

MONITOR - VAJRA 331 (CAST BRONZE)



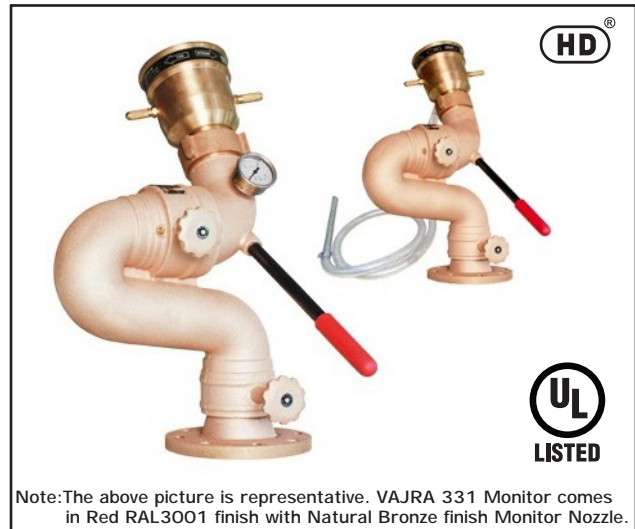
TECHNICAL DATA

MONITOR	VAJRA 331
NOZZLE	VARSHA HF 40U-500 VARSHA HF 40U-750 VARSHA 40U-500 VARSHA 40U-750 VARSHA 40U-1000
NOMINAL SIZE	3 Inch (80 MM)
MAX. SERVICE PRESSURE	14 Bar (200 PSI) UL Listed for 175 PSI
MAXIMUM FLOW	1000 GPM (3800 LPM) Refer Table I for flow
FACTORY HYDROSTATIC TEST PRESSURE	28 Bar (400 PSI)
SWIVEL JOINT	Bronze to IS:318/ASTM B 62 with double row of Stainless Steel Ball Bearing and Grease Fittings
NOZZLE THRUST REACTION IN Kg.	Flow in LPM X $\sqrt{\text{Pressure}}$ in Kg./sq.cm. X 0.0228
INLET CONNECTION	3" (80 NB) or 4" (100 NB) Flange to ANSI B16.5 #150,FF
OUTLET CONNECTION	3" BSP (M) or 3" NH
MONITOR ELEVATION	90 Deg. above horizontal & 45 Deg. below horizontal
MONITOR ROTATION	360 Deg. continuous
MONITOR MOVEMENT	Manual
APPROVAL	UL Listed
FINISH	Red RAL 3001 for Monitor, Natural finish for Nozzle
WEIGHT (Approx)	33Kg -Monitor without nozzle 9.2Kg - Nozzle VARSHA 40U 12.7Kg-Nozzle VARSHA HF40U
PRESSURE GAUGE	Optional, at outlet
ORDERING INFORMATION	Specify Monitor & Nozzle Model

DESCRIPTION

The Monitor Model VAJRA-331 is durable manual controlled 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 and many other Industrial application.

The Monitor possesses several design features that provides ease of operation, minimum maintenance and resistance to corrosive environments.



The monitor has cast bronze 3 inch (80MM) water way. The vertical and horizontal rotation is through corrosion resistant bronze swiveling joint with double row of stainless steel ball bearing. Both vertical and horizontal movements are controlled by handle with twist lock. VAJRA 331 is UL Listed with VARSHA HF40U Nozzle (with pickup tube) and VARSHA 40U Nozzle (without pickup tube).

The monitor has large flow capability 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 from 90 deg. above horizontal to 65 deg. below horizontal. When used on oscillation unit the angle of elevation will be - 40° to +80° manual adjustable.

The water vanes in discharge tube reduces turbulence and friction loss, thus increasing the nozzle performance to achieve greater range. To ensure desired performance, friction loss through monitor must be considered while selecting the nozzle and flow through the monitor with reference to available base pressure at inlet of the monitor. For flow and jet reach data, refer monitor nozzle data sheet.

