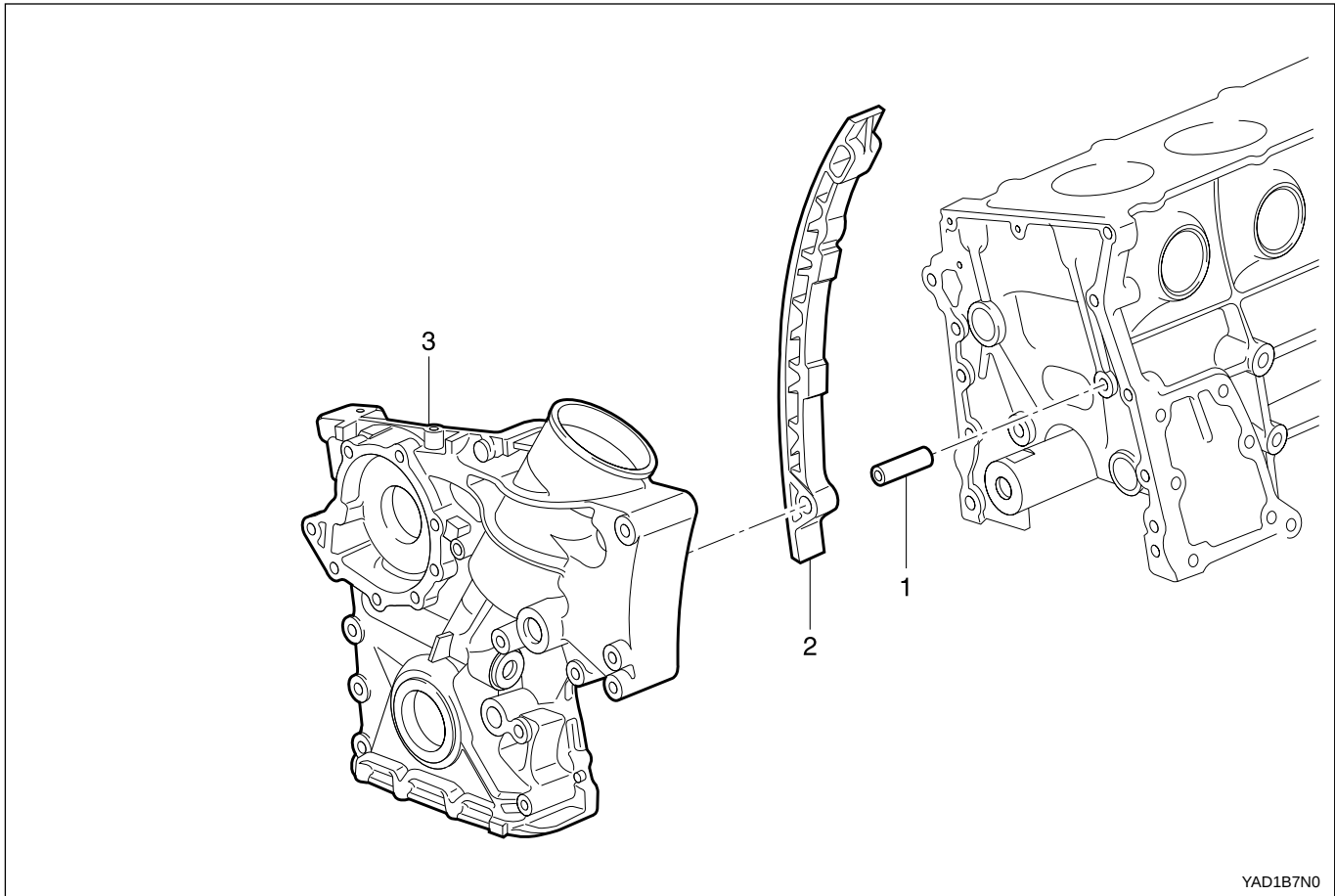


CRANKCASE GUIDE RAIL

Preceding Work: Removal of timing gear case cover



YAD1B7N0

- 1 Guide Rail Pin
- 2 Guide Rail

- 3 Timing Gear Case Cover

Removal & Installation Procedure

1. Remove the timing gear case cover (3).

Notice: Be careful not to damage the gasket when removing / installing the timing gear case cover.

2. Remove the guide rail (2) from the guide rail pin (1).

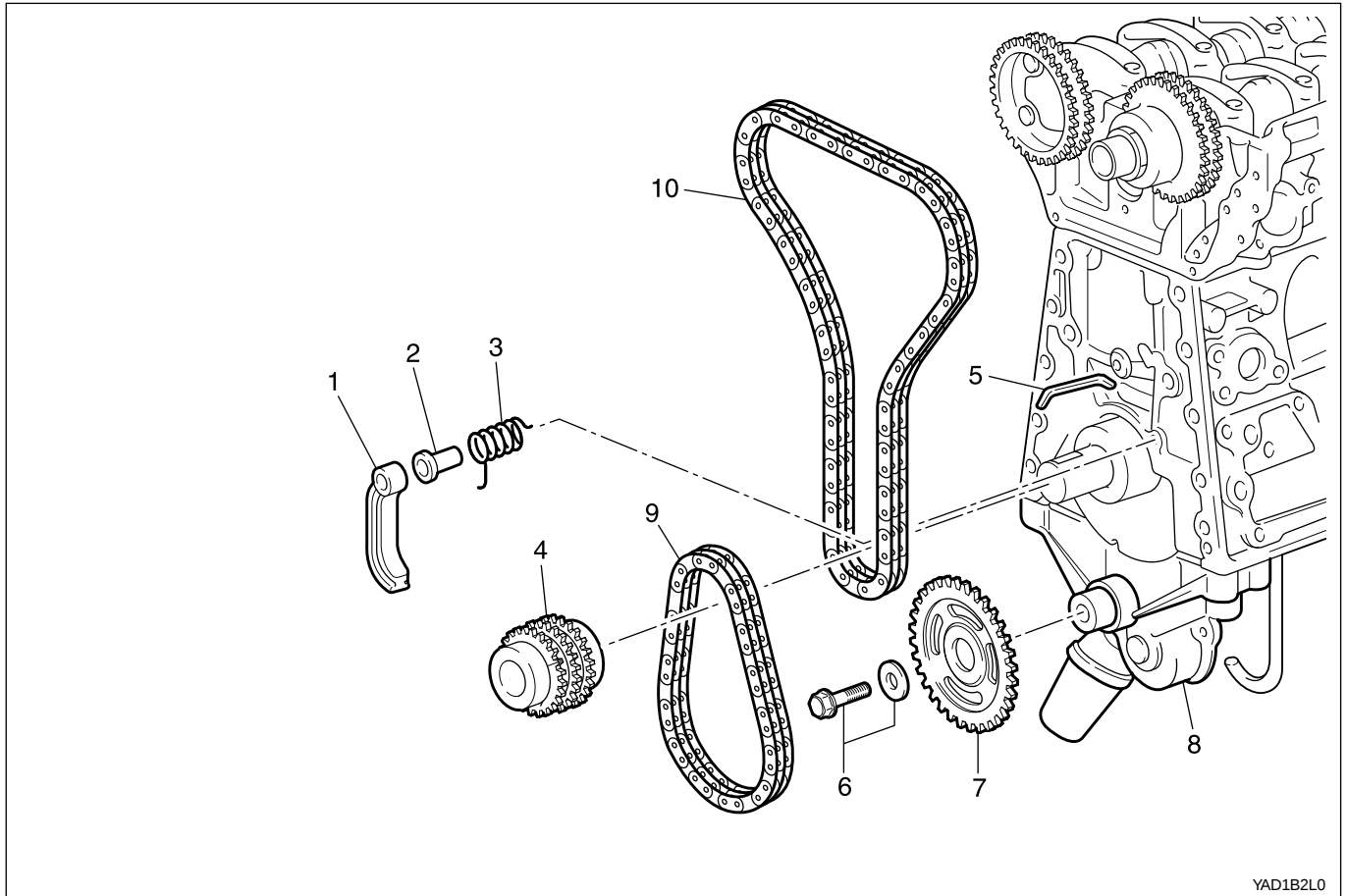
Notice:

- Replace the plastic guide (2) if damaged.
- Connect the plastic guide (2) and the guide rail (1) by aligning them accurately when installing.

3. Installation should follow the removal procedure in the reverse order.

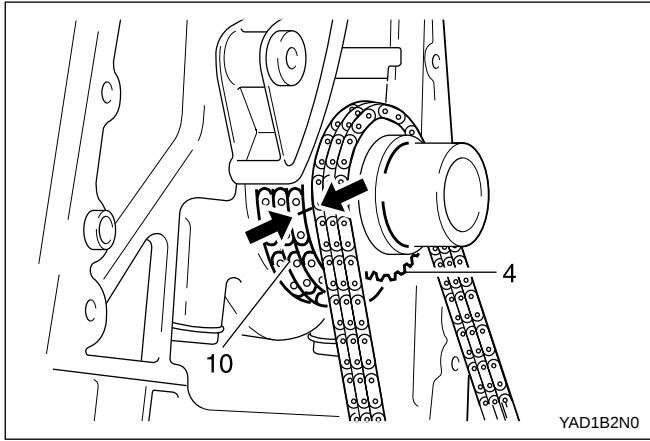
CRANKSHAFT SPROCKET

Preceding Work: Removal of oil pan
Removal of tensioning rail
Removal of crank case guide rail



YAD1B2L0

- | | |
|----------------------------|------------------------------------|
| 1 Oil Pump Chain Tensioner | 6 Bolt (M8 x 20, 1 piece) / Washer |
| 2 Oil Pump Chain Bushing | 29 - 35 N•m (21 - 26 lb-ft) |
| 3 Oil Pump Chain Spring | 7 Oil Pump Sprocket |
| 4 Crankshaft Sprocket | 8 Oil Pump |
| 5 Key | 9 Oil Pump Roller Chain |
| | 10 Timing Chain |



Tools Required

615 589 01 33 00 Crankshaft Sprocket Puller

Removal & Installation Procedure

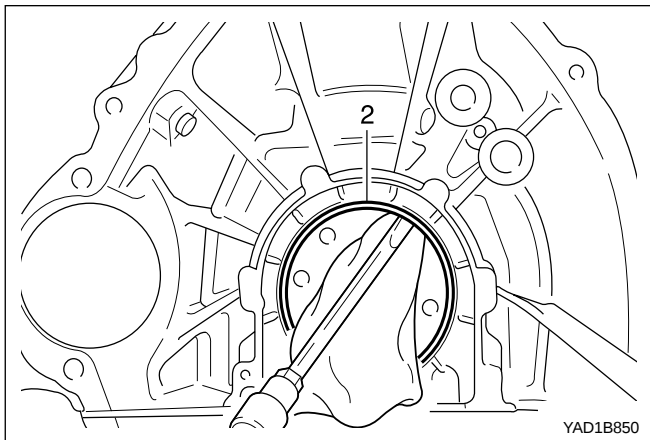
1. Put the assembly mark at the crankshaft sprocket (4) and the timing chain (10) with the paint (arrow).

Notice: Align the assembly marks on crankshaft sprocket and timing chain. Also, align the assembly marks on camshaft sprocket and timing chain when installing.

2. Unscrew the bolt (6) and remove the oil pump sprocket (7) from the oil pump.

Installation Notice

Tightening Torque	29 - 35 N•m (21 - 26 lb-ft)
-------------------	--------------------------------



3. Remove the oil pump roller chain (9).
4. Remove the oil pump chain tensioner (1), oil pump chain bushing (3), and the oil pump chain spring (2).
5. Remove the crankshaft sprocket (4) using crankshaft sprocketpuller 615 589 01 33 00.

