

## **OPERATING INSTRUCTIONS RDN VACUUM SIZER**

### **UNCRATE AND INSPECT**

This machine has been carefully crated to assure safe arrival to your plant. It is important that you immediately inspect the equipment upon arrival at your plant and report any possible damage incurred in transit to the trucker.

It is suggested that you uncrate the equipment as soon as possible so that any concealed damage may be discovered.

Compare the packing list with items received and in turn cross check the items with your purchase order and report any discrepancies immediately to RDN MFG. CO. INC. at the address or phone number listed above.

### **DESCRIPTION**

Vacuum sizing tanks provide a means of cooling and sizing the extrudate after it exits the die. They are essential for sizing most hollow rigid shapes. The vacuum compartment is a sealed water bath which operates under vacuum with the vacuum system as part of the unit.

In standard vacuum sizing a hollow mandrel tool, referred to as vacuum sizing sleeve, is mounted inside the extrudate inlet of the tank. The mandrel is machined to the outside shape of the profile or pipe. The mandrel can be in the form of a solid sleeve or stacked wafers. The extrudate passes through the mandrel and vacuum pulls the profile into contact with the inner wall of the mandrel. At the same time, the water in which the mandrel is immersed removes the heat from the extrudate.

The cooling/sizing tank is 12 gauge stainless steel and is divided into compartments. Each section, is equipped with a gasketed hinged lid, and a water level control, and operates as a vacuum sizing compartment.

A handwheel with rack and gear assembly allows movement of the tank in the extrusion direction. A handwheel and enclosed gear arrangement at each end of the tank provides vertical height adjustment (optional). A micrometer adjustment handwheel is used for fine lateral adjustment (optional).

The units are mounted on four grooved casters and height adjusting leveling screws are provided.

The electrical controls include start-stop pushbuttons and magnetic starters with thermal overload protection for each motor.

The Water Saver/Recirculation/Heat Exchanger System supplies cooled water to each compartment spray pipes by a recirculation heat exchanger system mounted on the vacuum sizer frame. A pump circulates the process cooling water through a heat exchanger, the cooling compartments, the sizer tooling, and the water reservoir. The vacuum pump is a direct acting water seal pump with noise muffling system.

Heat is removed from the process cooling water by chilled water from an external source circulated through the other side of the heat exchanger. A return line with manual valve is also provided to return process water directly to the reservoir from the heat exchanger. This allows recirculation of a portion or all of the process water through the heat exchanger and reservoir only.

### **CALIBRATOR OPTION**

The RDN Vacuum Calibrator provides mounting for water cooled vacuum sizer tooling and either immersion or spray cooling for plastic shapes and profiles. A handwheel and enclosed

The unit is also equipped to supply vacuum and water cooling directly to vacuum calibrator tooling. For this mode of operation a vacuum manifold with air vent vacuum regulator, vacuum relief valve, vacuum gauge, and 8 vacuum ports including shut-offs, hoses and fittings is supplied. A water manifold with 8 water ports including shut-offs, hoses, and fittings supplies cooling water for the calibrator tooling. The vacuum pump is a direct acting water seal pump with noise muffling system.

### **INSTALLATION**

The Vacuum Sizer is designed for mounting on inverted "V" track. The tracks should be level to provide good support, centered to the extruder output centerline, and aligned parallel to the extrusion direction. With the Vacuum Sizer setting on the "V" tracks. Move the sizer to the approximate position on the tracks which will be used for normal extrusion conditions. Fill the reservoir to approximately 7/8 full. Plug the line cord into an outlet with the proper line voltage.

This outlet must be protected by a branch circuit disconnect switch fused in accordance with the National Electric Code and any applicable local codes. Open one of the water valves. (If the tank ends are still open, use the valve in the line from the heat exchanger to the reservoir.)

Depress the water pump start push-button. The pump should run and water should flow from the line with the open valve. If water flows the pump rotation is correct and the line phase rotation is correct. If water does not flow, the pump must be reversed. Depress the water pump Stop push-button. Disconnect the line cord from the power plug. Interchange two of the three power leads at the incoming line terminals in the control box. Plug the line cord into the outlet, start the pump, and again check for water flow. Once the water pump is operating properly the other motor rotations will be correct as all motors were phased at the factory. Connect the heat exchanger to the chilled water source. Flexible hose should be used at the heat exchanger to allow movement of the Vacuum Calibrator.

### **LUBRICATION AND MAINTENANCE**

1. Vacuum Pump - Refer to manufacturer's catalog sheets which are part of this manual.
2. Water Pump - Refer to manufacturer's catalog sheets which are part of this manual.
3. "V" Groove Wheels - Grease fittings. Re-lubricate on the plant maintenance schedule using Lithium Base Ball Bearing Grease.
4. Tank Vertical Adjustment (Two) - The threaded rods are lubricated at the factory. Apply a light coat of Lithium Base Ball Bearing Grease every six months.
5. Tank Vertical Adjustment (Two) - Grease fittings. Re-lubricate on the plant maintenance schedule using Lithium Base Ball Bearing Grease.
6. Tank Vertical Guide Rod (Four) Re-lubricate on the plant maintenance schedule using SAE 40 oil.
7. The heat exchanger will require periodic service. The interval between cleanings will be determined by the amount of minerals in the water. Refer to manufacturer's catalog sheets which are part of this manual.