

EVEREST ANALYTICALS, THANE

MANUAL

GENERAL INSTRUCTIONS :

1) G.A DRAWING & BILL OF MATERIAL.

2) TROUBLE SHOOTING

3) WARRANTY CERTIFICATE

4) CATALOGUES

Pneumatic lifting unit are designed to lift load to the required height by applying pneumatic pressure. The unit being supplied has been designed to lift a dead weight load of 150 & dynamic load of 120 kilograms at a rated air pressure of 6 kg/cm².

- The following forms the integral parts of the equipment.
- Cable cylinder Bore 75 mm & working stroke 1 meter:- For lifting the motor
- ¼ " 5/2 way 3 position 230 volts Ac double solenoid valve:- For changing the direction of lifting & stopping the motor at required desire height. Silencer are provided at the exhaust port to reduce noise.
- ½ " filter regulator & lubricator unit:- The FRL unit is to be installed immediately before the solenoid valves, The filter unit of the FRL has a purpose of supplying clean & dry air to the solenoid valve and cable cylinder ,The regulator regulates the upstream pressure to the desired down stream pressure thereby eliminating the chance of equipment wear & damages due to excessive pressure .Optimizing the efficiency & energy conservation by reducing air losses .On line lubricator prevents wear and tear of equipment due to want of lubrication.
- Control valves: - Flow control valves control the speed of lifting
- **GUIDANCE FOR INSTALLATION:** The unit is accurately aligned at factory before dispatch. The equipment are packed and supplied in wooden box with 1) Cable cylinder and motor mounted on a square frame and 2) 4nos of stands along with side frame & FRL unit separately.

The stand and side frame is to be bolted according to the markings on the stand & square frame. The foundation must be sufficiently strong to absorb the vibrations The whole assembly may than be grouted. Ensure that there is no vibration of the pump set while running. The alignment of the equipment should be rechecked after the complete unit has been installed.

The solenoid valve & FRL should be installed at the position indicated on drawings

Under no condition the equipment should be operated without proper foundation to avoid tilting & damage of the equipments.

START-UP PROCEDURE: Before starting ensure that the unit is installed according to the drawing with motor position downwards.

- 1) The regulator should be in the de-pressure condition (pull the regulator knob and rotate it in anti clock wise direction for de -pressurizing)
- 2) Fill the lubricator unit with oil up to the oil level markings. We recommend Enclor 44 /Servo 32 oil. The lubricator is designed to fill oil under pressurized condition.
- 3) Electric Supply to Solenoid valve is 230 VAC & Flow control valve is in shut off position

- 4) Do the necessary piping & electric connections as per the drawing
- 5) Now start the pneumatic supply & adjust the regulator to 4 kg/cm² or (as per the requirement of load)
- 6) Start the electric supply of solenoid valve and adjust the flow control valve to control the speed.

Note :- In case of power failure the solenoid valve can be operated manually by means of manual (blue) button

- 7) Once the desire speed of motor lift is set, adjust the downward speed by the second control valve.
- 8) To motor can be stop in between by just cutting off the solenoid supply.
- 9) Adjust the lubricator knob to give a oil drop of 1 drop per 20 SCFM.
- 10) See that all piping connections are tight and leak free.

SERVICE MAINTENANCE: The equipment generally give prolong trouble free service if maintained properly The maintenance consist of:

- 1) Periodical checking of alignment of four columns on which the motor slide pump and drive.
- 2) Greasing of bearings & column regularly.
- 3) Regularly checking the oil level in the lubricator & replenishing it to the required level.

In case it is necessary to dismantle or open the unit, It can be easily done by removing the bolts without disturbing the Foundation.

TROUBLE SHOOTING CABLE CYLINDER		
PROBLEM	PROBABLE CAUSES	SOLUTION
1) cable cylinder Not taking the load	a) Sufficient pressure not being developed	a) Adjust the regulator pressure b) Adjust flow through Flow control Valve
	b) Piston seal leakage	Inside the cylinder leakage past the piston seals can cause sluggish movement or settling of the cylinder under load conditions. This occurs due to leakage of worn piston seals or rings.
	c) Rope seal leak	Replace rope seal
	d) Rope damage	Check for scratch on rope
	e) Column bearing damage /rust	Grease & change bearing
	f) Leakage from fittings & pipe	Replace leaking fittings /Pipe
	g) Leakage from FRL Unit	Refer Trouble Shooting of FRL
	h) Creeping Cylinder	When a cylinder is stopped in mid-stroke and it creeps, check for internal leakage. A worn control valve can also cause creeping. Refer Trouble Shooting of Solenoid Valve
	i) Cylinder Sticking or Binding	Check for dirt or gummy deposits or air leaks. Check for misalignment, worn parts or defective packing
	J) Repeated Seal Failure	Check for contaminants in oil and cylinder, barrel/ Rope.

