

Removal and Installation of Distributor Drive

Types 220 and 220a

Operation No.
M 75

Special Tools:

Puller for camshaft gear	187 589 01 33
Puller for intermediate gear	187 589 02 35
Puller and installer for intermediate gear shaft and gear	187 589 07 61

Procedure:

1. Remove vent line at cylinder head cover, intake silencer and cylinder head cover. In Type 220 the radiator stay must be removed first.
2. Unscrew fan.
3. Unscrew chain tensioner. Be careful when taking the tensioner off! The oil contained in the oil pocket will flow out; it is therefore necessary to place a small vessel under it.
4. Turn out camshaft gear fastening screw and remove the gear; if necessary, use puller 187 589 01 33 (see Fig. M 3/18). Let chain hang over the left end of the cylinder head.
5. Unscrew cover plate on sprocket housing. Turn out intermediate gear fastening screw. Back up chain drive securing screw sufficiently (see Fig. M 3/68).
6. Take distributor cap with wires and low-voltage wire off the distributor. Disconnect vacuum controller and control cable at adjusting arm.
7. Remove distributor with support by turning out screw (3). See Fig. M 3/9.
8. Take out helical distributor drive gear. Pull intermediate gear off the shaft by means of puller 187 589 02 35 (see Fig. M 3/26). When pulling the gear, lift chain so it will not be damaged.
9. Turn out retaining screw for front bearing bushing. Then pull intermediate gear shaft together with front bushing by means of tool 187 589 07 61 (see Fig. M 3/27). If necessary, pull rear bushing as well.
10. Check the parts. If tooth flanks of intermediate gear shaft and helical gear are heavily worn, replace these parts. Check the bearing surfaces of shafts and bushings as well. Press bushing for helical gear only out if the bore is badly worn. The bearing surface dimensions are given in the following tables.

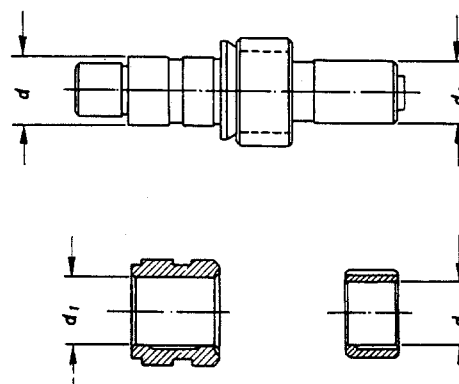


Fig. M 75/00

Intermediate Gear Shaft with Bushing
Dimensions in mm (in.)

Table 30

d	d ₁	d ₂	d ₃
19.980	20.020	17.96	18.000
19.959	20.033	17.94	18.018
(0.78661)	(0.78819)	(0.70708)	(0.70866)
(0.78578)	(0.78870)	(0.70630)	(0.70937)

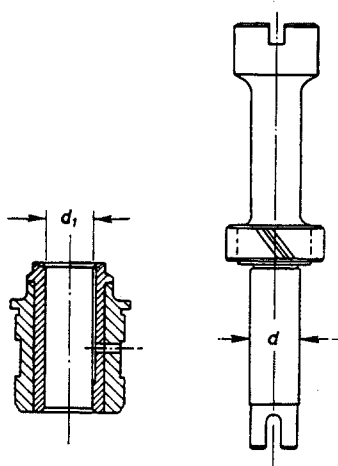


Fig. M 75/01

Helical Gear with Bushing

Dimensions in mm (in.)

Table 31

d	d ₁
13.968 (0.54992)	14.000 (0.55118)
13.950 (0.54921)	14.018 (0.55189)

11. Before installing the parts again, clean them carefully and blow out with compressed air. Oil the bearing surfaces.
12. Drive bushing for helical gear and rear bushing for intermediate gear shaft into cylinder crankcase by means of a suitable punch.
Install rear bushing for intermediate gear shaft in such a way that continuous outer groove running in longitudinal direction points upward and open end of longitudinal groove in bore faces the rear (see Fig. M 3/42).
13. Insert intermediate gear shaft with front bearing bushing into bore in cylinder crankcase.
14. Secure lock washer for front bearing bushing by means of screw with spring washer.
15. Press intermediate gear on shaft with tool 187 589 07 61 (see Fig. M 3/46). When inserting the gear into the sprocket housing, first push shaft back and then press it forward into the bore of the gear. Do not forget key on shaft.
16. Install helical gear and tighten intermediate gear with screw. (Do not forget washer and snap ring.)
17. Press sprocket on camshaft (see Operation No. M 3/cf. 64 and 65).
18. Install distributor with support and clamp in place by means of the trunnion screw. Loosen clamping screw at adjusting arm.
19. Set 1st piston to 5° after TDC in the case of a cylinder head with compression ratio 6.5:1, and to 2° after TDC in the case of a cylinder head with compression ratio 7.6:1. Turn intermediate gear clockwise until rotor points to breaker point for 1st cylinder in distributor cap, then rotate distributor head until movable breaker point is just lifting off the cam (see also Operation No. M 30). Tighten adjusting arm clamping screw and turn in chain drive securing screw (see Fig. M 3/68).
20. The other parts are installed in reverse order of removal. For installation of chain tensioner see Operation No. M 73a, cf. 3-5.

Watch out for position of front bushing to ensure that lock washer can be installed (see Fig. M 3/43).