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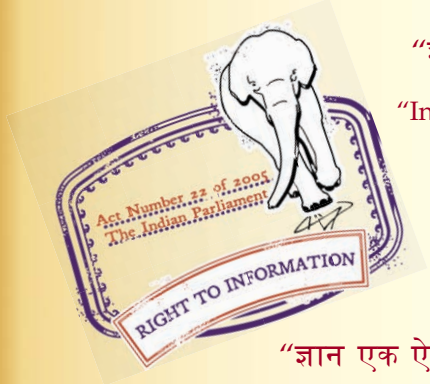
IS 2253 (1974): Designation for types of construction and mounting arrangement of rotating electrical machines [ETD 15: Rotating Machinery]



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"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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IS : 2253 - 1974

(Reaffirmed 2002)

Indian Standard

DESIGNATIONS FOR TYPES OF CONSTRUCTION AND MOUNTING ARRANGEMENTS OF ROTATING ELECTRICAL MACHINES

(First Revision)

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NEW DELHI 110002

Gr 4 *May* 1975

Indian Standard

DESIGNATIONS FOR TYPES OF CONSTRUCTION AND MOUNTING ARRANGEMENTS OF ROTATING ELECTRICAL MACHINES

(First Revision)

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(*Continued on page* 14)

Indian Standard

DESIGNATIONS FOR TYPES OF CONSTRUCTION AND MOUNTING ARRANGEMENTS OF ROTATING ELECTRICAL MACHINES

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 31 October 1974, after the draft finalized by the Rotating Machinery Sectional Committee had been approved by the Electrotechnical Division Council.

0.2 This standard has been prepared with a view to providing guidance on designating the several types of mounting arrangements and construction of rotating electrical machines being employed to suit the individual application.

0.3 This standard was first published in 1964 and covered designations for types of construction and mounting arrangements of electric motors only. The standard is now revised to cover designations for types of construction and mounting arrangements of all types of rotating electrical machines and also to line up with the international practice.

0.4 At the international level, symbols for type of construction and mounting arrangements of rotating electrical machinery consists of two codes: Code 1 and Code 2. Code 1 concerns a reduced number of possibilities whereas Code 2 is a general code. This standard is based on Code 1 of IEC Pub 34-7 (1972) 'Rotating electrical machines, Part 7 Symbols for types of construction, mounting arrangements of rotating electrical machinery' as this code is similar to the practices followed in the country. The decision for adoption of Code 1 may be reviewed in the light of future experience gained in this field.

0.5 When indicating mounting arrangements, reference is invited to IS : 4691-1968* and IS : 6362-1971† for requirements of degree of protection provided by enclosures and methods of cooling respectively.

NOTE — When drainage holes are required, the manufacturer shall make suitable arrangements for these to meet the requirements of the IP class in all positions indicated by the IM designation valid for the machine. It is assumed that the user will select the correct drainage holes suitable for the conditions under which the machine is operated.

*Degrees of protection provided by enclosures for rotating electrical machinery.
†Designation of methods of cooling for rotating electrical machines.

1. SCOPE

1.1 This standard lays down the designations of various types of construction and mounting arrangements of rotating electrical machines with endshield bearings and only one shaft extension.

2. TERMINOLOGY

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

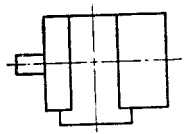
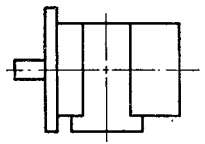
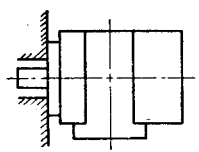
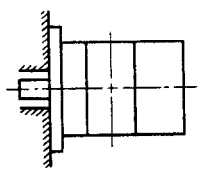
2.1 Substructure—It shall mean baseplates, foundations, slide rails, pedestals, etc.

3. DESIGNATION

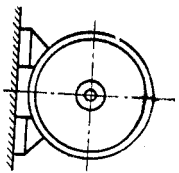
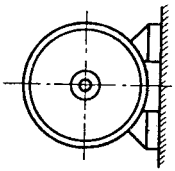
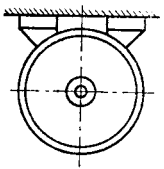
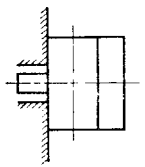
3.1 The designation consists of the letters IM, indicating 'International mounting' followed by one capital letter and a numeral according to **4** and **5**. For example, machine with feet and two endshields with horizontal shaft shall be designated as 'IMB3'.

