

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 6389 (1998): Combination Wrenches with Equal Openings
[PGD 5: Assembly Hand Tools]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS 6389 : 1998

Edition 3.1

(1999-10)

भारतीय मानक
बराबर छेद वाले संयोजी रैंच की विशिष्टि
(दूसरा पुनरीक्षण)

Indian Standard

**COMBINATION WRENCHES WITH EQUAL
OPENINGS — SPECIFICATION**

(Second Revision)

(Incorporating Amendment No 1)

ICS 25 140 30

© BIS 2002

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Price Group 2

FOREWORD

| This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Assembly Hand Tools Sectional Committee had been approved by the Production Engineering Division Council

This standard was first published in 1972. The first revision was taken up in 1989 aligning it with the practices being followed internationally. While revising following changes were made:

- a) The title of the specification was modified from 'Combination wrenches' to 'Combination wrenches with equal openings' for better understanding.
- b) Types were modified and the concept of short handle and long handle was deleted since the minimum length was specified. If the length is to be increased, this may be done as agreed to between the manufacturers and the suppliers. The empirical relation for the length shall be

$$l, Min = 18.2 s^{0.78} \text{ for wrench openings } s < 17 \text{ mm}$$

$$l, Min = 4.8 s^{1.25} \text{ for wrench openings } 17 \text{ mm} < s < 22 \text{ mm}$$

$$l, Min = 18 s^{0.825} \text{ for wrench openings } s > 22 \text{ mm}$$

- c) The dimensions had accordingly been modified. Nominal sizes 15, 16, 18, 21, 34 and 46 to 60 mm were also included.

In the revision of this standard, an ISO series as Type C has been included and manufacturing of the product from unalloyed steel has been deleted.

While revising this standard, assistance has been taken from the following:

ISO 7738: 1990 'Combination wrenches — Minimum length and thickness of head' issued by the International Organization for Standardization (ISO)

DIN 3113: 1984 'Combination wrenches with equal openings, test long series A and C' issued by the Deutsches Institut für Normung (DIN)

This edition 3:1 incorporates Amendment No. 1 (October 1999). Side bar indicates modification of the text as the result of incorporation of the amendment.

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: 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***COMBINATION WRENCHES WITH EQUAL OPENINGS — SPECIFICATION***(Second Revision)***1 SCOPE**

This standard covers the requirements for combination wrenches with equal openings, complying with the test torque series A and C or torque series B and D of IS 6131 'Technical requirements for hand operated wrenches (spanners) and sockets (*first revision*)'

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 1992 | Spanners and sockets — Widths across flats (<i>third revision</i>) |
| 3748 1990 | Tool and die steels (<i>second revision</i>) |
| 6131 1980 | Technical requirements for hand operated wrenches (spanners) and sockets (<i>first revision</i>) |

3 TYPES

3.1 The combination wrenches with equal opening shall be of the following types

- a) *Type A* — Combination wrenches without deep offset ring end
- b) *Type B* — Combination wrenches with deep offset ring end
- c) *Type C* — Combination wrenches — ISO series

4 DIMENSIONS

4.1 Dimensions of the various types of combination wrenches with equal opening shall be as given in Table 1 and Table 2

4.2 Tolerance on Width Across Flats

Tolerances on the dimensions of width across flats for forged and subsequently machined spanners shall be as specified in IS 2027

5 MATERIAL

5.1 These wrenches shall be manufactured from a suitable grade of steel conforming to IS 3748 and meeting the requirement laid down in 6

6 HARDNESS, WORKMANSHIP AND FINISH, PRESERVATION, PACKING, TESTS AND SAMPLING

6.1 These requirements shall be according to IS 6131. The ring end and open jaw end shall successfully withstand the torque tests according to Series A and C or Series B and D respectively

7 DESIGNATION

7.1 A combination wrench of Type A and having a width across flats of 30 mm shall be designated as follows

Wrench IS 6389 — A30

8 MARKING

8.1 Wrenches shall be legibly and indelibly marked with the nominal size and the manufacturer's name, initials or trade mark

