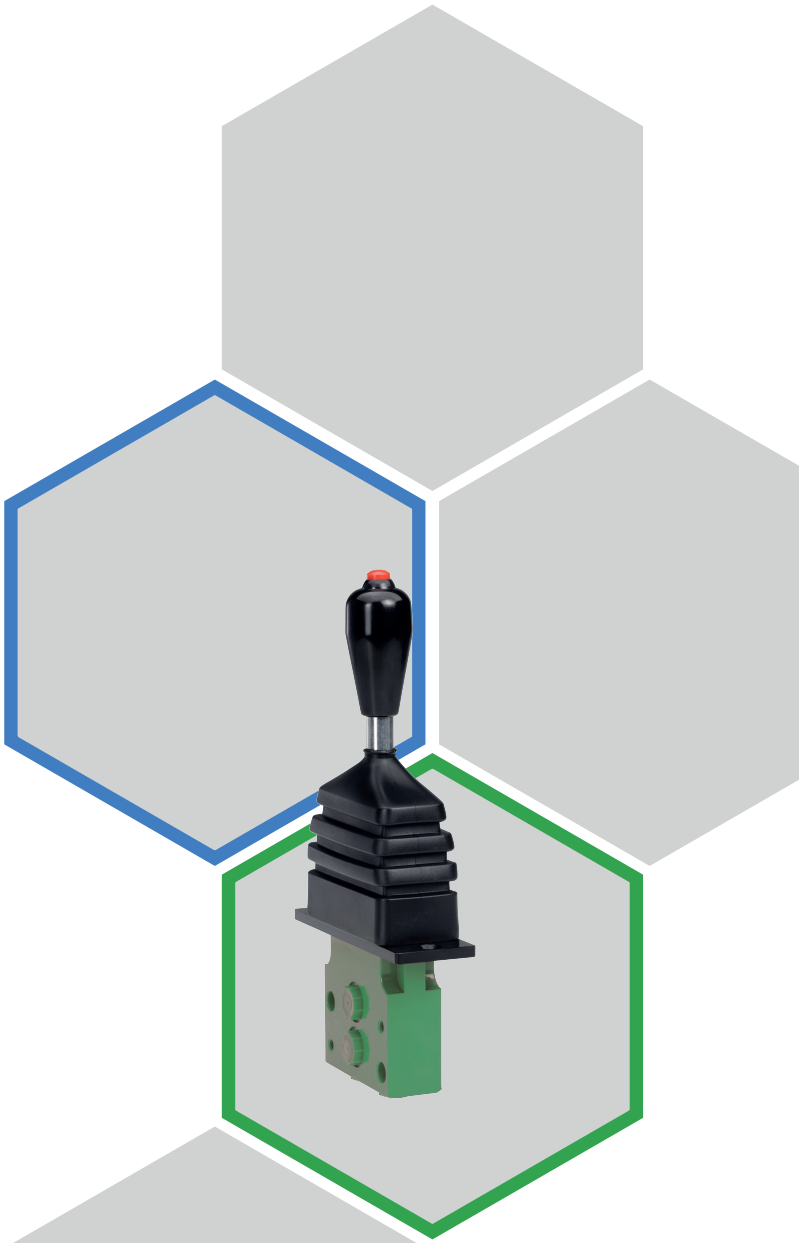
HYDRECO
a member of DAIKIN group



HPVS SERIES

HYDRAULIC PILOT CONTROL

TECHNICAL CATALOGUE

INTRODUCTION

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

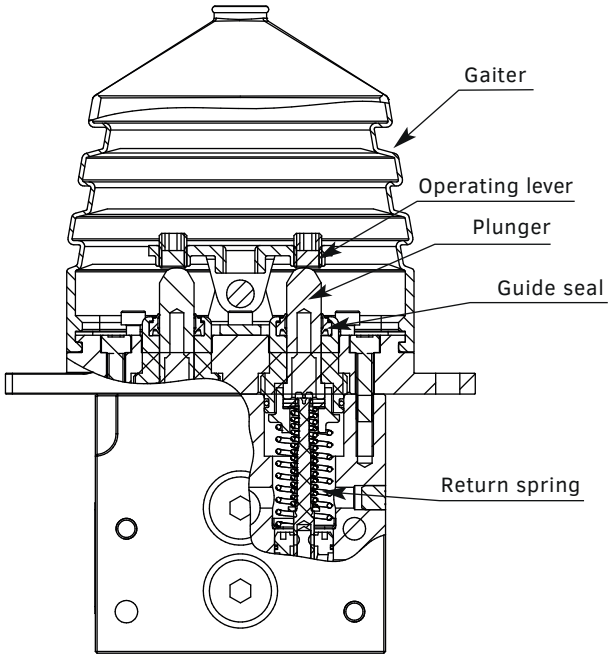
This product, with its single lever control, supported by an extensive range of characteristics and handles is suitable for a wide range of both mobile and industrial applications.

