

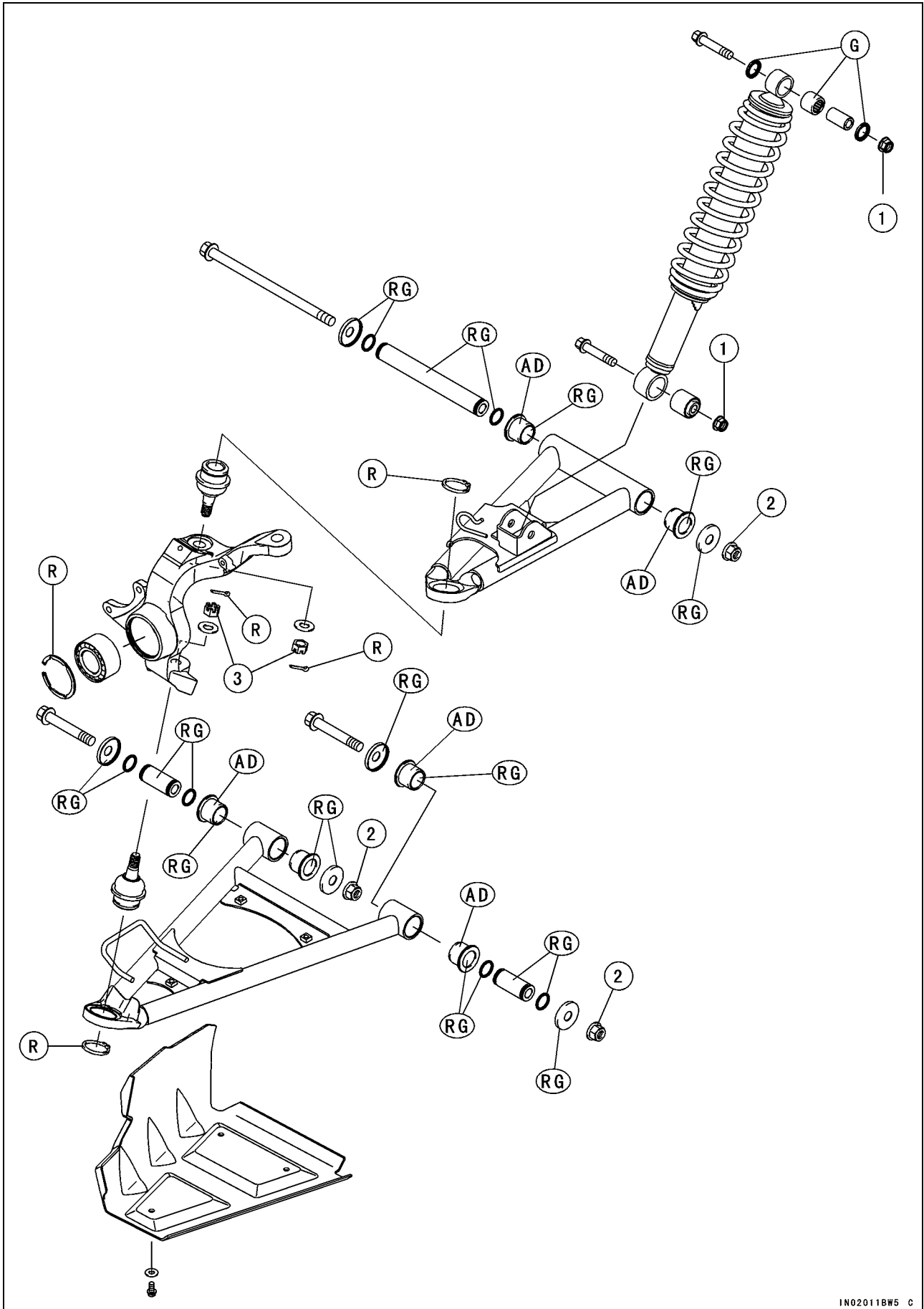
Suspension

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13-2 SUSPENSION

Exploded View



Exploded View

No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Front Shock Absorber Mounting Nuts	58	5.9	43	
2	Front Suspension Arm Pivot Nuts	88	9.0	65	
3	Steering Knuckle Joint Nuts	47	4.8	35	

AD: Apply adhesive (Three Bond: 1215).

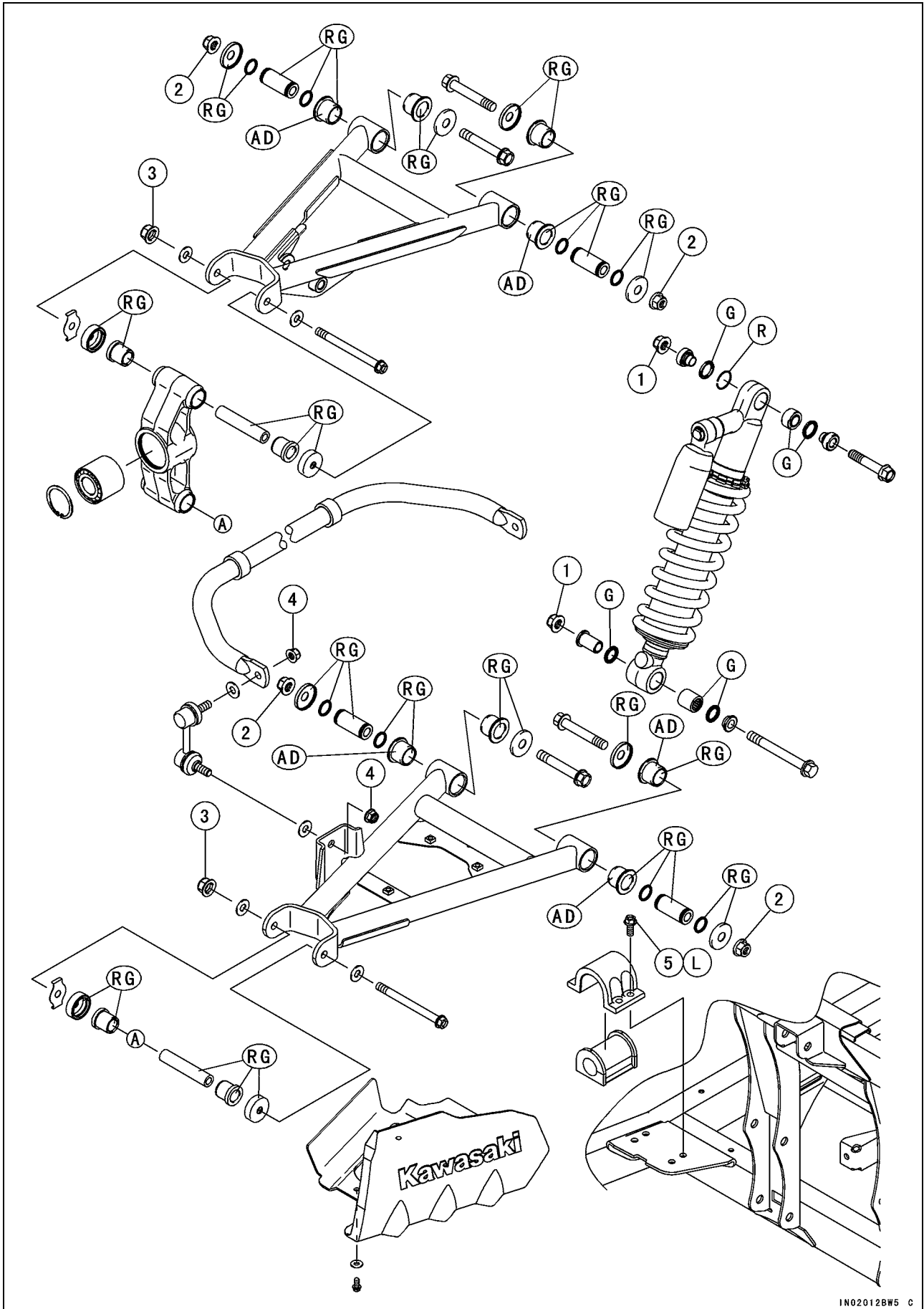
G: Apply grease.