8.2 BIS Certification Marking

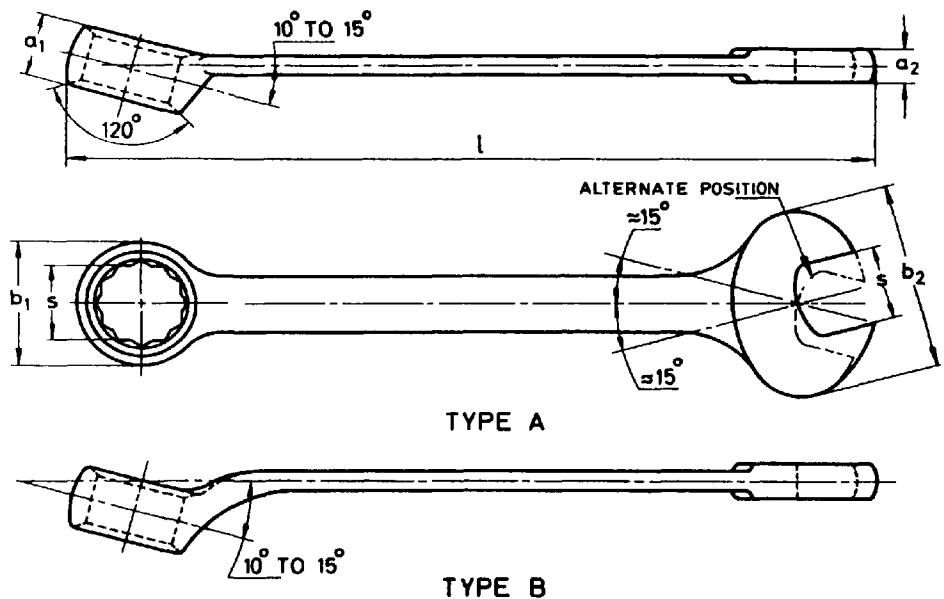
Each wrench may also be marked with the Standard Mark

8.2.1 The use of the Standard Mark is governed by the provision of *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of the conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards

Table 1 Dimensions for Combination Wrenches with Equal Openings, Type A and Type B

(Clause 4.1)

All dimensions in millimetres



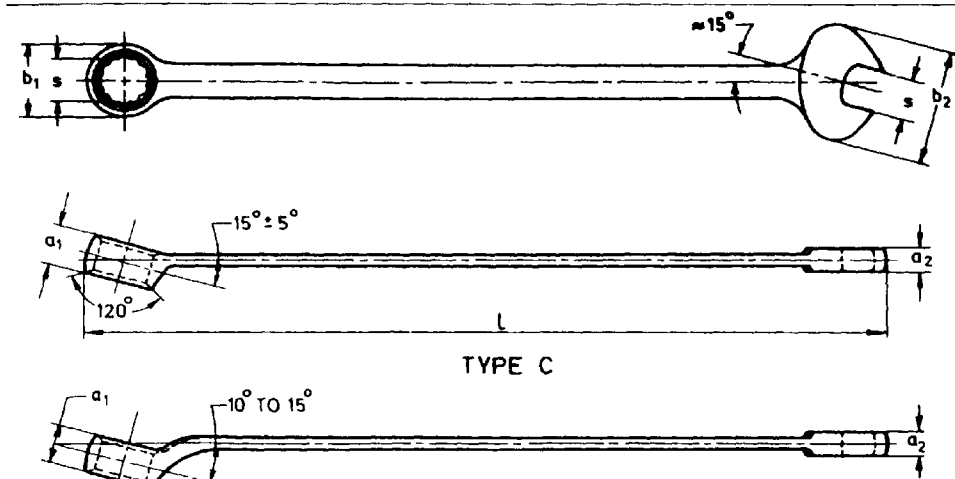
TYPE A

TYPE B

| Nominal Width Across Flats s | a_1 Max | a_2 Max | b_1 Max | b_2 Max | l Min |
|--------------------------------------|--------------|--------------|--------------|--------------|------------|
| 6 | 6 | 4 | 11 | 19 | 90 |
| 7 | 7 | 4 | 12.5 | 20 | 100 |
| 8 | 7 | 4.5 | 14 | 22 | 105 |
| 9 | 8 | 4.5 | 15.5 | 24 | 115 |
| 10 | 9 | 5 | 17 | 27 | 125 |
| 11 | 10 | 5.5 | 18.5 | 30 | 135 |
| 12 | 10 | 5.5 | 20 | 32 | 140 |
| 13 | 11 | 6.5 | 21.5 | 34 | 150 |
| 14 | 12 | 6.5 | 23 | 35 | 160 |
| 15 | 12 | 7 | 24 | 37 | 165 |
| 16 | 13 | 8 | 25.5 | 39 | 175 |
| 17 | 13 | 8 | 27 | 42 | 180 |
| 18 | 14 | 9 | 28.5 | 44 | 195 |
| 19 | 14 | 9 | 30 | 47 | 205 |
| 21 | 15 | 10 | 33.5 | 50 | 230 |
| 22 | 15 | 10 | 35 | 52 | 245 |
| 24 | 16 | 12 | 38 | 56 | 265 |
| 27 | 18 | 13 | 42 | 63 | 290 |
| 30 | 20 | 14 | 46 | 66 | 320 |
| 32 | 21 | 14 | 49 | 71 | 340 |
| 34 | 21 | 14 | 52 | 75 | 360 |
| 36 | 24 | 15 | 55 | 80 | 380 |
| 41 | 26 | 17 | 63 | 88 | 430 |
| 46 | 28 | 18 | 70 | 96 | 480 |
| 50 | 30 | 19 | 76 | 105 | 520 |
| 55 | 31 | 20 | 84 | 114 | 560 |
| 60 | 33 | 22 | 92 | 122 | 595 |

