SERVICE STATION MANUAL

854310

BREVA V1100 - ABS

AFTER THE SPECIFIED MILEAGE, TAKE THE VEHICLE TO AN OFFICIAL Moto Guzzi DEALER FOR THE CHECKS INDICATED IN THE "AFTER-RUN" TABLE IN THE SCHEDULED MAINTENANCE SECTION TO AVOID INJURING YOURSELF, OTHERS AND /OR DAMAGING THE VEHICLE.

- Between 1000 km (625 miles) and 2000 km (1250 miles) travelled, ride more vigourously, vary speeds and twist throttle fully for some short periods for best coupling of the components; do not exceed 6000 rpm.
- After 2000 km (1250 miles) a better engine performance may be expected, but without exceeding the engine maximum rpm allowed (7600 rpm).

Vehicle identification

SERIAL NUMBER POSITION

These numbers are necessary for vehicle registration.

NOTE

ALTERING IDENTIFICATION NUMBERS CAN BE SERIOUSLY PUNISHED BY LAW, PARTICULARLY MODIFYING THE CHASSIS NUMBER WILL IMMEDIATELY INVALIDATE THE WARRANTY.

This number is composed by numbers and letters, as in the example shown below.

ZGULPA000YMXXXXXX

KEY:

ZGU: WMI (World manufacture identifier) code;

LP: model;

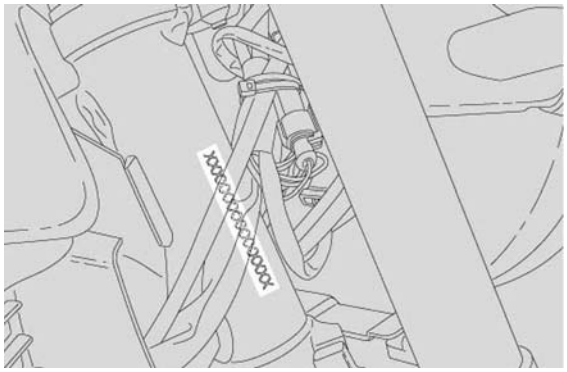
A00: version variation;

0: digit free

Y year of manufacture

M: production plant (M= Mandello del Lario);

XXXXXX: progressive number (6 digits);



CHASSIS NUMBER

The chassis number is stamped on the right side of the headstock.

ENGINE NUMBER

The engine number is stamped on the left side, close to the engine oil level check cap.

Name	Torque in Nm
Front brake right and left calliper retainer	40 Nm

REAR BRAKING SYSTEM

Name	Torque in Nm
Rear brake calliper retainer	50 Nm
Rear brake lever pin	15 Nm
Rear brake fluid reservoir retainer	3 Nm
Rear brake fluid reservoir support to plate retainer	10 Nm
Rear brake rod lock nut	manual
Brake lever spring to plate retainer	6 Nm
Brake pump retainer	10 Nm

HANDLEBAR AND CONTROLS

Name	Torque in Nm
Half-handlebar to steering plate retainer	25 Nm
Handlebar pipes to half-handlebar retainer	25 Nm
Anti-vibration weights retainer	10 Nm

