

# WATER POWERED OSCILLATING MONITOR

Installation, Operations and Maintenance Manual



**HD FIRE PROTECT PVT.LTD.**  
*Protecting what matters most to you*

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## I. INSPECTION

- (1) Monitor and Oscillating Unit are packed separately in two corrugated boxes. Both boxes are packed in one outer corrugated box. The joining nut-bolts & gasket are attached to the oscillating unit.
- (2) Inspect the external box for any possible damage. If damage observed, then take photograph and inform HD FIRE Sales.
- (3) Unpack the unit and inspect for any sign of damage during shipment. If any damage observed, then take photograph and report to shipper for reimbursement of repair cost from the freight company or insurance claim.

## II. INSTALLATION MATERIAL & TOOLS REQUIREMENT BY USER/INSTALLER

- (1) One 100 NB flange gasket to suit the flange ANSI Class 150, or as ordered size of flange inlet.
- (2) M16 x 75mm long or 5/8" x 3" long bolt with nut - 8 units for fixing Oscillating unit to stand post.
- (3) Two box wrenches to tighten the nut bolts.
- (4) Garden hose with sufficient length to connect from water supply source to monitor oscillating unit.
- (5) Monitors if stored for six months from shipment date, then a grease gun will be required.
- (6) Clean rugs and carry out maintenance approved solvent cleaner.

## III. INSTALLATION

- (1) 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.
- (2) Clean the surface of the monitor mounting flange. Use a wire brush if necessary to ensure that the pipe mounting flange is free from scales or rust.
- (3) Place flange gasket on the mounting flange.
- (4) Remove the sticker of inlet & outlet flanges of oscillating unit and clean the surface.
- (5) Place the oscillating unit carefully on pipe mounting flange and ensuring that the gasket remains centered on the flange. Insert the bolt in appropriate holes and hand tighten the nuts. Use two box wrenches to tighten the nutbolts. Make sure to tighten the nuts in an alternate manner, from one side of the flange to the other side.
- (6) Once the oscillating unit is fixed to pipe mounting flange, place gasket on top flange of oscillating unit. Before placing the gasket, make sure the nut bolts attached to oscillating unit are removed and the sticker on flange is removed. Place monitor carefully on oscillating unit and insert the bolts in appropriate holes and hand tighten the nuts, holding the monitor in place. Use both wrenches to tighten the nuts & bolts. Make sure to tighten the nuts in alternate manner, from one side of flange to the other side, ensure that the bolts do not touch the cover. A torque wrench may be used.
- (7) Remove the nozzle from the box, clean if required and verify that the nozzle gasket is in place. Screw the nozzle carefully to the monitor outlet.
- (8) The monitor handle provided with monitor needs to be screwed with monitor.

With this, Monitor installation is completed.

## IV. MONITOR OSCILLATION ARC ADJUSTMENT

- (1) Loosen the vertical elevation knob of monitor and adjust the nozzle to the desired angle. If required nozzle elevation angle is not available, then raise the nozzle to 20 - 25 degrees above the horizontal plane. This will ensure that the water stream is directed towards the ground, damage equipment or injure personnel in front of the monitor. Tighten the elevation knob clockwise, until tight, or to where it can no longer be turned comfortably by hand.

### CAUTION :

- (1) Do not use a wrench or any other device to tighten the monitor elevation or rotation knob; use of wrench or other device may cause damage to the monitor.
- (2) Loosen the horizontal rotation knob of monitor. At this time it should be possible to freely rotate the upper portion of monitor 360 degree left and right. If rotation is not easy, then the swivel joint needs to be greased.

For accurate positioning of the stream, position the monitor as shown in Fig.1. The monitor is fully adjustable upto 360 degree and maximum field of oscillation is 120 degree.

To adjust the arc of oscillation, follow following steps:

- (i) Unlock the retaining clip on top of the box housing and sliding the two pieces of protective cover to the left and right.
- (ii) Arc of oscillation can be set at 25°, 45°, 60°, 80°, 100° and 120° by unscrewing the bolt on link and fixing at desired angle as marked in Fig.1.
- (iii) Refix the top protection cover.
- (iv) The angle of oscillation can be checked by connecting garden hose test connection on flowing water through monitor. Refer Fig.2 for garden hose test connection.

