

**IN-LINE CIRCULATION PUMPS  
INSTALLATION MANUEL**



The circulation pumps, which make up one of the most important product groups of building technique, are designed for the circulation of hot & cold water that does not contain abrasive materials in heating, cooling, and air conditioning systems of industrial areas, and they can also be used as transfer pumps.

In-line circulation pumps are easy to install as they can be installed on a flat pipe from suction and delivery flanges and they have a small footprint. They are manufactured with rigid coupling or in monoblock form. Those standard flanges are used on rigid coupling models and the monoblock forms use electric motors that are specially manufactured with an extended motor shaft.

In general, they are used;

- a. Directly, or
- b. Together with a frequency control driver.

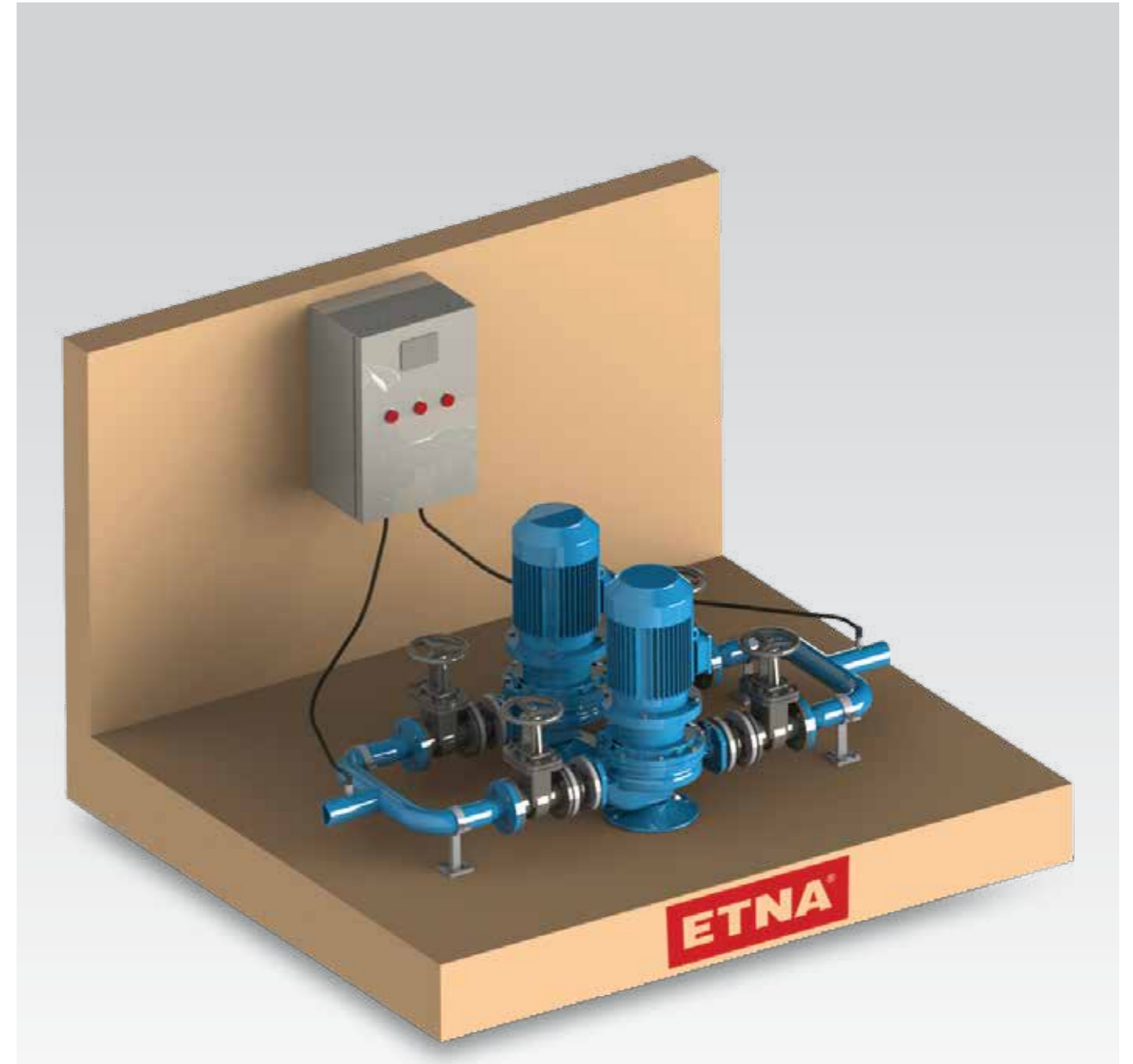
When they are used together with the frequency control driver in in-line circulation pumps, the pressure transmitter is located on the suction and delivery flanges. The pressure transmitters measure the pressure difference between flanges. The frequency control driver changes the frequency and consequently the motor speed in order to meet the requirement of the system in accordance with the data obtained from the transmitters. The in-line circulation pump that runs with variable circulation by means of the frequency control is used effectively and productively in order to meet the changing hydraulic demands of the system as a result. When the pump is not required to run in full capacity, the pump will run at low speed and as a result, it will generate significant energy savings.

