



INSTRUCTIONS MANUAL

Keep for future use!



HIGH PRESSURE HEATER 3KW

Serial Number:



VR COATINGS PVT.LTD.

J-138, MIDC PUNE – 411 026, INDIA.

TEL: (020) 27122331, 27121890 FAX: (020) 27121891,
7475273 E-MAIL: vfdsouza@vsnl.com



WARNING AND SAFETY INSTRUCTIONS

EQUIPMENT IS FOR PROFESSIONAL USE ONLY

⚠ WARNING



HIGH PRESSURE DEVICE FOR PROFESSIONAL USE ONLY

Read and understand instruction manual before use and maintenance. Observe on warnings.



Do not use spray materials containing reactive solvents with equipment containing aluminum, galvanized or zinc coated wetted parts. e.g. Dichloromethane and ethylene chloride can chemically react with aluminum and galvanized or zinc coated parts and cause explosion hazard.

⚠ WARNING



Do not process flammable, explosive, toxic or otherwise hazardous materials without first performing an appropriate hazard analysis.

VR Coatings cannot be an expert in the chemical and biological properties of the infinite number of materials that could be processed in this machine. As sold by VR Coatings, this machine is not designed to safely process hazardous materials unless additional precautions are not taken.

Before processing any material that are (or can react to become) flammable, explosive, toxic or otherwise hazardous, the user must perform a thorough hazard analysis and risk assessment of the entire process and determine the best way to deal with the hazard(s) identified, including contingency plans for dealing with processing errors and object conditions.



It is compulsory to

- know the product and possible hazards.
- store the product to be used in the appropriate areas.
- keep the product used during dispensing in a suitable container.
- Dispose the product according to the regulation of hazardous products in force in the country where the product is used.
- Wore protective equipment designed for that use.
- were glasses, gloves, shoes clothes and mask for breath.

⚠ WARNING



SKIN INJECTION HAZARD. Protect hands and body from high pressure fluids. Relieve pressure before disconnecting hydraulic or other lines and tighten all connections before applying pressure. In case of accidental skin injection, seek immediate” Surgical Treatment”. Failure to follow this warning can result in amputation or serious injury.

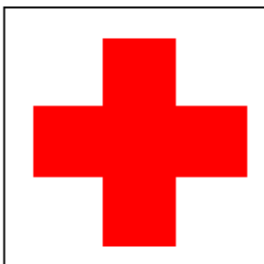


An airless spray gun requires that fluid be introduced to it at very high pressure. Fluids under high pressure, from spray or leaks, can penetrate the skin and inject substantial quantities of toxic fluid into the body. If not promptly and properly treated, the injury can cause tissue death or gangrene and may result in serious, permanent disability or amputation of the wounded part. Therefore extreme caution must be exercised when using any airless spray equipment.

IF YOU ARE INJECTED, SEE A PHYSICIAN IMMEDIATELY. DO NOT TREAT AS A SIMPLE CUT!

NOTE TO PHYSICIAN:

Injection into the skin is a serious, traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is concerned with some exotic coatings injected directly in to the bloodstream. Consultation with a plastic surgeon or a reconstructive hand surgeon may be advised



⚠ WARNING**ELECTRIC SHOCK HAZARD**

Improper grounding, wiring or usage of the system can cause electric shock.

- All electrical wiring, must be done by a qualified electrician and comply with all local codes and regulations.
- Connect only a grounded power source.
- Turn off and disconnect power at the main switch before disconnecting any cables and before servicing equipment.

⚠ WARNING**BURN HAZARD**

This equipment is used with heated fluid, which can cause equipment surfaces to become very hot.

To avoid serious burns:

- Do not touch hot fluid or equipment.
- Allow equipment to cool completely before touching it.
- Wear heat protective gloves and take special care if fluid temperature exceeds 43°C.

⚠ WARNING

COMPONENT RUPTURE The system is capable of producing high pressure all components in the system must have a maximum working pressure capacity, not less than the pressure rating of the pump.

SERVICING Before servicing, cleaning or removing any part, always shut off power source, carefully release pressure in fluid portions of the system and set safety locks on guns and equipment



PRESSURE RELEASE PROCEDURE

- A Set trigger safely in a locked position.
- B Shut off pump(Close main air supply valve and back-off air regulator).
- C Release fluid pressure from entire system (Open drain valve) and trigger gun.
- D Reset trigger safely in a locked position.

⚠ WARNING



High velocity flow of material through equipment may create static electricity. All equipment being used must be properly grounded to prevent sparking, which may cause fire or explosion.



