

# WPB SERIES

## Hydraulic Flow Monitor

The WPB series in-line flow meters are ideal for monitoring pump performance and media flows through hydraulic circuits and cooling systems.

The flow rate is easily read in either US gpm or L/min from the laser engraved scale.

A varied choice of materials and seals can make it suitable for a wide range of fluids.

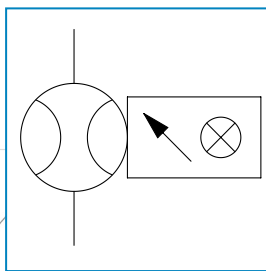
Due to the sharp edge orifice technology the units have excellent viscosity stability which means it is suitable for a wide operating temperature range.

Installation is made easy with a choice of threaded ports, no need for straight lengths of pipe on inlet or outlet and no restriction to orientation. This combined with the unit being sealed means that it can nearly be installed anywhere.

### Specifications

<b>Maximum Rated Pressure:</b>	Up to 420 bar, 6000 psi
<b>Maximum Rated Flow:</b>	Up to 550 L/min, 150 US gpm
<b>Maximum Rated Temperature:</b>	116°C, 240°F
<b>Accuracy:</b>	± 2.0% of full scale (-BI code ±0.4% of full scale)
<b>Porting:</b>	BSPP, NPTF, SAE
<b>Material:</b>	
<b>Body Materials:</b>	Aluminium, Brass or Stainless Steel
<b>Internal Materials:</b>	Stainless Steel
<b>Seals:</b>	NBR (Other seals consult sales office) (FKM fitted as standard to Stainless Steel bodies)

### ISO Symbol:



Make it **BLUE**

### Features

- Direct reading with dual scale, L/min & US gpm.
- Excellent viscosity stability to a min 95 cSt flow throttling capability.
- Advanced Stainless steel sharp edge orifice.
- Unrestricted mounting in any orientation.
- Choice of Aluminium, Brass or Stainless Steel construction.
- Other series available:  
WPG Pneumatic Flow Monitor  
WPR Flow Monitor with Flow Rate Transmitters  
WPM Flow Monitor with Flow Rate Alarm  
WPC Hydraulic Case Drain Monitor

## Sales Order Code

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

TYPICAL CODE	DESCRIPTION	SEE TABLE	YOUR CODE
WPB	Basic valve - valve type	-	WPB
3	Port / Line Size	Table 1	
A	Material	Table 2	
6	Pressure Rating Maximum	Table 3	
H	Fluid Media	Table 4	
B	Thread Porting	Table 5	
15	Flow Ranges	Table 6	
-BI	Optional Flow Directions	Table 7	

**Table 1:**

PORT / LINE SIZE	CODE
1/4" - 1/2"	3
3/4" - 1"	4
1 1/4" - 2"	5

**Table 2:**

MATERIAL	CODE
Aluminium	A
Brass	B
Stainless Steel	S

**Table 3:**

PRESSURE RATING MAXIMUM	CODE
240 bar, 3500 psi (Liquids / Aluminium and Brass)	6
420 bar, 6000 psi (Liquids / Stainless Steel)	7

**Table 4:**

FLUID MEDIA	CODE
Oil at 0.873 specific gravity	H
Water at 1.0 specific gravity	W

**Table 5:**

THREAD PORTING	CODE
Size 3 available threads	
1/4" NPTF	S
3/8" NPTF	A
1/2" NPTF	B
9/16" -18UN #6 SAE ORB	E
3/4" -16UN #8 SAE ORB	F
7/8" -14UN #10 SAE ORB	G
1/4" BSPP	8
3/8" BSPP	R
1/2" BSPP	T
Size 4 available threads	
3/4" NPTF	C
1" NPTF	D
1-1/16" -12UN #12 SAE ORB	H
1-5/16" -12UN #16 SAE ORB	J
3/4" BSPP	U
1" BSPP	V
Size 5 available threads	
1-1/4" NPTF	K
1-1/2" NPTF	L
2" NPTF	M
1-5/8" -12UN #20 SAE ORB	N
1-7/8" -12UN #24 SAE ORB	P
2" -12UN #32 SAE ORB	Q
1-1/4" BSPP	W
1-1/2" BSPP	Y
2" BSPP	X

**Table 6: Oil and Water**

FLOW RANGES		SIZE	CODE
L/min	US gpm		
0.5-4	0.1-1.0	3 only	01
1-8	0.2-2.0	3 & 4	02
2-19	0.5-5.0	3 & 4	05
5-37.5	1-10	3 & 4	10
5-55	1-15	3 & 4	15
10-75	2-20	4 only	20
10-95	2-25	4 & 5	25
15-115	4-30	4 only	30
20-150	4-40	4 only	40
20-190	6-50	4 & 5	50
30-280	6-75	5 only	75
50-375	10-100	5 only	88
100-550	25-150	5 only	99

