

भारतीय मानक मसौदा

छल्ला रिंच (पाने) — विशिष्टि

(IS 2029 का पांचवां पुनरीक्षण)

Draft Indian Standard

RING WRENCHES (SPANNERS) — SPECIFICATION

(Fifth Revision of IS 2029)

ICS 25.140.30

Hand Tools Sectional Committee, PGD 34

Last Date for Comments: **One month from
the date of circulation**

FOREWORD

This draft Indian Standard (Fifth Revision), will be adopted by the Bureau of Indian Standards, after the draft finalized by the Hand Tools Sectional Committee had been approved by the Production Engineering Division Council.

This standard was first published in 1962, and was subsequently revised in 1971, 1981, 1991 and 1998. The fifth revision has been brought out to align it with the latest technological developments and industrial practices in the country.

In this revision, the following changes have been made:

- a) New grades for material have been added; and
- b) Dimensions of Table 1, Table 2, Table 3, Table 4 and Table 5 have been modified and new sizes have been included.

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, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard
RING WRENCHES (SPANNERS) — SPECIFICATION
(Fifth Revision)

1 SCOPE

This standard covers the requirements of forged, double-ended ring wrenches (spanners) of cranked, straight, angled and offset types conforming to torque series A and B of IS 6131.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
2027 : 2023	Spanners and Sockets — Widths across flats (<i>third revision</i>)
6131 : 1980	Technical requirements for Hand-Operated Wrenches (spanners) and Sockets (<i>first revision</i>)

3 DIMENSIONS

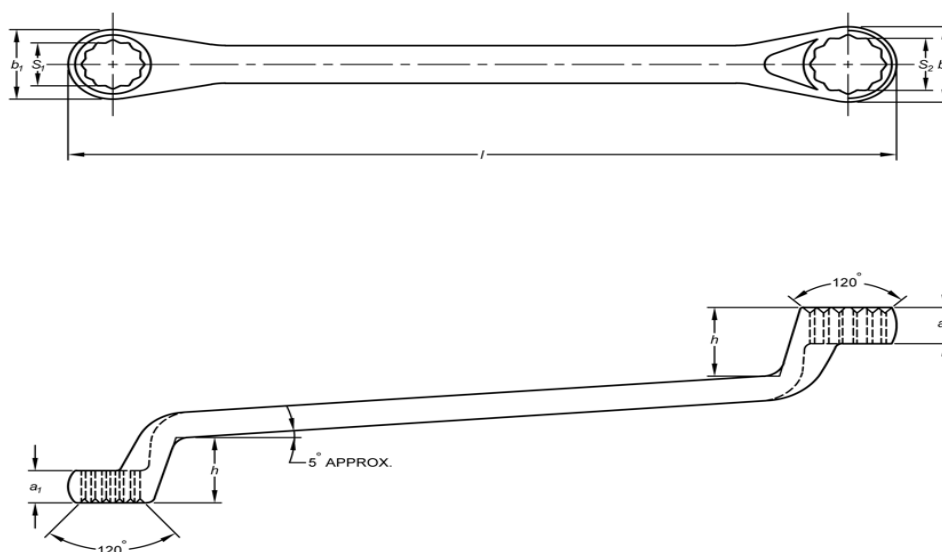
3.1 The dimensions of ring wrenches (spanners) of cranked, straight, angled and offset types shall be as given in Tables 1 to 5.

3.2 The widths across flats and the corresponding tolerances for the ring wrenches (spanners) shall be in accordance with IS 2027.

3.3 The illustrations are diagrammatic only and are not intended to indicate details of design.

Table 1 Dimensions for Cranked Double-Ended Ring Wrenches (Spanners)
(Clause 3.1)

