BRAKES

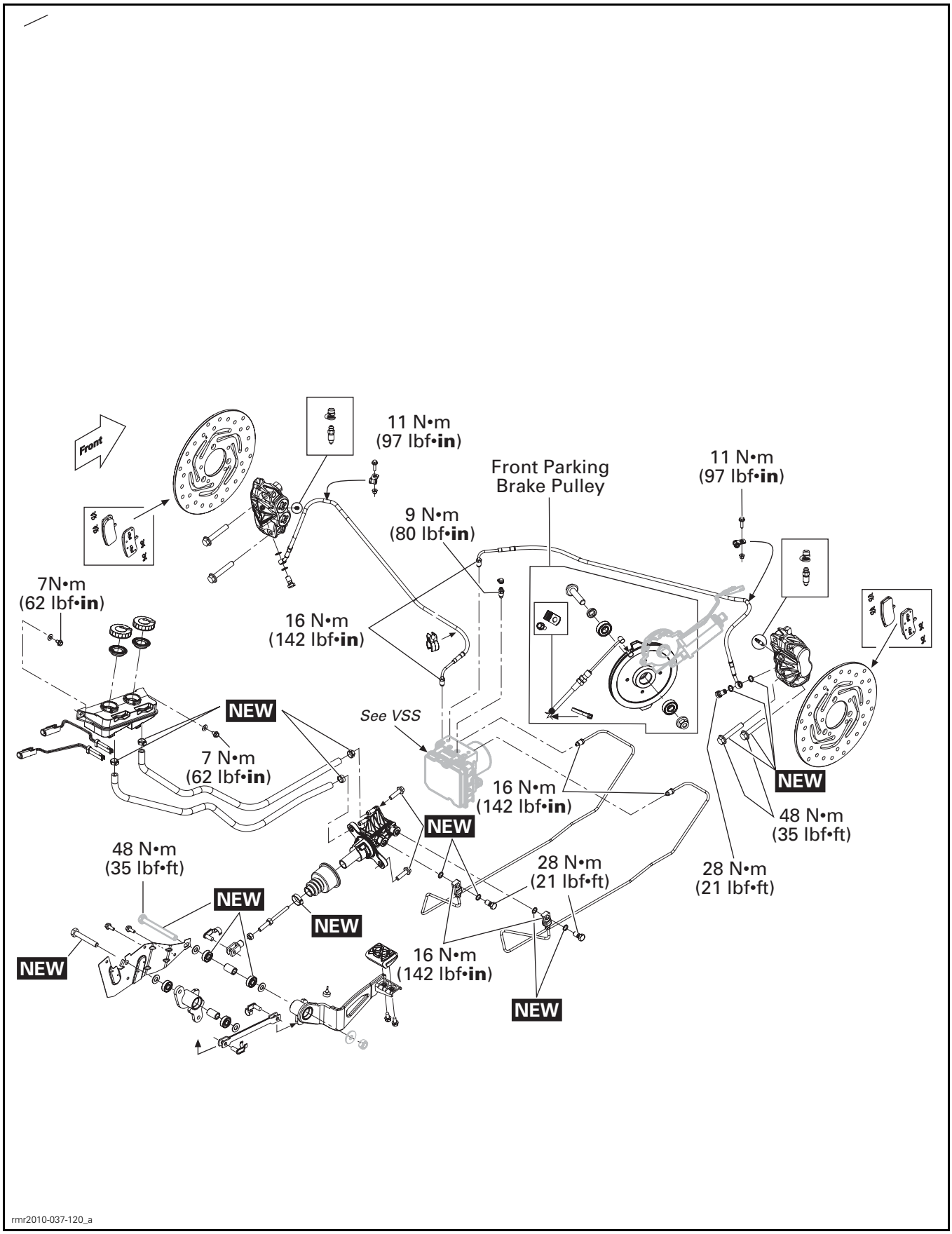
SERVICE TOOLS

Description	Part Number	Page
BLIND HOLE BEARING PULLER SET	529 036 117	21
FLUKE 115 MULTIMETER	529 035 868	30
MASTER CYLINDER ROD ADJUSTER	529 036 119	24

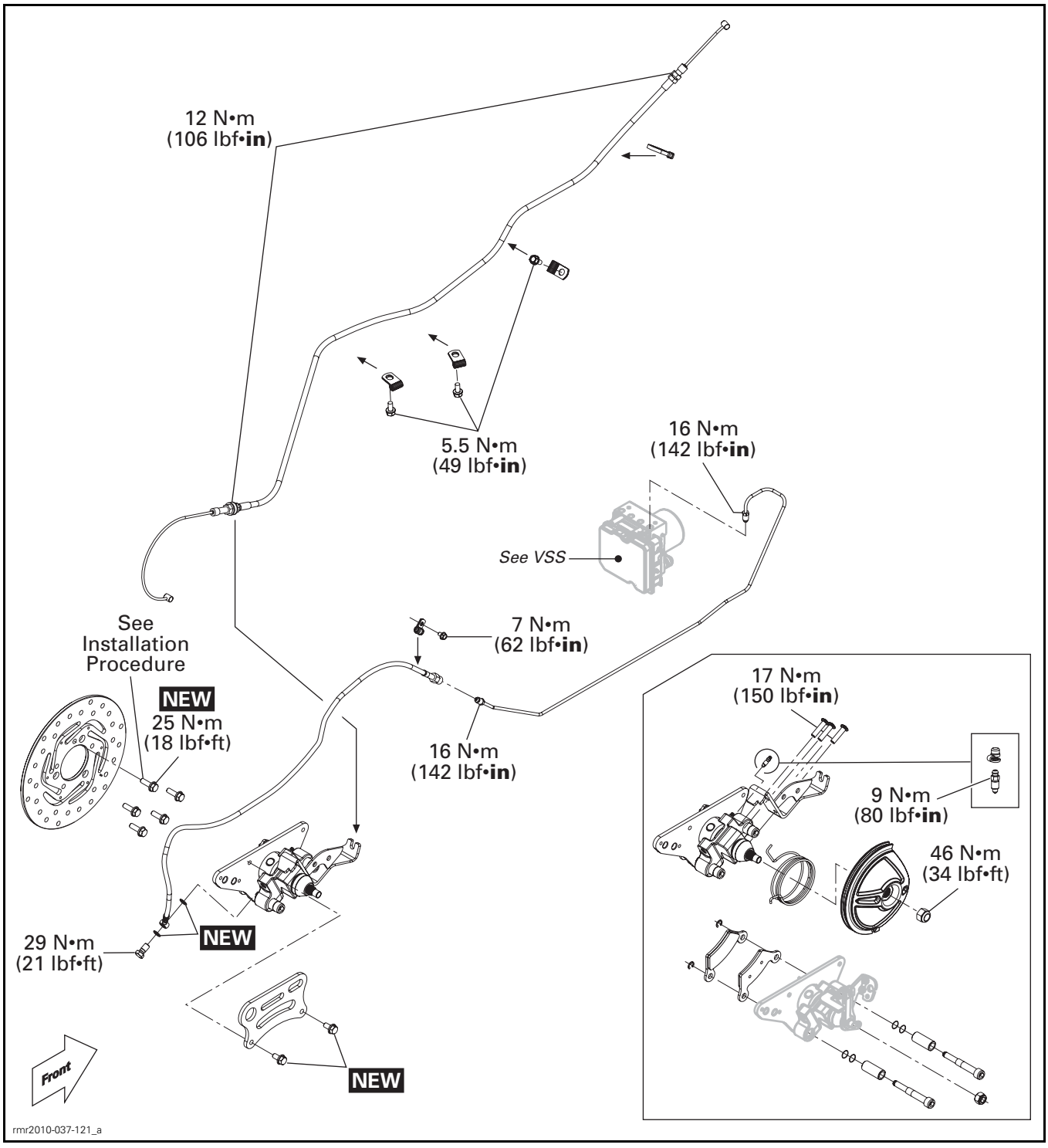
SERVICE PRODUCTS

Description	Part Number	Page
BRAKE FLUID GTLMA (DOT 4)	293 600 062	4–5
LOCTITE 243 (BLUE)	293 800 060	18

FRONT BRAKES



REAR BRAKE


12 N•m
(106 lbf•**in**)
5.5 N•m
(49 lbf•**in**)
16 N•m
(142 lbf•**in**)
See VSS
7 N•m
(62 lbf•**in**)
See
Installation
Procedure
NEW
25 N•m
(18 lbf•ft)
16 N•m
(142 lbf•**in**)
29 N•m
(21 lbf•ft)
NEW
NEW
Front
17 N•m
(150 lbf•**in**)
9 N•m
(80 lbf•**in**)
46 N•m
(34 lbf•ft)
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GENERAL

This subsection covers the maintenance and procedures related to the braking system mechanical components. For ABS related components, refer to *VEHICLE STABILITY SYSTEM (VSS)* subsection.

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

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

⚠ WARNING

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

⚠ WARNING

Never apply anything to the brake fittings. The use of thread sealant or Teflon tape could cause brake system failure and cause severe damages to components.

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

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

NOTICE **Sealing washers must be discarded and replaced with new ones every time a Banjo fitting is unscrewed.**

NOTICE **Before opening or working near bleeders, reservoir or fittings, clean the part and its area to avoid system contamination.**

NOTICE **Hoses, cables and locking ties removed during a procedure must be reinstalled as per factory standards.**

NOTE: Dispose brake fluid as per your local environmental regulations.

NOTE: Install a battery charger on battery terminals (under seat) for any tests that involve a prolonged *KEY ON* period. If battery voltage gets too low, some accessories are shut off by the ECM.

FAULT CODES

If any bleeding is performed on the braking system, it is important to reset the fault codes. Refer to *MONITORING SYSTEM AND FAULT CODES* subsection.

NOTE: B.U.D.S. software is used to perform the reset.

TASK	WHAT TO DO
Any brake part replacement that involved bleeding	1. Check/clear fault codes 2. Clear LPS fault

MAINTENANCE

BRAKE FLUID

Recommended Brake Fluid

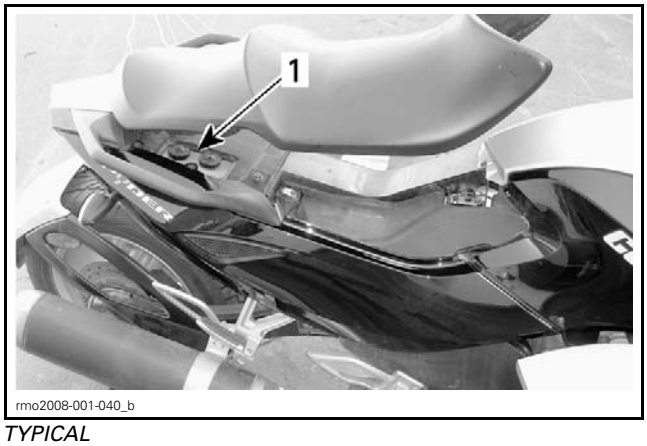
Always use brake fluid meeting the specification DOT 4 only such as BRAKE FLUID GTLMA (DOT 4) (P/N 293 600 062).

Brake Fluid Level Verification

Park the vehicle on a firm level surface.

Unlatch and lift seat.

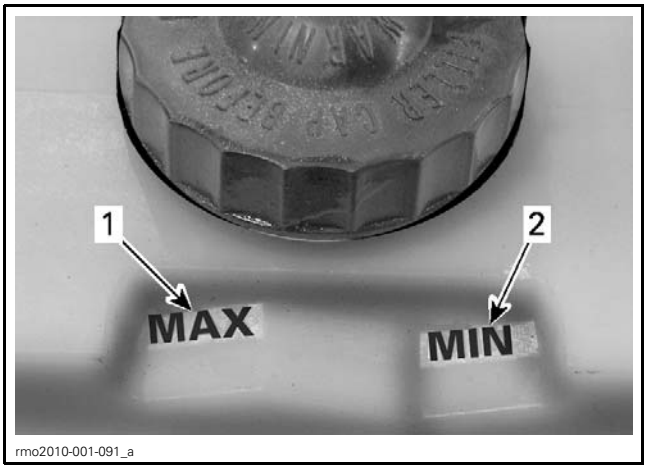
Check brake fluid level in each reservoir, near the back of the seat. They should both be above the MIN. mark.



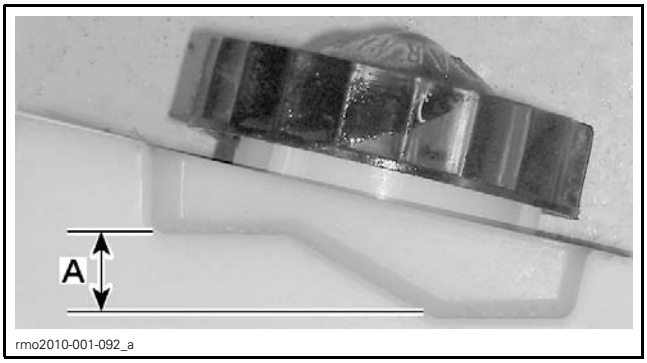
TYPICAL
1. Brake fluid reservoir

Clean filler caps before removing.

Add fluid as required. **Do not overfill.**



1. Brake fluid MAX. level mark
2. Brake fluid MIN. level mark



A. Operating range

Immediately wipe out any spills.

Reinstall cap on each reservoir.

Close seat and ensure it is fully latched.

Brake Fluid Replacement

To replace brake fluid, perform the complete brake bleeding sequence. Refer to *BRAKE FLUID BLEEDING PROCEDURE (COMPLETE SYSTEM)* below.

Brake Fluid Bleeding Procedure (Complete System)

General Guidelines

This procedure is divided in multiple tasks that must be completed in a specific order according to the following table.

STEP	TASK
1	Perform manual bleeding procedure (left caliper, right caliper, rear caliper and VCM)
2	Perform B.U.D.S. bleeding procedure (front circuit and rear circuit)
3	Validate the system pressure

Requirements for Task Completion

DESCRIPTION	QTY
BRAKE FLUID GTLMA (DOT 4) (P/N 293 600 062) (or equivalent)	1.75 L (1.85 quarts)
40 cm (16 in) clear hose (3/16)	3
80 cm (31 in) clear hose (3/16)	1
Small locking ties	4
Locking ties	4

Use a computer with the latest version of B.U.D.S. software, the MPI-2 and a diagnostic cable.

NOTE: Assistance is required to accomplish some actions.

Vehicle Preparation

NOTE: Vehicle battery must be fully charge prior to bleed brake system.

Remove body parts as required to access to the following components. Refer to *BODY* subsection.

– Front left and right calipers
– Rear caliper
– VCM
– Brake fluid reservoir

NOTICE Protect plastic, rubber or painted parts with rags when servicing brake system.

TYPICAL

Place vehicle on a level surface.

Loosen front wheel lug nuts.

Lift the front of the vehicle.

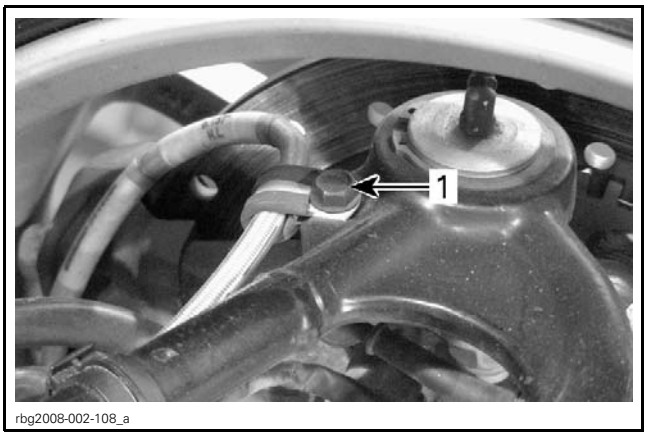
Secure front of vehicle on jack stands.

Level the vehicle by using a jack underneath the rear shock absorber.

NOTE: To ensure that the vehicle is level, use the bottom vehicle frame as a reference.

Remove front wheels.

Remove clip retaining hose on suspension arm (one on each side).



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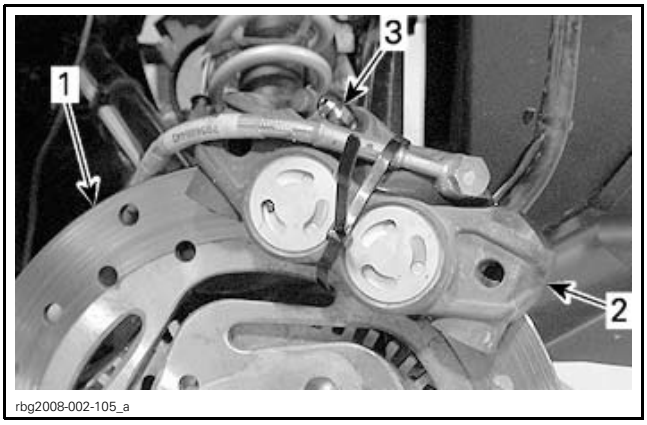
TYPICAL
1. Clip retaining hose

Remove caliper mounting bolts from both front calipers.

NOTICE **Do not let caliper hang by the hose and do not stretch or twist the hose.**

Install each caliper horizontally on the top of its brake disc with bleeder to the highest point.

Secure caliper with locking tie.



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TYPICAL
1. Brake disc
2. Caliper
3. Bleeder to the highest point

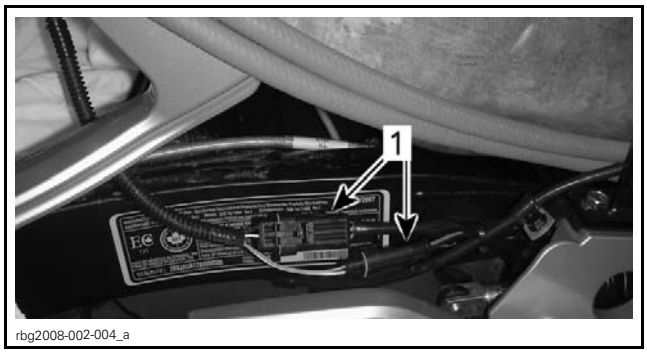
Open seat.

Detach lift cylinder from seat.

Lift seat and unplug the pillion rider (passenger) switch connector.

Cut locking ties securing brake hoses between reservoir and master cylinder.

Unplug low pressure switch connector and brake light connector.



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TYPICAL
1. Low pressure switch connector and brake light connector

Detach brake fluid reservoir from vehicle.

Move reservoir down and outside the footrest and then reinstall at its location as per the following picture.

Place brake hoses alongside rear passenger footrest support.

