FOAM MONITOR VARUN 443

WITH OR WITHOUT JRC, STAINLESS STEEL
VARIABLE & FIX FLOW 500-750-1000-1250 GPM

HD FIRE PROTECT LIMITED

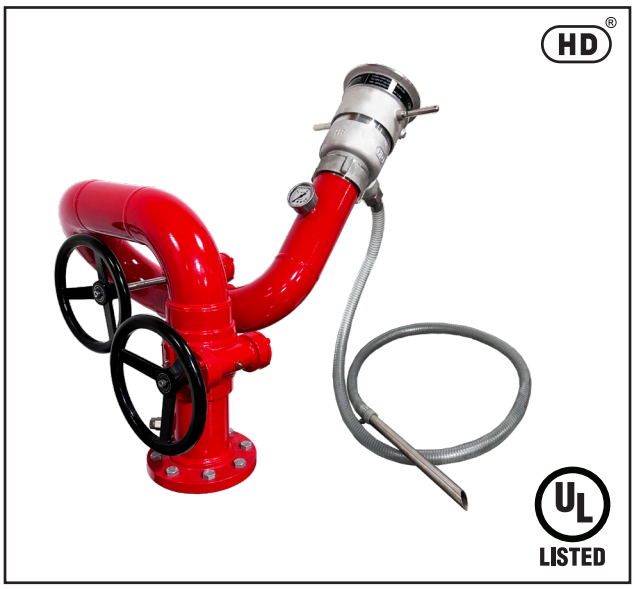
TECHNICAL DATA

MONITOR MODEL	VARUN 443
NOMINAL SIZE	4" (100 mm)
MAX. SERVICE PRESSURE	175 psi (12 bar)
NOZZLE MODEL	Refer Table-I
INDUCTION RATE	3% (3 to 3.9%) AFFF Foam
FACTORY HYDRO TEST PRESSURE	350 psi (25 bar)
MATERIAL	Stainless Steel
OPTIONAL SUPPLY	Pressure Gauge
NOZZLE THRUST REACTION IN KG.	Flow in LPM x √Pressure in kg/sq.cm x 0.0228
INLET CONNECTION	4" or 6" (100 or 150 NB) Flange to ANSI B16.5,#150, RF
END CONNECTION	4" BSP(M) for Monitor Nozzle
PICKUP TUBE	3.0 mtrs. Long Clear PVC with SS Dip Tube
MONITOR ELEVATION	90 deg. Above Horizontal & 65 deg. Below Horizontal
MONITOR ROTATION	360 deg. Continuous
MONITOR MOVEMENT	Double Hand Wheel Driven Enclosed Worm Gear
APPROVAL	UL Listed
FINISH	Standard Supply - Red RAL 3001
MONITOR WEIGHT	With HF4V Nozzle - 77.2 kg With HF4VJ Nozzle - 76.2 kg With HF50 Nozzle - 75.0 kg
ORDERING INFORMATION	Refer Ordering Information Chart

DESCRIPTION

Corrosion resistant Stainless Steel Monitor Model VARUN 443 is a durable manual controlled low profile monitor for fixed installation as well as trailer mounted unit. The monitor is generally used for protection of flammable liquid storage tanks, loading racks, dykes, marine areas and many other Industrial applications.

The VARUN 443 Monitor possesses several design features that provide ease of operation, minimum maintenance and resistance to normally destructive environments. VARUN 443 is used with fix flow or variable flow nozzle.



The Monitor has welded Stainless Steel 4 inch (100mm) waterway. Vertical and horizontal rotation is through stainless steel swivel joints with double row of stainless steel ball bearings. Both vertical and horizontal movements are controlled with handwheel driven enclosed worm gear.

The Monitor has large flow capacity and can be manually operated by a single fire fighter. The design ensures to prevent jet reaction forces from affecting the horizontal and vertical position of the monitor. The monitor has the ability for 360 deg. continuous horizontal rotation and angle of elevation is adjustable from 90 deg. above horizontal to 65 deg. below horizontal. The water vanes in discharge tube reduces the turbulence and friction loss, thus increasing the nozzle performance to achieve greater range. To ensure desired performance, all the flow specified is achieved with monitor base inlet pressure.

