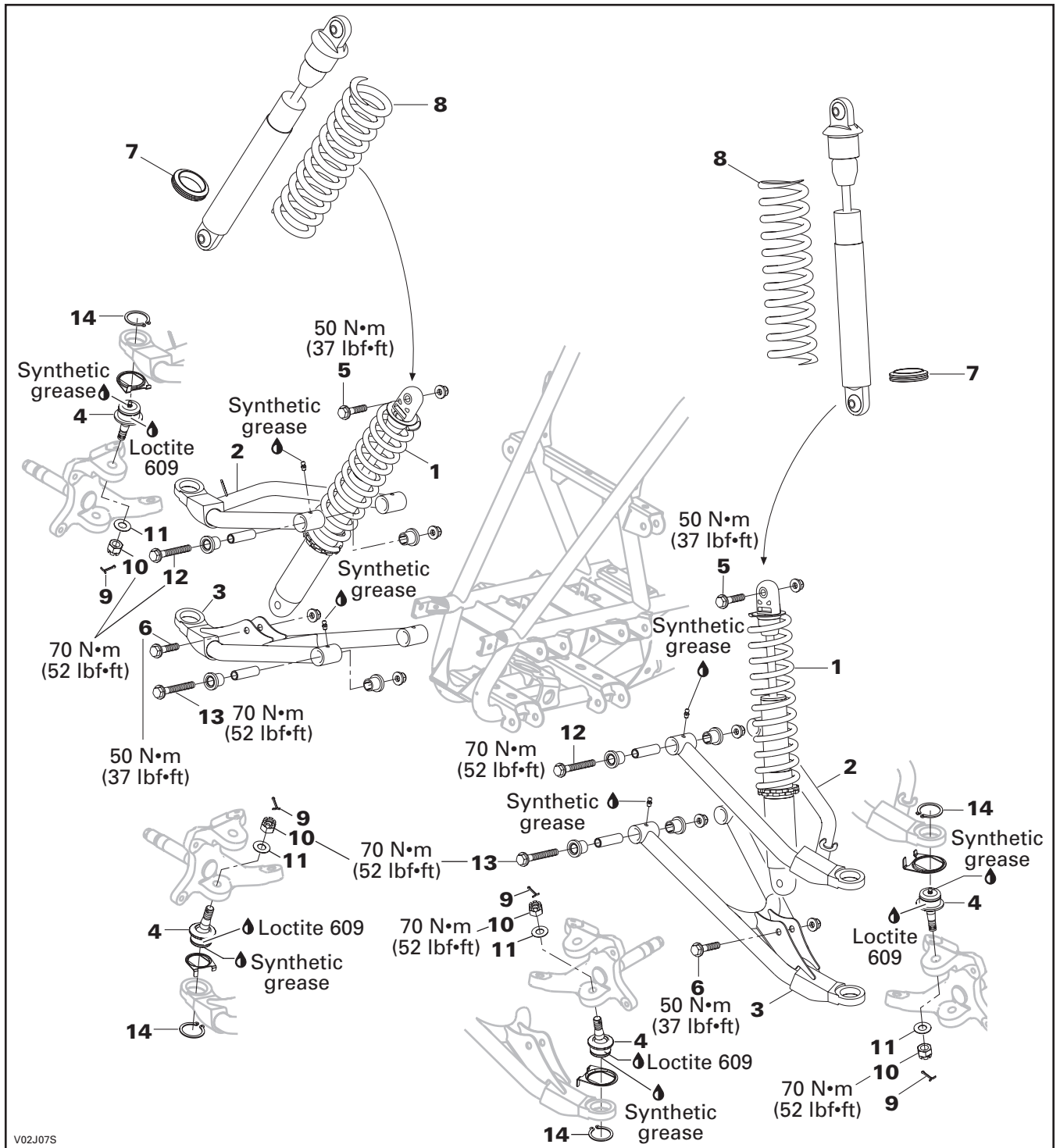


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FRONT SUSPENSION



Section 08 SUSPENSION

Subsection 02 (FRONT SUSPENSION)

1, SHOCKS ABSORBER

Removal

Lift front of vehicle and install jack stands under the frame to support the vehicle off the ground.

NOTE: Lift up vehicle high enough to have the wheel off the ground and shock absorber **no. 1** fully extended.

Remove lower bolt **no. 5** then upper bolt **no. 6** of shock.

- A skip or hang back when reversing stroke at mid travel.
- Seizing or binding condition except at extreme end of either stroke.
- A gurgling noise after completing one full compression and extension stroke.

Replace shock if any of these conditions are found.

Assembly and Installation

For assembly and installation, reverse the disassembly and removal procedures. Paying attention to the following details.

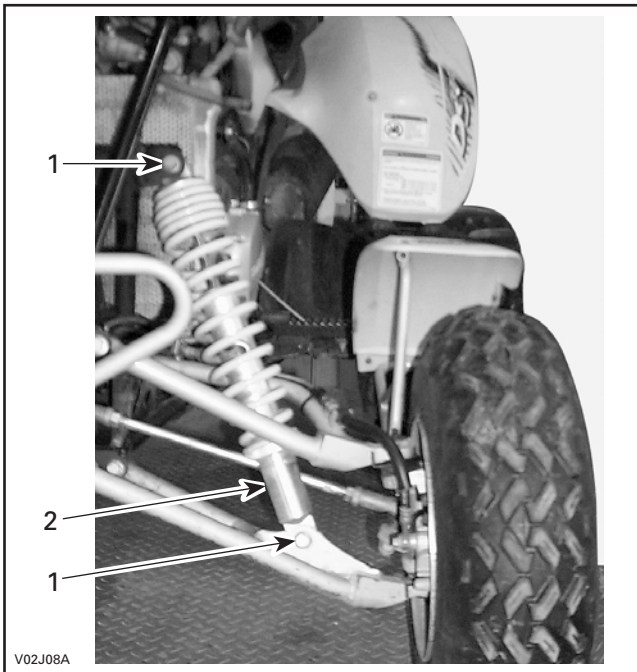
Extend the piston before installing spring, spring seat and snap ring.

