

## C. Cleaning and Testing of Spark Plugs

For testing and cleaning the spark plugs and for the interpretation of spark plug appearance in Models 180 a, 180 b, 190 SL, 220 a, 219, 220 S, and 220 SE see the details given in the Model 190 Workshop Manual.

### Approved Spark Plugs

The approved spark plugs are listed in our Service Bulletins and Spark Plug Tables and are also contained in our Workshop Tables.

### Thread Length of Spark Plugs

The thread lengths differ on different types of spark plugs. It is necessary therefore to ensure that only spark plugs of the type approved for the individual engines are installed.

Wrong spark plugs may cause engine trouble and may even damage the engine.

The following list gives the thread length of the spark plugs for the various engines. The Table is based on thread length "H<sub>2</sub>" (Fig. 01-3/4a).

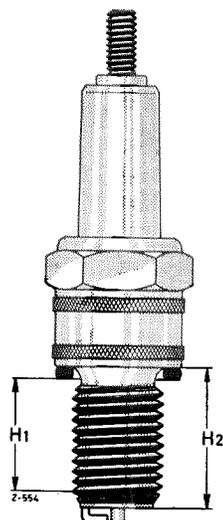


Fig. 01-3/4 a

H<sub>1</sub> = free thread length  
H<sub>2</sub> = thread length  
(standard length)

### Thread Length of Spark Plugs

Model	Thread length "H <sub>2</sub> "
180 a, 180 b, 190, 220 a, 219, 220 S all with the exception of $\epsilon = 8.7:1$	12
190 SL with $\epsilon = 8.5:1$	18
190 SL with $\epsilon = 8.8:1$	19 *)
219, 220 S with $\epsilon = 8.7:1$	19 *)
220 SE	19

\*) The cylinder heads for Models 190 SL ( $\epsilon = 8.8:1$ ) and 219, 220 S ( $\epsilon = 8.7:1$ ) formerly had a plug thread for spark plugs with a thread 18 mm long, and now have a plug thread for spark plugs with a 19 mm thread. To distinguish the two types, cylinder heads with a plug thread for 19 mm spark plugs are marked "19" beside the compression ratio marking.

On Champion spark plugs the beginning of the thread is **not** chamfered, so that the free thread length "H<sub>1</sub>" is slightly longer than that of Bosch and Beru spark plugs. For this reason it is necessary to install a second sealing ring of a minimum thickness of 1 mm when Champion spark plugs are used. This is necessary, since otherwise part of the plug thread would project into the combustion chamber and may accumulate carbon deposits, which, under certain circumstances, may damage the thread in the cylinder head when the plugs are unscrewed.

## Installation of Spark Plugs

Spark plugs should only be slackened and tightened by means of the Articulated Spark Plug Wrench 0005810067. Great care is necessary when this wrench is used to screw in the spark plugs, as a certain amount of experience is necessary to insert the spark plug correctly. In order to avoid damage to the plugs and to the thread in the cylinder head, Spark Plug Holder 198 580 00 65 should be used for screwing in the spark plugs (Fig. 01-3/4b).

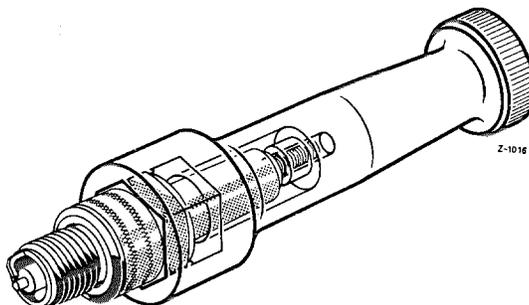


Fig. 01-3/4b

The Rubber Socket 000 581 00 86 pressed into the Articulated Spark Plug Wrench and the Socket 000 581 00 56 screwed into the Spark Plug Holder are replaceable.

## D. Measurement and Adjustment of Distributor Contact Gaps and Angles of Closure

Measurement and adjustment on Models 180 a, 180 b, 190 SL, 220 a, 219, 220 S, and 220 SE are carried out in the same way as on Model 190. **We should like to point out again that whenever the angle of closure has been corrected, it is absolutely necessary to check whether the contact gap is still satisfactory.**

**When the contact gaps have been adjusted, it is always necessary to check and if necessary to readjust the ignition setting.**

### Distributor Contact Gaps and Angles of Closure

Model	180 a, 180 b, 190, 190 b, 190 SL	220 a, 219, 220 S, 220 SE
Distributor contact gap (mm)	0.4—0.5	0.3—0.4
Angle of closure *)	$50^{\circ} \pm 2^{\circ}$	$36^{\circ} \pm 2^{\circ}$

\*) When measuring the angle of closure please note that at higher engine speeds it may be lower by a maximum of  $3^{\circ}$ .

## E. Ignition Setting

For the ignition setting in Models 180 a, 180 b, 190 SL, 220 a, 219, 220 S, and 220 SE see the details given in the Model 190 Workshop Manual.

Ignition adjustment should always be made by means of a flash stroboscope, and a timing light should only be used in exceptional circumstances.

The adjustment data are listed in the Table overleaf.