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**ISO**

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION**

**R 261**

**ISO GENERAL PURPOSE METRIC SCREW THREADS**

**GENERAL PLAN**

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2nd EDITION

September 1969

This second edition supersedes the first edition.

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## BRIEF HISTORY

The ISO Recommendation R 261, *ISO metric screw threads – General plan (diameter range 0.25 to 300 mm)*, was drawn up by Technical Committee ISO/TC 1, *Screw threads*, the Secretariat of which is held by the Sveriges Standardiseringskommission (SIS).

Work on this question led to the adoption of a Draft ISO Recommendation.

In May 1960, this Draft ISO Recommendation (No. 297) was circulated to all the ISO Member Bodies for enquiry. It was approved by 30 Member Bodies. One Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in July 1962, to accept it as an ISO RECOMMENDATION.

## BRIEF HISTORY RELATING TO THE 2nd EDITION

In 1967, Technical Committee ISO/TC 1 decided to revise the ISO Recommendation R 261-1962, deleting the sizes below 1 mm, and a Draft ISO Recommendation was adopted to this effect.

In May 1968, this Draft ISO Recommendation (No. 1499) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Israel	South Africa, Rep. of
Belgium	Italy	Spain
Canada	Japan	Sweden
Chile	Korea, Rep. of	Switzerland
Czechoslovakia	Netherlands	Thailand
Cuba	New Zealand	Turkey
Denmark	Norway	U.A.R.
France	Peru	United Kingdom
Germany	Poland	U.S.S.R.
Hungary	Portugal	
India	Romania	

Two Member Bodies opposed the approval of the Draft :

Australia  
U.S.A.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in September 1969, to accept it as a revision of ISO Recommendation R 261-1962, the title of which is modified as follows : *ISO general purpose metric screw threads – General plan*.

This edition (2nd edition) cancels and replaces the first edition of ISO Recommendation R 261-1962.

## FOREWORD

This document is one of a number of ISO Recommendations specifying ISO general purpose metric screw threads. Related ISO Recommendations are as follows :

ISO/R 68 (2nd edition – 1969), *ISO general purpose screw threads – Basic profile*;

ISO/R 262 (2nd edition – 1969), *ISO general purpose metric screw threads – Selected sizes for screws, bolts and nuts*;

ISO/R 724, *ISO general purpose metric screw threads – Basic dimensions*.

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## ISO GENERAL PURPOSE METRIC SCREW THREADS

## GENERAL PLAN

## 1. SCOPE

This ISO Recommendation tabulates ISO general purpose metric screw threads having the basic profile according to ISO Recommendation R 68 (see Foreword).

## 2. CHOICE OF DIAMETER AND PITCH

- 2.1 Choose, for preference, diameters in column 1 of the Table of section 4 and, if necessary, in column 2 and then column 3.

Diameter 35 mm, and pitch 1.25 mm of diameter 14 mm should be used only for the special cases indicated in the footnotes.

- 2.2 The words "coarse" and "fine" are given in order to conform to usage. No concept of quality should, however, be associated with these words.

It should be understood that "coarse" pitches are the largest metric pitches used in current practice.

- 2.3 For the diameter (or the diameter range) selected, choose one of the pitches shown on the corresponding line (or lines), avoiding pitches in brackets.

- 2.4 If screw threads finer than those appearing in the Table of section 4 are found necessary, only the following pitches should be used :

$$3 - 2 - 1.5 - 1 - 0.75 - 0.5 - 0.35 - 0.25 - 0.2$$

When selecting such pitches, take into account the fact that there is increasing difficulty in complying with tolerances as the diameter is increased for a given pitch. It is suggested, for the time being, that diameters larger than the following should generally not be used with the pitches indicated :

Pitch	Maximum diameter
mm	mm
0.5	22
0.75	33
1	80
1.5	150
2	200
3	300

- 2.5 In cases where it would be necessary to use a thread with a pitch larger than 6 mm, in the diameter range 150 to 300 mm, the pitch 8 mm should be used for preference.

