

## 07.5–500 Checking and adjusting closing angle (dwell angle) and firing point

**Closing angle** (dwell angle) (transistorized ignition system)

**Identification:** blue ignition coil, two series resistances and transistorized switchgear.

Engine	Closing angle (dwell angle) testing and <b>adjusting value</b> at idle <sup>1)</sup>	Change between idle and 3000/min
116, 117	30–34°	max ± 3°

<sup>1)</sup> When installing new or adjusting used breaker points, adjust closing angle (dwell angle) according to bold-face value ± 1°.

### A. Standard version

**Firing point** (for normal and low compression engines)

Engine	Ignition distributor Bosch order no.	Adjusting value <sup>1)</sup> of firing point without vacuum at 3000/min	Test values ignition adjustment with/without vacuum			Vacuum adjustment after		Installation value of ignition distributor at starting speed without vacuum
			idle <sup>2)</sup>	1500/min	3000/min	„retard” at idle	„advance” at 3000/min	
116	0 231 302 001 0 231 401 001 0 231 402 001 0 231 402 004 0 231 402 006	<b>34°<sup>3)</sup></b>	TDC±2°	16–20°	34°	8–12°	8–12°	10° before TDC
	0 231 403 001 0 231 403 005 0 231 403 009	<b>30°<sup>4)</sup></b>	with vacuum					
117	0 231 403 003 0 231 403 004 0 231 403 008	<b>30°<sup>4)</sup></b>	TDC±2° with	15–19° without	30° without			

<sup>1)</sup> If normally compressed engines are operated with fuel under 98 RON (min 88 MON), adjust firing point in direction of „retard” and match to octane rating of fuel used. A reference value for this adjustment is: set firing point back by 1–2° crank angle per 1 RON. Max setback should not exceed 6° crank angle.

**Attention!**

Taking firing point back is considered an „emergency measure”. Reduced input and increased fuel consumption will result. In addition, the engine cannot be fully loaded. **As soon as fuel with specified octane number is available, set again to full advance.**

<sup>2)</sup> Switch off air conditioner.

<sup>3)</sup> On engines with retard adjustment, check specified idle speed with vacuum after adjusting firing point.

<sup>4)</sup> Pull-off both vacuum lines for ignition adjustment when setting firing point. After setting firing point, test specified firing point at idle with vacuum.

B. National version (J) (USA)

Engine	Ignition distributor Bosch order no.	Adjusting value of firing point with vacuum at idle	Test values ignition adjustment with vacuum		Vacuum adjustment after „retard“ at idle		„advance“ at 3000/min	Installation value of ignition distributor at starting speed without vacuum
			1500/min	3000/min				

(J)

Identification: Information plate with yellow printing on cylinder head cover.

Up to introduction of model year 1976

Engine	Ignition distributor Bosch order no.	Adjusting value of firing point with vacuum	Test values ignition adjustment with vacuum	Vacuum adjustment after „retard“ at idle	„advance“ at 3000/min	Installation value of ignition distributor at starting speed without vacuum
116	0 231 403 001 0 231 403 005	TDC	16–20°	28–32°	8–12°	8–12°
117	0 231 403 003 0 231 403 004					

(USA)

Identification: green/black information plate in English on cross member in front of radiator.

Model year 1970/71

Engine	Ignition distributor Bosch order no.	Adjusting value of firing point with vacuum	Test values ignition adjustment with vacuum	Vacuum adjustment after „retard“ at idle	„advance“ at 3000/min	Installation value of ignition distributor at starting speed without vacuum
116	0 231 302 002 0 231 401 002	6° after TDC	TDC±1°	30–38°	12–18°	–

Model year 1972

Engine	Ignition distributor Bosch order no.	Adjusting value of firing point with vacuum	Test values ignition adjustment with vacuum	Vacuum adjustment after „retard“ at idle	„advance“ at 3000/min	Installation value of ignition distributor at starting speed without vacuum
117	0 231 401 003 0 231 402 002	5° after TDC	11–15°	18–22°	10–14°	–

Model year 1973

Engine	Ignition distributor Bosch order no.	Adjusting value of firing point with vacuum	Test values ignition adjustment with vacuum	Vacuum adjustment after „retard“ at idle	„advance“ at 3000/min	Installation value of ignition distributor at starting speed without vacuum
117	0 231 402 007 0 231 402 002 0 231 402 005	5° after TDC	10–14°	18–22°	10–14°	–

Model year 1974

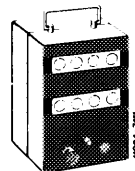
Engine	Ignition distributor Bosch order no.	Adjusting value of firing point with vacuum	Test values ignition adjustment with vacuum	Vacuum adjustment after „retard“ at idle	„advance“ at 3000/min	Installation value of ignition distributor at starting speed without vacuum
117	0 231 403 006 0 231 403 007	5° after TDC	10–14°	18–22°	10–14°	–

Model year 1975

Engine	Ignition distributor Bosch order no.	Adjusting value of firing point with vacuum	Test values ignition adjustment with vacuum	Vacuum adjustment after „retard“ at idle	„advance“ at 3000/min	Installation value of ignition distributor at starting speed without vacuum
117	0 231 404 002	TDC	10–16° without vacuum	18–23°	6–10°	8–12°

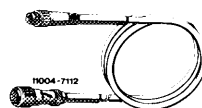
Special tools

Digital tester



001 589 54 21 00

Connecting cable



000 589 04 90 00

Conventional tools

CO measuring instrument, revolution counter, stroboscope, oscilloscope

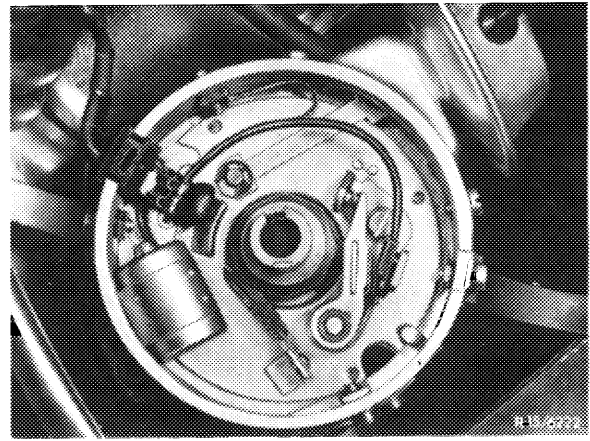
### Checking and adjusting closing angle (dwell angle)

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- 1 Measure closing angle at idle.
- 2 Measure closing angle change between idle and 3000/min, max change  $\pm 3^{\circ}$ .
- 3 Adjust closing angle, if required, or renew breaker points (07.5–505).

Closing angle can be adjusted for used contacts.

Large closing angle — small contact gap.  
Small closing angle — large contact gap.



### Checking and adjusting firing point

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- 4 Measure firing point with stroboscope or digital tester at specified speed with or without vacuum.
- 5 Loosen ignition distributor attachment (arrow) and set adjusting value of firing point by turning ignition distributor.

Clockwise = retard  
Counterclockwise = advance

Screw down ignition distributor and check firing point.

- 6 Check centrifugal and vacuum adjustment of ignition distributor. For this purpose, run through specified test values with or without vacuum adjustment.

