

Tech Note

LS Compensating Valve PVFC



This Tech Note introduces LS compensating valve PVFC. PVFC is an important step towards the elimination of typical regulation problems that arise when, for example, PVG is used with LS-pumps that

- lead an oil flow into the LS-line
- are fitted with a high leakage LS-control

In the first case PVFC is used as an LS-controlled pressure relief valve. In the second case it is used as an LS-controlled pressure regulator.

PVFC must only be sold together with other hydraulic components from Danfoss.

Code number and weight

Code number	Weight (kg)
158H805500	0.8

Technical data

	Max.pressure (bar)		Max. flow (l/min)
	cont.	int.	
	350	400	3

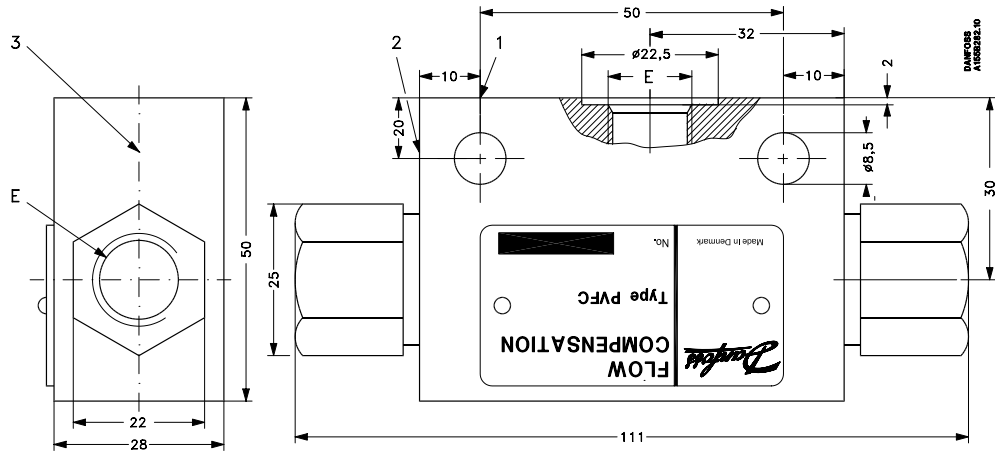
Conversion

PVFC is always supplied as an LS-controlled pressure regulator. If it is to be used as an LS-controlled pressure relief valve the following conversion must be made:

1. Remove nipple at ports 2 and 3 (a/flats 22)
2. Reverse spool
3. Fit the spring into port 3
4. Fit nipple with orifice into port 3
5. Fit nipple without orifice into port 2

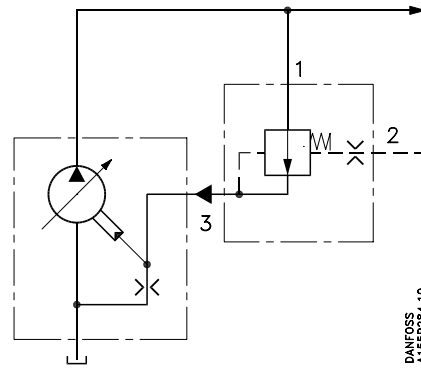
The port numbers are stamped into the housing.

Dimensions

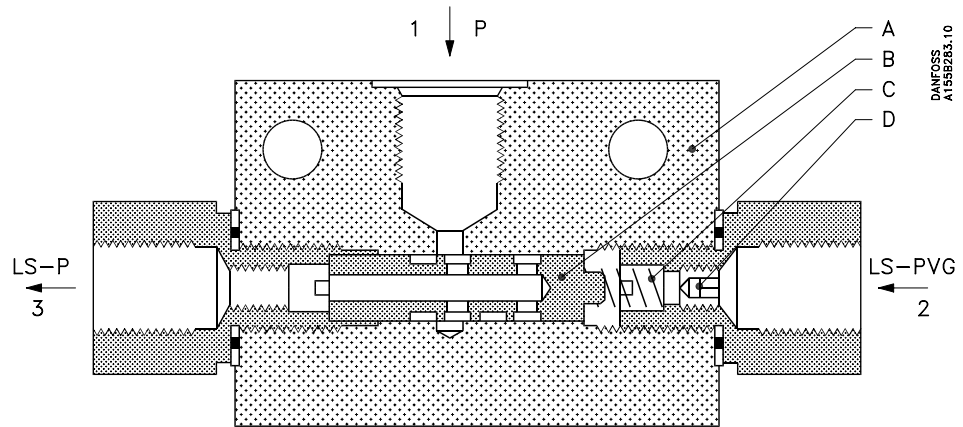


The numbers 1, 2, and 3 are stamped into the valve housing.
E: G 1/4; 12 mm deep

PVFC as LS-controlled pressure regulator (standard)



