

# HPV1 SERIES

HYDRAULIC PILOT  
CONTROL



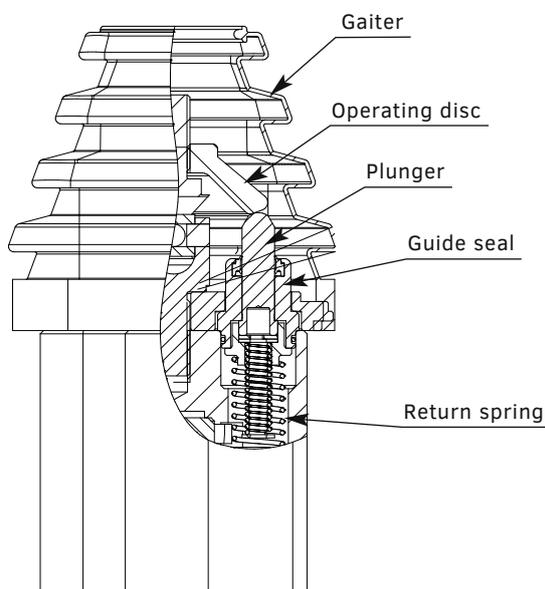
**INTRODUCTION**

HPV1 Pilot Control Valves are part of the extensive range of Hydreco Hydraulics products.

This product has a new design meant to provide a comfortable and fine control for mobile and industrial machines. The pilot valve, with its single lever dual axis control, is supported by an extensive range of characteristics, metering curves and handle option which make it suitable for a wide range of both mobile and industrial applications.

Our engineers can offer special support to optimize this product to suit your application.

**PARTS**



**BENEFITS**

- Compact and lightweight body
- Low effort control and smooth movements
- Rugged construction for long operating life
- Spare parts available upon request
- Suitable for armrest of control mounting
- Compatible with a wide range of products
- Low hysteresis, high accuracy, pressure control curves
- Wide range of electrical options in multi-functional ergonomic handles

**APPLICATIONS**

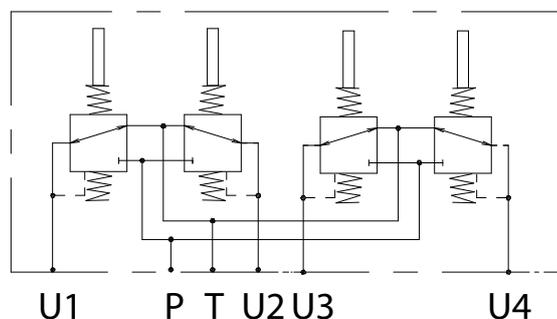
- Excavators and mini-excavators
- Cranes
- Forestry machines
- Access platforms
- Container handlers
- Tracked machines
- Skid steer loaders
- Forklift trucks

**TECHNICAL FEATURES**

<b>MAXIMUM OPERATING PRESSURE</b>	inlet (P port)	50 bar	725 psi
	back (T port)	3 bar	43.5 psi
<b>CONTROL FLOW</b>	range	5 to 20 l/min	1.3 to 5.3 gpm
<b>MAXIMUM HYSTERESIS</b>		±0.5 bar	± 7.3 psi
<b>SERVICE PORTS</b>		1/4" BSP	9/16" UNF

<b>RANGE TEMPERATURES</b>	fluid	-20 to +80 °C	-4 to +176 °F
<b>FLUID TYPE</b>		mineral oils ISO, HM and HV	
<b>FLUID CONTAMINATION</b>		ISO 4406:1999 class 20/18/15	

**HYDRAULIC SYMBOL (TYPICAL)**



Hydreco Hydraulics reserves the right to update the information and data contained in this catalogue at any time without notice

**HPV1-** [ ] - [ ] - [ ] - **S-** [ ] - [ ] - [ ]

**MODEL** \_\_\_\_\_  
 HPV Hydraulic Pilot Valve

**SERIES** \_\_\_\_\_

**MODEL TYPE** \_\_\_\_\_  
**C01** Return spring  
**C04** Frictioned on y axis, return spring on x axis

**HANDLE STYLE** \_\_\_\_\_  
 (refer to HANDLE catalogue for complete handle options definition)

- W** Without handle
- SA** Without switch
- SD** With one switch on the top and one on the side
- SX** With one switch on the top
- SS** With one switch on the top with deep socket
- SY** With one momentary 3 position rocker
- SZ2** With 2 latched position
- SZ3** With 3 latched position
- E** MFE handle series
- M** MFE2 handle series
- EX** EXM handle (multifunctional) series
- MH** MHC handle (multifunctional) series