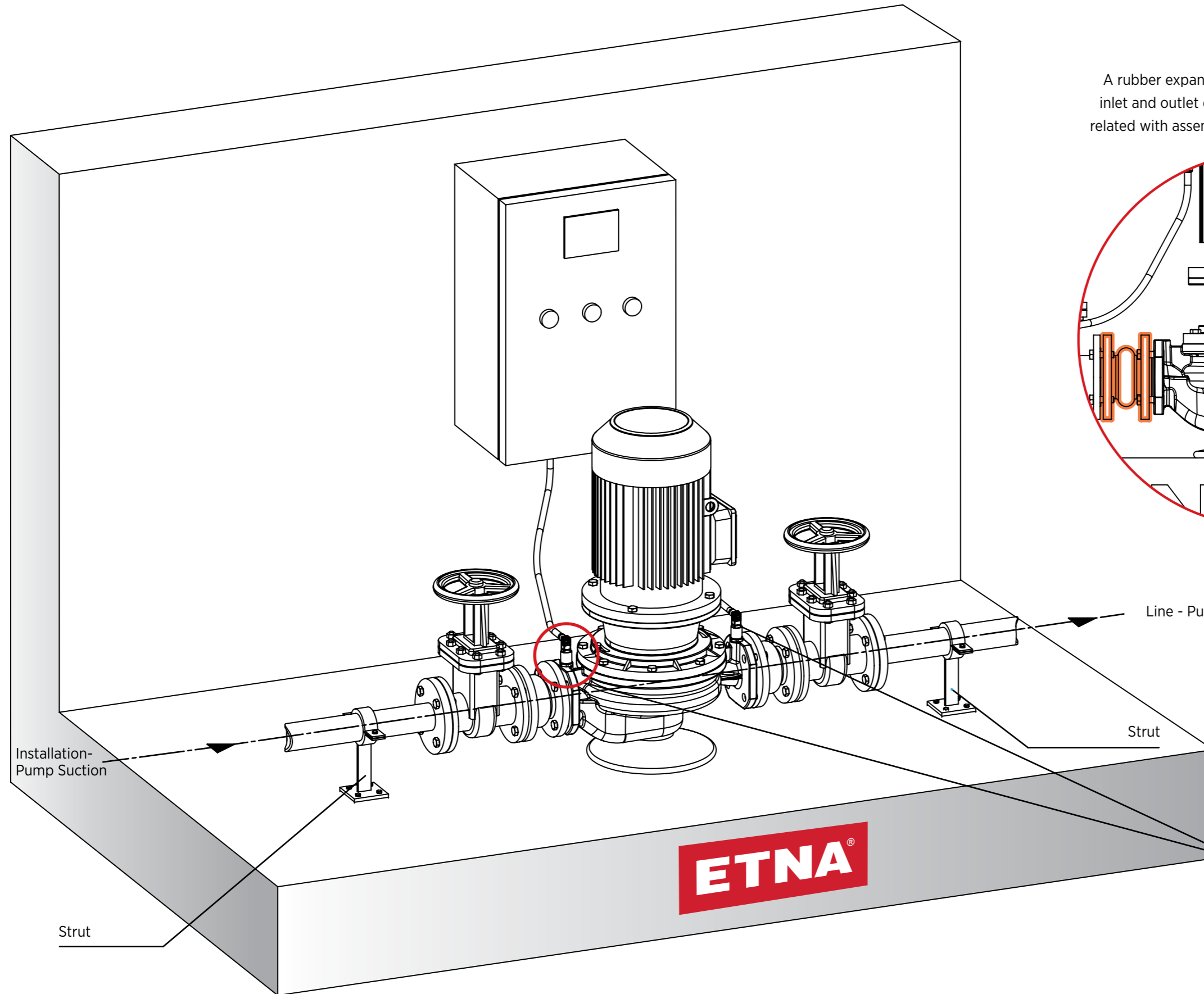
### Attention Should be Paid to the Following During Installation

