

## HORIZONTAL SINGLE-LEVEL CENTRIFUGAL PUMPS INSTALLATION GUIDE



# HORIZONTAL SINGLE-LEVEL CENTRIFUGAL PUMPS

- EA series norm pumps are high-efficiency, end-suction, EN 733-compatible, horizontal shaft centrifugal pumps that can be used in water transfer, heating and chiller systems, firefighting and various industrial applications.

## **Fire Booster Suction Line Specifications**

- The connections of pumps with the electrical engines are established using flexible coupling or rigid coupling. In rigid coupling models, standard flange motors are used and the pumps suck the water from the horizontal axis and deliver it from the vertical.
- Suction flange is a size bigger than the delivery flange.
- The spacer coupling that can be optionally mounted to the pump enables ease of maintenance by allowing the dismantle of the bolts where the mill and the mechanical seal while keeping the pump connected to the mill, mechanical seal, roller and oil seals, and not removing the pump and electrical motor/diesel motor from the chassis and the installation. This is generally used in fire pumps in line with EU norms.

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

- First examine the detailed drawing related with the installation of the device.
- Before connecting end-suction pumps to the installation pumps, it is required to securely fix them to the concrete stand in line with the pump dimensions using steel bolts. Then rubber compensators must be inserted both to the suction and the delivery ends in line with the pump pressure. After this, the installation pumps must be combined with the pipe. The rubber compensators absorb the axial leaks resulting from the installation by absorbing the small axial displacements in the installation.
- The installation loads created by installation parts such as the pipes, branch ducts and collectors may cause axial displacements, coupling decalibration and deflections with time. For vibration-free, silent, efficient and durable operation of the pump system, the installation components in suction and delivery lines must be fixed to the ground with steel legs or suspended from the ceiling.
- The suction and delivery lines of the pumps should not be smaller than the inlet-outlet diameters. And the installation to be a size bigger in the outlet line would minimize flow rate and pressure losses.
- If the pump will suck water from a negative level (negative suction), the suction line pump must be one size bigger than the suction flange and an eccentric pipe piece must be placed in between before connecting the pump to the suction flange. Thus possible air gaps and swirls in the suction are prevented, and ease of suction is ensured for the pump.