R: Replacement Parts

RG: Apply grease (Rykon Premium Grease EP No.2 Green).

13-4 SUSPENSION

Exploded View



Exploded View

No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Rear Shock Absorber Mounting Nuts	96	9.8	71	
2	Rear Suspension Arm Pivot Nuts	88	9.0	65	
3	Rear Knuckle Mounting Nuts	58	5.9	43	
4	Stabilizer Joint Nuts	58	5.9	43	
5	Stabilizer Holder Bolts	32	3.3	24	L

AD: Apply adhesive (Three Bond: 1215).

G: Apply grease.

L: Apply a non-permanent locking agent.

R: Replacement Parts

RG: Apply grease (Rykon Premium Grease EP No.2 Green).

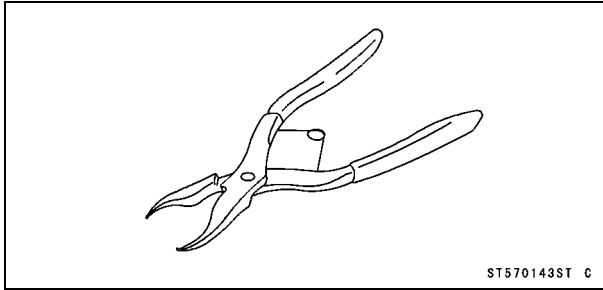
13-6 SUSPENSION

Specifications

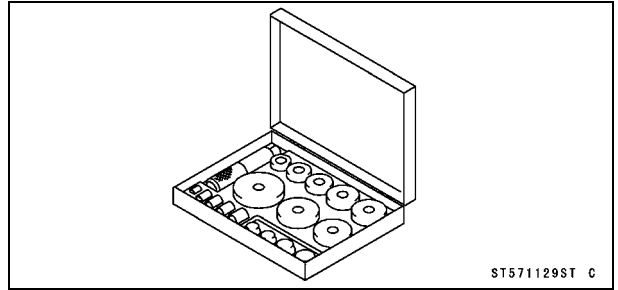
Item	Standard	Service Limit
Shock Absorbers		(Usable Range)
Spring Preload Setting Position (Front)	No. 2	1 ~ 5
Spring Preload Setting Position (Rear)	111.5 mm (4.390 in.)	109.5 ~ 127.5 mm (4.311 ~ 5.020 in.)

Special Tools

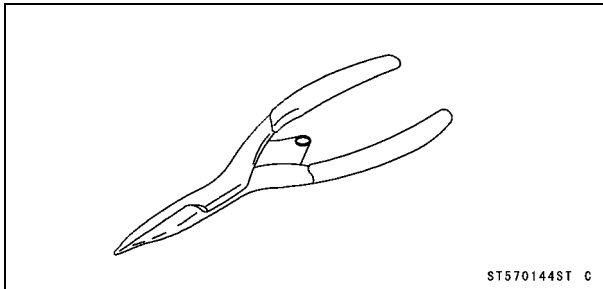
Inside Circlip Pliers:
57001-143



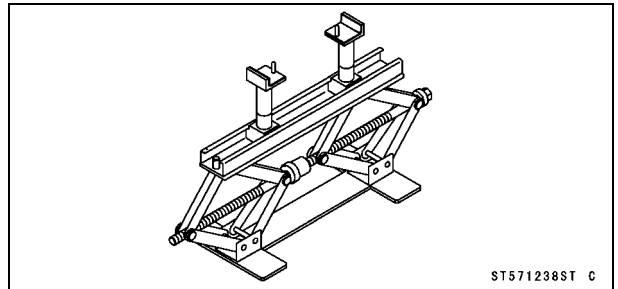
Bearing Driver Set:
57001-1129



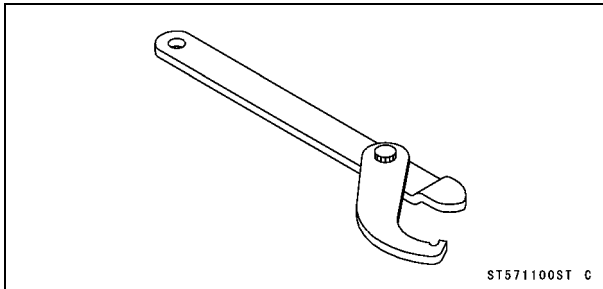
Outside Circlip Pliers:
57001-144



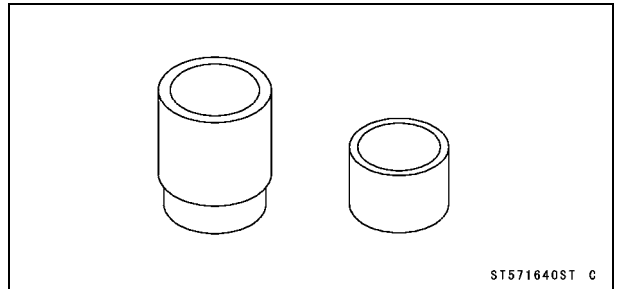
Jack:
57001-1238



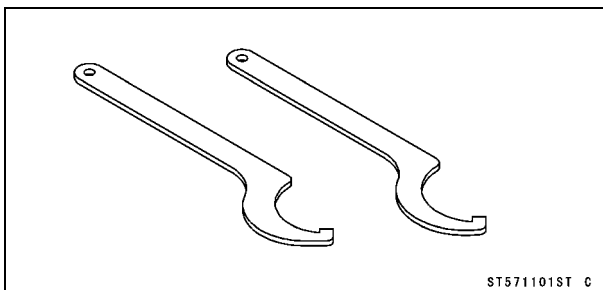
Steering Stem Nut Wrench:
57001-1100



Knuckle Joint Driver:
57001-1640



Hook Wrench R37.5, R42:
57001-1101



13-8 SUSPENSION

Shock Absorbers

Front Shock Absorber Preload Adjustment

The spring adjusting sleeve [A] on the front shock absorber has 5 positions so that the spring can be adjusted for different terrain and loading conditions. If the spring action feels too soft or too stiff, adjust it in accordance with the following table.

Spring Action

Position	Spring Force	Setting	Load	Terrain	Speed
1	Weak	Soft	Light	Smooth	Low
2 (STD)	↑	↑	↑	↑	↑
3					
4	↓	↓	↓	↓	↓
5	Strong	Hard	Heavy	Rough	High

- Turn the adjusting sleeve on the front shock absorber to the desired position with the wrench.

Special Tool - Steering Stem Nut Wrench: 57001-1100

Front Shock Absorber Removal

- Support the vehicle on a stand or a jack so that the front wheels are off the ground.