NOZZLE OPERATION INSTRUCTIONS

a) In case of Variable Flow Nozzle Model HF4V, to change the flow, press the knob and rotate to match the arrow of the knob and marking line on the Nozzle. After flow setting, set the concentrate induction by rotating the knob of the induction valve.

b) To change the spray angle, rotate the pattern sleeve clockwise for straight stream or anticlockwise for spray / fog pattern.

c) When JRC is to be used, the induction setting to be positioned on the metering valve at the JRC.

INSTALLATION, TESTING & MAINTENANCE

The monitor must be installed and operated carefully by a trained person, having good knowledge of equipment. Before assembly of the monitor to supply piping, thoroughly flush the piping with water to avoid sand, residue, welding slag or other debris hindering the proper functioning of the monitor.

After few initial successful tests, an authorized person must be trained to perform the inspection and testing of the monitor.

The monitor should be ready for use. To achieve this condition, scheduled inspection and maintenance operation should be performed and it must be recorded in the maintenance register book indicating the requirement or recommendation. The recommended maintenance procedure must be followed as given in the manual and also as per the local authority having jurisdiction.

It is recommended to carry out weekly physical inspection of the monitor. The inspection should verify that no damage has taken place to any component and the monitor is ready for use. Carry out functional test every month for the flow, regular rotation in horizontal and vertical plane for the entire operating range to observe any leakage.

Periodic proper greasing through grease nipple provided on bearing, worm wheel and worm shaft must be ensured. Use water resistant low friction synthetic grease. Lubrication is required for smooth operation.

Periodical flushing of the Nozzle with clean water and movement of moving parts, will allow Nozzle to operate as designed.

Each monitor must be operated with full flow in accordance to the guidelines of the organisation having local jurisdiction. The owner is responsible for maintaining the equipment in proper operating condition.

CAUTION ⚠

A trained personnel for fire fighting must use the monitor. Appropriate guidance & training must be given to reduce the risk or injury.

The nozzle must be fixed to the monitor carefully, the flange bolts must be tightened uniformly.

The piping must be able to with stand the horizontal reaction force. Serious injury to personnel and equipment can result from improper installation.

When installing monitor it is critical that flange bolts be tightened uniformly to prevent cocking of the monitor relative to the flange or valve.

Before flowing water from monitor, check that all personnel are out of stream path and stream direction will not cause avoidable property damage.

Application of water or foam on an electrical appliance can cause serious injury.

The water supply to monitor must be increased/ decreased gradually to prevent possible water hammer occurrence.

If dust protection cap for nozzle is used, then make sure that cap is removed before starting of monitor.

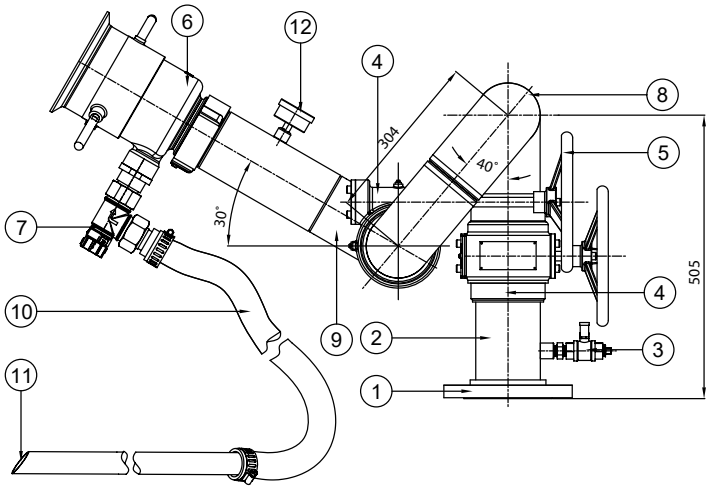
Maximum permissible suction lift is 2.5 meters for self-inducting nozzle.

The elevation difference between monitor and JRC shall not be more than 1.5 meters.

