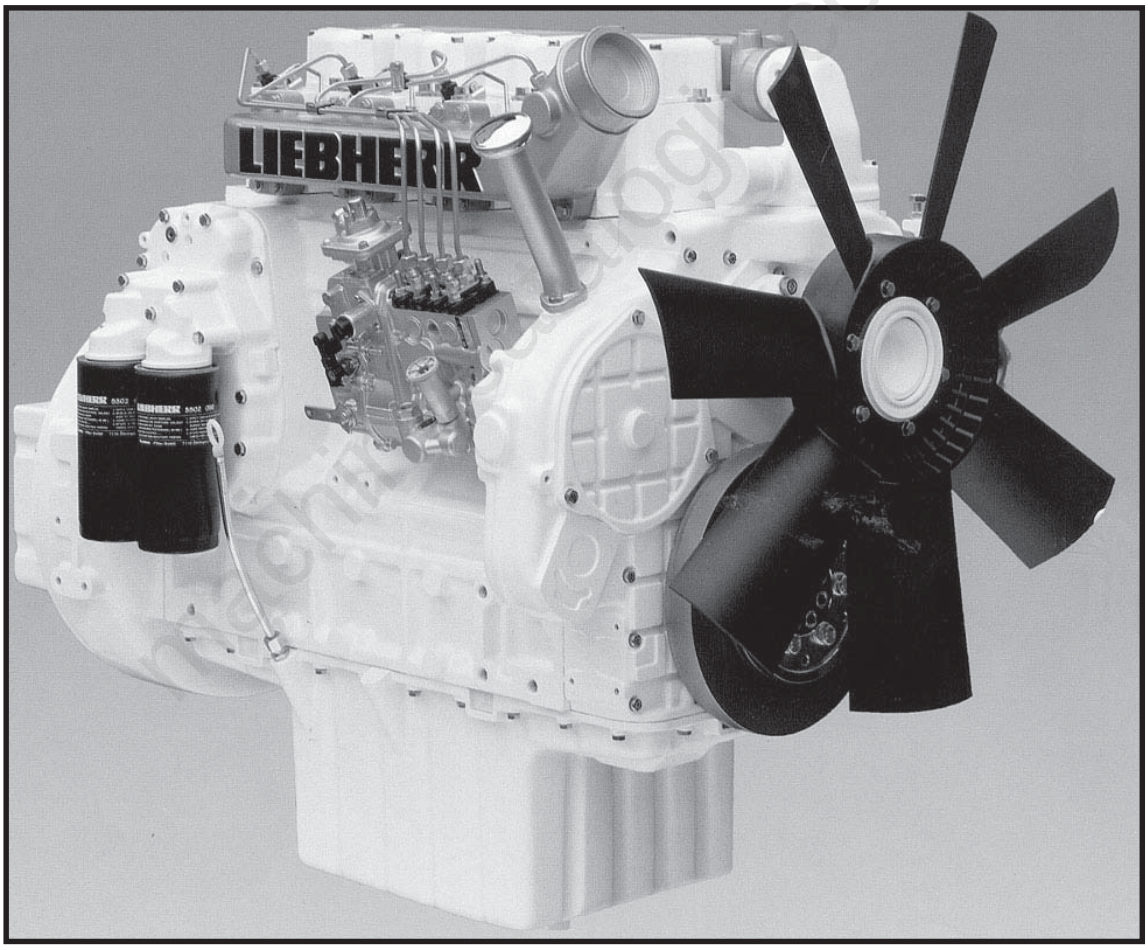
Workshop Manual

LIEBHERR-Diesel engines

D 904 / D 906
D 914 / D 916
D 924 / D 926



899621108

Triebwerk	Crank and Camshaft Drive	Embiellage			
Motortype	**Engine Type**	**Type de moteur**	**D 924 TI-EA5**	**D 926 TI-EA5**	
Lagerbuchse Durchmesser mm	Bushing inside diameter (inch) mm	Coussinet du palier diamètre mm	60,03 + 0,06 (2,3634 - 2,3657)		
Axialspiel mm	Axial clearance (inch) mm	Jeu axial mm	0,15 - 0,35 (0,0059 - 0,0138)		
Grenzwert mm	Limit (inch) mm	Valeur limite mm	0,55 (0,0217)		
Radialspiel mm	Radial clearance (inch) mm	Jeu radial mm	0,06 - 0,094 (0,0024 - 0,0037)		
Grenzwert mm	Limit (inch) mm	Valeur limite mm	0,25 (0,0098)		
Lagerzapfen Durchmesser mm	Shaft diameter (inch) mm	Portée Diamètre mm	$30^{-0,020}_{-0,041}$ (1,1795 - 1,1803)		
Lagerbuchse Durchmesser mm	Bushing inside diameter (inch) mm	Coussinet du palier diamètre mm	$30^{+0,053}_{+0,040}$ (1,1827 - 1,1832)		
Hydraulikpumpen - Antrieb Untergruppe 8.30	**Hydraulic pump drive** sub-group 8.30	**Entrainement de pompe hydraul.** sous-group 8.30			
Axialspiel mm	Axial clearance (inch) mm	Jeu axial mm	0,05 - 0,25 (0,0020 - 0,0098)		
