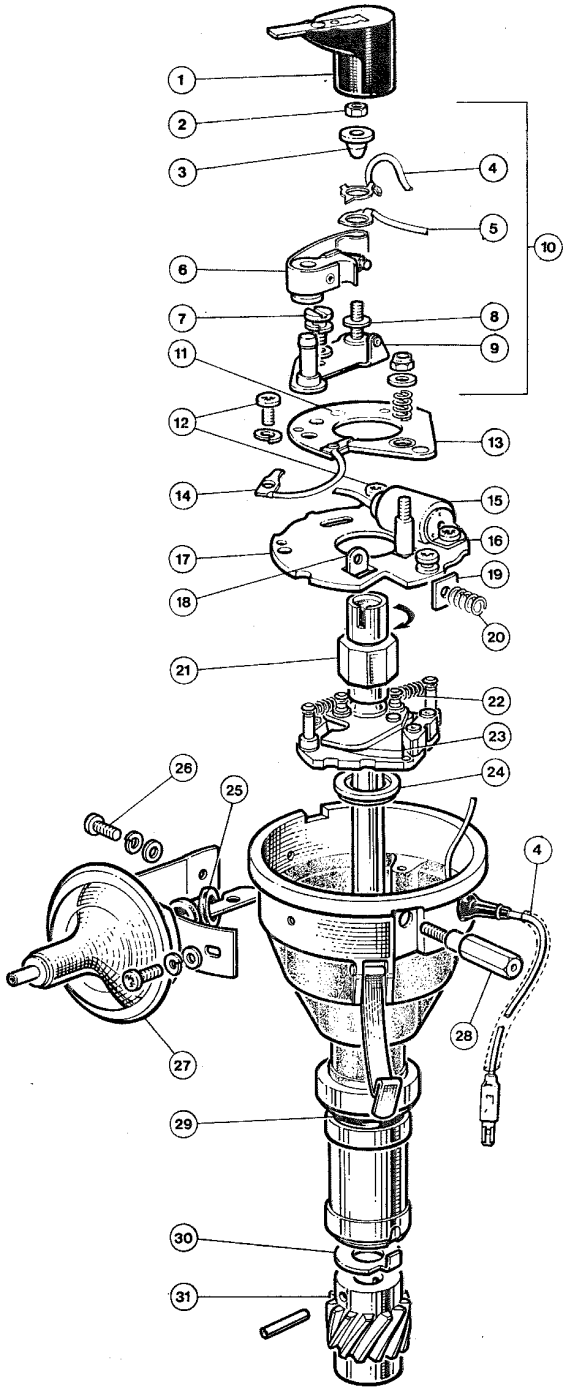
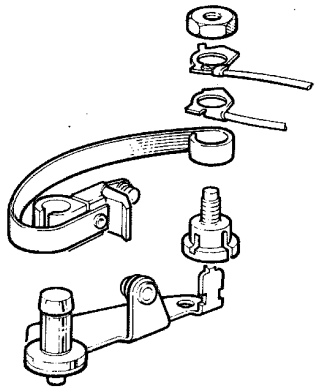
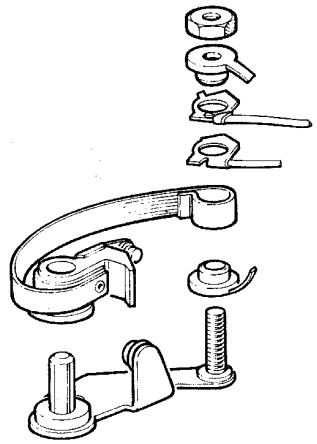
MODEL 35D8 DISTRIBUTORS