ELECTRICAL SYSTEM

Name	Torque in Nm
Horn retainer	15 Nm
Speed sensor to front fork retainer	12 Nm

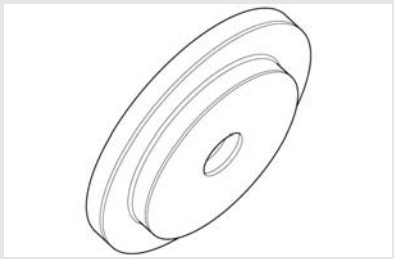
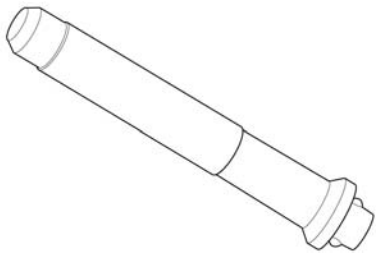
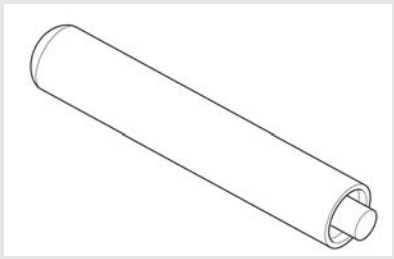
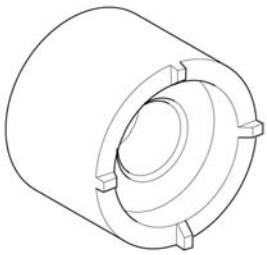
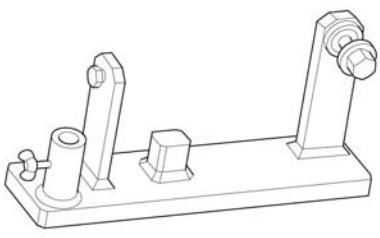
INSTRUMENT PANEL AND LIGHTS

Name	Torque in Nm
Instrument panel support to light support retainer	10 Nm
Instrument panel support to fork upper plate retainer	25 Nm
Instrument panel retainer	3 Nm
Light support to fork lower plate retainer	25 Nm
Light + turn indicators retainer	10 Nm
Rear light to handgrip retainer	4 Nm

FUEL PUMP FLANGE

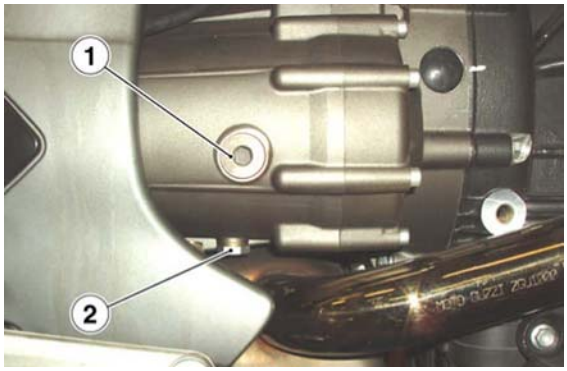
Name	Torque in Nm
Tank breather joint	6 Nm
Pump support to tank retainer	4 Nm

FUEL TANK

Stores code	Description	
05.90.27.31	Gearbox oil seal buffer	
05.90.27.32	Buffer handgrip	
05.90.27.33	Ball joint sealing buffer	
05.90.27.34	Wrench for pinion ring nut	
05.90.27.35	Pinion oil seal buffer	
05.90.27.36	Bevel gear pair support	

wheels on the ground.

- Unscrew and remove the cap/dipstick (1) placed on the gearbox right side.
- • The level is correct if the oil is on the rim of the hole of the level plug (1).



If necessary:

- Top-up with oil until it reaches the dip-stick opening (1).

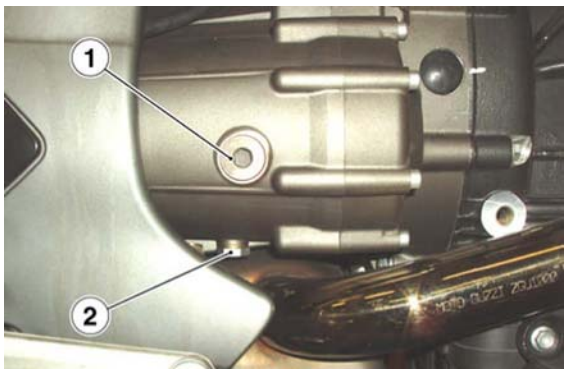
CAUTION

DO NOT ADD ADDITIVES OR ANY OTHER SUBSTANCE TO THE FLUID. WHEN USING A FUNNEL OR ANY OTHER ELEMENT, MAKE SURE IT IS PERFECTLY CLEAN.

Replacement

NOTE

HOT OIL IS MORE FLUID AND WILL DRAIN OUT MORE EASILY AND COMPLETELY.



• Place a container with suitable capacity under the drainage plug (2).

