

At first and second maintenance jobs

All gasoline engines

Dwell angle for standard coil ignition

Engine	Test value ¹⁾ at idling speed		Change between idling speed and 3000 rpm
M			
100	total single	33– 38° 16– 19° ²⁾	max. ± 3°
110		39– 43°	
114 130 180		34– 41°	
115		46– 53°	

- 1) Replace contacts if lower test value falls short (refer to item 773).
- 2) Adjust dwell angle on both contact pairs. To determine dwell angle of one contact pair, make other pair inoperative by inserting an insulating shim.

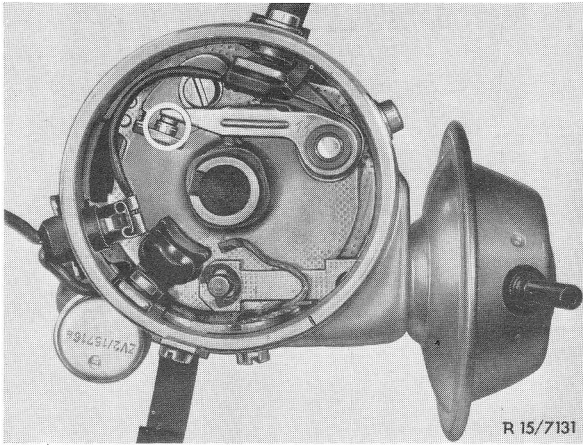
Dwell angle for transistorized ignition Identification: "blue" ignition coil, two series resistances and transistor switch unit

Engine	Test and adjusting value ³⁾ at idling speed		Change between idling speed and 3000 rpm
M			
110 114.980 114.981 NV		34 –40°	max. ± 3°
114.920 114.923 NV 130 180		30 –36°	
115		47 –53°	
100 116 117		30 –34°	

- NV = Low compression
- 3) If the test values are not attained, adjust contact breaker points to bold value ± 1°

Special Tool

Dwell angle measuring instrument, revolution counter



- Connect measuring instruments. For vehicles with transistorized ignition refer to pertinent notes.
- Measure dwell angle with engine idling.
- Measure variation in dwell angle between idling speed and 3000 rpm.
Max. variation $\pm 3^\circ$.

Note

With standard coil ignition the dwell angle on worn contact points should **not** be re-adjusted. When the limit of wear is reached, the contact points must be renewed, refer to item 773.

With transistorized ignition the dwell angle may be re-adjusted.

Instructions for measuring engine speed and dwell angle on vehicles with transistorized ignition

On vehicles with transistorized coil ignition the engine speed and the dwell angle **cannot** always be measured as accustomed.

Transistorized ignition systems of the germanium and silicon type are installed.

Identification mark:

Germanium-TSZ: Cable of **terminal 1** of ignition coil (color brown) **to ground**.

Silicon-TSZ: Cable of **terminal 1** of ignition coil (color black) to **series resistance** (0.6 Ohm).

Silicon-TSZ with standardized switching unit: Cable of **terminal 1** of ignition coil (color black) to **transistor switching unit terminal 16**.

Depending on type of tester employed and acc. to design of ignition system, connections must be made to varying terminals. Following are the required instructions for the most commonly used testers.

Tester connections for germanium – TSZ**SUN-testers without changeover for TSZ**

	Ge-switching unit (flat plug connector)	
RPM-dwell angle tester TDT 5, 6, 12,216	Red clip to	Black clip to
	Series resistor output 0,4 ohm (2 cable terminals at output)	Series resistor input 0,6 ohm (resistor between switching unit and ignition coil)
Exhaust emission-rpm-dwell angle tester CVT 260	Blue clips to cable connector terminal 7	Tester to battery Red clip to plus Black clip to minus
Engine tester ODT 83, EET 745, 820 EDET 1020	Cable connector terminal 7	Ground
	High-voltage trigger to cylinder 1 (connection, rpm impulse, secondary section)	

SUN-testers with changeover for TSZ

RPM-dwell angle tester TDT 12 DB Engine tester ODT 83, SMT 89 EET 745, 820, 1130 EDET 1020	Ignition coil terminal 15	Ground
	High-voltage trigger to cylinder 1 (connection, rpm impulse, secondary section)	

Bosch-testers

Mini-tester EFAW 226	Ignition coil terminal 15	Ignition coil terminal 1
RPM-dwell angle tester EFAW 166 C	Green clip to ignition coil terminal 15	Black clip to ignition coil terminal 1

Tester connections for silicon – TSZ

SUN-tester without changeover for TSZ

	Si-switching unit (flat plug connector)		Si-standardized switching unit (round plug connector)	
RPM-dwell angle tester TDT 5, 6, 12, 216	Red clip to	Black clip to	Red clip to	Black clip to
	Series resistor output 0.6 Ohm (cable terminal to switching unit terminal 16)	Ground	Ignition coil terminal 1	Ground
Exhaust emission rpm-dwell angle tester CVT 260	Blue clip to terminal 1	Tester to battery Red clip to + Black clip to –	Blue clip to ignition coil terminal 1	Tester to battery Red clip to + Black clip to –
Engine tester QDT 83, EET 745, 820, EDET 1020	Series resistor output 0.6 Ohm (cable terminal to switching unit terminal 16)	Ground	Ignition coil terminal 1	Ground
	High voltage trigger to cylinder 1 (connection, rpm impulse, secondary section)			

SUN-testers with changeover for TSZ

RPM-dwell angle tester TDT 12 DB	Cable connector terminal 7 or series resistor 0.6 Ohm terminal 16 (cable out- going end to switchgear)	Ground connection	Ignition coil terminal 1	Ground connection
Engine tester QDT 83, SMT 89, EET 745, 820, 1130 EDET 1020	High voltage trigger to cylinder 1 (connection, rpm impulse, secondary section)			

Bosch-testers

Mini-tester EFAW 226	Ignition coil terminal 15	Ignition coil terminal 1	Ignition coil terminal 15	Ignition coil terminal 1
RPM-dwell angle tester EFAW 104, 166 B	Ignition coil terminal 15	Green clip to ignition coil terminal 1	–	–
RPM-dwell angle tester EFAW 166 C	–	–	Black clip to ground	Green clip to ignition coil terminal 1