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*भारतीय मानक मसौदा*

**खदान के पिंजड़े के लिए केप्स — विशिष्टि**

*( आई एस 10970 का पहला पुनरीक्षण )*

*Draft Indian Standard*

**KEPS FOR MINE CAGES — SPECIFICATION**

*( First Revision of IS 10970 )*

ICS 73.100.01

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**Mining Techniques and Equipment  
Sectional Committee, MED 08**

**Last date for receipt of  
comments is 03 December 2022**

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**FOREWORD**

*( Formal clause to be added later )*

This standard was first published in 1984. This standard is being revised again to keep pace with the latest technological developments and international practices. In this revision, the following major changes have been made:

1. A reference clause has been added mentioning the latest version of all the referred standards.
2. Editorial corrections have been done.

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.

## **1 SCOPE**

Covers the general requirements for keps for mine cages having flat seating surface for holding the cages in required position.

## **2 REFERENCES**

The standards listed 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 the agreement 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>
2062 : 2011	Hot rolled medium and high tensile structural steel — Specification ( <i>seventh revision</i> )
1570 (Part 2) Sec 1: 1979	Schedules for wrought steels: Part 2 carbon steels (Unalloyed Steels) : Sec 1 wrought products (Other Than Wires) with specified chemical composition and related properties ( <i>first revision</i> )
958 : 2020	Temporary Corrosion Preventives, Grease Type, Soft Film — Specification ( <i>third revision</i> )

## **3 TERMINOLOGY**

### **3.1 ‘ON’ Position**

When the keps are fully extended in shaft in the travelling path of the cages, the keps are said to be in the ‘ON’ position.

### **3.2 ‘OFF’ Position**

When the keps are fully retracted in shaft from the travelling path of the cages, the keps are said to be in ‘OFF’ position.

## **4 CLASSIFICATION**

Depending on the position of operating lever, the keps are classified as follows:

- a) *Right Handed* — If the operating lever is provided towards the right hand of the seating surface, the keps are termed as right handed.
- b) *Left Handed* — If the operating lever is provided towards the left hand of the seating surface, the keps are termed as left handed.

## **5 MATERIAL**

<b>Component</b>	<b>Material Conforming to</b>
Lever	IS 2062

Shaft	35C4 of IS 1570 (Part 2) Sec 1
Kep body	20Mn2 of IS 1570 (Part 2) Sec 1

## **6 DESIGNATION**

A kep for mine cage shall be designated by its commonly used name, distance of seating surfaces along the length and width of cage GXF [*see* 9 (a)], classification and the number of this standard.

Example:

A kep with GXF as distances between seating surfaces along the length and width respectively of cage having operating lever on the right side shall be designated as:

Kep GXF Right IS 10970

## **7 General Requirements**

**7.1** The distance between seating surface of kep and the edge of cage platform, when the kep is in 'OFF' position, shall not be less than 50 mm.

**7.2** The distance between the edge of the cage platform and the extreme point of the supporting structure for keps shall not be less than 50 mm.

**7.3** The keps shall normally be in 'ON' position.

**7.4** The position of operating lever of kep shall be secured by means of a pin or other suitable means in its 'OFF' position.

**7.4.1** The design of locking mechanism shall be such as to prevent the operation of keps by unauthorized persons.

**7.4.2** The design of keps shall be such as to allow the cage to run in the shaft with ease with operating lever in the 'OFF' position.

**7.5** The keps shall be designed for loads of 5, 8, 10, 12 and 15 *t*.

**7.6** The seating surface of the keps shall have a length of not less than 60 mm and a width of 50 mm.

**7.7** When cage is seated on the keps, the keps shall ensure smooth running of mine tubs or mine cars without undue shock and vibration from the rails of the track.

**7.8** The seating surfaces of keps supporting a cage shall be in one horizontal plane and their deviation shall not exceed 2 mm.

**7.9** The keps in ‘OFF’ position shall not project beyond the limits of the supporting beam.

**7.10** The components of keps shall be interchangeable.

**7.11** An automatic indicator shall be provided to indicate the position of the keps.

**7.12** The keps shall be supplied in complete set and shall contain:

- a) Keps in dismantled form (*see also* 9);
- b) Spare parts; and
- c) Technical documents, such as certificates, drawing of general view, mounting and operation manual, etc.

## **8 MARKING**

Each keps shall be marked with manufacturer’s name or identification mark and loading capacity.

### **8.1 BIS Certification Marking.**

The keps may also be marked with the Standard Mark.

