

S-Stage Bore Up Kit 125cc Instruction manual

Product number 01-05-5486

Adaptation model CRF110F (JE02-1000001 ~)

Thank you very much for purchasing our products.

Thank you so you will comply with the following matters at the time of use. Before installation, please check your always kit contents. If there is a point of notice event, Please contact us the dealer of purchase.

◎ If the description, such as photos or Illustration different with this part.

☆ Please read carefully before use ☆

Caution about fuel to use

This product is so designed to achieve a higher compression ratio than stock engines. As for the fuel, high-octane gasoline should always be used. In case regular gasoline is used, abnormal combustion will take place, and the engine cannot achieve its original performance. Moreover, it is highly likely that the piston will be damaged, leading to a serious failure of the motorcycle. Before installing this kit, make sure that no regular gasoline remains in the fuel tank. In case regular gasoline is remaining in the fuel tank, do replace it with high-octane gasoline.

Caution about FI controller

Never use Stock ECU with this product (possibility of serious engine damage). Must use Hyper ECU at the same time.

About crankshaft

By installing our bore up kit will increase the burden of twisting and bending on the crankshaft (cause engine output and torque will be significantly increased).

We recommend installing a crankshaft support adapter at the same time to reduce the burden on the crankshaft.

The crankshaft support adapter has extra ball bearing (at the end of the crankshaft on the flywheel) which prevents twisting camshaft.

Increases the durability of the crankshaft by suppressing deflection etc.

Crankshaft support adapter: 01-10-0151

◎ The use ignoring the instructions that are written in the manual, if the accident or damage has occurred, we can not assume any responsibility for compensation.

◎ This product installation and use, when a problem occurs to after market goods, guarantee other than this product, also can not assume any in any such matters.

◎ If it was the case or mounting that has been processed like a product, it will not be covered under warranty.

◎ It is not possible to inquire of the combination of other manufacturers.

◎ This product is the above-mentioned vehicle exclusive goods. Is not possible attached to the other vehicle. Please note.

◎ Product may have edges or protrusions. Be sure to wear working gloves.

(Please wear work gloves when working, even if a photo in this article show without work gloves.)

◎ The starter motor may rotate more slowly due to compression ratio is higher than stock, depending on the condition of the battery. Pay attention to the condition of the battery.

◎ Installation of product, go to ensure reference to a genuine service manual to adaptive models always.

◎ During installation, it prepares the tool or the like, do the work with care in accordance with the mounting procedure.

In addition, this manual and genuine service manual are intended for those who have a basic skills and knowledge.

If no experience of mounting, etc., who preparation of such a tool is insufficient, we recommend that it is your request to the shop with a technical credit.

◎ Please perform the break-in.

◎ The engine heat will increase as the power increases with this kit. For high-load running, we recommend installing a super oil pump kit and oil cooler kit.

◎ Some of bolts, nuts, dowel pins, and packings will be reused. However, be sure to replace worn-down or severely-damaged ones with new ones.

◎ This product cannot be fitted with a stock cylinder oil temperature sensor cover. Please note.

~ feature ~

○ This is a bore up kit using the stock cylinder head.

○ The spec increase: piston diameter: ϕ 50mm to ϕ 53.5mm, Displacement: 125cc, compression ratio 9.0:1 to 10.8:1.

By increasing compression, you can feel powerful torque. The kit camshaft effectively draws out the power of the bore-up.

⚠ Caution When the handling of ignoring this display, property damage and human shows the assumption of what injury.

■ When performing the work, etc., be sure during the cold (when the engine and the muffler is cold). (It may cause burns.)

■ When performing the work, it should be made to prepare the tools for the job. (Breakage of parts, it may cause injury.)

■ Do the work must always specified torque using a torque wrench. (Damage of bolts and nuts, and cause of dropout.)

■ The product and the frame, might have edges or protrusions. When working, please wear work gloves to protect your hands. (It may cause injury.)

■ Be sure to each part inspection before operation, check the loosening of the threaded portion, be sure to securely tighten the specified torque if there is loose. (It may cause detachment of the parts.)

※ As for the cylinder head among others, please be sure to tighten it up to the specified torque.

■ Check gaskets and seals carefully and replace them with new parts if they are worn or damaged.