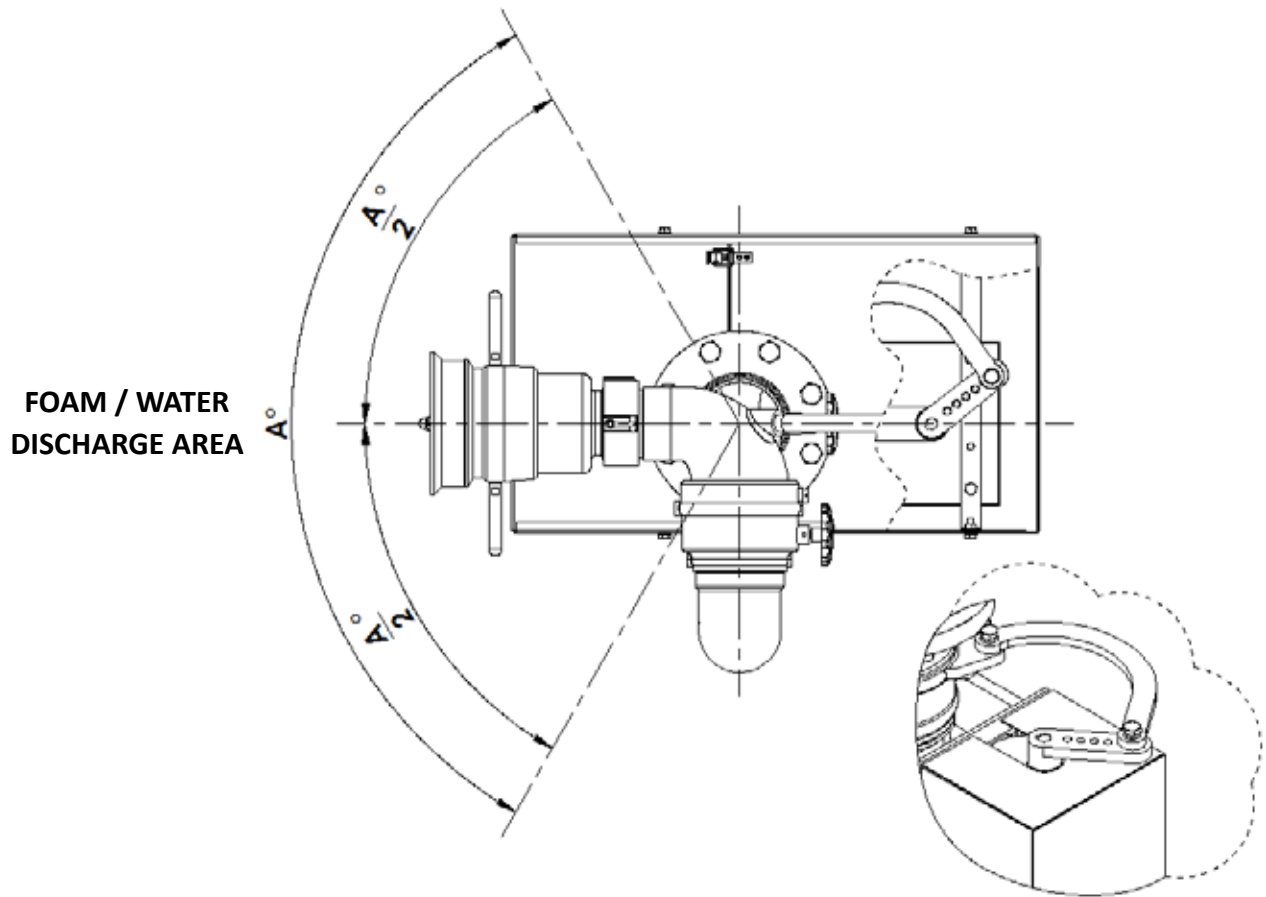
Follow following for testing using garden hose test connection :

- (i) Set the Three-way Valve to 'TEST' position.
- (ii) Open the speed control valve.
- (iii) Turn on the water supply valve.
- (iv) Watch the monitor oscillation.
- (v) On satisfactory observation, shut off water supply and disconnect the garden hose. **Reset the three-way valve from 'TEST' position to the RUN position.** Replace the protection cover & latch.