**8.1.1** 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.

## **9 PAINTING AND PACKING**

The keps shall be transported in partly dismantled condition. The unmachined parts of keps shall be painted as desired by purchaser. The machined components shall be suitably protected against corrosion with grease conforming to IS 958 to protect it against rusting for a period of 6 months.

## **10 DATA TO BE SUPPLIED AT THE TIME OF ENQUIRY OR ORDER**

Following data read with Fig. 1 and 2 shall be supplied at the time of enquiry or order:

- a) Distance of seating surfaces along length and width of cage ‘GXF’;
- b) Classification of keps;
- c) Number of sets required;
- d) Loading capacity of keps;
- e) Maximum dimensions of cage platform,  $A \times B$ ;
- f) Track gauge of mine car or mine. tub;
- g) Distance between surface of cage platform and seating surface of keps (*see*  $H_1$  in Fig. 1 and 2);

- h) Distance between seating surface of keps and top edge of structure for fixing the base of keps (*see*  $H_2$  in Fig. 1 and Fig. 2); and
- j) The distance between the axis of the tie rod of keps and the centre line of cage (*see*  $L$  in Fig. 1 and 2).

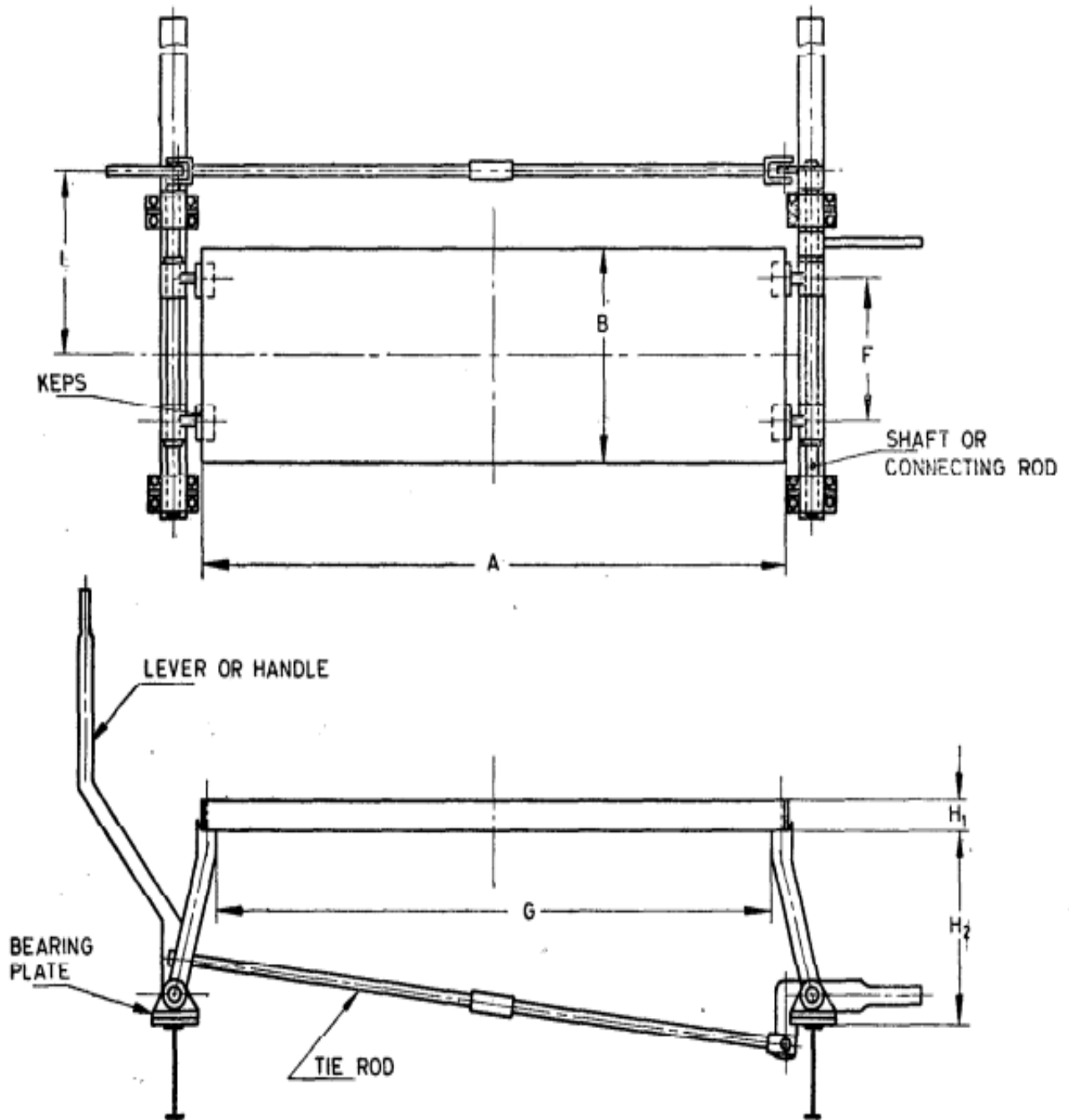


FIG. 1 GENERAL LAYOUT OF KEPS

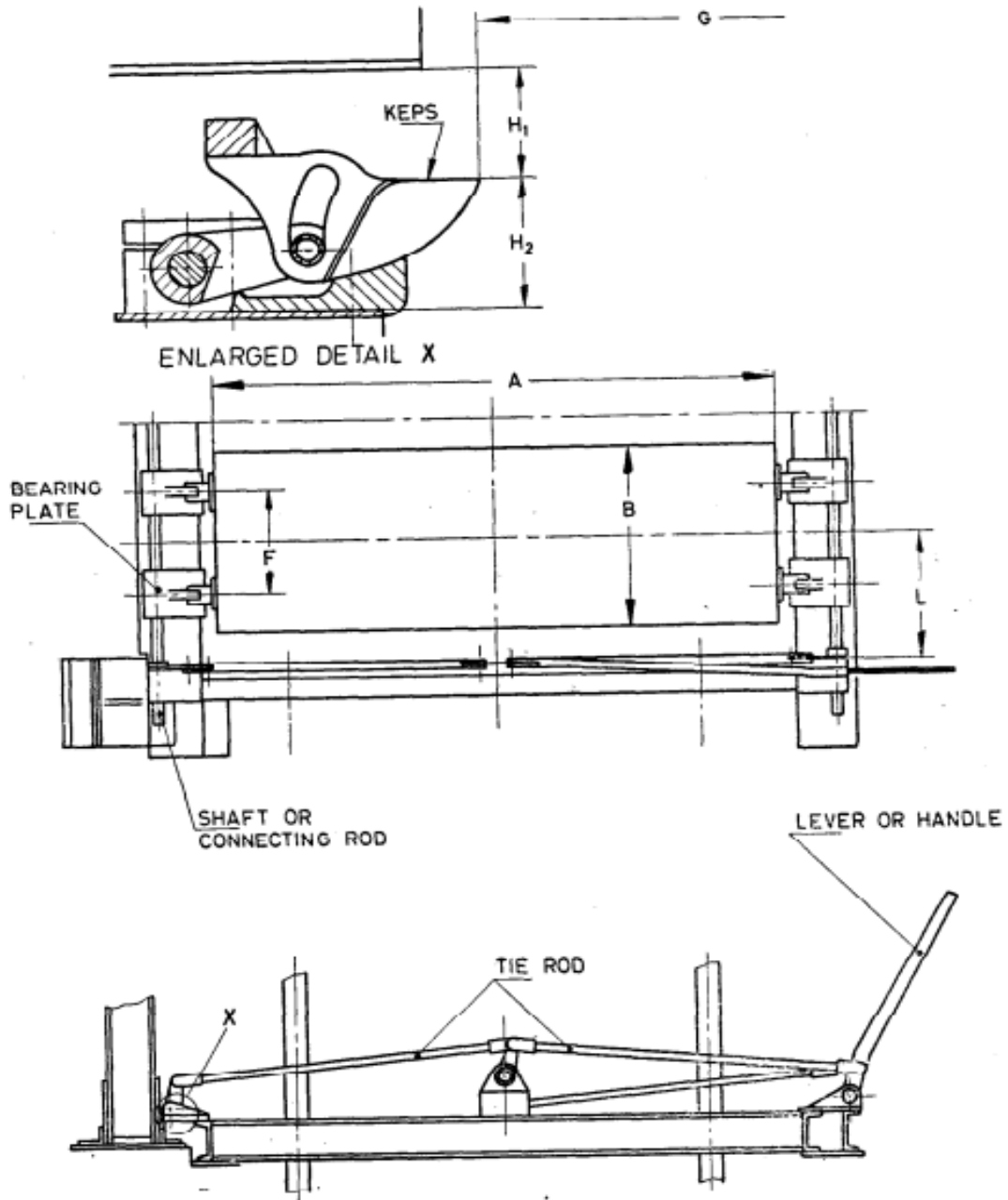


FIG. 2 GENERAL LAYOUT OF KEPS