SPECIAL PARTS
TAKEGAWA

CONTACT Address : 3-5-16 Nishikiorihigashi Tondabayashi Osaka JAPAN

TEL: +81-721-25-1357 FAX: +81-721-24-5059 e-mail: english@takegawa.co.jp URL: <http://www.takegawa.co.jp>

Please contact with your name and country name provided. (Only English please)

Warning When the handling of ignoring this display people died, shows the contents of the serious injury possibility is assumed.

- Always start the engine in a well-ventilated place, and do not turn on the engine in an airtight place. (Otherwise, you will suffer from carbon monoxide poisoning.)
- During operation, when an abnormality occurs, immediately stop the vehicle in a safe place, please stop running. (It may lead to an accident.)
- When performing the work, do the work safely stabilize the vehicle in a horizontal location. (There is a risk of injury vehicle collapsed while working.)
- Inspection, maintenance, the instruction manual or, inspection methods such as service manuals, to protect the way, should be done correctly. (unsuitable inspection and maintenance, there is a risk that result to an accident.)
- When carrying out the inspection and maintenance, etc., if found damaged parts, replace the damaged parts to avoid possible to reuse the parts. (There is a risk that lead to accidents Continued use.)
- As gasoline is highly flammable, never place it close to fire. Make sure that nothing flammable is near the gasoline. Since vaporized accumulation of gasoline is at high risk of explosion, work in a well-ventilated place. (Otherwise it may cause a fire.)

- © Please note. Performance up, the design change, the product and the price in the cost up, etc. are subject to change without notice.
- © Please be informed that we shall be held harmless against any claim against us whatsoever arising out of use of the products in racing and the like.
- © Keep this manual stored until this product is discarded.

Product content



Number	Product content	Quantity	Item Number
1	Piston, 53.5mm	1	00-01-0209 (with piston pin)
2	Piston ring set	1	01-15-016
3	Piston pin, 13x36	1	00-01-0091 (with circlip)
4	Piston pin circlip, 13mm	2	00-01-0003 (6 pcs)
5	Cylinder	1	01-01-0109
6	Cylinder head gasket	1	01-13-0114
7	Cylinder gasket	1	
8	Sports cam shaft	1	01-08-0059

※ Please order in the repair parts are always repair part number.
If it is not the part number order, you may not be able to order. Please be forewarned.
It should be noted, In the case of parts that can not be separately shipment, please order a set part number.
※ Repair parts may differ slightly from the kit contents in terms of shape, etc.
There is no problem to use it. Please be forewarned.

- Mounting procedure ※ Please refer to the Genuine Service Manual for detailed mounting methods and specified torques that are not specifically described.

◇ Park the motorcycle in a horizontal place with a maintenance stand, etc.

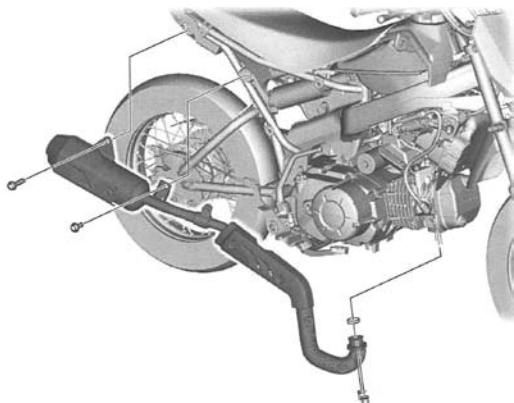
● Removal of exterior parts

◇ Refer to the genuine service manual and remove the exterior parts.

● Exhaust muffler (stock) removal

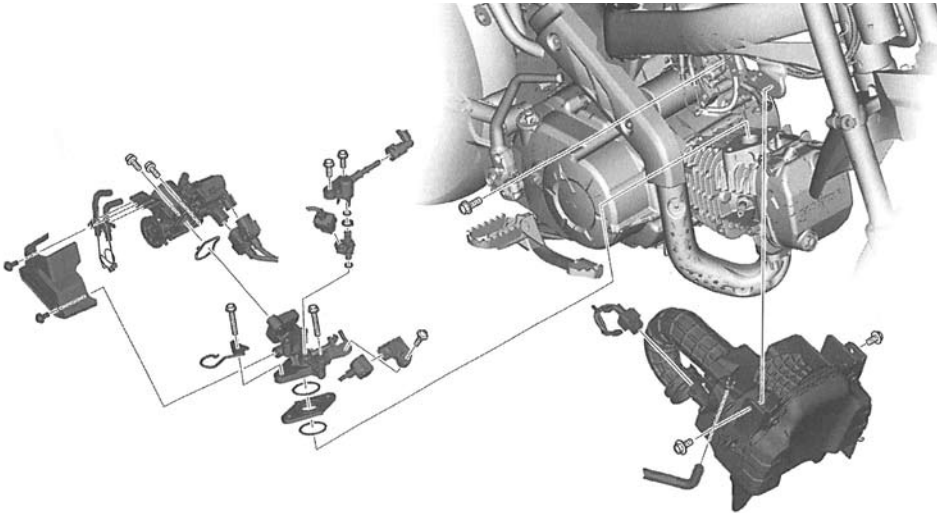
※ If the exhaust muffler already changed, remove it following to their instruction manual.