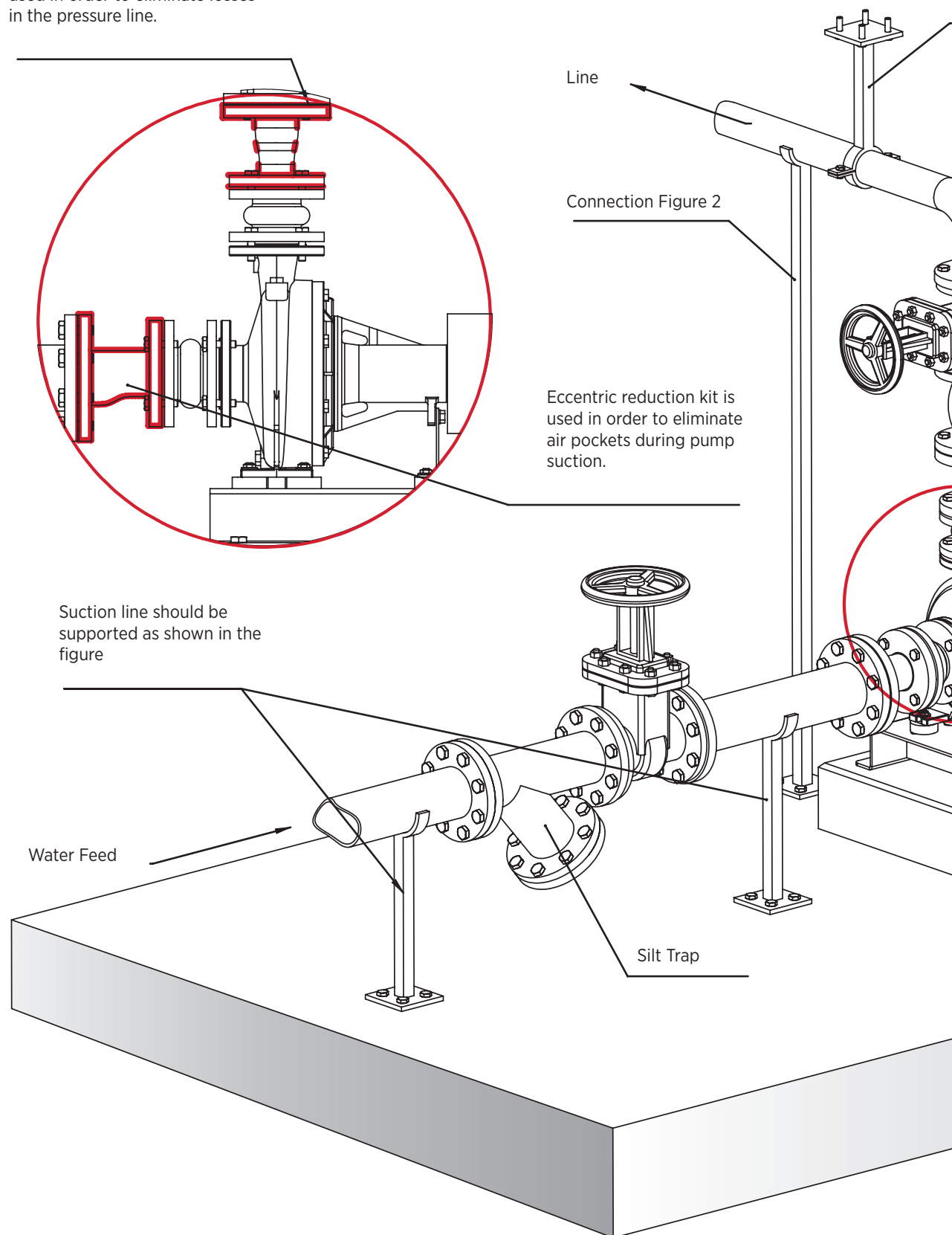
## **Details to Consider in Commissioning End-Suction Pumps**

- Before commissioning end-suction pumps, the installation should be washed with water ensuring no dirt remains. Otherwise, the mechanical seal of the pump may be damaged.
- Later, motor rotation direction should be verified. Manually rotating the pump coupling, the seamless operation should be confirmed. In case of strained rotations, the coupling readjustments should be made.
- The air discharge plug on the pipe must be removed before running the motor and the trapped air must be discharged.
- In case of negative discharge, the inside of the pump and the suction pipe must be filled with water. Operation before air discharge may damage the mechanical seal of the pump.