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LS-PVG: Connection to LS-port,
PVG LS-P: Connection to LS-port, pump
Tallene 1, 2 og 3 are stamed into the valve
housing

A: Housing
B: Spool
C: Spring (Spring pressure: 1 bar (14.5 lbf/in²))
D: Orifice

Application

Some LS-pumps have LS-control with high leakage or a defined "bleed-off". The oil flow from the LS-line to tank often causes too low an LS-pressure in relation to the load pressure.

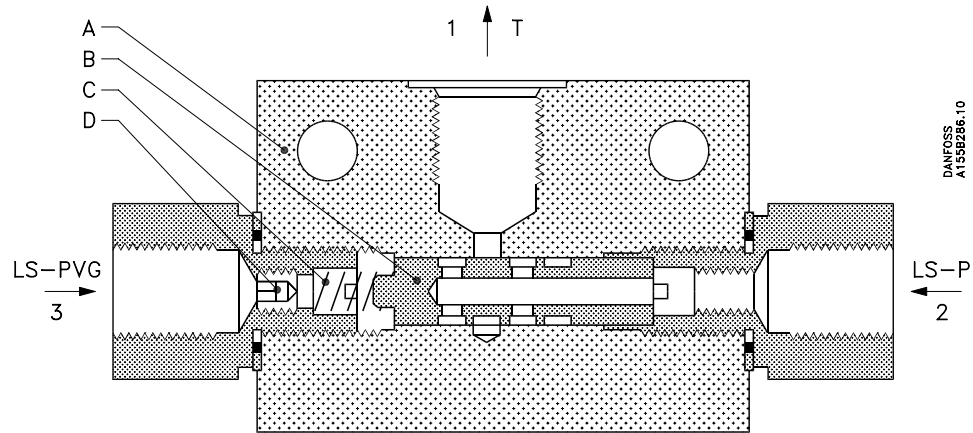
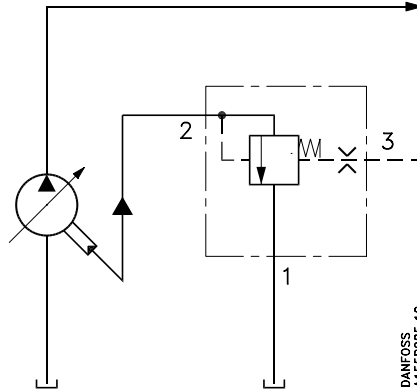
When a standard PVFC is built into the LS-line between proportional valve and pump, an oil flow equivalent to the leakage is led into the LS-line.

Function

When the LS-pressure in the LS-P line is less than the LS-pressure in the LS-PVG line + the spring pressure, the spool in PVFC is displaced so that oil flows from the pump into the LS-P line.

The spool cuts off the oil flow again when the pressure in the LS-P line becomes higher than the pressure in the LS-PVG line + the spring pressure. Thus the spool regulates the oil flow so that the pilot pressure for the LS-control always matches the load pressure.

PVFC as LS-controlled pressure relief valve (converted)



LS-PVG: Connection to LS-port, PVG LS-P: Connection to LS-port, pump
 Tallene 1, 2 og 3 are stamed into the valve housing

A: Housing
 B: Spool
 C: Spring (Spring pressure: 1 bar (14.5 lbf/in²)).

Application

Other LS-pumps conduct an oil flow into the LS-line via the LS-control. The oil flow in the LS-line often causes too high an LS-pressure in relation to the load pressure.

When a converted PVFC is built into the LS-line between pump and proportional valve, an oil flow equivalent to the flow from the pump into the LS-line is led from the LS-line to tank.

Function

When the pressure in the LS-P line becomes higher than the pressure in the LS-PVG line + the spring pressure, the spool is displaced so that oil flows from the LS-P line to tank.

The spool cuts off the oil flow again when the pressure in the LS-P line becomes less than the pressure in the LS-PVG line + the spring pressure. In this way the spool regulates the oil flow so that the pilot pressure for the LS-control always matches the load pressure.

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