Due to static electricity potential generated by the high velocity of fluid through the pump, hose and tip, sparking may occur and the system may become hazardous. This can result in an explosion and/or fire, if every part of the spray equipment is not properly grounded. Be sure that both the object being sprayed and the airless equipment are grounded. This can be done by attaching a static wire to water piping or building structural members known to be earthen. If the hose does not contain a static electricity conductor, a static wire must be attached from the spray gun to the earth.

⚠ CAUTION



Before any adjustment, inspection, maintenance, cleaning, removing work always shut off the power source, carefully release pressure in fluid of the system and set safety locks on guns.





ALWAYS follow the coating or solvent manufacturer's safety precautions and warnings. Never spray flammable material near open flames, pilot lights or any other source of ignition.



If you experience any static sparking or slight shock while using the equipment, stop spraying immediately. Check the entire system for proper grounding. Do not use the system again until the problem has been corrected. Follow material supplier's instructions carefully and ensure adequate ventilation of working area to prevent health hazards.

⚠ CAUTION



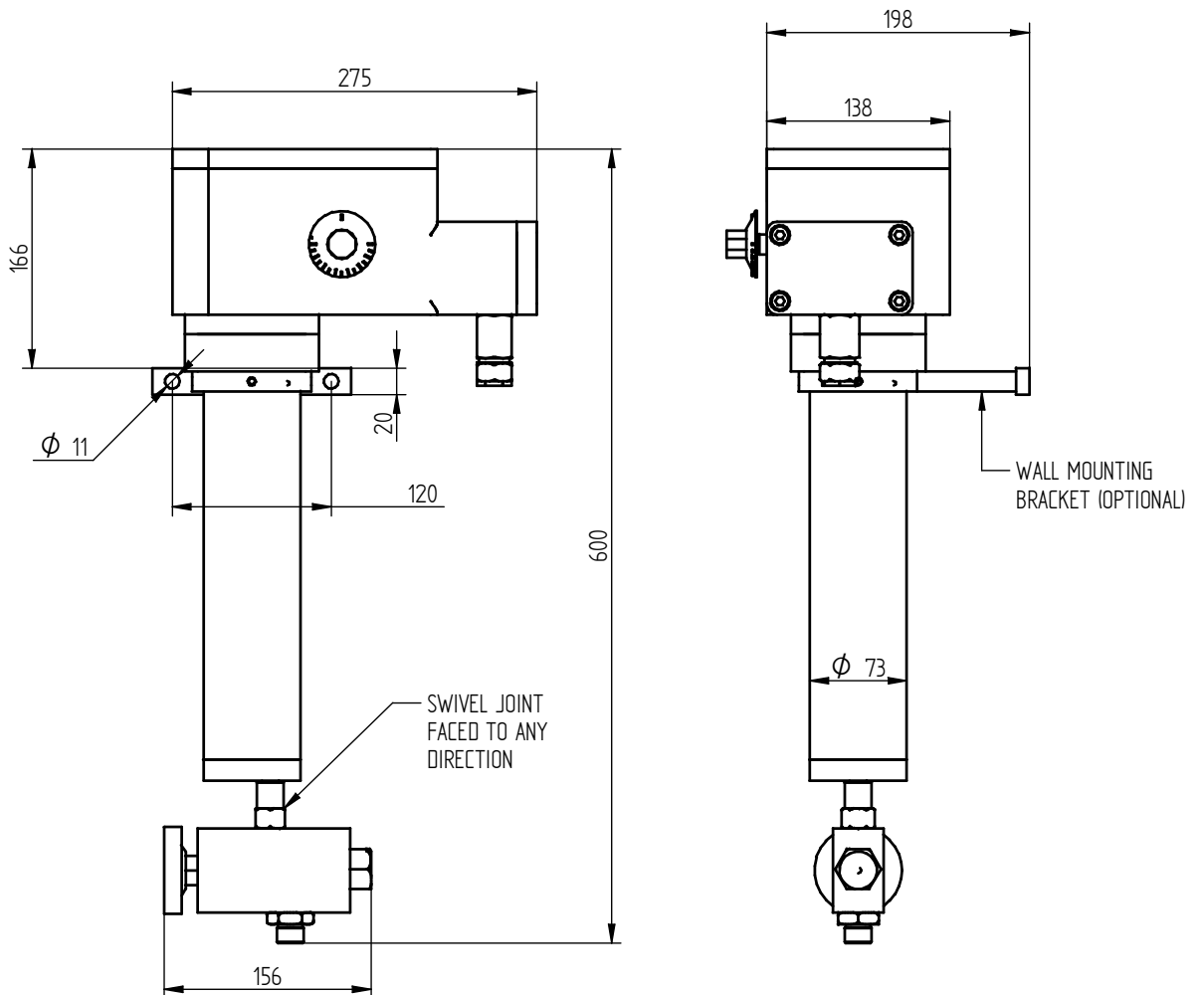
FLUSHING/CLEANING

Always flush the unit into a separate metal container with the spray tip removed and the gun held firmly against the side of container to ensure proper grounding and prevent static discharge, which could cause serious bodily injury.

