

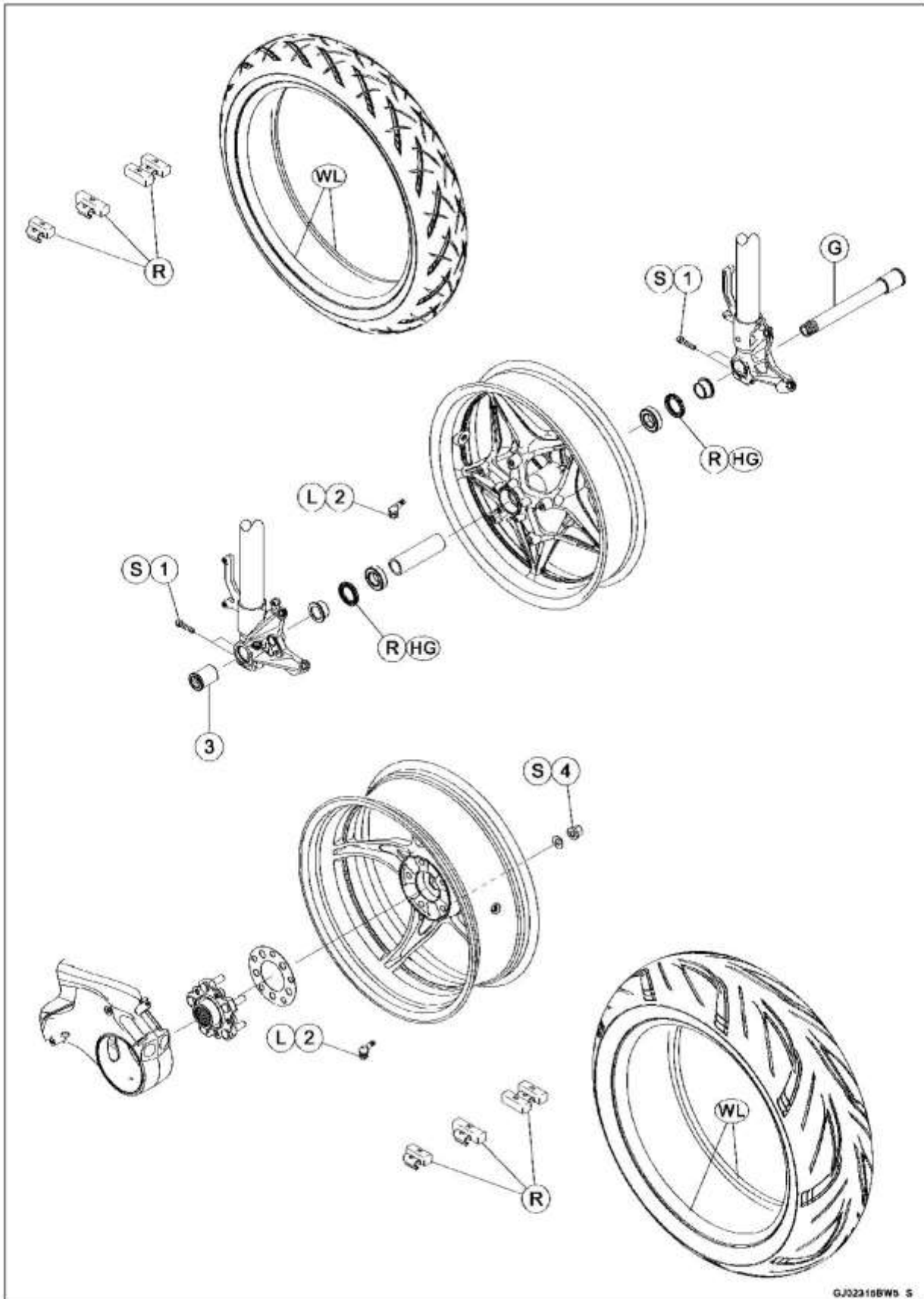
Wheels/Tires

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10-2 WHEELS/TIRES

Exploded View



Exploded View

No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Front Axle Clamp Bolts	20	2.0	15	S
2	Air Valve Nuts	4.5	0.46	40 in·lb	L
3	Front Axle Nut	130	13.3	95.9	
4	Rear Wheel Nuts	110	11.2	81.1	S

G: Apply grease.

HG: Apply high-temperature grease.

L: Apply a non-permanent locking agent.

R: Replacement Parts

S: Follow the specified tightening sequence.

WL: Apply soap and water solution or rubber lubricant.

