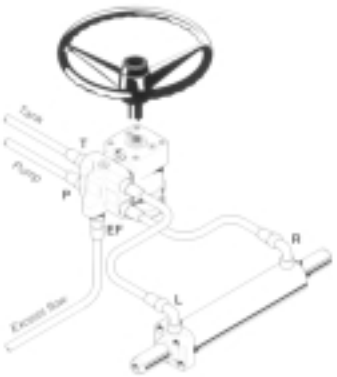
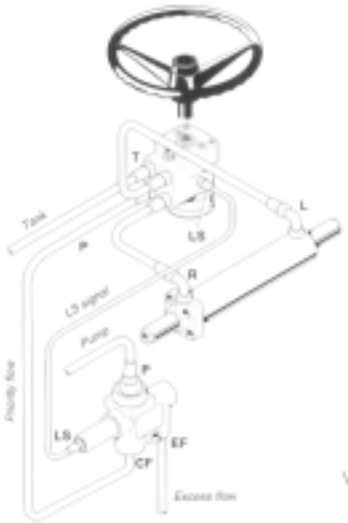
Priority valves

LOAD SENSING system

In a circuit using a LS steering unit and priority valve the flow always promotes the optimal use of the steering unit, irrespective of the pressure values in the auxiliary circuits.
The distribution is controlled by the LS signal from steering unit.



VPF

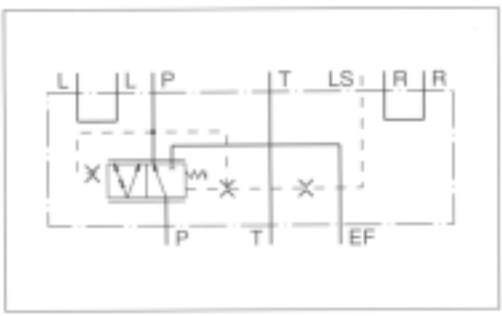


VPL

Versions and application

VPF 40/80

VPF 40 and 80 priority valves are used in load sensing steerings systemes flanged to the STA LS steering unit.

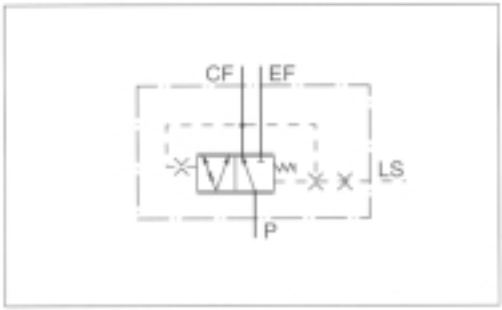


ISO SYMBOL



VPL 40/80

The VPL 40 and 80 priority valves are used in load sensing steering systems STX LS and STA LS, where the connection with the steering unit is in line.



ISO SYMBOL



Both priority valves are available dynamic or static signal.

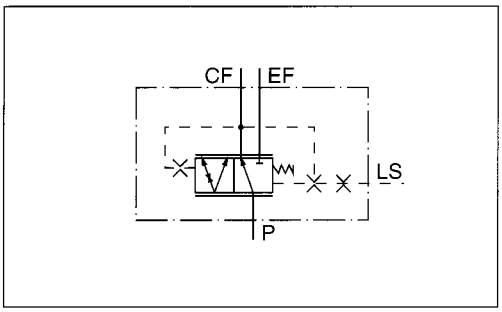
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DYNAMIC SIGNAL

The primary characteristic of a dynamic signal system is the improvement of the response time of the priority valve. This means an "always ready" state of steering, with no hesitation in steering response when demanded.
In other words, LOAD SENSING steering units, with dynamic signal, can be applied in the following situations:

* when a faster response of the steering is required
* when operating at low environmental temperatures
* when major flexibility of plumbing is required

In fact, the dynamic-type signal does not have a lenght limit for hoses that link the priority valve to the steering unit (these usually characterize "static" type signals).

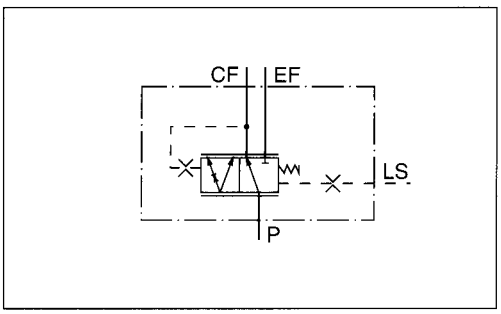


ISO SYMBOL

Another advantage of the dynamic system is that the small flow rate (0,3 ÷ 0,4 l/min.), draining from the priority valve to the steering unit, heats the steering unit itself, thus avoiding thermal shock in the steering unit after long periods of inactivity in low temperature environments.

