

# VALVE STEM AND CYLINDER NECK GAUGES

## Gauges for testing the taper threads specified in BS 341: Part 1: 1991.

BS 341: Part 1: 1991 specifies six sizes of threaded connection for valve stems and cylinder necks for use with refillable containers for storage and transportation of gases for industrial applications.

All the connections have threads with a standard Whitworth form which is generated at 90° to the cone, not to the axis, as is the case for many other taper threads.

The other thread details of the six connections are as follows:

TYPE	SIZE	TPI	TAPER
16T	0.635 inch	18	8°incl.
18T	0.715 inch	14	10°incl.
19T	0.735 inch	14	1 in 8 on diam.
25T	1.000 inch	14	3 in 25 on diam.
26T	1.025 inch	14	10°incl.
32T	1.250 inch	11	1 in 8 on diam.

## BS 341 Annex G

This appendix recommends types and dimensions of gauges for testing the taper threads defined in the main body of the standard. These gauges are described as follows.

**A set of plug gauges** for testing the threads in cylinder necks comprises three threaded and three plain gauges.

The threaded plugs comprise a full length effective diameter gauge, and two gauges with relieved threads to be

used in combination, where one is designed to test the large end of the taper, and the other to test the small end.

The plain plugs comprise a full length gauge and two gauges with relieved diameters, to be used in combination in a similar way as the threaded gauges.

These plug gauges do not check the major diameter of the threads.

**A set of ring gauges** for testing the threads on the valve stem comprises three threaded and three plain gauges.

The threaded rings comprise a full length effective diameter gauge, and two gauges with relieved threads to be used in combination, where one is designed to test the large end of the taper, and the other to test the small end.

The plain rings comprise a full length gauge, and two gauges with relieved diameters to be used in combination in a similar way as the threaded rings.

These rings do not check the minor diameter of the threads.

All the above Gauges are provided with steps to indicate the minimum and maximum diametral condition of the threads.

Full length, full form plugs and rings can be supplied if required. Prices on application.

The standard also provides recommended sizes and tolerances for check plugs for checking the dimensional conformity of the ring gauges.

## Gauges for testing the taper threads specified in DIN 477: Part 7: 1984

DIN 477: Part 7: 1984 specifies three sizes of threaded connections for valve stem and cylinder necks used for a similar purpose as described in BS 341.

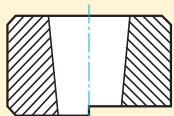
All the connections have threads with a standard Whitworth form at 90° to the cone, as in BS 341, however the sizes of two of the connections are different, as shown below.

NOMINAL SIZE	TPI	TAPER
19.8mm	18	3 in 25 on diam.
28.8mm	14	3 in 25 on diam.*
31.3mm	14	3 in 25 on diam.

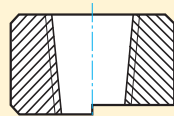
\* This size is equivalent to the 25T (1.000inch) in BS 341.

The sets of gauges shown in DIN 477 are as described in BS 341

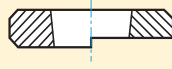
As with all gauges regular checks should be carried out to test for wear. The frequency will depend upon usage. Because of the nature of the thread profile, it is recommended that these gauges are tested and certified by a calibration laboratory having specialised equipment. Consult our Technical Department for more information.



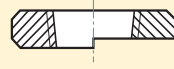
Full length major diameter



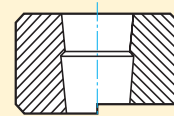
Full length effective diameter



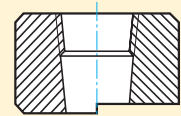
Small end major diameter



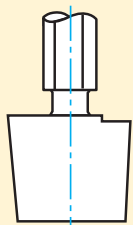
Small end effective diameter



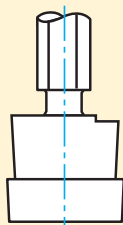
Large end major diameter



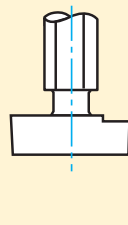
Large end effective diameter



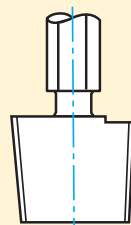
Full length minor diameter



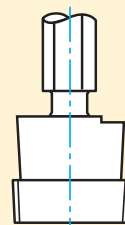
Small end minor diameter



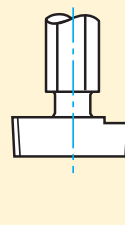
Large end minor diameter



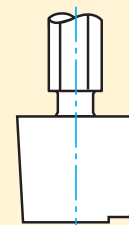
Full length effective diameter



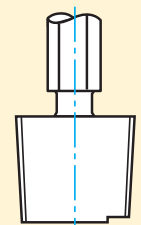
Small end effective diameter



Large end effective diameter



Plain plug for testing plain ring gauges



Thread plug for testing thread ring gauges