10-4 WHEELS/TIRES

Specifications

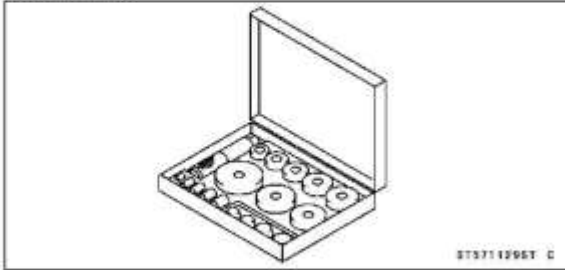
Item	Standard	Service Limit
Wheels (Rims)		
Rim Runout:		
Axial	TIR 0.5 mm (0.02 in.) or less	TIR 1.0 mm (0.04 in.)
Radial	TIR 0.8 mm (0.03 in.) or less	TIR 1.0 mm (0.04 in.)
Axle Runout/100 mm (3.94 in.)	TIR 0.03 mm (0.001 in.) or less	TIR 0.2 mm (0.008 in.)
Wheel Balance	10 g (0.35 oz.) or less	---
Balance Weights	10 g (0.35 oz.), 20 g (0.71 oz.), 30 g (1.06 oz.)	---
Rim Size:		
Front	17M/C × MT3.50	---
Rear	17M/C × MT6.00	---
Tires		
Air Pressure (when cold):		
Front	Up to 195 kg (430 lb) load: 290 kPa (2.90 kgf/cm ² , 42 psi)	---
Rear	Up to 195 kg (430 lb) load: 290 kPa (2.90 kgf/cm ² , 42 psi)	---
Tread Depth:		
Front	3.6 mm (0.14 in.)	1 mm (0.04 in.) (AT, CH, DE) 1.6 mm (0.06 in.)
Rear	5.0 mm (0.20 in.)	Up to 130 km/h (80 mph): 2 mm (0.08 in.) Over 130 km/h (80 mph): 3 mm (0.12 in.)
Standard Tires:		
Front:		
Make	BRIDGESTONE	---
Type	BATTLAX, HYPERSPORT S21F F	---
Size	120/70ZR17M/C (58W)	---
Rear:		
Make	BRIDGESTONE	---
Type	BATTLAX, HYPERSPORT S21R F	---
Size	190/55ZR17M/C (75W)	---

WARNING

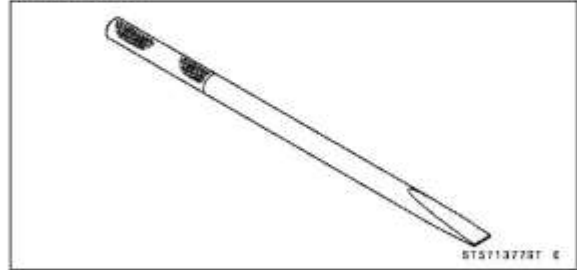
Some replacement tires may adversely affect handling and cause an accident resulting in serious injury or death. To ensure proper handling and stability, use only the recommended standard tires for replacement, inflated to the standard pressure.

Special Tools

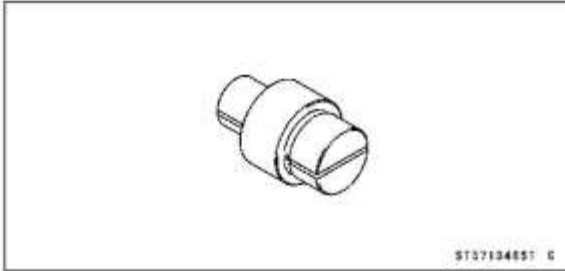
Bearing Driver Set:
57001-1129



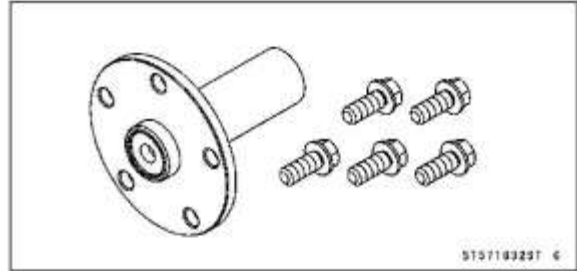
Bearing Remover Shaft, $\phi 13$:
57001-1377



Bearing Remover Head, $\phi 25 \times \phi 28$:
57001-1346



Wheel Balance Adjustment Tool:
57001-1832



10-6 WHEELS/TIRES

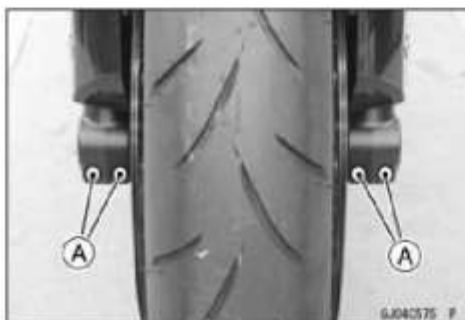
Wheels (Rims)

Front Wheel Removal

- Remove the front caliper mounting bolts [A] on both sides.
- Remove the front wheel rotation sensor bolt [B] to free the sensor.
- Take the front calipers off the fork legs.



- Loosen:
Front Axle Clamp Bolts [A]



- Loosen:
Front Axle Nut [A]
- Raise the front wheel off the ground with a suitable stand.
- Remove:
Front Axle
Front Axle Nut
Front Wheel

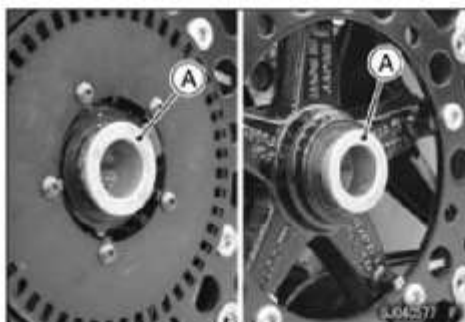


NOTICE

Do not lay the wheel down on one of the discs. This can damage or warp the disc. Place blocks under the wheel so that the disc does not touch the ground.