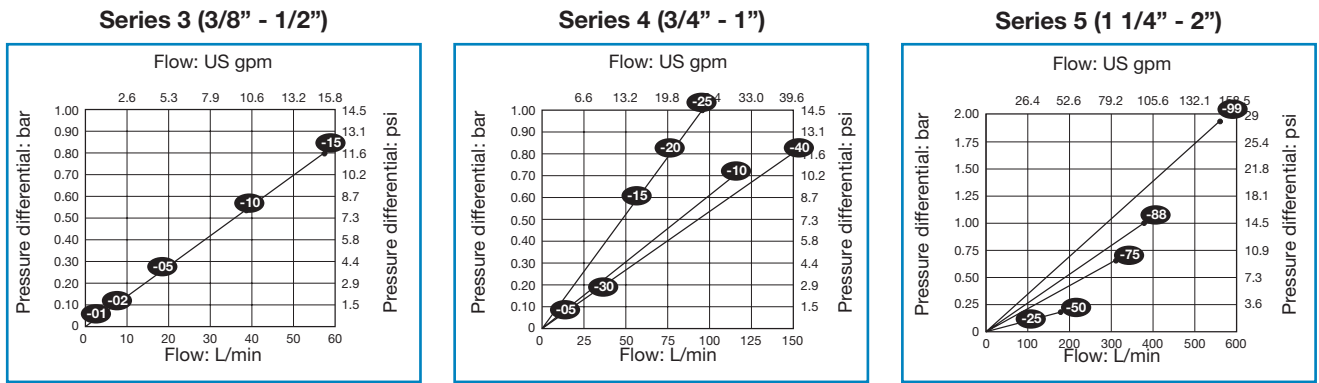
**Table 7:**

OPTIONAL FLOW DIRECTIONS	CODE
Uni- directional	
Bi directional*	-BI
Reverse flow	-RF

\*Bi-directional option only available in the following flow ranges  
 Port/Line Size Code 3 - Flow Ranges Code 05, 10 and 15  
 Port/Line Size Code 4 - Flow Ranges Code 10, 15, 20 and 30  
 Port/Line Size Code 5 - Flow Ranges Code 50, 75 and 88

NPTF porting threads are dry seal to ANSI B1.20.3  
 For SAE porting in brass please contact technical sales team.

## Pressure Differential Graphs Categorised by Sized Code

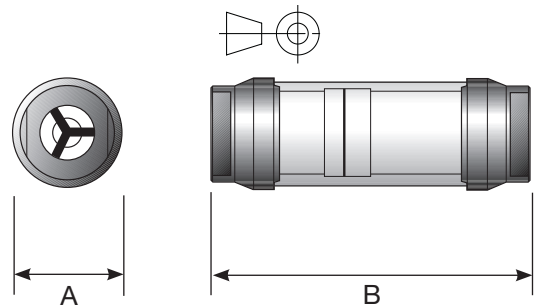


= Flow size (see Product Selector)  
 14.5 psi = 1 bar, 1 US gpm = 3.785 L/min

### Installation Details

Table Dimensions

SIZE CODE	3		4		5		5 (2"PORTS)	
	mm	inch	mm	inch	mm	inch	mm	inch
Dim. A	48	1-7/8	60	2-3/8	90	3-1/2	90	3-1/2
Dim. B	167	6-9/16	182	7-5/32	258	10-1/8	322	12-5/8



### Product Information

- Accuracy: ± 2.0 % of full scale (-BI code ± 4.0% of full scale)
- Repeatability: ± 1% of full scale
- Max. operating pressure: Aluminium and Brass 240 bar, 3500 psi.  
Stainless Steel 420 bar, 6000 psi.
- Max. operating temperature: 116° C, 240° F  
Note: For operation to 316° C, 600° F, a high temperature range is available.
- Calibration: Oil monitors: DTE 25 @ 43°C, 110°F (40cSt), 0.873 sg (DTE 25 is a registered trademark of Exxon Mobil).  
Water monitors: Tap water @21°C, 70°F (1 cSt), 1.0 sg  
Flow calibration certificates are available on request - this is a chargeable option.  
Note: Must be requested at time of order & cannot be retrospectively requested.
- Filtration requirements: 74 micron filter or 200 mesh screen minimum

### Construction

#### Wetted Components:

- Casing and End Ports: Anodised Aluminium, Brass, Stainless Steel
- Seals: Aluminium & Brass: NBR (as standard); Optional EPR, FKM or FFKM - consult sales office  
Stainless Steel: FKM with PTFE backup (as standard); Optional NBR, EPR or FFKM - consult sales office
- Transfer Magnet: PTFE coated Alnico
- Floating Orifice Disc: Stainless Steel
- All other Internal Parts: Stainless Steel

#### Non-wetted Components:

- Window Tube: Polycarbonate
- Window Seal: NBR (as standard), PTFE

### Operation

The flow monitor consists of tapered centre shaft, encircled by a sharp edged floating orifice disk, transfer magnet and return spring.

As flow moves through the monitor, a pressure differential occurs across the floating orifice disk, forcing the disk & transfer magnet against the return spring. As flow increases, the pressure differential increases, forcing the disk transfer magnet along the tapered shaft. As flow decreases, the biased spring forces the disk & transfer magnet down the tapered shaft, returning to the "no flow" position.

In metal casing monitors, where the disk & transfer magnet are sealed in the body casing, there is a magnetically coupled magnet follower which displays the reading on the outside scale.

The flow monitor has a linear relationship between flow rate, pressure differential and piston displacement which is displayed on the calibrated scale.

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