

GoTo USA Focused Delivery Program Hydraulics

















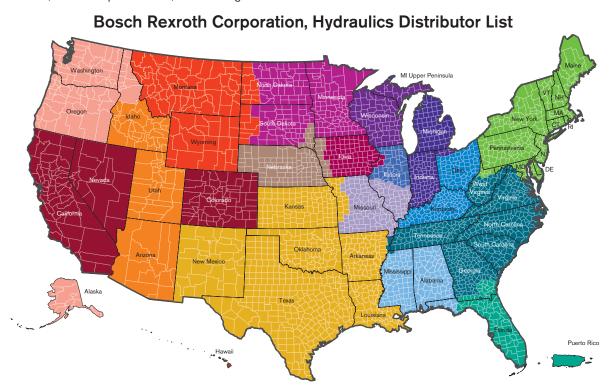


Hydraulics GoTo Catalog

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Variable displacement pumps (A)A10VSO (Series 31), A10VO (Series 31), & A10V(S)O (Series 52)





Variable displacement axial piston pump (A)A10V(S)O in swashplate design is available for open circuit applications. It can be used in both mobile and industrial applications. Flow is proportional to the drive speed and the displacement. By adjusting the position of the swashplate, it is possible to steplessly vary the flow. Multiple forms of pressure, flow or electrohydraulic controls are available.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTopumps*

Features

- Sizes 10 to 140
- · Axial piston swashplate design
- · Open circuit
- Series 31 (sizes 18, 28, 45, 71, 100, 140), Series 52 (sizes 10, 28, 45, 60, 85)
- Combination of pumps of up to the same size can be mounted to the through-drive (not with size 10)

Detailed information:

- Series 31: RA92711
 - RA92701
- Series 52: RA92703

Size - Serie	es 31			18	28	45	71	100	140
Nominal pre	ssure	\boldsymbol{p}_{N}	bar (PSI)	280 (4000)	280 (4000)	280 (4000)	280 (4000)	280 (4000)	280 (4000)
Peak pressu	ire	p max	bar (PSI)	350 (5100)	350 (5100)	350 (5100)	350 (5100)	350 (5100)	350 (5100)
Displacemen	nt	V _{g max}	cm ³ (in ³)	18 (1.10)	28 (1.71)	45 (2.75)	71 (4.33)	100 (6.10)	140 (8.54)
Speed 1)		n max	rpm	3300	3000	3000	2200	2000	1800
Flow	at n max	q V max	I/min (GPM)	59 (15.59)	84 (22.19)	117 (31)	156 (41)	200 (53)	252 (67)
Power	$\Delta p = 280 \text{ bar} $ (4000 PSI)	P max	kW	28	39	55	73	93	118
Torque	$\Delta p = 280 \text{ bar} $ (4000 PSI)	T max	Nm (lb-ft)	80 (59)	125 (92)	200 (148)	316 (233)	445 (328)	623 (460)
Weight (app	orox.)	m	kg (lbs.)	12 (26)	15 (33)	21 (46)	33 (73)	45 (99)	60 (132)

Size - Serie	es 52			10	28	45	60	85
Nominal pres	ssure	\boldsymbol{p}_{N}	bar (PSI)	250 (3600)	250 (3600)	250 (3600)	250 (3600)	250 (3600)
Peak pressu	re	\boldsymbol{p}_{max}	bar (PSI)	315 (4600)	315 (4600)	315 (4600)	315 (4600)	315 (4600)
Displacemen	nt	V _{g max}	cm ³ (in ³)	10.5 (0.64)	28 (1.71)	45 (2.75)	60 (3.66)	85 (5.18)
Speed 1)		n max	rpm	3600	3000	2600	2700	2500
Flow	at n max	q v max	I/min (GPM)	38 (10.04)	84 (22)	117 (31)	163 (43)	212 (55)
Power	$\Delta p = 250 \text{ bar} $ (3600 PSI)	P max	kW	16	35	49	68	89
Torque	$\Delta p = 250 \text{ bar} $ (3600 PSI)	T max	Nm (lb-ft)	42 (31)	111 (82)	179 (132)	238 (176)	338 (247)
Weight (app	rox.)	m	kg (lbs.)	8 (18)	14 (31)	18 (40)	22 (49)	34 (75)

¹⁾ The values are valid at an absolute pressure of 1 bar (14.50 PSI) in suction port S.

Detailed information:

RA10097

GoTo Focused Delivery Program: Pumps and Motors

External gear pump AZPF and AZPN



Bosch Rexroth has been involved with the design, development and manufacture of gear pumps for many decades. Well-proven designs, the use of specially developed materials, constant testing and sophisticated mass production techniques ensure products of the very highest quality.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/*GoTo*pumps*

Features

- AZPF sizes 4 to 28 cc; AZPN sizes 20 to 36 cc
- · Plain bearings for high loads
- · Drive shafts according to ISO or SAE and customer-specific standards
- · Combination of several pumps possible
- · Line connections: connecting flanges or female threads

Technical Data

AZPF - Size			4	5	8	11	14	16	19	22	25	28
Displacement	V g max	cm ³ (in ³)	4.1 (0.26)	5.6 (0.35)	8.2 (0.51)	11.3 (0.71)	14.3 (0.89)	16.5 (1.03)	19.5 (1.22)	22.9 (1.43)	25.4 (1.59)	28.5 (1.78)
Operating pressure, continuous	p _{1 max}	bar (PSI)	250 (3600)	250 (3600)	250 (3600)	250 (3600)	250 (3600)	250 (3600)	210 (3045	180 (2610)	200 (2900)	170 (2500)
Operating pressure, intermittent	p 3	bar (PSI)	280 (4100)	280 (4100)	280 (4100)	280 (4100)	280 (4100)	280 (4100)	230 (3335)	210 (3045)	220 (3200)	190 (2800)
Max. speed at p ₁	n	rpm	3500	3500	3500	3000	2500	2500	2500	2000	2000	2000
Min. speed at p ₁	n	rpm	600	500	500	500	500	500	500	500	500	500

Note:

- Applicable to an oil viscosity of 25 mm²/s (116 SUS) and an oil temperature of 55 °C (131 °F) with HLP 46.
- The pressure in the suction port is 0.7 bar (10.2 PSI) min and 3 bar (43.5 PSI) max absolute.

AZPN - Size			20	22	25	28	32	36			
Displacement	cm ³ /r	ev (in ³ /rev)	20.4 (1.24)	23.1 (1.41)	25.8 (1.57)	28.4 (1.73)	32.4 (1.98)	36.4 (2.22)			
Inlet pressure		bar (PSI)	min. 0.7; max. 3 (min. 10.2; max 43.5) [absolute]								
Max. continuous pressure	p ₁	bar (PSI)	230 (3335)	230 (3335)	230 (3335)	210 (3045)	180 (2610)	160 (2610)			
Max. intermittent pressure	p_2	bar (PSI)	250 (3625)	250 (3625)	250 (3625)	230 (3335)	200 (2900)	180 (2610)			
Max. peak pressure	p ₃	bar (PSI)	270 (3915)	270 (3915)	270 (3915)	250 (3625)	220 (3190)	200 (2900)			
Min. rotational speed ≤ 10	0	rpm	500	500	500	500	500	500			
Max. rotational speed p_1 rpm		2500	2500	2500	2300	2300	2100				
	p_2	rpm	3000	3000	3000	2800	2800	2600			

Variable vane pumps, pilot operated PV7



The PV7 is a variable displacement vane pump used quite extensively for low to mid-pressure applications for numerous market segments such as machine tool and packaging industries. The PV7 pump utilizes a journal bearing design and pivoting control pistons to provide a low noise and durable product for the industrial hydraulic market.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopumps

Features

- 8 displacement sizes ranging from 14-150cc.
- All pumps are supplied with through drive capable shaft that is capped off with an aluminum rear cover
- PV7 pumps can be incorporated into combinations with many other Rexroth products including internal and external gear pumps, radial piston pumps, fixed and variable vane pumps and axial piston pumps.
- Multiple control options are available such as pressure control, flow control, solenoid unloading control, lockable controls, etc.
- PV7 design is European based, 4-bolt DIN mounting pilot and metric shaft

Detailed information:

• RE10515

Size		10		16		25		40		63		100	
Size	cm ³ (in ³)	14 (0.85)	20 (1.22)	20 (1.22)	30 (1.83)	30 (1.83)	45 (2.75)	45 (2.75)	71 (4.27)	71 (4.27)	94 (5.74)	118 (7.20)	150 (9.15)
Flow	L/min (GPM)	21 (5.5)	29 (7.7)	29 (7.7)	43.5 (11.5)	43.5 (11.5)	66 (17.4)	66 (17.4)	104 (27.5)	108 (28.5)	136 (35.9)	171 (45.2)	218 (57.6)
Max. Pressu	re (absolute)												
Inlet	bar (PSI)	0.8 to 2	2.5 (11.6	to 36.26	3)								
Outlet	bar (PSI)	160 (2320)	100 (1450)	160 2320)	80 (1160)	160 (2320)	80 (1160)	160 (2320)	80 (1160)	160 (2320)	80 (1160)	160 (2320)	80 (1160)
Speed range	е	900 to 1800 rpm											
Direction of	rotation	Clockwise (viewed to shaft end)											

Vane pumps



Rexroth continues to offer advanced variable vane pump technology. Market conditions favor hydraulic components that operate at low noise levels without sacrificing efficiency or durability. VPV pumps feature an outstanding response to the needs of the market today and for the future.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTopumps*

Features

- Sizes 16 to 164
- Flows from 30 to 287 L/min (7.6 to 75.8 GPM) in single pumps
- · Available in combination with other VPV pumps and Rexroth gear pumps
- Through-drive horsepower transfer is 100% to the second pump
- · VPV pumps are available with through-shaft versions for quick combinations
- Pressures to 210 bar (3050 PSI)
- · Continuous speeds from 1000 to 1800 rpm
- · A variety of fluids can be used: mineral oil, phosphate ester, and environmentally friendly fluids
- Controls include standard pressure compensation, remote pressure compensation, load sense, solenoid 2-pressure, and solenoid vented

Detailed information:

- 9535233724
- 9535233782
- * 9535233785

Size	in ³ /rev (cc/rev)	1.0 (16)	1.5 (25)	2.0 (32)	2.75 (45)	3.84 (63)	4.88 (80)	6.0 (100)	7.93 (130)	10.0 (164)
Flow 1)	L/min GPM	30 (7.6)	43 (11.4)	57 (15.1)	79 (20.8)	110 (29.1)	140 (37.0)	172 (45.4)	227 (60.0)	287 (75.8)
Max. Pressure	bar (PSI)	210 (3000)	210 (3000)	210 (3000)	210 (3000)	210 (3000)	210 (3000)	210 (3000)	210 (3000)	210 (3000)
Speed range					100	00 to 1800	rpm			
Mounting					Flanç	je to ISO 30	19/1			
Mount Position	1					Any				
Rotation		RH								
Sound Pressur	re Level 2)	67 69 69 68 69 71 74 76 77						77		

^{1) 1750} rpm in GPM.

²⁾ dB(A) at 3000 PSI, 1750 rpm, full fl ow in a hemi-anechoic chamber with microphone placed 1 meter away at 7 discrete locations. Sound pressure levels are spacially and time weighted averaged.

Fixed displacement vane pumps PVV



Rexroth PVV product is a fixed displacement vane pump based on the cartridge principle. PVV pumps can be used in a wide spectrum of applications, from low pressure filter / cooler loops to higher pressure systems such as presses and injection molding machines. PVV fixed vane pumps are just one of the many pump options available from the extensive Rexroth portfolio of products.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopumps

Features

20 different displacement sizes ranging from 18cc/rev (1.1 cu-in/rev) to 193cc/rev (11.8 cu-in/rev)

Detailed information:

• RE10335

- Hydraulically balanced design provides long bearing life
 Contrider replacement simplifies against and repair
- Cartridge replacement simplifies service and repair
- Cartridges are interchangeable with competitive designs
- Displacement changes can be easily performed by swapping cartridges
- · Rotational flexibility of port locations optimizes customer interface
- PVV pumps can be coupled to other Rexroth vane, piston and gear products

Mounting style		Flange	mounti	ng to S	AE J74	4					
Pipe connections		SAE flange version (fixing threads: UNC)									
Direction of rotation		Clock	Clockwise and counter-clockwise								
Drive		Direct	, co-axia	l drive;	radial ar	nd axial	forces	cannot b	oe taker	ı up	
Build sizes 1 and 2 (pump cartridge)				BS1					BS2		
Nominal size (≈ V in cm³)	NS	18	27	36	40	46	40	45	55	60	68
Max. flow at $n = 1500 \text{ min}^{-1}$, $p = 0.7 \text{ bar (10 PSI)}$ and $v = 25 \text{ mm}^2/\text{s}$	l/min (GPM)	25 (6.6)	39 (10.3)	53 (14.0)	59 (15.6)	70 (18.5)	59 (15.6)	66 (17.4)	80 (21.1)	89 (23.5)	100 (26.4)
Outlet continuous p _{max} for PVV	bar (PSI)		210 (3000)		160 (2300)	140 (2000)			175 (2500)		
Weight	kg (lb)		-	12 (26.4	4)			1-	4.8 (32.	.6)	
Speed at 1 bar (14.5 PSI)	RPM					600-	1800				
Build sizes 4 and 5 (pump cartridge)				BS4					BS5		
Nominal size (≈ V in cm³)	NS	69	82	98	113	122	139	154	162	183	193
Max. flow at $n = 1500 \text{ min}^{-1}$, $p = 0.7 \text{ bar (10 PSI)}$ and $v = 25 \text{ mm}^2/\text{s}$	l/min (GPM)	101 (26.7)	120 (31.7)	141 (37.2)	167 (44.1)	177 (46.8)	203 (53.6)	223 (58.9)	234 (61.8)	267 (70.5)	285 (75.3)
Outlet continuous p _{max} for PVV	bar (PSI)			175 (2500)					175 (2500)		
Weight	kg (lb)		2	23 (50.7	7)			3	34 (74.9	9)	
Speed at 1 bar (14.5 PSI)	RPM					600-	1800				

Radial piston pump, fixed displacement R4



Hydraulic pumps of type R4 are integral check valve-controlled, self-priming radial piston pumps with fixed displacement. R4 pumps are designed for high pressure operation and long life.

For complete engineering and design information: GoTo *www.boschrexroth-us.com/*GoTo*pumps*

Features

- Sizes 1.6 to 20
- · Radial piston pump with 3, 5 or 10 pistons
- · Self-priming, valve-controlled
- · Long bearing life due to hydro-dynamically lubricated plain bearings
- · Optional combination with variable displacement vane and axial piston pumps

Detailed information:

• RA11263

Size			1.6	2.0	2.5	3.15	4.0	6.3	8.0
Displacement	V _{g max}	cm ³	1.51	2.14	2.59	3.57	4.32	7.14	8.63
	3	(in ³)	(0.09)	(0.13)	(0.16)	(0.22)	(0.26)	(0.44)	(0.53)
Operating pressure	\boldsymbol{p}_{max}	bar	700	700	700	700	700	700	700
		(PSI)	(10,150)	(10,150)	(10,150)	(10,150)	(10,150)	(10,150)	(10,150)
Power 1)	Р	kW	2.9	4.1	4.9	6.8	8.1	13.6	16.1
		(HP)	(3.89)	(5.50)	(6.57)	(9.12)	(10.86)	(18.24)	(21.59)
Speed	n	rpm	1000 to 2000						
Weight (approx.)	m	kg	9.2	9.2	9.2	12.4	12.4	16.4	16.4
		(lbs)	(20.3)	(20.3)	(20.3)	(27.3)	(27.3)	(36.1)	(36.1)

Size			3.15	5.0	6.3	8.0	10.0	16.0	20.0
Displacement	V _{g max}	cm ³	3.39	4.82	5.83	8.03	9.71	16.07	19.43
		(in ³)	(0.21)	(0.29)	(0.36)	(0.49)	(0.59)	(0.98)	(1.19)
Operating pressure	p_{max}	bar	500	500	500	500	500	500	500
		(PSI)	(7250)	(7250)	(7250)	(7250)	(7250)	(7250)	(7250)
Power 1)	P	kW	4.7	6.7	7.9	10.9	12.9	21.2	25.3
		(HP)	(6.30)	(8.98)	(10.59)	(14.62)	(17.30)	(28.43)	(33.93)
Speed	n	rpm	1000 to 2000						
Weight (approx.)	m	kg	9.2	9.2	9.2	12.4	12.4	16.4	16.4
		(lbs)	(20.3)	(20.3)	(20.3)	(27.3)	(27.3)	(36.1)	(36.1)

¹⁾ At maximum continuous operating pressure and $n=1450\ rpm$.

Radial piston pump, fixed displacement R4-Mini



Hydraulic pumps of type R4 "mini" are integral check valve-controlled, self-priming radial piston pumps with fixed displacement. R4 mini pumps are designed for low flow, high pressure operation and long life.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTopumps*

Features

- Sizes 0.4 to 2.0
- · Radial piston pump with 3 pistons
- · Very compact build
- · Self-priming, valve-controlled
- Long service life due to hydro-dynamically lubricated plain bearings
- · Optional combination with variable displacement vane pumps

Technical Data

Size			0.4	0.63	1	1.6	2
Displacement	V g max	cm ³ (in ³)	0.4 (0.024)	0.63 (0.038)	1 (0.061)	1.6 (0.098)	2 (0.122)
Operating pressure	p _{max}	bar (PSI)	700 (10,150)	700 (10,150)	450 (6500)	250 (3600)	175 (2500)
Power 1)	P	kW (HP)	0.66 (0.89)	1.15 (1.54)	1.14 (1.53)	1.06 (1.42)	0.86 (1.15)
Speed	n	rpm	3400	3000	2000	2000	2000
Weight (approx.)	m	kg (lbs)	2.6 (5.73)	2.6 (5.73)	2.6 (5.73)	2.6 (5.73)	2.6 (5.73)

¹⁾ At maximum continuous operating pressure and $n=1450\ rpm$.

Detailed information:

• RA11260

Variable Displacement Motors (A)A6VM





Variable displacement motor (A)A6VM in axial tapered piston rotary group of bent-axis design is available for open and closed circuit applications. It can be used in both mobile and industrial applications. The output speed is dependent on the flow of the pump and the displacement of the motor. The output torque increases with the pressure differential between the high-pressure and low-pressure side and with increasing displacement.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTomotors

Features

- Sizes 80, 107, 160
- · Series 6
- · Axial tapered piston, bent-axis design
- · For use in mobile and stationary applications
- · Wide control range, high speeds and torque
- Compact, robust motor with long service life
- Cost savings through elimination of gear shifts and possibility of using smaller pumps
- Wide selection of control devices; good starting characteristics

Detailed information:

 Series 6: RE91604

Technical Data

Size			80	107	160
Nominal pressure		bar (PSI)	400 (5800)	400 (5800)	400 (5800)
Peak pressure		bar (PSI)	450 (6500)	450 (6500)	450 (6500)
Displacement 1)	V _{g max}	cm ³ (in ³)	80 (4.88)	107 (6.53)	160 (9.76)
	$V_{g 0}$	cm ³ (in ³)	0 (0)	0 (0)	0 (0)
Max. speed ²⁾	n _{max} at V _{q max}	rpm	3900	3550	3100
(while adhering to the maximum	n_{max} at $V_q < V_{qx}$	rpm	6150	5600	4900
permissible flow)	$V_{g x} = 0.63 \times V_{g max}$	cm ³ (in ³)	51 (3.11)	68 (4.15)	101 (6.16)
	n _{max} at V _{q 0}	rpm	7350	6300	5500
Max. flow	qv _{max}	L/min (GPM)	312 (82)	380 (100)	496 (131)
Max. torque	T _{max} at V _{g max} 3)	Nm (lb-ft)	509 (375)	681 (502)	1019 (752)
Rotary stiffness	·				
$V_{g max}$ to $V_{g/2}$	C _{min}	Nm/rad (lb-ft/rad)	15500 (11432)	21000 (15489)	35300 (26036)
V _{g/2} to 0 _(interpolated)	C _{max}	Nm/rad (lb-ft/rad)	47900 (35329)	65200 (48089)	105000 (77444)
Moment of inertia for rotary group	JTW	kgm² (lb-ft²)	0.0080 (0.190)	0.0127 (0.301)	0.0253 (0.600)
Maximum angular acceleration	а	rad/s ²	24000	19000	11000
Filling capacity	V	L (Gal)	1.2 (0.32)	1.5 (0.40)	2.4 (0.63)
Mass (approx.)	m	kg (lbs.)	34 (75)	47 (104)	64 (141)

- The minimum and maximum displacement are infinitely adjustable, see ordering code, page 3. (default settings for sizes 250 to 1000 unless specified in the order: V_{g min} = 0.2 • V_{g max}, V_{g max} = V_{g max}).
- 2) Vg x = 0.75 x Vg max (appr.)
- 3) Sizes 28 to 200: $\Delta p = 400$ bar (5800 PSI); sizes 250 to 1000: $\Delta p = 350$ bar (5100 PSI)

Caution: Exceeding the permissible limit values may result in a loss of function, a reduction in service life or in the destruction of the axial piston unit. Other permissible limit values with respect to speed variation, reduced angular acceleration as a function of the frequency and the permissible startup angular acceleration (lower than the maximum angular acceleration) can be found in data sheet RE90261.

See index Page 178 for GoTo product and accessory part numbers.

External gear motors



Bosch Rexroth has been involved with the design, development and manufacture of gear motors for many decades. Well-proven designs, the use of specially developed materials, constant testing and sophisticated mass production techniques ensure products of the very highest quality.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTomotors

Features

- Sizes 8 to 22 cc
- · High pressures with small installation space and low weight
- Wide speed ranges
- · Wide viscosity and temperature ranges
- Reversible motors for 2- and 4-quadrant operation
- · Plain bearings for high loads
- Consistently high quality owing to large-scale production
- Many design variants available

Technical Data

Size			800	011	014	016	019	022
Displacement		cm ³ /rev (in ³ /rev)	8.2 (0.50)	11.3 (0.69)	14.3 (0.87)	16.5 (1.01)	19.5 (1.19)	22.9 (1.40)
Max. continuous pressure	p ₁	bar (PSI)	210 (3045)	210 (3045)	210 (3045)	210 (3045)	180 (2610)	180 (2610)
Max. starting pressure	p ₂	bar (PSI)	280 (4060)	280 (4060)	280 (4060)	280 (4060)	210 (3045)	210 (3045)
Min. rotational speed Max. rotational speed	p ₁	min ⁻¹	500 4000	500 3500	500 3000	500 3000	500 3000	500 3000
Motor outlet pressure Leakage-oil line pressure	p _A p _L	bar (PSIA)		o _A ≦ 3 bar 43.5 PSI)*	$ \rho_1 \longrightarrow \rho_2 < 3 \text{ bar} $ 43.5 PSI)* $\Gamma = -\left(\frac{1}{2}\right)^{\frac{1}{2}}$	$\sum_{n\leq p_1}$	$\begin{array}{c c} \hline \rho_1 & \hline \\ \hline \hline \rho_A \leq \\ \hline (43.5) \end{array}$	

^{*)} Short-term when starting 10 bar (145 PSI)

Detailed information:

• RA14025

Radial Piston Motors MCR





The MCR radial piston motors are low-speed high-torque hydraulic motors which operate according to the multiple-stroke principle. The relationship between roll diameter and cam profile is optimized inside the central power unit. This results in the best possible balance of forces between piston and cam path and simultaneously extends the service life. The step-piston power unit or high-displacement power unit yields a very compact drive unit with high power density. MCR motors can be used both in open as well as in closed circuits.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTomotors

Features

- Sizes 365, 400, 820
- · Compact, robust design
- · Uniform concentric running, even at very low speeds
- Reversible
- · High Radial forces permissible on the output shaft
- · Sealed tapered roller bearing

Detailed information:

- MCR 03: RE15205
- MCR 05: RE15206

Frame Size 3	Si	ze	365	400
Swept Volume	V _{g max}	cm ³	365	400
Torque	T _{max}	Nm	2105	2307
Speed, intermittent	n _{max}	rpm	280	260
Pressure Difference	Δp_{max}	bar	400	400
Weight	m	kg	20	20

Frame Size 5	Si	820	
Swept Volume	V _{g max}	cm ³	820
Torque	T _{max}	Nm	4860
Speed, intermittent	n _{max}	rpm	220
Pressure Difference	Δp_{max}	bar	400
Weight	m	kg	39

Fixed displacement motors (A)A2FM





Fixed displacement motor (A)A2FM in axial tapered piston rotary group of bent-axis design is applicable for closed and open circuit applications. It can be used in both mobile and stationary applications. The output speed is dependent on the flow of the pump and the displacement of the motor. The output torque increases with the pressure differential between the high-pressure and the low-pressure side. The (A)A2FM motor has excellent starting torque efficiency.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTomotors

Features

- Sizes 28, 32, 45, 63, 80, 107, 125, 180
- · Series 6
- Axial tapered piston, bent-axis design
- Finely graduated sizes permit far-reaching adaptation to the drive case
- · High power density within small dimensions
- · High total efficiency
- Optional integrated counterbalance valve, pressure relief valve, or built-on flushing and boost valve
- Nominal Pressure

Detailed information:

 Series 6: RE91001

Technical Data

Size				28	32	45	63	80	107	125	180
Nominal pr	essure		bar (PSI)				400 (5	800)			
Peak press	sure		bar (PSI)				450 (6	3500)			
Diplacemen	nt	V _g	cm ³ (in ³)	28.1 (1.71)	32 (1.95)	45.6 (2.78)	63 (3.84)	80.4 (4.91)	106.7 (6.51)	125 (7.63)	180 (10.98)
Max. speed	k	n _{max}	rpm	6300	6300	5600	5000	4500	4000	4000	3600
		n _{max intermit.} 1	rpm	6900	6900	6200	5500	5000	4400	4400	4000
Max. flow		q _{V max}	l/min (GPM)	176 (46.6)	201 (52.2)	255 (67.4)	315 (83.1)	360 (95.6)	427 (112.7)	500 (132.1)	648 (171.1)
Torque at	$\Delta p = 350 \text{ bar}$ ($\Delta p = 5100 \text{ PSI}$)	Т	Nm (lb-ft)	156 (115)	178 (132)	254 (188)	350 (259)	445 (332)	595 (440)	697 (516)	1001 (742)
	$\Delta p = 400 \text{ bar}$ ($\Delta p = 5800 \text{ PSI}$)	T	Nm (lb-ft)	178 (131)	204 (150)	290 (213)	400 (295)	508 (377)	680 (500)	796 (587)	1144 (844)
Rotary stiff	ness		Nm/° (lb-ft/°)	230 (170)	230 (170)	330 (243)	440 (325)	670 (494)	880 (649)	880 (649)	1350 (996)
Moment of inertia J _{TW} for rotary group		J_{TW}	kgm² (lbs-ft²)	0.0012 (0.0285)	0.0012 (0.0285)	0.0024 (0.0569)	0.0042 (0.0997)	0.0072 (0.1708)	0.0116 (0.2753)	0.0116 (0.2753)	0.0220 (0.5221)
Filling capa	acity	V	L (gal)	0.20 (0.053)	0.20 (0.053)	0.33 (0.087)	0.45 (0.119)	0.55 (0.145)	0.8 (0.211)	0.8 (0.211)	1.1 (0.291)
Mass (appr	rox.)	m	kg (lbs)	9.5 (21)	9.5 (21)	13.5 (30)	18 (40)	23 (51)	32 (71)	32 (71)	45 (99)

¹⁾ intermittent maximum speed: overspeed at discharge and over-running travel operations, t < 5 sec. and $\Delta p < 150$ bar (2200 PSI)

Caution: Exceeding the permissible limit values may result in a loss of function, a reduction in service life or in the destruction of the axial piston unit. Other permissible limit values with respect to speed variation, reduced angular acceleration as a function of the frequency and the permissible startup angular acceleration (lower than the maximum angular acceleration) can be found in data sheet RE90261.

See index Page 178 for GoTo product and accessory part numbers.

²) $\Delta p = 315 \text{ bar } (4600 \text{ PSI})$

High Torque Vane Motors Rineer MVS15 Series





Bosch Rexroth Rineer MVS15 Series Hydraulic Vane Motors provide high torque at start & stall, medium speed, and reliability in demanding applications. The patented Vane-Crossing-Vane design allows for high power-to-weight ratio, improved mechanical & volumetric efficiency. The rotating group is hydraulically balanced internally, resulting in no significant loads induced on the motor bearings which contribute to long service life. A variety of displacements & configurations are available on the GoTo Program.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTomotors

Features

- · Patented Vane-Crossing-Vane design
- High torque at start & stall
- Speed to 2000 rpm continuous & 2600 rpm intermittent
- · Operating pressure to 207 bar continuous
- Can conform to SAE C mounting specification
- High power-to-weight ratio
- · Reliability in heavy duty & demanding applications
- · Variety of displacements

Technical Data

	Dianlacement	Pres	sure	Sp	eed	Torque @ 207 bar
Code 61 Series	Displacement	Continuous	Intermittent	Continuous	Intermittent	Continuous
	cm ³ /rev (in ³ /rev)	bar (psi)	bar (psi)	(rpm)	(rpm)	Nm (lb-ft)
R986V00875	213 (13)	207 (3000)	241 (3500)	1500	2000	580 (428)
R986V00894	246 (15)	207 (3000)	241 (3500)	1500	2000	690 (509)
R986V00905	246 (15)	207 (3000)	241 (3500)	1500	2000	690 (509)
R986V00909	246 (15)	207 (3000)	241 (3500)	1500	2000	690 (509)
R986V00941	98 (6)	207 (3000)	241 (3500)	2000	2600	248 (183)
R986V00974	131 (8)	207 (3000)	241 (3500)	1800	2600	372 (274)
R986V00983	156 (9.5)	207 (3000)	241 (3500)	1700	2300	418 (308)

Detailed information:

High Torque Vane Motors Rineer MVS37 Series





Bosch Rexroth Rineer MVS37 Series Hydraulic Vane Motors provide high torque at start & stall, medium speed, and reliability in demanding applications. The patented Vane-Crossing-Vane design allows for high power-to-weight ratio, improved mechanical & volumetric efficiency. The rotating group is hydraulically balanced internally, resulting in no significant loads induced on the motor bearings which contribute to long service life. A variety of displacements & configurations are available on the GoTo Program.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTomotors

Features

- Patented Vane-Crossing-Vane design
- · High torque at start & stall
- Speed to 1000 rpm continuous & 1200 rpm intermittent
- · Operating pressure to 310 bar continuous
- Can conform to SAE D mounting specification
- · High power-to-weight ratio
- · Reliability in heavy duty & demanding applications
- · Variety of displacements

Detailed information:

• RE10550

	Dianlacement	Pres	sure	Spe	eed	Torque @ 207 bar
	Displacement	Continuous	Intermittent	Continuous	Intermittent	Continuous
Code 61 Series	cm ³ /rev (in ³ /rev)	bar (PSI)	bar (PSI)	(rpm)	(rpm)	Nm (lb-ft)
R986V00435	328 (20)	207 (3000)	241 (3500)	1000	1200	979 (722)
R986V00441	328 (20)	207 (3000)	241 (3500)	1000	1200	979 (722)
R986V00451	426 (26)	207 (3000)	241 (3500)	800	1000	1247 (920)
R986V00452	426 (26)	207 (3000)	241 (3500)	800	1000	1247 (920)
R986V00454	426 (26)	207 (3000)	241 (3500)	800	1000	1247 (920)
R986V00469	524 (32)	207 (3000)	241 (3500)	700	950	1550 (1143)
Code 62 Series						
R986V00693	328 (20)	310 (4500)	345 (5000)	1000	1200	1497 (1104)
R986V00696	328 (20)	310 (4500)	345 (5000)	1000	1200	1497 (1104)
R986V00697	328 (20)	310 (4500)	345 (5000)	1000	1200	1497 (1104)

Check valves

S



S model check valves are direct operated, line contact seat, guided poppet check valves. Guided poppets vs a "ball" provide more stable operation, more assurance for a line contact seat, and reductions in flow noise. The line contact seat is an interference fit where the seat areas are at slight differential angles to permit a true line contact seat vs a matched mating surface.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocheck*

Features

- Sizes 10 to 30
- · For threaded connection
- · Leak-free isolation in one direction
- Port connection: SAE 8 SAE 24

Detailed information:

• RE20375

General							
Size		10	15	25	30		
Weight	kg (lbs)	0.3 (0.66)	0.5 (1.1)	2.0 (4.4)	2.5 (5.5)		
Hydraulic							
Maximum operating pressure	bar (PSI)	315 (4600)					
Opening pressure		See characteristic	curves in data sheet	RE20375			
Maximum flow		See characteristic curves in data sheet RE20375					
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524; Fast bio-degradable hydraulic fluids according to VDMA 24568 (see also RE90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids on inquiry					
Hydraulic fluid temperature range	°C (°F)	-30 to +80 (-22 to	+176)				
Viscosity range	mm ² /s (SUS)	3) 2.8 to 500 (12.99 to 2317)					
Max. permissible degree of contam hydraulic fluid, cleanliness class to		Class 20/18/15 ¹⁾					

Check valves, cartridge type M-SR



M-SR check valves are cartridge assemblies for use in manifold applications. Flow capacities of 8 GPM – 106 GPM over six cartridge sizes permit a broad application potential. Both the right angle version "KE" or straight through version "KD" feature guided poppets with varying biasing spring options. M-SR check valves can be secured in a manifold utilizing a BSP or SAE plug (pressure limits applicable). The cavity is a relatively straight bore, therefore complicated tooling is not required.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocheck*

Features

- Sizes 10 to 30
- · For block installations:
 - Right-angled valve ("KE")
 - Straight valve ("KD")
- · Leak-free isolation in one direction
- · Plug screw with pipe thread or metric ISO thread
- · Various cracking pressures

Technical Data

Size				8	10	15	25	30
Operating pressure p_{max} bar (PSI)				315 (4600)	315 (4600)	315 (4600)	315 (4600)	315 (4600)
Cracking pressure bar (PSI) Without spring: 0.2 (2.90); 0.5 (7.25); 1.5 (21.76); 3.0 (43.5)						.76); 3.0 (43.51)); 5.0 (72.52)	
Flow	"KE"	q _{V max}	I/min (GPM)	35 (9.20)	50 (13.21)	120 (31.70)	300 (79.25)	400 (105.67)
	"KD"	q V max	I/min (GPM)	35 (9.20)	50 (13.21)	120 (31.70)	300 (79.25)	400 (105.67)

Detailed information:

Filling valve – sandwich plate ZSF



The valve type ZSF is a pilot operated check valve in sandwich plate design. It is used for the leakage-free isolation of pressurized working circuits (e.g. pressing cylinders). Due to its favorable flow characteristics and the low cracking pressure of the main poppet, it is particularly suitable on presses.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocheck*

