Section 2

Suspension

CONTENTS

Precautions

Precautions

Precautions for Suspension

B718H12000001

Refer to “General Precautions in Section 00 (Page 00-1)”.

⚠ WARNING

All suspensions, bolts and nuts are an important part in that it could affect the performance of vital parts. They must be tightened to the specified torque periodically and if the suspension effect is lost, replace it with a new one.

⚠ CAUTION

Never attempt to heat, quench or straighten any suspension part. Replace it with a new one, or damage to the part may result.

Suspension General Diagnosis

Diagnostic Information and Procedures

Suspension and Wheel Symptom Diagnosis

B718H12104001

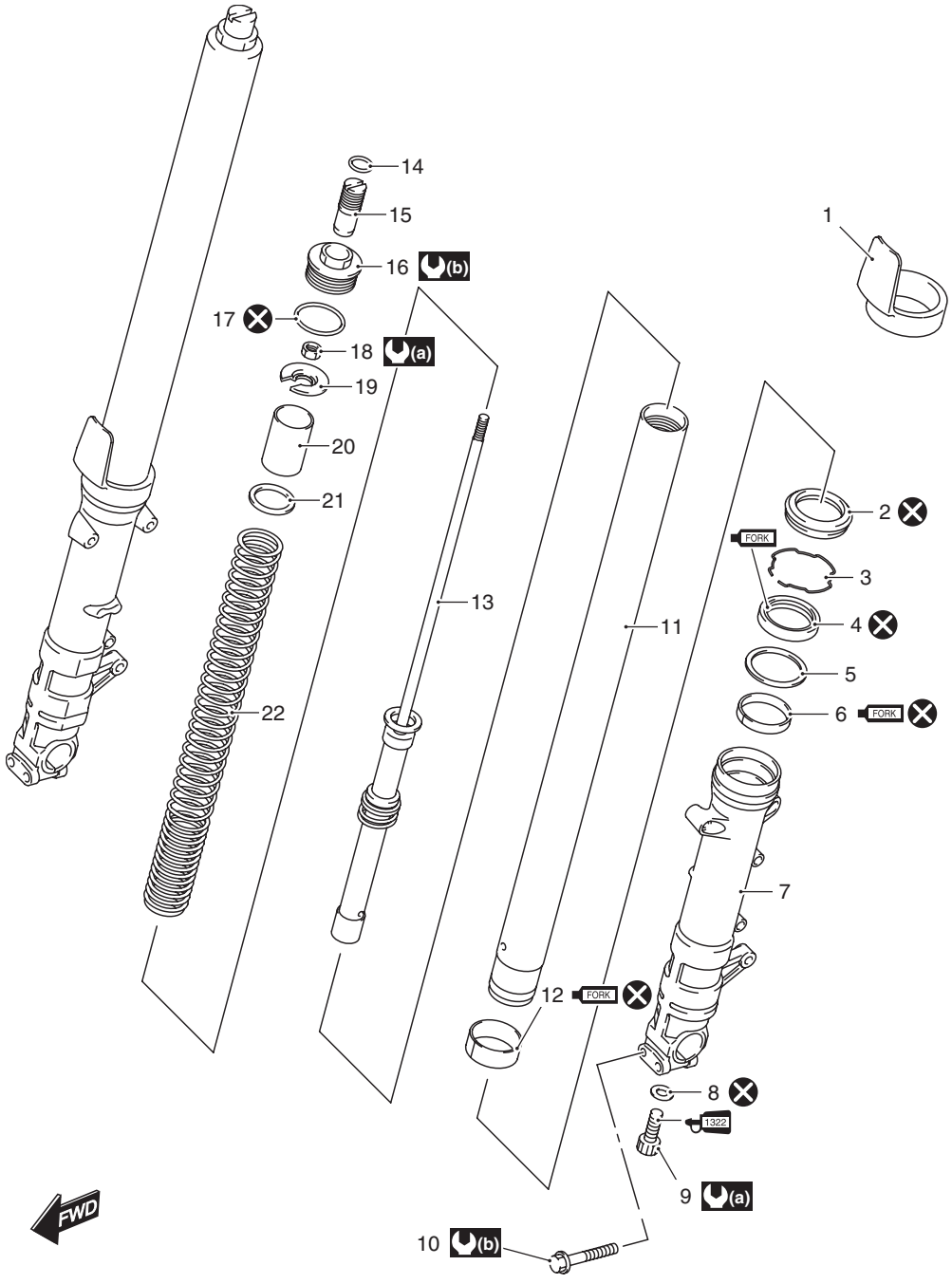
Condition	Possible cause	Correction / Reference Item
Wobbly front wheel	Distorted wheel rim.	*Replace.*
	Worn front wheel bearings.	*Replace.*
	Defective or incorrect tire.	*Replace.*
	Loose front axle nut.	*Tighten.*
	Loose front axle pinch bolt.	*Tighten.*
	Incorrect fork oil level.	*Adjust.*
Front suspension too soft	Weak spring.	*Replace.*
	Insufficient fork oil.	*Check level and add.*
	wrong weight fork oil.	*Replace.*
Front suspension too stiff	Excessively viscous fork oil.	*Replace.*
	Excessive fork oil.	*Check level and drain.*
	Bent front axle.	*Replace.*
Front suspension too noisy	Insufficient fork oil.	*Check level and add.*
	Loose front suspension fastener.	*Tighten.*
Wobbly rear wheel	Distorted wheel rim.	*Replace.*
	Worn rear wheel bearing.	*Replace.*
	Defective or incorrect tire.	*Replace.*
	Worn swingarm bearing.	*Replace.*
	Worn rear suspension bushing.	*Replace.*
	Loose rear suspension fastener.	*Tighten.*
Rear suspension too soft	Weak rear shock absorber spring.	*Replace.*
	Rear shock absorber leaks oil.	*Replace.*
	Improperly suspension setting.	*Adjust.*
Rear suspension too stiff	Improper suspension setting.	*Adjust.*
	Bent rear shock absorber shaft.	*Replace.*
	Bent swingarm.	*Replace.*
	Worn swingarm and rear suspension related bearings.	*Replace.*
Rear suspension too noisy	Loose rear suspension fastener.	*Tighten.*
	Worn rear suspension bushing.	*Replace.*
	Worn swingarm bearing.	*Replace.*

Front Suspension

Repair Instructions

Front Fork Components

B718H12206001



I718H1220001-04

1. Front fork protector	10. Front axle pinch bolt	19. Spring seat
2. Dust seal	11. Inner tube	20. Spacer
3. Oil seal stopper ring	12. Inner tube slide metal	21. Washer
4. Oil seal	13. Damper rod (Inner rod cylinder)	22. Spring
5. Oil seal retainer	14. O-ring	(a) : 20 N·m (2.0 kgf-m, 14.5 lb-ft)
6. Outer tube slide metal	15. Spring adjuster	(b) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)
7. Outer tube	16. Front fork cap bolt	1322 : Apply thread lock to thread part.
8. Gasket	17. O-ring	FORK : Apply fork oil.
9. Damper rod bolt	18. Inner rod lock-nut	: Do not reuse.

Front Fork Removal and Installation

B718H12206002

NOTE

The right and left front forks are installed symmetrically and therefore the removal procedure for one side is the same as that for the other side.

Removal

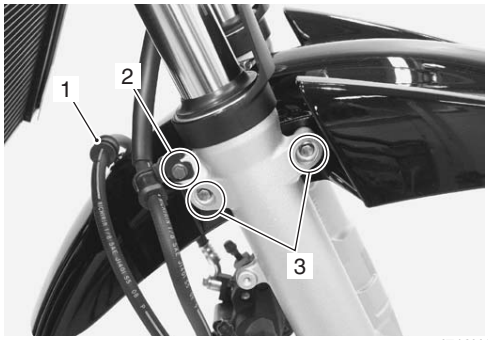
1) Remove the front wheel assembly. Refer to “Front Wheel Assembly Removal and Installation in Section 2D (Page 2D-6)”.

⚠ CAUTION

- **Make sure that the motorcycle is supported securely.**
- **Do not operate the front brake lever with the front wheel removed.**

2) Disconnect the brake hose clamp (1) from the front fender.
3) Remove the brake hose clamp bolt (2).
4) Remove the front fender by removing the bolts (3), left and right.

GSF1250/S



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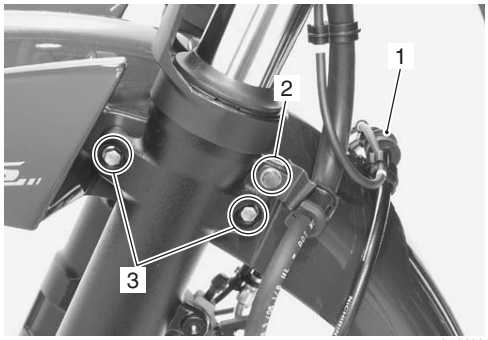
GSF1250A/SA



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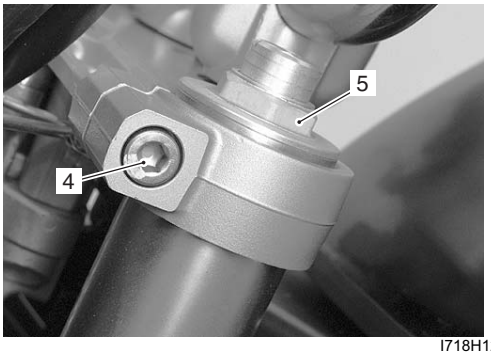
5) Loose the front fork upper clamp bolt (4).

NOTE

Slightly loosen the front fork cap bolt (5) to facilitate later disassembly.

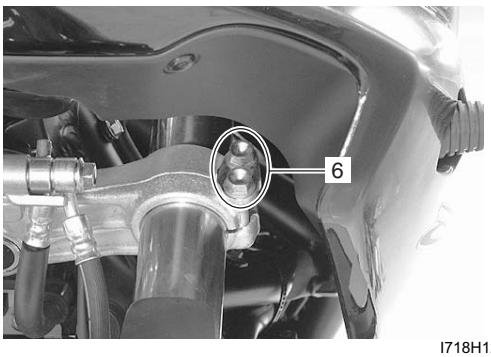


I718H1220002-02

6) Loosen the front fork lower clamp bolts (6) and remove the front fork.

NOTE

Hold the front fork by the hand to prevent sliding out of the steering stem.



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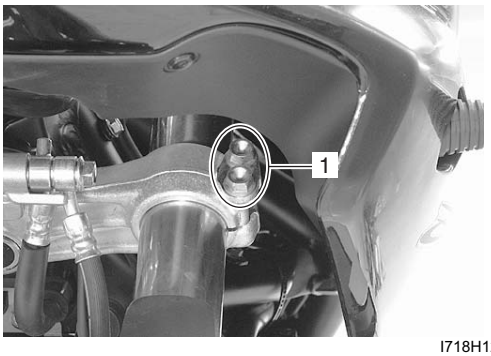
Installation

1) Set the front fork to the front fork lower bracket temporarily by tightening the lower clamp bolts (1).

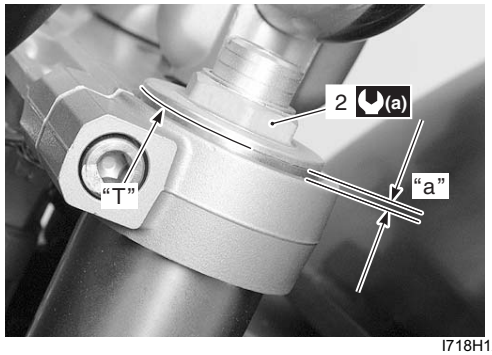


I718H1220006-03

2) Tighten the front fork cap bolt (2) to the specified torque with the special tool.

Tightening torque
Front fork cap bolt (a): 23 N·m (2.3 kgf-m, 16.5 lb-ft)

3) Loosen the lower clamp bolts.
4) Set the front fork with the upper surface "T" of the inner tube positioned 1.8 mm (0.071 in) "a" from the upper surface of the upper bracket.

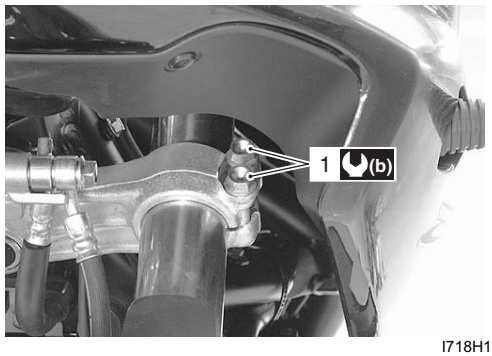


I718H1220007-06

"a": 1.8 mm (0.71 in))

5) Tighten the front fork lower clamp bolts (1).

Tightening torque
Front fork lower clamp bolt (b): 23 N·m (2.3 kgf-m, 16.5 lb-ft)



I718H1220008-05

6) Tighten the front fork upper fork clamp bolt (3).

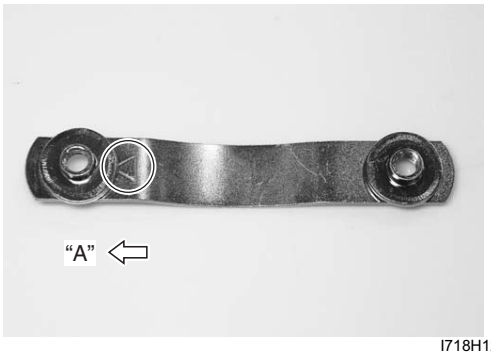
Tightening torque
Front fork upper clamp bolt (c): 23 N·m (2.3 kgf-m, 16.5 lb-ft)

I718H1220009-03

7) Set the front fender plate nut to the front fender.

NOTE

Face the triangle mark on the front fender brace to the front side "A".



I718H1220010-02

8) Remount the front fender along with the fender plate nut.
9) Install the front wheel assembly. Refer to "Front Wheel Assembly Removal and Installation in Section 2D (Page 2D-6)".

NOTE

Before tightening the front axle and front axle pinch bolts, move the front fork up and down four or five times.

⚠ WARNING

After remounting the brake caliper, pump the brake lever until the pistons push the pads correctly.

I718H1240014-02

Front Fork Inspection

B718H12206004

Refer to "Front Fork Inspection in Section 0B (Page 0B-20)".

Front Fork Adjustment

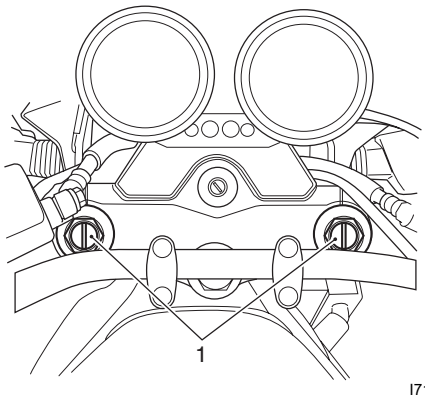
B718H12206006

Turn the adjustment (1) to the desired position.

⚠ CAUTION

Adjust the left and right front forks to the same setting.

STD position
3rd groove from top



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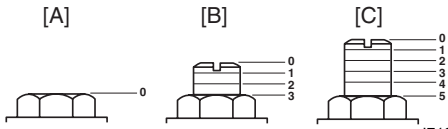

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[A]: Position 0	[C]: Position 5
[B]: Position 3 (STD)	

Front Fork Disassembly and Assembly

B718H12206003

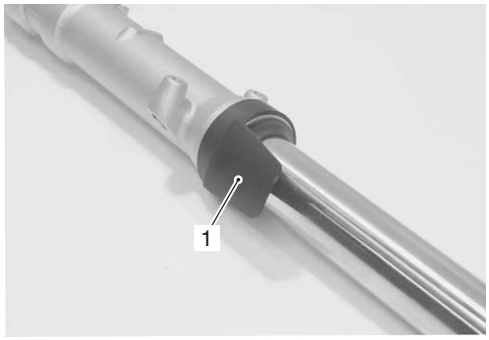
Refer to “Front Fork Removal and Installation (Page 2B-2)”.

NOTE

The right and left front forks are installed symmetrically and therefore the disassembly procedure for one side is the same as that for the other side.

Disassembly

1) Remove the front fork protector (1).



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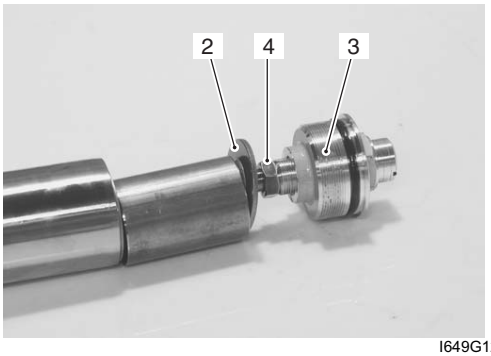
2) Remove the front fork cap bolt (3) from the outer tube.
3) Remove the spring seat (2).
4) Remove the front fork cap bolt (3) with spring adjuster by loosening the inner rod lock-nut (4).



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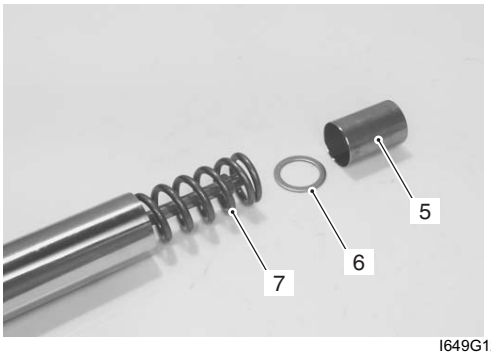
5) Remove the spacer (5), washer (6) and spring (7).



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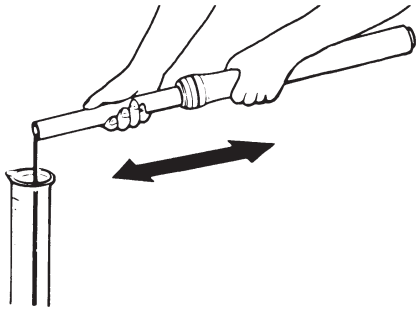
6) Invert the fork and stroke it several times to drain out fork oil.
7) Hold the fork inverted for a few minutes to drain oil.



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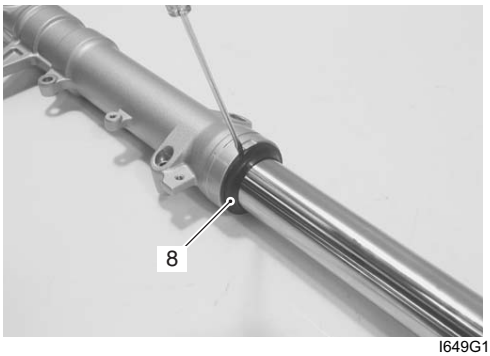
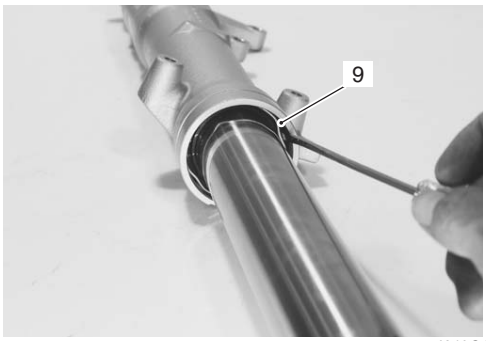
8) Remove the dust seal (8).



I649G1220013-02

9) Remove the oil seal stopper ring (9).



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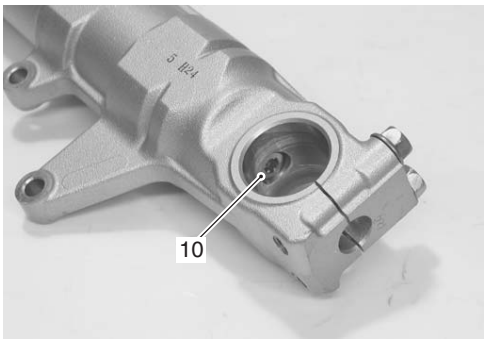
10) Remove the damper rod bolt (10).