- Examine the detailed drawing related to the installation of the device.
- During connection of in-line pumps to the service pipe, if the service line is parallel to the floor then the pump should be connected so as to be seated on the floor and the service pipe should be fixed to the ground with metal legs on both directions of the pump. If it is vertical to the floor, the service pipe should be fixed to the floor or wall with metal legs after the pump is connected.
- Attention should be paid to have parallel suction and delivery flanges of the pump during installation. Rubber compensators should be installed on the suction and delivery ports to prevent axial misalignment and the pump-motor weight should be supported. These compensators will be preventing the transmission of vibration and noise to the building by means of the installation pipe.
- The suction and delivery lines of the pumps should not be lower than the pump inlet-outlet diameter. During the installations of the pumps with frequency controls, the transmitters should not be very far from the driver board. It should be considered that the signal level will be lost as the cable length increases. Using thick cable is recommended for long distances.

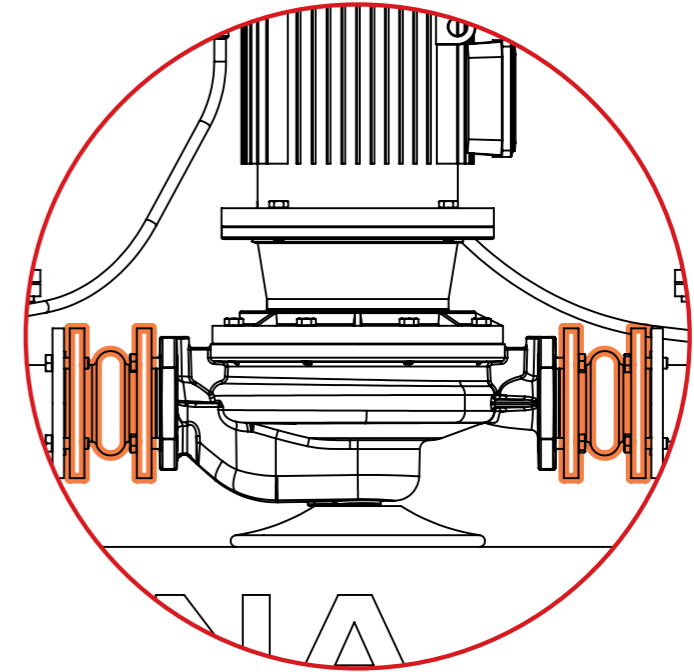
### Attention Should be Paid to the Following During Commissioning

- **Before in-line pumps are activated, the installation should be washed with plenty of water and no dirt should be left in it. It will prevent deformation of the mechanical seal.**
- Motor rotation direction should be verified.
- In order to prevent dry running of the mechanical seal before starting the motor, the screw of the air discharge purger on the pump should be loosened and air exhaust should be permitted, and discharge of water from the purger should be ensured. Running the pump without discharging its air will damage the mechanical seal.

