

Every 15 000 km / 10 000 miles

All gasoline engines

Dwell angle and ignition timing

Engine M	Dwell angle adjustment value at idling speed		Variation between idling and 3000/min	Ignition timing at 4500 /min without vacuum
	with standard coil ignition	with transisto- rized ignition ¹⁾		
100	total 36° ± 2° single 18° ± 1° ²⁾	--	max. ± 3°	at n = 3000/min Cyl. 1 26° BTDC Cyl. 5 62–66° ATDC ³⁾
110.921 110.922	42° ± 1°	—		28° ⁴⁾
110.981 110.983	—	34° ± 1°		34°
114.920	40° ± 1°	—		37°
114.923 NV				40°
114.980 114.981 NV	—	34° ± 1°		30°
115.920 115.923	52° ± 1°	—		43°
115.924 NV 115.926 NV				45°
115.951				40°
115.951 NV				
116	—	30° ± 1°		34° at n = 3000/min
117				30° ⁴⁾
130.920 130.923	40° ± 1°	—		35°
130.921 NV				37°
130.980 130.981 130.983 130.984 NV				30°
180.954				37°
180.955 NV				40°

NV = Low compression

- 1) Identification: “blue” ignition coil, two series resistances and transistor switching unit.
- 2) Complete dwell angle adjustment on both contact pairs accurately alike. To determine the dwell angle of one contact pair, make other pair inoperative by inserting an insulating shim.
- 3) If the test value is not attained, adjust contact plate in ignition distributor.
- 4) To adjust ignition timing remove both vacuum lines.

Dwell angle and ignition timing USA Version

Engine M	Dwell angle adjusting value for new contacts at idling speed 1)		Ignition timing adjusting value			
	with standard coil ignition	with transisto- rized ignition 2)	Model year 1968/69 Adjusting value at 4500/min without vacuum	Model year 1970/71 Adjusting value at idling speed with vacuum	Model year 1972	Model year 1973/74
100	total $36^{\circ} \pm 2^{\circ}$ single $18^{\circ} \pm 1^{\circ}$ 3)	$30^{\circ} \pm 1^{\circ}$ *	at n = 3000/min Cyl. 1 26° BTDC Cyl. 5 $62-66^{\circ}$ ATDC 4)	at n = 3000/min Cyl. 1 32° BTDC Cyl. 5 $56-60^{\circ}$ ATDC 4)	5° ATDC	—
110	—	$34^{\circ} \pm 1^{\circ}$	—	—	—	4° ATDC
114.920	$40^{\circ} \pm 1^{\circ}$	$30^{\circ} \pm 1^{\circ}$	37°	6° ATDC	—	—
115	$52^{\circ} \pm 1^{\circ}$	$47^{\circ} \pm 1^{\circ}$	43°	5° ATDC	5° ATDC	10° BTDC
116	—	$30^{\circ} \pm 1^{\circ}$	—	6° ATDC	—	—
117	—		—	—	5° ATDC	5° ATDC
130.920	$40^{\circ} \pm 1^{\circ}$		37°	4° ATDC	—	—
130.923	—		—		4° ATDC	—
130.980	$40^{\circ} \pm 1^{\circ}$		30°	8° ATDC	6° ATDC	—
180			37°	—	—	—

1) Dwell angle change between idling speed and 3000/min = max. $\pm 3^\circ$.

2) Identification: "blue" ignition coil, two series resistances and transistorized switching unit.

3) Complete dwell angle adjustment on both contact pairs accurately alike. To determine the dwell angle of one contact pair, make other pair inoperative by inserting an insulating shim.

4) If the value is not attained, adjust contact plate in ignition distributor.

Special Tools

Dwell angle measuring instrument, stroboscope, revolution counter

Adjust dwell angle

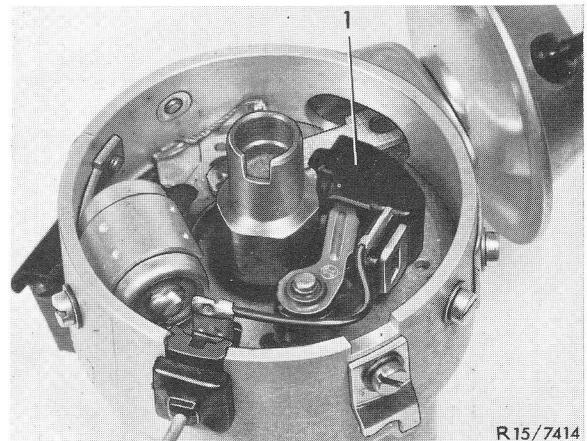
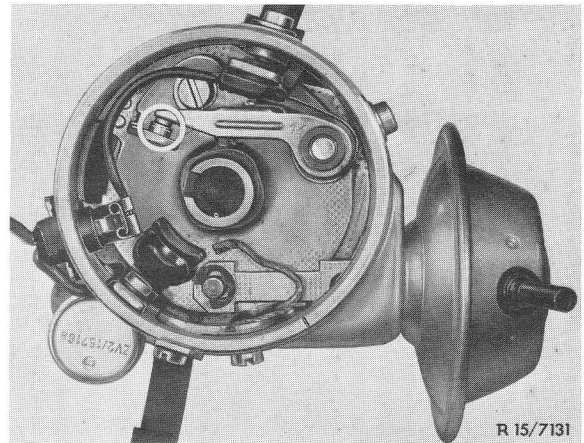
- Connect testers; for vehicles with transistorized ignition (see item 781).
- With engine at starting speed adjust dwell angle to correct setting.

On ignition distributors with protective cover (1), cover must be removed for replacing contact breaker points. When attaching cover, make sure that cover engages well and will not wipe against distributor shaft.

On ignition distributors with 2 pairs of contact breaker points, adjust dwell angles **individually**. For this purpose, make one contact pair inoperative by inserting an insulating shim.

- Check dwell angle at idling speed and adjust, if required.
- Check dwell angle change. When the speed increases from idling to 3000/min, the dwell angle change may be max. $\pm 3^\circ$.

Large dwell angle = small contact gap.
Small dwell angle = large contact gap.



1 Protective cover

Adjust ignition timing

- Switch-off air-conditioning.
- Check ignition timing with stroboscope at prescribed engine speed with or without vacuum hose, adjust if necessary.

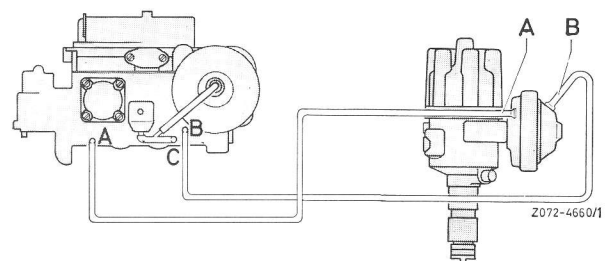
For adjustment, release distributor clamps slightly (see arrow) and adjust ignition timing by turning the distributor.

Towards the right = retard timing
Towards the left = advanced timing

- On ignition distributors with two pairs of contact breaker points, check firing point of 5th cylinder in addition.

If the test value is not attained, adjust contact plate in ignition distributor and check timing angle once again.

- Tighten fastening screw of ignition distributor and check firing point once again.



Vacuum connections, carburetor engine M 110

- A Vacuum connection "retard" (white)
B Vacuum connection "advance" (red)
C Vacuum connection to vacuum governor and fuel return valve

