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IS 4211 (1993): Gauges - Thread Pitch Gauges for ISO Metric Screw Threads (pitch range 0.4 to 6 mm) [PGD 25: Engineering Metrology]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

गैज — आई.एस.ओ. मीटरी पेंच चूड़ियों (पिच रेंज
0.4 से 6 मि.मि.) के लिए चूड़ीपिच गैज — विशिष्ट
(पहला पुनरीक्षण)

Indian Standard

GAUGES — THREAD PITCH GAUGES FOR
ISO METRIC SCREW THREADS
(PITCH RANGE 0.4 TO 6 mm) —
SPECIFICATION

(First Revision)

UDC 621.753.3 : 621.882.2.082.11

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Engineering Metrology Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This standard was originally published in 1967. First Revision has been brought out in the light of the present technical practices followed in India.

In preparation of this standard considerable assistance has been derived from GOST 519-1977 'Screw pitch gauges — Specification' published by Gosstandart (GOST).

Following important changes have been made:

- a) Dimensions and tolerances have been modified as per GOST 519-1977.
- b) Clause on 'Designation' has been added.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

GAUGES — THREAD PITCH GAUGES FOR ISO METRIC SCREW THREADS (PITCH RANGE 0·4 TO 6 mm) — SPECIFICATION

(*First Revision*)

1 SCOPE

1.1 This standard covers the requirements for thread pitch gauges consisting of an assembly of blades used for identifying the nominal pitch P of ISO metric screw threads in the pitch range 0·4 to 6 mm and a blade having ISO thread profile 60° (included angle) as per IS 4218 (Part 1) : 1976 assembled in a protective sheath.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

IS No.	Title
4218 (Part 1) : 1976	ISO Metric screw threads: Part 1 Basic and design profiles (first revision)
1501 (Part 1) : 1984	Method for vickers hardness test for metallic materials: Part 1 HV5 to HV100 (second revision)

3 MATERIAL

3.1 The blades shall be made from suitable quality of steel preferably of one which does not corrode during use and shall be hardened and tempered to a hardness not less than 200 HV [see IS 1501 (Part 1) : 1984].

4 DIMENSIONS AND TOLERANCES

4.1 The minimum gauge length L of each gauge shall be as specified below (see also Fig. 1):

Pitch P , mm	Gauge Length in mm L_{Min}
0·4 to 1	8 mm
1·25 to 6	13 mm

4.2 The gauges shall consist of thread pitches as specified below:

No. of Gauges in the Set	P , mm
20	0·4, 0·45, 0·5, 0·6, 0·7, 0·75, 0·8, 1, 1·25, 1·5, 1·75, 2, 2·5, 3, 3·5, 4, 4·5, 5, 5·5, 6

4.3 The profile and dimensions of gauges shall be as given in Table 1.

5 GENERAL REQUIREMENTS

5.1 Sheath

The sheath shall be so designed as to fully protect the blades when not in use.

5.2 The construction of the case for the blades should provide for easy replacement of each gauge and re-locking in the position for which it was set.

5.3 The gauges in the set should be assembled in the ascending order of the pitch of thread.

5.4 Finish

The outer ends of the blades shall be approximately semicircular and the blades shall be free from sharp edges throughout their length.

6 DESIGNATION

6.1 The thread pitch gauges shall be designated as:

Thread Pitch Gauges IS 4211 0·4 to 6 mm, 20 blades, ISO 60°.

7 MARKING

7.1 Blades shall be legibly and permanently marked with pitch as shown in Fig. 1.

7.2 Sheath

The sheath shall be legibly and permanently marked with the range as well as ISO 60° as shown on Fig. 1 and the manufacturer's or suppliers name or trade mark.

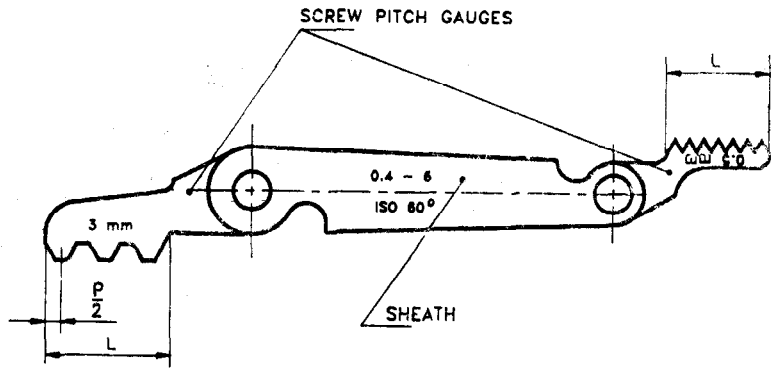
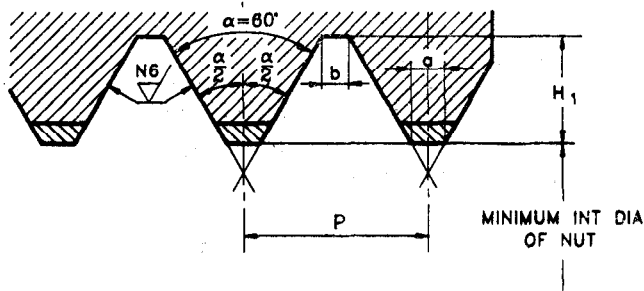


FIG. 1 THREAD PITCH GAUGE

Table 1 Dimensions and Tolerances for Thread Pitch Gauges for ISO Metric Screw Threads (Clause 4.3)

All dimensions in millimetres.



Pitch <i>P</i>	Tolerance on <i>P</i>	<i>H</i> ₁	Width of Flat Portion			Tolerance on Half Angle $\alpha/2$ in Minutes
			<i>a</i>		<i>b</i>	
			<i>Min</i>	<i>Max</i>	<i>Max</i>	
0.4 0.45	±0.010	0.217 0.244	0.10 0.11	0.12 0.13	0.05 0.06	±60
0.5 0.6 0.7		0.271 0.325 0.379	0.12 0.15 0.17	0.14 0.18 0.20	0.07 0.08 0.09	±50
0.75 0.8 1		0.406 0.433 0.541	0.18 0.20 0.25	0.21 0.23 0.28	0.09 0.10 0.13	±40
1.25		0.677	0.31	0.35	0.16	±35
1.5 1.75 2	±0.010	0.812 0.947 1.083	0.37 0.44 0.50	0.41 0.48 0.54	0.19 0.22 0.25	±30
2.5		1.353	0.62	0.66	0.31	
3 3.5 4		1.624 1.894 2.165	0.75 0.87 1.00	0.80 0.92 1.05	0.38 0.44 0.50	±25
4.5 5		2.436 2.706	1.13 1.25	1.18 1.32	0.56 0.63	±20
5.5 6		2.977 3.248	1.37 1.50	1.44 1.57	0.69 0.75	

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Amendments Issued Since Publication

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices:

Telephone

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 331 01 31 331 13 75
Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola CALCUTTA 700054	{ 37 84 99, 37 85 61 37 86 26, 37 86 62
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	{ 53 38 43, 53 16 40 53 23 84
Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113	{ 235 02 16, 235 04 42 235 15 19, 235 23 15
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