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

BENEFITS

- Compact and lightweight
- Suitable for armrest of console mounting
- Compatible with a wide range of product
- Operator is protected from high temperature components
- Low hysteresis, high accuracy, pressure control curves
- Wide range of electrical options in both standard and multifunctional ergonomic handles
- Low effort lever control

PARTS



APPLICATIONS

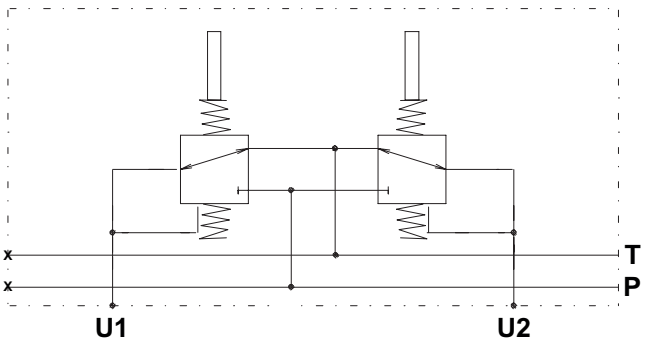
- Forklift trucks
- Drilling rigs
- Forestry machines
- Container handlers
- Cranes
- Mining
- Material handling

TECHNICAL FEATURES

MAXIMUM OPERATING PRESSURE	inlet (P port)	50 bar	725 psi
	back (T port)	3 bar	43.5 psi
CONTROL FLOW	range	5 to 20 l/min	1.3 to 5.3 gpm
MAXIMUM HYSTERESIS		±0.5 bar	± 7.3 psi
SERVICE PORTS		1/4" BSP	7/16" UNF

RANGE TEMPERATURES	ambient	-20 to +54 °C	-4 to +130 °F
	fluid	-20 to +82 °C	-4 to +180 °F
FLUID TYPE		mineral oils ISO, HM and HV	
FLUID CONTAMINATION		ISO 4406:1999 class 20/18/15	

HYDRAULIC SYMBOL (TYPICAL)



See others model's hydraulic symbols at page 4

HPVS- [ ] **-** [ ] **-** [ ] **- F -** [ ] [ ] **-** [ ]

MODEL
HPV Hydraulic Pilot Valve

SERIES

MODEL TYPE
01 Lever spring returned to neutral
02 Lever frictioned in any position
03 Lever frictioned in any position with neutral sensor
04 Lever detented at both stroke ends
05 Lever detented in neutral position
06 Lever detented in neutral and frictioned hold in any position
07 Lever detented to U1 and spring return to neutral from U2
08 Lever detented to U2 and spring return to neutral from U1
09 Square mounting flang and rubber boot with MFE handle

HANDLE STYLE

(refer to HANDLE catalogue for complete handle options definition)

W Without handle
KB Straight handle without electric switch
SA Straight handle without electric switch
SD Straight handle with electric switch
SX Straight handle with electric switch
SS Straight handle with electric switch to close and safety button
SY Straight handle with electric switch dual rocker type
SZ2 Straight handle with 2 positions latched rocker
SZ3 Straight handle with 3 positions latched rocker
E MFE handle series
M MFE2 handle series
EX EXM handle (multifunctional) series

METERING CURVES
See 'curve ID' in tables at pages 5 and 6.

CONTROL PLUNGER

RETURN SPRING
0 Standard : 1.4 to 2.8 daN
1 Medium : 3.0 to 4.5 daN

PORTS
Omit for 1/4" BSP
S 7/16"- 20 UNF SAE4

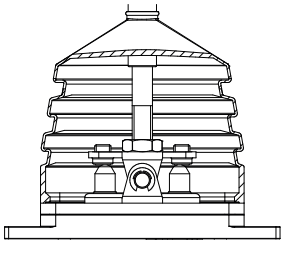
MICRO SWITCH OPTIONS
(OMIT if not required)
M1 1 switch senses out of centre position
M2 2 switches sense movement away from neutral each way
M3 1 switch senses forward movement away from neutral
M4 1 switch senses backward movement away from neutral

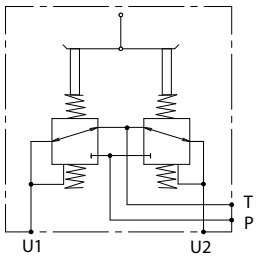
S* **K*** **E** **M** **EX**

CODE EXAMPLE:

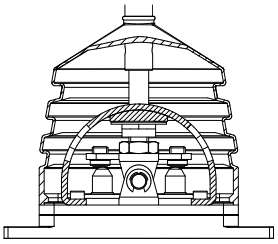
HPVS-01-KB-015-F-0
Hydraulic pilot valve series S, lever spring returned to neutral, duro plast knob handle, metering curve with step n. 015, standard plunger, standard return spring