Front Wheel Installation

- Apply high-temperature grease to the grease seal lips.
- Fit the collars [A] on both sides of the hub.
- The collars are identical.

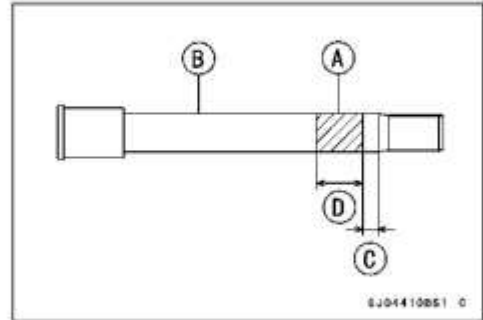


Wheels (Rims)

- Apply a thin coat of grease [A] to the front axle [B].
About 10 mm (0.4 in.) [C]
About 30 mm (1.2 in.) [D]

NOTE

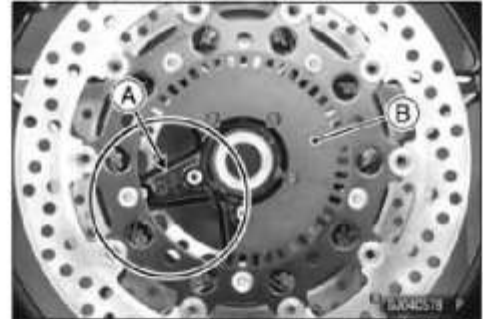
- Do not apply grease to the threads of the axle.



NOTE

- The direction of the wheel rotation is shown by an arrow [A] on the wheel spoke.
- In this model, the wheel rotation mark is under the wheel rotation sensor rotor [B].

- Check the wheel rotation mark on the front wheel and install it.
- Insert the front axle from the right side.
- Tighten:
Torque - Front Axle Nut: 130 N·m (13.3 kgf·m, 95.9 ft·lb)
- Check that the wheel rotates smoothly.



- Install the brake calipers temporarily.
- Before tightening the front axle clamp bolts [A] on the front fork legs, pump the front fork up and down 4 or 5 times to allow the front fork legs to seat on the front axle.

NOTE

- Put a block in front of the front wheel to stop moving.

- Tighten:
Torque - Front Axle Clamp Bolts: 20 N·m (2.0 kgf·m, 15 ft·lb)
- Tighten the inside clamp bolts first.
- After tightening the outside clamp bolts, tighten the inside clamp bolts again.
- There will be a gap at the slit of the front fork legs after tightening.
- Install the removed parts.
- Check the front brake effectiveness (see [Brake Operation Inspection\(2-48\)](#)).



WARNING

After servicing, it takes several applications of the brake lever before the brake pads contact the disc, which could result in increased stopping distance and cause an accident resulting in injury or death. Do not attempt to ride the motorcycle until a firm brake lever is obtained by pumping the lever until the pads are against the disc.

10-8 WHEELS/TIRES

Wheels (Rims)

Front Wheel Inspection

- Raise the front wheel off the ground with a suitable stand.
 - Spin the front wheel lightly, and check for roughness or binding.
 - ★ If roughness or binding is found, replace the front hub bearings (see [Front Hub Bearing Removal\(10-17\)](#)).
 - Inspect the front wheel for small cracks, dents, bending, or warp.
 - ★ If there is any damage on the front wheel, replace it with a new one.
-
- Remove the front wheel with the tire, and support it by the axle.
 - Measure the rim runout, axial [A] and radial [B], with a dial gauge.

Front Wheel Rim Runout (with tire installed)

Standard:

Axial	TIR 0.5 mm (0.02 in.) or less
Radial	TIR 0.8 mm (0.03 in.) or less

Service Limit:

Axial	TIR 1.0 mm (0.04 in.)
Radial	TIR 1.0 mm (0.04 in.)

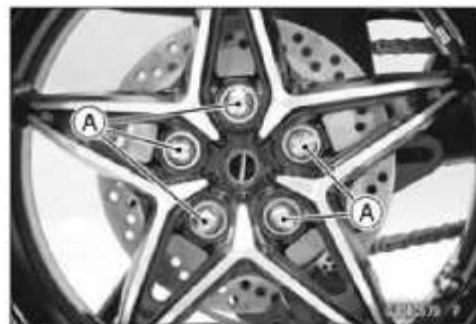
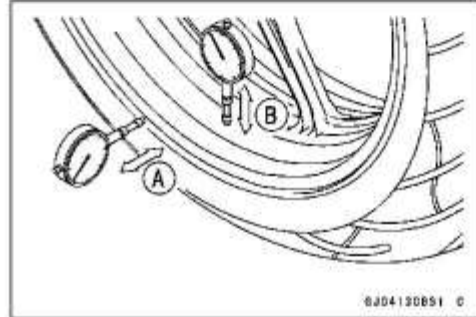
- ★ If the rim runout exceeds the service limit, check the hub bearings (see [Front Hub Bearing Inspection\(10-18\)](#)).
- ★ If the problem is not due to the bearings, replace the wheel.