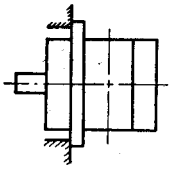
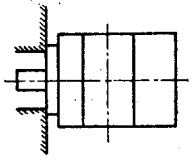
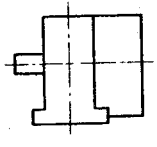
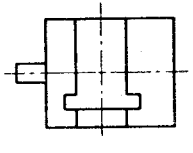
4. MACHINES WITH HORIZONTAL SHAFT

4.1 The designation of these machines consists of the capital letter B followed by a numeral according to the following table :

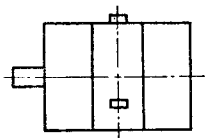
Symbol	*Figure*	*Bearing*	*Frame*	*Shaft Extension*	*Generalities Concerning the Construction*	*Attachment or Mounting*
B 3		2 endshields	With feet	Free shaft extension	—	Mounted on substructure
B 35		2 endshields	With feet	Free shaft extension	Flange type B (IS: 2223-1971*). Shaft extension at flange-end	Mounted on substructure by feet with additional mounting on flange
B 34		2 endshields	With feet	Free shaft extension	Flange type C (IS: 2223-1971*). Shaft extension at flange-end	Mounted on substructure by feet with additional mounting on flange
B 5		2 endshields	Without feet	Free shaft extension	Flange type B (IS: 2223-1971*). Shaft extension at flange-end	Supported by flange

*Dimensions of flange mounted ac induction motors (*first revision*).

Symbol	*Figure*	*Bearing*	*Frame*	*Shaft Extension*	*Generalities Concerning the Construction*	*Attachment or Mounting*
B 6		2 endshields	With feet	Free shaft extension	As B 3 but endshields turned through 90° (if sleeve bearings)	Mounted on a wall. Feet to the left viewing from drive end
B 7		2 endshields	With feet	Free shaft extension	As B 3 but endshields turned through 90° (if sleeve bearings)	Mounted on a wall. Feet to the right viewing from drive end
B 8		2 endshields	With feet	Free shaft extension	As B 3 but endshields turned through 180° (if sleeve bearings)	Mounted on the ceiling. Feet at top
B 9		1 endshield	Without feet	Free shaft extension	As B 5 or B 14 but without endshields and bearing at drive end	Mounted by end face of frame at drive end

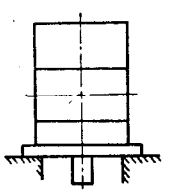
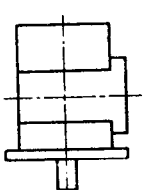
B 10		2 endshields	Without feet	Free shaft extension	Type D flange at drive end (IS: 2223-1971*)	Face mounted. Face on drive side
B 14		2 endshields	Without feet	Free shaft extension	Type C Flange at drive end (IS: 2223-1971*)	Flange mounted
B 15		1 endshield	With feet	Free shaft extension	As B 3 but without endshield and bearing at drive end	Mounted on substructure by feet with additional mounting on face of frame at drive end
B 20		2 endshields	Without feet	Free shaft extension	—	Mounted inside a substructure

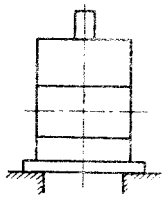
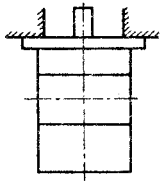
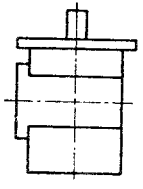
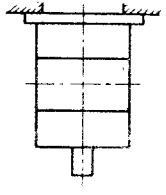
*Dimensions of flange mounted ac induction motors (*first revision*).

Symbol	*Figure*	*Bearing*	*Frame*	*Shaft Extension*	*Generalities Concerning the Construction*	*Attachment or Mounting*
B 30		2 endshields	Without feet	Free shaft extension	3 or 4 bosses on 1 endshield, 2 endshields or on frame	Pad-mounted by bosses

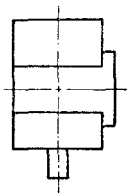
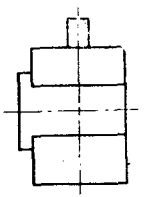
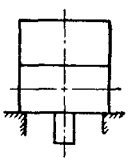
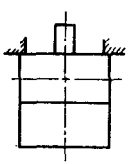
5. VERTICAL MACHINES