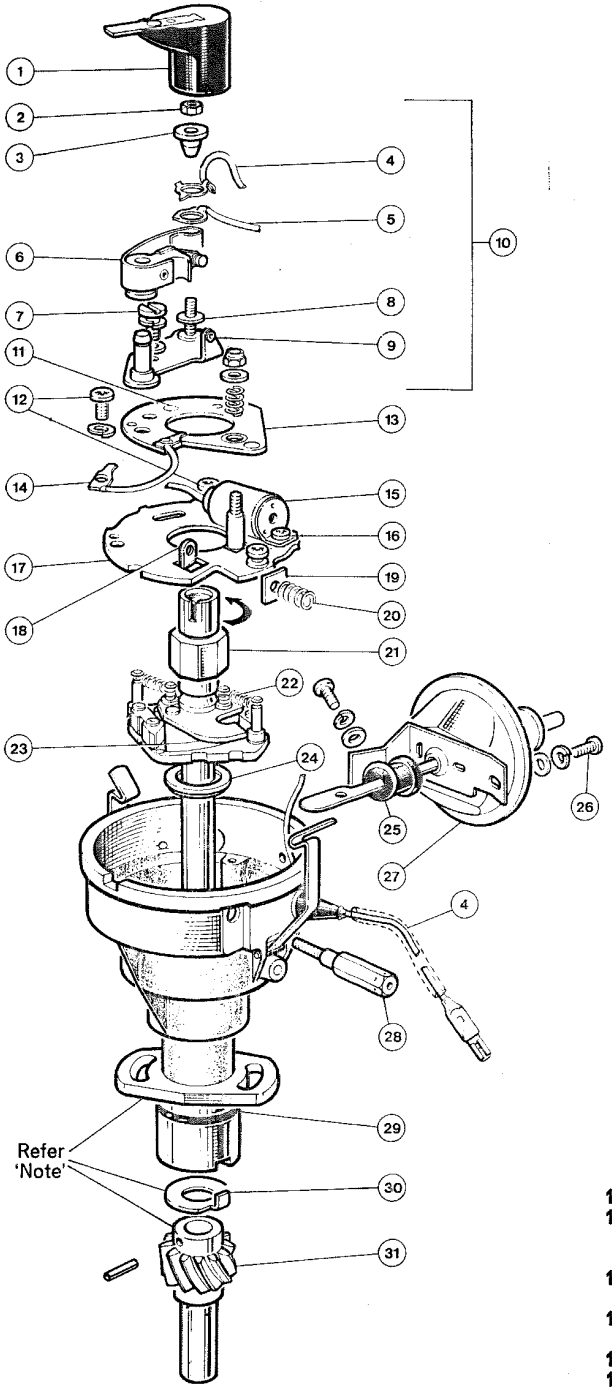
Alternative contact-breakers

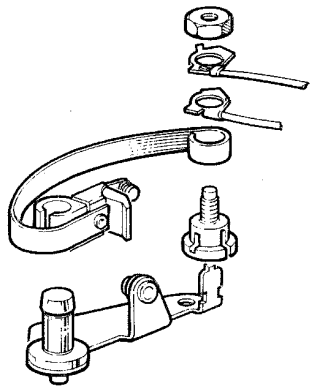


1 Rotor
2 Fixing nut
3 Insul bush
4 L.T. cable (fly-lead)
5 Capacitor cable
6 Moving contact
7 Screw and washer
8 Insul washer
9 Fixed contact plate
10 Contact set (items 2–9)
11 Vacuum actuating peg, riveted to underside of plate
12 C/B screw and washer (3 off)
13 Contact-breaker base plate
14 Earth lead
15 Capacitor
16 Screw and washer
17 Contact-breaker bearing plate
18 Threaded hole } item 28
19 Plastic friction strip } item 28
20 Tension spring } item 28
21 Eight-lobe cam
22 Centrifugal timing control springs
23 Centrifugal timing control weights
24 Distance collar
25 Grommet
26 Screw and washer (2 off)
27 Vacuum unit
28 C/B dwell-angle adjuster
29 'O' ring oil seal
30 Thrust washer
31 Driving gear

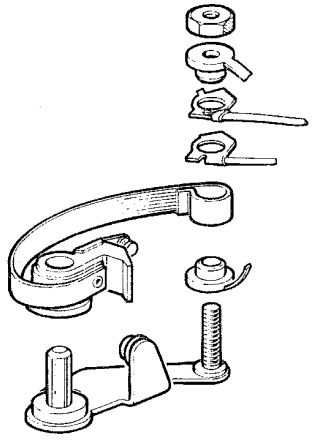
Fig. 1 Typical model 35D8 distributor with offset pivot contact-breaker (anti-clock rotation, viewed from drive-end, and advance vacuum unit)

Model 35D8 Distributors





Alternative contact-breakers



1 Rotor
2 Fixing nut
3 Insul bush
4 L.T. cable (fly-lead)
5 Capacitor cable
6 Moving contact
7 Screw and washer
8 Insul washer
9 Fixed contact plate
10 Contact set (items 2–9)
11 Vacuum actuating peg, riveted to underside of plate
12 C/B screw and washer (3 off)
13 Contact-breaker base plate
14 Earth lead
15 Capacitor
16 Screw and washer
17 Contact-breaker bearing plate
18 Threaded hole } item 28
19 Plastic friction strip } item 28
20 Tension spring } item 28
21 Eight-lobe cam
22 Centrifugal timing control springs
23 Centrifugal timing control weights
24 Distance collar
25 Grommet
26 Screw and washer (2 off)
27 Vacuum unit
28 C/B dwell-angle adjuster
29 'O' ring oil seal
30 Thrust washer
31 Driving gear

Fig. 2 Typical model 35D8 distributor with offset pivot contact-breaker (clock rotation, viewed from drive-end, and advance vacuum unit)

Note: Method of fixing may vary, and items 30 and 31 may be driving dog arrangement shown in Fig. 5.