Attach brake hoses to frame using locking tie.

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TYPICAL
1. Rear passenger footrest support

NOTE: The previous steps are required for the hoses to run completely down toward the master cylinder.

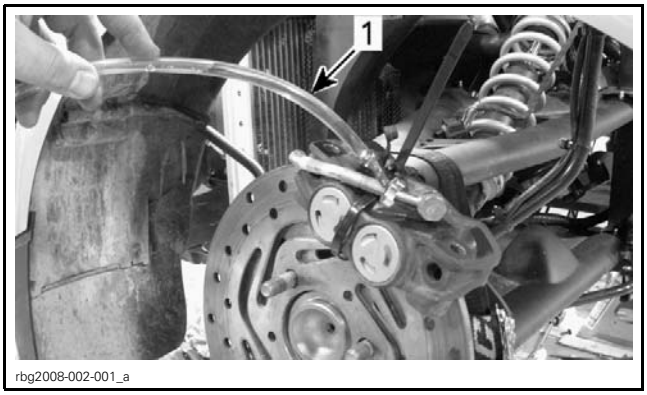
Replug low pressure switch connector and brake light connector.

Remove reservoir caps.

Install a 40 cm (16 in) long clear hose onto:
– Left caliper bleeder
– Right caliper bleeder
– Rear caliper bleeder.

Secure all clear hose with small locking ties.

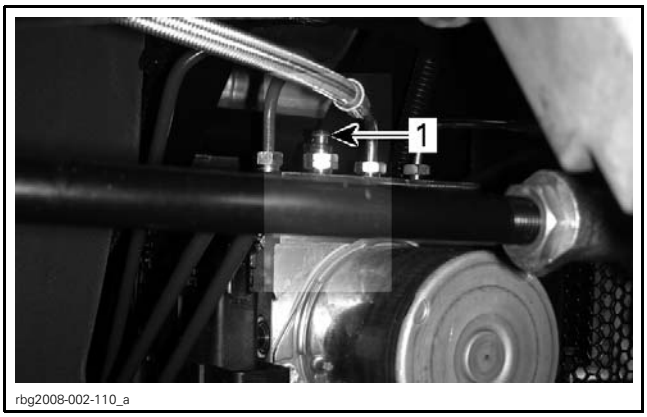
Fill clear hoses with brake fluid using a funnel (approximately 60 mm (2-1/2 in) long).



TYPICAL
1. Brake fluid

Locate VCM at the front of vehicle.

Install 80 cm (31 in) long clear hose onto VCM bleeder.



1. VCM bleeder

Secure VCM clear hose with small locking tie.

Fill VCM clear hose with brake fluid using a funnel (approximately 60 mm (2-1/2 in) long).

Manual Bleeding Procedure (Preliminary Bleeding)

NOTE: Brake fluid reservoir must be kept full to prevent air from being pumped into the system. If a sequence is interrupted or a lack of fluid occurs, start the sequence again.

1. Start bleeding system with left front caliper.
2. Open bleeder and slowly depress then slowly release brake pedal **at least 25 times** (full stroke) until fluid freely flows out of the bleeder without any air bubbles.

NOTE: It may be necessary to pump brake pedal more than 25 times, as a result, it is important to pump brake pedal until fluid flows out **without any air bubbles**.

3. When there is no more air bubbles in clear hose, close the bleeder while brake pedal is depressed.

NOTE: Do not release brake pedal until bleeder has been closed.

4. Pump up system pressure with brake pedal until pedal resistance is felt.
5. Depress and hold brake pedal.
6. Re-open bleeder and then re-close it.
7. Release brake pedal slowly.
8. Repeat manual bleeding procedure for the other bleeders in this order:
   – Right front caliper
   – Rear caliper
   – VCM.

B.U.D.S. Bleeding Procedure (Final Bleeding)

NOTE: The bleeding procedure is accomplished FIRST by completing the manual bleeding procedure as explained above.

Brake bleeding is completed using B.U.D.S. software. To properly bleed the complete braking system, use the bleeding sequence according to this table.

B.U.D.S. BLEEDING SEQUENCE	
OPERATION	BLEEDING CIRCUIT
Complete brake system bleeding	Front circuit and rear circuit

B.U.D.S. BLEEDING CIRCUIT	BLEEDER LOCATION
Front circuit	1: Left front caliper
	2: Right front caliper
Rear circuit	3: Rear caliper
	4: VCM

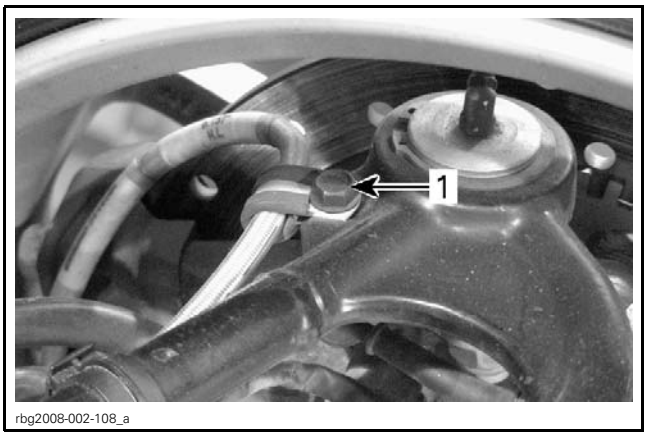
NOTE: Each sequence must be carried out without interruption. Furthermore, brake fluid reservoir must be kept full to prevent air from being pumped into the system. If a sequence is interrupted or a lack of fluid occurs, start the sequence again.

1. Connect B.U.D.S. Refer to *COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE*.
2. In B.U.D.S., select **Read Data**.
3. Select **Setting** folder then the **VCM** page.
4. Read and understand the procedure on screen before beginning it.
5. Perform **FRONT CIRCUIT BLEEDING** and **REAR CIRCUIT BLEEDING** inclusively. Follow the instruction in B.U.D.S.

Reinstall caliper. Refer to *CALIPER* in this subsection.

Reinstall clip retaining hose on suspension arm (one on each side).

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



TYPICAL
1. Clip retaining hose

Reinstall wheels on vehicle. Refer to *STEERING/FRONT WHEELS* subsection for procedure.

Carry out the *BRAKE SYSTEM PRESSURE VALIDATION* as detailed in this subsection.

NOTICE **Do not pump up the brake pedal repeatedly before doing the validation.**

Vehicle Reassembly

Reinstall brake fluid reservoir on vehicle with the hoses at their original location.

Secure brake fluid reservoir to 7 N•m (62 lbf•**in**).

Secure hoses with locking ties.

Install all removed *BODY* parts as the reverse of the removal procedure.

Ride the vehicle and apply the brake a few times to ensure the normal behavior of the vehicle.

Brake Fluid Bleeding Procedure (Rear Brake Only)

General Guidelines

This procedure is divided in multiple tasks that must be completed in a specific order according to the following table.

STEP	TASK
1	Perform manual bleeding procedure (rear caliper and VCM)
2	Perform B.U.D.S. bleeding procedure (rear circuit)
3	Validate the system pressure

Requirements for Task Completion

Requirements are the same as for bleeding the complete braking system. Refer to *BRAKE FLUID BLEEDING PROCEDURE (COMPLETE SYSTEM)*.

Vehicle Preparation

Remove body parts as required to access to the following components. Refer to *BODY* subsection.

– Rear caliper
– VCM
– Brake fluid reservoir.

Level the vehicle.

NOTE: To ensure that the vehicle is level, use the bottom vehicle frame as a reference.

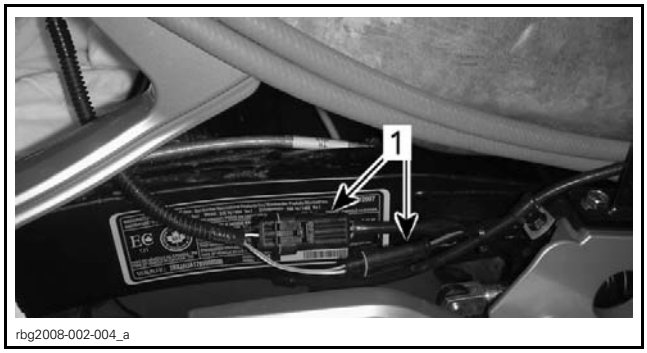
Open seat.

Detach lift cylinder from seat.

Lift seat and unplug the pillion rider (passenger) switch connector.

Cut locking ties securing brake hoses between reservoir and master cylinder.

Unplug low pressure switch connector and brake light connector.



TYPICAL
1. Low pressure switch connector and brake light connector

Detach brake fluid reservoir from vehicle.

Move reservoir down and outside the footrest and then reinstall at its location as per the following picture.

Place brake hoses alongside rear passenger footrest support.

Attach hoses to frame using locking tie.

TYPICAL
1. Rear passenger footrest support

NOTE: The previous steps are required for the hoses to run completely down toward the master cylinder.

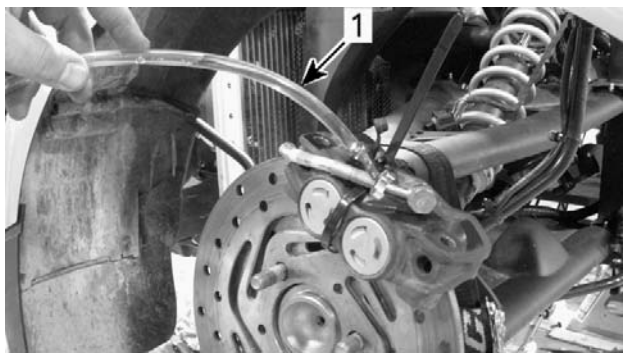
Replug low pressure switch connector and brake light connector.

Remove reservoir caps.

Install a 40 cm (16 in) long clear hose onto rear caliper bleeder.

Secure all clear hose with small locking ties.

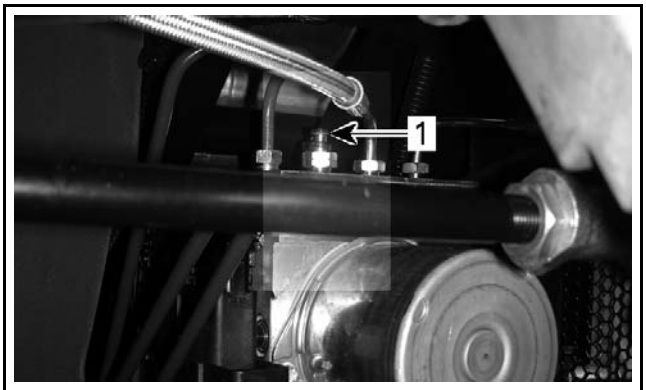
Fill clear hoses with brake fluid using a funnel (approximately 60 mm (2-1/2 in) long).



TYPICAL
1. Brake fluid

Locate VCM at the front of vehicle.

Install 80 cm (31 in) long clear hose onto VCM bleeder.



1. VCM bleeder

Secure VCM clear hose with small locking tie.

Fill VCM clear hose with brake fluid using a funnel (approximately 60 mm (2-1/2 in) long).

Manual Bleeding Procedure (Preliminary Bleeding)

NOTE: Brake fluid reservoir must be kept full to prevent air from being pumped into the system. If a sequence is interrupted or a lack of fluid occurs, start the sequence again.

1. Start bleeding system with rear caliper.
2. Open bleeder and slowly depress then slowly release brake pedal **at least 25 times** (full stroke) until fluid freely flows out of the bleeder without any air bubbles.

NOTE: It may be necessary to pump brake pedal more than 25 times, as a result, it is important to pump brake pedal until fluid flows out **without any air bubbles**.

3. When there is no more air bubbles in clear hose, close the bleeder while brake pedal is depressed.

NOTE: Do not release brake pedal until bleeder has been closed.

4. Pump up system pressure with brake pedal until pedal resistance is felt.
5. Depress and hold brake pedal.
6. Re-open bleeder and then re-close it.
7. Release brake pedal slowly.
8. Repeat manual bleeding procedure for VCM bleeder.

B.U.D.S. Bleeding Procedure (Final Bleeding)

NOTE: The bleeding procedure is accomplished FIRST by completing the manual bleeding procedure as explained above.

Brake bleeding is completed using B.U.D.S. software. To properly bleed the complete braking system, use the bleeding sequence according to this table.

B.U.D.S. BLEEDING SEQUENCE	
OPERATION	BLEEDING CIRCUIT
Rear brake system bleeding	Rear circuit

B.U.D.S. BLEEDING CIRCUIT	BLEEDER LOCATION
Rear circuit	3: Rear caliper
	4: VCM

NOTE: Each sequence must be carried out without interruption. Furthermore, brake fluid reservoir must be kept full to prevent air from being pumped into the system. If a sequence is interrupted or a lack of fluid occurs, start the sequence again.

1. Connect B.U.D.S. Refer to *COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE*.
2. In B.U.D.S., select **Read Data**.
3. Select **Setting** folder then the **VCM** page.
4. Read and understand the procedure on screen before beginning it.
5. Perform **REAR CIRCUIT BLEEDING**. Follow the instruction in B.U.D.S.

Carry out the *BRAKE SYSTEM PRESSURE VALIDATION* as detailed in this subsection.

NOTICE **Do not pump up the brake pedal repeatedly before doing the validation.**

Vehicle Reassembly

Reinstall brake fluid reservoir on vehicle with the hoses at their original location.

Secure brake fluid reservoir to 7 N•m (62 lbf•**in**).

Secure hoses with locking ties.

Install all removed *BODY* parts as the reverse of the removal procedure.

Ride the vehicle and apply the brake a few times to ensure the normal behavior of the vehicle.

Brake Fluid Bleeding Procedure (Front Brakes Only)

General Guidelines

This procedure is divided in multiple tasks that must be completed in a specific order according to the following table.

STEP	TASK
1	Perform manual bleeding procedure (left caliper and right caliper)
2	Perform B.U.D.S. bleeding procedure (front circuit)
3	Validate the system pressure

Requirements for Task Completion

Requirements are the same as for bleeding the complete braking system. Refer to *BRAKE FLUID BLEEDING PROCEDURE (COMPLETE SYSTEM)*.

Vehicle Preparation

Remove body parts as required to access to the following components. Refer to *BODY* subsection.

– Front left and right calipers
– Brake fluid reservoir

Place vehicle on a level surface.

Apply parking brake.

Loosen front wheel lug nuts.

Secure front of vehicle on jack stands.

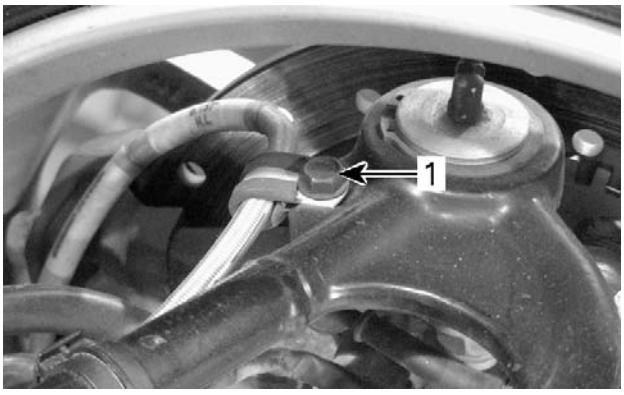
Level the vehicle by using a jack underneath the rear shock absorber.

NOTE: To ensure that the vehicle is level, use the bottom vehicle frame as a reference.

Remove front wheels.

NOTICE **Never use any type of impact wrench for lug nut removal and installation. The use of impact wrench could damage the bolts threads and nuts.**

Remove clip retaining hose on suspension arm (one on each side).



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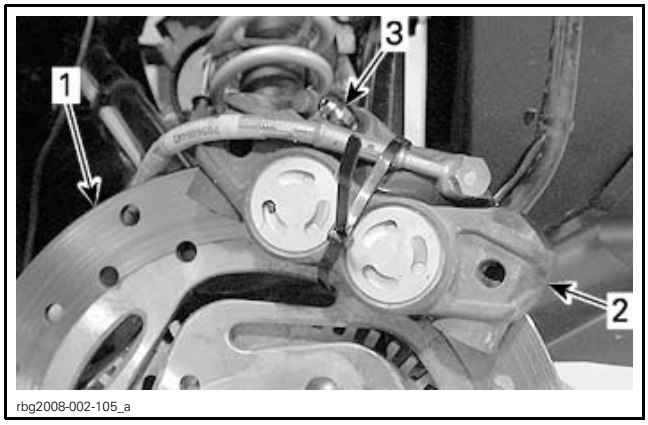
TYPICAL
1. Clip retaining hose

Remove caliper mounting bolts from both front calipers.

NOTICE **Do not let caliper hang by the hose and do not stretch or twist the hose.**

Install each caliper horizontally on the top of its brake disc with bleeder to the highest point.

Secure caliper with locking tie.



TYPICAL
1. Brake disc
2. Caliper
3. Bleeder to the highest point

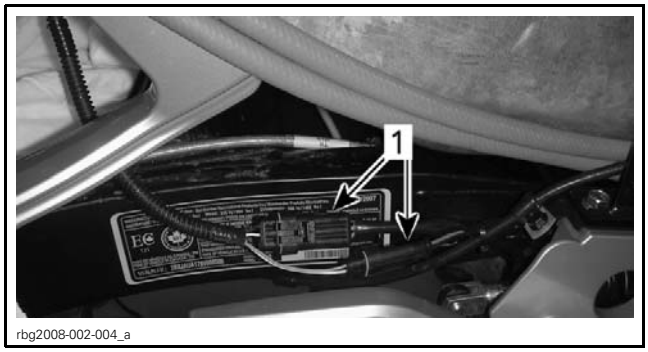
Open seat.

Detach lift cylinder from seat.

Lift seat and unplug the pillion rider (passenger) switch connector.

Cut locking ties securing brake hoses between reservoir and master cylinder.

Unplug low pressure switch connector and brake light connector.



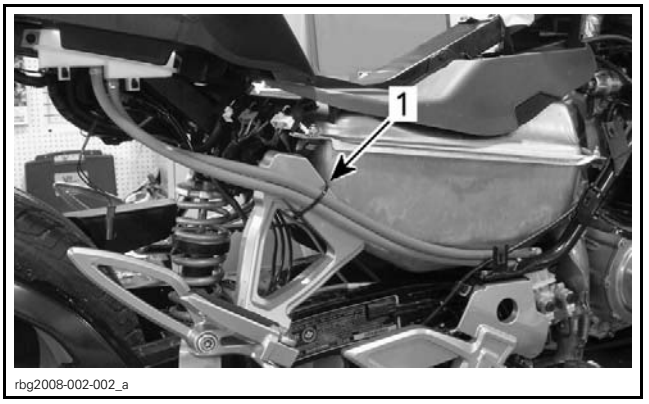
TYPICAL
1. Low pressure switch connector and brake light connector

Detach brake fluid reservoir from vehicle.