TECHNICAL SPECIFICATIONS

IN LINE HEATER 3KW

VOLTAGE (50 Hz.-SINGLE PHASE)	230 VAC
CURRENT	14 A
MAX TEMPERATURE	100 °C
MAXIMUM WORKING PRESSURE	400 BAR
WEIGHT	28 Kg.
WETTED PARTS	ALUMINUM, 304 STAINLESS STEEL, PTFE, SILICON.



TROUBLE SHOOTING

Problem	Cause	Solution
Heater will not heat.	No current.	Check circuit and fuses. Check continuity of primary thermostat, backup thermostat. Check continuity of thermostat
Too low temperature.	Wrong temperature setting.	Adjust setting.
	Fluid passage clogged.	Flush regularly.
	Too high flow rate.	Reduce flow rate or use two heaters.
Temperature too high.	Wrong temperature setting.	Adjust setting.
	Primary thermostat failed	Replace.
Too much pressure drop or fluid will not flow.	Clogged fluid passages.	Flush regularly.
Heater fittings leak.	Loose or damaged fittings.	Tighten fittings.

INDEX

DECLARATION OF CONFIRMITY	1
SAFETY LABELS	2
WARNING AND SAFETY INSTRUCTIONS	3
OPERATING INSTRUCTIONS	8
MAINTAINANCE	13
TROUBLESHOOTING	14
TECHNICAL SPECIFICATIONS	15
DRAWINGS AND PARTLISTS	
NOTES	16
WARRANTY	17



WARRANTY

VR Coatings warrants all equipments manufactured by us, as long as it is bearing original identification plate, to be free from defects in material and workmanship for a period of one year from ex-works date. VR Coatings will repair or replace any part of the equipment proven defective. The warranty applies only when the equipment is installed, operated and maintained in accordance with VR Coatings written recommendations.

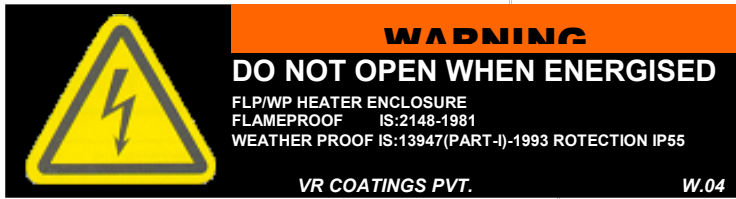
Warranty claims found to be defective shall be verified and confirmed by VR Coatings.

Our warranty does not cover and VR Coatings shall not be liable for any malfunction, damages, or fair wear and tear caused by faulty installation, misuse, abrasion, corrosion, inadequate or improper maintenance, negligence, tempering, accident or incorporation of non VR Coatings parts, non observance of VR Coatings recommendations.

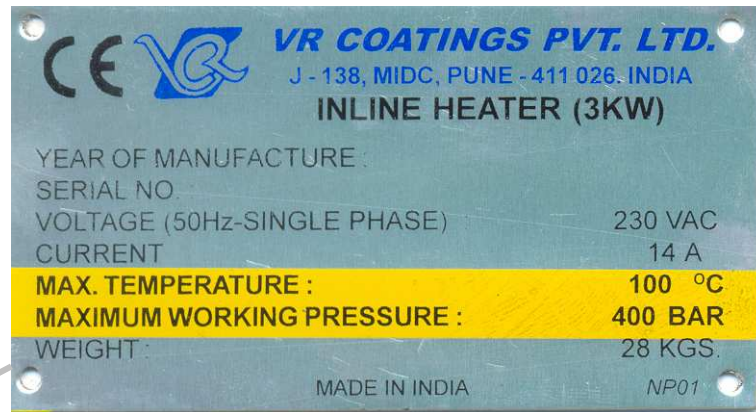
This warranty only consists of replacing the parts returned to our plant prepaid transportation and proven defective by us. If inspection of the equipment /part does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the cost of parts, labor and transportation. VR Coatings shall not be liable for any losses resulting from a production breakdown.