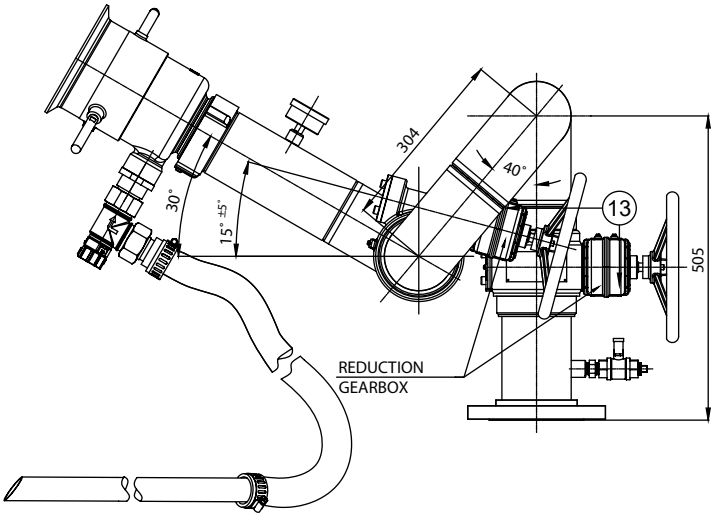
TABLE - I

SR. NO.	NOZZLE MODEL	FLOW AT 7 KG/SQ.CM. MONITOR BASE PRESSURE	SELF INDUCTING	PREMIX FOAM SOLUTION	INDUCTION BY JRC
1	VARSHA HF4V 500-1000	VARIABLE FLOW	YES	YES	NO
2	VARSHA HF4V 750-1000	VARIABLE FLOW	YES	YES	NO
3	VARSHA HF4V 500-750	VARIABLE FLOW	YES	YES	NO
4	VARSHA HF4V 500-750-1000	VARIABLE FLOW	YES	YES	NO
5	VARSHA HF4VJ 500-1000 WITH JRCP MODEL JP4	VARIABLE FLOW	NO	YES	YES
6	VARSHA HF4VJ 750-1000 WITH JRCP MODEL JP4	VARIABLE FLOW	NO	YES	YES
7	VARSHA HF4VJ 500-750 WITH JRCP MODEL JP4	VARIABLE FLOW	NO	YES	YES
8	VARSHA HF4VJ 500-750-1000 WITH JRCP MODEL JP4	VARIABLE FLOW	NO	YES	YES
9	VARSHA HF50 1000	FIX FLOW	YES	YES	NO
10	VARSHA HF50 1250	FIX FLOW	YES	YES	NO

WATER FOAM MONITOR VARUN 443 WITH NOZZLE HF4V



SELF INDUCTING VARIABLE FLOW



OPTIONAL (WITH REDUCTION GEARBOX)

PART LIST (STANDARD SUPPLY)

ITEM NO.	DESCRIPTION
1	BASE FLANGE
2	INLET PIPE
3	DRAIN VALVE ½"
4	SWIVEL JOINT V & H ROTATION
5	HAND WHEEL
6	NOZZLE - VARSHA HF4V
7	INDUCTION METERING VALVE
8	ELBOW
9	DISCHARGE ELBOW
10	PICKUP TUBE
11	DIP TUBE

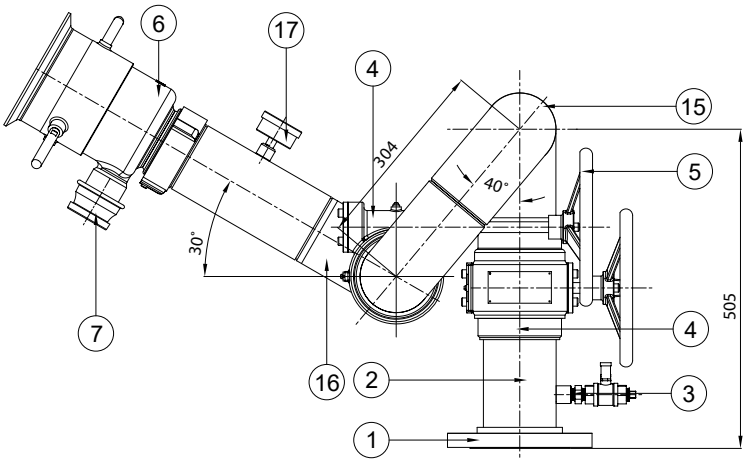
PART LIST (OPTIONAL SUPPLY)