Features

- Sizes 32 to 200
- · Pilot operated check valve in sandwich plate design
- · With or without pre-opening, optional
- · Control by built-on directional spool valve or directional seat valve, optional
- Integrated high-pressure connection (size 32 to 160
- Integrated throttle check valve (size 200)

Detailed information:

• RE20478

Size			30
Maximum operating pressure	- Port B, P	bar (PSI)	350 (5100)
	- Port X	bar (PSI)	150 (2175)
	– Port A	bar (PSI)	16 (232)
Control pressure		bar (PSI)	~0.12 (~1.74)

Check valve, hydraulically pilot operated SV & SL



The SV and SL valves are hydraulic pilot operated check valves of poppet type design which may be opened to permit flow in the reverse direction. These valves are used for the isolation of operating circuits which are under pressure, i.e. as a safe guard against the lowering of a load when a line break occurs or against creeping movement of hydraulically locked actuators. The valve basically comprises of the housing, the poppet, a compression spring, the control spool as well as optional decompression feature as a ball poppet valve.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocheck*

Features

- Sizes 10 to 30
- · For subplate mounting
- Connection location to ISO 5781
- · With internal SV or external SL pilot oil drain
- · With or without decompression feature, optional
- Version with decompression feature for dampened decompression (minimizing possible pressure shocks)

Technical Data

Size			10	20	30
Maximum operating pressure	p _{max}	bar (PSI)	315 (4600)	315 (4600)	315 (4600)
Control pressure		bar (PSI)	5 to 315 (72.5 to 4600)	5 to 315 (72.5 to 4600)	5 to 315 (72.5 to 4600)

Detailed information:

Check valves – sandwich module design Z1S



Valve type Z1S is a direct operated check valve of sandwich plate design. They provide line contact closure in one direction and allows free flow in the opposite direction. The check function can be in one of several ports, or dual ports. The check function orientation can also be defined by model coding.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocheck

Features

- Size 6 and 10
- · For mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B 93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- · Various isolating functions
- · Various cracking pressures
- · Check valve made of carbon fiber-reinforced plastic
- · Excellent compatibility with various hydraulic fluids

Detailed information:

• Size 6: RE21534

• Size 10: RE21537

Size			6	10
Operating pressure	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	350 (5100)	315 (4600)
Cracking pressure		bar (PSI)	0.5 (7.25), 1.5 (21.75), 3.0 (43.5), 5.0 (72.5)	0.5 (7.25), 3.0 (43.5), 5.0 (72.5)
Flow	q V max	I/min (GPM)	40 (10.6)	100 (26.4)

Piloted-to-open check valves – sandwich module Z2S



Models Z2S are pilot operated check valves in a sandwich plate design. They provide line contact closure in one or two actuator ports, even during idle periods. Piloted to open, utilizing a pressure signal from the opposite actuator port provides a self-contained function.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocheck*

Features

- Sizes 6 to 22
- Porting pattern according to ISO 4401-3, 5, 7, 8; NFPA T3.5.1M R1, and ANSI B93.7 D 03, D 05, D 07, D 08
- · For the leak-free isolation of one or two actuator ports
- Various cracking pressures

Detailed information:

- Size 6: RE21548
- Size 10: RE21553
- Size 16: RE21558
- Size 22: RE21564

Size			6	10	16	22
Component series			6X	ЗХ	5X	5X
Operating pressure	p _{max}	bar (PSI)	315 (4600)	315 (4600)	315 (4600)	315 (4600)
Cracking pressure		bar (PSI)	1.5, 3, 7 (22, 42, 102)	1.5, 3, 6, 10 (22, 42, 87, 145)	3, 5, 7.5, 10 (42, 92.5, 109, 145)	3, 5, 7.5, 10 (42, 92.5, 109, 145)
Flow	q V max	l/min (GPM)	60 (15.9)	120 (31.7)	300 (79.3)	450 (118.9)

Pilot operated check valves – sandwich module Z2SRK



Models Z2SRK are pilot operated check valves in a sandwich plate design. They provide line contact closure in one or two actuator ports, even during idle periods. Piloted to open, utilizing a pressure signal from the opposite actuator port provides a self-contained function. The Z2SRK has a maximum operating pressure of 3000 PSI.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocheck

Features

- · Sandwich plate valve
- Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1 and ANSI B93.7 D 03
- For the leak-free closure of two actuator ports

Detailed information:

- Size 6: RE21543
- Size 10: RE21549

Size			6	10
Operating pressure	p_{max}	bar (PSI)	210 (3100)	210 (3100)
Flow	q V max	I/min (GPM)	40 (10.6)	80 (21.1)

Directional poppet valves, direct operated, solenoid actuation SED & SEW



Directional control valves, model SED and SEW, are direct (SED) or lever (SEW) actuated directional poppet valves with solenoid actuation. They control the start, stop, and direction of fluid flow. Poppet valves, or seat valves, provide a line contact closure for applications where spool valve leakage or silting is not desirable.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTodirectional

Features

- Size 6 and 10
- For mounting:
 - -Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B 93.7 D 03
 - -Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- · Blocked port is leak-free when completely shifted
- · Solenoids with detachable coil
- Pressure-tight chamber does not have to be opened for changing the coil (type SED)
- · Reliable switching when under pressure over longer periods of standstill

Detailed information:

Size 6:

• SED: RE22049

• SEW: RE22058

Size 10:

• SED: RE22045

• SEW: RE22075

Type SED				
Size			6	10
Operating pressure	p _{max}	bar (PSI)	350 (5100)	350 (5100)
Flow	q ∨ max	I/min (GPM)	25 (6.6)	40 (10.6)

Type SEW				
Size			6	10
Operating pressure	p _{max}	bar (PSI)	420/630 (6100/9100)	420/630 (6100/9100)
Flow	q V max	I/min (GPM)	25 (6.6)	40 (10.6)

Directional spool valves, direct operated with manual actuation 4WMM & 4WMR



Directional valves type WMM are lever operated directional spool valves. They control the start, stop, and direction of a flow. These directional valves basically consist of housing; lever; control spool; return springs. A full array of spools are possible with variations for detented operation on both 2-position or 3-position functions. Flow and pressure rates from 4000 PSI to 5000 PSI and 16 GPM to 32 GPM cover a wide range of applications.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTodirectional

Features

- Size 6 and 10
- · For mounting:
 - -Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B 93.7 D 03
 - -Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- Operation by means of manual lever or roller/plunger

Detailed information:

• Size 6: RE22280

• Size 10: RE22331

Size			6	10
Operating pressure	p _{max}	bar (PSI)	350 (5100)	315 (4600)
Flow	q V max	I/min (GPM)	60 (16)	120 (32)

Directional valves with fluid actuation WP & WH



Valves of type WP and WH are directional spool valves with fluid actuation. They control the start, stop, and direction of flow. A full array of spools are available for both the WH and WP operator.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTodirectional

Features

- Size 6
- · Direct operated directional spool valve
- · Types of actuation:
 - Pneumatic (WP)
 - Hydraulic (WH)
- Porting pattern according to DIN 24340 form A (without locating hole)
- Porting pattern according to ISO 4401-03-02-0-05 and NFPA T3.5.1 R2-2002 D03 (with locating hole)

Technical Data

Size			6X (WP)	5X (WH)
Maximum operating pressure	p_{max}	bar (PSI)	315 (4600)	315 (4600)
Flow	q _{v nom}	I/min (GPM)	60 (15.8)	60 (15.8)

Detailed information:

Directional spool valves, direct operated with solenoid actuation WE



Directional valves type WE are solenoid operated directional spool valves. They control the start, stop, and direction of a flow. These directional valves basically consist of housing; one or two solenoids; control spool; and no, one, or two return springs. A full array of spools are possible with variations in voltage and electrical connection, all within the program. Flow and pressure rates from 4000 PSI to 5000 PSI and 21 GPM to 32 GPM cover a wide range of applications.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTodirectional

Features

- Sizes 6 to 10
- · For subplate mounting:
 - -Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B93.7 D 03
 - -Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- Wet-pin AC or DC solenoids
- · Solenoids with detachable coil
- · Electrical connection as individual or central connection
- Optional spool position monitoring (RE24830)
- Smooth switching characteristics 3)

Detailed information:

- Size 6: RE23178 ²⁾
- Size 10: RA23183 ³⁾ RE23327 ⁵⁾ RE23351 ⁶⁾

Size			6			
Version			1)	2)	3)	4)
Operating pressure	p_{max}	bar (PSI)	315 (4600)	350 (5100)	350 (5100)	315 (4600)
Flow	$q_{ m v\ nom}$	I/min (GPM)	60 (15.8)	80 (21)	60 (15.8)	60 (15.8)

Size			10			
Version			3)	5)	6)	
Operating pressure	p _{max}	bar (PSI)	315 (4600)	315 (4600)	315 (4600)	
Flow	q _{v nom}	I/min (GPM)	100 (26.4)	120 (32)	120 (32)	

- 1) Standard valve, size 6 (DC solenoid only)
- 2) Heavy duty valve
- 3) Soft switch valves
- 4) Reduced electrical power consumption
- 5) Standard valve, size 10
- 6) 5-chamber version (DC solenoid only)

Directional spool valves, pilot operated with solenoid actuation 4WEH



Directional valves type WEH are solenoid operated directional spool valves. They control the start, stop, and direction of a flow. These pilot operated directional valves consist of a pilot control valve and main stage with spring or hydraulic centering options. Additionally, the pilot and drain configuration may be selected. A full array of spools are possible with variations in voltage and electrical connection, all within the program. Flow and pressure rates from 4000 PSI to 5000 PSI and 42 GPM to 120 GPM cover a wide range of applications.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTodirectional

Features

- Sizes 10 to 22
- Porting pattern according to DIN 24340 form A and ISO 4401-5, 7, 8; NFPA T3.5.1M R1, and ANSI B93.7 D 05, D 07, D 08
- Wet-pin AC or DC solenoids
- Spring and/or pressure return of the main spool to its initial position
- Spring centering (size 10, 16 & 25)
- Spring or pressure centering (sizes 16 & 25)
- · Electrical connection as individual connection or central connection
- · Optional switching time adjustment
- · Stroke limitation of the main spool, optional

Technical Data

Size			10	16	22
Operating pressure	p _{max}	bar (PSI)	350/280 (5100/4060)	350/280 (5100/4060)	350/280 (5100/4060)
Flow	q V max	l/min (GPM)	160 (42.3)	300 (79.3)	450 (118.9)

Detailed information:

Directional shut-off valves, internally pilot operated, externally pilot operated Z4WEH



Valve type Z4WEH are directional spool valves with electrohydraulic actuation. They control the start and stop of a flow, and function as an emergency on–off isolating valve or on–off isolating/bypass valve, primarly used for servo/proportional systems.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTodirectional*

Features

- Sizes 10
- · Directional spool valve, pilot operated
- · 2 types of actuation:
 - Electrohydraulic (type WEH)
 - Hydraulic (type WH) available
- · Function as shut-off through-valve or shut-off/through valve/short-circuit valve
- · Free flow in P and T in every spool position
- Porting pattern to ISO 4401-05-04-0-05
- · Wet-pin DC or AC voltage solenoids, optional
- · Manual override, optional
- · Electrical connection as individual or central connection
- · Switching time adjustment, optional
- · Stroke adjustment of main spool, optional
- · Inductive position switch and proximity sensors

Technical Data

Size			10
Maximum operating pressure	p _{max}	bar (PSI)	315 (4600)
Flow	q V max	I/min (GPM)	160 (42)

Detailed information:

Pressure relief valves, direct operated DBD



The DBD pressure relief valves are direct operated type relief valves. They are used to limit the pressure in a hydraulic system. DBD type relief valves offer line contact sealing for minimal leakage at closure and a full array of pressure capacities are available.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopressure

Features

- Sizes 6 to 20
- For threaded connection ("G")
- As cartridge valve ("K")
- · Optional adjustment types:
 - -Screw with hexagon socket and protective cap
 - -Rotary knob / hand wheel

Detailed information:

• RE25402

Size			6	10	20
Version			"G, K"	"G, K"	"G, K"
Operating pressure	p _{max}	bar (PSI)	100 (1450) 400 (5800)	100 (1450) 630 (9150)	400 (5800)
Flow	q V max	I/min (GPM)	50 (13)	120 (32)	250 (66)
Version "G" port size	SAE		-4; 7/16-20	-8; 3/4-16	-16; 1-5/6-12

Pressure relief valves DZT



Type DZT pressure relief valves are seat design remote control valves and allow for the limitation of the system pressure. These valves are basically used as pilot control valves for the indirect control of major flow

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopressure

Features

- Sizes 6
- · Directly operated valve for the limitation of the system pressure
- · Application as pilot control valve
- · For plate and control panel mounting

Technical Data

Size			6		
Maximum operating pressure	\boldsymbol{p}_{max}	bar (PSI)	350 (5100)		
Maximum flow	q V max	I/min (GPM)	3 (0.79)		

Detailed information:

Pressure relief valves – sandwich module, pilot operated ZDB(K) & Z2DB



Pressure relief valve types ZDB(K) und Z2DB are pilot sandwich type pressure controls. ZDB versions offer single port pressure control, while Z2DB models offer dual port pressure control. Z2DB models can be configured as either port relief or cross port relief. The ZDB program offers multiple spring options.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopressure

Features

- Sizes 6
- · For mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D05
- Four pressure ratings: 50 bar (725 PSI), 100 bar (1450 PSI), 200 bar (2900 PSI), and 315 bar (4600 PSI)
- Five pressure relief functions:
 - A → T; P → T; B → T; A → T as well as A+B → T; A → B and B → A
- · Adjustment type:
 - Hex screw with protective cap

Detailed information:

- Size 6 ZDB & Z2DB: RE25751 Size 10 ZDB & Z2DB:
- Size 6
 ZDBK:
 RE25754

RE25761

ZDB & Z2DB Size		6	10	
Operating pressure	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	315 (4600)	350 (4600)
Flow	q √ max	I/min (GPM)	60 (15.9)	100 (26.4)

ZDBK Size		6	10	
Operating pressure	p max	bar (PSI)	210 (3000)	210 (3000)
Flow	q ∨ max	I/min (GPM)	40 (10.5)	80 (21)

Pressure relief valve, pilot operated DB & DBW



Pressure control valves of type DB are pilot operated pressure relief valves. They are used for the limitation of the operating pressure. Pressure relief valves basically consist of a main valve with main spool insert and pilot valve with pressure adjustment element.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopressure

Features

- Sizes 10, 20, & 30
- For mounting:
- · Porting pattern according to ISO 6264-AT-10-2-A

Detailed information:

• RE25802

Size			10	20	30
Operating pressure	p_{max}	bar (PSI)	350 (5100)	350 (5100)	350 (5100)
Flow	q V max	I/min (GPM)	250 (66)	500 (132)	650 (172)

GoTo Focused Delivery Program: Pressure Control Valves

Pressure reducing valve, direct operated DR





The valve type DR 6 DP is a direct operated pressure reducing valve in 3-way design, i.e. with pressure limitation of the secondary circuit.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopressure

Features

- · For subplate mounting
- · Porting pattern according to DIN 24340 form A
- Porting pattern according to ISO 4401-03-02-0-05 and NFPA T3.5.1 R2-2002 D03 (with locating hole)
- 4 adjustment types for pressure adjustment, optionally:
 - Rotary knob
 - Hex screw with protective cap
 - Lockable rotary knob with scale
 - Rotary knob with scale
- 5 pressure ratings
- · Check valve, optional

Technical Data

DR			
Weight		kg (lbs)	1.2 (2.64
Ambient temperature range		°C (°F)	-30 to +80 (-22 to +176) [NBR seals] -20 to +80 (-4 to +176) [FKM seals]
Maximum operating pressure	– Port P	bar (PSI)	315 (4600)
Maximum secondary pressure	– Port A	bar (PSI)	150 (2175)
Maximum backpressure	- Port T (Y)	bar (PSI)	160 (2300)
Maximum flow		I/min (GPM)	60 (15.9)

Detailed information:

GoTo Focused Delivery Program: Pressure Control Valves

Pressure-reducing valves – sandwich module, direct operated ZDR



Models ZDR are 3-way direct operated pressure reducing-relieving valves. They maintain a "reduced" pressure in a branch circuit and permit "relieving" pressure spike occurrences in the reduced branch circuit. Options for pressure ranges and operator adjustment options are within the scope of the modular reducing valve portfolio.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopressure

Features

- Sizes 6 and 10
- · For mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M Ra, and ANSI B93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-05, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- · Pressure reduction in channel A, B or P
- Four pressure ratings:
 - 25 bar (360 PSI), 75 bar (1100 PSI), 150 bar (2175 PSI), 210 bar (3050 PSI)
- Adjustment type:
 - Hex screw with protective cap
- · Check valve, optional

Technical Data

ZDR		Size	6	10
Component series			4X	5X
Operating pressure	p _{max}	bar (PSI)	210 (3050)	210 (3050)
Flow	q V max	l/min (GPM)	50 (13.2)	80 (21.1)

Detailed information:

ZDR

- Size 6: RE26570
- Size 10: RE26585 RA26861

GoTo Focused Delivery Program: Pressure Control Valves

Pressure-reducing valves – sandwich module, direct operated **ZDRK**



Models ZDRK are 3-way direct operated pressure reducing-relieving valves. They maintain a "reduced" pressure in a branch circuit and permit "relieving" pressure spike occurrences in the reduced branch circuit. Options for pressure ranges and operator adjustment options are within the scope of the modular reducing valve portfolio.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopressure

Features

- Sizes 6
- · Sandwich plate valve
- · For mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M Ra, and ANSI B93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-05, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- Pressure reduction in P1
- · Pressure gauge connection port
- · Adjustment type:
 - Hex screw with protective cap

Detailed information: ZDRK

• RA26572

ZDRK		Size	6
Component series			1X
Maximum operating pressure	p _{max}	bar (PSI)	210 (3050)
Maximum secondary pressure		bar (PSI)	100 (1450)
Maximum back pressure		bar (PSI)	160 (2300)
Flow	q _{V max}	I/min (GPM)	40 (10.5)

GoTo Focused Delivery Program: Flow Control Valves

Throttle valves and throttle check valves MG



Valve model MG is a pressure and viscosity dependent throttle valve. Model MG (throttle valve) throttles in both flow directions.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocheck*

Features

- Sizes 10
- · For in-line installation
- · Related to pressure and viscosity
- · Throttling in both directions of flow

Technical Data

Size			10
Operating pressure	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	315 (4600)
Flow	q V max	I/min (GPM)	50 (13.21)

• RA27219

Detailed information:

GoTo Focused Delivery Program: Flow Control Valves

Double throttle check valves – sandwich module Z2FS(K)



Flow control valves, Model Z2FS(K), are double throttle/check sandwich type valves. They restrict flow to or from actuator ports (A & B) of a directional valve. Two throttle/check valves, symmetrically arranged in the housing, restrict flow with adjustable throttles in one direction while providing free flow in the opposite direction.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoToflow*

Features

- Sizes 6 to 22
- · For mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
 - Size 16: Porting pattern according to ISO 4401-7, NFPA T3.5.1M R1, and ANSI B93.7 D 07
 - Size 22: Porting pattern according to ISO 4401-8, NFPA T3.5.1M R1, and ANSI B93.7 D 08
- For limiting the main or pilot flow of one or two actuators
- · Meter-in or meter-out throttling
- Adjustment type:
 - Softscrew with locknut

Detailed information:

- Z2FS Size 6: RA27506
- Z2FSK Size 6: RE27510
- Z2FS Size 10: RE27518
- Z2FSK Size 10: RA27524
- Z2FS Size 16: RE27526
- Z2FS Size 22: RE27536

Z2FS Size		6 10		16	22	
Operating pressure	p _{max}	bar (PSI)	315 (4600)	315 (4600)	350 (5100)	350 (5100)
Flow	q _{v nom}	l/min (GPM)	80 (21)	160 (42)	250 (66)	360 (95)

Z2FSK		Size	6	10
Operating pressure	p _{max}	bar (PSI)	210 (3000)	210 (3000)
Flow	q _{v nom}	l/min (GPM)	40 (10.5)	80 (21)

GoTo Focused Delivery Program: Flow Control Valves

2-way flow control valves, pressure compensated 2FRM



Pressure compensated flow controls Model 2FRM are two-way restrictive-style flow regulators. They accurately control flow, independent of changes in fluid viscosity or pressure drop across the valve. This valve maintains a constant actuator speed independent of changes in load induced pressure. Sharp edged throttle openings reduce the influence of flow variations from temperature change.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToflow

Features

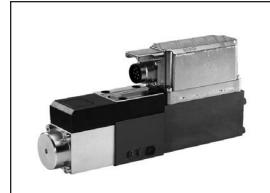
- Sizes 6, 10, and 16
- · For subplate mounting:
 - Size 6: Porting pattern according to ISO 6263-03 and NFPA T3.5.1M R1 2 FO 3
 - Size 10: Porting pattern according to ISO 6263-06-2 and NFPA T3.5.1M R1 2 FO 6
 - Size 16: Porting pattern according to ISO 6263-07-2 and NFPA T3.5.1M R1 2 FO 7
- · Manual dial adjustment
- · With external closure of the pressure compensator, optional (size 6)
- Check valve, optional (size 6)
- Pressure compensator stroke limitation for reducing start-up jumps, optional (size 10)

Detailed information:

- Size 6: RE28163
- Size 10 & 16: RA28389

Size			6	10	16
Operating pressure 1)	P max	bar (PSI)	315 (4600)	315 (4600)	315 (4600)
Pilot pressure	p St	bar (PSI)	_	315 (4600)	315 (4600)
Flow	q V max	I/min (GPM)	32 (8.45)	50 (13.21)	160 (42.27)

Proportional directional valves, direct operated with electrical position feedback 4WRP & 4WRPE



The 4/2 and 4/3 proportional valves are directly controlled components of subplate mounting design. They are actuated by proportional solenoids with an integrated linear feedback to assure accurate positioning related to a command signal. The valves are available with either external control electronics (model WRP) or by integrated valve electronics (model WRPE).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 6 and 10
- · For subplate mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B 93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- · Control of the direction and magnitude of a flow
- · Actuation through control solenoid
- · Position sensing of the control spool via an inductive position transducer
- · Series with/without integrated electronics
- · Characteristic curves with and without inflection

Technical Data

Size				6	10
Operating pressure	Ports P, A, B	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	315 (4600)	315 (4600)
Flow		q V max	I/min (GPM)	40 (10.57)	100 (26.42)
Maximum hysteresis			%	≤0.2	≤0.2
Actuating time	0 to 100 %		ms	12	25
Operating voltage	OBE	U	V	24	24
Comm. value signal	OBE	U	V	0 to 10/±10	0 to 10/±10
		1	mA	4 to 20	4 to 20
Control electronics	Type 4WRPEA	Ca	ard, analog	VT-VRPA1-527QV	VT-VRPA1-537QV
	Type 4WRPEW	Ca	ard, analog	VT-VRPA2-527	VT-VRPA2-537

Detailed information:

- RE29020
- RE29025

High-response directional valves, direct operated with electrical position feedback 4WRPH & 4WRPEH



4WRPH and 4WRPEH type proportional directional valves offer fast response, minimal hysteresis, and are excellent performers in closed loop applications. Available with or without on-board electronics, these valves may be used in a variety of applications and environments. The robust design is also applicable to circuits where vibration may be a concern.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 6 and 10
- · For subplate mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B 93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- · Control of the direction and magnitude of a flow
- · Use for position, velocity and pressure control
- · Actuation through control solenoid
- · Position sensing of the control spool via an inductive position transducer
- · Characteristic curves with and without inflection
- · Spool and sleeve in servo-type quality
- Integral electronics (OBE) for type 4WRPEH

Detailed information:

Size 6

- Model 4WRPH: RE29028
- Model 4WRPEH: RE29035

Size 10

- Model 4WRPH: RF29032
- Model 4WRPEH: RE29037

Size				6	10
Operating pressure		p _{max}	bar (PSI)	315 (4500)	315 (4500)
Nominal flow	$\Delta p = 70 \text{ bar (1000 PSI)}$	q V nom	l/min (GPM)	2 to 40 (0.5 to 11)	50 to 100 (13 to 26)
Maximum hysteresis			%	<0.2	<0.2
Frequency	Phase response: -90°	f	Hz	120	60
Operating voltage	OBE	U	V	24	24
Comm. value signal	OBE	U	V	0 to 10 / ±10	0 to 10 / ±10
		1	mA	4 to 20	4 to 20
Control electronics	Type 4WRPH	C	ard, analog	VT-VRRA1-527	VT-VRRA1-537

Proportional directional valve, direct operated without electrical feedback

4WRA & 4WRAE



The WRA(E) direct operated proportional valve without integral feedback is available with or without on-board electronics (OBE). Individual valve amplifiers are available for the non-OBE version. Postive overlap spools reduce leakage at center and OBE models can be configured to either a voltage or current command.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 6 and 10
- · For subplate mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B 93.7 D 03
 - Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- · Control of the direction and magnitude of a flow
- Proportional solenoid operation
- Spring-centered control spool
- Different spool overlaps possible
- Integral electronics (OBE) for type 4WRAE

Technical Data

Size				6	10	
Operating pressure	Ports A, B, P	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	315 (4600)	315 (4600)	
Nominal flow	$\Delta p = 10 \text{ bar } (145 \text{ PSI})$	q V nom	l/min (GPM)	7, 15, 30 (1.8, 4, 8)	30, 60 (8, 16)	
Maximum hysteresis			%	5	5	
Step response	0 to 90 %	$T_{u}+T_{g}$	ms	< 40	< 140	
Operating voltage	OBE	U	V	24	24	
Comm. value signal	OBE	U	V	0 to 10 / ±10	0 to 10 / ±10	
		I	mA	4 to 20	4 to 20	
Control electronics	Type 4WRA	Card, ana	log	VT-VS	SPA2-1	
		Card, digital		VT-VSPD-1		
		Module, a	nalog	VT-MSPA2-1		

Detailed information:

Proportional directional control valves, direct operated 4WRA(E)B



4WRAB6 type direct operated proportional valves are available with or without on-board electronics (OBE). Suitable for open loop applications, the WRAB6 does not have integral feedback; however, provides proportional flow output dependant on a commanded value. The WRAB6 may also be used with a DC switching signal, if the application requires throttled shifting without full proportional control.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Size 6
- Direct operated proportional directional control valves, which control both the direction and volume of a fluid flow
- Mounts on standard ISO 4401-3, NFPA T3.5.1MR1 D 03 and ANSI B 93.7 D 03 interface
- · Two piece solenoid design with removable coils
- · Integrated electronics available
- For subplates, see RE45052

Technical Data

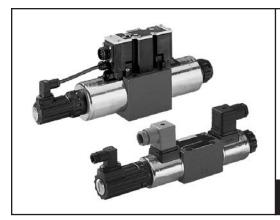
Size		6		
Operating pressure	Ports A, B, P	p _{max}	bar (PSI)	350 (5100)
	Port T	p _{max}	bar (PSI)	210 (3100)
Maximum flow			I/min (GPM)	30 (8)
Maximum hysteresis			%	3.5
Step response	0 to 100%	$T_{\rm u} + T_{\rm g}$	ms	40
Supply voltage		U	vdc	12V (±10%)
Associated electronic a	amplifier cards (some res	MDSD*		

^{*} The MDSD1 or MDSD will operate the 4 WRA B../G12 with 14 to 28 vdc from the power supply. The MDSD can be used with 10 to 14 vdc power, but valve performance may be affected. At higher temperatures, increased solenoid resistance may reduce the available flow. An amplifier is not required when using the 4 WRA B../G12 as a non-proportional (switching) valve at 12 vdc ±10%.

Detailed information:

• RA29057

Proportional directional valve, direct operated with electrical position feedback 4WREE



WRE(E) direct operated proportional directional control with integral feedback are available with on-board electronics (OBE). Positive overlap spools reduce leakage at center, while underlap spools can be utilized for closed-loop functions. Individual amplifiers are available, while OBE models are possible with either a voltage or current command.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 6 to 10
- For mounting:
 - Size 6: Porting pattern according to ISO 4401-3, NFPA T3.5.1M R1, and ANSI B 93.7 D 03
 Size 10: Porting pattern according to ISO 4401-5, NFPA T3.5.1M R1, and ANSI B93.7 D 05
- · Control of the direction and magnitude of a flow
- Proportional solenoid operation
- Spring-centered control spool
- Different spool overlaps possible
- Integrated control electronics (OBE) for type 4WREE

Technical Data

Size				6	10
Operating pressure	Ports A, B, P	p_{max}	bar (PSI)	315 (4600)	315 (4600)
Nominal flow	$\Delta p = 10 \text{ bar}(145 \text{ PSI})$	q v nom	l/min (GPM)	8, 16, 32 (2.1, 4.2, 8.5)	25, 50, 75 (6.6, 13.2, 19.8)
Maximum hysteresis			%	0.1	0.1
Step response	0 to 90%	$T_{\rm u} + T_{\rm g}$	ms	20	40
Operating voltage		U	V	24	24
Comm. value signal	Type 4WREE	U	V	±10	±10
(alternative)		I	mA	4 to 20	4 to 20

Detailed information:

High-response directional valves, pilot operated with electrical position feedback 4WRVE



Pilot operated proportional directional valve type 4WRVE offers integral position feedback on both pilot and mainstage for dynamic response plus greater accuracy. On-board electronics (OBE) and 12-pin connectors permit power and command all to be accomplished on the valve. Underlapped main spools and high performance pilot permit the WRVE to be an excellent candidate into applications requiring closed loop control of pressure, force, and velocity.

For complete engineering and design information: <u>GoTo www.b</u>oschrexroth-us.com/GoToproportional

Features

- Sizes 16
- Porting pattern according to ISO 4401-7, NFPA T3.5.1M R1, and ANSI B93.7 D 07
- · Control of the direction and magnitude of a flow
- · Proportional solenoid operation
- Integrated control electronics (OBE)

Detailed information:

• RE29077

Size				16
Operating pressure		p _{max}	bar (PSI)	350 (5100)
Nominal flow	$\Delta p = 10 \text{ bar}$	q V nom	l/min (GPM)	120, 200 (32, 53)
Maximum hysteresis			%	0.1
Frequency	Phase response -90 °	f	Hz	100
Operating voltage	OBE	U	V	24
Comm. value signal	OBE	U	V	±10

High-response directional valves, pilot operated with electrical position feedback 4WRLE



Pilot operated proportional directional valve type 4WRLE offers integral position greater feedback on both pilot and mainstage for dynamic response plus greater accuracy. On-board electronics (OBE) and 7-pin connectors permit power and command all to be accomplished on the valve. Overlapped main spools and high-performance pilot permit application into various circuits including those requiring closed-loop control of pressure, force, or velocity.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 10, 16, and 25
- Porting pattern according to ISO 4401-5, 7, 8; NFPA T3.5.1M R1; and ANSI B93.7 D 05, D 07, D 08
- · Control of the direction and magnitude of a flow
- Use for force control, position control, velocity control and pressure control purposes
- · Pilot control valve and main stage are position-controlled
- · Characteristic curves with and without inflection
- Integral electronics (OBE) for type 4WRLE

Detailed information:

- RE29088
- RE29089

Size				10	16	25
Operating pressure		p_{max}	bar (PSI)	350 (5100)	350 (5100)	350 (5100)
Nominal flow	$\Delta p = 10 \text{ bar (145 PSI)}$	q ∨ nom	l/min (GPM)	55, 80 (14.5, 21)	120, 200 (32, 53)	370 (98)
Maximum hysteresis			%	0.1	0.1	0.1
Frequency	Phase response -90°	f	Hz	45	45	50
Operating voltage	OBE	U	V	24	24	24
Comm. value signal	OBE	U	V	±10	±10	±10
		1	mA	4 to 20	4 to 20	4 to 20

4/3 directional high-response control valves, direct operated, with integrated control electronics (OBE) 4WRSE



These 4/3 directional high-response valves are direct operated components. They are actuated by control solenoids. The solenoids are controlled by integrated control electronics (OBE).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 10
- Direct operated directional high-response control valve with integrated control electronics (OBE) for controlling the direction and magnitude of flow
- · Suitable for position and velocity control
- · Porting pattern to DIN 24340 form A and ISO 4401

Detailed information:

• RE29067

Size			10
Operating pressure	Ports P, A, B	bar (PSI)	up to 315 (4600)
	Port T	bar (PSI)	up to 315 (4600)
Max. permissible flow	$q_{V \text{ nom}} \pm 10 \% \text{ at } \Delta p = 10 \text{ bar}$	l/min (GPM)	75 (19.8)
Hysteresis		%	≤ 0.05

4/2, 4/3 proportional directional valves, pilot operated, without electrical position feedback 4WRZE



Valves of type 4WRZE are pilot operated 4-way directional valves with operation by proportional solenoids. They control the direction and magnitude of flow.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 16
- Pilot operated 2-stage proportional directional valves with integrated electronics (OBE)
- · Control the direction and magnitude of flow
- Manual override
- Spring-centered control spool

Detailed information:

• RE29115

Size			16
Operating pressure		bar (PSI)	up to 350 (5100)
Return flow pressure	Port T (Port R) (external pilot oil drain)	bar (PSI)	up to 250 (3600)
	Port T (internal pilot oil drain)	bar (PSI)	up to 30 (1300)
	- Port Y	bar (PSI)	up to 30 (1300)
Flow of the main valve		I/min (GPM)	up to 460 (121.5)

Proportional cartridge throttle valve, with inductive position transducer FESX



Model FESX proportional throttle valves are pilot operated and in "cartridge" design. This results in their compact form despite high flow rates. The electronics, which take the form of an external valve amplifier in Europe card format, trigger the solenoid of the pilot valve and thus control the position of the main stage. Hysteresis is <0/2% and a position accuracy of >0.5% is achieved.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 25 & 32
- · Pilot operated throttle valves with inductive position transducer
- Design: cartridge type DIN 24342, ISO/DIS 7368, control oil external X and Y
- Adjustable via the position-controlled main stage by means of the position transducer and the external valve electronics
- Hysteresis < 0.2%, positioning accuracy < 0.5%

Detailed information:

• RE29215

Size			25	32	
Pressure fluid			Hydraulic oil to DIN 51524535		
Pressure fluid temperature range °C (°F)			-20 to +80 (-4 to +176)		
Maximum permitted degree of contamination of pressure fluid – Purity class to ISO 4406 (c)			Class 18/16/13		
Max. operating pressure	Ports A, B, X	bar (PSI)	315 (4600)	315 (4600)	
	Port Y	bar (PSI)	100 (1450)	100 (1450)	
Nominal flow rate at I/min (GPM) $\Delta_p = 5$ bar (72.5 PSI) per edge			210 (55.5)	320 (84.5)	
Weight kg (lbs.)		3.9 (8.6)	5.1 (11.2)		
Q _{max}		I/min (GPM)	600 (158.5)	1000 (264.2)	

