



Regina^{EVO}

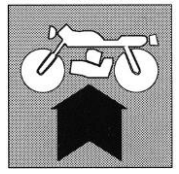
ENGINE REASSEMBLY





ENGINE REASSEMBLY

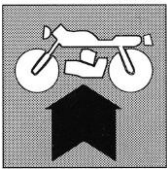
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Section

C



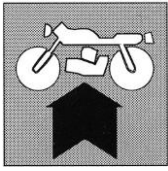


ENGINE REASSEMBLY

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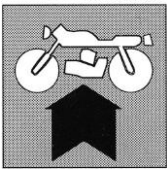




General

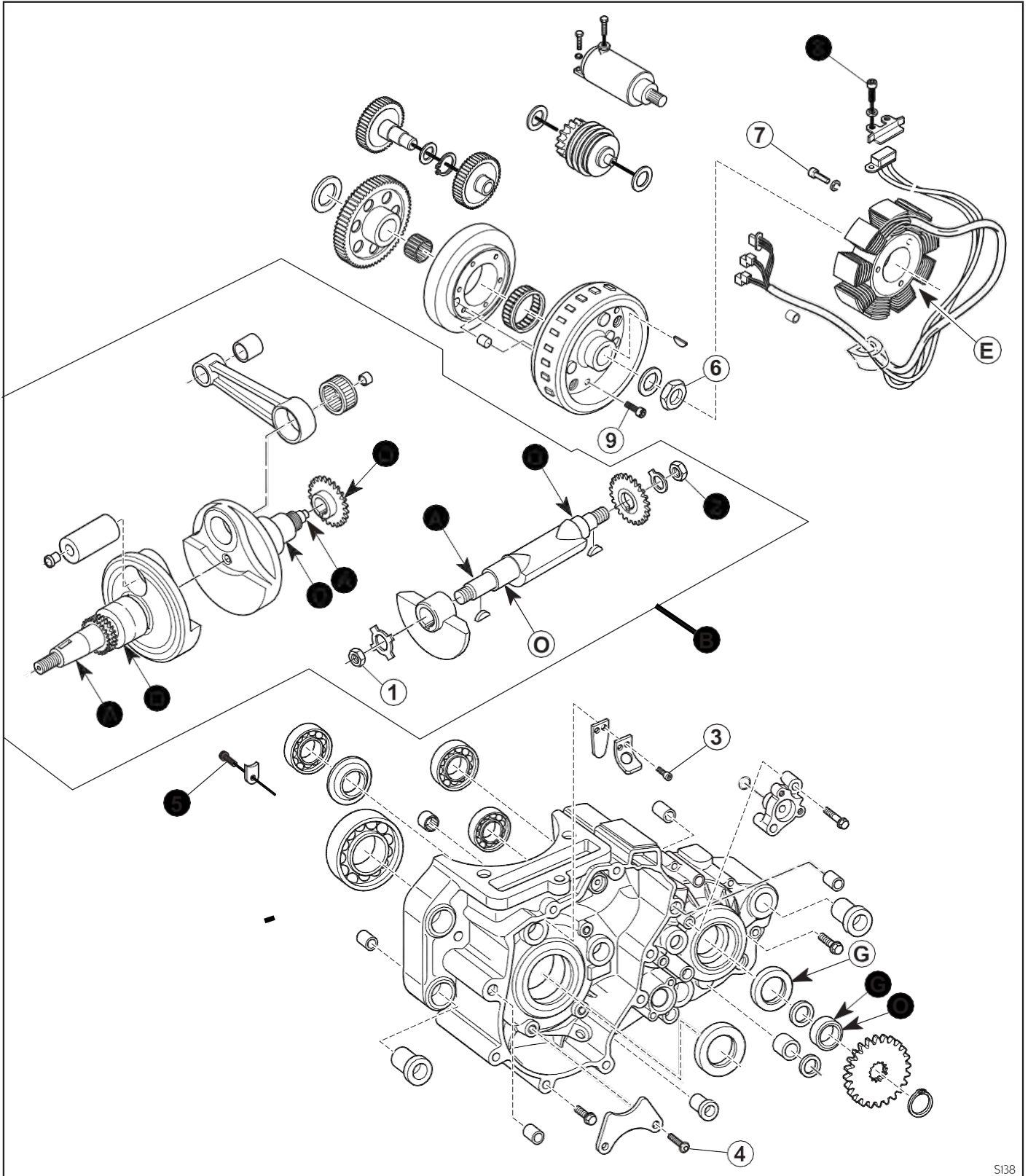
To reassemble, reverse the disassembly procedure. Any special instructions concerning reassembly are expressly highlighted in the text. Always replace gaskets, oil seals, metal retainers, sealing washers made From deformable material (copper, aluminium, fibre, etc.) and self-locking nuts after removal. Bearing specifications and dimensions have been calculated For a certain life. We recommend replacing the bearings - especially those exposed to heavy loading - also considering that checking them For wear is not an easy procedure. These recommendations are in addition to the dimensional checks of individual components specified in the relevant section (see Section G "ENGINE OVERHAUL"). Cleaning all components thoroughly is critical to reliability; bearings and any wear parts must be lubricated with engine oil before assembly. Screws, nuts and bolts must be tightened to the specified torque (see pages H.4-H.11 and Section X "TIGHTENING TORQUE FIGURES").





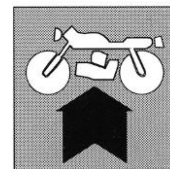
Assembly and lubrication instructions

CRANK- ALTERNATOR- LUBRICATION- LEFT CRANKCASE HALF



S138

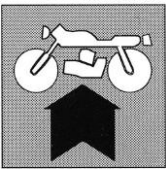




Tightening torque figures

	M18 x 1.25	70 Nm- 7.2 Kgm- 51.63 ft/lb
2	M16 x 1.25	70 Nm- 7.2 Kgm- 51.63 ft/lb
3	M4x4.07 (+Loctite 243)	3 Nm- 0.3 Kgm- 2.21 Ft/lb
4	MS x 0.8	8 Nm- 0.8 Kgm- 5.90 Ft/lb
5	MS x 0.8 (+Loctite 243)	8 Nm- 0.8 Kgm- 5.90 Ft/lb
6	M16 x 1.25	130 Nm-13.2 Kgm- 95.88 Ft/lb
7	M6 x 1 (+Loctite 270)	8 Nm- 0.8 Kgm- 5.90 Ft/lb
8	M4 x 0.7 (+Loctite 272)	3 Nm- 0.3 Kgm- 2.21 Ft/lb
9	M6 x 1 (+Loctite 270)	20 Nm- 2 Kgm-14.75 Ft/lb

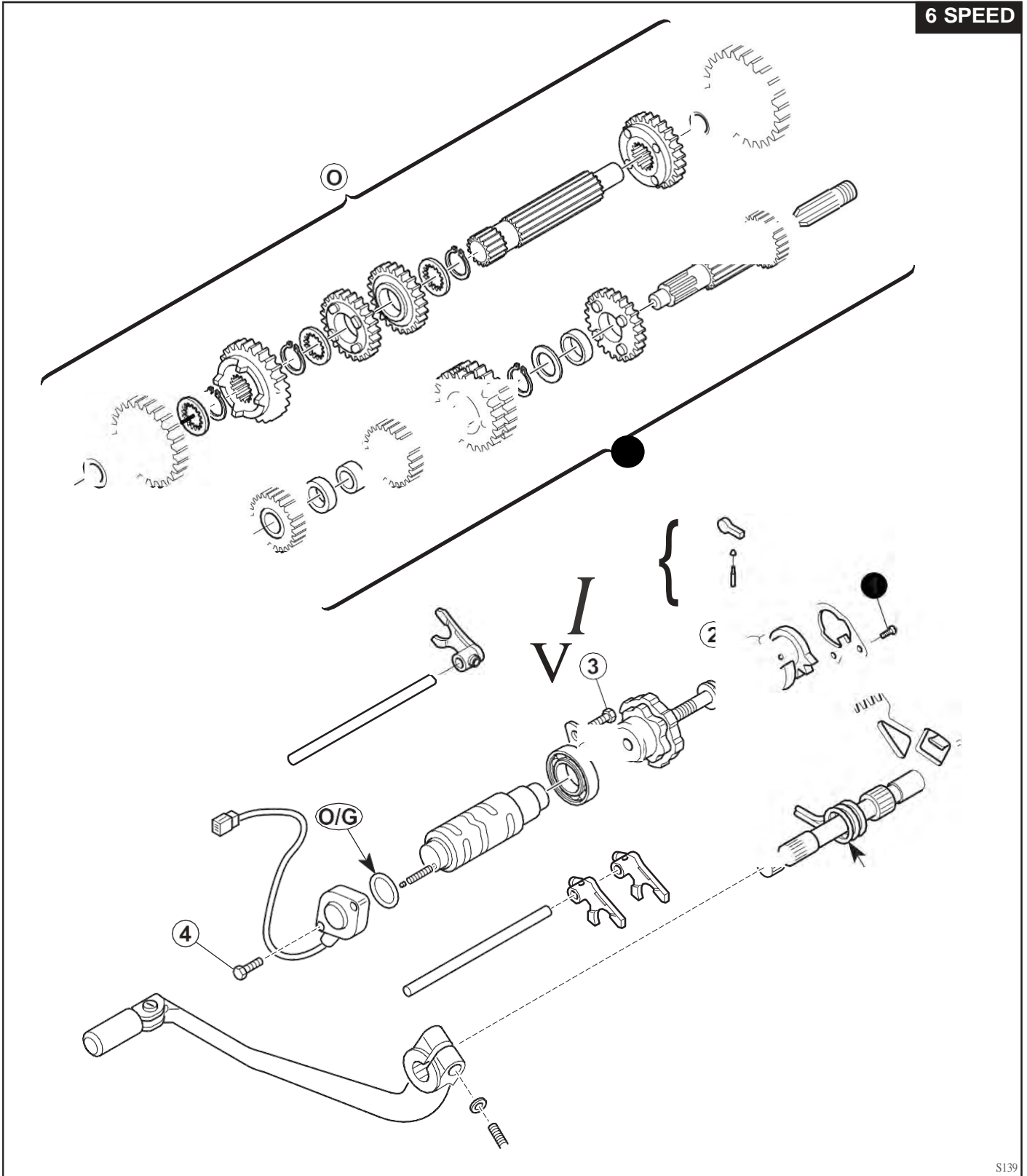
LUBRICATION POINTS-NOTES	LUBRICANT-INSTALLATION INSTRUCTIONS
A	Degrease
B	Apply engine oil on installation
E	Line up stator mark with cover mark
G	WATER RESISTANT grease
O	Engine oil



Assembly and lubrication instructions

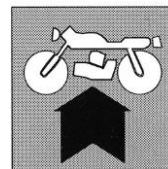
GEARBOX - GEAR SHIFT CONTROL

6 SPEED



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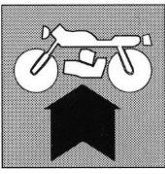




Tightening torque figures

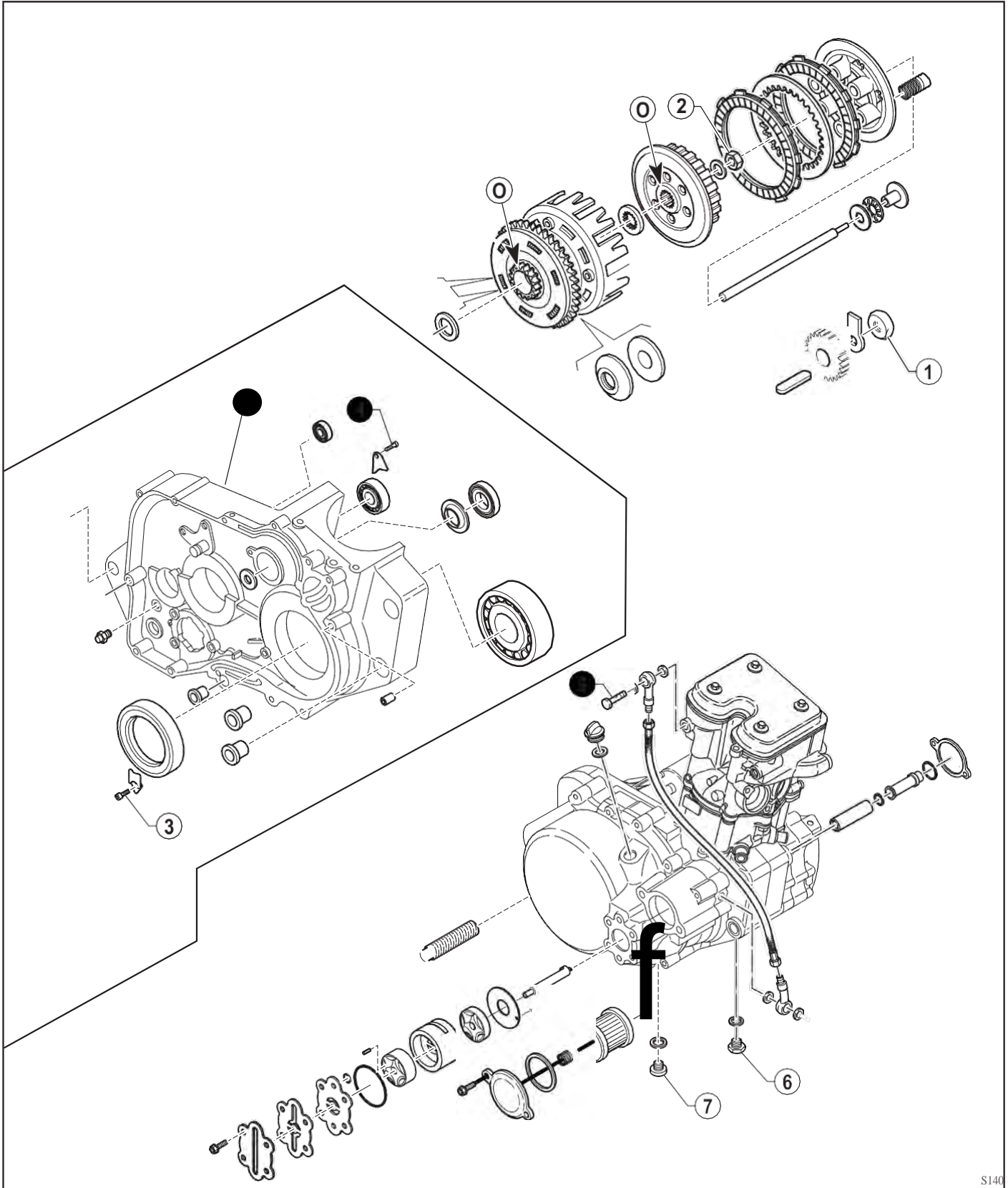
	M6x1	10 Nm-1.02 Kgm- 7.38 ft/lb
2	M8 x 1.25 (+LOCTITE 243)	28 Nm- 2.85 Kgm- 20.65 Ft/lb
3	M6 x 1 (+LOCTITE 243)	9 Nm- 0.92 Kgm- 6.64 Ft/lb
4	MS x 0.8 (+LOCTITE 243)	8 Nm- 0.8 Kgm- 5.90 Ft/lb