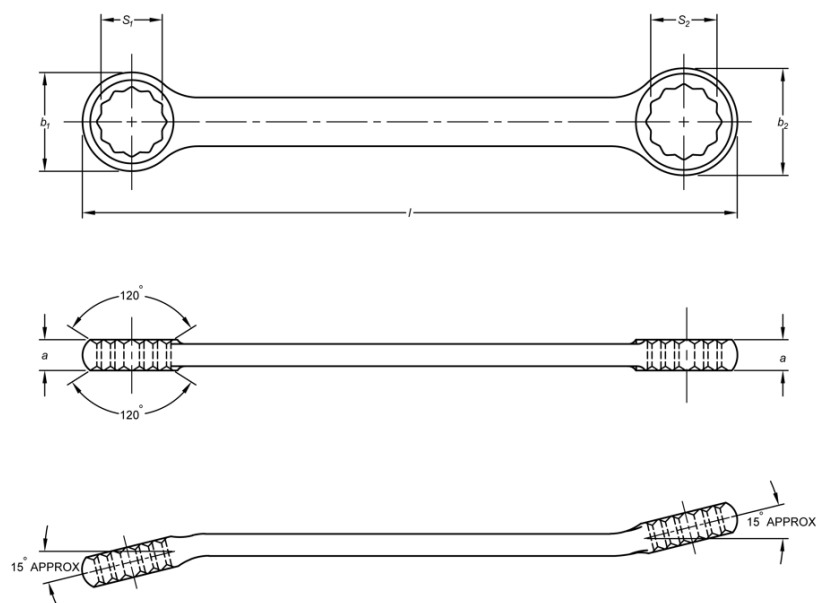
All dimensions are in millimeters



Nominal Width Across Flats	a_1	a_2	b_1	b_2	h		l	l
$S_1 \times S_2$	Max	Max	Max	Max	Max	Min	Max	Min
6 × 7	6	7	11.5	12.5	22	18	190	165
7 × 8	6	7	12.5	14.0	23	19	190	170
8 × 9	7	8	14.0	15.5	23	19	200	180
8 × 10	7	9	14.0	17.0	24	20	200	180
10 × 11	9	10	18.5	21.5	25	21	210	190
10 × 13	9	11	18.5	21.5	27	23	230	210
11 × 13	10	11	18.5	21.5	27	23	235	210
12 × 13	10	11	20.0	21.5	27	23	235	210
12 × 14	10	12	20.0	23.0	27	23	235	220
13 × 14	11	12	21.5	23	28	24	250	220
13 × 15	11	12	21.5	24	28	24	250	220
13 × 16	11	12	21.5	26	28	24	260	230
13 × 17	11	13	21.5	27	30	26	270	240
14 × 15	11	12	23.0	27	28	24	250	220
14 × 17	12	13	23.0	27	30	26	270	240
16 × 17	12	13	26.0	27	30	26	270	240
16 × 18	12	13	26.0	29	31	27	285	250
17 × 19	13	14	27.0	30	32	28	295	260
18 × 19	13	14	29.0	30	32	28	295	260
18 × 21	13	14	29.0	33	33	29	310	275
19 × 22	14	15	30.0	35	34	30	320	285
19 × 24	14	16	30.0	38	34	30	335	300
20 × 22	14	15	32.0	35	34	30	320	285
21 × 23	14	15	33.0	37	34	30	335	300
21 × 24	14	16	33.0	38	35	31	340	305
22 × 24	15	16	35.0	38	36	32	340	35
24 × 26	15	16	38.0	41	36	32	355	320
24 × 27	15	16	38.0	42	36	32	355	320
24 × 30	15	17	38.0	46	37	33	355	320
25 × 28	15	16	40.0	44	37	33	360	320
27 × 30	16	17	42.0	46	37	33	360	320
27 × 32	16	18	42.0	49	38	34	380	340
30 × 32	17	19	46.0	49	39	35	390	350
30 × 34	20	21	46.0	52	39	35	425	370
30 × 36	20	21	46.0	55	40	36	450	395
32 × 36	20	21	53.0	58	40	36	450	395
34 × 36	20	21	53.0	58	42	37	470	415
36 × 41	22	24	58.0	65	46	40	490	435
41 × 46	22	24	68.0	75	46	40	515	460
46 × 50	24	25	75.0	80	49	43	656	500

Table 2 Dimensions for Straight and Angled Double-Ended Ring Wrenches (Spanners)
(Clause 3.1)

All dimensions are in millimeters.

