8. Rear axle

8.1. Troubleshooting

Rear wheel wobble

- Unbalanced tyre
- Bent rim
- Axle incorrectly tightened
- Loose engine support
- Low tyre pressure

Soft suspension

- Weakened spring
- Oil leakage
- Soft preload

Hard suspension

- Uneven preload on shock absorbers
- Hard preload
- Incorrectly mounted shock absorber
- Shock absorber rod bent
- Damaged swing axle bearings
- Defective engine support

Underpowered rear brake

- Contaminated disc
- Contaminated tablets
- Air in hydraulic system
- Worn pads
- Warped disc
- Unbalanced clamp
- Clogged hose

Rear wheel noise

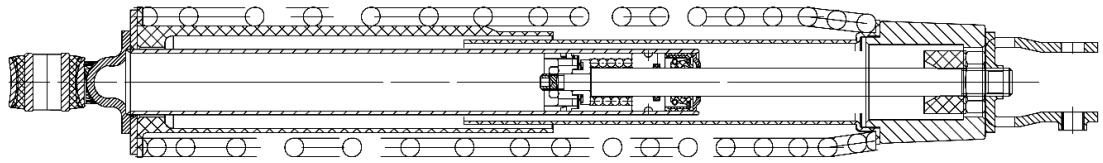
- Worn bearings
- Worn pads
- Deformed swingarm

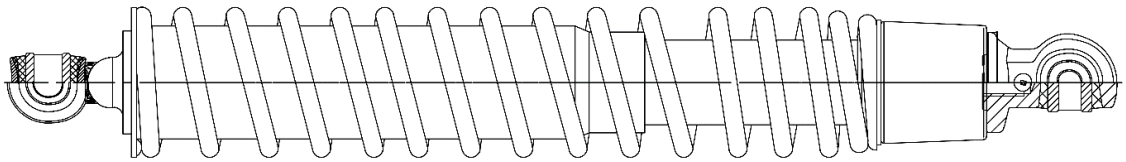
8.2. Rear axle characteristics

Component	Service limit
Rear wheel radial warpage	2.0 mm
Rear axial rim flare	2.0 mm
Rear brake disc thickness	3.0 mm
Rear brake disc warpage	0.3 mm

8.3. Tightness torques

Component	Screw type	Tightning torque
Rear caliper fixing screws	M8x30	25 ± 5 Nm
Rear disc fixing screws	M8x25	25 ± 5 Nm
Rear axle nut	M16	95 ± 5 Nm
Rear swingarm mounting screws	M8x35	20 ± 4 Nm
Upper shock absorber fixing nut	M10	40 ± 3 Nm
Lower right shock absorber fixing screws	M8x30	20 ± 4 Nm
Lower left shock absorber fixing screws	M8x50	25 ± 5 Nm
Rear speed sensor fixing screw	M6x12	5 ± 1 Nm