## 3. DESIGNATION

A screw thread taken from this ISO Recommendation should be designated by the letter M followed by the values of the nominal diameter and of the pitch expressed in millimetres and separated by the sign X.

*Example* : M6 X 0.75

The absence of the indication of pitch means that a coarse pitch is specified.

*Example* : M6

4. DIAMETER/PITCH COMBINATIONS

TABLE - Diameter/pitch

Dimensions in millimetres

Nominal diameters			Pitches												
Col. 1 1st choice	Col. 2 2nd choice	Col. 3 3rd choice	coarse	fine											
				3	2	1.5	1.25	1	0.75	0.5	0.35	0.25	0.2		
1			0.25												0.2
1.2	1.1		0.25												0.2
	1.4		0.25												0.2
			0.3												0.2
1.6			0.35												0.2
	1.8		0.35												0.2
2			0.4											0.25	
	2.2		0.45											0.25	
2.5			0.45											0.35	
3			0.5											0.35	
	3.5		0.6											0.35	
4			0.7											0.5	
	4.5		0.75											0.5	
5			0.8											0.5	
		5.5	1											0.5	
6			1							0.75					
		7	1.25						1	0.75					
8			1.25						1	0.75					
		9	1.25						1	0.75					
10			1.5				1.25		1	0.75					
		11	1.5						1	0.75					
12			1.75			1.5	1.25		1						
	14		2			1.5	1.25*		1						
		15	2			1.5			1						
16			2			1.5			1						
		17	2			1.5			1						
	18		2.5		2	1.5			1						
20			2.5		2	1.5			1						
	22		2.5		2	1.5			1						
24			3		2	1.5			1						
		25	3		2	1.5			1						
		26	3		2	1.5			1						
	27		3		2	1.5			1						
		28	3		2	1.5			1						
30			3.5	(3)	2	1.5			1						
		32	3.5	(3)	2	1.5			1						
	33		3.5	(3)	2	1.5			1						
		35**	4		2	1.5			1						
36			4	3	2	1.5			1						
		38	4	3	2	1.5			1						
	39		4	3	2	1.5			1						

\* Only for spark plugs for engines.

\*\* Only for locking nuts for bearings.

Avoid as far as possible pitches in brackets.

TABLE - Diameter/pitch (concluded)

Dimensions in millimetres

Nominal diameters			Pitches					
Col. 1 1st choice	Col. 2 2nd choice	Col. 3 3rd choice	coarse	fine				
				6	4	3	2	1.5
42	45	40	4.5		4	3	2	1.5
			4.5		4	3	2	1.5
48	52	50	5		4	3	2	1.5
			5		4	3	2	1.5
56		55	5.5		4	3	2	1.5
		58			4	3	2	1.5
64	60	62	5.5		4	3	2	1.5
			6		4	3	2	1.5
	68	65	6		4	3	2	1.5
		70		6	4	3	2	1.5
72	76	75		6	4	3	2	1.5
				6	4	3	2	1.5
80		78		6	4	3	2	1.5
		82					2	
90	85			6	4	3	2	
	95			6	4	3	2	
100	105			6	4	3	2	
				6	4	3	2	
110				6	4	3	2	
				6	4	3	2	
125	115			6	4	3	2	
	120			6	4	3	2	
140	130	135		6	4	3	2	
				6	4	3	2	
	150	145		6	4	3	2	
		155		6	4	3	2	
160	170	165		6	4	3		
				6	4	3		
180		175		6	4	3		
		185		6	4	3		
200	190	195		6	4	3		
				6	4	3		
	210	205		6	4	3		
		215		6	4	3		
220		225		6	4	3		
		230		6	4	3		
	240	235		6	4	3		
		245		6	4	3		
250	260	255		6	4	3		
				6	4			
		265		6	4			
		270		6	4			
280		275		6	4			
		285		6	4			
	300	290		6	4			
		295		6	4			