• Unscrew and remove the drainage plug (2).

• Unscrew and remove the filler cap (1).

• Drain the oil into the container; allow several minutes for oil to drain out completely.

• Check and replace, if necessary, the sealing washers of drainage plug (2).

• Remove any metal scrap attached to the drainage plug (2) magnet.

• Screw and tighten the drainage plug (2).

• Pour in new oil until it reaches the dipstick opening (1).

• Tighten the filler cap (1).

CAUTION

DO NOT ADD ADDITIVES OR ANY OTHER SUBSTANCE TO THE FLUID. WHEN USING A FUNNEL OR ANY OTHER ELEMENT, MAKE SURE IT IS PERFECTLY CLEAN.

4. Light relay
5. Right light switch
6. HAZARD button lighting LED
7. HAZARD button
8. Horn
9. Left light switch
10. Instrument panel air temperature thermistor
11. Instrument panel
12. Key switch
13. Immobilizer aerial
14. Heated handgrips
15. Heated handgrip control
16. Right rear turn indicator
17. Rear light (LED)
18. Left rear turn indicator
19. License plate light
20. Rear stop switch
21. Front stop switch
22. Diagnosis connector
23. Auxiliary fuses
24. Main fuses
25. Starter motor
26. Battery
27. Plug socket
28. Alternator
29. Main injection relay
30. Secondary injection relay
31. Oil pressure sensor
32. Gear in neutral switch
33. Lambda probe
34. Side stand switch
35. Fuel reserve sensor
36. Fuel pump
37. Intake air temperature thermistor
38. Head temperature sensor

18 Not used

19 Not used

20 CAN - H line (ccm/instrument panel)

21 Not used

22 Oxygen probe signal

23 Not used

24 Vehicle speed signal input

25 Not used

26 Not used

27 "Engine stop" signal input

28 Ignition signal input

29 CAN - L line (ccm/instrument panel)

30 Not used

31 Not used

32 Oxygen probe power supply

33 Clutch sensor signal

34 Not used

35 Fall sensor signal

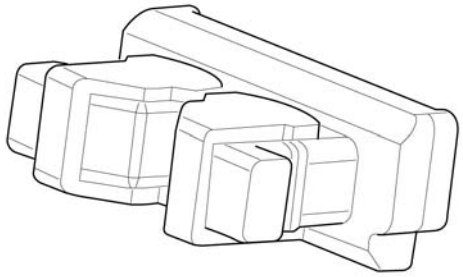
36 Not used

37 Not used

38 Side stand sensor signal

Pin Use

ABS



1 Earth connection

2 ABS pump supply

3 ABS pump supply

4 Earth connection

5 Front (ABS) speed sensor (supply)

6 Not used

7 Rear (ABS) speed sensor (supply)

8 Not used

9 Not used

10 Not used

11 Axone

12 ABS warning light check

- Disconnect the idle motor connector.

- Disconnect the engine temperature sensor connector.

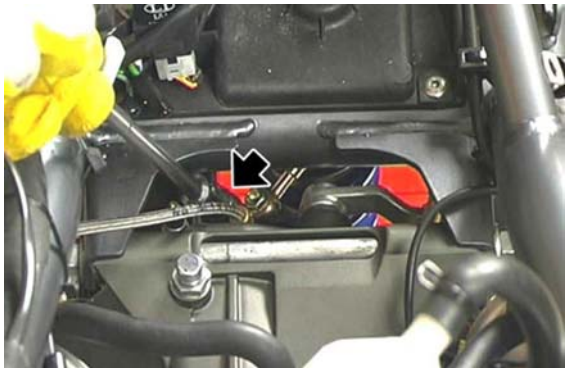
- Disconnect the throttle valve position sensor connector.

- Disconnect the revolution sensor connector.

- Fit the oil radiator.
- Screw the upper fixing column.

- Connect the horn connectors.

- Fasten the clutch oil pipe with the screw and its washers.



- Fit the clutch bleed pipe.
- Fill up the clutch system.