STATIC SIGNAL

The static signal version is used in applications where response time and stability of the circuit are not critical.
The maximum length of the hose that connect steering unit and priority valve must not exceed 2 m.



ISO SYMBOL

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Technical data

P = Pump
EF = Excess flow
CF = Control flow
L = Left
R = Right
LS = Load sensing signal
T = Tank

Priority valve	Nominal flow l/min	Oil ports pressure				
		P/EF bar *psi*	CF bar *psi*	L/R* bar *psi*	LS bar *psi*	T* bar *psi*
VPF 40	40	250 *3625*	175 *2538*	250 *3625*	175 *2538*	15 *218*
VPF 80	80	250 *3625*	175 *2538*	250 *3625*	175 *2538*	15 *218*
VPL 40	40	250 *3625*	175 *2538*		175 *2538*	
VPL 80	80	250 *3625*	175 *2538*		175 *2538*	

* Related to power steering unit specifications.

Part numbers, control spring pressure and weight

Priority valve	Signal type	P/N Oil ports G T/R/L : G 3/8 P/EF : G 1/2	P/N Oil ports I T/R/L : 9/16-18 UNF P/EF : 7/8-14 UNF	Control spring stand-by pressure bar	Weight Kgs.
VPF 40	DYNAMIC	905370010	905370020	4	2.1
	DYNAMIC	905370030	905370040	7	2.1
VPF 80	DYNAMIC	905370050	905370060	4	2.1
	DYNAMIC	905370070	905370080	7	2.1

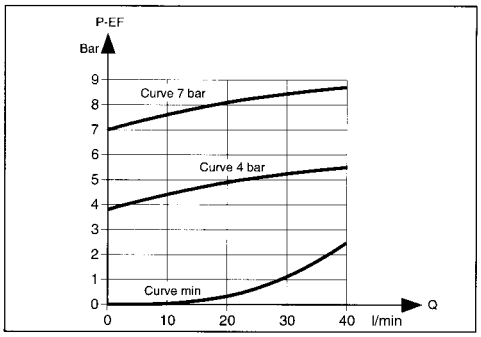
The VPF priority valve is supplied already assembled to STA LS steering unit. If ordered separately, the valve will be supplied with necessary screws and o - rings.
Tightening torque for bolt on valves is 6,5 ± 0,5 daNm.

Priority valve	Signal type	P/N Oil ports G LS: G1/4 P/EF/CF: G1/2	P/N Oil ports I LS: 7/16-20 UNF CF: 3/4-16 UNF P/EF: 7/8-14 UNF	Control spring stand-by pressure bar	Weight Kgs.
VPL 40 DY	DYNAMIC	905390010	905390020	4	1.0
	DYNAMIC	905390030	905390040	7	1.0
VPL 80 DY	DYNAMIC	905390050	905390060	4	1.0
	DYNAMIC	905390070	905390080	7	1.0
VPL 40	STATIC	905380010	905380020	4	1.0
	STATIC	905380030	905380040	7	1.0
VPL 80	STATIC	905380050	905380060	4	1.0
	STATIC	905380070	905380080	7	1.0

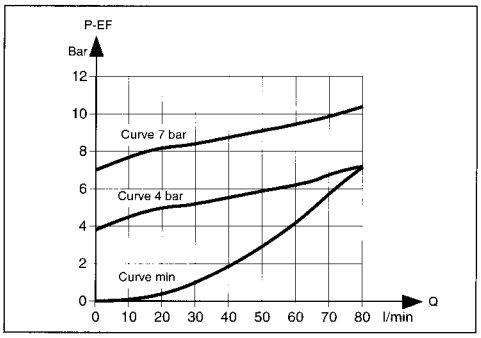
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Priority valves pressure drop

The charts below show the characteristic pressure drop curve in VPL / VPF priority valves, measured with oil viscosity 21 cSt. and with the LS signal in neutral position.
The minimum curves are applicable when the pressure on the EF connection is higher than the actual control spring pressure. The curves for control spring pressure of 4 and 7 bar apply when the pressure on the EF connection is zero.
This data reflects actual measurements from a production sample of priority valves.