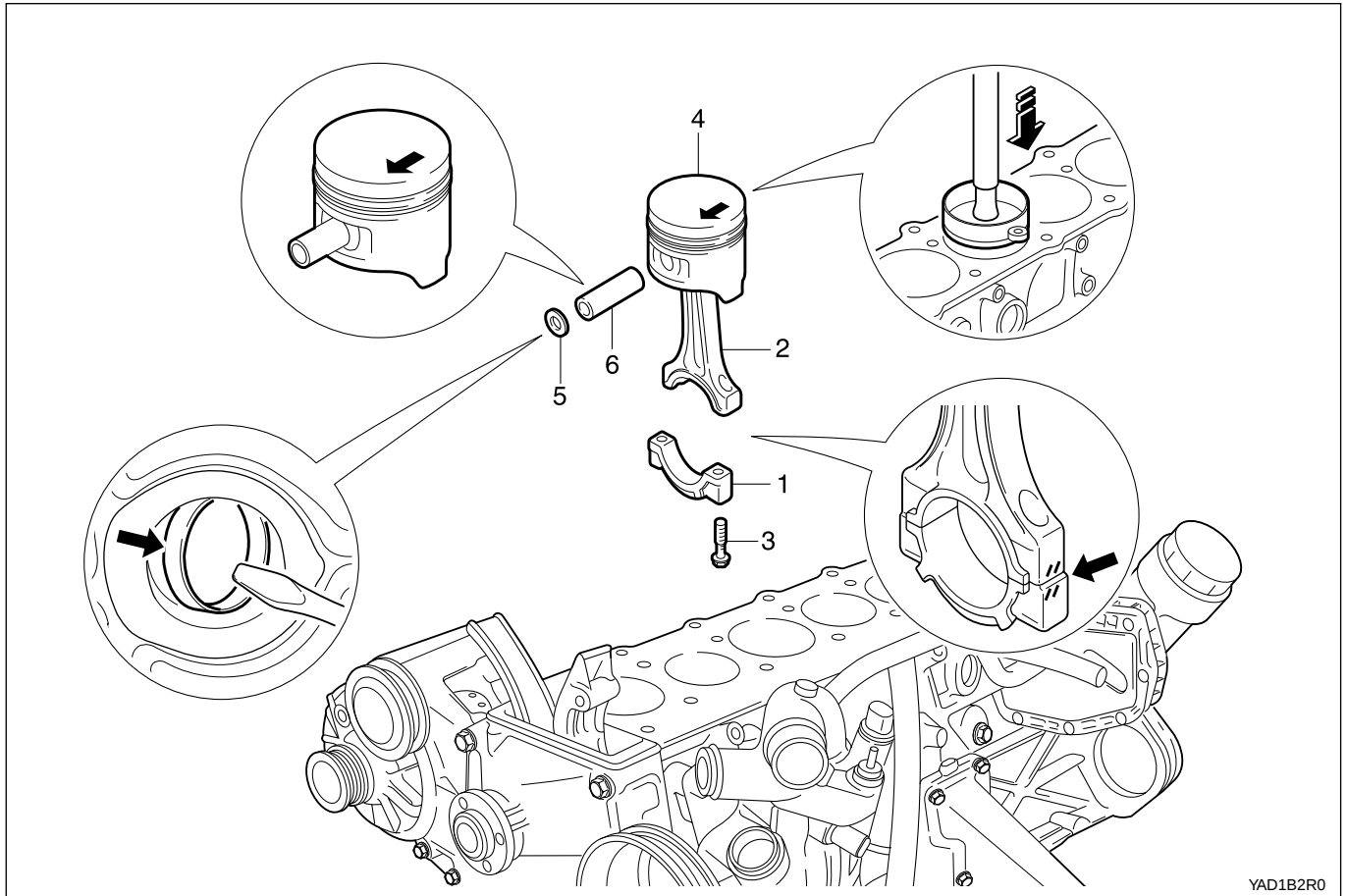
Notice:

- Make sure not to lose the crankshaft pulley key (5) when removing.
- Install the crankshaft sprocket (4) after warming it up.

6. Installation should follow the removal procedure in the reverse order.

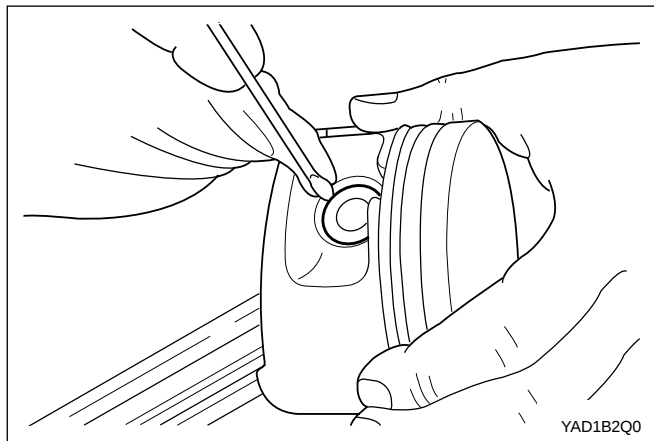
PISTON

Preceding Work: Removal of engine
Removal of cylinder head
Removal of oil pan
Removal of oil pump
Removal of baffle plate



YAD1B2R0

- | | |
|---|--------------|
| 1 Connecting Rod Bearing Cap | 4 Piston |
| 2 Connecting Rod | 5 Snap Ring |
| 3 Connecting Rod Bolt (M9 x 52, 8 pieces) | 6 Piston Pin |
| 1st step 40 N•m (30 lb-ft) | |
| 2nd step 90 ° | |



Removal Procedure

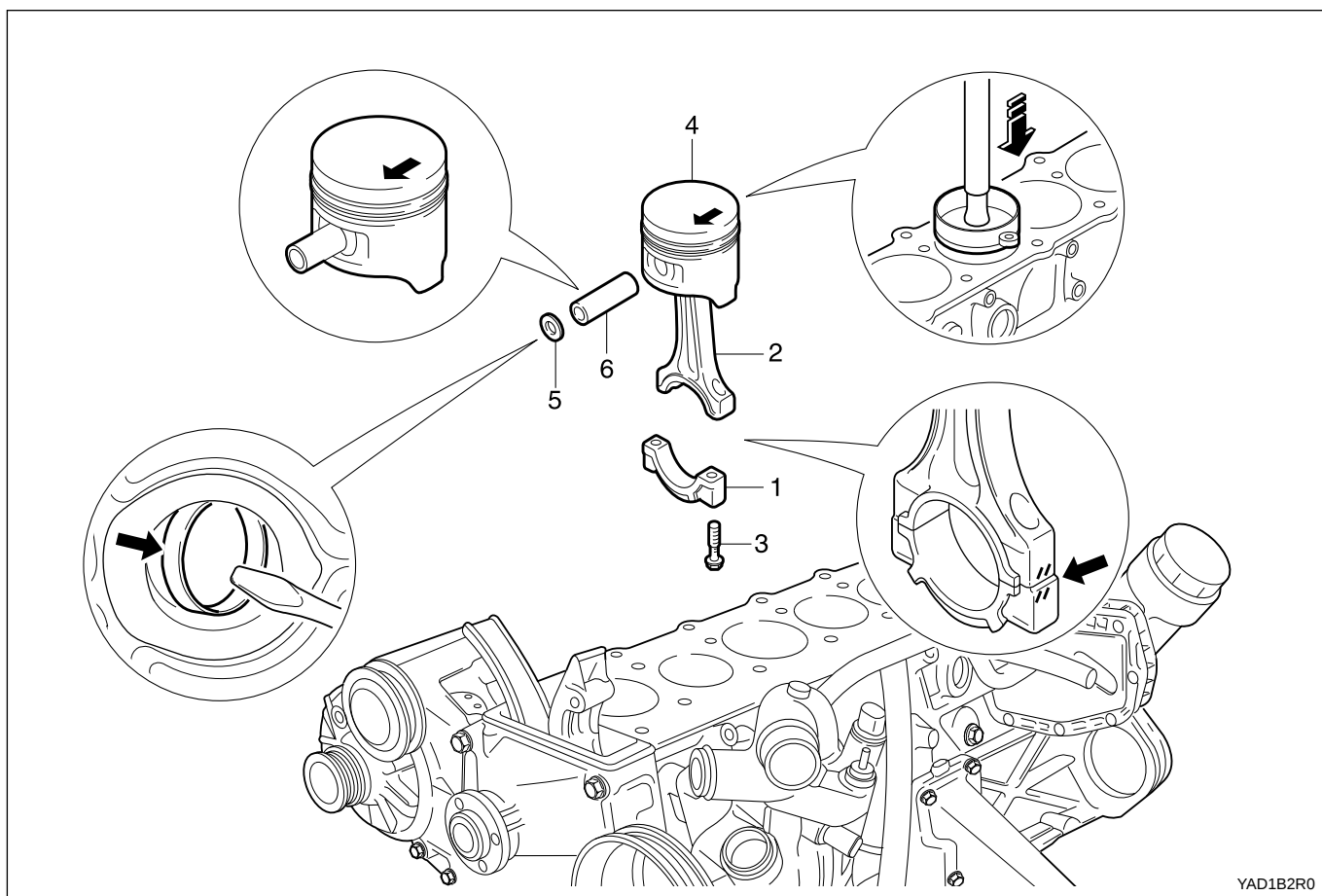
1. Unscrew the connecting rod bolt (3) and remove the cap.
2. Remove the connecting rod and the piston upward.

Notice: Make sure that the bearing cap and shell are not changed each other.

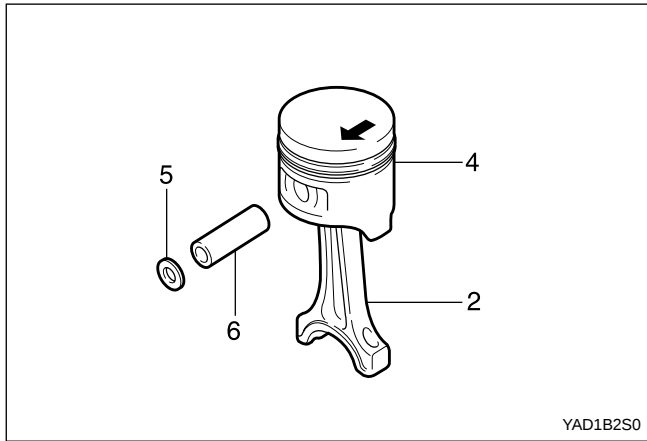
3. Remove the snap ring (5) and pull out the piston pin (6).

Notice: Remove the snap ring using a clean cloth as shown in the right picture so that the piston, piston ring, and the snap ring don't get damaged.

Installation Procedure



YAD1B2R0



1. Check the piston ring gap and apply the engine oil to the piston pin and the connecting rod bushing.
2. Connect the piston and the connecting rod by pressing in the piston pin (6) and install the snap ring to the groove.
3. Clean the cylinder bore, connecting rod bearing journal, connecting rod bearing shell and the piston and coat them with engine oil.
4. Install the piston ring.
5. Install the piston so that the arrow on the piston head faces to the forward of the vehicle.
6. After aligning the connecting rod and the bearing cap mark (// or a number), tighten the bolts.

Installation Notice

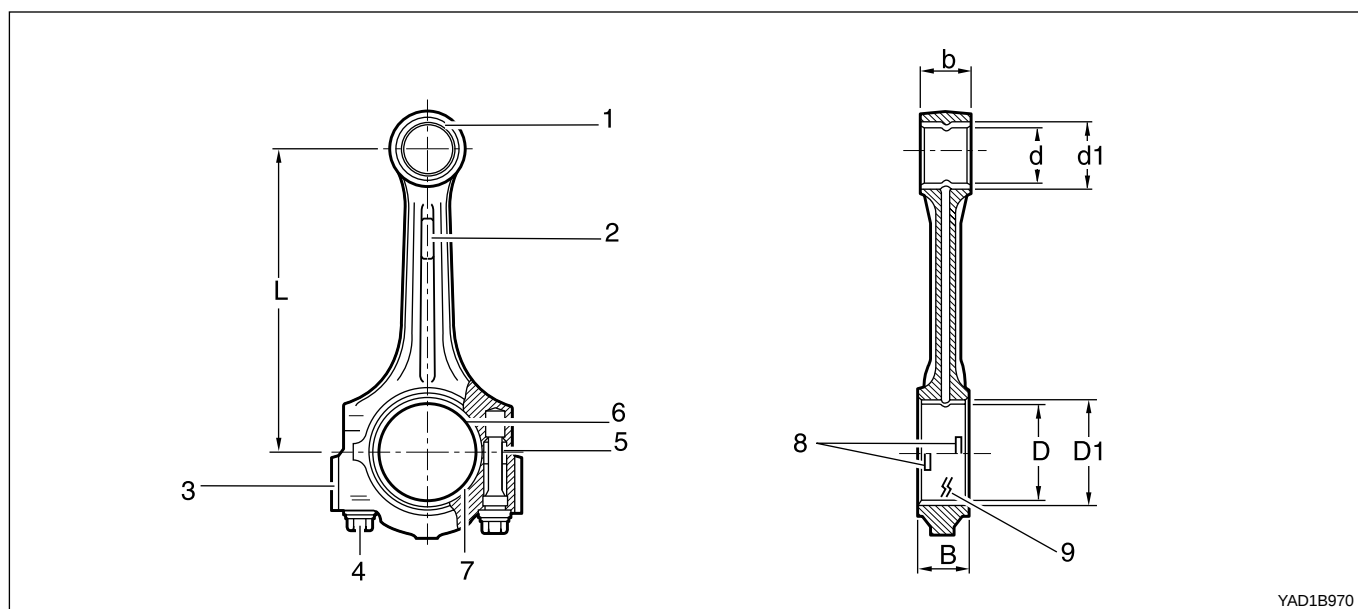
Tightening Torque	1st step : 40 N•m (30 lb-ft)
	2nd step : 90 °

Apply the engine oil to the bearing cap upper and lower bearing shells.

