

हाथ के औजार — कांटे, सामान्य
प्रयोजन — विशिष्टि

(दूसरा पुनरीक्षण)

Hand Tools — Forks, General
Purpose — Specification

(Second Revision)

ICS 25.140.30

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FOREWORD

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

This standard was first published in 1968 and was subsequently revised in 1989. This revision has been brought out to align it with the latest technological developments and international practices.

This Standard lays down the requirements of forks used in road building, paving and coke loading, etc.

In this revision, following major changes have been made:

- a) References have been updated, and
- b) Material designations have been updated.

The composition of the Committee, responsible for the formulation of this standard is given in [Annex A](#).

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 : 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.

Indian Standard

HAND TOOLS — FORKS, GENERAL PURPOSE — SPECIFICATION

(*Second Revision*)

1 SCOPE

This standard specifies dimensions and other requirements of forks for general purposes.

2 REFERENCES

The standards given below contain provisions which through reference in this text, constitute provisions 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 edition of these standards:

<i>IS No.</i>	<i>Title</i>
IS 620 : 1985	Wooden tool handles, general requirements (<i>fourth revision</i>)
IS 1570 (Part 2/ Sec 1) : 1979	Schedules for wrought steels: Part 2 Carbon steels (unalloyed steels), Section 1 Wrought products (other than wires) with specified chemical composition and related properties (<i>first revision</i>)
IS 2500 (Part 1) : 2000	Sampling procedures for inspection by attributes: Part 1 Sampling schemes indexed by acceptance quality limit (AQL) for lot — By — Lot inspection (<i>third revision</i>)

3 NOMENCLATURE

The nomenclature for forks shall be as shown in [Fig. 1](#).

4 TYPES

General purpose forks shall be of the following types:

- a) Digging forks,
- b) Trenching forks,
- c) Ballast forks, and

- d) Coke forks.

5 DIMENSIONS

5.1 The dimensions of digging forks shall be as given in [Fig. 2](#).

5.2 The dimensions of trenching forks shall be as given in [Fig. 3](#).

5.3 The dimensions of ballast forks shall be as given in [Fig. 4](#).

5.4 The dimensions of coke forks shall be as given in [Fig. 5](#).

6 MATERIAL

Forks shall be manufactured from suitable steels to meet the requirements laid down in **8** and **11**.

Example:

Steel designation 40C8 or 55C8 conforming to IS 1570 (Part 2/Sec 1) with a maximum sulphur and phosphorus content of 0.060 percent each may be used.

7 HANDLES

7.1 The handles, if made of wood shall conform to class 4 of IS 620 or as agreed to between the manufacturer and the purchaser.

7.2 Handles of other materials if agreed upon between the manufacturer and purchaser may also be supplied provided the finished tool complies with the requirements laid down in **11**.

8 HARDNESS

The prongs of the forks shall be suitably hardened and tempered, up to the length 50 mm less from the shoulder. The hardness shall be 380 HV minimum.

9 MANUFACTURE

9.1 The prongs of forks shall be either forged integrally or welded to the strap. The straps or sockets may be either forged integrally or welded with the prongs.

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9.2 The sockets and straps shall be smooth and shall be positively and permanently secured to the handles.

9.3 The sockets and straps shall be close fitted and finished flush with the handle. Rivets shall also be finished flush.

9.4 Where handles of other material suitably joined to the socket are used in place of wooden handles, the socket may be shorter than specified, provided the finished tool complies with the requirements laid down in [11](#).

10 FINISH

The sockets or straps shall be polished bright or painted. The remaining areas of metal may be bright, self-colored or painted. Any exposed unpainted metal shall be given a suitable anticorrosive treatment.

11 TESTS

11.1 Bend Test

The forks shall be clamped and a load of 40 kgf (392 N) shall be gradually applied by suspension from the grip. The load shall be maintained in the position for one minute and then removed. A load of 55 kgf (539 N) in case of digging forks and 65 kgf (637 N) in case of other types of forks shall then be applied gradually and maintained for two minutes. On removal of this load the forks shall show no sign of damage or loosening of any component part, nor shall there be any evidence of permanent set in excess of 25 mm when measured at the extreme tip of the hilt, at the centre line of the handle (see [Fig. 6](#)).