Move reservoir down and outside the footrest and then reinstall at its location as per the following picture.

Place brake hoses alongside rear passenger footrest support.

Attach brake hoses to frame using locking tie.



TYPICAL
1. Rear passenger footrest support

NOTE: The previous steps are required for the hoses to run completely down toward the master cylinder.

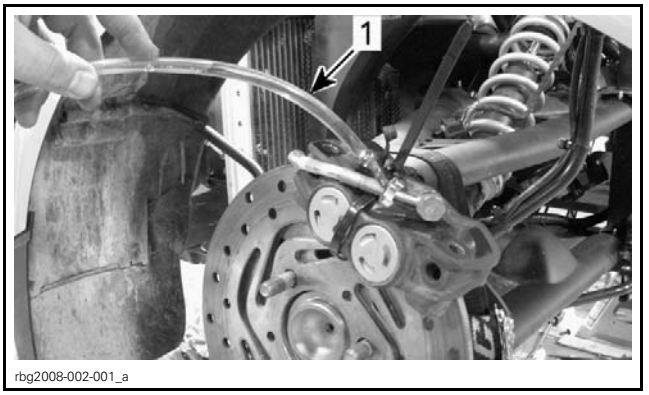
Replug low pressure switch connector and brake light connector.

Remove reservoir caps.

Install a 40 cm (16 in) long clear hose onto:
– Left caliper bleeder
– Right caliper bleeder.

Secure all clear hose with small locking ties.

Fill clear hoses with brake fluid using a funnel (approximately 60 mm (2-1/2 in) long).



TYPICAL
1. Brake fluid

Manual Bleeding Procedure (Preliminary Bleeding)

NOTE: Brake fluid reservoir must be kept full to prevent air from being pumped into the system. If a sequence is interrupted or a lack of fluid occurs, start the sequence again.

1. Start bleeding system with:
   – Left front caliper
   – Right front caliper.

2. Open bleeder and slowly depress then slowly release brake pedal **at least 25 times** (full stroke) until fluid freely flows out of the bleeder without any air bubbles.

NOTE: It may be necessary to pump brake pedal more than 25 times, as a result, it is important to pump brake pedal until fluid flows out **without any air bubbles**.

3. When there is no more air bubbles in clear hose, close the bleeder while brake pedal is depressed.

NOTE: Do not release brake pedal until bleeder has been closed.

4. Pump up system pressure with brake pedal until pedal resistance is felt.
5. Depress and hold brake pedal.
6. Re-open bleeder and then re-close it.
7. Release brake pedal slowly.

B.U.D.S. Bleeding Procedure (Final Bleeding)

NOTE: The bleeding procedure is accomplished FIRST by completing the manual bleeding procedure as explained above.

Brake bleeding is completed using B.U.D.S. software. To properly bleed the complete braking system, use the bleeding sequence according to this table.

B.U.D.S. BLEEDING SEQUENCE	
OPERATION	BLEEDING CIRCUIT
Front brake system bleeding	Front circuit

B.U.D.S. BLEEDING CIRCUIT	BLEEDER LOCATION
Front circuit	1: Left front caliper
	2: Right front caliper

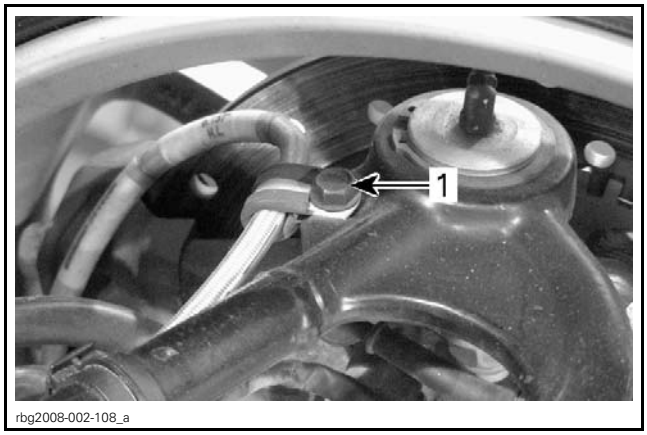
NOTE: Each sequence must be carried out without interruption. Futhermore, brake fluid reservoir must be kept full to prevent air from being pumped into the system. If a sequence is interrupted or a lack of fluid occurs, start the sequence again.

1. Connect B.U.D.S. Refer to *COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE*.
2. In B.U.D.S., select Read Data.
3. Select Setting folder then the VCM page.
4. Read and understand the procedure on screen before beginning it.
5. Perform FRONT CIRCUIT BLEEDING. Follow the instruction in B.U.D.S.

Reinstall caliper. Refer to *CALIPER* in this subsection.

Reinstall clip retaining hose on suspension arm (one on each side).

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



TYPICAL
1. Clip retaining hose

Reinstall wheels on vehicle. Refer to *STEERING (DPS) AND WHEELS* for procedure.

Carry out the *BRAKE SYSTEM PRESSURE VALIDATION* as detailed in this subsection.

NOTICE Do not pump up the brake pedal repeatedly before doing the validation.

Vehicle Reassembly

Reinstall brake fluid reservoir on vehicle with the hoses at their original location.

Secure brake fluid reservoir to 7 N•m (62 lbf•**in**).

Secure hoses with locking ties.

Install all removed *BODY* parts as the reverse of the removal procedure.

Ride the vehicle and apply the brake a few times to ensure the normal behavior of the vehicle.

INSPECTION

BRAKE SYSTEM PRESSURE VALIDATION

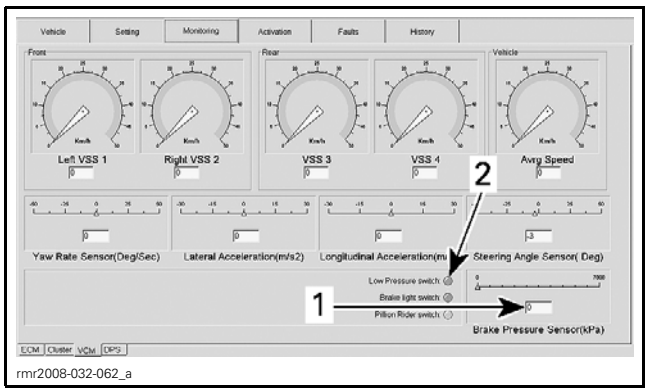
NOTICE Do not pump up the brake pedal repeatedly before doing the validation.

In B.U.D.S., select Monitoring folder then the VCM page.

Slowly depress the brake pedal (only once) until you reach **3500 kPa (508 PSI)** at the brake pressure sensor.

Maintain the brake pedal in position.

Check the **Low Pressure Switch** button value on the computer screen.



1. **Brake Pressure Sensor (PSI)** *value*
2. **Low Pressure Switch** *button*

If **Low Pressure Switch** button is still off when you reached the required pressure the validation is successful.

If **Low Pressure Switch** button turns on before reaching **3500 kPa (508 PSI)**, perform the following additional steps:

Perform equivalent of 3 complete wheels rotation (for the 3 wheels).

Slowly depress the brake pedal until **Low Pressure Switch** button turns on.

Take note of the **Brake Pressure Sensor (PSI)** value.

Perform equivalent of 3 complete wheels rotation (for the 3 wheels).

Slowly depress the brake pedal until **Low Pressure Switch** button turns on.

Take note of the **Brake Pressure Sensor (PSI)** value.

Perform equivalent of 3 complete wheels rotation (for the 3 wheels).

Slowly depress the brake pedal until **Low Pressure Switch** button turns on.

Take note of the **Brake Pressure Sensor (PSI)** value.

Calculate the average of the 3 **Brake Pressure Sensor (PSI)** values previously noted.

If the average is **EQUAL OR ABOVE 3500 kPa (508 PSI)**, the brake system pressure is conform. Clear fault codes.

If the average is **BELOW 3500 kPa (508 PSI)**, repeat *BRAKE FLUID BLEEDING PROCEDURE* with the following deviation:

– Lift the rear of vehicle and adjust master cylinder on level.

PROCEDURES

CALIPER

Caliper Removal

Front Caliper

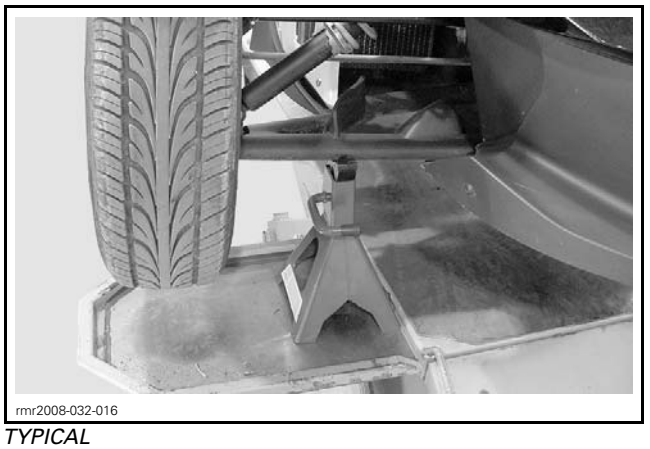
Place the vehicle on a level surface.

Apply parking brake.

Loosen wheel lug nuts.

Lift the front of vehicle.

Support the vehicle securely on jack stands.

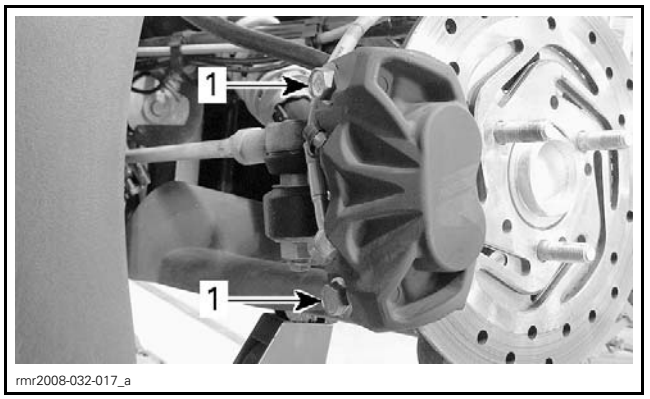


TYPICAL

Remove wheel.

Remove and discard caliper screws.

NOTE: If the caliper is replaced, loosen brake hose first. See procedure below. Otherwise, omit the next steps concerning the brake hose.



TYPICAL
1. *Caliper screws*

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

Install a drain pan under caliper to catch brake fluid.

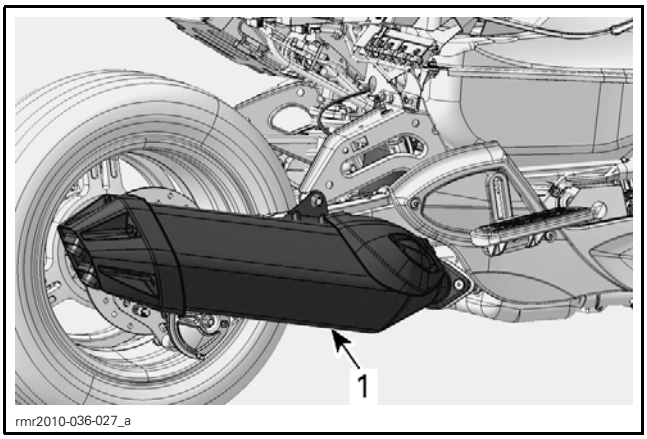
Loosen the Banjo fitting. Disconnect brake hose and discard sealing washers.

Remove the caliper from the vehicle.

Rear Caliper

Place vehicle on a level surface.

Remove muffler from swing arm.



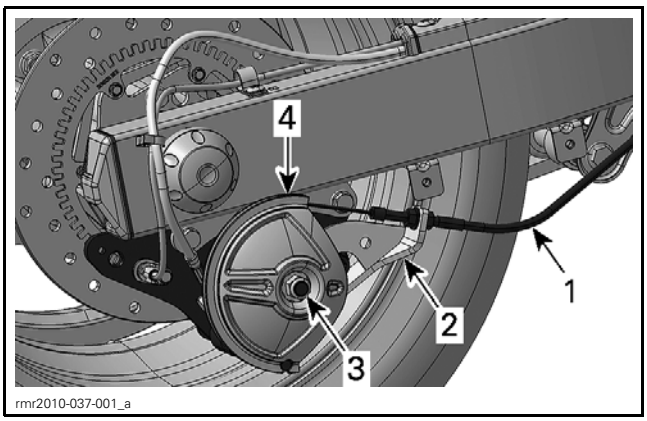
rmr2010-036-027_a

1. Muffler

Remove parking brake cable from parking brake support.

Remove retaining nut from parking brake rear pulley.

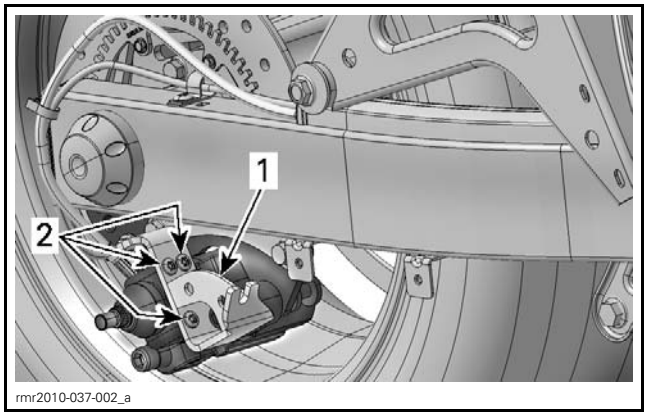
Remove parking brake rear pulley and its spring.



rmr2010-037-001_a

1. Parking brake cable
2. Parking brake support
3. Parking brake rear pulley nut
4. Parking brake rear pulley

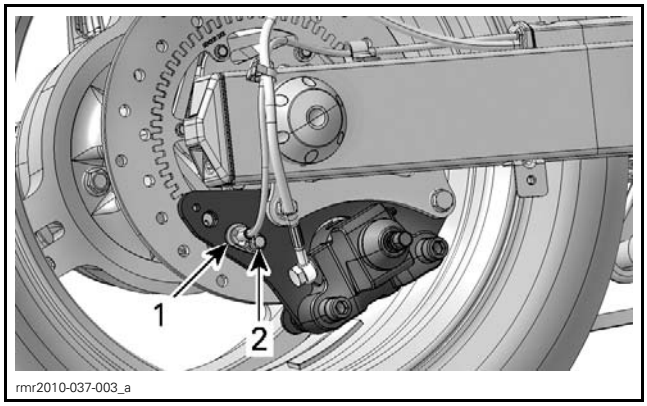
Remove parking brake support from caliper bracket.



rmr2010-037-002_a

1. Parking brake support
2. Retaining screws

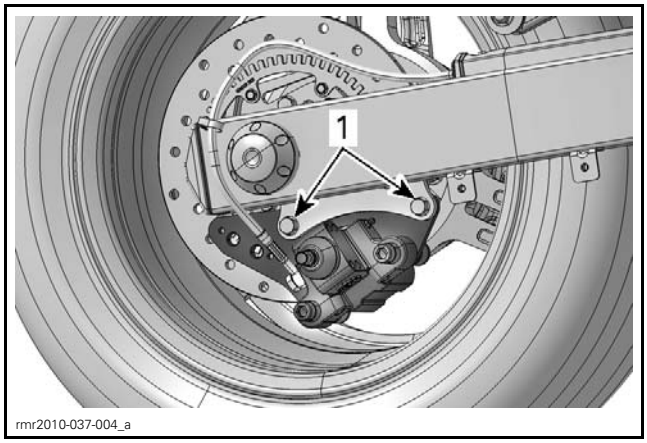
Remove wheel speed sensor from caliper bracket.



rmr2010-037-003_a

1. Wheel speed sensor
2. Retaining screw

Remove and discard caliper screws.



rmr2010-037-004_a

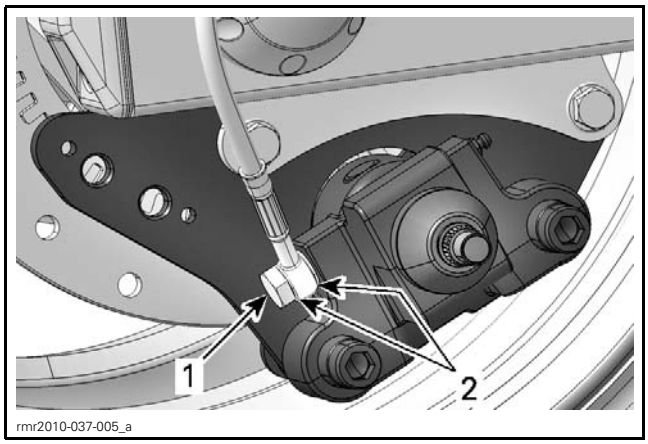
1. Caliper screws

NOTE: If the caliper is replaced, loosen brake hose first. See procedure below. Otherwise, omit the next steps concerning the brake hose.

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

Install a drain pan under caliper to catch brake fluid.

Loosen the Banjo fitting. Disconnect brake hose and discard sealing washers.



rmr2010-037-005_a

1. Banjo fitting
2. Sealing washers

Remove caliper.

Caliper Inspection

Check piston(s) for scratches, rust or other damages. If so, replace caliper.

Caliper Installation

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

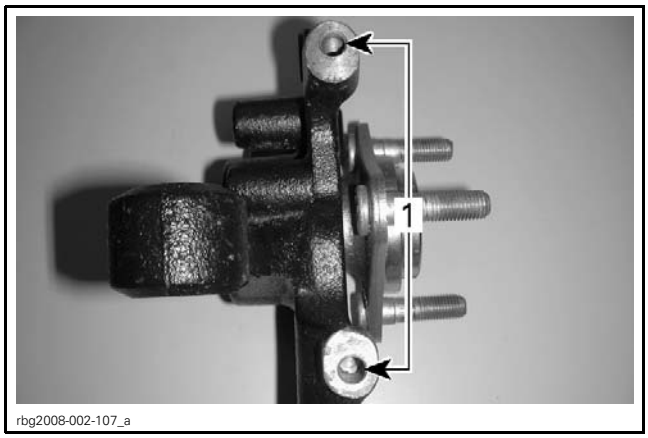
Install NEW caliper screws.

Install NEW sealing washers on banjo fitting if hoses were disconnected.