Grenzwert mm	Limit (inch) mm	Valeur limite mm	0,55 (0,0217)		

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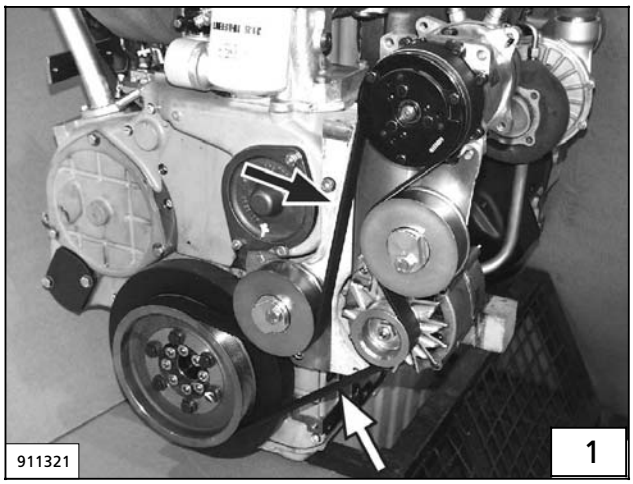
Check tension of V-belt for air conditioning compressor and alternator installation, adjust and replace.

From engine S/N 98 01 0815

Use special tool No. 9.1

Check V-belt tension by hand:

The V-belt tension is correct when the V-belt can be deflected by 13mm at the center between the pulleys of crankshaft and alternator or in the center between tension pulley 2 and air conditoner compressor pulley with a force of 120 N um .



Check the V-belt tension with the "Krikit 2" tension indicator unit:

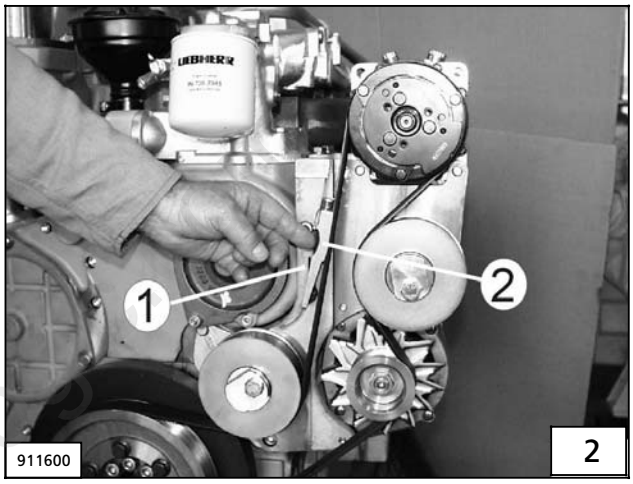
Use special tool No. 9.1

Push the indicator arm 1 into the tension indicator. Place the indicator on the V-belt in the center between the two pulleys of crankshaft and alternator, or in the center between tension pulley 2 and air conditioner compressor pulley .

Push the button 2 evenly at a right angle to the V-belt until the retaining spring disengages.

Carefully lift off the tension indicator and read the test value on the "KG" scale and the indicator arm.

Compare the test value with the chart.