LUBRICATION POINTS-NOTES	LUBRICANT-INSTALLATION INSTRUCTIONS
D	Install with open end pointing to engine centre
0	Engine oil
0/G	Engine oil or WATER RESISTANT grease



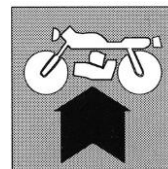
Assembly and lubrication instructions

CLUTCH- IICI- START- LUBRICATION- RIGHT CRANKCASE HALF



S140

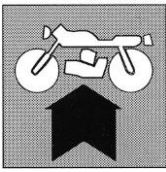




Tightening torque figures

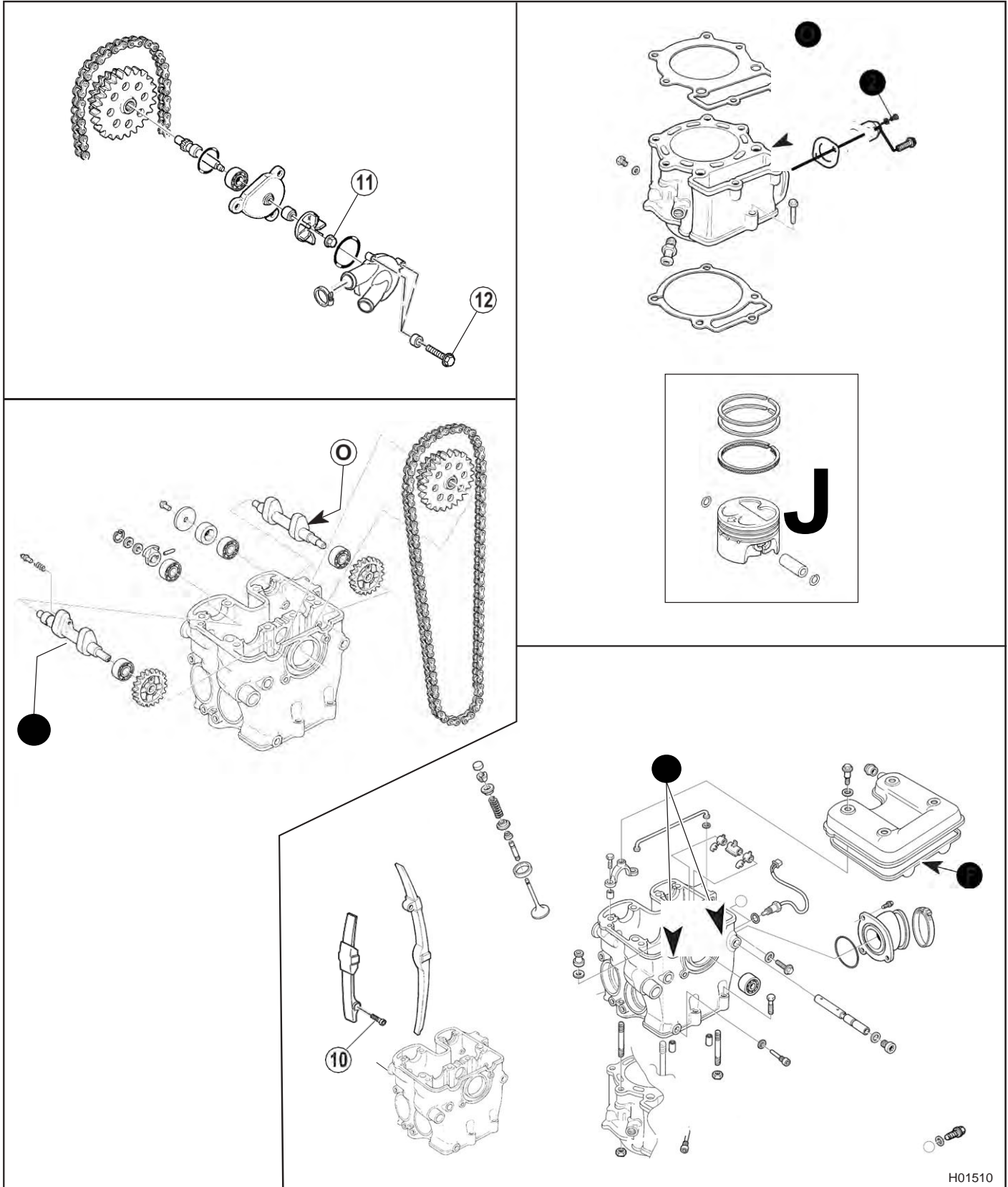
	M24 x 1.25 (+LOCTITE 243)	100 Nm-10.2 Kgm- 73.76 ft/lb
2	M18x1	61.7 Nm- 6.3 Kgm- 45.73 ft/lb
3	M6 x 1 (+LOCTITE 243)	9 Nm- 0.92 Kgm- 6.64 ft/lb
4	M6 x 1 (+LOCTITE 243)	9 Nm- 0.92 Kgm- 6.64 ft/lb
5	M10x1	15 Nm- 1.5 Kgm- 3.69 ft/lb
6	M14 x 1.5	24 Nm- 2.45 Kgm-17.70 ft/lb
7	M22 x 1.5	30 Nm- 3 Kgm- 22.13 ft/lb

LUBRICATION POINTS-NOTES	LUBRICANT-INSTALLATION INSTRUCTIONS
0	Engine oil
C	Join crankcase halves using Loctite 5205



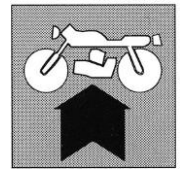
Assembly and lubrication instructions

HEAD - CYLINDER - PISTON - TIMING SYSTEM - WATER PUMP - SPARK PLUG



H01510

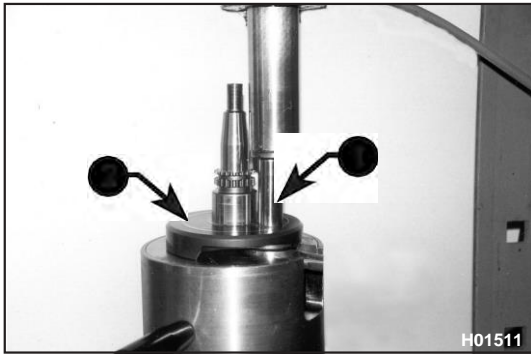
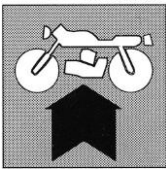




Tightening torque figures

	M14 x 1.5 (+LOCTITE 542)	25 Nm- 2.55 Kgm-18.44 ft/lb
2	M6x1	5 Nm- 0.5 Kgm- 3.69 ft/lb
3	MSx1.25	15 Nm- 1.5 Kgm-11.6 ft/lb
4	M10 x 1.5 (MOLIKOTE HSC -COPPER GREASE)	37 Nm +90°- 3.8 Kgm +90°- 27.29 ft/lb+90°
5	M6x1	12 Nm-1.2 Kgm- 8.85 ft/lb
6	M14 x 1.5 (+LOCTITE 243)	25 Nm- 2.55 Kgm-18.44 ft/lb
7	M6x1	8 Nm-0.8Kgm- 5.9 Ft/lb
8	M10 x 1.25 (ENGINES WITH ELECTRONIC INJECTION)	15" Nm-1.5" Kgm-11.06 Ft/lb
9	M6 x 1 (+LOCTITE 243)	8 Nm- 0.8 Kgm- 5.90 Ft/lb
10	MS x 1.25	12 Nm- 1.23 Kgm- 8.85 Ft/lb
11	MS x 0.8 (+LOCTITE 243)	6 Nm- 0.6 Kgm- 4.43 Ft/lb
12	M6 x 1 (+LOCTITE 542)	8 Nm- 0.8 Kgm- 5.90 Ft/lb

LUBRICATION POINTS-NOTES	LUBRICANT-INSTALLATION INSTRUCTIONS
F	Use sealant "AREXONS RHODORSEAL 5552" on installation
0	Engine oil

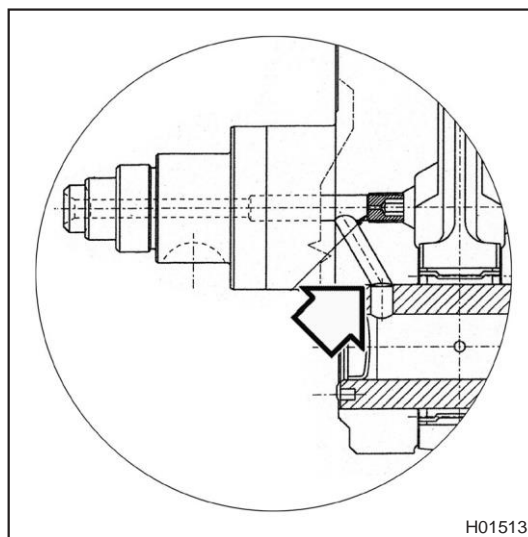
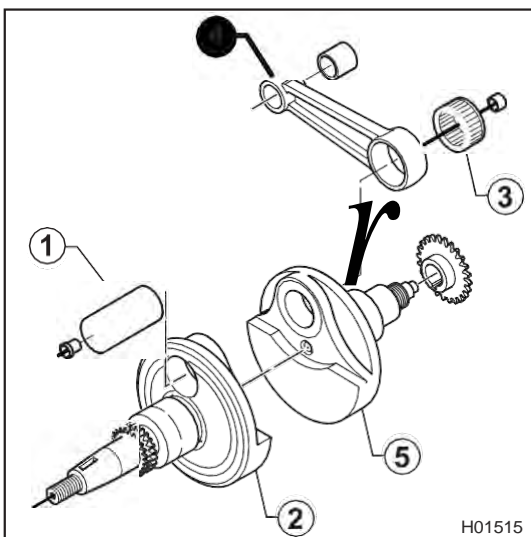
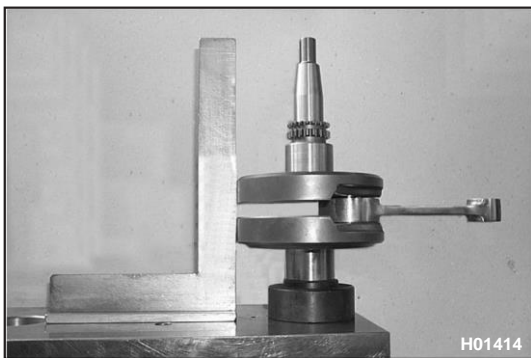


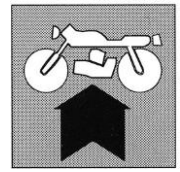
Crankshaft assembly

Clean the oil galleries thoroughly. Lubricate the crank pin (1) with engine oil and insert it into the flywheel half (2).

WARNING: Match the oil passage holes Fig."A".

Fit the needle roller bearing (3) and lubricate it the engine oil. Install the connecting rod (4) and the second flywheel half (S) and align the two flywheel halves using a square.



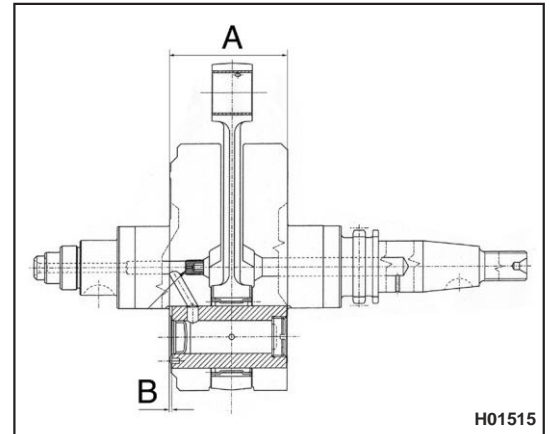


Finally, join the parts using a press.

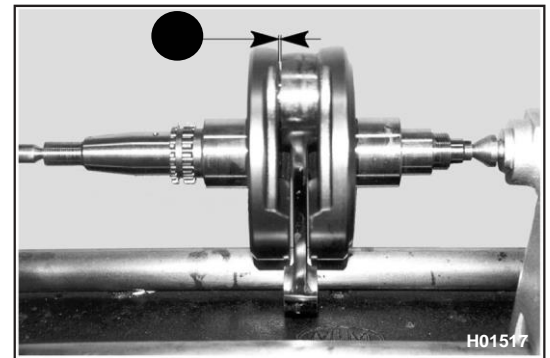
Make sure the pin does not protrude at either ends as you join the flywheel halves. Observe mounting dimension "A" and set crank pin (1) at distance "B" on the right flywheel half.

A = 6.35 - 64.45 mm
(2.574-2.578 in.)

B = 0.9-1.1 mm
(0.036- 0.044 in.)

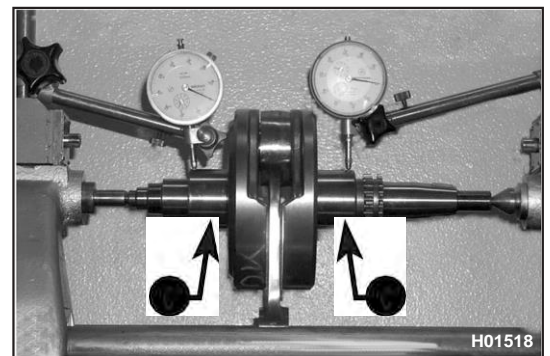


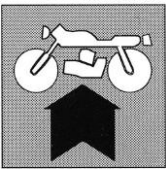
Measure axial clearance "D" of connecting rod to flywheels; it should be 0.45-0.7 mm (0.018-0.03 in.).



Measure crankshaft runout at the bearing locations "C". Runout must not exceed 0.03 mm (0.0012 in.).

Straighten the crankshaft using a copper hammer.