Material bought in equipment, which is sold but not manufactured by VR Coatings, will be subject to the manufacturer's warranty. VR Coatings will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

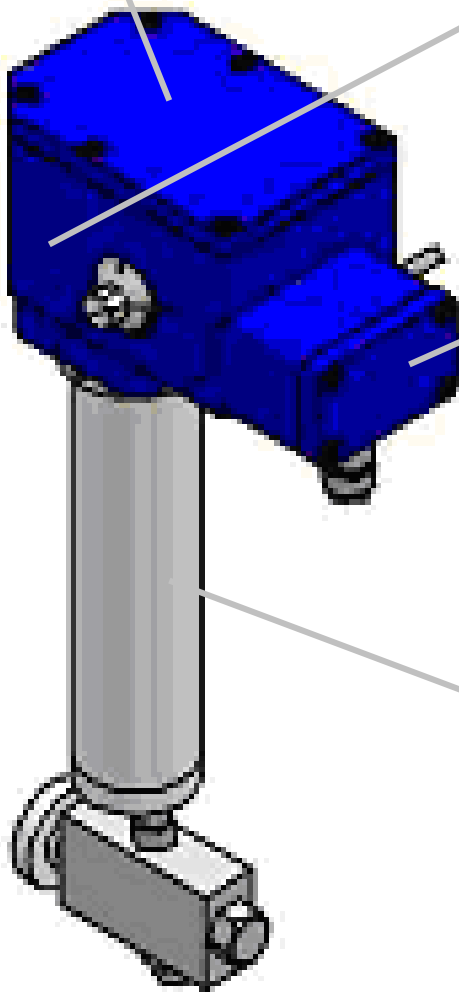
SAFETY LABELS AND NAMEPLATE



Label No.W.04



Name Plate NP01



Label No.W.07



Label No.W.06

Safety labels free of charge on request

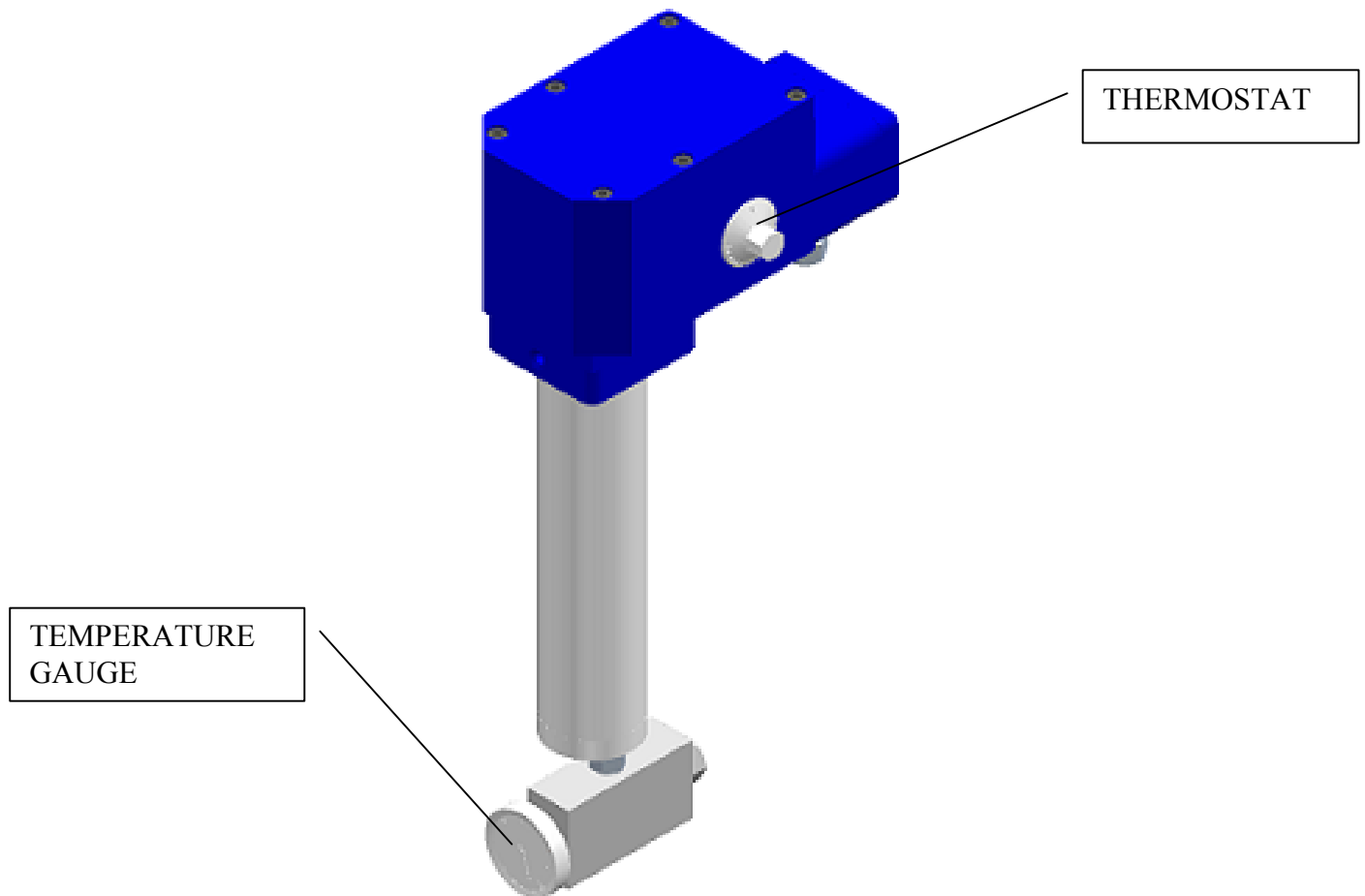
OPERATING INSTRUCTIONS

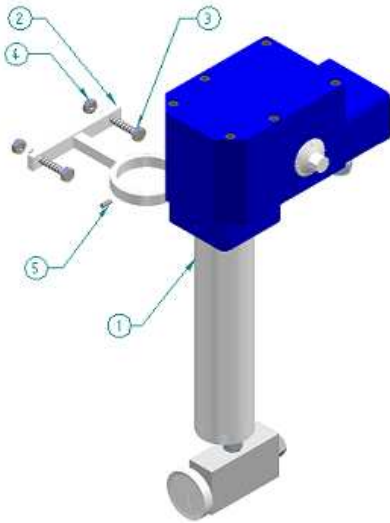
INSTALLATION

- Select system components as per the temperature and pressure ratings specified for the heater equipment.
- Place the heater assembly away from all flammable materials and also to avoid direct contact with hot metal surface.
- Insulate and/or label lines and components exposed out from the heater assembly that may become hot.



To avoid loss of heat between the heater assembly and spray gun, it is important to mount the heater close to the spray area. This will help in maintaining of the desired temperature without undue heat loss.





MOUNTING

- The heater has a surface temperature of 250°C Follow temperature code when locating the heater.
- Heater controls must be within easy reach of the user. The mounting surface must be able to support the weight of the heater and fluid, and any stress caused during operation.

Wall Mounting:

See adjoining figure

- For mounting on the wall, a wall bracket (2) is required. (Part no.41 005 32 07)
- Use the wall bracket as a template to mark bolt holes.

Bracket (part no. 41 005 32 07) (See mounting details.)

Fluid Connections & Accessories:

1. Install a fluid shut-off valve fluid inlet. Do not over-tighten. Connect the fluid line to the valve.
2. Provide a means for adequately handling fluid expansion caused by heat. Options include :