V-belt size	New belt KG reading	Used belt KG reading
8 grooves approx. 28 mm wide	50	40 - 50

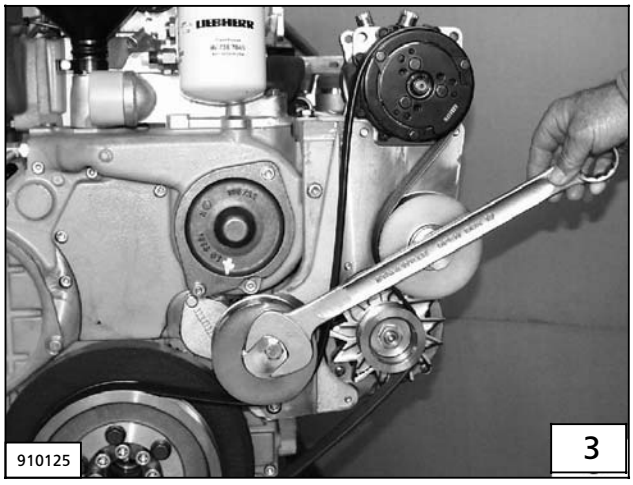
Adjust V-belt:

For positioning, refer to page 2.28.06.

Loosen screw 1 and turn the tension pulley 2 with a (WS36) wrench 45° in clockwise direction, tighten screw 1 .

Note:

Screws 1 and 3 are hex head screws beginning with above mentioned engine S/N.



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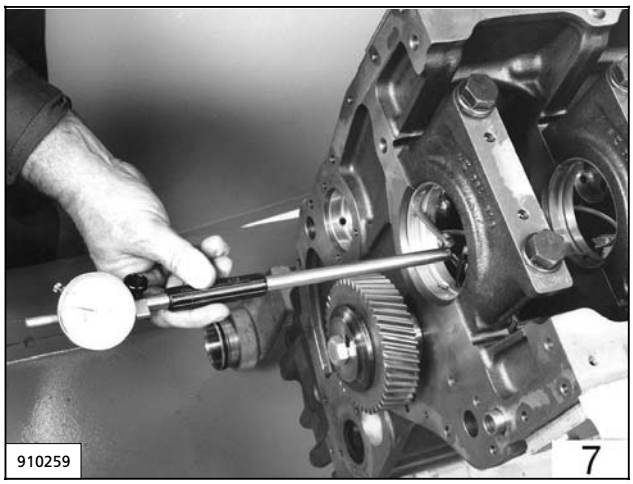
Measure bearing inside diameter on three locations with micrometer or dial gauge as described at fig. 3.

See Engine Specifications for proper dimensions.

Important:

In case the inside diameter of the bearing, does not conform with the required dimension, or the bearing shells show any damage, both bearing shells must be replaced and the measurement repeated. Do not try to rework the bearing shells in any case. In case the cankshaft has to be ground, use bearing shells with undersized inside diameter.

See Engine Specifications for detail on undersized bearings.



Thrust Bearing Inspection:

Place thrust washers on thrust bearing mount and measure entire width with micrometer.

See Engine Specifications for proper axial play.

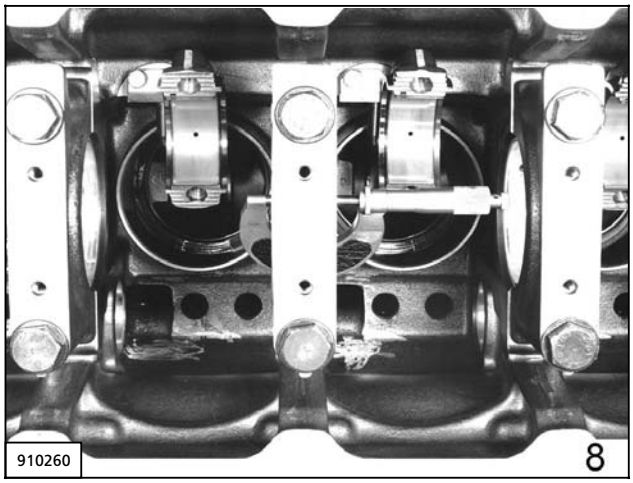
Important:

To determine the axial play, measure distance between the thrust washer contact surfaces on crankshaft.

In case the axial play exceeds the required dimensions, or the thrust washers show any damage, the thrust washers must be replaced.

In case it becomes necessary to surface grind the contact surfaces on the crankshaft, oversized thrust washers must be used.