NOTE:

1. Any intermediate range (UP + DN)^o between UP ≤ 90° and DN ≤ 65° can be provided as per requirement of the customer.
2. The vertical lock needs one turn for lock & unlock. Excessive rotation of knob should not be carried out.
3. Pressure Gauge is optional supply and should not be considered for friction loss measurement.
4. For details of VARSHA 40U, refer Data Sheet No. HD 280 and for VARSHA HF40U refer Data Sheet No. HD 281.

INSTALLATION, TESTING AND MAINTENANCE

The monitor must be installed and operated carefully by a trained person, having good knowledge of equipment. Before assembly of the monitor to the 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.

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 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 electric appliance can cause serious injury.

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

Do not try to over-tighten/ over-loosen Monitor lock.

TABLE-I

Nozzle Model	Type	*Flow at 100 PSI in GPM	Straight Stream Range in Meters
VARSHA 40U-500	D	500	60
VARSHA 40U-750	D	750	61.5
VARSHA 40U-1000	D	1000	65
VARSHA HF40U-500	C	500	46
VARSHA HF40U-750	C	750	54

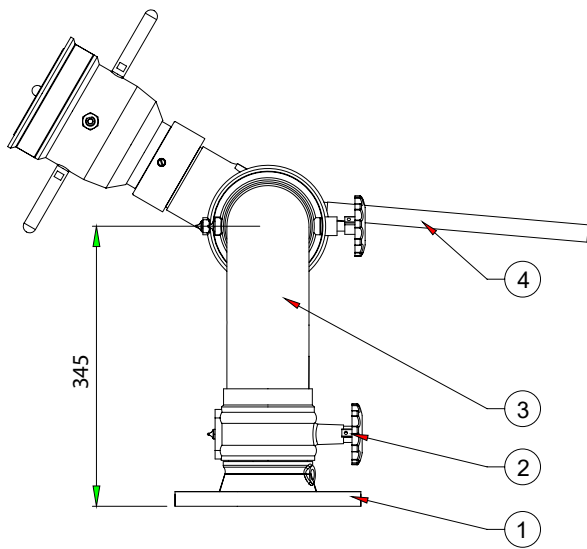
* The straight stream jet reach is at 100 PSI Monitor inlet pressure.

TYPE - D is Non Self-Inducting, non self Aspirating nozzle used for premix solution.

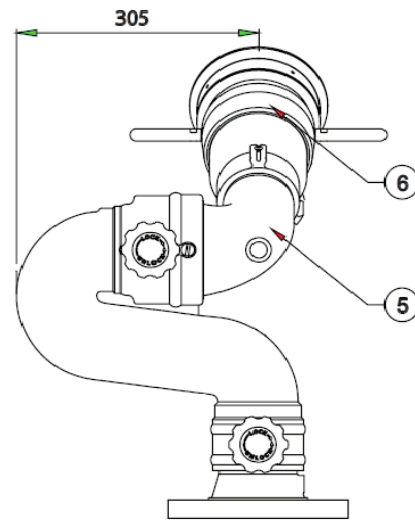
TYPE - C is Self-Inducting, non self Aspirating nozzle used with listed foam, AFFF3%.

NOTE:

- (i) Refer UL Listing for foam concentrate specifications.
- (ii) Performance data are for reach based at =30 nozzle elevation in still air condition.
- (iii) For details refer the nozzle catalogue.
- (iv) Flow and reach data are with HD VAJRA 331 Monitor, with nozzle and monitor inlet pressure.



ELEVATION



SIDE VIEW

*Monitor Nozzle also available with pick-up tube.