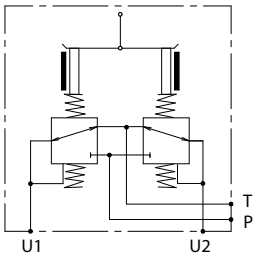
HYDRAULIC SYMBOL (01 MODEL TYPE)



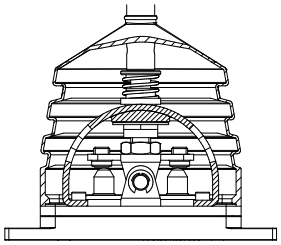


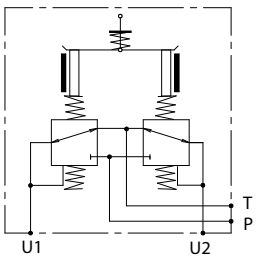
HYDRAULIC SYMBOL (02 MODEL TYPE)



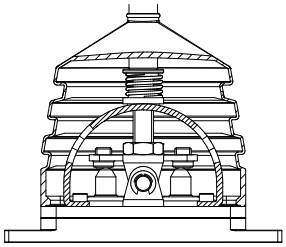


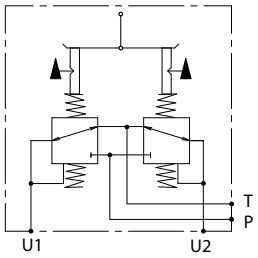
HYDRAULIC SYMBOL (03 MODEL TYPE)



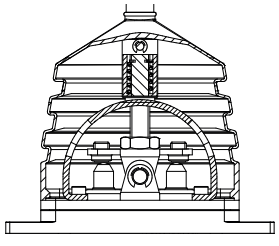


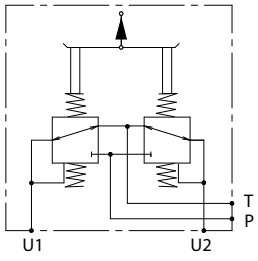
HYDRAULIC SYMBOL (04 MODEL TYPE)



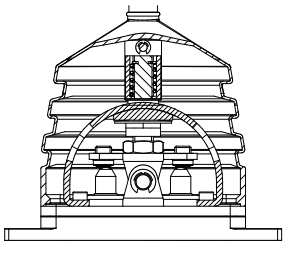


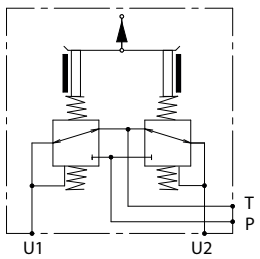
HYDRAULIC SYMBOL (05 MODEL TYPE)



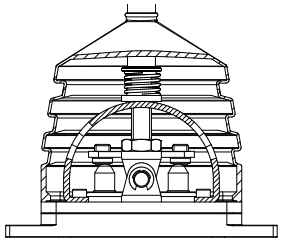


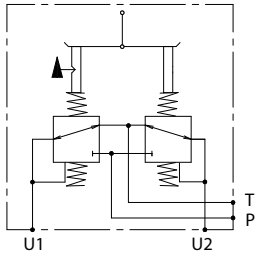
HYDRAULIC SYMBOL (06 MODEL TYPE)



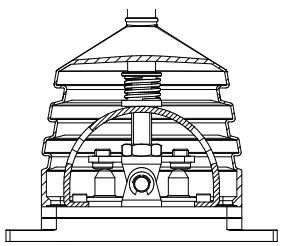


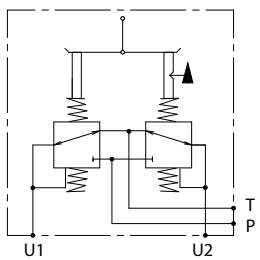
HYDRAULIC SYMBOL (07 MODEL TYPE)



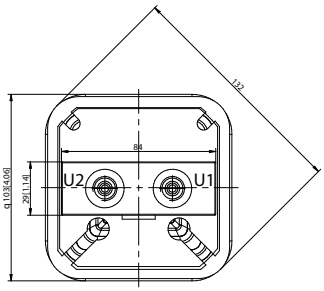


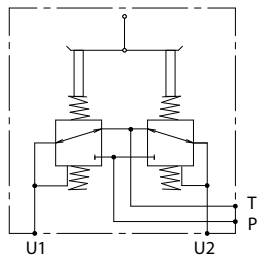
HYDRAULIC SYMBOL (08 MODEL TYPE)