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

Front Caliper

NOTICE **To ensure good clamping of calipers screws, it is imperative to clean knuckle threads using a metric tap M10 x 1.5.**



rbg2008-002-107_a

1. Knuckle threads

Secure caliper screws to 48 N•m (35 lbf•ft).

Rear Caliper

Torque parking brake support screws to 17 N•m (150 lbf•**in**).

Torque parking brake pulley nut to 46 N•m (34 lbf•ft).

Check wheel speed sensor adjustment. Refer to *VEHICLE STABILITY SYSTEM* subsection.

Adjust parking brake cable, refer to *PARKING BRAKE CABLE ADJUSTMENT* in this subsection.

BRAKE PAD

Brake Pad Inspection

Measure brake pad lining thickness.

BRAKE PAD THICKNESS	
Service Limit	1 mm (.04 in)

NOTICE **Brake pads must always be replaced in pairs.**

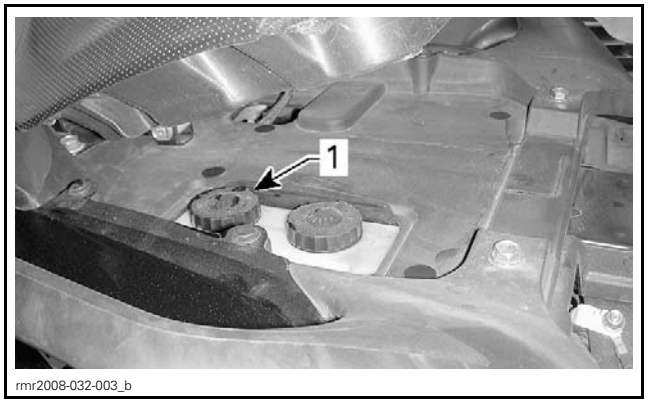
Front Brake Pad Replacement

Place the vehicle on a level surface.

Apply parking brake.

Lift seat.

Clean and remove the rear reservoir cap.



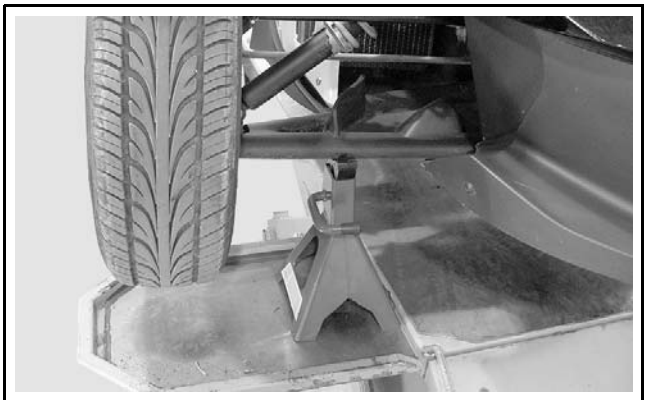
rmr2008-032-003_b

TYPICAL
1. Remove this cap

Loosen wheel lug nuts.

Lift the front of vehicle.

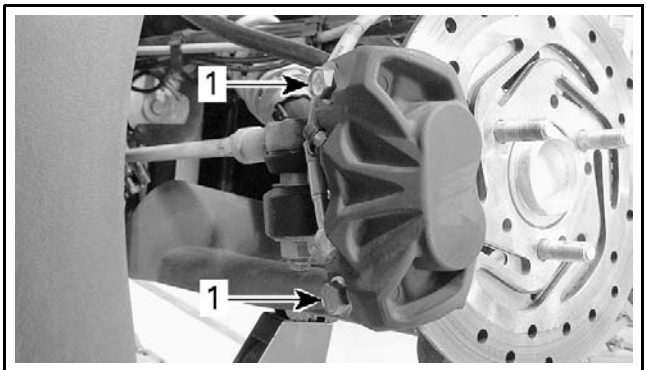
Support the vehicle securely on jack stands.


rmr2008-032-016

TYPICAL

Remove wheel.

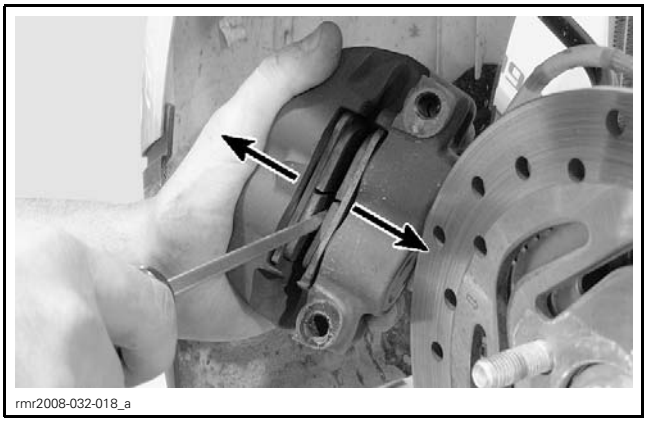
Remove and discard caliper screws.



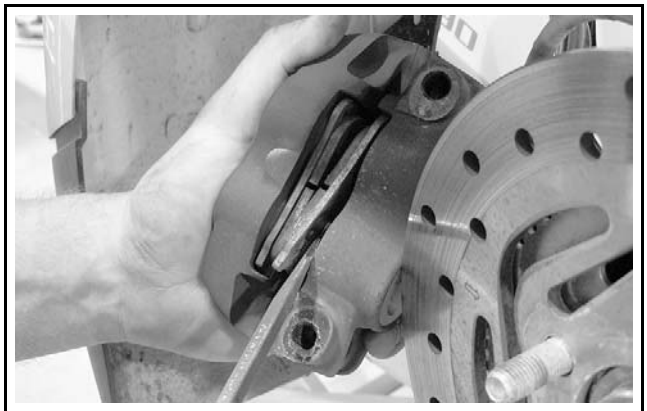
rmr2008-032-017_a

TYPICAL
1. Caliper screws

Using a flat screwdriver, depress pistons into their bores.

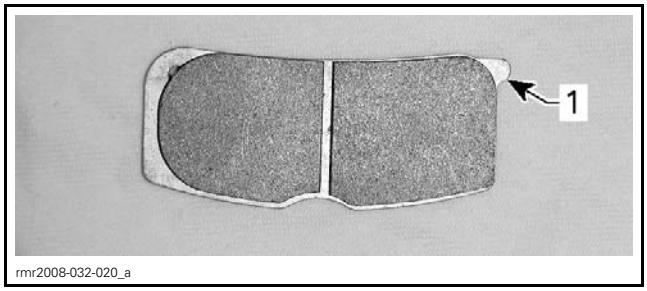

rmr2008-032-018_a

Remove brake pads.


rmr2008-032-019_a

Check the condition of pistons pins. Replace caliper as required.

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



rmr2008-032-020_a

1. Brake pad tab

Install caliper. Refer to *CALIPER* in this subsection.

Install wheel.

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

⚠ WARNING

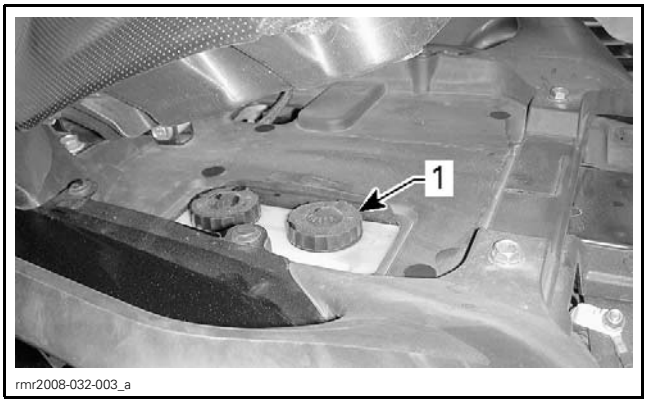
When installing new brake pads, always observe a break-in period of 300 km (200 mi). During this time, the brakes and the VSS will not operate at their maximum efficiency. You could lose control and crash – use extra caution.

Rear Brake Pad Replacement

Place vehicle on a level surface.

Lift seat.

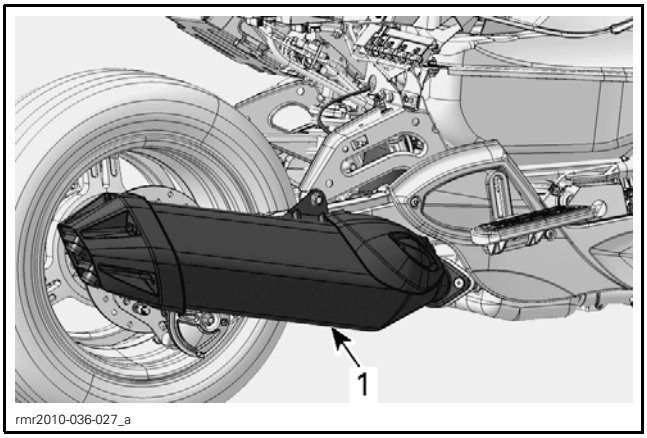
Clean and remove the front reservoir cap.



rmr2008-032-003_a

TYPICAL
1. *Remove this cap*

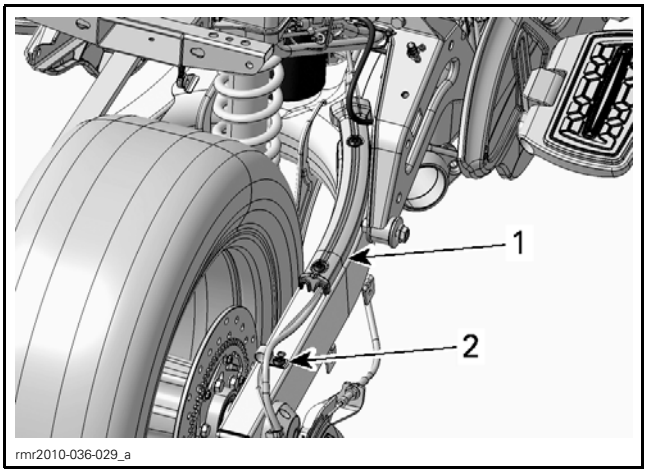
Remove muffler from swing arm.



rmr2010-036-027_a

1. *Muffler*

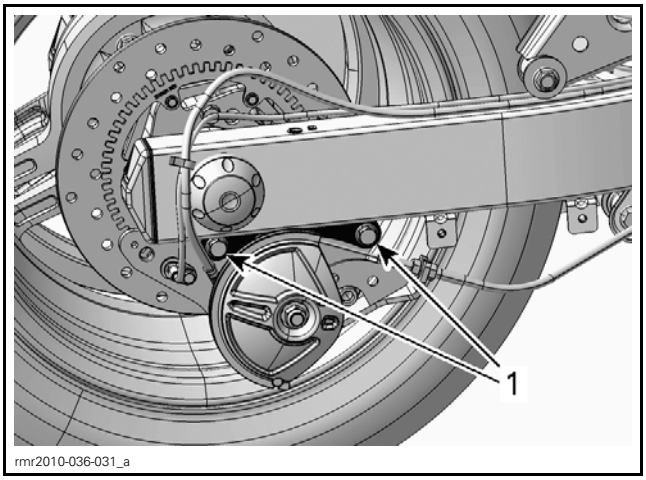
Remove cables protector and cables fastener from swing arm.



rmr2010-036-029_a

1. *Cables protector*
2. *Cables fastener*

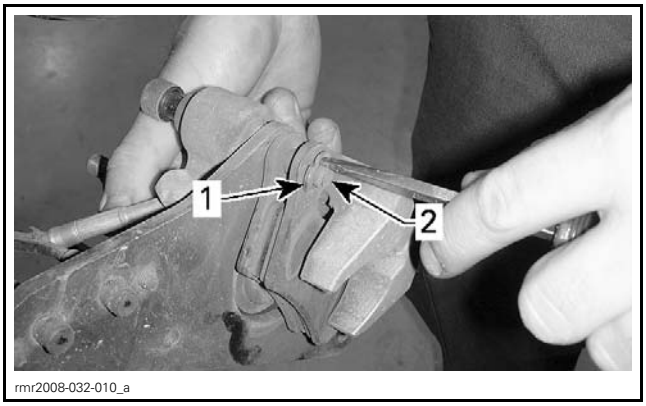
Remove and discard both caliper screws.



rmr2010-036-031_a

1. *Caliper screws*

Remove and discard circlips securing both brake pad pins.



rmr2008-032-010_a

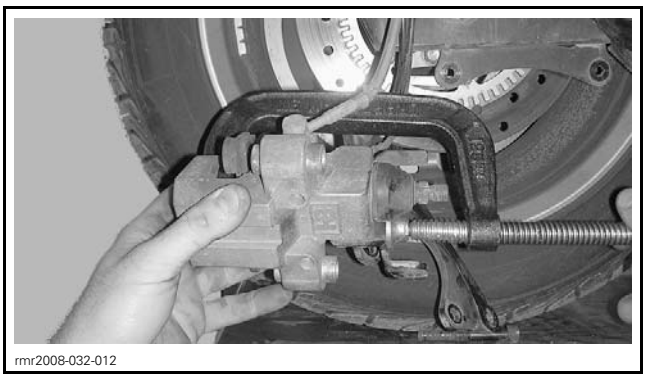
1. *Circlip*
2. *Brake pad pin*

Unscrew and remove brake pad pins.

Check brake pad pins for wear, replace as required.

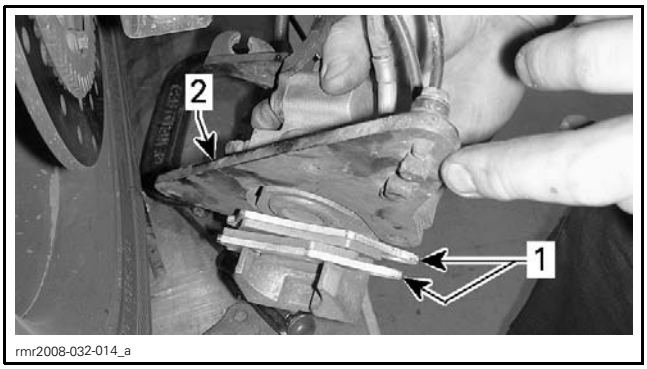
Remove wheel speed sensor bracket.

Use a C-clamp to push the piston into its bore to ease pad installation.


rmr2008-032-012

Remove and discard brake pads.

Install brake pads with the wheel speed sensor support.



rmr2008-032-014_a

1. New brake pads
2. Wheel speed sensor support

Apply LOCTITE 243 (BLUE) (P/N 293 800 060) on threads of brake pad pins.

NOTE: If new brake pad pins are used, the threads are coated with a self-locking product, do not apply Loctite 243 on threads.

Install brake pad pins. Do not tighten yet.

Install NEW circlips.

Install caliper with NEW screws.

Torque caliper screws to 25 N•m (18 lbf•ft).

Torque brake pad pins to 46 N•m (34 lbf•ft).

Apply brake a few times.

Check wheel speed sensor adjustment. Refer to *VEHICLE STABILITY SYSTEM* subsection.

Adjust parking brake cable, refer to *PARKING BRAKE CABLE ADJUSTMENT* in this subsection.

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

⚠ WARNING

When installing new brake pads, always observe a break-in period of 300 km (200 mi). During this time, the brakes and the VSS will not operate at their maximum efficiency. You could lose control and crash – use extra caution.

BRAKE DISC

Brake Disc Inspection

Measure the brake disc thickness.


rmr2008-032-030

FRONT BRAKE DISC


rmr2008-032-031

REAR BRAKE DISC

MINIMUM BRAKE DISC THICKNESS	
Front and rear	5.5 mm (.22 in)

Using a dial gauge, verify the brake disc warpage.

MAXIMUM BRAKE DISC WARPAGE	
Front and rear	0.12 mm (.004 in)

Brake Disc Removal

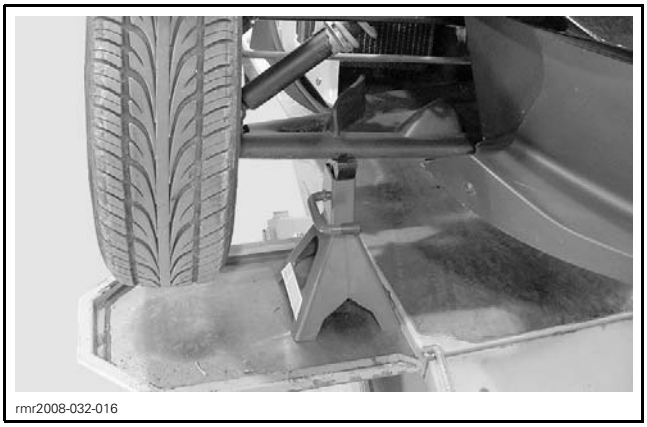
Front Brake Disc

Place vehicle on a level surface.

Loosen wheel lug nuts.

Lift the front of vehicle.

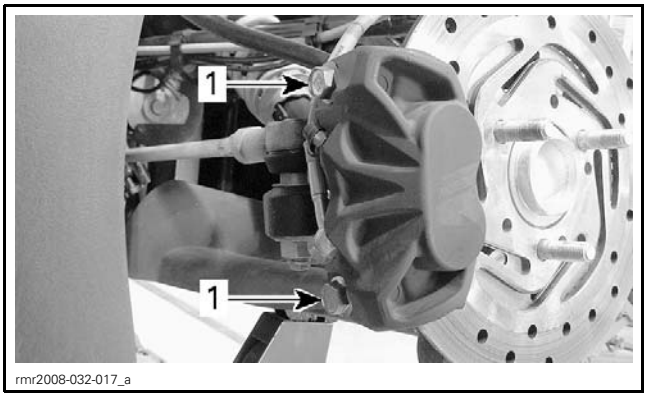
Support the vehicle securely on jack stands.


rmr2008-032-016

TYPICAL

Remove wheel.

Remove caliper screws.



rmr2008-032-017_a

TYPICAL
1. Caliper screws

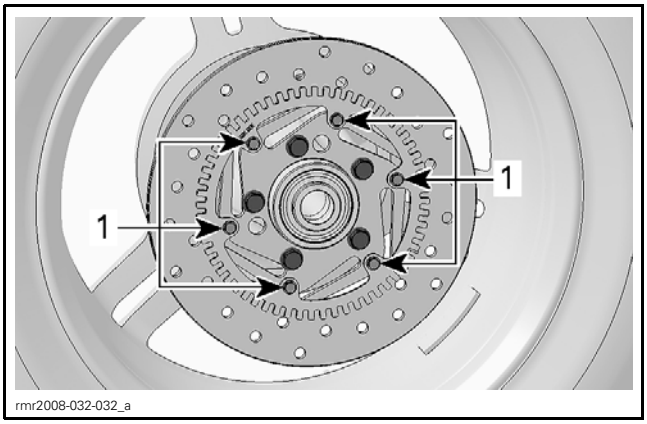
NOTICE **Do not let caliper hangs by the hose and do not stretch or twist the hose.**

Remove brake disc.

