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**भारतीय मानक मसौदा**

**वाल्वों के लिए मुहरांकन प्रणाली**

*( पहला पुनरीक्षण )*

**Draft Indian Standard**

**MARKING SYSTEM FOR VALVES**

*( First Revision )*

ICS 23.060.01

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Chemical Engineering Plants and Related  
Equipment Sectional Committee, MED 17

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**FOREWORD**

*(Formal clause would be added later on)*

This standard was first published in 1981. The revision has been taken up for incorporating the modifications found necessary as a result of experience gained with the use of this standard. Also, in this revision, the standard has been brought into the latest style and format of Indian Standards, and references wherever applicable have been updated.

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.

**Draft Indian Standard**

**MARKING SYSTEM FOR VALVES**

*( First Revision )*

**1 SCOPE**

**1.1** This Indian Standard covers the mandatory and optional marking of industrial valves and states the manner of applying the marking, namely, on the body, on the flange and on an identification plate. Markings on the body may be integral with the body or on a plate distinct from the identification plate mentioned above and securely fixed to the body.

**1.2** These specified markings serve to identify the manufacturer and the valve, as well as to assist in proper application.

**2 REQUIRED MARKINGS**

The data for which markings are normally provided on the valves and identification plates are listed in Annex A.

**3 MANDATORY MARKING ON BODY**

- a) Nominal size designation;
- b) Rating designation;
- c) Body material identification;
- d) Manufacturer's name or trade-mark;
- e) Melt identification;
- f) Arrow to indicate direction of flow (unidirectional valves only); and
- g) Ring joint numbers (for flanges grooved for ring joints).

**3.1 Mandatory Marking on Identification Plate**

- a) Nominal size designation;
- b) Rating designation;
- c) Body material identification;
- d) Manufacturer's name or trade-mark;
- e) Valve trim identification;
- f) Manufacturer's catalogue number or code number; and
- g) Additional markings permitted.

**3.2 Optional Markings**

All markings listed in Annex A other than those mentioned under **3** are optional unless specified otherwise in the standard appropriate to the individual type of valve.

## **4 METHOD OF APPLYING THE MARKINGS**

**4.1** The mandatory body markings shall be cast, forged, stamped or shown on a plate permanently attached or securely fastened to the valve bodies.

### NOTES

**1** Where steel stamps are used care should be taken to ensure that the marking does not cause cracks or reduce the wall thickness of the valve below minimum required thickness.

**2** Cast lettering on steel valves that is obliterated during manufacture may be replaced by weld deposition or stamping at the option of the manufacturer. When stamping is used care must be taken to ensure that the requirements of Note 1 are met.

**4.2** All other markings may be provided either on the body or on identification plate or both at the option of the manufacturer.

## **5 GUIDELINES FOR MARKING**

Steel valves, except bar stock valves, are required to have identification plates. Steel bar stock valves may have all the required markings stamped on body or indicated in a suitable manner.

### **5.1 Nominal Size Designation**

Numeral (s) denoting the nominal size valve: Numeral(s) can also be prefixed by the letters DN, for example, DN 100 for 100 mm valve.

### **5.2 Rating Designation**

**5.2.1** Rating designation for valves may be designated by class numbers alone or pressure class designations, for example, A CI. 300 valve fully complying with the standard's requirements.

<i>Body</i>	<i>Identification Plate</i>
300	CI. 300

**5.2.2** Rating designation for valves which conform to the recognized standards but are not suitable for full range of pressures or temperatures (as, for example, usage of elastomers, PTFE, etc, for parts) of these standards may be marked as prescribed in **5.2.1** as appropriate and shall also show the limiting pressure and temperatures for which the valves are suitable for example, CI. 300 valve conforming to the recognized standard but suitable for use up to 200 °C.

<i>Body</i>	<i>Identification Plate</i>
300	CI. 300/44 bar at 200 °C <i>Max</i>
	or
300	CI. 300/44 bar/200 °C <i>Max</i>
	or
300	44 bar at 200 °C/51 bar at 38 °C

### **5.3 Body Material Designation**

Carbon steel valves shall be marked with words STEEL or with relevant specification number and grade. Alloy steel valves shall be marked with relevant grade identification symbol.

**5.3.1** Austenitic steel valves (stainless steel) shall be marked with symbols designated in appropriate material standards to indicate the grade of steels. Use of symbols description of the chemical content of the alloy may also be used at the option of the manufacturer.