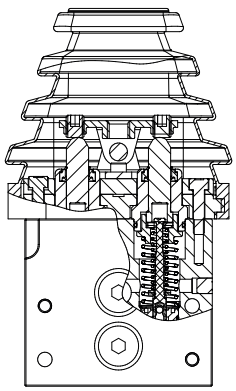


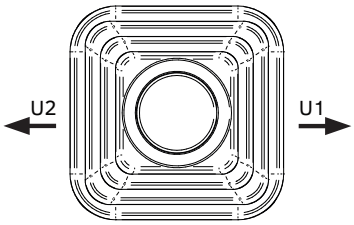


HYDRAULIC SYMBOL (09 MODEL TYPE)



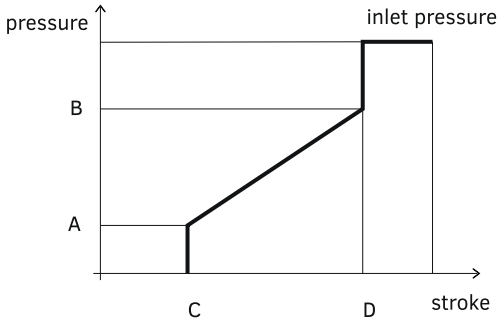






METERING CURVES - WITH STEP

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

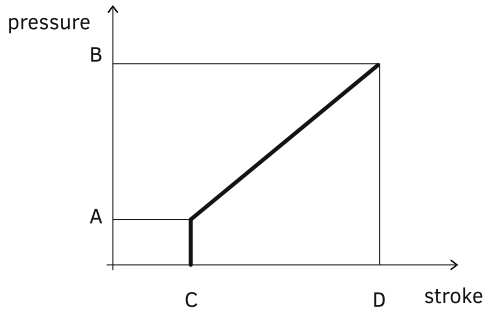


PRESSURE (bar | psi)		STROKE (mm| in)		CURVE ID
A	B	C	D	
0.0 | 0.0	13.0 | 188.6	0.5 | 0.02	8.5 | 0.33	027
0.5 | 7.3	4.0 | 58.0	1.8 | 0.07	8.5 | 0.33	009
0.5 | 7.3	6.5 | 94.3	2.0 | 0.08	8.5 | 0.33	010
0.5 | 7.3	11.4 | 165.4	1.8 | 0.07	8.5 | 0.33	047
0.5 | 7.3	18.4 | 267.0	1.0 | 0.04	8.5 | 0.33	076
1.0 | 14.5	8.0 | 116.1	1.0 | 0.04	8.5 | 0.33	011
1.0 | 14.5	12.0 | 174.1	1.0 | 0.04	8.5 | 0.33	034
1.5 | 21.8	8.5 | 123.3	1.0 | 0.04	8.5 | 0.33	069
2.0 | 29.0	11.5 | 166.9	1.0 | 0.04	8.5 | 0.33	012
2.0 | 29.0	11.5 | 166.9	2.0 | 0.08	8.5 | 0.33	025
2.0 | 29.0	8.0 | 116.1	0.5 | 0.02	8.5 | 0.33	042
2.0 | 29.0	13.0 | 188.6	1.0 | 0.04	8.5 | 0.33	045
2.0 | 29.0	20.5 | 297.5	1.0 | 0.04	8.5 | 0.33	077
2.0 | 29.0	27.5 | 399.0	1.0 | 0.04	8.5 | 0.33	080
2.0 | 29.0	14.2 | 206.0	1.0 | 0.04	8.5 | 0.33	163
2.0 | 29.0	25.0 | 362.8	1.0 | 0.04	8.5 | 0.33	180
2.4 | 34.8	16.4 | 238.0	1.0 | 0.04	8.5 | 0.33	078
2.8 | 40.6	14.91 | 216.3	1.0 | 0.04	8.5 | 0.33	123
2.8 | 40.6	4.75 | 69.0	1.0 | 0.04	8.5 | 0.33	129
3.0 | 43.5	9.0 | 130.6	2.0 | 0.08	8.5 | 0.33	021
3.0 | 43.5	10.0 | 145.1	1.0 | 0.04	8.5 | 0.33	051
3.0 | 43.5	21.74 | 315.4	1.0 | 0.04	8.5 | 0.33	101
3.0 | 43.5	8.0 | 116.1	1.0 | 0.04	8.5 | 0.33	125
3.2 | 46.4	15.4 | 223.4	1.0 | 0.04	8.5 | 0.33	041
3.2 | 46.4	11.7 | 169.8	1.8 | 0.07	8.5 | 0.33	048
3.2 | 46.4	17.2 | 249.6	1.0 | 0.04	8.5 | 0.33	062
3.4 | 49.3	29.4 | 426.6	1.0 | 0.04	8.5 | 0.33	030
3.5 | 50.8	13.0 | 188.6	1.0 | 0.04	8.5 | 0.33	101
3.7 | 53.7	29.23 | 424.1	1.0 | 0.04	8.5 | 0.33	104
4.0 | 58.0	21.5 | 312.0	1.0 | 0.04	8.5 | 0.33	090
4.3 | 62.4	15.2 | 220.6	1.0 | 0.04	8.5 | 0.33	049
4.3 | 62.4	13.8 | 200.2	1.0 | 0.04	8.5 | 0.33	122
4.44 | 64.4	17.0 | 246.7	1.8 | 0.07	8.5 | 0.33	107
4.44 | 64.4	30.4 | 441.1	1.0 | 0.04	8.5 | 0.33	138
4.5 | 65.3	18.0 | 261.2	1.0 | 0.04	8.5 | 0.33	095
4.5 | 65.3	27.0 | 391.2	1.0 | 0.04	8.5 | 0.33	108
4.8 | 69.6	17.4 | 252.5	2.0 | 0.08	8.5 | 0.33	200
4.9 | 71.1	18.9 | 274.2	1.0 | 0.04	8.5 | 0.33	018
4.9 | 71.1	17.5 | 254.0	2.0 | 0.08	8.5 | 0.33	202
5.0 | 72.6	14.5 | 210.4	1.0 | 0.04	8.5 | 0.33	019
5.0 | 72.6	12.0 | 174.1	1.0 | 0.04	8.5 | 0.33	023
5.0 | 72.6	15.9 | 230.7	1.0 | 0.04	8.5 | 0.33	026
5.0 | 72.6	24.5 | 355.5	1.8 | 0.07	8.5 | 0.33	109
5.0 | 72.6	23.0 | 333.7	1.0 | 0.04	8.5 | 0.33	116
5.0 | 72.6	19.3 | 280.0	1.0 | 0.04	8.5 | 0.33	201

