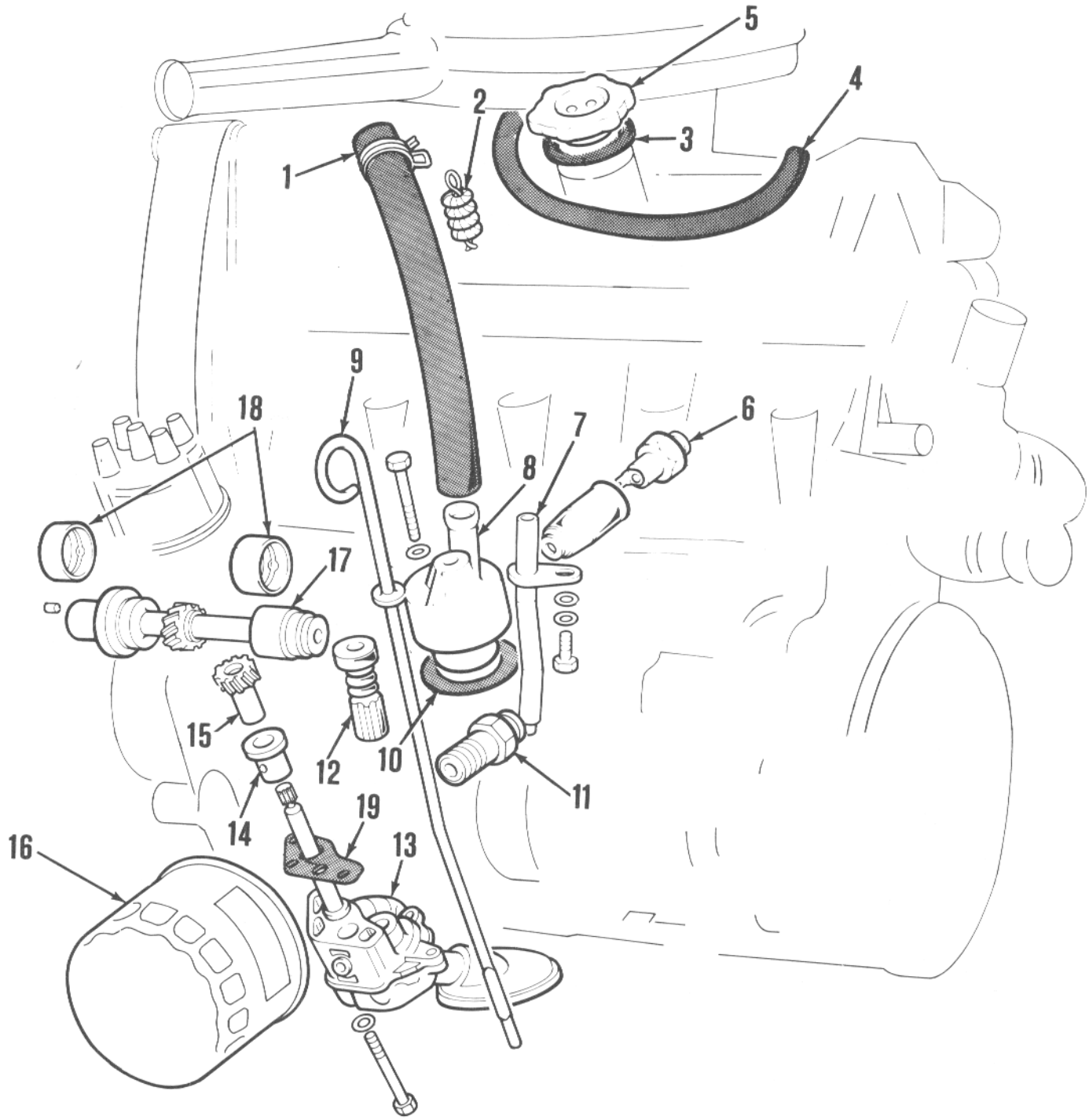