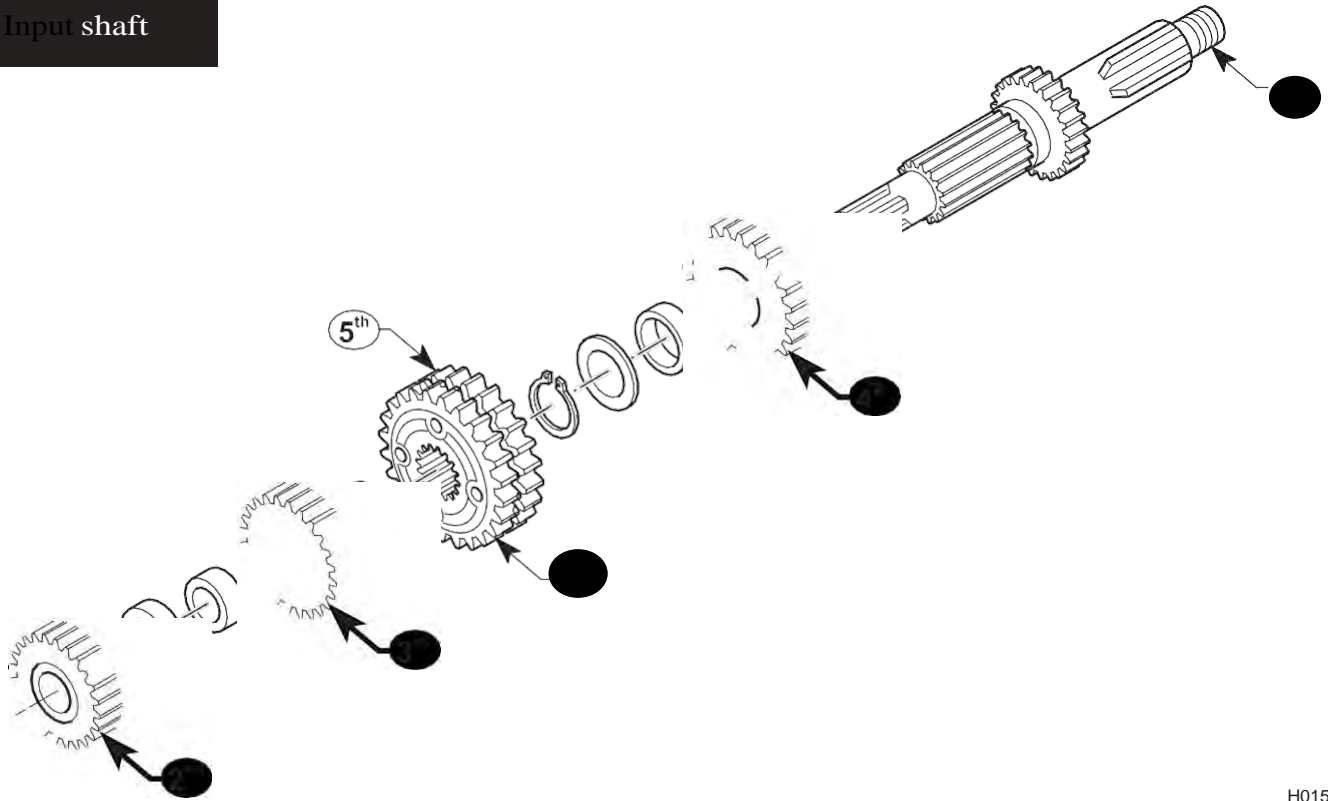




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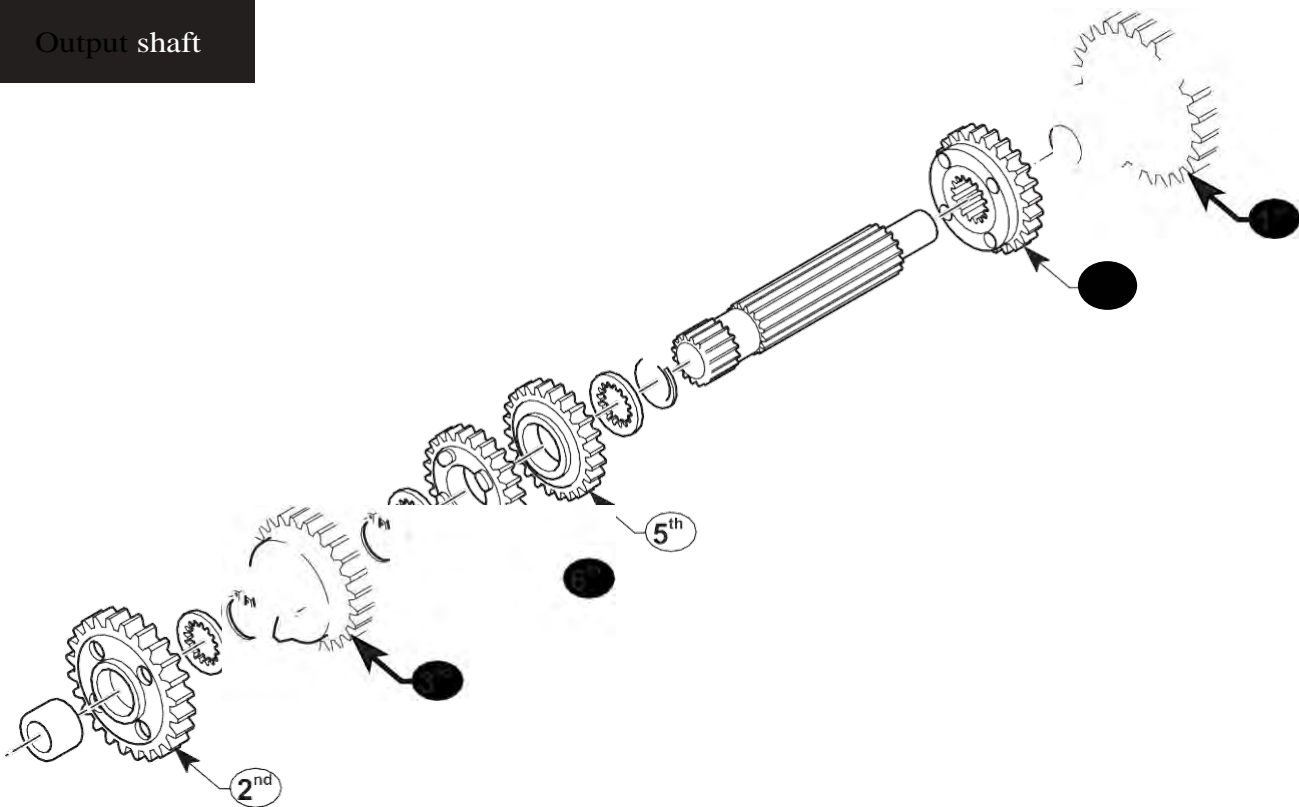
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Input shaft



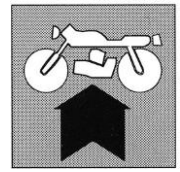
H01519

Output shaft



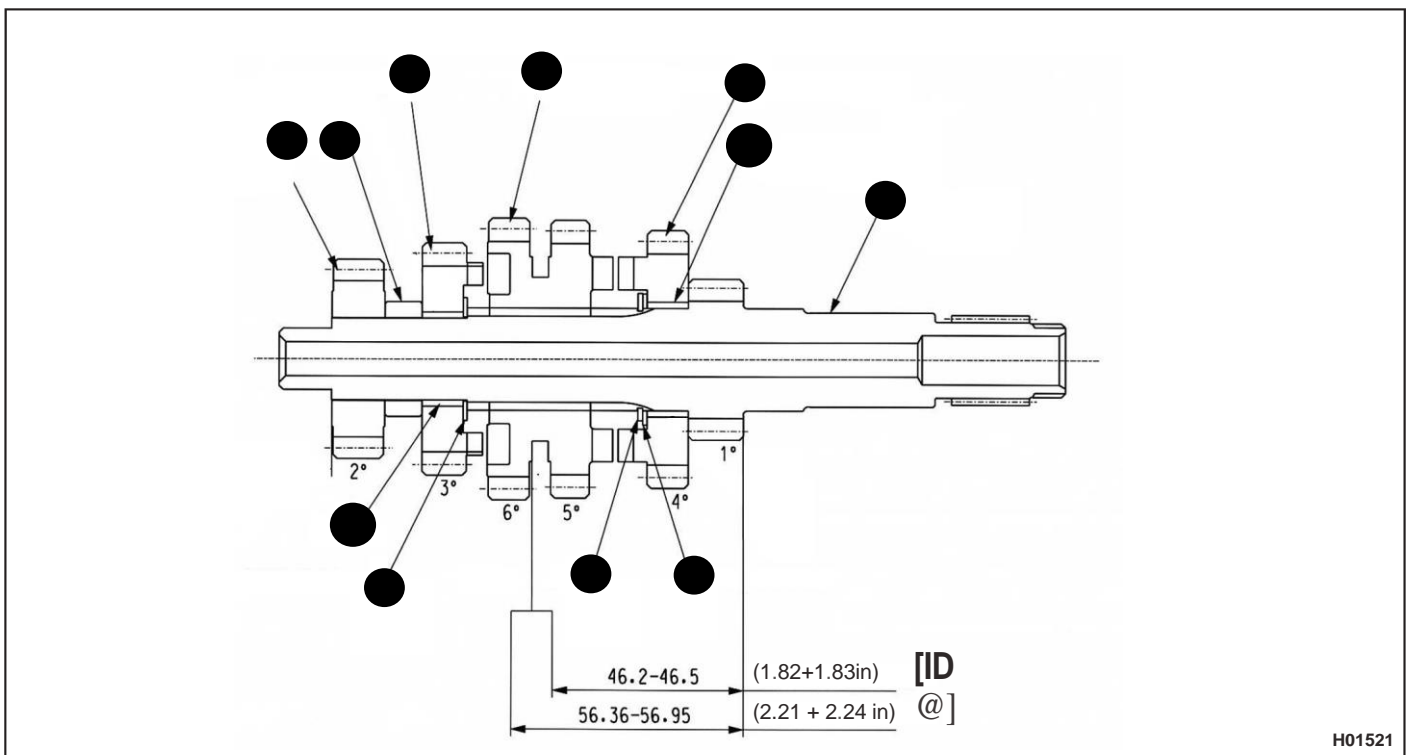
H01520





Input shaft

- Fit bushing (2) to the input shaft (1). Lubricate inner and outer Face with Molikote G-n plus grease before installation.
- Fit 4th gear (3), washer (4) and retaining ring (5) with the rounded edges of washer and retaining ring Facing the gear.
- Fit 5th/6th sliding gear (6).
- Fit washer (7) with the rounded edge Facing the gear.
- Fit plain bearing (8). Lubricate inner and outer Face with Molikote G-n plus grease before installation.
- Fit 3rd gear (9).
- Fit spacer (10) and 2nd gear (11).

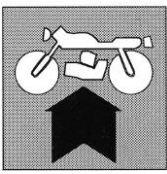


H01521

B: Control dimension with 4th gear engaged.

C: Control dimension with 3rd gear engaged.

1st	13
2nd	16
3rd	20
4th	22
5th	23
6th	25

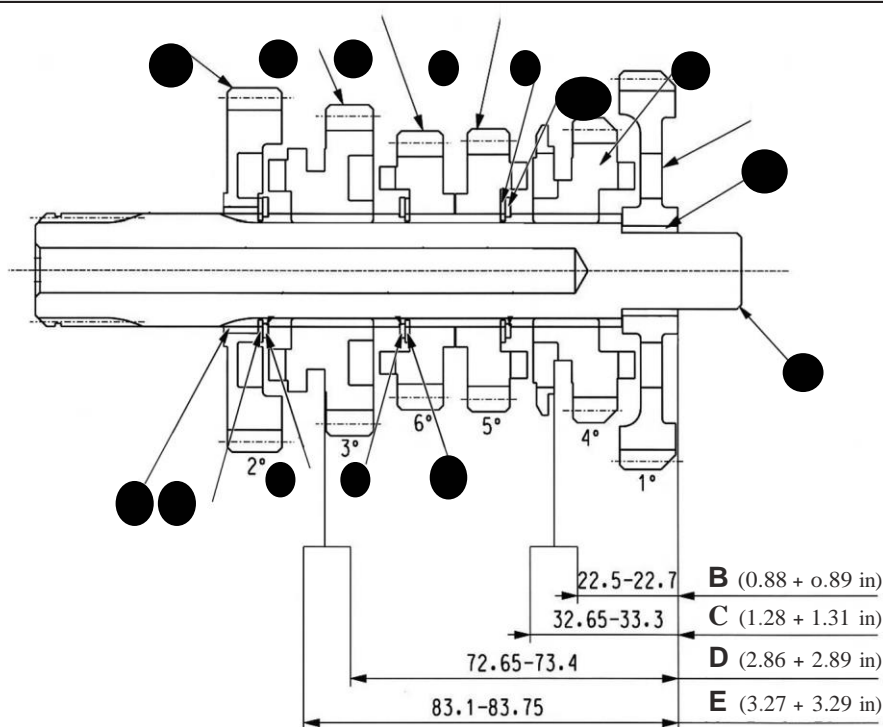


Output shaft

- Fit bushing (2) to the output shaft (1). Lubricate inner and outer face with Molikote G-n plus grease before installation.
- Fit 2nd gear with the splined side facing 3rd gear.
- Fit washer (4) and retaining ring (5) with the rounded edges of washer and retaining ring facing the gear.
- Fit 3rd gear (6) as shown.
- Fit retaining ring (7) and washer (8) with the rounded edges of washer and retaining ring facing the gear.
- Fit 6th gear (9).
- Fit 5th gear (10).
- Fit washer (11) and retaining ring (12) with the rounded edges of washer and retaining ring facing the gear.

NOTE: 5th and 6th gears should turn freely against each another.

- Fit 4th gear (13) with the flange facing 5th gear.
- Fit bushing (14) to the input shaft (1). Lubricate inner and outer face with Molikote G-n plus grease before installation.
- Fit 1st gear (15) with the bevelled edge facing 4th gear.

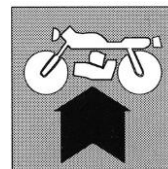


H01522

1st	34
2nd	29
3rd	27
4th	24
5th	22
6th	22

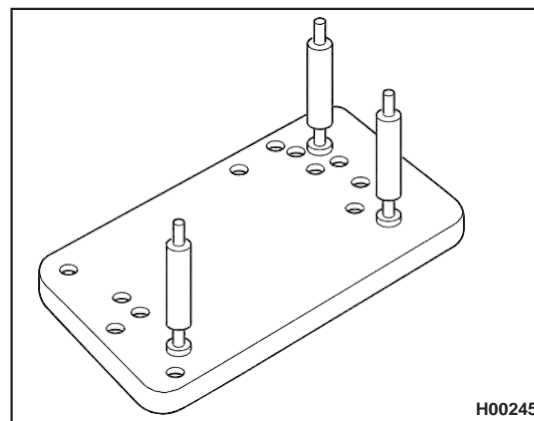
- B:** Control dimension with 1st gear engaged
- C:** Control dimension with 5th gear engaged
- D:** Control dimension with 6th gear engaged
- E:** Control dimension with 2nd gear engaged





Crankcase assembly

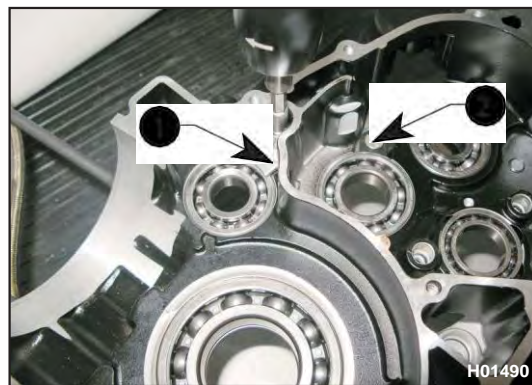
Clean the crankcase half mating Faces and place crankcase half on tool no. 8000 90662.

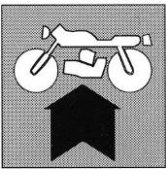


- Heat up to around 125 °C and drive the ball bearings into each crankcase half using a suitable driver tool.



