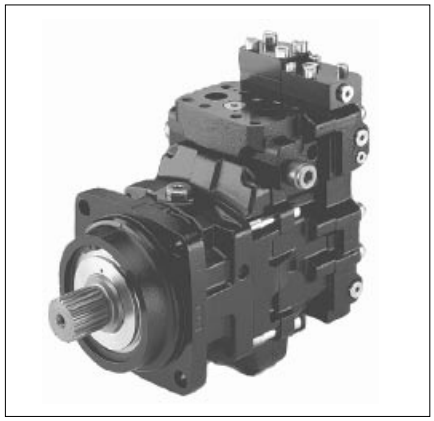
Bulletin HY30-8223-INST/EU

# Installation and start-up information Hydraulic Motors Series V12, V14 and T12

Effective: August 25, 2011
Supersedes: April 07, 2011

**V12**



**V14**

**T12**

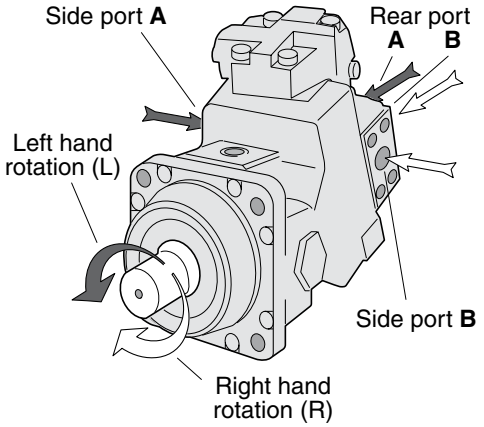
## Direction of rotation versus flow

**NOTE:** The V12, V14 and T12 motors are bi-directional.
**V12 rotation:**
- End cap position T (AC, AD and AH controls): When port B (open arrow) is pressurized, the motor rotates clockwise (right hand; R), and when port A (black arrow) is pressurized, the motor turns counter clockwise (left hand; L)
- End cap position M (EO, EP, HO and HP controls): A and B port positions interchange (A-to-B, B-to-A).

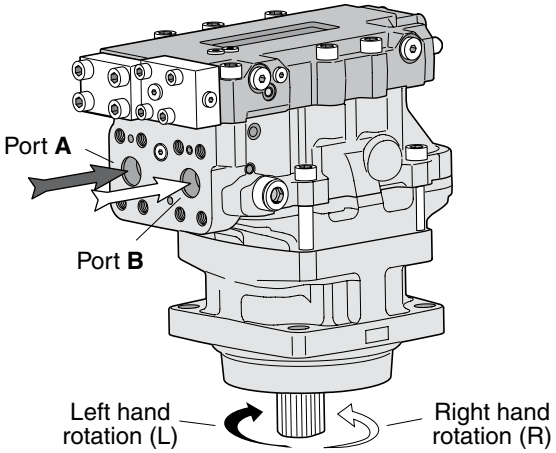
**V14 rotation:**
- Refer to the V14 illustration below right (valid for all compensators and controls).

**T12 rotation:**
- Refer to the V14 illustration below right.

**NOTE:** Before installing a V12, V14 or T12 motor in series (when both A and B ports can be subject to high pressures simultaneously) contact Parker Hannifin.




Direction of rotation vs. flow for the V12 motor (here shown with AC-compensator; end cap position T).




Direction of rotation vs. flow for the V14 motor (shown with AC-compensator).

## Filtration

Maximum motor sevice life is obtained when the fluid cleanlineness meets or exceeds ISO code 20/18/13 (ISO 4406). A 10 µm (absolute) filter is recommended.

## Case pressure

**To secure correct case pressure and lubrication, a spring loaded check valve, 1-3 bar, in the drain line (shown on next page) is recommended.**

**NOTE:** Contact Parker Hannifin for information when operating at high speeds.

| Frame size | 1500 | 3000 | 4000 | 5000 | 6000 |
|---|---|---|---|---|---|
| V12-60 | max 12 | 0.5–7 | 1–5.5 | 1.5–5 | 2–5 |
| V12-80 | max 12 | 0.5–7 | 1–5.5 | 1.5–5 | 2.5–5 |
| V14-110 | max 10 | 1–6 | 1.5–5 | 2–4.5 | 3–5 |
| V14-160 | max 10 | 1–6 | 2–5.5 | 2.5–5.5 | - |

Min and max case pressure [bar] vs. shaft speed [rpm].

## Required inlet pressure

The motor may operate as a pump under certain conditions. When this occurs, a minimum pressure must be maintained at the inlet port; increased noise and gradually deteriorating performance due to cavitation may otherwise be experienced.
A 15 bar inlet pressure, measured at the motor inlet port, satisfies most operating conditions.
Contact Parker Hannifin for more specific information on inlet pressure requirements.

## Operating temperatures

The following temperatures should not be exceeded

Main circuit: 80 °C.