PRESSURE (bar | psi)		STROKE (mm| in)		CURVE ID
A	B	C	D	
5.1 | 74.0	19.1 | 277.1	1.2 |0.05	8.5 | 0.33	112
5.5 | 79.8	24.2 | 351.1	1.0 |0.04	8.5 | 0.33	028
5.5 | 79.8	27.0 | 391.8	1.0 |0.04	8.5 | 0.33	139
5.7 | 82.7	17.8 | 258.3	1.0 |0.04	8.5 | 0.33	137
5.8 | 84.2	22.0 | 319.2	1.8 |0.07	8.5 | 0.33	015
5.8 | 84.2	22.4 | 325.0	1.0 |0.04	8.5 | 0.33	082
5.8 | 84.2	22.0 | 319.2	1.0 |0.04	8.5 | 0.33	088
5.8 | 84.2	19.8 | 287.3	1.0 |0.04	8.5 | 0.33	106
5.8 | 84.2	23.9 | 346.8	1.0 |0.04	8.5 | 0.33	113
5.8 | 84.2	26.0 | 377.3	1.0 |0.04	8.5 | 0.33	115
5.9 | 188.6	12.9 | 187.2	1.0 |0.04	8.5 | 0.33	065
6.0 | 85.6	28.7 | 416.4	1.0 |0.04	8.5 | 0.33	150
6.1 | 188.6	15.1 | 219.1	1.0 |0.04	8.5 | 0.33	209
6.5 | 88.5	14.0 | 203.1	1.0 |0.04	8.5 | 0.33	020
6.5 | 88.5	28.0 | 406.3	1.0 |0.04	8.5 | 0.33	063
6.6 | 95.8	20.7 | 300.4	1.0 |0.04	8.5 | 0.33	043
6.6 | 95.8	22.7 | 329.4	1.5 |0.06	8.5 | 0.33	181
6.7 | 97.2	16.2 | 235.1	1.0 |0.04	8.5 | 0.33	127
7.0 | 101.6	26.7 | 387.4	0.5 |0.02	8.5 | 0.33	135
7.2 | 104.5	15.3 | 222.0	1.0 |0.04	8.5 | 0.33	100
7.2 | 104.5	16.7 | 242.3	1.0 |0.04	8.5 | 0.33	199
7.57 | 109.8	24.6 | 357.0	0.5 |0.02	8.5 | 0.33	136
7.6 | 110.3	21.7 | 314.9	1.0 |0.04	8.5 | 0.33	198
7.6 | 110.3	21.5 | 312.0	1.0 |0.04	8.5 | 0.33	207
8.0 | 188.6	24.2 | 351.1	1.0 |0.04	8.5 | 0.33	024
8.0 | 116.1	20.7 | 300.4	1.8 |0.07	8.5 | 0.33	044
8.0 | 116.1	23.0 | 333.7	1.0 |0.04	8.5 | 0.33	173
8.2 | 119.0	24.4 | 354.0	1.8 |0.07	8.5 | 0.33	013
8.2 | 119.0	24.5 | 355.5	1.0 |0.04	8.5 | 0.33	014
8.4 | 121.9	50.0 | 725.5	1.0 |0.04	8.5 | 0.33	073
8.4 | 121.9	21.1 | 306.2	3.25 |0.13	8.5 | 0.33	098
8.4 | 121.9	27.9 | 404.8	1.8 |0.07	8.5 | 0.33	120
8.5 | 123.3	16.2 | 235.1	1.0 |0.04	8.5 | 0.33	175
9.0 | 130.6	15.5 | 224.9	2.0 |0.08	8.5 | 0.33	084
9.8 | 142.2	26.0 | 377.3	1.8 |0.07	8.5 | 0.33	032
14.0 | 203.1	29.0 | 420.8	1.0 |0.04	8.5 | 0.33	031