 - Use flexible hoses between heater and gun.
 - Install a properly sized accumulator downstream from the heater.
 - Install a pressure relief valve, which is preset to relieve pressure when it exceeds the system maximum working pressure.
 - Continuously circulated drain.

CAUTION



Never install a shut off device between the heater and gun as this will trap the heated fluid and not allow for expansion. If a fluid regulator is installed between the heater and gun, never use it as a shut off device.

3. Install a fluid filter, Drain valve and fluid pressure regulator near the heater's fluid outlet. Then connect the fluid line.

Electrical Connections:



Requirements for all installations:

1. The voltage supply should agree with the maximum heater voltage and current rating as specified on the heater nameplate.
2. Conductors used for supply connection must be suitable for at least 105° C.

Hazardous Location Installation Requirements:

1. The heater connection must be made using one of the following options:
 - a. Cable entries of a certified flameproof model.
 - b. Threaded metal conduits.



The above accessories are not provided by VRCPL. Make sure that the accessories are appropriately rated for the conditions of use.

Grounding:

Wire the heater to a properly grounded power supply through the electrical connections and external grounding lug. In a mobile installation, also ground the truck or trailer to a true earth ground.

Determining Proper Fluid Temperature:

Use the lowest temperature setting possible for maximum heater life



In this method of hot, airless spraying the fluid is heated to a temperature just under the boiling point of its most volatile solvent.



Follow **Pressure Relief Procedure** when you stop spraying, and before cleaning, checking or servicing equipment.



