

QUICK REFERENCE GUIDE

DISTRIBUTOR TESTING

USING SUN'S DT-504, DT-506 AND DT-404 DISTRIBUTOR TESTERS

This is a condensed test procedure. For complete information, see Instruction Manual and applicable Suntester Bulletins.

TESTER PREPARATION

1. Place all controls in OFF position.
2. Zero meters and gauge.
3. Plug AC cord into proper outlet. See tester nameplate.

DISTRIBUTOR MOUNTING

1. Using elevation crank, raise clamp arms high enough to permit shaft of distributor to clear drive chuck.
2. Position distributor in clamp and tighten clamp arms securely on machined surface of distributor body.
3. Using the elevation crank, lower the distributor until the gear, or about $\frac{3}{4}$ " of the tip of the shaft, enters the drive chuck or the adapter, if used. Do not bottom the distributor shaft in the chuck or adapter. Tighten the chuck securely.

TESTING DISTRIBUTORS WITH CONTACT POINTS

CONDENSER TEST

1. Set MOTOR SWITCH to RIGHT HAND DRIVE for clockwise rotating distributors and to LEFT HAND DRIVE for distributors with counterclockwise rotation as viewed from top.
2. Connect condenser test lead clips together and turn COND. CAL. (CONDENSER CALIBRATE) knob clockwise from OFF position.
3. Allow approximately 30 seconds for tester warm up and adjust control until meter reads on SET LINE.
4. Rotate distributor until cam holds points open. Separate test leads and connect one to the distributor primary terminal and the other to the distributor body.

Series Resistance Test

Read SERIES RES. (RESISTANCE) on CONDENSER METER. Pointer should indicate in black bar at right end of scale.

Capacity Test

Hold test selector knob at CAPACITY position and note CONDENSER METER indications on CAPACITY MFD (MICROFARAD) scale. Compare with manufacturer's specifications.

Leakage Test

Hold test selector knob at LEAKAGE position. CONDENSER METER should read in the black bar at left end of scale. Release knob.

5. Set COND. CAL. knob to OFF, disconnect test leads, and position MOTOR SWITCH to OFF.

CALIBRATION AND DISTRIBUTOR TESTING

1. Set MOTOR SWITCH to RIGHT HAND DRIVE for clockwise rotating distributors and to LEFT HAND DRIVE for distributors with counterclockwise rotation.
2. Connect DISTRIBUTOR LEAD and GROUND LEAD clips together.
3. Set RPM RANGE switch to high range (4000 or 6000).
4. Turn CAL. (CALIBRATE) CYL (CYLINDER) select knob to CAL. position and DWELL CALIBRATOR knob until DWELL meter pointer is at the SET LINE.
5. Make visual inspection of contact point alignment, rubbing block condition and cam lobe surface condition.
6. Test breaker point spring tension per spring tension gauge instructions.
7. Set CAL. CYL. knob to the number of lobes on the distributor cam.

NOTE: The number of flashing arrows that will appear on the degree ring in the center of the tester match the number of lobes on the distributor cam.

Contact Point Resistance Test

1. Separate DISTRIBUTOR and GROUND LEADS and connect Red lead to distributor primary lead and Black lead to distributor body.
2. With contact points closed, the DWELL meter should read within the black bar at the right end of the top DIST. RES. scale.

Dwell Test

1. Insure CAL. CYL. knob is set to match the number of cylinders in test engine.
2. Adjust speed as desired, normally 500 RPM.
3. Adjust dwell to manufacturer's specifications.

Dwell Variation

While watching DWELL meter, vary the distributor speed from 200 RPM to 1750 and back to 200 RPM. DWELL meter should not vary more than 2°.

Point Float

With tester connected as previously described, watch DWELL meter while gradually increasing distributor speed to 3000 RPM or desired speed. A sudden drop in the DWELL meter indicates point float.

Point Bounce

With distributor running gradually increase speed while watching the arrows on the degree ring. Extra arrows on degree ring indicate point bounce.

DISTRIBUTOR MECHANICAL COMPONENTS

Cam Lobe Accuracy

Adjust RPM RANGE switch to 1000 RPM and rotate degree ring until the zero on ring is aligned with one of the arrow flashes. Observe relative position of all arrow flashes. All arrows should be evenly spaced around degree ring ± 1 degree. Apply vacuum to vacuum advance unit until full advance is reached. Relative position of arrows should still be ± 1 degree.

Bushings and Shaft

Observe DWELL meter while varying speed control. Excessive dwell variation indicates bushing or shaft wear.

Breaker Plate Condition

Apply 0 to 20 inches to 0 vacuum unit while observing arrows on degree ring. There should be no intermittent or extra arrows. Make visual inspection also.

MECHANICAL ADVANCE

1. With distributor operating as described in

previous step, set Zero on degree ring in line with the arrow flash.

2. Increase distributor speed, pausing at each specified speed to note the amount of advance. Compare with manufacturer's specifications.
3. Momentarily exceed the highest specified speed. Then, while returning to zero, recheck each test speed.

VACUUM ADVANCE

1. To test vacuum chamber leaks, turn on VACUUM PUMP switch, clamp off vacuum hose and attach to vacuum chamber.
2. Adjust VACUUM REGULATOR knob to obtain 15" vacuum on gauge. Release hose clamp and observe vacuum gauge. Gauge reading will momentarily fall to a lower reading and should then return to 15" vacuum if chamber is good.
3. With no vacuum applied to the unit, set the zero of the degree ring in line with one of the arrows.
4. Adjust the VACUUM REGULATOR knob to apply proper amount of vacuum for each specified check point in turn and compare amount of advance with manufacturer's specifications.
5. Momentarily exceed the higher vacuum value specified; then reduce vacuum and again note advance obtained at each specified check point.
6. To check vacuum spark retard, connect vacuum hose to retard port on distributor and test as previously described in Vacuum Advance test.

TESTING BREAKERLESS DISTRIBUTORS

Breakerless Distributors such as Chrysler, Ford Duro-Spark I and II, GM-H.E.I. etc. using Magnetic Pick-up coils require the use of a Sun distributor pulse amplifier model DPA. See appropriate Sun-tester bulletin for hook-up information.

Some breakerless systems such as Prestolite BID do not produce a magnetic pulse in the distributor. These systems cannot be tested with the DPA. The complete ignition system must be tested using an external 12 volt power source. See Sun-tester Bulletin #238.

Skip tests of points. Perform all other tests that apply, including dwell.