

MODIFICATIONS

The engine as described in Sub-section A312 'Engine Overhaul' has been modified in certain respects for application to Dodge Trucks.

This section deals with these changes and modifications.

ENGINE NUMBER

The location of the engine number has been changed as illustrated below.

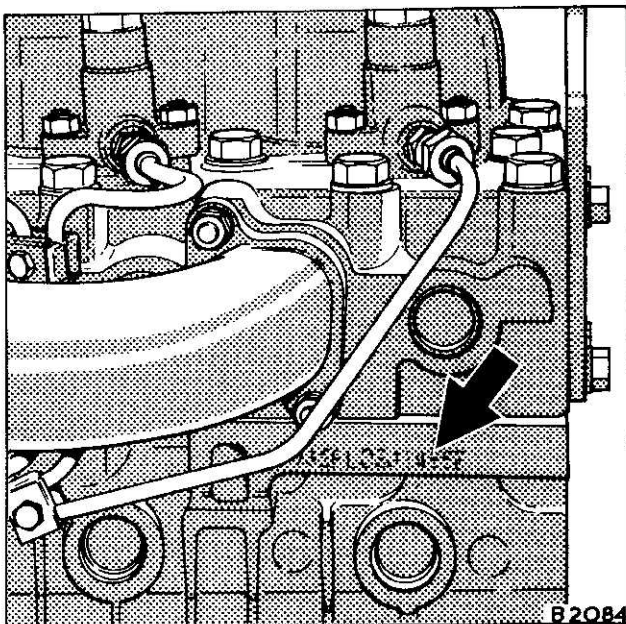


Fig. 1 Engine number location

MANUFACTURING DATA

Piston Rings

Ring gaps are as follows:-

Top	0.016/0.028" (0,40/0,71mm)
2nd	
3rd	0.011/0.22" (0,28/0,56mm)
5th	
4th	0.012/0.024" (0,30/0,61mm)

Delete the note at the bottom of page B3.

Cylinder Liners

Boring size for service — 0,030" (0,76mm)

Inner Valve Springs

The load at fitted length should read — 26.6/29.4 lbf (12,1/13,3 kgf)

Outer Valve Springs

The load at fitted length should read — 38/42 lbf (17,2/19,1 kgf).

Note: The above spring data also applies to Fig. 10 on page E6.

CYLINDER HEAD

Valve Seats

The included valve face and seat angle of 90° quoted under Fig. E9 is for the inlet.

The included angle for exhaust is 120°.

Valve Springs

The loads and dimensions for checking the valve springs have been amended as shown on the following illustration.

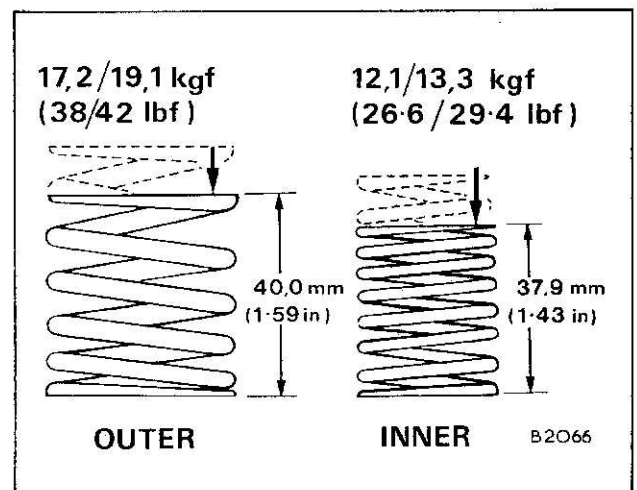


Fig. 2 Valve spring data

Rocker Shaft (pages E2, E6, E7)

The method of retaining the rocker shaft described on the above pages has been modified.

The shaft is located by means of a taper pin in the shaft which fits into a slot in front rocker standard as illustrated below.

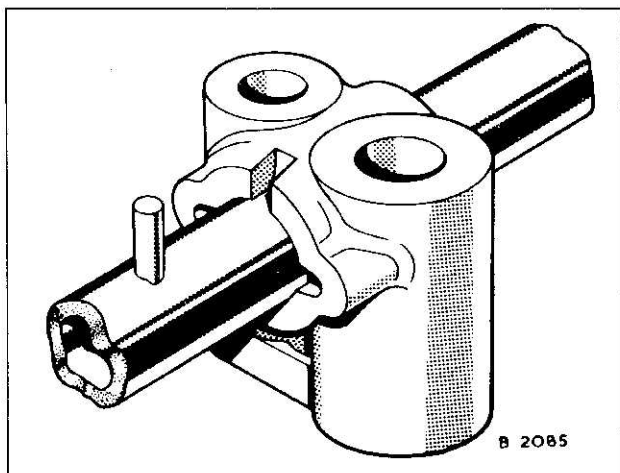


Fig. 3 *Rocker shaft location*

CRANKSHAFT AND MAIN BEARINGS

The main bearing cap identification marks described and illustrated on page G4 have been changed as follows:-