WARNING

Damaged wheel parts may fail and cause an accident resulting in serious injury or death. Never attempt to repair a damaged wheel part. If the wheel part is damaged, it must be replaced with a new one.

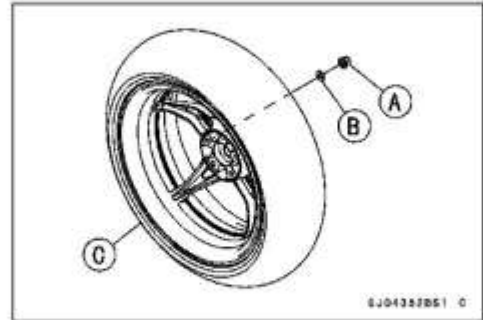
Rear Wheel Removal

- Remove:
 - Muffler Body (see [Muffler Body Removal\(5-36\)](#))
- Loosen the rear wheel nuts [A].
- Raise the rear wheel off the ground with the stand.



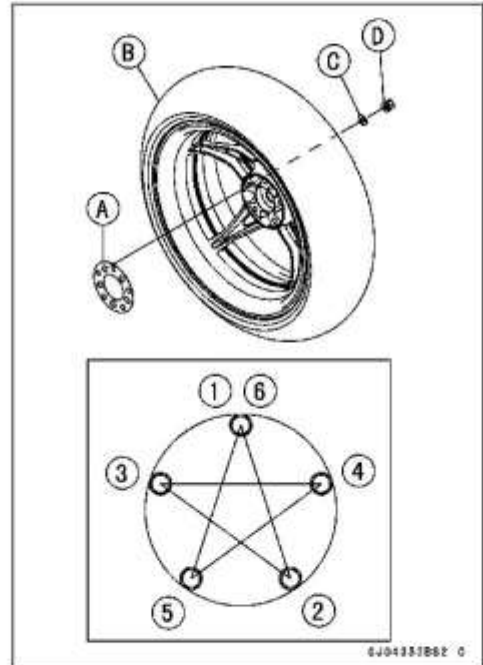
Wheels (Rims)

- Remove:
 - Rear Wheel Nuts [A]
 - Washers [B]
 - Rear Wheel [C]



Rear Wheel Installation

- Be sure to install the plate [A].
- Install:
 - Rear Wheel [B]
 - Washers [C]
- Tighten the rear wheel nuts [D] to a snug fit following the specified sequence [1 ~ 6].
- Tighten the rear wheel nuts to the specified torque with the same sequence.
 - Torque - Rear Wheel Nuts: 110 N·m (11.2 kgf·m, 81.1 ft·lb)**
- Install the removed parts.



Rear Wheel Inspection

- Raise the rear wheel off the ground with the stand.
- Spin the rear wheel lightly, and check for roughness or binding.
- ★ If roughness or binding is found, replace the following parts.
 - Coupling Bearing (see [Coupling Bearing Removal\(11-15\)](#))
 - Bearing Housing Bearings (see [Bearing Housing Removal\(11-16\)](#))
- Inspect the rear wheel for small cracks, dents, bending, or warp.
- ★ If there is any damage to the rear wheel, replace it with a new one.

10-10 WHEELS/TIRES

Wheels (Rims)

- Remove the rear wheel with the tire, and support it using the special tool.

Special Tool - Wheel Balance Adjustment Tool: 57001-1832

- Install the tool [A] to the left side.
- Install the washers of the rear wheel nuts, and tighten the wheel hub mounting bolts [B] of the special tool.

Torque - Wheel Hub Mounting Bolts: 15 N·m (1.5 kgf·m, 11 ft·lb)



- Measure the rim runout, axial [A] and radial [B], with a dial gauge.

Rear Wheel Rim Runout (with tire installed)

Standard:

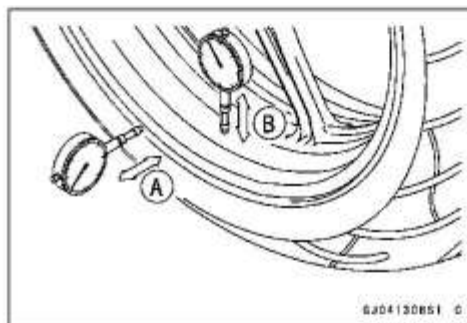
Axial TIR 0.5 mm (0.02 in.) or less

Radial TIR 0.8 mm (0.03 in.) or less

Service Limit:

Axial TIR 1.0 mm (0.04 in.)

Radial TIR 1.0 mm (0.04 in.)



- ★ If the rim runout exceeds the service limit, replace the wheel with a new one.

WARNING

Damaged wheel parts may fail and cause an accident resulting in serious injury or death. Never attempt to repair a damaged wheel part. If the wheel part is damaged, it must be replaced with a new one.