PRESSURE RELEASE PROCEDURE

- A. Set trigger safely in a locked position.**
- B. Shut off main power to the heater.**
- C. Circulate fluid for at least 10 minutes to cool the heated fluid and heater.**
- D. Shut off all air and fluid supplies.**
- E. Disengage the safety lock.**
- F. Hold a metal part of the gun firmly to a grounded metal pail, and trigger the gun to relieve pressure.**
- G. Engage the safety lock.**
- H. Have a container ready to catch the fluid, then open the fluid drain valve.**

4. Flushing while installation

The unit has been factory tested using oil emulsion. To avoid contamination of the coating material to be sprayed, be sure the emulsion is flushed from the system before spray operation begins by using a compatible solvent. Do as follows:

- Do not turn on heater yet.
- If using an airless spray gun, do not install a spray tip yet.
- Start the pump according to the instructions supplied with it.
- Turn the system director valve to circulate, and circulate fluid for several minutes.

- Open the spray gun at the last outlet to prime the line. Repeat for all gun stations.
- Engage the gun safety latch.
- Shut off the air supply to the pump.
- Follow the pressure relief procedure.
- Install the gun spray tip.

Setting heater control

1. Set the heater control knob to a trial set point.
2. Start the pump and circulate fluid through the system at very low pressure.
3. After a few minutes, read the temperature on the thermometer if it does not match the desired temperature, adjust the set point.

⚠ CAUTION



Operating the heater at its highest setting, over 100°C. for long periods of time decreases the heater life and can cause fluid to dry out; which can clog the heater and result in poor finish.

1. Adjust pump pressure and heater set point to the lowest settings needed for good fluid atomization.
2. Set all system backpressure valves to maintain even fluid pressure at all gun stations.

MAINTENANCE

⚠ WARNING



Make sure the main power is off and heater is cool before doing maintenance.

Flushing

Clogged fluid passages are difficult to clean and reduce heating efficiency, flow rate, and pressure. Flush frequently, including whenever system is not in use.

1. Follow Pressure Relief Procedure.



2. Ensure main power is off and heater is cool before flushing. Use a compatible solvent, and follow flushing instructions in your fluid supply and spray gun manual. **Do not turn on the heater until fluid lines are clear of solvent.**

