

# VFD120 Series

## Variable Priority Flow Dividers

Aimed at mobile and industrial applications the VFD120 can be used for controlling hydraulic motor and cylinder speeds by manually adjusting the flow rate.

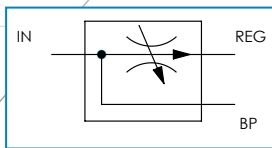
Variable priority flow dividers split a single input (P) flow into a priority (REG) flow and an excess or by-pass (BP) flow which can be returned directly to the oil reservoir or used to power a second system. This is possible due to the valve's adaptive pressure compensation characteristics meaning 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 VFD120 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

<b>Maximum Rated Pressure:</b>	Up to 420 bar, 6000 psi
<b>Total Flow:</b>	Up to 120 L/min, 32 US gpm
<b>Maximum Priority (REG) Flow:</b>	Up to 95 L/min, 25 US gpm
<b>Porting:</b>	BSPP, SAE, NPT, METRIC
<b>Material:</b>	Steel components in cast Ductile Iron body painted black Aluminium knob
<b>Weight:</b>	Typically 2.0 kg, 4.4 lbs
<b>Mounting:</b>	2 Bolts - M8 or 5/16"

### Symbol:



Make it **BLUE**

### Features

- Clearly marked single-turn hand dial permits fast visual adjustments to pre-determined 'Priority' flow.
- 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.
- Reverse flow capable (Depending upon control knob position) Contact Sales office for more information.

# Sales Order Code

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

TYPICAL CODE	DESCRIPTION	SEE TABLE	YOUR CODE
VFD120	Basic Valve	-	
RD	Valve Type	Table 1	
120	Priority (REG) Flow Capacity	Table 2	
J	Porting	Table 3	

**Table 1: Valve Type**

CODE	DESCRIPTION
RD	Standard
LN	Lock Nut Version

**Table 2: Priority (REG) Flow Capacity\***

CODE	FLOW SIZE	
	L/min	US GPM
030	0 - 11	0 - 3
050	0 - 19	0 - 5
080	0 - 30	0 - 8
120	0 - 45	0 - 12
160	0 - 60	0 - 16
200	0 - 76	0 - 20
250	0 - 95	0 - 25
Use for Lock Nut Version Only		
X??**	?? L/min	

**Table 3: Porting**

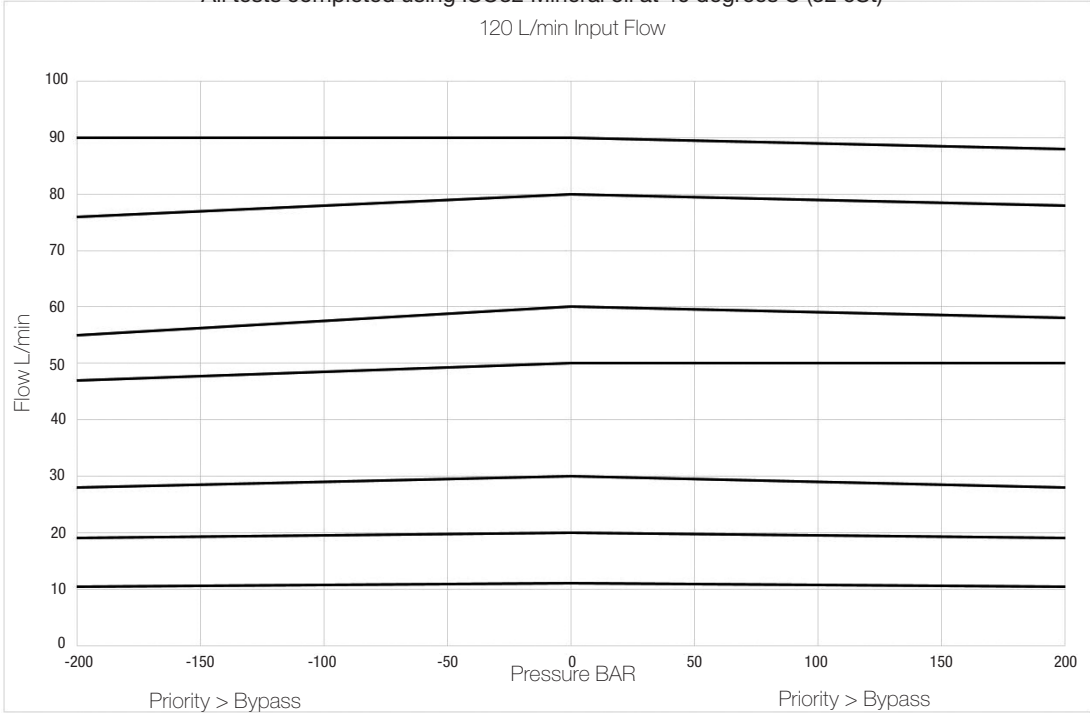
CODE	PORT THREAD TYPE
H	1/2" BSPP ***
J	3/4" BSPP
G	1-1/16" -12UN # 12 SAE ORB
A	3/4" NPTF ****
M	M22 X 1.5 ***