Rear Brake Disc

Remove rear wheel. Refer to *DRIVE BELT AND REAR WHEEL* subsection.

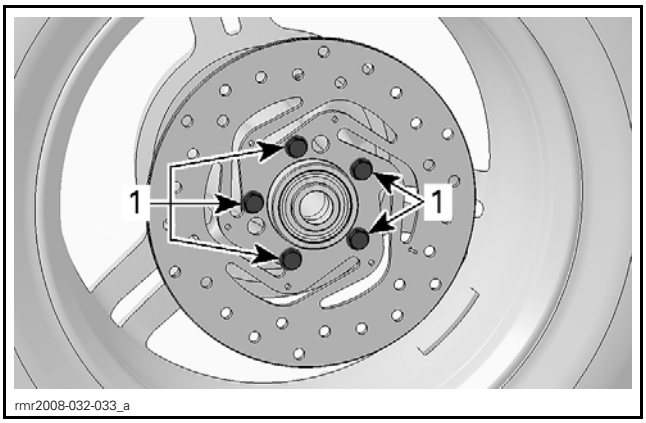
Remove encoder wheel by unscrewing encoder wheel screws. Discard screws.



rmr2008-032-032_a

1. Encoder wheel screws

Remove and discard brake disc screws.



rmr2008-032-033_a

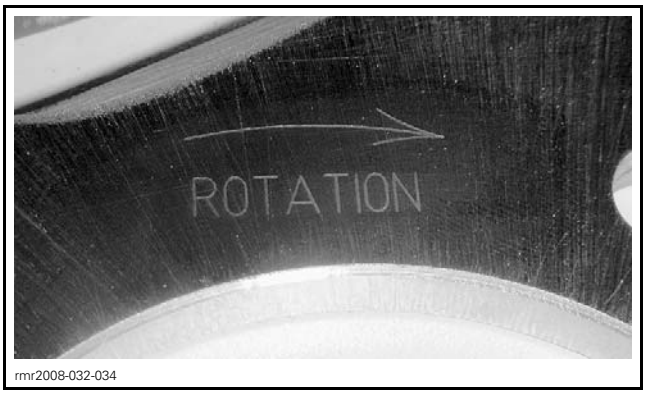
1. Brake disc screws

Remove brake disc.

Brake Disc Installation

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

Position the brake disk so that directional arrow points forward.



rmr2008-032-034

Front Brake Disc

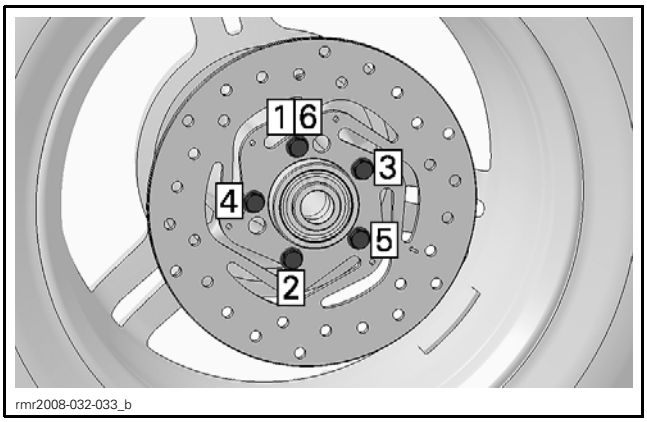
Install the encoder wheel before installing the brake disc.

NOTICE **Ensure encoder wheel is leaned against hub.**

Install all other removed parts.

Rear Brake Disc

Install and torque **NEW** brake disc screws to 25 N•m (18 lbf•ft) as per the following sequence.



rmr2008-032-033_b

Install *ENCODER WHEEL*, see procedure further in this subsection.

Install all other removed parts.

ENCODER WHEEL

Encoder Wheel Removal

Front Encoder Wheel

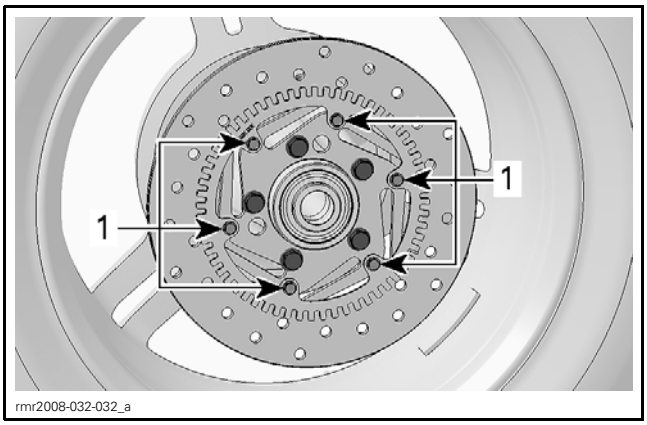
Remove appropriate *BRAKE DISC*, see procedure above in this subsection.

Pull encoder wheel to remove it.

Rear Encoder Wheel

Remove rear wheel. Refer to *DRIVE BELT AND REAR WHEEL* subsection.

Remove and discard encoder wheel screws.



rmr2008-032-032_a

1. Encoder wheel screws

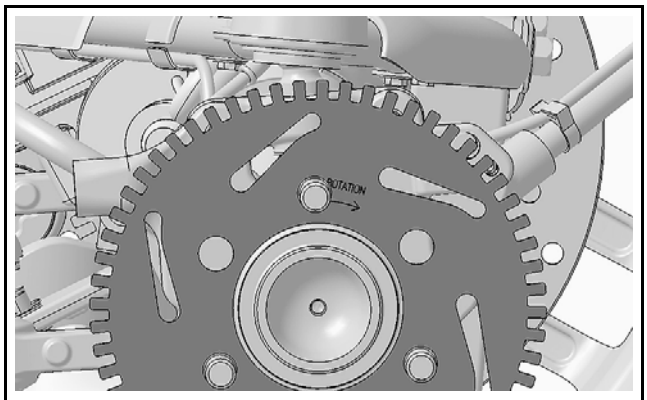
Encoder Wheel Inspection

Check if encoder wheel teeth are bent or otherwise damaged. Replace encoder wheel if necessary.

Encoder Wheel Installation

Front Encoder Wheels

Position the encoder wheel so that directional arrow points forward.



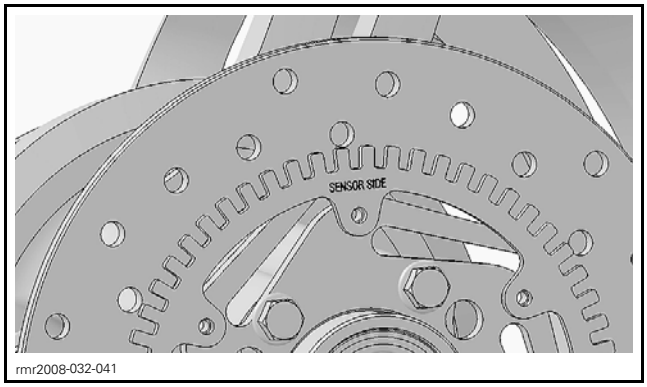
rmr2008-032-042

NOTICE Ensure encoder wheel is leaned against hub.

Install all other removed parts.

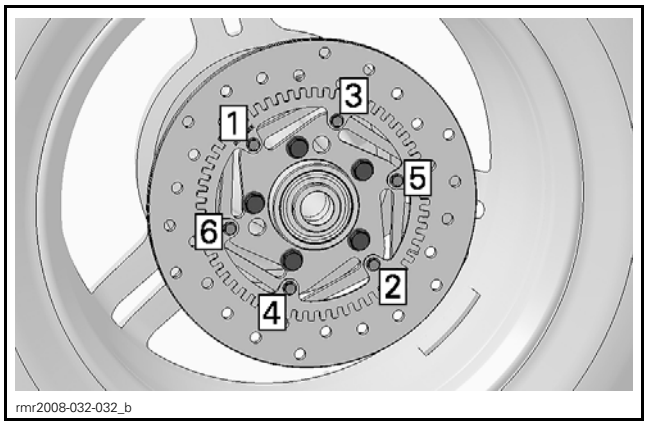
Rear Encoder Wheel

Position the encoder wheel with the inscription SENSOR SIDE facing outward.



rmr2008-032-041

Install and torque **NEW** encoder wheel screws to 5 N•m (44 lbf•**in**) as per the following sequence.



rmr2008-032-032_b

Install rear wheel.

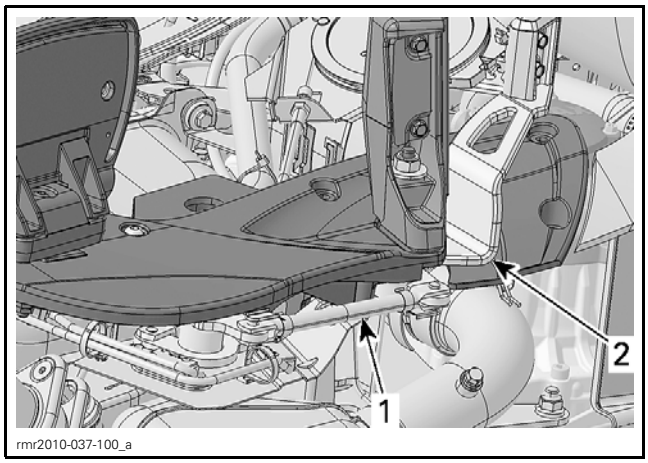
BRAKE PEDAL

Brake Pedal Removal

Remove body parts as required to access to the following components. Refer to *BODY* subsection.

– Brake pedal
– Master cylinder.

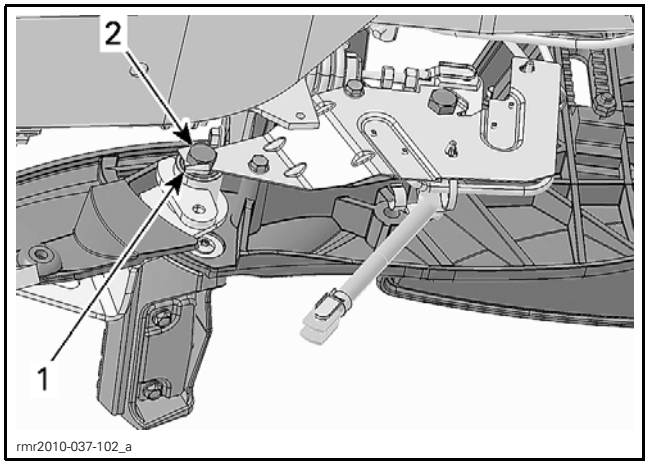
Unhook connecting rod from brake pedal.



1. Connecting rod
2. Brake pedal

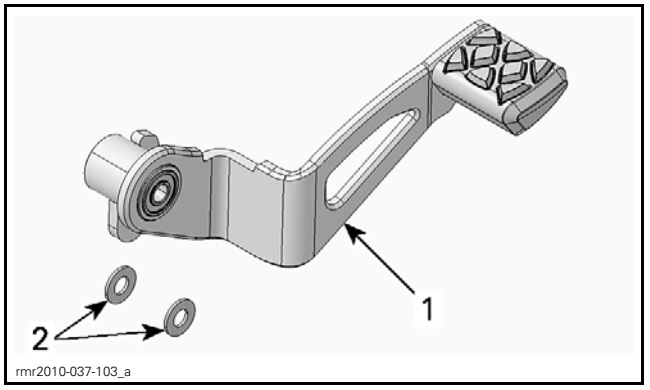
From the LH side, underneath vehicle:

– Unfold tab
– Remove and discard brake pedal bolt.



1. Tab
2. Brake pedal bolt

Remove brake pedal and both washers.

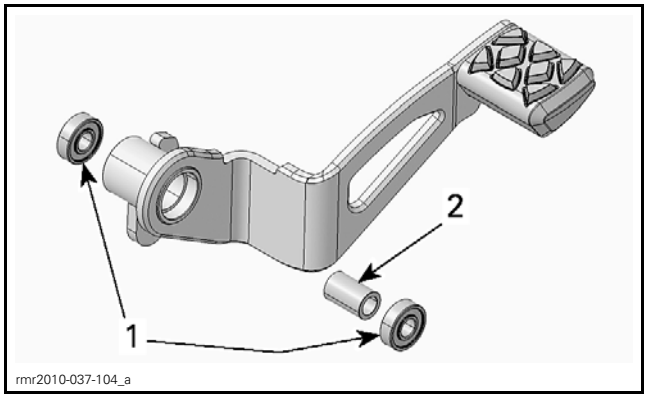


1. Brake pedal
2. Both washers

Brake Pedal Disassembly

Remove and discard brake pedal bearings using the BLIND HOLE BEARING PULLER SET (P/N 529 036 117).

Remove brake pedal sleeve.



1. Brake pedal bearings
2. Brake pedal sleeve

Brake Pedal Assembly

Assembly is the reverse of the disassembly procedure.

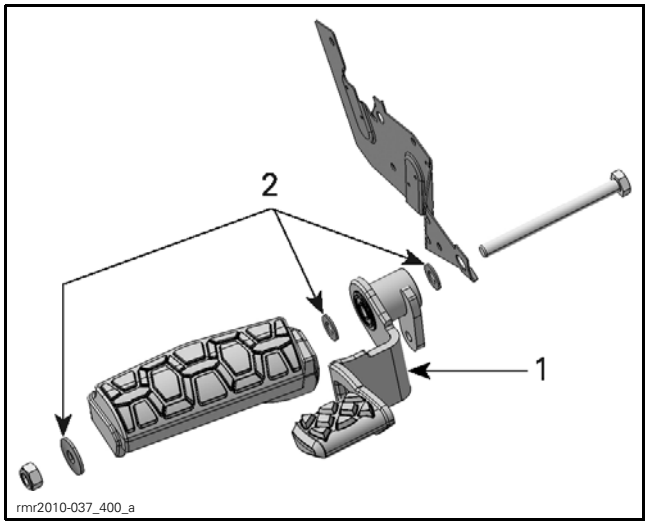
NOTE: When assembly brake pedal, always use NEW bearings.

Brake Pedal Installation

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

Install brake pedal using a NEW brake pedal bolt.

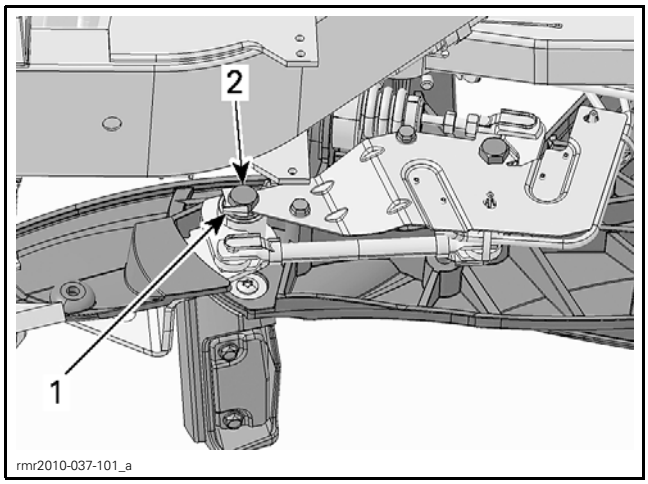
Make sure to install washers as per the following illustration.



1. Brake pedal
2. Washers

Tighten brake pedal bolt to 48 N•m (35 lbf•ft).

Fold either tabs against a flat side of brake pedal bolt head.



1. Folded Tab
2. Brake pedal bolt

Each time brake pedal is re-installed, the adjustment of the master cylinder rod is necessary. Refer to *MASTER CYLINDER ROD*.

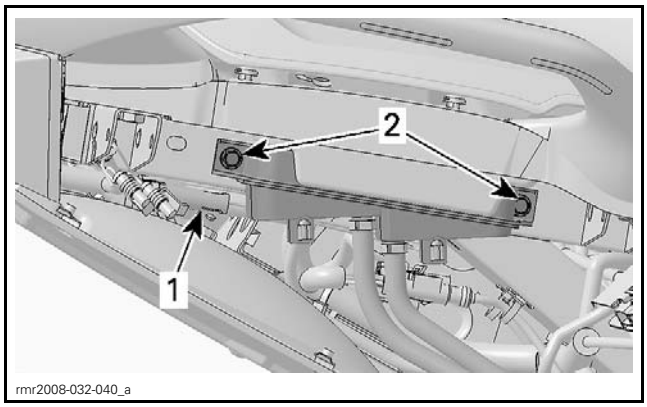
BRAKE FLUID RESERVOIR

Brake Fluid Reservoir Removal

Remove body parts as required to access to the brake fluid reservoir. Refer to *BODY* subsection.

Unplug brake fluid level sensor connectors.

Remove reservoir screws.



TYPICAL
1. Sensors connector
2. Reservoir screws

Remove reservoir caps.

Empty reservoir as much as possible.

Cut Oetiker clamps and disconnect hoses.

Brake Fluid Reservoir Installation

Connect hoses with NEW Oetiker clamps.

Install reservoir on frame.

Plug brake fluid level sensors.

Fill up reservoir with recommended brake fluid and bleed brake system. Refer to *BRAKE FLUID* in this subsection.

Install all other removed parts.

DUAL MASTER CYLINDER

Dual Master Cylinder Removal

Remove body parts as required to access to the following components. Refer to *BODY* subsection.

– Master cylinder
– Brake fluid reservoir.

Cut locking ties securing brake fluid reservoir hoses to frame.

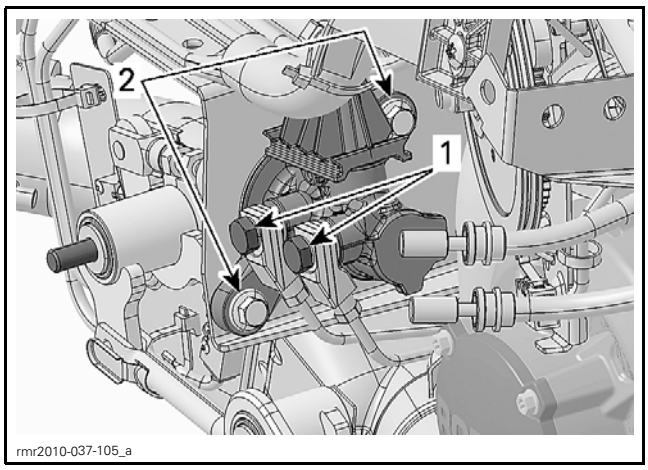
Place a container under master cylinder to catch brake fluid.