ITEM NO.	DESCRIPTION
12	PRESSURE GAUGE
13	REDUCTION GEARBOX CASING

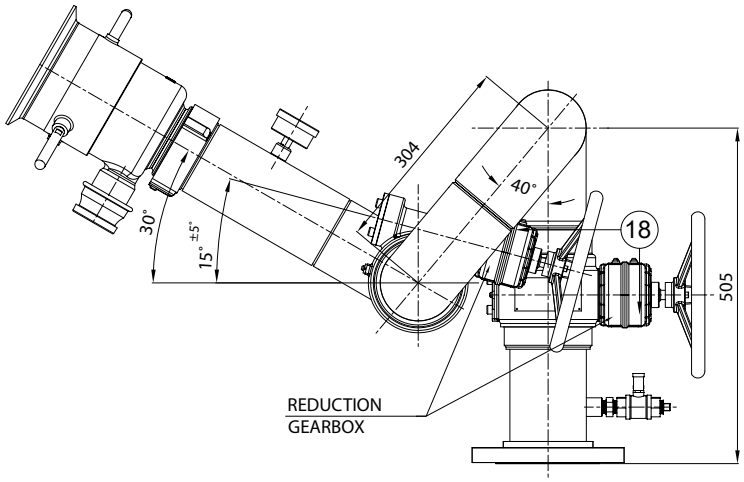
Note :

1) Monitor inlet flange standard size is 100NB (4") to ANSI B16.5, 150#, Other optional size is 150NB (6")
2) Flow is within ±5%
3) Standard Supply - SS 304/ ASTM A351 CF8
   Optional Supply - A) SS 316/ ASTM A351 CF8M B) SS 316L/ ASTM A351 CF3M C) SS 304L/ ASTM A351 CF3
4) Foam reach data is in still air at 30/35° Nozzle elevation
5) Foam concentrate induction is 3 to 3.9% as per UL requirement

WATER FOAM MONITOR VARUN 443 WITH NOZZLE HF4VJ



WITH JRC - VARIABLE FLOW



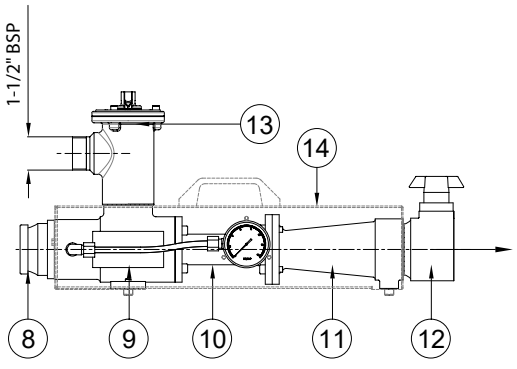
OPTIONAL (WITH REDUCTION GEARBOX

PART LIST (STANDARD SUPPLY)

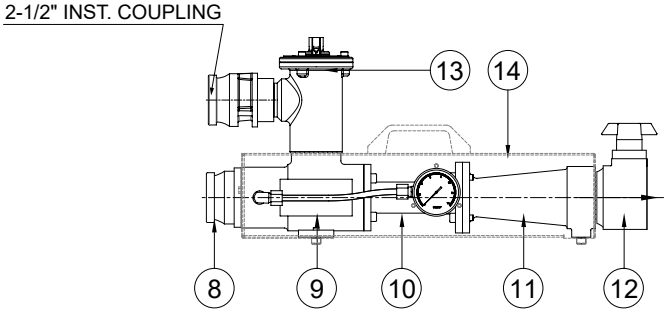
ITEM NO.	DESCRIPTION
1	BASE FLANGE
2	INLET PIPE
3	DRAIN VALVE ½"
4	SWIVEL JOINT V & H ROTATION
5	HAND WHEEL
6	NOZZLE - VARSHA HF4VJ
7	COUPLING WITH CONNECTOR
8	MALE INST. COUPLING
9	HOUSING
10	MIDDLE DIFFUSER
11	END DIFFUSER
12	FEMALE INST. COUPLING
13	FOAM INDUCTION VALVE
14	JRC COVER ASSEMBLY
15	ELBOW
16	DISCHARGE ELBOW

PART LIST (OPTIONAL SUPPLY)

