

44

# International Standard 5822

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

## Spot welding equipment — Taper plug gauges and taper ring gauges

*Matériel de soudage par points — Calibres coniques mâles et calibres coniques femelles*

First edition — 1982-08-15

STANDARDSISO.COM : Click to view the full PDF of ISO 5822:1982

UDC 621.753.3 : 621.791.037

Ref. No. ISO 5822-1982 (E)

Descriptors : standard gauges, plug gauges, ring gauges, cone, specifications, spot welding, welding equipment.

Price based on 4 pages

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5822 was developed by Technical Committee ISO/TC 44, *Welding and allied processes*, and was circulated to the member bodies in December 1980.

It has been approved by the member bodies of the following countries :

Austria	Germany, F.R.	Norway
Belgium	India	Romania
Canada	Italy	Spain
Cuba	Japan	Sweden
Czechoslovakia	Korea, Dem. P. Rep. of	United Kingdom
Finland	Korea, Rep. of	USSR
France	New Zealand	

No member body expressed disapproval of the document.

# Spot welding equipment — Taper plug gauges and taper ring gauges

## 1 Scope and field of application

This International Standard specifies requirements for taper plug and taper ring gauges used for the verification of type A, B and C tapers according to ISO 1089.

## 2 References

ISO/R 286, *ISO system of limits and fits — Part 1: General, tolerances and deviations.*

ISO 1089, *Electrode taper fits for spot welding equipment — Dimensions.*

ISO 1302, *Technical drawings — Method of indicating surface texture on drawings.*

ISO 1947, *System of cone tolerances for conical workpieces from  $C = 1 : 3$  to  $1 : 500$  and lengths from 6 to 630 mm.*

ISO 3670, *Blanks for plug gauges and handles (taper lock and trilock) and ring gauges — Design and general dimensions.*

## 3 Definitions

**3.1 type A tapers :** Type A tapers are suitable for straight thrust.

**3.2 type B tapers :** Type B tapers are suitable for eccentric loading.

**3.3 type C tapers :** Type C tapers are suitable for electrode caps.

4 Dimensions

Specifications for surface texture shall be according to ISO 1302.

4.1 Dimensions on taper plug gauges (P)

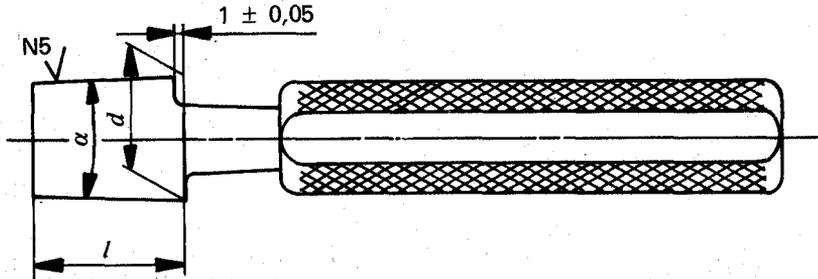


Table 1 – Dimensions on type A tapers

Dimensions in millimetres

Designation	Nominal diameter of taper to be measured	Taper	$\alpha^{1)}$ 0 - AT3	$d$ js4 <sup>2)</sup>	$l$ 0 -0,05	Handle No. <sup>3)</sup>
PA 10	10	1 : 10	5° 43' 30"	9,8	15	3
PA 13	13	1 : 10	"	12,7	18	4
PA 16	16	1 : 10	"	15,5	22	5
PA 20	20	1 : 10	"	19	27	6
PA 25	25	1 : 10	"	24,5	33,5	6
PA 32	32	1 : 5	11° 25' 16"	31	43	7
PA 40	40	1 : 5	"	39	53	7

- 1) Taper diameter and angle tolerances to ISO 1947.
- 2) Tolerance js4 see ISO/R 286 : Part 1.
- 3) Dimensions of handle and shank see ISO 3670.

Table 2 – Dimensions on type B tapers

Dimensions in millimetres

Designation	Nominal diameter of taper to be measured	Taper	$\alpha^{1)}$ 0 - AT3	$d$ js4 <sup>2)</sup>	$l$ 0 -0,05	Handle No. <sup>3)</sup>
PB 13	13	1 : 10	5° 43' 30"	12,7	27	4
PB 16	16			15,5	33,5	5
PB 20	20			19	43	6
PB 25	25			24,5	53	6

- 1) Taper diameter and angle tolerances to ISO 1947.
- 2) Tolerance js4 see ISO/R 286, Part 1.
- 3) Dimensions of handle and shank see ISO 3670.

Table 3 – Dimensions on type C tapers

Dimensions in millimetres

Designation	Nominal diameter of taper to be measured	Taper	$\alpha^{1)}$ 0 - AT3	$d$ js4 <sup>2)</sup>	$l$ 0 -0,05	Handle No. <sup>3)</sup>
PC 13	13	1 : 10	5° 43' 30"	10	7,5	3
PC 16	16	1 : 10	5° 43' 30"	12	9	4
PC 20	20	1 : 10	5° 43' 30"	15	11	5

- 1) Taper diameter and angle tolerances to ISO 1947.
- 2) Tolerance js4 see ISO/R 286 : Part 1.
- 3) Dimensions of handle and shank see ISO 3670.