## POSITIVE SUCTION CONNECTION

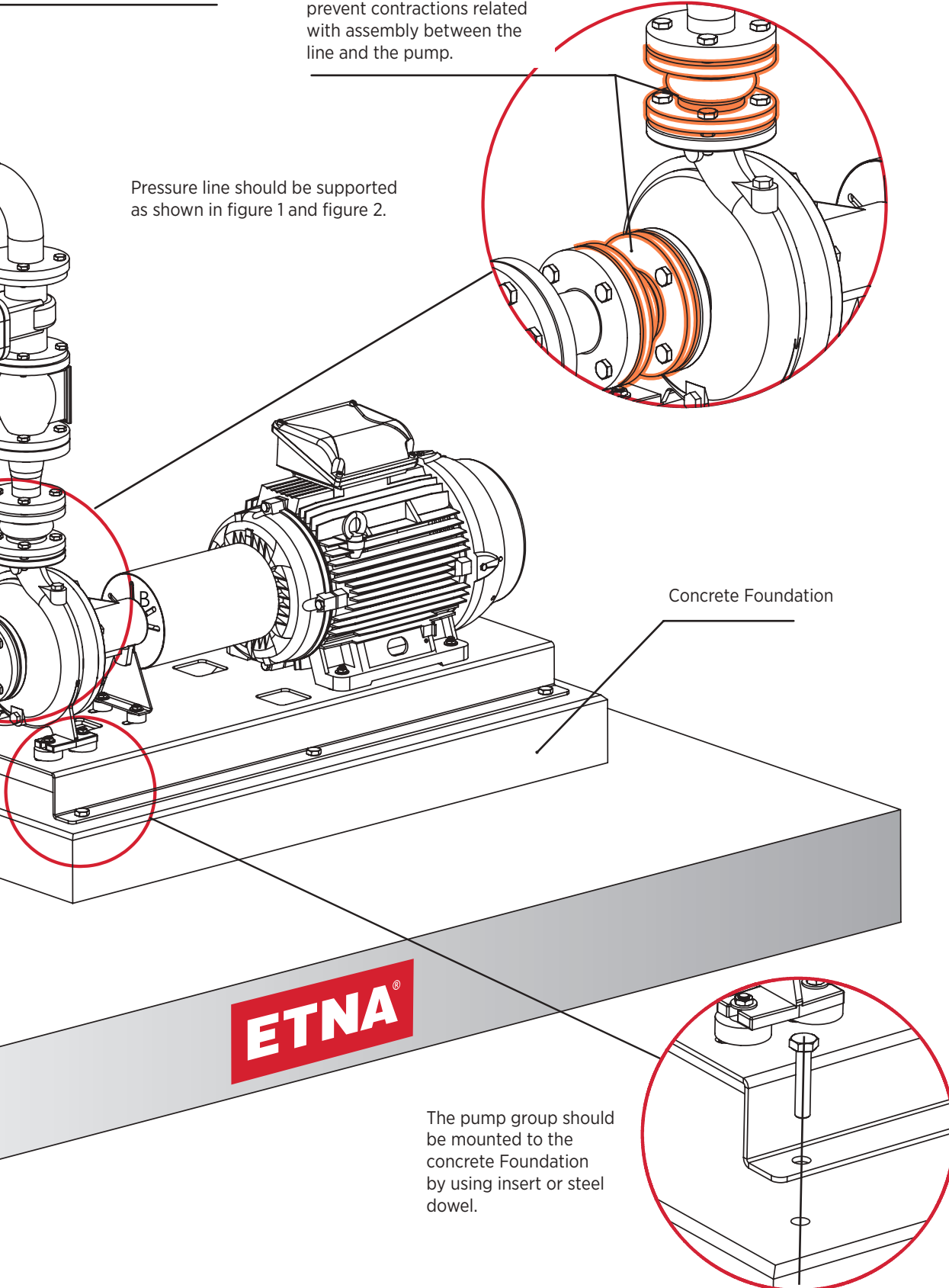
Concentric reduction should be used in order to eliminate losses in the pressure line.



Connection Figure 1

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

Pressure line should be supported as shown in figure 1 and figure 2.

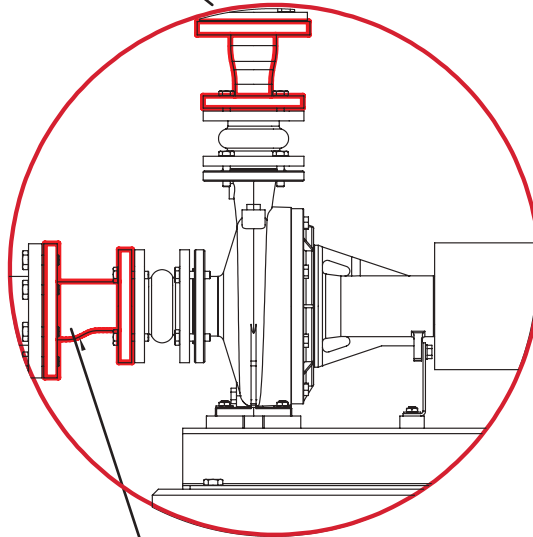


Concrete Foundation

The pump group should be mounted to the concrete Foundation by using insert or steel dowel.