Axle Inspection

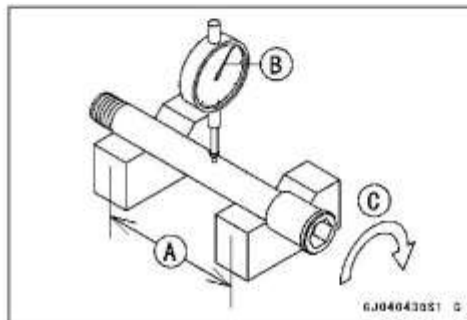
- Remove:
 - Front Axle (see [Front Wheel Removal\(10-6\)](#))
 - Inner Rear Axle (see [Coupling Removal\(11-13\)](#))
- ★ If the front or rear axle is damaged or bent, replace it with a new one.
- Place the axle in V blocks that are 100 mm (3.94 in.) [A] apart, and set a dial gauge [B] on the axle at a point halfway between the blocks. Turn [C] the axle to measure the runout. The difference between the highest and lowest dial readings is the amount of runout.

Axle Runout/100 mm (3.94 in.)

Standard: TIR 0.03 mm (0.001 in.) or less

Service Limit: TIR 0.2 mm (0.008 in.)

- ★ If the axle runout exceeds the service limit, replace it with a new one.

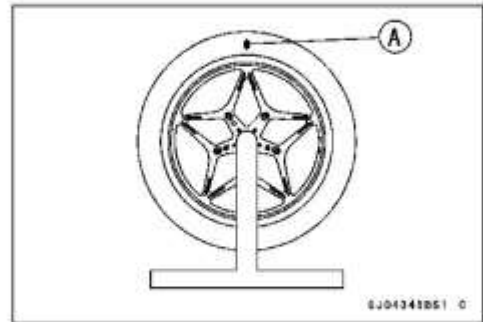


Wheels (Rims)

Balance Inspection

Front Wheel

- Remove the front wheel (see [Front Wheel Removal\(10-6\)](#)).
- Support the front wheel so that it can be spun freely.
- Spin the front wheel lightly, and mark [A] the front wheel at the top when the wheel stops.
- Repeat this procedure several times. If the wheel stops of its own accord in various positions, it is well balanced.
- ★ If the front wheel always stops in one position, adjust the wheel balance (see [Balance Adjustment\(10-12\)](#)).



Rear Wheel

- Remove the rear wheel (see [Rear Wheel Removal\(10-8\)](#)).
- Support the rear wheel so that it can be spun freely.

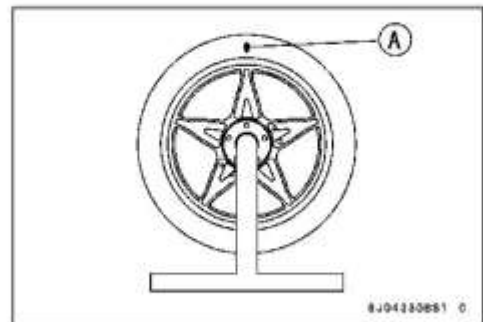
Special Tool - Wheel Balance Adjustment Tool: 57001-1832

- Install the tool [A] to the left side.
- Install the washers of the rear wheel nuts, and tighten the wheel hub mounting bolts [B] of the special tool.

Torque - Wheel Hub Mounting Bolts: 15 N·m (1.5 kgf·m, 11 ft·lb)



- Spin the rear wheel lightly, and mark [A] the rear wheel at the top when the wheel stops.
- Repeat this procedure several times. If the wheel stops of its own accord in various positions, it is well balanced.
- ★ If the rear wheel always stops in one position, adjust the wheel balance (see [Balance Adjustment\(10-12\)](#)).

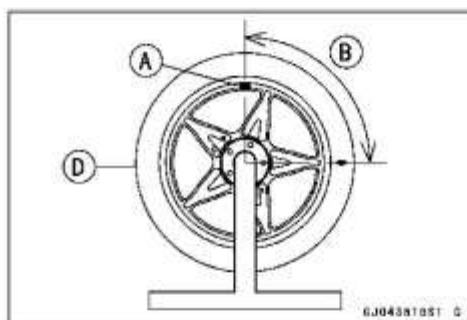
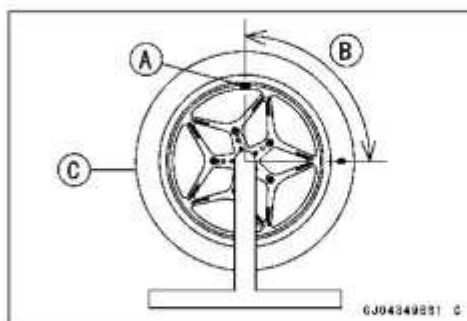


10-12 WHEELS/TIRES

Wheels (Rims)