Special Tool - Jack: 57001-1238

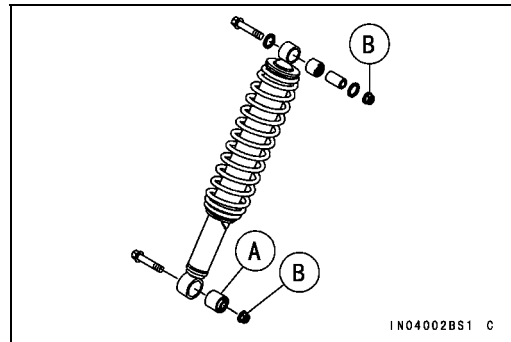
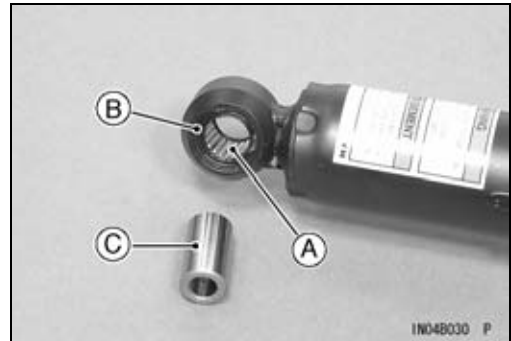
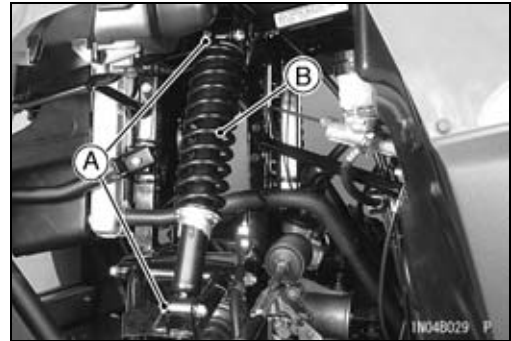
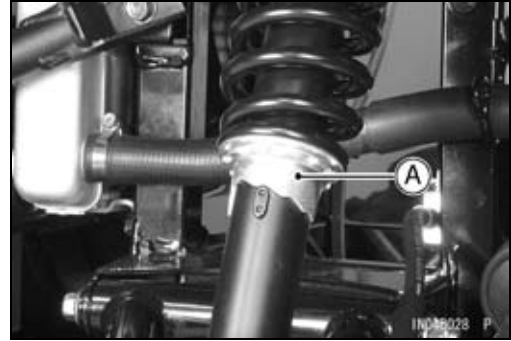
- While holding the front wheels, remove the lower and upper shock absorber mounting bolts [A], nuts, and washers.
- Remove the front shock absorber [B].

Front Shock Absorber Installation

- Apply grease to the inside of needle bearing [A] and grease seal lips [B].
- Install:
Collar [C]

- Install:
Bushing [A] (press)
- Tighten:

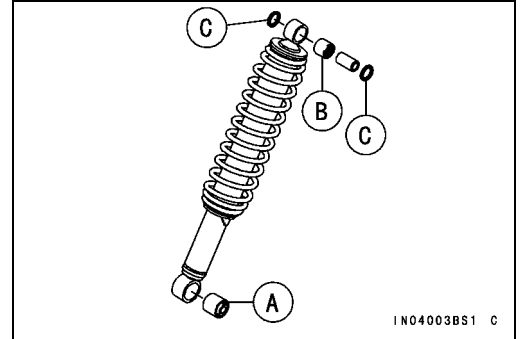
Torque - Front Shock Absorber Mounting Nuts [B]: 58 N·m (5.9 kgf·m, 43 ft·lb)



Shock Absorbers

Front Shock Absorber Inspection

- Check the bushing [A] in the lower pivot.
- ★ If bushing is worn, cracked, hardened, or otherwise damaged, replace it.
- Check the needle bearing [B] and grease seals [C] in the upper pivot.
- ★ If they are damaged, replace them.

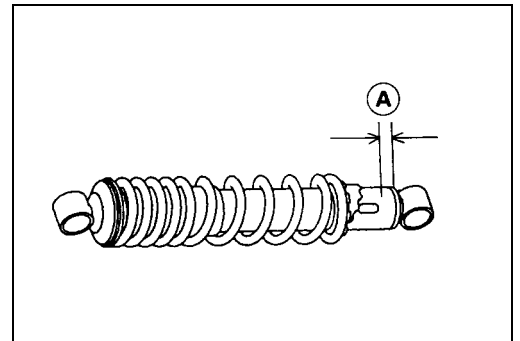


Front Shock Absorber Scrapping

⚠ WARNING

Since the front shock absorber contains nitrogen gas, do not incinerate or disassemble the front shock absorber.

Before a front shock absorber is scrapped, drill a hole at a point about 15 mm (0.59 in.) [A] up from the bottom of the cylinder to release the nitrogen gas completely. Wear safety glasses when drilling the hole, as the gas may blow out bits of drilled metal when the hole opens.



Rear Shock Absorber Preload Adjustment

- Loosen the locknut [A].
- Turn the adjusting nut [B] to the desired position.

Special Tool - Hook Wrench: 57001-1101

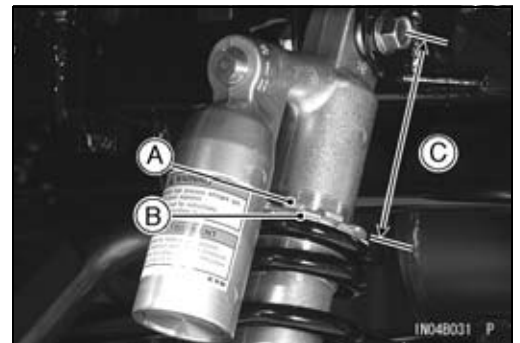
Adjusting Length [C]:

from center of upper mounting bolt to lower surface of adjusting nut

Standard: Adjusting length 111.5 mm (4.390 in.)

Usable Range: Adjusting length 109.5 ~ 127.5 mm (4.311 ~ 5.020 in.)

- Tighten the locknut.
- ★ If the spring action feels too soft or too stiff, adjust it.



Spring Preload Adjustment

Adjusting Length	Damp- ing Force	Setting	Load	Road	Speed
109.5 mm (4.311 in.)	Weak	Soft	Light	Good	Low
↑	↑	↑	↑	↑	↑
↓	↓	↓	↓	↓	↓
127.5 mm (5.020 in.)	Strong	Hard	Heavy	Bad	High

13-10 SUSPENSION

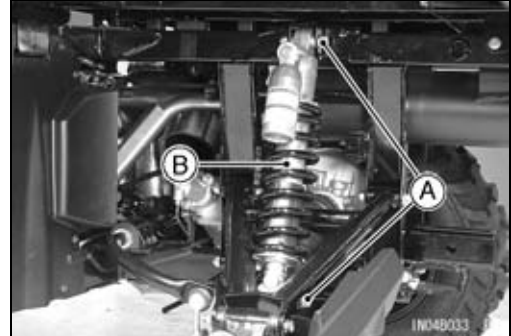
Shock Absorbers

Rear Shock Absorber Removal

- Remove:
 - Rear Wheel (see Wheel Removal in the Wheels/Tires chapter)
 - Guard [A], Bolts and Washer

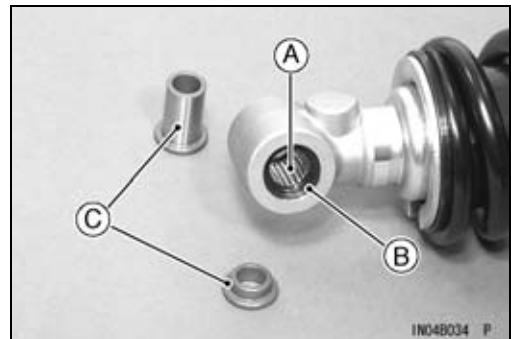


- Remove:
 - Rear Shock Absorber Mounting Bolts [A] and Nuts
 - Rear Shock Absorber [B]

