VFD190 Series Variable Priority Flow Dividers

Aimed at mobile and industrial applications the VFD190 can be used for controlling hydraulic motor and cylinder speeds by manually adjusting the flow rate.

Variable priority flow dividers split a single input (P) flow into a priority (REG) flow and an excess or by-pass (BP) flow which can be returned directly to the oil reservoir or used to power a second system. This is possible due to the valve's adaptive pressure compensation characteristics meaning both the priority and by-pass flows can be used to drive separate circuits, even under varying loads. In many instances this dispenses with the need for another pump to operate a second system.

The VFD190 design has also been optimised to reduce energy wastage by minimising the pressure losses across the valve, resulting in a significant reduction in running costs.

Specifications

Maximum Rated Pressure: Total Flow: Maximum Priority (REG) Flow: Fluid Temperature Range: Ambient Temperature Range: Porting: Material: Up to 420 bar, 6000 psi Up to 190 L/min, 50 US gpm Up to 150 L/min, 40 US gpm -30 to 120 °C, -22 to 248 °F -30 to 50 °C, -22 to 122 °F BSPP, SAE Steel components in cast Ductile Iron body painted black Aluminium knob 3.5 to 4.0 kg, 7.7 to 8.8 lbs 2 Bolts - M8 or 5/16"



Features

- Clearly marked singleturn hand dial permits fast visual adjustments to predetermined 'Priority' flow and fast easy adjustments of 'Priority' circuit to meet varying requirements.
- Pressure compensated permitting both 'Priority' and 'By-Pass' to be used simultaneously at varying pressures without affecting the 'Priority' flow rate.
- Anti-tamper locknut option available. Contact Sales Office for more information.
- Needle Valve can be pulled back to allow intermittent reverse flow.

Weight: Mounting:

Symbol:







Sales Order Code

Please contact our technical sales team to discuss any special order requirements.

TYPICAL CODE	DESCRIPTION	SEE TABLE	YOUR CODE
VFD190	Basic Valve	-	
RD	Valve Type	Table 1	
250	Priority (REG) Flow Capacity	Table 2	
B 3	Porting	Table 3	

Table 1: Valve Type

CODE	DESCRIPTION
RD	Standard
LN	Lock Nut Version

Table 2: Priority (REG) Flow Capacity*

CODE	FLOW SIZE		
CODE	L/min	US GPM	
200	0 - 76	0 - 20	
250	0 - 95	0 - 25	
300	0 - 114	0 - 30	
350	0 - 132	0 - 35	
400	0 - 150	0 - 40	

Table 3: Porting

CODE	PORT THREAD TYPE	
B3	1" BSPP	
S3	1-5/16" -12UN #16 SAE ORB	

Note:

*Input flow will affect the maximum seen priority flow capacity. To achieve the given flow capacity, the input flow needs to be greater.

Priority (Reg) Flow vs. Load

All tests completed using ISO32 Mineral oil at 40 degrees C (32 cSt)

190 L/min Input Flow







LN (Anti-Tamper Locknut Option)



Select Sales Order Code 'LN' from Table 1 'Valve Type'. Select flow size code from Table 2 'Priority (REG) Flow Capacity'.



Circuit Suggestions

1. Variable Speed of Hydraulic Motor Drive on Agricultural Tractor

This circuit gives the capability to vary the speed of a hydraulic motor as required. Also, for a given control knob setting, the hydraulic motor speed stays constant regardless of the tractor speed.





Using only one pump, this circuit gives speed control of the hydraulic motor and powers a hydraulic cylinder. Each function can be used either simultaneously or independently because pressure variations between Priority (REG) and By-Pass (BP) flows do not effect the flow on the Priority (REG) circuit.



3. Multiple Circuits From a Single Pump

Using one pump, this circuit gives independently variable speed drive from three hydraulic motors. Motors can be used simultaneously or independently.



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