72. Bushing

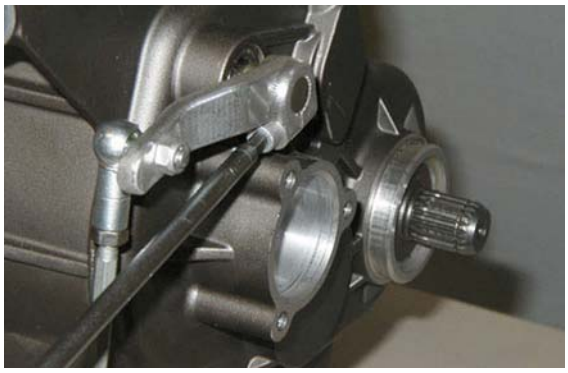
73. Pre-selector compl.

74. Spring

Gearbox

Removing the gearbox

- Remove the starter motor.
- Make sure the transmission is in idle.
- Undo and remove the screw and remove the gearbox lever.



- Unscrew and remove the cap.

- Place a container of suitable capacity under it, unscrew and remove the cap and then bleed all gearbox oil.

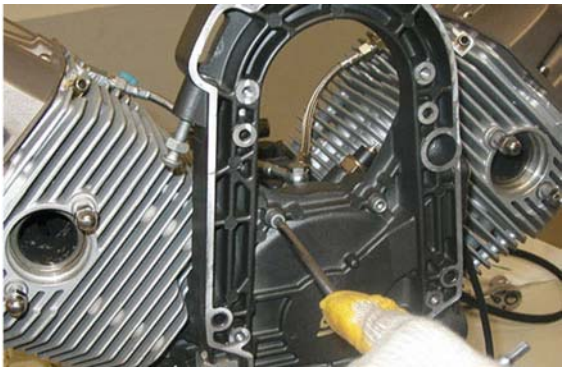
- Undo and remove the three screws.

- Remove the circlip and collect the shoulder washer.

- Remove the gear of the fourth gear and collect the ball bearing cage.

- Remove the gear of the third gear and collect the ball bearing cage and the shoulder washer.

- Remove the circlip.



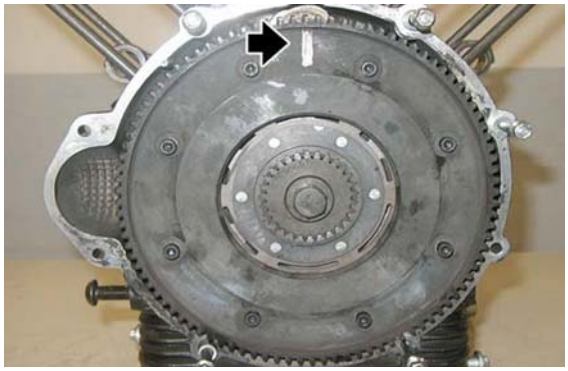
- Remove the alternator frame.
- Remove the sealing ring if necessary.

Tensioning the belt

- Remove both fuel tank side fairings.
- Remove the right exhaust manifold.
- Remove the control unit.
- Undo and remove the fixing screw of the engine oil recovery tank.

- Unscrew and remove the spacer.

ence with that on the flywheel.



- Tighten the eight screws sealing the crown gear to the flywheel to the prescribed torque
- Remove the special tool for clutch spring compression.

Specific tooling

30.90.65.10 Tool for clutch fitting

- Insert the pressure plate disc cover.
- Install the gearbox unit.

Head and timing

Removing the head cover

NOTE

THE FOLLOWING OPERATIONS REFER TO REMOVING ONLY ONE COVER BUT APPLY TO BOTH COVERS.

- Unscrew and remove the eight screws and collect the bushings.

for the left cylinder.

- Tighten the two screws.