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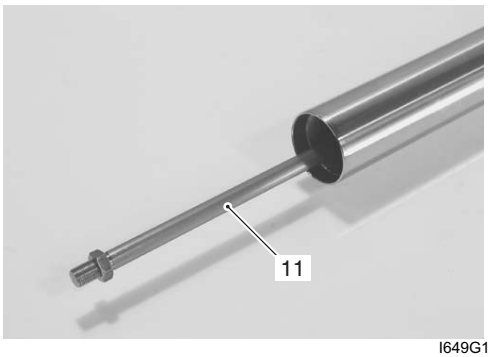
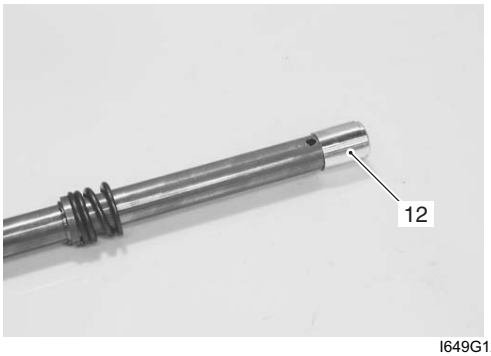
11) Remove the inner rod cylinder (11).



I649G1220016-02

12) Remove the oil lock piece (12).

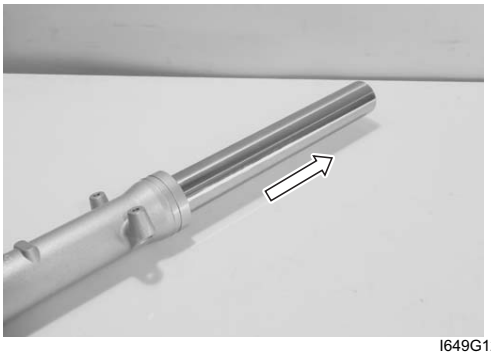


I649G1220017-02

13) Remove the oil seal by slowly pulling out the inner tube.

NOTE

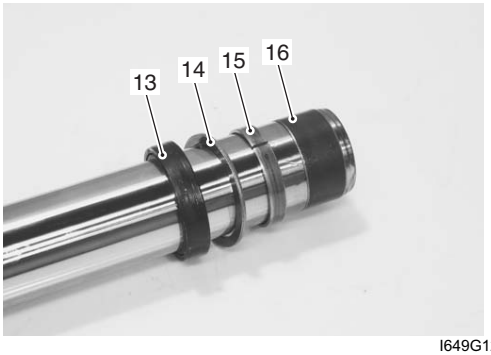
Be careful not to damage the inner tube.



I649G1220018-01

14) Remove the following parts.

- Oil seal (13)
- Oil seal retainer (14)
- Outer tube slide metal (15)
- Inner tube slide metal (16)



I649G1220019-04

Assembly
Assemble the front fork in the reverse order of disassembly. Pay attention to the following points:

⚠ CAUTION

The outer and inner tube's slide metals must be replaced along with the oil seal and dust seal when assembling the front fork.

Inner tube

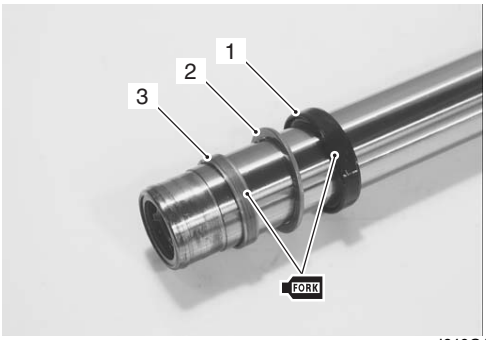
- Install the following parts onto the inner tube.
  - Oil seal (1)
  - Oil seal retainer (2)
  - Outer tube slide metal (3)

⚠ CAUTION

When installing the oil seal to inner tube, be careful not to damage the oil seal lip.

- Apply fork oil to the outer slide metal and oil seal lip.

FORK : Oil 99000–99001–SS8 (SUZUKI FORK OIL SS-08 or equivalent)



I649G1220020-01

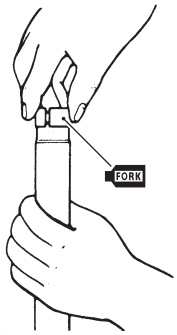
- Hold the inner tube vertically, clean the metal groove and install the inner tube slide metal by hand.

⚠ CAUTION

Do not damage the Teflon coated surface of the inner tube's slide metal when mounting it.

- Apply fork oil to the inner tube slide metal.

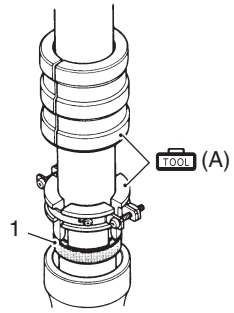
FORK : Oil 99000–99001–SS8 (SUZUKI FORK OIL SS-08 or equivalent)



I649G1220021-01

- Insert the inner tube into the outer tube and install the oil seal (1) using the special tool.

Special tool
TOOL (A): 09940–52861 (Front fork oil seal installer)



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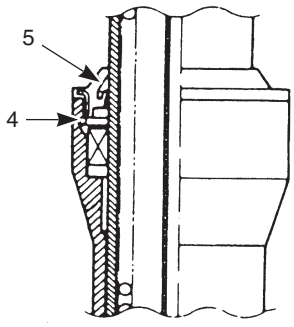
- Install the oil seal stopper ring (4).

⚠ CAUTION

Make sure that the oil seal stopper ring is fitted securely.

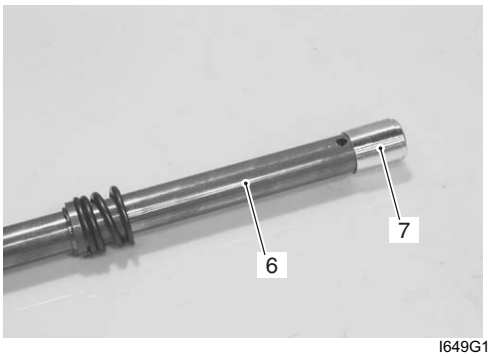
- Install the dust seal (5).



I649G1220023-02

Damper rod bolt

- Insert the inner rod/damper rod (cartridge) (6) and the oil lock piece (7) into the inner tube.



I649G1220024-01

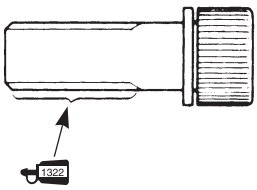
- Apply thread lock to the damper rod bolt and tighten it to the specified torque with a 6-mm hexagon wrench and special tools.

⚠ CAUTION

Use a new gasket to prevent oil leakage.

1322 : Thread lock cement 99000–32110 (THREAD LOCK CEMENT SUPER 1322 or equivalent)

Tightening torque
Front fork damper rod bolt: 20 N·m (2.0 kgf-m, 14.5 lb-ft)



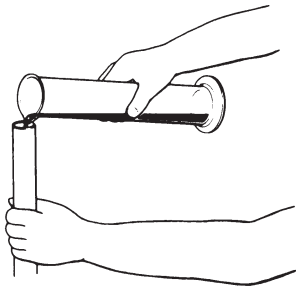
I718H1220012-03

Fork oil

- Place the front fork vertically without spring.
- Compress it fully.
- Pour specified front fork oil up to the top level of the inner tube.

FORK : Oil 99000–99001–SS8 (SUZUKI FORK OIL SS-08 or equivalent)

Capacity (each leg)
GSF1250/A: 472 ml (16.0/16.6 US/Imp oz)
GSF1250S/SA: 471 ml (15.9/16.0 US/Imp oz)



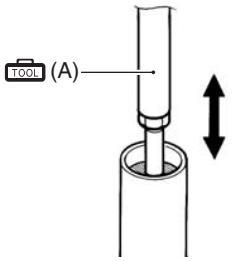
I649G1220026-01

- Move the inner rod slowly with the special tool more than ten times until bubbles do not come out from the oil.

NOTE

Refill front fork oil up to the top of the inner tube to find bubbles while bleeding air.

Special tool
TOOL (A): 09940–52841 (Inner rod holder)

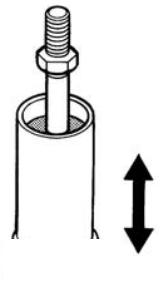


I649G1220027-04

- Refill specified front fork oil up to the top level of the inner tube again. Move the inner tube up and down several strokes until bubbles do not come out from the oil.
- Keep the front fork vertically and wait 5 – 6 minutes.

NOTE

- **Always keep oil level over the cartridge top end, or air may enter the cartridge during this procedure.**
- **Take extreme attention to pump out air completely.**



I649G1220028-02

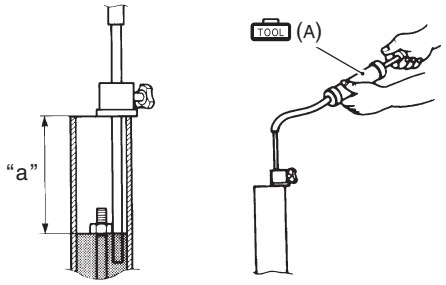
- Hold the front fork vertically and adjust fork oil level with the special tool.

NOTE

When adjusting the fork oil level, remove the fork spring and compress the inner tube fully.

Special tool
(A): 09943–74111 (Fork oil level gauge)

Fork oil level “a”
GSF1250/A: 143 mm (5.6 in.)
GSF1250S/SA: 144 mm (5.7 in)



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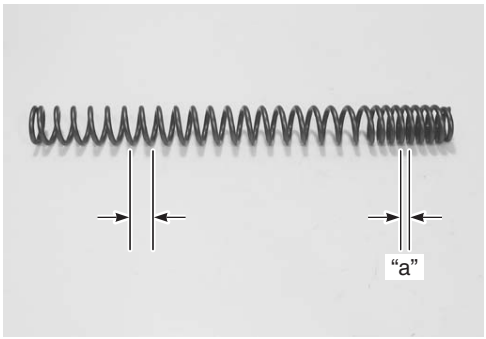
Fork spring

- Install the fork spring as shown.

NOTE

The smaller pitch “a” should face to the bottom side of the front fork.



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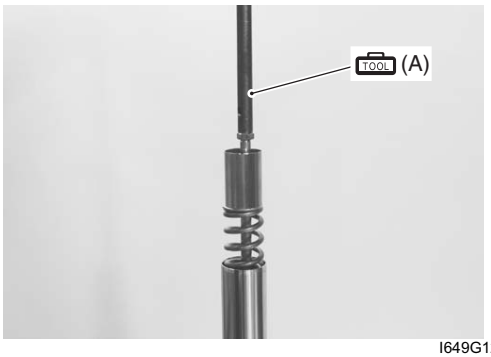
Inner rod and lock-nut

- Install the special tool and pull up the inner rod.

Special tool
(A): 09940–52841 (Inner rod holder)



I649G1220031-03

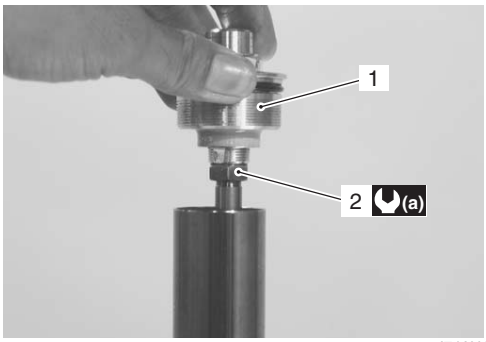
- Install the front fork cap (1).

NOTE

Before installing the front fork cap, turn the inner rod lock-nut (2) completely to the lower position as shown.

- Tighten the lock-nut (2) to the specified torque.

Tightening torque
Inner rod lock-nut (a): 20 N·m (2.0 kgf-m, 14.5 lb-ft)



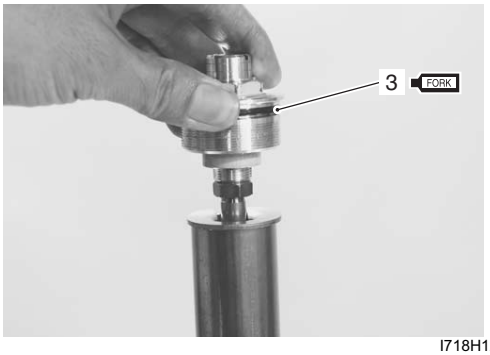
I718H1220013-01

- Apply fork oil lightly to the O-ring (3).

⚠ CAUTION

Use a new O-ring (3) to prevent oil leakage.

FORK : Oil 99000–99001–SS8 (SUZUKI FORK OIL SS-08 or equivalent)



I718H1220016-01

- Install the front fork protector (4).

NOTE

Fit the projection of the front fork protector to the depression of the front fork outer tube.

I649G1220034-01

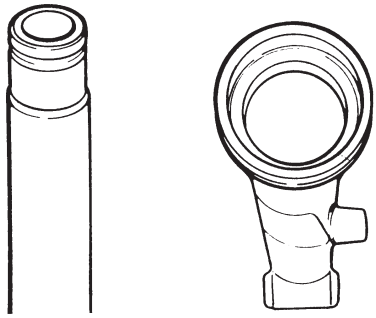
Front Fork Parts Inspection

B718H12206005

Refer to “Front Fork Disassembly and Assembly (Page 2B-4)”.

Inner and Outer Tubes

Inspect the inner tube sliding surface and outer tube sliding surface for scuffing.



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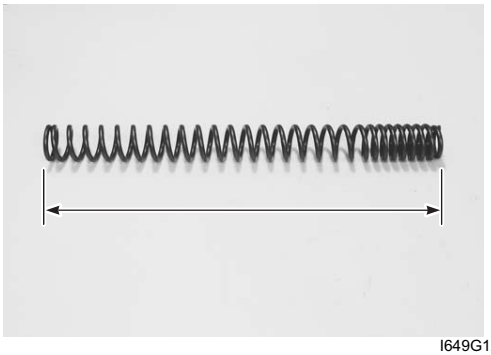
Fork Spring
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Front fork spring free length
Service limit: 382 mm (15.0 in.)



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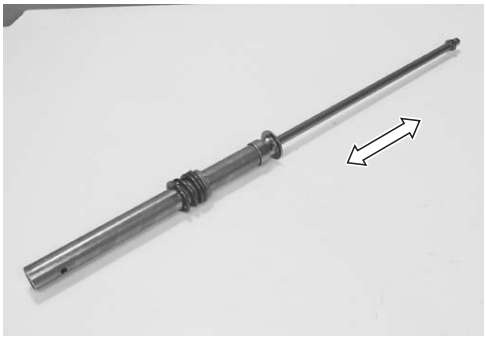
Damper Rod
Move the inner rod by hand to inspect it if operating smoothly.



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Specifications

Service Data

B718H12207001

Front Fork
Unit: mm (in.)

Item	Standard		Limit
Front fork stroke	130 (5.1)		—
Front fork inner tube O.D.	43 (1.7)		—
Front fork spring free length	390.4 (15.37)		382 (15.0)
Front fork oil level (without spring, outer tube fully compressed)	GSF1250/A	143 (5.6)	—
	GSF1250S/SA	144 (5.7)	
Front fork spring adjuster	3rd groove from top		—

Oil

Item	Specification		Note
Front fork oil type	Fork oil SS-08 or equivalent fork oil		
Front fork oil capacity (each leg)	GSF1250/A	472 ml (16.0/16.6 US/lmp oz)	—
	GSF1250S/SA	471 ml (15.9/16.6 US/lmp oz)	

Tightening Torque Specifications

B718H12207002

Fastening part	Tightening torque			Note
	N·m	kgf-m	lb-ft	
Front fork cap bolt	23	2.3	16.5	☞(Page 2B-3)
Front fork lower clamp bolt	23	2.3	16.5	☞(Page 2B-3)
Front fork upper clamp bolt	23	2.3	16.5	☞(Page 2B-3)
Front fork damper rod bolt	20	2.0	14.5	☞(Page 2B-7)
Inner rod lock-nut	20	2.0	14.5	☞(Page 2B-9)

NOTE

The specified tightening torque is also described in the following.
“Front Fork Components (Page 2B-1)”

Reference:
For the tightening torque of fastener not specified in this section, refer to “Tightening Torque Specifications in Section 0C (Page 0C-7)”.

Special Tools and Equipment

Recommended Service Material

B718H12208001

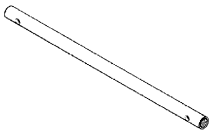
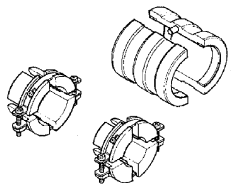
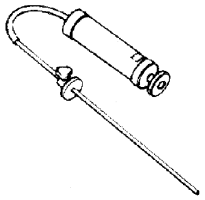
Material	SUZUKI recommended product or Specification		Note
Oil	SUZUKI FORK OIL SS-08 or equivalent	P/No.: 99000–99001–SS8	☞(Page 2B-6) / ☞(Page 2B-6) / ☞(Page 2B-7) / ☞(Page 2B-9)
Thread lock cement	THREAD LOCK CEMENT SUPER 1322 or equivalent	P/No.: 99000–32110	☞(Page 2B-7)

NOTE

Required service material is also described in the following.
“Front Fork Components (Page 2B-1)”

Special Tool

B718H12208002

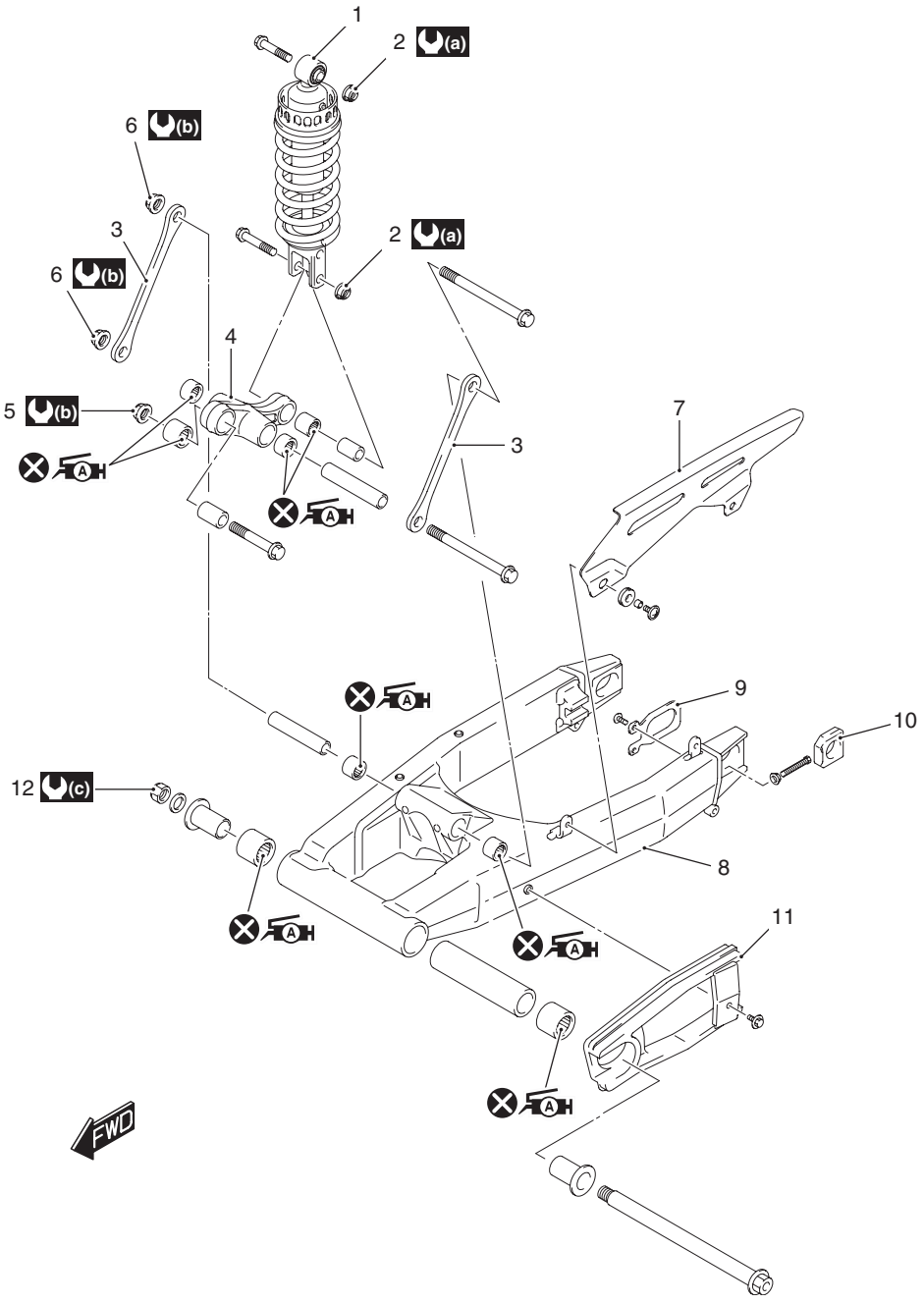
09940–52841 Inner rod holder ☞(Page 2B-7) / ☞(Page 2B-8) 	09940–52861 Front fork oil seal installer ☞(Page 2B-6) 
09943–74111 Fork oil level gauge ☞(Page 2B-8) 	

