



WATER POWERED OSCILLATING MONITOR

TECHNICAL DATA

MODEL	VAJRA 331-5
FLOW	With VARSHA 400 - 500 or 750 or 1000 GPM. With VARSHA HF400 - 500 or 750 GPM (self-inducting).
MINIMUM & MAXIMUM OPERATING PRESSURE	3.5 TO 14 Bar (50 to 200 PSI)
FACTORY HYDROTESTED	35 Bar (500 PSI)
SWIVEL JOINT	Bronze to IS:318/ ASTM B62 With double row of stainless steel Ball Bearing & Grease fittings
INLET CONNECTION	100 NB (4") ANSI Class 150, Flat Face flanged
MONITOR ELEVATION	+80 Deg. above and (-140 Deg. below horizontal
OSCILLATION GEAR BOX	Stainless Steel, double reduction, oil bath gear box
PELTON WHEEL	Stainless Steel
OSCILLATION LINKS	Stainless Steel
ENCLOSURE	Stainless Steel
PELTON WHEEL FEEDER TRIM	Bronze Valve, Copper tubing & DI fittings
OSCILLATION SPEED	Adjustable from 0° -30°/sec. at 7 Bar pressure (100 PSI)
SPEED CONTROL	By Brass Valve externally accessible
ARC OF OSCILLATION	Adjustable 0° to 120° with six set points.
TEST CONNECTION	1/2" Garden Hose (1/2" BSP F)
FINISH	Red, RAL 3000
WEIGHT	67 Kgs
ORDERING INFORMATION	Specify Flow & Nozzle model.



DESCRIPTION

Monitor mounted on water powered Oscillating Unit, transforms the manual Monitor into an Oscillating Monitor. The unit is suitable for use in high risk areas such as tank farm facilities, aircraft hangars, offshore, refineries, chemical plants, and heliports.

The Monitor possesses several design features that provides ease of operation, minimum maintenance and resistance to corrosive environments. The monitor is used with Nozzle as premix solution with flow upto 1000 GPM. The monitor can be used with water-foam self-inducting nozzle having flow up to 750 GPM.

The monitor has cast bronze 3 inch (75 MM) 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 movement is controlled by handle with twist lock.

A water drive wheel connected to a double reduction gearbox drive and oscillating mechanism. To operate the drive wheel, a small quantity of flow is diverted from the monitor inlet.

The monitor requires no external wiring or hydraulic control for operation. The minimum operating water pressure of the oscillation mechanism is 3.5 kg./sq.cm. The flow of water through oscillation mechanism is 42 LPM at 3.5 kg./sq.cm. and 60 LPM at 7 kg./sq.cm. of water pressure.

The design ensures to prevent jet reaction forces from affecting the horizontal and the vertical position of the monitor during operation.

The vertical angle of elevation and horizontal arc of oscillation is field adjustable and can be set and locked in position. The monitor can be set to oscillate over a range of 0°-120° and the oscillation arc can be set anywhere within the 360° field of operation.

FIREGUARD GLOBAL LTD.

Tel: 00-44-8450751042 • Fax: 00-44-8459751043
Email: Info@Fireguard-Uk.com • www.fireguard-Uk.com

Unit 11 • Chancel Industrial Estate • Newhall Street
Willenhall • WV13 1NX • United Kingdom





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The unit is equipped with a garden hose test connection. This allows functional check of the oscillating mechanism without system flow.

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.

The vertical angle of elevation and horizontal arc of oscillation is field adjustable and can be set and locked in position. The Monitor can be set at oscillation over a range of 0-120° and oscillation arc can be set anywhere with 360° field of operation. The elevation angle of monitor is between +80° to - 40° from horizontal.

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 the physical inspection of the monitor on weekly basis. 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, must be ensured. Use water resistant low friction synthetic grease. Lubrication is required for smooth operation.

Each monitor must be operated with the 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

Trained personnel for firefighting 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 withstand 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.

WARNING

The Oscillating unit contains moving parts. Keep hands, fingers and objects away from the moving parts and never operate without cover fitted on the unit.

ADJUST THE ARC OF OSCILLATION

1. To adjust the arc of oscillation, shut off the water supply and open the top cover plate.
2. Close the speed control valve.
3. Arc of oscillation can be set at 0°, 25°, 45°, 60°, 80°, 100° or 120° by unscrewing the bolt on link and fixing at desired angle as marked (Fig. 3)
4. Refix the top cover plate, after opening the speed control valve.