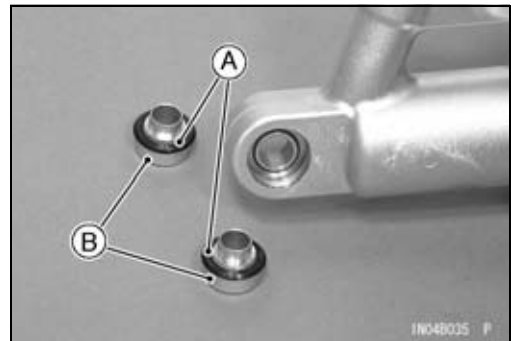


Rear Shock Absorber Installation

- Apply grease to the inside of needle bearing [A] and grease seal lips [B].
- Install:
 - Collars [C]

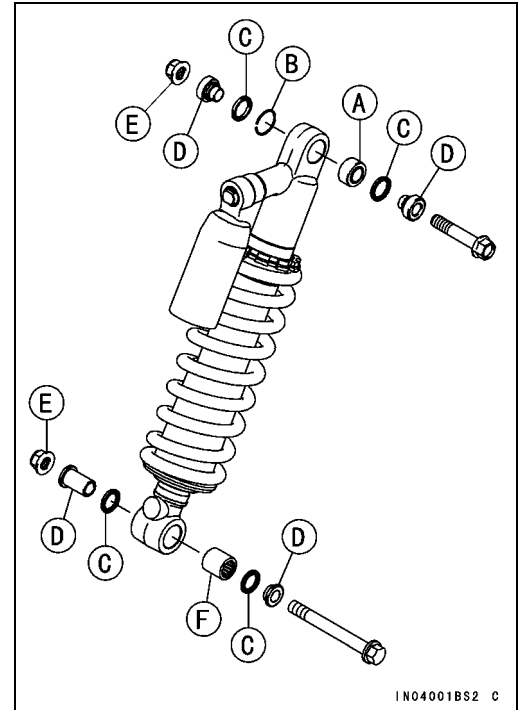


- Apply grease to the grease seal lips [A].
- Install:
 - Collars [B]



Shock Absorbers

- When replacing the ball bearing [A], install the new circlip [B].
 - [C] Grease Seals
 - [D] Collars
 - [E] Mounting Nuts
 - [F] Needle Bearing
- Tighten:
 - Torque - Rear Shock Absorber Mounting Nut: 96 N·m (9.8 kgf·m, 71 ft·lb)



Rear Shock Absorber Inspection

- Check the ball bearing and grease seals in the upper pivot.
 - ★ If they are damaged, replace them.
- Check the needle bearing and grease seals in the lower pivot.
 - ★ If they are damaged, replace them.

Rear Shock Absorber Scrapping

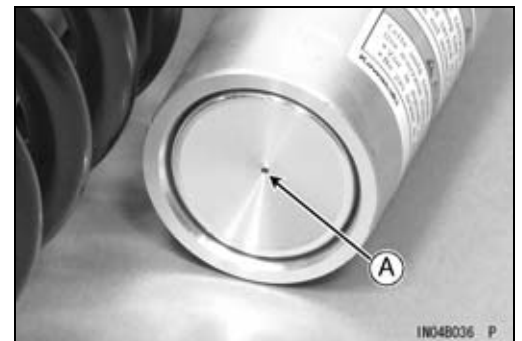
⚠ WARNING

Since the reservoir tank of the rear shock absorber contains nitrogen gas, do not incinerate the reservoir tank without first releasing the gas or it may explode.

- Remove the rear shock absorber. (see Rear Shock Absorber Removal).
- Drill the hole [A] of the reservoir tank using about 2 mm (0.08 in.) drillbit.

⚠ WARNING

Wear safety glasses when drilling the hole, as the high pressure gas may blow out bits or drilled metal when the hole opens.

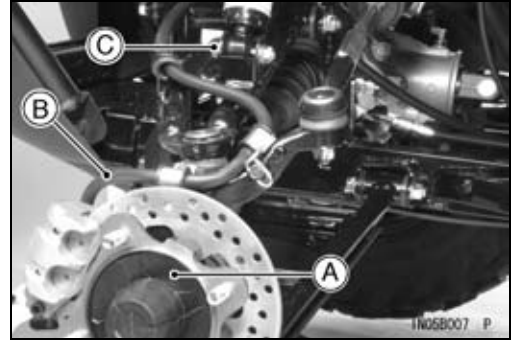


13-12 SUSPENSION

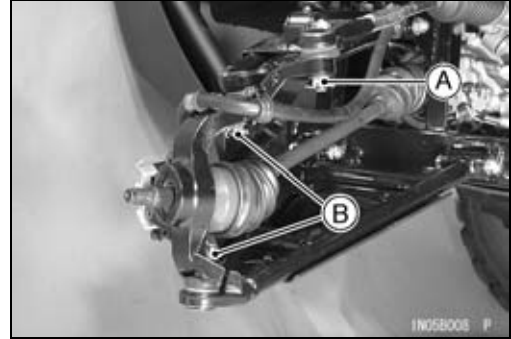
Suspension Arms

Front Suspension Arm Removal

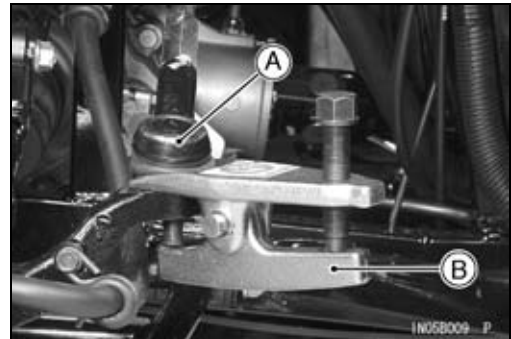
- Remove:
 - Front Wheels (see Wheel Removal in the Wheels/Tires chapter)
 - Front Hub [A] (see Front Hub Removal in the Wheels/Tires chapter)
 - Brake Caliper and Hose [B] (from Suspension Arm)
 - Front Shock Absorber Mounting Bolt [C] and Nut (lower)



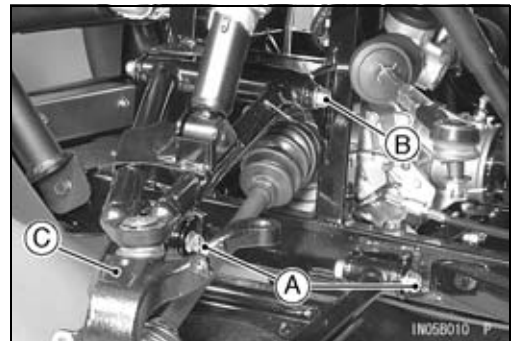
- Remove:
 - Cotter Pins
 - Tie-rod End Nut [A]
 - Knuckle Joint Nuts [B]



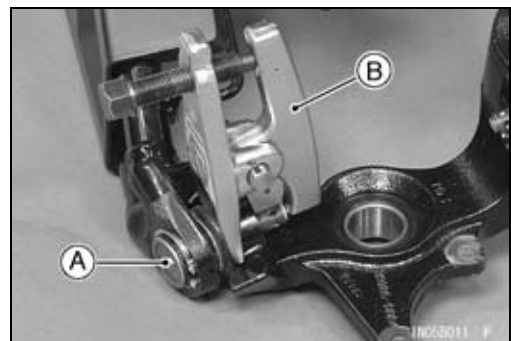
- Remove the tie-rod end [A] from the knuckle using a suitable joint remover [B].