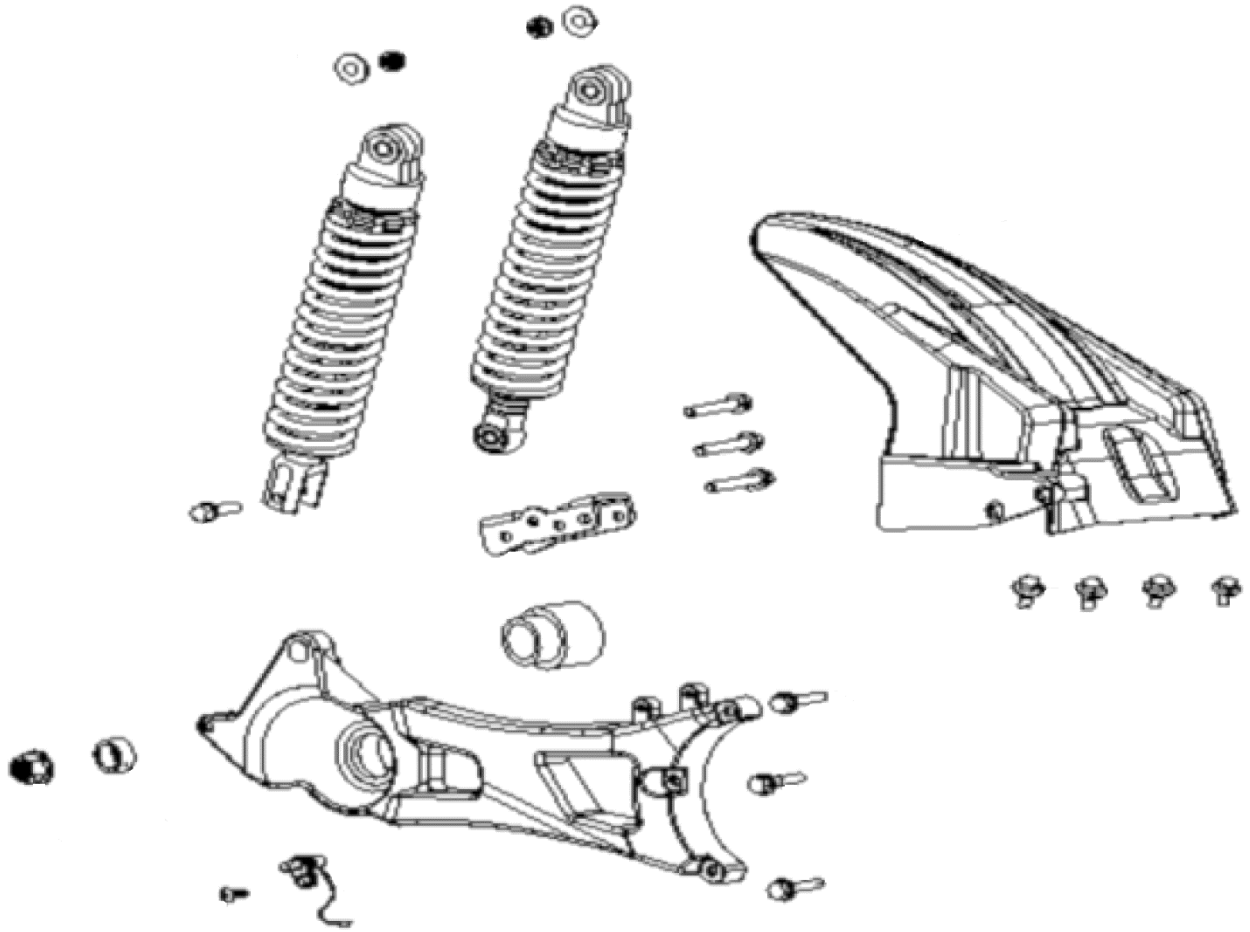




8.4. Shock absorber characteristics

Component	Value
Shock absorber wheelbase	365 ± 2 mm
Elastic constant hard spring rate	40.0 N/mm
Elastic constant soft spring rate	23.5 N/mm
Quantity of hydraulics	40 ± 2 cc
Hydraulic oil viscosity	Suspension oil no. 22
Shock absorber travel	76 mm

8.5. Rear suspension diagram



8.6. Removal of the left shock absorber

Necessary tools

Socket spanners 12 and 15 mm

Long flat screwdriver

Remove the upper fixing nut of the left shock absorber with a 15 mm socket spanner from the inside.

Tightening torque:

Upper left shock absorber nut 40 ± 3 Nm

Use a 12 mm socket spanner to remove the two screws marked with arrows that secure the left shock absorber lower anchor support to the transmission housing.

Tightening torque:

Lower left shock absorber fixing screws 25 ± 5 Nm

Use a large flat-blade screwdriver to pry the lower anchor support of the left shock absorber from the back of the lower anchor support.

Remove the left shock absorber by hand.

Remove the washer.

The assembly sequence is the reverse of the disassembly sequence.

8.7. Removal of the right shock absorber

Necessary tools

Socket spanners 15 and 12 mm

Remove the upper fixing nut of the right shock absorber with a 15 mm socket spanner from the inside.

Tightening torque:

Upper right shock absorber nut 40 ± 3 Nm

Remove the lower fixing screw of the right shock absorber with a 12 mm socket.

Tightening torque:

Lower right shock absorber fixing screw 20 ± 4 Nm

Remove the right shock absorber by hand.

Remove the washer.

The assembly sequence is the reverse of the disassembly sequence.