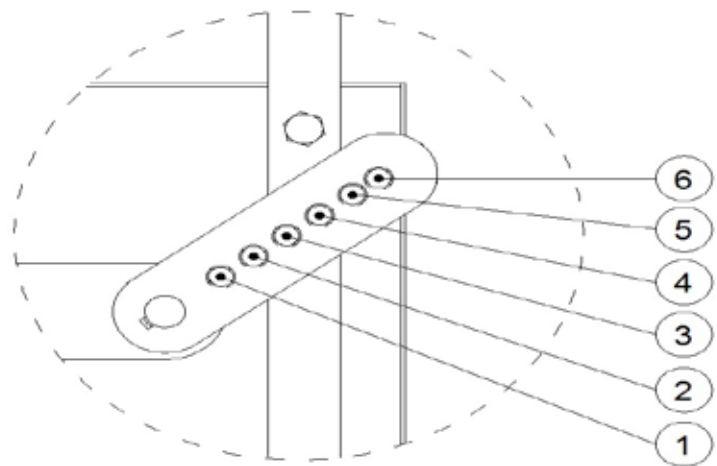
In case the monitor does not cover the desired area, then follow above procedure to adjust the arc. The monitor can be tested with full water flow.

To adjust monitor nozzle stream to diffused pattern follow following steps:

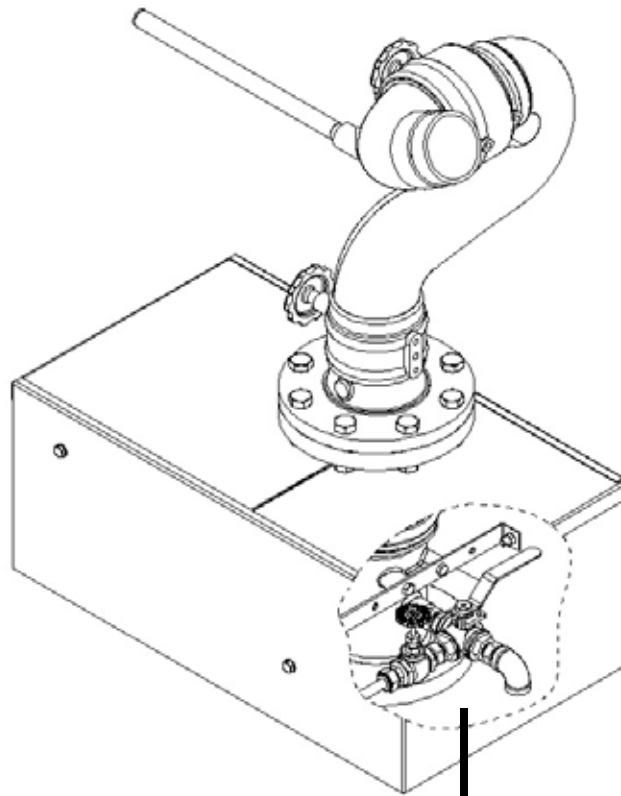
- (i) Close the speed control valve by opening top protection cover.
- (ii) Fully open water control valve.
- (iii) Now adjust the monitor nozzle to the desired pattern i.e. straight stream to full fog.
- (iv) Now the speed control valve may be opened slowly to watch the field of oscillation and flow pattern.
- (v) Speed control valve opened to set the speed of oscillation.
- (vi) If the oscillation arc is not centered the target, then close the speed control valve and loosen the horizontal rotation lock and adjust the monitor. After adjustment, tighten the rotation lock and open the speed control valve.