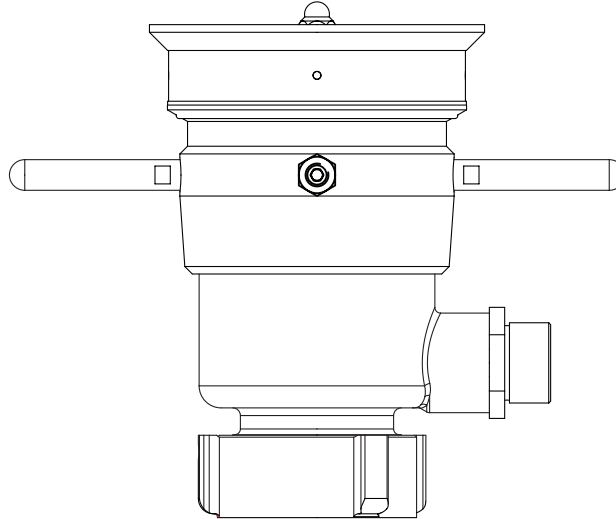
PART LIST

SR NO	DESCRIPTION	MATERIAL SPECIFICATION
1	BASE FLANGE	BRONZE IS:318/ASTM B62
2	LOCK	STAINLESS STEEL CF8
3	ELBOW	BRONZE IS:318/ASTM B62
4	HANDLE	CARBON STEEL
5	OUTLET ELBOW	BRONZE IS:318/ASTM B62
6	NOZZLE	BRONZE

Note :

- 1) Monitor inlet flange standard size 80 NB (3") or 100NB (4") to ANSI B16.5, 150#FF.
- 2) All dimensions in mm and are approximate.
- 3) For VARSHA HF 40U pickup tube is 3 meters long and Brass Ball Valve is optional.
- 4) UL Listed with VARSHA 40U Nozzle.
AFFF foam to be used as pre-mix solution for Flow 500, 750 and 1000 GPM at 100 PSI.
- 5) UL Listed with Self Inducting VARSHA HF40U Nozzle. Flow 500,750 GPM at 100 PSI.
- 6) Pressure gauge is optional supply.

VARSHA HF40U



Note :

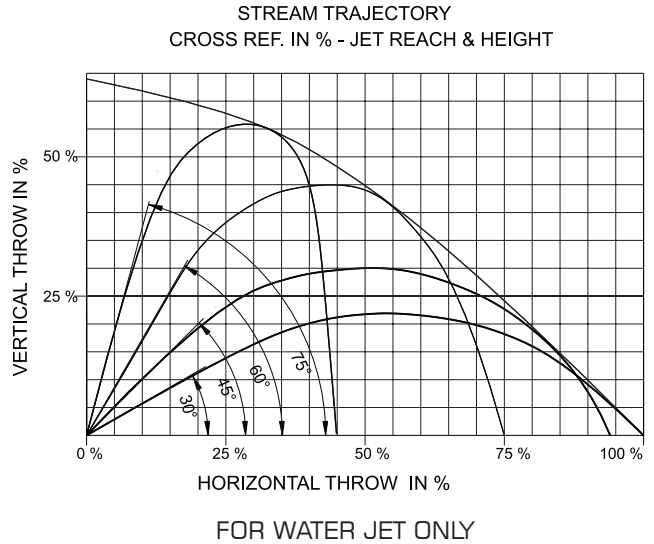
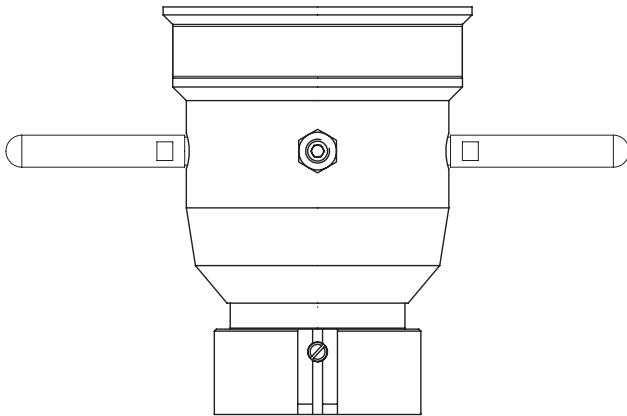
- Nozzle is self-inducting with pickup tube.
- Foam shut off valve is optional.
- Refer to HD 281 catalogue (VARSHA HF40U) for more information.