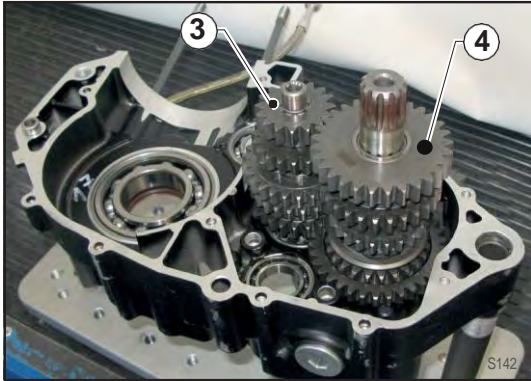
- Fit the retaining plates (1) and (2) to the crankcase bearings.
(See Section "x" For tightening torque figures)





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Install the input and output shaft assembly pushing them Fully home into the right crankcase half and make sure input (3) and output shaft (4) gears are Flush.



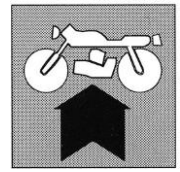
Lubricate the shifter Forks (S) with engine oil and install them.



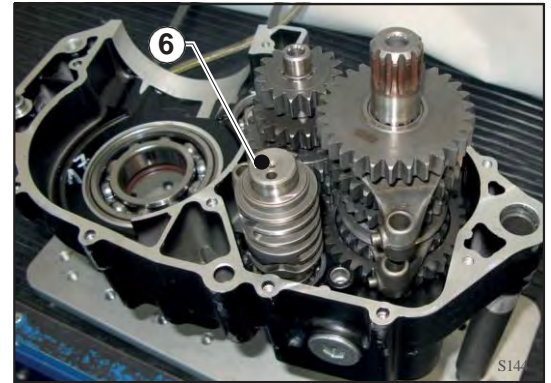


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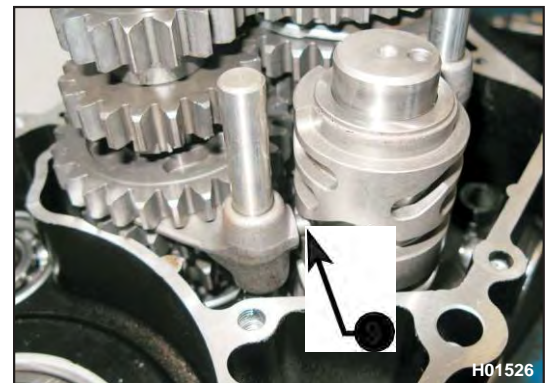
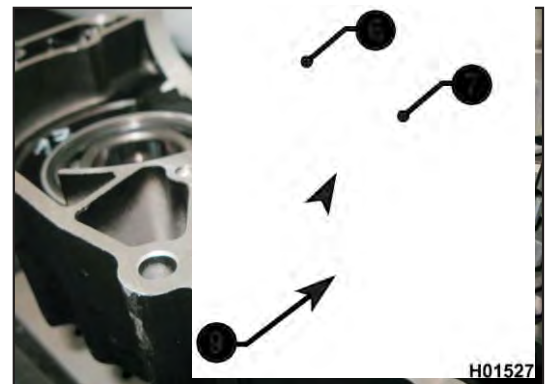
Insert the selector drum (6) into its seat.

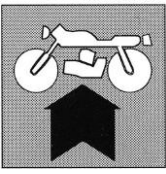


Install the Fork shafts (7) and (8) and make sure the Forks move Freely.

Make sure the Fork pins (9) are correctly located in the drum grooves (6).

Rotate the selector drum to test operation.





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Heat up the crankshaft bearing (10) and install the crankshaft (11).

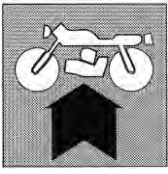
Fit the countershaft (12) onto its bearing.



Make sure both crankcase locating bushings (13) are in place.

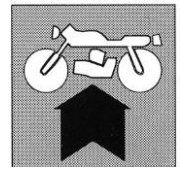
Apply a layer of "LOCTITE 5205" on the right crankcase mating surface (14).





ENGINE REASSEMBLY

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Heat up the left crankcase bearing locations and install the crankcase.

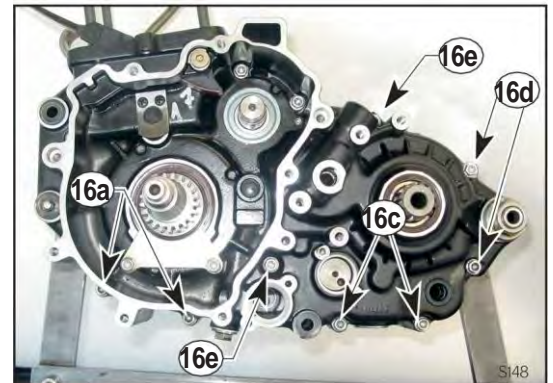


Grease the sprocket bearing bushing (15) and fit it into the bearing; fit the left crankcase half onto the right crankcase half.



To join the crankcase halves, tap with a plastic hammer.

Tighten the screws (16) using an 8 mm (0.31 in.) wrench. Make sure to fit the screws in the correct positions according to the pattern shown.



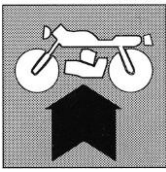
12a= M6 x 55 mm (2.165 in.)

12b= M6 x 55 mm (2.165 in.)+ copper washer

12c= M6 x 55 mm (2.165 in.)

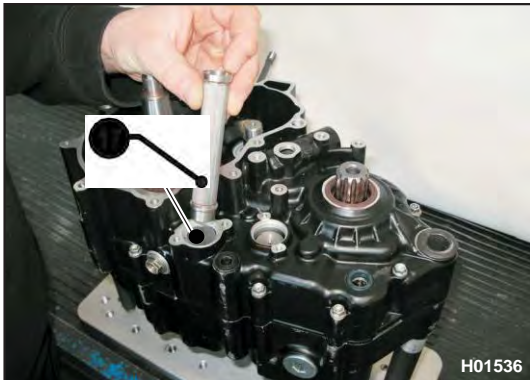
12d= M6 x 65 mm (2.559 in.)



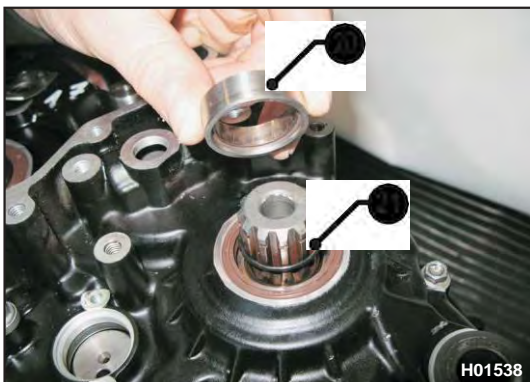
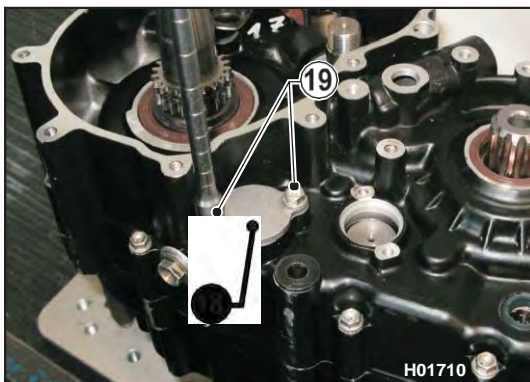


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Install mesh Filters (17) and their cover (18) and tighten the screws (19) with an 8 mm wrench (see Section "X" For tightening torque Figures).

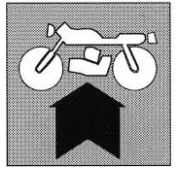


Insert bushing (20) with its O-ring (21); the O-ring groove must be Facing into the engine.

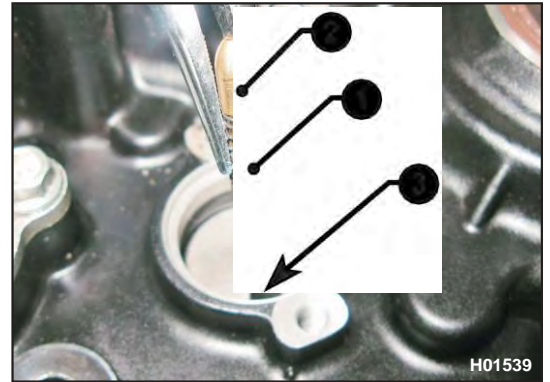


Cover the upper section of the engine with a cloth, a sponge or the like to prevent screws or other parts From accidentally Falling into the engine.

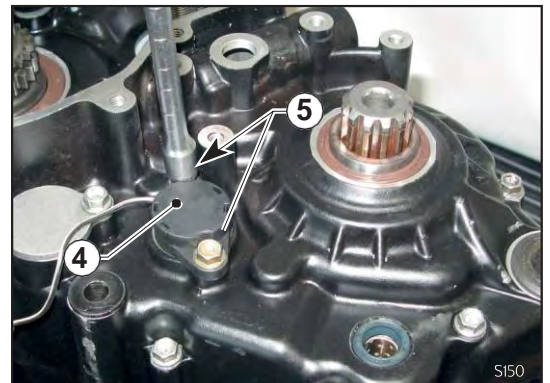


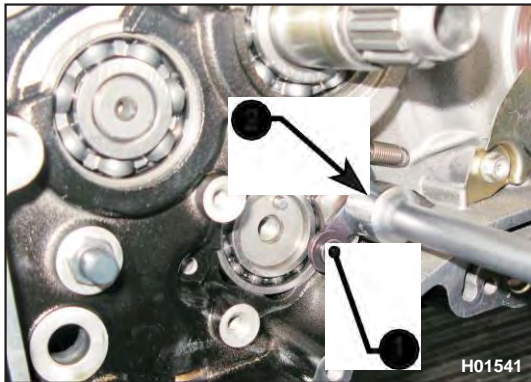
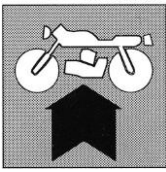
**Gear sensor installation**

Insert spring (1) and pushrod (2) into their seat (3).



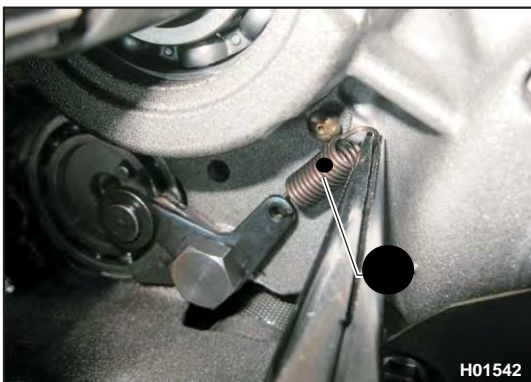
Fit the sensor (4); make sure to install the gasket. Tighten the screws (5) 8 N/m; 0.8 Kgm; 5.8 Ft/lb.





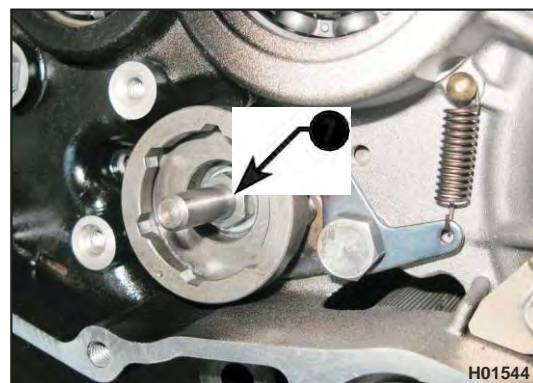
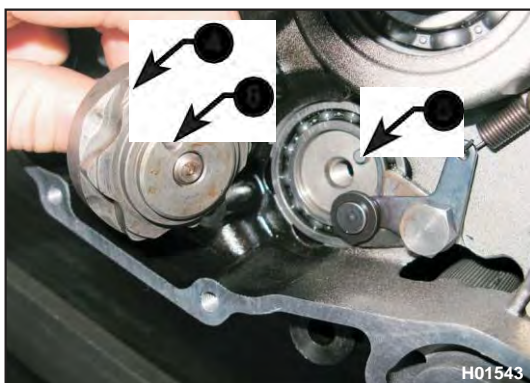
Gear shift control assembly

Install the ratchet (1) and tighten the screw (2) (13 mm wrench; 28 N/m; 2.8 Kgm; 20.65 ft/lb).



Engage the spring (3) with the suitable pin.

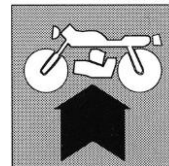
Install the selector drum (4) making sure the tab (5) locates in the recess (6) and secure drum with its screw (7). (Apply Loctite 243, tighten to 28 Nm; 2.8 Kgm; 20.65 ft/lb using a 12 mm wrench).





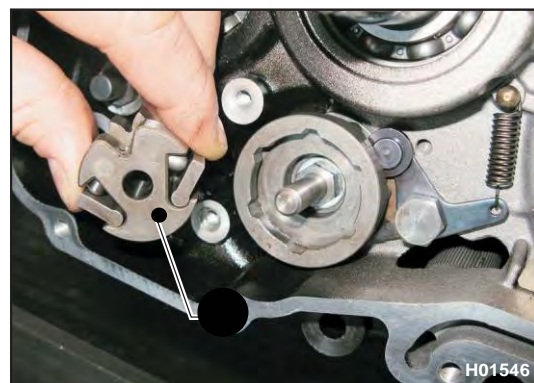
ENGINE REASSEMBLY

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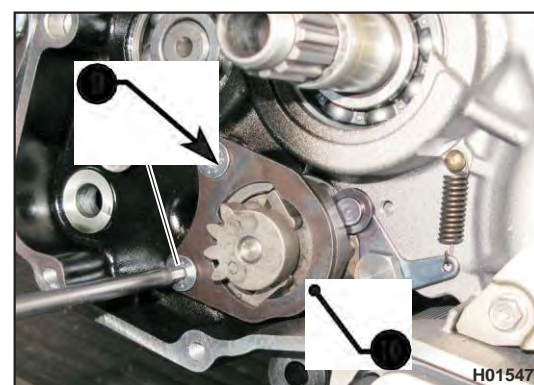


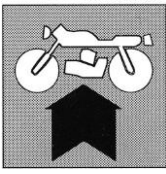
Operate shifter and transmission shaft to test gearbox For proper operation.

Refit the ratchet assembly (S) together with the plate, making sure ratchets and springs are in the correct positions.



Tighten the screws (9) of plate (10) using a 4 mm Allen wrench (Loctite 243; 9.3 Nm; 0.93 Kgm; 6.85 Ft/lb).