2, UPPER A-ARM

Removal

NOTE: Both upper **no. 2** and lower **no. 3** A-arms can be removed without removing the tie rods.

Detach brake hose from upper A-arm.



1. Remove bolts
2. Front shock assembly

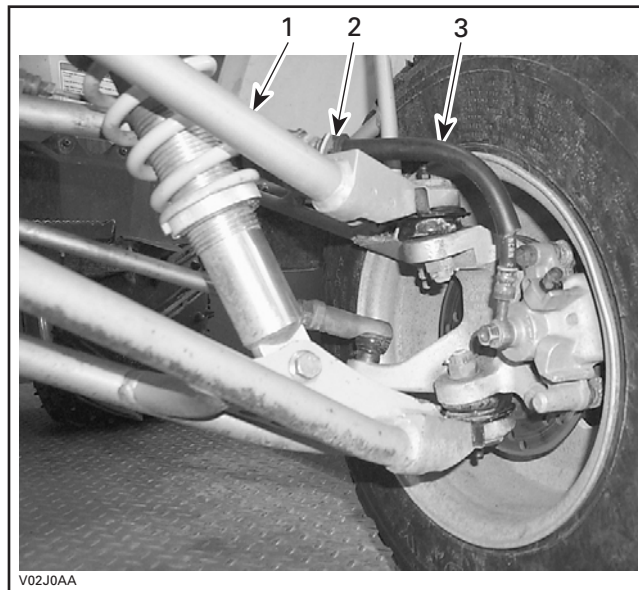
Disassembly

Remove snap ring under spring seat **no. 7**.

Unscrew the spring seat completely and remove the spring **no. 8**.

Inspection

Inspect the spring for damage. Replace if necessary. Inspect shock for oil leakage. Extend and compress the piston several times over its entire stroke. Check that it moves smoothly and with uniform resistance with its rod upwards. Any of the following conditions will denote a defective shock:

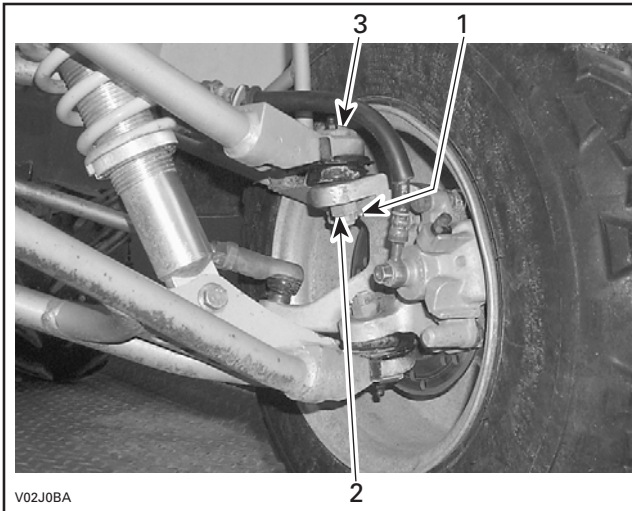


1. Upper A-arm
2. Detach brake hose from tubing
3. Brake hose

Section 08 SUSPENSION

Subsection 02 (FRONT SUSPENSION)

Remove cotter pin **no. 9**, castellated nut **no. 10** and hardened washer **no. 11** from upper ball joint **no. 4**.



1. Remove cotter pin
2. Castellated nut
3. Upper ball joint

Loosen wheel nuts.

Lift front of vehicle and install jack stands under the frame to support the vehicle off the ground.

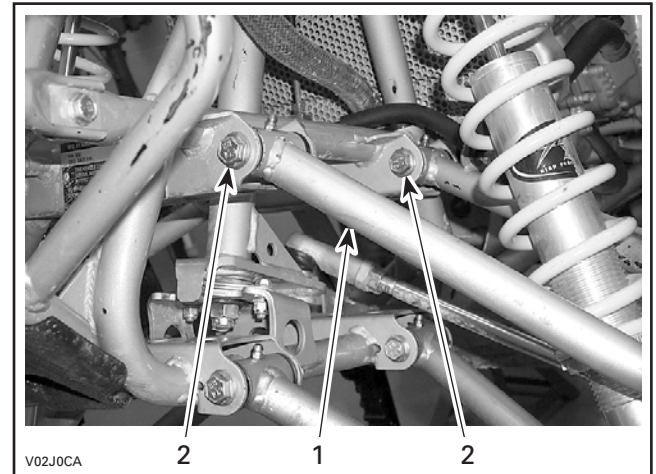
NOTE: Lift up vehicle high enough to have the wheel off the ground and shock absorber **no. 1** fully extended.

Remove wheel(s).

Use a ball joint remover and detach upper A-arm from knuckle.

CAUTION: Never tap the knuckle with a hammer.

Remove bolts **no. 12** and nuts retaining upper A-arm to frame.



1. Upper A-arm
2. Remove nuts and bolts

Remove upper A-arm from vehicle.

Inspection

Check upper A-arm for cracks, distortion or other damages. Replace as required.

Inspect pivot bushings for wear or damages.

Replace pivot bushings if necessary.

Check ball joint bellows on upper A-arm for cracks or any other damage and inspect ball joint stud for damages. Ensure stud is moving freely. Refer to BALL JOINT section below.

Installation

Position upper A-arm and install bolts **no. 12** and nuts.

Torque nuts to 70 N•m (52 lbf•ft).

Attach upper A-arm to knuckle. Install hardened washer **no. 11** and castellated nut **no. 10**.

Torque to 50 N•m (37 lbf•ft). Finish by the hand tightening.