- No. 1 — has oil pump spigot location.
- No. 2 — block and cap marked '1'.
- No. 3 — has tapped drillings for oil pipe support. Block and cap marked 1.
- No. 4 — has thrust washer locations.
- No. 5 — has no markings.
- No. 6 — has tapped drillings for oil pipe support. No other markings.
- No. 7 — rear of cap forms sump joint location.

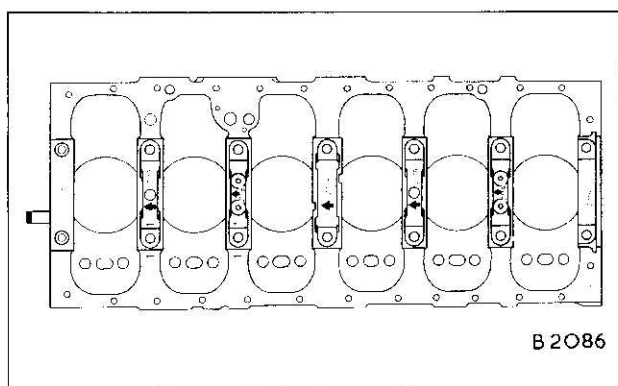


Fig. 4 *Bearing cap identification*

Note: Caps must be fitted with arrows towards front of engine. Serial numbers must correspond with serial numbers on bottom face of block.

CYLINDER BLOCK AND LINERS

If wear on any cylinder exceeds 0.006 in (0,15 mm) then all liners must be rebored and honed to 0.030 in. (0,762mm) oversize or a new standard liner fitted.

Oversize pistons and rings are only available in 0.030 in. oversize.

TIMING CASE AND DRIVE

The method for removing the crankshaft pulley as described and illustrated on page J2 is not recommended.

In order to prevent damage to the pulley use a puller which is similar to that illustrated below. ($\frac{1}{2}$ x 20 UNF bolts.)

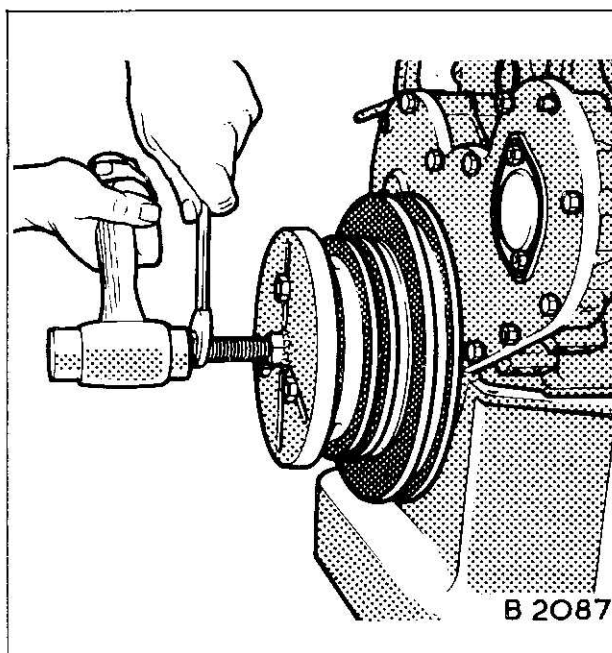


Fig. 5 *Removing crankshaft pulley*

TIMING**Static Injection Timing**

There are no timing marks on either the flywheel or crankshaft pulley. To enable the static injection timing to be checked, it is first necessary to determine T.D.C. using the valve drop method and a dial test indicator.

To Determine T.D.C.

Remove rocker cover.

Turn engine until valves are rocking on number 6 cylinder.

Reset tappets of number 1 cylinder to: Inlet 1,02 mm (.040 in), Exhaust 0,84 mm (.033 in).

Release adjusting screw of number 12 rocker, remove circlip and washer from rear of rocker shaft.

Slide number 12 rocker from shaft.

Depress valve cotter plate, remove cotters, plate and spring, and allow valve to drop onto piston. Wrap elastic band around the valve to prevent it dropping into the cylinder when engine is turned.

Assemble a D.T.I. to number 12 valve stem tip.