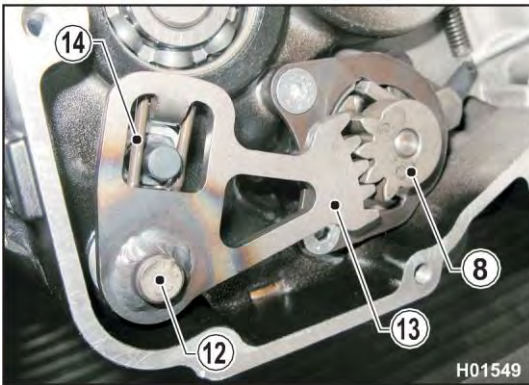


ENGINE REASSEMBLY

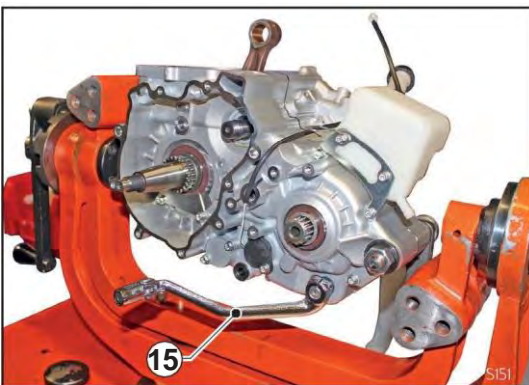
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Make sure the spring (11) of the gear shift lever shaft is positioned correctly.

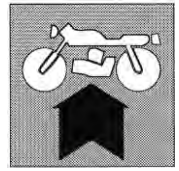


Lubricate the shaft with engine oil and insert the shaft (12) into the crankcase so that the teeth (13) mesh with sector gear (8) teeth and spring (14) locates to its abutment pin.



Install the gear shift lever (15) and operate the gearbox manually (10 mm wrench; 9 Nm; 0.9 Kgm; 6.64 Ft/lb).

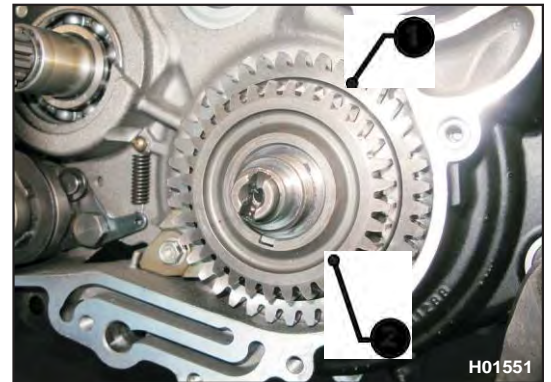




Crankshaft gears installation

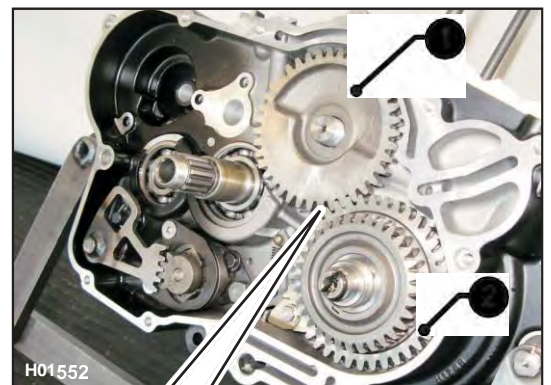
Fit the countershaft driving gear (1) to the crankshaft with the timing dot facing out.

Fit the input shaft driving gear (2) with the bevelled side Facing out.

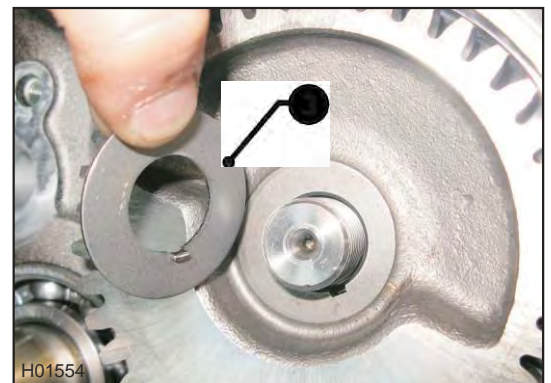


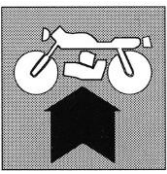
Countershaft weight/gear installation

Fit the countershaft gear (1) line up its dot with that of the crankshaft gear (2) to set timing.



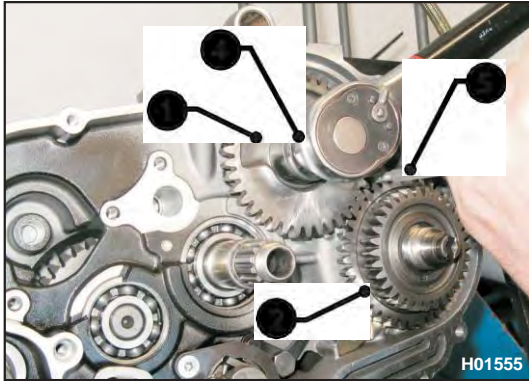
Fit the lock washer (3) onto the gear making sure the tab locates into the keyway.



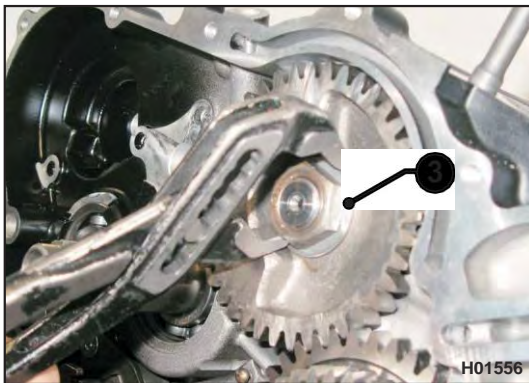


ENGINE REASSEMBLY

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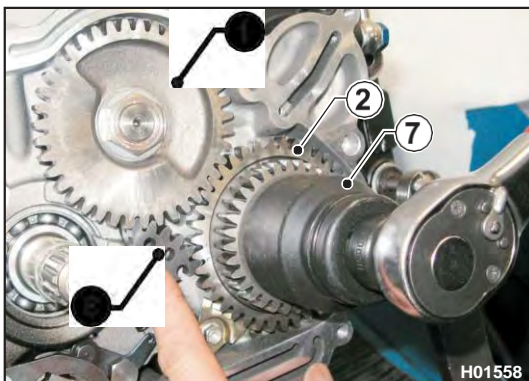
Tighten the nut (4) with a 27 mm (1.06 in.) wrench to 70 N/m; 7 Kgm; 51.58 Ft/lb placing an aluminium shim (S) between countershaft gear (1) and crankshaft gear (2).



Bend the lock washer (3).



Fit the lock washer (6) onto the crankshaft gear making sure the tab locates into the keyway.



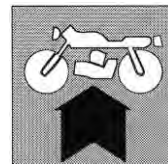
Tighten the nut (7) with a 38 mm (1.49 in.) wrench to 100 N/m; 10 Kgm; 73.69 Ft/lb placing a half gear (8) between countershaft gear (1) and crankshaft gear (2).





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Turn the engine over.

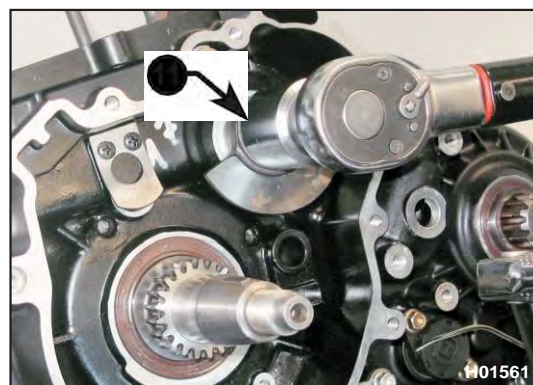
Fit the counterweight (9) to the countershaft.

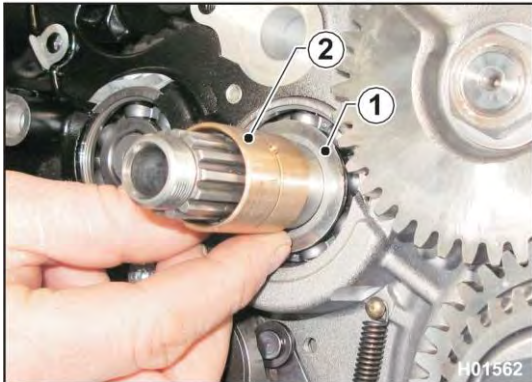
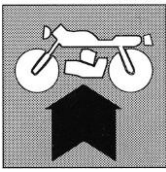
Fit the lock washer (10) onto the shaft making sure the tab locates into the keyway.



Tighten the nut (11) with a 27 mm (1.06 in.) wrench to 70 N/m; 7 Kgm; 51.58 Ft/lb placing a half gear at the opposite side of the engine between countershaft gear(1) and crankshaft gear (2).

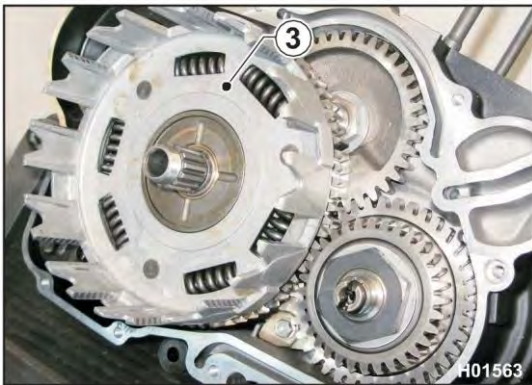
Bend the lock washer (10).





Clutch assembly

Slide washer (1) and bushing (2) over the shaft (lubricate with engine oil).



Lubricate the shaft with engine oil and Fit the clutch housing (3).



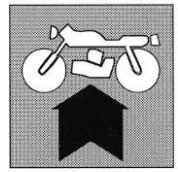
Fit the splined spacer (4).



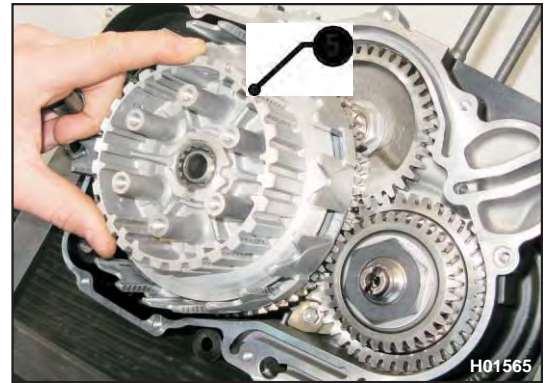


ENGINE REASSEMBLY

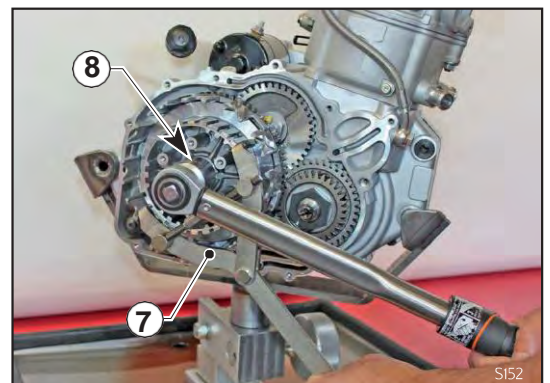
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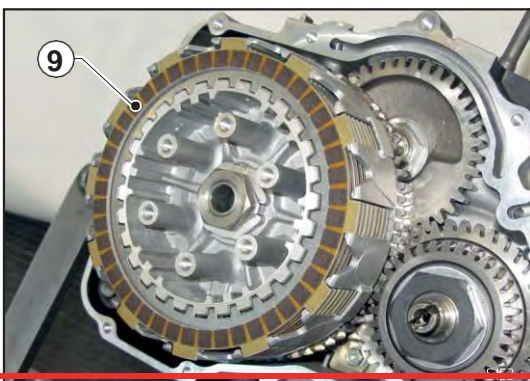
Fit the clutch hub (S) and its lock washer (6).



Use the suitable tool (7) to prevent rotation and tighten the nut (8) with a 27 mm (1.06 in.) wrench to 61.7 Nm; 6.17 Kgm; 45.47 Ft/lb.



Bend the lock washer (6).

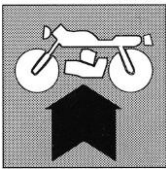


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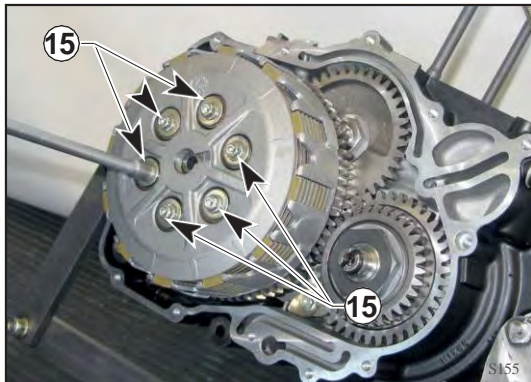
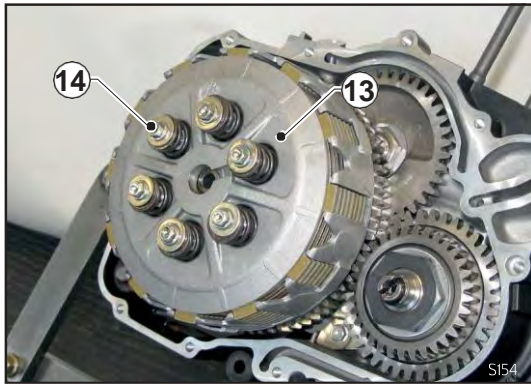
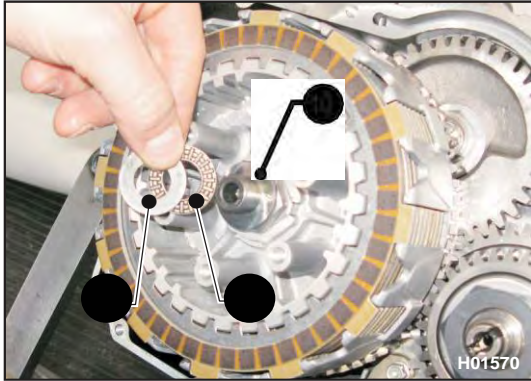
plates (9) (install a Friction plate First and then a steel plate and keep alternating between Friction and steel plates; the last to go in should be a steel plate). Fit actuator plate (to), thrust bearing (11), thrust washer (12), pressure plate (13) and springs (14). Tighten the spring screws (ts) gradually in a cross pattern (S Nm, 0.5 Kgm, 3.6 Ft/lb).