## NEGATIVE SUCTION CONNECTION

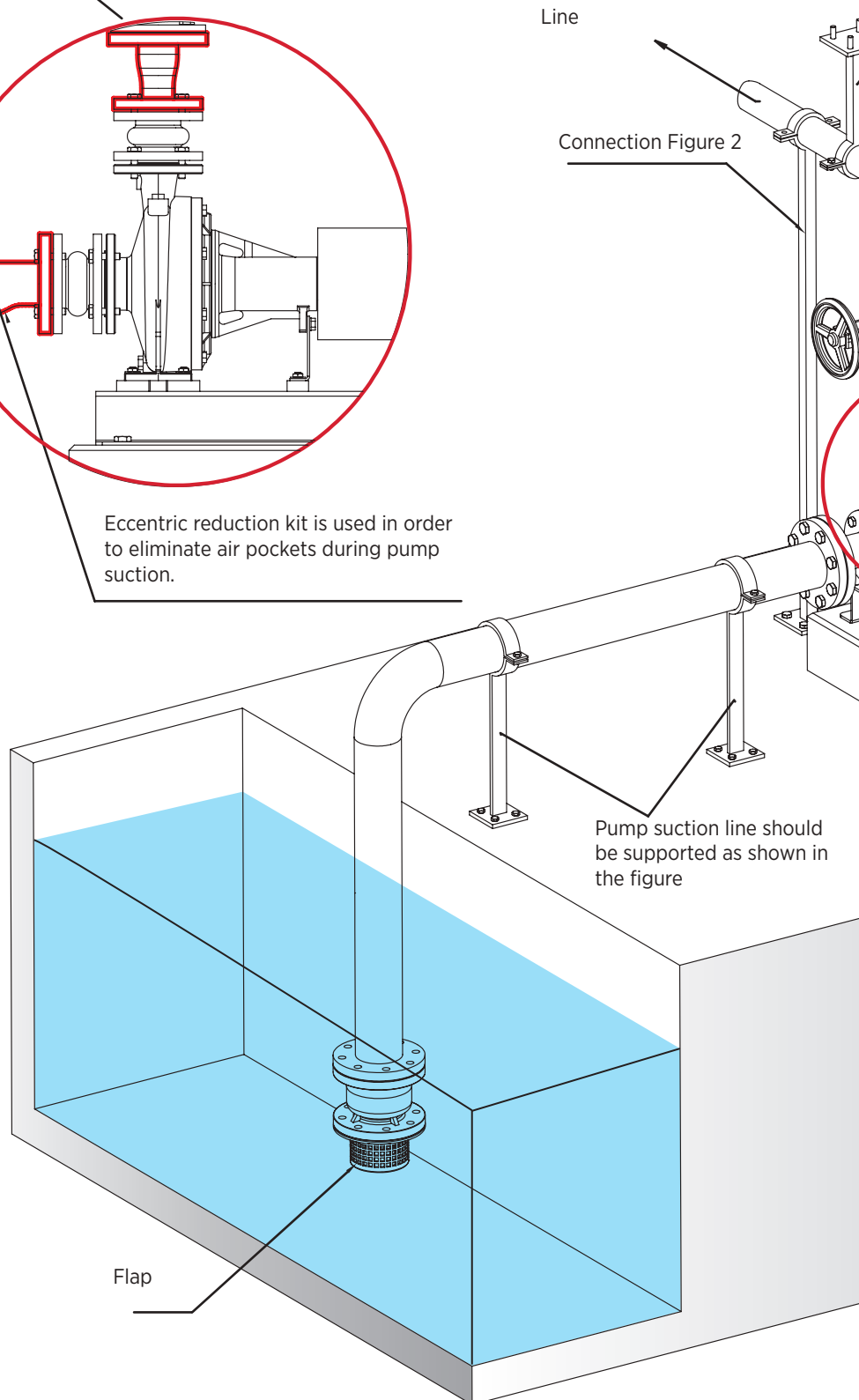
Concentric reduction should not be used in order to eliminate losses in the pressure line.



Eccentric reduction kit is used in order to eliminate air pockets during pump suction.

Line

Connection Figure 2



Pump suction line should be supported as shown in the figure

Flap

Connection Figure 1

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

Pressure line should be supported as shown in Figure 1 and Figure 2.

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