

*Indian Standard*  
SPECIFICATION FOR  
BRANCH PIPE, UNIVERSAL, FOR  
FIRE FIGHTING PURPOSES  
( *First Revision* )

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**BUREAU OF INDIAN STANDARDS**  
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NEW DELHI 110002

*Indian Standard*  
 SPECIFICATION FOR  
 BRANCH PIPE, UNIVERSAL, FOR  
 FIRE FIGHTING PURPOSES  
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*Indian Standard*  
SPECIFICATION FOR  
BRANCH PIPE, UNIVERSAL, FOR  
FIRE FIGHTING PURPOSES  
( *First Revision* )

**0. FOREWORD**

**0.1** This Indian Standard ( First Revision ) was adopted by the Indian Standards Institution on 28 February 1983, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** Branch pipe, universal, is one of the important items of water fittings used for general fire fighting, marine fire fighting and for fire fighting in oil refineries. In addition, branch pipe, universal, is also used for laying dust in mines and for smoke dispersal in rescue operations. The advantages of this type of branch pipe over the ordinary branch pipe covered by IS : 903-1975\* are that it is capable of providing atomized spray and wide-spreading curtain in addition to a straight jet and it minimizes water damage which is of particular importance on board ships and in storage rooms. This standard has been prepared with a view to providing guidance both in manufacture and purchase of branch pipes, universal, of proper design and construction and capable of giving the required performance. This standard was first published in year 1964. The revision has been prepared so as to give complete details of the drawings and also keeping its provisions in line with the latest Indian Standards on similar items.

**0.3** 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.

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\*Specification for fire hose delivery couplings branch pipe, nozzles and nozzle spanner ( *second revision* ).

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

## 1. SCOPE

**1.1** This standard lays down the requirements regarding material, shape, dimensions, finish and performance test for the branch pipe, universal, used for fire fighting purposes.

## 2. MATERIALS

**2.1 Castings and Forgings** — The castings and forgings shall be made of any one of the materials given under **2.1.1** and **2.1.2**.

**2.1.1 Copper Alloys** — Copper alloys used for castings or forgings shall conform to the requirements given below:

- a) Sand castings — Grade LTB2 of IS : 318-1981\*
- b) High tensile castings — Grade HTB1 of IS : 304-1981†
- c) Die castings — Grade 3 of IS : 292-1961‡
- d) Hot forgings — Grade 1 of IS : 291-1977§

**2.1.2 Aluminium Alloy** — Aluminium alloy used for castings shall conform to IS Designation 4450 or 4225 of IS : 617-1975||.

## 3. SHAPE AND DIMENSIONS

**3.1** The branch pipe shall consist of body, diffuser and nozzle ( see Fig. 1 ).

**3.2** The shape and dimensions of the body, diffuser and nozzle shall be as shown in Fig. 2 to Fig. 4. The tolerance on all such machined parts shall where not mentioned be  $\pm 0.25$  mm.

## 4. WORKMANSHIP AND FINISH

**4.1** All parts shall be of good workmanship and finish. The forgings and castings shall be sound and free from pits, blow holes, scales, cracks and other imperfections and shall not be repaired or filled so as to hide casting defects. The waterway shall have a smooth finish. The exterior of the fitting shall be rounded and made smooth.

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\*Specification for leaded tin bronze ingots and castings ( second revision ).

†Specification for high tensile brass ingots and castings ( second revision ).

‡Specification for brass ingots and castings ( revised ).

§Specification for naval brass rods and sections ( suitable for machining and forging ) ( second revision ).

||Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes ( second revision ).