◇ Refer to the genuine service manual and remove the exhaust muffler.



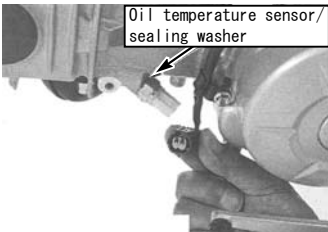
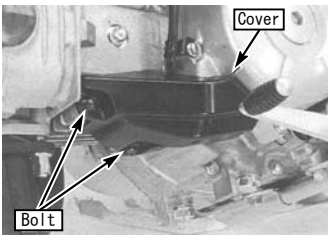
● Removal of air cleaner case, inlet pipe / throttle body

◇ Refer to the genuine service manual and remove the air cleaner case, inlet pipe / throttle body.

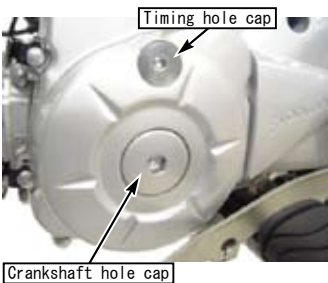


● Remove a cylinder head

◇ Remove the cylinder cover and disconnect the oil temperature sensor connector wiring. Remove the oil temperature sensor and sealing washer.



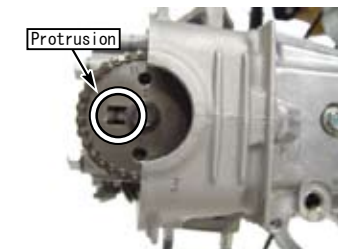
◇ Remove the timing hole cap and crankshaft hole cap.



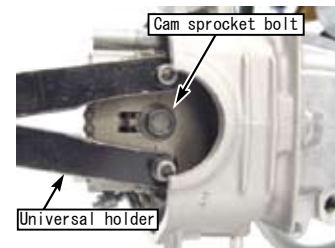
◇ Remove the two bolts/mount rubbers from the head cover and remove the head cover/gasket.



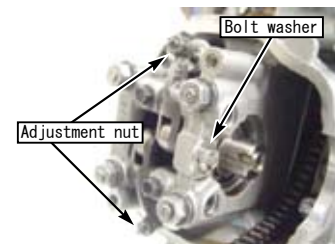
◇ Turn the crankshaft counterclockwise and align the "T" mark on the flywheel with the alignment mark on the clutch cover while the protrusion on the cam sprocket is facing forward.



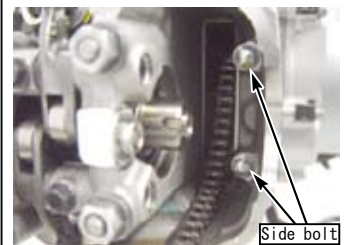
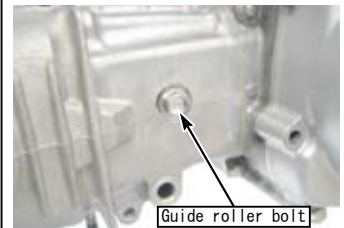
◇ Fix the cam sprocket with a universal holder, remove the cam sprocket bolt, and remove the cam sprocket.



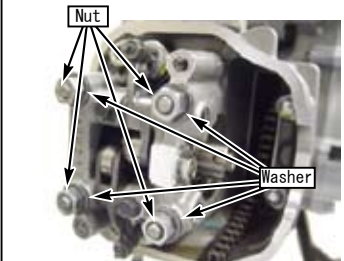
◇ Loosen the adjustment nuts on the rocker arms of both the intake and exhaust and loosen the adjustment screws. Loosen the bolt washer.