11.2 Prong Test

The prongs of forks shall be tested by bringing tips of any two adjacent prongs together in case of digging forks and trenching forks, any four adjacent prongs in case of ballast forks and any five adjacent prongs in case of coke forks. The permanent set is noted. At the end of this test, the prongs shall show no sign of permanent set or damage.

12 MARKING

12.1 The forks shall be clearly marked with the type, manufacturer's name or trade-mark/initials and month/year of manufacturing/batch no.

12.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

13 PACKING

The forks shall be securely packed in suitable packing cases or crates of a size convenient for handling in transit, or bundled and secured suitably with wire or as may be specified by the purchaser. Each type of the fork shall be kept separate when packed and no package shall contain more than one variety of forks.

14 SAMPLING

14.1 Unless otherwise agreed to between the purchaser and the supplier, the procedures given in IS 2500 (Part 1) shall be followed for sampling inspection. The sampling plan, inspection level and acceptable quality level shall be as given in [14.2](#), [14.3](#) and [14.4](#) respectively.

14.2 For dimensions and workmanship, single sampling plan with inspection level IV and AQL of 2.5 percent as given in Tables 1 and Table 2 of IS 2500 (Part 1) shall be followed.

14.3 For bend and prong test, the single sampling plan with inspection level I and AQL 1.5 percent as given in Tables 1 and Table 2 of IS 2500 (Part 1) shall be followed.