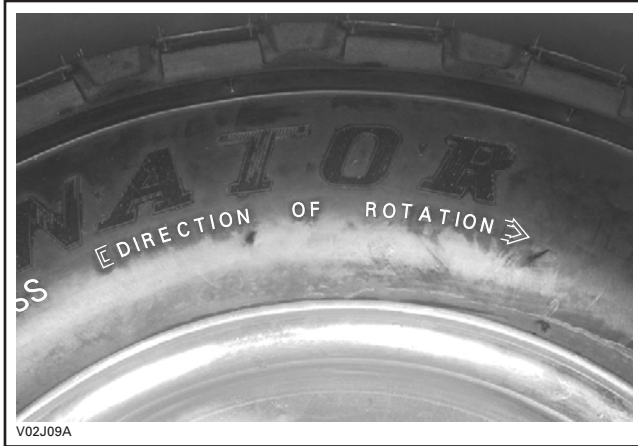
Install a new cotter pin. Both ends of cotter pins must be folded.

Secure brake hose to upper A-arm.

Section 08 SUSPENSION

Subsection 02 (FRONT SUSPENSION)

NOTE: Do not interchange left and right tires. Check direction of rotation mark on tires.



DIRECTION OF ROTATION

Torque wheel nuts to 52.5 N•m (39 lbf•ft) in a criss-cross sequence.

Grease each A-arm pivot.

3, LOWER A-ARM

Removal

Remove cotter pin and castellated nut retaining lower A-arm to ball joint on the knuckle.

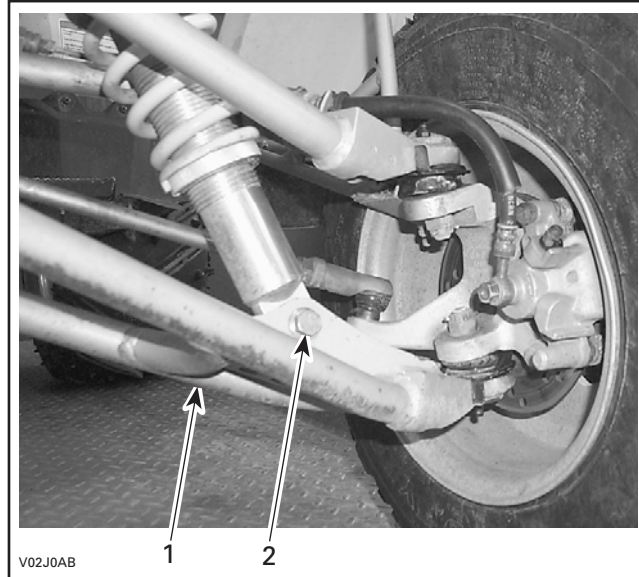
Loosen wheel nuts.

Lift front of vehicle and install jack stands under the frame to support the vehicle off the ground.

NOTE: Lift up vehicle high enough to have the wheel off the ground and shock absorber **no. 1** fully extended.

Remove wheel(s).

Remove bolt **no. 6** retaining the shock absorber **no. 1** to lower A-arm.

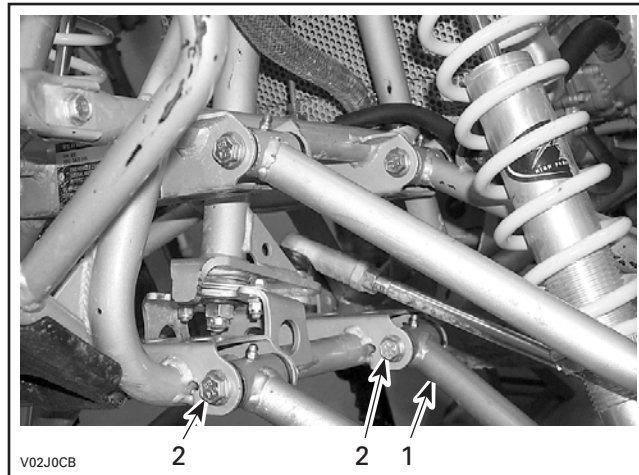


1. Lower A-arm
2. Remove nut and bolt

Use a ball joint remover and detach knuckle from the lower A-arm.

CAUTION: Never tap the knuckle with a hammer.

Remove nuts and bolts **no. 13** retaining lower A-arm to frame.



1. Lower A-arm
2. Remove nuts and bolts

Remove lower A-arm from vehicle.

Inspection

Check lower A-arm for cracks, distortion or other damages. Replace as required.

Inspect pivot bushings for wear or damages.

Replace pivot bushings if necessary.

Check ball joint bellows on lower A-arm for cracks or any other damage and inspect ball joint stud for damages. Ensure stud is moving freely. Refer to BALL JOINT section below.

Installation

For assembly, reverse the disassembly procedure. However, pay attention to the following.

Position lower A-arm and install bolts **no. 13** and nuts.

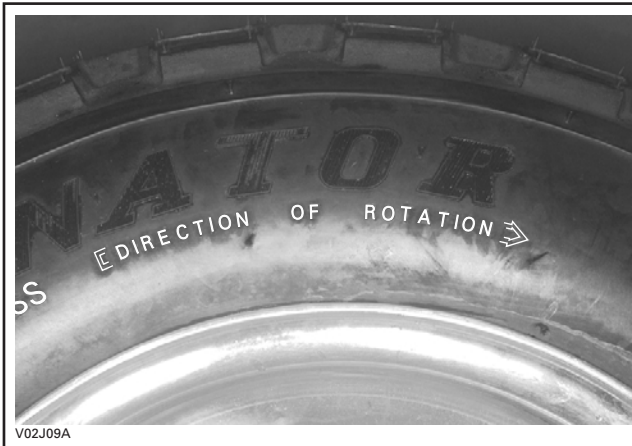
Torque nuts to 70 N•m (52 lbf•ft).

Attach lower A-arm to knuckle. Install hardened washer **no. 11** and castellated nut **no. 10**.

Torque to 50 N•m (37 lbf•ft). Finish by the hand tightening.

Install a new cotter pin. Both ends of cotter pins must be folded.

NOTE: Do not interchange left and right tires. Check direction of rotation mark on tires.