**SHUTTLE BLOCK (Only for 1/4 " BSP)**  
**BVR4** 4 Shuttle valve block (Pag.7)  
 \* Omit if not required

**HANDLE CODE**  
 Only for handle type E, M or EX:  
 5-digit handle code defined by Hydreco

**PORTS**  
 Omit for 1/4" BSP  
**S** 9/16"-18 UNF SAE6

**RETURN SPRING**  
**0** Standard: 1.2 to 2.5 daN  
**1** Medium: 1.7 to 3.2 daN

**SQUARE GAITER**

**METERING CURVES**  
 See 'curve ID' in tables at pages 4 and 5.

**S\***

**E**

**M**

**EX**

**MH**



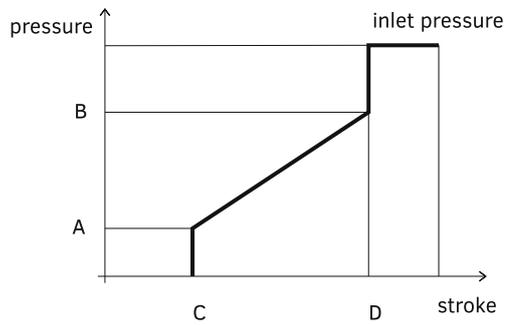
**CODE EXAMPLE:**

HPV1-C01-E015-S-0-11163

Hydraulic pilot valve series 2, return spring configuration, MFE handle, metering curve with step 015, square gaiter, standard return spring, MFE handle n. 11163:

**METERING CURVES - WITH STEP**

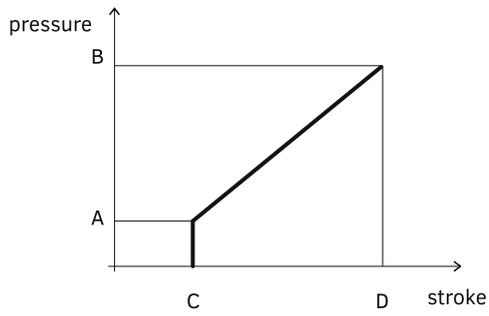
Tolerance on pressure settings  $\pm 0.5$  bar (7.25 psi). Other metering curves are available upon request.



PRESSURE (bar   psi)		STROKE (mm   in)		CURVE ID
A	B	C	D	
1.0   14.5	12.0   174.0	1.0   0.04	8.5   0.33	<b>034</b>
2.0   29.0	11.5   166.8	1.0   0.04	8.5   0.33	<b>012</b>
2.0   29.0	20.5   297.3	1.0   0.04	8.5   0.33	<b>077</b>
2.0   29.0	14.2   206.0	1.0   0.04	8.5   0.33	<b>163</b>
3.2   46.4	17.2   249.5	1.0   0.04	8.5   0.33	<b>062</b>
3.4   49.3	29.4   426.4	1.0   0.04	8.5   0.33	<b>030</b>
4.3   62.4	15.2   220.5	1.0   0.04	8.5   0.33	<b>049</b>
4.9   71.1	18.9   274.1	1.0   0.04	8.5   0.33	<b>018</b>
4.9   71.1	17.5   253.8	2.0   0.08	8.5   0.33	<b>202</b>
5.0   72.5	14.5   210.3	1.0   0.04	8.5   0.33	<b>019</b>
5.0   72.5	15.9   230.6	1.0   0.04	8.5   0.33	<b>026</b>
5.8   84.1	22.0   319.1	1.8   0.07	8.5   0.33	<b>015</b>
7.2   104.4	16.7   242.2	1.0   0.04	8.5   0.33	<b>199</b>
7.6   110.2	21.7   314.7	1.0   0.04	8.5   0.33	<b>198</b>
8.0   110.0	23.0   333.6	1.0   0.04	8.5   0.33	<b>173</b>

