



**COMIND**  
INDUSTRIES

# USER MANUAL

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## CIRCULATION HEATERS



COMIND INDUSTRIES

READ THE INSTRUCTIONS  
BEFORE USING YOUR PRODUCT!



This manual prepared and distributed by Comind Industries is intended to convey recommendations, warnings and requirements regarding your purchase and use of the products described below. Visit the Comind Industries website (<https://www.comind.cl/>) or contact Comind customer service for further product information.

To ensure proper use of the product the user should carefully review this Manual.

**FAILURE TO COMPLY WITH THE INFORMATION PROVIDED IN THIS MANUAL IMPLIES THAT THE USER ASSUMES ALL RISKS AND LIABILITIES ARISING FROM SUCH FAILURE.**

#### QUALITY REVIEW

Make sure that your product has the safety label or nameplate inserted. See the product number on the product label or nameplate.

#### SAFETY INSTRUCTIONS

**NOTE:** Pass-through heaters are designed and manufactured to increase the temperature of a liquid or gas only by the time it takes for the liquid or gas to pass through the heater.

**NOTE:** This heater allows thinning of oils, heavy oil and high viscosity fluids.

**NOTE:** It has an inlet and outlet chamber that allows the flow of whatever is to be heated to pass through.

#### SECURITY STATEMENTS

The user must ensure that the installer uses all relevant PPE (personal protective equipment).



#### WARNING

Risk of Electrical Shock

Any installation and maintenance performed on this heater should only be performed by a qualified electrician in accordance with applicable national and local electrical codes.

Any interruption or disconnection of the protective ground circuit used by this heater will create a hazardous situation and could result in electric shock which in some situations could cause serious injury.

#### WARNING

This product is not designed for use in classified (hazardous, ATEX) locations.



#### CAUTION

Tubular elements may come in contact with each other during shipment. Minor adjustments to the elements prior to installation may be necessary to separate them. Extensive bending of the elements should be avoided, as the dielectric strength between the coil and steel sheath may be compromised.

Comind does not recommend field bending of the elements. However, if the element must be field-bent, consult your local Comind representative for assistance. It may be necessary due to atmospheric conditions / humidity to perform a dielectric test prior to start-up. Refer to the insulation resistance pre-check (megohmmeter) in the Installation section.

### PRE-INSULATION RESISTANCE TEST

During shipping and/or storage, moisture absorption by the insulation material inside the heater element is possible.

To determine if the proper megohm value is present, use a megohmmeter to measure the dielectric insulation resistance between the heater terminal and the heater jacket. This value should be greater than 1 megohm. If the heater is at room temperature and a low Megohm value exists, the following options can be used to dry out the elements and return the Megohm value to an acceptable range: The preferred method is to remove the terminals and place the product in an oven at a temperature no higher than 80 degrees overnight or until an acceptable reading is reached.

The second method is to energize the unit at low voltage in air until the megohm is at an acceptable reading. Care should be taken to prevent the heater jacket from exceeding 150 degrees for steel and nickel alloy elements.

### PROTECTION OF THE HEATING ELEMENTS AGAINST OVERHEATING

The use of automatic temperature controls to regulate the heating process and prevent overheating of the heater is highly recommended to ensure safe heater operation.

All temperature limiting devices must be approved by an appropriate third party and must be applied in the rating for which they are approved. High temperature limiting devices must operate independently from the process temperature control.

\*If you do not have a panel for your heater, consult your COMIND sales representative.

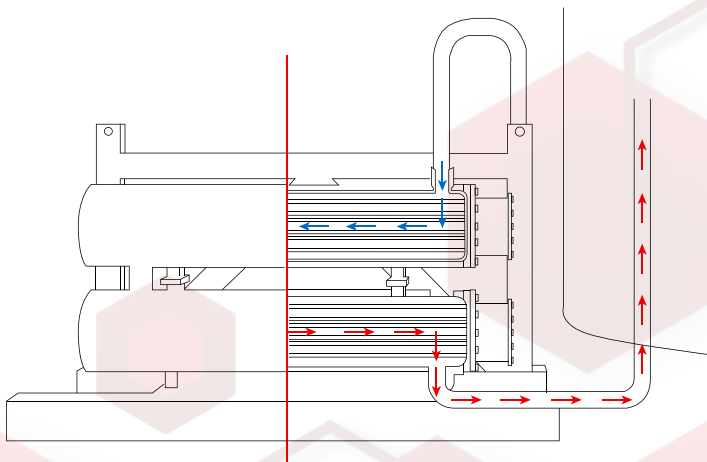
**NOTE:** Some heaters are supplied with thermocouples or thermostats at the customer's request, however, it is still the responsibility of the user to use these devices correctly in the control or protection circuit.