14.4 For hardness test one sample shall be tested from each lot of 100 pieces or parts thereof. No sample should fail.

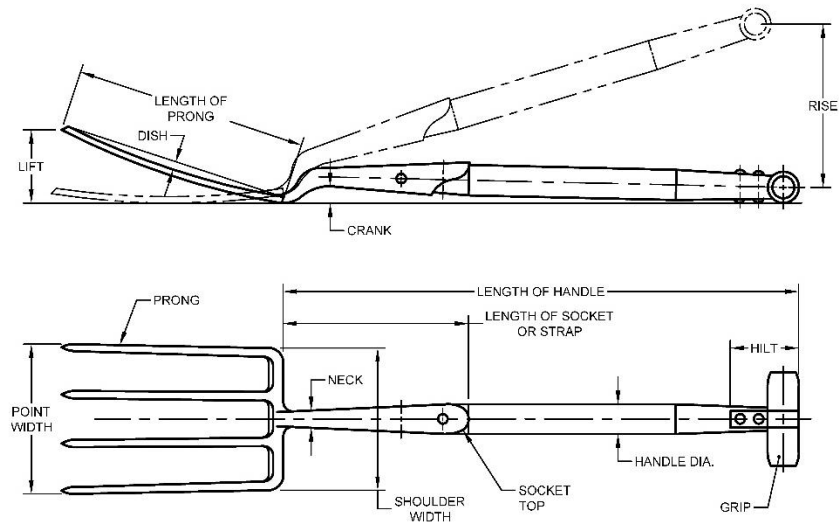
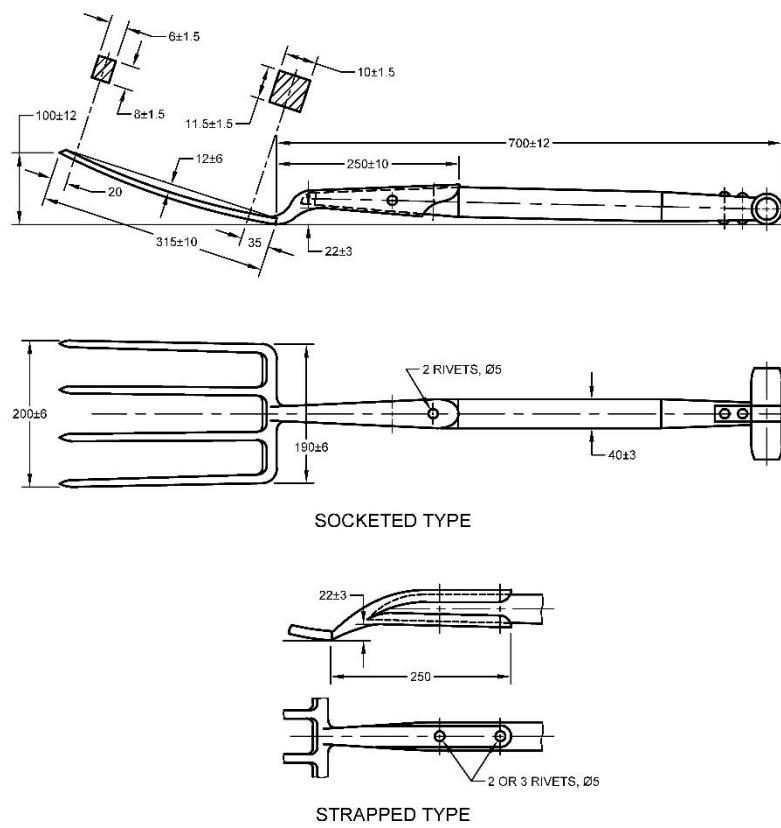
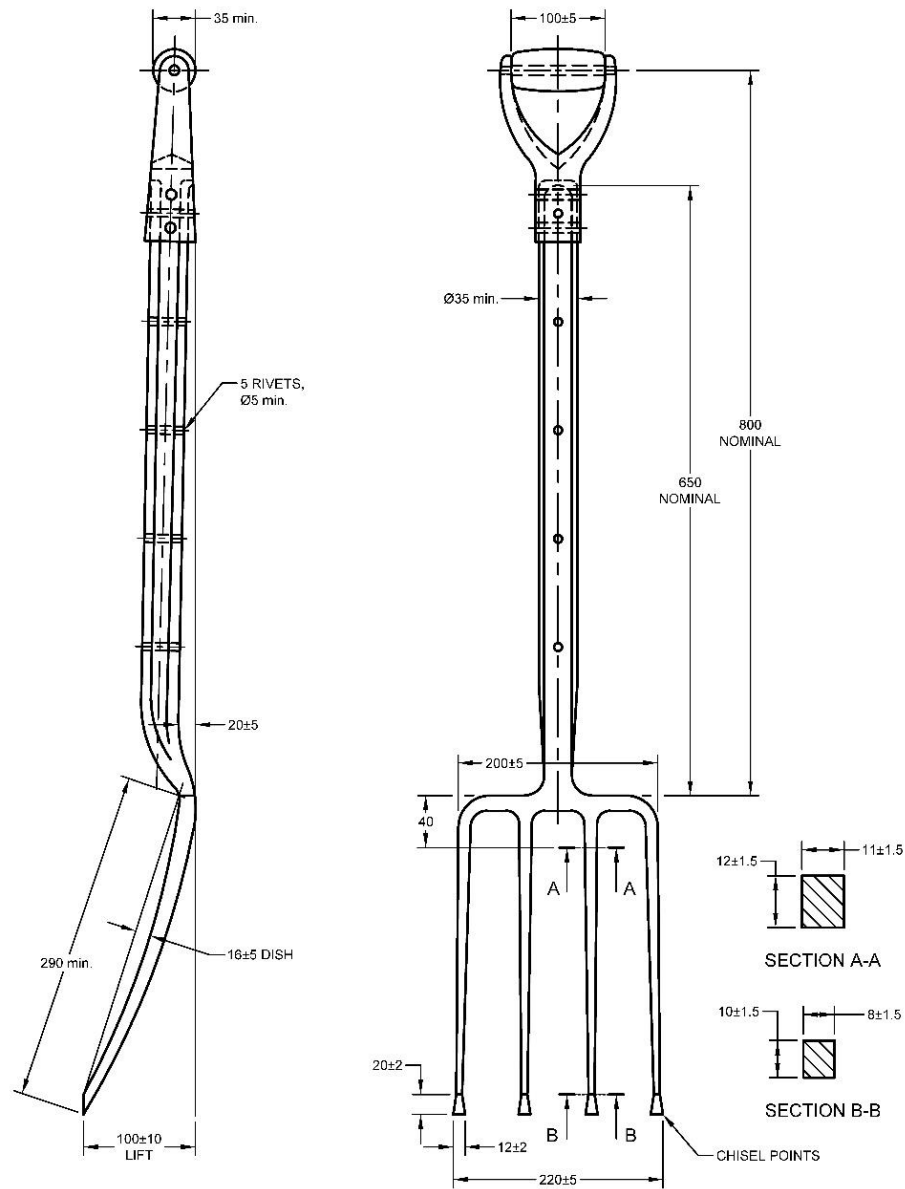