Proportional cartridge throttle valve, with on-board electronics (OBE) and inductive position transducer FESXE



Model FESXE proportional throttle valves are pilot operated and in "cartridge" design. This results in their compact form despite high flow rates. The position of the main spool is closed-loop controlled by the on-board electronics (OBE).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

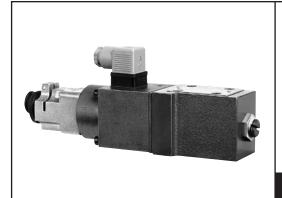
- Size 40
- Pilot operated throttle valves with on-board electronics (OBE) and inductive position transducer
- Design: cartridge type DIN 24342, ISO/DIS 7368, control oil external X and Y
- Hysteresis < 0.2%

Technical Data

Size		40	
Max. operating pressure	Ports A, B, X	bar (PSI)	315 (4600)
	Port Y	bar (PSI)	100 (1450)
Nominal flow rate		I/min (GPM)	500 (132)
Weight		kg (lbs.)	7.9 (17.4)
Q _{max}		I/min (GPM)	1,500 (396)
Hysteresis		%	≤ 0.2

Detailed information:

Proportional pressure relief valves with position feedback (Lvdt AC/AC) DBETBX



DBETBEX proportional pressure relief valves limit pressure for piloting applications requiring high performance. Pressure is directly controlled by changing the proportional solenoid position.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Size 6
- · Directly operated valves with position feedback for limiting system pressure
- · Adjustable through the position of the armature against the compression spring
- Position-controlled at a high magnetic force, minimal hysteresis <0.3%
- Pressure limitation to a safe level even with faulty electronics (solenoid current $I > I_{max}$)
- For subplate attachment, mounting hole configuration to ISO 4401-03-02-0-94

Detailed information:

• RE29150

Size			6
Maximum set pressure (at Q = 1 l/min [0.26 GPM])		bar (PSI)	180 (2600)
Minimum pressure		bar (PSI)	4 (58)
(at $Q = 1$ I/min [0.26 GPM])			Note: At $Q_{max} = 3$ I/min (GPM) the pressure levels stated here increase
Maximum working pressure (at Q = 1 I/min [0.26 GPM])	Port P	bar (PSI)	315 (4600)
Maximum pressure	Port T	bar (PSI)	≤ 2 (29)
Maximum solenoid current		I_{max}	3.7
Coil resistance R ₂₀		Ω	2.5
Hysteresis		%	≤ 0.3

Proportional pressure relief valves, direct operated with position feedback DBETBEX



DBETBEX proportional pressure relief valves limit pressure for piloting applications requiring high performance. Pressure is directly controlled by changing the proportional solenoid position with on-board electronics (OBE).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

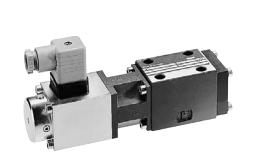
- Size 6
- Porting pattern according to ISO 4401-3, NFPA T3.5.1M R, and ANSI B93.7 D 03
- · Proportional solenoid operation
- · Adjustable by specifying the position of the solenoid armature
- Integral electronics (OBE)

Technical Data

Size				6
Туре				DBETBEX
Operating pressure	Port P	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	315 (4600)
	Port T	p _{max}	bar (PSI)	250 (3600)
Flow		q v max	I/min (GPM)	2 (0.53)
Maximum hysteresis			%	≤ 0.2
Operating voltage	OBE	U	V	24
Command value signal	OBE	U	V	0 to 10
		1	mA	4 to 20

Detailed information:

Proportional pressure relief valve, pilot operated DBE6X



Type DBE6X proportional pressure relief valves are pilot operated pressure relief valves. The valves are actuated by means of a proportional solenoid. With these valves, the system pressure that needs to be limited can be infinitely adjusted in relation to the solenoid current.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

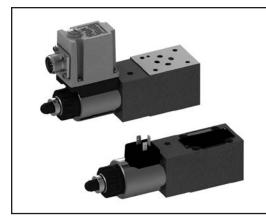
- Size 6
- Pilot operated valves (pilot valves) for limiting system pressure (pilot oil internal only)
- · Adjustable by means of the solenoid current
- Solenoid versions $I_{\text{max}} = 0.8 \text{ A}$
- Pressure limitation to a safe level even with faulty electronics (solenoid current $I > I_{max}$)
- For subplate attachment, mounting hole configuration to ISO 4401-03-02-0-94

Detailed information:

• RE29156

Size			6
Maximum set pressure (at Q = 1 l/min [0.26 GPM])		bar (PSI)	315 (4600)
Minimum pressure (at Q = 1 l/min [0.26 GPM])		bar (PSI)	10 (145)
Maximum working pressure	Port P	bar (PSI)	315 (4600)
Maximum pressure	Port T	bar (PSI)	250 (3600)
Maximum flow		I/min (GPM)	40 (10.6)
Valve with solenoid type			0.8 A
Maximum solenoid current		I_{max}	0.8 A
Coil resistance R ₂₀		Ω	22
Hysteresis		%	≤ 4

Proportional pressure relief valve, pilot operated DBEE6



The pilot operated proportional pressure relief valves of the type DBEE are operated by means of a proportional solenoid. These valves are used to limit a system pressure. With these valves it is possible to steplessly adjust the system pressure to be limited depending on the electrical command value.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Size 6
- Pilot operated valve for limiting a system pressure
- · Operation by means of proportional solenoids
- Proportional solenoid with rotatable and detachable coil
- · For subplate mounting
- Porting pattern according to ISO 4401-03-02-0-05 and DIN 24340

Technical Data

Size			6
Maximum operating	Port P; P1 – P2; A1 – A2; B1 – B2	bar (PSI)	350 (5100)
pressure	Port T	bar (PSI)	50 (725)
Maximum setting pressure	Pressure rating 315 bar	bar (PSI)	315 (4600)
Maximum flow		I/min (GPM)	30 (7.9)
Hysteresis		%	±3 of the maximum setting pressure
Repeatability		%	< ±2 of the maximum setting pressure
Supply voltage	Nominal voltage	VDC	24
Inputs	Voltage	V	0 to 10

Detailed information:

Proportional pressure relief valve DBETX



DBETX proportional pressure relief valves limit pressure for piloting applications. Pressure is limited by changing current to the proportional solenoid from an external amplifier.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

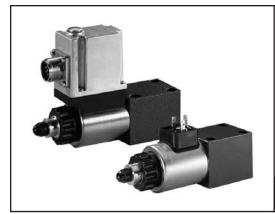
- Size 6
- Porting pattern according to ISO 4401-3, NFPA T3.5.1M R, and ANSI B93.7 D 03
- · Directly operated valves (pilot valves) for limiting system pressure
- · Adjustable by means of the solenoid current
- Solenoid versions $I_{\text{max}} = 0.8 \text{ A}$ or $I_{\text{max}} = 2.5 \text{ A}$
- Pressure limitation to a safe level even with faulty electronics (solenoid current $I > I_{\rm max}$)

Detailed information:

• RE29161

Size				6
Туре				DBETX
Operating pressure	Port P	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	315 (4600)
	Port T	$oldsymbol{ ho}_{\sf max}$	bar (PSI)	250 (3600)
Flow		q V max	I/min (GPM)	1 (0.26)
Maximum hysteresis			%	≤ 4
Control electronics		Plug		VT-SSPA1-525 VT-SSPA1-508
		Module		VT-MSPA1-525 VT-MSPA1-508
		Card		VT-VSPA1-525 VT-VSPA1-508

Proportional pressure relief valves, direct operated DBET & DBETE



DBET proportional pressure relief valves for piloting applications. Pressure is limited by changing current to the proportional solenoid from an external amplifier or internal electronics (DBETE).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

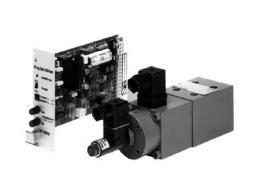
- Size 6
- Porting pattern according to ISO 4401-3, NFPA T3.5.1M R, and ANSI B93.7 D 03
- · Valve for limiting a system pressure
- Proportional solenoid operation
- · For subplate mounting
- · Linearized pressure/command value characteristic curve
- Integral electronics (OBE) for type DBETE

Technical Data

Size				6
Operating pressure		$oldsymbol{ ho}_{\sf max}$	bar (PSI)	420 (6100)
Flow		q V max	I/min (GPM)	2 (0.5)
Maximum hysteresis			%	<4
Step response	0 to 100 %	$T_{u} + T_{g}$	ms	70
	100 to 0 %	$T_{u} + T_{g}$	ms	70
Operating voltage	OBE	U	V	24
Comm. value signal	OBE	U	V	0 to 10
		I	mA	4 to 20
Control electronics	Type DBET	Card, analog		VT-VSPA1-2-1X
		Card, digital		VT-VSPD-1-2X
		Module, analog		VT-MSPA1-1-1X
		Plug, analog		VT-SSPA1-1-1X

Detailed information:

Proportional pressure relief valve DBETR



DBETR proportional pressure relief valves for piloting applications requiring high accuracy. Pressure is limited changing the proportional solenoid position with an external amplifier.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- · Valve for remote electrical control
- · Direct operated proportional pressure relief valve, of poppet design
- Proportional solenoid actuation with inductive position transducer (pressure balanced)
- Mounts on standard ISO 6264-03, NFPA/ANSI R 03 interface (uses Port P and T only)
- · Electrical closed loop position control of the spring pre-tension, hence low hysteresis
- Good repeatability
- · Control electronics:
 - Analog amplifier VT-VRPA1-100-1X/ in Euro card format (separate order)
 - Analog amplifier of modular design VT-MRPA1-100-1X/V0/0 (separate order)

Technical Data

Size				6
Operating pressure		$\boldsymbol{\rho}_{max}$	bar (PSI)	350 (5100)
Flow		q V max	I/min (GPM)	3 (0.8)
Maximum hysteresis			%	≤ 1 of max. pressure setting
Operating voltage	OBE	U	V	24
Control electronics		Card, analog		VT-VRPA1-100-1X
		Card, modula	r	VT-MRPA1-100-1X/V0/0

Detailed information:

Proportional pressure relief valve, pilot operated DBEME



DBE(M)E proportional pressure relief valves limit pressure in hydraulic systems, where higher flow may be required.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Size 10
- · Pilot operated valve for limiting a system pressure
- · Operation by proportional solenoid
- For subplate mounting: Position ports according to DIN 24340, form E subplates according to data sheet RE45064 (separate order)
- Optional maximum pressure relief function by means of spring-loaded pilot valve
- Integrated electronics (OBE) with type DBEME:
 - Low tolerances of the command value/pressure characteristic curve
 - Up and down ramps can be adjusted independently of each other

Technical Data

Hydraulic		Size	10	
Weight		kg (lbs.)	3.5 (7.7)	
Installation orientation			Optional	
Ambient temperature	range	°C (°F)	- 20 to +50 (-4 to	+122)
Operating pressure	- Ports A, B and X	bar (PSI)	350 (5100)	
	– Port Y		Separate and at zero pre	ssure to tank
Max. set pressure	- Pressure stage 315 bar (4500 PSI)	bar (PSI)	315 (4500)	
	- Pressure stage 200 bar (2900 PSI)	bar (PSI)	200 (2900)	
Maximum pressure rel	ief function (infinitely adjustable)		Pressure adjustment range	Factory setting:
	- Pressure stage 315 bar (4500 PSI)	bar (PSI)	150 to 350 (2175 to 5100)	to 350 (5100)
	- Pressure stage 200 bar (2900 PSI)	bar (PSI)	90 to 230 (1305 to 3335)	to 230 (3335)
Max. flow		I/min (GPM)	200 (52.8)	
Hydraulic fluid temper	ature range	°C (°F)	-20 to +80 (-4 to	+176)
Hysteresis (see comm	and value/pressure characteristic curve)	%	±1.5 of max. set pressure	
Repeatability		%	< ±2 of max. set pressure	
Linearity		%	±3.5 of max. set pr	essure
Electrical				
Supply voltage	<u> </u>	V	24 DC	

Detailed information:

• RA29160

Proportional pressure reducing valve DRE6



The valve type DRE is an electrically pilot operted 3-way pressure reducing valve with pressure limitation of the actuator. They are used for reducing sytem pressure.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Size 6
- Pilot operated pressure reducing valve in ports A and P1 with pressure limitation
- · Operation by means of proportional solenoid
- For subplate mounting or sandwich plate design:
 - Porting pattern according to DIN 24340 form A6 and ISO 4401-03-02-0-05

Detailed information:

• RE29175

Size		6	
Maximum operating pressure	Port P or PA	bar (PSI)	315 (4600)
	Port P1, A, and B	bar (PSI)	210 (3045)
	Port T	bar (PSI)	Separately and to the tank at zero pressure
Maximum setting pressure in channel P1 and A	Pressure rating 100 bar (1450 PSI)	bar (PSI)	100 (1450)
Maximum flow		I/min (GPM)	3 (0.8)
Hysteresis		%	±2.5 of the maximum setting pressure
Repeatability		%	< ±2 of the maximum setting pressure
Minimum control current		mA	100
Maximum control current		mA	1600

Proportional pressure reducing valves, pilot operated DRE6X



Model DRE6X proportional pressure reducing valves are pilot operated with a 3-way main stage. The pilot valve (pressure relief valve pilot stage) is supplied internally with a controlled flow of pilot oil. The valves are actuated by a proportional solenoid acting against a spring. The solenoid armature is cushioned to aid stability.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

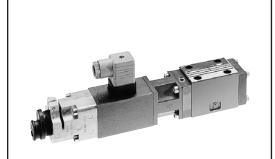
- Size 6
- Pilot operated valves for reducing system pressure at the consumer (pilot oil internal only)
- 3-way version (P-A/A-T), $p_{min} = p$ in T
- · Adjustable by means of the solenoid current
- Solenoid type $I_{\text{max}} = 0.8 \text{ A}$
- Pressure limitation to a safe level even with faulty electronics (solenoid current $I > I_{max}$)
- For subplate attachment, mounting hole configuration to ISO 4401-03-02-0-94
- Plug-in connector to DIN 43650-AM2 included in scope of delivery
- External trigger electronics with ramps and valve calibration (order separately)

Technical Data

Size		6
Ambient temperature range	°C (°F)	-20 to +50 (-4 to +122)
Weight	kg (lbs.)	2.3 (5.1)
Pressure fluid temperature range	°C (°F)	-20 to +80 (-4 to +176)
Max. set pressur in A (at Qmin = 1 L/min (0.26 GPM)	bar (PSI)	175 (2540)
Minimum pressure in A	bar (PSI)	0 (relative) or pressure in T
Minimum inlet pressure in P	bar (PSI)	$p_{P} = p_{A} + \geq 5$
Maximum working pressure	bar (PSI)	Port P: 315 (4600)
Maximum pressure	bar (PSI)	Port T: 250 (3626) [B sealed]
Maximum flow	L/min (GPM)	40 (10.6)
Maximum solenoid current	$I_{\sf max}$	0.8 A
Coil resistance R ₂₀	Ω	22
Hysteresis	%	≤ 4
Manufacturing tolerance for p_{max}	%	≤ 10

Detailed information:

Proportional pressure reducing valve, pilot operated with inductive position transducer DREB6X



Type DREB6X proportional pressure reducing valves are pilot operated with a 3-way main stage. The valves are actuated by a proportional solenoid, which is position-controlled against a spring. This ensures rapid response times and minimal hysteresis.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

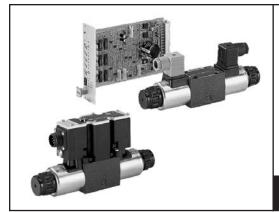
- Size 6
- Pilot operated valves for reducing system pressure at the consumer (pilot oil internal only)
- 3-way version (P-A /A-T), $p_{min} = p_{T}$
- · Adjustable through the position of the armature against the compression spring
- Position-controlled, minimal hysteresis < 1 %, rapid response times, see Technical data
- Pressure limitation to a safe level even with faulty electronics (solenoid current $I > I_{max}$)
- For subplate attachment, mounting hole configuration to ISO 4401-03-02-0-94

Detailed information:

• RE29182

Size	6	
Maximum set pressure (at $Q_{\min} = 1$ I/min [0.26 GPM])	bar (PSI)	175 (2500)
Minimum pressure in A	bar (PSI)	0 (relative) or pressure in T
Minimum inlet pressure in P	bar (PSI)	$p_{P} = p_{A} + \geq 5$
Maximum working pressure Port P	bar (PSI)	315 (4600)
Maximum pressure Port T	bar (PSI)	250 (3600) [B sealed]
Maximum flow	I/min (GPM)	40 (10.6)
Maximum solenoid current	$I_{\sf max}$	2.5 A
Coil resistance R ₂₀	Ω	3
Hysteresis	%	≤1

Proportional pressure reducing valves, direct operated 3DREP & 3DREPE



3DREP6 is a pressure reducing/relieving valve for very low pressures in special applications. The dual solenoid model-C regulates port A or port B. The most common application is 25 bar (360 PSI) on the 4WRZ(E) 10..32 proportional directional valve. Pressure is directly controlled by changing current to a proportional solenoid by external amplifier or by integrated electronics (3DREPE6).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Size 6
- Porting pattern according to ISO 4401-3, NFPA T3.5.1M R, and ANSI B93.7 D 03
- · Valve for reducing a system pressure
- · Proportional solenoid operation
- · For subplate mounting
- Integrated electronics (OBE) for type 3DREPE

Detailed information:

• RE29184

Size				6
Operating pressure		p _{max}	bar (PSI)	100 (1450)
Flow		q √ max	I/min (GPM)	15 (4.0)
Maximum hysteresis			%	5
Operating voltage	OBE	U	V	24
Command value signal	OBE	U	V	±10
		I	mA	4 to 20
Control electronics	Type 3DREP	Card, digital		VT-VSPD-1
		Module, anal	og	VT 11118

Proportional pressure reducing valves, pilot operated DREBE6



DREBE6 is a pilot operated pressure reducing/relieving valve for high performance applications. Pressure in port A is controlled by a proportional solenoid using position feedback with on-board electronics (OBE).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Sizes 6
- Porting pattern according to ISO 4401-3, NFPA T3.5.1M R, and ANSI B93.7 D 03
- · Valve for reducing a system pressure
- · Proportional solenoid operation
- · Adjustable by specifying the position of the solenoid armature
- Integral electronics (OBE)

Detailed information:RE29195

Size		6		
Туре				DREBE6X
Operating pressure	Port P	p _{max}	bar (PSI)	315 (4600)
	Port T	p _{max}	bar (PSI)	250 (3600)
Flow		q ∨ max	I/min (GPM)	40 (10.6)
Maximum hysteresis			%	≤ 1
Operating voltage	OBE	U	V	24
Command value signal	OBE	U	V	0 to 10
		Ī	mA	4 to 20

Proportional pressure reducing valve, pilot operated ZDREE



Valve of type ZDREE are pilot operated pressure reducing valves of sandwich plate design in 3-way variant, i.e. with pressure limitation of the actuator pressure. They are used for reducing a system pressure.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToproportional

Features

- Size 10
- · Pilot operated valve for reducing a system pressure
- · Actuation by proportional solenoid, which can be rotated
- · Sandwich plate design
- Porting pattern to DIN 24340-A and ISO 4401
- · Linear command value/pressure characteristic curve
- Integrated electronics (OBE) with type ZDREE, with low manufacturing tolerance of the command value/pressure characteristic curve

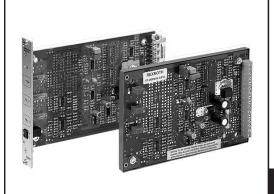
Technical Data

Size			6
Maximum operating pressure	Port P1	bar (PSI)	315 (4600)
	Ports P2; A; B; X	bar (PSI)	350 (5100)
	Port T	bar (PSI)	250 (3600)
	Port Y or L	bar (PSI)	Line separately and at zero pressure to tank
Maximum set pressure in Port P1	Pressure rating to 200 bar (2900 PSI)	bar (PSI)	200 (2900)
Permissible maximum flow		I/min (GPM)	80 (21.1)
Hysteresis		%	±3 of maximum set pressure
Supply voltage	Nominal voltage	VDC	24
Required fuses		А	2, slow-blowing
Inputs	Voltage	V	0 to 10

Detailed information:

Analog amplifiers for proportional valves without electrical position feedback

VT-VSPA1-1-1X



The VT-VSPA proportional amplifier controls solenoid current to Rexroth proportional valves without LVDT position feedback. Single solenoid driver cards have additional features for more flexibility. The user may configure the analog input, extend ramp time, and change setup for pre-defined valve types.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Analog amplifiers in Eurocard format
- · Voltage stabilization, partially with raised measuring zero point
- · Command value inputs for voltage and current
- Internal command value adjustment by means of 4 trimming potentiometers, call-up via relays, with LED indicator lamp (on some versions)
- · Ramp generator, ramp times adjustable
- · Jump function for quickly passing through overlaps of directional valves
- Enable input (on some versions)

Technical Data

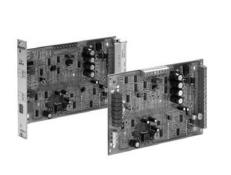
Operating voltage	U	VDC	24	
Command value,	U	V	0 to 10, ±10	
depending on type	1	mA	4 to 20; 0 to 20	
Output amplifier			Current-regulated, clocked	
Type of connection			32-pin form D (VT-VSPA1-1)	
Card dimensions		mm (in.)	Eurocard 100 x 160 (3.93 x 6.29), DIN 41494	
Ambient temperature range	θ	°C (°F)	0 to +50 [+70] (0 to +122 [158])	

Туре	Suitable for valve type
VT-VSPA1-1-1X	DBE(M), (Z)DBE, (Z)DRE10, 3DRE(M)

Detailed information:

Analog amplifiers for proportional valves without electrical position feedback

VT-VSPA1-2-1X



This amplifier is suitable for controlling DBET-6X pressure valves or use as a universal amplifier. It has differential inputs for both voltage and current signals along with command call-ups.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Differential input (0 to +10 V)
- Current input (4 to 20 mA)
- 4 command value call-ups (only in conjunction with option A4)
- Ramp generator with separately adjustable ramp time for "up/down"

Detailed information:

• RE30115

Operating voltage	U	VDC	24
Power consumption	PS	VA	< 24 VA
Current consumption	1	V	<2
Fuse	I F	А	2 (medium time lag, replaceable)
Inputs:			
Analog			
Command values 1 to 4 (potentiometer inputs)	U e	V	0 to +10, $R_{\rm e}$ > 100 kΩ
Differential output	U e	V	0 to +10, $R_{\rm e}$ > 50 kΩ
Current input	I e	mA	4 to 20, load $R_L = 100 \Omega$
Type of connection			48-pin form F
Permissible temperature range	θ	°C (°F)	0 to +50 (0 to +122)

Туре	Suitable for valve type
VT-VSPA1-2-1X	DBET-6X

Electrical proportional amplifier VT 2000-5X/



The VT-2000 is a proportional amplifier suitable for controlling single solenoid proportional pressure control valves without electrical position feedback.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Differential input
- Additional command value input, 0 to +9 V
- Separately adjustable ramp generator for up and down ramps
- Card holder: Model VT 3002-2X/32, see RE29928

Detailed information:

• RA29904

Operating voltage		VDC	24 + 40% - 5%
Inputs	U_{i}	V	0 to 9 (reference potential is M0)
	$\overline{U_{i}}$	V	0 to +10; R_i = 100 kΩ
Ramp time (adjustment range) t		30 ms to approx. 1 s or 5 s (depending on setting of S1)	
Outputs: Output stage - Solenoid current / resistance		800 mA + 10% – 5%; $R_{(20)} = 19.5 \Omega$	
Permissible operating temperature range °C (°F)		°C (°F)	0 to +50 (0 to +122)

Туре	Suitable for valve types
VT 2000-5X	DBEP, DBE5X

Detailed information:

GoTo Focused Delivery Program: Proportional Electronics

Plug-in proportional amplifier VT-SSPA1-50



The plug-in amplifier is suitable for mounting onto a valve connection base according to EN 175301-803. By turning the plug insert and the electronics in the housing, the plug-in amplifier can be mounted on the solenoid in 90° increments. user can adjust ramp time, maximum current, and bias current.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Used for controlling solenoid operated pressure control and directional valves without closed-loop position control
 - RE30116
- · Differential input, optional current input
- · Ramp generator, separate for up/down
- · Zero potentiometer / biasing current
- · Command value attenuator / maximum current
- Operating voltage 24 V

Operating voltage 24 V	U _B	VDC	24
	$u(t)_{max}$	V	35
	u(t) _{min}	V	18
Current / power consumption	1	Α	< 2.6
(depending on solenoid data)	P_{max}	Α	< 60
Recommended back-up fuse	1	Α	3, 15; slow-blow
Maximum current (adjustment range)	I _{max}	Α	<i>I</i> _g 2.6
Clock frequency at I _{max}	f	Hz	305
Command value input (voltage)			
Proportional range	U	V	010
Switching range	U	V	12 <i>U</i> B
Resistance	R	kΩ	20
Type of connection (M12 component connector)		Component connector, 4-pin, M12x1	

Туре	Suitable for valve type
VT-SSPA1-50-1X/V0/0-24	Universal; 2.5 A max output

Plug-in proportional amplifiers for proportional valves without electrical position feedback VT-SSPA1-5...



The plug amplifier is employed for actuating proportional valves without position control. It is plugged directly onto square solenoid valves. User can adjust ramp time, dither, and minimum and maximum output current.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Analog amplifier in plug-in design for controlling proportional valves
- · Differential input with optional current input
- Integrated ramp generator
- Proportional command value / current characteristic curve

Detailed information:

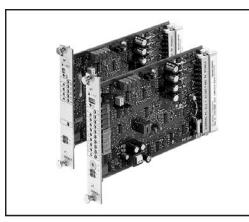
• RE30264

Operating voltage	U	VDC	10.2 to 31
Comm. value signal	U	V	0 to 10
	1	mA	4 to 20
Output amplifier			Current-regulated, clocked
Type of connection			Screw terminals
Ambient temperature range	ϑ	°C (°F)	-20 to +70 (-4 to +158)

Туре	Suitable for valve type
VT-SSPA1-525	DBETX25, DBE6X25, DRE6X25, DBE10Z25, DRE10Z25, 2FREX6, 2FREX10, 3FREX6, 3FREX10, 4WRBAEA
VT-SSPA1-508	DBETX8, DBE6X8, DRE6X8, DBE10Z8, DRE10Z8

Analog amplifiers for proportional valves without electrical position feedback

VT-VSPA2-1-2X



The VT-VSPA proportional amplifier controls solenoid current to Rexroth proportional valves without LVDT position feedback. Double solenoid driver cards have additional features for more flexibility. The user may configure the analog input, extend ramp time, and change setup for predefined valve types.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Analog amplifiers in Eurocard format
- · Voltage stabilization, partially with raised measuring zero point
- · Command value inputs for voltage and current
- Internal command value adjustment by means of 4 trimming potentiometers, call-up via relays, with LED indicator lamp (on some versions)
- Ramp generator, ramp times adjustable
- · Jump function for quickly passing through overlaps of directional valves
- Enable input (on some versions)

Technical Data

Operating voltage	U	VDC	24
Command value,	U	V	0 to 10, ±10
depending on type	1	mA	4 to 20; 0 to 20
Output amplifier			Current-regulated, clocked
Type of connection			48-pin male connector form F (VT-VSPA2-1)
Card dimensions		mm (in.)	Eurocard 100 x 160 (3.93 x 6.29), DIN 41494
Ambient temperature range	θ	°C (°F)	0 to +50 [+70] (0 to +122 [158])

Туре	Suitable for valve type
VT-VSPA2-1-2X	4WRA2X; 4WRZ7X

Detailed information:

Analog amplifier module VT 11118-1X/



The VT 11118 is suitable for controlling direct operated directional valves (model 4WRA, component series 1X only), pilot operated proportional directional valves (model .WRZ, from component series 5X) and proportional pressure reducing valves (model 3DREP 6) without electrical position feedback.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Selection of the valve type by means of change-over switch at the front
- Differential input for command value voltage ±10 V
- · Enable inputs
- · Adjustable ramp generator

- · 2 command value attenuators
- 2 output stages with fixed-frequency clocking
- LEDs: "power" internal supply voltage (green)

"H1" – enable 1 (yellow) "H2" – enable 2 (yellow)

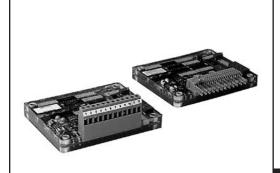
Detailed information:

• RE30218

Operating voltage	Uo	24 V DC +40% (-10%)
Inputs		
Command value (differential input)	U_{Soll}	0 to ±10 V; $R_{\rm e}$ > 50 kΩ
Outputs		
Solenoid current/resistance		
for 4WRA 6 (component series 1X)	I_{max}	1.75 A; $R_{(20)} = 5.4 \Omega$
for 4WRA 10 (component series 1X) Imax	I_{max}	1.75 A; $R_{(20)} = 10 \Omega$
for .WRZ (component series 5X & 6X) and 3DREP 6 (component ceries 1X)	I_{max}	1 A; $R_{(20)} = 19.5 \Omega$
for .WRZ (component series 7X) and 3DREP 6 (component series 2X)	I_{max}	1.75 A; $R_{(20)} = 4.8 \Omega$
Clock-pulse frequency of the output stage		
for 4WRA 6 (component series 1X), .WRZ (component series 5X to 7X), 3DREP 6 (component series 2X)	f	175 Hz ± 10 %
for 4WRA 10 (component series 1X) and 3DREP 6 (component series 1X)	f	100 Hz ± 10 %
Type of connection		12 screw terminals
Type of mounting		Top hat rail TH 35-7.5 to EN 60715
Dimensions (W x H x D)	mm (in.)	40 x 79 x 85.5 (1.6 x 3.1 x 3.4)

Туре	Suitable for valve types
VT 11118	4WRZ7X, 3DREP2X

Mobile dual solenoid driver MDSD



The MDSD is a high current amplifier that controls proportional valves with one or two force solenoids. Applications include the EL and EP controls on A2, A4, A7, A11 pumps and A6 motors. Also included are pressure and directional valves FT-DRE2K, DRE4K, DBE, DBET, MP, SM, SP, 4WRA, 4WRZ. All 12 Volt solenoids can be controlled over the entire 10 to 28 VDC power supply range to simplify design. Of course, 24 Volt solenoids can be used in 24 Volt power systems.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

· Rugged, environmental packaging

Features

- Wide supply voltage range: 10-28 VDC
- On board, replaceable fuse
- · Reverse voltage protection
- · Pulse Width Modulated (PWM) outputs
- PWM frequency adjustable from 75-275 Hz
- · Max. and min. current separately adjustable for both solenoids
- High current driver, regulated to within 1.0%, continuous operation
- · Infinite duration short circuit protection on both outputs
- Reference voltage provided for control via an external potentiometer (>1K Ohm)
- Differential inputs for external voltage sources (+/- 2.5 or +/- 5.0 VDC)
- Neutral position deadband for joysticks
- Ramp time 0.2 to 10.0 sec., separately adjustable for both solenoids (A = up/down; B = up/down)
- All adjustments are made via multi-turn potentiometers
- Temperature range: -13 to 176 °F (-25 to 80 °C)

Technical Data

Power supply voltage	VDC	V _{DC} = 10 to 28
Power requirement	W	$P = I_{max}^2 \cdot R_{SOL} \cdot 1.2$ (Refer to valve or pump data sheet for max. solenoid current and hot solenoid resistance)
Power supply current	Amp	$I = P / V_{DC}$
Ramp time	sec.	0.2 to 10 (standard); 1.2 to 60 (R60); 2.4 to 120 (R120)
Control potentiometer	ΚΩ	1 to 10
Pulse frequency	P7 Hz	75 to 275
Fuse – 5x20 mm fast acting	Amp	4
Ambient temperature	°F (°C)	-13 to +176 (-25 to +80)
Weight	lbs. (kg)	0.36 (0.16)

EMI/RFI resistant
 Detailed information:

RA29864

External control electronics for the SYDFE1 control of A10VSO axial piston pumps, analog amplifier, configurable VT 5041-3X/



VT5041-3X analog amplifiers are designed as plug-in cards in Euroformat. They are external control electronics for the SYDFE1 control of A10VSO axial piston pumps analog amplifier.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Differential amplifier input
- Controller for valve spool position
- · Minimum generator for pressure and swivel angle controller
- · Self-clocking output stage
- · Pressure-related leakage compensation (can be switched off)
- · Polarity reversal protection for power supply
- Switchable actual pressure value input (current, voltage, range)

Technical Data

Operating voltage	$U_{\rm O}$	VDC	24 + 40% - 10%
Power consumption	P S	VA	35
Current consumption	1	Α	$0.6 (I_{\text{max}} = 1.25 \text{ A})$
Type of connection			32-pin male connector, DIN 41612, form D
Card dimensions			Euro-card 100 x 160 mm, DIN 41494
Permissible operating temperature range		°C (°F)	0 to +50 (0 to +122)
Storage temperature range		°C (°F)	-20 to +70 (-4 to +158)

Туре	Suitable for pump types
VT-5041-3X/1-0	SYDFE1 control of A10VSO
VT-5041-3X/3-0	SYDFE1 control of A10VSO with power limitation

Detailed information:

Analog amplifiers for proportional valves with electrical position feedback

VT-VRPA1-1...