7. Check if the crankshaft rotates without any trouble by rotating it.

CONNECTING ROD

Preceding Work: Removal of piston

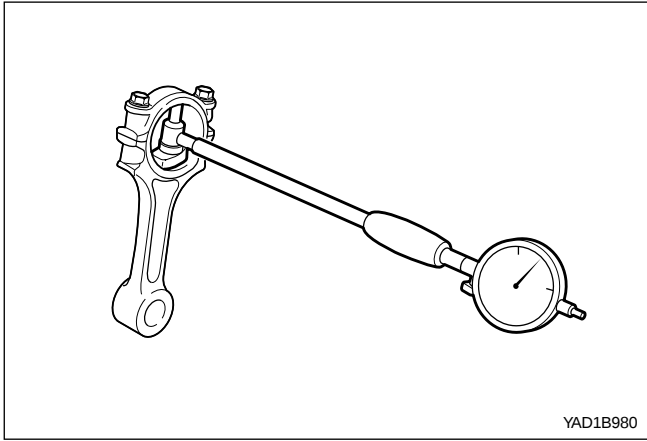


YAD1B970

- | | |
|--|--|
| 1 Connecting Rod Bushing | 5 Fit Sleeve |
| 2 Oil Gallery | 6 Upper Connecting Rod Bearing |
| 3 Balance Weight | 7 Lower Connecting Rod Bearing |
| 4 Connecting Rod Bearing Cap Bolt
(M9 x 52, 8 pieces) | 8 Bearing Shell Lug |
| 1st step 40 N•m (30 lb-ft) | 9 Marking [Indication (//) or Numbers] |
| 2nd step 90 ° | |

Service Data Standard

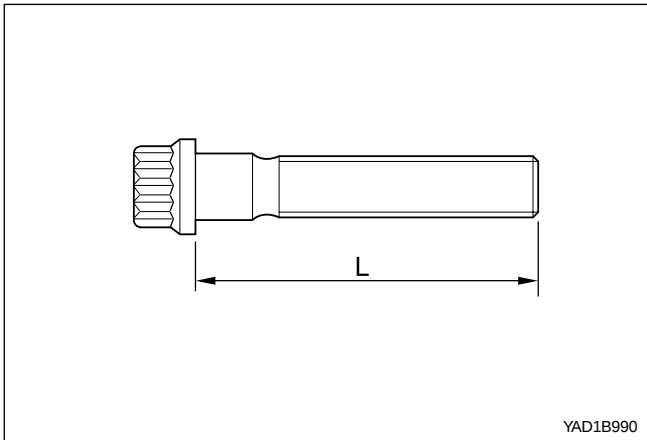
Distance (L) from The Connecting Rod Bearing to Bushing Bore Center	149 ±0.05 mm
Width of The Connecting Rod (B) at Bearing Bore	21.940 - 22.000 mm
Width of The Connecting Rod (b) at Bushing Bore	21.940 - 22.000 mm
Basic Bore at The Bearing Shell (D1)	51.600 - 51.614 mm
Basic Bore at The Bushing (d1)	24.500 - 24.521 mm
Bushing Inner Diameter (d)	22.007 - 22.013 mm
Clearance Between The Piston Pin and The Bushing	0.007 - 0.018 mm
Peak-to-valley Height of Connecting Rod Bushing on Inside	0.005 mm
Permissible Wwist of Connecting Rod Bearing Bore to Connecting Rod Bushing Bore	0.1/100 mm
Permissible Deviation of Axial Paralleism of Connecting Rod Bearing Bore to Connecting Rod Bushing Bore	0.045/100 mm
Permissible Deviation of Axial Paralleism of Connecting Rod Bearing Bore from Concentricity	0.01 mm
Permissible Difference of Each Connecting Rod in Weight	0.4 g



Inspection

1. Measure the basic bore of the connecting rod bearing.

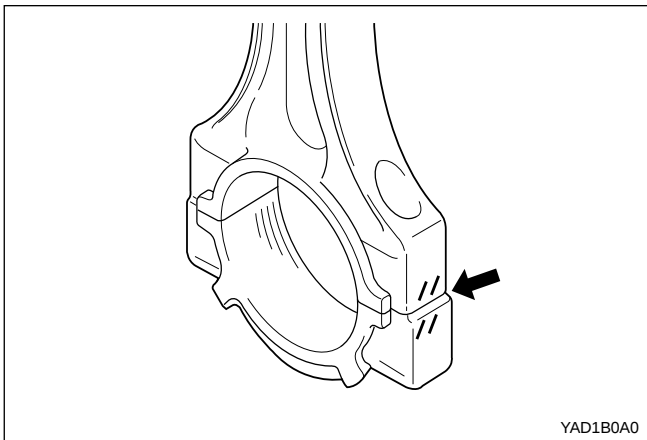
Notice: If the basic bore exceeds the value of 51.614 mm, replace the bearing or check the connecting rod.



2. Check connecting rod bolts.

Length When New (L)	51.7 - 52 mm
Max. Length (L)	52.9 mm
Tightening Torque	1st step : 40 N•m (30 lb-ft)
	2nd step : 90°

Notice: If the length exceeds max. length, replace it.



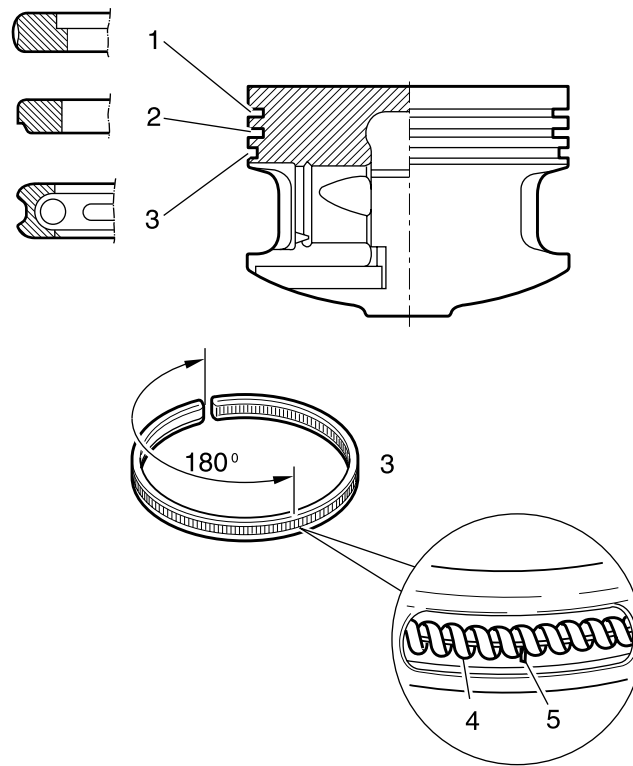
3. Check the assembly mark (indication//or number:arrow) of the connecting rods and the bearing cap when installing.

Notice:

- Make sure it doesn't exceed over 4g with other connecting rods when replacing the connecting rods.
- Check if the connecting rod and the bearing cap are accurately seated on the groove when replacing the bearing.

PISTON RING

Preceding Work: Removal of piston



YAD1B2T0

- 1 Piston Compression Ring (Top Ring)
- 2 Piston Compression Ring (2nd Ring)
- 3 Piston Oil Ring

- 4 -
- 5 Spacer
- 6 SideRail

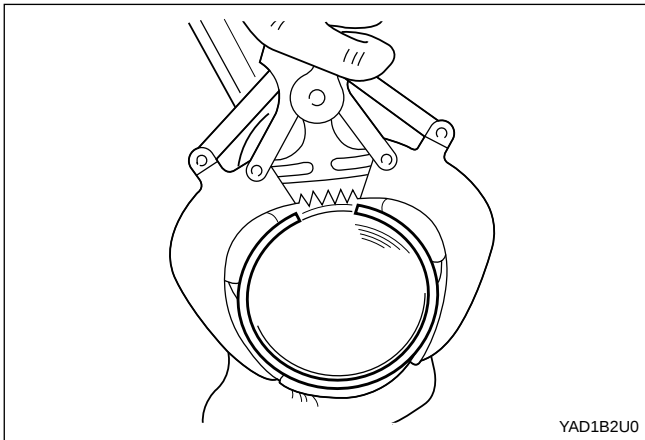
Replacement Procedure

1. Measure the piston ring's gap.

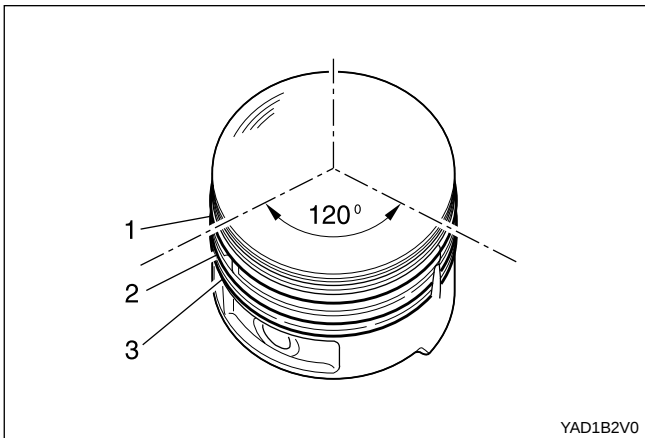
End Gap of the Piston Ring	Groove 1 0.20 - 0.40 mm
	Groove 2 0.20 - 0.40 mm
	Groove 3 0.20 - 0.45 mm
Gap Between the Piston and the Piston Ring	Groove 1 0.028 - 0.060 mm
	Groove 2 0.010 - 0.045 mm
	Groove 3 0.010 - 0.045 mm

Notice: If out of specification, replace the piston ring.

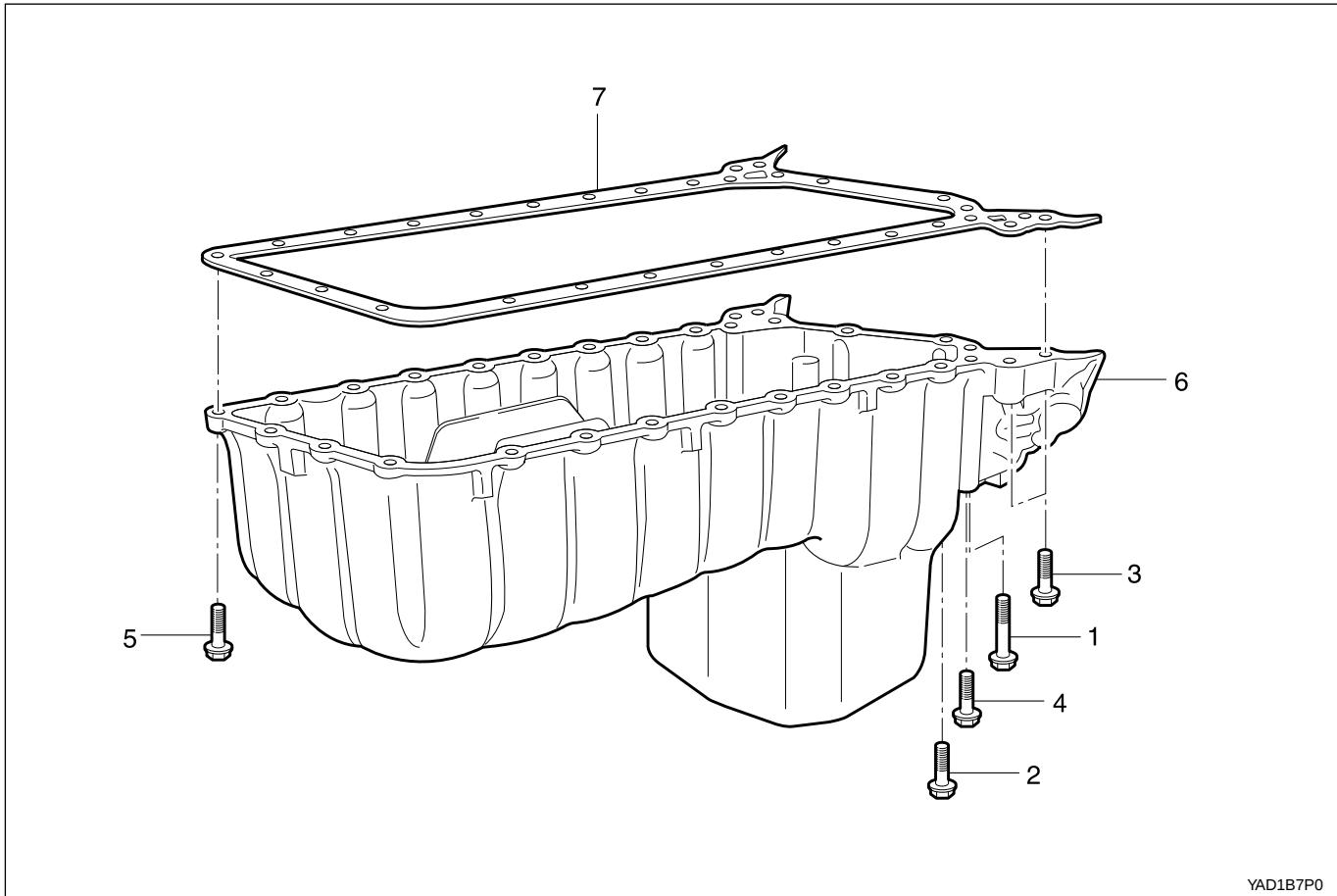
2. Remove the piston ring with a pliers.



3. For installation, position the piston ring to be the 'TOP' mark on the piston ring upward and arrange the piston ring ends to be 120 ° part.
4. Adjust the hook spring joint in the oil ring 180 ° way from the ring end.