Loosen Banjo fittings retaining metal brake lines to master cylinder.

Apply on brake pedal to empty the brake fluid reservoir and the dual master cylinder.

Remove Banjo fittings and discard sealing washers.

Remove and discard master cylinder screws.



SOME PARTS REMOVED FOR CLARITY
1. *Banjo fittings*
2. *Master cylinder screws*

Unscrew brake fluid reservoir screws.

Unplug brake fluid level sensor connectors.

Remove master cylinder by moving it toward the front.

Cut Oetiker clamps and remove reservoir hoses from master cylinder.

Dual Master Cylinder Inspection

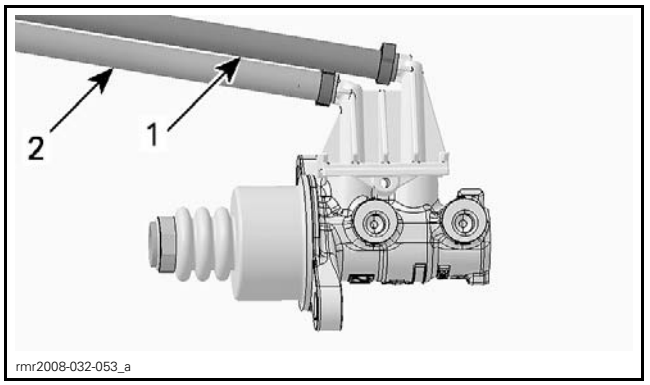
Check bellows for cracks or other damages. Replace bellows as necessary.

Check if the master cylinder plunger is not stuck by pushing it on. Replace master cylinder if necessary.

Dual Master Cylinder Installation

NOTICE During installation, ensure all parts are cleaned to avoid brake system contamination.

Install reservoir hoses with NEW Oetiker clamps.



1. *From the front brake fluid reservoir*
2. *From the rear brake fluid reservoir*

Install dual master cylinder using 2 NEW master cylinder screws.

Torque master cylinder screws to 25 N•m (18 lbf•ft).

Install metal brake lines on master cylinder with NEW sealing washers.

Tighten Banjo fitting to 28 N•m (21 lbf•ft).

Install brake fluid reservoir.

Plug brake fluid level sensors.

Bleed complete brake system. Refer to *BRAKE FLUID BLEEDING PROCEDURE (COMPLETE SYSTEM)* at the beginning of this subsection.

Install all other removed parts.

MASTER CYLINDER ROD

Master Cylinder Rod Adjustment

⚠ WARNING

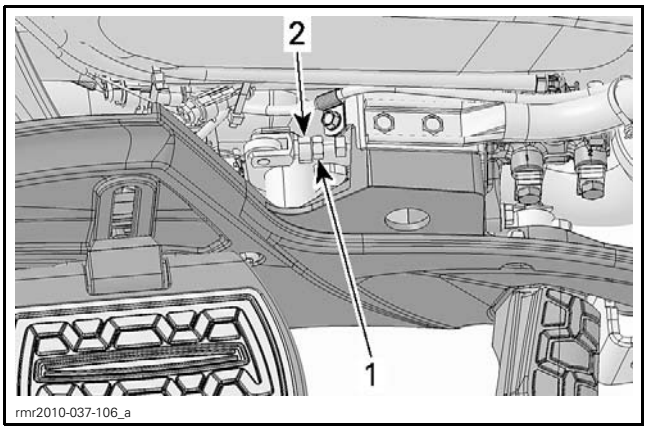
This adjustment is necessary to calibrate the dual master cylinder and avoid braking system malfunction.

The adjustment of master cylinder rod must be performed when one of the following items is replaced or removed:
- Brake pedal
- Brake pedal stop
- RH footrest support
- Master cylinder rod
- Hook at the end of master cylinder rod
- Connecting rod.

Remove dual master cylinder. Refer to *DUAL MASTER CYLINDER* in this subsection.

Unscrew the nut locking the master cylinder rod.

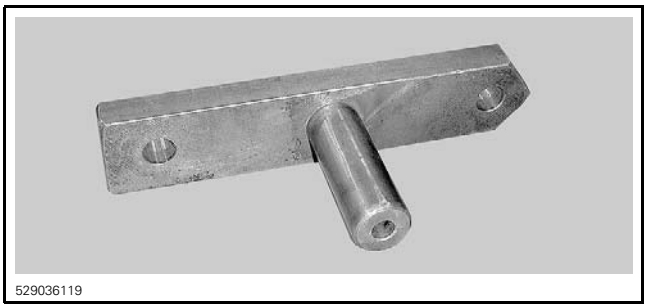
Tighten master cylinder rod into hook.

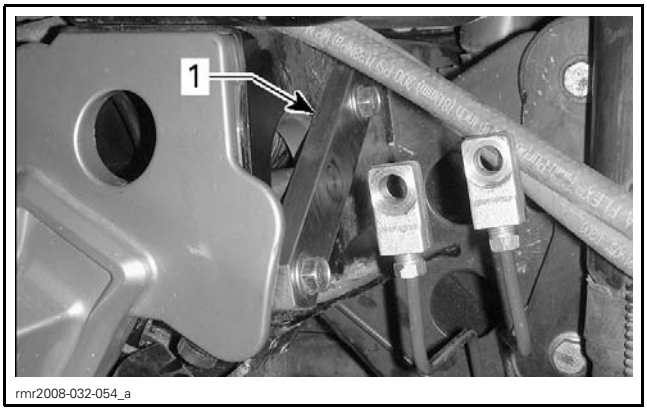


rmr2010-037-106_a

1. Locking nut
2. Hook

Install the MASTER CYLINDER ROD ADJUSTER (P/N 529 036 119) instead of dual master cylinder. Position the end of rod inside tool.


529036119



rmr2008-032-054_a

TYPICAL
1. Master cylinder rod adjuster

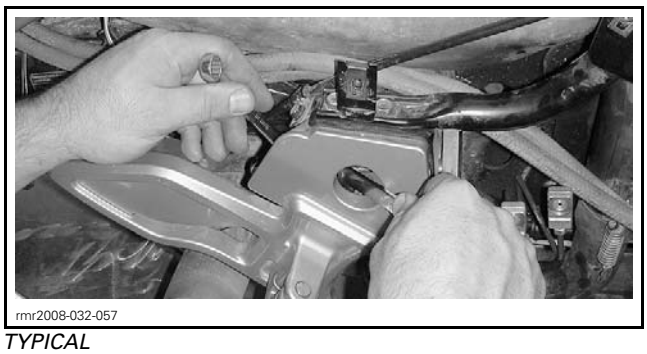
Ensure brake pedal leans against its rubber stop. Hold brake pedal in this position.

Adjust the rod position until it just touches the inside of the adjuster hole without compressing rubber stop.


rmr2008-032-055

TYPICAL

Using two wrenches, hold the master cylinder rod and tighten lock nut. Ensure rod does not turn.


rmr2008-032-057

TYPICAL

Remove tool and install the dual master cylinder. Refer to *DUAL MASTER CYLINDER* in this subsection.

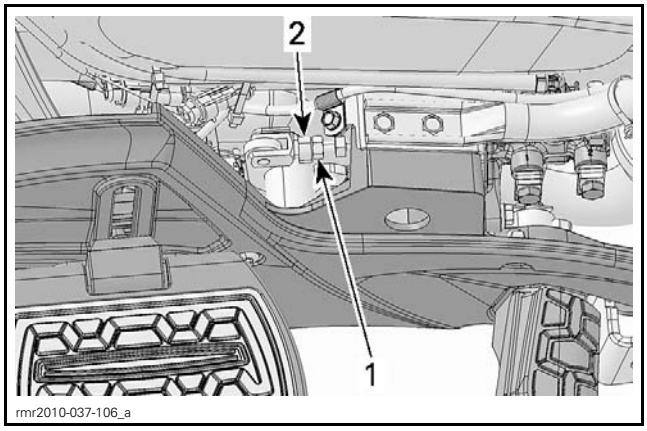
Attach reservoir hoses with new locking ties.

Master Cylinder Rod Removal

Remove body parts as required to access to the master cylinder. Refer to *BODY* subsection.

Loosen lock nut.

Remove hook lock.

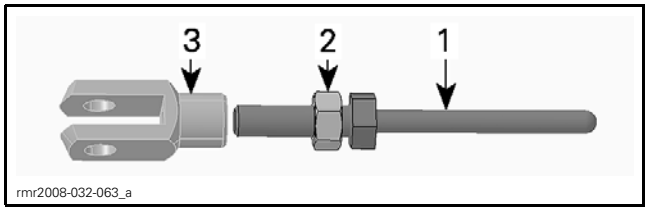


rmr2010-037-106_a

1. Lock nut
2. Hook lock

Remove master cylinder rod from vehicle by moving it toward the rear.

Unscrew clevis from master cylinder rod.



1. *Master cylinder rod*
2. *Lock nut*
3. *Clevis*

Master Cylinder Rod Installation

Completely screw the clevis on master cylinder rod.

Secure clevis to brake pedal using the clevis lock.

Adjust master cylinder rod, refer to *MASTER CYLINDER ROD ADJUSTMENT*.

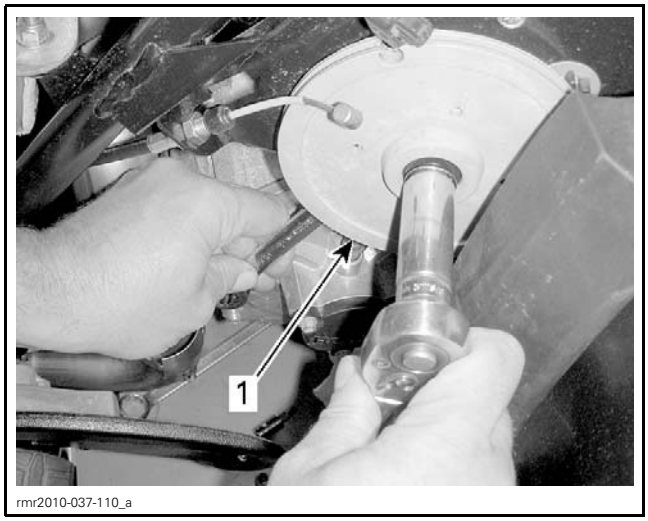
PARKING BRAKE FRONT PULLEY

Parking Brake Front Pulley Removal

Remove body parts as required to access to the parking brake front pulley. Refer to *BODY* subsection.

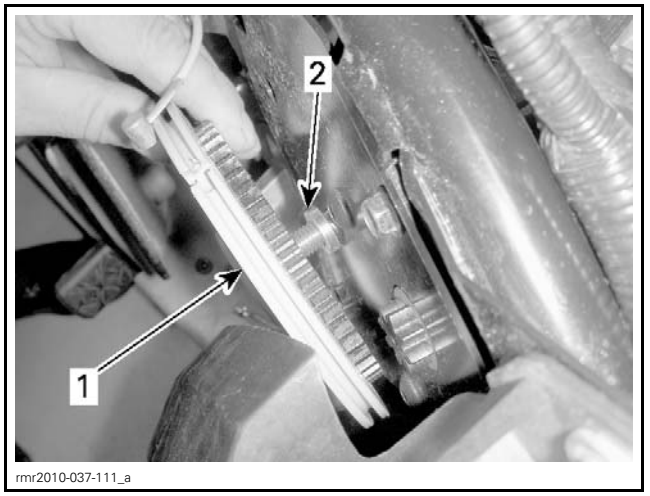
Detach parking brake cable from pulleys, refer to *PARKING BRAKE CABLE REMOVAL* in this subsection.

Remove front pulley retaining nut.



1. *Front pulley*

Carefully pull front pulley toward the outside then remove spacer.

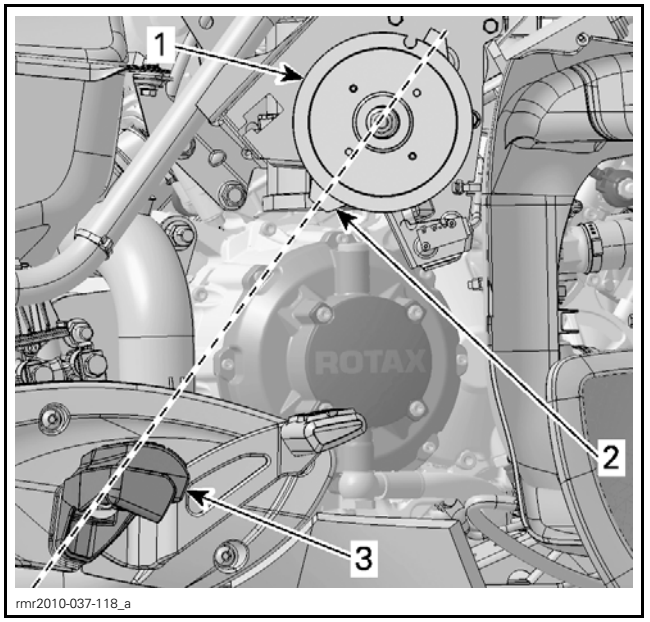


1. *Front pulley*
2. *Spacer*

Parking Brake Front Pulley Installation

Install spacer on front pulley retaining bolt.

Install front pulley with the lower pulley stopper positioned toward driver footpeg, refer to illustration.



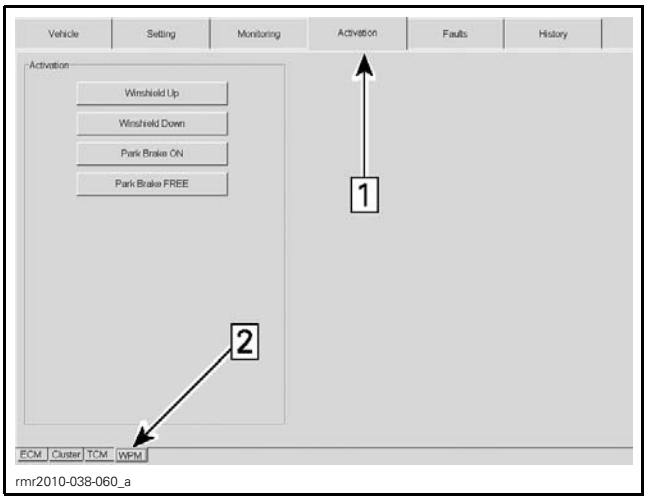
1. *Front pulley*
2. *Lower pulley stopper*
3. *Driver footpeg*

Install and tighten retaining nut to secure front pulley.

Connect vehicle to B.U.D.S. Refer to *COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE* subsection.

Select **Activation** page.

Select **WPM** folder.



Step 1: Activation page
Step 2: WPM folder

Press **Park Brake FREE** button to set pulley at its reference position.

Attach parking brake cable on front pulley.

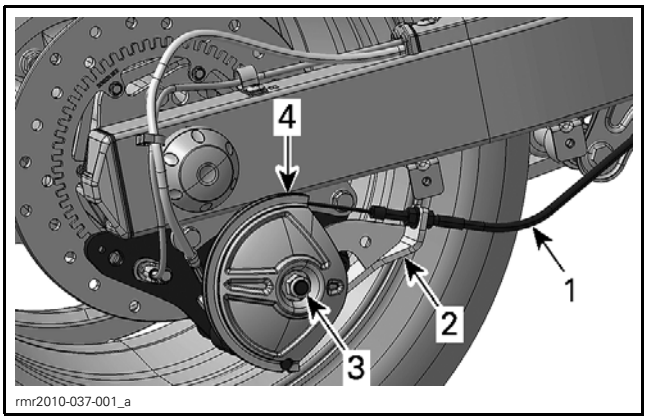
Adjust parking brake cable, refer to *PARKING BRAKE CABLE ADJUSTMENT* in this subsection.

PARKING BRAKE REAR PULLEY

Parking Brake Rear Pulley Removal

Detach parking brake cable from pulleys, refer to *PARKING BRAKE CABLE REMOVAL* in this subsection.

Remove parking brake rear pulley and its spring by unscrewing the retaining nut.



1. *Parking brake cable*
2. *Parking brake support*
3. *Parking brake rear pulley nut*
4. *Parking brake rear pulley*

Parking Brake Rear Pulley Installation

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

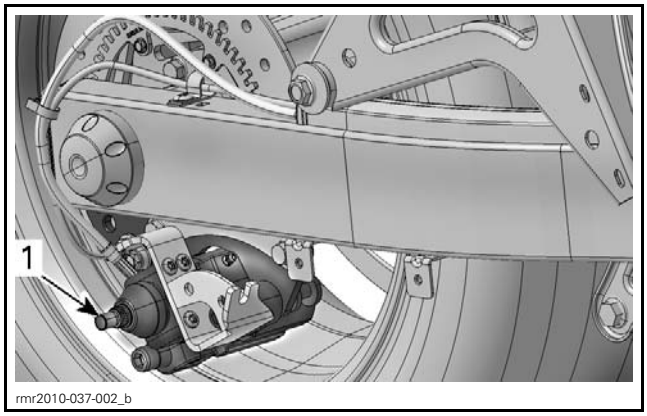
Adjust parking brake cable, refer to *PARKING BRAKE CABLE ADJUSTMENT* in this subsection.

PARKING BRAKE CABLE

Parking Brake Cable Adjustment

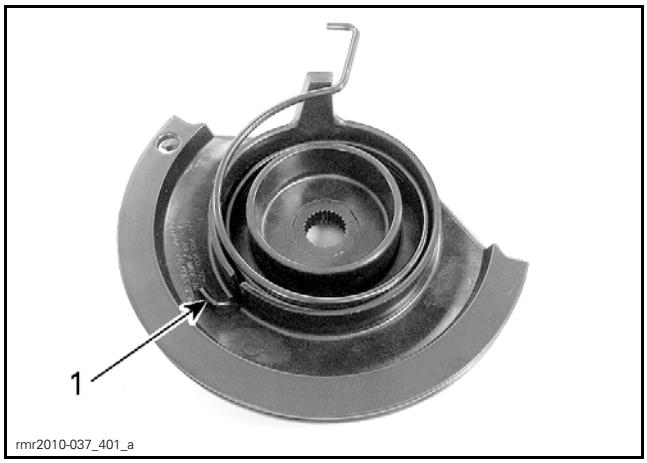
Remove parking brake rear pulley. Refer to *PARKING BRAKE REAR PULLEY* in this subsection.