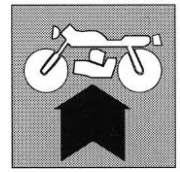




ENGINE REASSEMBLY

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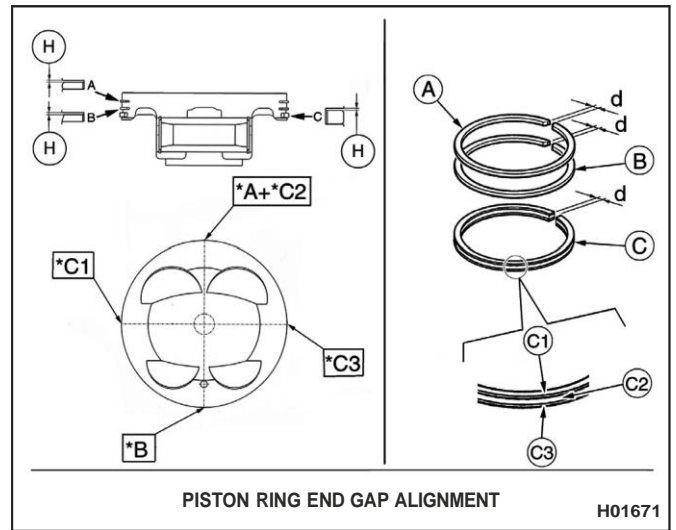




Piston ring installation

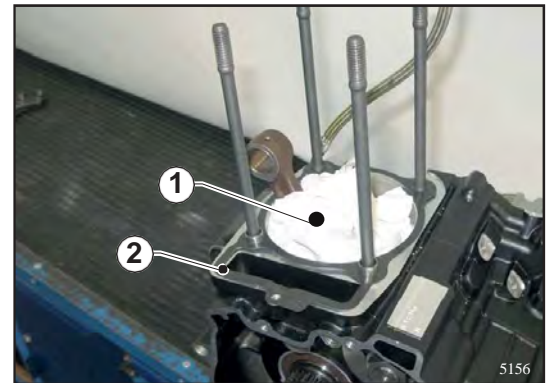
Fit the piston rings as shown in the diagram. If the piston ring is marked on one side, that side must be facing up.

"": position of end gap "d"



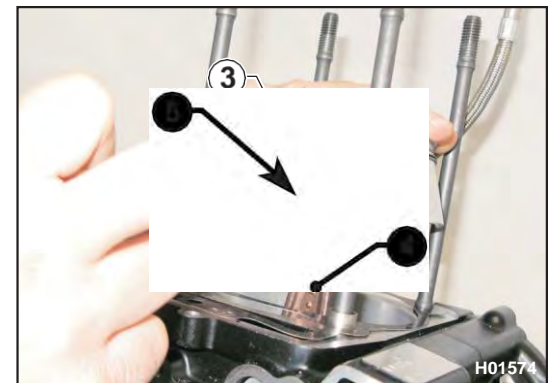
Piston and cylinder installation

Remove the cylinder protection (1).
Install a new cylinder foot gasket (2).



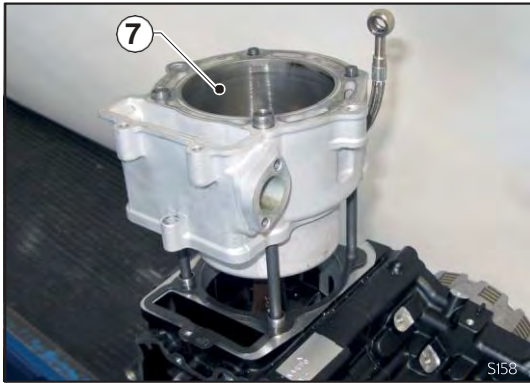
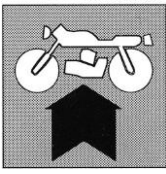
Assemble piston (3) to connecting rod (4) (lubricate with engine oil) and fit the piston pin retaining rings (5).

Make sure the arrow mark on the piston is pointing to the front end.



Make sure that the locating pins (6) are in place.

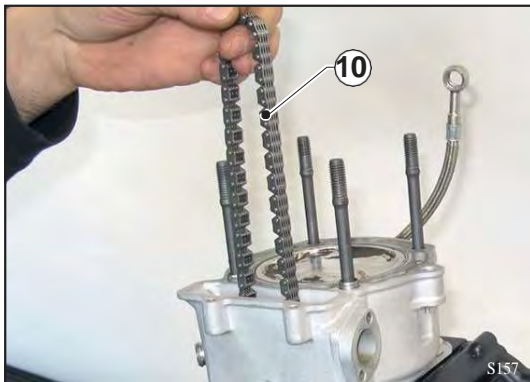
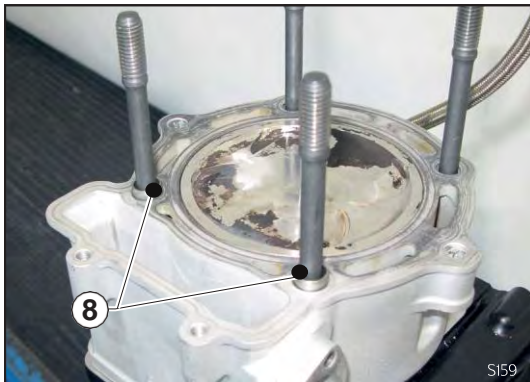




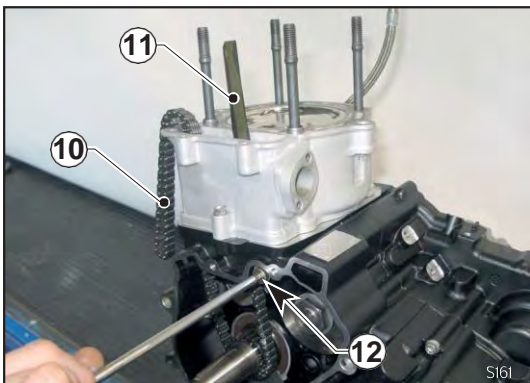
Lubricate the cylinder liner (7) with engine oil and slide it over the piston rings.

Fit the two locating bushings (8).

Secure the cylinder (7) to the crankcase tightening screw (9) with an 8 mm wrench (see Section "X" For tightening torque figures).

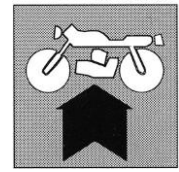


Install the timing chain (10).



Position the slider (11) and tighten screw (12) using a 5 mm Allen wrench (see Section "X" For tightening torque figures).

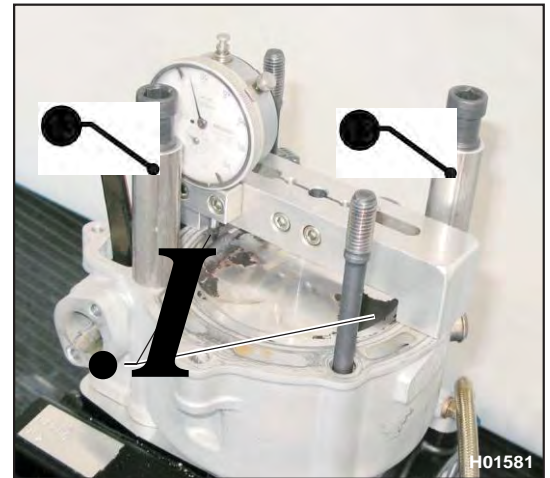




Fit screws and spacers (13) to temporarily secure the cylinder liner (7).
 (2 spacers)
 Use a 10 mm (0.39 in.) Allen wrench; 25 Nm; 2.5 Kgm; 18.44 Ft/lb.
 Make sure that the piston is at Top Dead Centre.

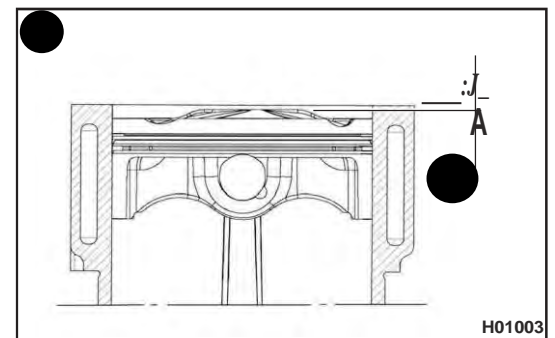
Measure distance "A" on the two machined Faces "B" of the piston and choose the appropriate head gasket according to the table.

Remove spacers and screws (13) and Fit the appropriate head gasket.

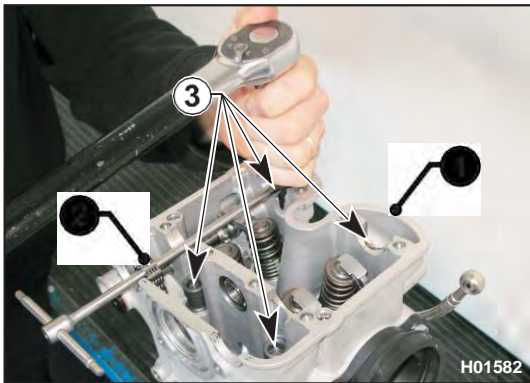
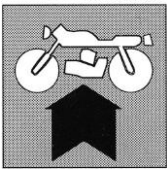


Cylinder head gasket selection table

Bring piston to T.D.C. at the end of the compression stroke, measure distance "A" between piston crown and head gasket mating Face and select the appropriate gasket according to the table below.



CONDITION (see diagram)	"A"	Gasket thickness	Gasket part no.
1) (piston lower than cylinder mating Face)	-0.5 ± 0.05 mm -0.02 ± 0.002 in.	1.1mm 0.043 in.	8A00 H0937
1) (piston lower than cylinder mating Face)	-0.6 ± 0.05 mm	1mm 0.039 in.	8B00 H0937
1) (piston lower than cylinder mating Face)	-0.4 ± 0.05 mm	1.2mm 0.047 in.	8000 H0937

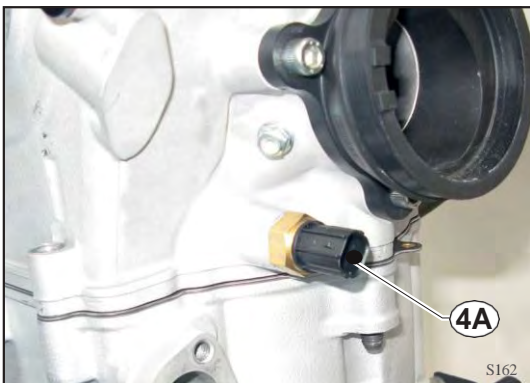
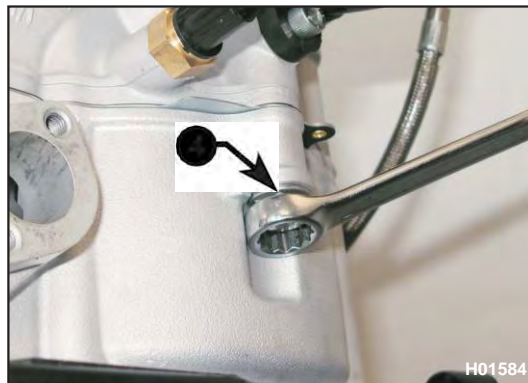
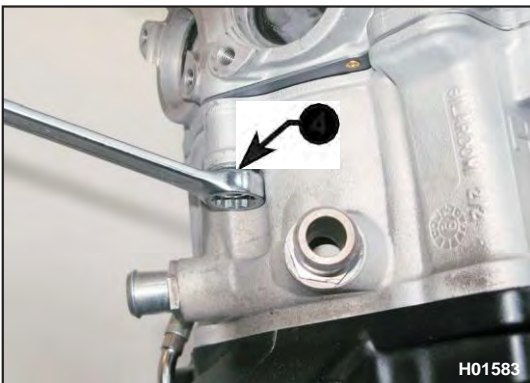


Cylinder head installation

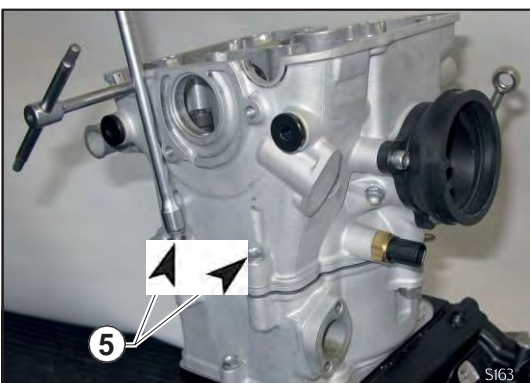
For valve installation instructions, please see Section "G".

Always use a new head gasket on assembly: see the "Cylinder head gasket selection table". Install the head (1) while supporting the timing chain (2) with a tool. Tighten the head bolts (3) gradually in a cross pattern to 38 Nm+90°; 3.8 Kgm+90°; 28.03 +90° Ft/lb (using a 10 mm - 0.39 in. - Allen wrench).

Tighten the two head to cylinder nuts (4) at the sides with a 13 mm (0.51 in.) wrench (see Section "X" For tightening torque Figures).



Refit the cooling water temperature sensor (4A) using a 17 mm (0.66 in.) ring wrench; 15 Nm; 1.5 Kgm; 11.6 Ft/lb).



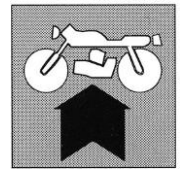
Tighten the two head to cylinder bolts (S) with an 8 mm (0.31 in.) wrench (see Section "X" For tightening torque Figures).



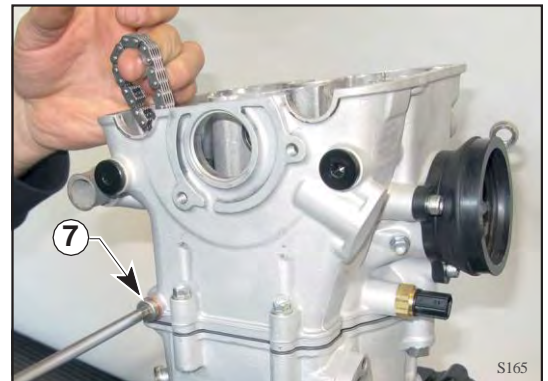


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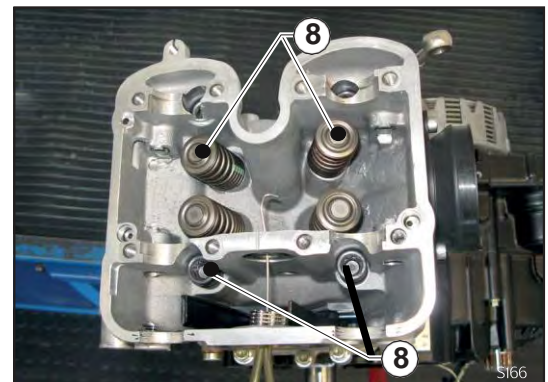
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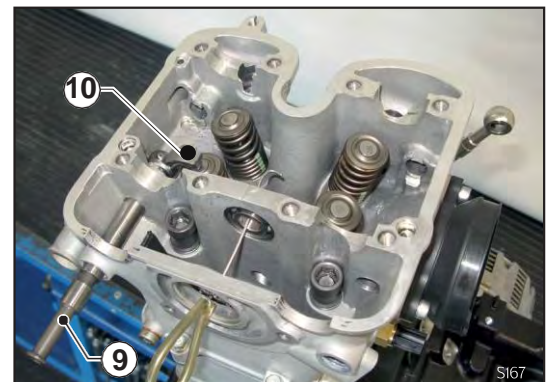
Insert the Fixed slider (6) and secure it into place tightening the retaining screw (7) with a 5 mm (0.19 in.) Allen wrench (see Section "X" For tightening torque Figures).