OIL PAN



YAD1B7P0

- 1 Bolt
- 2 Bolt
- 3 Bolt
- 4 Bolt

- 5 Bolt
- 6 OilPan
- 7 Gasket

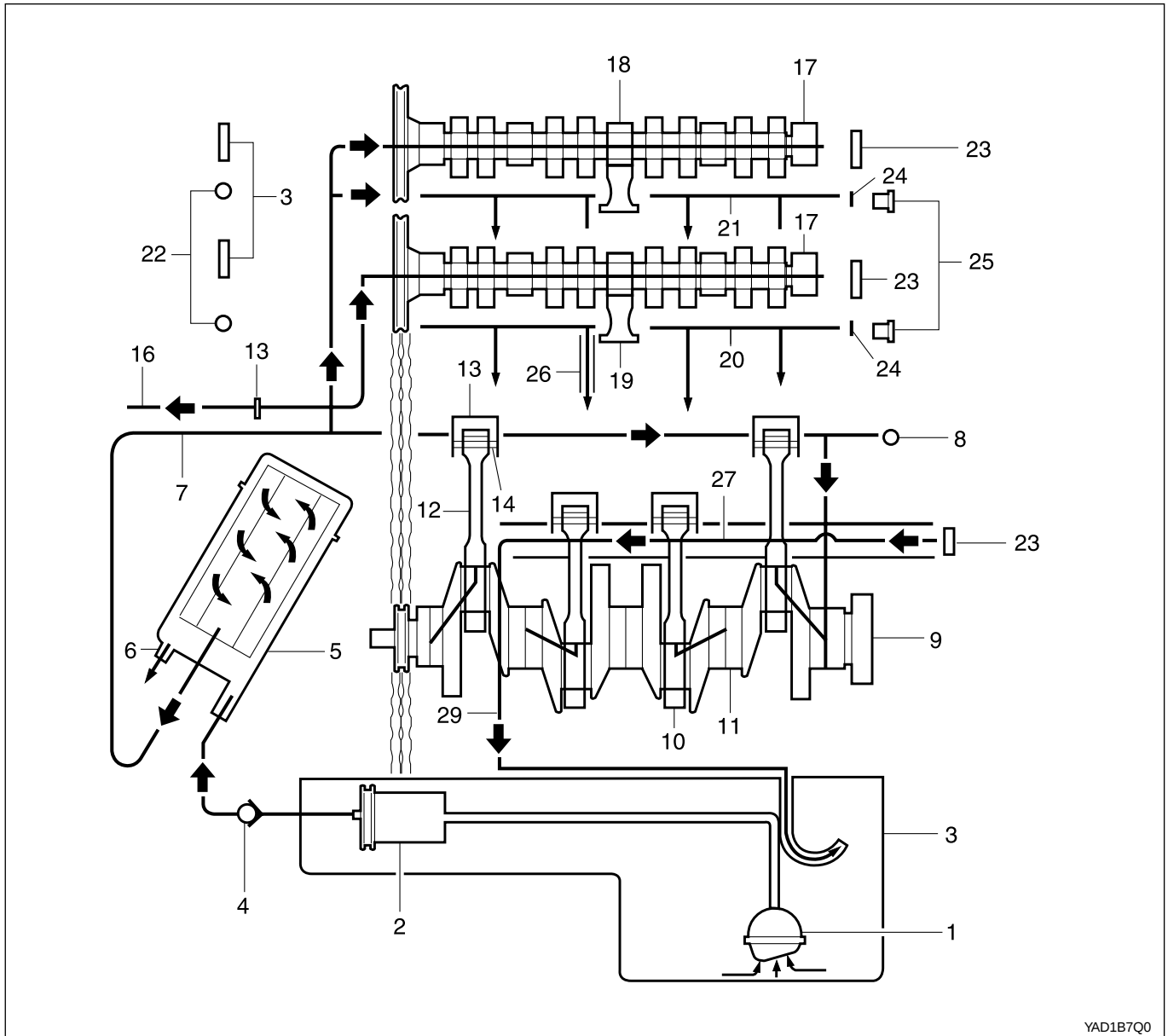
Removal & Installation Procedure

1. Remove the drain plug and drain the oil completely.
2. Unscrew the bolts and remove the oil pan and gasket.

Notice: Arrange the bolts according to each size.

3. Clean the inside of oil pan and sealing surface, then apply the sealant.
4. Replace the gasket with new one.
5. Install the oil pan with gasket, and tighten each bolt in specified torque.
6. Check for oil leaks while running the engine.

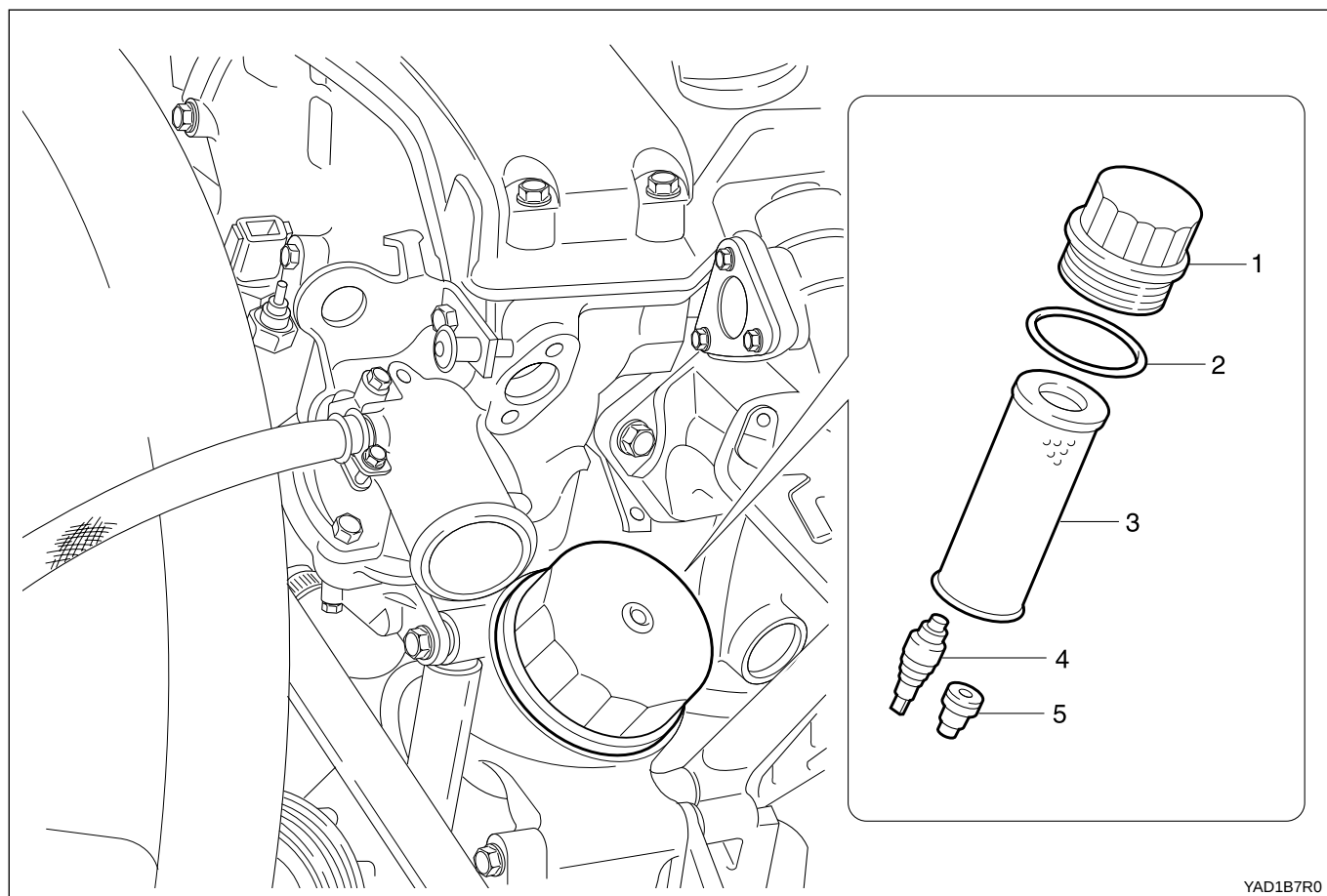
Oil Circulation



YAD1B7Q0

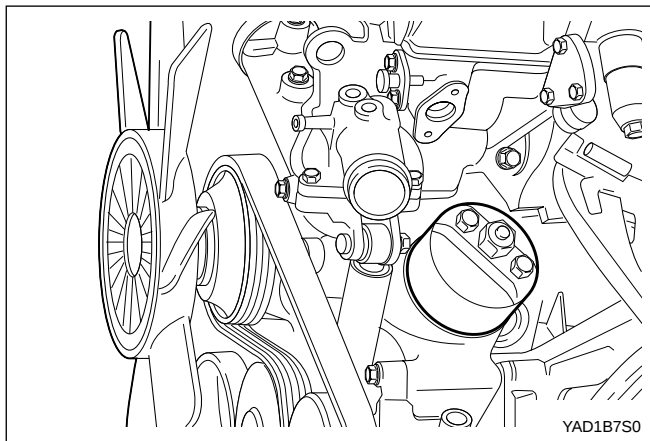
- | | |
|----------------------------------|---|
| 1 Oil Strainer | 16 Oil Supply (To Chain Tensioner) |
| 2 Oil Pump | 17 Camshaft |
| 3 Oil Pan | 18 Cam Bearing |
| 4 Oil Non-Return Valve | 19 Valve |
| 5 Oil Filter | 20 Oil Gallery (Supply Oil to Intake Tappet) |
| 6 Oil Filter Bypass Valve | 21 Oil Gallery (Supply Oil to Exhaust Tappet) |
| 7 Main Oil Gallery | 22 Ball (ϕ 8 mm) |
| 8 Closing Ball (ϕ 15 mm) | 23 Camshaft Plug |
| 9 Crankshaft | 24 Seal |
| 10 Connecting Rod Bearing | 25 Screw Plug |
| 11 Crankshaft Bearing | 26 Oil Return Gallery (Cylinder Head and Crankcase) |
| 12 Connecting Rod | 27 Oil Return Gallery (Crankcase) |
| 13 Piston | 28 End Cover (ϕ 20 mm) |
| 14 Oil Spray (Piston Crown Area) | 29 Oil Return Pipe |
| 15 Non-Return Valve (Crankcase) | |

ENGINE OIL AND OIL FILTER ELEMENT



- 1 Oil Filter Cover 25 N•m (18 lb-ft)
- 2 O-Ring Replace
- 3 Oil Filter Element

- 4 Oil Drain Plug
- 5 Oil Filter Bypass Valve



Tools Required

103 589 02 09 00 Oil Filter Remover

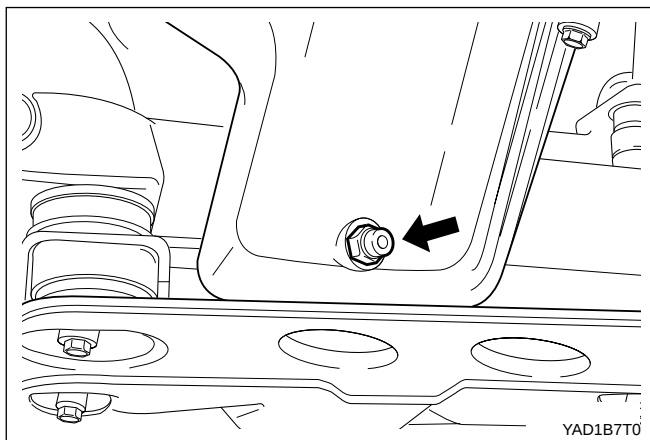
Replacement Procedure

1. Install the oil filter remover 103 589 02 09 00 on the oil filter cover.

Notice: Make the screw cover removable by tightening the bolt at the side of the oil filter remover 103 589 02 09 00.

2. Install the wrench to the upper bolt in the oil filter remover 103 589 02 09 00 and remove the oil cover by turning it.
3. Remove the oil filter element.

Notice: Work with a cloth under the vehicle when removing the oil filter element to not drain the oil.



4. Remove the drain plug and drain the engine oil.

Notice: Leave the oil filler cap open to ease the engine oil discharge.

5. Tighten the engine oil drain plug after cleaning it.

Installation Notice

Tightening Torque	25 N•m (18 lb-ft)
-------------------	-------------------

Replace the seal washer with new one.

6. Replace the O-ring in the oil filter cover with new one.

Notice: Apply the engine oil to the O-ring.

7. Insert new oil filter element into the oil filter housing.
8. Temporarily tighten the oil filter cover. Install the Oil filter remover 103 589 02 09 00, and then completely tighten it.