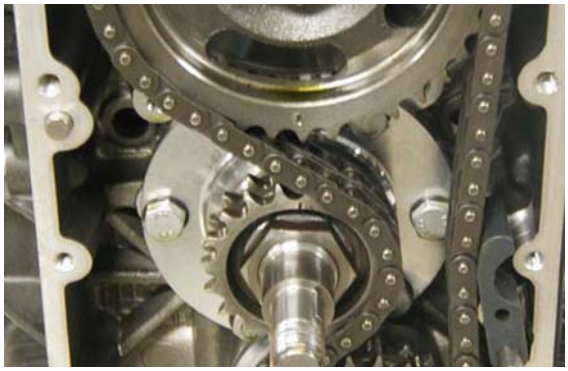
See also

Installing the rods

Timing

Chain removal

- Remove the engine assembly.
- Remove the alternator.
- Clearly indicate the distribution timing marks that should be restored at the next refitting (left cylinder TDC).



- Using the adequate tool, lock the ignition crown.

Specific tooling

12.91.18.01 Tool to lock flywheel and start-up crown gear

- Unscrew the central sealing nut of the camshaft gear and collect the washer.

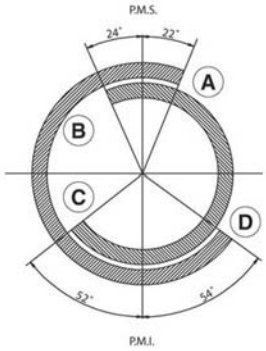
- Observing the timing system diagram, check timing considering that:

A - intake start opens 22° before TDC

B - outlet end closes 24° after TDC

C - outlet start opens 52° before BDC

D - intake end closes 54° after BDC

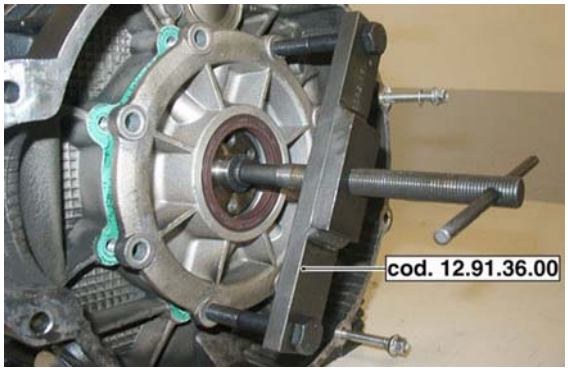


- Screw the dial gauge support and then the gauge itself on the right cylinder outer spark plug hole.
- With a screw, fix the arrow to the threaded hole to the right of the base.
- Turn the disc clockwise until the reference marked with letter 'D' is aligned with the reference at the centre of the checking hole on the gearbox (valves closed).
- Repeat the operations described above for the left cylinder.

- After the check and if everything is correct, operate as follows to restore the operation clearance between rocking levers and valves (intake 0.10 mm (0.0039 in), outlet 0.15 mm (0.0059 in).

Specific tooling

12.91.36.00 Tool to remove the flywheel-side flange



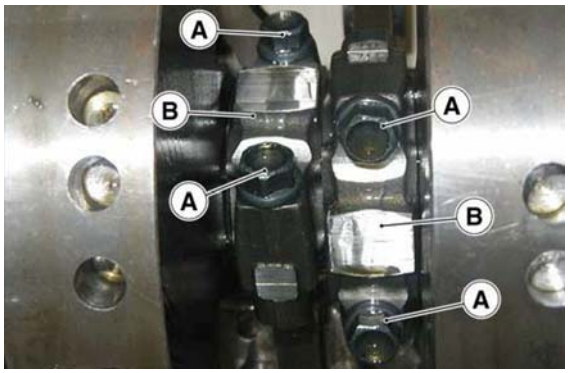
- Remove the crankshaft afterwards.

See also

Disassembling the connecting rod

Disassembling the connecting rod

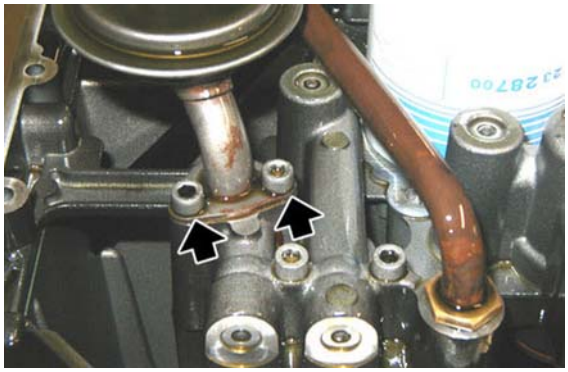
- Remove the heads.
- Remove the cylinders and the pistons.
- Remove the clutch.
- Remove the flywheel.
- Remove the timing system.
- Remove the oil sump.
- Loosen the coupling screws 'A' from inside the base and remove the connecting rods 'B'.



