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# INTERNATIONAL STANDARD



# 298

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

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## Machine tools – Lathe centres – Sizes for interchangeability

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**Descriptors** : machine tools, lathes, lathe tools, shanks, morse taper shanks, taper, dimensions, interchangeability.

## 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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 39 has reviewed ISO Recommendation R 298 and found it suitable for transformation. International Standard ISO 298 therefore replaces ISO Recommendation R 298-1963 and Addendum 1-1969.

ISO Recommendation R 298 was approved by the Member Bodies of the following countries :

Argentina	Hungary	Portugal
Belgium	India	Romania
Chile	Israel	Spain
Colombia	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Netherlands	United Kingdom
France	New Zealand	U.S.A.
Germany	Poland	U.S.S.R.

The Member Body of the following country has subsequently approved this Recommendation

Philippines

No Member Body expressed disapproval of the Recommendation.

No Member Body disapproved the transformation of ISO/R 298 into an International Standard.

# Machine tools — Lathe centres — Sizes for interchangeability

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the sizes for interchangeability of lathe centres.

Its scope should not be regarded as restricted to lathes only, but may be extended to all the other machine tools with centres of the same type.

## 2 DESIGNATION

The lathe centre shall be designated by the number followed by the type.

*Example :*

No. 3 Morse Centre.

## 3 SIZES

The centre sizes given in the tables which follow are only those necessary for interchangeability; details of design (for example for the extracting device), which do not directly affect interchangeability, are not included.

Sizes for interchangeability of the taper shank with the machine are in compliance with ISO 296, *Machine-tools — Self-holding tapers for tool shanks*.

Table 1 gives sizes in millimetres for centres with Nos. 0 to 6 Morse or metric 5 % taper shanks.

Table 2 gives sizes in inches for centres with Nos. 1 to 6 Morse or Nos. 1 to 3 Brown & Sharpe taper shanks.

The angle of the centre itself is fixed at 60° min.

When a greater angle is really necessary for particularly heavy workpieces, either 75° min. or 90° min. shall be adopted. In this case, the following designation should be stated : "75° Centre" or "90° Centre".

3.1 Sizes in millimetres

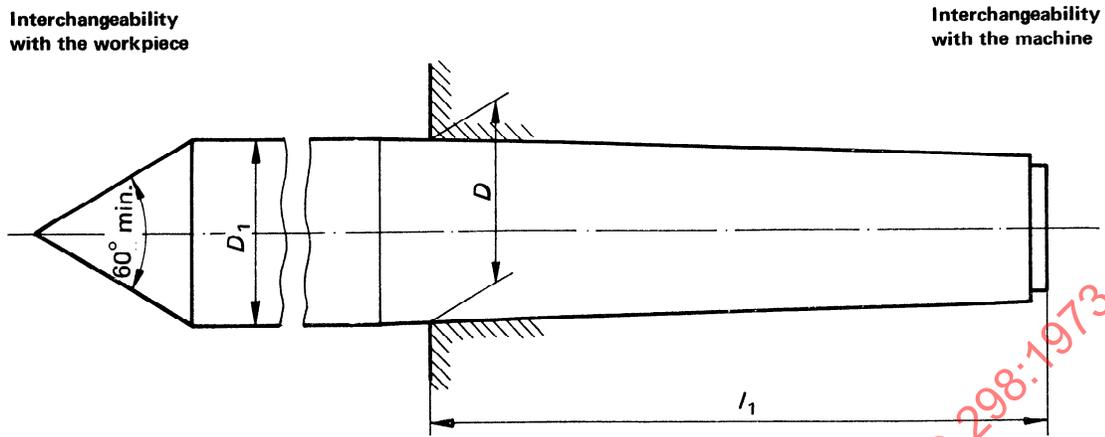


TABLE 1 – Lathe centres with Nos. 0 to 6 Morse or metric 5 % taper shanks

Designation		Taper shank			Centre
Type	No.	Taper	$D$	$l_1$ max.	$D_1$ h9
Metric 5 %	4	1 : 20 = 0,05	4	23	4,1
	6	1 : 20 = 0,05	6	32	6,2
Morse	0	0,624 6 : 12 = 0,052 05	9,045	50	9,2
	1	0,598 58 : 12 = 0,049 88	12,065	53,5	12,2
	2	0,599 41 : 12 = 0,049 95	17,780	64	18,0
	3	0,602 35 : 12 = 0,050 20	23,825	81	24,1
	4	0,623 26 : 12 = 0,051 94	31,267	102,5	31,6
	5	0,631 51 : 12 = 0,052 63	44,399	129,5	44,7
	6	0,625 65 : 12 = 0,052 14	63,348	182	63,8
Metric 5 %	80	1 : 20 = 0,05	80	196	80,4
	100	1 : 20 = 0,05	100	232	100,5

For sizes of centres with Brown & Sharpe taper shanks, see table 2.

3.2 Sizes in inches

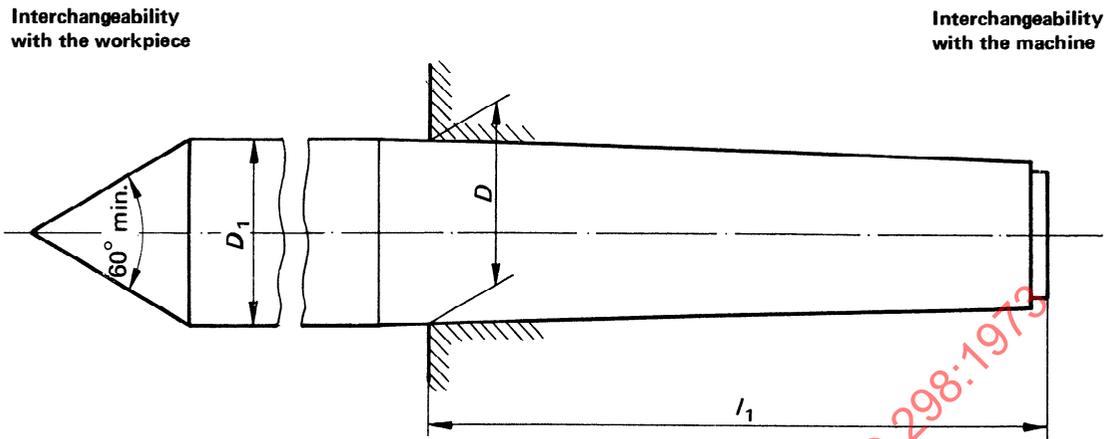


TABLE 2 — Lathe centres with Nos. 1 to 6 Morse or Nos. 1 to 3 Brown & Sharpe taper shanks

Designation		Taper shank			Centre
Type	No.	Taper	$D$	$l_1$ max.	$D_1$ h9
Brown & Sharpe	1	0.502 00 : 12 = 0.041 83	0.239	15/16	0.243
	2	0.502 00 : 12 = 0.041 83	0.299	1 3/16	0.303
	3	0.502 00 : 12 = 0.041 83	0.375	1 1/2	0.379
Morse	1	0.598 58 : 12 = 0.049 88	0.475	2 1/8	0.481
	2	0.599 41 : 12 = 0.049 95	0.700	2 9/16	0.709
	3	0.602 35 : 12 = 0.050 20	0.938	3 3/16	0.947
	4	0.623 26 : 12 = 0.051 94	1.231	4 1/16	1.244
	5	0.631 51 : 12 = 0.052 63	1.748	5 3/16	1.760
	6	0.625 65 : 12 = 0.052 14	2.494	7 1/4	2.510

For sizes of centres with metric 5 % taper shanks and with No. 0 Morse taper shanks, see table 1.

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