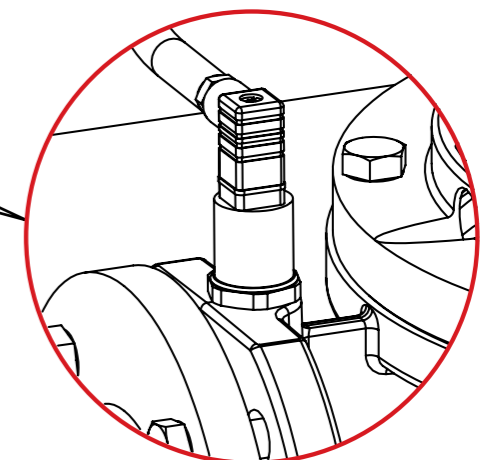


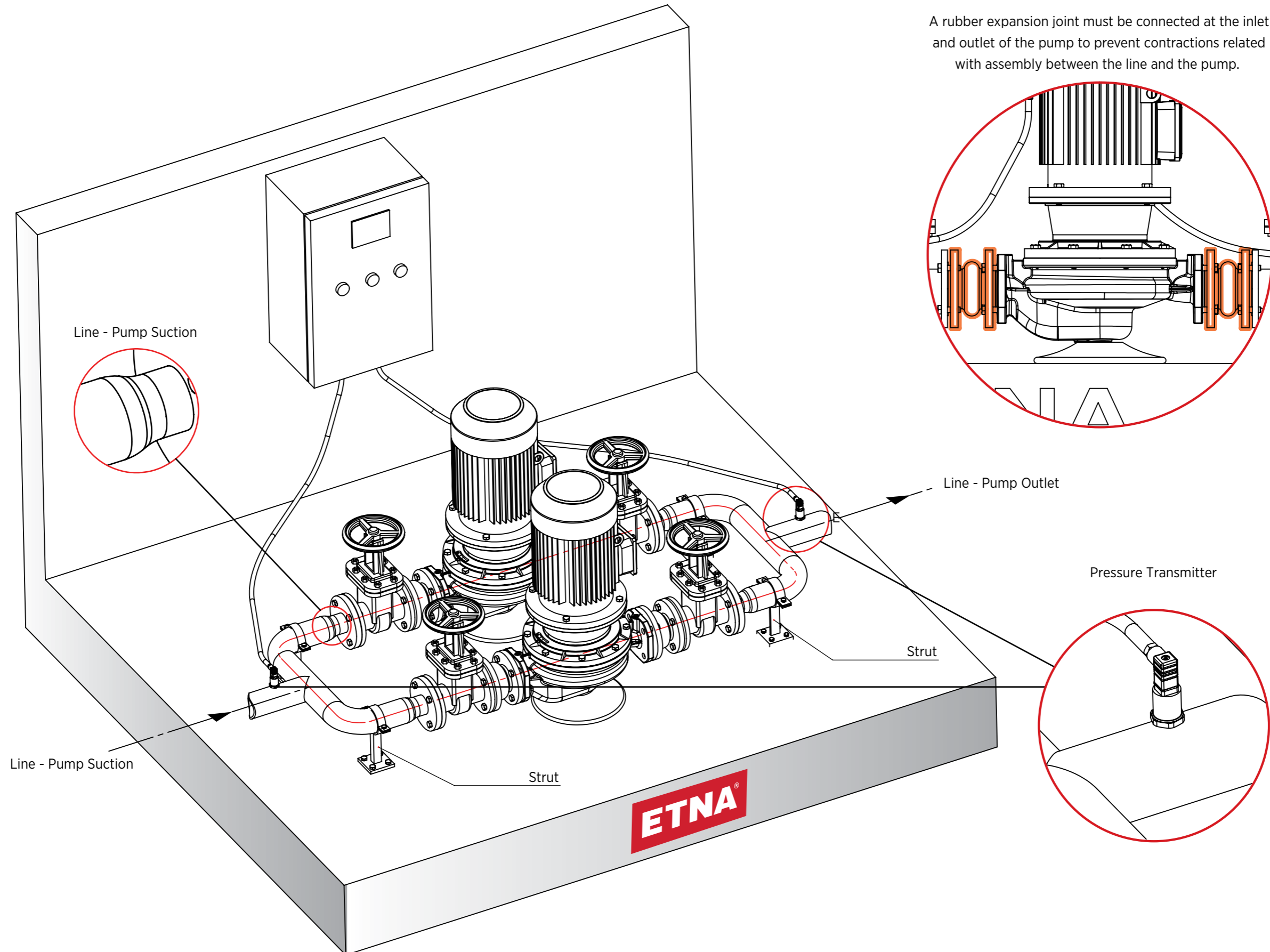


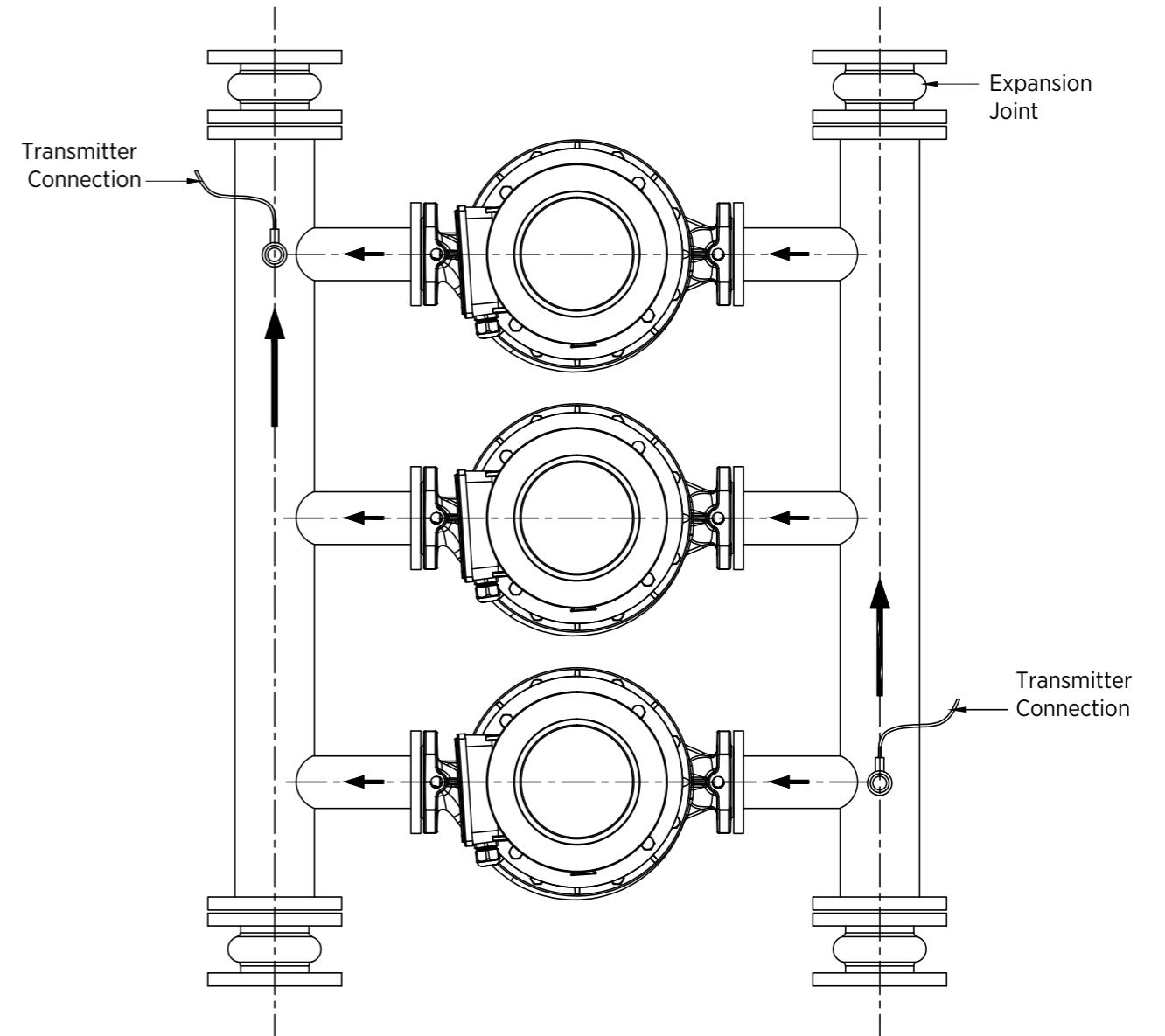
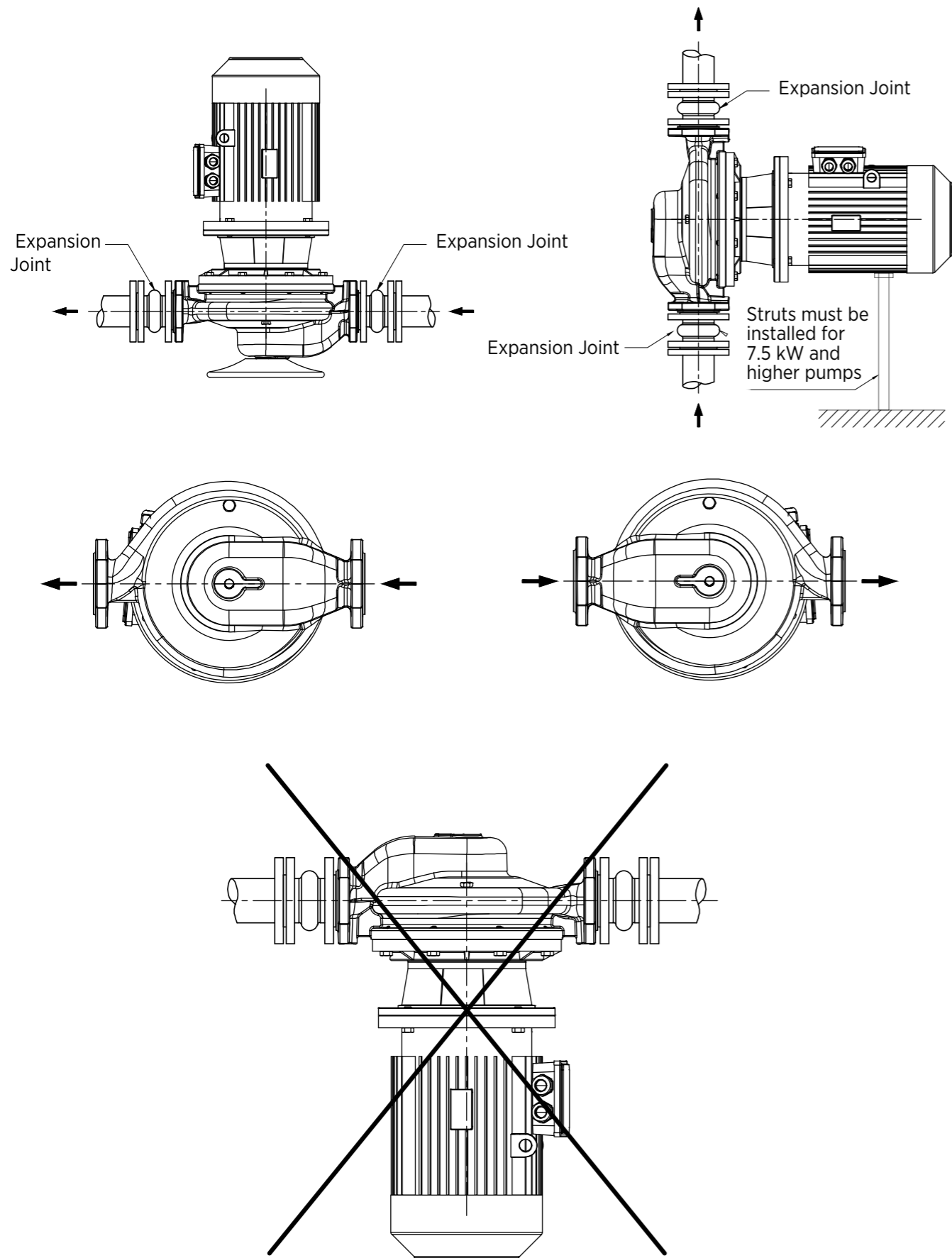
A rubber expansion joint must be connected at the inlet and outlet of the pump to prevent contractions related with assembly between the line and the pump.



Pressure Transmitter







### **Always observe the following security instructions;**

- Never touch pumps and pipes hotter than 80 °C. The required precautionary measures must be taken for the personnel to use. (e.g. warning signs and labels)
- Never run the pump in the reverse direction.
- Do not walk on the pump and/or the pipes connected to the pump.
- Any work on the pump must be carried out by a minimum of two people.
- Work should never be carried out on the pump without stopping the pump group.
- Cut the energy to the pump motor before conducting any work on the pump and make sure that it won't restart.
- After completing the work on the pump, reinstall the previously removed security jackets.
- The stresses, contractions, and weights on the pump system should never be transmitted to the pump.
- Never conduct work when the pump and pump-related pipes are under pressure.
- The clothes of the personnel to work on the pump must be suitable for the work to be done and/or they must use the required security equipment.
- Never conduct work on the pump when it is hot.
- The electrical connections related with the motor and auxiliary equipment must be done in accordance with the local regulations and by the authorized staff.
- Run the pump only under the indicated work conditions.
- Do not put your hand and fingers in the holes and gaps on the pump body.
- Always be careful while working on the pumps that pump hazardous liquids.



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