TROUBLE SHOOTING SOLENOID VALVE & FLOW CONTROL VALVE

PROBLEM	PROBABLE CAUSES	SOLUTION
<p style="color: red;">A) Flow Control Valve 1) Fails to control the flow</p>	<p>a) Worn out needle b) Worn out adjusting thread c) Lock Nut Jammed</p>	<p>In Case Of a& b Replace the valve For c loosen the lock nut</p>
<p style="color: red;">B) Solenoid Valve 1) Fails to Operate 2) Leakage from Solenoid Valve exhausts Port. 3) leakage in pilot port (hole above solenoid coil.)</p>	<p>1.a) check supply connection and voltage as per specification b) Supply pressure below or above working pressure range 2.a) Spool seal Damage & worn Out b) Cable cylinder Piston seals leakage Plunger seat Damages.</p>	<p>1) Make connection as per specification. b) set supply pressure as per specification 1.a) Replace worn out seal b) Replace piston seal Open the housing & check the plunger seat for damages. Replace the faulty part.</p>

OPERATING INSTRUCTIONS FOR 3 POSITION SOLENOID VALVES WITH MANUAL OVERRIDES.

1. **SUPPLY AIR:**

Supply Filtered Lubricated Air to the valve. Use recommended Oil to avoid softening of Seals which may lead to malfunctioning of Valves.

2. **CONNECTION:**

Ensure Voltage availability as rated on Name Plate of the Valve.

3. In case of leakage in Midget, Globe or Diaphragm Valves, Open the housing & check the plunger seat or diaphragm for damages. Replace the faulty part.

4. ***MANUAL OPERATION:***

a. Ensure Manual Override position to OFF prior to operation of Valve. (Rotating the Manual Override in CLOCKWISE direction shall lead to functioning of Valve & Vice Versa).

b. Ensure Manual Override Knobs to OFF position in case of Double Solenoid Valves. To operate, rotate any ONE of the Manual Override in CLOCKWISE direction. Ensure the other in Off position as this will cause leakage and manufacturing of valve.

c. Valves with Manual Override are recommended to mount in UPRIGHT POSITION.

OPERATION/ INSTRUCTION MANUAL

ASTRA SERIES LUBROSET UNIT

Filter:

Depressurize the filter for cleaning or repairing.

For servicing, rotate the bowl anti-clock wise. Disassemble the internal assembly like plain baffle, filter element, element stud, deflector etc..

Carefully examine each part and replace the damaged parts or just clean the assembly with soap water.

Regulator:

Shut off the inlet pressure and depressurize the regulator before cleaning and repairing.

To open the bonnet, unscrew the bolts. Examine the diaphragm & the diaphragm chamber. Assemble the spring, spring push cap and place the bonnet back on the body and bolt.

To service the plunger assembly unscrew bolts at bottom - nut side to disassembly. Examine the plunger, plunger "O" ring and plunger spring. Replace the damaged part or just clean and reassemble.

Lubricator: For cleaning or repairing of lubricator, shut off the inlet air pressure. For servicing, loosen the bowl ring by rotating anti- clockwise. Disassemble the internal assembly like ventury parts or just clean the assemblies with soap water.

Note: 1) Avoid using solvents like thinner, kerosene etc. for cleaning n\bowls or others Parts as same may react.

2) Polypropylene element are not cleanable.

4) Service kit are available with us. You may place your order for the same at the below mentioned address or send the unit to us for servicing.

WARRANTY CERTIFICATE

We hereby warranty that all items supplied against the above referred purchased order are free from all defects and faults in material, workmanship, and manufacture and is of highest grade and consistent with the established and generally accepted standards of material of the type ordered, and in full conformity with the specifications.

This warranty shall be valid for 18 months from the date of despatch / 12 months from the date of installation whichever is earlier for satisfactory operation.

If any defect or fault is found in items supplied during the warranty period, it shall be duly repaired or replaced free of cost.

The material used is of recent manufacture and not older than one year from the date of dispatch.

The parts of the material supplied against abovementioned P.O. are interchangeable against existing parts.

This warranty shall not apply to rapidly wearing parts, natural wear or damage caused by negligent, improper careless handling or maintenance at Purchaser's or consignee's premises.

Product : Motor Lifting unit 1 set with accessories consisting of

1. Cable Cylinder Bore Dia 75 mm Stroke 1000 mm.	QTY
2. Everest Make 2 HP 200 LPH Pump along with plate.	1 No
3. ½ “ Siemag Make Astra Series Lubro set	1 No
4. ¼” 3 position 230 VAC 5/2 way Solenoid Valve.	1 No
5. ¼ “ Flow Control Valve & ¼ ‘ Elbow	1 No
6. Motor lifting column (4nos) along with Top, Base & platform Plate (1 no each).	1 No

For *EVEREST ANALYTICALS*

Authorised Signatory