TROUBLE SHOOTING

If the Oscillating unit fails to oscillate, then check the following:

- Check the speed control valve is open.
- Make sure the operating pressure is minimum 3.5 kg. / sq.cm.
- Check and make sure the pelton wheel water exhaust is freely flowing without any obstruction.
- Make sure all links are free from debris and bolts are loose and are in place.
- If the unit is not operated from long time, then clean and operate at 7 Bar for few minutes, to make sure the line link is free to move.
- The oscillating unit may wear and tear, hence the unit need to be opened and inspected after approximately three hours of Oscillation. If considerable wear and tear is observed then the parts of oscillation unit need to be replaced to keep the monitor in healthy condition.





WATER-POWERED OSCILLATING MONITOR RANGE DATA – MONITOR MODEL VAJRA-331

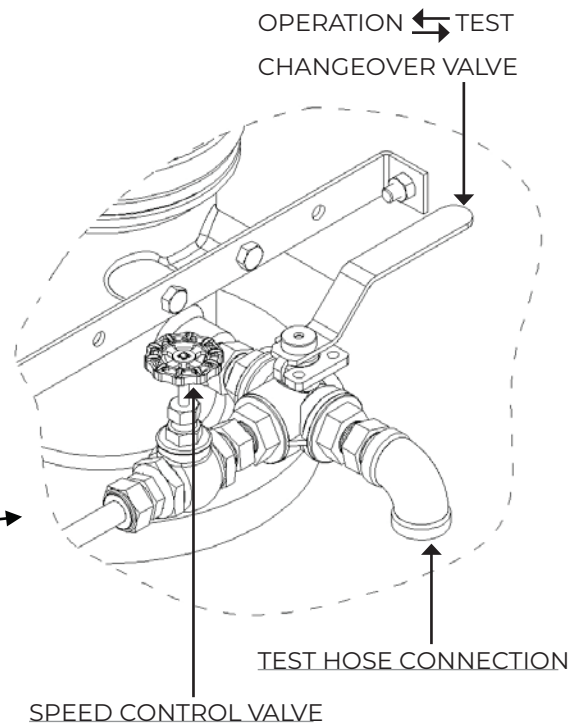
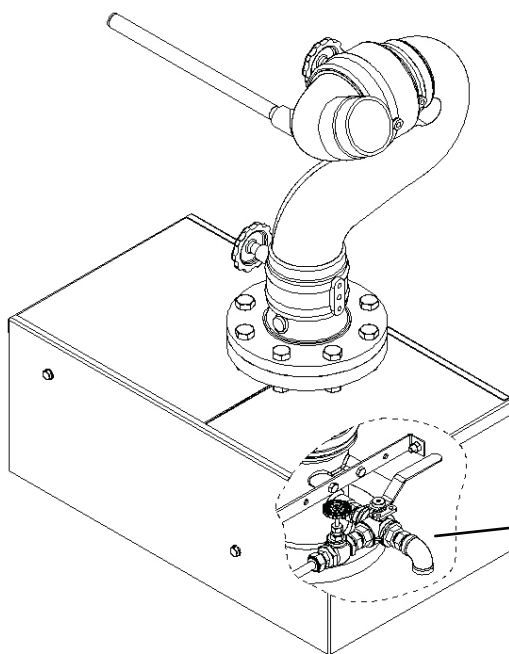
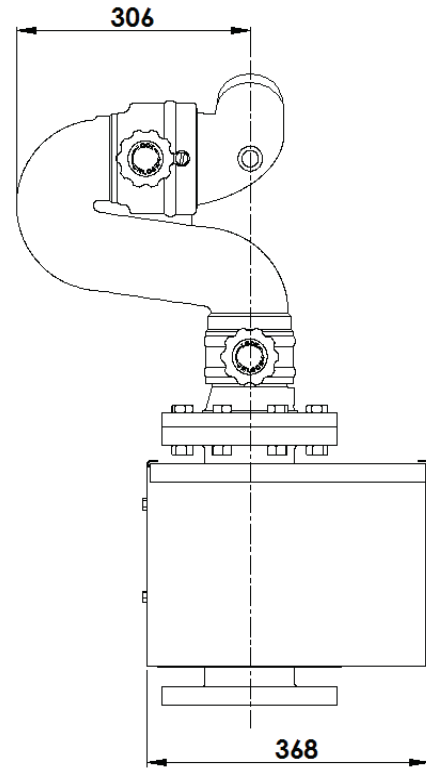
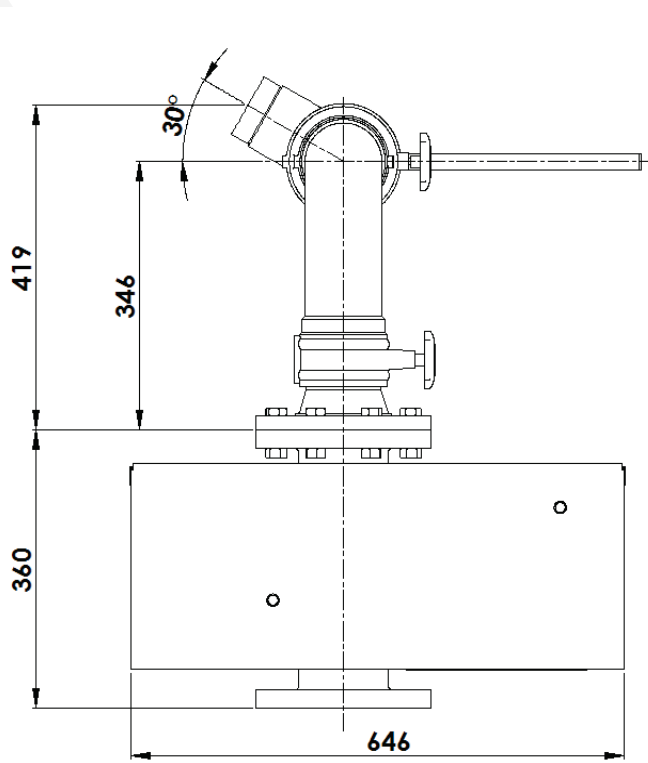
Nozzle Model	Monitor Elevation Angle	Monitor Inlet Pressure & Reach Data					
		100 PSI			120 PSI		
		Flow GPM	Reach in Meters		Flow GPM	Reach in Meters	
			Fixed	Oscillating		Fixed	Oscillating
VARSHA 40U-500	5	500	10	8.5	547	11	9.5
	15	500	20	16	547	21	17
	30	500	53	46	547	54	47
VARSHA 40U-750	5	750	12	9	821	13	10
	15	750	24	20	821	25	21
	30	750	55	47.5	821	57	49
VARSHA 40U-1000	5	1000	14	12	1095	14.5	11
	15	1000	32	27	1095	33	28
	30	1000	60	56	1095	61	56.5
VARSHA HF40U-500	5	500	7	6	547	7.5	6.5
	15	500	16	13	547	17.5	14
	30	500	41	36	547	42	36.5
VARSHA HF40U-750	5	750	9	7.5	821	9.5	7
	15	750	20	16	821	22.5	20
	30	750	40	35	821	42	37

