remove the 30 A fuse from its plastic bag and install it into the fuse holder located on the battery support bracket.

Handlebar

Model(s): Mach Z/Summit Highmark X



- Loosen bolts **[**1**]** retaining the steering extension to the steering column.
- Lift steering extension until it comes in contact with the steering column thrust.
- On some models, adjust the handlebar so that the brake fluid reservoir is level.
- Secure steering extension to the steering column.

Torque to 24 N•m (**18** lbf•ft)**.**

- Secure the handlebar to the steering extension (if necessary).

Torque to 24 N•m (**18** lbf•ft)**.**

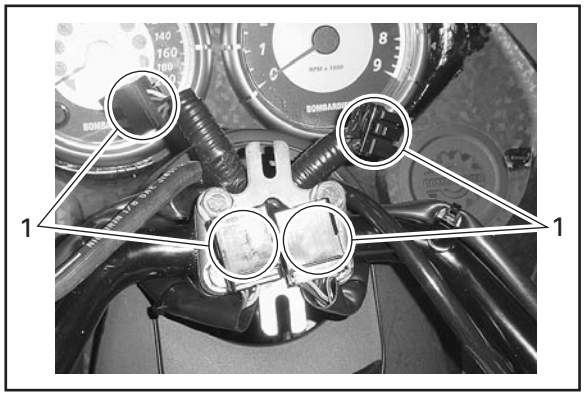
Model(s): Summit Highmark

- Loosen bolts retaining the handlebar to the steering column.
- Lift the handlebar so that the brake fluid reservoir is level.
- Secure the handlebar to the steering column.

Torque to 24 N•m (**18** lbf•ft)**.**

Steering Column Connectors

- On some models, clip the main harness connectors on the steering column brackets.
- Connect **[**1**]** main harness to steering harness.

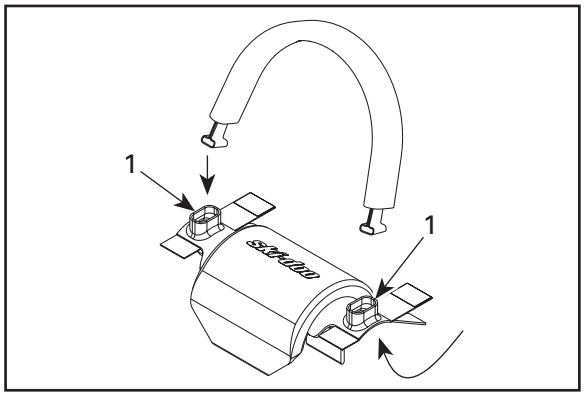


Steering Holding Strap/Cover

Model(s): Summit

NOTE: Steering pad is included in the predelivery box.

- Cut the locking tie retaining the holding strap end to the handlebar.
- If applicable, insert strap through steering pad holes **[**1**]**.



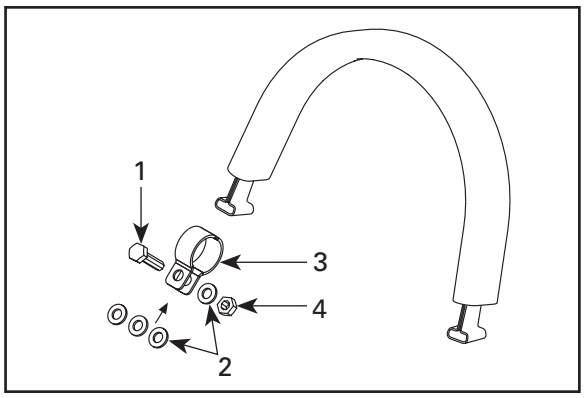
- Secure the holding strap end to the handlebar using:

NOTE: Retaining clip and hardware should be installed identically on both sides.

- **[**1**]** hexagonal flanged bolt (predelivery kit)
- **[**2**]** 4 flat washers (predelivery kit)
- **[**3**]** retaining clip (previously removed)
- **[**4**]** elastic nut (predelivery kit)

Torque to 11 N•m (**97** lbf•**in**)**.**

NOTE: Wires are routed along the handlebar. To avoid pinching them, take care to keep wires out of retaining clip.



Steering Cap

Model(s): Plastic Cap

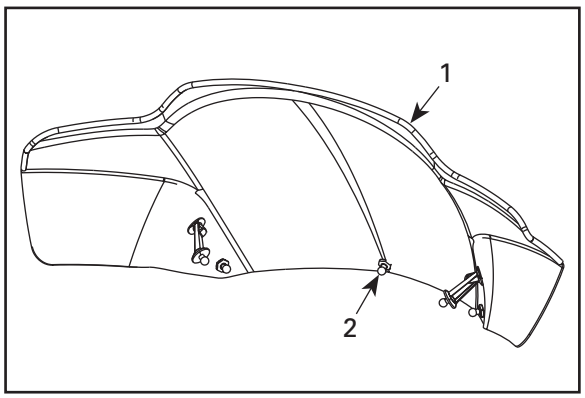
- Clip steering cap in place (predelivery box).