8.8. Removal of the right swingarm

Required prior operations:

- Remove only the right shock absorber (→ See 8.7 Removal of the right shock absorber).
- Remove only the rear mudguard (→ See 1.3.3. Dismantling of mudguard and rear wheel arch)

Necessary tools

4 mm Allen key

21 and 12 mm socket spanners

Cable cutters

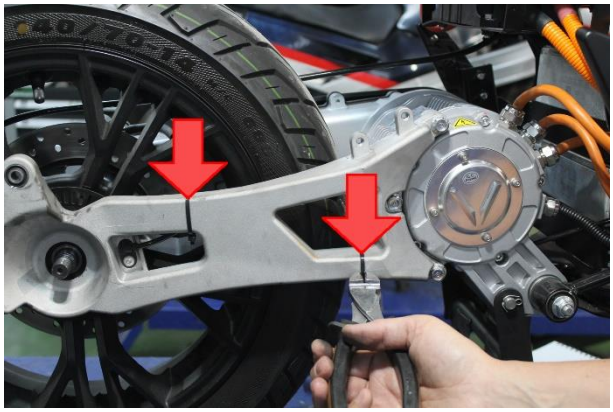
Remove the rear axle nut with a 21 mm socket spanner.

Tightening torque:

Rear axle nut 95 ± 5 Nm

Remove the spacer bushing.

Cut the cable ties securing the speed sensor cable to the swingarm.



Using the 4 mm Allen key, remove the screw that fixes the speed sensor to the swingarm.

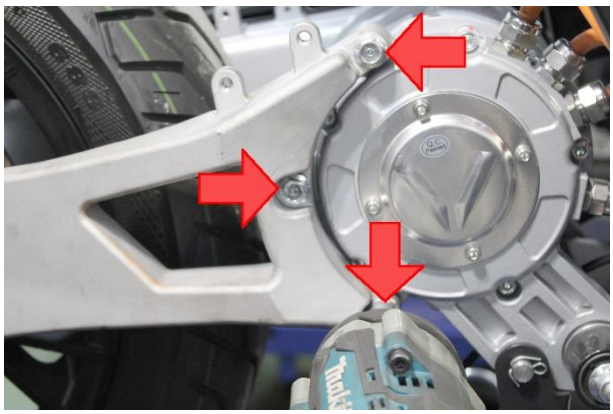
Tightening torque:

Rear speed sensor fixing screw 5 ± 1 Nm

Remove the three screws holding the front of the swingarm to the electric engine support with a 12 mm socket spanner.

Tightening torque:

Rear swingarm fixing screws 20 ± 4 Nm



Remove the swingarm with your hands.

The assembly sequence is the reverse of the disassembly sequence.

Tightness torques

Rear axle nut 95 ± 5 Nm

Tilting fixing screws 20 ± 4 Nm

8.9. Removal of the rear brake caliper

Necessary tools

12 mm socket spanner

Remove the two screws securing the caliper to the transmission housing using a 12 mm socket spanner.

Tightening torque:

Rear brake caliper fixing screws 25 ± 5 Nm

Pull the caliper off the disc with your hands.

8.10. Brake pad replacement

Required prior operations:

- Remove the rear brake caliper (→ See 8.9 Rear brake caliper removal).