The VT-VRPA1-100 proportional amplifier controls the DBETR proportional relief valves with position feedback. The VT-VRPA1-151 proportional amplifier controls 2FRE10 and 2FRE16 proportional flow control valves. The user may configure the analog input and extend ramp times.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Analog amplifiers in Eurocard format
- · Voltage stabilization, partially with raised measuring zero point
- Differential input 0–10 V/0–20 mA/4–20 mA
- · Ramp generator that can be switched off
- · Oscillator/demodulator for electrical position feedback
- · PID-controller for controlling the control spool position
- Cable break detection with LED indicator lamp for position transducer; in the event of a cable break, the output amplifier is de-energized
- Enable input

Detailed information:

• RE30118

Operating voltage	U	VDC	24
Comm. value signal	U	V	0 to 6(9); 0 to 10; , ±10
	1	mA	0 to 20; 4 to 20
Output amplifier			Current regulated, clocked
Oscillator frequency	f	kHz	approx. 2.5
Type of connection			32-pin form D
Card dimensions (W x L x H)		mm (in.)	Eurocard 100 x 160 (3.93 x 6.29), DIN 41494
Ambient temperature range	θ	°C (°F)	0 to +50 (0 to +122)

Туре	Suitable for valve type
VT-VRPA1-100	DBETR
VT-VRPA1-151	2FRE10, 2FRE16

Electrical proportional amplifier VT-VRPA1...RTS-2STV



The VT-VRPA1 is suitable for controlling servo solenoid pilot operated two-stage valves. It has options for valve zero and gain. The ramps can be controlled by external voltage signals.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Analog amplifiers in Eurocard format for installation in 19" rack
- · Output stage with closed-loop control
- Closed-loop position control with PID action
- Ramp functions:
 External voltage-controlled ramp adjustment via differential inputs.
 Ramp function can be deactivated

Detailed information:

• RE30044

Operating voltage	VDC	24
Plug connector		DIN 41612 – F32
Valve solenoid max.	A/VA	2.7/40 (Size 6)
Input signal	V	0 to ±10
Card dimensions (W x L x H)	mm (in.)	Eurocard 100 x 160 x ~35 (3.93 x 6.29 x ~1.38)
Ambient temperature range	°C (°F)	0 to +70 (0 to +158)

Туре	Suitable for valve type
VT-VRPA1-527	4WRL, series 3X

Electric amplifier for proportional cartridge throttle valves VT-VRPA1-527...RTS-2/2V



The VT-VRPA1-527 controls throttle cartridge valves FESX with

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Analog amplifier in Europe card format for installation in 19 rack
- · Closed-loop controlled output stage
- · Outputs short-circuit-proof
- · Open-circuit detection for feedback signal cable
- Closed-loop position control with PID action
- Ramp function:
 - External voltage-controlled ramp adjustment via differential inputs
 - Ramp function can be shut down

Detailed information: • RE30053

Card dimensions (W x L x H)	mm (in.)	100 x 160 x ~35 (3.93 x 6.29 x ~1.38) Eurocard format with fron panel (7 modular spacing)
Plug connector		DIN 41612 – F32
Ambient temperature range	°C (°F)	0 to +70 (0 to +158)
Power supply (U _B at z ₂ - b ₂)		Nominal 24 VDC; Battery voltage 2140 V, rectified AC voltage $U_{\text{eff}} = 2128 \text{ V}$ (single-phase, full-wave rectification)
Maximum vavle solenoid	A/VA	2.7/40
Current rating	Α	1.5
Power consumption (typical)	W	37

Туре	Suitable for valve type
VT-VRPA1-527-2X/V0/RTS-2/2V	FESX

Electrical proportional control amplifier VT-VRPA1...PV-RTP



The VT-VRPA1-537-1X/V0/PV-RTP is used to control direct operated pressure control valves DBETBX. It has both zero and maximum adjustments to optimize the pressure range for the hydraulic circuit. Ramp times are controlled by potentiometer adjustment.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Output stage with closed-loop control
- · Rapid energizing and de-energizing for fast response times
- · Ramp can be adjusted and deactivated

Detailed information:

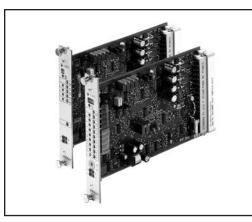
• RE30054

Operating voltage	VDC	24
Plug connector		DIN 41612 – F32
Valve solenoid max.	A/VA	3.7/50 (Size 6)
Input signal	V	0 to ±10
Card dimensions	mm (in.)	Eurocard 100 x 160 x ~35 (3.93 x 6.29 x ~1.38)
Ambient temperature range	°C (°F)	0 to +70 (0 to +158)

Туре	Suitable for valve type
VT-VRPA1-537	DBETBX-1X

Analog amplifier card for 4/3 proportional directional valves of type 4WRE

VT-VRPA2-.../T1



The VT-VRPA2-1 controls direct operated proportional directional valves, type 4WRE6 series 2X. The VT-VRPA2-2 controls direct operated proportional directional valves, type 4WRE10 series 2X.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

 Designed as printed circuit board in Euro-format 100 x 160 mm and suitable for installation in a rack **Detailed information:**

• RE30119

- Command value inputs:
 - Differential input ±10 V
 - Four callable command value inputs ±10 V
 - Current input 4 to 20 mA
- Inversion of the internal command value signal via 24V input or by means of jumpers
- Selection of ramp time through quadrant recognition (24V input) or ramp time call-ups (24V inputs) (option T5)

Operating voltage	VDC	24 + 40% - 20%
Power consumption	P_{S}	< 24 VA
Current consumption	1	< 2 A
Type of connection		48-pin male connector, DIN 41612, form F
Card dimensions (W x L x H)	mm (in.)	Eurocard 100 x 160 (3.93 x 6.29), DIN 41494

Туре	Suitable for valve type
VT-VRPA2-1-1X/T1	4WRE6 series 2X
VT-VRPA2-2-1X/T1	4WRE10 series 2X

Electrical proportional amplifier VT-VRPA2-5...RTP



The VT-VRPA2-5.../RTP/ is suitable for controlling direct operated 4WRP valves. It offers both zero and maximum adjustments for both solenoids. Ramp times are set by potentiometer adjustments for both acceleration and deceleration.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoToelectronics*

Features

· Ramp generator can be deactivated

Deadband compensation

Detailed information:

• RE30048

Operating voltage	VDC	24	
Plug connector		DIN 41612 – F32	
Valve solenoid max.	A/VA	2.7/25 (Size 6)	3.7/50 (Size 10)
Current rating	Α	1.5	2.5
Power consumption (typical)	W	35	60
Input signal (setpoint)	V	0 to ±10	
Card dimensions	mm (in.)	Eurocard 100 x 160 x ~35 (3.93 x 6.29 x ~1.38)	
Ambient temperature range	°C (°F)	0 to +70 (0 to +158)	

Туре	Suitable for valve type
VT-VRPA2-527	4WRP 6, series 1X
VT-VRPA2-537	4WRP 10, series 1X

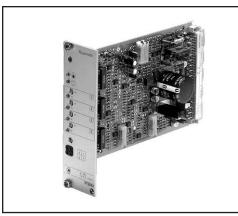
Detailed information:

• RE29955

GoTo Focused Delivery Program: Proportional Electronics

Electrical amplifier for displacement control with proportional pumps

VT 5035-1X/



VT 5035 amplifiers are used for adjusting the flow of variable displacement pumps of types A4VSO and A4VSG with EO control (see RE92050, RE92076 and RE92100).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Differential input
- · Enable input with LED indicator lamp
- · "Ready for operation" signalled by LED
- · Ramp generator
- · Four command values that can be adjusted by means of a potentiometer; call-up is signalled by LEDs
- · Controller for swivel angle
- · Two clocked current output stages
- Oscillator and demodulator for inductive position measurement with cable break detection
- · Reverse polarity protection for power supply

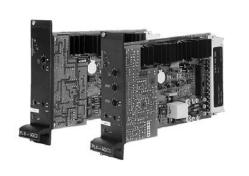
Technical Data

Operating voltage	U O	VDC	24 + 40% - 5%
Power consumption	$P_{\mathbb{S}}$	VA	< 50
Current consumption	1	Α	< 2
Oscillator frequency	f	kHz	2.5 ± 10 %
Type of connection			32-pin male connector, DIN 41 612, form D
Card dimensions			Euro-card 100 x 160 mm, DIN 41 494
Permissible operating temperature range		°C (°F)	0 to +50 (0 to +122)
Storage temperature range		°C (°F)	-25 to +85 (-13 to +185)

Туре	Suitable for pump types
VT-5035-1X	A4VSO and A4VSG

See index Page 198 for GoTo product and accessory part numbers.

Analog amplifiers for high-response valves VT-VRRA



The amplifier VT-VRRA1 controls standard servo solenoid valves with DC-LVDT feedback for direct operated 4WRPH..L-2X and 2-stage 4WRL..-3X. These are basic amplifiers. Since these components are normally used in closed loop applications, other features like ramp, time, and spool compenstion (jump) are not needed.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Analog amplifiers in Eurocard format
- · Controlled output stage
- · Enable input
- · Short-circuit-proof outputs
- · Adjustment options: Valve zero point
- · Cable break detection for actual value cable
- · Closed-loop position control with PID characteristics

Detailed information:

- RE30041
- RE30045

Operating voltage	U	VDC	24
Command value, depending on type	U	V	0 to 10, ±10
Type of connection			32-pin male connector, Form F
Card dimensions		mm (in.)	Eurocard 100 x 160 (3.4 x 6.3), DIN 41494
Ambient temperature range	θ	°C (°F)	0 to +70 (0 to +158)

Туре	Suitable for valve type	Detailed information:
VT-VRRA1-527-2X/V0	4WRPH 6 L-2X	RE30041
VT-VRRA1-527-2X/V0/2STV	4WRL M-3X; 3WRCB, NG25 to 50	RE30045
VT-VRRA1-537-2X/V0	5WRPH10L-2X	RE30041

p/Q amplifier VT-VARAP1



The p/Q amplifier is comprised of a base card with front panel containing the valve amplifier for 4WRPH6 with closed loop pressure controller. When used with the appropriate servo solenoid valves and pressure sensors, this unit can be employed for controlling flow and pressure in a closed-loop control circuit. The input parameters are the setpoints for pressure p and flow Q.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · Suitable for actuating directly operated and pilot operated servo solenoid valves
- Analog amplifiers in Eurocard format for installation in 19" rack
- · Output stage with closed-loop control
- · Rapid energizing and de-energizing for fast response times
- · Enabling input
- Short-circuit-proof outputs
- · External control shutoff
- · Open-circuit detectin for feedback signal cable and pressure sensor
- Suitable for pressure sensors (1...6 V, 0...10 V, 4...20 mA)
- · Closed-loop position control with PID action

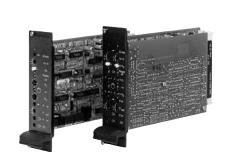
Technical Data

P.C.B. format (W x L x H) mm (in.)	100 x 160 x ~35 (3.93 x 6.29 x ~1.38) Europe format with front panel (7 modular spacings)	
Plug connector	Connector DIN 41612 – F 32	
Power supply – $U_{\rm B}$ to Z2 – b2	24 V DC	
Power consumption (typical)	37 W	
Input signal (setpoint Q)	b 20: 0+10 V; z 20: 0+10 V – Difference amplifier (R_i = 100 kΩ)	
Input signal (setpoint p)	z 12: 010 V; z 10: 0 V - Difference amplifier	
Feedback signal from pressure sensor	z 14: 420 mA current input; b 16: 0+10 V / 1+6 V voltage input; b 18: 0 V reference	

Туре	Suitable for valve type
VT-VARAP1-527	4WRPH6

Detailed information:

p/Q controller VT-VACAP



The input parameters for the card comprise the setpoint value for valve position, the setpoint value for pressure, the actual (feedback) pressure and any control mode signals. The pressure sensors with voltage interface receive their voltage supply from the card (z6/z8). Cards are for the connection of pressure sensors with both voltage and current signals.

The setpoint value for pressure is selected via potentiometer. The potentiometers can be supplied from the card (z32/b12). Test connections in the front plate and on the card are available for monitoring and compensation tuning of the most important parameters.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Analog amplifiers in Europe card format for installation in 19 rack
- · Suitable for servo solenoid valves with on-board electronics
- · Closed-loop position control with PID action
- · Short-circuit-proof outputs
- · External deactivation for pressure controller
- Suitable for pressure sensors (1...6 V, 0...10 V, 4...20 mA)
- · Supply for pressure sensors
- · Detection of open circuit to pressure sensors
- For valves with on board electronics (OBE)

Technical Data

P.C.B. format (W x L x H) mm (in.)	100 x 160 x ~35 (3.93 x 6.29 x ~1.38) Europe format with front panel (7 modular spacings)
Plug connector	Connector DIN 41612 – F 32
Ambient temperature °C (°F)	operating temperature: 0 to +70 (32 to +158), storage temperature: -20 to +70° (-4 to +158)
Current rating	0811405157 max. 160 mA

Detailed information:

Digital closed-loop control electronics VT-HACD-3



The VT-HACD-3-2X closed-loop control electronics is a module that is installed on a top hat rail. A microcontroller controls the entire process, makes adjustments, establishes links and realizes the closed control loops. Data for configuration, command values and parameters are stored in a FLASH in a non-volatile form.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

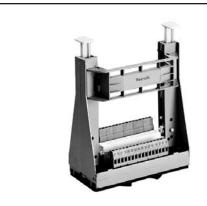
- Use as command value card for generating, linking and normalizing signals
- · Use as controller card for closed loop control with PIDT1 controller and optional state feedback
- Alternating control possible (e.g. position control with superimposed pressure control)
- Configurable analog and discrete I/O
- · Digital SSI or incremental position measuring system
- Possibility of sequence control through block call-ups with command values, ramp times and controller parameters
- PC software BODAC for configuration, parameterization and diagnostics
- · Field bus systems: PROFIBUS DP or EtherNet IP

Technical Data

Operating voltage	VDC	24
Command value signal	V	0 to 10; +/-10
	mA	0 to 20; 4 to 20
Output signal	V	0 to 10; +/-10
	mA	0 to 20; 4 to 20
Scanning time	m/sec	2
Serial interface		RS 232
Installation		DIN Rail mount
Dimensions	mm (in.)	120 x 55 x 118 (4.72 x 2.17 x 4.65) compact module
Ambient temperature range	°C (°F)	0 to +50 (0 to +122)

Detailed information:

Card holder VT 3002



The VT-3002 card holder is available in either a 32-pin or 48-pin connection format (Form D or Form F). Individual screw terminals aid in robust field connections while the VT-3002 provides a stable platform to anchor field connections. Push buttons on each side permit releasing an amplifier board without incurring undue stress on an amplifier's faceplate.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

 Card holders allow the simple installation and wiring of individual electronic cards in Euro format, e.g. in switching cabinets Detailed information:

• RE29928

- · Can be screwed on or snapped onto DIN rails
- Vertical mounting onto a DIN rail, possible with an additional adaptor (included within the scope of supply)
- · Stable base
- · Card locking and releasing by lever operation
- · Connection via screw terminals

Terminal voltage to VDE 0110 C		U	VAC	Max. 48 VAC/DC
Current loading capacity	- VT 3002-1-2X/32D	1	Α	4 A
	– VT 3002-1-2X/32F	1	Α	4 A
	– VT 3002-1-2X/48F	I	Α	4 A
Cross-section connection		Α		Plug-in screw terminals max. 4 mm ²
Connection type:	- VT 3002-1-2X/32D			32-pin socket connector, form D, DIN 41612
(socket connection)	- VT 3002-1-2X/32F			32-pin socket connector, form F, DIN 41612
	– VT 3002-1-2X/48F			48-pin socket connector, form F, DIN 41612
Pin allocation: - VT 3002-1-2X/32D				Even numbered, rows a/c
	- VT 3002-1-2X/32F			Even numbered, rows b/z
	- VT 3002-1-2X/48F			Even numbered, rows d/b/z
Permissible ambient temperature range		θ	°C (°F)	-20 to +70 (-4 to +158)
Weight		m	kg (lbs.)	0.5/0.8 (1.1/1.8)

Plug-in switching amplifier VT-SSBA1



The VT-SSBA1 switching amplifier is directly mounted on the valve's K4 connector. It is supplied with 24 V direct voltage. As a fast switching amplifier, the VT-SSBA1 considerably reduces the switching time of standard directional valves in connection with 12 V solenoid coils. As a power reducer, the switching amplifier considerably reduces the holding current when using 24 V standard directional valves.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoToelectronics*

Features

 Control of hydraulic on/off valves with 12 V solenoids which are to be switched fast (fast switching amplifier) Detailed information:

- RE30362
- Energy saving due to power reduction when controlling hydraulic on/off valves with 24 V solenoids (power reducer)
- Suitable for controlling on/off valves of type WE6 and WE10 with 12 V or 24 V DC solenoids
- · Potted-in cable with open end
- 3-conductor connection, power supply and release separated
- · Short-circuit proof output
- · Status display of the switching status by LED
- CE mark

Max. operating temperature °C (°F)		°C (°F)	-20 to +60 (-4 to +140)
Operating voltage (nominal voltage	је)	U_{B}	24 V ± 10%
Holding current		I _{max}	2 A
Control Voltage (release "IN")	– ON	U_{IN}	10 to 30 V
	- OFF	U_{IN}	< 3.5 V
Switch-on repetition rate	Switch-on repetition rate		≤ 1 Hz
Protection class according to EN	Protection class according to EN 60529		IP 65, IP 67
Switch-on duration	- V001	t	100 to 115 ms
	- V002	t	300 to 315 ms
Pulse width modulation	- V001	%	40 ± 5% on
	- V002	%	60 ± 5% on

Туре	Suitable for valve type
VT-SSBA1-PWM-1X/V001/5	
VT-SSBA1-PWM-1X/V002/5	WE6

3/3 proportional directional valves direct operated, with electrical position feedback as pilot valves for control systems SY(H)DFE VT-DFP



The VT-DFP-A-2X/G24K0/0/V is the pilot control valve for the SYDFE1 system. In conjunction with amplifier VT5041, it controls the swashplate angle of the pump in either closed loop pressure or flow control. This valve is to be considered a part and not a complete control.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Pilot valve for the pressure and flow control system SY(H)DFE
- · Actuation by means of a proportional solenoid with electrical feedback
- · Control electronics:
 - VT-DFP (for SY(H)DFE1) → external analog amplifier VT 5041-3X/

Detailed information:

• RE29016

Туре			VT-DFP
Operating pressure	Port A, P	bar (PSI)	350 (5100)
	Port T	bar (PSI)	100 (1450)
Control			External amplifier VT-5041-3X

Service case with test unit for servo & proportional valves with integral electronics (OBE) VT-VETSY-1



For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- The service case comprises a test unit, power supply unit 24 V, connecting cables and adapter cables (see ordering code)
- The test unit can be used to control and carry out functional tests on servo and proportional valves with integral electronics and operating voltages of ±15 V or +24 V
- Simplifies commissioning and troubleshooting in hydraulic systems with servo and proportional valves

Detailed information:

• RE29685

Service case			
Dimensions		(W x H x D)	450 x 100 x 350 mm (17.72 x 3.94 x 13.78 in.)
Weight	empty	kg (lb-ft)	2 (4.41)
	complete	kg (lb-ft)	4.3 (9.48)
Power supply			
Output			24 VDC; 3.75 A
Input			90-265 VAC; 47-63 Hz

Pressure transducer for hydraulic applications HM20



The HM20 measures pressure and outputs voltage or current. It is suitable for closed loop (feedback) and most industrial applications.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Measuring pressures in hydraulic systems
- Conversion of the measured pressure into a standardized electric analog signal
- · Sensor with thick-film measuring cell
- Components that are in contact with the media are of stainless steel
- Operational reliability due to high bursting pressure, reverse polarity, overvoltage and short-circuit protection
- Compact design
- · Very good temperature behavior
- Accuracy class 0.5
- 4-pin M12 connector at the housing
- Hydraulic port G1/4A
- Protection class IP65/IP67
- UL approval; CE approval

Detailed information:

• RE30270

Operating voltage	U_{S}	16 to 36 VDC			
Residual ripple	U_{PP}	2.5 V (40 to 400 Hz)			
Current consumption	$I_{\sf max}$	6 mA (with voltage	output)		
Measurement range	p_{N} – bar (PSI)	100 (1450)	250 (3600)	400 (5800)	
Output signal and admissible load R_{A}	I_{Sig} U_{Sig}	4 to 20 mA, two-wire, $R_A = (U_S - 8.5 \text{ V}) / 0.02 \text{ A}$ with R_A in Ω and U_S 0.1 to 10 V, three-wire, $R_A > 20 \text{ k}\Omega$			
Accuracy		linearity, h	the complete measurement ysteresis, zero point and en the measuring deviation and	nd value deviation (corre-	
Temperature coefficient (TK) in the nor temperature range for zero point and range for zero point and range for zero point and range.	< 0.1% / 10 K				
Hysteresis		< 0.15%			
Non-repeatability		< 0.10%			
Setting time (10 to 90%)	t	< 1 ms			
Service life		40 million load cycl	es or 40000 h		
Shock resistance, mechanical		15 g according to I	EC 60068-2-27		
Vibration resistance in case of resonar	nce	10 g according to I	EC 60068-2-6		
Electromagnetic compatibility (EMC)		DIN EN 61326-2-3			

Mobile Electronics BODAS Tools





The BODAS-service PC software tool provides a convenient and user-friendly method of executing service functions for BODAS controllers from Rexroth. Parameters can be displayed and edited, process variables displayed, and their values graphically plotted and recorded. In addition, error messages and configurable diagnostics are provided.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- · User-friendly Windows user interface, freely configurable work flow and online help
- · Simultaneous display of multiple parameters for modification settings
- Simultaneous display of multiple process variables in graphical or numeric form
- Printout of all settings and process variables for documentation purposes
- · Clear and easy-to-understand display of error messages
- Easy-to-use data logger: Save measured values (process variables and parameters) to the hard disk
- Selectable and expandable program language
- Adjustable device language (relevant to controller data, up to 4 languages available)
- · Diagnosis configurations for simplified troubleshooting"

Technical Data

- Operating System:
 - Windows Vista
 - Windows 7 (only for BODAS-service. Not available for FT2 and BO-DEM)
- One free serial or CAN interface (depending on selected communications interface)
- One free USB interface (for license key USB dongle)
- Available hard disk capacity > 200 MB
- · Java runtime environment (installation occurs automatically)

Detailed information:

Mobile Electronics

Fluid Temperature Sensor





The sensor element consists of a PTC nickel-thin-film resistor, vacuummetalized onto a ceramic base. It enables the measurement of pressurized fluid temperatures of coolants, hydraulic oil or motor oil in vehicles. Its resistance increases virtually linearly with increases in temperature.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

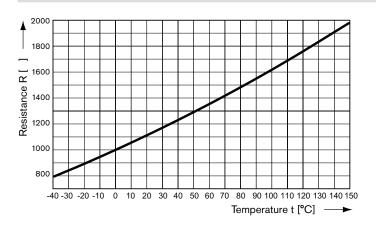
Technical Data

Туре	TSF
Measurement range	-40 °C to 150 °C
Pressure range	to 150 bar
Resistance at 0 °C	1000 Ω
Tolerance at 20 °C	± 0.5 K corresp. to ± 0.3 % of R ₂₀
Tolerance at 100 °C	± 1.1 K corresp. to ± 0.5 % of R ₁₀₀
Max. current allowed	5 mA
Time constant (in standing water)	11 s
Lag time	1 s
Vibration strength	40 g
Type of protection	IP 64 A with plug connector
Plug connection	Jet connector, 2-pin
Threaded socket	M14 x 1.5

Detailed information:

• RE95180

Characteristic



Mobile Electronics Analog Amplifier RA





The analog amplifier activates up to two proportional solenoids. The specified control voltage is processed in the amplifier as an input command signal. The analog amplifier provides a regulated electric current as an output signal for actuation of proportional solenoids.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

• The electronic analog amplifier operates up to two proportional solenoids and a switching function:

Detailed information:

• RE95230

· Supply voltage for external setpoint potentiometer

· Optional interlock of actuation for proportional solenoids

- · Monitoring of setpoint potentiometer for cable breakage and short circuit
- Externally actuated switching output
- Error output
- Separately adjustable ramp times
- · Overload protection, overvoltage protection, conditional short-circuit protection
- · Separately adjustable Imin and Imax for every solenoid
- · Externally adjustable PWM frequency

		RA2-1
Nominal Voltage	12 and 24 V	
Residual ripple (DIN 40839, Section 1)	max. ± 2 V	Х
Supply voltage, perm, range	10 32 V	
Current Consumption		
without load	mA	150
with load, max.	A	6
Fuse		
external: for switching and proportional solenoid outputs and for electronics	ΑΤ	7.5
Potentiometer Supply Voltage	0 V, 4.0 V	Х
(for setpoint potentiometer 2 5 $k\Omega$)	7.2 V 8.4 V (depending on load)	
Voltage Input (differential amplifier)	4.0 V	2
(Setpoint voltage)		
Switch Input	> 5.0 V	1
Proportional Solenoid Outputs (PWM)		
Current range	02.3 A	2
Pulse frequency	100, 200 or 350 Hz	

Mobile Electronics BODAS Components





The BODAS controllers RC are used for the programmable control of proportional solenoids and additional switching functions. They can therefore be used for both simple and complex open- or closed-loop controls, e.g. for hydrostatic travel drives, working hydraulics or transmission control in mobile working machines. BODAS controllers RC were specially developed for use in mobile working machines, and satisfy the relevant safety requirements with regard to ambient temperature, moisture, resistance to shock and vibration, as well as electromagnetic compatibility (EMC).

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToelectronics

Features

- Component of BODAS system for mobile applications
- Robust design meeting specifications for mobile applications
- High electromagnetic compatibility (EMC)
- · Inputs and outputs with fault detection
- Safety features such as redundant inputs and central safety cut-off for all outputs
- Pulse-width-modulated (PWM) solenoid currents for minimum hysteresis
- Closed-loop control of solenoid currents, i.e. not dependent on voltage and temperature
- Sturdy, sealed aluminum housing

Detailed information:

• RE95200 RE95201

Technical Data

Nomina	al voltage	12 and 24 V	1
	idual ripple (DIN 40839, Part 1)	max. ± 2 V	1
	pply voltage, permitted range	9 – 32 V	1
	t consumption		
	hout load, maximum	mA	150
	h load, maximum	A	8
Fuse	Internal:	_	
	External: for switch and proportional solenoid outputs	AT	8
	For electronics	AT	3
	For sensors	AT	1
Consta	Int voltage source (e.g. for setpoint potentiometer 1 – 5 k Ω)	5 V ± 0.1 V, 30 mA	2
Analog	voltage inputs (may also be used as switch input)	0 – 5	2
	current inputs (may also be used as switch input as well as analog voltage input)	0 - 20 mA and 0 - 8 V	2
Switch	inputs		
May	be switched between high/low active	low < 1.5 V; high > 4.5 V	4
	y also be used as an analog voltage input as well as a frequency input) ency inputs for inductive and active sensors (may also be used as switch input)	0 - 10 kHz; > 1 VRMS	2
	ency inputs for inductive and active sensors (may also be used as switch input)	0 - 10 kHz	2
	or inputs for temperature sensors (may also be used as switch input)	800 Ω – 1800 Ω	4
		800 22 - 1800 22	4
	tional solenoid outputs (PWM)	0 – 2.3 A	0
	rent range	100 – 2.3 A	2
	ustable dither frequency		1
	ntrol frequency	1 kHz	<u> </u>
	ed outputs (MOSFET) (may also be used as PWM outputs)	max. 2 A	2
Interfac		C	1
	CAN 2.0 B	ISO 11898	ı 1

See index Page 199 for GoTo product and accessory part numbers.

GoTo Focused Delivery Program: Tie Rod Cylinders

Hydraulic cylinder, NFPA industrial type CDT



Rexroth offers you a well structured and systematically engineeredrange of hydraulic cylinders geared to your application requirements. Our CDT1/4 cylinders conform to NFPA standards regarding bore, rod, mounting, and length. Manufactured and assembled in the U.S.A., CDT1 cylinders are rated ro 1500 PSI and the CDT4 for 3000 PSI. A full array of bores and rod diameters cover the spectrum from 1" to 8".

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocylinders

Features

- · Mounting of head and cap according to the tie rod principle
- Service-friendly modular system
- · Small installation dimensions
- · Interchangeability due to standardization
- · Industry-specific and project-related cylinders on inquiry

Detailed information:

- RA17038
- RA17041

Series		CDT1	CDT4
Nominal pressure	PSI	1500	3000
Piston Ø	inch	1.00 to 8.00	1.50 to 8.00
Piston rod Ø	inch	1.00 to 8.00	0.63 to 5.50
Mounting types		18	19
Max. stroke length	inch	120	120
Max. stroke speed	in/sec	20	20

GoTo Focused Delivery Program: Mobile Controls

Stackable single axis hydraulic pilot controllers 2TH6



Hydraulic pilot control units of the type 2TH6 operate on the basis of direct operated pressure reducing valves. Pressure in the relevent control port is proportional to the stroke of the control lever. This pressure control as a function of the control lever position and the characteristics of the control spring enables the proportional hydraulic control of directional valves and high response control valves for hydraulic pumps and motors.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTomacontrols

Features

- · Precise and play-free control characteristics
- · Low actuation force at the lever
- · Rust-free plunger

Technical Data

- Stackable single axis controllers, up to 6 controllers in one assembly
- · Lever operator available "L" spring center, "P" friction detent, or "M" 3-position detent available
- · Standard die-cast aluminum base or cast iron base for marine or underground applications

2TH6		
Inlet pressure (max.)	bar (PSI)	50 (725)
Control flow (max.)	I/min (GPM)	16 (4.2)

Detailed information:

Check, poppet type VUCN-08A



When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 08

Detailed information:

• RE18318-89

Max. operating pressure	bar (PSI)	420 (6000)
1 01		
Max. flow	I/min. (GPM)	50 (13)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.12 (0.27)
Cavity		CA-08A-2N
		see data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG08A2010520100
	material no.	R901101437
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Check, poppet type VUCN-10A



When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 10

Detailed information:

• RE18318-90

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min. (GPM)	80 (21)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.15 (0.33)
Cavity		CA-10A-2N
		see data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG10A2010520100
	material no.	R901111363
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 15 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Shuttle, ball type SELB-08A



The single ball shuttle allows flow from the higher pressure of two work ports 1 and 3 to the 2 port.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 10

Detailed information:

• RE18319-80

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	See performance graph in data sheet
Nominal size		DN 3
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34–41 (25–30)
Weight	kg (lbs)	0.06 (0.13)
Cavity		CA-08A-3N
		See data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG08A3010520100
	material no.	R930000861
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Relief, direct acting guided poppet type VSBN-08A



Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 2 to tank. Pressure at port 2 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 08

Detailed information:

• RE18318-04

Max. operating pressure port 1 (P)	bar (PSI)	350 (5000)
Max. pressure permitted port 2 (T)	bar (PSI)	140 (2000)
Max. flow	I/min (GPM)	20 (5.3)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight (**)	kg (lbs)	0.09 (0.2)
Cavity		CA-08A-2N
		see data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG08A2010520100
	material no.	R901101437
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

^(*) Max. to 80% of nominal setting

^(**) Standard version X=03 type

Relief, direct acting guided poppet type VSBN-10A



Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 2 to tank. Pressure at port 2 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 10

Detailed information:

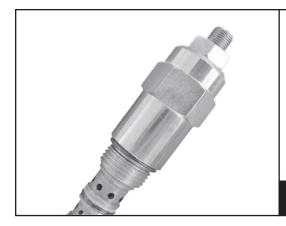
• RE18318-05

Technical Data

Max. operating pressure port 1 (P)	bar (PSI)	350 (5000)
Max. pressure permitted port 2 (T)	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	50 (13)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41–47 (30–35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-2N
		see data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG10A2010530100
	material no.	R901111366
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

(*) At 80% of nominal setting

Relief, direct acting poppet type differential area VSDN-10A



Flow is blocked from 2 to 1 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 1 to tank. Pressure at port 1 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocompact*

Features

· Common cavity, Size 10

Detailed information:

• RE18318-03

Max. operating pressure port 2 (P)	bar (PSI)	350 (5000)
Max. pressure permitted port 1 (T)	bar (PSI)	140 (2000)
Max. flow	I/min (GPM)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41–47 (30–35)
Weight	kg (lbs)	0.2 (0.44)
Common cavity		CA-10A-2N
		see data sheet RE18325-70
Seal kit (**)	code	RG10A2010520100
	material no.	R901111363
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

^(*) at 80% of cracking pressure

^(**) Only external seals for 10 valves

Relief, pilot operated spool type VSPN-10A



When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition. Available with "manual override" option.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 10

Detailed information:

• RE18318-08

Max. operating pressure port 1 (P)	bar (PSI)	420 (6000)
Max. pressure permitted port 2 (T)	bar (PSI)	350 (5000) for version 03 210 (3000) for version 04
Flow range	I/min (GPM)	3–120 (1–32)
Max. internal leakage (*)	cm ³ /min. (cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41–47 (30–35)
Weight (**)	kg (lbs)	0.21 (0.46)
Cavity		CA-10A-2N see data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code material no.	RG10A2010530100 R901111366
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation	·	No restrictions
Other Technical Data		See data sheet RE18350-50

^(*) Measured at 200 bar (2900 PSI)

^(**) Standard version X=03 type

Relief, pilot operated spool type VSPN-16A



Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve. Pilot operation is protected from contamination by a filter screen at the bottom of the main piston.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 16

Detailed information:

• RE18318-10

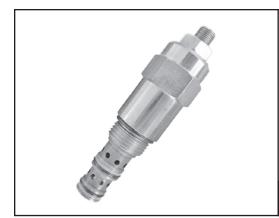
Max. operating pressure port 1 (P)	bar (PSI)	420 (6000)
Max. pressure permitted port 2 (T)	bar (PSI)	140 (2000)
Flow range	I/min (GPM)	8-300 (2-79)
Max. internal leakage (*)	cu ³ /min (cu.in./min.)	350 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108–122 (80–90)
Weight (**)	kg (lbs)	0.45 (0.99)
Cavity		CA-16A-2N
		see data sheet RE18325-70
Seal kit (***)	code	RG16A2010520100
	material no.	R901111386
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

^(*) Measured at 200 bar (2900 psi)

^(**) Standard version X=03 type

^(***) Only external seals for 10 valves

Pressure reducing and relieving, direct acting spool type VRPR-10A



Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 10

Detailed information:

• RE18318-53

Max. operating pressure port 2 (P)	bar (PSI)	350 (5000), 210 (3000) for version Z=01
Max. pressure permitted port 1 (T)	bar (PSI)	105 (1500)
Flow range	I/min (GPM)	30 (8)
Max. internal leakage (*)	cm ³ /min. (cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41–47 (30–35)
Weight (**)	kg (lbs)	0.26 (0.57)
Cavity		CA-10A-3N, see data sheet RE18325-70
Seal kit (***)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

^{(*) 1-3} to 80% of pressure setting

^(**) Standard version X=03 type

^(***) Only external seals for 10 valves

Pressure reducing and relieving, pilot operated spool type VRPX-10A



Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the conical poppet in the upper, pilot stage is lifted from its seat. This allows the main-stage piston to shift, restricting input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 10

Detailed information:

• RE18318-56

Max. operating pressure port 2 (P)	bar (PSI)	350 (5000)
Max. pressure permitted port 1 (T)	bar (PSI)	280 (4000)
Max. flow	l/min (GPM)	60 (16)
Standard internal pilot orifice diameter	mm	0.6
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (*)	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-3N see data sheet RE18325-70
Seal kit (**)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

^(*) Standard version X=03 type

^(**) Only external seals for 10 valves

Pilot operated check, pilot to open VSON-08U



When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition. Available with "manual override" option.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

SUN cavity interchange, T11A

Detailed information:

• RE18319-39

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	60 (16)
Pilot ratio	(- /	3:2:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-50 (30-37)
Weight	kg (lbs)	0.12 (0.27)
Cavity		SUN T-11A
Seal kit	code	RG08U9020110100
	material no.	R901193388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Counterbalance, standard poppet type, differential area, counterclockwise adjustment VBSN-08U-RS



When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting—turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. Any back-pressure at 2 is additive to the pressure setting in all functions.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

SUN cavity interchange, T-11A

Detailed information:

• RE18320-17

Technical Data

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-50 (30-37)
Weight	kg (lbs)	0.19 (0.42)
Cavity		SUN T-11A
Seal kit	code	RG08U9020110100
	material no.	R901193388
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data	<u> </u>	See data sheet RE18350-50

Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

Counterbalance, standard guided poppet type, counterclockwise adjustment VBSN-08UU-RS



When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting—turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2, and any back-pressure at 2 is additive to the pressure setting in all functions.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

SUN cavity interchange, T-11A

Detailed information:

• RE18320-16

Technical Data

Max. operating pressure	bar (PSI)	280 (4000)
Max. flow	I/min (GPM)	30 (8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40–50 (30–37)
Weight	kg (lbs)	0.18 (0.4)
Cavity		SUN T-11A
Seal kit	code material no.	RG08U9020110100 R901193388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data	<u>-</u>	See data sheet RE18350-50

Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

Counterbalance, standard guided poppet type, differential area, counterclockwise adjustment VBSN-12U-RS



When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting—turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. Any back-pressure at 2 is additive to the pressure setting in all functions.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· SUN cavity interchange, T-2A

Detailed information:

• RE18320-18

Technical Data

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	60-70 (44-52)
Weight	kg (lbs)	0.37 (0.82)
Cavity		SUN T-2A
Seal kit	code	RG12U9020110100
	material no.	R930005599
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

Counterbalance, relief compensated poppet type differential area, counterclockwise adjustment VBSP-08U-RS



When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting – turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent of back-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

SUN cavity interchange, T-11A

Detailed information:

• RE18320-20

Technical Data

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	60 (16)
Max. internal leakage (*)	drops/min	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40–50 (30–37)
Weight	kg (lbs)	0.19 (0.42)
Cavity		SUN T-11A
Seal kit (**)	code material no.	RG08U9020110100 R901193388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Pressure setting: at least 1.3 times the load induced pressure.