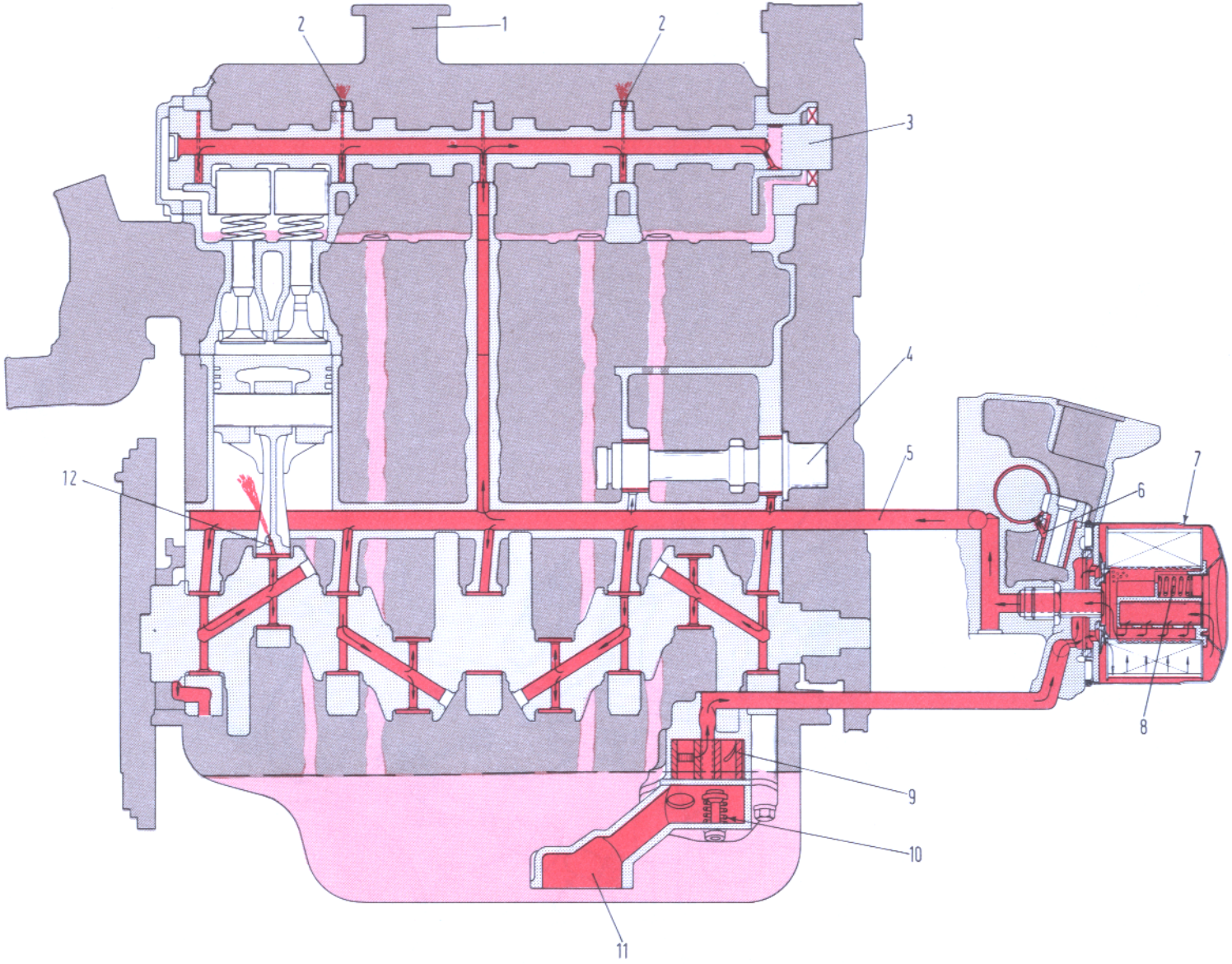