METERING CURVES - WITHOUT STEP

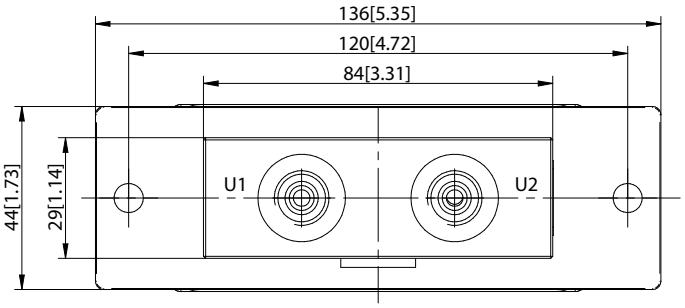
Tolerance on pressure settings ± 0.5 bar (7.25 psi). Other metering curves are available upon request.



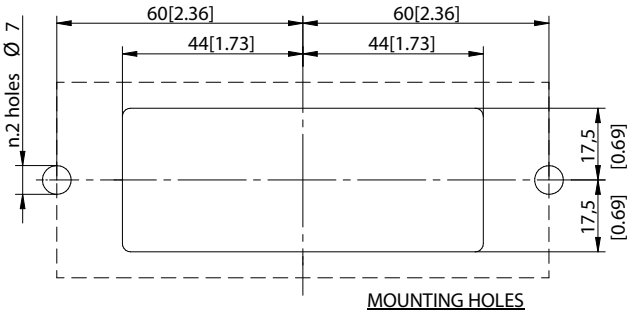
PRESSURE (bar | psi)		STROKE (mm | in)		CURVE ID
A	B	C	D	
0.0 | 0.0	64.0 | 928.6	2.0 | 0.08	9.0 | 0.35	022
0.0 | 0.0	115.0 | 1668.7	2.0 | 0.08	9.0 | 0.35	033
0.0 | 0.0	38.0 | 551.4	1.0 | 0.04	9.0 | 0.35	061
0.0 | 0.0	130.0 | 1886.3	1.0 | 0.04	9.0 | 0.35	143
0.0 | 0.0	27.3 | 396.1	1.0 | 0.04	9.0 | 0.35	205
0.5 | 7.3	12.2 | 177.0	1.8 | 0.07	9.0 | 0.35	087
0.7 | 10.2	30.0 | 435.3	1.0 | 0.04	9.0 | 0.35	071
1.0 | 14.5	15.5 | 224.9	1.0 | 0.04	9.0 | 0.35	178
1.4 | 20.3	11.5 | 166.9	1.0 | 0.04	9.0 | 0.35	072
1.4 | 20.3	12.2 | 177.0	1.0 | 0.04	9.0 | 0.35	155
1.5 | 21.8	9.0 | 130.6	1.0 | 0.04	9.0 | 0.35	086
1.5 | 21.8	39.5 | 573.1	1.0 | 0.04	9.0 | 0.35	093
2.0 | 29.0	8.0 | 116.1	1.0 | 0.04	9.0 | 0.35	004
2.0 | 29.0	15.0 | 217.7	1.0 | 0.04	9.0 | 0.35	060
2.0 | 29.0	52.5 | 761.8	1.0 | 0.04	9.0 | 0.35	092
2.8 | 40.6	5.9 | 85.6	1.0 | 0.04	9.0 | 0.35	157
3.0 | 43.5	23.0 | 333.7	1.0 | 0.04	9.0 | 0.35	058
3.0 | 43.5	14.0 | 203.1	1.0 | 0.04	9.0 | 0.35	162
3.0 | 43.5	10.0 | 145.1	1.0 | 0.04	9.0 | 0.35	165
3.2 | 46.4	18.1 | 262.6	1.0 | 0.04	9.0 | 0.35	053
3.2 | 46.4	20.0 | 290.2	1.0 | 0.04	9.0 | 0.35	096
3.2 | 46.4	16.2 | 235.1	1.0 | 0.04	9.0 | 0.35	153
3.5 | 50.8	25.7 | 372.9	1.0 | 0.04	9.0 | 0.35	171
3.7 | 53.7	31.0 | 449.8	1.0 | 0.04	9.0 | 0.35	168
3.8 | 55.1	23.7 | 343.9	1.0 | 0.04	9.0 | 0.35	074
4.0 | 58.0	10.0 | 145.1	1.0 | 0.04	9.0 | 0.35	005
4.0 | 58.0	8.0 | 116.1	1.0 | 0.04	9.0 | 0.35	054
4.0 | 58.0	16.0 | 132.2	1.0 | 0.04	9.0 | 0.35	057
4.0 | 58.0	6.0 | 87.1	1.0 | 0.04	9.0 | 0.35	170
4.3 | 62.4	10.0 | 145.1	1.0 | 0.04	9.0 | 0.35	158
4.4 | 63.8	21.6 | 313.4	1.0 | 0.04	9.0 | 0.35	126
4.7 | 68.2	27.6 | 400.5	1.0 | 0.04	9.0 | 0.35	132
4.9 | 71.1	19.8 | 287.3	1.0 | 0.04	9.0 | 0.35	204
5.0 | 72.6	10.5 | 152.4	1.0 | 0.04	9.0 | 0.35	066
5.0 | 72.6	18.0 | 261.2	1.0 | 0.04	9.0 | 0.35	079
5.0 | 72.6	33.0 | 478.8	1.0 | 0.04	9.0 | 0.35	085
5.0 | 72.6	20.0 | 290.2	1.0 | 0.04	9.0 | 0.35	089
5.0 | 72.6	19.9 | 288.7	1.0 | 0.04	9.0 | 0.35	094
5.0 | 72.6	45.0 | 653.0	1.0 | 0.04	9.0 | 0.35	169
5.0 | 72.6	12.0 | 174.1	1.0 | 0.04	9.0 | 0.35	196
5.0 | 72.6	26.0 | 377.3	1.0 | 0.04	9.0 | 0.35	203
5.5 | 79.8	26.7 | 387.4	1.1 | 0.04	9.0 | 0.35	067
5.5 | 79.8	25.5 | 370.0	1.1 | 0.04	9.0 | 0.35	075
5.5 | 79.8	50.0 | 725.5	2.0 | 0.08	9.0 | 0.35	145
5.6 | 79.8	21.4 | 310.5	1.0 | 0.04	9.0 | 0.35	208

