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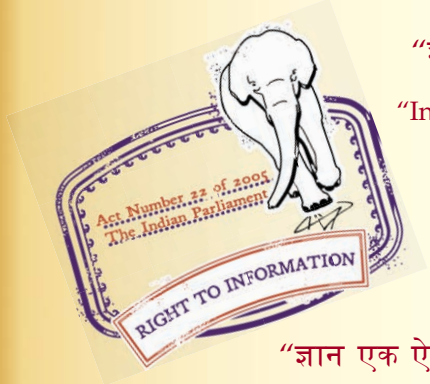
IS 15385 (2003): Woodworking Tools - Metal-Bodied Bench Planes, Plane Cutters and Cap Irons [PGD 6: Earth, Metal And Wood Working Hand Tools]



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IS 15385 : 2003
ISO 2726 : 1995
(Superseding IS 4057:1986 and IS 11832:1986)

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काष्ठकारी औजार—धातु-ढाँचे के बैंच रंदे, रंदा कर्तक तथा लोहा तापी

Indian Standard

WOODWORKING TOOLS—METAL-BODIED BENCH PLANES, PLANE CUTTERS AND CAP IRONS

ICS 79.120.20

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

August 2003

Price Group 3

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 2726:1995 'Woodworking tools — Metal-bodied bench planes, plane cutters and cap irons' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Woodworking Hand Tools Sectional Committee (BP07) and approval of the Basic and Production Engineering Division Council.

Separate Standards were available as per IS 4057:1986 "Specification for carpenters' adjustable metal bodied bench planes (*first revision*)" and IS 11832:1986 "Cut-irons and cap-irons for carpenters' metal bodied bench planes". The above standards had been prepared by deriving assistance from ISO 2726:1973 and ISO 2728:1982. Subsequently, ISO 2726:1995 was published cancelling and replacing ISO 2726:1973 as well as ISO 2728:1982. In order to incorporate the international practices, the Sectional Committee dealing with the subject decided to merge IS 4057:1986 and IS 11832:1986 and to adopt ISO 2726:1995 as an Indian Standard.

The text of the ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker in the International Standard while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

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

WOODWORKING TOOLS—METAL-BODIED BENCH PLANES, PLANE CUTTERS AND CAP IRONS

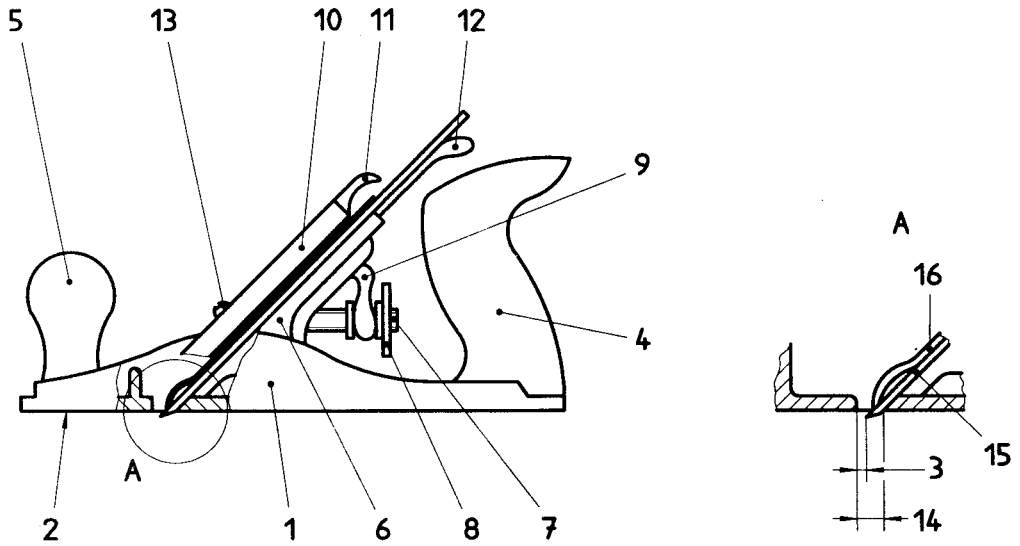
1 Scope

This International Standard specifies the characteristics of metal-bodied bench planes, plane cutters and cap irons.

2 Metal-bodied bench planes

2.1 Nomenclature

See figure 1.