1. Breather hose
2. Flame trap
3. Seal
4. Blow-by gas and oil vapor hose
5. Oil filler cap
6. Oil pressure switch
7. Breather oil return pipe
8. Cyclonic trap
9. Dipstick
10. Gasket
11. Oil filter connector
12. Dipstick seal
13. Oil pump
14. Bushing
15. Oil pump drive gear
16. Oil filter
17. Auxiliary shaft
18. Bushings
19. Gasket

LUBRICATION SYSTEM COMPONENTS

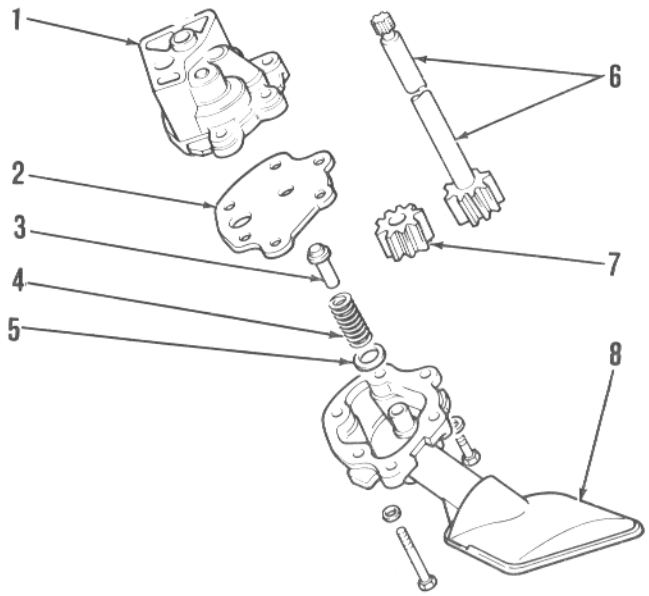


1. Oil filler pipe
2. Oil mist outlets for camshaft lobes and tappets
3. Camshaft
4. Auxiliary units drive shaft
5. Filter to engine components oil line
6. Oil pump and distributor drive gear oil duct
7. Full-flow oil filter
8. By-pass valve
9. Oil pump
10. Oil pressure relief valve
11. Oil pump suction pipe
12. Oil mist outlet for cylinder walls

ENGINE LUBRICATION DIAGRAM

OIL PUMP ASSEMBLY

1. Pump housing
2. Cover plate
3. Pressure relief valve
4. Spring
5. Washer
6. Drive gear
7. Driven gear
8. Oil intake pickup



REMOVAL AND INSTALLATION (Engine in vehicle)

Drain oil sump. Remove bolts and washers holding sump to engine and remove sump.

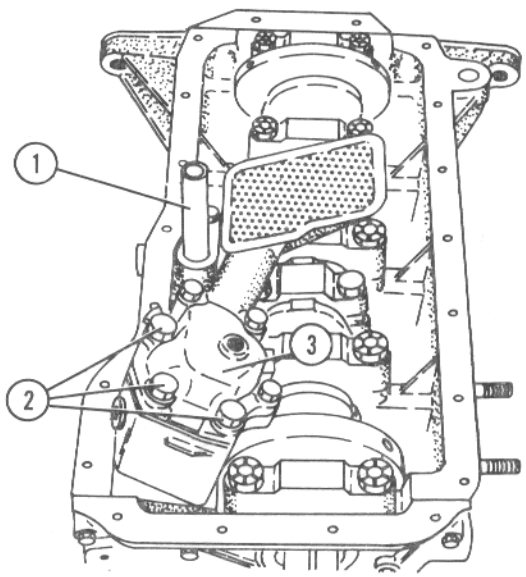
Remove three bolts (2) and washers holding oil pump (3). Remove pump and gasket.

Installation is reverse of removal.

When installing pump, make sure it is seated before tightening bolts.

Clean sump gasket surfaces thoroughly. Install all new gaskets.

1. Oil return pipe from breather 2. Bolt 3. Oil pump



INSPECTION

Carefully clamp pump body in a vise.

Remove three bolts holding pickup housing to pump housing (5) and remove.

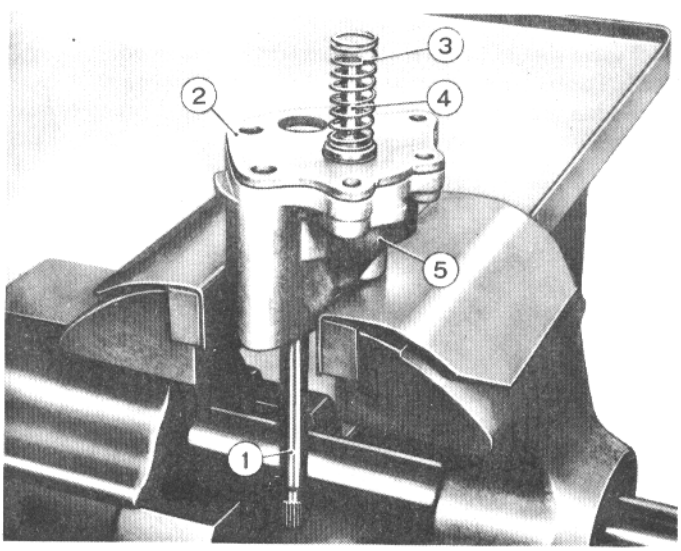
Remove spring (3), relief valve (4) and cover (2).