Model(s): Padded Cap

- Properly position steering padding in place and secure with Velcro strips or zippers.

Windshield

- Remove protective films from windshield.
- Install windshield support from predelivery kit into the hole in the console.
- Position windshield **[**1**]** in place.
- Secure windshield to console using windshield knobs **[**2**]**.

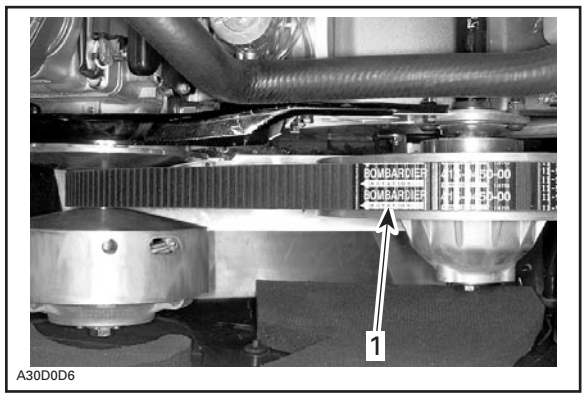


Drive Belt

- Clean pulleys and disc brake before installing the drive belt.

NOTE: Use a suitable cleaner such as Pulley flange cleaner (P/N 413 711 809).

CAUTION: The arrow on the belt [1], indicates the direction of rotation (see typical illustration).



A30D0D6

FINAL PREPARATION

DESS Key Programming Procedure

For the complete instructions regarding the DESS key programming procedure, refer to *Service Bulletin 2005–7*.

Recommended Oil

CAUTION: Use only injection oil that flows at - 40°C (- 40°F).

- Oil is contained in the injection oil reservoir.
- Use only two-stroke engine injection oil sold by authorized SKI-DOO dealers.

MODEL	OIL TYPE [1]
All	XP-S synthetic 2-stroke oil or XP-S 2-stroke synthetic blend

[1] All XP-S injection oils are compatible, they can be mixed together.

The XP-S 2-stroke synthetic blend and XP-S synthetic 2-stroke injection oil **provide superior lubrication**, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. These synthetic injection oils meet the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

CAUTION: Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard two-stroke engine oils or ashless two-stroke engine oils. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

⚠ WARNING

Wipe off any oil spills. Oil is highly flammable.

=>Break-in Period

- For the first 3–1/2 hours, the ECM will retard timing and will increase fuel delivery for a smooth brake-in period. The mapping will progressively convert to normal during that period.

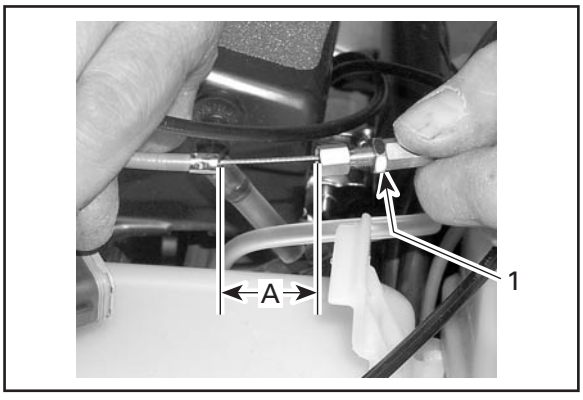
For fuel injection engines, no oil needs to be added to the first fuel tank.

Oil Pump Adjustment

Oil injection pump is factory set. However, if adjustment needs to be checked or modified, refer to *Service Bulletin 2005–8* for the complete instructions regarding the oil pump cable adjustment procedure.

NOTE: If you are well aware of the new oil pump cable adjustment procedure, refer to the following table for quick reference.

Measure distance between throttle lever and cable housing end.
and ADD
Oil pump specification: 16.5 mm (0.650 in)
=
Oil pump adjustment "A"

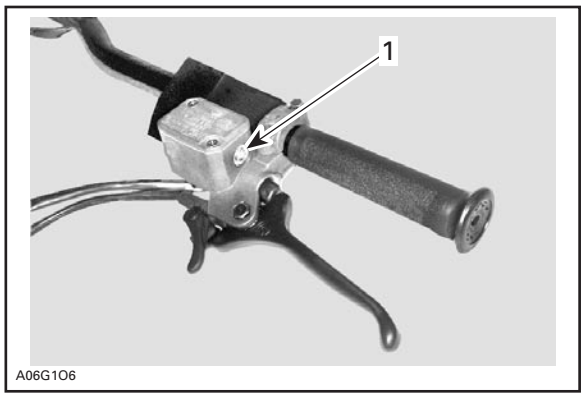


Brake Fluid Level

- Check brake fluid in reservoir for proper level [1].
- Add brake fluid (DOT 4) as required.