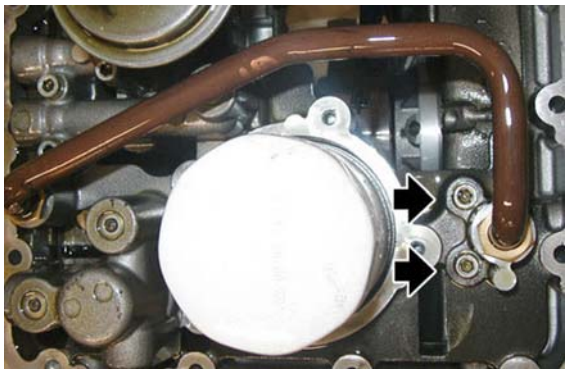
See also

Removing the flywheel
Disassembling the piston
Removing the cylinder
Removing the cylinder head

- Place a new gasket and refit the mesh filter tightening the two screws.



- Tighten the two screws.



- Place the oil sump cover.
- Tighten the four screws.
- Refit the oil sump on the base.
- Fill engine oil up to the correct level.

Blow-by

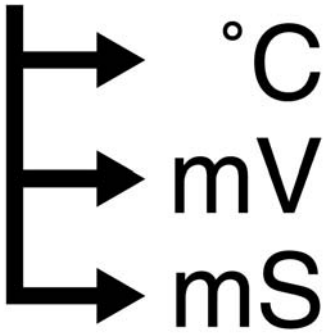
ISO SCREEN PAGE

Specification	Desc./Quantity
Mapping	-

Engine parameter reading screen page

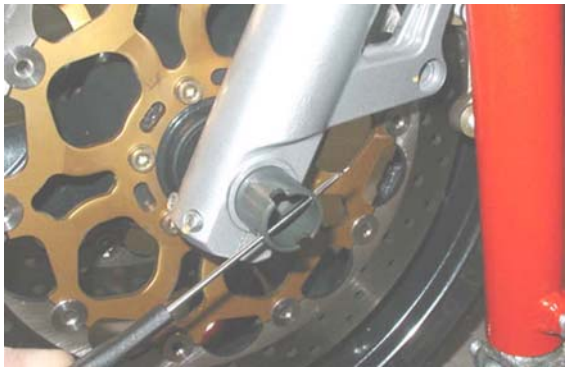
ENGINE PARAMETER READING

This display shows the parameters measured by the several sensors (engine revs, engine temperature, etc.) or values set by the control unit (injection time, ignition advance, etc.)



ENGINE PARAMETER READING SCREEN PAGE

Specification	Desc./Quantity
Engine rpm	Engine revolutions per minute: the minimum value is set by the control unit cannot be adjusted
Injection time	- ms
Ignition advance	- °
Air temperature	°C Temperature of the air taken in by the engine, measured by the sensor in the filter casing. This is not the temperature indicated by the instrument panel
Engine temperature	°C
Battery voltage	V
Throttle	Value corresponding to the throttle when closed (approximate value between 4.5 and 4.9°) (left throttle supported by the end of stroke screw). If a different value is read, it is necessary to activate the parameter "Throttle positioner autodetection" and obtain this value.
Atmospheric pressure	1015 mPa (approximate values) The sensor is inside the instrument panel
Lambda probe	100 - 900 mV (approximate values) Signal when energised that the control unit receives from the lambda probe: inversely proportional to the presence of oxygen
Lambda integrator	When the control unit uses the lambda probe sig-



- During extraction, support the wheel and then remove it.