Drain fluid: 115 °C.

Continuous operation at high power levels usually requires case flushing in order for the fluid to stay above the minimum viscosity requirement. A flushing valve and restricting nozzle, available as an option, provide the necessary main circuit flushing flow.

Refer to fig. 1 (next page), and to:



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Pump and Motor Division
Trollhättan, Sweden

## Drain ports

There are two drain ports on the V12 and T12 and three on the V14motors. The uppermost drain port should always be utilized.
In order to avoid excessively high case pressure, the drain line should be connected directly to the reservoir.

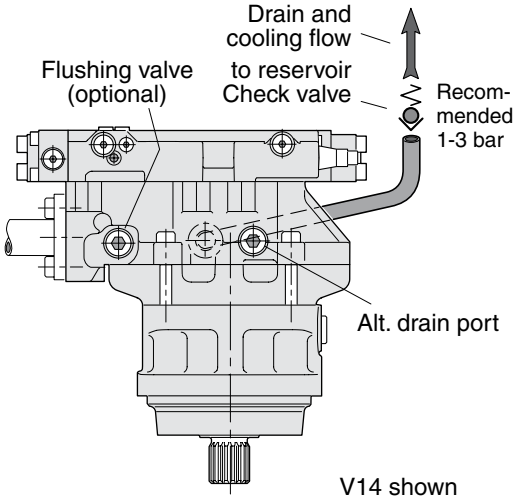


Fig. 1. V14 shown

## Hydraulic fluids

Ratings and performance data for the motors are valid when a good quality, contamination-free, petroleum-based fluid is used in the hydraulic system.
Hydraulic fluids type HLP (DIN 51524), automatic trans-mission fluids type A, or API CD engine oils can be used.
When the hydraulic system has reached full operating temperature, the motor drain oil viscosity should be above 8 $mm^2/s$ (cSt).
At start-up, the viscosity should not exceed 1500 $mm^2/s$.
The ideal operating range for the motor is 15 to 30 $mm^2/s$.
Fire resistant fluids, when used under modified operating conditions, and synthetic fluids are also suitable.
Contact Parker Hannifin for additional information about:
- Hydraulic fluid specifications
- Fire resistant fluids.

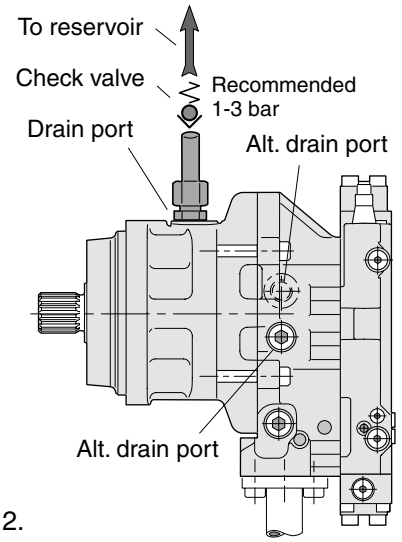


Fig. 2. V14 shown

## Before start-up

**Make sure the motor case as well as the entire hydraulic system is filled with hydraulic fluid.**

The internal leakage, especially at low operating pressures, is not sufficient to provide lubrication at start-up.

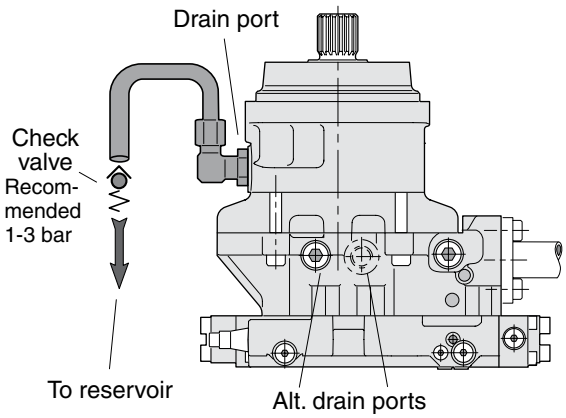


Fig. 3. V14 shown



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Trollhättan, Sweden

## Position notification regarding Machinery Directive 2006/42/EG:

Products made by the Pump and Motor Division (PMD) of Parker Hannifin are excluded from the scope of the machinery directive following the “Cetop” Position Paper on the implementation of the Machinery Directive 2006/ 42/ EC in the Fluid Power Industry.

All PMD products are designed and manufactured considering the basic as well as the proven safety principles according to:

- SS EN ISO13849-2:2008-09, C.2 and C.3 and,
- SS EN 982+A1:2008,

so that the machines in which the products are incorporated meet the essential health and safety requirements.

Confirmations for components to be proven component, e. g. for validation of hydraulic systems, can only be provided after an analysis of the specific application, as the fact to be a proven component mainly depends on the specific application.

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HY30-8223-INST/EU
Art. No 3785940-04