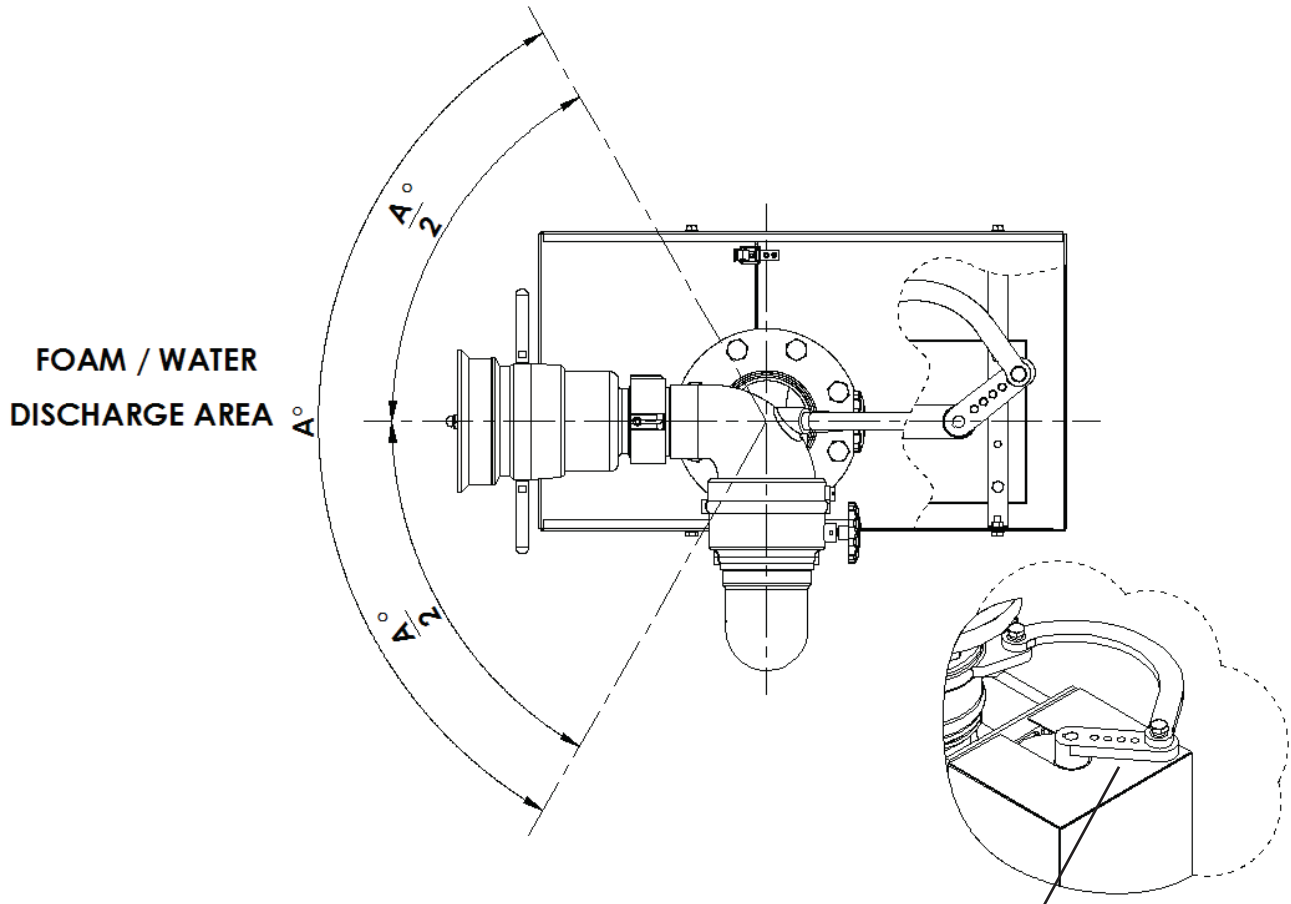
NOTE : VARSHA 40U is non-aspirating, non-inducting Nozzle, Needs premix foam concentrate.
VARSHA HF40U is non-aspirating, self-inducting Nozzle.