ITEM NO.	DESCRIPTION
17	PRESSURE GAUGE
18	REDUCTION GEARBOX CASING

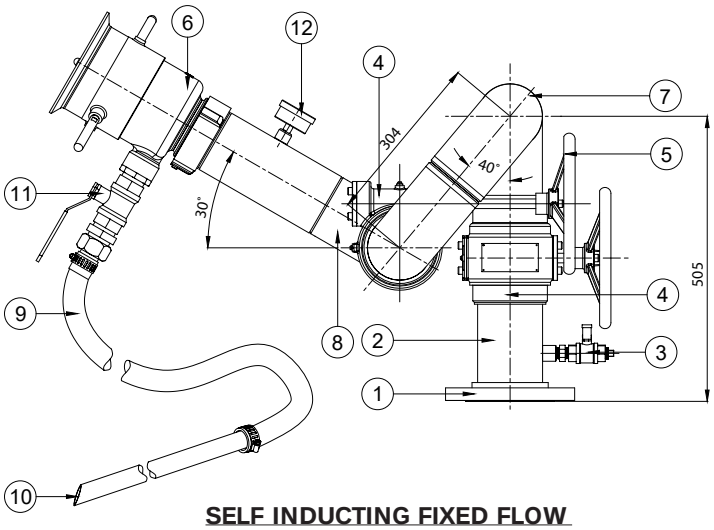


OPTION - I FOR JRC

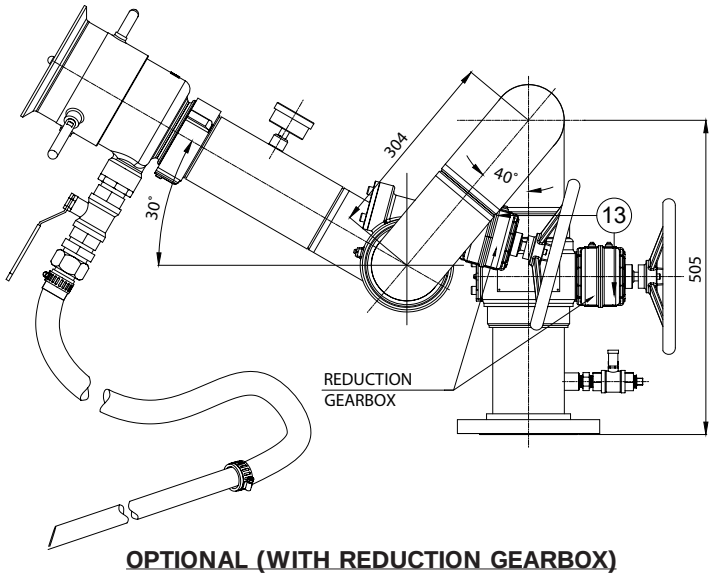


OPTION - II FOR JRC

WATER FOAM MONITOR VARUN 443 WITH NOZZLE HF50



SELF INDUCTING FIXED FLOW



OPTIONAL (WITH REDUCTION GEARBOX)

PART LIST (STANDARD SUPPLY)

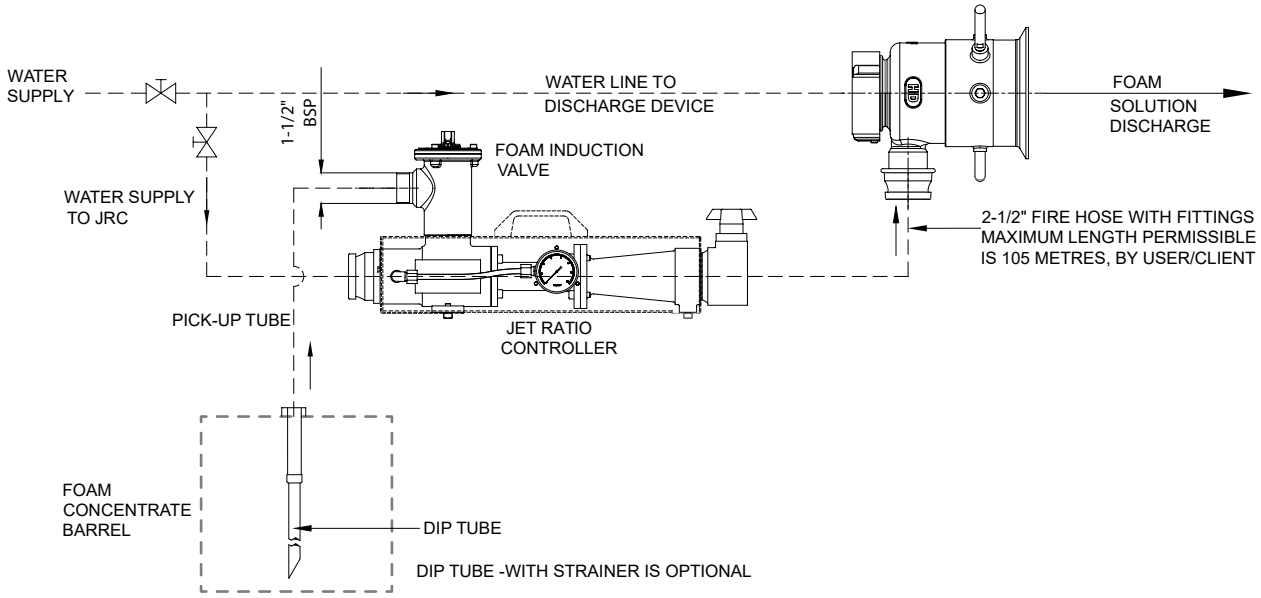
ITEM NO.	DESCRIPTION
1	BASE FLANGE
2	INLET PIPE
3	DRAIN VALVE ½"
4	SWIVEL JOINT V & H ROTATION
5	HAND WHEEL
6	NOZZLE - VARSHA HF50
7	ELBOW
8	DISCHARGE ELBOW
9	PICKUP TUBE
10	DIP TUBE