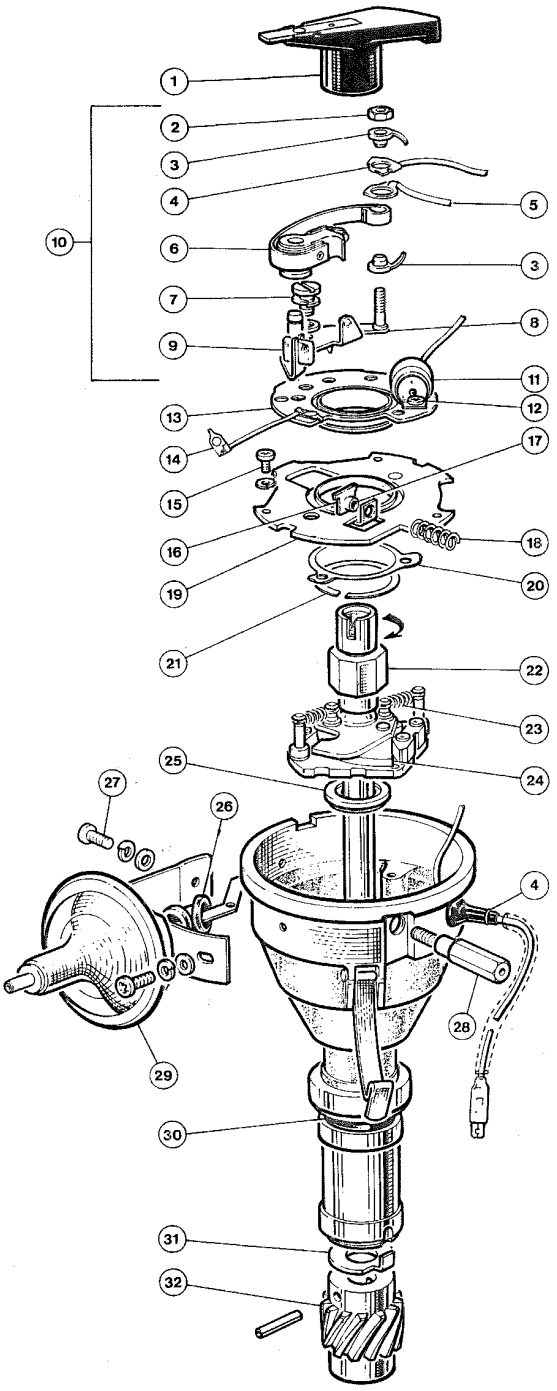
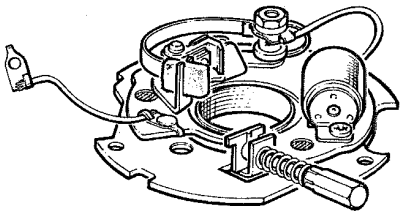
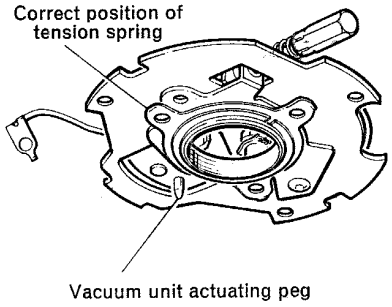


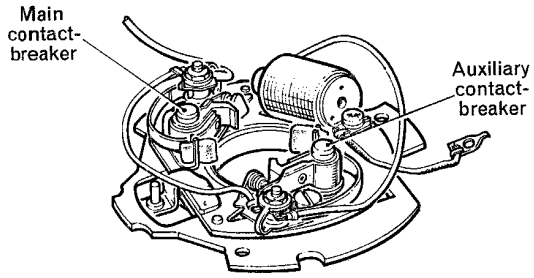
Fig. 3 Typical model 35D8 distributor with single or twin concentric contact-breaker(s) (anti-clock rotation, viewed from drive-end, and advance vacuum unit)



Concentric single contact-breaker assembly



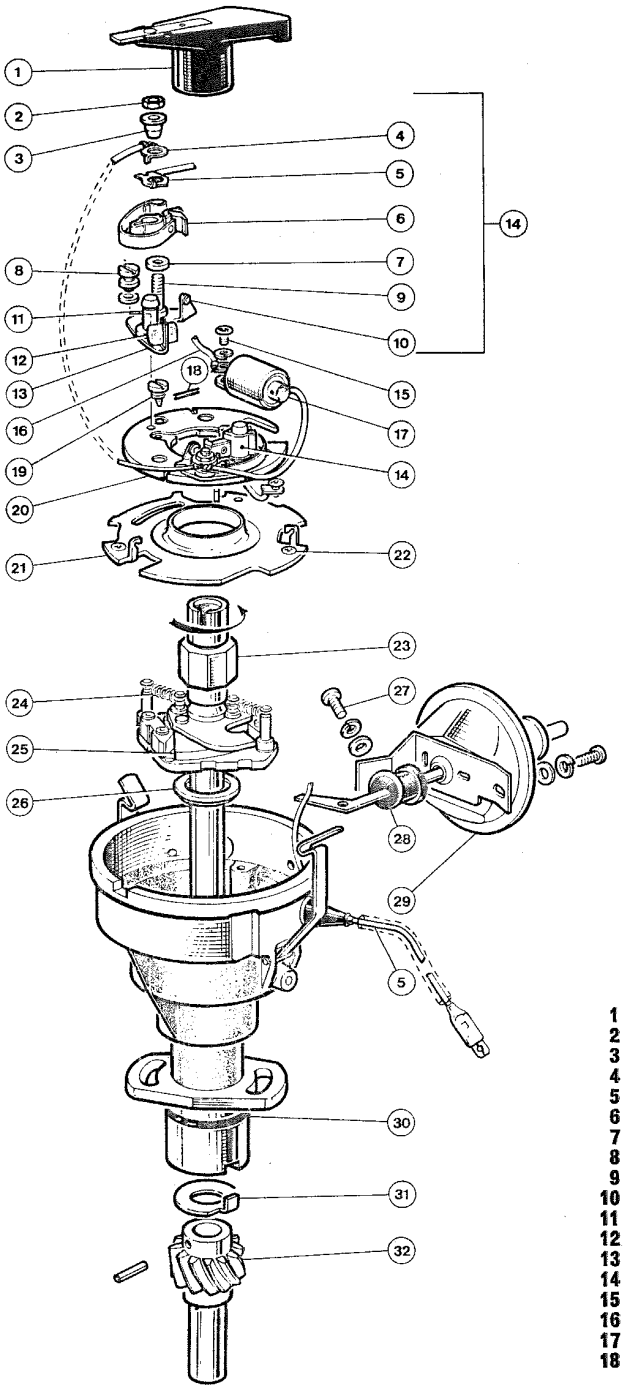
Underside view of concentric single contact-breaker assembly, showing correct positioning of 3-lobe tension spring