^(*) At 70% of pressure setting

^(**) Only external seals for 10 valves

Counterbalance, relief compensated poppet type differential area, counterclockwise adjustment VBSP-12U-RS



When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting – turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent of back-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

SUN cavity interchange, T-2A

Detailed information:

• RE18320-21

Technical Data

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	l/min (GPM)	120 (32)
Max. internal leakage (*)	drops/min	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	60-70 (44-52)
Weight	kg (lbs)	0.37 (0.82)
Cavity		SUN T-2A
Seal kit (**)	code material no.	RG12U9020110100 R930005599
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

Flow control valve, cartridge restrictor ST-C-06



Increasing the orifice value from fully closed to fully open, flow is permitted and regulated bi-directional from 1 to 2 and from 2 to 1.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 08

Detailed information:

• RE18321-26

Max. operating pressure	bar (PSI)	350 (5000)
Rated flow	I/min. (GPM)	40 (11)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	39–51 (29–38)
Weight	kg (lbs)	0.09 (0.2)
Cavity		CA-08A-2N
		see data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG08A2010530100
	material no.	R901101544
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Flow control valve, cartridge restrictor ST-C-10



Increasing the orifice value from fully closed to fully open, flow is permitted and regulated bi-directional from 1 to 2 and from 2 to 1.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 10

Detailed information:

• RE18321-27

Max. operating pressure	bar (PSI)	350 (5000)
Rated flow	I/min. (GPM)	70 (19)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	44-56 (33-41)
Weight	kg (lbs)	0.18 (0.4)
Cavity		CA-10A-2N
		see data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG10A2010530100
	material no.	R901111366
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

Needle restrictor, free reverse flow STVU-10A



With flow from 2 to 1, the valve provides a fully adjustable orifice restriction. Free flow is permitted from 1 to 2, regardless of valve adjustment, by when pressure overcomes the spring bias of the valve's check function.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 10

Detailed information:

• RE18321-11

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	80 (22)
Max. internal leakage (*)	drops/min.	15 closed
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41–47 (30–35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-2N
		See data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG10A2010520100
	material no.	R901111363
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50

^(*) Measured at 200 bar (2900 PSI)

Needle restrictor, free reverse flow, fine adjustment STFU-08A



With flow from 2 to 1, the valve provides a fully adjustable orifice restriction. Free flow is permitted from 1 to 2, regardless of valve adjustment, by when pressure overcomes the spring bias of the valve's check function. STFU, compared to STVU, is suitable for applications requiring fine adjustments.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 08

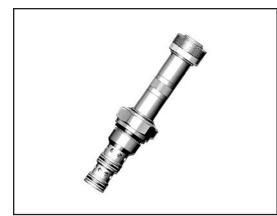
Detailed information:

• RE18321-09

Max. operating pressure	bar (PSI)	350 (5000)
Max. flow	I/min (GPM)	40 (11)
Max. internal leakage (*)	drops/min.	15 closed
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.16 (0.35)
Cavity		CA-08A-2N
		See data sheet RE18325-70
Line bodies		See Accessories, page 140
Seal kit	code	RG08A2010520100
	material no.	R901101437
Fluids		Mineral-based or synthetics with lubricating properties
		at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE18350-50
		·

^(*) Measured at 200 bar (2900 PSI)

Solenoid operated valves, spool 3-way / 2-position VED-8I-32-06-SE & VED-7I-32-09-SE



Solenoid-operated, 3-way / 2-position, direct-acting, spool-type, cartridge valve. When de-energized, the valve permits bi-directional flow betwen ports 2 and 3, while blocking flow at port 1. When the coil is energized, the valve permits bi-directional flow betwen ports 2 and 1, while blocking flow at port 3.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 08 and Size 10

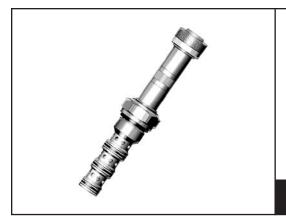
Detailed information:

• RE00162-02 (1.31.050.U & 1.31.070.U)

Technical Data

		Size 08, VED-8I	Size 10, VED-7I
Max. operating pressure	bar (PSI)	210 (3000)	210 (3000)
Rated flow	l/min. (GPM)	10 (3)	20 (6)
Max. internal leakage	cm ³ /min (in ³ /min)	40 (2.5) @ 3000 PSI	80 (4.9) @ 3000 PSI
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	39-51 (29-37)	44–56 (33–41)
Weight	kg (lbs)	0.13 (0.286)	0.22 (0.485)
Cavity		CA-08A-3N	CA-10A-3N
Line bodies		See Accessories, page 140	
Seal kit	code	RG08A301053010	RG10A3010530100
	material no.	R901101723	R930000990
Fluids		Mineral-based or synthetics with le	ubricating properties at viscosities
		of 20 to 380	mm ² /s (cSt)
Filtration	Filtration Nominal value max. 10μm (NAS 8)		ax. 10μm (NAS 8)
		ISO 4406	19/17/14
Mounting position		Unrestricted	
Other Technical Data	<u> </u>	See data shee	t RE18350-50

Solenoid operated valves, spool 4-way / 3-position VED-7I-43-09-CC



Solenoid-operated, 4-way / 3-position, direct-acting, spool-type, blocked center, cartridge valve. Port 3 is to be connected to the pressure supply to the cartridge, and port 1 must be connected to the tank, or return, line. When de-energized, the valve blocks flow at all ports. When coil S1 is energized, the valve permits flow from port 3 to port 4 and from port 2 to port 1. When coil S2 is energized, the valve permits flow from port 3 to port 2 and from port 4 to port 1.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

Common cavity, Size 10

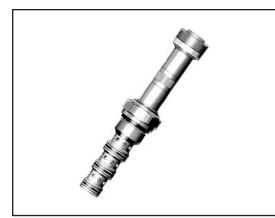
Detailed information:

• RE00162-02 (1.43.070.U)

Technical Data

Max. operating pressure	bar (PSI)	210 (3000)
Rated flow	l/min. (GPM)	20 (6)
Max. internal leakage	cm ³ /min (in ³ /min)	120 (7.3) @ 3000 PSI
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	44-56 (33-41)
Weight	kg (lbs)	0.27 (0.595)
Cavity		CA-10A-3N
Line bodies		See Accessories, page 140
Seal kit	code	RG10A4010530100
	material no.	R901111373
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm2/s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Mounting position		Inrestricted
Other Technical Data		See data sheet RE18350-50

Solenoid operated valves, spool 4-way / 3-position VED-7I-43-09-ABT



Solenoid-operated, 4-way / 3-position, direct-acting, spool-type, motor-spool center, cartridge valve. Port 3 is to be connected to the pressure supply to the cartridge, and port 1 must be connected to the tank, or return, line. When de-energized, the valve blocks flow at port 3 and connects ports 1, 2 and 4. When coil S1 is energized, the valve permits flow from port 3 to port 4 and from port 2 to port 1. When coil S2 is energized, the valve permits flow from port 3 to port 2 and from port 4 to port 1.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 10

Detailed information:

• RE00162-02 (1.43.170.U)

Technical Data

Max. operating pressure	bar (PSI)	210 (3000)
Rated flow	I/min. (GPM)	20 (6)
Max. internal leakage	cm ³ /min (in ³ /min)	120 (7.3) @ 3000 PSI
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	44-56 (33-41)
Weight	kg (lbs)	0.27 (0.595)
Cavity		CA-10A-3N
Line bodies		See Accessories, page 140
Seal kit	code	RG10A4010530100
	material no.	R901111373
Fluids		Mineral-based or synthetics with lubricating properties at viscosities
		of 20 to 380 mm2/s (cSt)
Filtration		Nominal value max. 10μm (NAS 8)
		ISO 4406 19/17/14
Mounting position		Inrestricted
Other Technical Data		See data sheet RE18350-50

Solenoid operated valves, pilot operated poppet type, 2-way normally closed VEI-8A-06-NC



Solenoid-operated, 2-way / 2-position, normally closed, pilot operated, poppet-type, cartridge valve. When de-energized, flow is permitted across the check valve function from port 1 to 2, and blocks flow leak-free from port 2 to 1. When the coil is energized, the valve allows bi-directional flow between both ports.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 08

Detailed information:

• RE18323-02

Technical Data

General		
Weight	kg (lbs)	0.16 (0.35)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. proof pressure	bar (psi)	420 (6000)
Flow range	l/min. (gpm)	0.5-40 (0.1-11)
Fatigue cycle life	cycles	1 million cycles at 350 bar
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N (version 4: 019-E)

Line bodies	See Accessories, page 140
Seal kit version 1	RG08A2010520100 R901101437
Seal kit version 2-3	RG08A2010530100 R901101544
Seal kit version 4	RG19E201053010 R934003561
Seal kit coil	RG12A1PNBR7010 R934003958
Other technical data	See data sheet RE18350-50

Electrical	
Type of voltage	DC voltage
Coil type	S8-356 see RE18325-90
Supply voltage	See data sheet RE18325-90
Nominal voltage	± 10%
Power consumption W	20
Duty cycle coil %	See performance graphs
Type of protection	See data sheet RE18325-90

Solenoid operated valves, pilot operated poppet type, 2-way normally open VEI-8A-06-NA



Solenoid-operated, 2-way / 2-position, normally open, pilot operated, poppet-type, cartridge valve. When de-energized, the valve allows bi-directional flow between both ports. When the coil is energized, flow is permitted across the check valve function from port 1 to 2, and blocks flow leak-free from port 2 to 1.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocompact*

Features

• Common cavity, Size 08

Detailed information:

• RE18323-06

Technical Data

General		
Weight	kg (lbs)	0.12 (0.26)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

bar (psi)	350 (5000)
bar (psi)	420 (6000)
l/min. (gpm)	1.5-40 (0.4-11)
cycles	1 million cycles at 350 bar
drops/min.	20
°C (°F)	-20 to 80 (-4 to 176)
	Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Nm (ft-lbs)	39-51 (29-38)
	Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
	CA-08A-2N / 019-E see RE18325-75
	bar (psi) I/min. (gpm) cycles drops/min. °C (°F)

Line bodies	See Accessories, page 140
Seal kit version 1	RG08A2010520100 R901101437
Seal kit version 2-3	RG04A2010530100 R901101544
Seal kit version 4	RG19E201053010 R934003561
Seal kit coil	RG12A1PNBR7010 R934003958
Other technical data	See data sheet RE18350-50

Electrical		
Type of voltage		DC voltage
Coil type		S8-356 see RE18325-90
Supply voltage		See data sheet RE18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE18325-90

Solenoid operated valves, pilot operated poppet type, 2-way normally closed VEI-8A-10-NC



Solenoid-operated, 2-way / 2-position, normally closed, pilot operated, poppet-type, cartridge valve. When de-energized, flow is permitted across the check valve function from port 1 to 2, and blocks flow leak-free from port 2 to 1. When the coil is energized, the valve allows bi-directional flow between both ports.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 10

Detailed information:

• RE18323-11

Technical Data

General		
Weight	kg (lbs)	0.16 (0.35)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. proof pressure	bar (psi)	420 (6000)
Flow range	l/min. (gpm)	2-70 (0.5-18)
Fatigue cycle life	cycles	1 million cycles at 350 bar
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	44-56 (33-42)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14

Cavity	CA-10A-2N see RE18325-75
Line bodies	See Accessories, page 140
Seal kit version 1	RG10A2010520100 R901111363
Seal kit version 2-3	RG10A2010530100 R901111366
Seal kit coil	RG12A1PNBR7010 R934003958
Other technical data	See data sheet RE18350-50

Electrical	
Type of voltage	DC voltage
Coil type	S8-356 see RE18325-90
Supply voltage	See data sheet RE18325-90
Nominal voltage	± 10%
Power consumption W	20
Duty cycle coil %	See performance graphs
Type of protection	See data sheet RE18325-90

Solenoid operated valves, pilot operated poppet type, 2-way normally open VEI-8A-10-NA



Solenoid-operated, 2-way / 2-position, normally open, pilot operated, poppet-type, cartridge valve. When de-energized, the valve allows bi-directional flow between both ports. When the coil is energized, flow is permitted across the check valve function from port 1 to 2, and blocks flow leak-free from port 2 to 1.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Common cavity, Size 10

Detailed information:

• RE18323-12

Technical Data

General		
Weight	kg (lbs)	0.16 (0.35)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. proof pressure	bar (psi)	420 (6000)
Flow range	I/min. (gpm)	2-70 (0.5-18)
Fatigue cycle life	cycles	1 million cycles at 350 bar
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	44-56 (33-42)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14

Cavity	CA-10A-2N see RE18325-75
Line bodies	See Accessories, page 140
Seal kit version 1	RG10A2010520100 R901111363
Seal kit version 2-3	RG10A2010530100 R901111366
Seal kit coil	RG12A1PNBR7010 R934003958
Other technical data	See data sheet RE18350-50

Electrical		
Type of voltage		DC voltage
Coil type		S8-356 see RE18325-90
Supply voltage		See data sheet RE18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE18325-90

Solenoid operated valves, pilot operated poppet type, 2-way normally closed VEI-8A-16A-NC



Solenoid-operated, 2-way / 2-position, normally closed, pilot operated, poppet-type, cartridge valve. When de-energized, flow is permitted across the check valve function from port 1 to 2, and blocks flow leak-free from port 2 to 1. When the coil is energized, the valve allows bi-directional flow between both ports.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

· Common cavity, Size 16

Detailed information:

• RE18323-17

Technical Data

General		
Weight	kg (lbs)	0.32 (0.71)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	l/min. (gpm)	5-150 (1-40)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-2N see RE18325-75

Line bodies	See Accessories, page 140
Seal kit version 1	RG16A2010520100 R901111386
Seal kit version 2-3	RG16A2010530100 R930003262
Seal kit coil	RG12A1PNBR7000 R934003591
Other technical data	 See data sheet RE18350-50

Electrical	
Type of voltage	DC voltage
Coil type	S8-356 see RE18325-90
Supply voltage	See data sheet RE18325-90
Nominal voltage	± 10%
Power consumption W	20
Duty cycle coil %	See performance graphs
Type of protection	See data sheet RE18325-90

Solenoid operated valves, pilot operated poppet type, 2-way normally open VEI-8A-16A-NA



Solenoid-operated, 2-way / 2-position, normally open, pilot operated, poppet-type, cartridge valve. When de-energized, the valve allows bi-directional flow between both ports. When the coil is energized, flow is permitted across the check valve function from port 1 to 2, and blocks flow leak-free from port 2 to 1.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTocompact*

Features

• Common cavity, Size 16

Detailed information:

• RE18323-18

Technical Data

General		
Weight	kg (lbs)	0.32 (0.71)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. proof pressure	bar (psi)	420 (6000)
Flow range	l/min. (gpm)	5-150 (1-40)
Fatigue cycle life	cycles	1 million cycles at 350 bar
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14

Cavity	CA-16A-2N see RE18325-75
Line bodies	See Accessories, page 140
Seal kit version 1	RG16A2010520100 R901111386
Seal kit version 2-3	RG16A2010530100 R930003262
Seal kit coil	RG12A1PNBR7010 R934003958
Other technical data	See data sheet RE18350-50

Electrical			
Type of voltage	DC voltage		
Coil type	S8-356 see RE18325-90		
Supply voltage	See data sheet RE18325-90		
Nominal voltage	± 10%		
Power consumption W	/ 20		
Duty cycle coil %	See performance graphs		
Type of protection	See data sheet RE18325-90		

Inlet plate – basic TA-00



The inlet elements TA-00-__ are employed to connect the external P, T lines to the P, T channels inside the ED elements of the Directional Valve Assembly and to connect to the LS ports of the elements equipped with LS channels.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

- Port sizes: P and T SAE 8; LS and G SAE 4.
- Includes a test point port "G" for pressure gauge connection.
- · Special plating and coating availabe, C.F.

Detailed information:

• RA18300-01

Maximum pressure	bar (PSI)	210 (3000)*
Maximum inlet flow	I/min (GPM)	60 (15)
Material		Aluminum
Seals		NBR
Fluide temperature	°C (°F)	-20 to +80 (-4 to +176)

^{*}For higher pressure, C.F.

Inlet plate – relief and dump TA-05



The inlet elements TA-05-_ are employed to connect the external P and T lines to the P and T channels inside the ED elements of the Directional Valve Assembly. They incorporate a pressure relief cartridge which limits the primary pressure in the P line. The relief setting can be checked through the Test Point port G.

When fitted, the Normally Open Solenoid Unloading VEI Cartridge unloads to Tank all the P line flow; unloading stops when the cartridge coil is energized.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

- Port sizes: P and T SAE 8; LS and G SAE 4.
- Ports LS and G are provided with plugs.
- · Special plating and coating available, C.F.

Detailed information:

• RA18300-05

Maximum pressure	bar (PSI)	210 (3000)*
Maximum inlet flow	I/min (GPM)	60 (15)
Material		Aluminum
Seals		Buna N (NBR)
Fluide temperature	°C (°F)	-20 to +80 (-4 to +176)

^{*}For higher pressure, C.F.

4/3 4/2 Directional valve elements with or without secondary relief valves, with or without LS connections L8 10... (ED1-Z)



The sandwich plate design directional valve elements L8_10... are compact direct operated solenoid valves which control the start, the stop and the direction of the oil flow.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

- · Valve elements with solenoid operated directional spool
- Control spools operated by screwed-in solenoids with extractable coils
- In the de-energized condition, the control spool is held in the central position by return springs
- Wet pin tubes for DC coils, with push rod for mechanical override; nickel plated surface
- Coils can be rotated 360° around the tube; they can be energized by AC current through special connectors with rectifier (RAC).
- Manual override (push-button or screw type) available upon request.
- Plug-in connectors available: EN 175301-803 (Was DIN 43650); AMP Junior; DT04-2P (Deutsch), free leads.

Technical Data

General		
Valve element with 2 solenoids	kg (lbs)	1.55 (3.42)
Valve element with 1 solenoid	kg (lbs)	1.25 (2.76)
Valve element with 2 solenoid with lever override	kg (lbs)	1.9 (4.2)
Valve element with 1 solenoid with lever override	kg (lbs)	1.6 (3.5)
Ambient Temperature	°C (°F)	-20+50 (-4+122) [NBR seals]
Hydraulic		
Maximum pressure at P, A, and B ports	bar (PSI)	310 (4500)
Maximum dynamic pressure at T	bar (PSI)	180 (2610)
Maximum dynamic pressure, with lever type emergency at T	bar (PSI)	100 (1450)
Maximum static pressure at T	bar (PSI)	210 (3045)
Maximum inlet flow	I/min (GPM)	30 (7.9)
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.
Fluid Temperature	°C (°F)	-20+80 (-4+176) [NBR seals]
Permissible degree of fluid contamination		ISO 4572: β _χ ≥75 X=1215 ISO 4406: class 20/18/15 NAS 1638: class 9
Viscosity range	mm²/s	5420

Detailed information:

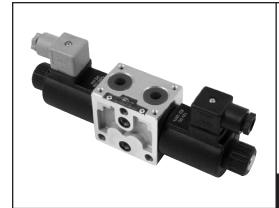
• RA18301-01

Detailed information:

• RA18301-02

GoTo Focused Delivery Program: Compact Hydraulics

4/3 4/2 Directional valve elements with or without secondary relief valves, with or without LS connections L8_11... (ED2-DZ)



The sandwich plate design directional valve elements L8_11... are compact direct operated solenoid valves which control the start, the stop and the direction of the oil flow.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

- Valve elements with solenoid operated directional spool
- Control spools operated by screwed-in solenoids with extractable coils
- In the de-energized condition, the control spool is held in the central position by return springs.
- · Wet pin tubes for DC coils, with push rod for mechanical override; nickel plated surface
- Coils can be rotated 360° around the tube; they can be energized by AC current through special connectors with rectifier (RAC)
- Manual override (push-button or screw type) available upon request
- Plug-in connectors available: EN 175301-803 (Was DIN 43650); AMP Junior; DT04-2P (Deutsch), free leads.

Technical Data

General		
Valve element with 2 solenoids	kg (lbs)	1.95 (4.3)
Valve element with 1 solenoid	kg (lbs)	1.45 (3.2)
Valve element with 2 solenoid with lever override	kg (lbs)	2.2 (4.85)
Valve element with 1 solenoid with lever override	kg (lbs)	1.7 (3.75)
Ambient Temperature	°C (°F)	-20+50 (-4+122) [NBR seals]
Hydraulic		
Maximum pressure at P, A, and B ports	bar (PSI)	310 (4500)
Maximum dynamic pressure at T	bar (PSI)	250 (3625)
Maximum dynamic pressure, with lever override at T	bar (PSI)	100 (1450)
Maximum static pressure at T	bar (PSI)	310 (4500)
Maximum statuc pressure, with lever override at T	bar (PSI)	290 (4200)
Maximum inlet flow	I/min (GPM)	50 (13.2)
Hydraulic fluid		Mineral oil based hydraulic fluids HL (DIN 51524 part 1).
General properties: it must have physical lubricating and		Mineral oil based hydraulic fluids HLP (DIN 51524 part 2).
chemical properties suitable for use in hydraulic systems		For use of environmentally acceptable fluids (vegetable or polyglycol base)
such as, for example:		please consult us.
Fluid Temperature	°C (°F)	-20+80 (-4+176) [NBR seals]
Permissible degree of fluid contamination		ISO 4572: β _x ≥75 X=1215
		ISO 4406: class 20/18/15
		NAS 1638: class 9
Viscosity range	mm ² /s	5420

See index Pages 208 & 209 for GoTo product and accessory part numbers.

4/3 – 4/2 Directional valve elements proportional controls and with or without LS connections L8 80... (ED4-P)



The sandwich plate design directional valve elements L8080... are compact direct operated proportional solenoid valves which control the start, the stop, the direction and the quantity of the oil flow.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

- Valve element with direct proportional control of spool
- Control spool operated by screwed-in solenoid with extractable coil
- · In the de-energized condition, the control spool is held in the central position by return springs.
- · Wet pin proportional tubes for DC coils, with push rod for mechanical override; nickel plated surface
- Manual override (push-button or screw type) available upon request
- Plug-in connectors available: EN 175301-803 (Was DIN 43650) and DT04-2P (Deutsch)

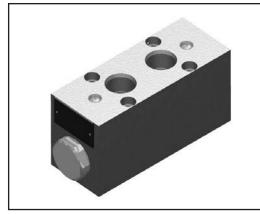
Detailed information:

• RA18301-06

General	
Valve element with 2 solenoids kg (lbs)	2.20 (4.85)
Valve element with 1 solenoid kg (lbs)	1.70 (3.75)
Ambient Temperature °C (°F)	-20+50 (-4+122) [NBR seals]

Hydraulic		
Maximum pressure at P	bar (PSI)	310 (4500)
Maximum dynamic pressure at T	bar (PSI)	210 (3050)
Maximum static pressure at T	bar (PSI)	250 (3625)
Maximum inlet flow	I/min (GPM)	45 (11.9)
Nominal flow with $\Delta P = 10$ bar	I/min (GPM)	10, 20, 30 (2.64, 5.28, 7.9)
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.
Fluid Temperature	°C (°F)	-20+80 (-4+176) [NBR seals]
Permissible degree of fluid contamination		ISO 4572: β _x ≥75 X=1215 ISO 4406: class 20/18/15 NAS 1638: class 9
Viscosity range	mm²/s	20380 (optimal 3046)

Stacking modules, pilot operated check EDM-PO



The secondary flangeable elements EDM-PO-_ can be interfaced and bolted on top of the A and B ports of the ED elements of the Directional Valve Assembly.

They incorporate two Cross Piloted Check Valves which allow free flow toward the A and B outlet ports, and lock in a leak free mode the flow returning from the actuator, until sufficient pilot pressure is built up in the opposite line and the check valve is opened.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

- Hydraulic port sizes: A and B SAE 8.
- Special coating and plating available, C.F.

Detailed information:

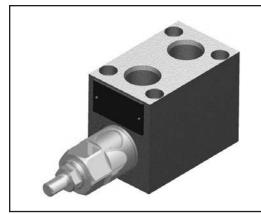
• RA18301-40

General		
Ambient Temperature	°C (°F)	-20+50 (-4+120)
Material		Aluminum

Hydraulic		
Maximum pressure	bar (PSI)	210 (3000)
Maximum flow	I/min (GPM)	60 (15)
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.
Fluid Temperature	°C (°F)	-20+80 (-4+176) [NBR]
Permissible degree of fluid contaminat	ion	ISO 4572: β _x ≥75 X=1215 ISO 4406: classe 20/18/15 NAS 1638: classe 9
Viscosity range	mm²/s	5420

^{*310} bar (4500 PSI) available. Consult factory.

Stacking modules, cross-over relief EDM-CR



The secondary flangeable elements EDM-CR-_ can be interfaced and bolted on top of the A and B ports of the ED elements of the Directional Valve Assembly.

The body consists of one direct acting pressure relief valve. The relief valve for line A releases the oil into line B and vice versa.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Port sizes: A and B - SAE 8

· Special coating and plating available, C.F.

Detailed information:

• RA18301-41

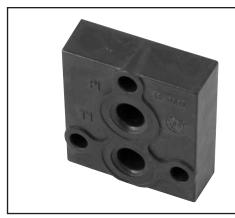
General		
Ambient Temperature °C	C (°F)	-20+50 (-4+120)
Material		Aluminum

Hydraulic				
		AB	0A	0B
Maximum pressure	bar (PSI)	210 (3000)	210 (3000)	210 (3000)
Maximum flow	I/min (GPM)	60 (15)	50 (13)	60 (15)
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.		
Fluid Temperature	°C (°F)	-20+80 (-4+176)	[NBR]	
Permissible degree of fluid contamination		ISO 4572: β _x ≥75 X=1215 ISO 4406: classe 20/18/15 NAS 1638: classe 9		
Viscosity range	mm²/s	5420		

^{*310} bar (4500 PSI) available. Consult factory.

Exit plate, basic

TC-...



The exit plate TC... is employed as end plates to plug the P and T channels of the ED element of the Directional Valve Assembly, or to provide an extra port for P, T, or P and T.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTocompact

Features

• Port sizes are available in SAE 6 and SAE 8

Detailed information:

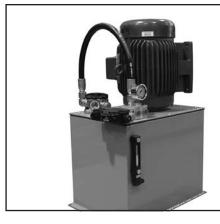
• RA18301-60

General		
Weight (w/o ports & SAE 6)	kg (lbs)	0.3 (0.66)
Weight (SAE 8)	kg (lbs)	0.5 (1.10)
Ambient Temperature	°C (°F)	-20+50 (-4+120) [NBR seals)

Hydraulic					
Maximum pressure (TC0000)	bar (PSI)	250 (3600)*			
Maximum pressure	bar (PSI)	210 (3000)*			
Maximum flow	I/min (GPM)	60 (15)			
Hydraulic fluid					
General properties: it must have phys and chemical properties suitable for u systems such as, for example:	•	Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.			
Fluid Temperature	°C (°F)	-20+80 (-4+176) [NBR seals]			
Permissible degree of fluid contamina	ation	ISO 4572: β _x ≥75 X=1215 ISO 4406: classe 20/18/15 NAS 1638: classe 9			
Viscosity range	mm²/s	5420			

^{*310} bar (4500 PSI) available. Consult factory.

Power packs, fixed displacement



PP Standard Power Packs utilize external gear pumps with standard industrial keyed shaft. Motors can be run at 60Hz/1750RPM/208-230/460V or 50Hz/1425RPM/190-208/380-416V. Motors are NEMA frame with female shaft.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopowerpacks

Features

- · Powder coated steel reservoir
- System relief valve & Gauge
- One station D03 aluminum bar manifold
- PP5 = 10 μ absolute. PP10, 20 = 16 μ absolute in-tank return filter/filler/breather
- · Check valve in pressure line
- Spare in-tank return down-line

Detailed information:

• RA09788

Model Code	Reservoir Size G (I)	Pump Flow GPM (lpm)*	Max. Pressure PSI (bar)**	Motor HP (kw)
PP5/G2004/2/3BM1/H0/L0	5 (18.9)	1.9 (7.2)	1534 (106)	2.0 (1.5)
PP5/G2004/3/3BM1/H0/L0	5 (18.9)	1.9 (7.2)	2300 (159)	3.0 (2.2)
PP5/G2004/5/3BM1/H0/L0	5 (18.9)	1.9 (7.2)	3625 (250) [†]	5.0 (3.7)
PP5/G2005/2/3BM1/H0/L0	5 (18.9)	2.6 (9.8)	1121 (77)	2.0 (1.5)
PP5/G2005/3/3BM1/H0/L0	5 (18.9)	2.6 (9.8)	1681 (116)	3.0 (2.2)
PP5/G2005/5/3BM1/H0/L0	5 (18.9)	2.6 (9.8)	2802 (193)	5.0 (3.7)
PP10/G2005/2/3BM1/H0/L0	10 (37.9)	2.6 (9.8)	1121 (77)	2.0 (1.5)
PP10/G2005/3/3BM1/H0/L0	10 (37.9)	2.6 (9.8)	1681 (116)	3.0 (2.2)
PP10/G2005/5/3BM1/H0/L0	10 (37.9)	2.6 (9.8)	2802 (193)	5.0 (3.7)
PP10/G2008/2/3BM1/H0/L0	10 (37.9)	3.8 (14.4)	767 (53)	2.0 (1.5)
PP10/G2008/3/3BM1/H0/L0	10 (37.9)	3.8 (14.4)	1150 (79)	3.0 (2.2)
PP10/G2008/5/3BM1/H0/L0	10 (37.9)	3.8 (14.4)	1917 (132)	5.0 (3.7)
PP10/G2008/7.5/3BM1/H0/L0	10 (37.9)	3.8 (14.4)	2875 (198)	7.5 (5.6)
PP20/G2011/3/3BM1/H0/L0	20 (75.7)	5.2 (19.7)	841 (58)	3.0 (2.2)
PP20/G2011/5/3BM1/H0/L0	20 (75.7)	5.2 (19.7)	1401 (97)	5.0 (3.7)
PP20/G2011/7.5/3BM1/H0/L0	20 (75.7)	5.2 (19.7)	2101 (145)	7.5 (5.6)
PP20/G2011/10/3BM1/H0/L0	20 (75.7)	5.2 (19.7)	2802 (193)	10.0 (7.5)
PP20/G2016/5/3BM1/H0/L0	20 (75.7)	7.6 (28.8)	958 (66)	5.0 (3.7)
PP20/G2016/7.5/3BM1/H0/L0	20 (75.7)	7.6 (28.8)	1438 (99)	7.5 (5.6)
PP20/G2016/10/3BM1/H0/L0	20 (75.7)	7.6 (28.8)	1917 (132)	10.0 (7.5)

^{*} Based on 1750 RPM, and 100% volumetric efficiency; actual flow will be lower.

^{**} All max pressures reflect an 85% overall efficiency (1.15 SF not included in calculation).

[†] Limited by maximum continuous pressure of pump.