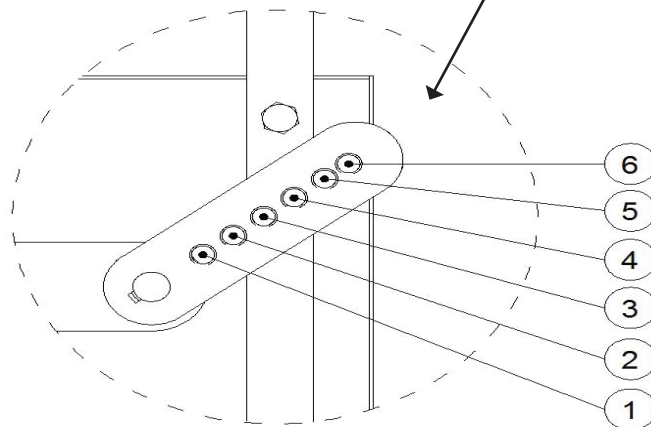


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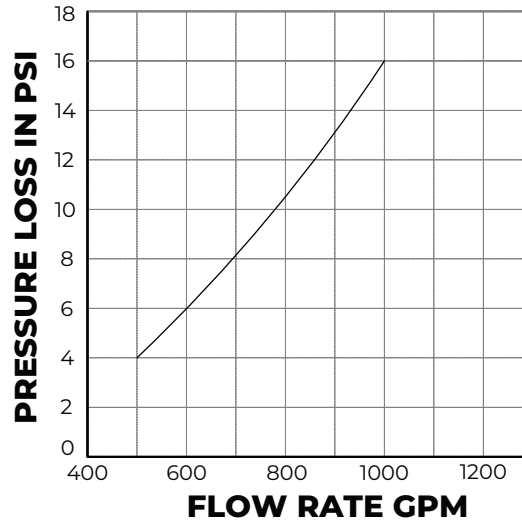
Position No.	A° Oscillation Angle
1	25°
2	45°
3	60°
4	80°
5	100°
6	120°



OSCILLATION ANGLE SETTING DETAILS (Fig.3)



OSCILLATING UNIT WITH MONITOR VAJRA 331



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

of the product including damages for injury to person, damages to property and penalties resulting from any products or 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.