Rock the engine until the highest reading is obtained on D.T.I. dial, then set to zero.

Turn engine clockwise until valves are rocking on number 1 cylinder and have an equal valve nip, using feeler gauge of approximately 0,075 mm (.003 in).

The D.T.I. on number 12 valve should now read zero (T.D.C.) or be within 0,10 mm (.004 in) of zero (T.D.C.)

Note: If the checking procedure has been correctly carried out, the engine should be at T.D.C. $\pm 2\frac{1}{2}^\circ$ as equal valve nip is obtained on number 1 cylinder. If incorrect, remove the timing cover and reset timing gears.

Fuel Pump Timing

With the clock gauge set up as previously described, disconnect the stop cable from the pump control lever, thoroughly clean the fuel pump cover and remove it.

Fit the timing tool and continue with the timing operation as described on pages K3 and K4.

Note: The 6° BTDC is the equivalent of 0,36mm (0,014 in) valve movement BTDC.

Reconnect the stop control cable to the fuel pump lever ensuring that with the cable fully retracted the correct clearance of 1,25mm (0.05 in) exists between the lever and its stop.

LUBRICATING SYSTEM**Oil Strainer**

The arrangement of the oil strainer and suction pipe has been modified as shown below.

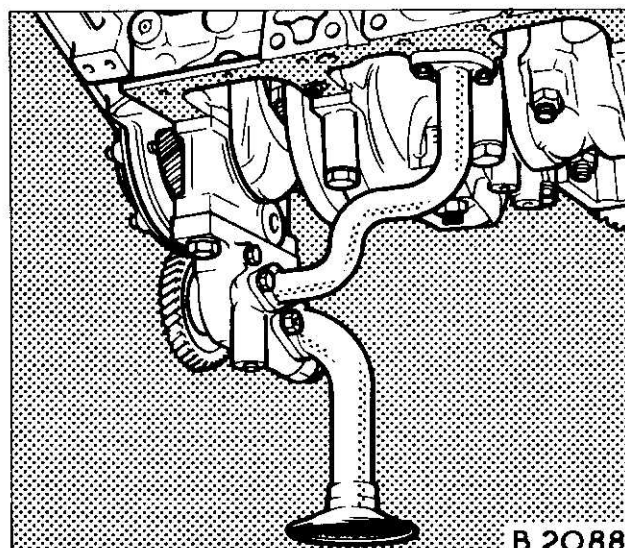


Fig. 6 Oil pump strainer

Oil Filter

The location and mountings of the oil filter has been modified as shown below.

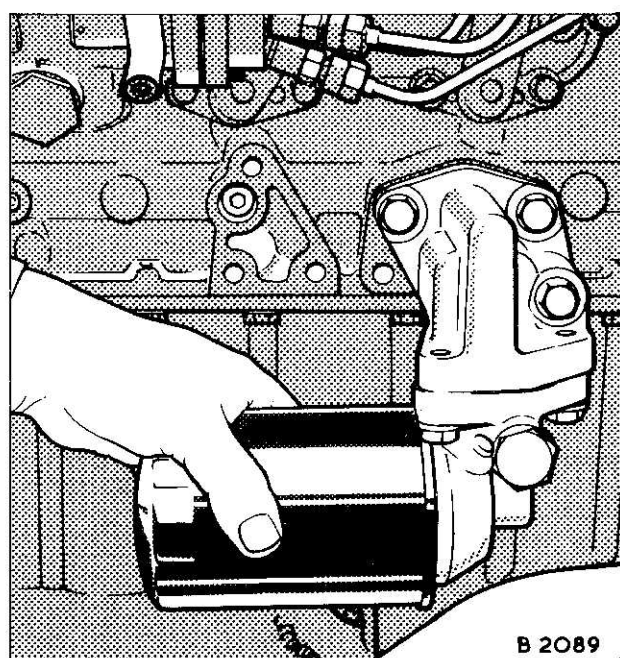


Fig. 7 Engine oil filter

Filter Head Gaskets

It is important to correctly identify the type of filter head and gasket used on the engine since use of an incorrect gasket will cause low oil pressure if the oil ports are obscured.

The correct relationship of gasket to head is shown in the following illustration.