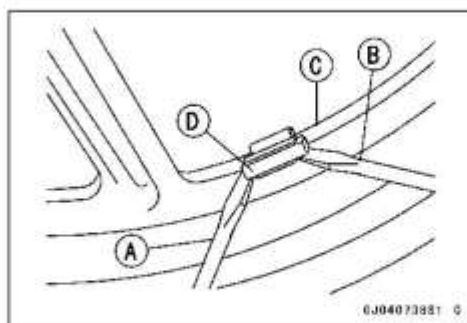
Balance Adjustment

- If the wheel always stops in one position, provisionally attach a balance weight [A] on the rim at the marking using adhesive tape.
- Rotate the wheel 1/4 turn [B], and see whether or not the wheel stops in this position. If it does, the correct balance weight is being used.
Front Wheel [C]
Rear Wheel [D]
- ★ If the wheel rotates and the weight goes up, replace the weight with the next heavier size. If the wheel rotates and the weight goes down, replace the weight with the next lighter size. Repeat these steps until the wheel remains at rest after being rotated 1/4 turn.
- Rotate the wheel another 1/4 turn and then another 1/4 turn to see if the wheel is correctly balanced.
- Repeat the entire procedure as many times as necessary to achieve correct wheel balance.
- Permanently install the balance weight.



Balance Weight Removal

- Insert a flat tip screwdrivers [A] [B] between the rib [C] and weight [D] as shown.
- Pry the balance weight with two screwdrivers and remove the balance weight.
- Discard the used balance weight.



NOTICE

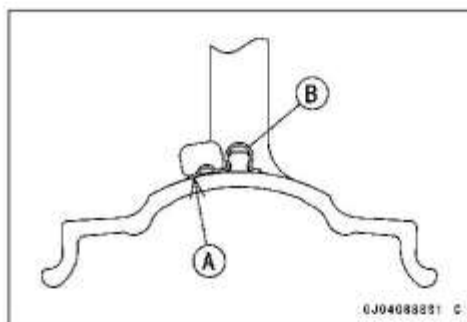
Do not tap the screwdrivers. The rim could be damaged.

Balance Weight Installation

- Check if the weight portion has any play on the blade [A] and clip [B].
- ★ If it does, discard it.

WARNING

Unbalanced wheels can create an unsafe riding condition. If the balance weight has any play on the rib of the rim, the blade and/or clip have been stretched. Replace the loose balance weight. Do not reuse used balance weight.



Wheels (Rims)

Balance Weight

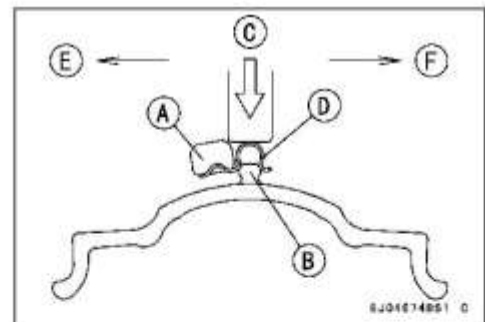
Part Number	Weight
41075-0007	10 g (0.35 oz.)
41075-0008	20 g (0.71 oz.)
41075-0017	30 g (1.06 oz.)

NOTE

- Balance weights are available from Kawasaki dealers in 10, 20 and 30 grams (0.35, 0.71 and 1.06 oz.) sizes. An imbalance of less than 10 grams (0.35 oz.) will not usually affect running stability.
- Do not use four or more balance weights (more than 90 grams, 3.2 oz.). If the wheel requires an excess balance weight, disassemble the wheel to find the cause.

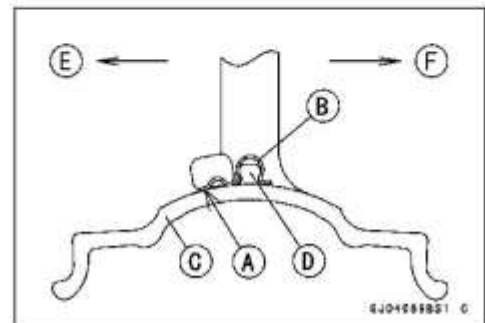
- Slip the balance weight [A] onto the rib [B] by pushing or lightly hammering [C] the clip [D].

Left Side [E]
Right Side [F]



- Check that the blade [A] and clip [B] are fully seated on the rim [C] and that the clip is hooked over the rib [D].

Left Side [E]
Right Side [F]



10-14 WHEELS/TIRES

Tires

Air Pressure Inspection/Adjustment

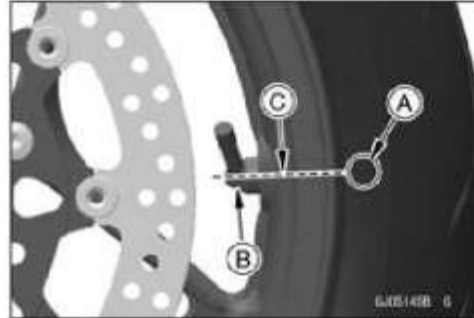
- Refer to the Air Pressure Inspection (see Air Pressure Inspection(2-42)).

Tire Inspection

- Refer to the Wheels and Tires Inspection (see Wheels and Tires Inspection(2-42)).