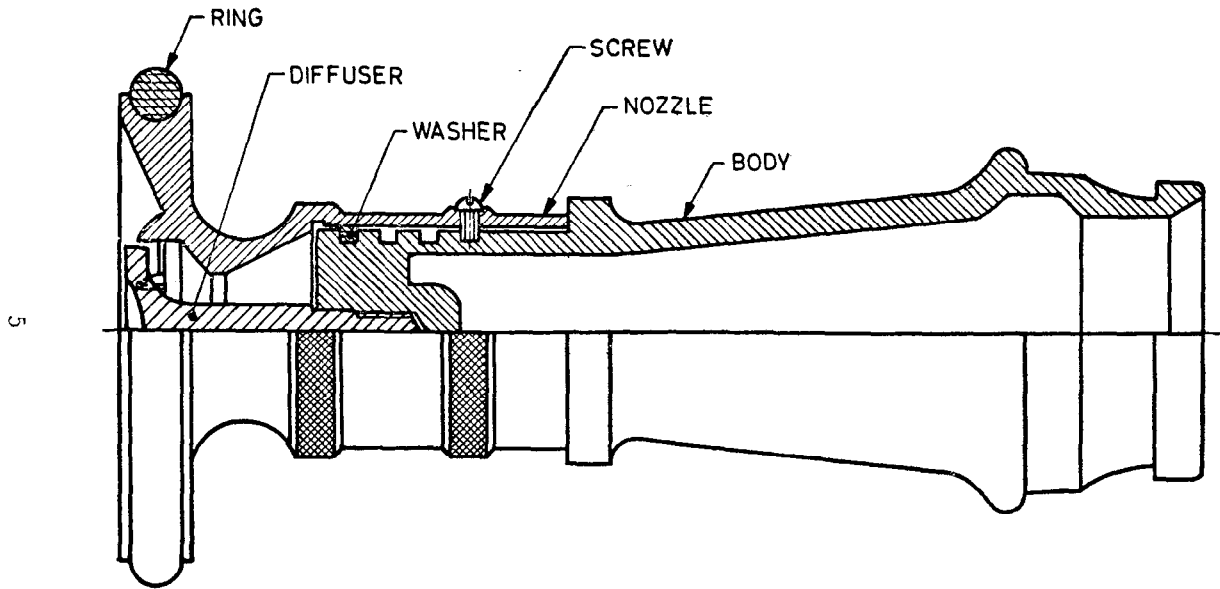
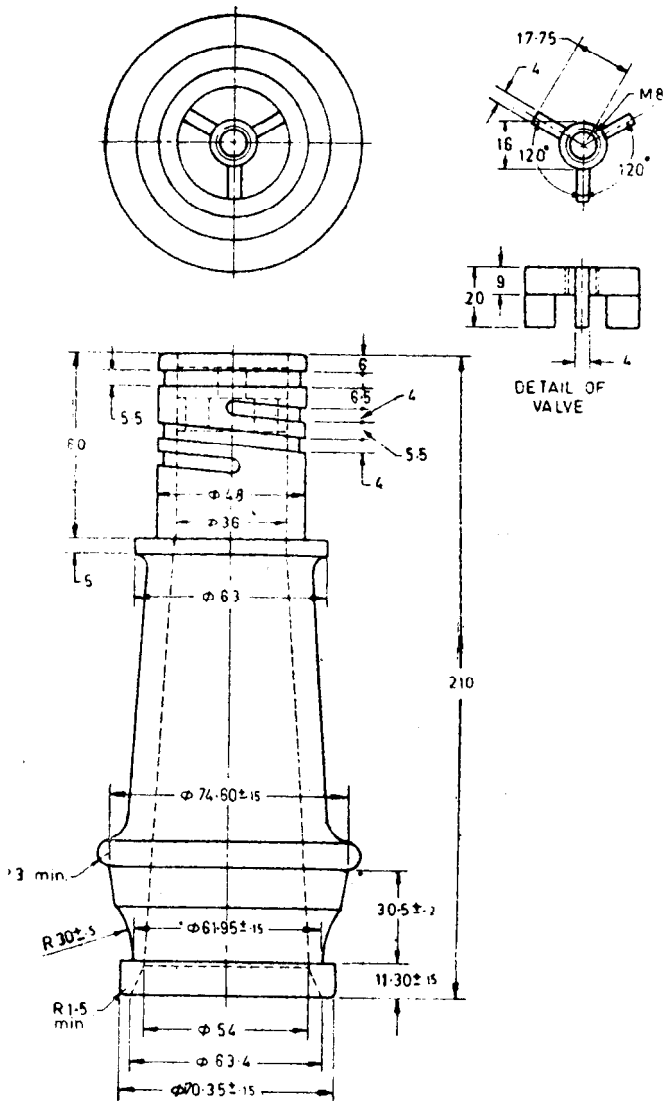
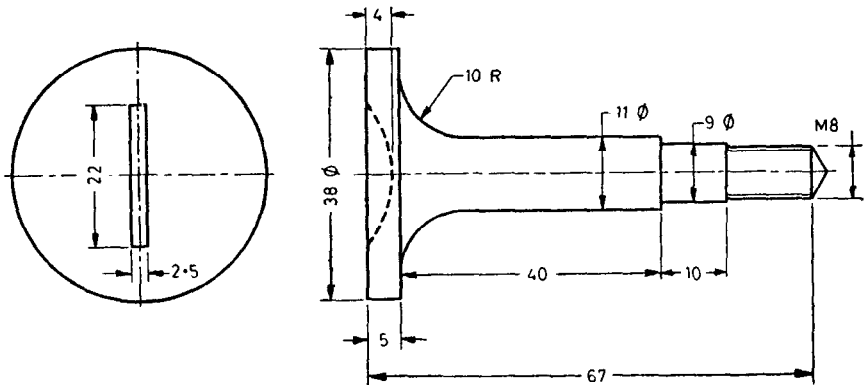


