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मानक

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IS 4531-3 (1988): Swivels, Part 3: Dimensions of Eye [MED  
14: Cranes, Lifting Chains and Related Equipment]



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*Indian Standard*

**SPECIFICATION FOR SWIVELS**

**PART 3 DIMENSIONS OF EYE**

*( First Revision )*

**1. Scope** — Covers the dimensions of round and elongated eye with ball bearing and plain bearing used in swivels.

**2. Dimensions**

**2.1** The dimensions of round and elongated eye with ball bearing and plain bearing shall be as given in Table 1 ( see also Fig. 1 and 2 ). Most dimensions in the series are geometrically similar and have been based on one common factor which is the theoretical diameter,  $A$ , of the shank of the eye or hook. Some dimensions have to be adapted to fit other standards and must, therefore, diverge slightly from precise geometrical similarity. These include all dimensions associated with the screw thread or ball bearing, such as the actual shank dimensions.

**2.2** A plus allowance shall be made when forging the shank to allow for machining to the required diameter. The tolerance on the machined shank ( dimension  $D_1$  ) shall be  $-0.08$  to  $-0.25$  mm. The junction of the shank and the collar shall be radiused.

**2.3** The screw threads and shank nuts used shall comply with the requirements covered in Part 1 of this standard.

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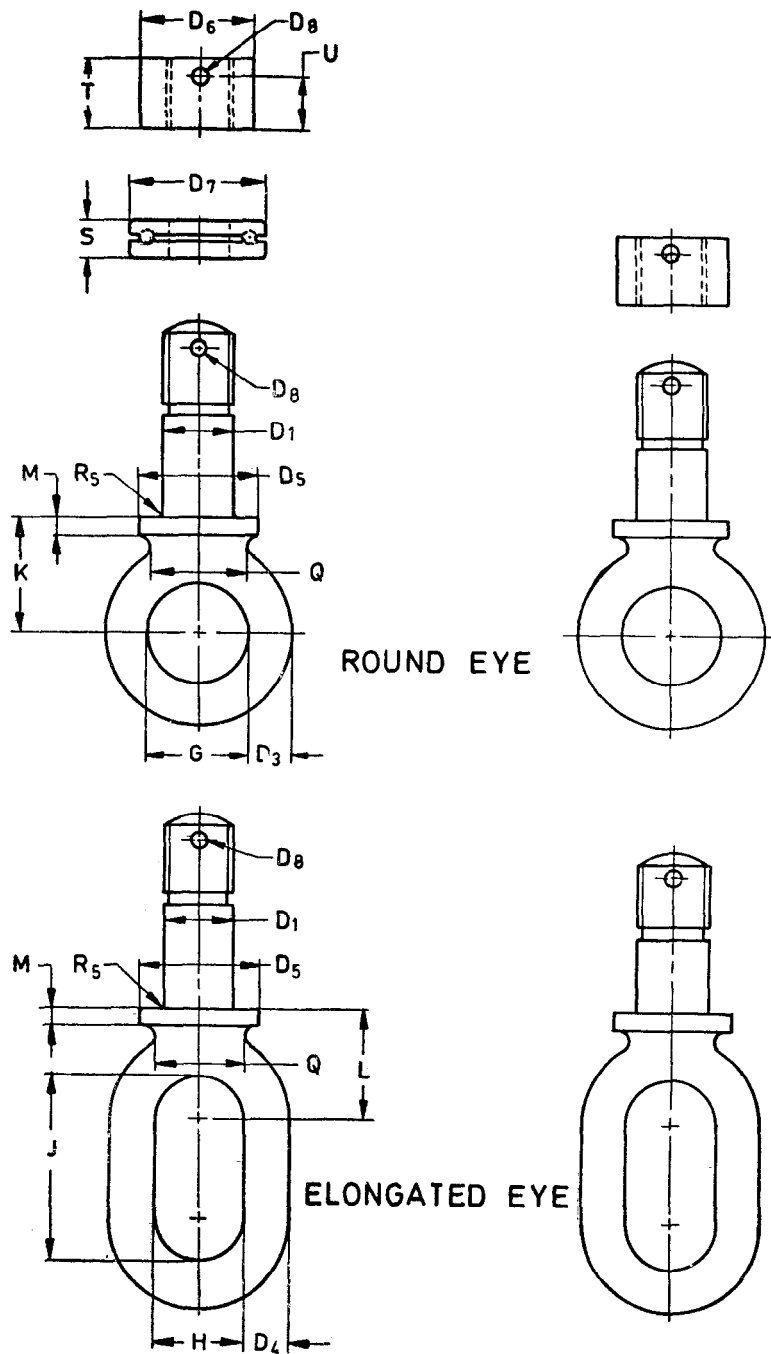


FIG. 1 ROUND EYE AND ELONGATED EYE WITH BALL BEARING

( Dimensions are same as Fig. 1 )  
FIG. 2 ROUND EYE AND ELONGATED EYE WITH PLAIN BEARING

**TABLE 1 DIMENSIONS OF EYE**

( Clause 2.1 and Fig. 1 and 2 )

All dimensions in millimetres.

Safe Working Load, kN	Shank Dia			Screw Thread	Ball Bearing IS : 5932-1970*			Nut				G (1.50A)	H (1.25A)	J (2.60A)	K (1.70A)	L (1.60A)	M (0.25A)	Q (1.50A)	D <sub>3</sub> (0.68A)	D <sub>4</sub> (0.72A)	D <sub>5</sub> (1.75A)	R <sub>5</sub> (0.10A)
	Theoretical, A	Recommended Forged	Machined D <sub>1</sub>		Series	D <sub>7</sub>	S	T, Min	D <sub>8</sub> , Min	U, Min	D <sub>8</sub> (0.25 A)											
10	16	21	20	M18	11	35	10	18	29	14	4	24	20	42	27	26	4	24	11	12	28	2
12.5	18	23	20	M20	11	35	10	20	32	16	5	27	22	47	31	29	5	27	13	13	32	2
16	20	25	25	M22	11	42	11	22	35	17	5	30	25	52	34	32	5	30	14	15	35	2
20	23	28	25	M24	11	42	11	24	38	19	6	34	29	60	39	37	6	34	16	17	40	2
25	26	31	30	M27	12	52	16	27	43	21	6	39	32	68	44	42	6	39	18	19	46	3
32	29	34	30	M30	12	52	16	30	48	24	7	44	36	75	49	46	7	44	20	21	51	3
40	32	38	35	M33	12	62	18	33	53	26	8	48	40	83	54	51	8	48	22	23	56	3
50	36	41	40	M36	12	68	19	36	58	29	9	54	45	94	61	58	9	54	25	26	63	4
63	40	44	40	M39	13	78	26	39	62	31	10	60	50	104	68	64	10	60	27	29	70	4
80	45	50	45	M45	13	85	28	45	72	36	11	68	55	117	76	72	11	68	31	32	79	5
100	51	55	55	M52	13	105	35	52	83	41	13	76	64	133	87	82	13	76	35	37	89	5
125	57	60	60	M56	13	110	35	56	90	45	14	86	71	148	97	91	14	86	39	41	100	6

\*Boundary dimensions for thrust ball bearings with flat seats.

**EXPLANATORY NOTE**

The general requirements of swivels including material, workmanship, tests, marking details, etc, are covered in Part 1 of this standard. The dimensions of bowpiece have been separately covered in Part 2 of this standard.

In the preparation of this standard, assistance has been derived from BS : 4283 : 1968 'Swivels for lifting purposes', issued by the British Standards Institution ( BSI ).