- Collect the spacer from the front wheel right side.

- Support the fork stem and loosen the screws on the upper and then the lower plate.

- Then, tighten the cap to the prescribed torque.

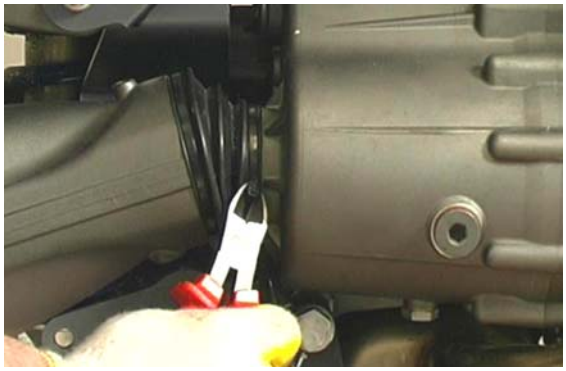
Installing the fork legs

- Insert the fork stem in position.

- Insert the wheel pin so that the stems are aligned.

- Tighten the screws on the fork plates to the prescribed torque.

- Remove the clamp from the dust guard cap.



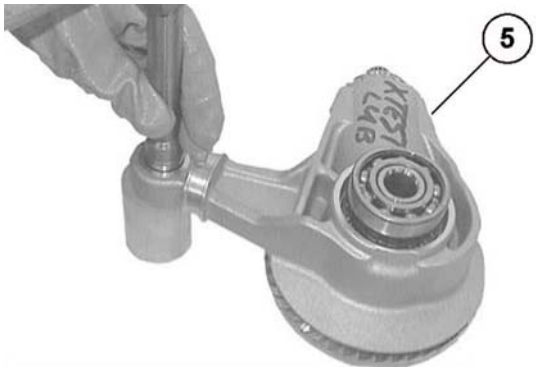
- Loosen the two fork terminal screws.

- Loosen the ring nut.

Specific tooling

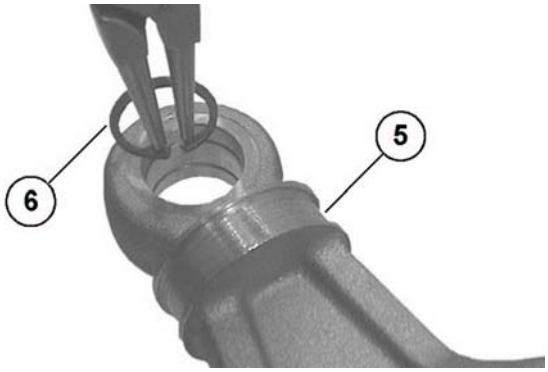
05.91.26.30 Tool for tightening the fork pin ring nut - clutch hub

- Helped by a second operator, remove the pin and remove the fork with



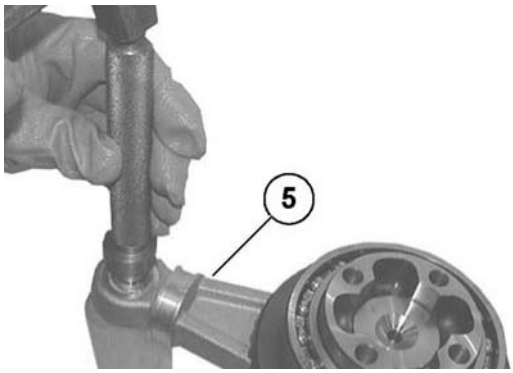
FITTING

Fit the stop ring (6) in the support (5) with suitable pliers.

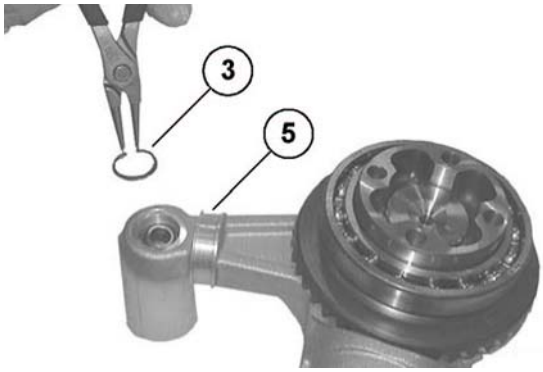


Turn the support (5) over.