PRESSURE (bar | psi)		STROKE (mm | in)		CURVE ID
A	B	C	D	
5.7 | 82.7	64.0 | 928.6	1.0 | 0.04	9.0 | 0.35	022
5.8 | 84.2	115.0 | 1668.7	1.6 | 0.06	9.0 | 0.35	033
5.8 | 84.2	38.0 | 551.4	1.0 | 0.04	9.0 | 0.35	061
5.8 | 84.2	130.0 | 1886.3	1.8 | 0.07	9.0 | 0.35	143
5.8 | 84.2	27.3 | 396.1	1.0 | 0.04	9.0 | 0.35	205
6.0 | 87.1	12.2 | 177.0	2.0 | 0.08	9.0 | 0.35	087
6.0 | 87.1	30.0 | 435.3	1.0 | 0.04	9.0 | 0.35	071
6.0 | 87.1	15.5 | 224.9	1.0 | 0.04	9.0 | 0.35	178
6.0 | 87.1	11.5 | 166.9	1.0 | 0.04	9.0 | 0.35	072
6.0 | 87.1	12.2 | 177.0	1.0 | 0.04	9.0 | 0.35	155
6.0 | 87.1	9.0 | 130.6	1.0 | 0.04	9.0 | 0.35	086
6.4 | 92.9	39.5 | 573.1	1.0 | 0.04	9.0 | 0.35	093
6.5 | 94.3	8.0 | 116.1	2.0 | 0.08	9.0 | 0.35	004
7.0 | 101.6	15.0 | 217.7	1.0 | 0.04	9.0 | 0.35	060
7.0 | 101.6	52.5 | 761.8	1.0 | 0.04	9.0 | 0.35	092
7.0 | 101.6	5.9 | 85.6	1.0 | 0.04	9.0 | 0.35	157
7.0 | 101.6	23.0 | 333.7	1.0 | 0.04	9.0 | 0.35	058
7.5 | 108.8	14.0 | 203.1	1.0 | 0.04	9.0 | 0.35	162
8.0 | 116.1	10.0 | 145.1	1.0 | 0.04	9.0 | 0.35	165
8.1 | 117.5	18.1 | 262.6	3.25 | 0.13	9.0 | 0.35	053
8.3 | 120.4	20.0 | 290.2	1.0 | 0.04	9.0 | 0.35	096
8.6 | 124.8	16.2 | 235.1	1.0 | 0.04	9.0 | 0.35	153
9.1 | 132.0	25.7 | 372.9	1.0 | 0.04	9.0 | 0.35	171
11.5 | 166.9	31.0 | 449.8	1.0 | 0.04	9.0 | 0.35	168