Rear Suspension

Repair Instructions

Rear Suspension Components

B718H12306001

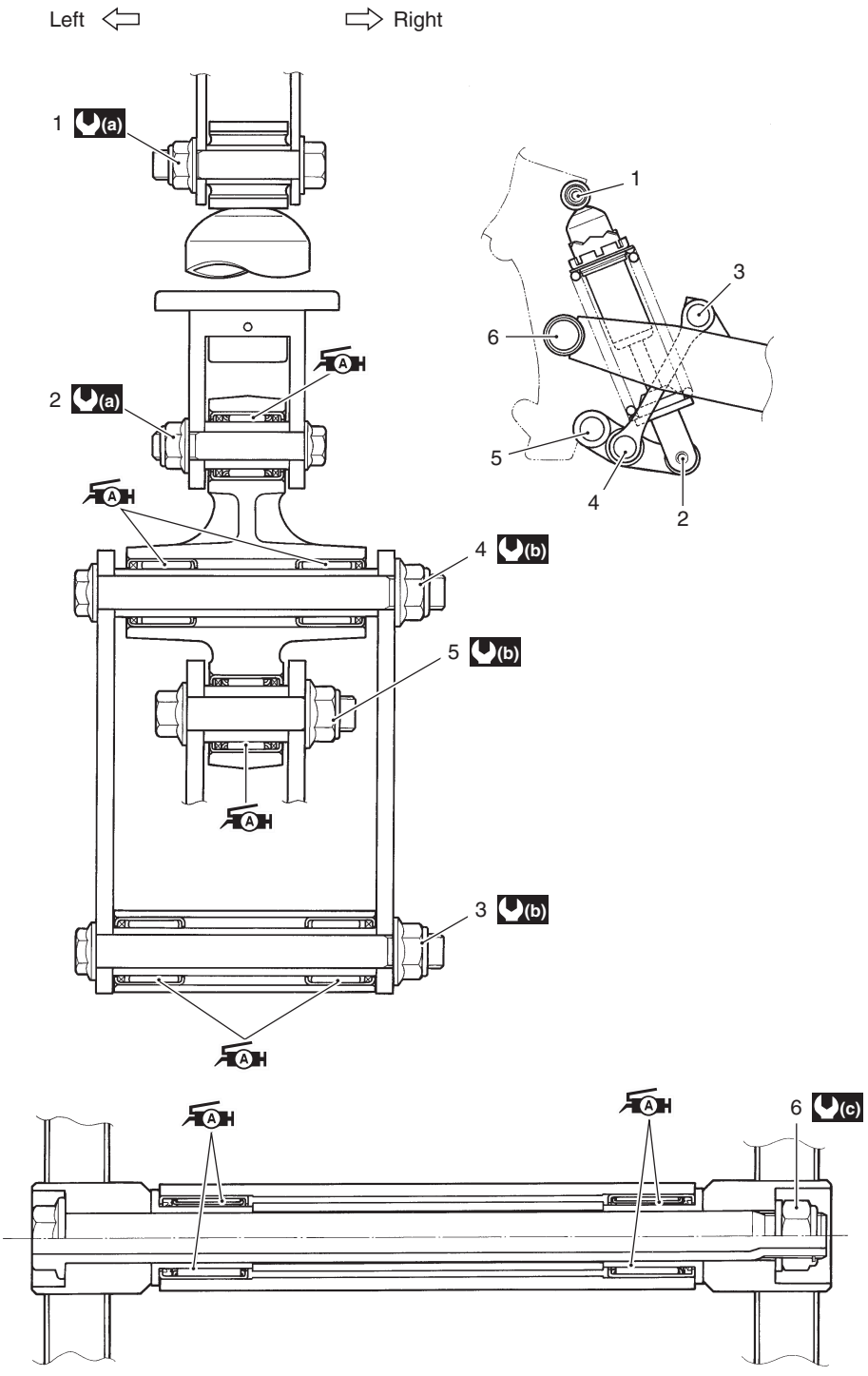


I718H1230001-01

1. Rear shock absorber	7. Chain case	(a) : 50 N·m (5.0 kgf-m, 36.0 lb-ft)
2. Rear shock absorber mounting nut	8. Swingarm	(b) : 78 N·m (7.8 kgf-m, 56.5 lb-ft)
3. Cushion rod	9. Plate	(c) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)
4. Cushion lever	10. Chain adjuster	A : Apply grease to the bearing.
5. Cushion lever mounting nut	11. Chain buffer	: Do not reuse.
6. Cushion rod mounting nut	12. Swingarm pivot nut	

Rear Suspension Assembly Construction

B718H12306002



I718H1230042-01

1. Rear shock absorber mounting nut (Upper)	5. Cushion lever mounting nut	(c) : 100 N·m (10.0 kgf-m 72.5 lb-ft)
2. Rear shock absorber mounting nut (Lower)	6. Swingarm pivot nut	A H : Apply grease to the bearing.
3. Cushion rod mounting nut (Upper)	(a) : 50 N·m (5.0 kgf-m 36.0 lb-ft)	
4. Cushion rod mounting nut (Lower)	(b) : 78 N·m (7.8 kgf-m 56.5 lb-ft)	

Rear Shock Absorber Removal and Installation

B718H12306003

Removal

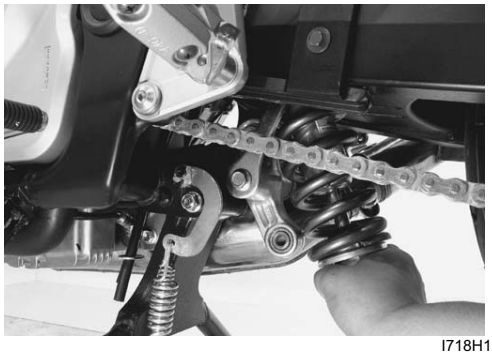
1) Place the motorcycle on the center stand and support the motorcycle with a jack to be no load for the rear shock absorber.
2) Remove the left frame cover. Refer to “Exterior Parts Removal and Installation in Section 9D (Page 9D-6)”.
3) Remove the shock absorber lower mounting bolt and nut, and cushion lever mounting bolt and nut.

I718H1230002-01

4) Remove the shock absorber upper mounting bolt and nut.

I718H1230003-01

5) Remove the shock absorber.



I718H1230004-01

Installation

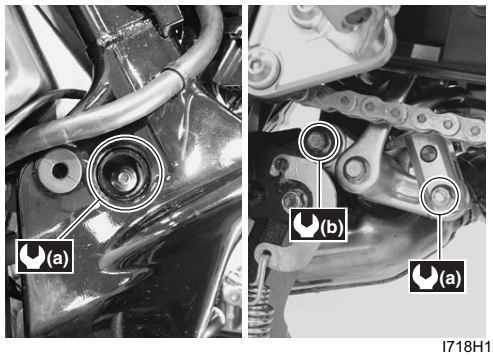
Install the rear shock absorber in the reverse order of removal. Pay attention to the following points:

- Temporary install the rear shock absorber and cushion lever.
- Tighten the rear shock absorber upper/lower mounting bolts and nuts.

  Tightening torque
  Rear shock absorber mounting nut (a): 50 N·m (5.0 kgf-m, 36.0 lb-ft)

- Tighten the cushion lever mounting bolt and nut.

  Tightening torque
  Cushion lever mounting nut (b): 78 N·m (7.8 kgf-m, 56.5 lb-ft)



I718H1230005-03

Rear Suspension Inspection

B718H12306004

Refer to “Rear Suspension Inspection in Section 0B (Page 0B-20)”.

Rear Shock Absorber Inspection

B718H12306005

Inspect the rear shock absorber in the following procedures:

1) Remove the rear shock absorber. Refer to “Rear Shock Absorber Removal and Installation (Page 2C-3)”.
2) Inspect the rear shock absorber for damage and oil leakage, and absorber bushing for wear and damage. If any defect is found, replace the rear shock absorber with a new one.

⚠ CAUTION

Do not attempt to disassemble the rear shock absorber. It is unserviceable.

I718H1230006-01

3) Install the rear shock absorber. Refer to “Rear Shock Absorber Removal and Installation (Page 2C-3)”.

Rear Suspension Adjustment

B718H12306006

After installing the rear suspension, adjust the spring pre-load and damping force as follows.

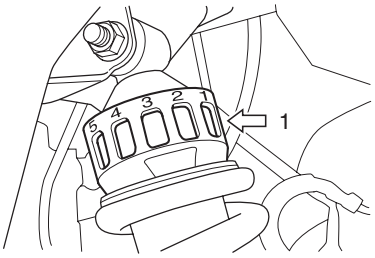
Spring Pre-load Adjustment

Turn the spring tension ring (1) to the desired position.

NOTE

Position 1 provides the softest spring tension and position 7 provides the stiffest.

STD position
GSF1250/A: 3rd position
GSF1250S/SA: 4th position



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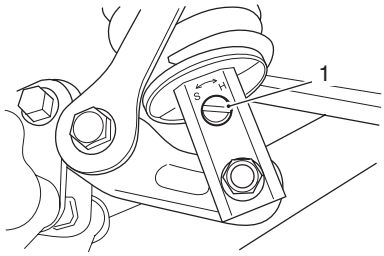
Damping Force Adjustment

Turn the damping force adjuster (1) to the desired position.

NOTE

Turn the adjuster clockwise to stiffen the damping force and turn it counterclockwise to soften the damping force.

STD position
1-1/4 turns out from stiffest position



I649G1230007-01

Rear Shock Absorber Disposal

B718H12306007

Refer to “Rear Shock Absorber Removal and Installation (Page 2C-3)”.
The rear shock absorber unit contains high-pressure nitrogen gas.

⚠ WARNING

- **Mishandling can cause explosion.**
- **Keep away from fire and heat. High gas pressure caused by heat can cause an explosion.**
- **Release gas pressure before disposing.**

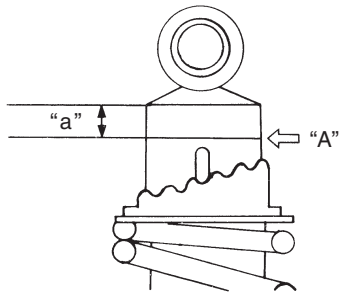
Gas Pressure Release

Make sure to observe the following precautions.

⚠ WARNING

- **Never apply heat or disassemble the damper unit since it can explode or oil can splash hazardously.**
- **When discarding the rear cushion unit, be sure to release gas pressure from the unit following the procedures.**

1) Mark the drill center at the location “A” using a center punch.



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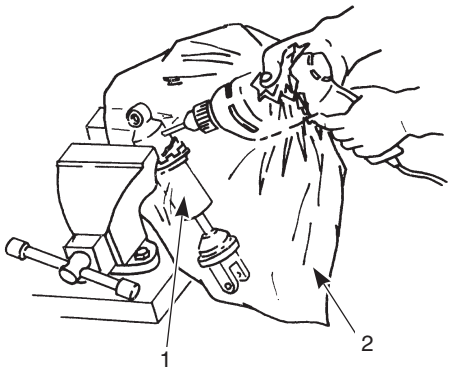
“a”: 10 mm (0.39 in.)	“A”: Mark the drill hole

2) Wrap rear shock absorber (1) with a vinyl bag (2) and fix it on a vise as shown.
3) Drill a 2 – 3 mm (0.08 – 0.12 in.) hole at the marked drill center using a drilling machine and let out gas while taking care not to get the vinyl bag entangled with the drill bit.

⚠ WARNING

- **Be sure to wear protective glasses since drilling chips and oil may fly off with blowing gas when the drill bit has penetrated through the body.**
- **Make sure to drill at the specified position. Otherwise, pressurized oil many spout out forcefully.**



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Cushion Lever Removal and Installation

B718H12306008

Removal

1) Place the motorcycle on the center stand and support the motorcycle with a jack to be no load for the cushion lever.
2) Remove the cushion lever by removing its related bolts and nuts.

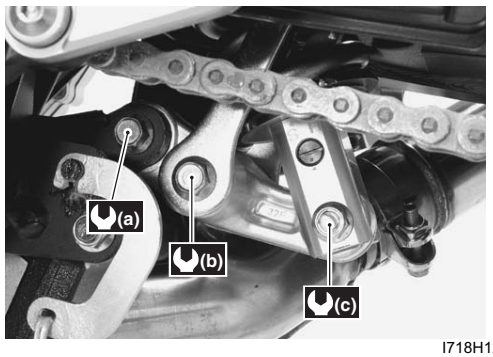
I718H1230007-01

Installation

Install the cushion lever in the reverse order of removal. Pay attention to the following point:

- Tighten each nut to the specified torque.

Tightening torque
Cushion lever mounting nut (a): 78 N·m (7.8 kgf-m, 56.5 lb-ft)
Cushion rod mounting nut (b): 78 N·m (7.8 kgf-m, 56.5 lb-ft)
Rear shock absorber mounting nut (c): 50 N·m (5.0 kgf-m, 36.0 lb-ft)



I718H1230008-01

Cushion Lever Inspection

B718H12306009

Refer to “Cushion Lever Removal and Installation (Page 2C-5)”.

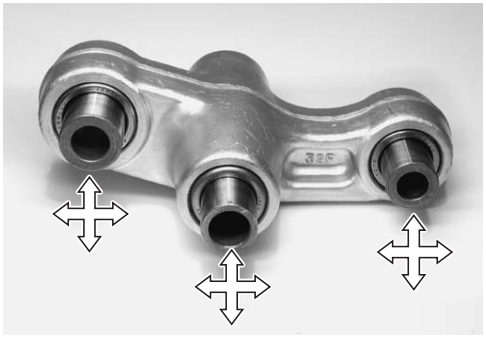
Spacer

1) Remove the spacers from the cushion lever.
2) Inspect the spacers for any flaws or other damage. If any defects are found, replace the spacers with new ones.

I718H1230009-01

Cushion Lever Bearing

1) Insert the spacers into bearings.
2) Check the play by moving the spacers up and down. If excessive play is noted, replace the bearing with a new one. Refer to “Cushion Lever Bearing Removal and Installation (Page 2C-6)”.



I718H1230010-01

Cushion Lever

Inspect the cushion lever for damage. If any defect is found, replace the cushion lever with a new one.

I718H1230011-01

Cushion Rod

Refer to “Swingarm Related Parts Inspection (Page 2C-9)”.

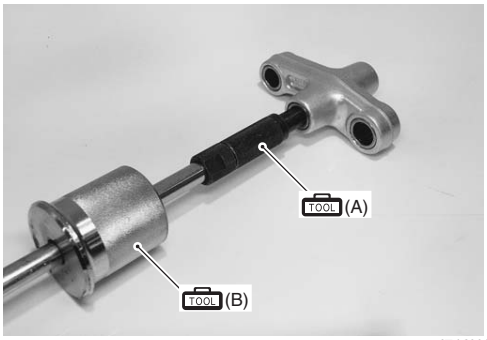
Cushion Lever Bearing Removal and Installation

B718H12306010

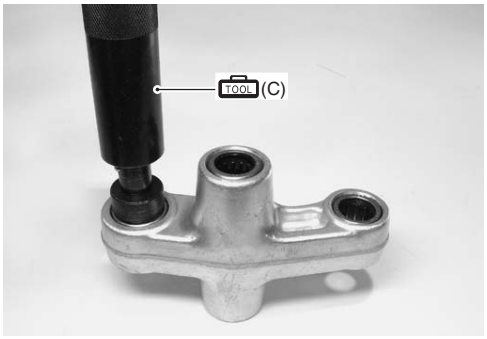
Removal

1) Remove the cushion lever. Refer to “Cushion Lever Removal and Installation (Page 2C-5)”.
2) Remove the cushion lever bearings using the special tools.

Special tool
TOOL (A): 09923–73210 (Bearing remover)
TOOL (B): 09930–30104 (Rotor remover slide shaft)
TOOL (C): 09913–70210 (Bearing installer set)



I718H1230012-01



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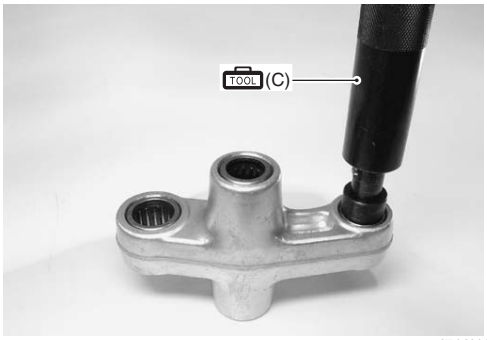


I718H1230015-01

Installation

⚠ CAUTION

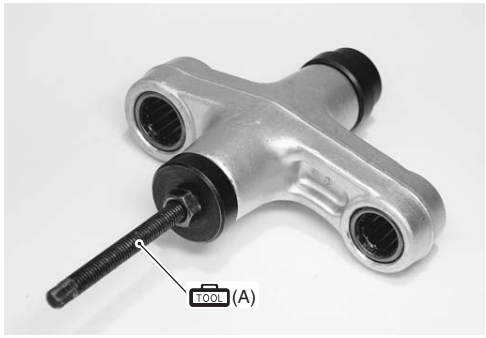
The removed bearings must be replaced with new ones.

1) Press the bearings into the cushion lever with the special tool.

NOTE

When installing the bearing, stamped mark on the bearing must face outside.

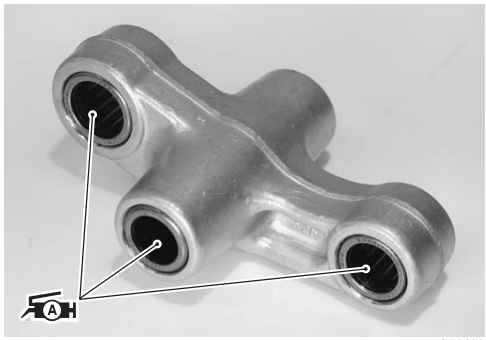
Special tool
(A): 09924–84521 (Bearing installer set)



I718H1230014-02

2) Apply grease to the bearings.