Notes:  
 \*\*\* M22 and 1/2" BSPP threads only available in flow codes 030 to 120.  
 \*\*\*\* All NPTF threads are to ANSI B1.20.3 -1976 Class 1. As stated in the standard it is recommended that "sealing is accomplished by the means of a sealant applied to the thread". NPT fittings may also be used to connect to NPTF ports (also with a sealant applied to the thread).

Notes:  
 \* Input flow will affect the maximum seen priority flow capacity. To achieve the given flow capacity, the input flow needs to be greater.  
 \*\* Unless otherwise stated, factory set to 47 L/min (CODE X47).

## Priority (Reg) Flow vs. Load

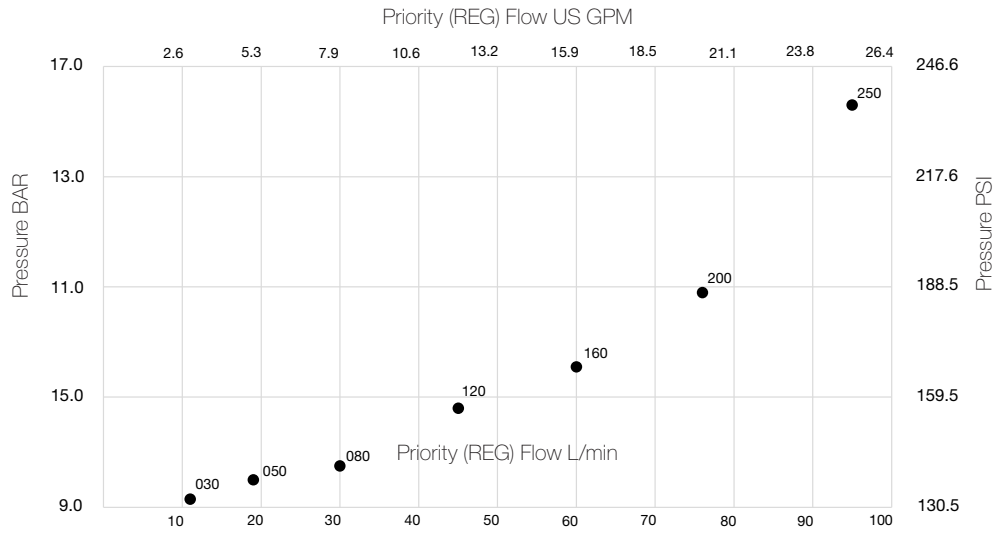
All tests completed using ISO32 Mineral oil at 40 degrees C (32 cSt)



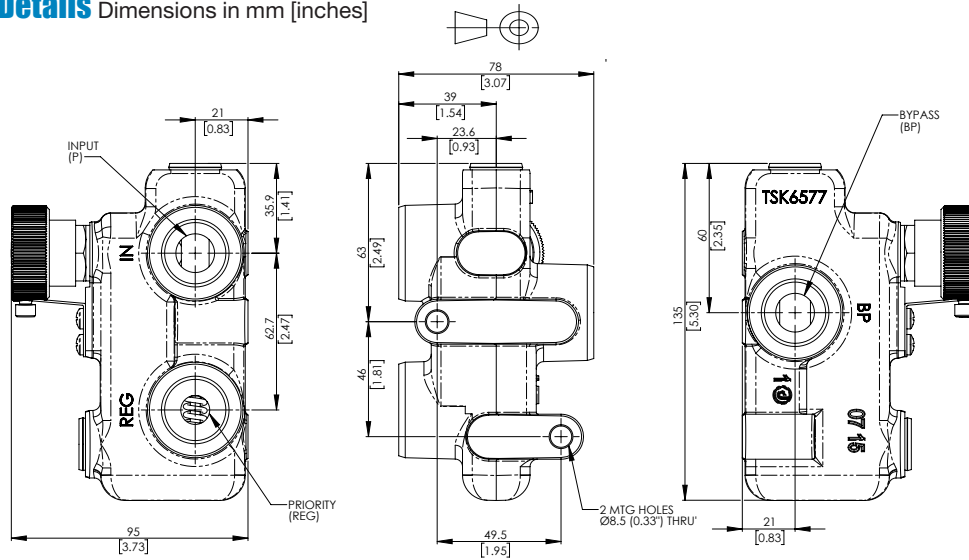
## Max Pressure Drop Between Inlet (P) and priority (REG) port