### **5.3.2** *Body Material Identification*

- a) *Cast Iron* — Material marking is not required for grey cast iron. Alloyed cast iron may be identified by a manufacturer's symbol provided that confusion with standard symbol is avoided.
- b) *Non-Ferrous Metals* — Material identification is not required for brass or bronze. Other non-ferrous alloys may be identified by using symbols listed in Annex B.
- c) *Non-Metallic Material* — Non-metallic materials may be identified by using symbols listed in Annex C.

**5.3.3** Malleable iron valves shall be marked with the letters 'MI'.

**5.3.4** Ductile cast iron valves shall be marked with the word 'DUCTILE'. On valves of small size or shape which will not permit the use of the word 'DUCTILE' the letters 'DI' may be used.

## **5.4 Ring Joint Number**

Valve and flanges and body/bonnet flanges grooved for ring joints shall be marked with the corresponding ring numbers. In the case of non-standard ring joints for body/bonnet flanges, the flanges shall be marked 'R spl'.

## **5.5 Thread Identification**

Screwed and valves threaded with other than standard pipe threads shall be marked to indicate the type of thread. The style of marking may be the manufacturer's own symbols provided that confusion with standard symbols are avoided. Left hand threads shall be marked LH on the outside wall of the appropriate opening.

## **5.6 Limiting Pressure Rating**

Valves whose construction limits its use to pressures less than those permissible for the rating marked on the valves shall carry marking of such limitations on an identification plate.

*Example:*

Valve with closure elements designed for closed pressure differentials lower than the basic rated pressure of the valve.

## **5.7 Identification Number**

The identification number marking shall indicate the manufacturer's figure or number which identifies the valve in all respects. The same figure or number shall therefore only be used for valves which are identical in design, detail, dimensions and material and which have interchangeable parts.

### **5.8 Indian Standard Specification Number**

Indian Standard number marking when applied shall indicate the IS number appropriate to the individual type of valve.

### **5.9 Melt/Heat Identification**

All pressure containing castings and forgings shall be marked with melt/heat number or melt/heat identification in an unmachined location.

### **5.10 Trim Identification**

The symbols that are to be used to identify the different trim materials are listed in Annex B and Annex C.

**5.10.1** For gate, globe and angle valves, the trim markings shall consist of three symbols. The first shall indicate the material of the stem, the second shall indicate the material of the gate disc face and the third shall indicate the material of the seat face.

Symbols may either be preceded by the words 'STEM', 'GATE DISC', 'SEAT' or used alone, but must appear in the order given.

*Example:*

Steel gate valve, 13 percent chromium steel stem, 13 percent chromium steel disc face, cobalt-chromium-tungsten alloy seat face:

STEM CR 13  
DISC CR 13  
SEAT HF  
or  
CR 13 CR 13 HF  
or  
CR 13  
CR 13  
HF

**5.10.2** For check and other types of valves having no stem, the trim marking shall consist of two symbols. The first shall indicate the material of the disc face and second shall indicate the material of the seat face:

*Example:*

Steel check valve 13 percent chromium steel disc face, 13 percent chromium steel seat face:

DISC CR 13  
SEAT CR 13  
or  
CR 13 CR 13  
or  
CR 13  
CR 13

**5.10.3** Plug, ball and butterfly valves or other quarter-turn valves require no trim identification marking unless the plug, disc, or closure member, or stem or both are of different material than the stem, second indicate the material of plug, ball, disc or closure member. These valves with seating or sealing material different than the body material shall add a third symbol to indicate the material of the seat. In these cases, symbol identification shall be preceded by the words STEM, DISC (or PLUG, BALL or GATE, as appropriate) and the word 'SEAT'. If used alone, symbols must appear in the order given.

### **5.11 Service Symbols**

When service symbols are required the following letters shall be used. These symbols may be used in any order.

A to signify AIR  
G to signify GAS  
L to signify LIQUID  
O to signify OIL  
S to signify STEAM  
W to signify WATER  
D-M-V to signify DRAINAGE, WASTE and VENT

### **5.12 Valves Lining**

Valves made one of material and lined with another shall carry the regular markings specified by this standard and additional marking which will indicate whether partially or completely lined and the material used for lining. These additional shall be cast (*see 4*, Note 2) forged or stamped (*see 4*, Note 1) on the valves or marked on plates securely fastened to the valves.