Tire Removal

- Remove:
 - Front Wheel (see Front Wheel Removal(10-6))
 - Rear Wheel (see Rear Wheel Removal(10-8))
 - Valve Core (Let out the air)
- To maintain wheel balance, mark the valve stem position on the tire with chalk so that the tire can be reinstalled in the same position.
 - Chalk Mark or Yellow Mark [A]
 - Valve Stem [B]
 - Align [C]
- Lubricate the tire beads and rim flanges on both sides with a soap and water solution or rubber lubricant. This helps the tire beads slip off the rim flanges.



NOTICE

Never lubricate with engine oil or petroleum distillates because they will deteriorate the tire.

- Remove the tire from the rim using a suitable commercially available tire changer.

NOTE

○ *The tires cannot be removed with hand tools because they fit the rims too tightly.*

Tire Installation

WARNING

Some replacement tires may adversely affect handling and cause an accident resulting in serious injury or death. To ensure proper handling and stability, use only the recommended standard tires for replacement, inflated to the standard pressure.

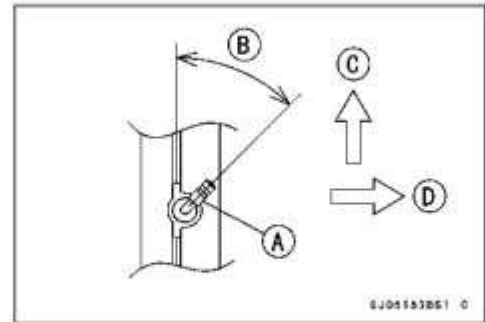
- Inspect the rim and tire, and replace them if necessary.
- Clean the sealing surfaces of the rim and tire, and smooth the sealing surfaces of the rim with a fine emery cloth if necessary.
- Remove the air valve and discard it.

NOTICE

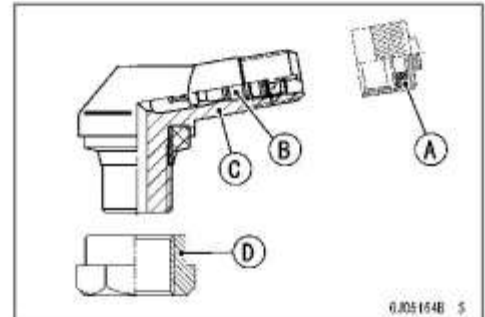
Replace the air valve whenever the tire is replaced. Do not reuse the air valve.

Tires

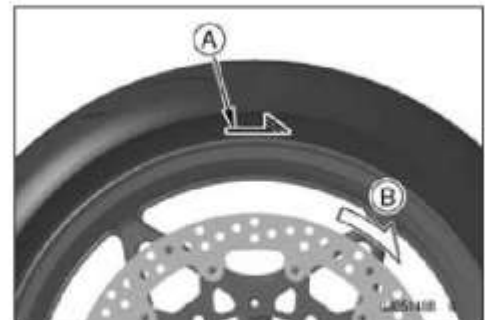
- Install a new valve [A] in the rim.
45° [B]
Front [C]
Right [D]
- Apply a non-permanent locking agent to the threads of air valve nut.
- Tighten the valve nut.
Torque - Air Valve Nuts: 4.5 N·m (0.46 kgf·m, 40 in·lb)



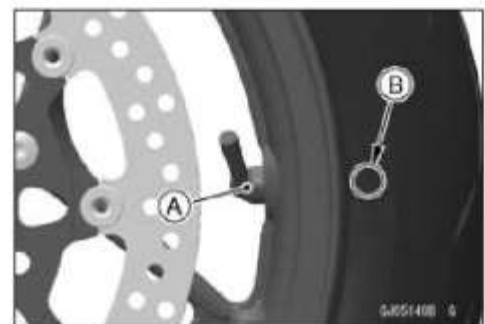
- The air valve is as shown.
Valve Cap [A]
Valve Core [B]
Valve Stem [C]
Valve Nut [D]



- Check the tire rotation mark on the front and rear tires and install them on the rim accordingly.
Tire Rotation Mark [A]
Rotating Direction [B]



- Position the tire on the rim so that the valve [A] align with the tire balance mark [B] (the chalk mark made during removal, or the yellow paint mark on a new tire).
- Install the tire bead over the rim flange using a suitable commercially available tire changer.
- Lubricate the tire beads and rim flanges with a soap and water solution or rubber lubricant to help seat the tire beads in the sealing surfaces of the rim while inflating the tire.
- Center the rim in the tire beads, and inflate the tire with compressed air until the tire beads seat in the sealing surfaces.



⚠ WARNING

Overinflating a tire can cause it to explode, causing serious injury or death. Be sure to install the valve core whenever inflating the tire, and do not inflate the tire to more than 400 kPa (4.0 kgf/cm², 57 psi).

10-16 WHEELS/TIRES

Tires

- Check to see that the rim lines [A] on both sides of the tire sidewalls are parallel with the rim flanges.
- ★ If the rim flanges and tire sidewall rim lines are not parallel, remove the valve core.
- Lubricate the rim flanges and tire beads.
- Install the valve core and inflate the tire again.
- After the tire beads seat in the rim flanges, check for air leakage.
- Inflate the tire slightly above standard inflation.
- Use a soap and water solution or submerge the tire, and check for bubbles that would indicate leakage.
- Adjust the air pressure to the specified pressure (see [Air Pressure Inspection\(2-42\)](#)).
- Install the air valve cap.
- Adjust the wheel balance (see [Balance Adjustment\(10-12\)](#)).