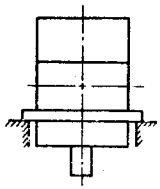
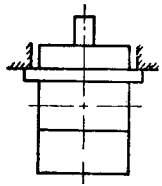
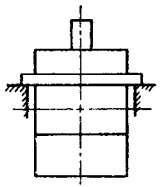
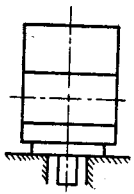
5.1 The designation of these machines consists of the capital letter V followed by a numeral according to the following table:

Symbol	*Figure*	*Bearing*	*Frame*	*Shaft Extension*	*Generalities Concerning the Construction*	*Attachment or Mounting*
V 1		2 endshields	Without feet	Free shaft extension at bottom	Flange type B (IS: 2223-1971*). Flange at drive end	Supported by flange at bottom
V 15		2 endshields	With feet	Free shaft extension at bottom	Flange type B or C (IS: 2223-1971*). Flange at drive end	Mounted on a wall with additional mounting on flange at bottom

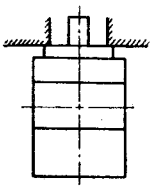
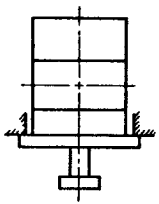
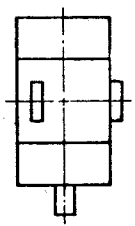
V 2		2 endshields	Without feet	Free shaft extension at top	Flange type B (IS: 2223-1971*). Flange at nondrive end	Supported by flange at bottom
V 3		2 endshields	Without feet	Free shaft extension at top	Flange type B (IS: 2223-1971*). Flange at drive end	Supported by flange at top
V 36		2 endshields	With feet	Free shaft extension at top	Flange type B (IS: 2223-1971*). Flange at drive end	Wall-mounted or on a substructure with additional flange at top
V 4		2 endshields	Without feet	Free shaft extension at bottom	Flange type B (IS: 2223-1971*). Flange at nondrive end	Supported by flange at top

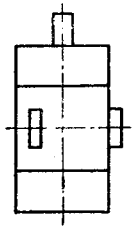
*Dimensions of flange mounted ac induction motors (*first revision*).

Symbol	*Figure*	*Bearing*	*Frame*	*Shaft Extension*	*Generalities Concerning the Construction*	*Attachment or Mounting*
V 5		2 endshields	With feet	Free shaft extension at bottom	As B 3	Wall-mounted or on a substructure
V 6		2 endshields	With feet	Free shaft extension at top	As B 3	Wall-mounted or on a substructure
V 8		1 endshield	Without feet	Free shaft extension at bottom	As V 1 or V 18 but without flange and bearing at drive end	Supported by face at bottom of frame at drive end
V 9		1 endshield	Without feet	Free shaft extension at top	As V 3 or V 19 but without flange bearing at drive end	Supported by face at top of frame at drive end

V 10		2 endshields	Without feet	Free shaft extension at bottom	Flange type D (IS: 2223-1971*). Flange at drive end	Supported by flange face at bottom at drive end side
V 14		2 endshields	Without feet	Free shaft extension at top	Flange type D (IS: 2223-1971*). Flange at drive end	Supported by flange at top at drive end side
V 16		2 endshields	Without feet	Free shaft extension at top	Flange type D (IS: 2223-1971*). Flange at drive end	Supported by flange at top with face underneath
V 18		2 endshields	Without feet	Free shaft extension at bottom	Flange type C (IS: 2223-1971*). Flange at drive end	Supported by flange at bottom

*Dimensions of flange mounted ac induction motors (*first revision*).

Symbol	*Figure*	*Bearing*	*Frame*	*Shaft Extension*	*Generalities Concerning the Construction*	*Attachment or Mounting*
V 19		2 endshields	Without feet	Free shaft extension at top	Flange type C (IS: 2223-1971*). Flange at drive end	Supported by flange at top
V 21		2 endshields	Without feet	Flanged shaft extension at bottom	Flange type B (IS: 2223-1971*). Flange at drive end	Supported by flange at top
V 30		2 endshields	Without feet	Free shaft extension at bottom	3 or 4 bosses on 1 endshield, 2 endshields or on frame	Pad-mounted by bosses

V 31		2 endshields	Without feet	Free shaft extension at top	3 or 4 bosses on 1 endshield, 2 endshields or on frame	Pad-mounted by bosses

*Dimensions of flange mounted ac induction motors (*first revision*).

(*Continued from page* 2)

Members	*Representing*
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