: Grease 99000–25010 (SUZUKI SUPER GREASE A or equivalent)



I718H1230016-01

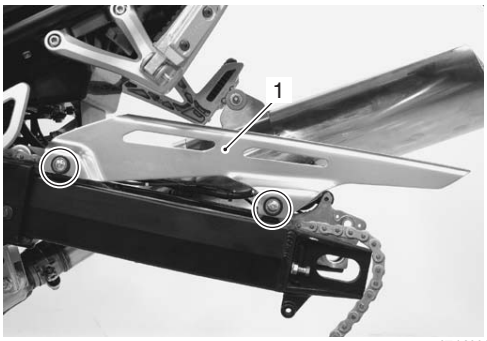
3) Install the cushion lever. Refer to “Cushion Lever Removal and Installation (Page 2C-5)”.

Swingarm / Cushion Rod Removal and Installation

B718H12306011

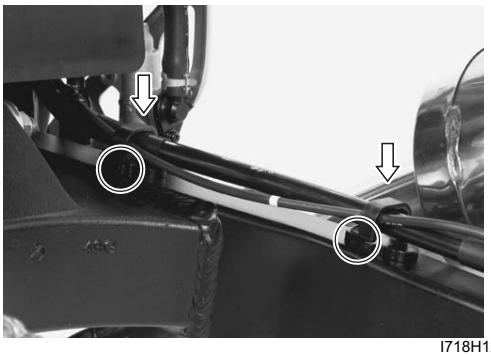
Removal

1) Remove the rear wheel assembly. Refer to “Rear Wheel Assembly Removal and Installation in Section 2D (Page 2D-16)”.
2) Remove the drive chain cover (1).



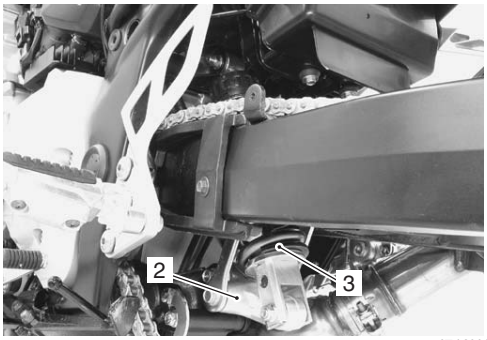
I718H1230017-01

3) Remove the brake hose clamps.



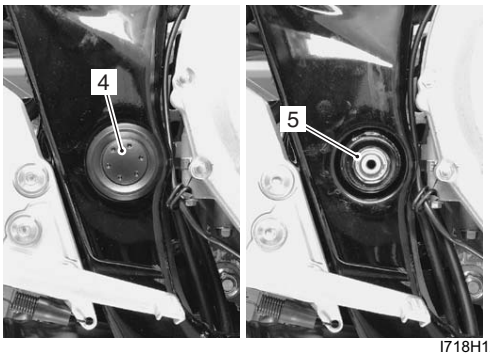
I718H1230018-01

4) Remove the cushion lever (2) and rear shock absorber (3). Refer to “Cushion Lever Removal and Installation (Page 2C-5)” and “Rear Shock Absorber Removal and Installation (Page 2C-3)”.



I718H1230019-01

5) Remove the pivot shaft end caps (4), left and right.
6) Remove the swingarm by removing the pivot shaft nut (5) and washer.



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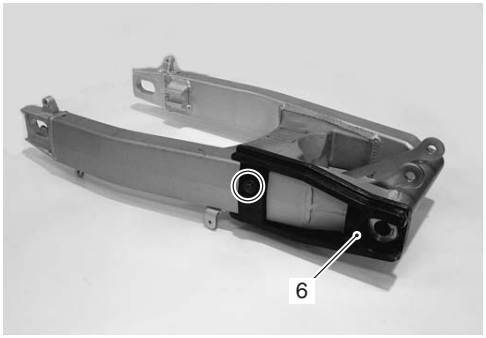
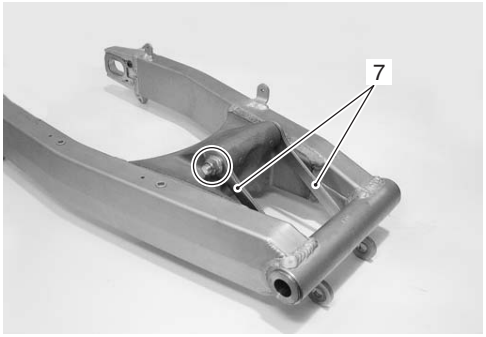
7) Remove the chain buffer (6).



I718H1230021-02

8) Remove the cushion rods (7).



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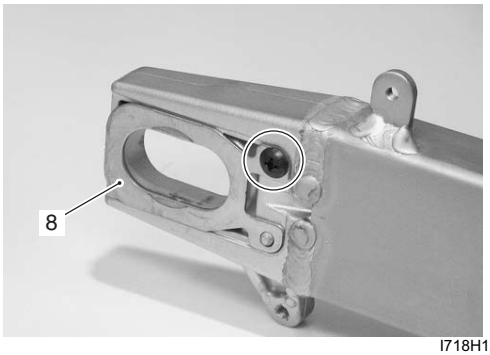
9) Remove the plates (8).



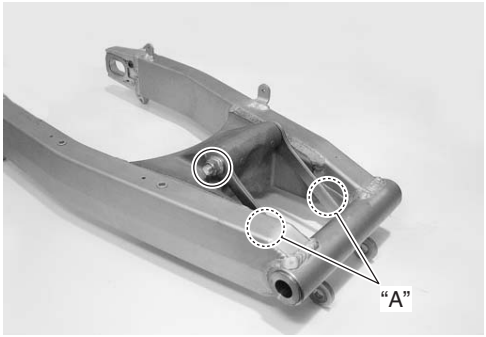
I718H1230023-01

Installation
Install the swingarm in the reverse order of removal. Pay attention to the following points:

- Temporarily the cushion rod mounting nut.

NOTE

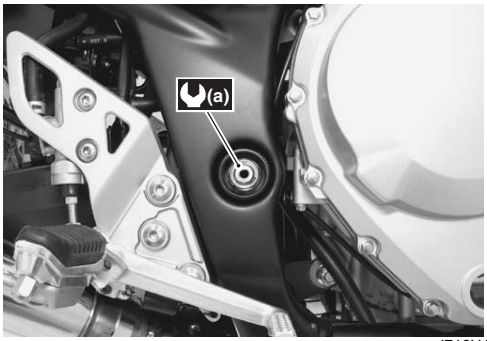
The stamped marks “A” on the cushion rod should be face out side.



I718H1230024-04

- Install the washer and swingarm pivot nut.
- Tighten the swingarm pivot nut to the specified torque.

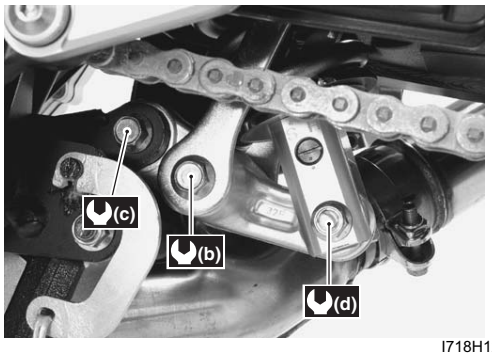
Tightening torque
Swingarm pivot nut (a): 100 N·m (10.0 kgf-m, 72.5 lb-ft)



I718H1230025-02

- Tighten the cushion lever, cushion rod and rear shock absorber mounting nut to the specified torque.

  Tightening torque
  Cushion rod mounting nut (b): 78 N·m (7.8 kgf-m, 56.5 lb-ft)
  Cushion lever mounting nut (c): 78 N·m (7.8 kgf-m, 56.5 lb-ft)
  Rear shock absorber mounting nut (d): 50 N·m (5.0 kgf-m, 36.0 lb-ft)



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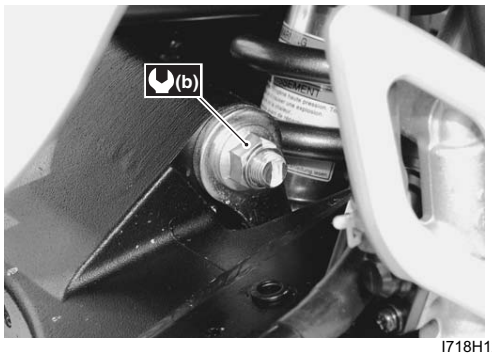


I718H1230041-01

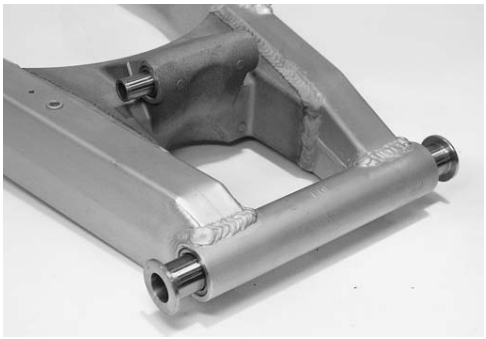
Swingarm Related Parts Inspection

B718H12306012

Refer to “Swingarm / Cushion Rod Removal and Installation (Page 2C-7)”.

Spacers

1) Remove the spacers from the swingarm.
2) Inspect the spacers for wear and damage. If any defects are found, replace the spacers with new ones.


I718H1230028-01

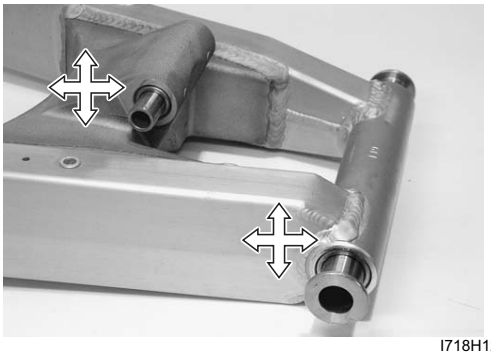
Chain Buffer

Inspect the chain buffer for wear and damage. If any defect is found, replace the chain buffer with a new one.

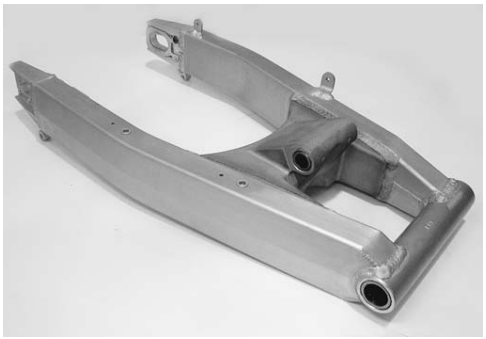

I718H1230029-01

Swingarm Bearing and Cushion Rod Bearing

1) Insert the spacers into bearings.
2) Check the play by moving the spacers up and down. If excessive play is noted, replace the bearing with a new one. Refer to “Swingarm Bearing Removal and Installation (Page 2C-10)”.


I718H1230030-01

Swingarm
Inspect the swingarm for damage. If any defect is found, replace the swingarm with a new one.



I718H1230031-01

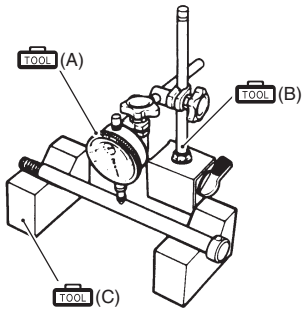
Cushion Rod
Inspect the cushion rods for damage and bend. If any defects are found, replace the cushion rods with new ones.

I718H1230032-01

Swingarm Pivot Shaft
Measure the swingarm pivot shaft runout using the dial gauge. If the runout exceeds the service limit, replace the pivot shaft.

Special tool
(A): 09900–20607 (Dial gauge (1/100 mm, 10 mm))
(B): 09900–20701 (Magnetic stand)
(C): 09900–21304 (V-block (100 mm))

Swingarm pivot shaft runout
Service limit: 0.3 mm (0.01 in)



I649G1230034-02

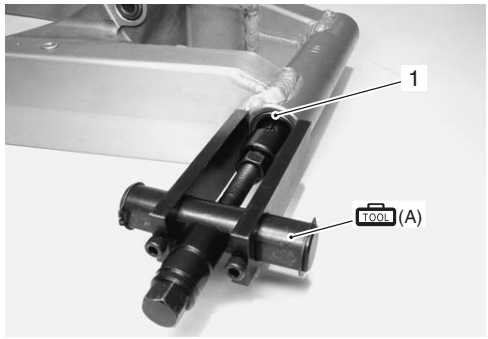
Swingarm Bearing Removal and Installation

B718H12306013

Removal

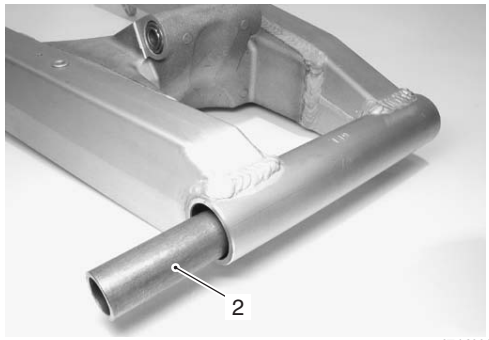
1) Remove the rear wheel assembly. Refer to “Rear Wheel Assembly Removal and Installation in Section 2D (Page 2D-16)”.
2) Remove the swingarm. Refer to “Swingarm / Cushion Rod Removal and Installation (Page 2C-7)”.
3) Draw out the swingarm pivot bearings (1) using the special tool.

Special tool
(A): 09921–20240 (Bearing remover set)



I718H1230033-01

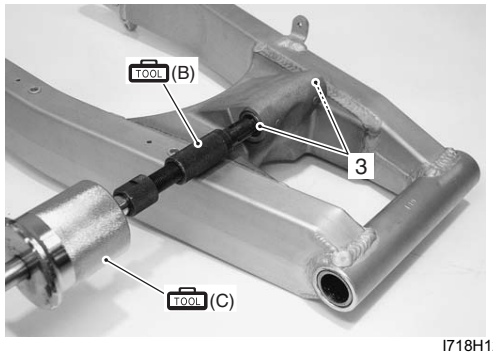
4) Remove the center spacer (2).



I718H1230034-01

5) Remove the swingarm cushion rod bearings (3) using the special tools.

Special tool
(B): 09923–73210 (Bearing remover)
(C): 09930–30104 (Rotor remover slide shaft)



I718H1230035-04

Installation

⚠ CAUTION

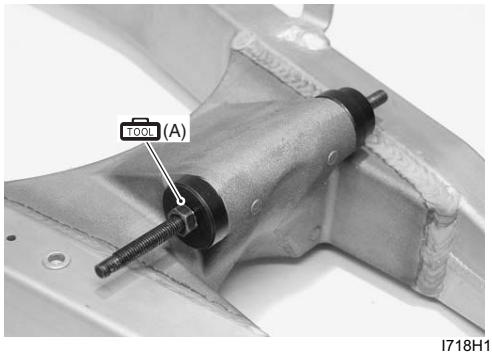
The removed bearings must be replaced with new ones.

1) Press the swingarm cushion rod bearings with the special tool.

NOTE

When installing the bearing, stamped mark on the bearing must face outside.

Special tool
(A): 09924–84521 (Bearing installer set)



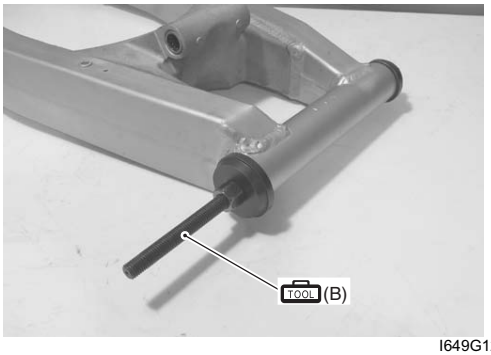
I718H1230036-01

2) Install the center spacer.
3) Press the bearings into the swingarm pivot with the special tool.

NOTE

When installing the bearing, stamped mark on the bearing must face outside

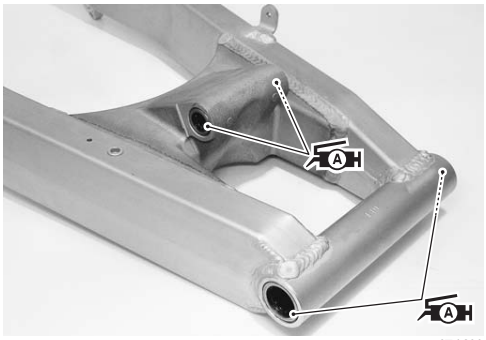
Special tool
(B): 09941–34513 (Steering race installer)



I649G1230039-03

4) Apply grease to the bearings.

: Grease 99000–25010 (SUZUKI SUPER GREASE A or equivalent)



I718H1230038-03

5) Install the swingarm. Refer to “Swingarm / Cushion Rod Removal and Installation (Page 2C-7)”.
6) Install the rear wheel assembly. Refer to “Rear Wheel Assembly Removal and Installation in Section 2D (Page 2D-16)”.

Specifications

Service Data

B718H12307001

Unit: mm (in)

Item	Standard		Limit
Rear shock absorber spring adjuster	GSF1250/A	3rd position	
	GSF1250S/SA	4th position	—
Rear shock absorber damping force adjuster	Rebound	1-1/4 turns out from stiffest position	—
Rear wheel travel	136 (5.4)		—
Swingarm pivot shaft runout	—		0.3 (0.01)

Tightening Torque Specifications

B718H12307002

Fastening part	Tightening torque			Note
	N·m	kgf-m	lb-ft	
Rear shock absorber mounting nut	50	5.0	36.0	☞(Page 2C-3) / ☞(Page 2C-5) / ☞(Page 2C-9)
Cushion lever mounting nut	78	7.8	56.5	☞(Page 2C-3) / ☞(Page 2C-5) / ☞(Page 2C-9)
Cushion rod mounting nut	78	7.8	56.5	☞(Page 2C-5) / ☞(Page 2C-9)
Swingarm pivot nut	100	10.0	72.5	☞(Page 2C-8)

NOTE

The specified tightening torque is also described in the following.
“Rear Suspension Components (Page 2C-1)”
“Rear Suspension Assembly Construction (Page 2C-2)”

Reference:
For the tightening torque of fastener not specified in this section, refer to “Tightening Torque Specifications in Section 0C (Page 0C-7)”.

