

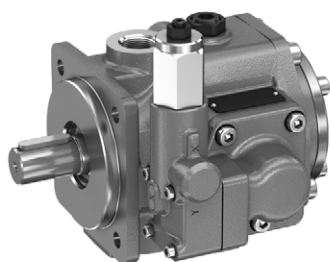
Adjustable vane pump, pilot-operated

Type PV7

RE 10515

Edition: 2018-11

Replaces: 10.2005



- ▶ Size 14 to 150
- ▶ Component series 1X
- ▶ Maximum operating pressure 160 bar
- ▶ Maximum flow 270 l/min

Features

- ▶ Variable displacement
- ▶ Low operating noise
- ▶ Extended bearing life cycle thanks to hydrodynamically lubricated plain bearings
- ▶ Pressure and flow can be controlled
- ▶ Low hysteresis
- ▶ Very low control up times and down control times
- ▶ Mounting dimensions according to ISO 3019-2.
- ▶ Connection dimensions according to ISO 6162-1 and ISO 228-1
- ▶ Suitable for HLP, HETG, HEES and HFD-U hydraulic fluids
- ▶ Standard Series PV7 single pumps can be combined with multiple pumps as well as internal gear, external gear, axial piston and radial piston pumps.
- ▶ Used for drives in continuous operation with variable flow requirement and a high share in the pressure holding function, e.g.:
 - machine tools
 - hydrostatic bearings
 - constant pressure systems

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Ordering code

01	02	03	04	05	06	07	08	09	10	11	12
PV7	-	1X	/		R	E				-	

Type

01	Vane pump, variable, pilot-operated	PV7
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Series

02	Series 1A to 1Z (1A to 1Z have unchanged installation and connection dimensions)	1X
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Frame size (BG) and size (NG)

03	BG 10 – NG 14 cm ³	10-14
	BG 10 – NG 20 cm ³	10-20
	BG 16 – NG 20 cm ³	16-20
	BG 16 – NG 30 cm ³	16-30
	BG 25 – NG 30 cm ³	25-30
	BG 25 – NG 45 cm ³	25-45
	BG 40 – NG 45 cm ³	40-45
	BG 40 – NG 71 cm ³	40-71
	BG 63 – NG 71 cm ³	63-71
	BG 63 – NG 94 cm ³	63-94
	BG 100 – NG 118 cm ³	100-118
	BG 100 – NG 150 cm ³	100-150

Direction of rotation

04	Viewed on drive shaft	clockwise	R
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Drive shaft

05	Cylindrical drive shaft according to ISO 3019-2 with output	E
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Line connections

06	Frame sizes 10, 16, 25	Suction and pressure port: Pipe thread according to ISO 228-1	01
	Frame size 40	Suction port: SAE flange connection according to ISO 6162-1 Pressure port: Pipe thread according to ISO 228-1	37
	Frame sizes 63, 100	Suction and pressure port: SAE flange connection according to ISO 6162-1	07

Seal material

07	NBR seals, suitable for HLP mineral oil according to DIN 51524	M
	FKM shaft seal ring, suitable for HETG, HEES and HFD-U hydraulic fluid	K

Controller type

08	Pressure controller	C
	Pressure controller for hydraulic remote pressure adjustment	D
	Flow controller	N
	Pressure controller with 2-step electric pressure adjustment	W

Controller option

09	Standard	0
	Lockable	3
	With K plate	5
	With Q plate	6
	Lockable with K plate	7
	Lockable with Q plate	8

01	02	03	04	05	06	07	08	09	10	11	12	
PV7	-	1X	/		R	E				-		

Zero stroke pressure range

10		10 -14	10 -20	16 -20	16 -30	25 -30	25 -45	40 -45	40 -71	63 -71	63 -94	100 -118	100 -150	
	20 - 80 bar	-	-	-	●	-	●	-	●	-	●	-	●	08
	20 - 100 bar	-	●	-	-	-	-	-	-	-	-	-	-	10
	20 - 160 bar	●	-	●	-	●	-	●	-	●	-	●	-	16

Option

11	Directional valve, normally closed, only available for C5-, D5 and W controllers	WG
	Directional valve, normally open, only available for C5, D5 and W controllers	WH

Setting in plain text

12	Pressure adjustment [bar]	-P***
	Flow setting [l/min] at $n = 1450$ rpm	-Q***

Preferred types (available for immediate delivery)