◇ Loosen the cylinder guide roller bolt. Remove the two side bolts of the cylinder head.



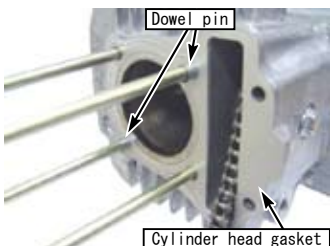
◇ Loosen the four cylinder head nuts diagonally in several increments and remove the four washers along with the cylinder head nuts.



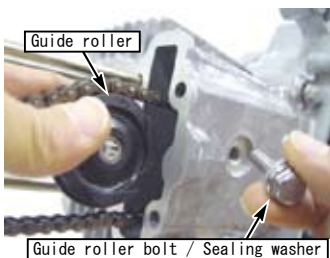
◇ Remove the cylinder head.

● Remove a cylinder and piston

- ◇ Remove the cylinder head gasket and 2 dowel pins.



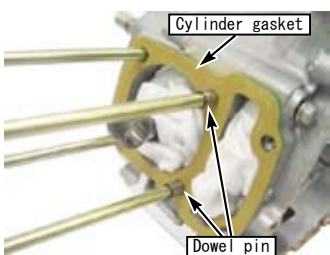
- ◇ Remove the guide roller bolt / sealing washer from the cylinder and take out the guide roller.



- ◇ Remove the cylinder.
- ◇ Remove one side of the piston pin circlip, remove the piston pin and the piston.

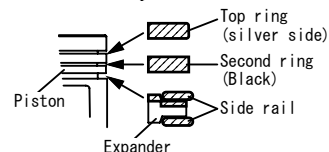
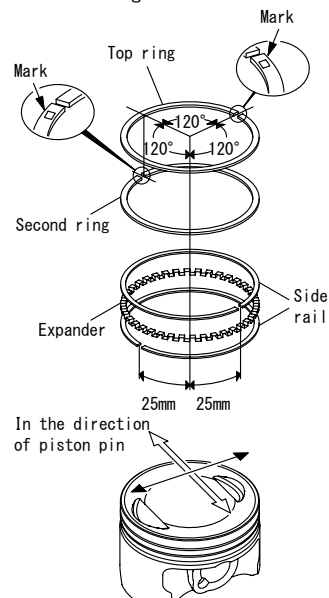


- ◇ Remove the cylinder gasket and 2 dowel pins. The gasket must be removed with a scraper if stuck to the crankcase.



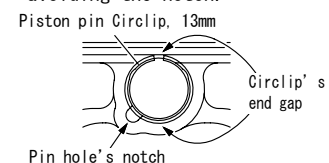
● Installation of piston

- ◇ Install each piston ring. (blow the piston ring groove with air to clean)
- ※ Install the 2nd ring and TOP ring with the marks facing up.
- ※ Do not damage the piston/piston rings.
- ※ After installation, check that the ring rotates smoothly.
- ※ Install the ring openings at 120 degree intervals as shown in the diagram.



Pay attention to the cross section as we

- ◇ Install the piston pin circlip into the groove of the piston pin hole on one side.
- ※ Install the piston pin circlip so that it faces upward/downward, avoiding the notch.



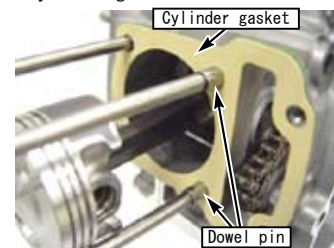
- ◇ Apply engine oil to the small end of the connecting rod and the piston pin hole, apply molybdenum solution to the piston pin, and turn the piston pin with the "IN" mark on the piston head facing the intake side.



- ◇ Install the piston pin circlip into the groove.
- ※ Install the piston pin circlip so that it faces upward/downward, avoiding the notch.

● Installation of cylinder

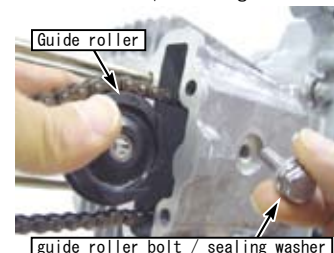
- ◇ Clean the cylinder mounting surface of the crankcase and install the two dowel pins and cylinder gasket to the crankcase.