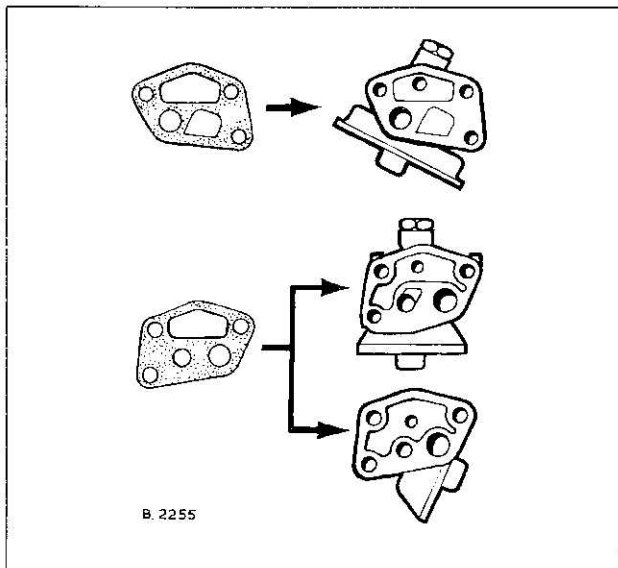


Fig. 8 Gasket identification

COOLING SYSTEM

Drive Belt Tension

The drive belt arrangement differs to that shown in section M, Fig. 1 as follows:

- A – Alternator drive
- B – Exhauster drive

Large arrows indicate fixings.

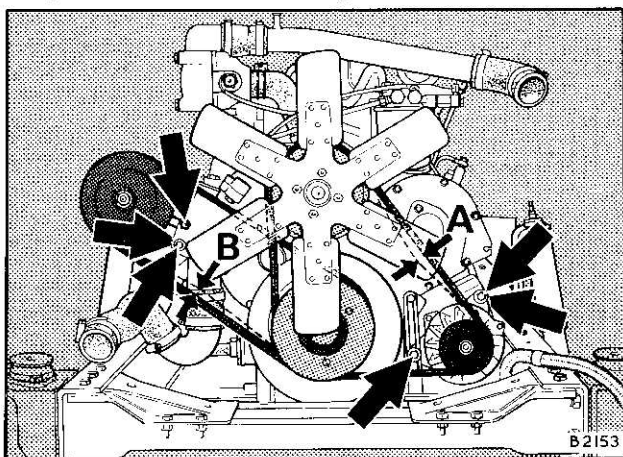


Fig. 9 Drive belt tensioning

Water Pump

The modified water pump is illustrated below together with its revised dismantling and re-assembly procedures.

To Dismantle

Separate rotating assembly (4) from main body (7) after removing nuts and washers (5). Remove joint (6) and clean mating faces.

Using a suitable puller, withdraw pulley hub (1) from shaft (9), where necessary remove dust cover (2) from hub.

Remove outer bearing retaining circlip (15).

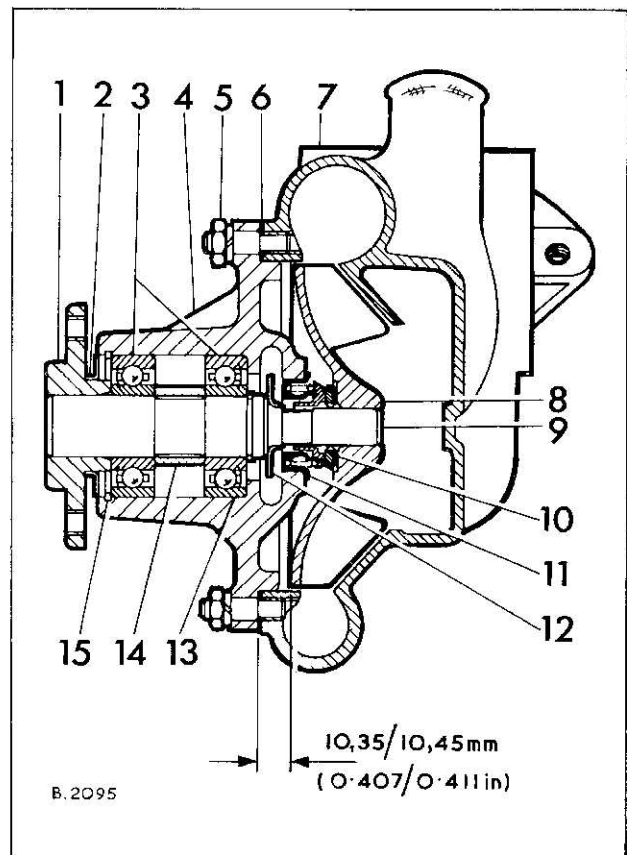


Fig. 10 Water pump details

Support body and using a suitable mandrel that will pass through impeller (8) and front of body, remove impeller, ceramic counterface (10) and seal (11).

Remove thrower (12) and inner bearing retaining circlip (13) from shaft. Press bearings (3) and spacer (14) from shaft.