  - Use SRF (DOT 4) (P/N 293 600 063)
  - or GTLMA (DOT 4) (P/N 293 600 062).

CAUTION: Use only (DOT 4) brake fluid from a sealed container. Do not store or use a started bottle of brake fluid.



Track

- Refer to *2004 REV Shop Manual* to adjust track tension and alignment.

NOTE: Track deflection is 30 to 35 mm (1-3/16 to 1-3/8 in) with a downward pull of 7.3 kg (16 lb).

- Install caps provided in Predelivery Kit.

NOTE: If lubricant is needed to help cap installation, use lens cleaner instead of soapy water to avoid cap to pop-out from its location due to soap residue.

Disk Brake

- Remove any rust built-up on braking surfaces.
- Clean brake disk with pulley flange cleaner (P/N 413 711 809).

DELIVERY TO CUSTOMER

Speedometer

This model is equipped with an electronic speedometer, it may show speed in km/h or MPH.

NOTE: At the factory speedometer, odometer and trip meter is adjusted for miles reading.

- Proceed as follow to change units from miles to kilometers.

NOTE: At a speed of 90 km/h (55 MPH) and more, the LCD mode screen will show speed only instead of the selected mode.

- Stop engine and open hood.
- Cut locking ties.
- Plug connectors **[**1**]** together to change units from miles to kilometers.
- Unplug to return to miles reading.
- Fasten connector to harness with locking ties.

Suspension Adjustments

- Suspensions are calibrated at the factory. At predelivery, mechanics should perform suspension adjustments according to customer riding style and vehicle load.
- For the complete instructions regarding the suspension adjustments, refer to the appropriate *Operator's Guide*.

SPECIFICATIONS

Technical Data

The content of the TECHNICAL DATA pages should be used as necessary to fine-tune and perform additional adjustments required on the snowmobile.

			MODEL	MACH Z	SUMMIT
				1000 SDI	1000 SDI
ENGINE					
Engine type				995 SDI	
Number of cylinder				2	
Bore	Standard		mm (in)	88 (3.465)	
Stroke			mm (in)	82 (3.228)	
Displacement			cm^3 (in^3)	997.47 (60.869)	
Compression ratio				12.0 ± 0.5	
Maximum power engine speed (1)			± 100 RPM	7900	
Piston ring type			1st	Semi-trapezoidal	
			2nd	Semi-trapezoidal	
ELECTRICAL					
Magneto generator output				480 W	
Ignition type				Inductive	
Spark plug	Make and type			NGK BR9ECS (6)	**NGK BR8ECS**
	Gap		mm (in)	0.8 mm (.0315)	
Ignition timing BTDC (3) (7)			mm (in)	7.87 (0.3098)	
Trigger coil (4)			Ω	190 to 300	
Lighting coil (4)			Ω	0.145 to 0.185	
Battery				12 V, 18A•h	
Headlamp			W	60/55 (H4)	
Taillight and stoplight			W	8/27	
Tachometer and speedometer bulbs			W	N.A.	
Fuel and temperature gauge bulbs			W	2 x 2.6	N.A.
Fuse	Starter solenoid		A	30	
	Fuel level sensor		A	0.25	N.A.
FUEL SYSTEM					
Throttle body type				Dell'Orto	
Idle speed			± 200 RPM	1600	
Gas type				Premium unleaded	
Pump octane number	Inside North America		(R+M)/2	91	
	Outside North America		RON	95	
Gas/oil ratio				Injection	
Injection oil				XP-S 2-stroke synthetic blend	
COOLING SYSTEM					
Type				Liquid	
Coolant			Mixture	Ethyl glycol/water mix (50% coolant, 50% distilled water). Use coolant specifically designed for aluminum engines.	
			Premixed	P/N 219 700 362 — 12 x 1 L	
Thermostat opening temperature			°C (°F)	N.A.	
Radiator cap opening pressure			kPa (PSI)	90 (13)	