Close-coupled motor pump groups, fixed displacement MPGB-AZP



Close-Coupled Motor Pump Groups type MPGB-AZP come fully assembled from our factory. Pumps are external gear type, standard industrial keyed shaft. Motors are NEMA frame, femal shaft, and can be run at 60 Hz/1750 RPM/208–230/460 V or 50 Hz/1425 RPM/190–208/380–416 V.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopowerpacks

Features

• Eliminate the need for multiple vendors by giving you one source of supply

• RA12750

Detailed information:

- Closed-coupled feature dramatically reduces the overall length of the motor pump group
- · Motor pump groups can be mounted horizontally or vertically

	Pump Size in ³ /rev	Pump Flow GPM	Max. Pressure	Mot	or	
Model Code	(cc/rev)	(I/min)*	PSI (bar)**	HP (kW)	Frame	Connection sizes
MPGB002HTYZ4DEOFS1HAZPF12004K1NN	0.24 (4.0)	1.9 (7.2)	1534 (106)	2.0 (1.5)	145TYZ	0 1 04540
MPGB003HTYZ4DEOFS1HAZPF12004K1NN	0.24 (4.0)	1.9 (7.2)	2300 (159)	3.0 (2.2)	145TYZ	Suction = SAE-10 Pressure = SAE-8
MPGB005HTYZ4DEOFS1HAZPF12004K1NN	0.24 (4.0)	1.9 (7.2)	3625 (250) [†]	5.0 (3.7)	184TYZ	Flessule — SAL-6
MPGB002HTYZ4DEOFS1HAZPF12005K1NN	0.34 (5.5)	2.6 (9.8)	1121 (77)	2.0 (1.5)	145TYZ	0 1 04540
MPGB003HTYZ4DEOFS1HAZPF12005K1NN	0.34 (5.5)	2.6 (9.8)	1681 (116)	3.0 (2.2)	145TYZ	Suction = SAE-10 Pressure = SAE-8
MPGB005HTYZ4DEOFS1HAZPF12005K1NN	0.34 (5.5)	2.6 (9.8)	2802 (193)	5.0 (3.7)	184TYZ	Tressure — SAL-0
MPGB002HTYZ4DEOFS1HAZPF12008K1NN	0.49 (8.0)	3.8 (14.4)	767 (53)	2.0 (1.5)	145TYZ	
MPGB003HTYZ4DEOFS1HAZPF12008K1NN	0.49 (8.0)	3.8 (14.4)	1150 (79)	3.0 (2.2)	145TYZ	Suction = SAE-12
MPGB005HTYZ4DEOFS1HAZPF12008K1NN	0.49 (8.0)	3.8 (14.4)	1917 (132)	5.0 (3.7)	184TYZ	Pressure = SAE-10
MPGB7.5HTYZ4DEOFS1HAZPF12008K1NN	0.49 (8.0)	3.8 (14.4)	2875 (198)	7.5 (5.6)	213TYZ	
MPGB003HTYZ4DEOFS1HAZPF12011K1NN	0.67 (11.0)	5.2 (19.7)	841 (58)	3.0 (2.2)	145TYZ	
MPGB005HTYZ4DEOFS1HAZPF12011K1NN	0.67 (11.0)	5.2 (19.7)	1401 (97)	5.0 (3.7)	184TYZ	Suction = SAE-12
MPGB7.5HTYZ4DEOFS1HAZPF12011K1NN	0.67 (11.0)	5.2 (19.7)	2101 (145)	7.5 (5.6)	213TYZ	Pressure = SAE-10
MPGB010HTYZ4DEOFS1HAZPF12011K1NN	0.67 (11.0)	5.2 (19.7)	2802 (193)	10.0 (7.5)	215TYZ	
MPGB005HTYZ4DEOFS1HAZPF12016K1NN	0.98 (16.0)	7.6 (28.8)	958 (66)	5.0 (3.7)	184TYZ	0.1. 045.10
MPGB7.5HTYZ4DEOFS1HAZPF12016K1NN	0.98 (16.0)	7.6 (28.8)	1438 (99)	7.5 (5.6)	213TYZ	Suction = SAE-16 Pressure = SAE-10
MPGB010HTYZ4DEOFS1HAZPF12016K1NN	0.98 (16.0)	7.6 (28.8)	1917 (132)	10.0 (7.5)	215TYZ	TIESSUIE - SAE-TU

^{*} Based on 1750 RPM, and 100% volumetric efficiency; actual flow will be lower.

^{**} All max pressures reflect an 85% overall efficiency (1.15 SF not included in calculation).

[†] Limited by maximum continuous pressure of pump.

Close-coupled motors MTRB



Close-Coupled Motors are NEMA frame, female shaft to accomodate SAE A (2-bolt flange 82-2 A SAE J744) pumps. Can be run at 60 HZ/1750 RPM/208-230/460 V or 50 Hz/1425 RPM/190-208/380-416 V.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopowerpacks

Features

· Close-coupled feature dramatically reduces the overall length of the motor pump group

Detailed information:

• RA12750

- Eliminates the expense of a bellhousing
- · Can be mounted horizontally or vertically

Model Code	HP (KW)	Frame
MTRB2H1450/1800R145TYZ50/60HZ F1 SAE A	2.0 (1.5)	145TYZ
MTRB3H1450/1800R145TYZ50/60HZ F1 SAE A	3.0 (2.2)	145TYZ
MTRB5H1450/1800R184TYZ50/60HZ F1 SAE A	5.0 (3.7)	184TYZ
MTRB7.5H1450/1800R213TYZ50/60HZ F1 SAE A	7.5 (5.6)	213TYZ
MTRB10H1450/1800R215TYZ50/60HZ F1 SAE A	10.0 (7.5)	215TYZ

Pre-assembled Filter/Cooler Module MFC3



The MFC3 is a compact off-line filtration/ cooling package, which provides numerous mounting and configuration options. The design allows for multiple selections of AC motors, pumps, filter elements, and auxiliary components. The modular design concept permits field upgrades concerning oil flow, filtration, or configuration with minimal labor and cost.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTopowerpacks

Features

- Off line does not interrupt production
- · Versatile / Simple Modular design concept
- · Space saving vertical designs
- · Durable common base construction
- · Multiple mounting and configurations
- · Multiple pump, and filter element selections
- · Dual frequency motor windings standard
- Stainless Steel, plate style heat exchangers
- Single supply source
- Extensive international distribution and service

Technical Data

See data sheet RA50127 for detailed Technical Data. All part numbers listed in RA50127 are included in GoTo.

Detailed information:

• RA50127

GoTo Focused Delivery Program: Accumulators

Bladder-type accumulators HAB



The HAB design is a hydro-pneumatic type accumulator with compressed nitrogen separated from hydraulic fluid by means of an elastomeric bladder. The current generation of bladder accumulators from Bosch Rexroth carries the HAB-5X designation. The HAB product line is available in many different configurations needed to meet the stringent demands of today's market.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToaccumulators

Features

- Hydraulic accumulator according to ASME Section VIII pressure vessel code
- · Bladder materials for different applications
- Two piece gas valve design on 2.5 gallon and larger units improves serviceability

Use:

- Energy storing in systems with intermittent operation
- Energy reserve for emergencies
- Compensation for leakage losses
- Impact and vibration damping
- Compensation of flow in the case of changes in pressure and temperature

Detailed information:

• RA51350

Function & Performance Data

		,	1				
Bottom Repairable, 3K	Nominal volume (GAL)	1 QT	1 G	2.5 G	5 G	10 G	15 G
	Effective gas volume (L)	1.2	3.8	9.8	19.7	37.0	56.4
	Max operating pressure (PSI)	3000	3000	3000	3000	3000	3000
Operating Temperature	Nitrile, Buna-n (NBR)	5 °F to 212	²°F				
Flow Output (Standard SAE fluid port,	Nominal volume (GAL)	1 QT	1 G	2.5 G	5 G	10 G	15 G
max. flow rate dependant on fluid viscosity and accumulator orientation.)	Max flow rate (GPM)	30	80	160	160	160	160
Pre-Charge Ratio Limitation	Maximum ratio of system press	sure to pre-c	harge press	ure, 4:1			
Installation Position	Recommended vertical with gas side up, other positions may reduce accumulator performance and bladder life						
Fluid	Mineral oils to DIN 51524, HFC to ISO 12922, other fluids compatible with bladder compounds listed.						
Gas	Nitrogen gas with typical purity	y 99.99%					

Accumulator Charge Kit & Clamps

For detailed information, see RA51350.

R978046091	ACCUM CHARGE KIT HAB-5X	Supplied with two pressure gauges, 2000 PSI and 5000 PSI.
R978044766	ACCUM CLAMP HAB-5X 10-50L 3K PSI	
1531316021	CLAMPING BANDTIGHT 110-120 MM	
1531316022	CLAMPING BANDTIGHT 160-170 MM	

GoTo Focused Delivery Program: Accumulators

Diaphragm-type accumulators HAD



The HAD design is a hydro-pneumatic type accumulator that utilizes compressed nitrogen to supply fluid to the hydraulic system. The nitrogen and hydraulic fluid are separated by means of an elastomeric membrane. HAD units are the diaphragm welded non-repairable type that can be supplied in both non-rechargeable and chargeable versions.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToaccumulators

Features

- Hydraulic accumulator according to Pressure Equipment Directive 97/23/EC
- HAD sizes range from 0.075L to 3.5L
- · HAD pressure rating 250 bar on most sizes, with special options available up to 350 bar.
- HAD units are economical solutions for pulsation dampening and energy storage applications where only a small volume of usable fluid is required.
- Very compact design allows for the use of the HAD product in the smallest of locations, industrial or mobile hydraulic in nature.
- Multiple elastomer options for many different fluid and temperature driven applications.
- · Multiple fluid port options are available such as UNF, NPT, BSPP, and metric M threaded designs.
- Two gas valve options are available for pre-charging, the standard Schrader valve type common for the US market (7/8"-14UNF connection) and the European standard M28 threaded connection.

Function & Performance Data

Capacity	Liters (cu-in)	0.075 (5)	0.16 (10)	0.35 (21)	0 (3	.5 0)	0 (4	.7 3)	1.0 (61)		.4 (5)	2 (12	-	2 (17	-	3.5 (214)
Maximum pressure	bar (PSI)	250 (3626)	250 (3626)	210 (3045)	160 (2320)	250 (3626)	180 (2610	250 (3626)	200 (2900)	140 (2030)	250 (3626)	100 (1450)	250 (3626)	70 (1015)	250 (3626)	250 (3626)
Weight	kg (lbs.)	0.65 (1.4)	1.0 (2.2)	1.3 (2.9)	1.6 (3.5)	2.0 (4.4)	2.6 (5.7)	3.2 (7.1)	3.5 (7.7)	4.9 (10.8)	6.2 (13.7)	4.0 (8.8)	9.5 (20.9)	5.5 (12.1)	10.0 (22.0)	14.0 (30.9)
Mounting type		With c	lamps	or threa	ided co	nnecti	on	,				,				
Installation position		Option	al, pref	erably 1	fluid co	nnectio	n piec	e point	ing dov	vnward						
Hydraulic temp. range*	°C (°F)	-10 to +80 (+14 to +176) - NBR diaphragm -35 to +80 (-31 to +176) - ECO diaphragm														
Charge gas		Use or	ly nitro	gen wi	th typic	al purit	y 99.99	9%								

^{*} Specific to elastomer type

Accumulator Charge Kit

0538103013	ACCUM CHARGE KIT FOR HAD UNITS WITH GAS VALVE TYPE 2

Detailed information:

• RE50150

GoTo Focused Delivery Program: Filtration Systems

Tank mounted return line filters and replacement filter elements 10 TEN 0040 to 0100



The tank mounted return line filters are designed for installation on fluid tanks. They serve the separation of solid materials from the whole fluid flowing back to the tanks.

Replacement filter elements for Rexroth filters: Filter media for all applications made out of glassfiber-paper, filter-paper, wire mesh, non-wovens, and metal fiber.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Features

- · Special highly efficient filter media
- · Adsorption of very fine particles across a broad pressure differential range
- · High dirt holding capacity thanks to large specific filter area
- · Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings: 3...100 μm
- · As standard, each filter is equipped with mechanical-optical maintenance indicator with memory function

Technical Data

General								
Installation po	sition		Vertical					
Ambient temp	erature range	°C [°F]	-30 to +100 (-22 to	+212)				
Weight		Size	0040	0063	0100			
		kg (lbs)	1.4 (3.1)	1.6 (3.5)	1.8 (4.0)			
Material	Filter cover		Carbon fiber reinforce	ed plastic				
	Filter head		Aluminum					
	Filter bowl		Carbon fiber reinforced plastic					
	Optical maintenance indicato	r (V2,2)	Aluminum					
	Electronic switching element		Plastic PA6					
	Pressure gauge		Plastic					
Hydraulic								
Maximum ope	rating pressure	bar (PSI)	10 (145)					
Cracking pres	sure of the bypass valve	bar (PSI)	$3.5 \pm 0.35 (50.7 \pm 5)$					
Response pre	ssure of the maintenance indicator	bar (PSI)	2.2 ± 0.25 [31.9 ± 3.6]					
Type of pressi	ure measurement of the maintenance	e indicator	Backpressure					
Hydraulic fluid	I temperature range	°C (°F)	-10 to +100 (+14 to +212)					
Fatigue streng	th according to ISO 10771	Load cycles	> 10 ⁵ with max. operating pressure					

Detailed information:

• RE51424

GoTo Focused Delivery Program: Filtration Systems

Tank mounted return line filters and replacement filter elements 10 FREN 0160 to 1000



The tank mounted return line filters are designed for installation on fluid tanks. They serve the separation of solid materials from the whole fluid flowing back to the tanks.

Replacement filter elements for Rexroth filters: Filter media for all applications made out of glassfiber-paper, filter-paper, wire mesh, non-wovens, and metal fiber.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Features

- · Special highly efficient filter media
- · Adsorption of very fine particles across a broad pressure differential range
- · High dirt holding capacity thanks to large specific filter area
- Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings: 3...100 μm
- · As standard, each filter is equipped with mechanical-optical maintenance indicator with memory function

Technical Data

General										
Installation po	osition	Vertical								
Ambient temp	perature range	°C (°F)	-30 to +70 (–22 to +158)						
Weight		Size	0160	0250	0400	0630	1000			
		kg (lbs)	4.5 (9.9)	6.5 (14.3)	5.6 (12.3)	7.9 (17.4)	15 (33.1)			
Material	Filter cover		Aluminum							
	Filter head		Aluminum	Aluminum						
	Filter bowl		Aluminum St	Aluminum Steel						
	Optical maintenance indicator		Aluminum							
	Electronic switching element		Plastic PA 6							
Hydraulic										
Maximum ope	erating pressure	bar (PSI)	10 (145)							
Cracking pressure of the bypass valve bar (PSI		bar (PSI)	3.5 ± 0.35 (50.7 ± 5)							
Response pressure of the maintenance indicator bar (PSI)			2.2 ± 0.25 (31.9 ± 3.6)							
Hydraulic flui	d temperature range	°C (°F)	-10 to 100 (14 to 212)							

Detailed information:

• RA51425

GoTo Focused Delivery Program: Filtration Systems

Inline filter with filter element 50 LE 0130, 0150



Inline filters are used in hydraulic systems for separating solid materials from the hydraulic fluids and lubricating oils. They are intended for attachment in pipelines.

The 50LE(N) inline filters are suitable for direct installation into pressure lines. They are mostly installed upstream open-loop or closed-loop control units to be protected.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Features

- · Adsorption of very fine particles across a broad pressure differential range
- · Good chemical resistance of the filter elements
- High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 μm to 100 μm
- By default equipped with mechanical optical maintenance indicator with memory function
- Flow-optimized design due to 3D computer-supported design.

Detailed information:

• RE51447

General							
Installation posi	tion	Vertical					
Ambient temper	rature range	°C [°F]	-30 to +100 (-22 to +212)				
Weight		Size	0130	0150			
		kg (lbs)	1.91 (4.2)	2.06 (4.5)			
Volume		l (US gal)	0.89 (0.23)	1.10 (0.29)			
Material	Filter head		Aluminum				
	Filter bowl		Aluminum				
	Optical maintenance indicator	V1.5; V2.2	2 Aluminum				
		V5.0	Brass				
	Electronic switching element		Plastic PA6				
Hydraulic							
Maximum opera	ating pressure	bar (PSI)	50 (725)				
Hydraulic fluid t	emperature range	°C (°F)	-10 to +100 (+14 to +212)				
Minimum condu	activity of the medium	pS/m	300				
Fatigue strength	h according to ISO 10771	Load cycles	> 10 ⁶ with max. operating pressure				
Assignment: Re	esponse pressure of the maintenance	Load cycles	Response pressure of the	Cracking pressure of the			
indicator / crack	king pressure of the bypass valve		maintenance indicator	bypass valve			
		bar (PSI)	1.5 ± 0.2 (21.8 ± 2.9)	$2.5 \pm 0.25 \ (36.3 \pm 3.6)$			
		bar (PSI)	$2.2 \pm 0.3 \ (31.9 \pm 4.4)$	$3.5 \pm 0.35 (50.8 \pm 5.1)$			
		bar (PSI)	$5.0 \pm 0.5 (72.5 \pm 7.3)$	$7.0 \pm 0.5 \ (101.5 \pm 7.3)$			

Inline filter with filter element 110 LEN 0040 to 0400; 110 LE 0150



Inline filters are used in hydraulic systems for separating solid materials from the hydraulic fluids and lubricating oils. They are intended for attachment in pipelines.

The 110LE(N) inline filters are suitable for direct installation into pressure lines. They are mostly installed upstream openloop or closed-loop control units to be protected.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTofilters*

Features

- · Filtration of very fine particles across a broad pressure differential range
- · Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 μm to 100 μm
- · By default equipped with mechanical optical maintenance indicator with memory function
- Flow-optimized design due to 3D computer-supported design

Detailed information:

• RA51448

Technical Data

General										
Installation	position		Vertical							
Ambient ter	mperature range	°C (°F)	-30 to +1	00 (-22 to	+212)					
Weight		Size	0040	0063	0100	0150	0160	0250	0400	
kg (lbs)			1.1 (2.4)	1.2 (2.9)	1.5 (3.3)	2.6 (5.7)	3.5 (7.7)	4.0 (8.8)	4.9 (10.8)	
Volume I (US gal)			0.3 (0.08)	0.4 (0.11)	0.6 (0.16)	1.1 (0.29)	1.3 (0.34)	1.9 (0.50)	2.9 (0.77)	
Material	Filter head		Aluminum							
	Filter bowl		Aluminum							
	Optical maintenance V1.5									
	indicator	V5.0	Brass							
	Electronic switching eler	ment	Plastic PA6							
Hydraulic										
Maximum o	perating pressure	bar (PSI)	110 (1595)							
Hydraulic fl	uid temperature range	°C (°F)	-10 to +100 (+14 to +212)							
Minimum co	onductivity of the medium	pS/m	300							
Fatigue strength according to Load cycles ISO 10771			> 10 ⁶ with max. operating pressure							
Assignment: Response pressure of the maintenance indicator / cracking		Load cycles	Response pressure of the maintenance indicator bypass valve			the				
pressure of	pressure of the bypass valve bar (PS		1.	5 ± 0.2 (21.	8 ± 2.9)		2.5 ± 0.2	25 (36.3 ± 3	3.6)	
		bar (PSI)	$2.2 \pm 0.3 \ (31.9 \pm 4.4)$ $3.5 \pm 0.35 \ (50.8 \pm 5.1)$					5.1)		
		bar (PSI)	$5.0 \pm 0.5 \ (72.5 \pm 7.3)$ $7.0 \pm 0.5 \ (101.5 \pm 7.3)$						7.3)	

See index Page 213 for GoTo product and accessory part numbers.

Line mounted filters and replacement filter elements 245 LE(N) 0040 to 400



Line filters are used in hydraulic systems for separating solid materials from the hydraulic fluids and lubricating oils. They are intended for installation into pipelines.

Replacement filter elements for Rexroth filters: Filter media for all applications made out of glassfiber-paper, filter-paper, wire mesh, non-wovens, and metal fiber.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Features

- · Special highly efficient filter media
- · Adsorption of very fine particles across a broad pressure differential range
- · High dirt holding capacity thanks to large specific filter area
- · Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 μm to 100 μm
- · As standard, each filter is equipped with mechanical-optical maintenance indicator with memory function
- Flow-optimized design due to 3D computer-supported design

Technical Data

General								
Installation position			vertical					
Ambient tempera	ture range	°C (°F)	-30 to +100 (-	22 to +212)				
Weight		Size	0040	0063	0100	0130		
		kg (lbs)	3.2 (7.1)	3.8 (8.4)	4.2 (9.3)	6.95 (15.3)		
Weight		Size	0150	0160	0250	0400		
		kg (lbs)	7.25 (16.0)	11.5 (25.4)	12.2 (26.9)	13.8 (30.4)		
Material Filter head		GGG						
	Filter bowl		Steel					
	Optical maintenance indicate	tor	Brass					
	Electronic switching elemen	nt	Plastic PA6					
Hydraulic								
Maximum operati	ng pressure	bar (PSI)	250 (3628)					
Hydraulic fluid ter	mperature range	°C (°F)) -10 to +100 (+14 to +212)					
Fatigue strength according to ISO 10771 Load cycles			> 10 ⁶ with max. operating pressure					
Cracking pressure of the bypass valve bar (PSI)			$7 \pm 0.5 (100 \pm 7)$					
Type of pressure measurement of the maintenance indicator			Pressure differential					
Response pressu	ure of the maintenance indicator	bar (PSI)	5 ± 0.5 (72 ± 7)					

Detailed information:

Line mounted filters and replacement filter elements 350 LE(N) 0040 to 1000



Line filters are used in hydraulic systems for separating solid materials from the hydraulic fluids and lubricating oils. They are intended for installation into pipelines.

The 350LE(N) line filters are suitable for direct installation into pressure lines. They are mostly installed upstream open-loop or closed-loop control units to be protected.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTofilters*

Features

- · Special highly efficient filter media
- · Adsorption of very fine particles across a broad pressure differential range
- · High diret holding capacity thanks to large specific filter area
- · Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 μm to 100 μm
- · As standard, each filter is equipped with mechanical-optical maintenance indicator with memory function
- Flow-optimized version due to 3D computer-supported design

Technical Data

General								
Installation position			Vertical					
Ambient temp	erature range	°C (°F)	-30 to +100	(-22 to +21	2)			
Weight		Size	0040	0063	0100	0130	0150	
		kg (lbs)	4.4 (9.7)	5.0 (11.0)	5.9 (13.0)	10.5 (23.1)	11.2 (24.7)	
Weight		Size	0160	0250	0400	0630	1000	
		kg (lbs)	17.2 (30.0)	19.5 (43.1)	23.0 (50.8)	45.0 (99.5)	93.0 (205.6)	
Material	Filter head		GGG					
Filter bowl			Steel					
	Optical maintenance indicator		Brass					
	Electronic switching element		Plastic PA6					
Hydraulic								
Maximum ope	rating pressure	bar (PSI)) 350 (5100)					
Hydraulic fluid	l temperature range	°C (°F)	f) -10 to +100 (+14 to +212) [shortly -30 (-22)]					
Fatigue strength according to ISO 10771 Load cycles			> 10 ⁶ with max. operating pressure					
Cracking pressure of the bypass valve bar (PSI)			1) $7 \pm 0.5 (100 \pm 7)$					
Type of pressure measurement of the maintenance indicator			Pressure differential					
Response pre	ssure of the maintenance indicator	bar (PSI)) 5 ± 0.5 (72 ± 7)					

Detailed information:

Manifold mount pressure filter and replacement filter elements 245 PSF(N) 0040 to 0400



Manifold mounted filters are designed to be mounted directly on the pump outlet or control manifolds. They are installed upstream to protect open-loop and closed-loop control systems.

Replacement filter elements for Rexroth filters: Filter media for all applications made out of glassfiber-paper, filter-paper, wire mesh, non-wovens, and metal fiber.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Features

- · Special highly efficient filter media
- · Adsorption of very fine particles across a broad pressure differential range
- · High dirt holding capacity thanks to large specific filter area
- · Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 μm to 100 μm
- · As standard, each filter is equipped with mechanical-optical maintenance indicator with memory function
- Flow-optimized design due to 3D computer-supported design

Technical Data

General								
Installation po	osition		Lateral					
Ambient temp	perature range	°C (°F)	-30 to +100 (-	·22 to +212)				
Weight		Size	0040	0063	0100	0130		
		kg (lbs)	4.6 (10.1)	5.0 (11.0)	5.8 (12.8)	8.8 (19.4)		
Weight		Size	0150	0160	0250	0400		
		kg (lbs)	9.2 (20.3)	13.5 (29.8)	14.3 (31.5)	16.0 (35.3)		
Material Filter head		GGG						
	Filter bowl		Steel					
	Optical maintenance indicator		Brass					
	Electronic switching element		Plastic PA6					
Hydraulic								
Maximum ope	erating pressure	bar (PSI)	250 (3626)					
Hydraulic fluid temperature range °C (°F)		°C (°F)	-10 to +100 (+14 to +212)					
Fatigue strength according to ISO 10771 Load cycles		> 10 ⁶ with max. operating pressure						
Cracking pressure of the bypass valve bar (PSI)) $7 \pm 0.5 (100 \pm 7)$					
Type of press	Type of pressure measurement of the maintenance indicator			Pressure differential				
Response pre	Response pressure of the maintenance indicator bar (PSI)			5 ± 0.5 (72 ± 7)				

Detailed information:

Manifold mount pressure filter and replacement filter elements 350 PSF(N) 0040 to 1000



Manifold mounted filters are designed to be mounted directly on the pump outlet or control manifolds. They are installed upstream to protect open-loop and closed-loop control systems.

Replacement filter elements for Rexroth filters: Filter media for all applications made out of glassfiber-paper, filter-paper, wire mesh, non-wovens, and metal fiber.

For complete engineering and design information: *GoTo www.boschrexroth-us.com/GoTofilters*

Features

- · Special highly efficient filter media
- · Adsorption of very fine particles across a broad pressure differential range
- · High dirt holding capacity thanks to large specific filter area
- · Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 μm to 100 μm
- · As standard, each filter is equipped with mechanical-optical maintenance indicator with memory function
- Flow-optimized design due to 3D computer-supported design

Technical Data

General								
Installation pos	sition		Lateral					
Ambient tempe	erature range	°C (°F)	-30 to +100	(-22 to +21	2)			
Weight		Size	0040	0063	0100	0130	0150	
		kg (lbs)	5.5 (12.1)	6.2 (13.6)	7.0 (15.4)	13.0 (28.6)	13.9 (30.6)	
Weight		Size	0160	0250	0400	0630	1000	
		kg (lbs)	18.5 (40.7)	20.5 (45.1)	24.5 (53.9)	41.2 (90.6)	87.0 (191.4)	
Material	Filter head		GGG					
Filter bowl		Steel						
Optical maintenance indicator		Brass						
	Electronic switching element		Plastic PA6					
Hydraulic								
Maximum opera	ating pressure	bar (PSI)	350 (5100)					
Hydraulic fluid	temperature range	°C (°F)	-10 to +100 (+14 to +212) [shortly -30 (-22)]					
Fatigue strength according to ISO 10771 Load cycles			> 10 ⁶ with max. operating pressure					
Cracking pressure of the bypass valve bar (PSI)) $7 \pm 0.5 (100 \pm 7)$					
Type of pressure measurement of the maintenance indicator			Pressure differential					
Response pres	ssure of the maintenance indicator	bar (PSI)	5 ± 0.5 (72 ± 7)					

Detailed information:

Manifold mount pressure filter and replacement filter elements 450 PBFN 0040 to 1000



Manifold mounted filters are designed to be mounted directly on the pump outlet or control manifolds. They are installed upstream to protect open-loop and closed-loop control systems.

Replacement filter elements for Rexroth filters: Filter media for all applications made out of glassfiber-paper, filter-paper, wire mesh, non-wovens, and metal fiber.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Features

- · Special highly efficient filter media
- · Adsorption of very fine particles across a broad pressure differential range
- · High dirt holding capacity thanks to large specific filter area
- · Good chemical resistance of the filter elements
- · High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 μm to 100 μm
- · As standard, each filter is equipped with mechanical-optical maintenance indicator with memory function
- Flow-optimized design due to 3D computer-supported design

Technical Data

General								
Installation position			Vertical					
Ambient temp	erature range	°C (°F)	-30 to +100) (-22 to +21	2)			
Weight		Size	0040	0063	0100	0130	0150	
		kg (lbs)	5 (11.0)	5.5 (12.1)	6.4 (14.1)	11.9 (26.2)	12.9 (28.4)	
Weight		Size	0160	0250	0400	0630	1000	
		kg (lbs)	15.9 (35.1)	16.5 (36.3)	19.9 (43.8)	37.5 (82.5)	48 (105.8)	
Material Filter head		GGG						
	Filter bowl		Steel					
	Optical maintenance indicator		Brass					
	Electronic switching element		Plastic PA6					
Hydraulic								
Maximum ope	rating pressure	bar (PSI)	450 (6530)					
Hydraulic fluid temperature range °C (°F)		°C (°F)) -10 to +100 (+14 to +212)					
Fatigue strength according to ISO 10771 Load cycles		> 10 ⁶ with max. operating pressure						
Cracking pressure of the bypass valve bar (PSI)			1) $7 \pm 0.5 (100 \pm 7)$					
Type of pressu	Type of pressure measurement of the maintenance indicator			Pressure differential				
Response pre	Response pressure of the maintenance indicator bar (PSI)			5 ± 0.5 (72 ± 7)				

Detailed information:

Desiccant Air Breathers BFSK



The BFSK is used for filtration and dehumidification of the intake air of industrial systems. This desiccant air breather extends the life of your application by preventing damage to pumps and bearings, and system components.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Description

Water collection in reservoir

Most liquid reservoirs must allow for the exchange of air and must be able to breath. Depending on the machine cycles, air is drawn into the reservoir and exhausted again. This air contains small miniature particles and also water vapor. Due to different temperatures in the tank, the water vapor condenses. The resulting water promotes the oxidation process of the oil and is also responsible for possibly occurring damage of the components. Due to the catalytic influence of solid metallic parts, this process is further accelerated.

Filtration and drying in one single process

Through the BRFS silica gel air filter, fluid reservoirs are able to breath clean and dry air. The drawn in air is firstly dried by means of Z-R granulate. Afterwards, the air flows through the pleated filter element where the solid dirt particles are collected. In this way, only dried and filtered air enters the reservoirs. The exhaust air from the system can enter the atmosphere in the opposite direction.

Monitoring

The Z-R granulate's absorption capacity regarding humidity becomes visible by a change in color from dark red to orange. An optional clogging indicator shows how much filter capacity has already been used and how much is still available.

Technical Data

Туре	BFSK 45/21	BFSK 60/21	BFSK 90	BFSK 130
qmax	42 m³/h	42 m³/h 90 m³/h		90m³/h
Air filter	10 μm	10 μm		10 μm
Weight	1.2 kg	1.5 kg	1.5 kg 2.7 kg	
Silica gel	300 cm ³	600 cm ³	1,000 cm ³	2,000 cm ³
Water absorption	86 ml	172 ml	277 ml	576 ml

Detailed information:

Breather filters:

BFS 7, BFS 20; BF 7 SL; FEF 0, FEF 1; TLF I, TLF III



Filtration and dehumidification of the intake air of industrial systems.

Avoidance of initial damage in pumps and bearings, and system components.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Design

Model BF 7 SL

Breather filter with threaded filter cartridge and 10 micron pleated filter element.

Flange connection (BF 7 SL...).

BFS 7, BFS 20

Compact design male thread breather with 10 micron pleated paper filter element.

Materials as per spare parts list.

Models FEF 0, FEF 1

Combination filler breather with mounting flange and filling filter (screen basket 500 μ m) and removable cap with bayonet lock. The internal breather filter element is 40 μ m. The filter element is replaced by exchanging the whole metal cap. The breather cap is secured to the reservoir with a chain.

Materials as per spare parts list.

Models TLF I, TLF III

Removable filter breather housing with internal replaceable filter element. Filter element H10XL, H3XL up to a filtration rating of 10 μm and 3 μm with glass fiber material.

Materials as per spare parts list

Designs:

TLF I...: with female thread,

TLF III...: with male screw-in thread and filling filter (screen basket 130 μm).

Detailed information:

- RE51413
- RE51514
- RE51415

Popular Cross-Over Filter Elements



Rexroth cross-over filter elements are designed to replace your existing products, even those manufactured by other companies. Rexroth filter elements present the highest quality option for separation of solid materials from the whole fluid flowing back into the tanks. All cross-over elements listed in this section have a maximum order quantity of five and will ship in one day.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoTofilters

Description

- · Designed for optimum flow characteristics to achieve reduced pressure drop
- · Finest materials and manufacturing processes used yield highest available beta efficiencies
- · Compatible with different oil types, including rapidly biodegradable hydraulic oils
- Element lifetime increased due to materials and design get more from your investment

Technical Data

Part Number	Description
R928017121	9.60LA H3XL-F00-0-M SO3000
R928045173	1.1401 G40-A00-0-M
R928017483	10.110LA H10XL-A00-6-M SO3000
R928017667	10.1300LA H10XL-A00-6-M SO3000
R928017668	10.1300LA H6XL-A00-6-M SO3000
R928017506	10.160LA H10XL-A00-6-M SO3000
R928017529	10.240LA H10XL-A00-6-M SO3000
R928017552	10.330LA H10XL-A00-6-M SO3000
R928017575	10.500LA H10XL-A00-6-M SO3000
R928017598	10.660LA H10XL-A00-6-M SO3000
R928019959	16.7500/R P10-S00-0-M
R928016804	16.8700/R H10XL-S00-0-M
R928045584	2.0005 G40-A00-0-V
R928006376	2.0020 H6XL-A00-0-M
R928006699	2.0063 H3XL-A00-0-M
R928006862	2.0250 H6XL-A00-0-M
R928019029	2.56 P10-A00-0-M
R928046179	20.750 P25-S00-6-M
R928022781	4.06 P10-A00-0-M
R928028012	4.10 G200-A00-0-M
R902603750	62.0056K H10XL-J00-0-V

Part Number	Description
R928037484	80.130 H1XL-S00-0-M
R928019201	80.130 H6XL-S00-0-M
R928028010	80.30/20 P10-S00-0-V
R928028019	80.45/21 VS60-S00-0-M
R928016614	80.90 H10XL-S00-0-M
R928016612	80.90 P10-S00-0-M
R928022425	9.110LA H10XL-A00-0-V SO3000
R928017317	9.330LA H10XL-F00-0-M SO3000
R928017319	9.330LA H3XL-F00-0-M SO3000
R928017318	9.330LA H6XL-F00-0-M SO3000
R928017374	9.500LA H20XL-A00-0-M SO3000
R928048442	9.60 G25-A00-0-V-0024
R928017408	9.660LA H10XL-A00-0-M SO3000
R928017416	9.660LA H10XL-F00-0-M SO3000
R928017407	9.660LA H20XL-A00-0-M SO3000
R928017417	9.660LA H6XL-F00-0-M SO3000
R928022726	99.183677 MB15-C00-0-M
R928005636	1.0045 G25-A00-0-M
R928005639	1.0045 H10XL-A00-0-M
R928005640	1.0045 H20XL-A00-0-M
R928005672	1.0060 G25-A00-0-M

continued on next page

Technical Data (continued)

Part Number	Description
R928037731	10.2600LA H10XL-A00-0-M SO3000
R928035218	10.330LA H10XL-A00-B6-M SO3000
R928016662	16.7400/R H20XL-S00-0-M
R928016677	16.7500/S H10XL-S00-0-M
R928016673	16.7500/S H3XL-S00-0-M
R928016729	16.8304/X H6XL-S00-0-V
R928016950	16.9600/T H6XL-E00-0-M
R928006374	2.0020 G25-A00-0-M
R928006755	2.0100 H10XL-A00-0-M
R928006764	2.0100 H10XL-B00-0-M
R928006861	2.0250 H3XL-A00-0-M
R928006871	2.0250 H6XL-B00-0-M
R928025500	2.90 H10XL-C00-0-M
R902603298	62.0056K H20XL-J00-0-V
R902603243	62.0125K H20XL-J00-0-V
R902603004	62.0180K H20XL-J00-0-V
R928028556	84.60 H10XL-S00-4-M

Part Number	Description
R928017144	9.110LA H10XL-A00-0-M SO3000
R928017154	9.110LA H3XL-F00-0-M SO3000
R928017145	9.110LA H6XL-A00-0-M SO3000
R928017210	9.160LA H10XL-A00-0-M SO3000
R928017220	9.160LA H3XL-F00-0-M SO3000
R928017243	9.240LA H10XL-A00-0-M SO3000
R928017251	9.240LA H10XL-F00-0-M SO3000
R928017253	9.240LA H3XL-F00-0-M SO3000
R928017276	9.280LA H10XL-A00-0-M SO3000
R928017275	9.280LA H20XL-A00-0-M SO3000
R928017277	9.280LA H6XL-A00-0-M SO3000
R928017085	9.30LA H20XL-F00-0-M SO3000
R928017088	9.30LA H3XL-F00-0-M SO3000
R928017309	9.330LA H10XL-A00-0-M SO3000
R928017111	9.60LA H10XL-A00-0-M SO3000
R928017119	9.60LA H10XL-F00-0-M SO3000

Hydro-electric pressure switch HED 8



Hydro-electric pressure switches of model HED 8 are piston-type pressure switches used to monitor a pressure value in a circuit. As a pressure value is achieved (rising or falling), the HED micro-switch changes state, which can be used as an indicator for the next sequential operation or shutdown. The HED microswitch is not a current carrying device; it is an actuator/sensor.