See Engine Specifications for detail on oversized thrust washers.



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Fuel injection pump drive removal and installation, inspection and repair
(Injection pump drive integrated in the timing gear cover)

Use special tool No. 30, 80

Removal:

Remove injection pump, see sub group 7.02, 7.03

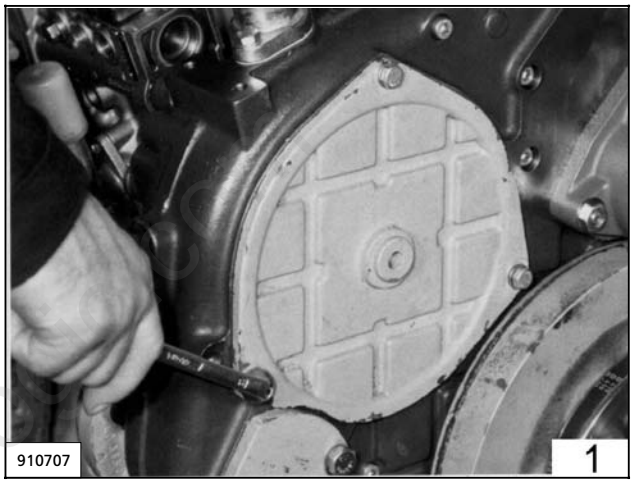
For position, see page 7.06.04

Note:

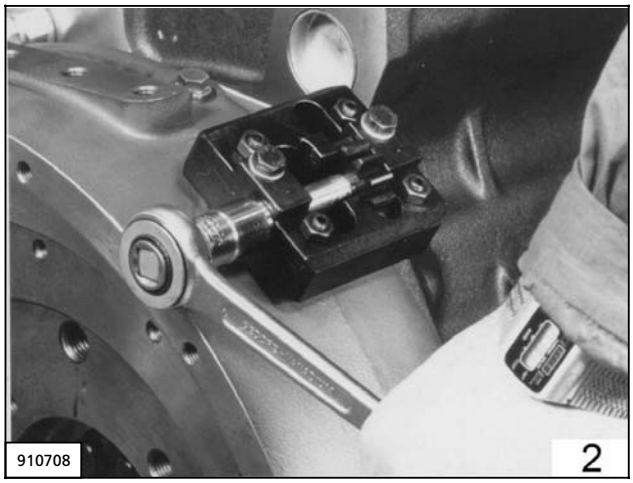
Page 7.06.04 (front side) shows drive for A, MW, P injection pumps and distributor (VE) injection pump on the reverse side.

Loosen and remove screws 1 on injection pump drive cover 2 .

Push cover 2 from timing gear cover.



Install hand crank, special tool No. 30 at the inspection window on the flywheel housing.

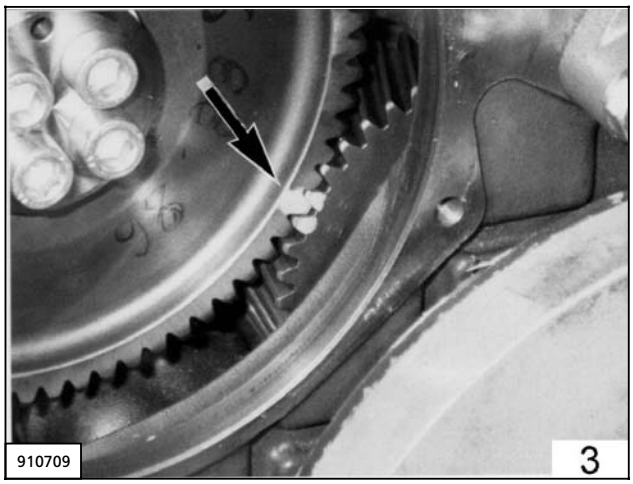


Rotate the engine crankshaft with the hand crank until the marked took on the gear of the injection pump drive is positioned between the two marked teeth on the intermediate gear .