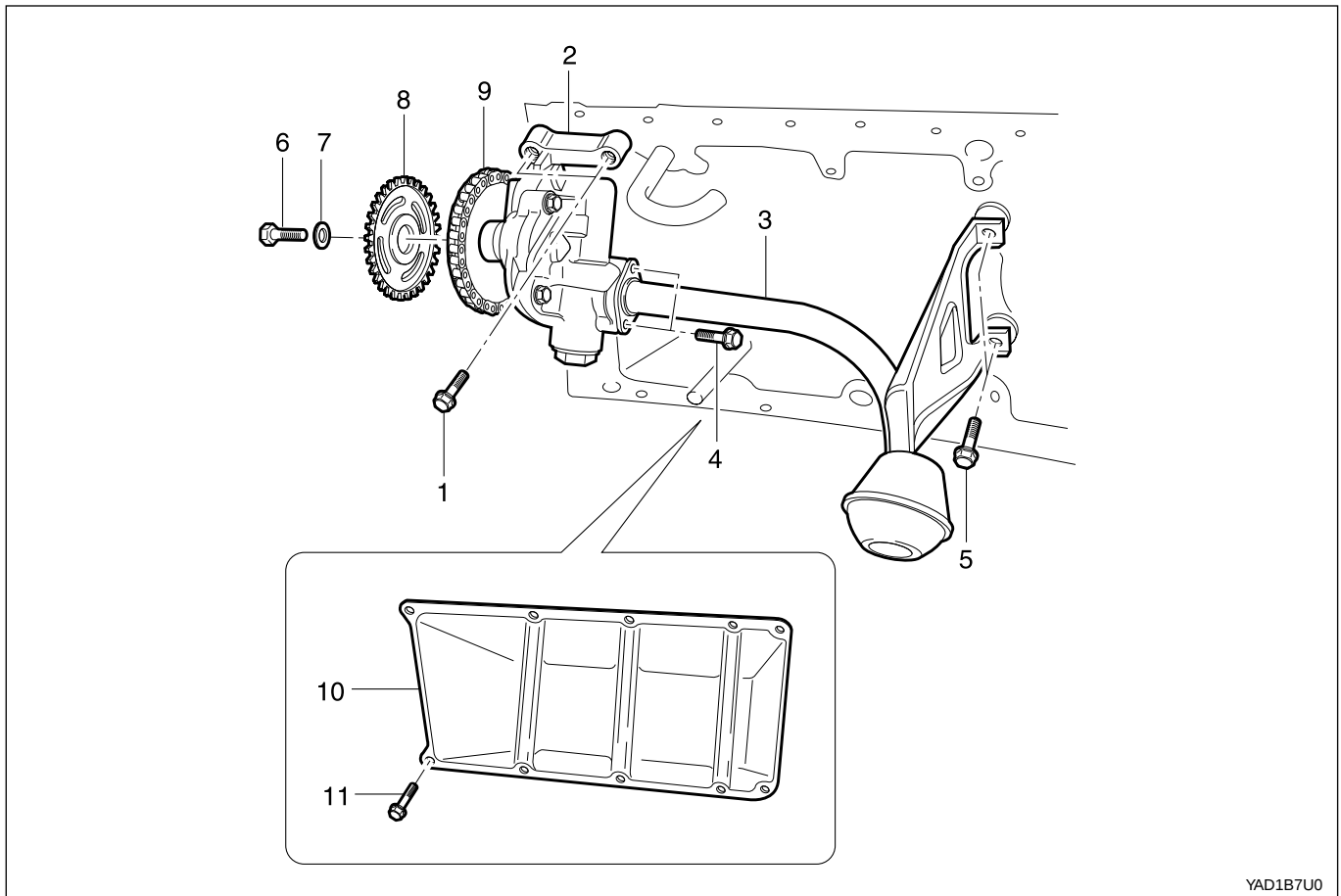
Installation Notice

Tightening Torque	25 N•m (18 lb-ft)
-------------------	-------------------

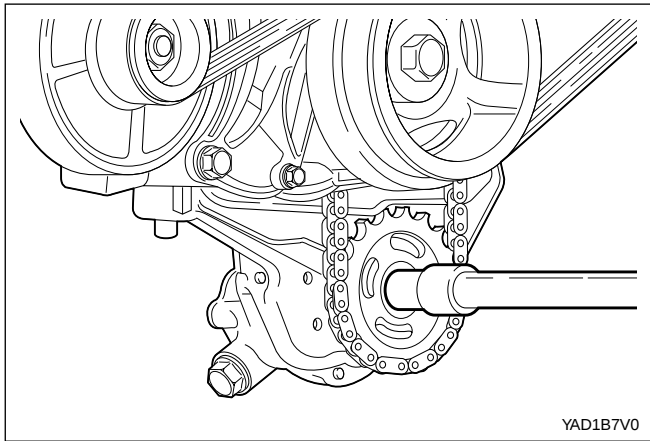
9. Fill up engine oil through the engine oil filler opening (3).
10. Check for oil leaks at normal engine temperature after starting the engine.
11. Stop the engine and wait 5 minutes.
Check the oil level and fill up as specified if necessary.

OIL PUMP

Preceding Work: Removal of oil pan



- | | |
|---|--|
| 1 Bolt (M8 X 35, 3 piece) | 6 Bolt (M8 X 20, 1 pieces) |
| 22.5 - 27.5 N•m (16.6 - 20.3 lb-ft) | 29 - 35 N•m (21 - 26 lb-ft) |
| 2 OilPump | 7 Washer |
| 3 Oil Strainer Assembly | 8 Sprocket (Oil Pump Drive) |
| 4 Bolt (M6 X 20, 2 pieces) | 9 Chain (Oil Pump Drive) |
| 9 - 11 N•m (80 - 97 lb-in) | 10 Plate-Baffle |
| (In E23 Engine, These Bolts are Combined with Baffle Plate) | 11 Bolt (M6 X 12, 6 pieces) |
| 5 Bolt (M6 X 12, 2 pieces) | 9 - 11 N•m (80 - 97 lb-in) |
| 9 - 11 N•m (80 - 97 lb-in) | (E23 Engine Only : Baffle Plate Mounting Bolt) |



Removal & Installation Procedure

1. Unscrew the bolt (6) from the oil pump drive sprocket and separate the oil pump drive chain.

Installation Notice

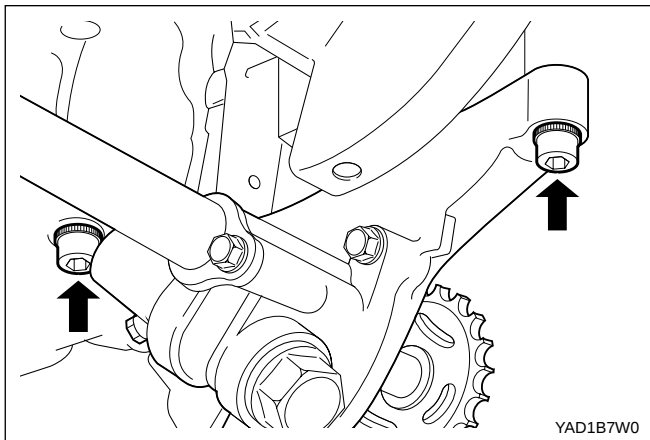
Tightening Torque	25 - 39 N•m (21 - 26 lb-ft)
-------------------	--------------------------------

2. Unscrew the bolts (4,5) and remove the oil strainer assembly (3).

Installation Notice

Tightening Torque	Bolt (4): 9 - 11 N•m (80 - 97 lb-ft)
	Bolt (5): 9 - 11 N•m (80 - 97 lb-ft)

Insert the steel gasket into the oil pump and bolt (4) mounting surface.



3. Unscrew the six bolts (11) and remove the baffle plate.

Installation Notice

Tightening Torque	70 N•m (52 lb-ft)
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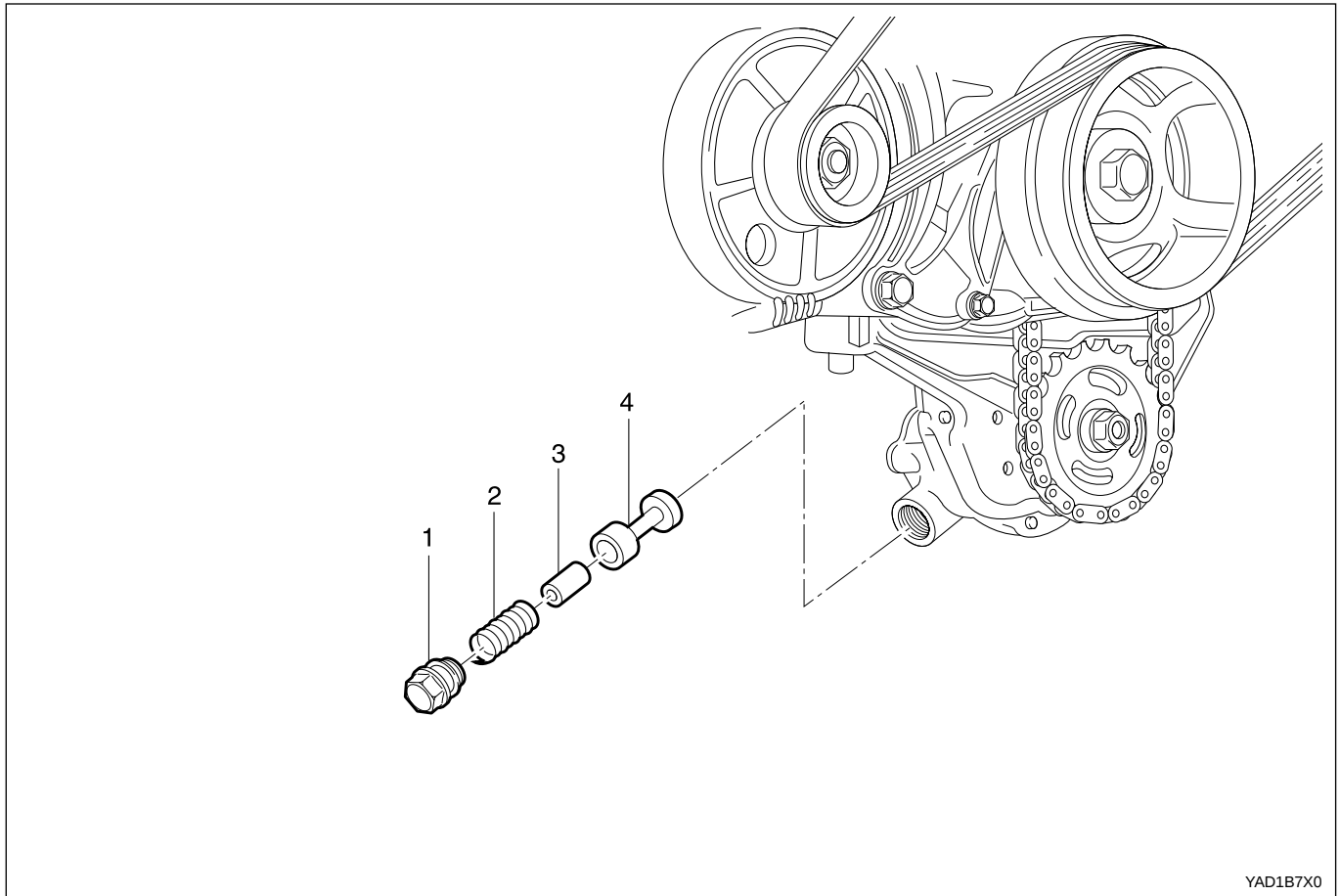
4. Unscrew the three bolt (1) and remove the oil pump.

Installation Notice

Tightening Torque	22.5 - 27.5 N•m (16.6 - 20.3 lb-ft)
-------------------	--

OIL PRESSURE RELIEF VALVE

Preceding Work: Removal of oil pan



YAD1B7X0

- | | |
|--------------------------------------|-------------|
| 1 Screw Plug 50 N•m (37 lb-ft) | 3 Guide Pin |
| 2 Compression Spring | 4 Piston |

Removal & Installation Procedure

1. Remove the screw plug (1).

Installation Notice

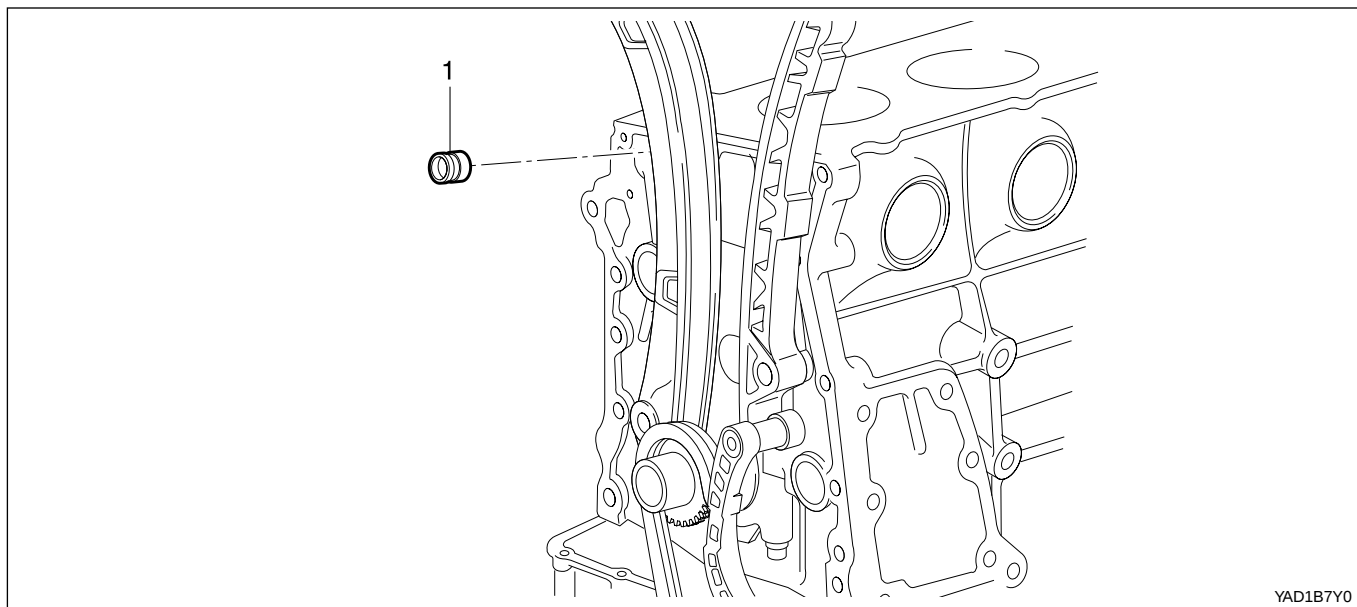
Tightening Torque	50 N•m (37 lb-ft)
-------------------	-------------------

2. Remove the spring (2), guide pin (3) and the piston (4).
3. Installation should follow the removal procedure in the reverse order.