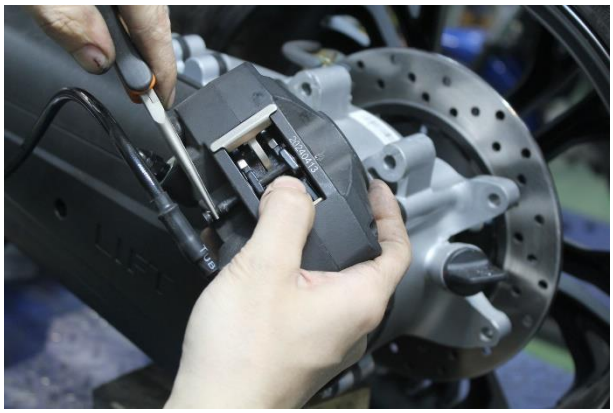
Necessary tools

Fine-nosed pliers

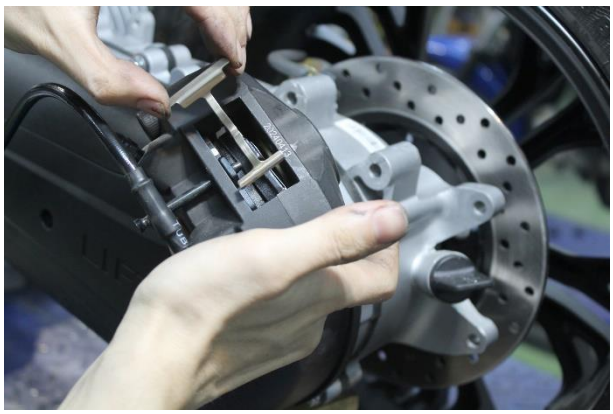
Large flat screwdriver

Remove the pin lock with the tip of a pair of needle-nose pliers.

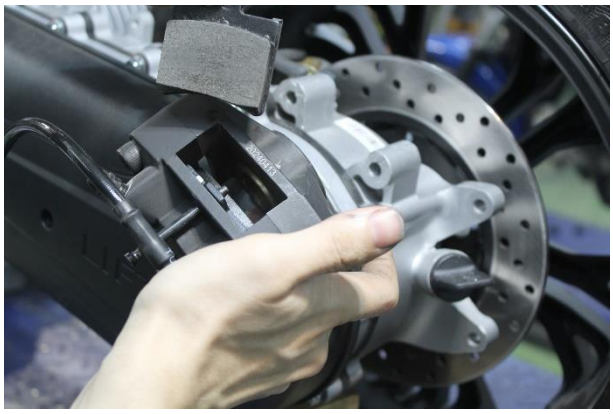
Pull out the pin with the pliers while holding the spring plate compressed with the other hand to prevent it from popping out when the pin is removed.



Remove the elastic plate.



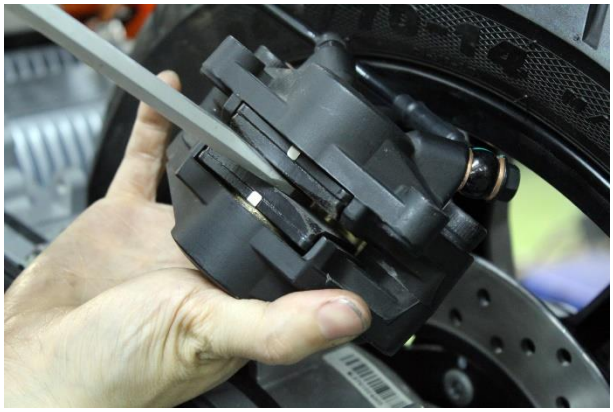
Remove the tablets.



The assembly sequence is the reverse of the disassembly sequence.

Always change the tablets in pairs.

When mounting the caliper on the disc, it may be necessary to open the pad spacing by retracting the caliper pistons. To do this, refit the worn calipers and, using a large flat-blade screwdriver, open the brake pads so that the pistons are retracted.



8.11. Checking the rear brake disc

➔ Follow similar procedure as in 7.6 for the front brake disc.

8.12. Checking the rear wheel rim

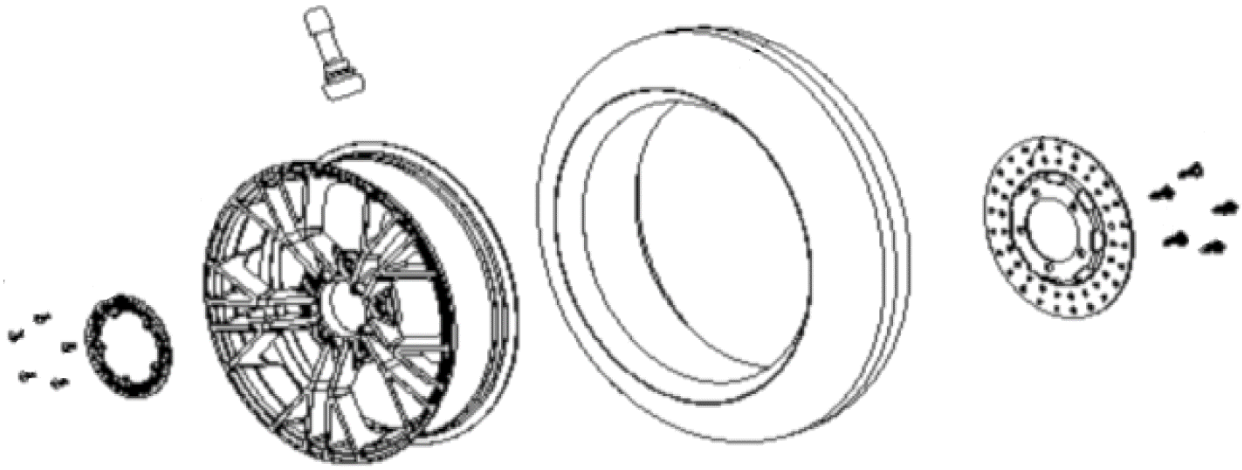
➔ Follow similar procedure as in 7.7 for the front wheel rim