Special Tools and Equipment

Recommended Service Material

B718H12308001

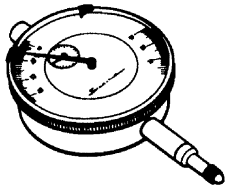
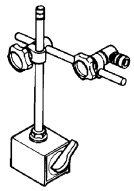
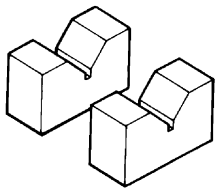
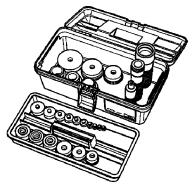
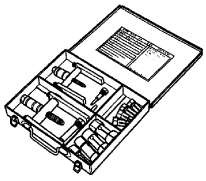
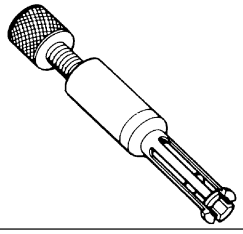
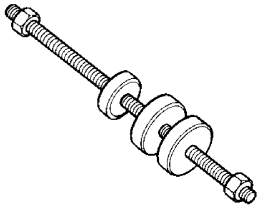
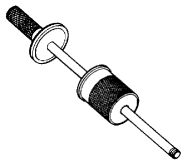
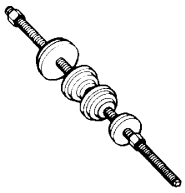
Material	SUZUKI recommended product or Specification		Note
Grease	SUZUKI SUPER GREASE A or equivalent	P/No.: 99000–25010	☞(Page 2C-7) / ☞(Page 2C-11)

NOTE

Required service material is also described in the following.
"Rear Suspension Components (Page 2C-1)"
"Rear Suspension Assembly Construction (Page 2C-2)"

Special Tool

B718H12308002

09900–20607 Dial gauge (1/100 mm, 10 mm) ☞(Page 2C-10)		09900–20701 Magnetic stand ☞(Page 2C-10)	
09900–21304 V-block (100 mm) ☞(Page 2C-10)		09913–70210 Bearing installer set ☞(Page 2C-6)	
09921–20240 Bearing remover set ☞(Page 2C-10)		09923–73210 Bearing remover ☞(Page 2C-6) / ☞(Page 2C-10)	
09924–84521 Bearing installer set ☞(Page 2C-7) / ☞(Page 2C-11)		09930–30104 Rotor remover slide shaft ☞(Page 2C-6) / ☞(Page 2C-10)	
09941–34513 Steering race installer ☞(Page 2C-11)			

Wheels and Tires

Precautions

Precautions for Wheel and Tire

B718H12400001

⚠ WARNING

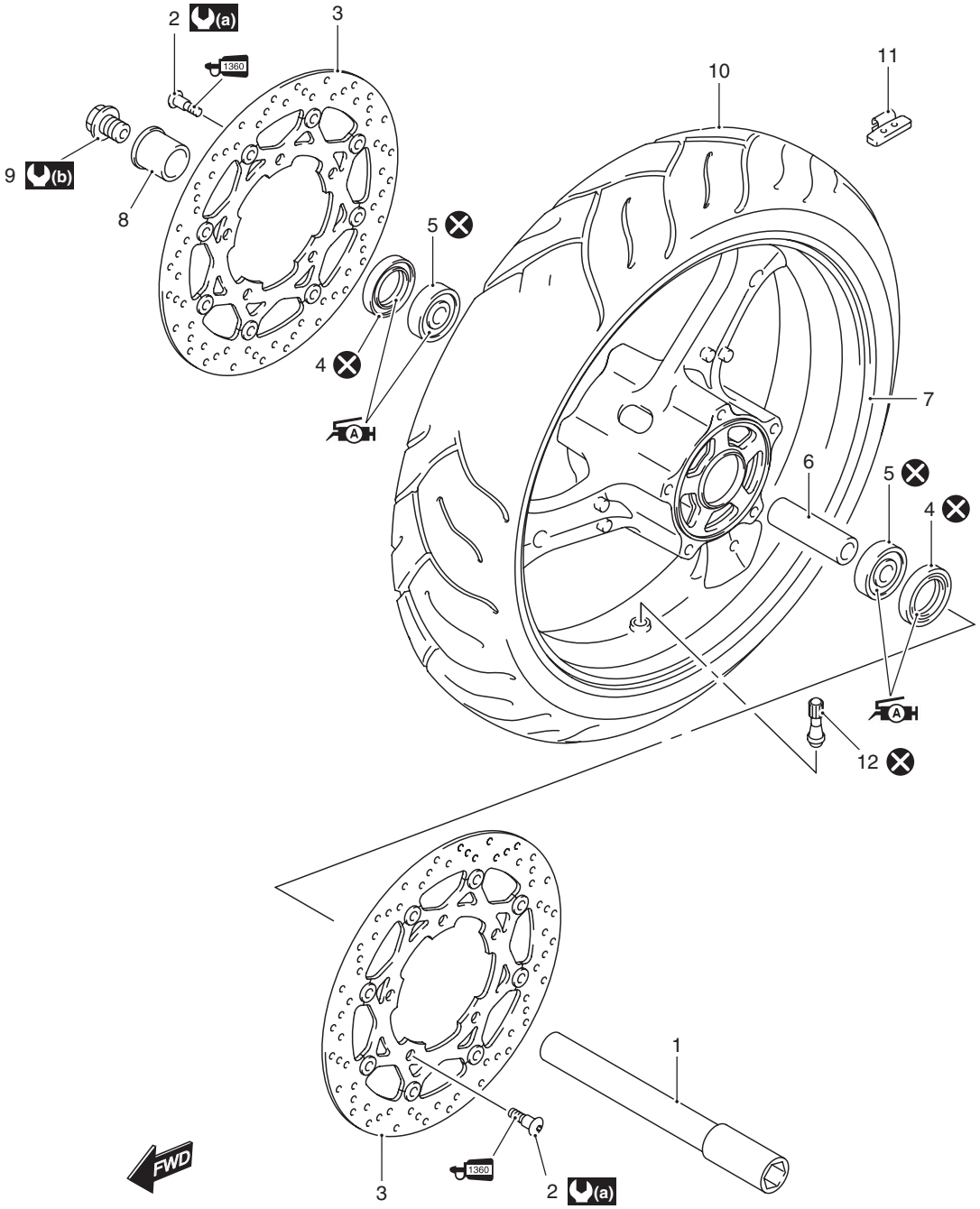
- **Proper tire pressure and proper tire loading are important factors. Over loading tire can lead to tire failure and loss of motorcycle control.**
- **Under-inflated tires make smooth cornering difficult, and can result in rapid tire wear.**
- **Over-inflated tires have a smaller amount of tire in contact with the load, which can contribute to skidding and loss of control.**
- **Replace the wheel when wheel runout exceed the service limit or if find damage such as distortion, crack, nick or scratch.**
- **When tire replacement is necessary, the original equipment type tire should be used.**
- **Do not mix different types of tires on the same vehicle such as radial and bias-belted tires except in emergencies, because handling may be seriously affected and may result in loss of control.**
- **Replacement wheel must be equivalent to the original equivalent wheel.**

Repair Instructions

Front Wheel Components

B718H12406015

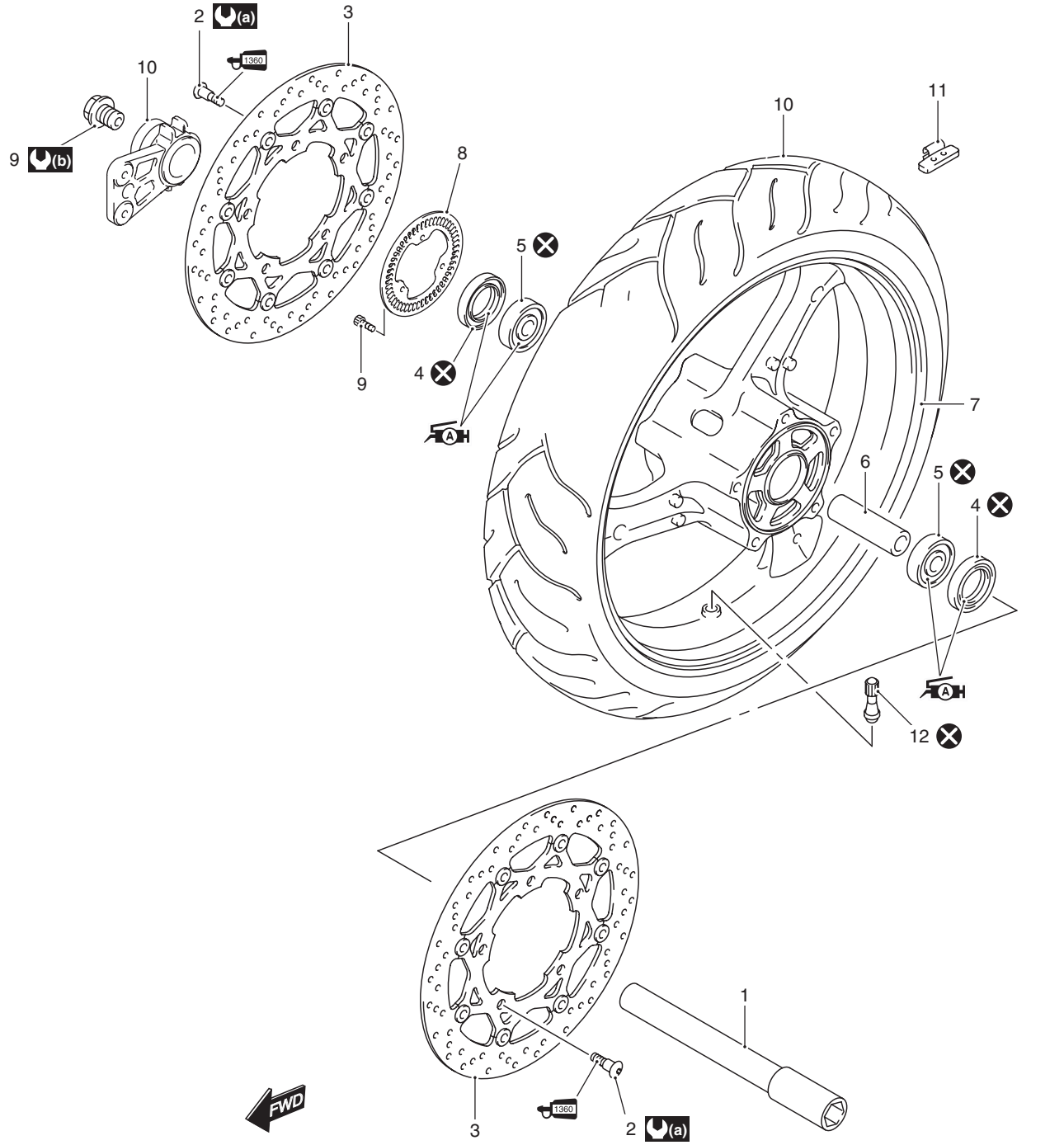
GSF1250/S



I718H1240050-02

1. Front axle	7. Front wheel	(a) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)
2. Brake disc bolt	8. Collar	(b) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)
3. Brake disc	9. Front axle bolt	A : Apply grease.
4. Dust seal	10. Tire	1360 : Apply thread lock to thread part.
5. Bearing	11. Wheel balancer	⊗ : Do not reuse.
6. Spacer	12. Air valve	

GSF1250A/SA



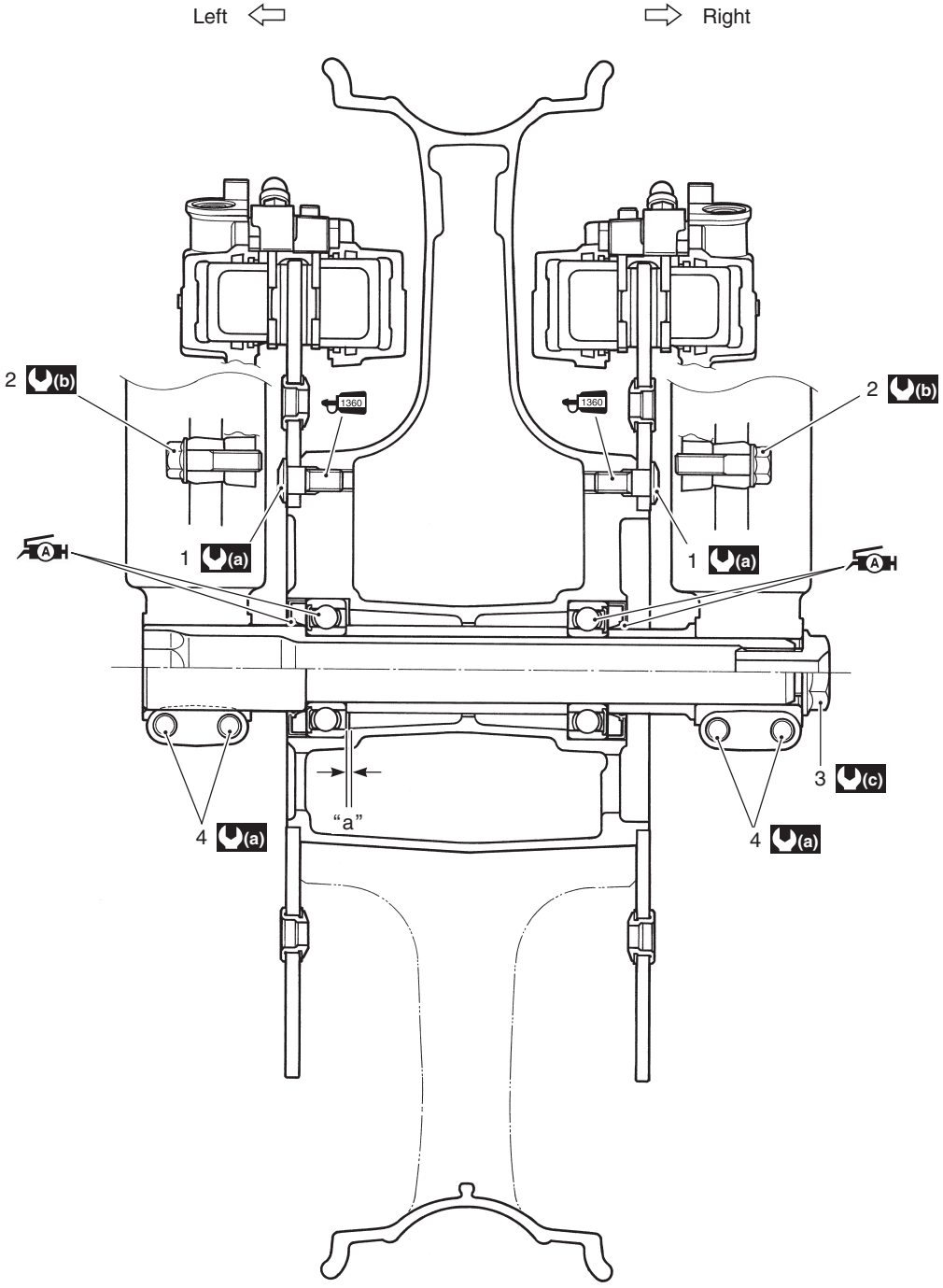
I718H1240001-03

1. Front axle	8. Wheel speed sensor rotor	(a) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)
2. Brake disc bolt	9. Sensor rotor bolt	(b) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)
3. Brake disc	10. Wheel speed sensor bracket	A : Apply grease.
4. Dust seal	11. Front axle bolt	1360 : Apply thread lock to thread part.
5. Bearing	12. Tire	⊗ : Do not reuse.
6. Spacer	13. Wheel balancer	
7. Front wheel	14. Air valve	

Front Wheel Assembly Construction

B718H12406002

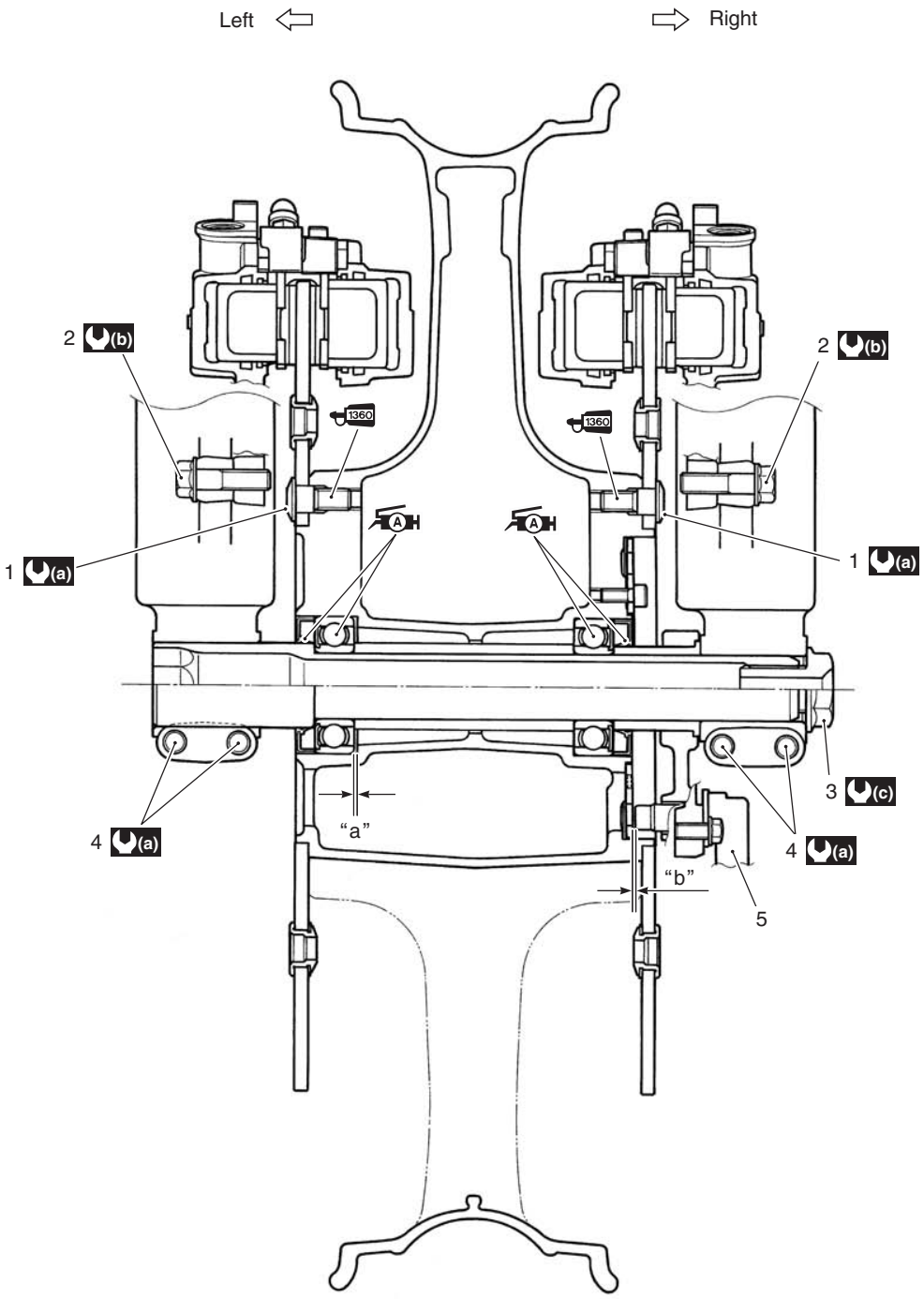
GSF1250/S



I718H1240044-02

1. Brake disc bolt	"a": Clearance	: Apply grease.
2. Brake caliper mounting bolt	(a) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)	1360 : Apply thread lock to thread part.
3. Front axle bolt	(b) : 26 N·m (2.6 kgf-m, 19 lb-ft)	
4. Front axle pinch bolt	(c) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)	

GSF1250A/SA



I718H1240002-02

1. Brake disc bolt	5. Front wheel speed sensor	(b) : 26 N·m (2.6 kgf-m, 19.0 lb-ft)
2. Brake caliper mounting bolt	"a": Clearance	(c) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)
3. Front axle bolt	"b": 0.3 – 1.5 mm (0.012 – 0.059 in)	A : Apply grease.
4. Front axle pinch bolt	(a) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)	1360 : Apply thread lock to thread part.

Front Wheel Assembly Removal and Installation

B718H12406003

Removal

1) Raise the front wheel off the ground and support the motorcycle with a jack or a wooden block.

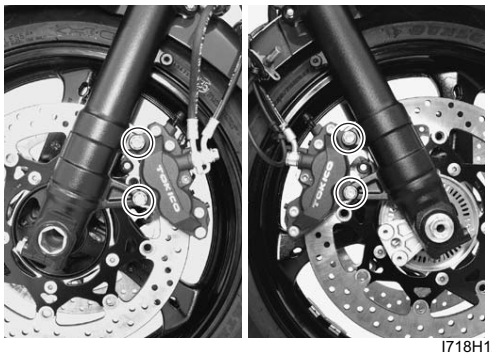
⚠ CAUTION

Do not carry out the work with the motorcycle resting on the side-stand. Do not support the motorcycle with the exhaust pipes. Make sure that the motorcycle is supported securely.

2) Remove the front wheel speed sensor by removing the mounting bolts. (GSF1250A/SA) Refer to “Front Wheel Speed Sensor Removal and Installation in Section 4E (Page 4E-71)”.
3) Remove the brake calipers. Refer to “Front Brake Caliper Removal and Installation in Section 4B (Page 4B-3)”.

