

**Special tools**

Measuring pin for TDC and 20° ATDC position of the engine on 1st cylinder



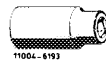
115 589 17 21 00

Locating tool for adjusting slide



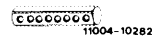
102 589 03 21 00

Socket insert 27 mm, 1/2" drive



001 589 65 09 00

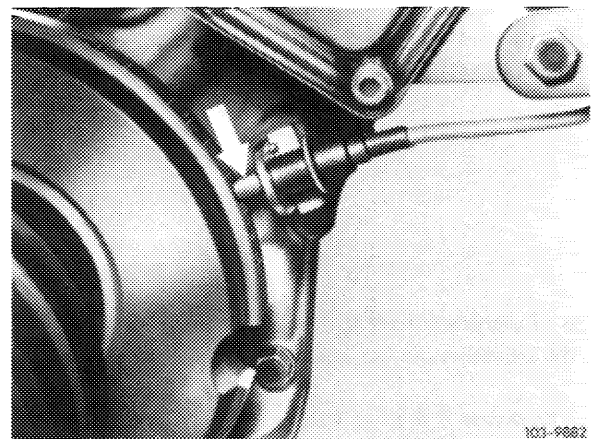
1/2" drive insert, 80 mm long, for rotating the engine



617 589 00 16 00

**Note**

With the crankshaft at 20° after TDC, the TDC transmitter must be positioned exactly above the pin in the vibration damper (arrow).



The adjustment of the TDC transmitter must be checked and corrected

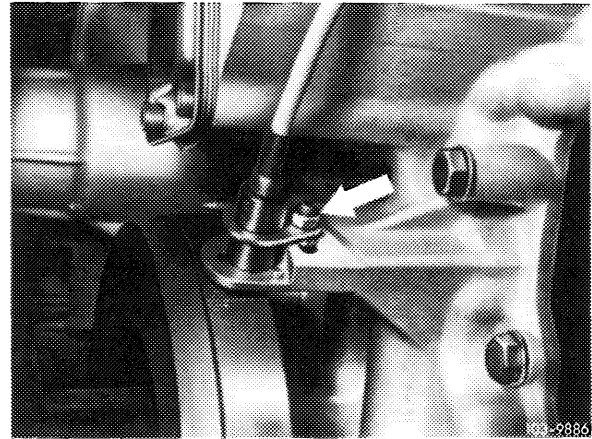
- a) when renewing the TDC transmitter adjusting slide
- b) when renewing the crankshaft with hub and vibration damper
- c) when renewing the timing case cover
- d) when completing partly assembled engines.

**Checking**

1 Loosen power steering pump, remove V-belt, swing power steering pump to the inside.

2 On vehicles with air conditioning or automatic climate control, remove refrigerant compressor with carrier.

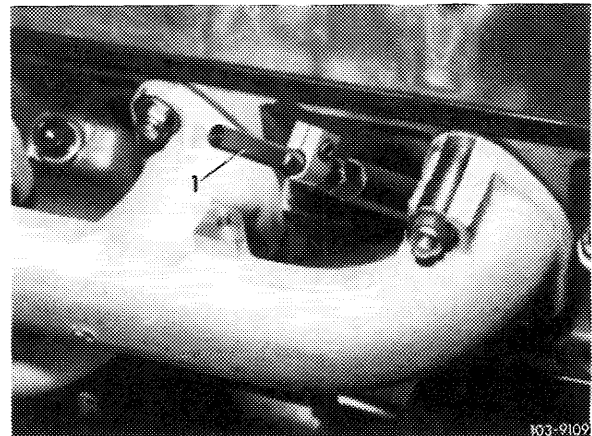
3 Unscrew hex. head nut (arrow) and pull out TDC transmitter.



4 Screw adapter into the spark plug bore of No. 1 cylinder.

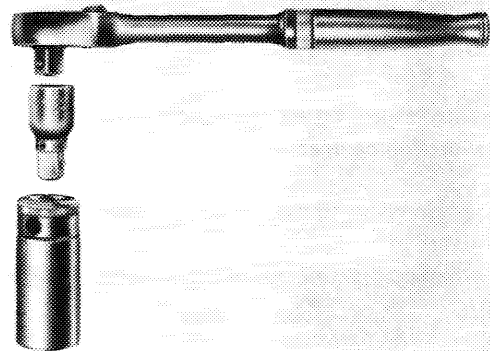
Insert adjusting pin (1) into the adapter and push down fully.