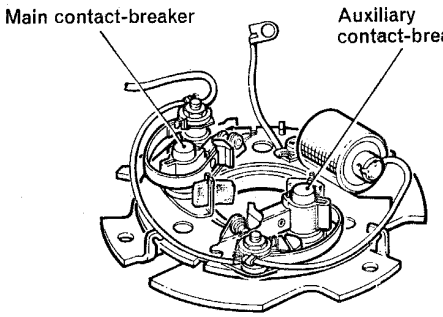


Concentric twin contact-breaker assembly (alternative fitment). Correct position of tension spring as shown above

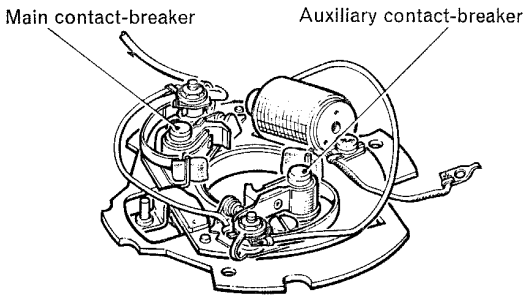
1 Rotor
2 Fixing nut
3 Twin insul bush
4 L.T. cable (fly-lead)
5 Capacitor cable
6 Moving contact
7 Screw and washer
8 Fixed contact plate
9 Felt pad
10 Contact set (items 2–9)
11 Capacitor
12 Screw and washer
13 C/B base plate
14 Earth lead
15 Screw and washer (3 off) for C/B bearing plate
16 Plastic friction strip
17 Threaded hole
18 Tension spring
19 Contact-breaker bearing plate
20 Three-lobe tension spring
21 Circlip
22 Eight-lobe cam
23 Centrifugal timing control springs
24 Centrifugal timing control weights
25 Distance collar
26 Grommet
27 Screw and washer (2 off)
28 C/B dwell-angle adjuster
29 Vacuum unit
30 'O' ring oil seal
31 Thrust washer
32 Driving gear

Model 35D8 Distributors





Concentric twin contact-breaker assembly (early type)

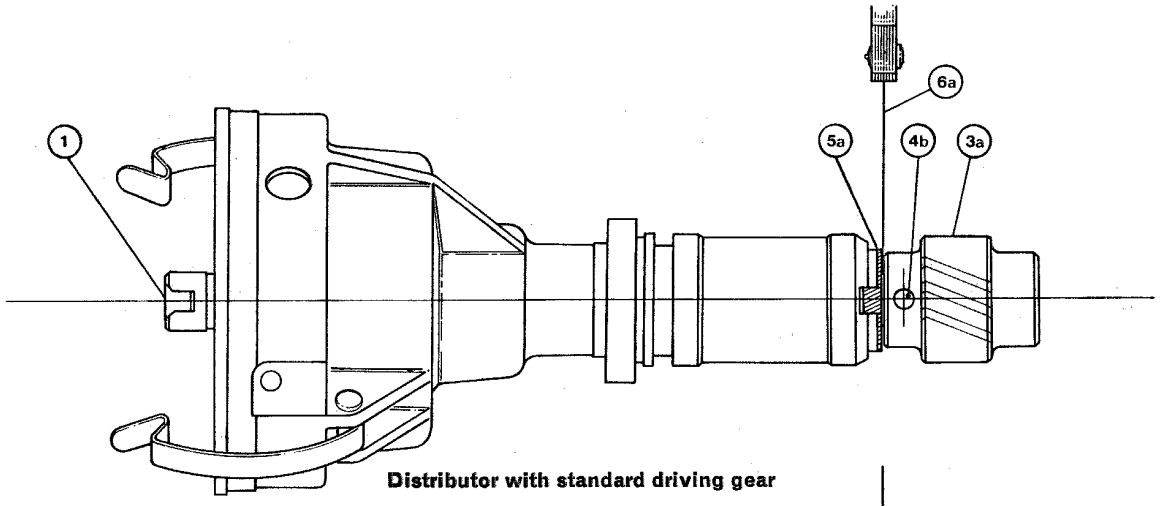


Concentric twin contact-breaker assembly (later type)

