IS 939 (1977): Specification for Snatch Block for Use with Fibre Rope for Fire Brigade Use [CED 22: Fire Fighting]

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IS : 939 - 1977
(Reaffirmed 2002)

Indian Standard

SPECIFICATION FOR SNATCH BLOCK FOR USE WITH FIBRE ROPE FOR FIRE BRIGADE USE

(First Revision)

UDC 614·842·866·5 : 621·861·2

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

Price Rs 5·00 Gr 2

July 1978

Indian Standard

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Indian Standard

SPECIFICATION FOR SNATCH BLOCK FOR USE WITH FIBRE ROPE FOR FIRE BRIGADE USE

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 30 November 1977, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Snatch blocks with fibre rope are used in various positions either by direct hand-manipulation or for use with hauling and lifting equipment. It is one of the important equipments for use in fire brigade and for civil defence operation.

0.3 This standard was first published in 1960. In the past 16 years a number of Indian Standards on materials of which various components are made have been prepared and this revision has, therefore, been prepared to make reference to such standards. While revising this standard opportunity has also been taken to delete such clauses which are not part of the specification, like design criteria, etc.

0.4 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*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the requirement regarding material, shape and the performance requirement for the snatch blocks for use with fibre ropes for working load up to 4 900 N (500 kgf).

*Rules for rounding off numerical values (*revised*).

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

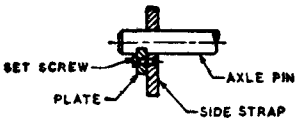
2.1 Snatch Blocks — A block with hinged strap to enable insertion of rope on to the sheave at any position on the length of the rope.

2.2 Safe Working Load — The maximum permissible load for the rope of one of the single sheave blocks is permitted to take on one end.

3. DESCRIPTION

3.1 The snatch block shall consist of the following parts (*see* Fig. 1):

a) Swivel hook,
b) Cross-head for supporting strap,
c) Pin for supporting hook,
d) Side straps and side plates,
e) Axle pin,
f) Sheave,
g) Hinge,
h) Distance piece, and
j) Becket.