Notice: Don't use the seal for the screw plug.

OIL NON-RETURN VALVE

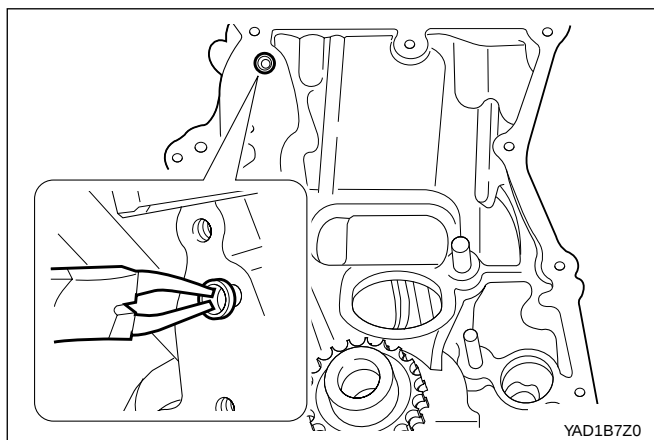
Preceding Work: Removal of timing gear case cover



1 Oil Non-return Valve

Functions

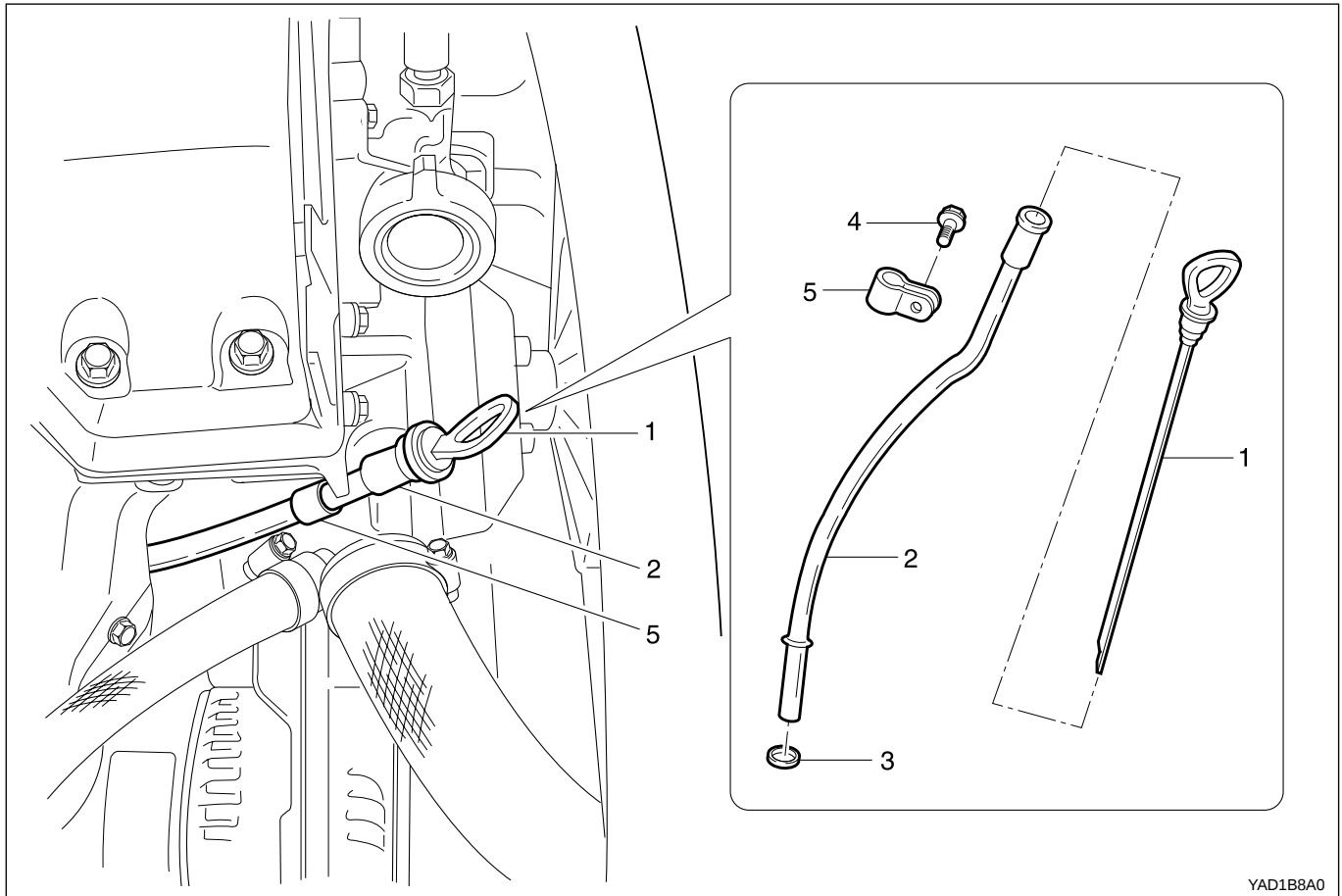
The non-return valve prevents the oil in the chain tensioner from drying up. In other words, it stops oil-returning in order to prevent the oil in the chain tensioner from getting dry. As a result, the chain tensioner can be activated with oil in itself.



Replacement Procedure

1. Remove the non-return valve using a pliers.
2. Insert new non-return valve with hand.

OIL DIPSTICK GUIDE TUBE



YAD1B8A0

- 1 Oil Dipstick Level Gauge
- 2 Oil Dipstick Guide Tube
- 3 O-Ring

- 4 Bolt (M6 X 16, 1 piece)
..... 9 - 11 N•m (80 - 97 lb-in)
- 5 Clamp

Removal & Installation Procedure

1. Pull out the oil dipstick level gauge (1).
2. Unscrew the bolt (4) and remove the oil dipstick guide tube (2).

Installation Notice

Tightening Torque	9 - 11 N•m (80 - 97 lb-ft)
-------------------	-------------------------------

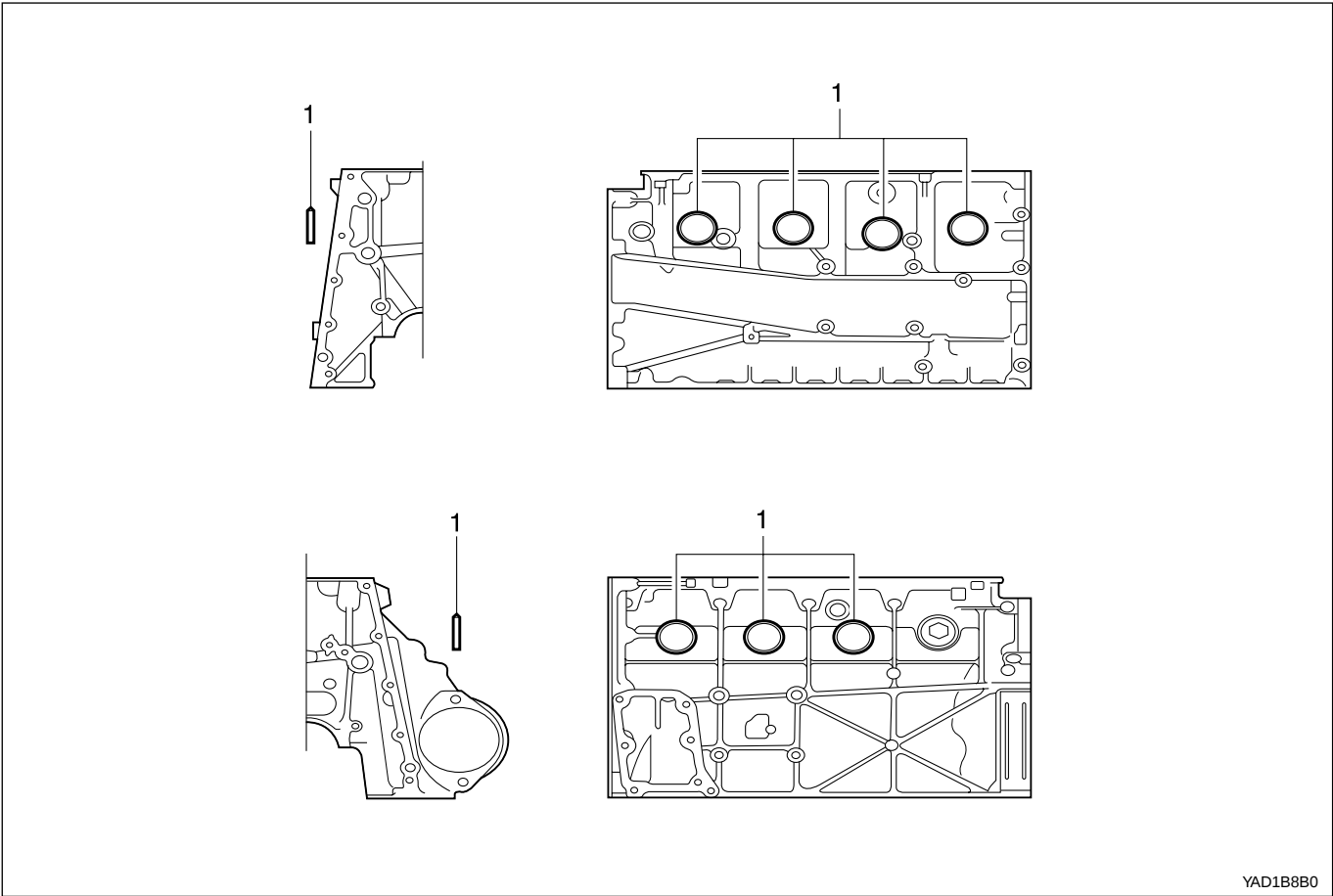
It is very hard to remove the oil dipstick guide tube without special tool. If it is not necessary, do not remove the guide tube.

3. Installation should follow the removal procedure in the reverse order.
4. Check for leaks by starting the engine.

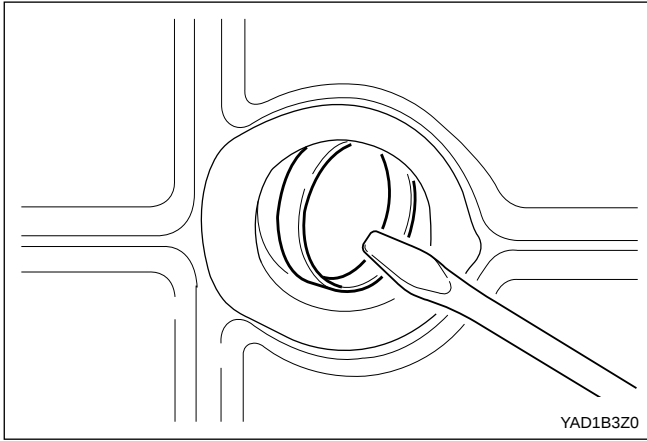
UNIT REPAIR

CORE PLUGS IN CRANKCASE

Preceding Work: Draining of the coolant



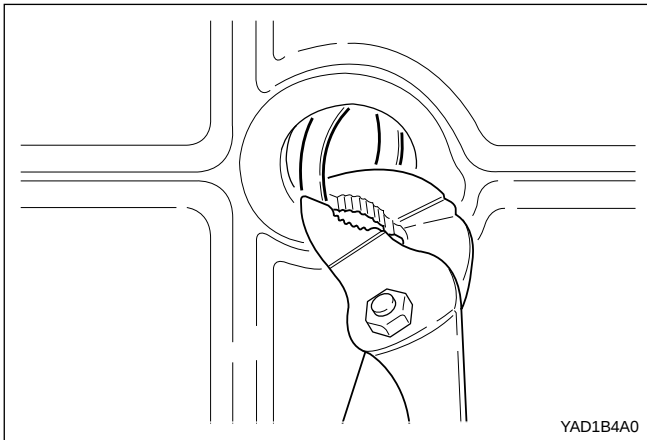
1 Core Plug Replace

**Tools Required**

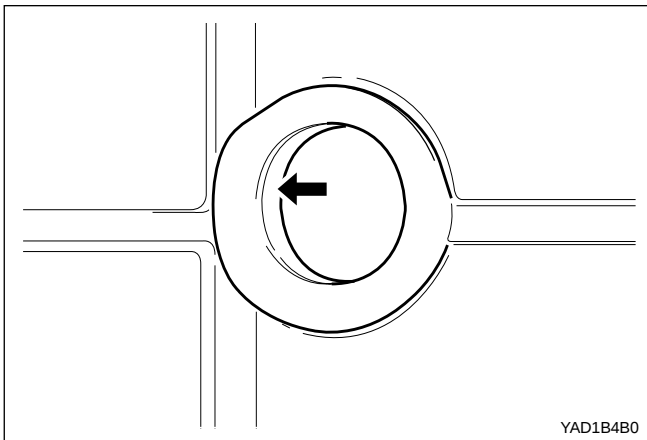
102 589 00 15 00 Drift

Replacement Procedure

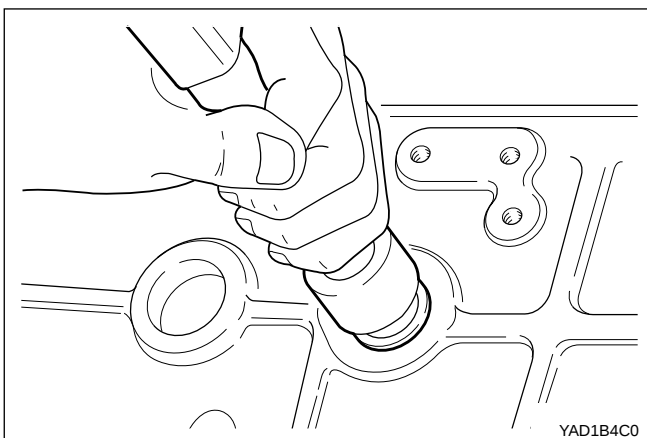
1. Remove the intake and exhaust manifolds.
2. Pull back the core plug until the end of one side comes out using the screw driver.



