

Ignition Distributors

FORD MOTOR CO. DUAL ADVANCE

DESCRIPTION

DUAL ADVANCE DISTRIBUTORS

Conventional automatic and vacuum advance type using adjustable vacuum advance control unit and a pivoted type breaker plate mounted on a stationary sub-plate. Breaker plate is linked directly to vacuum advance unit and centrifugal advance is provided by governor type weights mounted below stationary sub-plate. Breaker arm and rubbing block assembly is mounted on contact with assembly bracket and does not have conventional pivot post.

VACUUM UNITS

Single and double diaphragm vacuum units use same centrifugal advance mechanism. On double diaphragm units, outer diaphragm utilizes carburetor vacuum to advance ignition timing. Inner diaphragm is actuated by intake manifold vacuum to provide additional ignition timing retard during closed throttle deceleration and idle.

SPECIFICATIONS

POINT GAP, CAM ANGLE & BREAKER ARM SPRING TENSION

See appropriate article in TUNE-UP Section.

CENTRIFUGAL & VACUUM ADVANCE

See DISTRIBUTOR ADVANCE SPECIFICATIONS in this Section.

ADJUSTMENT

CONTACT POINT AND CAM ANGLE SETTING

On new points, insert a feeler gauge between points with rubbing block on peak of cam lobe. On used points, set point gap by checking cam angle since roughness of points will not allow accurate reading. Adjust by loosening stationary contact lock screw.

CONTACT POINT ALIGNMENT

Align points for full face contact by bending stationary contact bracket. **DO NOT bend breaker arm.**

BREAKER ARM SPRING TENSION

Check tension with spring scale hooked over movable contact and pulled at right angle to contact. Note reading as points just start to open. On pivotless type points, no adjustment is possible (replace breaker point assembly). On pivoted type points, adjust spring tension by loosening contact spring nut and moving spring as necessary.

SPARK ADVANCE ADJUSTMENT

Vacuum Advance (Dual Advance Distributor) – With above adjustments correct, check vacuum advance at the first vacuum setting given in specifications. If reading is not within specifications, change calibration washers between vacuum chamber spring and nut. Adding a washer will decrease advance, and removal of a washer will increase advance. After one vacuum reading checked, test distributor over the full specified range of vacuum settings without changing RPM setting. If readings not within specifications, it indicates incorrect spring tension, vacuum leakage, or the wrong fibre stop has been installed in vacuum chamber of diaphragm housing.

Centrifugal Advance (Dual Advance Distributors) – With distributor mounted on a test stand, check centrifugal advance at the first (lowest) RPM setting shown in table. If advance reading not within specifications, adjust by bending one adjusting bracket (work with a screwdriver through adjusting hole in breaker plate). Bend adjusting bracket away from distributor shaft to decrease advance and toward the shaft to increase advance. With this adjustment correct, test advance at speed next below the maximum. If advance not within specifications, bend the other adjusting bracket to obtain correct advance. As a check, test distributor over full range of specified speeds.

Vacuum Retard (Double Diaphragm) – Check retard operation at normal engine idle. Initial timing should retard to approximately TDC if initial timing is correct. On some engines, timing may retard to as low as 6 degrees ATDC.

NOTE – If vacuum advance or vacuum retard is not functioning properly, remove distributor and check it on distributor tester. Replace dual diaphragm unit if retard portion is not to specification or advance portion cannot be calibrated to specification. Replace vacuum unit if diaphragm leaks.

OVERHAUL

DISASSEMBLY

- 1) Remove rotor. Disconnect primary and condenser wires at breaker point assembly terminal, remove breaker point assembly and condenser. Disconnect vacuum diaphragm link from breaker plate, remove vacuum diaphragm mounting screws and slide vacuum diaphragm out. Working from inside distributor housing, pull primary lead through opening in distributor.
- 2) Remove spring clip, flat washer, and spring washer securing breaker plate to sub-plate, then remove sub-plate retaining screws and lift both plates out.
- 3) Mark one advance weight, pivot pin, weight spring, and bracket to ensure correct reassembly, then unhook and remove weight springs. Lift lubricating wick from cam assembly, remove retainer and lift cam assembly off distributor shaft, remove thrust washer. Remove advance weight retainer and lift weights out. Remove distributor cap clamps.
- 4) On 6 Cyl. distributors, drive out gear roll pin and mark gear and shaft for hole alignment when gear replaced, then support gear on support plate in arbor press and press shaft out of gear and housing.
- 5) On V8 distributors, drive out gear roll pin, support gear on support plate in arbor press and press shaft out of gear. Remove shaft collar roll pin, invert distributor in arbor press and press shaft out of collar and distributor housing.

INSPECTION

Inspect all parts for damage or wear and replace as necessary. Check distributor shaft for wear at the bushing.

BUSHING REPLACEMENT

Removal – Use suitable tool to drive old bushings out (upper and lower bushings on V8 distributors).

Installation – Oil new bushing and install using suitable tool (T57L-12120-A), and press bushing in upper end of distributor housing until tool bottoms against distributor. Burnish bushing to correct size using suitable tool (12132). Install lower bushing in V-8 distributors in a similar manner.

FORD MOTOR CO. DUAL ADVANCE (Cont.)

REASSEMBLY

Reverse disassembly procedure and note the following:

Using Original Shaft & Gear — Oil shaft and slide it into position in housing, install gear (6 Cyl. Distributor) or collar (V-8 Distributor) on shaft and align pin hole in gear or collar with pin hole in shaft. Install new roll pin. Using feeler gauge, check for specified endplay between distributor base and gear or collar. If endplay is not within specifications, replace shaft and gear as an assembly.