Draining Heater

1. Follow **Pressure Relief Procedure**

2. Remove heater inlet and outlet fittings. Have a container ready to catch the fluid.

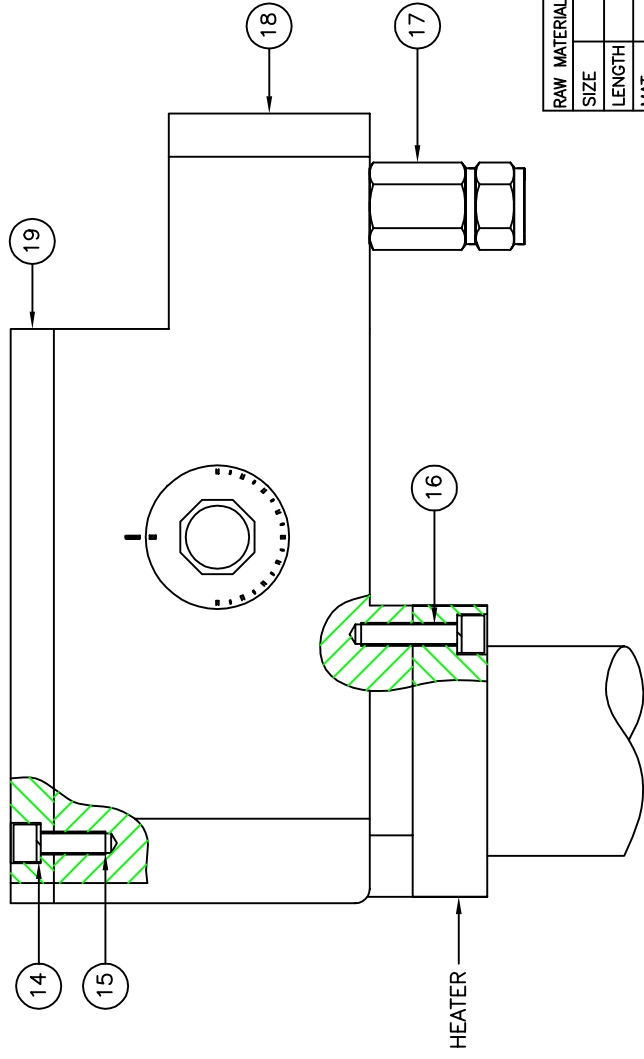
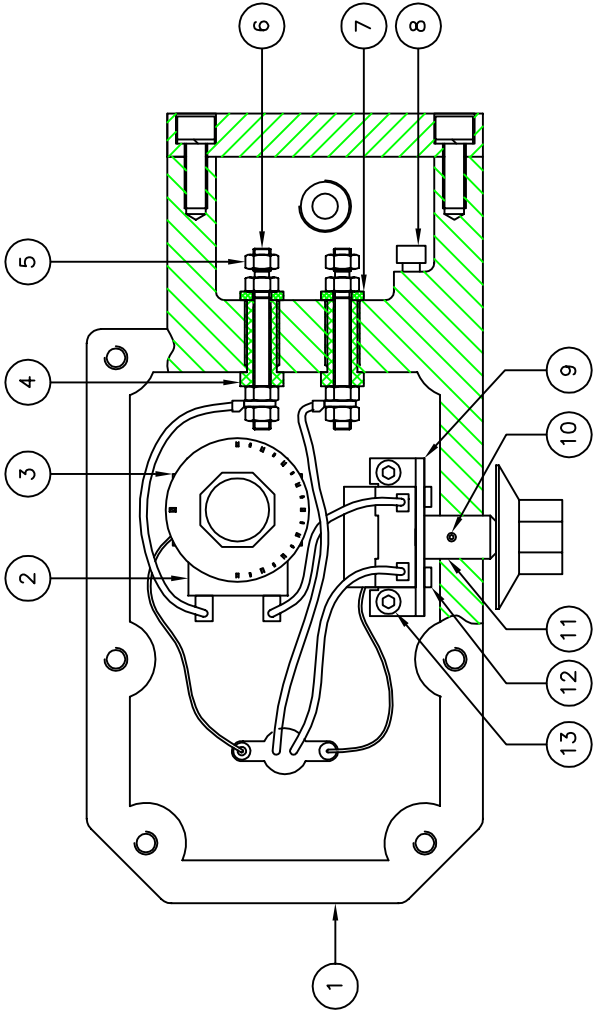
Unclogging Fluid Passages

1. Drain the heater.

2. Pour a high strength, **compatible** solvent into the heater tube to soften the clog.

3. Flush out the clog.

4. Clean all passages thoroughly before reassembling.

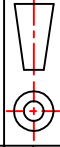


S.NO.	PART NAME	PART NUMBER	QTY.
19	TOP COVER PLATE	41 005 018 06	1
18	SIDE COVER PLATE	41 005 019 06	1
17	CABLE GLAND	41 006 008 00	1
16	ALLEN BOLT M8x30	15 330 009 07	4
15	ALLEN BOLT M8x20	15 320 009 07	10
14	SPRING WASHER	19 003 009 07	14
13	ALLEN BOLT M5x10	15 310 023 07	3
12	CSK SCREW M4x5	15 505 024 07	4
11	EXTENSION ROD	41 005 021 07	1
10	GRUB SCREW M3	15 604 025 07	1
9	MOUNTING PLATE	41 005 020 07	1
8	ALLEN BOLT M6x10	15 310 008 07	1
7	INSULATING WASHER	41 005 024 45	2
6	TERMINAL BOLT	41 005 023 07	2
5	NUT M6	15 105 008 07	6
4	INSULATING BUSH	41 005 022 45	2
3	MOUNTING BRACKET	41 005 025 01	1
2	THERMOSTAT	49 021 001 00	2
1	CONTROL BOX	41 005 017 06	1

PARTS LIST

RAW MATERIAL DESCRIPTION NOTE:

SIZE	
LENGTH	
MAT.	