8.13. Hydraulic system purging

➔ Follow similar procedure as in 7.17 for bleeding the front hydraulic system.

8.14. Rear wheel removal

Diagram



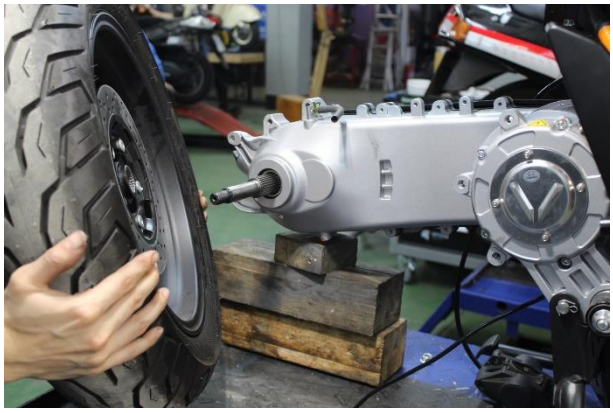
Required prior operations:

- Remove only the right shock absorber (→ See 8.7 Removal of the right shock absorber).
- Remove the right-hand swingarm (→ See 8.8 Removal of the right-hand swingarm).
- Remove the rear break caliper (→ See 8.9 Removal of the rear brake caliper)

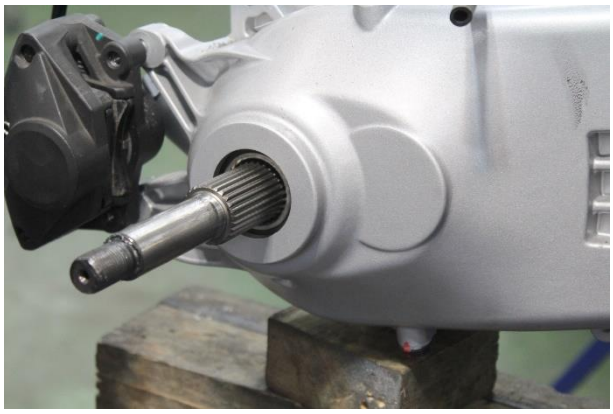
Remove the second spacer bushing and check the seal and bearing for wear or damage. Replace the oil seal and/or bearing with new ones if necessary.

If the left shock absorber has been removed, support the transmission housing on suitable brackets.

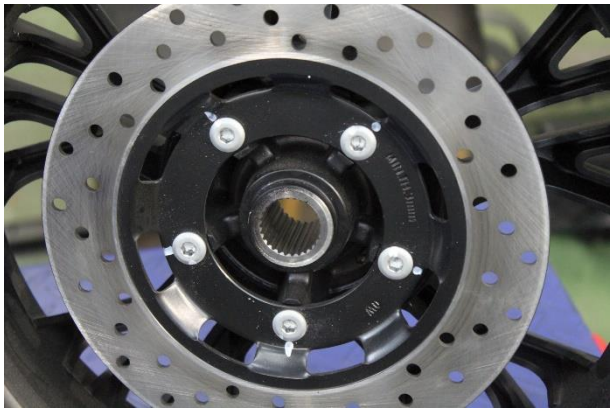
Pull the rear wheel off the axle with your hands.



Check the rear wheel axle splines for damage or wear.

