General installation information

A. Fluid recommendations

Premium quality hydraulic mineral oil fluids are recommended, like H-LP oils to DIN 51524, part2.
The viscosity range should be 25 to 50 mm²/s (cSt) at 50° C. Operating temperatures –10 to +70°C.
For other fluids such as phosphoric acid esters or for other operating conditions, please consult with YEOSHE for assistance.

B. Seals

NBR (Nitrile) seals are used for operation with hydraulic fluids based on mineral oil.
For synthetic fluid, as perhaps phosphoric acid esters, Fluorocarbon seals are required.
Please consult with YEOSHE for assistance.

C. Filtration

For maximum pump and system component functionability and life, the system should be protected from contamination by effective filtration.
Fluid cleanliness should be in accordance with ISO classification ISO 4406.
The quality of filter elements should be in accordance with ISO standards.
(1) Minimum requirement for filtration rate ×(mm):
General hydraulic systems for satisfactory operation:
Class 19/15, to ISO 4406 X=25μm (β25≧75) to ISO 4572
(2) Hydraulic systems with maximum component life and functionability:
Class 16/13, to ISO 4406 X=10μm (β10≧75) to ISO 4572
It is recommended to use return line or pressure filters.
YEOSHE Filter Division offers a wide range of these filters for all common applications and mounting styles.
The use of suction filters should be avoided, especially with fast response pumps.
Bypass filtration is a good choice for best filter efficiency.

D. Installation and mounting

Horizontal mounting:
Outlet port-side or top. Inlet port-side or bottom, drain port always uppermost.
Vertical mounting: Shaft pointing upwards.
Install pump and suction line in such way that the maximum inlet vacuum never exceeds 0.8 bar absolute.
The inlet line should be as short and as straight as possible.
A short suction line cut to 45° is recommended when the pump is mounted inside the reservoir, to improve the inlet conditions. All connections should be leak-free,otherwise the air in the suction line will cause cavitations, noise, and damage to the pump.

E. Shaft rotation and alignment

Pump and motor shafts must be aligned within 0.25mm T.I.R. maximum. A floating coupling must be used.
Bellhousings and couplings can be ordered at manufacturers listed in this catalog.
Please follow the coupling manufacturer's installation instructions.
Please consult with YEOSHE for assistance on radial load type drives.

F. Start up

Prior to start up, the pump case must be filled with hydraulic fluid (use case drain port).
Initial start up should be at zero pressure with an open circuit to enable the pump to prime.
Pressure should only be increased once the pump has been fully primed.
Attention: Check motor rotation direction.

G. Operating noise of pumps

The normal operating noise of a pump and constantly-operation noise of the entire hydraulic system is largely determined by where and how the pump is mounted and how it is connected to the down stream hydraulic system. Besides, size, style, and installation of hydraulic tube are the major influence on the overall noise emitted by a hydraulic system.

General installation information

H. Noise reduction measures

Flexible elements help to prevent pump body vibration from being transmitted to other construction elements, where amplification may occur. Such elements can be:

Bell housing with elastic dampening flange with vulcanized labyrinth

(1) Floating and flexible coupling
(2) Damping rails
(3) Or silent blocks for mounting the electric motor or the foot mounting flange
(4) Flexible tube connections (compensators) or hoses on inlet, outlet, and drain port of the pump.
(5) Exclusive use of gas tight tube fittings for inlet connections to avoid ingression of air causing cavitations and excessive noise.

I. Drain line

The drain line must lead directly to the reservoir without restriction. The drain line must not be connected to any other return line.

The end of the drain line must be below the lowest fluid level in the reservoir and as far away as possible from the pump inlet line. This ensures that the pump is not empty itself when it's not in operation and the hot aireated oil will not be recirculated.

For the same reason, when the pump is mounted inside the reservoir, the drain line should be arranged in such a way that a siphon is created. This ensures that the pump is always filled with fluid.

The drain pressure must not exceed 1 bar.

Drain line length should not exceed 2 meters.

Minimum diameter should be selected according to the port size and a straight low pressure fitting with maximized bore should be used.

	PV016~PV023 PV028	PV032~PV046 PV056/PV065	PV063~092 PV110	PV125~180 PV210	PV270
Size of pipe joints	3/8"	1/2"	3/4"	1"	1-1/4"
I.D. of pipes	Ø12 more	Ø15 more	Ø19 more	Ø25 more	Ø32 more
Length of drain	Under 1m	Under 1m	Under 1m	Under 1m	Under 1m