3. Pull out the plug carefully using a pliers.



4. Clean the sealing surface and apply Loctite 241.

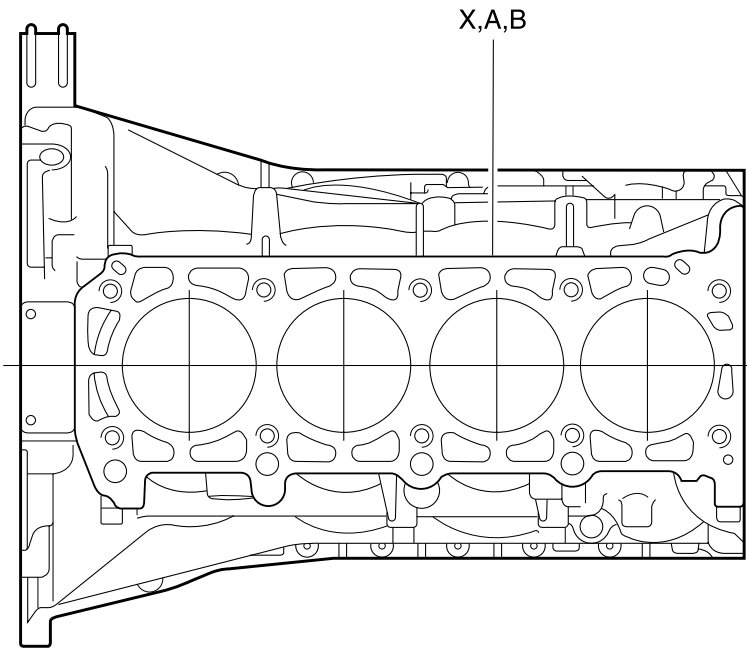


5. Press in new plug using a drift.

Notice: Wait for about 45 minutes before filling the coolant so that the Loctite 241 hardens.

6. Warm up the engine and check the coolant for leaks.

CYLINDER BORE



YAD1B8C0

Group Code Letter and Cylinder Bore Size

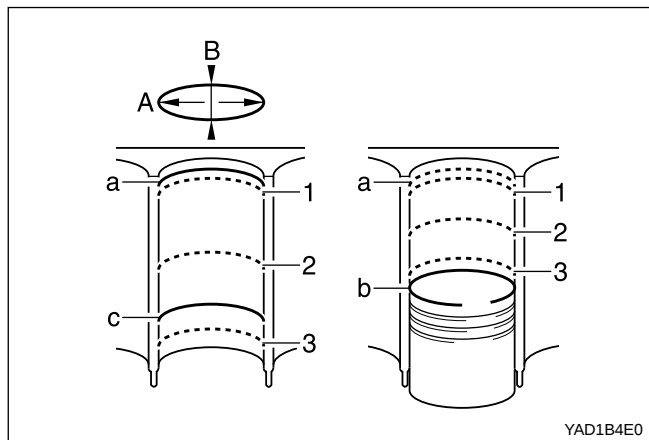
Engine	Group Code Letter of Cylinder	Piston Type to be Used	Cylinder Bore Size (mm)
E23	A	A or X	ϕ 90.906 - ϕ 90.912
	X	A, X or B	ϕ 90.906 - ϕ 90.912
	B	X or B	ϕ 90.912 - ϕ 90.918
	X + 5	X + 5	ϕ 90.950 - ϕ 90.968
	X + 10	X + 10	ϕ 91.000 - ϕ 91.018

Group Code Letter Cylinder	Group Code Letter 1)	Cylinder Bore Size (mm)
Standard Size $\varnothing 90.9$	A	$\varnothing 89.900 - \varnothing 89.906$
	X	$\varnothing 89.906 - \varnothing 89.912$
	B	$\varnothing 89.912 - \varnothing 89.918$
1st Repair Size (Standard Size + 0.25)	A	$\varnothing 90.150 - \varnothing 90.156$
	X	$\varnothing 89.156 - \varnothing 90.162$
	B	$\varnothing 90.162 - \varnothing 90.168$
2nd Repair Size (Standard Size + 0.5)	A	$\varnothing 90.400 - \varnothing 90.406$
	X	$\varnothing 90.406 - \varnothing 90.412$
	B	$\varnothing 90.412 - \varnothing 90.418$

1) The group code letters are carved on the surface of the piston crown and in the mating surface of the crankcase.

Service Data Standard

Wear Limit in Longitudinal and Transverse Direction		0.1 mm
Permissible Deviation of Cylinder Out-of-round	When new	0.007 mm
	Wear limit	0.05 mm
Permissible Deviation of Rectangular Cylinder Height (Except Chamfered Area)		0.05 mm
Basic Peak-to-valley Height After Final Honing and Brushing		0.003 - 0.006 mm
Chamfer Angle		75 °
Honing Angle		50 ° ± 10 °

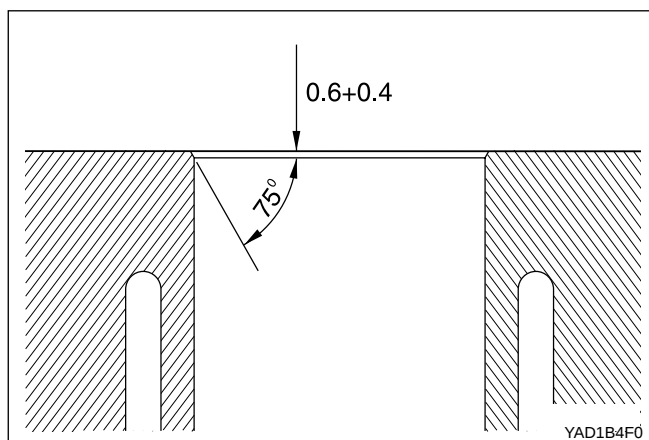


Measurement of Cylinder Bore

1. Clean the cylinder wall.
2. Using a internal diameter gauge, measure the bore size in axial and transverse direction at three points (1,2,3).

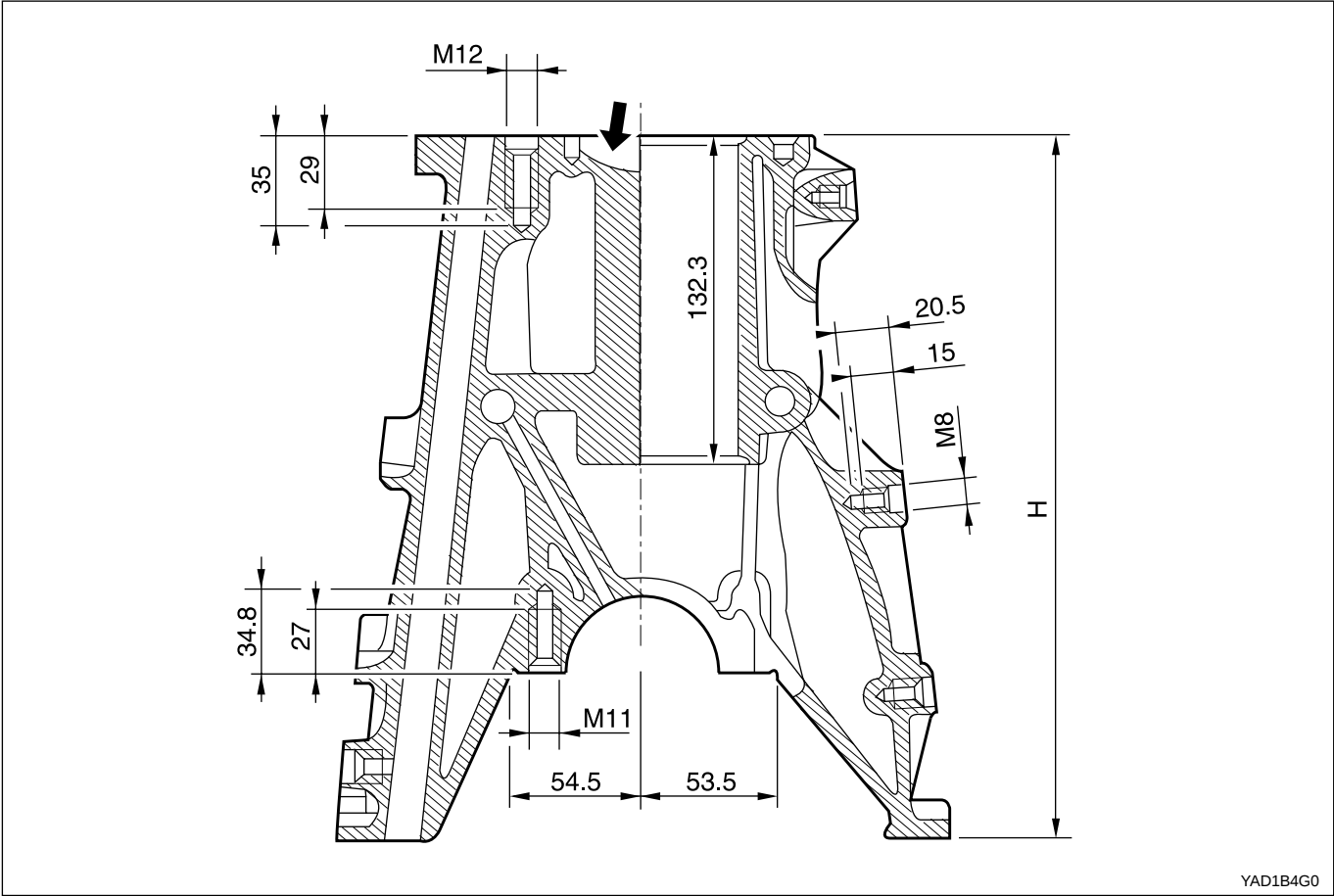
1, 2, 3 Measuring Points

- A. Axial Direction
- B. Transverse Direction
- a. Location of the No.1 Piston Ring at TDC
- b. Location of the Piston BDC
- c. Location of the Oil Ring at BDC



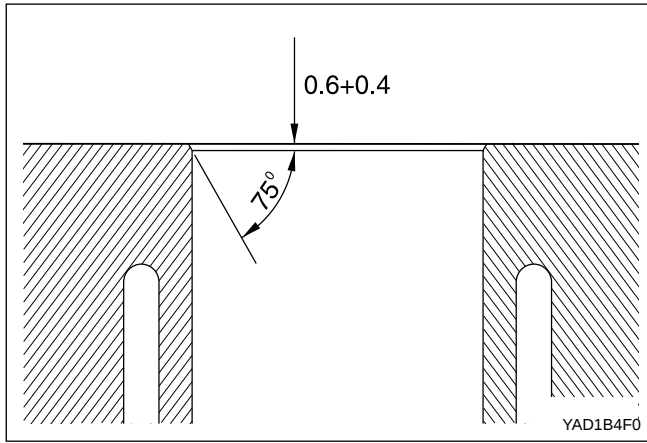
Chamfer Angle

CRANKCASE MATING SURFACE



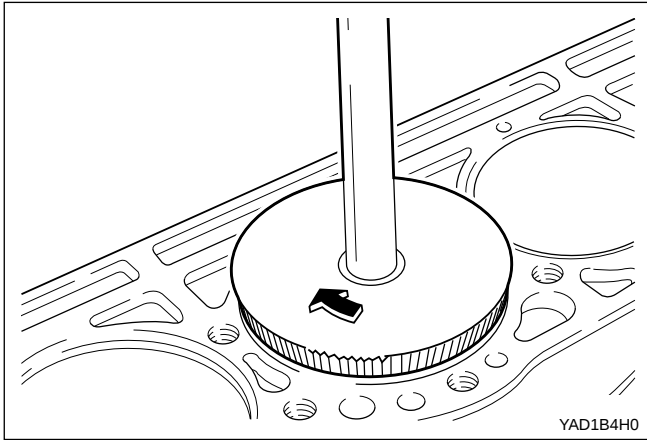
Service Data Standard

Height of The Crankcase 'H' (When new)		289.35 - 289.45 mm
Minimum Height After Milling		289.05 mm
Flatness	Crankcase Upper Mating Surface	0.03 mm
	Crankcase Lower Mating Surface	0.04 mm
Permissible Deviation of Parallelism of The Upper to Lower Mating Surface	Axial Direction	0.1 mm
	Transverse Direction	0.05 mm
Peak-to-valley Height	Crankcase Upper Mating Surface	0.012 - 0.009 mm
	Crankcase Lower Mating Surface	0.025 - 0.020 mm