- ◇ Apply engine oil to the piston ring and let it blend in. Apply engine oil after cleaning the inner circumference of the cylinder. Install the cylinder with the cam chain through the cylinder and compressing the piston ring with fingers.



- ◇ Align the guide roller with the cylinder mounting hole and temporarily tighten the guide roller bolt / sealing washer.



● Change of camshaft

- ◇ Remove the bolt washers from the cylinder head and remove the stock camshaft.
- ※ If it is difficult to remove, loosen the rocker arm adjustment screw and remove it.



- ◇ Apply engine oil to the cam sliding part and bearing of the sports camshaft.



- ◇ Attach the "sport camshaft" to the cylinder head with the groove facing the rocker arm.

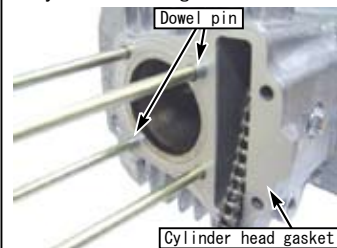


- ◇ Temporarily attach the bolt washer to the cylinder head.



● Installation of cylinder head

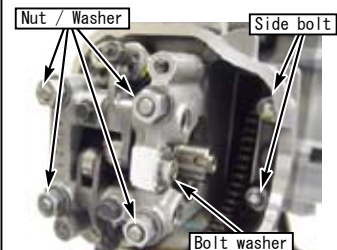
- ◇ Clean the top of the cylinder. Attach the dowel pin and cylinder head gasket.



- ◇ Pass the cam chain through the cylinder head and attach the cylinder head.



- ◇ Install x4 washers, cylinder head nuts and x2 cylinder head side bolts.



- ◇ Tighten the four cylinder head nuts diagonally in several steps to the specified torque.

▲ Note: Be sure that you protect specified torque.
Cylinder head nut
Torque : 13N · m (1.3kgf · m)

- ◇ Tighten the two side bolts of the cylinder head alternately in several steps to the specified torque.

⚠ Note: Be sure that you protect specified torque.

Side bolt

Torque : 10N · m (1.0kgf · m)

- ◇ Tighten the guide roller bolt of the cylinder to the specified torque.

⚠ Note: Be sure that you protect specified torque.

Guide roller bolt

Torque : 10N · m (1.0kgf · m)

- ◇ Tighten the bolt washers to the specified torque.

⚠ Note: Be sure that you protect specified torque.

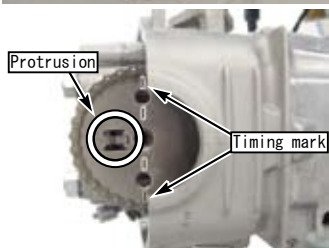
Bolt washer

Torque : 12N · m (1.2kgf · m)

- ◇ Remove the oil filler bolt and sealing washer.



- ◇ Check that the "T" mark on the flywheel is aligned with the alignment mark on the clutch cover, and orient the protrusion forward so that the timing mark is aligned with the head cover mounting surface. Attach the cam sprocket to the cam chain, and align the groove of the camshaft with the protrusion of the cam sprocket.



- ◇ Fix the cam sprocket with the universal holder and tighten the cam sprocket bolt to the specified torque.

⚠ Note: Be sure that you protect specified torque.

Bolt

Torque : 27N · m (2.8kgf · m)

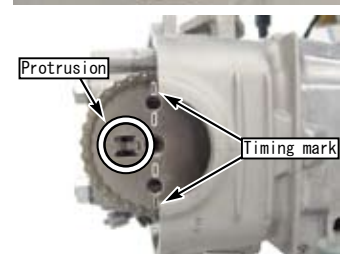
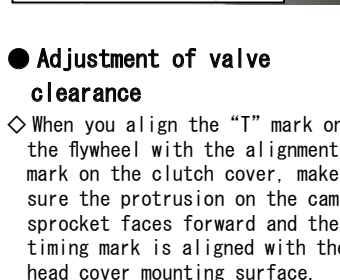
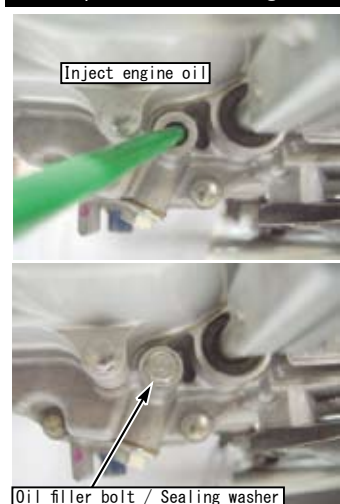
- ◇ Turn the crankshaft counterclockwise to align the "T" mark on the flywheel with the matching mark on the clutch cover, and check that the timing mark on the cam sprocket is aligned with the head cover mounting surface.