DIRECTION OF ROTATION

Torque wheel nuts to 52.5 N•m (39 lbf•ft) in a criss-cross sequence.

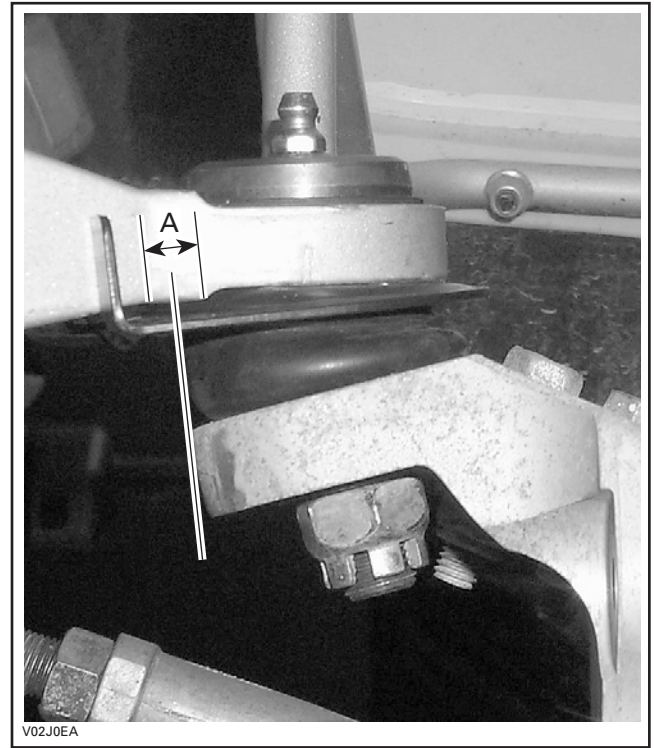
Grease each A-arm pivot.

4, BALL JOINT

Inspection

Upper Ball Joint

Take the top of tire and check upper ball joint lateral play, by push and pull. The maximum lateral play should be 1.5 mm (0.060 in). If the lateral play is out of specification, change the ball joints.



UPPER BALL JOINT LATERAL PLAY

A. Maximum lateral play 1.5 mm (0.060 in)

Lower Ball Joint

Place a jack under A-arm and raise vehicle high enough to have the wheel off the ground.

Take tire by the bottom and lift it up. The maximum axial play should be 1.5 mm (0.060 in). If the axial play is out of specification, change the lower ball joints.

Section 08 SUSPENSION

Subsection 02 (FRONT SUSPENSION)

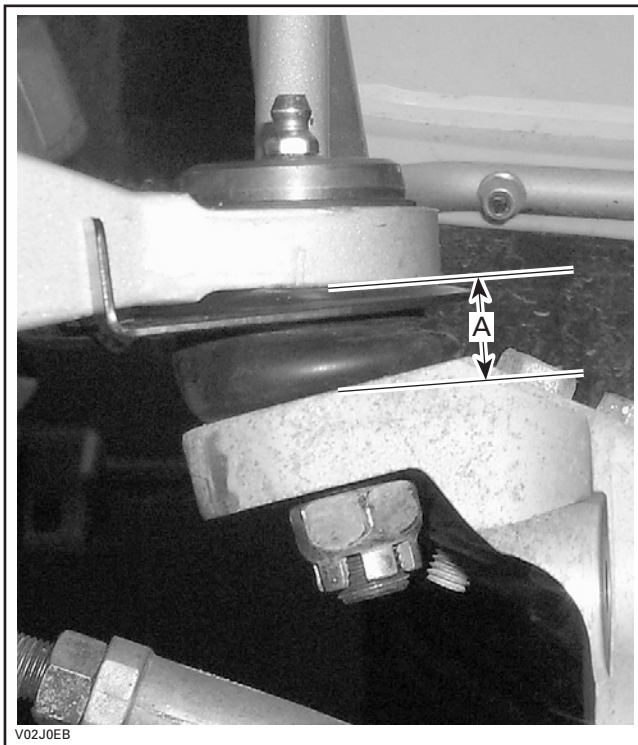


LOWER BALL JOINT AXIAL PLAY

A. Maximum axial play (measurement A +1.5 mm (0.060 in))

Upper Ball Joint

Move the upper A-arm vertically. The maximum axial play should be 1.5 mm (0.060 in). If the axial play is out of specification, change the upper ball joints.



UPPER BALL JOINT AXIAL PLAY

A. Maximum axial play (measurement A +1.5 mm (0.060 in))

Check ball joint bellows for cracks or any other damage and inspect ball joint stud for damages. Ensure stud is moving freely. Replace ball joint if necessary.

NOTE: It is recommended to change both left or right ball joints at the same time.

Install a new circlip.

Removal

Remove upper or lower A-arm.

Remove the circlip no. 14.

Extract the ball joint.

Installation

CAUTION: This ball joint has an oblong opening and therefore must be installed with the appropriate tab lock to ensure proper orientation of the ball joint relative to the A-arm. If there is no tab lock on the ball joint being replaced or if existing tab lock is damaged and would need replacement, the appropriate tab lock must be ordered.

NOTE: Use the same tools for the lower and upper ball joints.

Lower Ball Joint Installation

Apply a thin layer (0.3 mL) of Loctite 609 on the outside diameter of new ball joint (surface that contacts arm). Wipe any excess.

Using the 2 inches long driver (P/N 529 035 705) on a solid flat surface of a bench, align ball joint in that driver, align proper tab lock on ball joint, and then align arm, up side down, making sure that tabs show on each side.