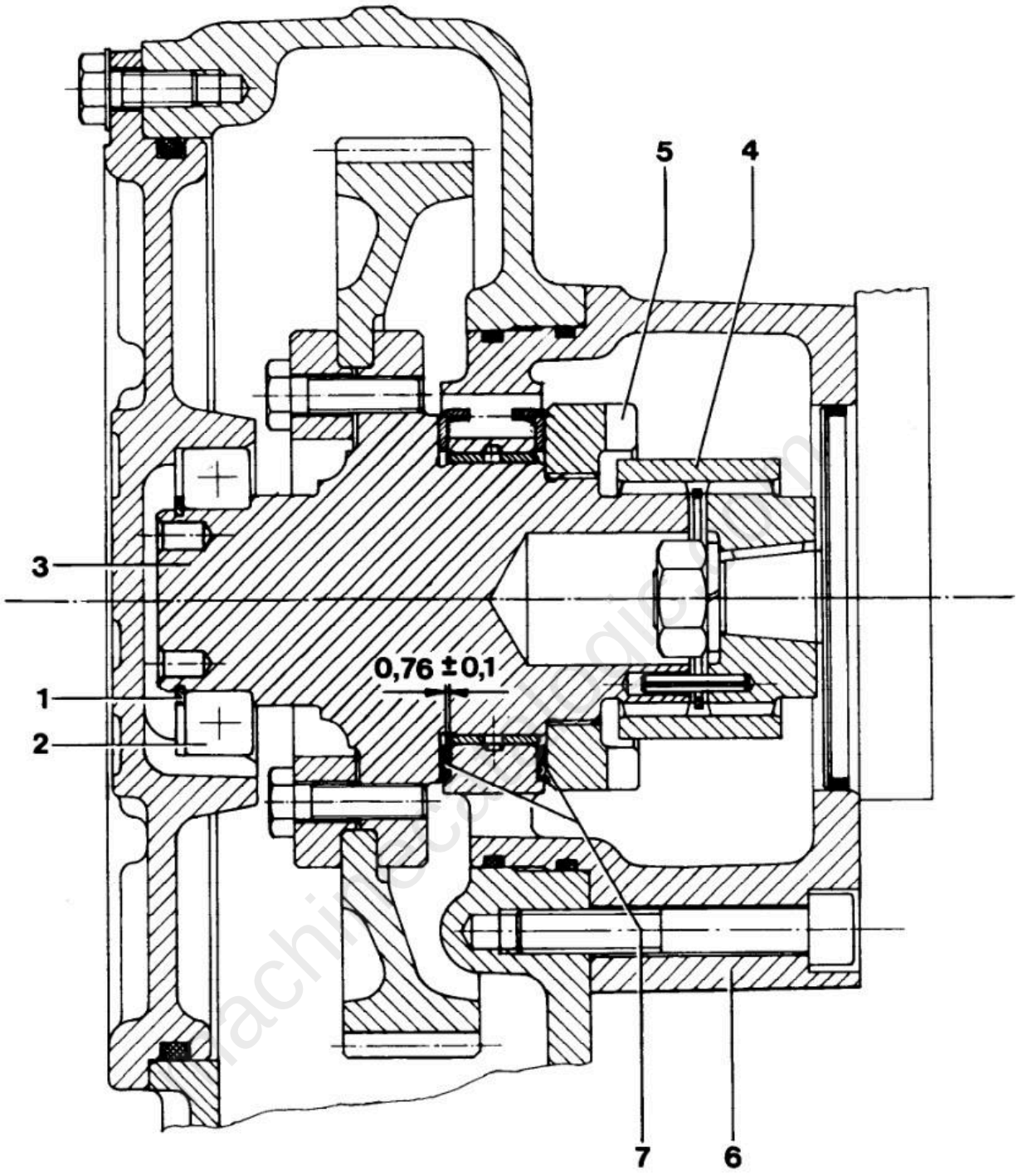
Note:

The teeth on the intermediate gear are also marked EP (EP = Einspritzpumpe = injection pump) .