- Remove:
 - Front Lower Suspension Arm Pivot Bolts, Caps and Nuts [A]
 - Front Upper Suspension Arm Pivot Bolt, Caps and Nut [B]
 - Knuckle [C] and Front Suspension Arms Assembly



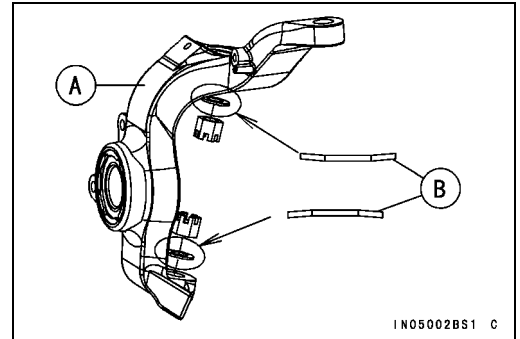
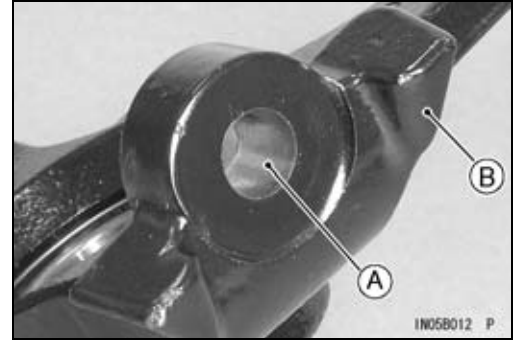
- Remove the knuckle joints [A] from the knuckle using a suitable joint remover [B].



Suspension Arms

Front Suspension Arm Installation

- Clean the taper surface [A] of the knuckle [B] and shank of the knuckle joint, or the tapers will not fit snugly.
- Apply grease (Rykon Premium Grease EP #2 Green) to the inside of the caps.
- Install:
 - Front Upper Suspension Arm
 - Front Lower Suspension Arm
 - Suspension Arm Pivot Bolts, Caps and Nuts (temporary)
 - Front Shock Absorber Mounting Bolt and Nut (lower)
- Install:
 - Knuckle [A], Washers [B] and Nuts
- Install the washer as shown in the figure.

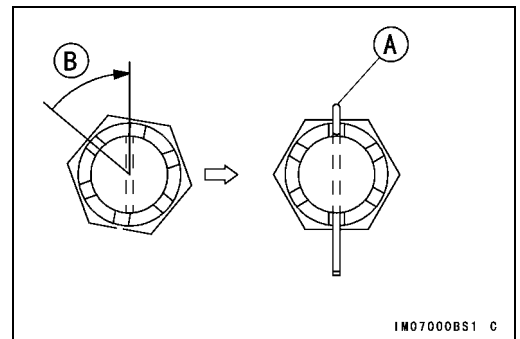


- Tighten:
 - Torque - Front Suspension Arm Pivot Nuts: 88 N·m (9.0 kgf·m, 65 ft·lb)
 - Steering Knuckle Joint Nuts: 47 N·m (4.8 kgf·m, 35 ft·lb)
 - Front Shock Absorber Mounting Nut: 58 N·m (5.9 kgf·m, 43 ft·lb)

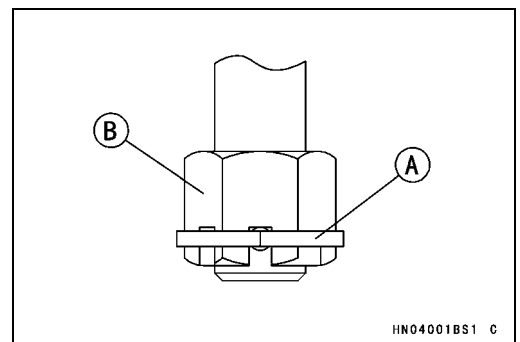
- Install:
 - New Cotter Pins [A]

NOTE

- When inserting the cotter pin, if the slots in the nut do not align with the cotter pin hole in the axle, tighten the nut clockwise [B] up to next alignment.
- It should be within 30 degree.
- Loosen once and tighten again when the slot goes past the nearest hole.



- Bend the cotter pin [A] over the nut [B].



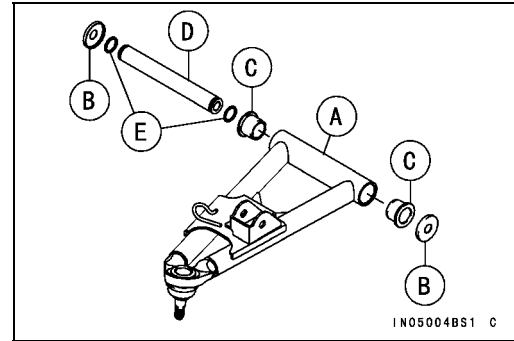
- Install the removed parts (see appropriate chapter).

13-14 SUSPENSION

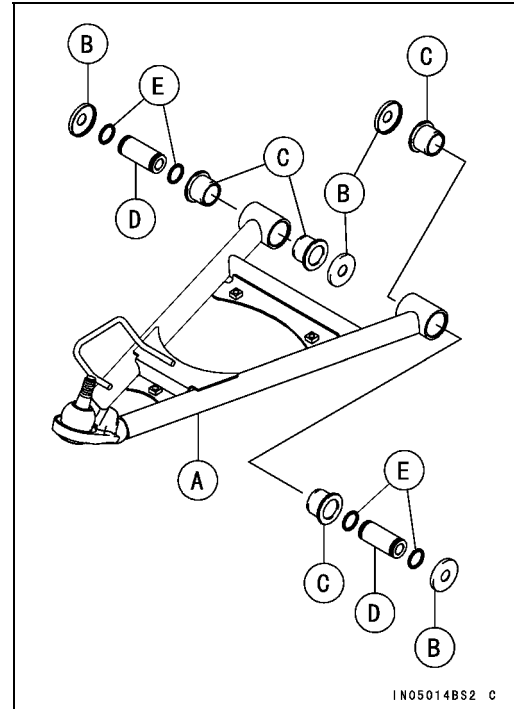
Suspension Arms

Front Suspension Arm Disassembly

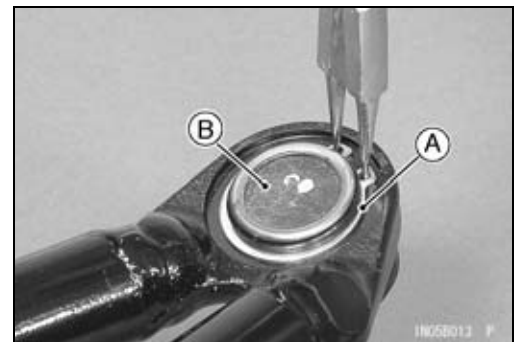
- Remove:
 - Upper Suspension Arm [A]
 - Caps [B]
 - Bushings [C]
 - Sleeve [D]
 - O-rigs [E]



- Remove:
 - Lower Suspension Arm [A]
 - Caps [B]
 - Bushings [C]
 - Sleeve [D]
 - O-rigs [E]

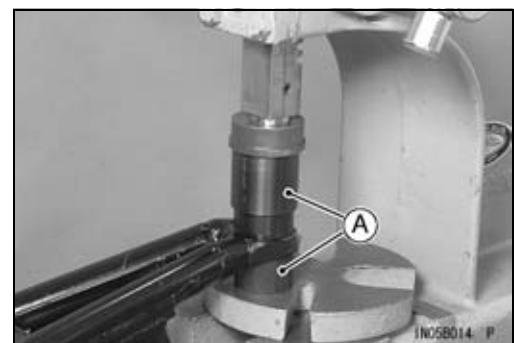


- Remove:
 - Circlip [A]
- **Special Tool - Outside Circlip Pliers: 57001-144**
- Remove the knuckle joint [B] using a press.