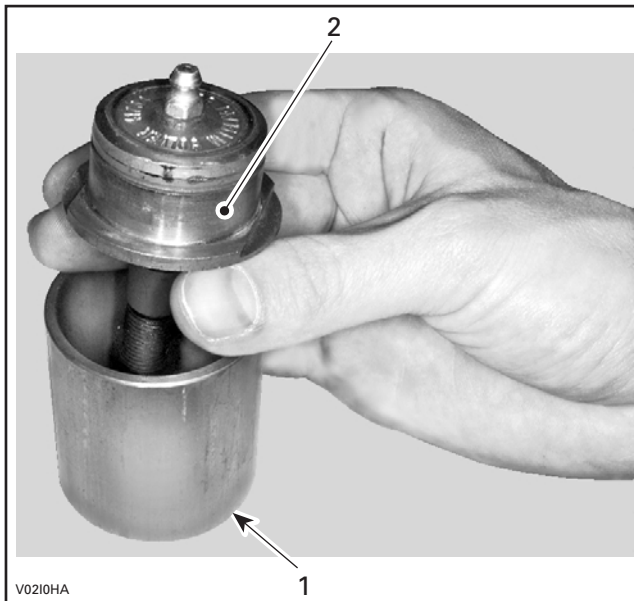
WARNING

If ball joint is installed without tab lock or with tab lock that has its longer tab not facing front of vehicle, it may cause ball joint stud travel to be reduced, (hitting on the side of ball joint housing), leading to stud damage or failure, which may cause an accident.

CAUTION: Longer tab of tab lock must be towards front of vehicle.

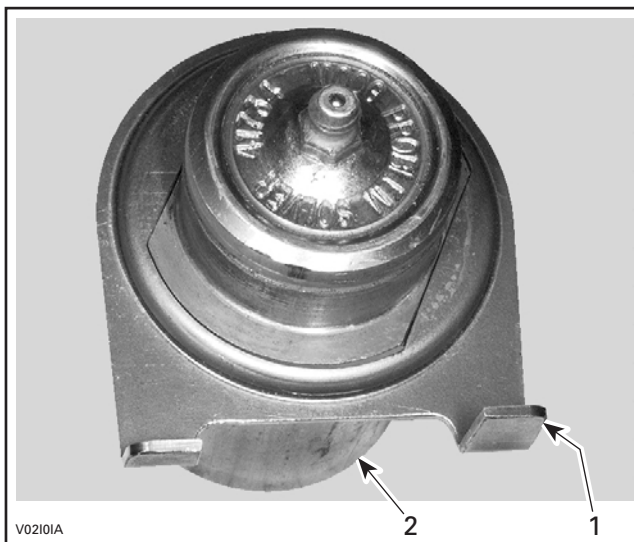
Section 08 SUSPENSION

Subsection 02 (FRONT SUSPENSION)

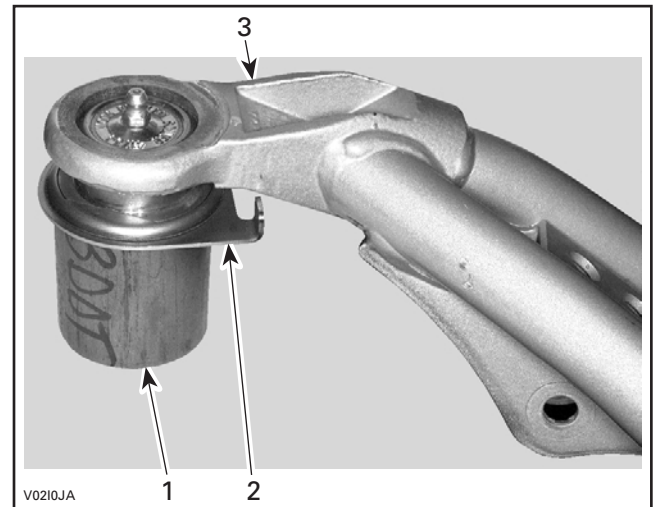


ALIGNING BALL JOINT IN DRIVER

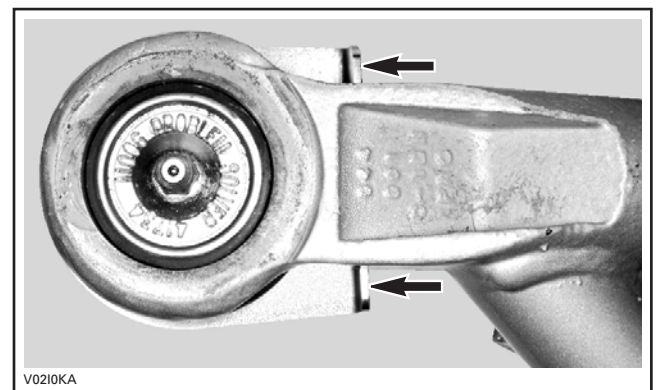
1. 2 inches long driver (P/N 529 035 705)
2. Apply Loctite 609 on this surface



1. Longer tab (**towards front of vehicle**)
2. Driver



1. Driver
2. Tab lock
3. Arm aligned up side down



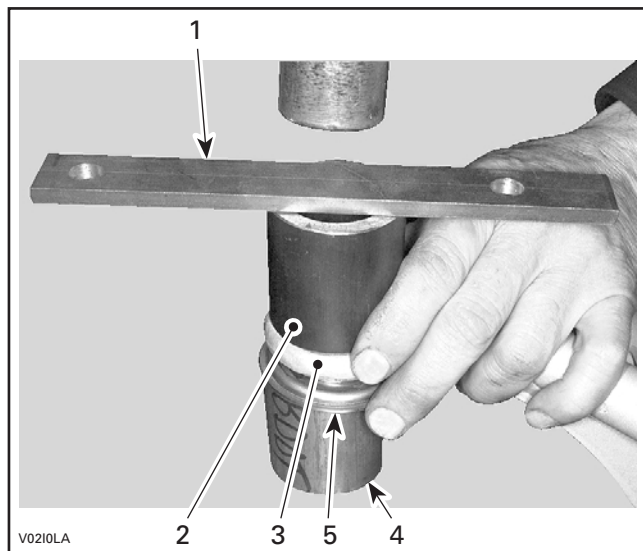
ARROWS SHOW TAB ON EACH SIDE OF ARM

With the use of the second driver (P/N 529 035 706) aligned on arm, **be sure alignment is correct**, properly hammer or press arm on ball joint, making sure snap ring can correctly be installed.