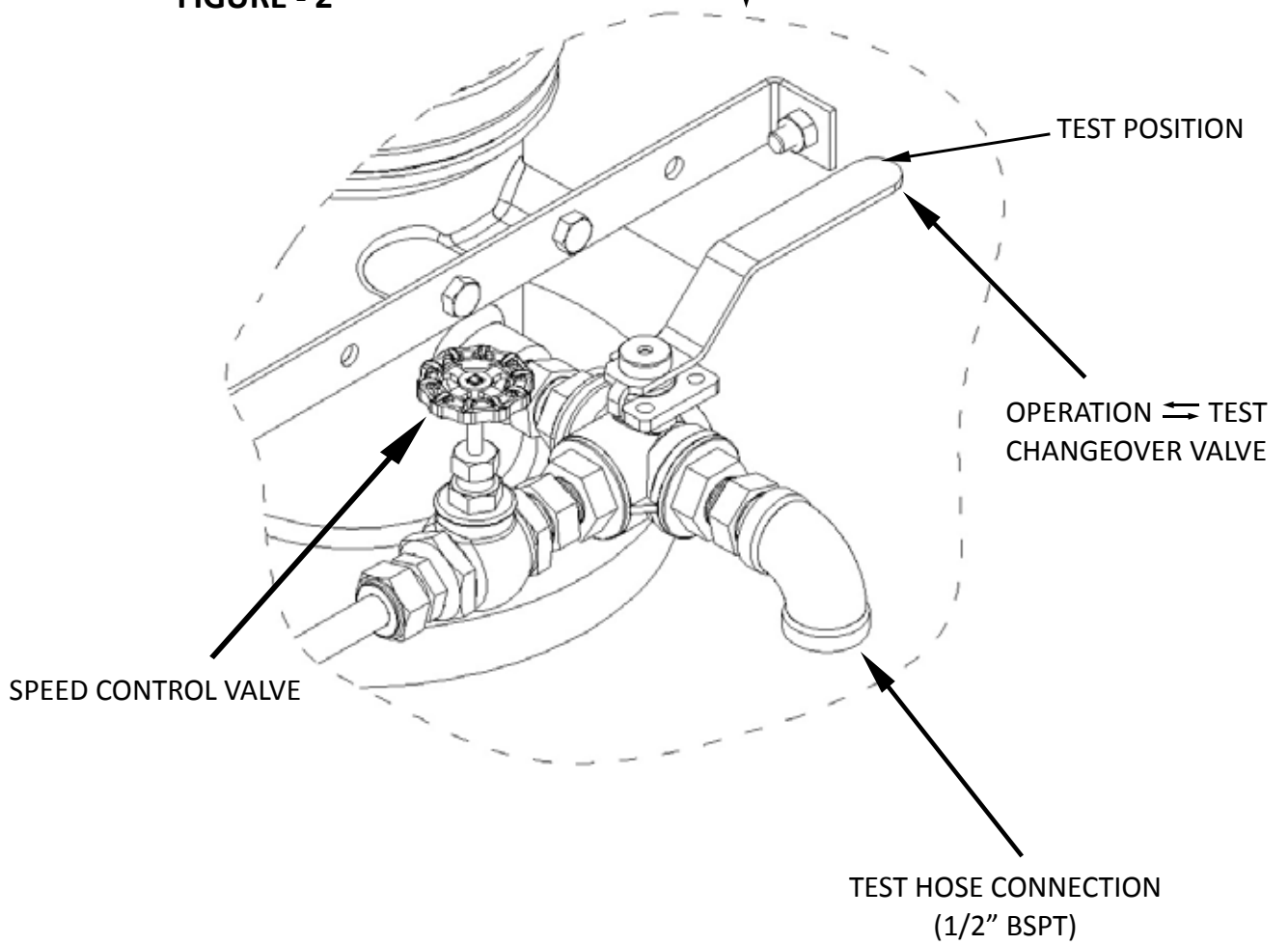
POSITION NO.	$A^\circ$ OSCILLATION ANGLE
1	$25^\circ$
2	$45^\circ$
3	$60^\circ$
4	$80^\circ$
5	$100^\circ$
6	$120^\circ$



OSCILLATION ANGLE SETTING DETAILS (Fig.1)



**FIGURE - 2**



## **⚠ CAUTION:**

**ONLY TRAINED PERSONAL IN FIRE-FIGHTING EQUIPMENT INSTALLATION & OPERATION MUST USE THE MONITOR. APPROPRIATE GUIDANCE & TRAINING MUST BE GIVEN TO REDUCE THE RISK OR INJURY.**

**OSCILLATING UNIT MAY WEAR AND TEAR, HENCE OPERATION OF MONITOR SHALL BE LIMITED TO MINIMUM TIME OF ROUTINE INSPECTION AND NOT TO BE USED FOR ANY OTHER PURPOSE OTHER THAN FOR FIRE FIGHTING.**

## **⚠ 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.**

**DO NOT TRY TO STOP THE MONITOR OSCILLATION, AS THE MONITOR CAN CAUSE INJURY TO PERSON; THE GEAR MAY SLIP AND OSCILLATION MAY STOP. THIS MONITOR SHOULD NOT BE USED FOR ANY OTHER PURPOSE, OTHER THAN FOR FIRE FIGHTING.**

## **MAINTENANCE**

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 three months 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.

The gear box is oil filled, so no oiling or greasing is required.

Each monitor must be operated with full flow once in a year or in accordance to the guidelines of the local body or AHJ.

The owner is responsible for maintaining the equipment in proper operating condition.

## **TROUBLESHOOTING**

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

- Check if 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 drain 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 for long time, then clean and operate at 7 Kg/sq.cm. for few minutes, to make sure the line link is free to move.
- The oscillating unit may wear and tear, hence the unit needs to be opened and inspected after approximately two 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.

## 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.