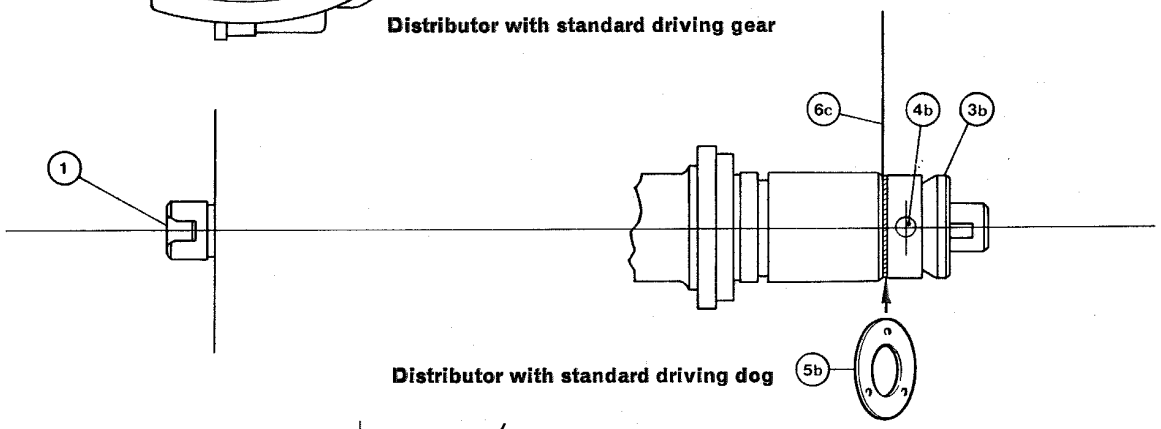
1 Rotor
2 Fixing nut
3 Insul bush
4 Contact-breaker L.T. cable
5 Main L.T. cable (fly-lead)
6 Moving contact
7 Insul washer
8 Screw and washer
9 L.T. terminal post
10 Contact
11 Pivot post
12 Felt pad
13 Fixed contact plate
14 Contact set (items 2–13)
15 Capacitor fixing screw
16 Earth lead
17 Capacitor
18 Tension spring (base-plate)
19 Vacuum unit connecting peg
20 Contact-breaker base-plate
21 Contact-breaker bearing plate
22 Fixing screws
23 Eight-lobe cam
24 Centrifugal timing-control springs
25 Centrifugal timing-control weights
26 Distance collar
27 Screw and washer (2 off)
28 Grommet
29 Vacuum unit
30 'O' ring oil seal
31 Thrust washer
32 Driving gear

Fig. 4 Typical model 35D8 distributor with twin concentric contact-breakers (clock rotation, viewed from drive-end, and advance vacuum unit)

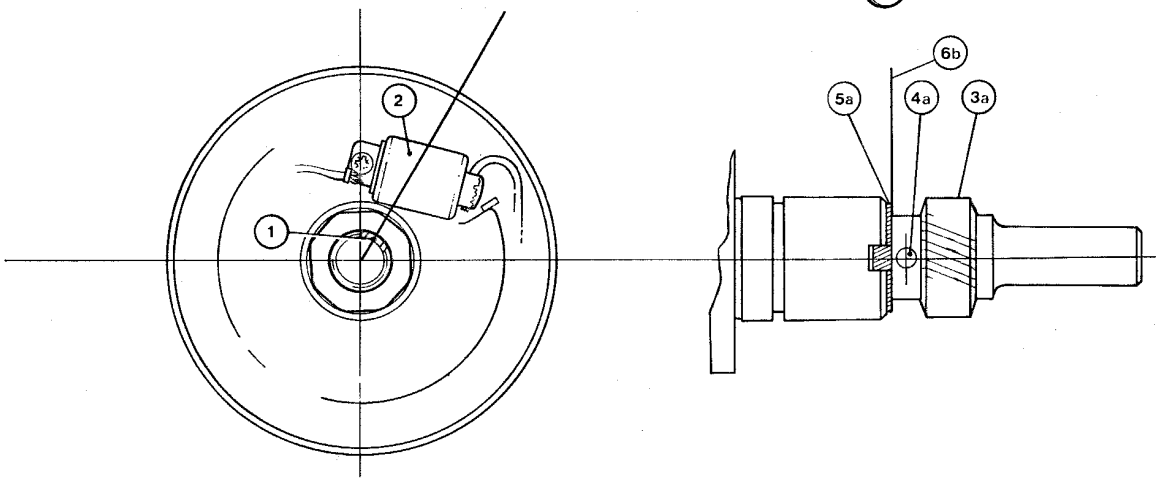
Model 35D8 Distributors



Distributor with standard driving gear



Distributor with standard driving dog



Distributor with special driving gear (extended shaft)