Key

1	Plane body	7	Adjusting screw	13	Lever cap screw
2	Sole	8	Adjusting nut	14	Mouth
3	Clearance	9	Depth adjusting lever	15	Plane cutter
4	Handle	10	Lever cap assembly	16	Cap iron
5	Knob	11	Lever cap lock		
6	Frog	12	Lateral adjusting lever		

Figure 1 — Nomenclature

2.2 Dimensions

See figure 2 and table 1.

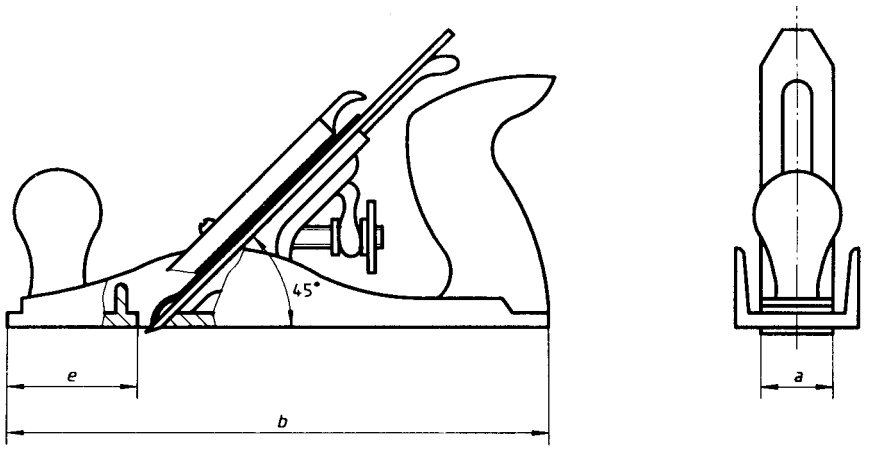


Figure 2 — Metal-bodied bench planes

Table 1

Dimensions in millimetres, between parentheses in inches

a nom.	*b* ± 10	*e* ± 10
45 (1 3/8)	236	63
51 (2)	250	63
	355	100
60 (2 3/8)	450	125
	560	180

2.3 Technical specifications

2.3.1 Shape

Metal-bodied bench planes shall have dimensions which conform to those shown in figure 2 and table 1, and be of a shape adapted to facilitate a firm grip during operation.

2.3.2 Material

Materials to be used for this purpose shall have at least the qualities of the materials which have been most commonly used up to now.

2.3.2.1 Cast iron or steel for body, frog and lever cap.

2.3.2.2 Steel for lever cap screw and for adjusting screw for plane cutter. Steel, brass or suitable plastic material for adjusting nut.

2.3.2.3 Hardwood timber, straight-grained, free from defects and with a moisture content between 10 % and 15 % for knob and handle. Suitable plastic material may also be used for the knob and handle. Where plastics are used, they shall have similar mechanical properties and be smoothly finished.

2.3.3 Sole

The working face shall be finished smooth and be flat within the specified tolerance including planes with corrugated faces.

The flatness tolerance shall be 0,08 mm.

The side faces shall be finished smooth. They shall be parallel and have an angle of 90° ± 0° 30′ to the face of the sole.

The mouth shall have parallel edges, at 90° ± 1° to the sides of the sole, and have sufficient side clearance to allow maximum lateral adjustment as given in 2.3.5.

2.3.4 Frog

The frog shall be firmly fixed on the sole (suitable means shall be provided) to enable correct adjustment of the mouth aperture.

2.3.5 Lateral adjusting lever

The lateral adjusting lever shall be capable of positioning the cutting edge at an angle of ± 1° 30′ relative to the face of the sole.

2.3.6 Adjusting nut

The adjusting nut shall be capable of being easily operated (knurled or special shape), and of imparting a minimum of 3 mm longitudinal movement to the cutter.

2.3.7 Knob and handle

The knob and handle shall be smoothly finished.

They shall be firmly fixed to the body of the plane.

2.4 Protection

Any exposed bright metal parts shall be given suitable anti-corrosion treatment.

2.5 Finish

All components of each plane shall be smoothly finished and be free from burrs, scale, flaws and other defects. With the exclusion of the plane cutter and cap iron, the unmachined surfaces of metal parts shall be painted, lacquered, black-japaned, powder epoxy coated, nickel or nickel chrome plated.