Refit the Four shims (8) on the valves as marked on removal.

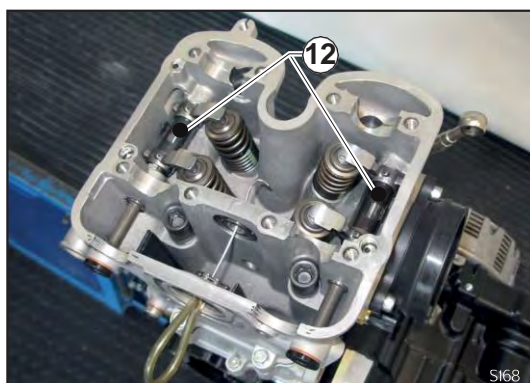


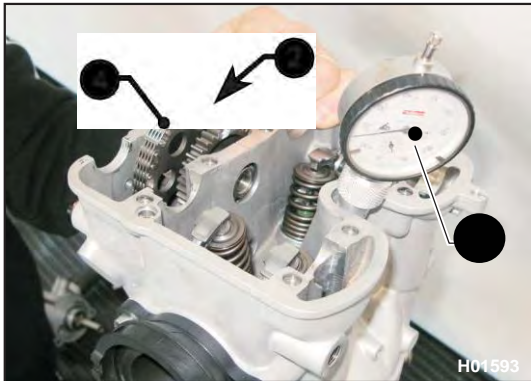
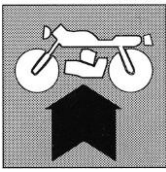
Fit the shafts (9) of the rocker arms (10) as marked on removal with the slotted end Facing outwards.



Tighten the screws (11) with a 6 Allen wrench (see Section "X" For tightening torque Figures).

Fit the two spring spacers (12).

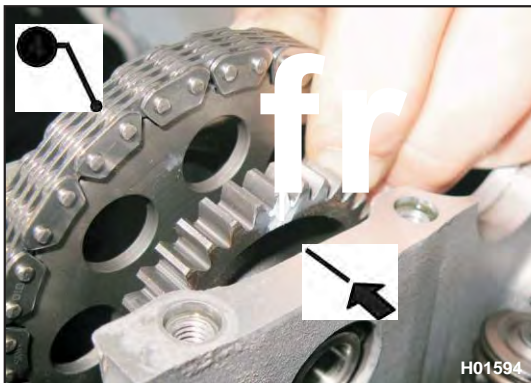




Water pump installation

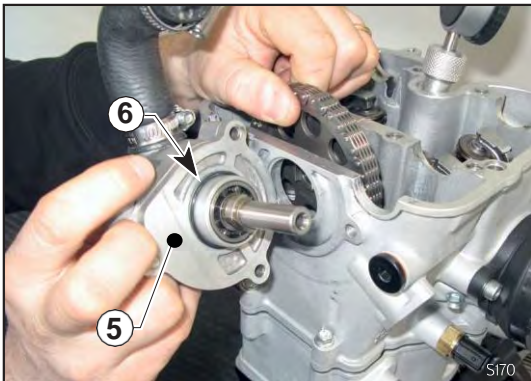
Secure a dial gauge (1) to the spark plug hole.

Turn the crankshaft manually until bringing the piston to Top Dead Centre.



Insert the timing drive gear (2) into the head lining up the notch on the camshaft drive gear (3) with the notch on the head mating Face.

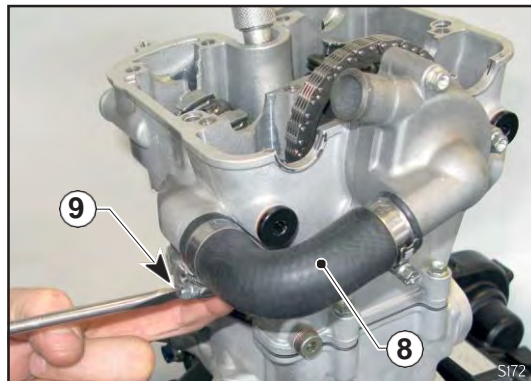
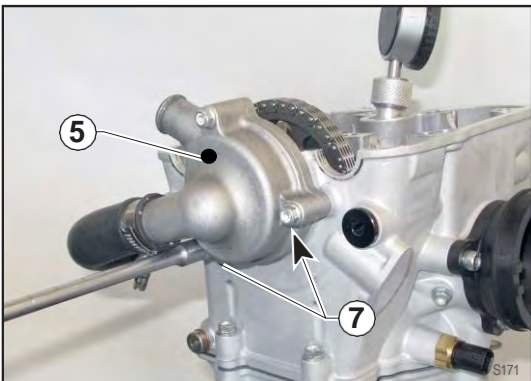
Install the chain on the gear (4).

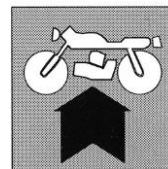


Fit the water pump (5) to the head; check the O-ring (6) For damage.

Tighten the screws (7) with an 8 mm (0.31 in.) wrench to 8 Nm; 0.8 Kg_m; 5.8 Ft/lb+ Loctite 542.

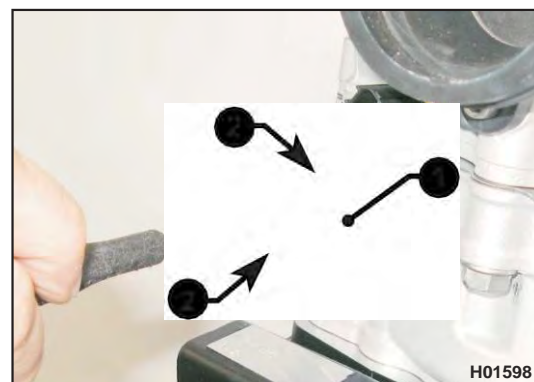
Connect the rubber hose (8) and tighten the clamp (9).



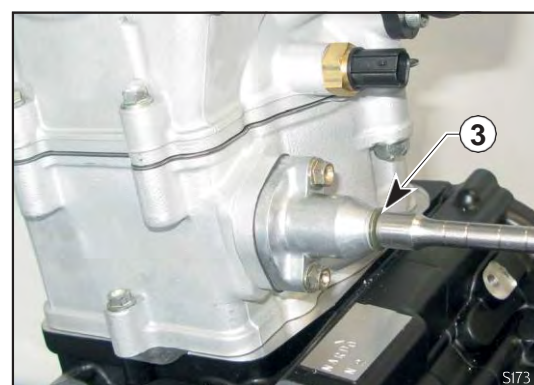
**Timing chain tensioner installation**

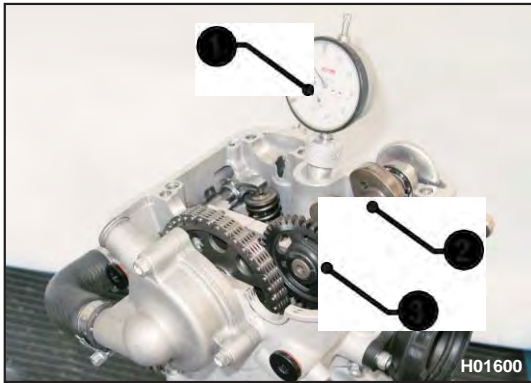
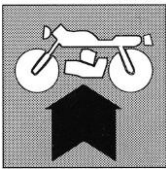
Refit the chain tensioner (1) and its gasket. Tighten the two screws (2) using an 8 mm (0.31 in.) wrench (10 Nm, 1.0 Kgm, 7.25 Ft/lb).

Release the chain tensioner (1) using a screwdriver (turn counter clockwise).



Refit the screw (3) with its washer (8 mm wrench - 0.31 in.).



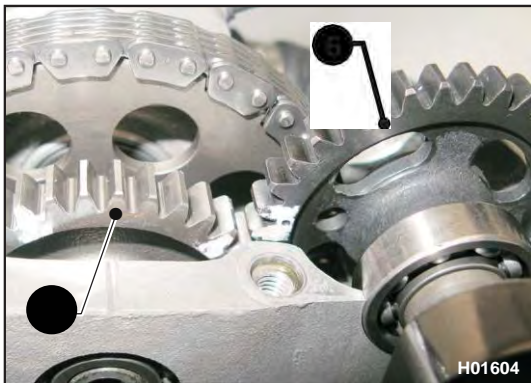
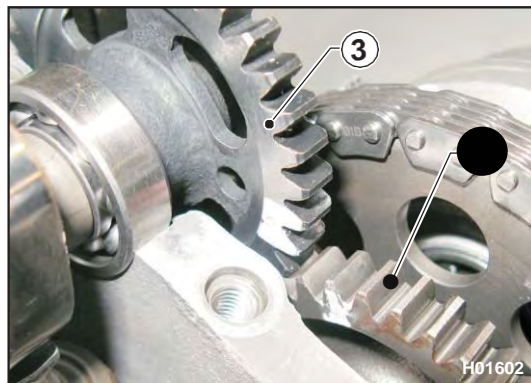
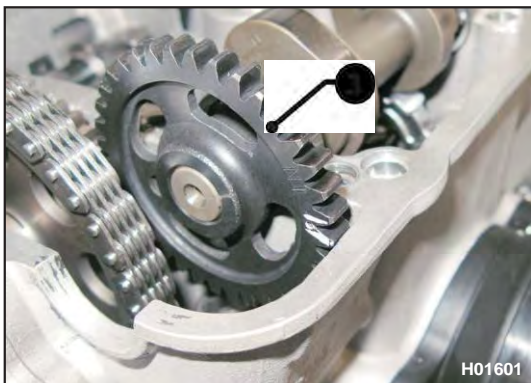


Camshaft installation

Secure a dial gauge (1) to the spark plug hole.

Turn the crankshaft manually until bringing the piston to Top Dead Centre.

Insert the camshaft drive gear (2) into the head lining up the dot on gear (3) with the head mating Face. Make sure the dot on the inboard side of gear (3) is lined up with the dot on the left of the timing gear (4).

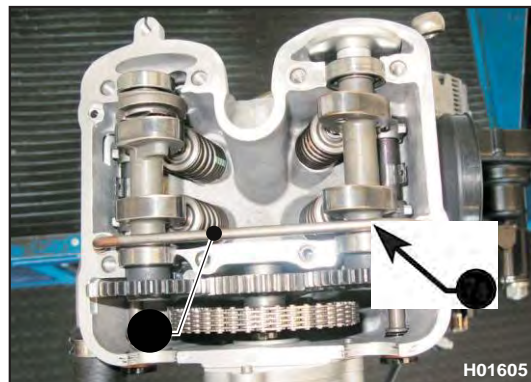
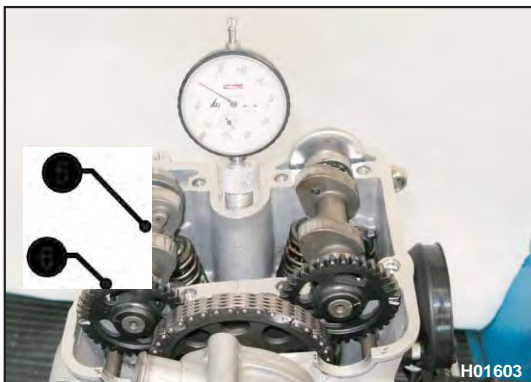


Install the exhaust camshaft (5) lining up the dot on gear (6) with the head mating Face. Make sure the dot on the inboard side of gear (6) is lined up with the dot on the right of the timing gear (4).

Refit the oil pipe (7) with the curved end (7a) at the intake camshaft end.

Lubricate lobes, springs and rocker arms with engine oil.

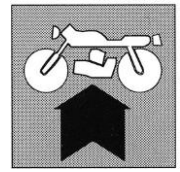
Make sure that the centring bushings are in place in the caps.



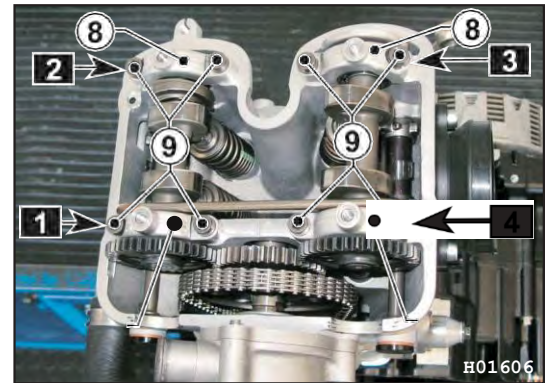


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Refit the camshaft caps (8) and tighten the screws (9) with a 5 mm (0.19 in.) Allen wrench; 12 Nm; 1.2 Kgm; 8.85 ft/lb as marked on removal.



Apply a 38 mm (1.49 in.) wrench to the clutch side gear and turn the crankshaft manually a few turns to check for free, smooth rotation without any tight points, then bring it back to Top Dead Centre position.

Use a feeler gauge (10) to check clearance between rocker arm and shim.

Correct values are as follows:

- intake:15 hundredths
- exhaust:20 hundredths.

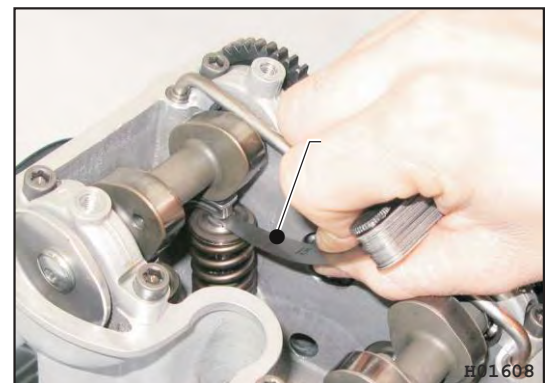


If clearance is not as specified, release the spring spacer using a hook, push aside rocker arm (11) and change the shim (12).

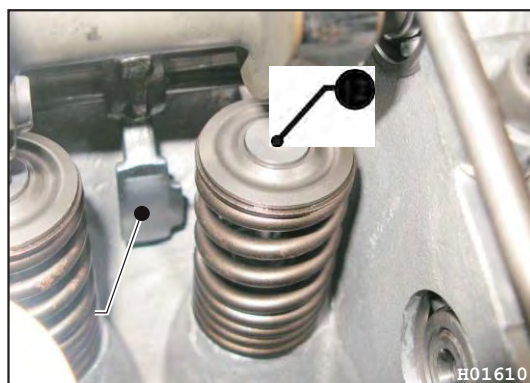
Replacement shims are available in a 1.60 mm (0.063 in.) to 2.60 mm (0.1024 in.) thickness range, in 0.05 mm (0.002 in.) increments.