Fig. 5 Positioning driving dog or gear on distributor shaft

1 Rotor arm keyway in shaft
2 Capacitor
3 (a) Driving gear
(b) Driving dog (note offset driving tongue)
4 (a) Fitting pin and hole 3 mm ($\frac{1}{8}$") diameter
(b) " " " " 4 mm ($\frac{3}{16}$") "
5 (a) Steel thrust washer (with locking tab located in distributor shank)
(b) Brass thrust washer (fitted with raised 'pips' facing driving dog)
6 (a) End-float feeler gauge 0·18–0·30 mm (0·007–0·012")
(b) " " " 0·13–0·23 mm (0·005–0·009")
(c) " " " 0·13–0·25 mm (0·005–0·010")

Note: Reference 6(c) 0·13 mm (0·005") max. when fitting new thrust washer

Model 35D8 Distributors

1. GENERAL

These high performance distributors incorporate contact-breakers, either single or twin, operated by an eight-lobe cam. Lightweight construction and consequent low inertia of the contact-breaker(s) prevent contact-breaker bounce at high engine speeds.

The distributors incorporate conventional auto-advance mechanism and a vacuum unit (advance-type, retard-type or double-acting type). An advance-type vacuum unit is fitted to improve fuel economy, when the throttle is partially open, while a retard-type vacuum unit is provided to operate in conjunction with an exhaust emission control system, incorporated in the engine design. The retard-type vacuum unit retards ignition timing during engine idling and over-run conditions. The associated emission control system is designed to reduce air pollution from the vehicle exhaust fumes.

Single contact-breaker distributors incorporate a dwell-angle adjuster screw (Figs. 1, 2 and 3, item 28), which enables the dwell-angle (closed-contact period) to be set accurately, while the engine is running, and so obtain the optimum performance from the distributor.

Twin contact-breaker distributors (Figs. 3 and 4) have no provision for dwell-angle adjustment, because the auxiliary contact-breaker provides increased dwell-angle period, affording sufficient time for the ignition coil primary windings to be energised at high speeds, and thus resulting in an improved ignition spark. The twin contact-breakers are connected in parallel, each moving contact having a common connection to the low tension (L.T.) terminal of the distributor. Static ignition timing is carried out in conjunction with the 'main' contact-breaker, the 'auxiliary' contact-breaker being ignored during this process. (The 'main' and 'auxiliary' contact-breakers are shown in Figs. 3 and 4, inset illustration.)

Operation of Twin Contact-Breaker

Before the main contact-breaker opens, the auxiliary contact-breaker is already open and ineffective. As the distributor cam rotates further, the main contact-breaker **'opens'** breaking the ignition primary circuit, and producing a high tension ignition spark. The auxiliary contact-breaker then **'closes'** having the additional function of switching **'ON'** the ignition primary circuit, before the main contact-breaker closes. In this way the auxiliary contact-breaker increases the dwell-angle period, affording sufficient time for the ignition coil primary windings to be energised at high engine speeds.

The main contact-breaker now **'closes'**, but does not operate at this stage, because the auxiliary contact-breaker is also closed and the ignition primary circuit is switched **'ON'**.

Finally, the auxiliary contact-breaker **'opens'** again, but does not operate, because the main contact-breaker is still closed and holds the ignition primary circuit switched **'ON'**.

Further rotation of the cam causes the main contact-breaker to open again, and the cycle of operations is repeated leading to the production of the next H.T. spark.

2. ROUTINE MAINTENANCE

Occasionally wipe clean the outside of the distributor moulded cover, the H.T. leads and insulated tops of the sparking plugs.

(a) Single Contact-Breaker Distributors

(i) After the first 1600 kilometers (1000 miles)

Check the contact-breaker gap, using a dwell-angle meter, or alternatively, a test-lamp or voltmeter, suitable for the vehicle electrical system.

Checking with dwell-angle meter

With the engine running at approximately normal working speed, check that the dwell-angle (closed-contact period) is within 26°–30°. If not, reset the contact-breaker gap by turning the dwell-angle adjuster screw. (Clockwise to decrease and anti-clockwise to increase the dwell-angle.)

Note: Reset contact-breaker gap with decreasing dwell-angle adjustment, commencing above 32° and decreasing to a nominal 27°.