		MODEL	MACH Z	SUMMIT
			1000 SDI	1000 SDI
DRIVE				
Chaincase oil			XP-S Synthetic chaincase oil	
Chain drive ratio			29/49	21/49 EUR: 23/49
Chain	Pitch	in	3/8	
	Type/links qty/plate qty		Silent 82/13	Silent 86/13
Drive pulley type			TRA V	
Drive pulley calibration	Clutch engagement	± 100 RPM	3400	3500 EUR: 3400
	Spring color		Green/Violet	Pink/White EUR: Green/White
	Spring length	mm (in)	133.7 (5.26)	124.5 (4.90) EUR: 110.7 (4.36)
	Pin (with roller (P/N 417 222 762))		Steel lever (P/N 417 004 309)	
	Ramp		434	433 EUR: 600
	Screw position		6	4 EUR: 3
Driven pulley type	Type		HPV Roller	HPV VSA
	Spring preload		0.0	
	Cam angle		44°/33°	44°/30°
Pulley distance	Z	mm (in)	27.5 (1.083)	
Offset	X	mm (in)	37.0 ± 0.5 (1.457 ± 0.2)	
	Y – X	mm (in)	1.23 (.0484)	
Drive belt part number		P/N	417 300 189	
DRIVE				
Drive belt	Width (9)	mm (in)	38.3 (1.51)	
	Wear limit	mm (in)	35.9 (1.41)	
Drive belt adjustment	Deflection	mm (in)	32 ± 5 (1.260 ± .197)	
	Force (5)	kg (lbf)	11.30 (24.91)	
Track	Width	mm (in)	381 (15)	406 (16)
	Length	mm (in)	3074 (121)	4115 (162)
	Profile height	mm (in)	25.4 (1.0)	58.8 (2.313)
			31.8 (1.25)	
Track adjustment	Adjustment Deflection	mm (in)	30 to 35 (1.181 to 1.378)	
	Force (9)	kg (lbf)	7.3 (16)	
Suspension type	Track		SC 4	SC 162
	Ski		R.A.S. A-arm	

MODEL		MACH Z	SUMMIT
		1000 SDI	1000 SDI
BRAKE			
Brake fluid reservoir	mL (U.S. oz)	60 (2.0)	
Brake fluid (P/N)		GTLMA (DOT 4) (P/N 293 600 062) Racing brake fluid SRF (DOT 4) (P/N 293 600 063)	
VEHICLE INFORMATIONS			
Mass (dry)	kg (lb)	236 (519)	240 (529)
Length	mm (in)	2930 (115.4)	3435 (135.2)
Width	mm (in)	1217 (47.9)	1139 (44.8)
Height	mm (in)	1046 (41.2)	1125 (44.3)
Ski stance (carbide to carbide)	mm (in)	1195 (47.0)	1025 to 1080 (40.35 to 42.52)
Toe-out	mm (in)	0.00	
Camber		0°	
Frame material		Aluminum	
Bottom pan material		Impact resistant copolymer	
Hood material		Surlyn	
CAPACITIES			
Fuel tank	L (U.S. gal)	40 (10.6)	
Chaincase/gearbox	mL (U.S. oz)	250 (8.5)	
Cooling system	L (U.S. oz)	6.4 (216.4)	7.4 (250.2)
Injection oil reservoir	L (U.S. oz)	3.7 (125.112)	
TIGHTENING TORQUE (engine cold)			
Drive pulley retaining screw		120 N•m (89 lbf•ft)	
Exhaust manifold nuts or bolts		11 N•m (97 lbf•**in**)	
Magneto ring nut		130 N•m (96 lbf•ft)	
Crankcase nuts or screws	M6	9 N•m (80 lbf•**in**)	
	M8	29 N•m (21 lbf•ft)	
Crankcase/engine support nuts or screws		24 N•m (18 lbf•ft)	
Cylinder head screws		40 N•m (30 lbf•ft)	
Crankcase/cylinder nuts or screws		55 N•m (41 lbf•ft)	
Axial fan shaft nut		N.A.	

TECHNICAL DATA LEGEND

BTDC: Before Top Dead Center
CDI: Capacitor Discharge Ignition
MAG: Magneto
N.A.: Not Applicable
P/N: Part Number
PTO: Power Take Off
R.A.S.: Response Angle Suspension
RER: Rotax Electronic Reverse
RPM: Revolution Per Minute
TRA: Total Range Adjustable
VSA: Variable Sheave Angle
W: Watt

(1) The maximum horsepower RPM applicable on the vehicle. It may be different under certain circumstances and BRP reserves the right to modify it without obligation.

(2) Crankshaft end-play is not adjustable on these models. Specification is given for verification purposes only.

(3) At 3500 RPM with headlamp turned on.

(4) All resistance measurements must be performed with parts at room temperature (approx. 20°C (68°F)). Temperature greatly affects resistance measurements.

(5) Force or downward pull applied to track to obtain specified tension deflection.

(6) CAUTION: Do not attempt to adjust gap on spark plug BR 9 ECS. The specification is given for verification purpose only. If found out of specification, replace with a new one.

(7) 793 HO Power TEK: with TPS (Throttle positioning Sensor) disconnected.
995 SDI: with APS (Air pressure Sensor) disconnected.

(8) Force applied midway between pulleys to obtain specified tension deflection.

(9) Minimum allowable width may not be less than 3.0 mm (1/8 in) of new drive belt.