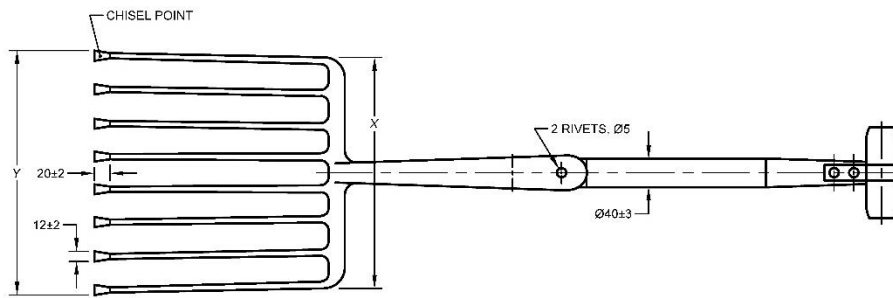
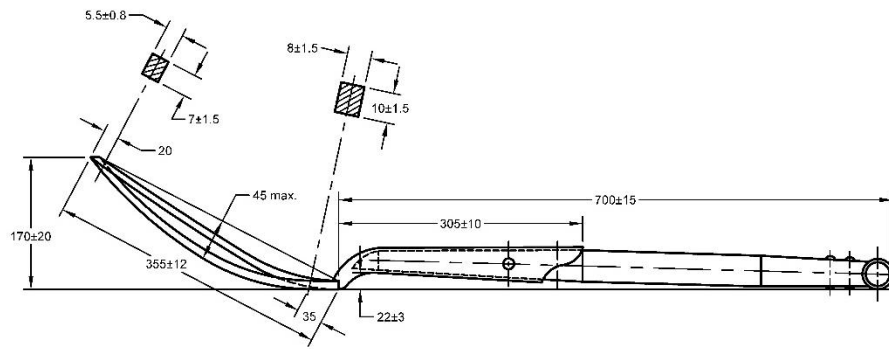
FIG. 1 NOMENCLATURE FOR FORKS



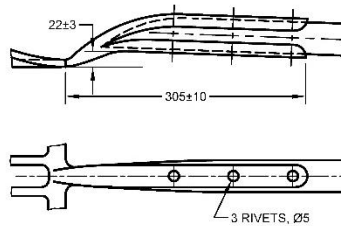
All dimensions in millimetres.
FIG. 2 DIMENSIONS FOR DIGGING FORKS



All dimensions in millimetres.
FIG. 3 DIMENSIONS FOR TRENCHING FORK



SOCKETED TYPE



STRAPPED TYPE

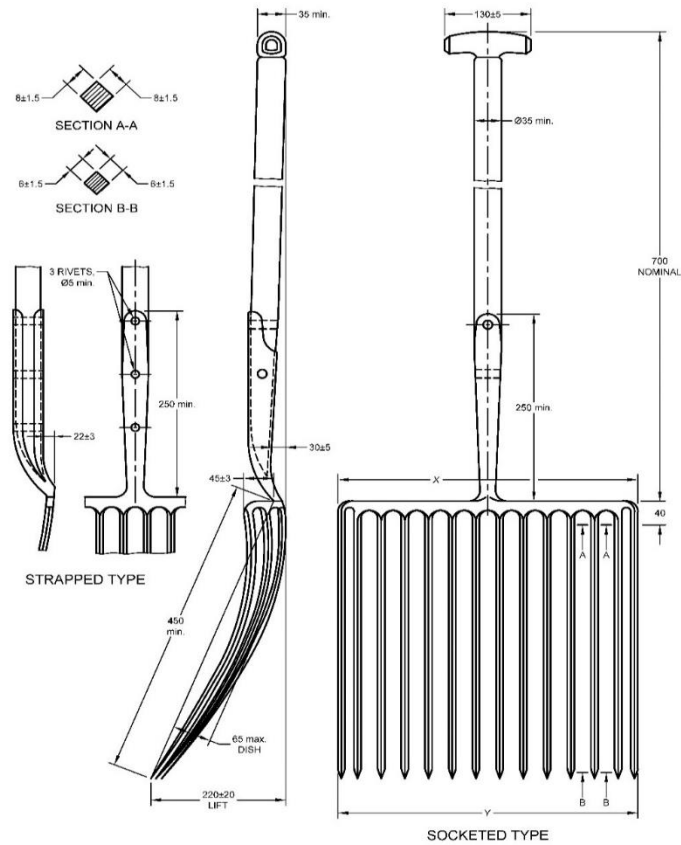
<i>Sl No.</i>	<i>No. of Prongs</i>	<i>Dimension at Shoulder</i> $X \pm 10$
(1)	(2)	(3)
i)	8	290
ii)	10	380