4.2 Dimensions on taper ring gauges (R)

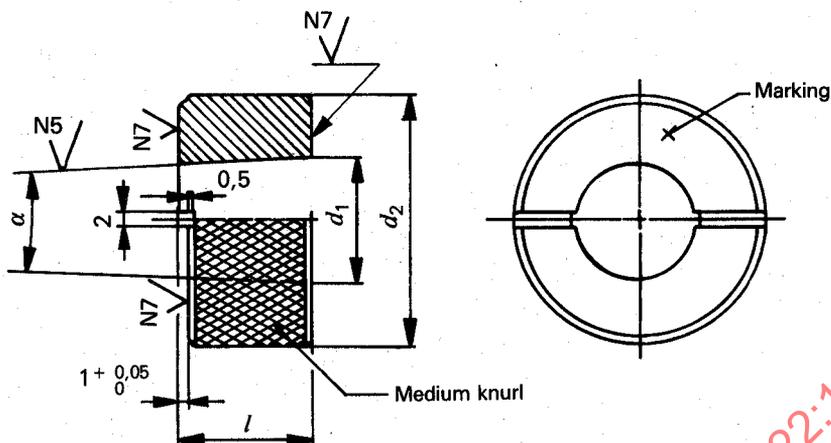


Table 4 – Dimensions on type A tapers

Dimensions in millimetres

Designation	Nominal diameter of taper to be measured	Taper	$\alpha^{1)}$ + AT3 O	$d_1$ JS4 <sup>2)</sup>	$d_2$	$l$ 0 -0,05
RA 10	10	1 : 10	5° 43' 30"	9,8	32	13,5
RA 13	13	1 : 10	5° 43' 30"	12,7	38	16,5
RA 16	16	1 : 10	5° 43' 30"	15,5	45	20,5
RA 20	20	1 : 10	5° 43' 30"	19	45	25,5
RA 25	25	1 : 10	5° 43' 30"	24,5	53	32
RA 32	32	1 : 5	11° 25' 16"	31	63	40,5
RA 40	40	1 : 5	11° 25' 16"	39	71	50,5

- 1) Taper diameter and angle tolerances to ISO 1947.
- 2) Tolerance JS4 see ISO/R 286 : Part 1.

Table 5 – Dimensions on type B tapers

Dimensions in millimetres

Designation	Nominal diameter of taper to be measured	Taper	$\alpha^{1)}$ + AT3 O	$d_1$ JS4 <sup>2)</sup>	$d_2$	$l$ 0 -0,05
RB 13	13	1 : 10	5° 43' 30"	12,7	38	25,5
RB 16	16			15,5	45	32
RB 20	20			19	45	40,5
RB 25	25			24,5	53	50,5

- 1) Taper diameter and angle tolerances to ISO 1947.
- 2) Tolerance JS4 see ISO/R 286 : Part 1.

Table 6 – Dimensions on type C tapers

Dimensions in millimetres

Designation	Nominal diameter of taper to be measured	Taper	$\alpha^{1)}$ + AT3 O	$d_1$ JS4 <sup>2)</sup>	$d_2$	$l$ 0 -0,05
RC 13	13	1 : 10	5° 43' 30"	10	32	7
RC 16	16	1 : 10	5° 43' 30"	12	38	8,5
RC 20	20	1 : 10	5° 43' 30"	15	38	10,5

- 1) Taper diameter and angle tolerances to ISO 1947.
- 2) Tolerance JS4 see ISO/R 286 : Part 1.

## 5 Designation

Gauges shall be designated by the number of this International Standard, by the type of taper and by its nominal diameter.

Example for the designation of a taper plug gauge, type A taper, used for the inspection of a taper nominal diameter of 20 mm.

ISO 5822 — PA 20

Example for the designation of a taper ring gauge, type B taper, used for the inspection of a taper nominal diameter of 20 mm.

ISO 5822 — RB 20

## 6 Material

### 6.1 Material for gauges

The material shall be steel, heat-treated to HRC = 63-65.

### 6.2 Material for handles

The material shall be suitable for the purpose, for example, unhardened steel or light alloys.

## 7 Marking

### 7.1 Marking of taper plug gauges

The handle shall be permanently marked with the full designation of the gauge fitted according to clause 5, for example,

ISO 5822 — PA 20

### 7.2 Marking of taper ring gauges

The gauge shall be permanently marked with the full designation (see drawing in 4.2) according to clause 5, for example,

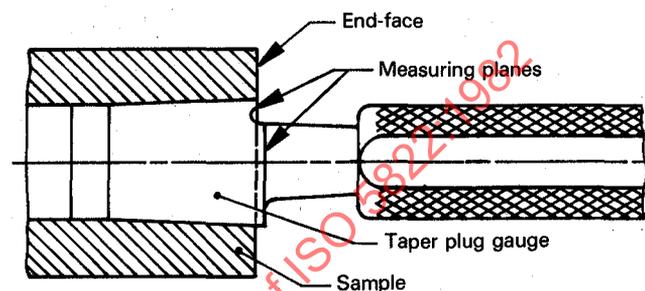
ISO 5822 — RB 20

## 8 Application

### 8.1 Taper fit and permissible diameter

Taper fit and permissible tolerance of taper diameter  $d$  shall be checked.<sup>1)</sup>

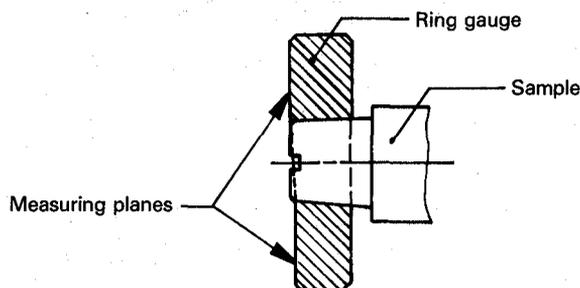
The end face of the sample shall be within the measuring planes.



### 8.2 Taper fit and permissible length

Taper fit and permissible tolerance of taper length shall be checked with these gauges.<sup>1)</sup>

The end face of sample shall be within the measuring planes.



1) Angle variances cannot be checked.