- ◇ Inject a small amount of engine oil into the bolt hole, install the oil filler bolt and sealing washer, and tighten to the specified torque.

⚠ Note: Be sure that you protect specified torque.

Oil filler bolt

Torque : 10N · m (1.0kgf · m)



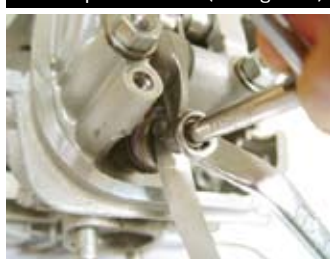
- ◇ Insert a 0.1mm thickness gauge between the rocker arm adjustment screw and the valve stem, tighten the adjustment screw, and then tighten the adjustment nut until the thickness gauge feels a little resistance but can still be pulled out.

Valve clearance

: 0.1mm for both intake and exhaust.

⚠ Note: Be sure that you protect specified torque.

adjustment nut
Torque : 9N · m (0.9kgf · m)

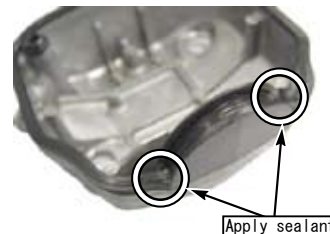


- ◇ After adjusting the valve clearance, rotate the flywheel counterclockwise two times, then align the "T" mark with the timing mark to check that the valve clearance has not changed. If it has changed, repeat this process until you can readjust it.

- ◇ Attach the gasket to the head cover and apply sealant to the corners of the gasket as shown in the image.

Sealant

: "Threebond 1215" or equivalent



- ◇ Attach the head cover/gasket to the head cover bolts/mount rubber at two points and tighten to the specified torque.

- ※ Attach the mounting rubber with the "UP" mark facing up.

⚠ Note: Be sure that you protect specified torque.

Bolts / Mount rubber

Torque : 10N · m (1.0kgf · m)



- ◇ Check that the timing hole cap and crankshaft hole cap have O-rings and install and tighten them to the specified torque.

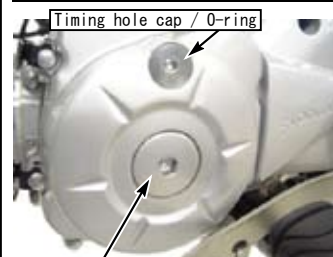
⚠ Note: Be sure that you protect specified torque.

Timing hole cap

Torque : 10N · m (1.0kgf · m)

Crankshaft hole cap

Torque : 8N · m (0.8kgf · m)



Timing hole cap / O-ring

Crankshaft hole cap / O-ring

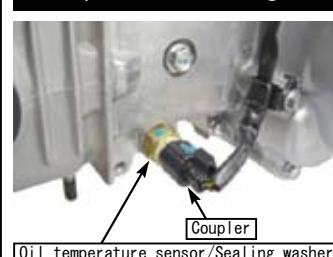
- ◇ Install the oil temperature sensor and sealing washer to the cylinder and tighten them to the specified torque.

Connect the wiring of the oil temperature sensor connector.

⚠ Note: Be sure that you protect specified torque.

Oil temperature sensor/
Sealing washer

Torque : 14N · m (1.4kgf · m)



Oil temperature sensor/Sealing washer

- ◇ Connect the O₂ sensor cap.

● Install the inlet pipe/throttle body and air box

- ◇ Refer to the OEM service manual to install the inlet pipe/throttle body and air box.
- ◇ When installing the Hyper ECU, follow the instruction manual.

● Install the (stock) exhaust system

- ※ If the exhaust system has been changed from the standard, follow the instruction manual for that exhaust system.
- ◇ Refer to the OEM service manual to install the exhaust system.

● Installation of exterior parts

- ◇ Refer to the OEM service manual to install the exterior parts.