Checking with test-lamp or voltmeter (alternative to using dwell-angle meter)

1. Remove distributor moulded cover.
2. Turn engine until contact-breaker heel rests on peak of cam. (Removing sparking plugs facilitates this operation.)
3. Operate ignition switch to 'ON'.
4. Connect test-lamp, or voltmeter, between earth and the distributor fly-lead connection on the ignition coil. (Do not disconnect the fly-lead.) **The test-lamp should light or the voltmeter should register the system voltage.**
   Leave test-lamp or voltmeter connected and proceed to 5.
5. Reset the hexagonal adjuster screw, as follows: With adjuster screw pressed towards distributor body, turn adjuster 'anti-clockwise' until the test-lamp goes off or the voltmeter needle returns to 'zero' (contact-breaker now just closed). Turn the adjuster a further half-turn (three flats of the adjuster).
   Finally, turn the adjuster screw carefully 'clockwise' until the test-lamp lights or the voltmeter registers the system voltage (contact-breaker now just open) and then turn the adjuster five more flats. The contact-breaker gap is now set to provide the correct dwell-angle.

(ii) Every 9600 kilometers (6000 miles)

Examine the contact-breaker. If cleaning is necessary, use a petrol-moistened cloth. If the contact surfaces show signs of burning or excessive wear, dismantle the contact-breaker and refinish the contact surfaces with a carborundum stone or fine emery cloth and then wipe clean with the petrol-moistened cloth. During reassembly of the contact-breaker, smear the moving-contact pivot post with Shell Retinax 'A' or equivalent grease (in the case of a new contact-set, the pivot post is pre-lubricated).

After servicing the contact-breaker, reset the contact gap, as previously described in (i).

Finally, lubricate the distributor as subsequently detailed in (c).

(b) Twin Contact-Breaker Distributors

(i) After the first 1600 kilometers (1000 miles)

Check each contact-breaker gap, with a feeler gauge, as follows:

Turn engine until the heel of each contact-breaker in turn rests on a peak of the cam (removing sparking plugs facilitates this operation). Insert feeler gauge between the contacts and check whether the gap is within the limits 0.35–0.40 mm (0.014–0.016″). If necessary, the gap can be adjusted after slackening the fixed-contact securing screw.

(ii) Every 9600 kilometers (6000 miles)

Examine the contact-breakers. (Servicing is detailed in 2 (a) (ii), first para.). After servicing the contact-breaker, adjust the gap as detailed in previous para. (i).

Note: If new contact-sets are fitted, initial adjustment of the gaps should be 0.40–0.45 mm (0.016–0.018″), which allows for 'bedding-in' of the moving-contact heels.

(c) Lubrication

(i) Shell 'Retinax A' or equivalent grease

Lightly smear the grease on the working surface of the cam and on each contact-breaker pivot post. (The contact-breakers will need dismantling to enable the grease to be applied. If new contact-sets are fitted, the pivot post is pre-lubricated.)

Certain distributors have a felt pad fitted to the contact-breaker(s), to augment lubrication of the cam. This pad does not require periodic lubrication, as it was impregnated before fitting.

(ii) Shell 'Turbo 41' or clean engine oil

Apply the oil sparingly to the felt pad in the top of the cam beneath the rotor arm (to lubricate the cam spindle), and through the aperture at the base of the cam (to lubricate the auto-advance mechanism).

3. TECHNICAL DATA

Direction of rotation	...	According to arrow-marking on distributor body.
Firing angles	... ...	0.45°, 90° etc., ±1°
Dwell-angle (closed-contact period):		
(i) Single contact-breaker distributors	... ...	26–28°
(ii) Twin contact-breaker distributors	... ...	Determined by contact-breaker gap.
Contact-breaker gap:		
(i) Single contact-breaker distributors	... ...	Determined by dwell-angle setting.
(ii) Twin contact-breaker distributors	... ...	0.35–0.40 mm (0.014–0.016″) 0.40–0.45 mm (0.016–0.018″) Initial setting for new contact set.
Contact-breaker spring loading	... ...	5–7N or 512–680 gf (18–24 ozf).
Capacitor	... ...	0.18–0.25 microfarad.

4. SERVICING, DISMANTLING AND REASSEMBLY

(a) Bench Servicing and Dismantling

Except in the case of removal and refitting of the driving gear or driving dog, servicing is facilitated by lightly clamping the distributor upright in the jaws of a vice.

(i) Servicing the contact-breaker(s) and general lubrication

(Refer 2. ROUTINE MAINTENANCE).

(ii) Renewing the vacuum unit and initial dismantling

Distributors with offset pivot contact-breaker (Figs. 1 and 2)

Remove the moulded cover and the rotor arm.

Remove the nut and the washer and spring, securing the contact-breaker base plate to the pivot post. Lift the contact-breaker base plate assembly (complete with contact-breaker) from the pivot post, to disengage the base plate actuating peg from the vacuum unit operating lever. Remove the two screws which secure the vacuum unit to the side of the distributor body. Remove the vacuum unit and renew, if necessary.

If further dismantling is required, refer subsequent para's (iii) and (iv).

Distributors with single 'concentric' contact-breaker (Fig. 3)

Remove the moulded cover and the rotor arm.

Disengage the vacuum unit actuating peg from the vacuum operating lever, by first removing the cheese-headed fixing screw and then lifting the one-piece contact-breaker assembly from the base plate (see underside view of the contact-breaker assembly, Fig. 3, showing vacuum unit actuating peg on the underside of the fixed contact plate). Remove the two screws securing the vacuum unit to the side of the distributor body, remove the vacuum unit and, if necessary, renew.