**Note:** With the cylinder head removed, attach a dial gauge holder to the crankcase and position dial gauge pin on the piston crown.



5 Turn crankshaft with the tool combination until the adjusting pin has reached its highest position.

The piston is then at TDC.

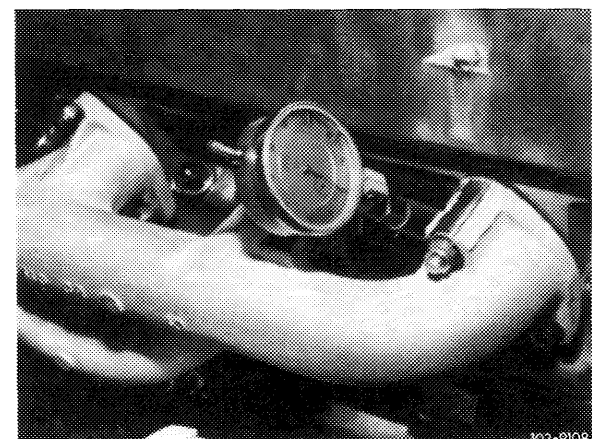


6 Remove adjusting pin.

Clamp dial gauge in position with a preload of approx. 5 mm.

Rotate crankshaft and accurately adjust TDC with the dial gauge.

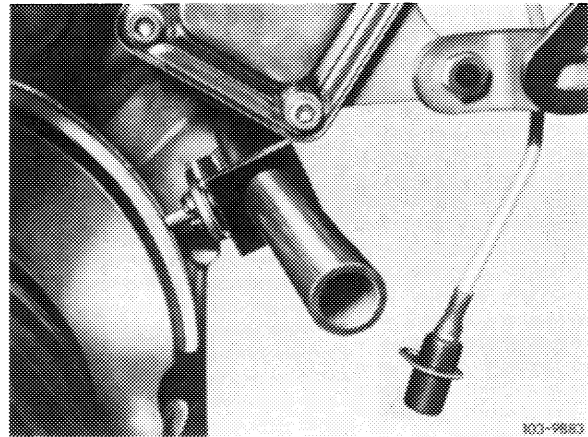
Turn dial gauge scale until the pointer is at 0.



7 Continue rotating the crankshaft in direction of rotation until the dial gauge pointer has moved back by the value specified in the table.

8 Insert locating tool into adjusting slide. The pin of the vibration damper must engage in the slot of the locating tool.

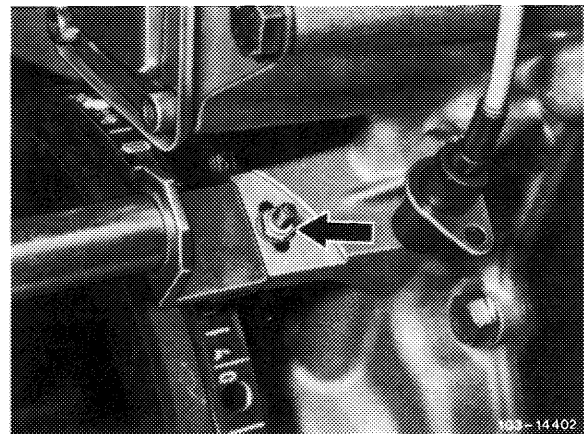
Engine	Measurement through spark plug bore
116.960/961 Standard version	2.99
116.964/965	
116.960/961 AUS J S USA	3.36
116.962/963	
117.960/961 117.962/963 117.964/965	3.58
117.967/968	4.09



### Correcting

9 Loosen adjusting slide (arrow) and slide until the pin engages in the locating tool.

10 Tighten adjusting slide (arrow) and remove locating fixture.



11 Insert TDC transmitter and secure (arrow).

12 Remove dial gauge.

13 Briefly turn crankshaft in direction of rotation, then unscrew the adapter from the spark plug bore.