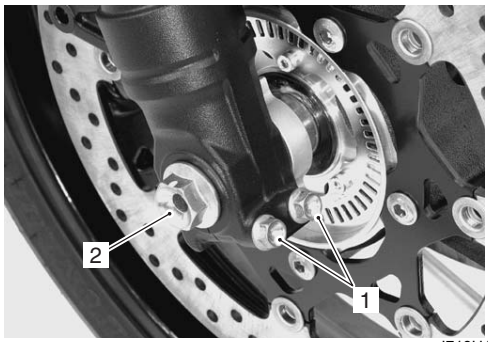
⚠ CAUTION

Do not operate the brake lever while removing the caliper.



I718H1240004-03

4) Loosen two axle pinch bolts (1) on the right front fork leg.
5) Remove the front axle bolt (2).



I718H1240005-01

6) Loosen two axle pinch bolts (3) on the left front fork leg.
7) Draw out the front axle and remove the front wheel.

NOTE

After removing the front wheel, fit the calipers temporarily to the original positions.

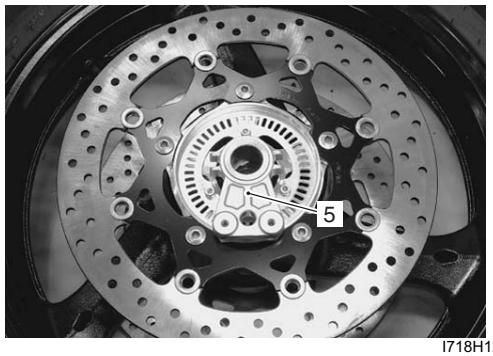
I718H1240006-02

8) Remove the collar (4) (GSF1250/S) or front wheel speed sensor bracket (5) (GSF1250A/SA).

GSF1250/S

I718H1240008-02

GSF1250A/SA



I718H1240007-02

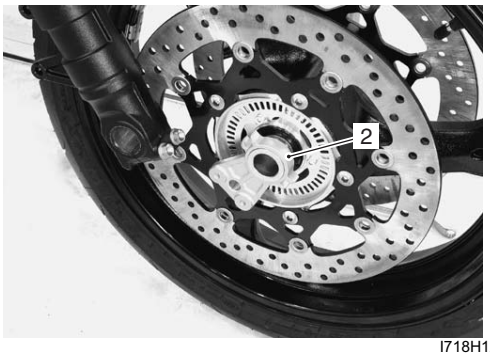
Installation

1) Install the collar (1) (GSF1250/S) or front wheel speed sensor bracket (2) (GSF1250A/SA) into the right side of the wheel.

GSF1250/S

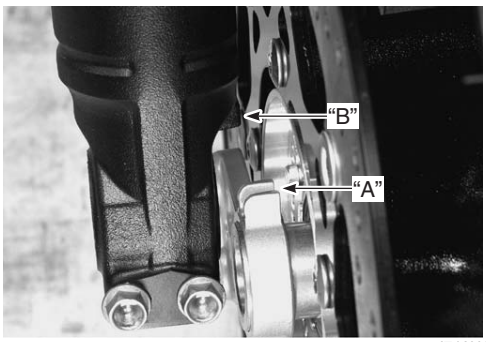
I718H1240010-02

GSF1250A/SA



I718H1240009-02

2) Align the recess “A” on the speed sensor bracket with the stopper “B” on the right front fork. (GSF1250A/SA)



I718H1240046-01

3) Install the front wheel with the front axle and tighten the front axle bolt temporarily.

⚠ WARNING

The directional arrow on the tire should point to the wheel rotation, when remounting the wheel.

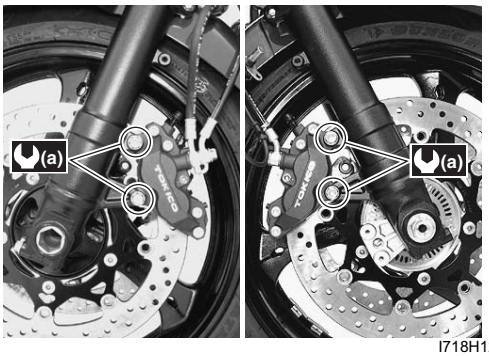
I718H1240011-01

4) Tighten the brake caliper mounting bolts to the specified torque.

Tightening torque
Front brake caliper mounting bolt (a): 26 N·m (2.6 kgf-m, 19.0 lb-ft)

⚠ WARNING

After remounting the brake calipers, pump the brake lever until the pistons push the pad correctly.



I718H1240012-01

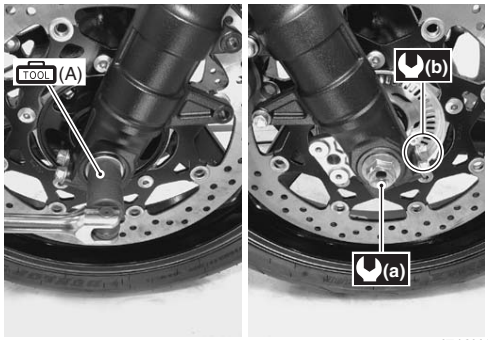
5) Hold the front axle with the special tool and tighten the front axle bolt to the specified torque.

Special tool
TOOL (A): 09900–18740 (Hexagon socket (24 mm))

Tightening torque
Front axle bolt (a): 100 N·m (10.0 kgf-m, 72.5 lb-ft)

6) Tighten two axle pinch bolts on the right fork leg to the specified torque.

Tightening torque
Front axle pinch bolt (b): 23 N·m (2.3 kgf-m, 16.5 lb-ft)



I718H1240013-01

7) Move the front fork up and down 4 or 5 times.

I718H1240014-02

8) Tighten two axle pinch bolts on the left front fork leg to the specified torque.

Tightening torque
Front axle pinch bolt (c): 23 N·m (2.3 kgf-m, 16.5 lb-ft)

I718H1240015-01

9) Install the front wheel speed sensor mounting bolts. (GSF1250A/SA) Refer to “Front Wheel Speed Sensor Removal and Installation in Section 4E (Page 4E-71)”.
10) Check the clearance between the front wheel speed sensor and sensor rotor. (GSF1250A/SA) Refer to “Front Wheel Speed Sensor Removal and Installation in Section 4E (Page 4E-71)”.

Front Wheel Related Parts Inspection

B718H12406004

Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)”

Tire
Refer to “Tire Inspection in Section 0B (Page 0B-19)”.

Front Brake Disc
Refer to “Front Brake Disc Inspection in Section 4B (Page 4B-7)”.

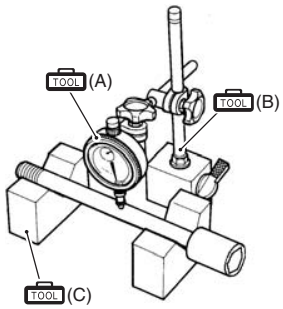
Dust Seal
Inspect the dust seal lips for wear or damage. If any defects are found, replace the dust seal with the new ones. Refer to “Front Wheel Dust Seal / Bearing Removal and Installation (Page 2D-9)”.

I718H1240017-02

Wheel Axle
Using a dial gauge, check the wheel axle for runout. If the runout exceeds the limit, replace the axle shaft.

Special tool
TOOL (A): 09900–20607 (Dial gauge (1/100 mm, 10 mm))
TOOL (B): 09900–20701 (Magnetic stand)
TOOL (C): 09900–21304 (V-block (100 mm))

Wheel axle runout
Service limit: 0.25 mm (0.010 in.)

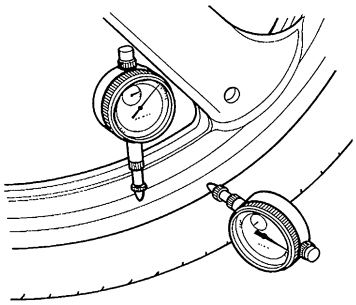


I649G1240054-01

Wheel

1) Remove the brake pads. Refer to “Front Brake Pad Replacement in Section 4B (Page 4B-2)”.
2) Make sure that the wheel runout checked as shown does not exceed the service limit. An excessive runout is usually due to worn or loosened wheel bearings and can be reduced by replacing the bearings. If bearing replacement fails to reduce the runout, replace the wheel.
3) Install the brake pads. Refer to “Front Brake Pad Replacement in Section 4B (Page 4B-2)”.

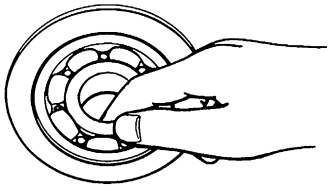
Wheel rim runout
Service limit (Axial and Radial): 2.0 mm (0.08 in.)



I649G1240014-01

Wheel Bearing

Inspect the play of the wheel bearings by finger while they are in the wheel. Rotate the inner race by finger to inspect for abnormal noise and smooth rotation. Replace the bearing in the following procedure if there is anything unusual. Refer to “Front Wheel Dust Seal / Bearing Removal and Installation (Page 2D-9)”.



I649G1240015-01

Front Wheel Speed Sensor Rotor (GSF1250A/SA)

Refer to “Wheel Speed Sensor and Sensor Rotor Inspection in Section 4E (Page 4E-74)”.

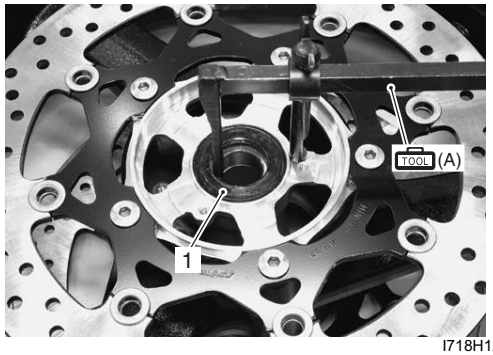
Front Wheel Dust Seal / Bearing Removal and Installation

B718H12406005

Removal

1) Remove the front wheel assembly. Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)”.
2) Remove the front wheel sensor speed sensor rotor by removing the mounting bolts. (GSF1250A/SA) Refer to “Front Wheel Speed Sensor Rotor Removal and Installation in Section 4E (Page 4E-72)”.
3) Remove the dust seals (1).

Special tool
TOOL (A): 09913–50121 (Oil seal remover)



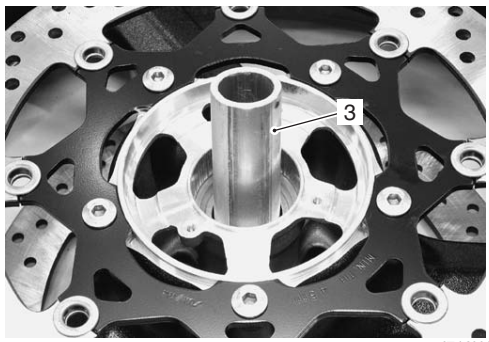
I718H1240020-02

4) Remove the bearings (2) using the special tool.

Special tool
TOOL (B): 09921–20240 (Bearing remover set)

I718H1240018-02

5) Remove the spacer (3).



I718H1240019-02

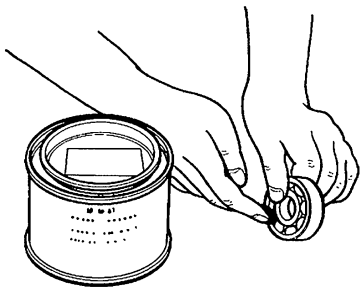
Installation

⚠ CAUTION

The removed dust seals and bearings must be replaced with new ones.

1) Apply grease to the wheel bearings.

: Grease 99000–25010 (SUZUKI SUPER GREASE A or equivalent)



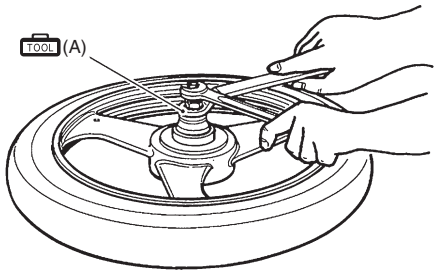
I649G1240019-01

2) First install the right wheel bearing, then install the spacer (1) and left wheel bearing with the special tool.

Special tool
(A): 09924–84510 (Bearing installer set)

⚠ CAUTION

The sealed cover of the bearing must face outside.



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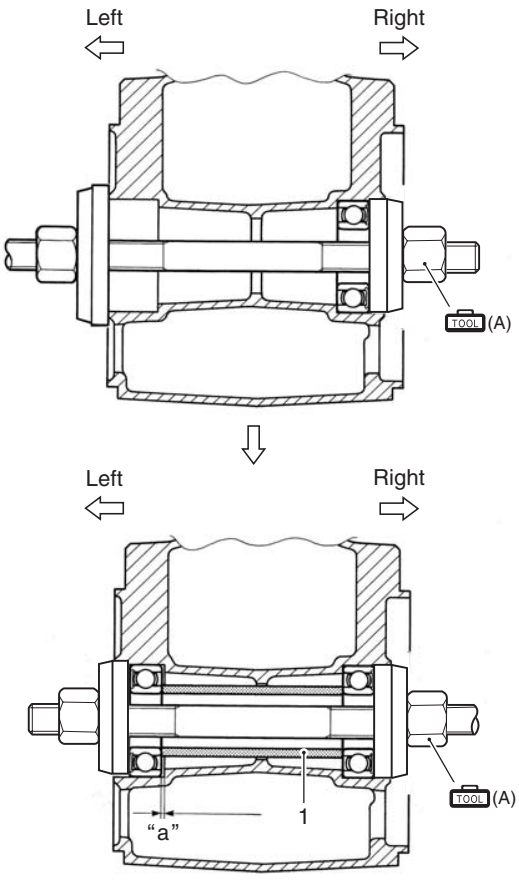


I649G1240021-05

1. Spacer	"a": Clearance

3) Install the dust seals with the special tool.

Special tool
(B): 09913–70210 (Bearing installer set)

I718H1240021-01

4) Apply grease to the lip of dust seals.

: Grease 99000–25010 (SUZUKI SUPER GREASE A or equivalent)

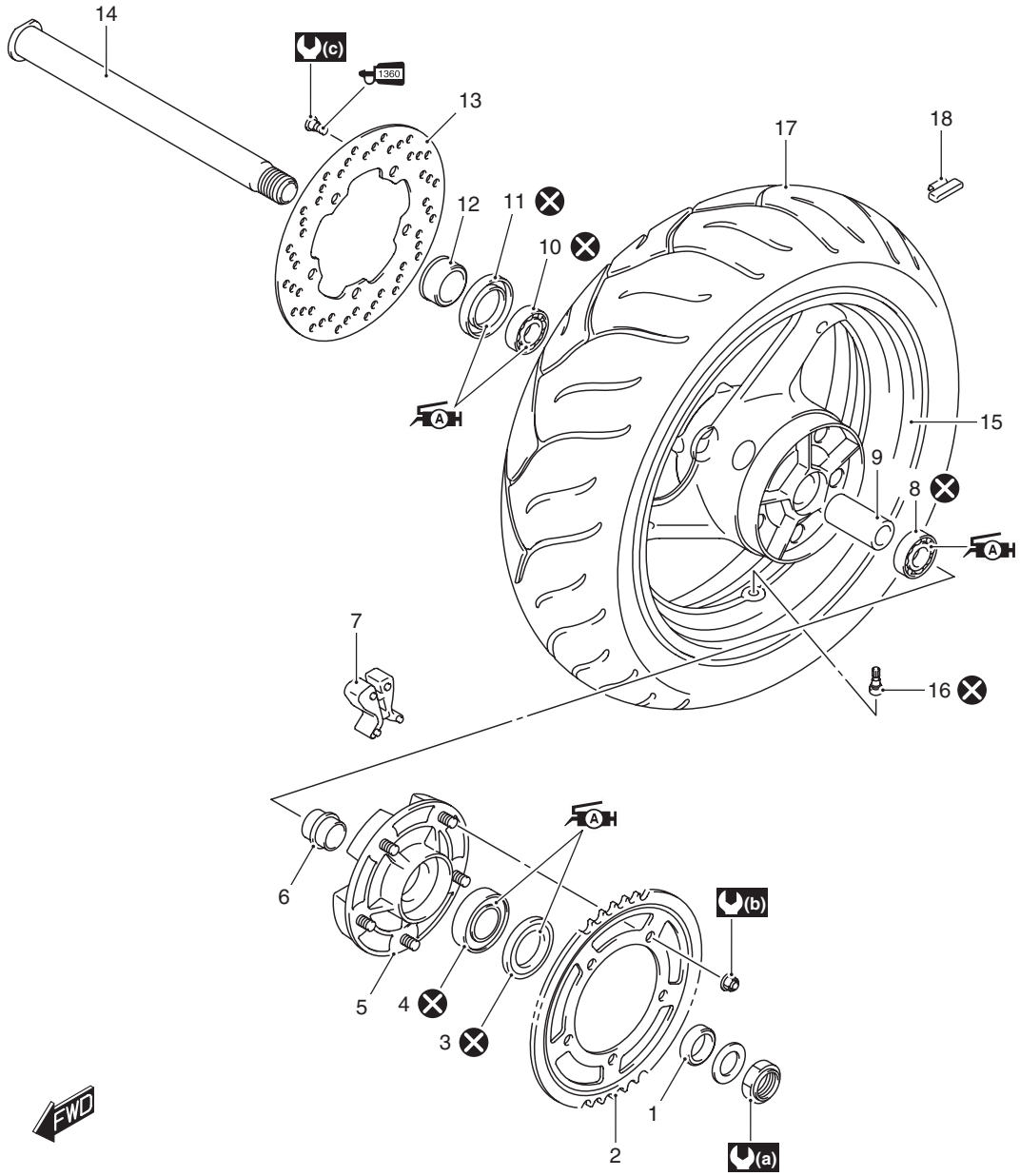
I718H1240022-01

5) Install the front wheel speed sensor rotor as the letters “50T” face outside. (GSF1250A/SA) Refer to “Front Wheel Speed Sensor Rotor Removal and Installation in Section 4E (Page 4E-72)”.
6) Install the front wheel assembly. Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)”.