ARRANGEMENT TO PREVENT ROTATION OF AXLE

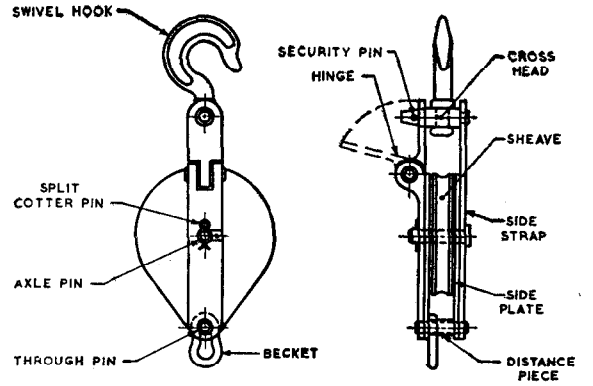


FIG. 1 SNATCH BLOCK

4. MATERIAL

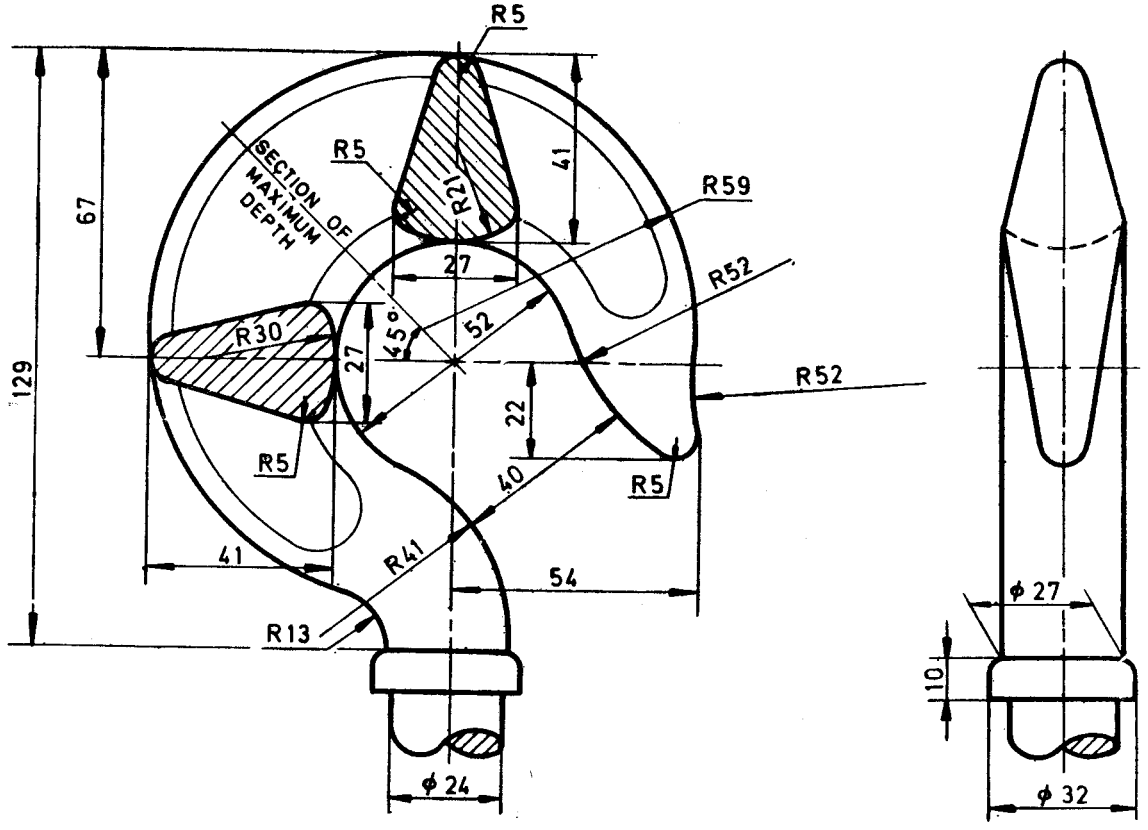
4.1 The materials used for the various parts of snatch block shall be as shown below:

Sl No.	*Name of Part*	*Material*	*Conforming to*
i)	Swivel hook	Steel forging	IS : 4367-1967*
ii)	Cross-head	Wrought steel or steel forging	IS : 1570-1961†
iii)	Pin for supporting hook	Wrought steel bar	IS : 1570-1961†
iv)	Side straps and side plates	Steel plate	IS : 226-1975‡
v)	Axle pin	Wrought steel bar	IS : 1570-1961†
vi)	Sheave	Iron casting	Grade 25 of IS : 210-1970§
vii)	Hinge	Steel forging	IS : 4367-1967*
viii)	Distance piece and becket	Steel forging or malleable iron casting	IS : 4367-1967*

5. REQUIREMENT

5.1 The head fitting of the block shall be trapezoidal hook and shanked, swivel head fitting shall be forged in one piece and machined. Shank shall be threaded and fitted with screw collar or nut, the depth of either being not less than full diameter of the screwed shank. The continuous length of shank engaged by the nut or collar on the load side shall be at least equal to two-thirds of the diameter of the screwed shank. The shape and dimension of the hook shall conform to Fig. 2. The cross-head shall be neatly dressed and hole for the shank of hook or either shall be machined finished and shall be in correct alignment at right angle to the axis of head fitting. The shank shall turn freely by hand. The sheave shall be integrally casted and the width of the central boss shall be greater than the width of the rim by 2 to 3 mm. The depth of the rope groove in the rim of the sheave shall be not less than one-third of the diameter of the rope and the profile of the groove shall be an arc of a circle having a radius of 15 mm and edges of the groove shall be rounded. The axle pin shall be not less than 3 mm larger in diameter than the diameter of the bearing portion of the axle pin. The tail end of the pin shall project to allow it to be drilled and fitted with a split cotter pin.

*Specification for alloy and tool steel forgings for general industrial use.
†Schedule for wrought steels for general engineering purposes.
‡Specification for structural steel (standard quality) (*fifth revision*).
§Specification for grey iron casting (*second revision*).



All dimensions in millimetres.

FIG. 2 SWIVEL HOOK

6. PERFORMANCE REQUIREMENT

6.1 The snatch block as a whole shall be tested to a proof load of four times the safe working load of the block. The test load shall be maintained for a period of 5 minutes.

6.2 At the end of the test, the blocks shall be opened and all parts examined for permanent deformation or other defects. The blocks shall not show any permanent deformation.

7. MARKING

7.1 All snatch blocks shall be marked on the strap in a clear manner with the following:

a) Proof load in newtons,

b) Nominal size (safe working load in newtons),

c) The inspecting authority's seal with date of test, and

d) The manufacturer's identification mark.

7.1.1 The snatch blocks may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Conversion
Force	newton	N	1 N = 0·101 972 kgf
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2