NOTE: The use of a flat bar placed on driver will help ease installation and insure a proper and equal fit.

Section 08 SUSPENSION

Subsection 02 (FRONT SUSPENSION)



1. Flat bar
2. Driver (P/N 529 035 706)
3. Arm
4. Driver (P/N 529 035 705)
5. Tab lock

Secure ball joint with its snap ring.

Reinstall all removed parts with supplied new cotter pins and flanged elastic nuts.

CAUTION: Insure that washer is in place before installing castellated ball joint nut.

Above procedure to be performed for both lower ball joints.

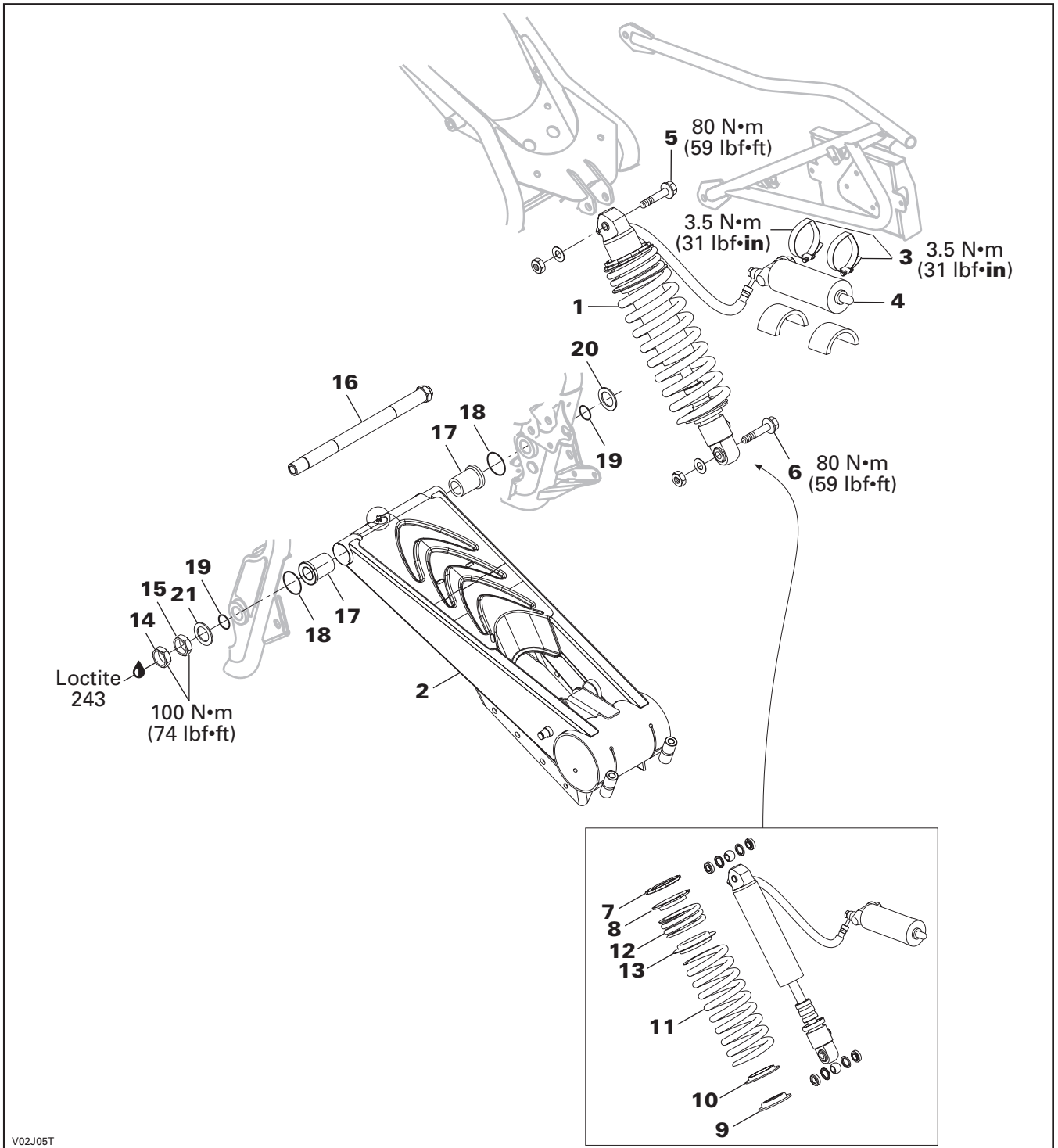
WARNING

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

Upper Ball Joint Installation

For installation, use the same procedure that the lower ball joint installation.

REAR SUSPENSION



V02J05T

Section 08 SUSPENSION

Subsection 03 (REAR SUSPENSION)

1, REAR SHOCK WITH RESERVOIR

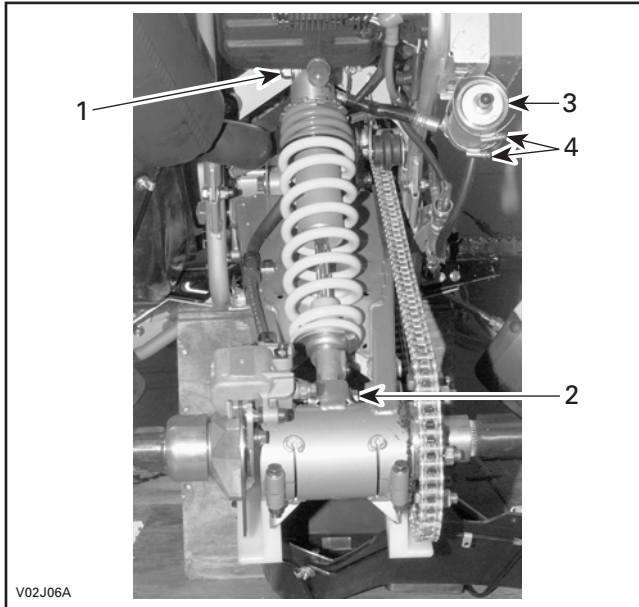
Removal

Lift rear of vehicle until rear shock absorber is fully extended.