Using New Shaft & Gear — Press new gear (6 Cyl. Distributor) or collar (V-8 Distributors) until shaft end play is within specifications. Using opening in gear or collar as a pilot, drill 1/8" hole through shaft. Install new roll pin in this hole. On V-8 distributors, press gear onto shaft until distance from bottom face of gear to bottom face of distributor mounting flange is within specifications. Using hole in gear as a pilot, drill 1/8" hole through shaft and install new roll pin in this hole.

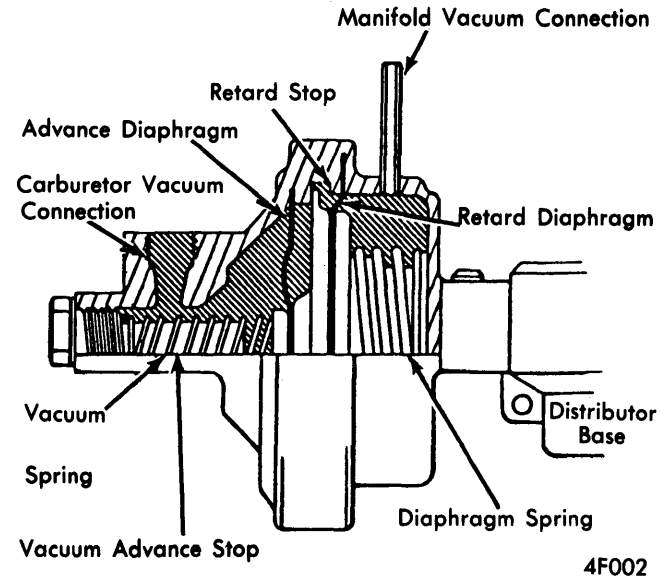
Distributor Shaft Endplay	
Application	Endplay
170", 200", 352", 360", 390"	.022-.033"
240", 300"	.003-.010"
289", 302", 460"	.024-.035"

① Gear Distance	
Application	Distance
170", 200", 240", 300"	2.510-2.515"
289", 302", 460"	4.031-4.038"
352", 360", 390"	3.071-3.078"

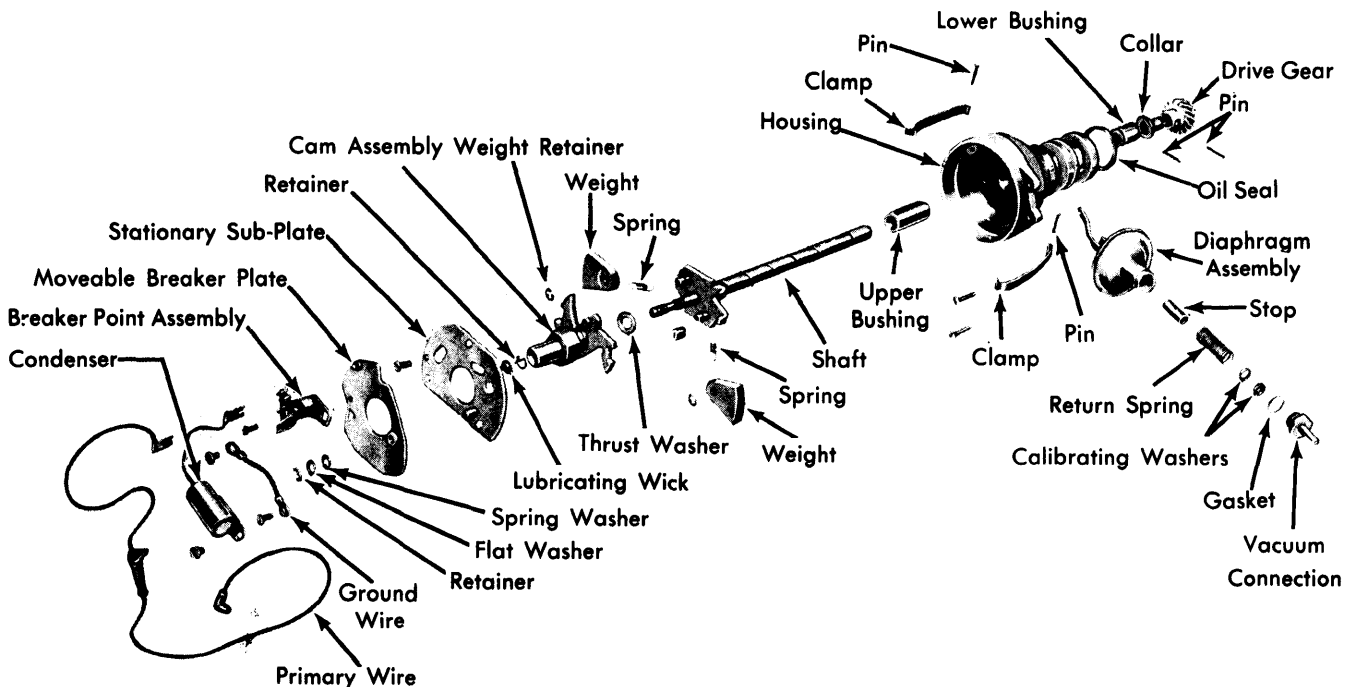
① — From bottom of gear to bottom of mounting flange.

Breaker Cam Installation — Fill grooves in upper portion of distributor shaft with Distributor Cam Lubricant. Install cam with marked spring bracket on cam near marked spring bracket on stop plate. If new cam is installed, index cam.

Cam Indexing — Hypalon covered stop must be installed in correct cam plate control slot (some cams have size of slot in degrees stamped near slot). Measure length of slot used on old cam and use corresponding slot on new cam. **CAUTION** — Maximum advance will be incorrect if wrong slot used.



DOUBLE DIAPHRAGM VACUUM ADVANCE UNIT



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FORD DUAL ADVANCE DISTRIBUTOR ASSEMBLY