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

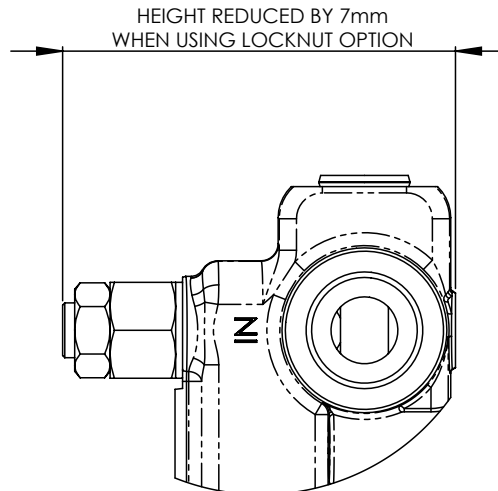
Inlet Flow - 120 L/min, REG port 100 Bar, BP port to tank



## Installation Details Dimensions in mm [inches]



## LN (Anti-Tamper Locknut Option)



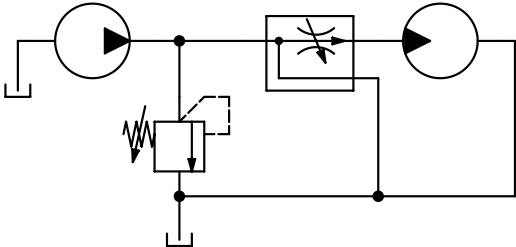
Select Sales Order Code 'LN' from Table 1 'Valve Type'. State flow setting required, otherwise factory setting is used.

### 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.

Circuit 1

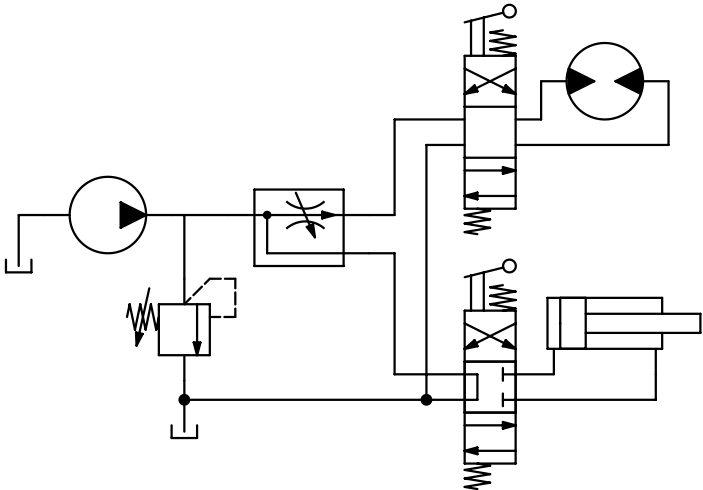


### Circuit Suggestions

#### 2. Two Circuits From a Single Pump

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.

Circuit 2

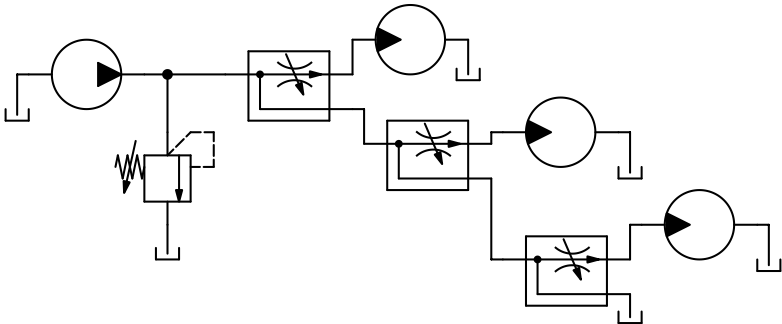


### Circuit Suggestions

#### 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.

Circuit 3



Webtec reserve the right to make improvements and changes to the specification without notice