Install a jack stand or a block under the frame to support the vehicle.

Unscrew clamps **no. 3** retaining the reservoir **no. 4**.

Remove upper bolt **no. 5** retaining shock absorber then unscrew the lower bolt **no. 6**.



- 1. Upper bolt and nut
- 2. Lower bolt and nut
- 3. Reservoir
- 4. Clamps

Disassembly

Unscrew the adjusting nuts **nos. 7** and **8**.

Remove spring stopper **no. 9** and spring seat **no. 10**.

Remove two piece dual rate spring **nos. 11** and **12** with ring **no. 13**.

Inspection

Examine shock for leaks. Extend and compress the piston several times over its entire stroke. Check that it moves smoothly and with uniform resistance with its rod upward.

Pay attention to the following conditions that will denote a defective shock:

- a skip or a hang back when reversing stroke at mid travel
- seizing or binding condition except at extreme end of either stroke
- oil leakage
- a gurgling noise, after completing one full compression and extension stroke.

Renew if any faults are present.

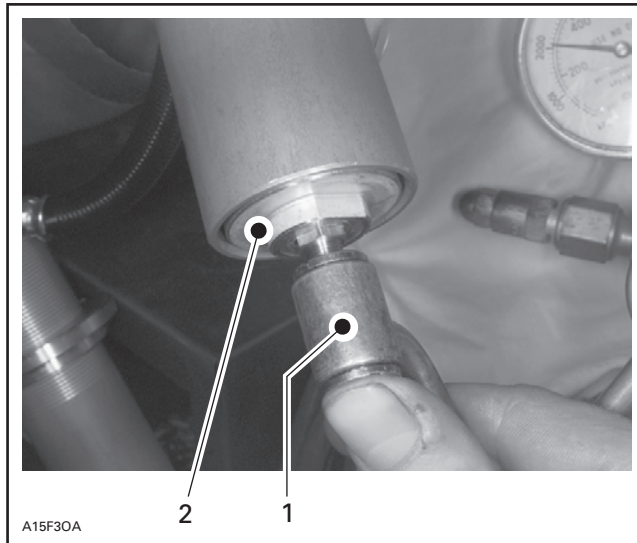
Assembly and Installation

For assembly and installation, reverse the disassembly and removal procedures.

Gas Pressure Adjustment

Nitrogen (N_2) can now be added to reservoir body.

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



- 1. Valve tip (Nitrogen)
- 2. Reservoir cap assembly

CAUTION: Do not exceed the recommended pressure value.

WARNING

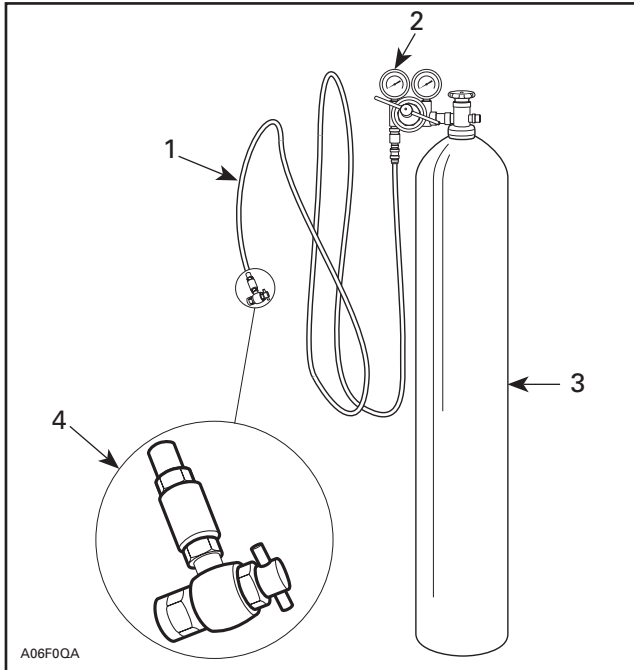
Whenever working with high pressure gas, use eye wear protection. Never direct gas pressure toward anybody.

Section 08 SUSPENSION

Subsection 03 (REAR SUSPENSION)

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

Damper gas pressure can be confirmed by using a pressure gauge available through your local industrial gas supplier.



1. Automotive type air pressure hose
2. Two stage regulator, delivery pressure range 2070 kPa (300 PSI)
3. High pressure cylinder filled with industrial grade nitrogen
4. Valve tip

Adjustment

WARNING

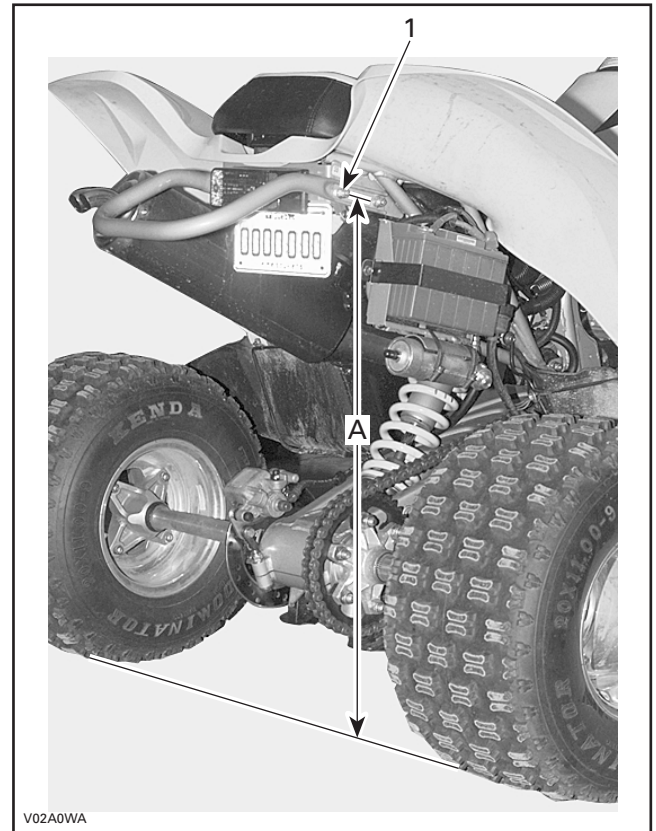
The rear shock includes a damper unit that contains high pressure nitrogen gas. **Do not attempt to disassemble or dispose of the damper.** Dispose as per your local environmental regulations.