Slide drive shaft with drive gear and driven gear out of housing.

Clean all disassembled parts in solvent and blow dry with compressed air.

Check housing and cover for cracks. Check intake pickup and oil duct for clogging. Blow clear with compressed air.

1. Pump shaft 2. Cover 3. Spring 4. Relief valve 5. Pump housing

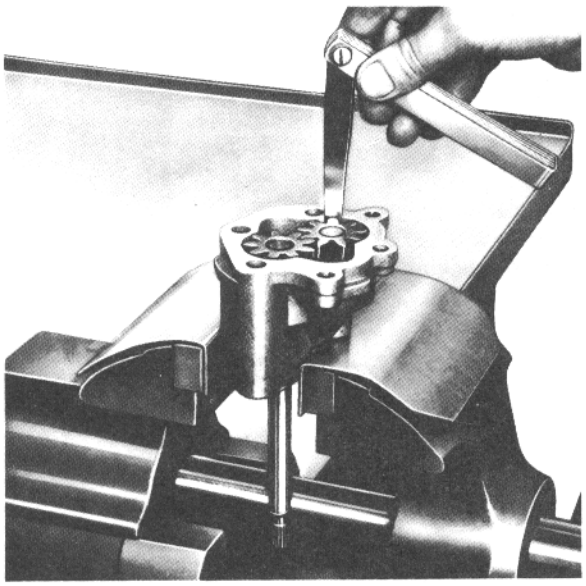


Examine gears for wear.

Backlash between gears is .006 in. (0.15 mm) when new. Maximum allowable clearance is .010 in. (0.25 mm).

Check gear tooth to pump housing clearance with feeler gage as shown. New clearance ranges from .004 to .007 in. (0.11 to 0.18 mm). Maximum allowable clearance is .010 in. (0.25 mm).

Replace housing and or gears if clearances are exceeded.



Check clearance between gears and cover mating face.

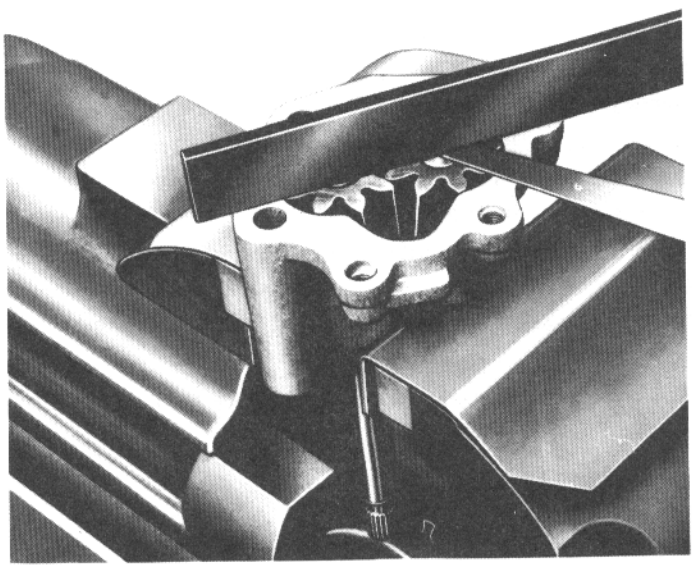
Using a straightedge and feeler gage as shown, clearance range should be .0008 to .0041. in. (.020 to 0.150 mm). If a value of more than .006 in. (0.15 mm) is found, either the gears and or pump housing must be replaced.

To determine if gears are worn, measure their length. The range for new gears is 1.101 to 1.102 in. (27.967 to 28.000 mm).

The drive gear is mounted on its shaft with an interference fit, check for signs of slack.

Clearance between driven gear and its shaft is .0006 to .0022 in. (0.017 to 0.057 mm). Maximum allowable clearance is .004 in. 0.10 mm).