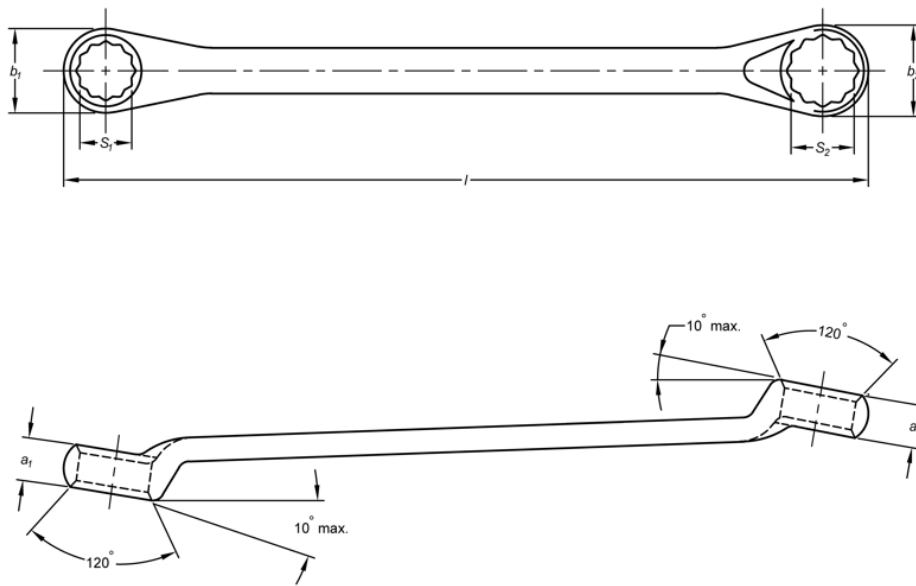


Nominal Width Across Flats	a	b_2	b_1	l	l
$S_1 \times S_2$	Max	Max	Max	Max	Min
6 × 7	5	10.0	11.5	100	80
7 × 8	6	11.5	13.0	115	95
8 × 9	6	13.0	14.5	115	95
8 × 10	6	13.0	16.0	125	105
10 × 11	7	16.0	17.0	135	115
10 × 13	8	16.0	20.5	150	130
11 × 13	8	17.0	20.5	150	130
12 × 13	8	19.0	20.5	150	130
12 × 14	8	19.0	21.5	165	130
13 × 14	8	20.5	21.5	165	130
13 × 16	9	20.5	24.5	165	130
13 × 17	9	20.5	25.5	170	140
14 × 15	8	21.5	23.0	165	130
14 × 17	9	21.5	25.5	175	140
16 × 17	9	24.5	25.5	175	140
16 × 18	10	25.5	27.0	180	145
17 × 19	10	25.5	28.0	190	150
18 × 19	10	27.0	28.0	190	150
18 × 21	11	27.0	30.5	200	160
19 × 22	11	28.0	32.5	210	175
20 × 22	12	29.5	32.5	210	175
21 × 23	12	30.5	33.5	235	190
21 × 24	12	30.0	35.5	235	190
22 × 24	12	32.5	35.5	235	200
24 × 26	12	35.5	38.0	285	220
24 × 27	12	35.5	39.0	290	220
24 × 30	13	35.5	43.5	310	240
25 × 28	13	36.5	41.0	290	220

27 × 30	14	39.0	43.5	325	270
27 × 32	14	39.0	46.0	325	270
30 × 32	14	43.5	46.0	325	270
30 × 34	15	43.5	49.0	335	280
30 × 36	15	43.5	51.5	360	305
32 × 36	15	46.0	51.5	360	305
34 × 36	15	49.0	51.5	360	305
36 × 41	16	51.5	59.0	395	34
41 × 46	17	59.0	66.0	435	380
46 × 50	17	66.0	71.5	480	415

Table 3 Dimensions for Double-Ended Offset Ring Wrenches (Spanners)
(Clause 3.1)

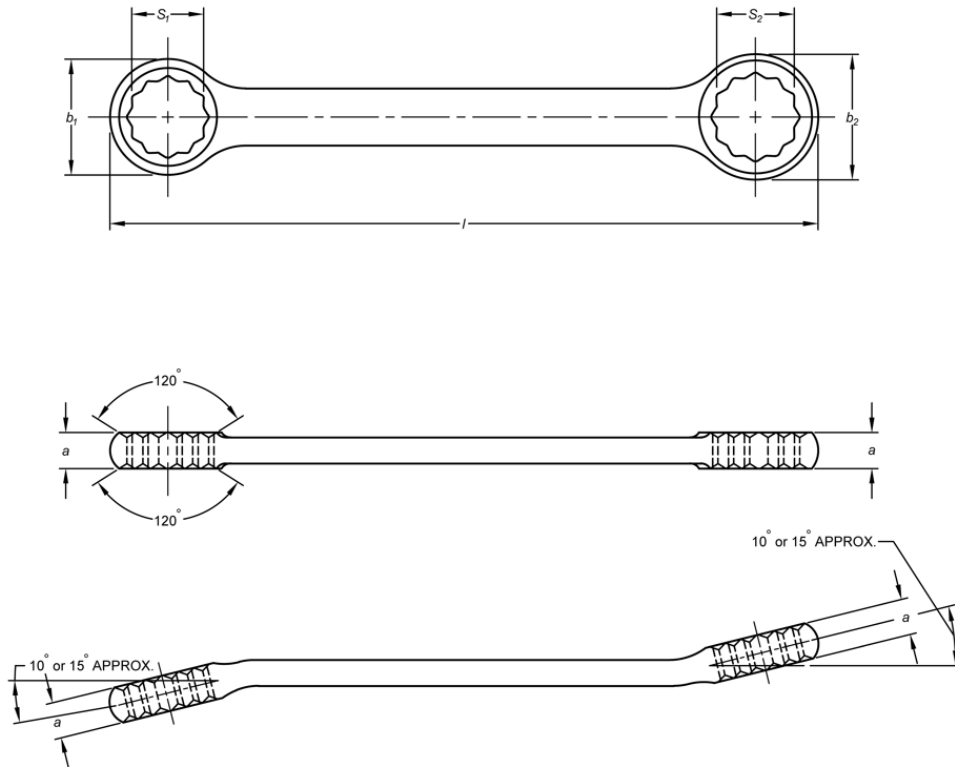
All dimensions are in millimetres.