NOTES

1 The point width Y shall not be less than the shoulder width X.

2 If not specifically required by the purchaser, the prong section may be rectangular or of diamond cross-section.

All dimensions in millimetres.
FIG. 4 DIMENSIONS FOR BALLAST FORK



<i>Sl No.</i>	<i>No. of Prongs</i>	<i>Dimension at Shoulder X ± 10</i>
(1)	(2)	(3)
i)	8	290
ii)	10	380
iii)	12	425
iv)	14	480

NOTES

- 1 The point width Y shall not be less than the shoulder width X.
- 2 If not specifically required by the purchaser, the prong section may be rectangular or of diamond cross-section.

All dimensions are in millimetres.
FIG. 5 DIMENSIONS FOR COKE FORK

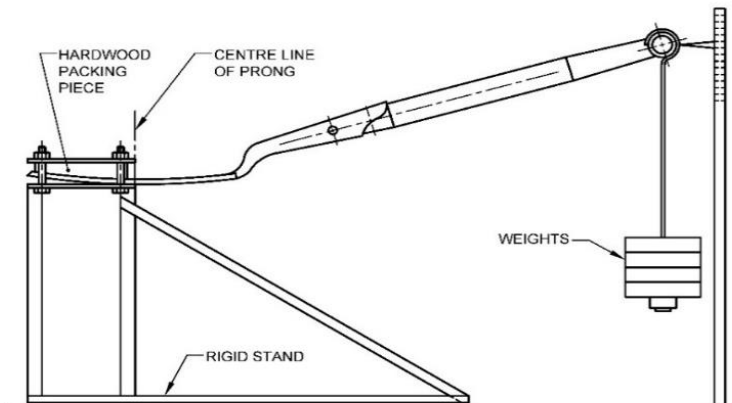


FIG. 6 BEND TEST OF FORKS

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Hand Tools Sectional Committee, PGD 34

<i>Organization</i>	<i>Representatives(s)</i>
Institute for Auto Parts and Hand tools Technology, Ludhiana	SHRI SANJEEV KATOCH (<i>Chairperson</i>)
Ajay Industries Private Limited, Jalandhar	SHRI AJAY GOSWAMI SHRI RAJAT GOSWAMI (<i>Alternate</i>)
Bharat Heavy Electrical Limited, New Delhi	SHRI M. RAVI SHRI J. S. ROY (<i>Alternate</i>)
Central Institute of Hand Tools, Jalandhar	SHRI AMIT KUMAR
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Gardex Industries, Jalandhar	SHRI PARAMJIT SINGH SHRI ASHUTOSH DATTA (<i>Alternate</i>)
Gujarat Matikam Kalakari and Rural Technology Institute, Gandhinagar	SHRI K. R. DHALORIA SHRI SATENDRA PAL SINGH (<i>Alternate</i>)
Hand Tools Industries Association, Nagaur	SHRI JULPHIKAR ALI SHRI ASHFAQ ALI (<i>Alternate</i>)
Hand Tools Manufacturers Association (Jalandhar)	SHRI SUKHDEV RAJ SHRI ASHWANI KUMAR (<i>Alternate</i>)
Inder Industries, Jalandhar	SHRI VIJAY CHATRATH SHRI SUNIL CHATRATH (<i>Alternate</i>)
Indian Oil Corporation Limited, New Delhi	MS NEETA AGARWAL SHRI ABHISHEK ANUPAM (<i>Alternate</i>)
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Ludhiana Hand Tools Association, Ludhiana	SHRI ASHOK GUPTA SHRI S. C. RALHAN (<i>Alternate</i>)
Mekaster Tools Limited, Chennai	SHRI SALIL AGARWAL

<i>Organization</i>	<i>Representatives(s)</i>
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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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