Turn actuator clockwise to lean piston against pad, do not force the actuator.



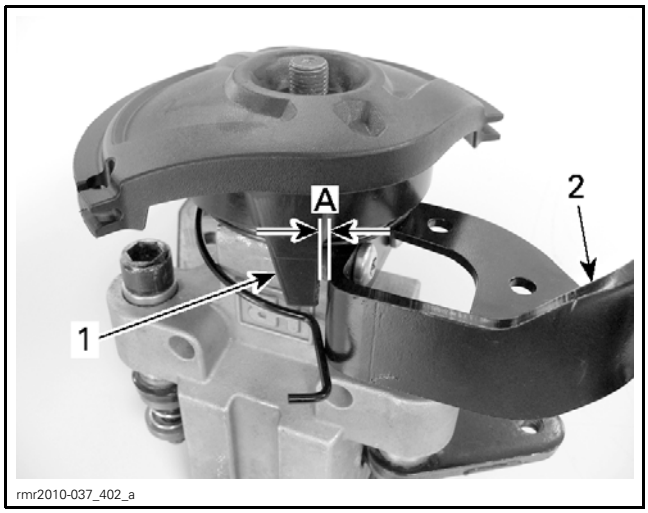
1. *Actuator*

Install spring in rear pulley groove.



1. *Spring installed in groove*

Install rear pulley with its stopper positioned against parking brake support.



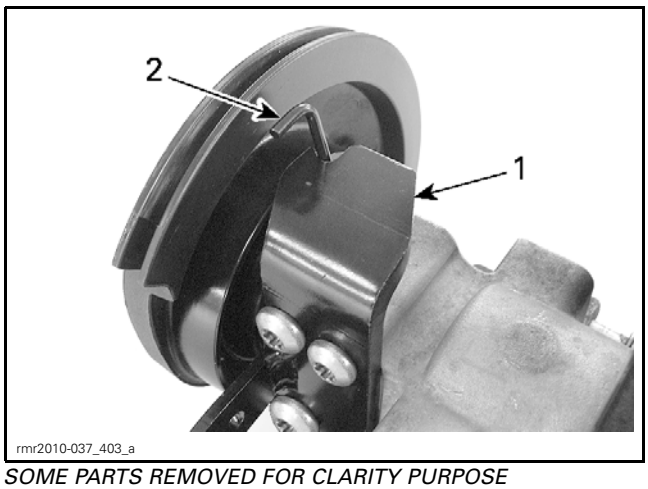
SOME PARTS REMOVED FOR CLARITY PURPOSE
1. *Rear pulley stopper*
2. *Parking brake support*

A. 1 mm to 3 mm (.039 in to .118 in)

NOTE: If adjustment cannot be obtained, remove rear pulley and move it one spline at a time until proper adjustment is obtained.

Install rear pulley retaining nut by hand, do not torque it for the moment.

Load rear pulley spring in the upper groove of parking brake support.



SOME PARTS REMOVED FOR CLARITY PURPOSE
1. *Parking brake support*
2. *Spring*

Torque rear pulley retaining nut to 46 N•m (34 lbf•ft).

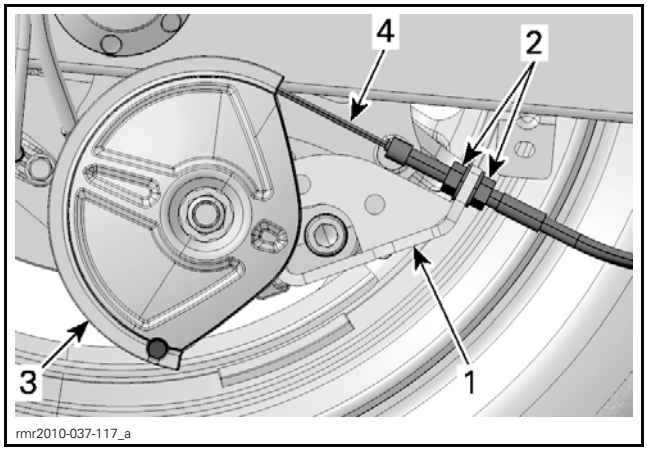
Hook cable on rear pulley.

Attach cable on parking brake support.

Adjust cable retaining nuts in order to generate a tension on the cable.

NOTE: The rear pulley rotates slightly clockwise when the proper adjustment is obtained.

Torque retaining nuts on the parking brake support to 12 N•m (106 lbf•**in**).



1. *Parking brake support*
2. *Retaining nuts*
3. *Rear pulley*
4. *Must be tensioned*

⚠ WARNING

Ensure parking brake cable is properly tensioned between both pulleys.

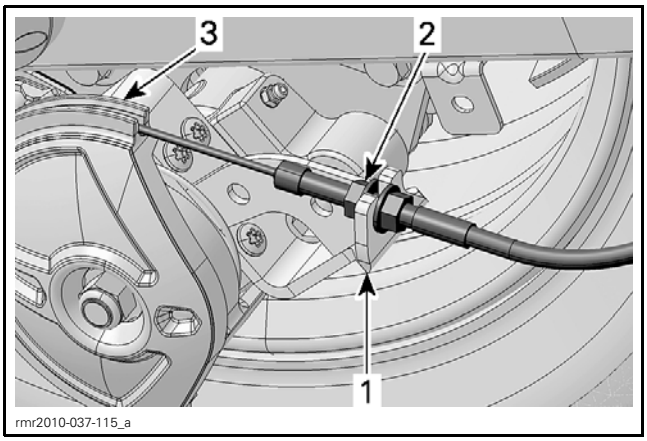
Apply and release the parking brake a few times to ensure normal operation of the mechanism.

Parking Brake Cable Removal

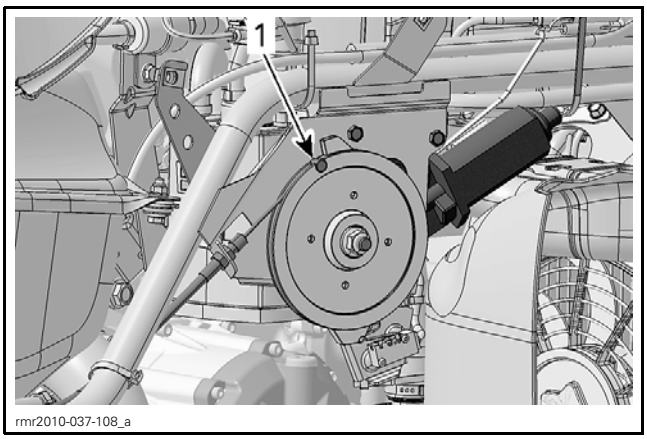
Remove body parts as required to access to the parking brake cable. Refer to *BODY* subsection.

Detach parking brake cable from pulleys as follows:

– Ensure parking brake is released.
– Unscrew nut securing parking brake cable on parking brake support.
– Remove cable from parking brake support.
– Unhook cable from rear pulley.
– Unhook cable from front pulley.

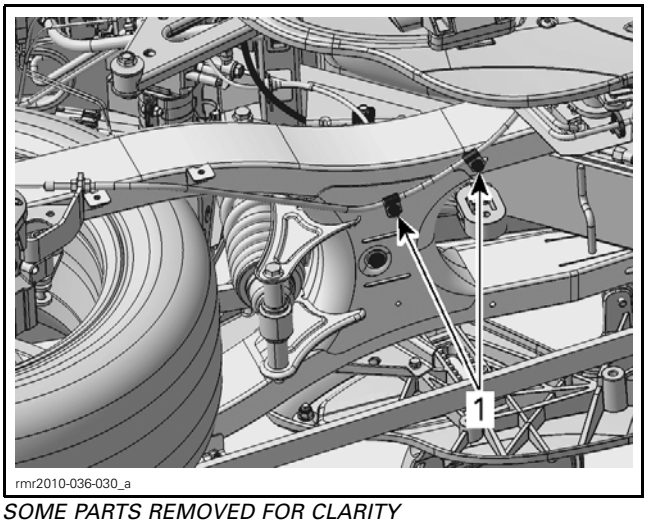


1. *Parking brake support*
2. *Nut securing cable to parking brake support*
3. *Rear pulley*



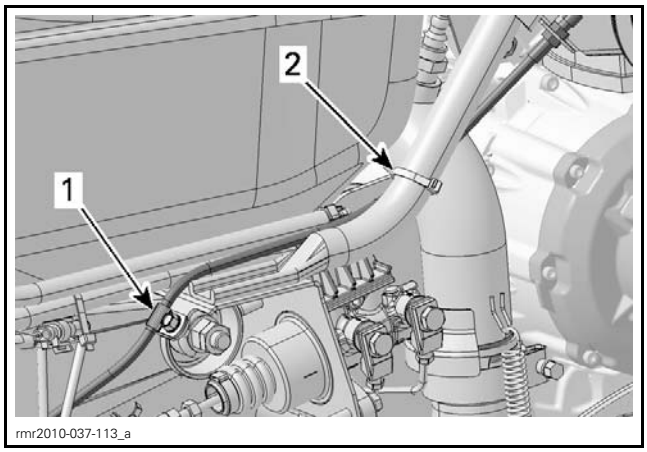
FRONT PULLEY
1. *Parking brake cable*

From underneath swing arm, remove parking brake cable fasteners.



SOME PARTS REMOVED FOR CLARITY
1. *Parking brake cable fasteners*

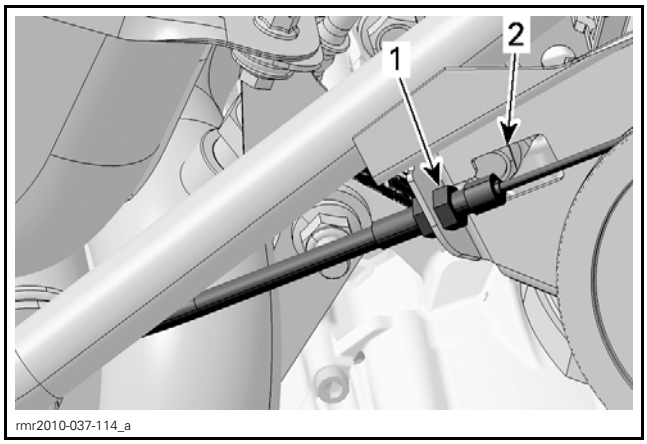
From RH side of vehicle, remove cable fastener and locking tie securing parking brake cable.



SOME PARTS REMOVED FOR CLARITY
1. *Parking brake cable fastener*
2. *Locking tie*

Unscrew nut securing parking brake cable on the upper support.

Remove cable from the upper support by passing it through the hole.



1. *Nut securing cable to support*
2. *Hole to remove cable*

Remove cable from vehicle.

Parking Brake Cable Installation

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

Align white lines on the cable with cable fasteners on swing arm.

Adjust parking brake cable, refer to *PARKING BRAKE CABLE ADJUSTMENT* in this subsection.

PARKING BRAKE MOTOR

Parking Brake Operation

To apply parking brake, press parking brake switch (PBS) down.

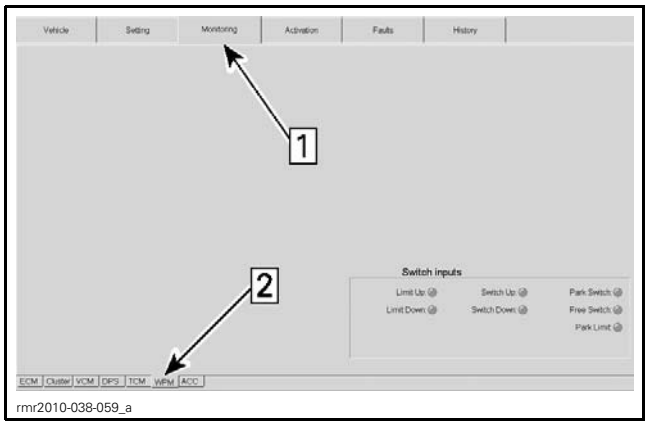
To release parking brake, press PBS switch down until brake indicator lamp turns OFF.

The parking brake cannot be activated while the vehicle is moving faster than 10 km/h (6 MPH).

Parking Brake Motor Monitoring (With B.U.D.S.)

To monitor parking brake motor during troubleshooting operation, proceed as follows:

1. Connect vehicle to B.U.D.S.. Refer to *COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE* subsection.
2. Select **Monitoring** page.
3. Select **WPM** folder.



Step 1: Select monitoring
Step 2: Select WPM

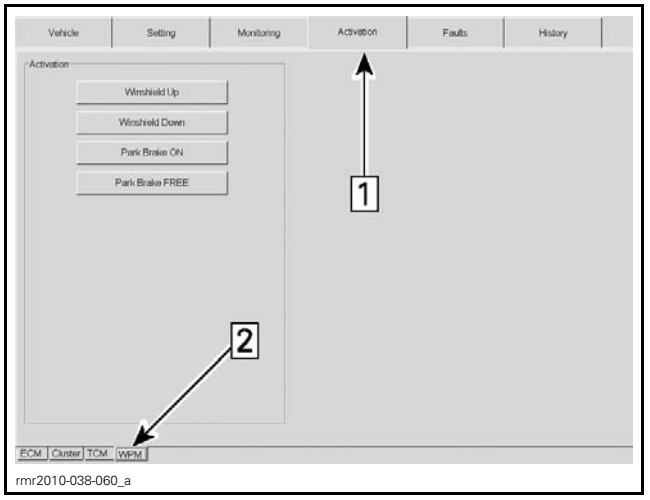
4. Press parking brake switch (PBS) on vehicle.

PARKING BRAKE SWITCH (PBS)

5. Check proper operation in B.U.D.S.

Parking Brake Motor Operation Test

1. Connect vehicle to B.U.D.S.. Refer to *COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE* subsection.
2. Select **Activation** page.
3. Select **WPM** folder.



Step 1: Activation page
Step 2: WPM folder

4. Press **Park Brake ON** button.
5. Verify if parking brake motor works properly to apply parking brake.

If parking brake works, go to step 6.

If parking brake motor does not work:

– Check input voltage at motor (PIN-1), refer to the *WIRING DIAGRAM*.
– Check ground circuit continuity at motor (PIN-2), refer to the *WIRING DIAGRAM*.
– Check connector and terminal condition.

6. Press **Park Brake FREE** button.
7. Verify if parking brake motor works properly to release parking brake.

If parking brake motor does not work:

– Check input voltage at motor (PIN-2), refer to the *WIRING DIAGRAM*.
– Check ground circuit continuity at motor (PIN-1), refer to the *WIRING DIAGRAM*.
– Check connector and terminal condition.

If the fault is not found after having carried out the previous tests:

– Test motor operation by connecting it directly to the battery posts.
  - If motor works properly, test module, refer to *PARKING BRAKE MODULE (WPM)* in this subsection.
  - If motor does not work properly, replace motor.

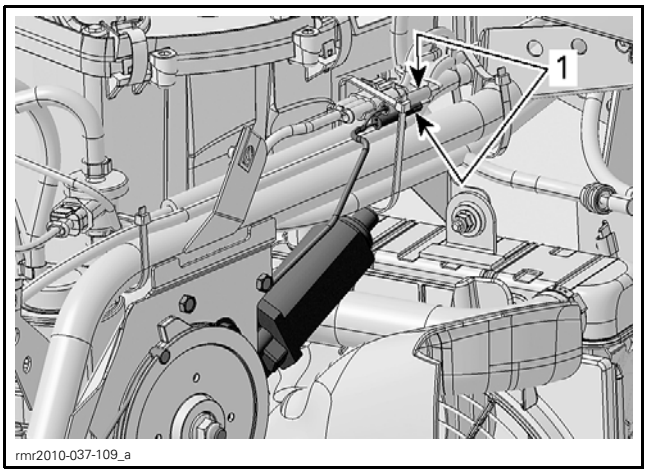
NOTICE **Do not power motor directly with the battery for a long period. Apply voltage quickly to ensure that the motor will not overheat at the end of its stroke.**

Parking Brake Motor Removal

Remove body parts as required to access to the parking brake motor. Refer to *BODY* subsection.

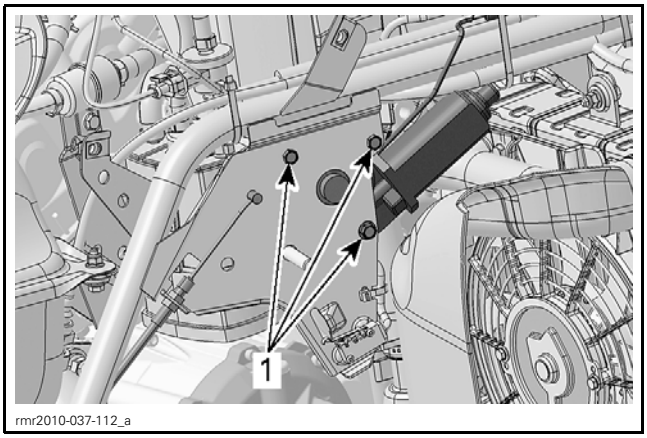
Remove parking brake front pulley, refer to *PARKING BRAKE FRONT PULLEY REMOVAL* in this subsection.

Disconnect parking brake motor connectors.



1. Parking brake motor connectors

Remove retaining bolts and nuts of parking brake motor.



1. Motor retaining bolts

Remove motor from vehicle by pulling it upwards.

Parking Brake Motor Installation

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

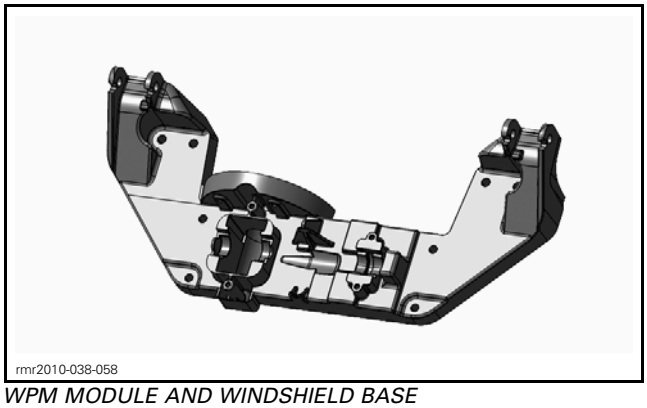
Install parking brake front pulley, refer to *PARKING BRAKE FRONT PULLEY INSTALLATION* in this subsection.

Adjust parking brake cable, refer to *PARKING BRAKE CABLE ADJUSTMENT* in this subsection.

PARKING BRAKE MODULE (WPM)

NOTE: WPM module has 2 functions, it controls windshield and parking brake. The WPM module is integrated into the windshield base.