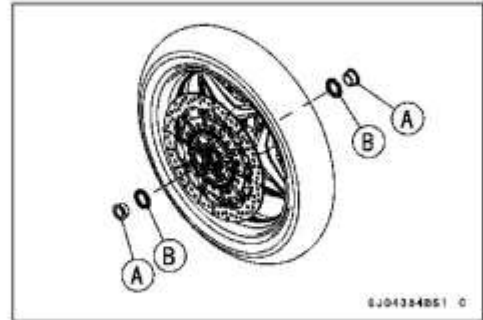
Tire Repair

Currently two types of repair for tubeless tires have come into wide use. One type is called a temporary (external) repair which can be carried out without removing the tire from the rim, and the other type is called permanent (internal) repair which requires tire removal. It is generally understood that higher running durability is obtained by permanent (internal) repairs than by temporary (external) ones. Also, permanent (internal) repairs have the advantage of permitting a thorough examination for secondary damage not visible from external inspection of the tire. For these reasons, Kawasaki does not recommend temporary (external) repair. Only appropriate permanent (internal) repairs are recommended. Repair methods may vary slightly from make to make. Follow the repair methods indicated by the manufacturer of the repair tools and materials so that safe results can be obtained.

Hub Bearing

Front Hub Bearing Removal

- Remove the front wheel (see [Front Wheel Removal\(10-6\)](#)), and take out the following.
 - Collars [A]
 - Grease Seals [B]

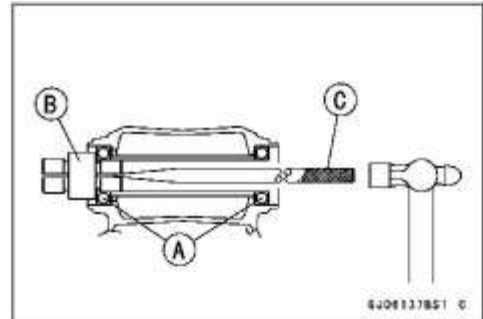


- Use the bearing remover to remove the hub bearings [A].

NOTICE

Do not lay the wheel on the ground with the disc facing down. This can damage or warp the disc. Place blocks under the wheel so that the disc does not touch the ground.

- Special Tools - Bearing Remover Head, $\phi 25 \times \phi 28$ [B]: 57001-1346
 Bearing Remover Shaft, $\phi 13$ [C]: 57001-1377



Front Hub Bearing Installation

- Before installing the hub bearings, blow any dirt or foreign particles out of the hub with compressed air to prevent contamination of the bearings.
- Replace the bearings with new ones.
- Install the bearings by using the bearing driver set which does not contact the bearing inner race.

NOTE

○ Install the bearings so that the marked side faces out.

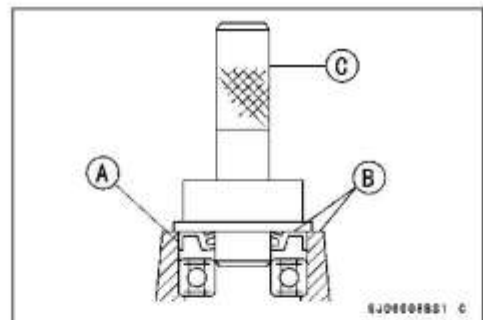
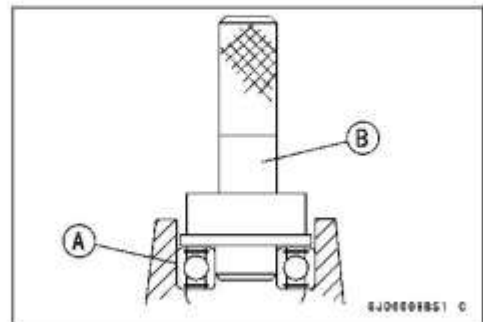
- Press in the right bearing [A] until it is bottomed.

Special Tool - Bearing Driver Set [B]: 57001-1129

- Replace the grease seals with new ones.
- Press in the grease seals [A] so that the seal surface is flush [B] with the end of the hole.
- Apply high-temperature grease to the grease seal lips.

Special Tool - Bearing Driver Set [C]: 57001-1129

- Install the removed parts.



10-18 WHEELS/TIRES

Hub Bearing

Front Hub Bearing Inspection

Since the hub bearings are made to extremely close tolerances, the clearance can not normally be measured.

NOTE

○Do not remove any bearings for inspection. If any bearings are removed, they will need to be replaced with new ones.

- Turn each bearing in the hub back and forth [A] while checking for plays, roughness, or binding.
- ★ If bearing play, roughness, or binding is found, replace the bearing.
- Examine the bearing seal [B] for tears or leakage.
- ★ If the seal is torn or is leaking, replace the bearing.

Front Hub Bearing Lubrication

NOTE

○Since the hub bearings are packed with grease and sealed, lubrication is not required.