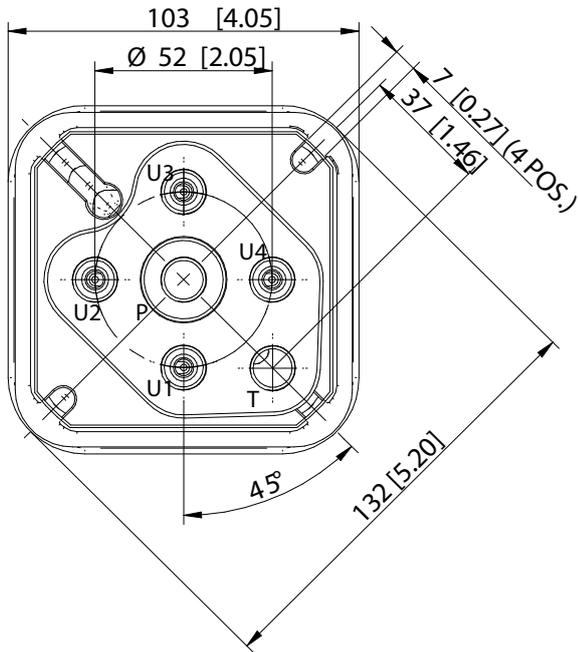
**METERING CURVES - WITHOUT STEP**

Tolerance on pressure settings  $\pm 0.5$  bar (7.25 psi). Other metering curves are available upon request.

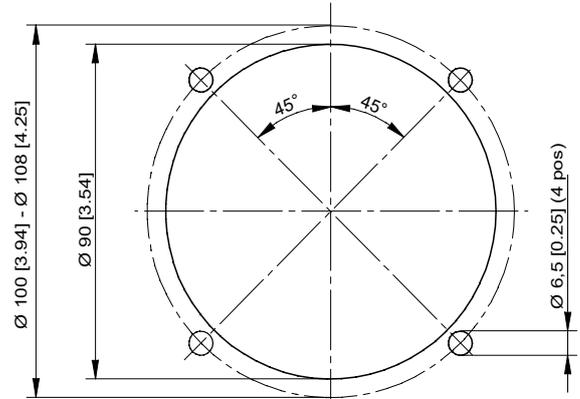


PRESSURE (bar   psi)		STROKE (mm   in)		CURVE ID
A	B	C	D	
3.8   55.1	23.7   343.7	1.0   0.04	9.0   0.35	<b>074</b>
4.0   58.0	8.0   116.0	1.0   0.04	9.0   0.35	<b>054</b>
4.4   63.8	21.6   313.3	1.0   0.04	9.0   0.35	<b>126</b>
5.0   72.5	18.0   261.1	2.0   0.08	9.0   0.35	<b>079</b>
5.0   72.5	19.87   288.2	1.0   0.04	9.0   0.35	<b>094</b>
5.7   82.7	18.7   271.2	1.0   0.04	9.0   0.35	<b>055</b>
8.3   120.4	22.5   326.3	1.0   0.04	9.0   0.35	<b>059</b>

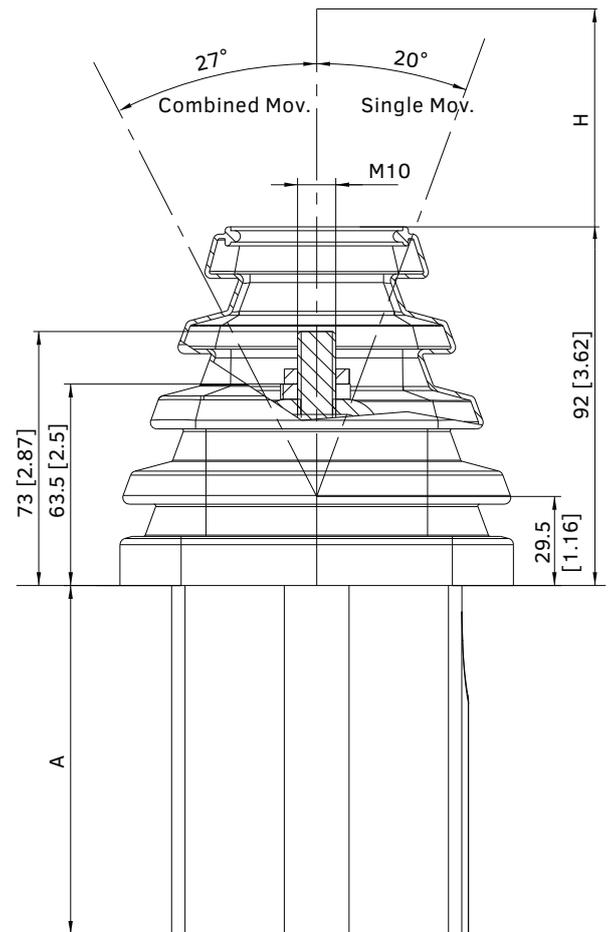
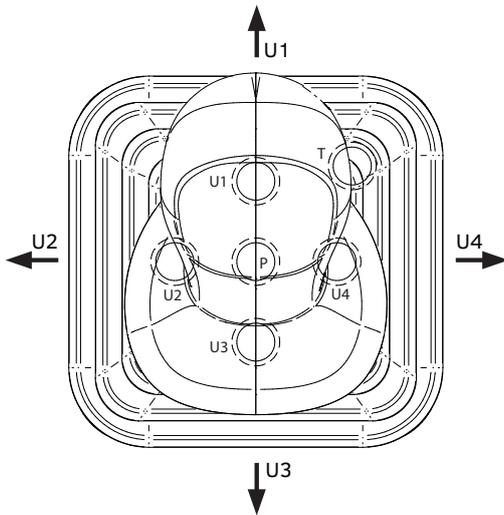
INSTALLATION AND DIMENSIONS mm[in]