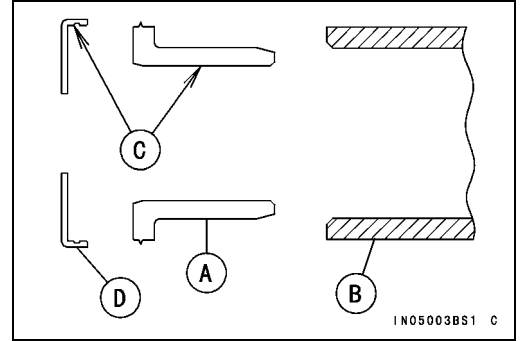
Front Suspension Arm Assembly

- Press the new knuckle joint using a press.
- **Special Tool - Knuckle Joint Driver [A]: 57001-1640**
- Install:
 - New Circlip
- **Special Tool - Outside Circlip Pliers: 57001-144**

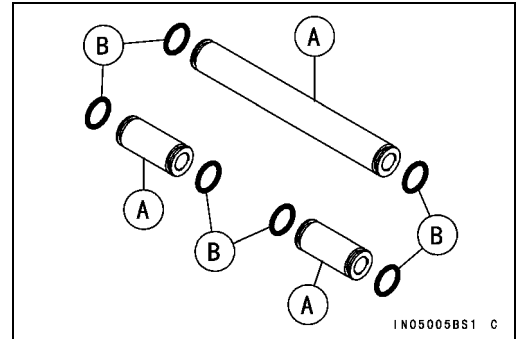


Suspension Arms

- Apply adhesive (Three Bond: 1215) to outside of the bushing [A] and install it into the suspension arm [B].
- Wipe off any extra adhesive.
- Apply grease (Rykon Premium Grease EP #2 Green) to the inside [C] of the bushing and cap [D].



- Apply grease (Rykon Premium Grease EP #2 Green) to the sleeves [A] and O-rings [B].

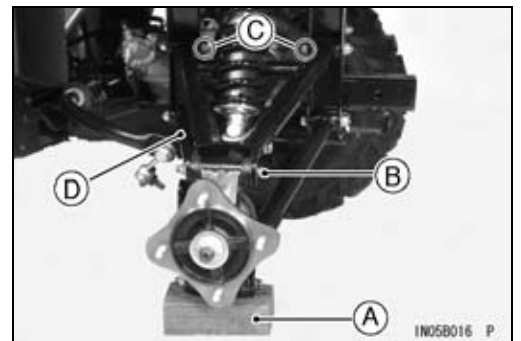


Rear Suspension Arm Removal

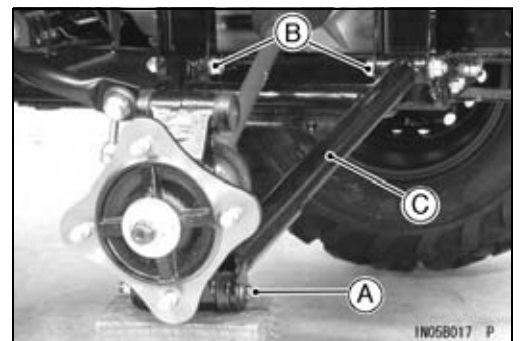
- Remove:
 - Rear Wheel (see Wheel Removal in the Wheels/Tires chapter)
 - Axle Guard [A]
 - Stabilizer Joint [B] (see Stabilizer Removal)



- Support the rear hub using a suitable jack or block [A].
- Remove:
 - Rear Shock Absorber Bolt, Washer and Nut (lower)
 - Rear Knuckle Mounting Bolt [B], Washers, Shim and Nut
 - Rear Upper Suspension Arm Pivot Bolts [C], Caps and Nuts
 - Rear Upper Suspension Arm [D]



- Remove:
 - Rear Lower Suspension Arm Pivot Bolts [A], Washers, Shim and Nut
 - Rear Lower Suspension Arm Pivot Bolts [B], Caps and Nuts
 - Rear Lower Suspension Arm [C]

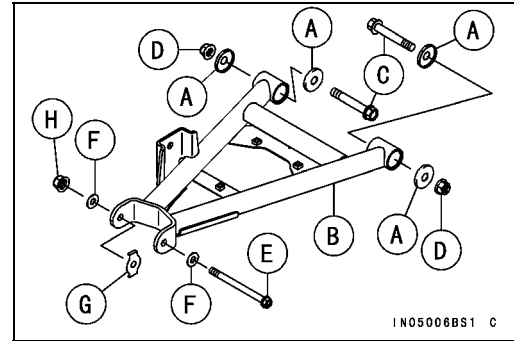


13-16 SUSPENSION

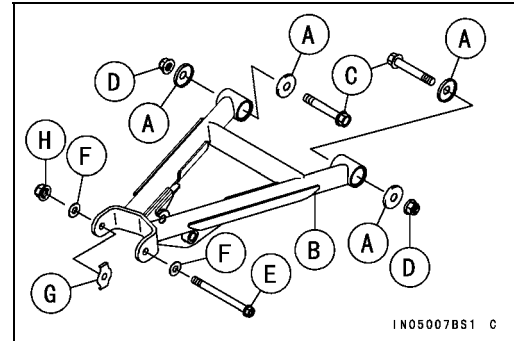
Suspension Arms

Rear Suspension Arm Installation

- Apply grease (Rykon Premium Grease EP #2 Green) to the inside of the caps [A].
- Install:
 - Rear Lower Suspension Arm [B]
 - Rear Lower Suspension Arm Pivot Bolts [C], Caps and Nuts [D] (temporary)
 - Rear Knuckle Mounting Bolt [E], Washers [F], Shim [G] and Nuts [H] (temporary)
- ★ If the shim [G] is need, install it to front side.
- Support the rear hub using a suitable jack or block.



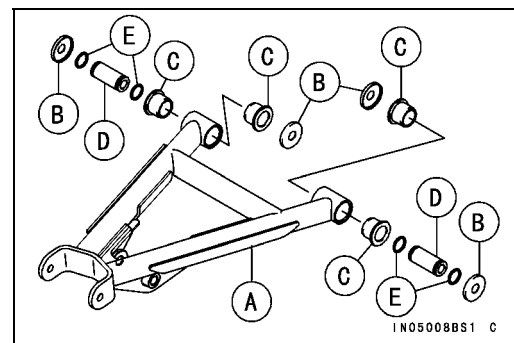
- Apply grease (Rykon Premium Grease EP #2 Green) to the inside of the caps [A].
- Install:
 - Rear Upper Suspension Arm [B]
 - Rear Upper Suspension Arm Pivot Bolts [C], Caps and Nuts [D] (temporary)
 - Rear Knuckle Mounting Bolt [E], Washers [F], Shim [G] and Nuts [H] (temporary)
- ★ If the shim [G] is need, install it to front side.
- Install:
 - Rear Shock Absorber Mounting Bolt, Washer and Nut (lower)



- Tighten:
 - Torque - Rear Suspension Arm Pivot Nuts: 88 N·m (9.0 kgf·m, 65 ft·lb)**
 - Rear Knuckle Mounting Nuts: 58 N·m (5.9 kgf·m, 43 ft·lb)**
 - Rear Shock Absorber Mounting Nuts: 96N·m (9.8 kgf·m, 71 ft·lb)**
- Install:
 - Stabilizer Joint (see Stabilizer Installation)
 - Rear Wheel (see Wheel Installation in the Wheels/Tires chapter)