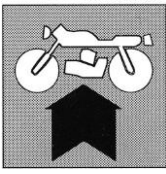
Thickness (S) of the new shim is determined as follows:

- S= (G1-G)+S1
- S= Thickness of new shim
- G1= Measured valve clearance
- G= Specified valve clearance
- S1= Thickness of old shim



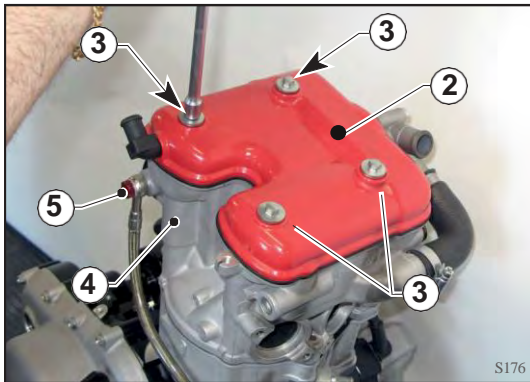
On assembly, check valve clearances.





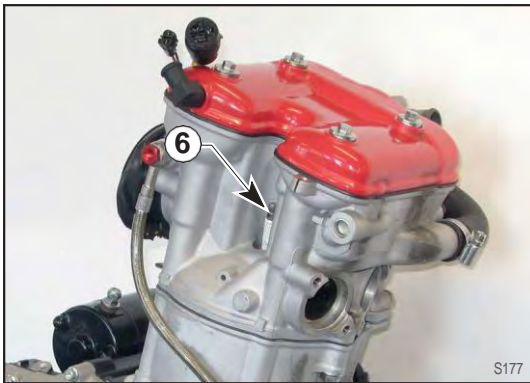
Cylinder head cover and spark plug installation

Smear Arexons 5552 compound on the half-round cutouts (1).



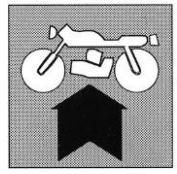
Refit head cover (2) and tighten the screws (3) in a cross pattern. 8 mm (0.31 in.) wrench, 8 Nm; 0.8 Kgm; 5.8 ft/lb.

Refit the lubrication pipe to the head (4) and tighten the drilled bolt (5). 8 mm (0.31 in.) wrench; 8 Nm; 0.8 Kgm; 5.90 Ft/lb.



Refit the Spark plug (6); 10-12 Nm; 1.0-1.2 Kgm; 7.2-8.9 ft/lb



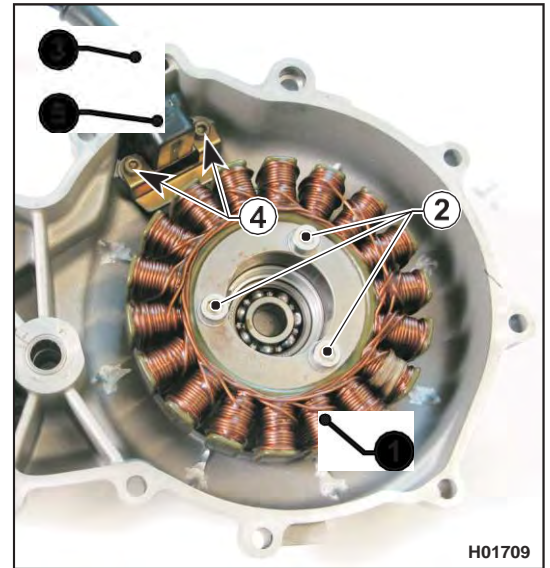


Flywheel and flywheel cover installation

Install the stator (1) with its mark lined up with the flywheel cover mark and tighten the three retaining screws (2) (use a 5 mm -0.19 in. -Allen wrench; 8 Nm; 0.8 Kgm; 5.9 ft/lb+ Loctite 272).

Insert the cable guide (3) into its seat in the cover and tighten the two retaining screws (4) of the pick-up sensor (S) with its plate using a 3 mm - 0.11 in. - Allen wrench (3 Nm; 0.3 Kgm; 2.21 ft/lb+ Loctite 272).

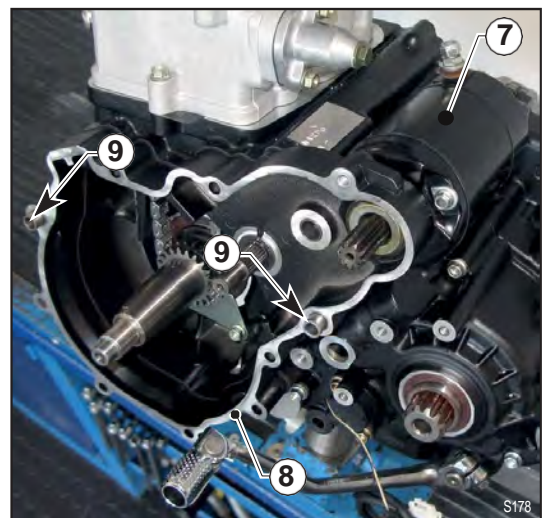
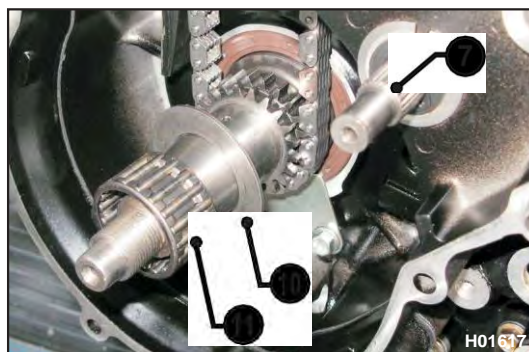
Make sure the two centring bushings (6) are in place.

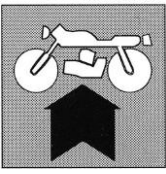


Fit the gasket to the crankcase, locate the starter motor (7) to its flange (8) and install on the crankcase.

Make sure the two locating bushings (9) are positioned correctly.

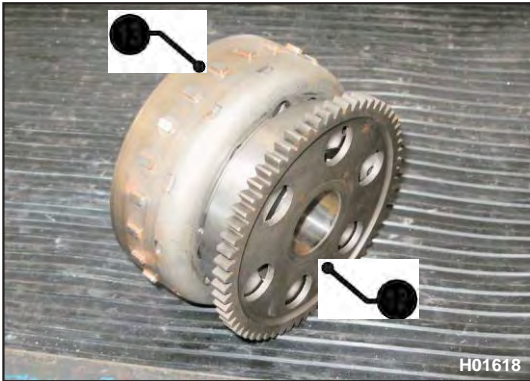
Fit washer (10) and roller cage (11) to the crankshaft.





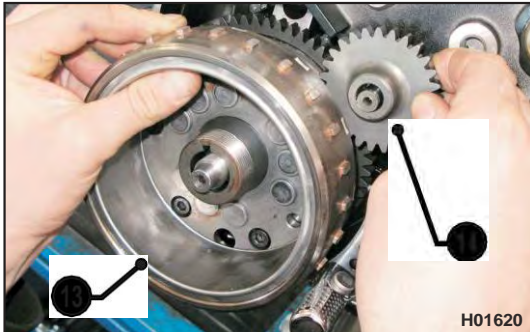
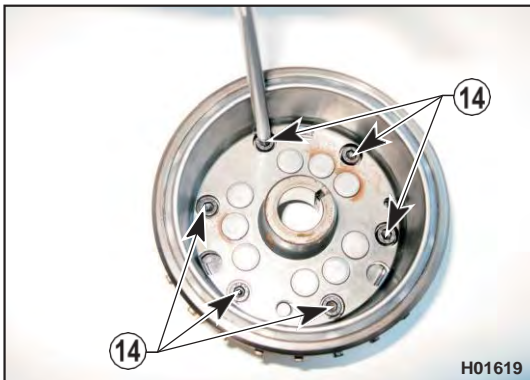
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Fit the Freewheel gear (12) to the Flywheel (13) and tighten the screws (14) (S mm Allen wrench - 0.19 in.) (see Section "X" For tightening torque Figures).

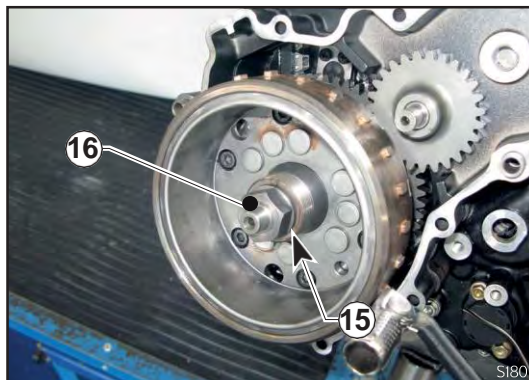
Degrease crankshaft taper end and Flywheel bore and smear crankshaft taper end with Loctite 270.



Install Flywheel (13) together with drive gear (14).



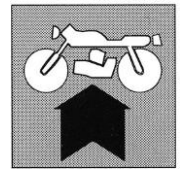
Fit washer (15) and nut (16) and tighten with a 24 mm (0.94 in.) wrench; 130 Nm; 13.0 Kgm; 95.89 Ft/lb Fitting a dummy gear to the crankshaft gears at the opposite end.



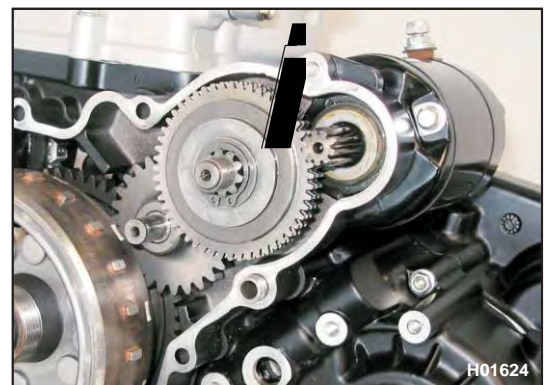


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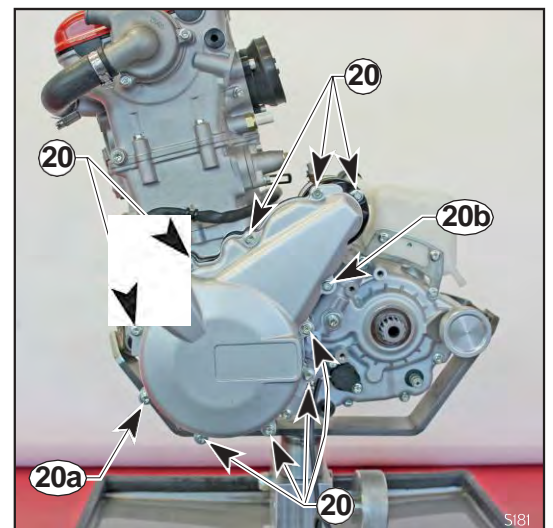


Fit bushing (17) and starter motor drive gear (18).

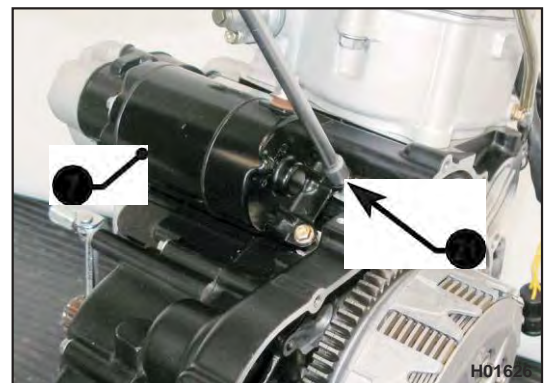


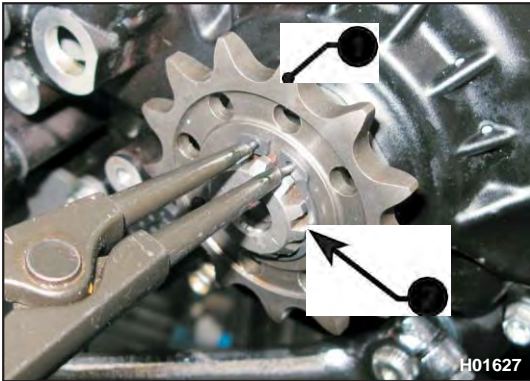
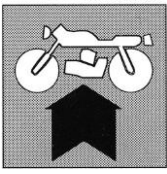
Install gasket and cover (19) and tighten the screws (20) in a cross pattern with an 8 mm (0.31 in.) wrench (see Section "X" For tightening torque Figures).

The two longer screws (20a) and (206) (L=65mm (2.559 in.)) must be refitted in their original positions.



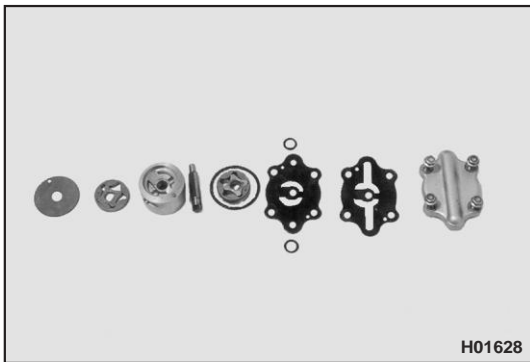
Secure starter motor (7) tightening screw (21). 8 mm (0.31 in.) wrench (see Section "X" For tightening torque Figures).





Sprocket installation

Fit the sprocket (1) and its circlip (2).



Oil pump and filter cartridge assembly

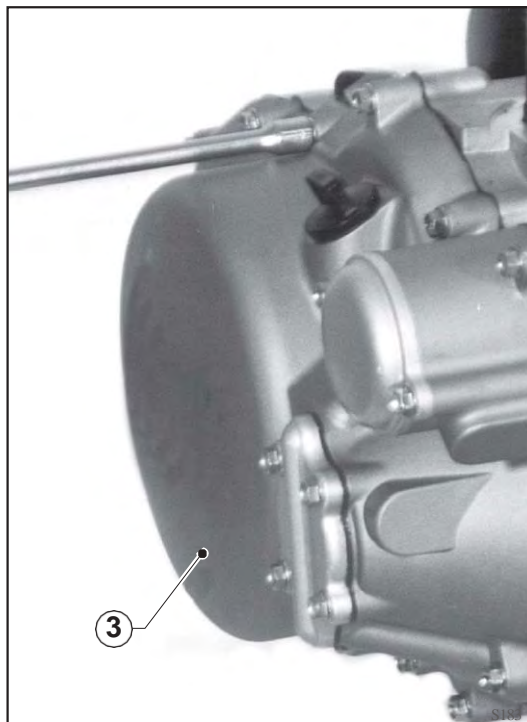
Assemble oil pump components in the order shown.



Secure the cover using the Four screws (1) (9 Nm-0.9 Kgm-6.5 ft/lb).

Refit the filtercartridge(2)and secure the cover using the two screws (9 Nm-0.9 Kgm-6.5 ft/lb).

Fit a new gasket and install the complete cover (3) using the thirteen retaining screws (9 Nm-0.9 Kgm-6.5 ft/lb).



Right crankcase assembly

Fit the mesh Filter (1) with the perforated end Facing outwards.

Fit the two locating bushings (2) into the crankcase.

Refit the gasket (3).

Refit the cover (4) making sure to mate pump shaft (S) with the slotted end (6) of the output shaft (gently rock the sprocket to Facilitate installation).

Tighten the screws (7) in a cross pattern with an 8 wrench (see Section "X" For tightening torque Figures).

Screws (7) are not all the same length; make sure to refit them in their original positions.

