

00 — Ignition Point Adjustment

Foot notes for the tables on pages 101 through 103

- 1) The testing lamp check is applicable only to assembly adjustments for running-in of the ignition distributor; for comparison and in order to avoid measuring faults, this check should be carried through on cylinder 1 and 4 with 4-cylinder engines or 1 and 6 with 6-cylinder engines, and on cylinder 1 and 4 and 5 and 8 with type 600. Both values, should not depart from one another by more than 1.5°. With the stroboscopic light check at starter speed, the basic adjustment values are by approx. 1–2° more advanced than with the spark check by testing lamp.
 - 2) **Attention! Decisive for measuring the ignition point is exclusively the adjustment figure at a speed of $n = 4500$ r.p.m. or with type 600 at a speed of $n = 3000$ r.p.m. without vacuum advance.**
The ignition point is adjusted at 4500 r.p.m. or 3000 r.p.m. resp. without vacuum adjusting device and without load. Then check the adjustment curve of the centrifugal adjusting device at 3000, 1500, and 800 r.p.m. also without vacuum adjusting device and without load.
 - 3) Then measure the total advance of the vacuum adjusting device without load at 4500 r.p.m. The ignition point is in connection herewith additionally advanced by the degrees indicated on the table.
 - 4) With types 230SE and 230SL with the ignition distributors 0231 116 047 and 0231 116 051 with retarding adjusting device and mixture controller with boring for vacuum control downstream the throttle valve, measuring of vacuum control is, however, carried out without load with completely closed throttle valve, i.e. with idling speed and unhooked regulating bar from regulating shaft to the reversing lever at the suction pipe. The ignition point is thereby retarded, i.e. the ignition point must be $2^\circ \pm 2$ a. TDC with ignition distributor 0231 116 051 and $3^\circ \pm 2$ a. TDC with ignition distributor 0231 116 047. In case of deviations the vacuum adjusting device should be checked.
 - 5) The adjusting range, the total advance of the vacuum adjusting device can be enlarged by unscrewing the stop nut on the pull rod, connecting the diaphragm in the vacuum cell with the breaker plate, or decreased by screwing in.
 - 6) The begin of the vacuum advance can be corrected by turning in or backing out the adjusting screw in the vacuum cell.
- Note:** With fuel injection engines, vacuum advance should only be initiated when the throttle valve starts to open. During idling the throttle valve must be completely closed.
- 7) Measured at cylinder 1 = $26^\circ - 2^\circ$ before TDC.
 - 8) Measured at cylinder 5 = $64^\circ + 2^\circ$ after TDC.
- Note:** With type 600 measuring of the ignition point should be performed at cylinder 1 and at cylinder 5, to determine the specified ignition interval of $90^\circ \pm 2^\circ$ between contact breaker 1 and 2. If the ignition interval is beyond 88–92°, it must be corrected. (See Workshop Manual Type 600, Job No. 00–6, Ignition Point Adjustment.)

Spark Plugs — 00 Breaker Point Gap and Dwell Angle

Foot notes of page 104 continued.

- 3) If, when using a fuel of a lower octane rating than 95 (research method) with fuel injection engines or of a lower octane rating than 98 (research method) with carburetor engines, a pinking of the engine is observed in the speed range between 1500 and 2500 r.p.m., retard ignition point and adapt it to the octane rating of the used fuel. As indication for this adjustment applies: Retard ignition by appr. 1° KW per 1 octane rating. Retardation by one graduation mark on the scale of the ignition distributor seat results in a change of the ignition point by 2° KW. The ignition point should, however, only be retarded by 8° max. As soon as fuel of the specified octane rating is available again, fully advance the timing of the ignition.
- 10) Without vacuum.

Spark Plugs

As to electrode gap, thread length, list of released spark plugs etc., please refer to the special spark plug chart. Regarding spark plug appearance, see workshop manual, type 199.

Breaker Point Gap and Dwell Angle of Ignition Distributor

Type	190 C 200	220 B, 220 SB 220 SEB, 230, 230 S 230 SL, 250 S, 250 SE	300 SE 300 SEB 300 SEL	600
Breaker point gap	0.4–0.5	0.3–0.4	0.35–0.45	0.3–0.4
Dwell angle ¹⁾	$50^\circ \pm 2^\circ$	$38^\circ \pm 3^\circ$	$49^\circ \pm 2^\circ$	$36^\circ \pm 2^\circ$

Note: With new breaker points be, as far as possible, out for the upper tolerance limit of dwell angle adjustment. Do not change dwell angle with run-in breaker points; if dwell angle differs by more than minus 5° from the nominal value, replace breaker point sets.

- 1) Measure dwell angle at starting or idling speed. With increasing speed up to $n = 4000$ r.p.m., a tolerance of minus 3° is permissible.
- 2) Check both breaker point sets separately. To do this, make one set inoperative by inserting a fibre plate.