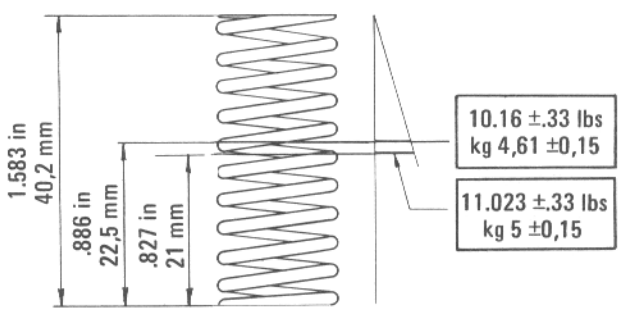
Check clearance between pump drive shaft and pump housing. Clearance range is .0006 to .0023 in. (0.016 to 0.060 mm). Maximum allowable clearance is .004 in. (0.10 mm).

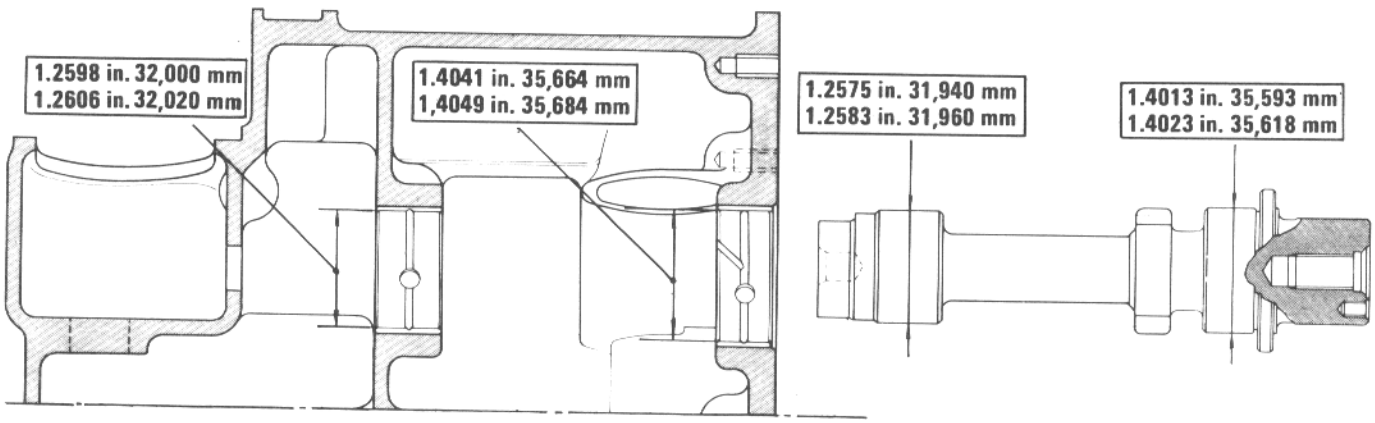


Relief Valve Inspection

Relief valve should be carefully cleaned and inspected.
NOTE: Particular care should be given to ensuring that dirt and residue are removed from between valve and pump housing, otherwise valve may stick.

Check load characteristics of spring as shown.





SPECIFICATIONS OF AUXILIARY SHAFT AND BORES IN BLOCK

AUXILIARY SHAFT

Auxiliary shaft (for oil pump, and ignition distributor on non A/C vehicles) should have an absolutely smooth journal. If signs of scuffing or scoring are found, which cannot be removed by an extra-fine abrasive stone, replacement of shaft is recommended.

Inspect oil pump and ignition distributor drive gear teeth for evidence of chipping or excessive wear. If these are found, replace shaft.

Check that auxiliary shaft journal diameters conform to specifications shown.

AUXILIARY SHAFT JOURNALS AND BUSHINGS FIT SPECIFICATIONS

	Bushing inside diameter (finish reamed)	Auxiliary shaft journal diameter	Clearance
1	1.4041 in (35.664 mm) to 1.4049 in (35.684 mm)	1.4013 in (35.593 mm) to 1.4023 in (35.618 mm)	.0018 in (0.046 mm) to .0036 in (0.091 mm)
2	1.2598 in (32.000 mm) to 1.2606 in (32.020 mm)	1.2575 in (31.940 mm) to 1.2583 in (31.960 mm)	.0016 (0.040 mm) to .0031 in (0.080 mm)

1) Drive end bushing 2) Inside bushing.