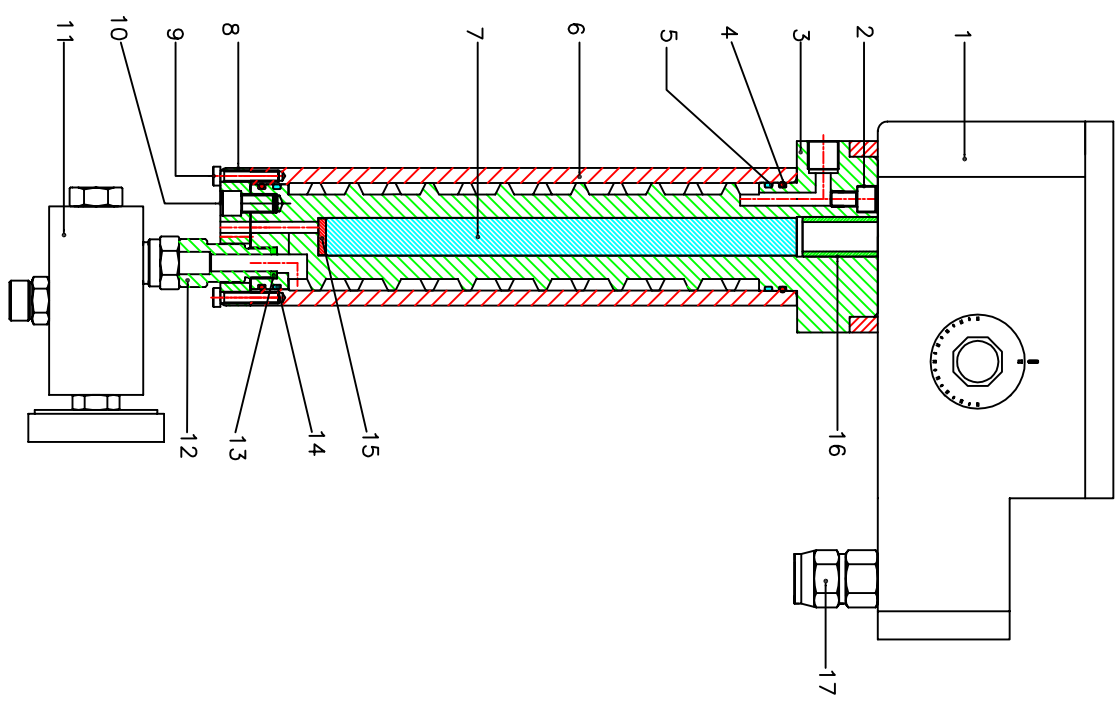
ALL DIMN. ARE IN MM UNLESS OTHERWISE STATED. FOR OPEN TOLERANCE AND SURFACE ROUGHNESS SEE STANDARD CHART DD-01/CH-01. REMOVE SHARP CORNERS. IN CASE OF DOUBT ASK.

SIGN	DRN.	APPD.	PART NAME	HEATER ENCLOSER ASSEMBLY
DATE			PART NO.	41 005 016 00
SCALE	NOT TO SCALE			

VR COATINGS
 J-138, MIDC, BHOSARI, PUNE-411 026
 INDIA

C	GLAND CHANGED & WASHER ADDED	17/07/10	
B	HOUSING CHANGED	30/03/09	
A	OUTLET ASSEMBLY ADDED IN DWG.	03/02/06	
Rev.	Description	Date	Appd.
REVISION			

TECHNICAL SPECIFICATIONS OF HEATER
230 Volt 50/60 HZ.
3000 Watts
14 Ampere
M.W.P. 350 Bar
Inlet / Outlet / 3/8" BSPM
Max. Set Temp. 100°c.



S.NO.	PART NAME	PART NUMBER	QTY.
PARTS LIST			
17	GLAND	41 005 045 00	1
16	BUSH	41 005 004 21	1#
15	WASHER	41 005 044 07	1
14	PACKING RING	41 005 035 21	1#
13	WASHER	41 005 014 03	1
12	CONNECTOR	41 005 006 19	1
11	OUTLET MANIFOLD ASSLY.	41 005 033 00	1
10	ALLEN BOLT M10	15 320 014 19	2
9	ALLEN BOLT M6	15 330 014 19	2
8	BOTTOM PLATE	41 005 005 19	1
7	HEATER CARTRIDGE	41 005 010 00	1#
6	SLEEVE	41 005 001 19	1
5	PACKING RING	41 005 034 21	1#
4	O-RING	41 005 008 49	2#
3	HOUSING	41 005 036 01	1
2	BOLT (M8X1.25X15MM)	15 315 009 19	1
1	HEATER ENCLOSER	41 005 016 00	1

RAW MATERIAL DESCRIPTION NOTE:

SIZE		ALL DIMN. ARE IN MM UNLESS OTHERWISE STATED. FOR OPEN TOLERANCE AND SURFACE ROUGHNESS SEE STANDARD CHART DD-01/CH-01.
LENGTH		REMOVE SHARP CORNERS. IN CASE OF DOUBT ASK.
MAT.	ASSEMBLY	

VR COATINGS PVT. LTD.
 J-138, MIDC, BHOSARI, PUNE-411 028
 INDIA

DRN.	APPD.	PART NAME	HEATER
SIGN	Alibert	PART NO.	41 005 000 00
DATE	14.07.07	SCALE	NOT TO SCALE