PART LIST (OPTIONAL SUPPLY)

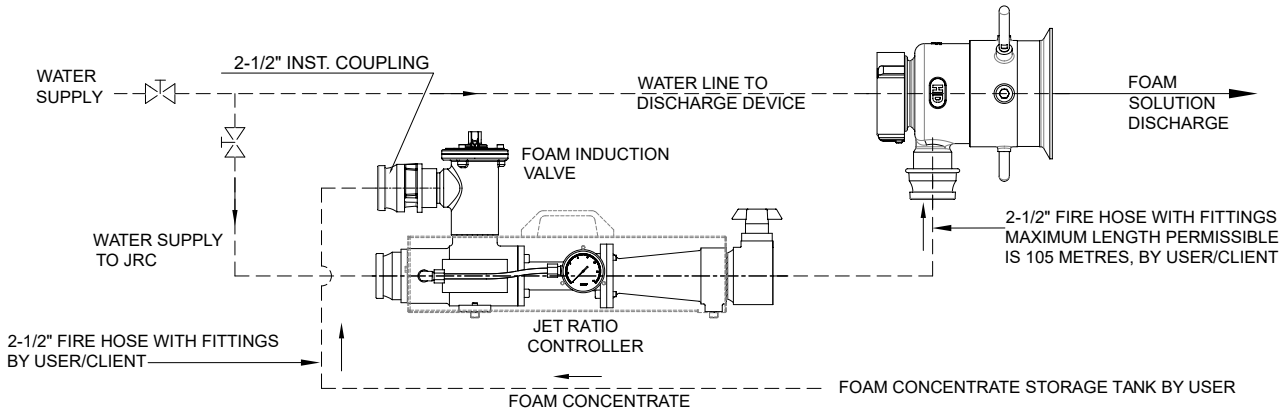
ITEM NO.	DESCRIPTION
11	ISOLATION VALVE
12	PRESSURE GAUGE
13	REDUCTION GEARBOX CASING

JET RATIO CONTROLLER - JRC

FOAM INDUCTION USING PICKUP TUBE & DIP TUBE (OPTION - I)



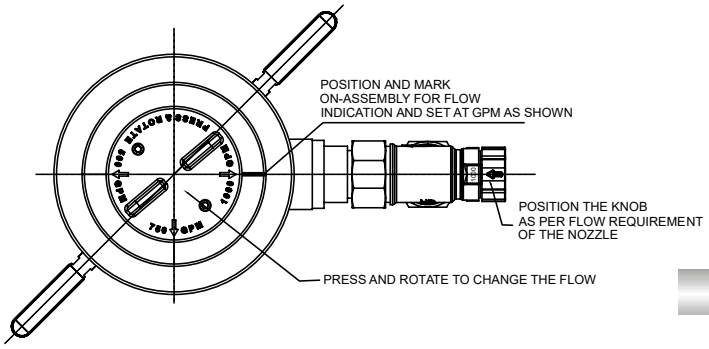
FOAM INDUCTION USING FIRE HOSE WITH FOAM CONCENTRATE STORAGE TANK (OPTION-II)



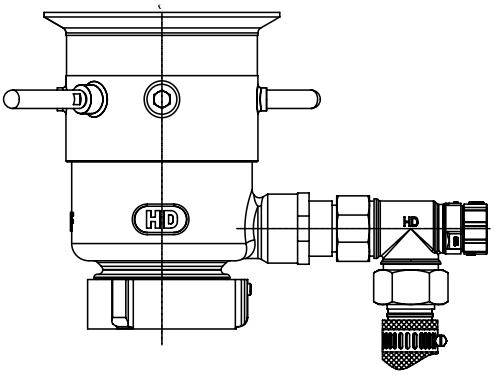
NOTE:

- VALVE – – – – BY USER

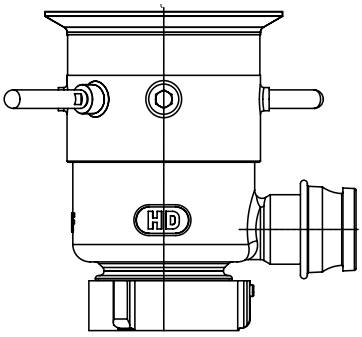
SELF INDUCTING VARIABLE FLOW FOAM NOZZLE - HF4V



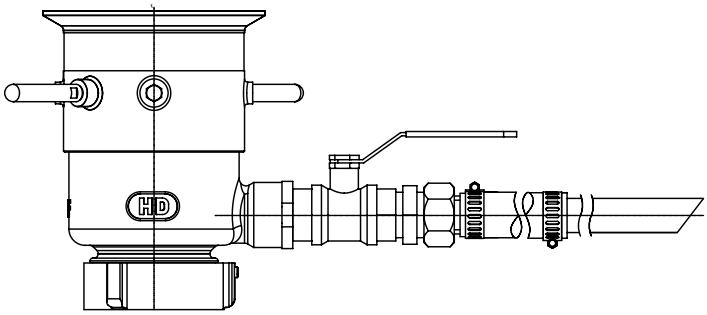
VARIABLE FLOW FOAM NOZZLE - HF4V



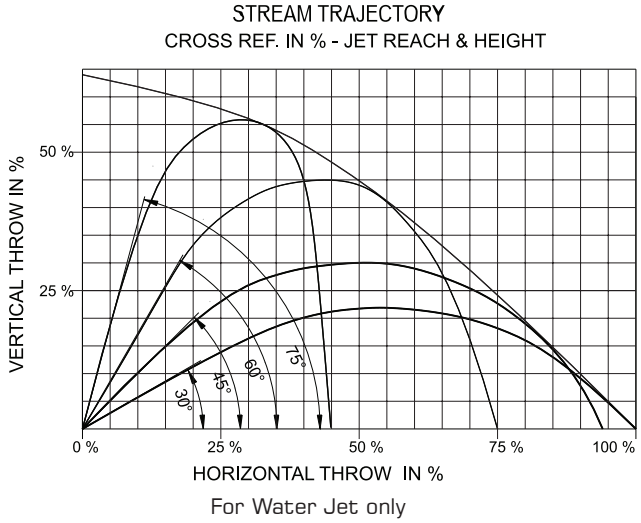
NOZZLE - HF4VJ



NOZZLE - HF50



FLOW REACH DATA



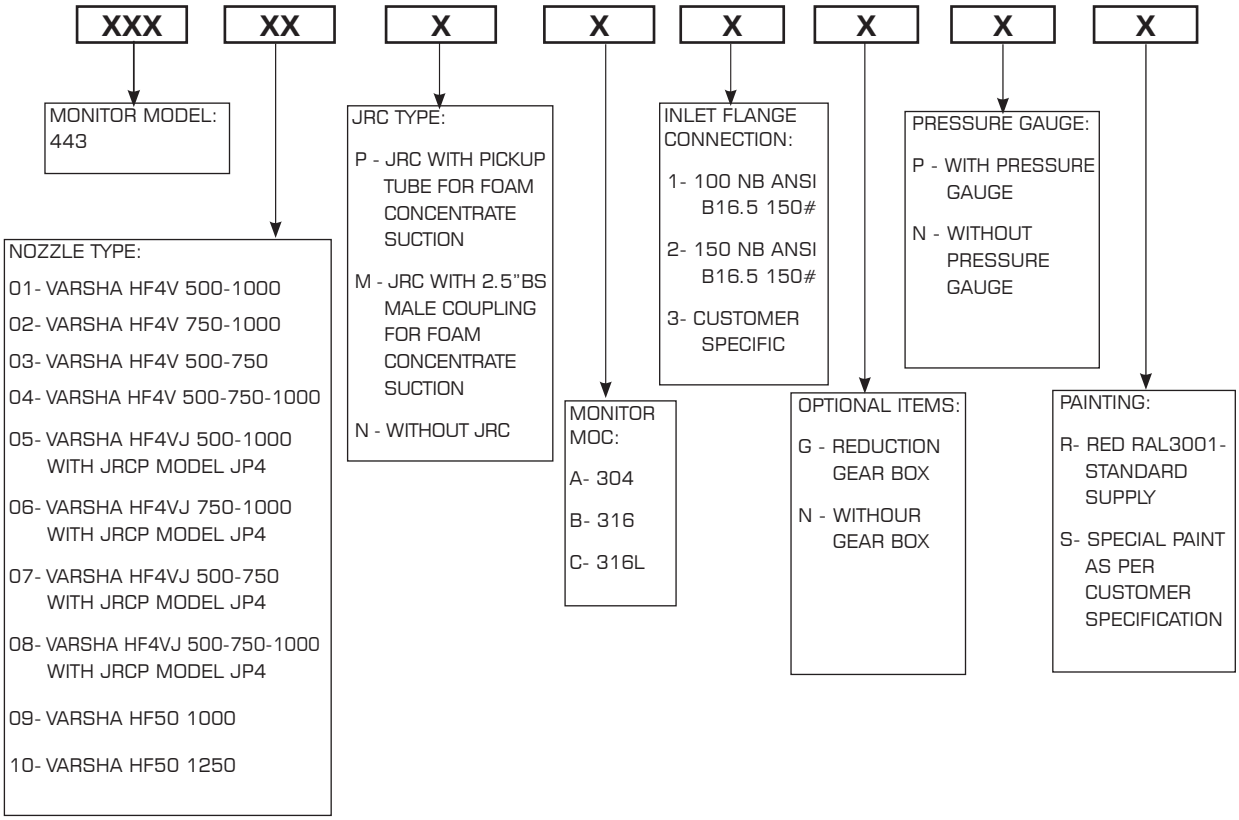
For Water Jet only

Set Flow Rate GPM	Concentrate Induction Rate in %	Monitor Base Pressure in kg / sq.cm	Reach in Still Air (in metres)	
			Water	Foam
500	3	7	50	45
750	3	7	60	55
1000	3	7	65	60

Note:

Jet reach data is in still air at 30/35° Nozzle elevation.

ORDERING INFORMATION



LIMITED WARRANTY

HD FIRE PROTECT LIMITED (Formerly known as HD FIRE PROTECT PVT. LTD.) hereby referred to as HD FIRE, warrants to the original purchaser of the fire protection products manufactured by HD FIRE and to any other person to whom such equipment is transferred, that such products will be free from defect in material and workmanship under normal use and care, for two (2) years from the date of shipment by HD FIRE. Products or Components supplied or used by HD FIRE, but manufactured by others, are warranted only to the extent of the manufacturer's warranty. No warranty is given for product or components which have been subject to misuse, improper installation, corrosion, unauthorized repair, alteration or un-maintained. HD FIRE shall not be responsible for system design errors or improper installation or inaccurate or incomplete information supplied by buyer or buyer's representatives. HD FIRE will repair or replace defective material free of charge, which is returned to our factory, transportation charge prepaid, provided after our inspection the material is found to have been defective at the time of initial shipment from our works. HD FIRE shall not be liable