3 Plane cutter and cap irons

3.1 Dimensions

See figures 3 and 4 and tables 2 and 3.

Dimensions in millimetres

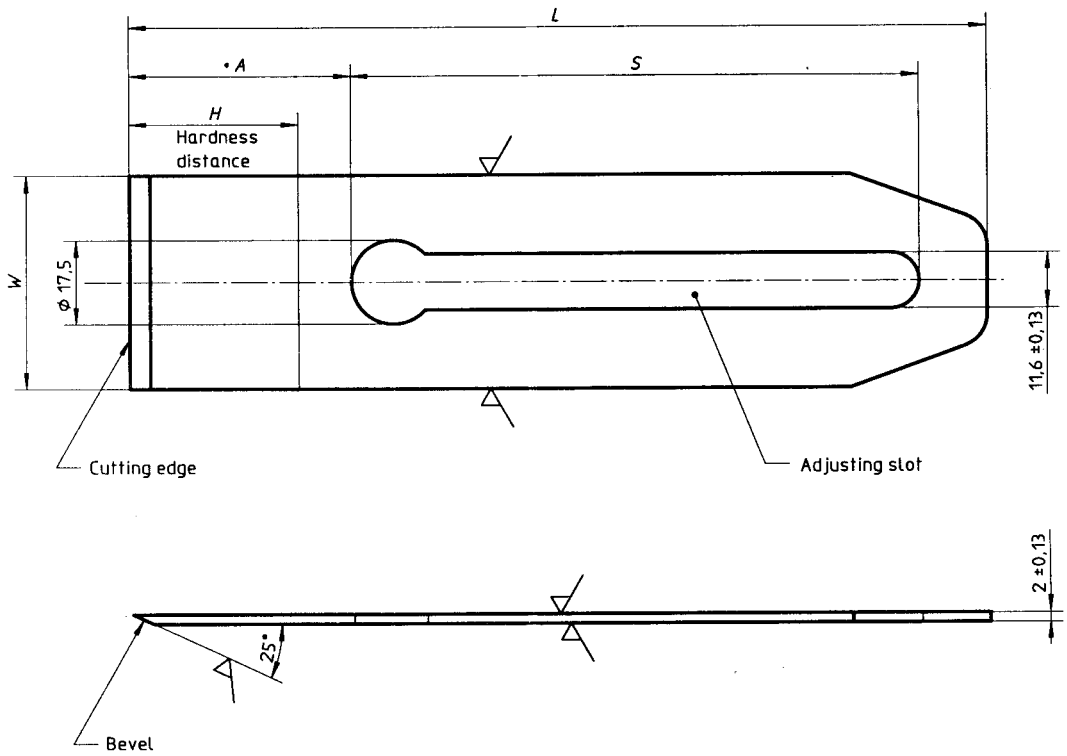


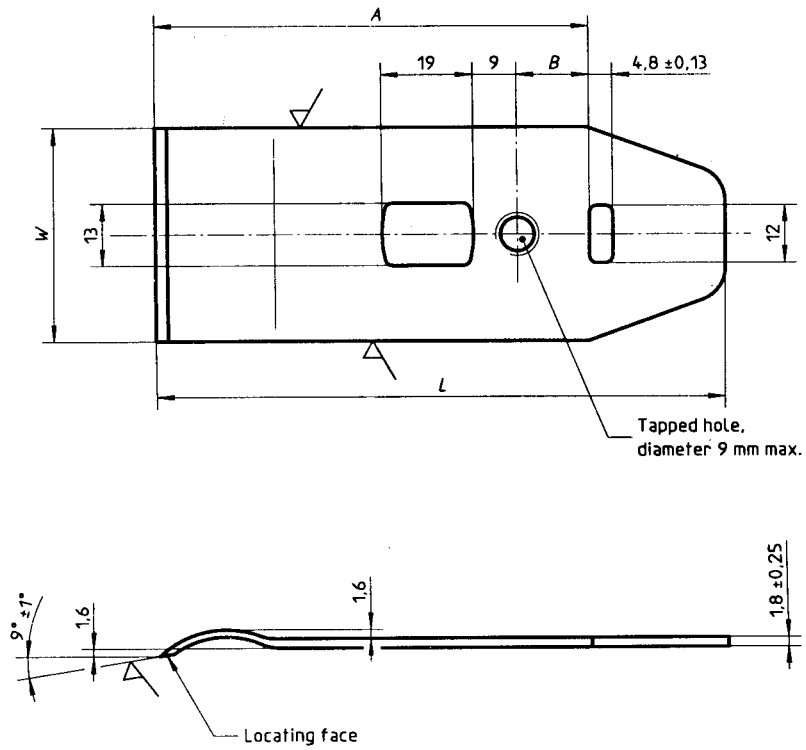
Figure 3 — Plane cutters for metal-bodied bench planes