Spring Preload

Spring preload may vary from rider to rider depending upon their weight. Preload can be changed by setting the two lock nuts up or down to compress the spring to different lengths. Shortening or lengthening the spring length will increase or decrease the preload.

Before adjusting the spring preload, first measure the ATV's height, without rider, from the rear bumper nut to the ground.

NOTE: Lift the vehicle by the rear bumper. The shock should be fully extended.



1. Rear bumper nut
- A. Measure between rear bumper nut and ground

Next, sit the rider with gear on the ATV and measure the distance between the same two points.

CAUTION: Add all other loads and accessories before measuring the height of the vehicle with the rider on. Do not exceed the total vehicle load allowed.

Calculate the difference between the two lengths. If the vehicle's height decreases more than 127 mm (5 in), increase the preload by 3 mm (1/8 in) increments. If the vehicle's height decreases of less than 102 mm (4 in), decrease the preload by 3 mm (1/8 in) increments. The optimum adjustment range is between 102 mm (4 in) and 127 mm (5 in) but, for heavier or more aggressive riders, it could be between 76 mm (3 in) and 102 mm (4 in).

Preload Adjustment:

To reduce:

- Turn the shock spring adjuster counterclockwise for a light load and smooth condition.

To increase:

- Turn the shock spring adjuster clockwise for a firmer ride and rough condition.

Section 08 SUSPENSION

Subsection 03 (REAR SUSPENSION)

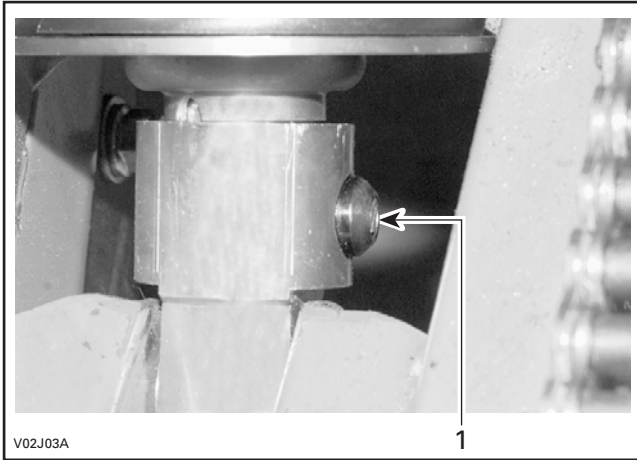
Rebound Damping:

To reduce:

- Turn the shock adjuster counterclockwise for a light load and smooth condition.

To increase:

- Turn the shock adjuster clockwise for a firmer ride and rough condition.



1. Adjuster

NOTE: The adjuster tool is included in the tool kit.

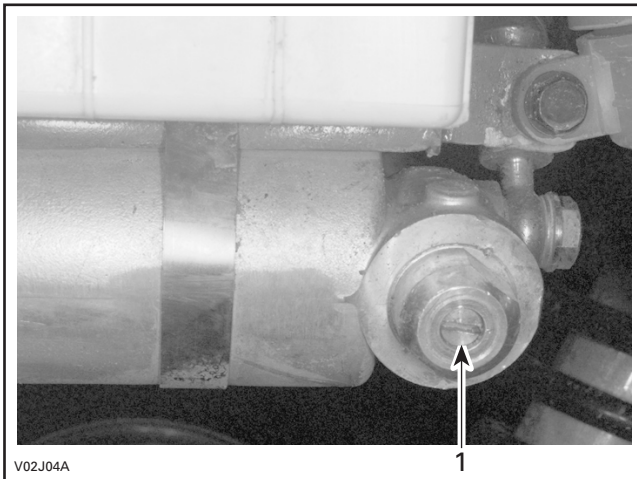
Compression Damping:

To reduce:

- Turn the damper adjuster counterclockwise for a light load and smooth condition.

To increase:

- Turn the damper adjuster clockwise for a firmer ride and rough condition.



1. Adjuster

2, SWING ARM

Removal

Lift rear of vehicle until rear shock absorber is fully extended.

Install a jack stand or a block under the frame to support the vehicle.

Remove rear axle and drive chain. Refer to FINAL DRIVE.

Remove lower bolt **no. 6** retaining shock.

On the LH side, unscrew both nuts **no. 14** and washer **no. 15**.

Remove the swing arm shaft **no. 16**.

Pull swing arm out of frame.

Inspection

Check condition of swing arm. Inspect for distortion, cracks or damage.

Check condition of bushings **no. 17** and O-rings **nos. 18** and **19**. Change if necessary.

Check swing arm shaft for rust, cracks, bend or other damage. Change if necessary.

Installation

Installation is essentially the reverse of removal procedure. However, pay attention to the following details.

Insert O-rings **no. 19** in the groove into frame.

Place O-rings **no. 18** on bushings **no. 17** then install the swing arm.

Install the swing arm shaft **no. 16** with washer **no. 20** then push the O-rings **no. 18** between frame and bushings.

Install washer **no. 21** and the nut **no. 15**. Torque to 100 N•m (74 lbf•ft) then, unscrew the nut a quarter turn.

NOTE: Check if the swing arm moves freely.

Install the other nut **no. 14** and torque to 100 N•m (74 lbf•ft).

NOTE: Take the first nut with a key when the second nut is torqued.

Install rear shock, axle and drive chain.