PERFORMANCE DATA

SET FLOW RATE LPM (GPM)	FOAM CONCENTRATE INDUCTION RATE	PRESSURE KG/CM.SQ. (PSI)	ACTUAL FLOW RATE LPM (GPM)	STRAIGHT STREAM FOAM RANGE METERS (FEET)
1900 (500) VARSHA HF40U-500	3%	5.6 (80) 7.0 (100) 8.4 (120)	1700 (450) 1900 (500) 2081 (550)	39.0 (128) 46.0 (151) 47.0 (154)
2850 (750) VARSHA HF40U-500	3%	5.6 (80) 7.0 (100) 8.4 (120)	2550 (673) 2850 (750) 3122 (825)	48.0 (157) 54.0 (177) 54.5 (179)

PERFORMANCE DATA FOR FOAM STREAM RANGE ARE BASED AT 30 DEG. NOZZLE ELEVATION IN STILL AIR CONDITION. THE REACH IS FOR FOAM, WHEN USED AS WATER THE WATER REACH WILL INCREASE BY ABOUT 10 to 15%. THE ABOVE NOZZLE DATA IS WITH HD MONITOR INLET PRESSURE.

VARSHA 40U



Note :

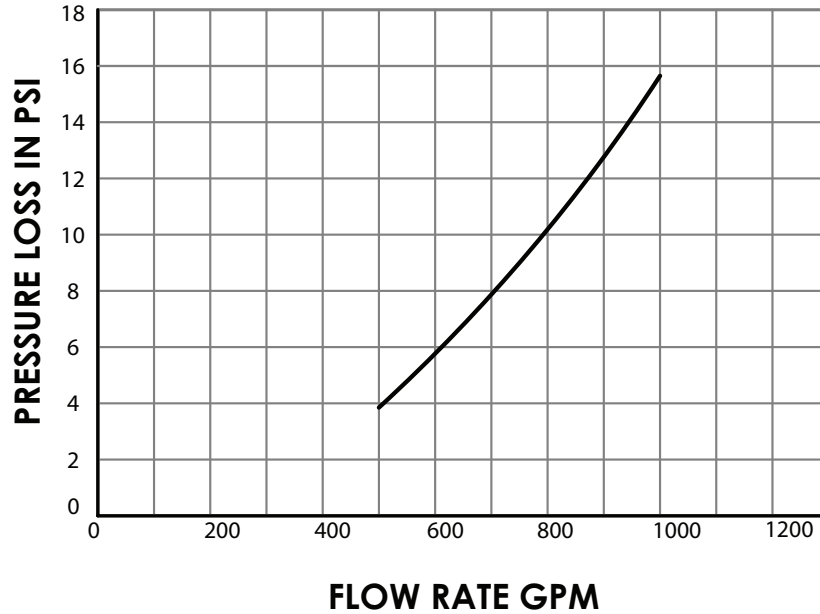
- Nozzle is self-inducting without pickup tube.
- For water or premix foam solution.
- Refer to HD 280 catalogue (VARSHA 40U) for more information.

PERFORMANCE DATA

SET FLOW RATE LPM (GPM)	PRESSURE KG/CM.SQ. (PSI)	ACTUAL FLOW RATE LPM (GPM)	STRAIGHT STREAM WATER RANGE IN METERS (FEET)
1900 (500) VARSHA 40U-500	5.6 (80) 7.0 (100) 8.4 (120)	1700 (450) 1900 (500) 2080 (550)	57 (187) 61 (200) 63 (207)
2850 (750) VARSHA 40U-750	5.6 (80) 7.0 (100) 8.4 (120)	2550 (674) 2850 (750) 3120 (825)	61 (200) 63 (207) 64 (210)
3785 (1000) VARSHA 40U-1000	5.6 (80) 7.0 (100) 8.4 (120)	3385 (895) 3785 (1000) 4150 (1095)	63 (207) 65 (213) 66 (216)

PERFORMANCE DATA IS BASED AT 30 DEG. NOZZLE ELEVATION IN STILL AIR CONDITION AND WITH HD MONITOR. THE JET STREAM IS NOT IN OSCILLATING CONDITION. FOAM STREAM JET REACH WITH PREMIX WATER FOAM SOLUTION SHALL BE SIGNIFICANTLY LOWER THAN WATER JET REACH. THE ABOVE NOZZLE DATA IS WITH HD MONITOR INLET PRESSURE.

FRICTION LOSS THROUGH MONITOR



LIMITED WARRANTY

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 PVT. LTD. and hence the right to modify any specification without prior notice is reserved with the company.



HD FIRE PROTECT PVT. LTD.
Protecting What Matters Most to You

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