If further dismantling is required, refer subsequent para's (iii) and (iv).

Distributors with twin 'concentric' contact-breakers, earlier type (Fig. 4)

Remove the moulded cover and rotor arm. Remove the two securing screws from the side of the distributor body.

Grasp the vacuum unit and pull on the vacuum unit until the contact-breaker base plate assembly has been rotated into a stop position. Slots in the base plate will now be in a position enabling the contact-breaker base plate assembly (complete with contact-breaker and capacitor) to be lifted and disengaged from the bearing plate. Still holding the vacuum unit, lift the contact-breaker base plate assembly and disengage the actuating peg from the vacuum operating lever, the vacuum unit can then be removed and if necessary renewed.

If further dismantling is required, refer subsequent para's (iii) and (iv).

Distributors with twin 'concentric' contact-breakers, later type (Figs. 3 and 4)

Remove the moulded cover and the rotor arm.

Remove the two screws securing the vacuum unit to the side of the distributor body.

Grasp the vacuum unit and pull on the vacuum unit until the contact-breaker base plate assembly has been rotated into a stop position. Still holding the vacuum unit, disengage the vacuum operating lever from the actuating peg and then remove the vacuum unit and, if necessary, renew.

If further dismantling is required, refer subsequent para's (iii) and (iv).

(iii) Renewing: Auto-advance springs, cam and centrifugal weights

Dismantle the distributor to the stage previously detailed in (ii), according to the type of contact-breaker (single offset-pivot, single concentric, and twin concentric earlier and later types).

Remove the three securing screws and lift the contact-breaker bearing plate (C.B. sub-assembly in the case of a twin concentric contact-breaker later type) from the distributor body. Access can now be obtained to the auto-advance springs, cam, and centrifugal weights, which if necessary can be renewed.

(iv) Renewing: Driving dog or gear, and the shaft-and-action plate assembly

Note: (1) The driving dog, or gear, is fitted in a particular position on the distributor shaft. To facilitate reassembly, before removing either the driving dog or the gear, note relative positions between the driving dog or gear and the rotor arm keyway in the shaft (see Fig. 5).

Note: (2) For service purposes: A new driving gear is supplied with the fitting pin hole predrilled, whereas a new driving dog is supplied with the fitting pin hole partially-drilled through one side of the dog only. A new shaft-and-action plate assembly is supplied with the shaft undrilled. Completion of the drilling of the fitting pin hole through the driving dog, or drilling of the fitting pin hole through the shaft, must be carried out after the driving dog or gear has been correctly positioned on the shaft (see Fig. 5).

Removing the driving dog or gear

Lightly clamp or carefully support the shank of the distributor, then drive or press the fitting pin from the driving dog or gear. Use a pin punch 3 mm or 4 mm ($\frac{1}{8}$" or $\frac{3}{16}$") diameter, according to the fitting pin size.

After removing the driving dog or gear and the thrust washer, the shaft-and-action plate assembly can be withdrawn from the distributor body.

When the shaft-and-action plate assembly is refitted, ensure the distance collar is fitted to the shaft beneath the action plate (see Figs. 1 to 4) and smear the shaft with clean engine oil.

Fitting the driving dog or gear

To ensure the thrust washer and the driving dog or gear are correctly assembled, on the distributor shaft, refer Fig. 5. Note the following main points:

(1) **Distributors with driving gear:** The steel thrust washer has a locking tab which engages in a keyway in the distributor shank.
Distributors with driving dog: The brass thrust washer has three raised 'pips' which must face the driving dog.

(2) The driving dog or gear must be positioned relative to the rotor arm keyway in the shaft.

(3) The end-float controlling feeler gauge is positioned differently for the purpose of fitting a driving dog and a driving gear.

With the thrust washer and the driving dog or gear and the end-float controlling feeler gauge in position as shown in Fig. 5, use the hole provided in the driving dog or gear as a guide for the drill and pass the appropriate size drill through the shaft and through the other side of the driving dog or gear. (Apply pressure to the rotor arm end of the shaft, whilst carrying out the drilling operation, so ensuring the correct amount of end-float when the feeler gauge is removed.) After removing the feeler gauge, secure the driving dog or gear with the fitting pin and lightly rivet both ends of the pin.

(b) Reassembly

The general reassembly of the distributor is simply a reversal of the dismantling procedure. During reassembly, lubricate the following parts:

(i) Cam spindle and moving parts of the centrifugal auto-advance mechanism:— Smear with Shell 'Turbo 41' oil, or clean engine oil.

(ii) Nylon bearing pads and the vacuum actuating-arm connecting peg on the underside of the contact-breaker base plate:— Smear with Rocol No. 30863 grease or equivalent lubricant.

(iii) The cam and contact-breaker pivot post:— Smear with Shell 'Retinax A' grease, or equivalent lubricant.

(iv) The felt pad located in the top of the shaft (beneath the rotor arm):— Apply a few drops of Shell 'Turbo 41' oil, or clean engine oil.