#### CAUTION

The orientation of the heater may be important to ensure the intended heat transfer and safe operation.

#### WARNING

If possible, the elements should be inspected to ensure that they are not touching.



## BEFORE INSTALLING

\*Inspect for any damage that occurs during shipping, storage or handling.

## INSTALLATION

**Note:** It is of vital importance that the user ensures the installation and orientation of the equipment. Failure to comply with this recommendation could lead to problems due to improper fluid flow over the equipment.

**Note:** It is important to have adequate space for the installation.

**Note:** It is essential that the user remembers the fluid inlet and outlet locations, as well as the general temperatures.

FIG. 1

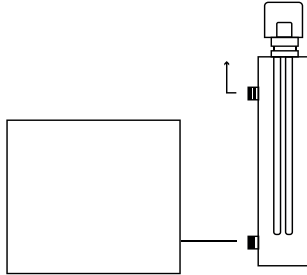
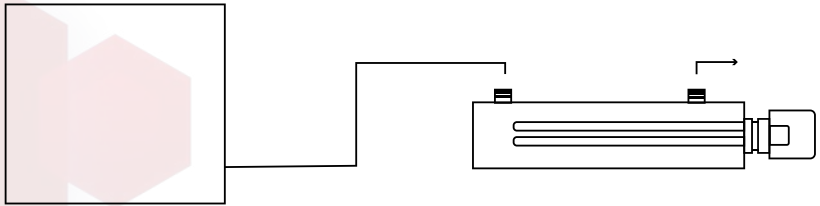


FIG. 2



Proper installation of the heater results in higher heat transfer efficiency, safety conditions and extends the life of the equipment.

1. Remove the equipment from the packaging making sure it is in optimum condition and install the heater in a warm, dry area with low humidity.
  2. Verify the type of inlet (Flange or American union).
  3. Check the orientation of the heater (FIG 1 and FIG 2).
  4. Install the fluids to be heated accordingly (Inlet / Outlet).
5. Make the connection to the control board (Do not consider this point when your heater is a "skid" type heater).
6. Start the equipment verifying the established temperatures.

## **WARNING**

Risk of electric shock

It is the user's responsibility to properly size the ground wire for protective earth / safe ground and to ensure that the impedance is low enough to ensure the safety of a person.

## **PREVENTIVE MAINTENANCE AND CLEANING**

### **RECOMMENDATIONS**

The heater may remain hot for a long period of time after it has been disconnected from the power supply, so make sure that the equipment has cooled down to a suitable temperature before any preventive maintenance is performed.

Corrosion and vibration can cause degradation of the thermal system and electrical interfaces. Follow Comind guidelines for periodically checking the condition of the installed heater and electrical connections.

Check line connections on a regular basis (recommended every 2 months) to make sure they are tight, free of rust buildup and free of dust or dirt accumulation. Retighten as necessary.

If an enclosure is provided, check the inside for rust, dirt or dust. Remove rust if present, with steel wool (or similar) and clean thoroughly with dry, oil-free air. If the enclosure is moisture resistant, check the condition of the cover gasket.

Units immersed in liquid should be removed from the tank and checked periodically for mineral scale buildup. Clean as necessary. Scale can cause high sheath temperature and lead to inefficiency and shorter life.

### **HOW TO ORDER SPARE PARTS**

If your Comind representative is not known, please visit our website <http://comind.cl> and use the  
Where to Buy tool.  
Where to Buy tool.

To order your replacement part, please indicate the numbers indicated on the product for the seller to find the manufacturing route of your heater or indication on the heater's nameplate.

### **HOW TO MAKE YOUR WARRANTY EFFECTIVE**

\*If this product develops a fault within the warranty period, you must contact us.

\*Have your proof of purchase (invoice or receipt), detailing the faults, your name, address and date of purchase.

### **Product warranty**

COMIND Industries warrants these products to be free from defects in materials and workmanship for a period of 6 months from the date of shipment. If this product proves defective during its warranty period, COMIND will repair the product at no additional charge, or provide a replacement in exchange for the defective product.

This warranty shall not apply to any defect, failure or damage caused by improper use or maintenance.