Controller type C	Material number
PV7-1X/10-14RE01MC0-16	R900580381
PV7-1X/10-20RE01MC0-10	R900534143
PV7-1X/16-20RE01MC0-16	R900580382
PV7-1X/16-30RE01MC0-08	R900533582
PV7-1X/25-30RE01MC0-16	R900580383
PV7-1X/25-45RE01MC0-08	R900534508
PV7-1X/40-45RE37MC0-16	R900580384
PV7-1X/40-71RE37MC0-08	R900535588
PV7-1X/63-71RE07MC0-16	R900506808
PV7-1X/63-94RE07MC0-08	R900560659
PV7-1X/100-118RE07MC0-16	R900506809
PV7-1X/100-150RE07MC0-08	R900561846
Controller type D	
PV7-1X/10-14RE01MD0-16	R900504653
PV7-1X/10-20RE01MD0-10	R900906584
PV7-1X/16-20RE01MD0-16	R900509274
PV7-1X/16-30RE01MD0-08	R900560658
PV7-1X/25-30RE01MD0-16	R900509506
PV7-1X/25-45RE01MD0-08	R900568833
PV7-1X/40-45RE37MD0-16	R900593330
PV7-1X/40-71RE37MD0-08	R900539886
PV7-1X/63-71RE07MD0-16	R900519094
PV7-1X/63-94RE07MD0-08	R900574560
PV7-1X/100-118RE07MD0-16	R900532770
PV7-1X/100-150RE07MD0-08	R900915470

Sample pumps with customer-specific setting:

- ▶ PV7-1X/16-20RE01MC0-16-P50 $p_{\text{zero stroke}} = 50$ bar
- ▶ PV7-1X/16-20RE01MC0-16-Q25 $q_{V \text{ max}} = 25$ l/min
- ▶ PV7-1X/16-20RE01MC0-16-P70Q20 $p_{\text{zero stroke}} = 70$ bar
 $q_{V \text{ max}} = 20$ l/min

In customer-specific settings, the pump comes noise-optimized at the desired operating points ($p_{\text{zero stroke}}/q_{V \text{ max}}$).

In standard versions, the pump is noise-optimized at maximum operating pressure and the zero stroke pressure is reset to 30 bar for delivery.

Technical data

Frame size		BG	10	10	16	16	25	25	40	40	63	63	100	100
Displacement	V_g	cm ³	14	20	20	30	30	45	45	71	71	94	118	150
Speed	n	rpm	900 ... 1800											
Drive power (at $n = 1450$ rpm; $p = p_{\max}$; $v = 41$ mm ² /s)	P_{\max}	kW	6.3	5.8	8.5	6.8	13.7	10.2	20.5	16.5	33	20.9	51.5	33
Maximum torque	T_{\max}	Nm	90	90	140	140	180	180	280	280	440	440	680	680
Operating pressure, absolute														
Input	$p_{\min-\max}$	bar	0.8 ... 2.5											
Output	p_{\min}	bar	20											
	p_{\max}	bar	160	100	160	80	160	80	160	80	160	80	160	80
Leakage oil	p_{\max}	bar	2											
Leakage flow at zero stroke (at p_{\max})	q_{VL}	l/min	2.7	1.9	4	2.5	5.3	3.2	6.5	4	8	5.3	11	7.3
Maximum flow (at $n = 1450$ rpm; $p = 10$ bar; $v = 41$ mm ² /s)	q_v	l/min	21	29	29	43.5	43.5	66	66	104	108	136	171	218
Change in flow (from one turn of flow adjusting screw $n = 1450$ rpm)	q_v	l/min	10	10	14	14	18	18	25	25	34	34	46	46
Change in pressure			From one turn of pressure adjusting screw (see page 5 pos. 15) approx. 19 bar											
Shaft load			Radial and axial forces cannot be absorbed.											
Weight (with pressure controller)	m	kg	12.5	12.5	17	17	21	21	30	30	37	37	56	56
Hydraulic fluid														
Hydraulic fluid for use at up to 160 bar (nominal pressure)			Mineral oil HLP according to DIN 51524, part 2 Please observe our regulations according to data sheet 90220.											
Special hydraulic fluids up to operating pressure			$p_{\max} = 100$ bar HETG and HEES hydraulic fluids according to VDMA 24 568 HFD-U according to ISO 12922 Other hydraulic fluids available on request!											
Hydraulic fluid temperature range			θ	°C	-10 to +70, observe permissible viscosity range.									
Viscosity range			v	mm ² /s	16 to 160 at operating temperature Maximum 800 on start with pump mode Maximum 200 on start in zero stroke mode									
Maximum admissible degree of contamination of the hydraulic fluid cleanliness class according to ISO 4406 (c)			Class 20/18/15											
Type of mounting			4-hole mounting flange (according to VMDA 24560 Part 1 and DIN ISO 3019-2)											