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToaccess

Features

- · For subplate mounting
- · For in-pipe installation
- As vertical stacking element, position of ports to DIN 24340 form A
- · In horizontal stacking assemblies
- · Five pressure stages, optional
- · Adjustment option:
 - Rotary knob with scale
- Cable socket with circuitry (indicator lamp) separate order

Technical Data

Operating pressure	p _{max}	bar (PSI)	630 (9100)
Switching frequency		cycles/hour	7200

Detailed information:

Rotary angle sensor VT-SWA-1



Rotary angle sensor for SYDFE. systems with integrated electronics (complete kit with sensor and evaluation electronics, magnet carrier and parts to be installed)

For complete engineering and design information: GoTo www.boschrexroth-us.com/GoToaccess

Features

- Suitable for use in SYDFEE and SYDFEC systems (systems with integrated electronics) for sensing the swivel angle of the A10V(S)O...DFE... pump and conversion of the measured value into an electrical signal
- · Contact-free acquisition of a rotary angle using a Hall-effect sensor
- · Consisting of magnet carrier and sensor with integral electronics in the housing

Detailed information:

• RE30268

Technical Data

Operating voltage	U o	V	-10.0 (reference voltage)
Current consumption	1	mA	~25
Measuring range	α	°C	±18
Output signal	U	V	-2 to -8

Subplates, Bolt kits, and Electrical connectors – applicable to GoTo directional valves

GoTo www.boschrexroth-us.com/GoToaccess

Electrical connectors

Material No.	Description	Notes	Explanation	
R901017011	3P Z4 M SW	Metric, PG thd	right angle connector, color black*	
R901017022	3P Z5L M12 240V	Metric, PG thd	right angle connector w/ light, color black*	
R901017026	3P Z5L1 M24V SPEZ	M16 X 1.5	right angle connector w/ light and zener diode protection, color black*	
R901017025	3P RZ5 M24 240V	Metric, PG thd	right angle connector w/ rectifier, color black*	
R900011039	3P Z45 B GDM201	NPT, 1/2" thd	right angle connector, color black*	
R900057453	3P Z55L 12-240V	NPT, 1/2" thd	right angle connector w/ light, color black*	
R900842566	3P RZ55 24	NPT, 1/2" thd	right angle connector w/ rectifier, color black*	
R900057455	3P RZ55L 24-2 SPEZ&	NPT, 1/2" thd	right angle connector w/ rectifier and light, color black*	
R900064381	4P Z24 M12X1	M12 X 1	straight plug cable (3m) for HM20, QM proximity switch*	
R900021267	7P Z31 BF6-3PG11DSPEZ	Metric, PG thd	7-pin plastic, solder	
R900223890	7P Z31 BF63PG11M SPEZ	PG11	Straight metal connector, solder contacts	

R978713598 MS CONNECTOR FOR OF	OBE VALVES
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^{*} See RE08006

Bolt kits

Material No.	Description	Notes	Explanation
R978833365	BK-(4) 10X24X2	WE6, WRAB(E)6, WRA(E)6, WRE(E)6	Bolt Kit; 4pcs of 10-24 x 2" long bolts
R978833366	BK-(4) 1/4X20X1-1/2	WE10, WRA(E)10, WRE(E)10	Bolt Kit; 4pcs of 1/4-20 x 1-1/2" long bolts
R978833367	BK-(4) 1/4X20X1-3/4	WEH10, WRZ(H)10, WRL(E)10	Bolt Kit; 4pcs of 1/4-20 x 1-3/4" long bolts
R978833395	BK-(4) 3/8X16X2-1/4- (2)1/4X20X2-1/4 SHCS	WEH16, WRZ(H)16, WRL(E)16	Bolt Kit; 4pcs of 3/8-16 x 2-1/4" + 2pcs of 1/4-20x 2-1/4" long bolts
R978833387	BK-(6) 1/2X13X2-1/2	WEH22, 25, WRZ(H)25, WRL(E)25	Bolt Kit; 6pcs of 1/2-13 x 2-1/2" long bolts

Subplates

Material No.	Description	Notes	Port sizes	Reference
R900341065	G 341/12	subplates to ISO 4401-3 - Size 6	NFPA D03 pattern; SAE-6 ports	RA45052
R900455128	G 342/12	subplates to ISO 4401-3 - Size 6	NFPA D03 pattern; SAE-8 ports	RA45052
R900503115	G 646/12	subplates to ISO 4401-5 - Size 10	NFPA D05 pattern; SAE-10 ports	RA45054

Coils & handnuts – applicable to *GoTo* directional valves

GoTo www.boschrexroth-us.com/GoToaccess

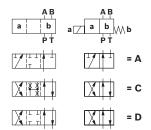
Coils & handnuts

Material No.	SAP/P	ortal Description	Notes	Explanation
R978839349	Coil Assembly	WZ45-4-L110V50HZ+ 120V60HZ	110/120 vac	For use with DIN connection WE6-6X/EWK4* valves
R900545268	Valve Solenoid	WZ45-4- MVN110V50/60+&	110/120 vac	For use with WE6/EW110K4
R900020175	Solenoid Coil	WZ45-4-L110V- 50/60HZ&	110/120 vac	For use with WE6/EW110K4
R900021464	Solenoid Coil	WZ45-3 110V &	110/120 vac	For use with central box WE6-6X/EWD* valves
R900020169	Nut	WZ45M.N. SPEZ	all AC "WZ45"	Handnut for use with standard "N9" option AC valves, WE6-6X/EW
R901333224	Solenoid Coil	45-K4K-30G12 01	12 vdc	For use with DIN connection WE6-6X/EGK4* valves
R900021462	Solenoid Coil	GZ45-3 12V	12 vdc	For use with central box WE6-6X/EGD* valves
R900021389	Solenoid Coil	GZ45-4 24V	24 vdc	For use with DIN connection WE6-6X/EGK4* valves
R900021463	Solenoid Coil	GZ45-3 24V	24 vdc	For use with central box WE6-6X/EGD* valves
R900029571	Nut	GZ45-01M.N. SPEZ	all DC "GZ45"	Handnut for use with standard "N9" option DC valves, WE6-6X/EG
R900219602	Solenoid Coil	WZ65-3 110V-50/ &	110/120 vac	For use with central box WE10-4X/CWD* valves
R900019816	Solenoid Coil	WZ65-4-L110V- 50/60HZ&	110/120 vac	For use with DIN connection WE10-3X/CWK4* valves
R900019801	Solenoid Coil	WZ65-0-L110V- 50/60HZ&	110/120 vac	For use with WE10-3X/CW110 D box
R900019840	Nut	WZ65LM.VN. SPEZ	all AC "WZ65"	Handnut for use with standard "N9" option AC valves, WE10-*X/CW
R900207929	Solenoid Coil	GZ63-3 12V	12 vdc	For use with central box WE10-4X/CGD* valves
R900019792	Solenoid Coil	GZ63-4 12V K4K	12 vdc	For use with DIN connection WE10-3X/CGK4* valves
R900217812	Solenoid Coil	GZ63-3 24V	24 vdc	For use with central box WE10-4X/CGD* valves
R900019793	Solenoid Coil	GZ63-4 24V	24 vdc	For use with DIN connection WE10-3X/CGK4* valves
R900019841	Nut	GZ63 M.VN.3K	all DC "GZ63"	Handnut for use with standard "N9" option DC valves, WE10-*X/CW
R901333224	Solenoid Coil	45-K4K-30G12 01	12 vdc	For use with DIN connection SED6+10 & SEW6+10 K4* valves
R900021389	Solenoid Coil	GZ45-4 24V	24 vdc	For use with DIN connection SED6+10 & SEW6+10 K4* valves
R900021392	Solenoid Coil	GZ45-4 96V	96 vdc	For use with DIN connection SED6+10 & SEW6+10 K4* valves
R900029574	Nut	GZ45C-01 SPEZ	all DC "GZ45"	Handnut for use with standard "N9" option DC valves, SEW6+10/SED6+10

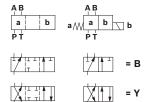
Symbols for directional control valves

2 Position - 3 and 4 Way Valves

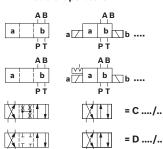
Operator "A" Spring Return



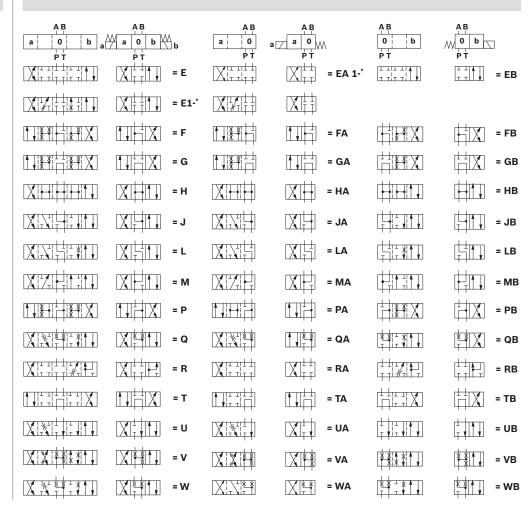
Operator "B" Spring Return



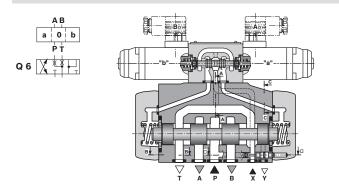
Double Operators



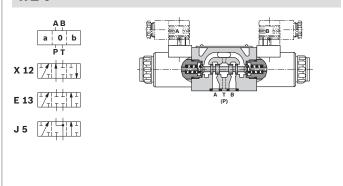
Position - 4 Way Valves and 2 Position - 4 Way Valves



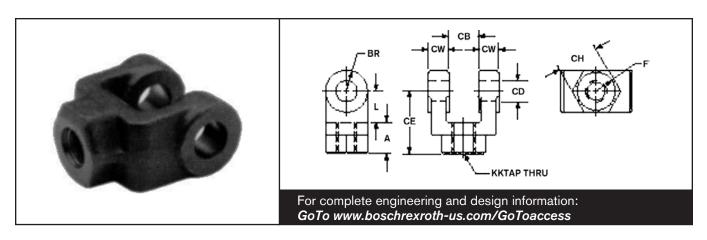
WEH 22



WE 6

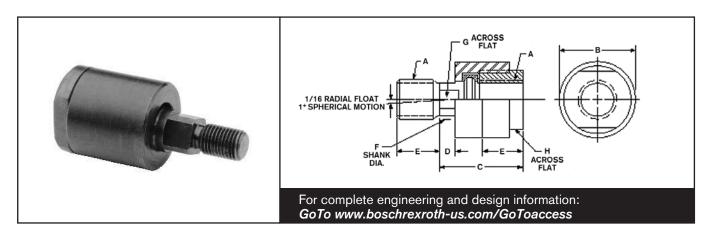


Rod clevises for cylinders (top) Alignment couplers for cylinders (bottom)



Rod clevises for	Rod clevises for CDT										
Part No.	СВ	CD	CE	СН	CW	F	L	Α	KK	ER	
R978935057	0.765	1/2	1-1/2	1	1/2	1	3/4	3/4	7/16 – 20	1/2	
R978935058	1.265	3/4	2-3/8	1-1/4	5/8	1-1/4	1-1/4	1-1/8	3/4 – 16	3/4	
R978935059	1.265	3/4	2-1/8	1-3/8	5/8	1-1/4	1	1-1/8	3/4 – 16	3/4	
R978935060	1.515	1	3-1/8	1-1/2	3/4	1-1/2	1-1/2	1-5/6	1 – 14	1	
R978935061	2.032	1-3/8	4-1/8	2	1	2	2-1/8	2	1-1/4 - 12	1-3/8	
R978935062	2.531	1-3/4	4-1/2	2-3/8	1-1/4	2-3/8	2-1/4	2-1/4	1-1/2 - 12	1-3/4	

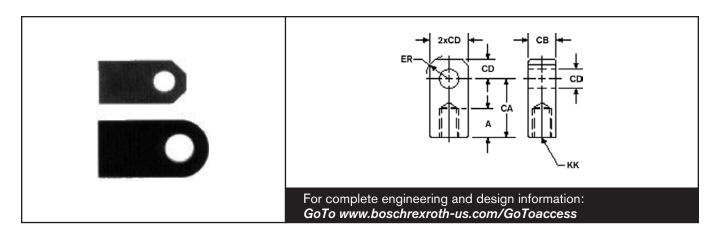
Note: Pins must be ordered separately, see Page 151 for dimensions and part numbers.



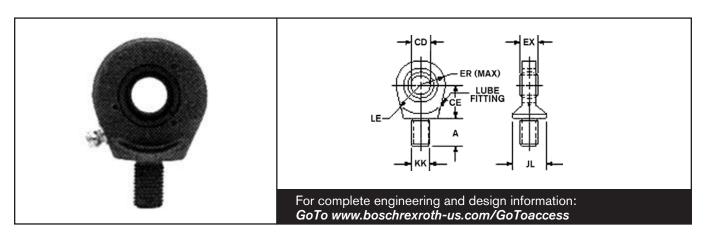
Alignment coupl	Alignment couplers for CDT									
Part No.	Α	В	С	D	E	F	0	Н	Max. Pull at Yield	
R978935082	7/16-20	1-1/4	2	1/2	3/4	5/8	9/16	1-1/8	10,000	
R978935080	1/2 - 20	1-1/4	2	1/2	3/4	5/8	9/16	1-1/8	14,000	
R978935083	3/4- 16	1-3/4	2-5/16	5/16	1-1/8	3-1/32	7/8	1-1/2	34,000	
R978935085	1 - 14	2-1/2	2-15/16	1/2	1-5/8	1-3/8	1-1/4	2-1/4	64,000	
R978935086	1-1/4- 12	2-1/2	2-15/16	1/2	1-5/8	1-3/8	1-1/4	2-1/4	64,000	
R978935087	1-1/2- 12	3-1/4	4-3/8	13/16	2-1/4	1-3/4	1-1/2	3	120,000	

See index Page 219 for GoTo product and accessory part numbers.

Rod eyes for cylinders (bottom) Spherical rod eyes for cylinders (top)

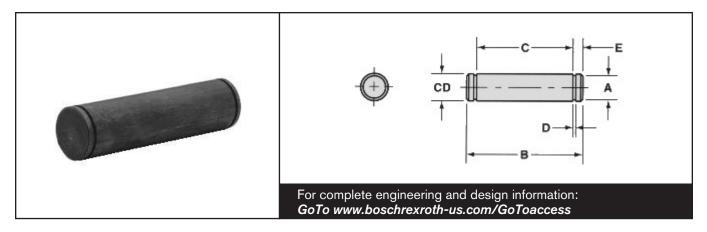


Rod eyes for CD	Rod eyes for CDT										
Part No.	Α	CA	СВ	CD	ER	KK					
R978935066	3/4	1-1/2	3/4	1/2	5/8	7/16 – 20					
R978935067	1-1/8	2-1/16	1-1/4	3/4	7/8	3/4 – 16					
R978935068	1-5/8	2-13/16	1-1/2	1	1-3/16	1 – 14					
R978935070	2	3-7/16	2	1-3/8	1-9/16	1-1/4 – 12					
R978935071	2-1/4	4	2-1/2	1-3/4	2	1-1/2 - 12					



Spherical rod eyes for CDT								
Part No.	CD -0.0005	Α	CE	EX	ER	LE	KK	JL
R978935075	0.500	1-1/16	7/8	7/16	7/8	3/4	7/16 – 20	7/8
R978935076	0.750	1	1-1/4	21/32	1-1/4	1-1/16	3/4 - 16	1-5/16
R978935077	1.000	1-1/2	1-7/8	7/8	1-3/8	1-7/16	1 – 14	1-1/2
R978935078	1.375	2	2-1/8	1-3/16	1-13/16	1-7/8	1-1/4 - 12	2
R978935079	1.750	2-1/8	2-1/2	1-17/32	2-3/16	2-1/8	1-1/2 - 12	2-1/4

Pivot pins for cylinders & C-rings for pivot pins



	C-Ring	gs						
Part No.	CD	Α	В	С	D	E	Part No.	CD
R978935026	0.500	0.468	2.094	1.875	0.041	0.109	R978000049	0.500
R978935027	0.750	0.704	2.875	2.625	0.048	0.125		
R978935028	1.000	0.940	3.375	3.125	0.048	0.125	R978000190	1.000
R978935029	1.375	1.291	4.485	4.187	0.056	0.149	R978000191	1.375
R978935030	1.750	1.650	5.547	5.188	0.068	0.180		

Note: When ordering pivot pins, two C-rings must also be ordered for each pin. Pivot pins do not automatically ship with C-rings. Additional C-rings are available in any quantity.

Bodies & Mounting hardware – applicable to *GoTo* compact hydraulics

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Bodies

Material No.	SAP / Portal Description	Notes	Explanation
R978032340	CB08-2N-A/S06	08-2 body, SAE-6, 3000 psi	For all Sz8, 2-ported cartridges
R978032344	CB08-2N-D/S06	08-2 body, SAE-6, 5000 psi	For all Sz8, 2-ported cartridges
R978032341	CB08-3N-A/S06	08-3 body, SAE-6, 3000 psi	For all Sz8, 3-ported cartridges, except short form (port 3 pilot)
R978032345	CB08-3N-D/S06	08-3 body, SAE-6, 5000 psi	For all Sz8, 3-ported cartridges, except short form (port 3 pilot)
R978032348	CB10-2N-A/S08	10-2 body, SAE-8, 3000 psi	For all Sz10, 2-ported cartridges
R978032352	CB10-2N-D/S08	T-11A body, SAE-8, 5000 psi	For all T11A counterbalance & PO check carts
R978032349	CB10-3N-A/S08	10-3 body, SAE-8, 3000 psi	For all Sz10, 3-ported cartridges, except short form (port 3 pilot)
R978032353	CB10-3N-D/S08	10-3 body, SAE-8, 5000 psi	For all Sz10, 3-ported cartridges, except short form (port 3 pilot)
R978032351	CB10-4N-A/S08	10-4 body, SAE-8, 3000 psi	For all Sz10, 4-ported cartridges
R978032355	CB10-4N-D/S08	10-2 body, SAE-8, 5000 psi	For all Sz10, 2-ported cartridges
R978032360	CB16-2N-A/S12	16-2 body, SAE-12, 3000 psi	For all Sz16, 2-ported cartridges
R978032362	CB16-2N-D/S12	10-4 body, SAE-8, 5000 psi	For all Sz10, 4-ported cartridges
R978041747	CBDT-11A-A/S08	T-11A dual body, SAE-8, 3000 psi	For all T11A counterbalance & PO check carts
R978041748	CBDT-11A-D/S08	T-11A dual body, SAE-8, 5000 psi	For all T11A counterbalance & PO check carts
R978041749	CBDT-2A-A/S10	T-2A dual body, SAE-10, 3000 psi	For all T2A counterbalance & PO check carts
R978041750	CBDT-2A-D/S10	T-2A dual body, SAE-10, 5000 psi	For all T2A counterbalance & PO check carts
R978012829	CBT-11A-A/S08	T-11A body, SAE-8, 3000 psi	For all T11A counterbalance & PO check carts
R978012838	CBT-11A-D/S08	16-2 body, SAE-12, 5000 psi	For all Sz16, 2-ported cartridges
R978041744	CBT-2A-A/S10	T-2A body, SAE-10, 3000 psi	For all T2A counterbalance & PO check carts
R978041745	CBT-2A-D/S10	T-2A body, SAE-10, 5000 psi	For all T2A counterbalance & PO check carts

Mounting Hardware

R987281101	BOLT KIT K-2221A MODULE	Single module bolt kit, M6	RA00159/10.11, RA18301-90/03.11, pg. 3
R933003730	KR-FF-M6-ED-06 K-2215	Mounting bracket kit, M6	RA00159/10.11, RA18301-90/03.11, pg. 3
R933003722	KR-SC-M8-ED-06-02E K-2202	2 section tie rod kit, M8	RA00159/10.11, RA18301-90/03.11, pg. 2
R933003723	KR-SC-M8-ED-06-03E K-2203	3 section tie rod kit, M8	RA00159/10.11, RA18301-90/03.11, pg. 2
R933003724	KR-SC-M8-ED-06-04E K-2204	4 section tie rod kit, M8	RA00159/10.11, RA18301-90/03.11, pg. 2

Coils – applicable to **GoTo** compact hydraulics

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Coils

Material No.	SAP / Portal Description	Notes	Explanation	
R933002776	C31-01-OB-12DC-20W-H- D12.7271-0450	12 VDC, DIN plug	Use on EDB-Y bankable directional valves	
R933002777	2777 C31-01-OC-24DC-20W-H- 24 VDC, DIN plug Use on EDB-Y bankable direction D12.7271-0451		Use on EDB-Y bankable directional valves	
R933002778	33002778 C31-07-OB-12DC-20W-H- D12.7271-0452 12 VDC, Deutsch DT04-2P Use on EDB-Y bankable direct		Use on EDB-Y bankable directional valves	
R933002779	C31-07-OC-24DC-20W-H- D12.7271-0453	24 VDC, Deutsch DT04-2P	Use on EDB-Y bankable directional valves	
R933000044	C36-01-OB-12DC-26W-H- D14271-0510	12 VDC, DIN plug	Use on ED1 / EDB-Z bankable directional valves	
R933000053	C36-01-OC-24DC-26W-H- D14271-0511	24 VDC, DIN plug	Use on ED1 / EDB-Z bankable directional valves	
R933000048	C36-07-OB-12DC-26W-H- D14271-0510207	12 VDC, Deutsch DT04-2P	Use on ED1 / EDB-Z bankable directional valves	
R933000058	C36-07-OC-24DC-26W-H- D14271-0511207	24 VDC, Deutsch DT04-2P	Use on ED1 / EDB-Z bankable directional valves	
R933000026	C45-01-OB-12DC-33W-H- D19271-0417	12 VDC, DIN plug	Use on ED2 bankable directional valves	
R933000034	C45-01-OC-24DC-33W-H- D19271-0418	24 VDC, DIN plug	Use on ED2 bankable directional valves	
R933000030	C45-07-OB-12DC-33W-H- D19271-041717	12 VDC, Deutsch DT04-2P	Use on ED2 bankable directional valves	
R933000032	C45-07-OC-24DC-33W-H- D19271-041719	24 VDC, Deutsch DT04-2P	Use on ED2 bankable directional valves	
R933000092	D15-01-OB-12DC-36W-H- D23271-8020210	12 VDC, DIN plug	Use on ED4-P and EDC bankable directional valves	
R933000093	D15-01-OC-24DC-36W-H- D23271-8020220	24 VDC, DIN plug	Use on ED4-P and EDC bankable directional valves	
R933000094	D15-07-OB-12DC-36W-H- D23271-8020230	12 VDC, Deutsch DT04-2P	Use on ED4-P and EDC bankable directional valves	
R933002798	D15-07-OC-24DC-36W-H- D23271-8020240	24 VDC, Deutsch DT04-2P	Use on ED4-P and EDC bankable directional valves	

Continued on next page

Coils – applicable to **GoTo** compact hydraulics (continued)

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Coils

Material No.	SAP / Portal Description	Notes	Explanation	
R901094597	S7L36DTL 24VDC 30W DIOD OD02072230OC02	24 VDC, Deutsch DT04-2P	Use on Sz10 spool cartridges	
R901094595	S7L36DTL12VDC30WDIOD CL.H OD02072230OB02	12 VDC, Deutsch DT04-2P	Use on Sz10 spool cartridges	
R934003806	S7L36HRL 110VRAC 30W CL.H OD02070130OW02	110 VRAC, DIN plug (Req. rectifying connector)	Use on Sz10 spool cartridges	
R901090824	S7L36HRL 12VDC 30W CLAS H OD02070130OB02	12 VDC, DIN plug	Use on Sz10 spool cartridges	
R901090825	S7L36HRL 24VDC 30W CLAS H OD02070130OC02	24 VDC, DIN plug	Use on Sz10 spool cartridges	
R901090821	S8.356HRL.12DC 20W CL.H OD02170130OB00	12 VDC, DIN plug	Use on all sizes of poppet cartridges & Sz8 spool cartridges	
R901083065	S8.356HRL.24DC 20W CL.H OD02170130OC00	24 VDC, DIN plug	Use on all sizes of poppet cartridges & Sz8 spool cartridges	
R901087981	S8.356HRL110RAC 20W CL.H OD02170130OW00	110 VRAC, DIN plug (Req. rectifying connector)	Use on all sizes of poppet cartridges & Sz8 spool cartridges	
R901120671	S8356DTV12DC20W DIOD CL.H OD0217223POB00	24 VDC, Deutsch DT04-2P	Use on all sizes of poppet cartridges & Sz8 spool cartridges	
R901114602	S8356DTV24DC20W DIOD CL.H OD0217223POC00	12 VDC, Deutsch DT04-2P	Use on all sizes of poppet cartridges & Sz8 spool cartridges	

Seal kits

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AZMF Seals

1510283065	ROTARY SHAFT LIP
1517010195	SEAL KIT

AZPF Seals

1517010152	SEAL KIT (BUNA)
1510283008	SHAFT SEAL (BUNA)

AZPN Seals

1510283023	ROTARY SHAFT LIP
1517010194	SEAL KIT

VPV Seal Kits

9511230597	SEAL KIT	VPV/25/32-210BAR	FKM SEALS
9511230605	SEAL KIT	VPV/16-210BAR	FKM SEALS
9511230658	SEAL KIT	VPV/45-80 210 BAR	FKM SEALS
9511230659	SEAL KIT	VPV/100-164 210 BAR	FKM SEALS

A10 service parts kits for AA10VSO series 30 and 31

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Size 28

Part Number	Description
R910915845	SEAL KIT (BUNA-N)
R910932983	SEAL KIT (VITON)
R910942158	BEARING KIT
R910947781	ROTARY GROUP RH – RIGHT HAND ROTATION
R910947782	ROTARAY GROUP LH – LEFT HAND ROTATION

Size 45

Part Number	Description
R910915885	SEAL KIT (BUNA-N)
R910932984	SEAL KIT (VITON)
R910942248	BEARING KIT
R910947730	ROTARY GROUP RH – RIGHT HAND ROTATION
R910947789	ROTARAY GROUP LH – LEFT HAND ROTATION

Size 71

Part Number	Description
R910915846	SEAL KIT (BUNA-N)
R910932985	SEAL KIT (VITON)
R910942250	BEARING KIT
R910947801	ROTARY GROUP RH – RIGHT HAND ROTATION
R910947802	ROTARAY GROUP LH – LEFT HAND ROTATION

Popular cross-over filter elements

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Part Number	Description
R928017121	9.60LA H3XL-F00-0-M SO3000
R928045173	1.1401 G40-A00-0-M
R928017483	10.110LA H10XL-A00-6-M SO3000
R928017667	10.1300LA H10XL-A00-6-M SO3000
R928017668	10.1300LA H6XL-A00-6-M SO3000
R928017506	10.160LA H10XL-A00-6-M SO3000
R928017529	10.240LA H10XL-A00-6-M SO3000
R928017552	10.330LA H10XL-A00-6-M SO3000
R928017575	10.500LA H10XL-A00-6-M SO3000
R928017598	10.660LA H10XL-A00-6-M SO3000
R928019959	16.7500/R P10-S00-0-M
R928016804	16.8700/R H10XL-S00-0-M
R928045584	2.0005 G40-A00-0-V
R928006376	2.0020 H6XL-A00-0-M
R928006699	2.0063 H3XL-A00-0-M
R928006862	2.0250 H6XL-A00-0-M
R928019029	2.56 P10-A00-0-M
R928046179	20.750 P25-S00-6-M
R928022781	4.06 P10-A00-0-M
R928028012	4.10 G200-A00-0-M
R902603750	62.0056K H10XL-J00-0-V
R928037484	80.130 H1XL-S00-0-M
R928019201	80.130 H6XL-S00-0-M
R928028010	80.30/20 P10-S00-0-V
R928028019	80.45/21 VS60-S00-0-M
R928016614	80.90 H10XL-S00-0-M
R928016612	80.90 P10-S00-0-M
R928022425	9.110LA H10XL-A00-0-V SO3000
R928017317	9.330LA H10XL-F00-0-M SO3000
R928017319	9.330LA H3XL-F00-0-M SO3000
R928017318	9.330LA H6XL-F00-0-M SO3000
R928017374	9.500LA H20XL-A00-0-M SO3000
R928048442	9.60 G25-A00-0-V-0024
R928017408	9.660LA H10XL-A00-0-M SO3000
R928017416	9.660LA H10XL-F00-0-M SO3000
R928017407	9.660LA H20XL-A00-0-M SO3000
R928017417	9.660LA H6XL-F00-0-M SO3000
R928022726	99.183677 MB15-C00-0-M
R928005636	1.0045 G25-A00-0-M

Part Number	Description
R928005639	1.0045 H10XL-A00-0-M
R928005640	1.0045 H20XL-A00-0-M
R928005672	1.0060 G25-A00-0-M
R928037731	10.2600LA H10XL-A00-0-M SO3000
R928035218	10.330LA H10XL-A00-B6-M SO3000
R928016662	16.7400/R H20XL-S00-0-M
R928016677	16.7500/S H10XL-S00-0-M
R928016673	16.7500/S H3XL-S00-0-M
R928016729	16.8304/X H6XL-S00-0-V
R928016950	16.9600/T H6XL-E00-0-M
R928006374	2.0020 G25-A00-0-M
R928006755	2.0100 H10XL-A00-0-M
R928006764	2.0100 H10XL-B00-0-M
R928006861	2.0250 H3XL-A00-0-M
R928006871	2.0250 H6XL-B00-0-M
R928025500	2.90 H10XL-C00-0-M
R902603298	62.0056K H20XL-J00-0-V
R902603243	62.0125K H20XL-J00-0-V
R902603004	62.0180K H20XL-J00-0-V
R928028556	84.60 H10XL-S00-4-M
R928017144	9.110LA H10XL-A00-0-M SO3000
R928017154	9.110LA H3XL-F00-0-M SO3000
R928017145	9.110LA H6XL-A00-0-M SO3000
R928017210	9.160LA H10XL-A00-0-M SO3000
R928017220	9.160LA H3XL-F00-0-M SO3000
R928017243	9.240LA H10XL-A00-0-M SO3000
R928017251	9.240LA H10XL-F00-0-M SO3000
R928017253	9.240LA H3XL-F00-0-M SO3000
R928017276	9.280LA H10XL-A00-0-M SO3000
R928017275	9.280LA H20XL-A00-0-M SO3000
R928017277	9.280LA H6XL-A00-0-M SO3000
R928017085	9.30LA H20XL-F00-0-M SO3000
R928017088	9.30LA H3XL-F00-0-M SO3000
R928017309	9.330LA H10XL-A00-0-M SO3000
R928017111	9.60LA H10XL-A00-0-M SO3000
R928017119	9.60LA H10XL-F00-0-M SO3000

Rineer service part kits

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BR Material #	Type of Kit	Description	
R986V02033	Spring Pack	M015 KT-SP-0150931	1 complete spring kit
R986V02035	Spring Pack	M037 KT-SP-0370936	1 complete spring kit
R986V02036	Spring Pack	M125 KT-SP-1250930	1 complete spring kit
R986V02037	Spring Pack	M125 KT-SP-1250993	1 complete spring kit
R986V04286	Service Kit	5/16 BALL CHECKS	12 pieces
R986V04287	Service Kit	M015 STD TIMING PLTS	2 pieces
R986V04288	Service Kit	M037 C62 TIMING PLTS	2 pieces
R986V04289	Service Kit	M125 PC TIMING PLTS	2 pieces
R986V02047	Service Kit	VANES 1250961PC	1 complete vane & spring kit
R986V02038	Service Kit	VANES V0150930	1 complete vane & spring kit
R986V02041	Service Kit	VANES V0371914PC	1 complete vane & spring kit
R986V02050	Service Kit	VANES V1251962-2S	1 complete vane & spring kit
R986V01643	Seal Kit	M015 KT-SE-0150004	1 complete seal kit
R986V01651	Seal Kit	M015 KT-SE-0150940	1 complete seal kit
R986V01687	Seal Kit	M037 KT-SE-0370973	1 complete seal kit
R986V01689	Seal Kit	M037 KT-SE-0370979	1 complete seal kit
R986V01690	Seal Kit	M037 KT-SE-0370982	1 complete seal kit
R986V01696	Seal Kit	M037 KT-SE-0371917	1 complete seal kit
R986V01747	Seal Kit	M125 KT-SE1250997	1 complete seal
R986V04301	Seal Kit	O-RINGS 2-160 NBR	12 pieces