Chamfering Procedure

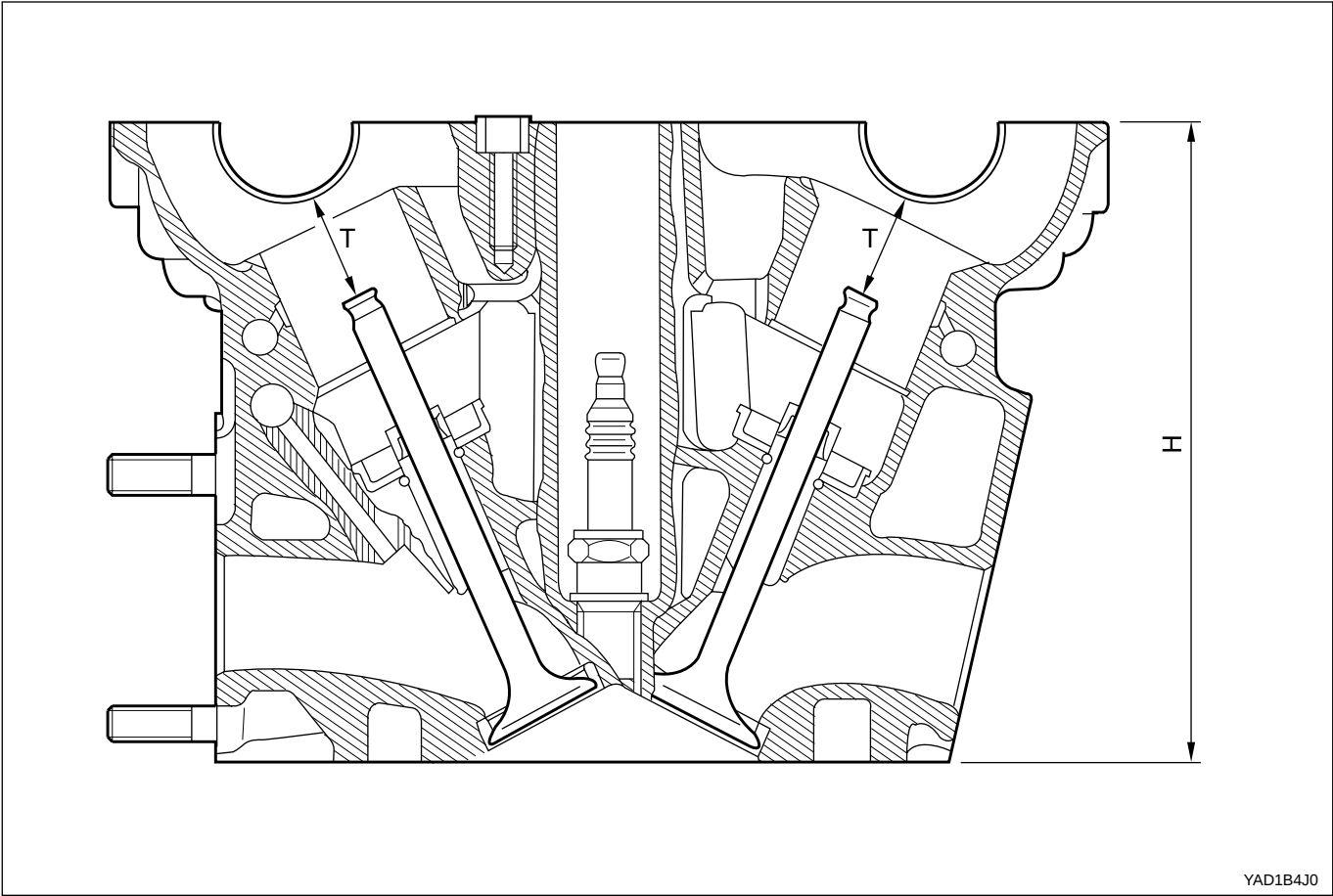
1. Chamfer angle : 75 °



2. Polish the lower chamfered area evenly with a grinder after finishing the chamfering with a suitable tool (e.g., hand milling cutter).

CYLINDER HEAD MATING SURFACE

Preceding Work: Removal of valves



Service Data Standard

Overall Height of Cylinder Head			135.9 - 136.0 mm
Minimum Height After Machining			135.5 mm
Flatness	Axial Direction		0.08 mm
	Transverse Direction		0.0 mm
Distance 'T' (Between Camshaft Bearing and Valve Stem)	Standard Size	Intake	24.21 - 24.75 mm
		Exhaust	22.21 - 22.75 mm
	Repair Size	Intake	23.96 - 24.51 mm
		Exhaust	21.96 - 22.51 mm

Notice: Do not exceed 0.4 mm for the milling of the mating surface of crankcase and cylinder head.

Measurement of Mating Surface

1. Measure the height (H) of the cylinder head (refer to Service data standard).
2. Check the mating surface of the cylinder head.
3. Mill the sharp edge of the combustion chamber.
4. Re-measure the height (H) of the cylinder head.
5. Seal the intake and exhaust valves.
6. Measure the dimension (T) between the camshaft bearing and the valve system (*refer to Service data standard*).
7. Mill the cylinder head valve seat (*refer to Service data standard*).

Universal Tool

Surface Grinding Machine	Sceledum, Type RTY Roaro Schio / Italy
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SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

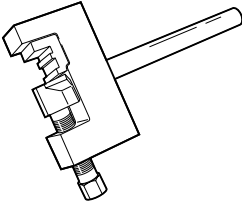
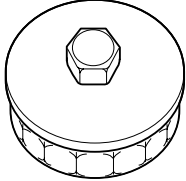
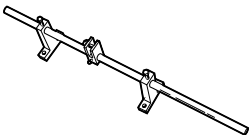
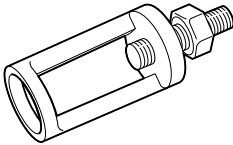
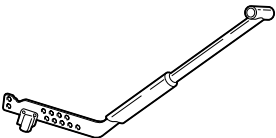
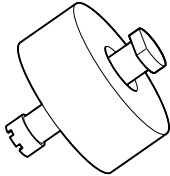
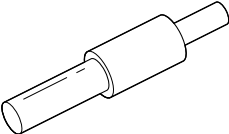
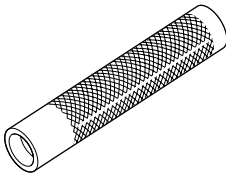
Application		N•m	Lb-Ft	Lb-In
Fuel Feed and Return Line		21 - 25	15 - 18	-
Exhaust Manifold and Pipe		30	22	-
Engine Mounting Nuts		70	52	-
Generator Carrier Bolts		25	18	-
Tensioning Pulley Bolt		40.5 - 49.5	29.9 - 36.5	-
Steering Pump Bolts		22.5 - 27.5	16.6 - 20.3	-
A/C Bracket Bolts		22.5 - 27.5	16.6 - 20.3	-
Intake Air Duct Mounting Nuts		9 - 11	-	80 - 97
Spark Plug Cover Bolts		9 - 11	-	80 - 97
Cylinder Head Cover Bolts		9 - 11	-	80 - 97
Magnetic Assembly Bolt		9 - 11	-	80 - 97
Cylinder Head Front Cover Bolts	M8	22.5 - 27.5	16.6 - 20.3	-
	M6	9 - 11	-	80 - 97
Cylinder Head Bolts		55	41	-
		+90°	+90°	-
		+90°	+90°	80 - 97
Timing Gear Case Cover Bolts		22.5 - 27.5	16.6 - 20.3	-
Crankshaft Sealing Rear Cover Mounting Bolts		9 - 11	-	-
Vibration Damper Center Bolts		200 + 20	148 + 15	-
		+90° + 10°	+90° + 10°	-
Flywheel Mounting Bolt		40	30	-
		+90°	+90°	-
Armature Bolt in Flywheel		45 + 5	33 + 3.7	-
Camshaft Adjuster Flange Bolts		+90° + 10°	+90° + 10°	-
		35	26	-
Intake Flange Shaft Bolts		18 - 22	13 - 16	-
		60° ± 5°	60° ± 5°	-
Exhaust Camshaft Sprocket Bolts		18 - 22	13 - 16	-
		60° ± 5°	60° ± 5°	-
Intake Flange Shaft Bolts		18 - 22	13 - 16	-
Exhaust Camshaft Sprocket Bolts		60° ± 5°	60° ± 5°	-
Camshaft Bearing Cap Bolts		22.5 - 27.5	16.6 - 20.3	-
Chain Tensioner Screw Plug		40	30	-
Chain Tension Assembly		72 - 88	53 - 65	-
Oil Pump Sprocket Bolt		29 - 35	21 - 26	-
Tensioning Device Bolts		26 - 32	19 - 24	-
Water Pump Pulley		22.5 - 27.5	16.6 - 20.3	-
Upper Intake Manifold Bolt		22.5 - 27.5	16.6 - 20.3	-
Lower Intake Mainfold Bolt		22.5 - 27.5	16.6 - 20.3	-
Flange Bolt to Exhaust Mainfold		30	22	-

FASTENER TIGHTENING SPECIFICATIONS (Cont'd)

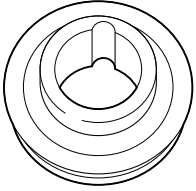
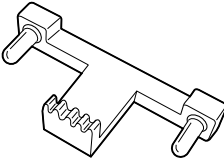
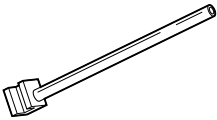
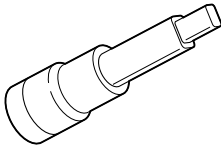
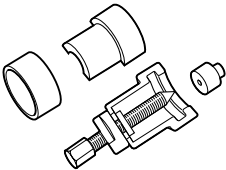
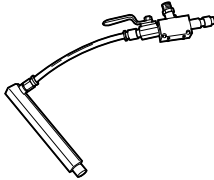
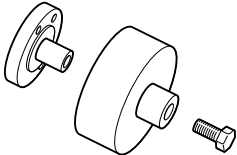
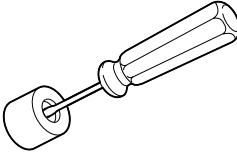
Application	N•m	Lb-Ft	Lb-In
Exhaust Mainfold Nut to Stud Bolt	26 - 34	19 - 25	-
Oil Drain Plug	25	18	-
Oil Filter Cover	25	18	-
Oil Filter Bolt	22.5 - 27.5	16.6 - 20.3	-
Oil Pump Drive Sprocket Bolt	29 - 35	21 - 26	-
Oil Pump Mounting Bolt	22.5 - 27.5	16.6 - 20.3	-
Oil Strainer Bracket Bolt	9 - 11	-	80 - 97
Oil Pressure Relief Valve Screw Plug	50	37	-
Oil Dipstick Guide Tube Bolt	9 - 11	-	80 - 97
Oil Gallery Screw Plug	15	11	-
Shock Absorber Bolts	22.5 - 27.5	16.6 - 20.3	-
Crankshaft Bearing Cap Bolts	55/+90°	41/+90°	-
Torque Converter Mounting Bracket Bolts	42	31	-

SPECIAL TOOLS AND EQUIPMENT

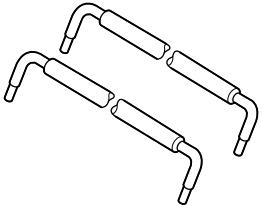
SPECIAL TOOLS TABLE

 YAD1B1W0	000 589 58 43 00 Chain Assembly	 YAD1B2Y0	103 589 02 09 00 Oil Filter Remover
 YAD1B0W0	111 589 01 59 00 Supporting Bar	 YAD1B0Y0	111 589 25 63 00 Thrust Piece
 YAD1B0X0	111 589 18 61 00 Lever Pusher	 YAD1B580	116 589 20 33 00 Sliding Hammer
 YAD1B570	116 589 01 34 00 Threaded Pin	 YAD1B1L0	119 589 00 43 00 Drift

Special Tools Table (Cont'd)

 YAD1B790	601 589 03 14 00 Crankshaft Front Seal Installer	 YAD1B720	602 589 00 40 00 Engine Lock
 YAD1B4K0	603 589 00 40 00 Fan Clutch Holder	 YAD1B560	617 589 00 10 00 Allen Wrench Socket
 YAD1B2M0	615 589 01 33 00 Crankshaft Sprocket Puller	 YAD1B0Z0	DW110 - 090 Connecting Hose
 YAD1B730	601 589 03 43 00 Crankshaft Rear Seal Installer	 YAD1B1A0	DW110 - 100 Valve Tappet Remover

Special Tools Table (Cont'd)

 YAD1B4R0	111 589 03 15 00 Holding Pin
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