Nominal Width Across Flats	<i>a</i>	<i>a</i> ₂	<i>b</i> ₁	<i>b</i> ₂	<i>l</i>	<i>l</i>
<i>S</i> ₁ × <i>S</i> ₂	Max	Max	Max	Max	Max	Min
6 × 7	6	7	11.0	12.5	170	135
7 × 8	7	8	12.5	14.0	175	140
8 × 9	7	8	14.0	15.5	180	145
8 × 10	7	9	14.0	17.0	180	145
10 × 11	9	10	17.0	18.5	200	165
10 × 13	9	11	17.0	21.5	205	170
11 × 13	10	11	18.5	21.5	205	170
12 × 13	10	11	20.0	21.5	210	175
12 × 14	10	12	20.0	23.0	210	175
13 × 16	11	12	21.5	26.0	220	185
13 × 17	11	13	21.5	27.0	255	220
14 × 15	11	12	23.0	24.0	235	200
14 × 17	12	13	23.0	27.0	255	220
16 × 17	12	13	26.0	27.0	260	225
16 × 18	12	13	26.0	29.0	275	235
17 × 19	13	14	27.0	30.0	290	245
18 × 19	13	14	29.0	30.0	290	245
18 × 21	13	14	29.0	33.0	305	260
19 × 22	14	15	30.0	35.0	320	275
20 × 22	14	15	32.0	35.0	320	275
21 × 23	14	15	33.0	37.0	355	310
22 × 24	15	16	35.0	38.0	355	310
24 × 27	16	17	38.0	42.0	410	360
25 × 28	17	18	40.0	44.0	410	360
27 × 32	18	20	42.0	49.0	460	400
30 × 32	18	20	46.0	49.0	460	400
30 × 34	18	20	46.0	52.0	500	400

Table 4 Dimensions for Double-Headed, Flat and Offset Box Wrenches (Spanners) - ISO Series
(Clause 3.1)