FIG. 1 GENERAL ASSEMBLY OF BRANCH PIPE, UNIVERSAL



All dimensions in millimetres.

FIG. 2 BODY



All dimensions in millimetres.

FIG. 3 DIFFUSER

## 5. PERFORMANCE TEST

**5.1 Hydraulic Test** — The branch pipe shall be subjected to a hydraulic pressure of  $2.1 \text{ MN/m}^2$  ( $21 \text{ kgf/cm}^2$ ) for a period of two minutes for the purpose of locating porosity in the casting. The test pressure shall be applied after all machining operations have been completed. Branch pipe when so tested shall not show any sign of leakage.

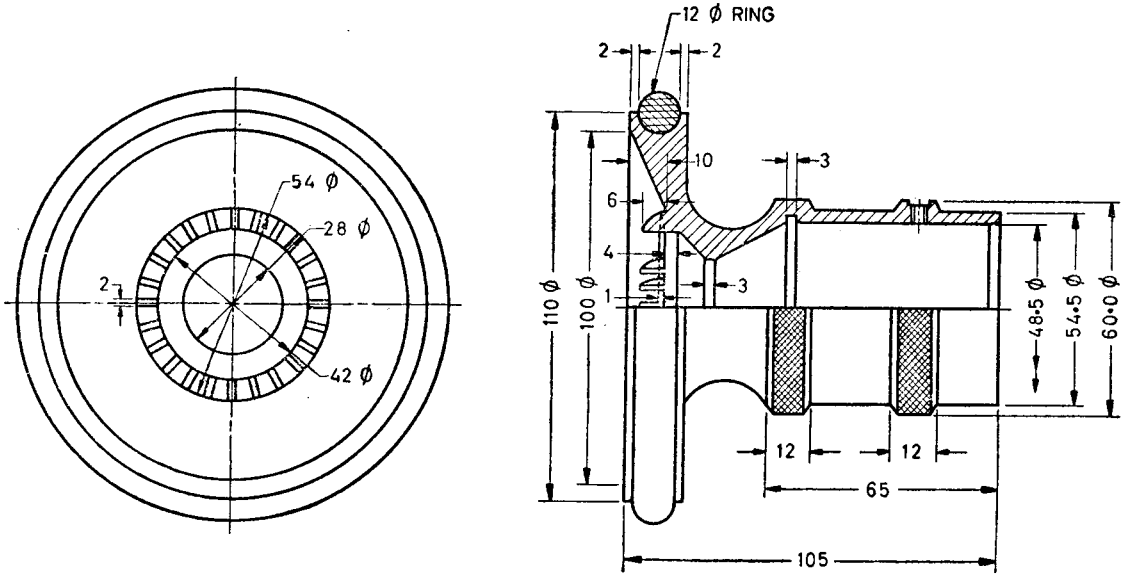
**5.2 Operational Test** — Branch pipe shall be capable of delivering a spray over a range varying from  $150^\circ$  to complete shut off.

## 6. MARKING

**6.1** Each branch pipe shall be clearly and permanently marked with the following information:

- a) Manufacturer's name or trade-mark, and
- b) Year of manufacture.





All dimensions in millimetres.

FIG. 4 NOZZLE WITH RING

## **6.2 BIS Certification Marking**

The product may also be marked with Standard Mark.

**6.2.1** The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

(Continued from page 2)

Water Fittings for Fire Fighting Subcommittee, BDC 22 : 1

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**AMENDMENT NO. 1 AUGUST 1999  
TO  
IS 2871 : 1983 SPECIFICATION FOR BRANCH PIPE,  
UNIVERSAL, FOR FIRE FIGHTING PURPOSES**

*( First Revision )*

*( Page 7, clause 5.1, lines 2 and 3 )* — Substitute '2.5 minutes' for 'two minutes'.

( CED 22 )

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Reprography Unit, BIS, New Delhi, India