

*Transformed*

**ISO**

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1651

TUBE DRAWING MANDRELS

1st EDITION

July 1970

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## BRIEF HISTORY

The ISO Recommendation R 1651, *Tube drawing mandrels*, was drawn up by Technical Committee ISO/TC 29, *Small tools*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of Draft ISO Recommendation No. 1561 which was circulated to all the ISO Member Bodies for enquiry in August 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Israel	Switzerland
Czechoslovakia	Italy	Thailand
France	Netherlands	Turkey
Greece	Poland	U.A.R.
Hungary	Portugal	United Kingdom
India	South Africa, Rep. of	Yugoslavia
Ireland	Spain	

The following Member Bodies opposed the approval of the Draft :

Finland  
Sweden

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided to accept it as an ISO RECOMMENDATION.

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ISO Recommendation

R 1651

July 1970

## TUBE DRAWING MANDRELS

### 1. SCOPE

This ISO Recommendation relates to tube drawing mandrels and gives their general dimensions with respect to diameter  $d_1$ .

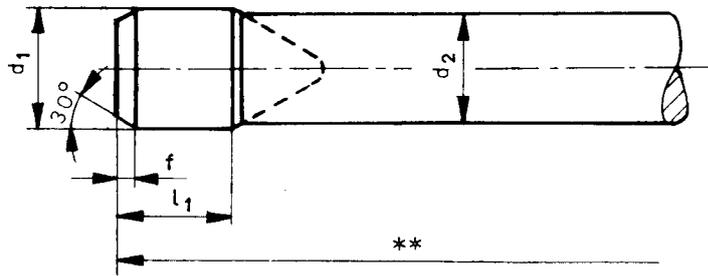
It applies to brazed drawing mandrels and sleeved drawing mandrels.

The dimensions given in this ISO Recommendation have been determined taking existing practice into account as far as possible.

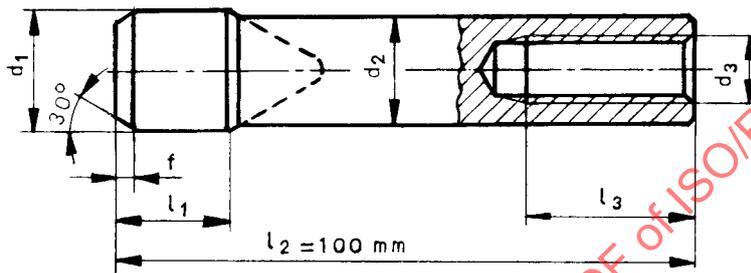
Threads are given in both measurement systems (metric and in inches) so as to allow the use of these mandrels in any country and on any machine.

2. BRAZED DRAWING MANDRELS

Form A – Welded on rod



Form B – With female thread



Form C – With male thread

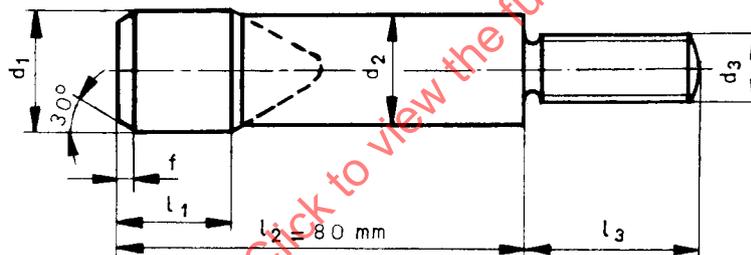


FIG. 1

TABLE 1

Dimensions in millimetres

Form	$d_1$			$d_2$	$l_1$	$f^*$	Form B		Form C		$l_3$					
							above	up to	Tolerance	max.		$d_3$		$l_3$	$d_3$	
												Metric thread	Inch thread		Metric thread	Inch thread
A	3	6	+0.01 0	$d_2 = d_1$	10	2	—	—	—	—	—					
	6	8			12		—	—	—	—						
B,C	8	10	+0.01 0	$d_2 = d_1 - 0.2 - 0.6$	15	2	M 5	Na10-32 UNF	10	M 6	$\frac{1}{4}$ - 20 UNC	12				
	10	12.5			18		M 6	$\frac{1}{4}$ - 20 UNC	12	M 8	$\frac{5}{16}$ - 18 UNC	16				
	12.5	16			20		M 8	$\frac{5}{16}$ - 18 UNC	16	M10	$\frac{3}{8}$ - 16 UNC	20				
	16	20	+0.02 0		22		M10	$\frac{3}{8}$ - 16 UNC	20	M12	$\frac{1}{2}$ - 13 UNC	24				
	20	25			25		M12	$\frac{1}{2}$ - 13 UNC	24	M16	$\frac{5}{8}$ - 11 UNC	32				

\* A radius can be provided in place of a chamfer if required.

\*\* The total length should be subject to agreement between manufacturer and purchaser.

NOTE. -- Details not stated are left to the discretion of the manufacturer.