NOTE — A manufacturer having complied with the requirements specified above is not precluded from providing any other marking which may be mandatorily required by the standard appropriate to the individual type of valve.

## **6 ADDITIONAL MARKINGS**

Additional markings given in Annex A may be used at the option of the manufacturers, provided they do not conflict with any other markings specified in this standard.

## **7 OMISSION OF MARKINGS**

On valves whose size or shape limiting the body and/or identification plate markings, they may be omitted to the degree which conditions required. The sequences of omission shall be:

- a) Size designation;
- b) Thread identification;
- c) Valve trim identification;
- d) Melt identification;
- e) Rating designation; and
- f) Material designation.

**ANNEX A**  
(Clauses 2, 3.2 and 6)

**TABLE OF VALVE MARKINGS**

<i>Sl No.</i>	<i>Item</i>	<i>Markings</i>
(1)	(2)	(3)
i)	1	Size designation
ii)	2	Nominal pressure rating
iii)	3	Material for pressure containing parts
iv)	4	Manufacturer's name or trade-mark
v)	5	Arrow for direction of flow
vi)	6	Ring joint number
vii)	7	Limiting temperature rating
viii)	8	Thread identification
ix)	9	Limiting pressure rating
x)	10	Identification number
xi)	11	Standard number
xii)	12	Melt/heat identification
xiii)	13	Trim identification
xiv)	14	Service symbols
xv)	15	Valve lining
xvi)	16	Quality and test labels
xvii)	17	Inspector's stamp
xviii)	18	Year of manufacture
xix)	19	Flow characteristic



**ANNEX B**  
(Clauses 5.3.2 and 5.10)

**COMMON SYMBOLS FOR METALLIC MATERIALS**

<i>Sl No.</i>	<i>Material</i>	<i>Symbol</i>
(1)	(2)	(3)
i)	Aluminium	AL
ii)	Brass	BRS
iii)	Bronze	BRZ
iv)	Carbon steel	CS
v)	Cast iron	CI
vi)	Hard facing material	HF
vii)	Copper-nickel alloy	CuNi
viii)	Ductile iron	DI
ix)	Malleable iron	MI
x)	Nickel-coper alloy	NiCu
xi)	Soft metal (lead, babbitt, copper, etc)	SM
xii)	Steel, 13 chromium	CR 13
xiii)	Steel, 18 chromium	CR 18
xiv)	Steel, 28 chromium	CR 28
xv)	Steel, 18-8	18-8
xvi)	Steel, 18-8 with columbium	18-8 SCB
xvii)	Steel, 18-8 with molybdenum	18-8 SMO
xviii)	Steel, 18-8 with titanium	18-8 STI
xix)	Surface hardened steel	SH

NOTE — For valves in which the body seat face is integral with the body, the grade or symbol applicable to the body material shall be used to indicate the body seat face in the trim markings.

**ANNEX C**  
(Clauses 5.3.2 and 5.10)

**COMMON SYMBOLS FOR NON-METALLIC MATERIALS**

<i>Sl No.</i>	<i>Material</i>	<i>Symbol</i>
(1)	(2)	(3)
i)	Asbestos	ASB
ii)	Butadiene rubber	BR
iii)	Butyl rubber	IIR
iv)	Chloroprene or neoprene	CR
v)	Chlorosulfonated polyethylene	CCM
vi)	Chlorotrifluoroethylene	CIFE
vii)	Ethylene-propylene diene monomer	EPDM
viii)	Ethylene-propylene rubber	EPR
ix)	Ethylene-propylene ter polymer	EPT
x)	Fluorocarbon or viton rubber	FPM
xi)	Fluorinated ethylene propylene	FEP
xii)	Isoprene rubber	IR
xiii)	Natural rubber	NR
xiv)	Nitrile or buna N-rubber	NBR
xv)	Nylon	NYL
xvi)	Polyacrylic rubber	ACM
xvii)	Poly vinyl chloride	PVC
xviii)	Silicone rubber	SI
xix)	Styrene butadiene rubber	SBR
xx)	Polytetrafluoro ethylene	PTFE
xxi)	Tetrafluoroethylene	TFE
xxii)	Thermoplastic material	T PLAS
xxiii)	Thermosetting material	T SET