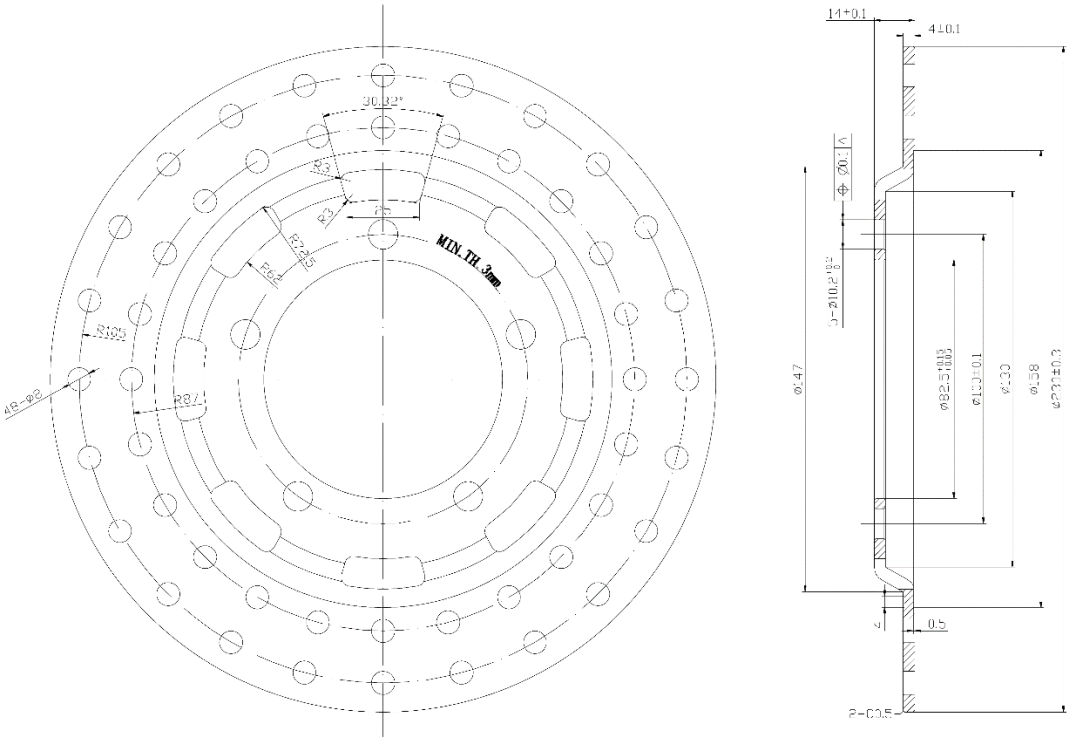


Check the splines of the axle housing on the rear rim for damage or wear.



8.15.Removal of the rear brake disc

Diagram



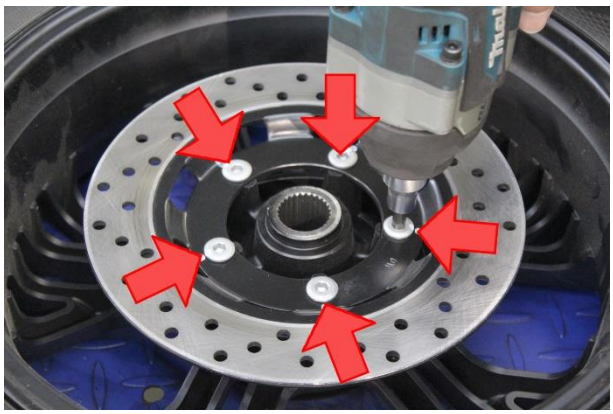
Required prior operations:

- Remove only the right shock absorber (→ See 8.7 Removal of the right shock absorber).
- Remove the right-hand swingarm (→ See 8.8 Removal of the right-hand swingarm).
- Remove the rear break caliper (→ See 8.9 Removal of the rear brake caliper)
- Remove the rear wheel (→ See 8.14 Disassembly of the rear wheel).

Necessary tools

6 mm Allen key

Remove the 5 screws securing the rear brake disc to the rear rim using a 5 mm Allen key.



Tightening torque:

Rear brake disc screws 25 ± 5 Nm

Remove the rear brake disc by hand.