All dimensions are in millimetres

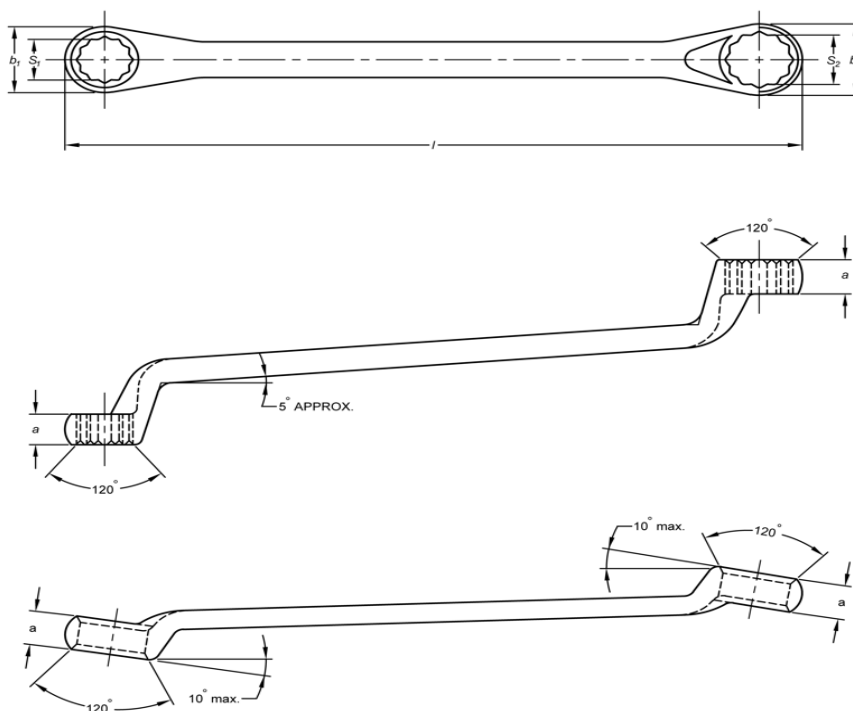


Nominal Width Across Flats	a	b_1	b_2	l	l
$S_1 \times S_2$	Max	Max	Max	Min	Max
6 × 7	65	11.0	12.5	73	100
7 × 8	7.0	12.5	14.0	81	113
8 × 9	7.5	14.0	15.5	89	115
8 × 10	8.0	14.0	17.0	89	125
9 × 11	8.5	15.5	18.5	97	135
10 × 11	8.5	17.0	18.5	105	147
10 × 13	9.5	17.0	21.5	105	147
11 × 13	9.5	18.5	21.5	113	158
12 × 13	9.5	20.0	21.5	121	169
13 × 14	9.5	21.5	23.0	129	181
13 × 15	10.0	21.5	24.5	129	181
13 × 16	10.5	21.5	26.0	129	181
13 × 17	11.0	21.5	27.5	129	181
14 × 15	10.0	23.0	24.5	137	192
15 × 16	10.5	24.5	26.0	145	203
15 × 18	11.5	24.5	29.0	145	203

16 × 17	11.0	26.0	27.5	153	214
16 × 18	11.5	26.0	29.0	153	214
17 × 19	11.5	27.5	30.5	166	232
18 × 19	11.5	29.0	30.5	174	244
18 × 21	12.5	29.0	33.5	174	244
19 × 22	13.0	30.5	35.0	182	255
20 × 22	13.0	32.0	35.0	190	266
21 × 22	13.0	33.5	35.0	198	277
21 × 23	13.0	33.5	36.5	198	277
21 × 24	13.5	33.5	38.0	198	277
22 × 24	13.5	35.0	38.0	206	277
24 × 27	14.5	38.0	42.5	222	311
24 × 30	15.5	38.0	47.0	222	311
25 × 28	15.0	39.5	44.0	230	333
27 × 30	15.5	42.5	47.0	246	344
27 × 32	16.0	42.5	50.0	246	344
30 × 32	16.0	47.0	50.0	275	385
30 × 34	16.5	47.0	53.0	275	385
32 × 34	16.5	50.0	53.0	291	407
32 × 36	17.0	50.0	56.0	291	407
34 × 36	17.0	53.0	56.0	307	430
36 × 41	18.5	56.0	63.5	323	452
41 × 46	20.0	63.5	71.0	363	508
46 × 50	21.0	71.0	77.0	403	564
50 × 55	22.0	77.0	84.5	435	609
55 × 60	23.5	84.5	92.0	475	665

**Table 5 Dimensions for Double-Headed Deep Offset and Modified Offset Box
Wrenches (Spanners) — ISO Series**
(Clause 3.1)

All dimensions are in millimetres



Nominal Width Across Flats	<i>a</i>	<i>b</i> ₁	<i>b</i> ₂	<i>l</i>	<i>l</i>
<i>S</i> ₁ × <i>S</i> ₂	Max	Max	Max	Min	Max
6 × 7	7.0	11.0	12.5	134	188
7 × 8	7.5	12.5	14.0	143	200
8 × 9	8.5	14.0	15.5	152	213
8 × 10	9.0	14.0	17.0	152	213
9 × 11	9.5	15.5	18.5	161	228
10 × 11	9.5	17.0	18.5	170	238
10 × 13	11.0	17.0	18.5	170	238
11 × 13	11.0	17.0	21.5	179	251
12 × 13	11.0	20.0	21.5	188	263
13 × 14	11.0	21.5	23.0	197	276
13 × 15	12.0	21.5	24.5	197	276
13 × 16	12.0	21.5	26.0	197	276
13 × 17	13.0	21.5	27.5	197	276
14 × 15	12.0	23.0	24.5	206	288
15 × 16	12.0	24.5	26.0	215	301
15 × 18	13.0	24.5	29.0	215	301
16 × 17	13.0	26.0	27.5	224	314
16 × 18	13.0	26.0	29.0	224	314
17 × 19	14.0	27.5	30.5	233	326
18 × 19	14.0	29.0	30.5	242	339