Rear Wheel Components

B718H12406006

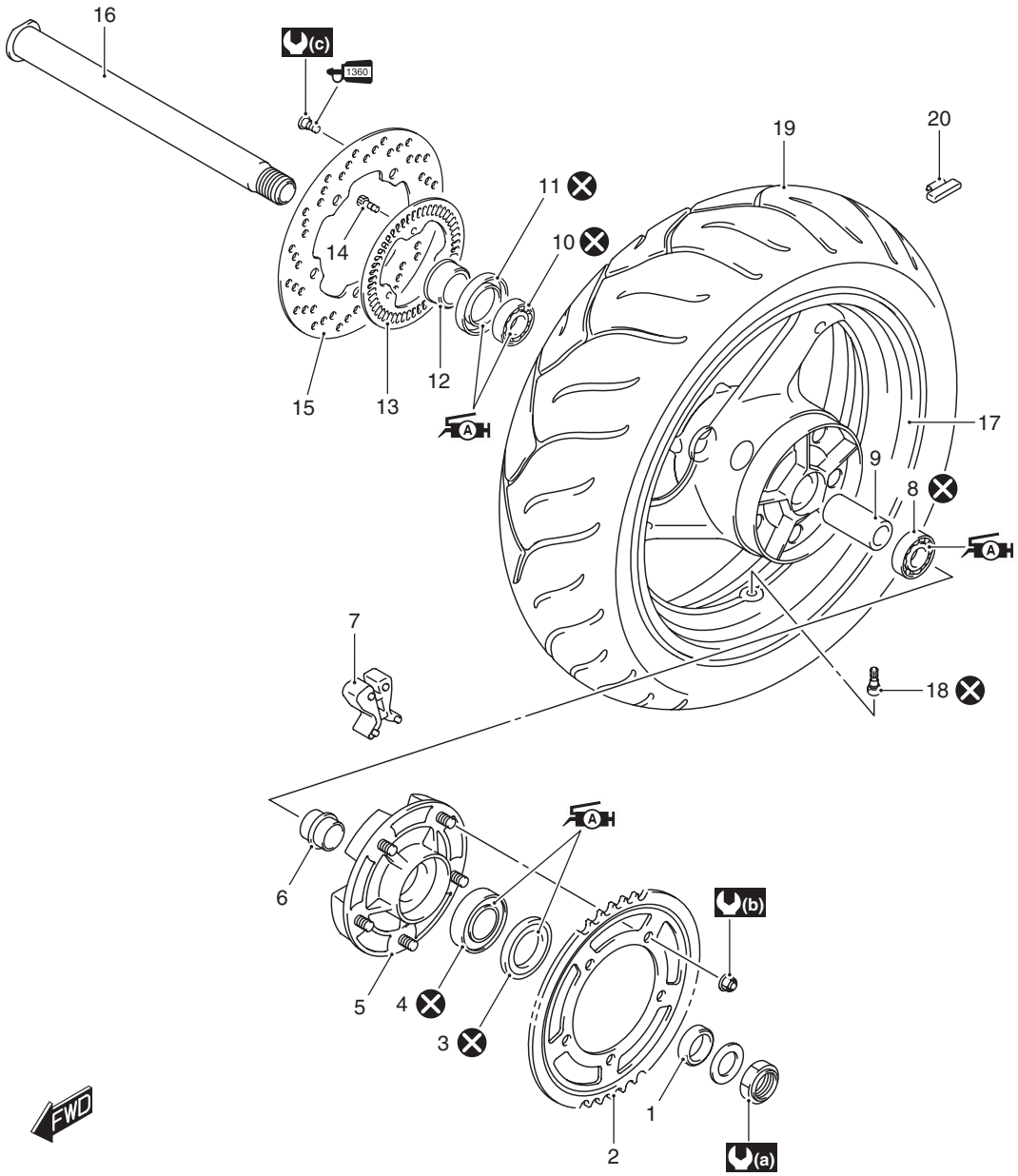
GSF1250/S



I718H1240024-03

1. Spacer	10. Bearing	(a) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)
2. Rear sprocket	11. Dust seal	(b) : 60 N·m (6.0 kgf-m, 43.5 lb-ft)
3. Dust seal	12. Collar	(c) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)
4. Bearing	13. Rear brake disc	A : Apply grease.
5. Sprocket mounting drum	14. Rear axle	1360 : Apply thread lock to thread part.
6. Retainer	15. Rear wheel	⊗ : Do not reuse.
7. Wheel damper	16. Air valve	
8. Bearing	17. Tire	
9. Spacer	18. Wheel balancer	

GSF1250A/SA



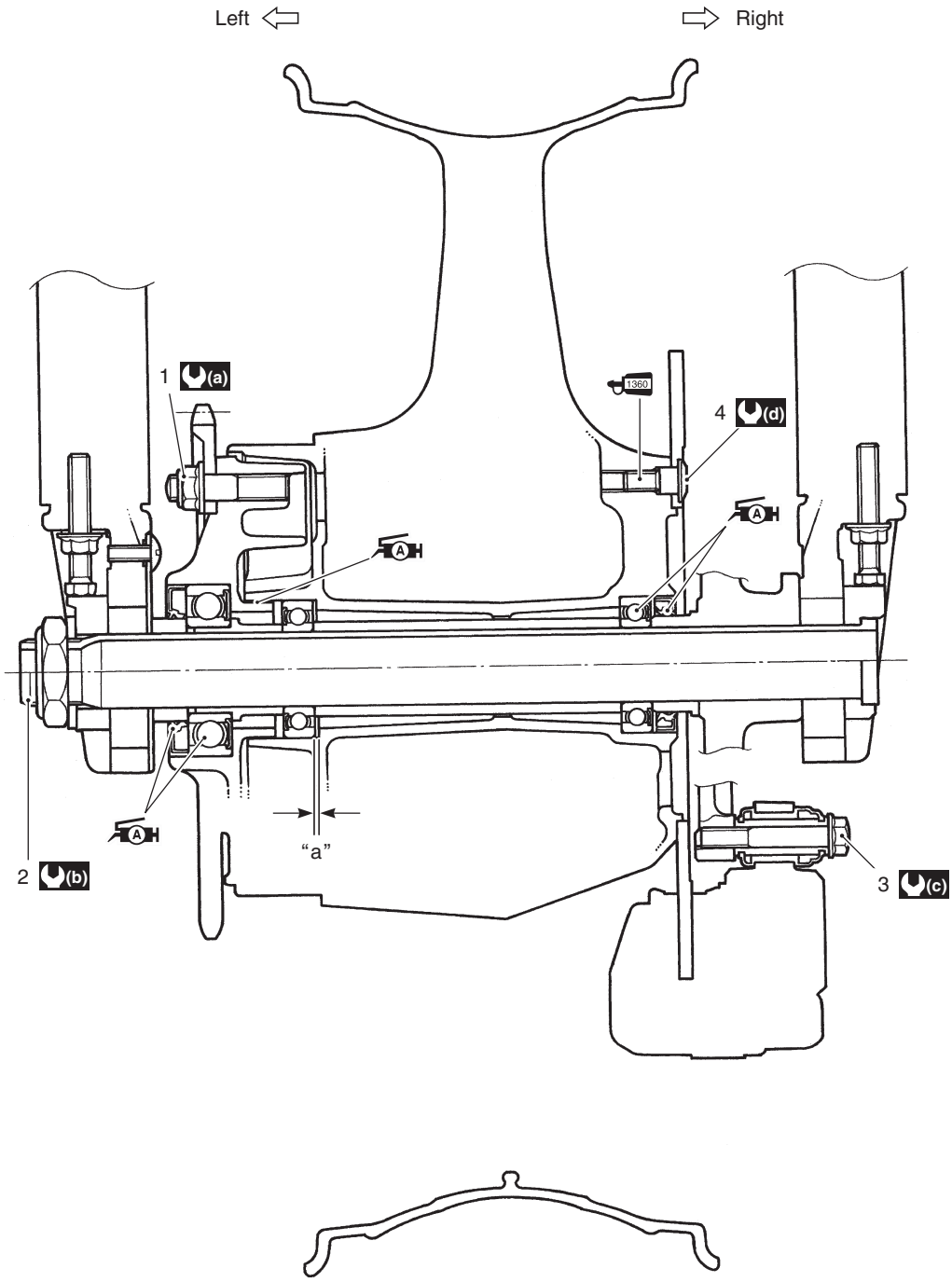
I718H1240025-03

1. Spacer	10. Bearing	19. Tire
2. Rear sprocket	11. Dust seal	20. Wheel balancer
3. Dust seal	12. Collar	(a) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)
4. Bearing	13. Wheel speed sensor rotor	(b) : 60 N·m (6.0 kgf-m, 43.5 lb-ft)
5. Sprocket mounting drum	14. Sensor rotor bolt	(c) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)
6. Retainer	15. Rear brake disc	A : Apply grease.
7. Wheel damper	16. Rear axle	1360 : Apply thread lock to thread part.
8. Bearing	17. Rear wheel	: Do not reuse.
9. Spacer	18. Air valve	

Rear Wheel Assembly Construction

B718H12406018

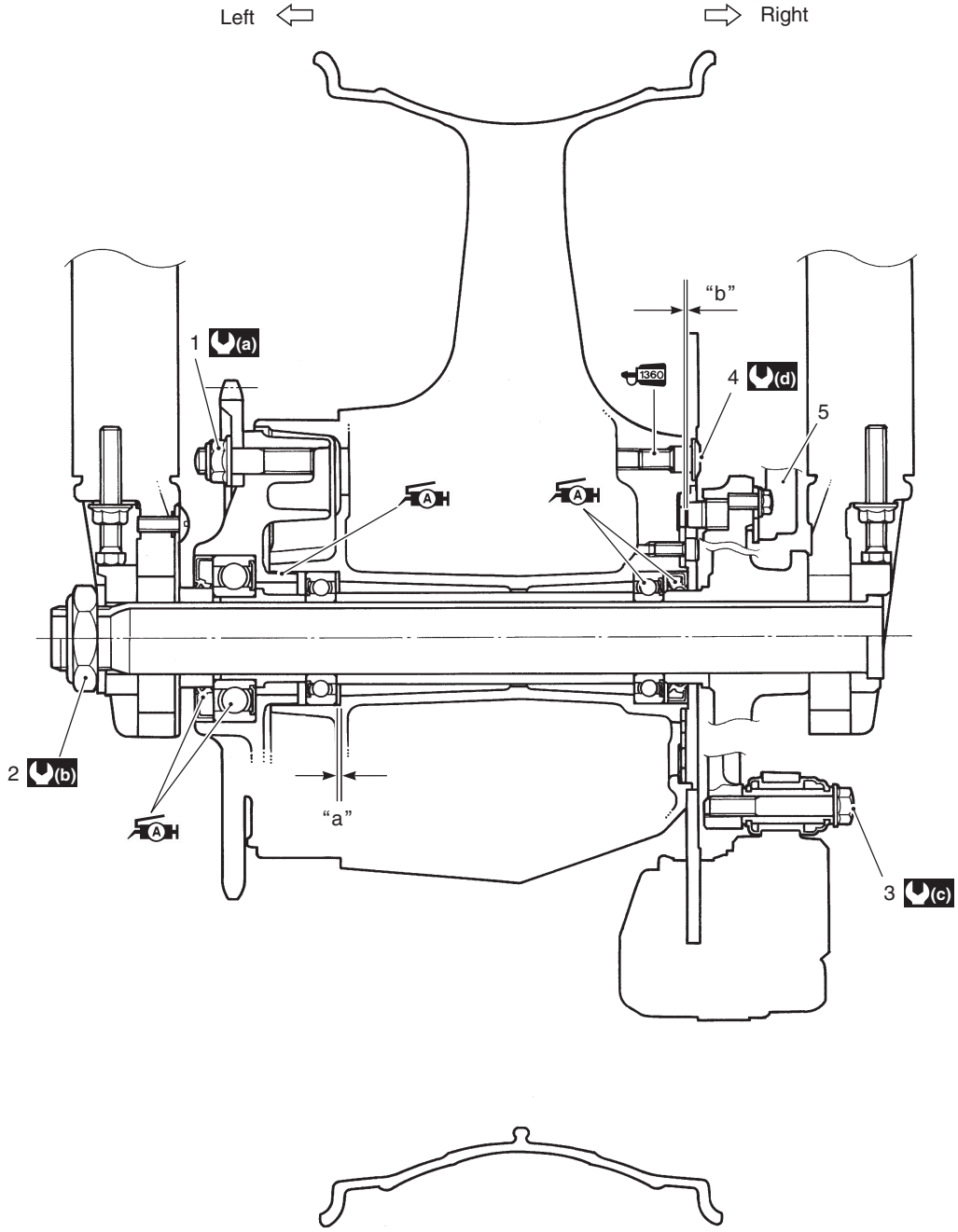
GSF1250/S



I718H1240027-03

1. Rear sprocket nut	"a": Clearance	(d) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)
2. Rear axle nut	(a) : 60 N·m (6.0 kgf-m, 43.5 lb-ft)	A : Apply grease.
3. Brake caliper mounting bolt	(b) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)	1360 : Apply thread lock to thread part.
4. Brake disc bolt	(c) : 22 N·m (2.2 kgf-m, 16.0 lb-ft)	

GSF1250A/SA



I718H1240026-07

1. Rear sprocket nut	"a": Clearance	(d) : 23 N·m (2.3 kgf-m, 16.5 lb-ft)
2. Rear axle nut	"b": 0.3 – 1.5 mm (0.012 – 0.059 in)	A : Apply grease.
3. Brake caliper mounting bolt	(a) : 60 N·m (6.0 kgf-m, 43.5 lb-ft)	1360 : Apply thread lock to thread part.
4. Brake disc bolt	(b) : 100 N·m (10.0 kgf-m, 72.5 lb-ft)	
5. Rear wheel speed sensor	(c) : 22 N·m (2.2 kgf-m, 16.0 lb-ft)	

Rear Wheel Assembly Removal and Installation

B718H12406008

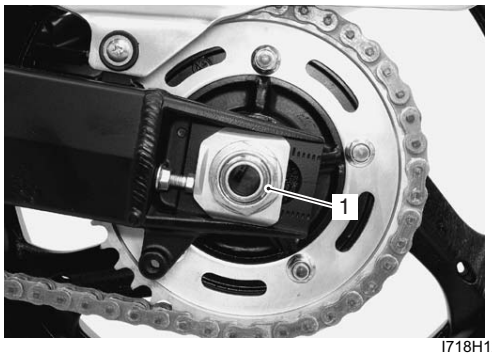
Removal

1) Support the motorcycle with the center stand.

⚠ CAUTION

Make sure that the motorcycle is supported securely.

2) Remove the rear wheel speed sensor by removing the mounting bolts. (GSF1250A/SA) Refer to “Rear Wheel Speed Sensor Removal and Installation in Section 4E (Page 4E-71)”.
3) Remove the rear axle nut (1) and draw out the rear axle.



I718H1240029-01

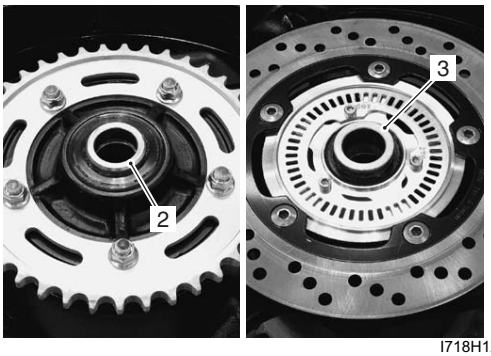
4) Remove the rear axle and disengage the drive chain from the rear sprocket.
5) Remove the rear wheel assembly.

⚠ CAUTION

Do not operate the rear brake pedal with the rear wheel removed.

I718H1240030-02

6) Remove the spacer (2) and collar (3).

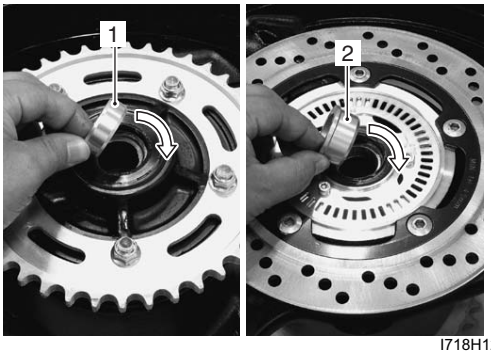


I718H1240031-01

Installation

Refer to “Wheel Speed Sensor and Sensor Rotor Inspection in Section 4E (Page 4E-74)”.

1) Install the spacer (1) and collar (2).



I718H1240033-01

2) Install the rear wheel with the rear axle and tighten the rear axle nut temporarily.
3) Adjust the drive chain slack after installing the rear wheel. Refer to “Drive Chain Inspection and Adjustment in Section 0B (Page 0B-15)”.
4) Tighten the rear axle nut (3) to the specified torque.

Tightening torque
Rear axle nut (a): 100 N·m (10.0 kgf-m, 72.5 lb-ft)

⚠ WARNING

After remounting the rear wheel, pump the brake pedal several times to check for proper brake operation.

I718H1240034-01

5) Install the rear wheel speed sensor mounting bolts. (GSF1250A/SA) Refer to “Rear Wheel Speed Sensor Removal and Installation in Section 4E (Page 4E-71)”.
6) Check the clearance between the rear wheel speed sensor. (GSF1250A/SA) Refer to “Rear Wheel Speed Sensor Removal and Installation in Section 4E (Page 4E-71)”.

Rear Wheel Related Parts Inspection

B718H12406009

Refer to “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.

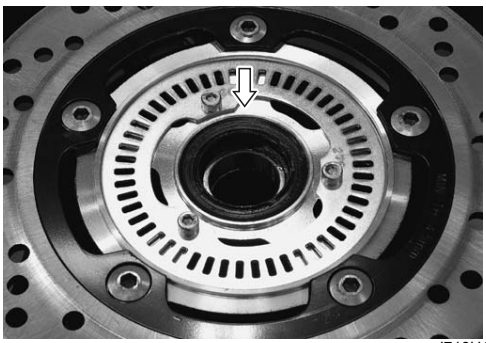
Tire
Refer to “Tire Inspection in Section 0B (Page 0B-19)”.

Rear Brake Disc
Refer to “Rear Brake Disc Inspection in Section 4C (Page 4C-7)”.

Wheel Damper
Refer to “Drive Chain Related Parts Inspection in Section 3A (Page 3A-5)”.

Sprocket
Refer to “Drive Chain Related Parts Inspection in Section 3A (Page 3A-5)”.

Dust Seal
Inspect the dust seal lip for wear or damage. If any defects is found, replace the dust seal with a new one. Refer to “Rear Wheel Dust Seal / Bearing Removal and Installation (Page 2D-18)”.

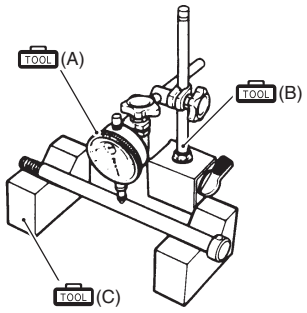


I718H1240037-02

Wheel Axle
Using a dial gauge, check the wheel axle for runout, If the runout exceeds the limit, replace the axle shaft.

Wheel axle runout
Service limit: 0.25 mm (0.010 in.)

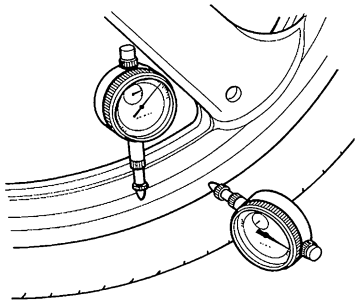
Special tool
TOOL (A): 09900–20607 (Dial gauge (1/100 mm, 10 mm))
TOOL (B): 09900–20701 (Magnetic stand)
TOOL (C): 09900–21304 (V-block (100 mm))



I649G1230034-02

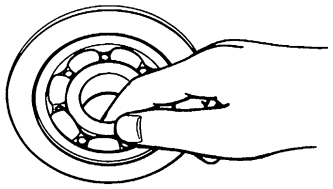
Wheel
1) Remove the brake pads. Refer to “Rear Brake Pad Replacement in Section 4C (Page 4C-2)”.
2) Make sure that the wheel runout checked as shown does not exceed the service limit. An excessive runout is usually due to worn or loosened wheel bearings and can be reduced by replacing the bearings. If bearing replacement fails to reduce the runout, replace the wheel.
3) Install the brake pads. Refer to “Rear Brake Pad Replacement in Section 4C (Page 4C-2)”.

Wheel rim runout
Service limit (Axial and Radial): 2.0 mm (0.08 in.)



I649G1240014-01

Bearing
Inspect the play of the wheel bearings by hand while they are in the wheel. Rotate the inner race by hand to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual. Refer to “Rear Wheel Dust Seal / Bearing Removal and Installation (Page 2D-18)”.



I649G1240015-01

Rear Wheel Speed Sensor Rotor (GSF1250A/SA)
Refer to “Wheel Speed Sensor and Sensor Rotor Inspection in Section 4E (Page 4E-74)”.

Rear Wheel Dust Seal / Bearing Removal and Installation

B718H12406010

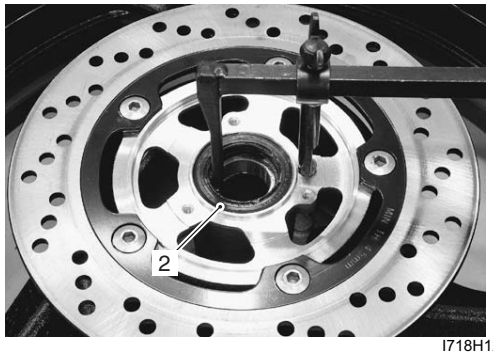
Removal

1) Remove the rear wheel assembly. Refer to “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
2) Remove the rear sprocket mounting drum assembly (1) from the rear wheel.