Table 2 Dimensions for Combination Wrenches with Equal Openings, Type C and Type D
(Clause 4.1)

All dimensions in millimetres



TYPE D

| Nominal Width Across Flats ¹⁾ | a_1 , Max | a_2 , Max | b_1 , ²⁾ Max | b_2 , ²⁾ Max | L , Min |
|---|----------------|----------------|------------------------------|------------------------------|--------------|
| 6 | 6.5 | 4.5 | 11 | 20 | 75 |
| 7 | 7 | 5 | 12.5 | 22 | 85 |
| 8 | 8 | 5 | 14 | 24 | 90 |
| 9 | 8.5 | 5.5 | 15.5 | 26 | 100 |
| 10 | 9 | 6 | 17 | 28 | 110 |
| 11 | 9.5 | 6.5 | 18.5 | 30 | 120 |
| 12 | 10 | 7 | 20 | 32 | 125 |
| 13 | 11 | 7 | 21.5 | 34 | 135 |
| 14 | 11.5 | 7.5 | 23 | 36 | 145 |
| 15 | 12 | 8 | 24.5 | 39 | 150 |
| 16 | 12.5 | 8 | 26 | 41 | 160 |
| 17 | 13 | 8.5 | 27.5 | 43 | 165 |
| 18 | 14 | 9 | 29 | 45 | 180 |
| 19 | 14.5 | 9 | 30.5 | 47 | 190 |
| 21 | 15.5 | 10 | 33.5 | 51 | 215 |
| 22 | 16 | 10.5 | 35 | 53 | 230 |
| 24 | 17.5 | 11 | 38 | 57 | 250 |
| 27 | 19 | 12.5 | 42.5 | 64 | 275 |
| 30 | 20 | 13.5 | 47 | 70 | 300 |
| 32 | 21 | 14.5 | 50 | 74 | 315 |
| 34 | 22.5 | 15 | 53 | 78 | 330 |
| 36 | 23.5 | 15.5 | 56 | 83 | 345 |
| 41 | 26.5 | 17.5 | 63.5 | 93 | 385 |
| 46 | 29.5 | 19.5 | 71 | 104 | 425 |
| 50 | 32 | 21 | 77 | 112 | 455 |

¹⁾ The tolerances on corresponding widths across flats for forged and subsequently machined spanners shall be as specified in IS 2027

²⁾ b_1 , Max = $1.5s + 2$ and b_2 , Max = $2.1s + 7$

The dimensions of b_1 and b_2 specified in the standard for the corresponding widths across flats are derived from ISO 3318 : 1990 'Assembly tools for screws and nuts — Double headed ring wrenches and combination wrenches — Maximum width of heads'

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically, a standard along with amendments is reaffirmed when such review indicates that no changes are needed, if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards Monthly Additions'.

This Indian Standard has been developed from Doc. No. PE 05 (0129)

Amendments Issued Since Publication

| Amend No. | Date of Issue |
|-----------|---------------|
| Amd No 1 | October 1999 |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

BUREAU OF INDIAN STANDARDS

Headquarters

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones 323 01 31, 323 33 75, 323 94 02

Telegrams Manaksanstha
(Common to all offices)

Regional Offices

| | Telephone |
|--|--|
| Central Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002 | { 323 76 17 323 38 41 |
| Eastern 1/14 C I T Scheme VII M, V I P Road, Kankurgachi KOLKATA 700054 | { 337 84 99, 337 85 61 337 86 26, 337 91 20 |
| Northern SCO 335-336, Sector 34 A, CHANDIGARH 160022 | { 60 38 43 60 20 25 |
| Southern C I T Campus, IV Cross Road, CHENNAI 600113 | { 235 02 16, 235 04 42 235 15 19, 235 23 15 |
| Western Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093 | { 832 92 95, 832 78 58 832 78 91, 832 78 92 |

Branches AHMEDABAD BANGALORE BHOPAL BHUBANESHWAR COIMBATORE
FARIDABAD GHAZIABAD GUWAHATI HYDERABAD JAIPUR KANPUR
LUCKNOW NAGPUR NALAGARH PATNA PUNE RAJKOT THIRUVANANTHAPURAM
VISHAKHAPATNAM