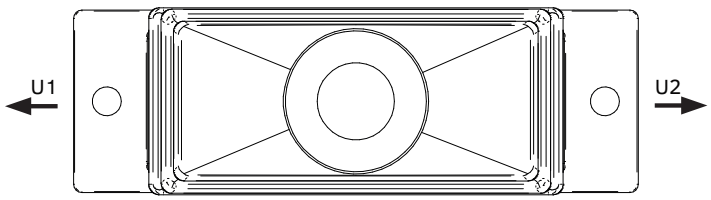
INSTALLATION AND DIMENSIONS mm[in]

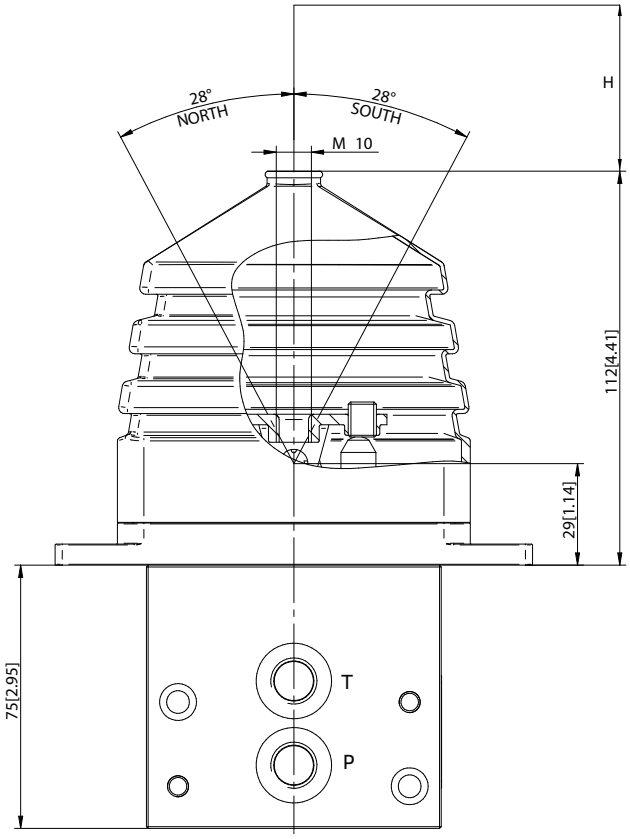


FOOTPRINT



ORIENTATION OF THE PILOT CONTROL UNITS





Valve configuration	**approx. weight** (kg |lb)	**H** (mm|in)
only body + gaiter	1.4 | 3.09	-
with S* handles	1.7 | 3.75	133 | 5.24
with MFE handles	1.7 | 3.75	154 | 6.06
with MFE2 handles	1.8 | 3.97	179 | 7.05
with EXM handles	1.6 | 3.53	174 | 6.85
with KB handles	1.8 | 3.97	083 | 3.27

HYDRECO

a member of **DAIKIN** *group*

Supported by a worldwide network

CONTACT INFORMATION

EMEA

GERMANY	Hydreco Hydraulics GmbH, Straelen (NRW)	+49 283494303-41	info-de@hydreco.com
ITALY	Hydreco Hydraulics Italia Srl, Vignola (MO)	+39 059 7700411	sales-it@hydreco.com
ITALY	Hydreco Hydraulics Italia Srl, Parma (PR)	+39 0521 1830520	sales-it@hydreco.com
ITALY	Hydreco Srl, San Cesario S/P (MO)	+39 059 330091	cylinders@hydreco.com
NORWAY	Hydreco Hydraulics Norway AS, Nittedal	+47 22909410	post-no@hydreco.com
UK	Hydreco Hydraulics Ltd, Poole, Dorset	+44 (0) 1202 627500	info-uk@hydreco.com

AMERICAS

NORTH/LATIN	Hydreco Inc / Continental Hydraulics Inc, Shakopee (MN)	+1 952 895 6400	sales@conthyd.com

APAC

AUSTRALIA	Hydreco Hydraulics Pty Ltd, Seven Hills (NSW)	+61 2 9838 6800	sales-au@hydreco.com
AUSTRALIA	Hydreco Hydraulics Pty Ltd, Welshpool (WA)	+61 8 9377 2211	reception-wa@hydreco.com
INDIA	Hydreco Hydraulics India Private Ltd, Bangalore	+91 80 67656300	sales-in@hydreco.com

Hydreco Hydraulics - Version Control Number: HPVS_2022_01

QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001:2015

www.hydreco.com

hydreco-hydraulics