I718H1240052-02

3) Remove the rear wheel speed sensor rotor by removing the mounting bolts. (GSF1250A/SA) Refer to “Wheel Speed Sensor and Sensor Rotor Inspection in Section 4E (Page 4E-74)”.
4) Remove the dust seal (2).

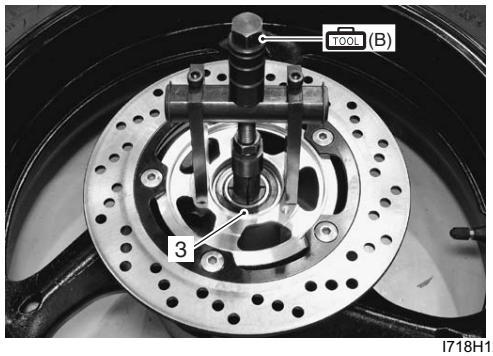
Special tool
(A): 09913–50121 (Oil seal remover)



I718H1240038-03

5) Remove the bearings (3) on both sides using the special tool.

Special tool
(B): 09921–20240 (Bearing remover set)



I718H1240040-03

6) Remove the spacer.

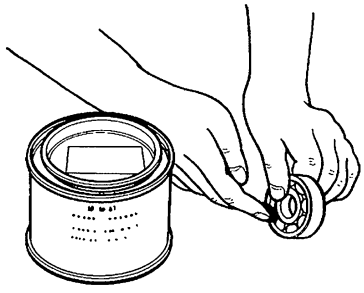
Installation

⚠ CAUTION

The removed dust seals and bearings must be replaced with new ones.

1) Apply grease to the wheel bearings.

: Grease 99000–25010 (SUZUKI SUPER GREASE A or equivalent)



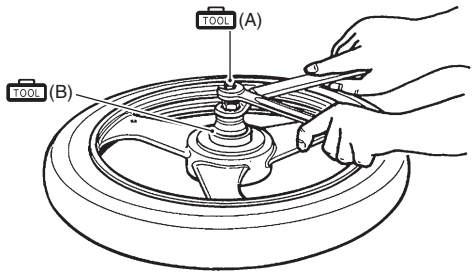
I649G1240019-01

2) First install the right wheel bearing, then install the spacer (1) and left wheel bearing with the special tools.

Special tool
TOOL (A): 09941–34513 (Steering race installer)
TOOL (B): 09924–84510 (Bearing installer set)

⚠ CAUTION

The sealed cover of the bearing must face outside.



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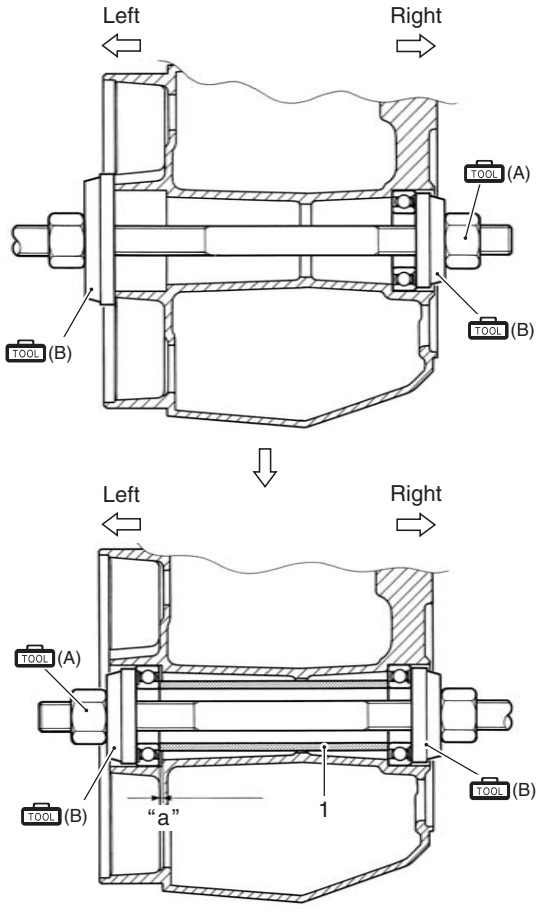
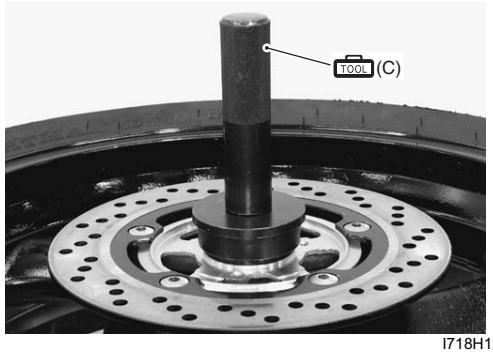


I649G1240034-02

1. Spacer	"a": Clearance

3) Install a new dust seal with the special tool.

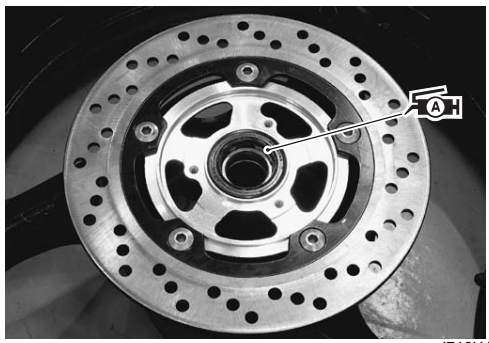
Special tool
TOOL (C): 09913–70210 (Bearing installer set)



I718H1240042-01

4) Apply grease to the dust seal lip.

: Grease 99000–25010 (SUZUKI SUPER GREASE A or equivalent)



I718H1240043-01

5) Install the rear wheel speed sensor rotor. (GSF1250A/SA) Refer to "Rear Wheel Speed Sensor Rotor Removal and Installation in Section 4E (Page 4E-73)".

6) Install the rear sprocket mounting drum assembly.

I718H1240053-01

7) Install the rear wheel assembly. Refer to "Rear Wheel Assembly Removal and Installation (Page 2D-16)".

Tire Removal and Installation

B718H12406011

Removal

The most critical factor of a tubeless tire is the seal between the wheel rim and the tire bead. For this reason, it is recommended to use a tire changer that can satisfy this sealing requirement and can make the operation efficient as well as functional.

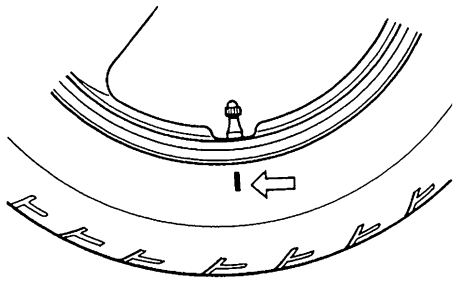
1) Removal the wheel assembly. Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)” and “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
2) Remove the mounting drum from the rear wheel. (For rear wheel)
   Refer to “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
3) Remove the valve core.
4) Remove the tire using the tire changer.

⚠ CAUTION

For operating procedures, refer to the instructions supplied by the tire changer manufacturer.

NOTE

When removing the tire in case of repair or inspection, mark the tire with a chalk to indicate the tire position relative to the valve position. Even though the tire is refitted to the original position after repairing puncture, the tire may have to be balanced again since such a repair can cause imbalance.



I649G1240037-01

Installation

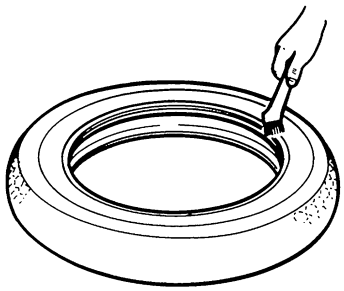
⚠ CAUTION

Do not reuse the valve which has been once removed.

1) Apply tire lubricant to the tire bead.

⚠ CAUTION

Never use oil, grease or gasoline on the tire bead in place of tire lubricant.



I649G1240038-01

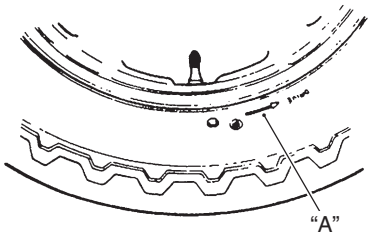
2) Install the tire onto the wheel.

⚠ CAUTION

For installation procedure of tire onto the wheel, follow the instructions given by the tire changer manufacturer.

NOTE

- **When installing the tire, the arrow “A” on the side wall should point to the direction of wheel rotation.**
- **Align the chalk mark put on the tire at the time of removal with the valve position.**



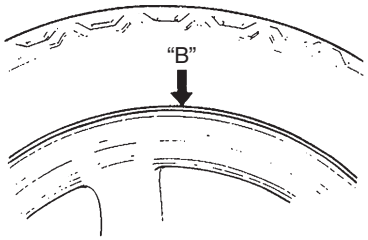
I649G1240039-01

3) Bounce the tire several times while rotating. This makes the tire bead expand outward to contact the wheel, thereby facilitating air inflation.
4) Install the valve core and inflate the tire.

⚠ WARNING

- **Do not inflate the tire to more than 400 kPa (4.0 kgf/cm², 57 psi). If inflated beyond this limit, the tire can burst and possibly cause injury. Do not stand directly over the tire while inflating.**
- **In the case of preset pressure air inflator, pay special care for the set pressure adjustment.**

5) In this condition, check the “grim line” “B” cast on the tire side walls. The line must be equidistant from the wheel rim all around.
6) If the distance between the rim line and wheel rim varies, this indicates that the bead is not properly seated. If this is the case, deflate the tire completely and unseat the bead for both sides. Coat the bead with lubricant and fit the tire again.



I649G1240040-01

7) When the bead has been fitted properly, adjust the pressure to specification.
8) As necessary, adjust the tire balance. Refer to “Wheel Balance Check and Adjustment (Page 2D-23)”.

Cold inflation tire pressure

	Front	Rear
Solo riding	**250 kPa (2.50 kgf/cm², 36 psi)**	**290 kPa (2.90 kgf/cm², 42 psi)**
Dual riding	**250 kPa (2.50 kgf/cm², 36 psi)**	**290 kPa (2.90 kgf/cm², 42 psi)**

9) Install the mounting drum to the rear wheel. (For rear wheel) Refer to “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
10) Install the wheel assembly. Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)” and “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.

Wheel / Tire / Air Valve Inspection and Cleaning

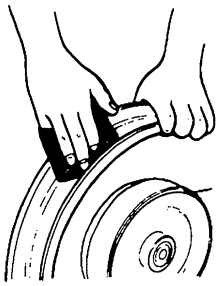
B718H12406012

Refer to “Tire Removal and Installation (Page 2D-20)”.

Wheel

Wipe the wheel clean and check for the following points:

- Distortion and crack
- Any flaws and scratches at the bead seating area.
- Wheel rim runout. Refer to “Front Wheel Related Parts Inspection (Page 2D-8)” and “Rear Wheel Related Parts Inspection (Page 2D-17)”.

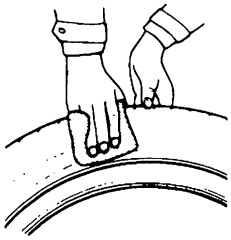


I649G1240041-01

Tire

Tire must be checked for the following points:

- Nick and rupture on side wall
- Tire tread depth (Refer to “Tire Inspection in Section 0B (Page 0B-19)”.)
- Tread separation
- Abnormal, uneven wear on tread
- Surface damage on bead
- Localized tread wear due to skidding (Flat spot)
- Abnormal condition of inner liner



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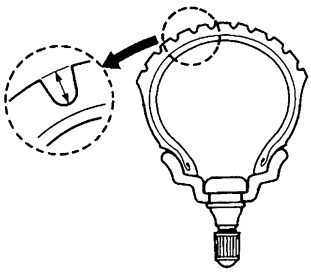
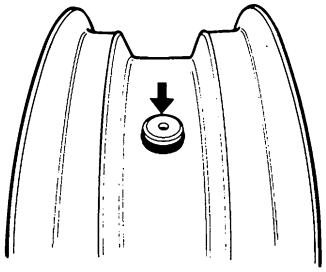


I649G1240043-01

Air Valve

Inspect the air valve for peeling and damage. If any defect is found, replace the air valve with a new one. Refer to “Air Valve Removal and Installation (Page 2D-22)”.



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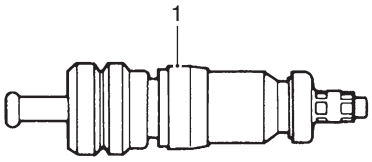
Inspect the valve core seal (1) for wear and damage. If any defect is found, replace the valve core with a new one. Refer to “Air Valve Removal and Installation (Page 2D-22)”.



I649G1240045-01

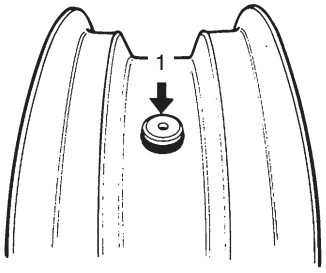
1. Seal

Air Valve Removal and Installation

B718H12406013

Removal

1) Remove the wheel assembly. Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)” and “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
2) Remove the tire. Refer to “Tire Removal and Installation (Page 2D-20)”.
3) Remove the air valve (1) from the wheel.

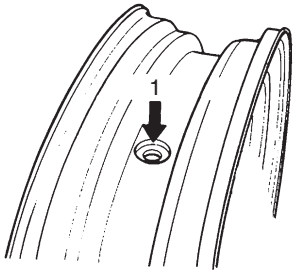


I649G1240046-01

Installation

Install the air valve in the reverse order of removal. Pay attention to the following points:

- Any dust or rust around the valve hole (1) must be cleaned off.



I718H1240054-01

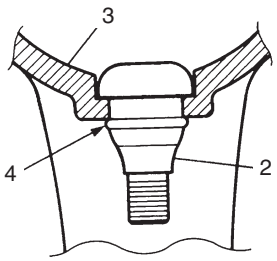
- Install the air valve (2) in the wheel (3).

⚠ CAUTION

- **Be careful not to damage the lip (4) of the valve.**
- **Replace the air valve with a new one.**

NOTE

To properly install the valve into the valve hole, apply a special tire lubricant or neutral soapy liquid to the valve.



I718H1240055-01

2. Valve	3. Wheel	4. Valve lip

Wheel Balance Check and Adjustment

B718H12406014

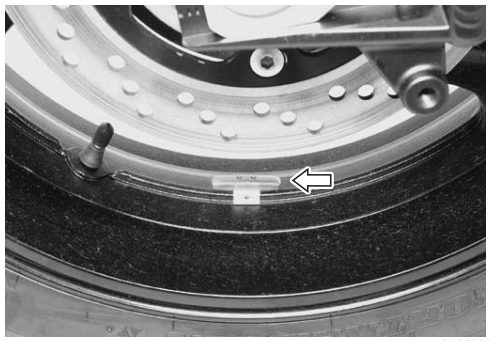
Check and adjust the wheel balance in the following procedures:

1) Removal the wheel assembly. Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)” and “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
2) Remove the mounting drum from the rear wheel. (For rear wheel)
   Refer to “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
3) Check the wheel balance using the balancer and adjust the wheel balance if necessary.

⚠ CAUTION

For operating procedures, refer to the instructions supplied by the wheel balancer manufacturer.

4) When installing the balancer weight to the wheel, set the balancer weight on center rib of the wheel.



I718H1240051-01

5) Recheck the wheel balance.
6) Install the mounting drum to the rear wheel. (For rear wheel)
   Refer to “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.
7) Install the wheel assembly. Refer to “Front Wheel Assembly Removal and Installation (Page 2D-6)” and “Rear Wheel Assembly Removal and Installation (Page 2D-16)”.

Specifications

Service Data

B718H12407001

Wheel

Unit: mm (in.)

Item	Standard		Limit
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Wheel rim size	Front	17 M/C x MT3.50	—
	Rear	17 M/C x MT5.50	—

Tire

Item	Standard		Limit
Cold inflation tire pressure (Solo/Dual riding)	Front	250 kPa (2.50 kgf/cm^2, 36 psi)	—
	Rear	290 kPa (2.90 kgf/cm^2, 42 psi)	—
Tire size	Front	120/70 ZR17M/C (58 W)	—
	Rear	180/55 ZR17M/C (73 W)	—
Tire type	Front	DUNLOP D218FT	—
	Rear	DUNLOP D218N	—
Tire tread depth (Recommended depth)	Front	—	1.6 mm (0.06 in.)
	Rear	—	2.0 mm (0.08 in.)

Tightening Torque Specifications

B718H12407002

Fastening part	Tightening torque			Note
	N·m	kgf-m	lb-ft	
Front brake caliper mounting bolt	26	2.6	19.0	☞(Page 2D-7)
Front axle bolt	100	10.0	72.5	☞(Page 2D-7)
Front axle pinch bolt	23	2.3	16.5	☞(Page 2D-8) / ☞(Page 2D-8)
Rear axle nut	100	10.0	72.5	☞(Page 2D-16)

NOTE

The specified tightening torque is also described in the following.
"Front Wheel Components (Page 2D-2)"
"Front Wheel Assembly Construction (Page 2D-4)"
"Rear Wheel Components (Page 2D-12)"
"Rear Wheel Assembly Construction (Page 2D-14)"

Reference:
For the tightening torque of fastener not specified in this section, refer to "Tightening Torque Specifications in Section 0C (Page 0C-7)".

Special Tools and Equipment

Recommended Service Material

B718H12408001

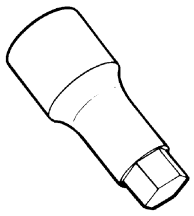
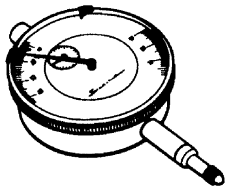
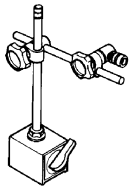
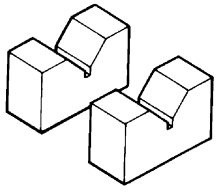
Material	SUZUKI recommended product or Specification		Note
Grease	SUZUKI SUPER GREASE A or equivalent	P/No.: 99000–25010	☞(Page 2D-10) / ☞(Page 2D-11) / ☞(Page 2D-18) / ☞(Page 2D-19)

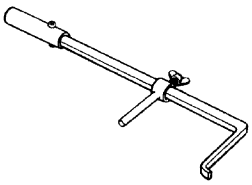
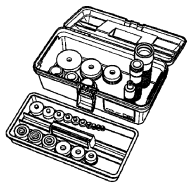
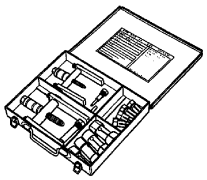
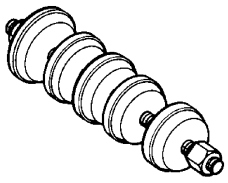
NOTE

Required service material is also described in the following.
"Front Wheel Components (Page 2D-2)"
"Front Wheel Assembly Construction (Page 2D-4)"
"Rear Wheel Components (Page 2D-12)"
"Rear Wheel Assembly Construction (Page 2D-14)"

Special Tool

B718H12408002

09900–18740 Hexagon socket (24 mm) ☞(Page 2D-7)		09900–20607 Dial gauge (1/100 mm, 10 mm) ☞(Page 2D-8) / ☞(Page 2D-17)	
09900–20701 Magnetic stand ☞(Page 2D-8) / ☞(Page 2D-17)		09900–21304 V-block (100 mm) ☞(Page 2D-8) / ☞(Page 2D-17)	

09913–50121 Oil seal remover ☞(Page 2D-9) / ☞(Page 2D-18) 	09913–70210 Bearing installer set ☞(Page 2D-11) / ☞(Page 2D-19) 
09921–20240 Bearing remover set ☞(Page 2D-9) / ☞(Page 2D-18) 	09924–84510 Bearing installer set ☞(Page 2D-10) / ☞(Page 2D-19) 
09941–34513 Steering race installer ☞(Page 2D-19)