FOOTPRINT



ORIENTATION OF THE PILOT CONTROL UNITS



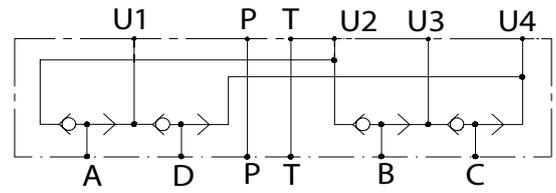
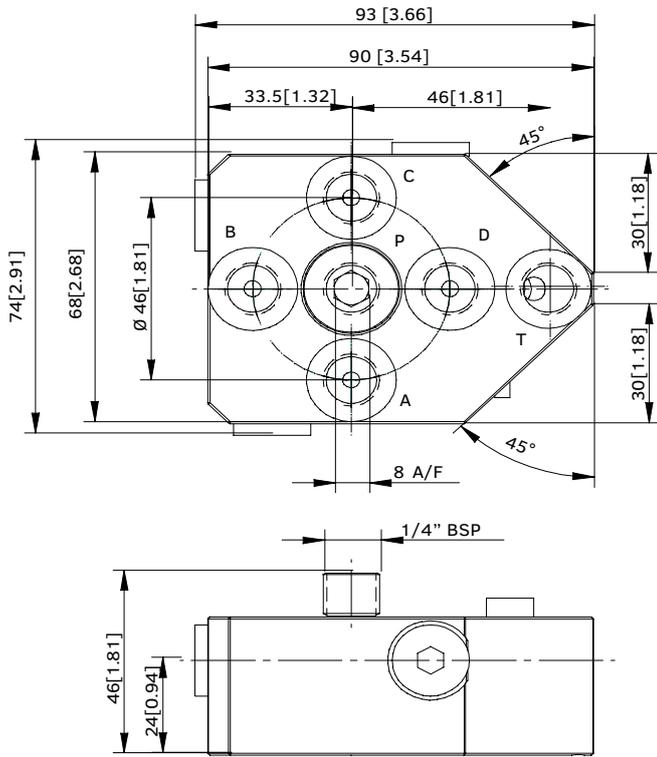
A = 75 mm [2.95] for 1/4" BSP PORTS  
A = 82 mm [3.23] for 9/16"-18 SAE6 PORTS

Valve configuration	approx. weight (kg   lb)	H (mm   in)
only body + gaiter	1.4   3.09	-
with S* handles	1.7   3.75	131   5.16
with MFE handles	1.7   3.75	154   6.06
with MFE2 handles	1.8   3.97	153   6.02
with EXM handles	1.6   3.53	147   5.78
with MHC handles	1.8   3.97	172   6.77

\* For the correct operation of special version HPV1C01F it is recommended to use 60° cone connectors, in accordance with ISO 8434-6 (Metallic tube connections for fluid power and general use — Part 6: 60° cone connectors with or without O-ring)

**BVR4 - INSTALLATION AND DIMENSIONS mm[in]**

**HYDRAULIC CIRCUIT DIAGRAM BVR4**



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## CONTACT INFORMATION

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