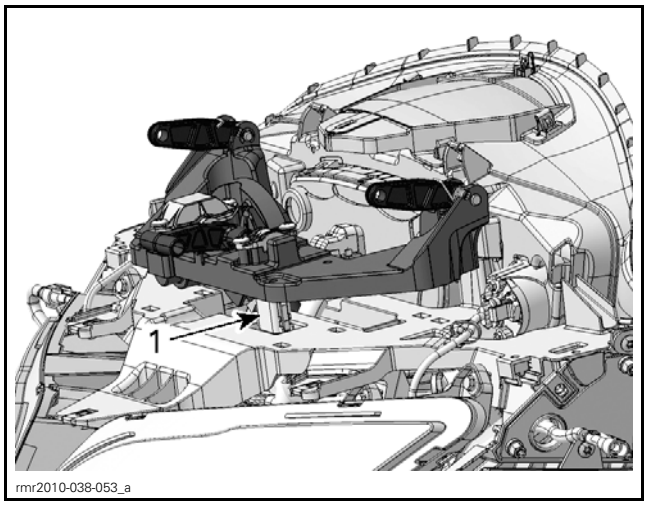
For troubleshooting and removal procedures relating to the WPM module, refer to *WINDSHIELD MODULE (WPM)* in *BODY* subsection.



WPM MODULE AND WINDSHIELD BASE

WPM Module Signal Circuit Continuity Test

1. Remove body parts as required to access to the WPM module. Refer to *WPM MODULE REMOVAL* in *BODY* subsection.
2. Disconnect WPM module connector.



1. WPM module connector

3. Disconnect parking brake switch (PBS) connector. Refer to *PARKING BRAKE SWITCH (PBS)* in this subsection.
4. Set the FLUKE 115 MULTIMETER (P/N 529 035 868) to Ω.
5. Measure resistance as per the following tables.

TEST PROBES	RESISTANCE
PBS switch connector pin 2 (YL/LT GN)	Close to 0 Ω
WPM module connector pin 10 (YL/LT GN)	

TEST PROBES	RESISTANCE
PBS switch connector pin 3 (LT BU/GN)	Close to 0 Ω
WPM module connector pin 1 (LT BU/GN)	

TEST PROBES	RESISTANCE
PBS switch connector pin 1 (GY/OR)	Close to 0 Ω
WPM module connector pin 12 (GY/OR)	

If results are not as per the previous tables:
- Check connector and terminal condition.
- Repair open circuit in wiring.

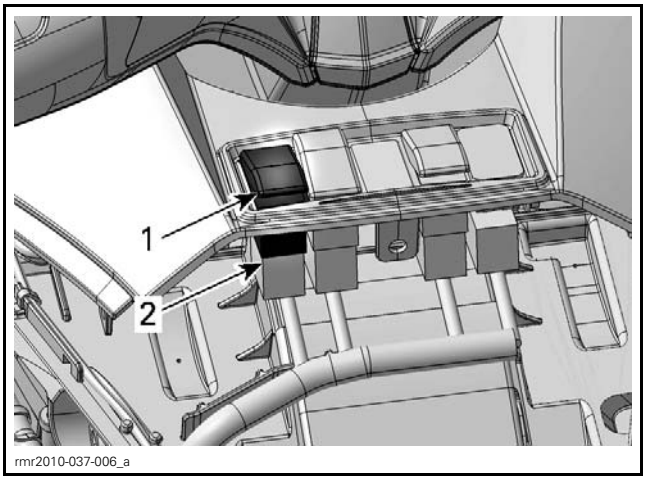
If the fault is not found after having carried out the previous operations:
- Test PBS switch, refer to *PARKING BRAKE SWITCH (PBS)* in this subsection.
- Check input voltage at WPM module (PIN-5), refer to the *WIRING DIAGRAM*.
- Check ground circuit continuity at WPM module (PIN-7), refer to the *WIRING DIAGRAM*.
- Test HBS switch, refer to *PARKING BRAKE LIGHT SWITCH (HBS)* in this subsection.
- Check wiring continuity between HBS switch (PIN-1) and WPM module (PIN-3), refer to the *WIRING DIAGRAM*.

If the fault is still not found:
- Replace WPM module.

PARKING BRAKE SWITCH (PBS)

Parking Brake Switch Test

Remove central panel. Refer to *BODY* subsection.



rmr2010-037-006_a

1. Parking brake switch
2. Parking brake switch connector

Check switch operation as follows.

PARKING BRAKE SWITCH POSITION	PIN		RESISTANCE
Firmly pushed	2	3	Close to 0 Ω
Released (FREE)			Infinite (OL)

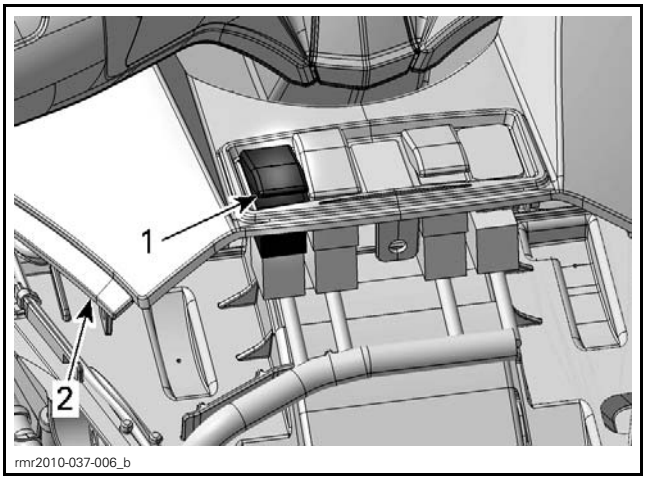
PARKING BRAKE SWITCH POSITION	PIN		RESISTANCE
Firmly pushed	1	2	Infinite (OL)
Released (FREE)			Close to 0 Ω

If switch is defective, replace it with a new one.

Parking Brake Switch Replacement

Remove central panel. Refer to *BODY* subsection.

Remove parking brake switch from central panel by pushing tabs.



rmr2010-037-006_b

1. Parking brake switch
2. Central panel

Install a NEW switch on console.

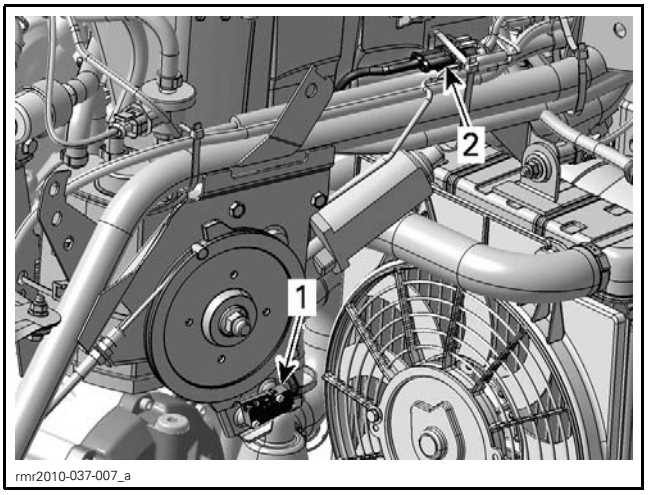
Re-install central panel as the reverse of removal procedure.

PARKING BRAKE LIGHT SWITCH (HBS)

Parking Brake Light Switch Test

Remove body parts as required to access to the parking brake light switch. Refer to *BODY* subsection.

Unplug parking brake light switch connector.



rmr2010-037-007_a

1. Parking brake light switch
2. Parking brake light switch connector

Check switch operation as follows.

PARKING BRAKE LIGHT SWITCH POSITION	PIN		RESISTANCE @ 20°C (68°F)
Firmly pushed	1	3	0.2 Ω max.
Released			Infinite (OL)

If switch is defective, replace it with a new one.

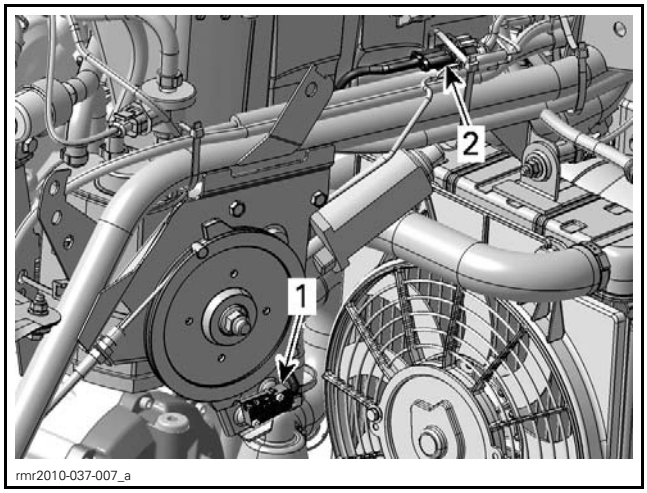
If the switch tests good, verify wire continuity between harness connector and multifunction gauge.

MULTIFUNCTION GAUGE CONNECTOR PIN	HARNESS WIRES	RESISTANCE @ 20°C (68°F)
17	GREEN/WHITE	Close to 0 Ω

Parking Brake Light Switch Removal

Remove body parts as required to access to the parking brake light switch. Refer to *BODY* subsection.

Unplug parking brake light switch connector.

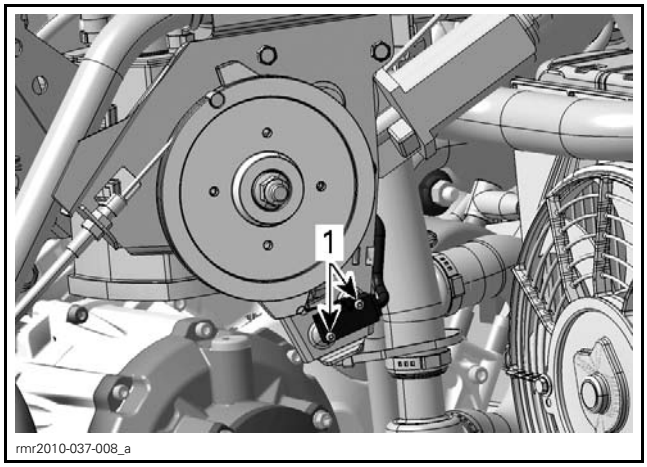


rmr2010-037-007_a

1. Parking brake light switch
2. Parking brake light switch connector

Cut locking ties retaining the switch harness.

Drill switch rivets.



rmr2010-037-008_a

1. HBS switch rivets

Remove parking brake light switch.

Parking Brake Light Switch Installation

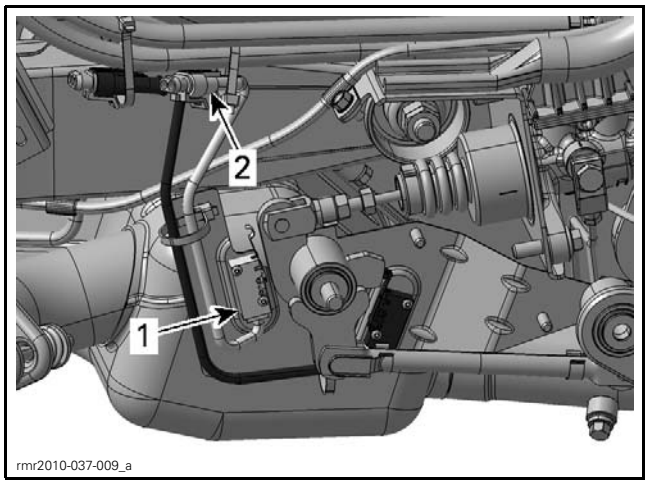
The installation is the reverse of the removal procedure.

BRAKE LIGHT SWITCH (BLS)

Brake Light Switch Test

Remove body parts as required to access to the brake light switch. Refer to *BODY* subsection.

Unplug brake light switch connector.



RH SIDE OF VEHICLE
1. *Brake light switch*
2. *Brake light switch connector*

Check switch operation as follows.

BRAKE LIGHT SWITCH POSITION	PIN		RESISTANCE @ 20°C (68°F)
Firmly pushed	1	2	0.2 Ω max.
Released			Infinite (OL)

If switch is defective, replace it with a new one.

If the switch tests good, verify wire continuity between harness connector and ECM-B connector.

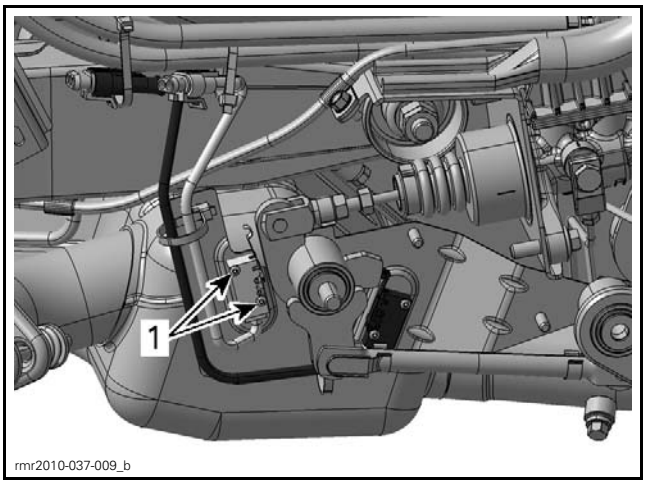
ECM-B CONNECTOR PIN	HARNESS WIRES	RESISTANCE @ 20°C (68°F)
C3	WHITE	Close to 0 Ω

Brake Light Switch Removal

Remove body parts as required to access to the brake light switch. Refer to *BODY* subsection.

Cut locking ties retaining the switch harness.

Drill brake light switch rivets.



RH SIDE OF VEHICLE
1. *BLS switch rivets*

Remove switch.

Brake Light Switch Installation

The installation is the reverse of the removal procedure.

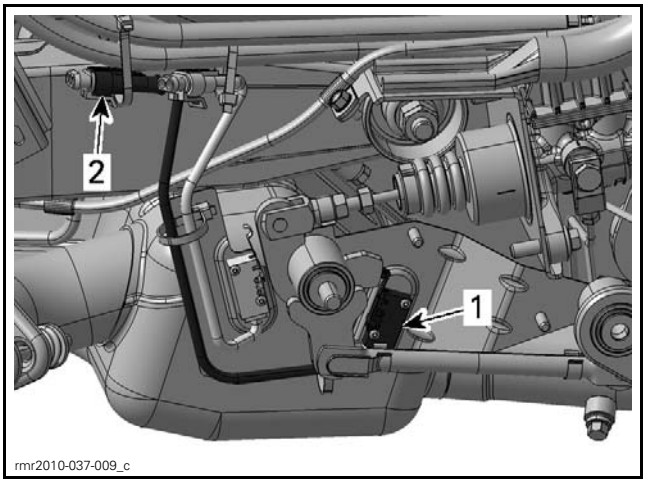
LOW PRESSURE SWITCH (LPS)

NOTE: After a low pressure switch (LPS) problem has been solved, it is necessary to clear the occurred fault in the VCM. Refer to *LPS FAULT (BRAKING SYSTEM)* below.

Low Pressure Switch Test

Remove body parts as required to access to the brake light switch. Refer to *BODY* subsection.

Unplug LPS connector.



RH SIDE OF VEHICLE
1. *LPS switch*
2. *LPS switch connector*

Check switch operation as follows.

LOW PRESSURE SWITCH POSITION	PIN		RESISTANCE @ 20°C (68°F)
Firmly pushed	2	3	Infinite (OL)
Released			0.2 Ω max.

If switch is defective, replace it with a new one.

If the switch tests good, verify wire continuity between harness connector and VCM.

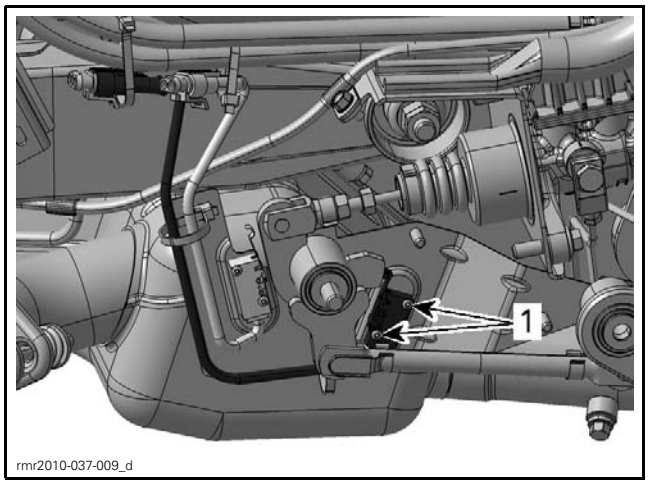
VCM CONNECTOR PIN	HARNESS WIRES	RESISTANCE @ 20°C (68°F)
8	WHITE/VIOLET	Close to 0 Ω

LPS Removal

Remove body parts as required to access to the brake light switch. Refer to *BODY* subsection.

Drill LPS rivets.

Cut locking ties retaining the switch harness.



RH SIDE OF VEHICLE
1. LPS switch rivets

Remove switch.

LPS Installation

The installation is the reverse of the removal procedure.

LPS Fault (Braking System)

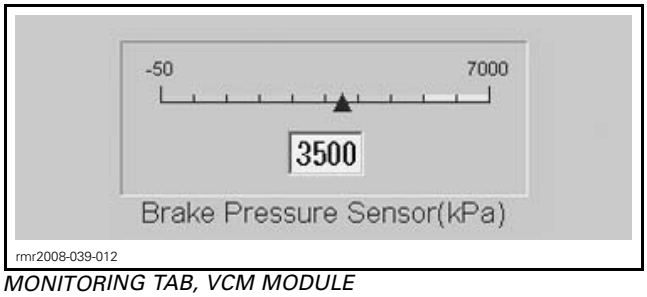
After a low pressure switch (LPS) problem has been solved, it is necessary to clear the occurred fault in the VCM as follows:

1. Turn ignition switch OFF.
2. Wait 30 seconds.
3. Turn ignition switch ON.
4. Firmly press brake pedal until you hear a "click" from the LPS switch or until braking pressure reaches 3500 kPa (508 PSI).

NOTE: The 1st click will come from the brake light switch. Continue to strongly press pedal to hear a 2nd click. This one will come from the low pressure switch.

TYPICAL

NOTE: Use B.U.D.S. to monitor brake pressure if desired.



MONITORING TAB, VCM MODULE

5. Turn ignition switch OFF.
6. Wait 30 seconds.
7. Turn ignition switch ON.
8. Validate fault was cleared.