Table 2

Dimensions in millimetres

W ± 1,3	*L* min.	*A* ± 1,5	*H* ± 3	*S* ± 1,5
44,5	178	46	35	118
50,8	187	54	46	118
60,3	197	56	48	118

Dimensions in millimetres



NOTE — Cap irons are normally supplied with screw.

Figure 4 — Cap irons for metal-bodied bench planes

Table 3

Dimensions in millimetres

W $^{0}_{-0,4}$	L min.	A ± 0,8	B ± 0,8
44,5	118	90	15
50,8	123	92	15
60,3	132	96	15

3.2 Technical specifications

Plane cutters and cap irons of metal-bodied bench planes have dimensions which conform to those given in figures 3 and 4 and tables 2 and 3. Their manufacture shall be such that they can withstand the loads to which they are subjected during normal use.

3.2.1 Plane cutters

3.2.1.1 Material

The plane cutter specified in this International Standard shall be manufactured from a material which, taking into account the hardness given below, gives a cutting edge quality the same as, or higher than, that of a tool steel of the analysis given for guidance in table 4.

After heat treatment, the hardened zone shall be as shown in figure 3 and shall have a minimum value of 60 HRC.

Table 4

Element		C	Si	Mn	P	S
Content %	min.	0,90	0,15	0,30	—	—
	max.	1,25	0,35	0,70	0,050	0,050

3.2.1.2 Cutting edge

The cutting edge shall be ground sharp and ready for final honing.

3.2.1.3 Finish

Front and back shall be finely ground or have an equivalent finish.

After finishing, a suitable protection shall be applied to prevent rusting.

3.2.2 Cap iron

The cap iron shall be manufactured from a material which has sufficient strength for satisfactory use. Any exposed bright metal parts shall be given suitable anti-corrosion treatment.

The tightening of the screw shall cause no deflections that might adversely affect use.

The locating edge shall be square relative to the centre line of the cap iron, with a tolerance of $\pm$ 1°.

When the screw is tightened, the cap iron and the plane cutter shall close together absolutely flush at the extreme edge of the cap iron, in order to avoid any intrusion of shavings (see figure 5).

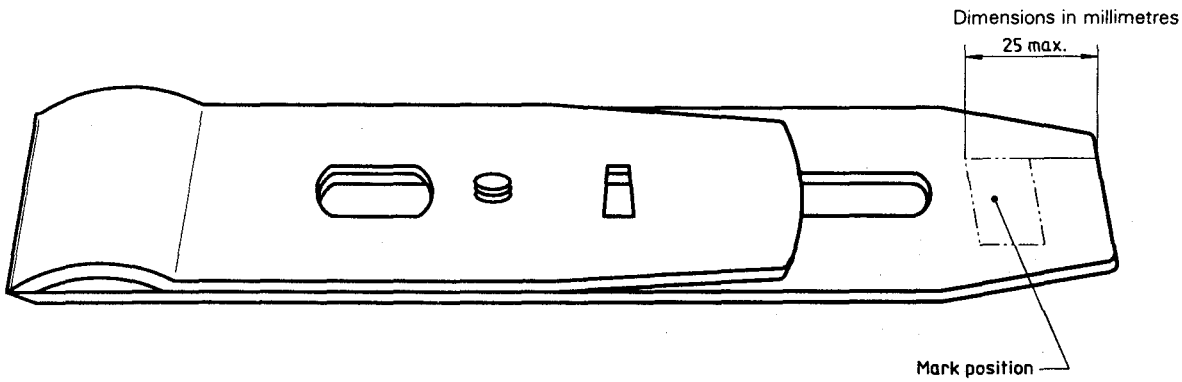


Figure 5 — Assembly of plane cutter and cap iron

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Amendments Issued Since Publication

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