VPF/VPL 40 PRESSURE DROP CHART



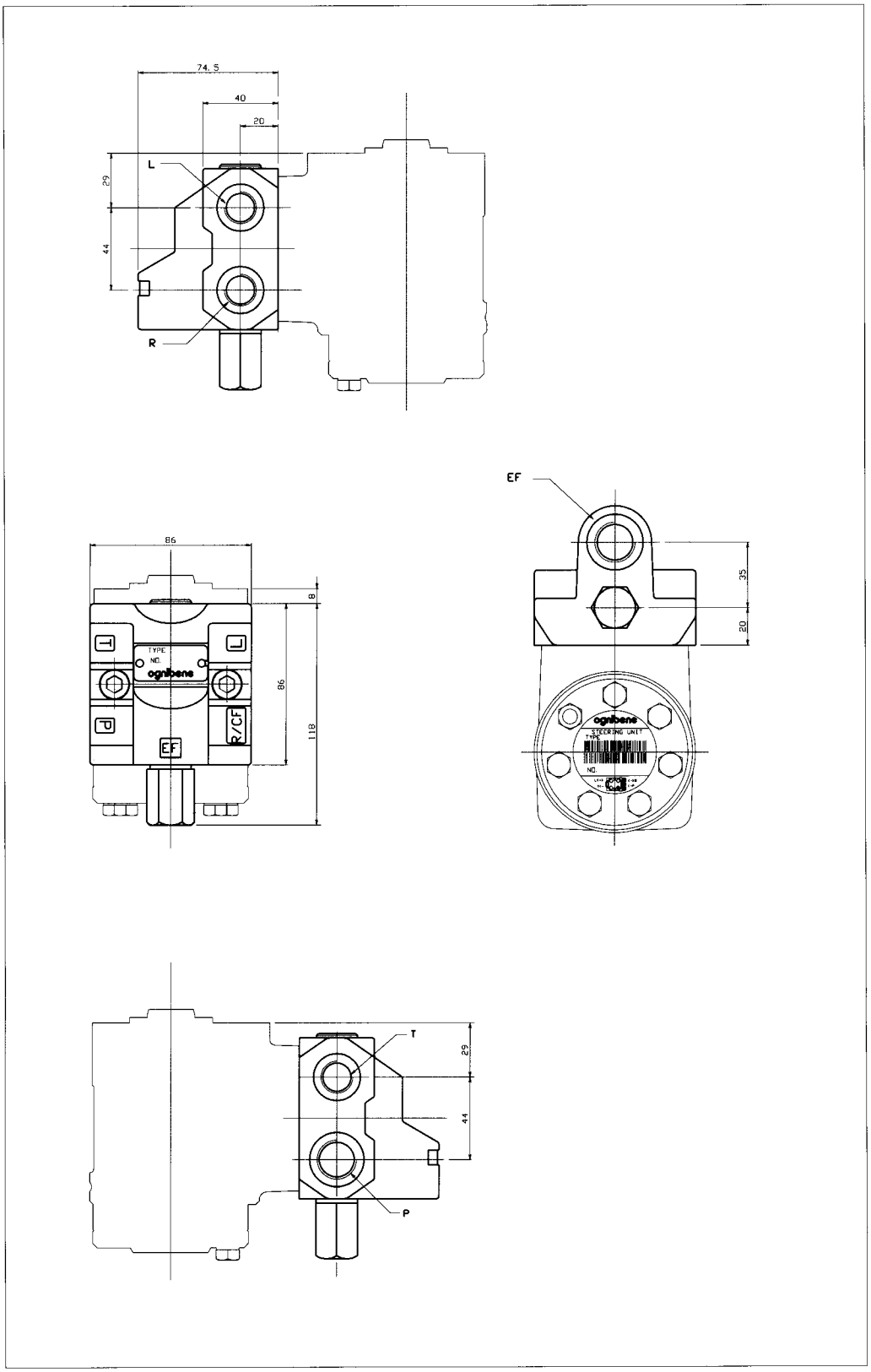
VPF/VPL 80 PRESSURE DROP CHART

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Dimensions

VPF

P,EF: 7/8-14 UNF or G 1/2
T,R,L: 9/16-18 UNF or G 3/8



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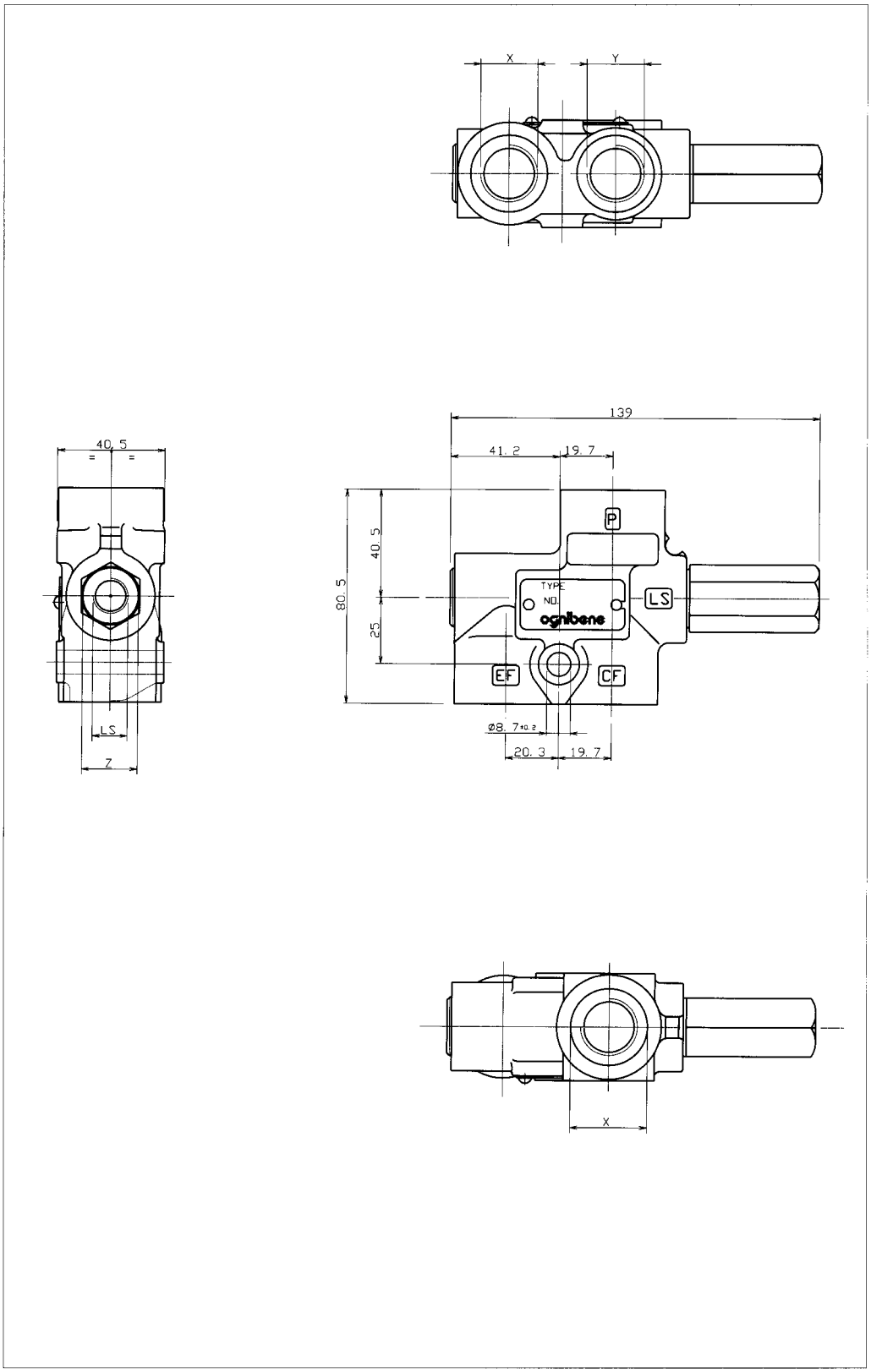
Dimensions

VPL

P, EF:
7/8 - 14 UNF
x = 34 $^{+0.2}$ max. 1,3 mm deep
or G 1/2
x = 29 $^{+0.4}$ max. 1,5 mm deep

CF:
3/4 - 16 UNF
y = 30 $^{+0.2}$ max. 1,3 mm deep
or G 1/2
y = 29 $^{+0.4}$ max. 1,5 mm deep

LS:
7/16 - 20 UNF
z = 21 $^{+0.2}$ max. 1 mm deep
or G 1/4
z = 21 $^{+0.2}$ max. 1 mm deep



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