18 × 21	14.0	29.0	33.5	242	339
19 × 22	15.0	30.5	35.0	251	351
20 × 22	15.0	32.0	35.0	260	364
21 × 22	15.0	33.5	35.0	269	377
21 × 23	15.0	33.5	36.5	269	377
21 × 24	16.0	33.5	36.5	269	377
22 × 24	16.0	35.0	38.0	278	389
24 × 27	17.0	38.0	42.5	296	414
24 × 30	18.0	38.0	47.0	296	414
25 × 28	17.5	39.5	44.0	305	425
27 × 30	18.0	42.5	47.0	323	452
27 × 32	19.0	42.5	50.0	323	452
30 × 32	19.0	47.0	50.0	330	462
30 × 32	20.0	47.0	53.0	330	462
32 × 34	20.0	50.0	53.0	348	487
32 × 36	21.0	50.0	56.0	348	487
34 × 36	21.0	53.0	56.0	366	512
36 × 41	22.0	56.0	63.5	384	538
41 × 46	24.0	63.5	71.0	429	601
46 × 50	25.0	71.0	77.0	474	664
50 × 55	27.0	77.0	84.5	510	714
55 × 60	28.5	84.5	92.0	555	765

4 MATERIAL

Any suitable grade of steel which fulfill the requirements of the hardness and torque test as laid down in 5 and 6 can be used. Some of the suitable material grades are mentioned in Table 6.

Table 6 Chemical composition of steel grades

Sl No.	Grade	C <i>Min</i>	Si	Mn	S <i>Max</i>	P <i>Max</i>	Cr <i>Min</i>	V <i>Min</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	Chrome Vanadium	0.28	0.40 <i>Max</i>	0.40-0.60	0.040	0.040	0.30	0.07
ii)	40Cr	0.37	0.17-0.37	0.50-0.80	0.040	0.040	0.80	-
iii)	Medium Carbon	0.35	0.10-0.40	0.50-0.80	0.040	0.040	-	-

NOTE— Composition limit in weight percent maximum, unless shown as a range or a minimum.

5 HARDNESS

5.1 The ring wrenches (spanners) shall be hardened over entire length and the hardness measured at any point on the wrench shall be within the limits specified in IS 6131.

5.2 For size combinations with width across flat at one end above 32 mm (inclusive), the hardness value shall be 345 HV (35 HRC), *Min*.

Example:

Wrenches (spanners) of nominal width across flat combinations of 30 mm x 36 mm and 32 mm x 36 mm shall have a hardness of 345 HV (35 HRC), *Min*.

6 WORKMANSHIP AND FINISH, SAMPLING, TORQUE TESTING AND PRESERVATION AND PACKING

These requirements shall be in accordance with IS 6131. The test torque values for ring wrenches (spanners) shall conform to series 'A' if made of alloy steel and series 'B' if made of carbon steel, as specified in IS 6131.

7 DESIGNATION

7.1 The ring wrenches (spanner) in accordance with this standard shall be designated by:

- a) Commonly used name;
- b) torque series (see IS 6131);
- c) type ('C' for cranked, 'S' for straight, 'A' for angled, and 'O' for offset);
- d) nominal widths across flats in millimeters; and
- e) IS Number.

Example 1:

A cranked double-ended ring wrench (spanner) conforming to torque series A, having nominal widths across flats $S_1 = 8$ and $S_2 = 10$ shall be designated as follows:

Ring Spanner IS 2029 — A series — C — 8 x 10

Example 2:

A straight double-ended ring wrench (spanner) conforming to torque series B, having nominal widths across flats $S_1 = 13$ and $S_2 = 17$ shall be designated as follows:

Ring Spanner IS 2029 — B series — S — 13 x 17

8 MARKING

8.1 The wrenches (spanners) shall be marked legibly and permanently with at least:

- a) Nominal width(s) across flats on their respective end(s);
- b) Name or initials/recognized trade-mark of the manufacturer or both;
- c) Year of manufacture may also be marked, if required by the purchaser; and
- d) Designation A or B as mentioned in IS 6131 with reference to the raw material used, alloy steel or carbon steel, respectively.

8.2 BIS CERTIFICATION MARKING

8.2.1 Each wrench (spanner) may also be marked with the Standard Mark.

8.2.1.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of the Standard Mark may be granted to the manufacturers or producers may be obtained from the Bureau of Indian Standards.