



PUMP INSTALLATION

OPTIMUM PUMP SELECTION FOR AN EXISTING INSTALLATION

Correct selection of pump type for an installation has larger implication that what meets the eye. The larger the pumps, the greater the costs with respect to investment, installation, commissioning, running and maintenance - basically the life cycle cost (LCC). An extensive product portfolio combined with competent advice and after-sales service is the foundation of a correct selection. The following analysis, recommendations and hints are general for any installation, but to a greater extent relevant for medium-sized and large installations. Here, we will present our recommendations for two types of installation: New and existing installations.



Existing Installation

The following five steps will help you make an optimum pump selection for an existing installation:

1) Pre-investigation of the installation should include the following considerations:

- Basic pipe flow - pipes in and out of the building, e.g. from ground, along floor or from ceiling.
- Specific pipework at the point of installation, e.g. in-line or end-suction, dimensions, manifolds.
- Space and accessibility of lifting equipment or alternatively accessibility of such equipment
- Floor type, e.g. solid or suspended floor
- Existing foundation and electric installation

2) Previous pump installation

- Pump make, type, specifications including old duty point, shaft seal, materials, gaskets, controlling
- History, e.g. lifetime, maintenances.

3) Future requirements

- Desired improvements and benefits
- New selection criteria including duty points and operating times, temperature, pressure, and liquid specification.

4) Advisory

- Major changes might be beneficial in along or short term, e.g. installation savings, LCC, reduction on environmental; impact like noise and accessibility in connection with maintenance.

5) Selection

- Must be based on a customer-agreed list priorities

For the selection of the correct pump type and advice on installation, two main areas are important: 1) Pipe flow and 2) Limitation of noise and vibration. These two areas will be dealt with on the following pages. However this article only cover PART 1 which is about the selection of correct pump type based on the pipe flow aspect.

Pipe Flow For Single-Pump Installation

Figure 1 below shows the relationship between pipework and selection of pump type for single-pump installation. In parallel installations accessibility plays a major role for how good a pump choice is. The evaluation criterion is as simple pipework as possible, hence as few bends as possible.

Scores:

- ▲ Best choice
- ◄ Good choice
- ▼ Least good choice
- × Not applicable

Pump type \ Pipework		Pump type		
		A. In-line close-coupled (horizontal or vertical mounting)	B. End-suction close-coupled (horizontal or vertical mounting)	C. End-suction long-coupled (only horizontal mounting)
To the pump:	From the pump:			
	Along floor	Along floor	▲ Best choice	◄ Good choice
To ground		▲ Best choice	◄ Good choice	◄ Good choice
To ceiling		◄ Good choice	▲ Best choice	▲ Best choice
From ground	Along floor	◄ Good choice	▲ Best choice	▼ Least good choice
	To ground	◄ Good choice	▲ Best choice	▼ Least good choice
	To ceiling	◄ Good choice	▲ Best choice	▲ Best choice
From ceiling	Along floor	▲ Best choice	▼ Least good choice	▼ Least good choice
	To ground	▲ Best choice	◄ Good choice	◄ Good choice
	To ceiling	◄ Good choice	▲ Best choice	▲ Best choice
Wall-mounted	Wall-mounted	▲ Best choice	◄ Good choice	× Not applicable

Figure 1 Pipework and pump type

In addition to that, accessibility plays a major role in how well a specific pump choice in connection with installation of several pumps in parallel. The accessibility in Figure 2 is not always easy for in-line pumps installed in parallel because of the pipework. As it appears from figure 3, end-suction pumps installed in parallel provide easier accessibility.

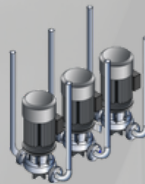


Figure 2. 3 in-line pumps in parallel; limited maintenance access because of pipework

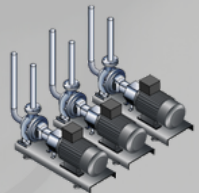


Figure 3. 3 end-suction pumps in parallel; easier maintenance access because of pipework