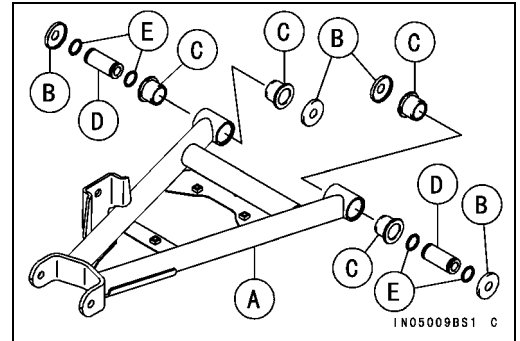
Rear Suspension Arm Disassembly

- Remove:
 - Upper Suspension Arm [A]
 - Caps [B]
 - Bushings [C]
 - Sleeve [D]
 - O-rigs [E]



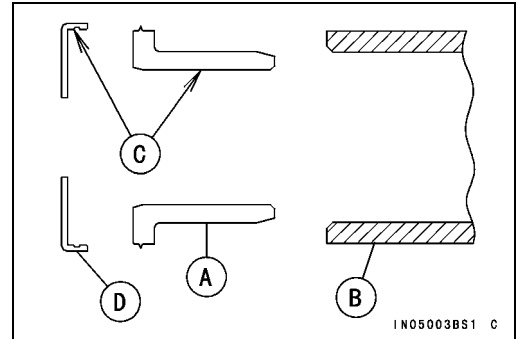
Suspension Arms

- Remove:
 - Lower Suspension Arm [A]
 - Caps [B]
 - Bushings [C]
 - Sleeve [D]
 - O-rings [E]

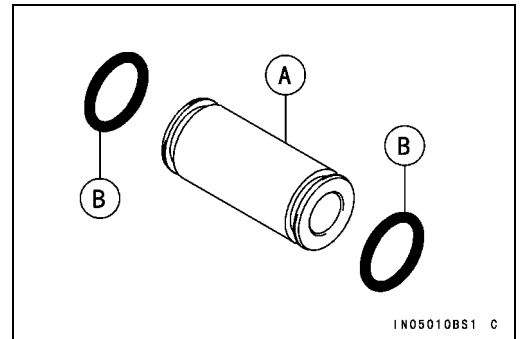


Rear Suspension Arm Assembly

- Apply adhesive (Three Bond: 1215) to outside of the bushing [A] and install it into the suspension arm [B].
- Wipe off any extra adhesive.
- Apply grease (Rykon Premium Grease EP #2 Green) to the inside [C] of the bushing and cap [D].

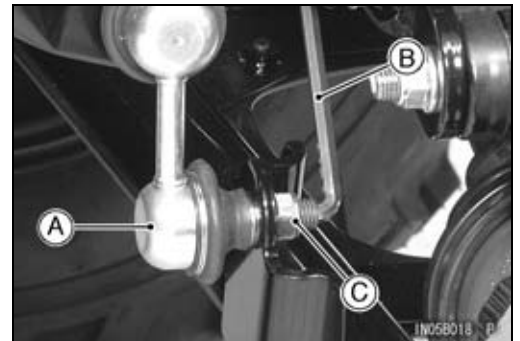


- Apply grease (Rykon Premium Grease EP #2 Green) to the sleeves [A] and O-rings [B] of the upper and lower suspension arms.

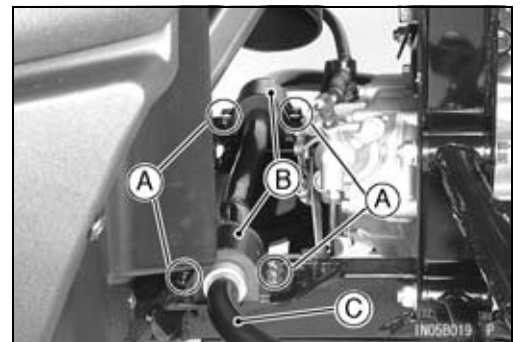


Stabilizer Removal

- Remove:
 - Rear Wheels (see Wheel Removal in the Wheels/Tires chapter)
 - Stabilizer Joint [A]
- Hold the joint bolt with an Allen wrench [B], and remove the nut [C].



- Remove:
 - Stabilizer Holder Bolts [A]
 - Stabilizer Holders [B]
 - Dampers and Stabilizer [C]

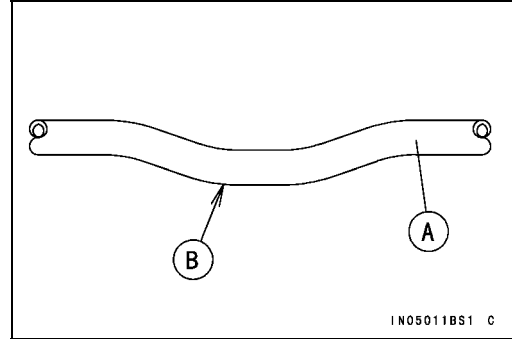


13-18 SUSPENSION

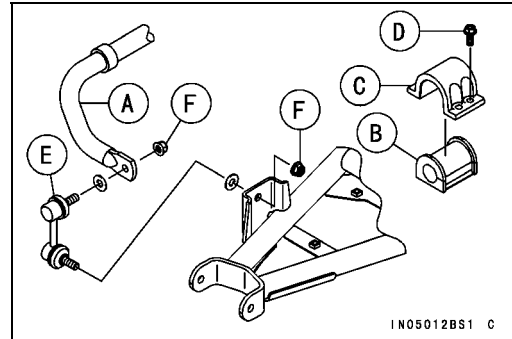
Suspension Arms

Stabilizer Installation

- Install the stabilizer [A] so that the recess side [B] faces to lower side.



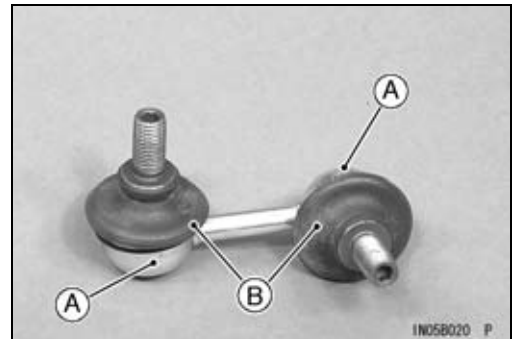
- Install:
 - Stabilizer [A]
 - Dampers [B] (both sides)
 - Stabilizer Holders [C] and Bolts (both sides)
- Apply a non-permanent locking agent to the stabilizer holder bolts.
- Tighten:
 - Torque - Stabilizer Holder Bolts [D]: 32 N·m (3.3 kgf·m, 24 ft·lb)**



- Install:
 - Stabilizer Joints [E] (both sides)
- Hold the joint bolt with an Allen wrench, and tighten the nut.
 - Torque - Stabilizer Joint Nuts [F]: 58 N·m (5.9 kgf·m, 43 ft·lb)**
- Install:
 - Rear Wheels (see Wheel Installation in the Wheels/Tires chapter)

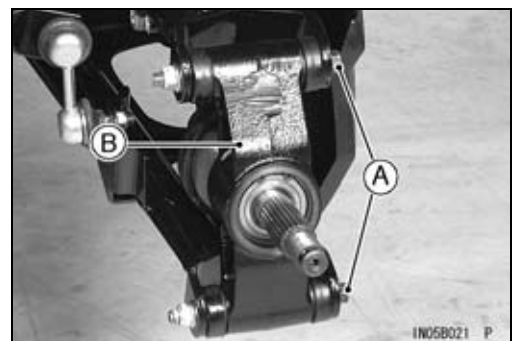
Stabilizer Joint Inspection

- Remove:
 - Stabilizer Joint (see stabilizer Removal)
- Inspect each spherical bearing [A].
- ★ If roughness, excessive play, or seizure is found, replace the stabilizer joint.
- Inspect each boot [B].
- ★ If damage, wear or deterioration is found, replace the stabilizer joint.