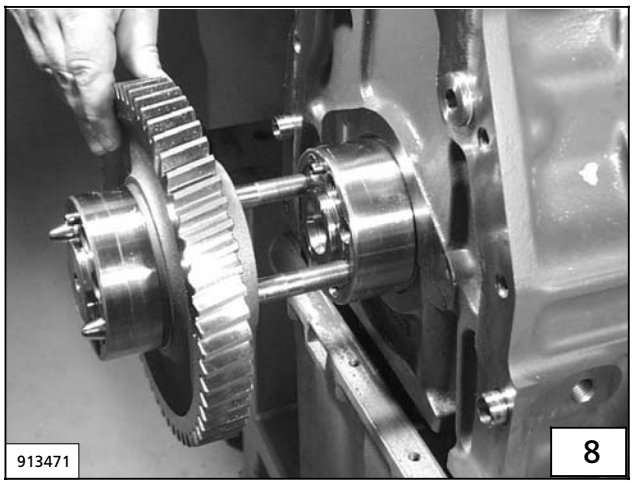
See also sub group 9.26



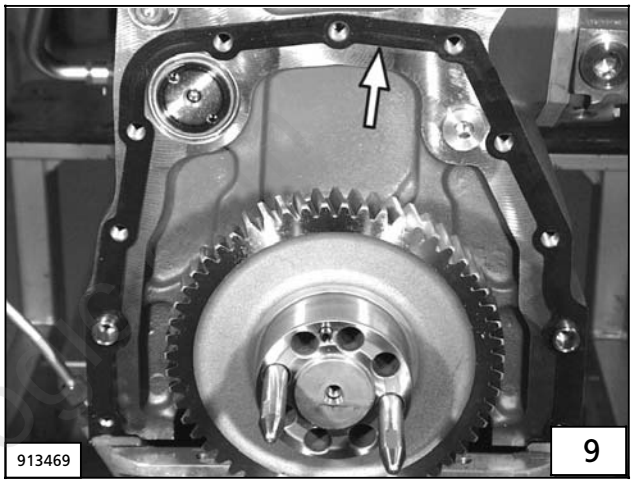
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5
4
3
0,76 ±0,1
1
2
7
6

Push gear over the mounting studs onto the crankshaft.



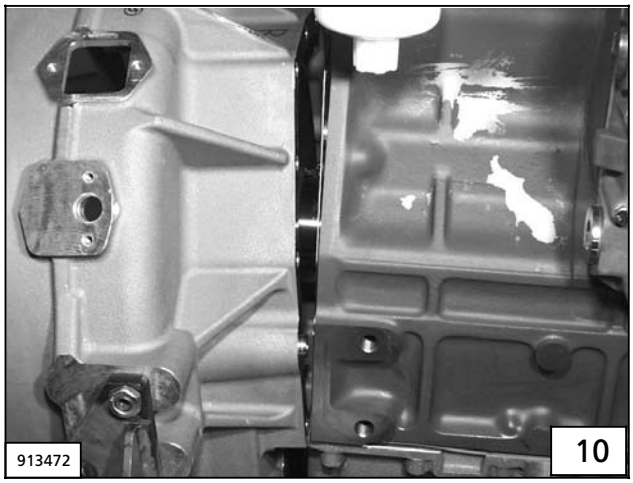
Attach new gasket over the line-up sleeves on the crankcase.



Push flywheel housing over the line- up sleeves onto the crankcase.

Note:

Watch surface contact of the tooth of intermediate gear in the flywheel housing and gear onto crankshaft.



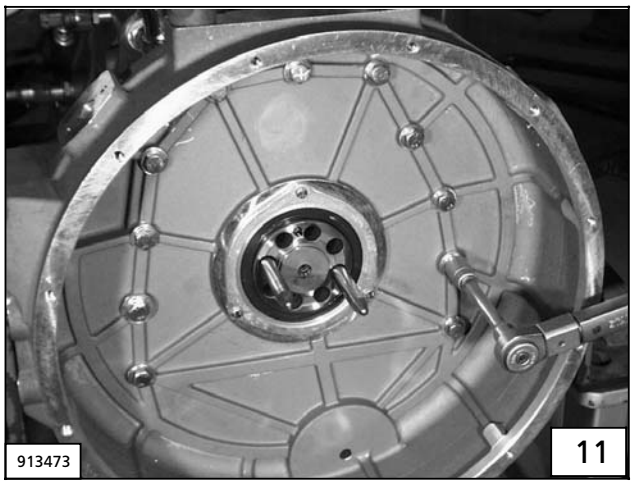
Insert and tighten screws.

For sequence, see fig. 12.

For tightening torque, see Technical Data.

Note:

The top center bolts (Pos.11, Fig. 12) is shorter than the other flywheel housing mounting bolts.



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