Assemble the ball joint (4) with the buffer and a rubber hammer.



Fit the stop ring (3) in the support (5) with suitable pliers.

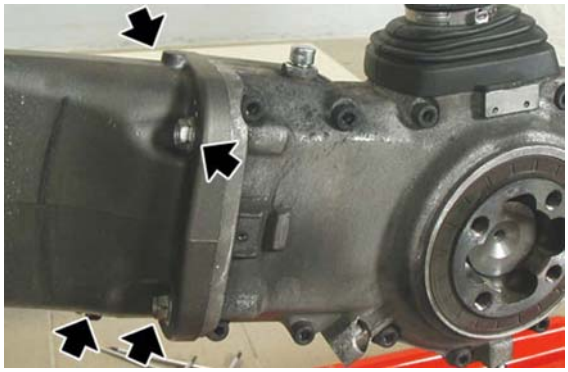


Manually assemble the new sealing rings (2) and (7).

Assemble the bushing (1).

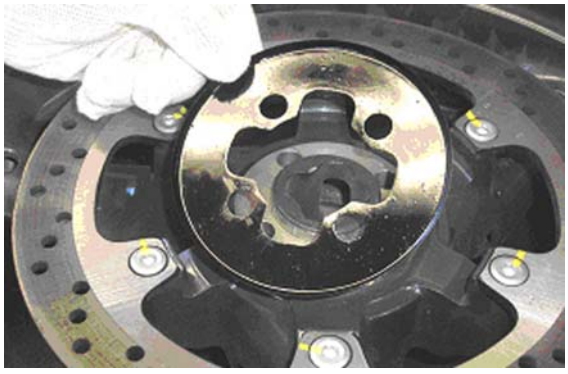
- Insert the transmission casing on the fork making sure that the universal joint engages correctly.

- Tighten the four screws to the prescribed torque operating diagonally.



- Place the reaction rod in its seat.
- Insert the screw.
- Screw the reaction rod fixing nut.

- Place the dust-protection ring between the rim and the cardan shaft taking care to mount it with the collar facing the transmission unit.



- Place the rear wheel on the fork.
- Tighten the four screws with their

in the vehicle (ATT) or stored in the control unit (MEM) and it is possible to check error deletion (STO)

ERROR DISPLAY

Specification	Desc./Quantity
Front speed sensor open circuit or short circuit	- see (DIAGNOSIS)
Rear speed sensor open circuit or short circuit	- see (DIAGNOSIS)
Front speed sensor coherence	- see (DIAGNOSIS)
Rear speed sensor coherence	- see (DIAGNOSIS)
ABS motor pump	- see (DIAGNOSIS)
ABS valve relay	- see (DIAGNOSIS)
Front inlet valve	- see (DIAGNOSIS)
Rear inlet valve	- see (DIAGNOSIS)
Front outlet valve	- see (DIAGNOSIS)
Rear outlet valve	- see (DIAGNOSIS)
Control unit	- see (DIAGNOSIS)

Diagnosis

In diagnosis mode (Axone communicating with the ABS module) the system is not active and does not recognise some errors (for instance, speed difference between the wheels).

If the 10A fuse is defective, the ABS warning light remains on. Axone does not communicate with the ABS module. That is, it is not valid in case of failure of 40A or 25A fuses even if the ABS warning light is activated.

If only the speed indication on the instrument panel does not work, it may be due to:

1) lack of speed indication and turning on of ABS warning light and the EFI.

The cause is to be found in a malfunction of the circuit between the speed sensor and the ABS module, connect the Axone to the ABS module connector and check the speed sensor circuit.

2) lack of speed indication and turning on of the EFI warning light.

The cause is to be found in a malfunction of the circuit between the ABS module and the injection control unit, connect the Axone to the injection control unit connector and check the cable connecting