Rear Knuckle Removal

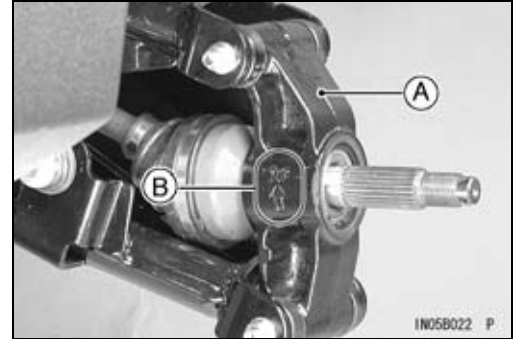
- Remove:
 - Rear Wheel (see Wheel Removal in the Wheels/Tires chapter)
 - Rear Hub (see Rear Hub Removal in the Wheels/Tires chapter)
- Remove:
 - Rear Knuckle Mounting Bolts [A], washers and Nuts
 - Rear Knuckle [B]



Suspension Arms

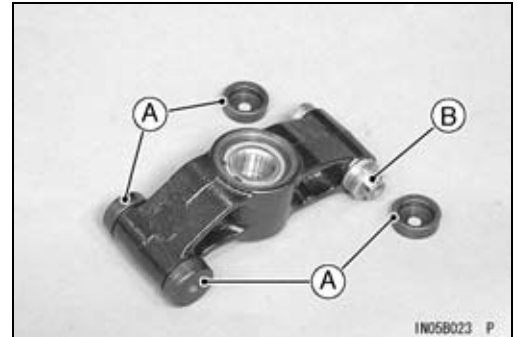
Rear Knuckle Installation

- Install the rear knuckle [A] so that the TOP mark [B] faces upward.
- Tighten:
Torque - Rear Knuckle Mounting Nuts: 58 N·m (5.9 kgf·m, 43 ft·lb)

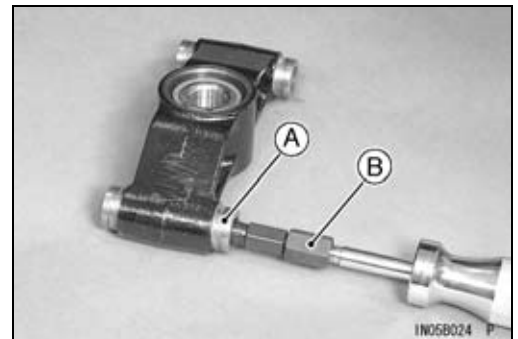


Rear Knuckle Disassembly

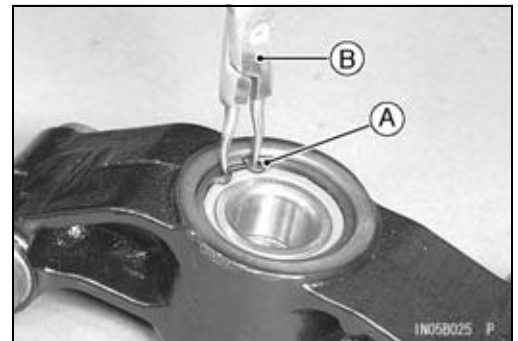
- Remove:
 Rear Knuckle (see Rear Knuckle Removal)
 Oil Seals [A]
 Sleeve [B]



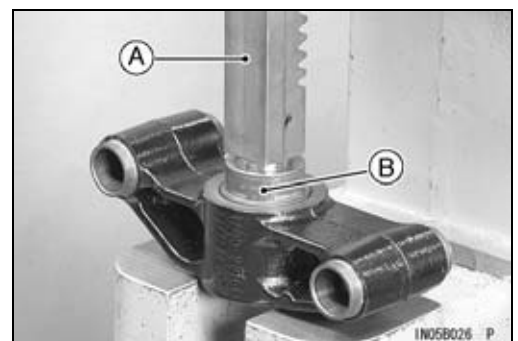
- Remove:
 Bushings [A]
 ○Using a suitable bearing remover [B].



- Remove:
 Circlip [A]
Special Tool - Inside Circlip Pliers [B]: 57001-143



- Remove the ball bearing using a press [A].
Special Tool - Bearing Driver Set [B]: 57001-1129

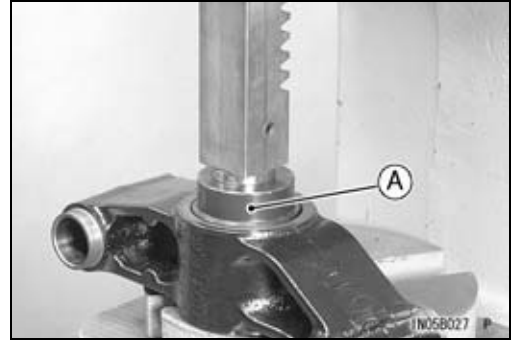


13-20 SUSPENSION

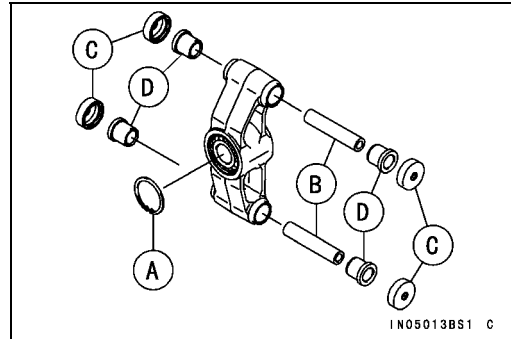
Suspension Arms

Rear Knuckle Assembly

- Install:
 - Ball Bearing (until bottomed)
- **Special Tool - Bearing Driver Set [A]: 57001-1129**



- Install:
 - New Circlip [A]
- **Special Tool - Inside Circlip Pliers: 57001-143**
- Apply grease (Rykon Premium Grease EP #2 Green):
 - Sleeves [B]
 - Lips of Oil Seals [C]
- Install:
 - Bushings [D] (until bottomed)
- **Special Tool - Bearing Driver Set: 57001-1129**
- Install:
 - Sleeve
 - Oil Seals



Bearing and Oil Seal

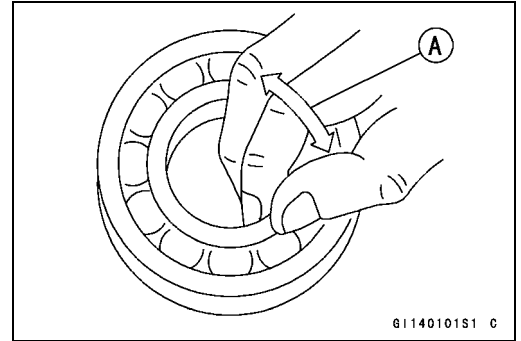
Ball Bearing Inspection

Since the bearings are made to extremely close tolerances, the clearance cannot normally be measured.

CAUTION

Do not remove any bearings for inspection.

- Turn each bearing back and forth [A] while checking for plays, roughness, or binding.
- ★ If bearing play, roughness, or binding is found, replace the bearing.

***Oil Seal Inspection***

- Inspect the oil seals.
- ★ Replace any if the lips are misshapen, discolored (indicating that the rubber has deteriorated), hardened, or been otherwise damaged.

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