for any incidental or consequential loss, damage or expense arising directly or indirectly from the use of the product including damages for injury to person, damages to property and penalties resulting from any products and components manufactured by HD FIRE. HD FIRE shall not be liable for any damages or labour charges or expense in making repair or adjustment to the product. HD FIRE shall not be liable for any damages or charges sustained in the adaptation or use of its engineering data & services. In no event shall HD FIRE's product liability exceed an amount equal to the sale price.
The foregoing warranty is exclusive and in lieu of all other warranties and representation whether expressed, implied, oral or written, including but not limited to, any implied warranties or merchantability or fitness for a particular purpose. All such other warranties and representations are hereby cancelled.

NOTICE :
The equipment presented in this bulletin is to be installed in accordance with the latest publication standards of NFPA or other similar organisations and also with the provision of government codes or ordinances wherever applicable.
The information provided by us is to the best of our knowledge and belief, and consist of general guidelines only. Site handling and installation control is not in our scope. Hence we give no guarantee for result and take no liability for damages, loss or penalties whatsoever, resulting from our suggestion, information, recommendation or damages due to our product.
Product development is a continuous programme of HD FIRE PROTECT LIMITED. and hence the right to modify any specification without prior notice is reserved with the company.

HD FIRE PROTECT LIMITED
Protecting What Matters Most to You

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