Page Number		Description		Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
	Pumps a	nd Motors				
	Variable Di	splacement Pumps				
7	new A A10V O	28 DFR /52L-VRC64N00		R902504637	3	10
7	new A A10V O	28 DFR /52R-VRC64N00		R902504639	3	10
7	new A A10V O	28 DFR1 /52R-VSC64N00		R902504642	3	10
7	new A A10V O	28 DFR1 /52L-VRC64N00		R902504647	3	10
7	new A A10V O	28 DFR1 /52L-VSC64N00		R902504644	3	10
7	new A A10V O	28 DFR1 /52R-VRC64N00		R902504651	3	10
7	new A A10V O	28 DR /52L-VRC64N00		R902504634	3	10
7	new A A10V O	28 DR /52R-VRC64N00		R902504645	3	10
7	new A A10V O	45 DFR /52L-VSC64N00	*GO2*	R902504308	3	10
7	new A A10V O	45 DFR /52R-VSC62N00		R902504660	3	10
7	new A A10V O	45 DFR /52R-VUC62N00		R902504662	3	10
7	new A A10V O	45 DFR1 /52L-VSC64N00		R902504652	3	10
7	new A A10V O	45 DFR1 /52L-VUC64N00		R902504653	3	10
7	new A A10V O	45 DFR1 /52R-VSC62N00		R902504663	3	10
7	new A A10V O	45 DFR1/52R-VUC62N00		R902504664	3	10
7	new A A10V O	45 DR /52R-VSC62N00		R902504666	3	10
7	new A A10V O	45 DR /52R-VSC64N00		R902504658	3	10
7	new A A10V O	45 DR /52R-VUC62N00		R902504668	3	10
7	new A A10V O	45 DR /52L-VUC64N00		R902504656	3	10
7	new A A10V O	45 DR/52L-VSC64N00		R902504654	3	10
7	new A A10V O	60 DFR /52L-VSC62K68		R902504821	3	10
7	new A A10V O	60 DFR /52L-VSC61N00		R902504690	3	10
7	new A A10V O	60 DFR /52L-VSC62K04		R902504803	3	10
7	new A A10V O	60 DFR /52L-VSC62N00		R902504746	3	10
7	new A A10V O	60 DFR /52L-VUC61N00		R902504698	3	10
7	new A A10V O	60 DFR /52L-VUC62N00		R902504755	3	10
7	new A A10V O	60 DFR /52L-VUD62N00		R902504736	3	10
7	new A A10V O	60 DFR /52L-VWC61N00		R902504721	3	10
7	new A A10V O	60 DFR /52L-VWC62N00		R902504776	3	10
7	new A A10V O	60 DFR /52L-VWD61N00		R902504709	3	10
7	new A A10V O	60 DFR /52L-VWD62N00		R902504765	3	10
7	new A A10V O	60 DFR /52R-VSC62K04		R902504800	3	10
7	new A A10V O	60 DFR /52R-VSC62K68		R902504820	3	10
7	new A A10V O	60 DFR /52R-VSC62N00		R902504743	3	10
7	new A A10V O	60 DFR /52R-VSD62K68		R902504810	3	10
7	new A A10V O	60 DFR /52R-VSD62N00		R902504727	3	10
7	new A A10V O	60 DFR /52R-VUC61N00		R902504697	3	10
7	new A A10V O	60 DFR /52R-VUD62N00		R902504733	3	10
7	new A A10V O	60 DFR /52R-VWC61N00		R902504717	3	10
7	new A A10V O	60 DFR /52R-VWC62N00		R902504773	3	10
7	new A A10V O	60 DFR /52R-VWD61N00		R902504705	3	10
7		60 DFR /52R-VWD62N00		R902504761	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
7	new A A10V O 60 DFR/52L-VSD62K04	R902504790	3	10
7	new A A10V O 60 DFR/52L-VSD62K68	R902504813	3	10
7	new A A10V O 60 DFR/52L-VUD61N00	R902504679	3	10
7	new A A10V O 60 DFR/52R-VSC61N00	R902504687	3	10
7	new A A10V O 60 DFR/52R-VSD62K04	R902504787	3	10
7	new A A10V O 60 DFR/52R-VUD61N00	R902504675	3	10
7	new A A10V O 60 DFR1 /52L-VSC62K68	R902504818	3	10
7	new A A10V O 60 DFR1 /52L-VSC62K04	R902504797	3	10
7	new A A10V O 60 DFR1 /52L-VSD61N00	R902504669	3	10
7	new A A10V O 60 DFR1 /52R-VSC62K04	R902504802	3	10
7	new A A10V O 60 DFR1 /52R-VSD62K68	R902504812	3	10
7	new A A10V O 60 DFR1/52L-VSC61N00	R902504692	3	10
7	new A A10V O 60 DFR1/52L-VSC62N00	R902504748	3	10
7	new A A10V O 60 DFR1/52L-VSD62K68	R902504808	3	10
7	new A A10V O 60 DFR1/52L-VSD62N00	R902504728	3	10
7	new A A10V O 60 DFR1/52L-VUC61N00	R902504700	3	10
7	new A A10V O 60 DFR1/52L-VUD61N00	R902504682	3	10
7	new A A10V O 60 DFR1/52L-VUD62N00	R902504738	3	10
7	new A A10V O 60 DFR1/52L-VWC61N00	R902504723	3	10
7	new A A10V O 60 DFR1/52L-VWC62N00	R902504778	3	10
7	new A A10V O 60 DFR1/52L-VWD61N00	R902504712	3	10
7	new A A10V O 60 DFR1/52L-VWD62N00	R902504768	3	10
7	new A A10V O 60 DFR1/52R-VSC61N00	R902504689	3	10
7	new A A10V O 60 DFR1/52R-VSC62N00	R902504745	3	10
7	new A A10V O 60 DFR1/52R-VSD62K04	R902504789	3	10
7	new A A10V O 60 DFR1/52R-VUC62N00	R902504753	3	10
7	new A A10V O 60 DFR1/52R-VUD61N00	R902504678	3	10
7	new A A10V O 60 DFR1/52R-VUD62N00	R902504735	3	10
7	new A A10V O 60 DFR1/52R-VWC61N00	R902504720	3	10
7	new A A10V O 60 DFR1/52R-VWC62N00	R902504775	3	10
7	new A A10V O 60 DFR1/52R-VWD61N00	R902504708	3	10
7	new A A10V O 60 DFR1/52R-VWD62N00	R902504764	3	10
7	new A A10V O 60 DR /52L-VSC61N00	R902504695	3	10
7	new A A10V O 60 DR /52L-VSC62K68	R902504824	3	10
7	new A A10V O 60 DR /52L-VSC62N00	R902504751	3	10
7	new A A10V O 60 DR /52L-VSD62N00	R902504732	3	10
7	new A A10V O 60 DR /52L-VUC61N00	R902504703	3	10
7	new A A10V O 60 DR /52L-VUC62N00	R902504759	3	10
7	new A A10V O 60 DR /52L-VUD62N00	R902504741	3	10
7	new A A10V O 60 DR /52L-VWC61N00	R902504726	3	10
7	new A A10V O 60 DR /52L-VWC62N00	R902504781	3	10
7	new A A10V O 60 DR /52L-VWD61N00	R902504715	3	10
7	new A A10V O 60 DR /52L-VWD62N00	R902504771	3	10
7	new A A10V O 60 DR /52R-VSC62N00	R902504749	3	10
7	new A A10V O 60 DR /52R-VSD62N00	R902504730	3	10
7	new A A10V O 60 DR /52R-VUC61N00	R902504701	3	10
7	new A A10V O 60 DR /52R-VUC62N00	R902504757	3	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
7	new	A A10V O 60 DR /52R-VUD62N00	R902504739	3	10
7	new	A A10V O 60 DR /52R-VWC61N00	R902504724	3	10
7	new	A A10V O 60 DR /52R-VWC62N00	R902504779	3	10
7	new	A A10V O 60 DR /52R-VWD61N00	R902504713	3	10
7	new	A A10V O 60 DR /52R-VWD62N00	R902504769	3	10
7	new	A A10V O 60 DR /52L-VSC62K04	R902504806	3	10
7	new	A A10V O 60 DR /52R-VSC61N00	R902504693	3	10
7	new	A A10V O 60 DR /52R-VSC62K04	R902504804	3	10
7	new	A A10V O 60 DR /52R-VSC62K68	R902504822	3	10
7	new	A A10V O 60 DR /52R-VSD61N00	R902504671	3	10
7	new	A A10V O 60 DR /52R-VSD62K68	R902504814	3	10
7	new	A A10V O 60 DR/52L-VSD61N00	R902504673	3	10
7	new	A A10V O 60 DR/52L-VSD62K04	R902504793	3	10
7	new	A A10V O 60 DR/52L-VSD62K68	R902504816	3	10
7	new	A A10V O 60 DR/52L-VUD61N00	R902504685	3	10
7	new	A A10V O 60 DR/52R-VSD62K04	R902504791	3	10
7	new	A A10V O 85 DFR /52L-VUC61N00	R902504835	3	10
7	new	A A10V O 85 DFR /52R-VUC61N00	R902504834	3	10
7	new	A A10V O 85 DFR1/52L-VUC61N00	R902504832	3	10
7	new	A A10V O 85 DFR1/52L-VUC62N00	R902504826	3	10
7	new	A A10V O 85 DR /52R-VUC61N00	R902504838	3	10
7	new	A A10V O 85 DR /52L-VUC61N00	R902504836	3	10
7	new	A A10V O 85 DR /52R-VUC62N00	R902504830	3	10
7	new	A A10V O 85 DR/52L-VUC62N00	R902504828	3	10
7	new	A A10VSO 18 DFR /31R-VKC62N00	R902502736	3	10
7		A A10VSO 71 DR /31R-VPA42N00	R902502988	3	10
7		A A10VSO 71 DRG /31R-PPA12K01	R902502989	3	10
7		A A10VSO100 DFR1/31R-VPA12N00	R902502996	3	10
7		A A10VSO140 DFR1/31R-VPB12N00	R902503000	3	10
7		A A10V O 28 DFR /31L-VSC62N00	R902504304	3	10
7		A A10V O 28 DFR /31R-VSC62N00	R902502726	3	10
7		A A10V O 28 DFR /52L-VSC64N00	R902504312	3	10
7		A A10V O 28 DFR /52R-VSC64N00	R902502740	3	10
7		A A10V O 28 DFR1/31R-VSC62N00	R902502735	3	10
7		A A10V O 28 DR /52L-VSC64N00	R902504317	3	10
7		A A10V O 28 DR /52R-VSC64N00	R902504314	3	10
7		A A10V O 45 DFR /31L-VUC62N00	R902504295	3	10
7		A A10V O 45 DFR /31R-VSC62K01	R902502728	3	10
7		A A10V O 45 DFR /31R-VSC62N00	R902502703	3	10
7		A A10V O 45 DFR /52L-VSC64N00	R902502739	3	10
7		A A10V O 45 DFR /52L-VUC64N00	R902504305	3	10
7		A A10V O 45 DFR /52R-VSC64N00	R902401405	3	10
7		A A10V O 45 DFR /52R-VUC64N00	R902504309	3	10
7		A A10V O 45 DFR1/31L-VSC62N00	R910910727	3	10
7		A A10V O 45 DFR1/52R-VSC64N00	R902502738	3	10
7		A A10V O 45 DFR1/52R-VUC64N00	R902504306	3	10
7		A A10V O 45 DR /52R-VUC64N00	R902504310	3	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
7		A A10V O 45 DRG /31L-VSC62N00	R902504296	3	10
7		A A10V O 60 DFR /52R-VSD61N00	R902504320	3	10
7		A A10V O 60 DFR1/52L-VSD62K04	R902504292	3	10
7		A A10V O 60 DFR1/52R-VSD61N00	R902502753	3	10
7		A A10V O 60 DFR1/52R-VSD62N00	R902504316	3	10
7		A A10V O 60 DFR1/52R-VUC61N00	R902504319	3	10
7		A A10V O 71 DFR /31L-VSC91N00	R902502700	3	10
7		A A10V O 71 DFR /31L-VSC92N00	R902502710	3	10
7		A A10V O 71 DFR /31R-VSC92K68	R902502697	3	10
7		A A10V O 71 DFR /31R-VSC92N00	R902502698	3	10
7		A A10V O 71 DFR1/31R-VSC94N00	R902504299	3	10
7		A A10V O 71 DR /31R-VSC92N00	R902502711	3	10
7		A A10V O 71 DRG /31R-VSC92K68	R902502723	3	10
7		A A10V O 85 DFR /52L-VUC62N00	R902504326	3	10
7		A A10V O 85 DFR /52R-VUC62N00	R902504322	3	10
7		A A10V O 85 DFR1/52R-VUC61N00	R902501434	3	10
7		A A10V O 85 DFR1/52R-VUC62N00	R902504330	3	10
7		A A10V O100 DFR /31L-VUC62N00	R902504293	3	10
7		A A10V O100 DFR /31R-VUC62K07	R902504300	3	10
7		A A10V O100 DFR /31R-VUC62N00	R902504294	3	10
7		A A10V O100 DFR1/31L-VUC61N00	R902503597	3	10
7		A A10V O100 DFR1/31R-VUC62K07	R902504303	3	10
7		A A10VO140 DFR /31L-VSD62N00	R902504303	3	10
7		A A10VO140 DFR /31L-VSD62N00	R902504324	3	10
7		A A10VO140 DFR /31K-VSD62N00		_	
7			R902504333	3	10
-		A A10VO140 DR /31R-VSD62N00	R902504331	3	10
7		A A10VSO 10 DFR /52R-VKC64N00 E	R902476345	3	10
7		A A10VSO 18 DFR /31R-VKC62N00	R910930740	3	10
7		A A10VSO 18 DFR /31R-VSC62N00	R902503236	3	10
7		A A10VSO 18 DFR /31R-VUC62N00	R902504298	3	10
7		A A10VSO 18 DR /31R-VKC62N00	R902502702	3	10
7		A A10VSO 18 DRG /31R-VKC62N00	R902502752	3	10
7		A AA10VSO 28 DFR /31R-VKC62K01	R902502185	3	10
7	new	A AA10VSO 28 DFR /31R-VKC62N00	R902502732	3	10
7		A AA10VSO 28 DR /31R-VKC62N00	R902401464	3	10
7		A AA10VSO 28 DRG /31L-VSC62N00	R902502364	3	10
7		A AA10VSO 28 DRG /31R-VKC62N00	R902502734	3	10
7		A AA10VSO 45 DFR /31R-VKC62K01	R902502188	3	10
7	new	A AA10VSO 45 DFR /31R-VKC62N00	R902502733	3	10
7		A AA10VSO 45 DR /31R-VKC62N00	R902502741	3	10
7		A AA10VSO 45 DRG /31R-VKC62N00	R902502737	3	10
7		A AA10VSO 71 DFR /31R-VKC92K01	R902502186	3	10
7		A AA10VSO 71 DFR /31R-VKC92N00	R902400497	3	10
7		A AA10VSO 71 DR /31L-VKC92N00	R902502981	3	10
7		A AA10VSO 71 DR /31R-VKC92K01	R902502980	3	10
7		A AA10VSO 71 DR /31R-VKC92K05	R902502984	3	10
7		A AA10VSO 71 DR /31R-VKC92K08	R902503042	3	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
7		A AA10VSO 71 DR /31R-VKC92N00	R902502701	3	10
7		A AA10VSO 71 DRG /31R-VKC92K03	R902502715	3	10
7		A AA10VSO 71 DRG /31R-VKC92K40	R902502982	3	10
7		A AA10VSO 71 DRG /31R-VKC92N00	R902502985	3	10
7		A AA10VSO100 DFR /31R-VKC62K03	R902502994	3	10
7		A AA10VSO100 DFR /31R-VKC62K08	R902502995	3	10
7	new	A AA10VSO100 DFR /31R-VKC62N00	R902502730	3	10
7		A AA10VSO100 DR /31R-VKC62K01	R902502992	3	10
7		A AA10VSO100 DR /31R-VKC62K38	R902502991	3	10
7		A AA10VSO100 DR /31R-VKC62N00	R902502997	3	10
7		A AA10VSO100 DRG /31R-VKC62N00	R902502990	3	10
7		A AA10VSO140 DFR /31R-VKD62K01	R902503002	3	10
7		A AA10VSO140 DFR /31R-VKD62N00	R910940042	3	10
7		A AA10VSO140 DFR1/31R-VKD62K01	R902502998	3	10
7		A AA10VSO140 DR /31R-VKD62N00	R902503003	3	10
7		A AA10VSO140 DR /31R-VKD62N00	R902502731	3	10
7		A AA10VSO140 DRG /31R-VKD62K08	R902502999	3	10
7		A AA10VSO140 DRG /31R-VKD62N00	R902503004	3	10
7		A10V O 60 DFR1/52R-PSD62N00 -SO 97	R902401219	3	10
7		A10V O 60 DRG /52R-VUC62N00 -SO 97	R902501461	3	10
7		AA10VSO 71 DFR1/31R-VKC92N00	R902502127	3	10
7		AEAA10VSO 71 DR /31R-VKC92N00	R902502986	3	10
7		AH A10V O 45 DFR /52R-PSC62N00	R902406182	3	10
7		AL A10V O100 DR /31R-VUC62N00	R902500164	3	10
7		External Gear Pumps			
8		AZPF-12-004RQR12MB	9510290021	3	10
8		AZPF-12-004RRR12MB	9510290015	3	10
8		AZPF-12-005RQR12MB	9510290022	3	10
8		AZPF-12-005RRR12MB	9510290005	3	10
8		AZPF-12-008RQR12MB	9510290023	3	10
8		AZPF-12-008RRR12MB	9510290017	3	10
8		AZPF-12-011-RQR12MB	9510290024	3	10
8		AZPF-12-011-RRR12MB	9510290414	3	10
8		AZPF-12-014-RQR12MB	9510290025	3	10
8		AZPF-12-014-RRR12MB	9510290004	3	10
8		AZPF-12-016RQR12MB	9510290122	3	10
8		AZPF-12-016RQR12MB-S0040 - OK	9510290026	3	10
8		AZPF-12-016RRR12MB	9510290056	3	10
8		AZPF-12-019RQR12MB	9510290123	3	10
8		AZPF-12-019RRR12MB	9510290125	3	10
8		AZPF-12-022RQR12MB	9510290124	3	10
8		AZPF-12-022RQR12MB-S0040	9510290028	3	10
8		AZPF-12-022RRR12MB	9510290126	3	10
8		AZPF-22-025RQR12MB-S0040	9510290112	3	10
8		AZPF-22-025RRR12MB	9510290111	3	10
8		AZPF-22-028RQR12MB-S0040	9510290111	3	10
0		AZPF-22-028RRR12MB	0010200110	3	

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
8	AZPN-12-020-RDC12MB	9510390001	3	10
8	AZPN-12-022-RDC12MB	9510390002	3	10
8	AZPN-12-025RDC12MB-S0040	9510390003	3	10
8	AZPN-12-028RDC12MB-S0040	9510390004	3	10
8	AZPN-12-032RDC12MB-S0040	9510390005	3	10
8	AZPN-12-036RDC12MB-S0040	9510390006	3	10
	Variable Vane Pumps			
9	PV7-1X/100-118RE07MC0-16	R900506809	3	10
9	PV7-1X/10-14RE01MC0-16	R900580381	3	10
9	PV7-1X/16-20RE01MC0-16	R900580382	3	10
9	PV7-1X/25-30RE01MC0-16	R900580383	3	10
9	PV7-1X/40-45RE37MC0-16	R900580384	3	10
9	PV7-1X/63-71RE07MC0-16	R900506808	3	10
9	REGULATOR V7-1A/C0-16 BG	R901169899	3	10
	Vane Pumps			
10	0513R18C3VPV100SM21HYB04	0513850216	3	10
10	0513R18C3VPV100SM21HYB04 P1	0513850214	3	10
10	0513R18C3VPV130SM21HYB04	0513860250	3	10
10	0513R18C3VPV130SM21HYB04P1	0513860258	3	10
10	0513R18C3VPV130SM21HZB04	0513860252	3	10
10	0513R18C3VPV130SM21HZB04 P1	0513860238	3	10
10	0513R18C3VPV164SM21HY B04	0513870226	3	10
10	0513R18C3VPV164SM21HYB04 P1	0513870216	3	10
10	0513R18C3VPV16SM21FYB03	0513300208	3	10
10	0513R18C3VPV16SM21FZB03	0513300202	3	10
10	0513R18C3VPV16SM21HYB03	0513300212	3	10
10	0513R18C3VPV16SM21HYB03 P1	0513300246	3	10
10	0513R18C3VPV25SM21FYB03	0513400208	3	10
10	0513R18C3VPV25SM21HYB03	0513400212	3	10
10	0513R18C3VPV32SM21FYB03	0513500216	3	10
10	0513R18C3VPV32SM21FZB03	0513500206	3	10
10	0513R18C3VPV32SM21HYB03	0513500220	3	10
10	0513R18C3VPV32SM21HYB03 P1	0513500254	3	10
10	0513R18C3VPV32SM21HZB03	0513500218	3	10
10	0513R18C3VPV45SM21HYB05	0513600214	3	10
10	0513R18C3VPV45SM21HYB05P1	0513600234	3	10
10	0513R18C3VPV45SM21HZB05	0513600240	3	10
10	0513R18C3VPV63SM21HYB05	0513700218	3	10
10	0513R18C3VPV63SM21HYB05P1	0513700242	3	10
10	0513R18C3VPV63SM21HZB05	0513700214	3	10
10	0513R18C3VPV80SM21HYB05	0513800248	3	10
10	0513R18C3VPV80SM21HYB05P1	0513800238	3	10
10	0513R18C3VPV80SM21HZB05	0513800236	3	10
10	PRESS REG VPV16-32 210 BAR F CONTROL SAE	9511230595	3	10
10	PRESS REG VPV16-32 210 BAR H CONTROL SAE	9511230601	3	10
10	PRESS REG VPV45-164 210 BAR H CONTROL SAE	9511230610	3	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
		Fixed Displacement Vane Pumps			
11		PVV1-1X/027RJ15DMB	R900939075	3	10
11		PVV1-1X/036RJ15DMB	R900965314	3	10
11		PVV1-1X/046RJ15DMB	R900704430	3	10
11		PVV2-1X/040RA15UMB	R900931138	3	10
11		PVV2-1X/055RA15UMB	R900928955	3	10
11		PVV2-1X/068RA15DMB	R900935466	3	10
11		PVV4-1X/069RA15DMC	R900936293	3	10
11		PVV4-1X/082RA15DMC	R900931548	5	10
11		PVV4-1X/098RA15DMC	R900936294	3	10
11		PVV4-1X/122RA15DMC	R900929542	3	10
11		PVV5-1X/154RA15DMC	R900936296	3	10
11		PVV5-1X/183RA15DMC	R900936297	3	10
11		PVV5-1X/193RA15DMC	R900929349	3	10
		Radial Piston Pumps			
12		PR4-3X/1,60-700RA12M01	R901093640	3	10
12		PR4-3X/10,00-500RA01M01	R901089173	3	10
12		PR4-3X/10,00-500RA12M01	R901093641	3	10
12		PR4-3X/2,00-700RA12M01	R901089758	3	10
12		PR4-3X/2,50-700RA12M01	R901093639	3	10
12		PR4-3X/3,15-500RA12M01	R901093871	3	10
12		PR4-3X/5,00-500RA12M01	R901093643	3	10
12		PR4-3X/8,00-700RA12M01	R901093864	3	10
		Mini-Radial Piston Pumps		_	
13		PR4-1X/0,40-700WA01M01	R900485830	3	10
13		PR4-1X/0,63-700WA01M01	R900345609	3	10
13		PR4-1X/1,00-450WA01M01	R900490630	3	10
		Variable Displacement Motors			
14	new	AA6VM107HD1/63W-VSD52000-B	R902092169	3	10
14	new	AA6VM160HD1/63W-VSD520B-E	R902092085	3	10
14	_	AA6VM80EZ3/63W-VSC520B-E *AL*	R902092121	3	10
14	new	AA6VM80HD1/63W-VSC520B-E	R902092070	3	10
		External Gear Motors			
15		AZMF-12-008-UQR12ML-S0022	9511290013	3	10
15		AZMF-12-011-UQR12ML-S0022	9511290014	3	10
15		AZMF-12-014-UQR12ML-S0018	9511290027	3	10
15		AZMF-12-016-UQR12ML	9511290010	3	10
15		AZMF-12-019-UQR12ML-S0018	9511290029	3	10
15		AZMF-12-019-UQR12ML-S0022	9511290017	3	10
15		AZMF-12-022-UQR12ML-S0022	9511290018	3	10
		Radial Piston Motors	3311200010		10
16	new	MCR3 400 CC wheel Motors with Wheel Studs, unbraked, single speed	R921807175	2	10
16	new	MCR3, 365cc, spline shaft, unbraked, single speed	R921811056	2	10
16	new	MCR3. 400cc wheel Motors w/brake, single speed	R921807578	2	10
10	11000	MCR5, 820cc, keyed shaft, unbraked, single speed	R921807576	2	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
		Fixed Displacement Motors			
17	new	AA2FM107/61W-VSD510	R902137843	3	10
17	new	AA2FM125/61W-VSD510	R902138182	3	10
17	new	AA2FM125/61W-VSD520	R902137733	3	10
17	new	AA2FM180/61W-VSD510	R902193869	3	10
17	new	AA2FM180/61W-VSD520	R902193712	3	10
17	new	AA2FM28/61W-VSD520	R902198240	3	10
17	new	AA2FM28/61W-VSD540	R902197566	3	10
17	new	AA2FM32/61W-VSD520	R902202055	3	10
17	new	AA2FM32/61W-VSD540	R902198042	3	10
17	new	AA2FM45/61W-VSD510	R902193514	3	10
17	new	AA2FM45/61W-VSD520	R902196957	3	10
17	new	AA2FM63/61W-VSD510	R902161224	3	10
17	new	AA2FM63/61W-VSD520	R902160055	3	10
17	new	AA2FM80/61W-VUDN520	R902137579	3	10
		High Torque Vane Motors			
18	new	MVS15-M015-61-1S-006-31-B1-QB-000	R986V00941	3	10
18	new	MVS15-M015-61-1S-008-31-B1-QB-000	R986V00974	3	10
18	new	MVS15-M015-61-1S-009-30-B1-QB-000	R986V00983	3	10
18	new	MVS15-M015-61-1S-013-30-B1-QB-000	R986V00875	3	10
18	new	MVS15-M015-61-1S-015-30-B1-QB-000	R986V00894	3	10
18	new	MVS15-M015-61-1S-015-31-B1-QB-000	R986V00909	3	10
18	new	MVS15-M015-61-1S-015-31-B1-TB-000	R986V00905	3	10
19	new	MVS37-M037-A2-1S-020-30-B1-TBB-000	R986V00435	3	10
19	new	MVS37-M037-A2-1S-020-31-B1-TBB-000	R986V00441	3	10
19	new	MVS37-M037-A2-1S-026-30-B1-QBB-000	R986V00452	3	10
19	new	MVS37-M037-A2-1S-026-30-B1-TBB-000	R986V00451	3	10
19	new	MVS37-M037-A2-1S-026-31-B1-TBB-000	R986V00454	3	10
19	new	MVS37-M037-A2-1S-032-31-B1-TBB-000	R986V00469	3	10
19	new	MVS37-M037-D2-2S-020-30-T1-TVD-127	R986V00697	3	10
19	new	MVS37-M037-D2-2S-020-30-T1-TVD-141	R986V00696	3	10
19	new	MVS37-M037-D2-2S-020-31-B1-TVD-112	R986V00693	3	10
		Check Valves			
		S-Check Valves			
00			R900497659		10
20		S 10 A1.0//12		5	10
20		S 15 A1.0/	R900420537	6	10
20		S 25 A1.0//12	R900455138	7	10
20		S 30 A1.0//12	R900492887	8	10
0.1		Cartridge Type Check Valves	D000045745	F	10
21		M-SR 10 KE02-1X/	R900345745	5	10
21		M-SR 10 KE05-1X/	R900344549	5	10
21		M-SR 10 KE05-1X/V	R900348632	5	10
21		M-SR 15 KE02-1X/	R900348943	5	10
21		M-SR 15 KE05-1X/	R900345372	5	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
21	M-SR 20 KE02-1X/	R900345744	5	10
21	M-SR 20 KE05-1X/V	R900350795	5	10
21	M-SR 25 KE05-1X/	R900344778	5	10
21	M-SR 30 KE02-1X/	R900345743	5	10
21	M-SR 30 KE05-1X/	R900344919	5	10
21	M-SR 30 KE05-1X/V	R900350797	5	10
21	M-SR 30 KE50-1X/	R900349973	5	10
21	M-SR 8 KE05-1X/V	R900357718	5	10
21	M-SR 8 KE30-1X/	R900348329	5	10
	Filling Valves			
22	ZSF 125 F1-1-2X/M/01	R901089756	5	10
22	ZSF 50 F1-1-1X/M/12	R900539731	5	10
22	ZSF 80 F1-1-1X/M/12	R900539733	5	10
	SV & SL-Check Valves			
23	SL 10 PA1-4X/	R900483371	5	10
23	SL 20 PA1-4X/	R900587559	5	10
23	SL 30 PA1-4X/	R900587560	5	10
23	SL 30 PA1-4X/V	R900500095	5	10
23	SV 10 PA1-4X/	R900483369	5	10
23	SV 10 PA1-4X/V	R900463364	5	10
23	SV 20 PA1-4X/	R900587557	5	10
23	SV 30 PA1-4X/	R900587558	5	10
	Z1S-Check Valves			
24	Z1S 10 B05-2-4X/F	R901274766	5	10
24	Z1S 10 P05-1-4X/F	R901274759	5	10
24	Z1S 10 P1-3X/V	R900417590	5	10
24	Z1S 10 TA05-2TB9-4X/F	R901274760	5	10
24	Z1S 6 P05-4X/V	R901086051	5	10
24	Z1S 6 T05-4X/V	R901086058	5	10
	Piloted-to-Open Check Valves			
25	Z2S 10-1-3X/	R900407394	5	10
25	Z2S 10-1-3X/V	R900407439	5	10
25	Z2S 10A1-3X/	R900407424	5	10
25	Z2S 10A1-3X/V	R900407440	5	10
25	Z2S 10B1-3X/V	R900407465	5	10
25	Z2S 16-1-5X/	R900328797	5	10
25	Z2S 16-1-5X/V	R900412459	5	10
25	Z2S 22-1-5X/	R900432915	5	10
25	Z2S 22-1-5X/V	R900436495	5	10
25	Z2S 6-1-6X/	R900347495	5	10
25	Z2S 6-1-6X/V	R900347504	5	10
25	Z2S 6-2-6X/	R900347496	5	10
25	Z2S 6-2-6X/V	R900347505	5	10
25	Z2S 6A1-6X/V	R900347507	5	10
25	Z2S 6B1-6X/	R900347501	5	10
25	Z2S 6B1-6X/V	R900347510	5	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
		Pilot Operated Check Valves			
26		Z2SRK 10-1-1X/V	R900564520	5	10
26		Z2SRK 6-1-1X/V	R900564519	5	10
		Directional Valves			
		SED & SEW-Directional Poppet Valves			
27		M-3SED 10 CK1X/350CG24N9K4	R900086685	5	10
27		M-3SED 10 UK1X/350CG24N9K4	R900051053	5	10
27		M-3SED 6 CK1X/350CG24N9K4	R900052392	5	10
27		M-3SED 6 CK1X/350CG96N9K4	R900218734	5	10
27		M-3SED 6 UK1X/350CG24N9K4	R900052621	5	10
27		M-3SED 6 UK1X/350CG96N9K4	R900207848	5	10
27		M-3SEW 10 C1X/420MG24N9K4	R900075565	5	10
27		M-3SEW 10 U1X/420MG24N9K4	R900075563	5	10
27		M-3SEW 10 U1X/420MG96N9K4/V	R900051907	5	10
27		M-3SEW 6 C3X/420MG24N9K4	R900566273	5	10
27		M-3SEW 6 C3X/420MG24N9K4/V	R900049834	5	10
27		M-3SEW 6 C3X/420MG96N9K4	R900570252	5	10
27		M-3SEW 6 C3X/630MG24N9K4/V	R900204628	5	10
27		M-3SEW 6 U3X/420MG24N9K4	R900566283	5	10
27		M-3SEW 6 U3X/420MG24N9K4/V	R900570174	5	10
27		M-3SEW 6 U3X/420MG96N9K4	R900570744	5	10
27		M-3SEW 6 U3X/420MG96N9K4/V	R900056442	5	10
27		M-3SEW 6 U3X/630MG96N9K4	R900205344	5	10
		4WMM & 4WMR-Directional Spool Valves			
28		4WMM 10 E3X/	R900589983	5	10
28		4WMM 10 E3X/F	R900589975	5	10
28		4WMM 10 J3X/	R900586919	5	10
28		4WMM 6 D5X/	R900468328	5	10
28		4WMM 6 D5X/F	R900469301	5	10
28		4WMM 6 E5X/	R900467936	5	10
28		4WMM 6 E5X/F	R900405611	5	10
28		4WMM 6 G5X/	R900471209	5	10
28		4WMM 6 G5X/F	R900469533	5	10
28		4WMM 6 J5X/	R900469302	5	10
28		4WMM 6 J5X/F	R900466583	5	10
28		4WMR 6 D5X/	R900465984	3	10
20		WP & WH-Directional Valves w/ Fluid Actuation	K900405964	3	10
00	now		D000003971	5	10
29		4WH16D7X/	R900923871	5	10
29	new	4WH22Y7X/	R900491846	5	10
29		4WH6D5X//5	R900955873	5	10
29		4WP6D6X/5	R978917418	5	10
29		4WP6D6X/N/5	R978918927	5	10
29		4WP6E6X/5	R978917419	5	10
29		4WP6E6X/N/5	R978919013	5	10
29		4WP6J6X/N/5	R978919116	5	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
		WE-Directional Spool Valves			
30		3WE 6 A6X/EG24N9K4	R900561180	5	10
30		3WE10A3X/CG24N9K4	R900592014	5	10
30		3WE6A6X/EG24N9K4/62	R978017740	5	10
30	new	3WE6A6X/EG24N9K4/62=CSA	R978017865	5	10
30	new	3WE6A6X/EG24N9K4/V/62=CSA	R978021044	5	10
30	new	3WE6A6X/EW110N9K4/62=CSA	R978017859	5	10
30	new	3WE6A9-6X/EG24N9K4/62 CSA	R978917519	5	10
30	new	3WE6B6X/EG24N9K4/V/62 CSA	R978916768	5	10
30	new	3WE6B9-6X/EG24N9K4/62 CSA	R978906497	5	10
30	new	3WE6B9-6X/EW110N9K4/62=CSA	R978022500	5	10
30		4WE10C3X/CG12N9K4	R900938674	5	10
30		4WE10C3X/CG24N9K4	R900593277	5	10
30		4WE10C3X/CW110N9K4	R900906473	5	10
30		4WE10C3X/OFCG24N9K4	R900500925	5	10
30	new	4WE10C4X/CG12N9DA	R978910297	5	10
30		4WE10C4X/CG24N9DA	R978908877	5	10
30	new	4WE10C4X/CW110N9DA	R978908696	5	10
30	new	4WE10C4X/OFCG12N9DA	R978911140	5	10
30		4WE10D3X/CG24N9K4	R900589933	5	10
30		4WE10D3X/CG24N9K4/V	R900593676	5	10
30		4WE10D3X/CW110N9K4	R900598925	5	10
30	new	4WE10D3X/OFCG12N9K4	R978911960	5	10
30		4WE10D3X/OFCG24N9K4	R900591664	5	10
30		4WE10D3X/OFCW110N9K4	R900594948	5	10
30	new	4WE10D4X/CG12N9DA	R978908826	5	10
30		4WE10D4X/CG24N9DA	R978908490	5	10
30	new	4WE10D4X/CG24N9DAL	R978908419	5	10
30		4WE10D4X/CW110N9DA	R978908566	5	10
30		4WE10D4X/CW110N9DAL	R900713654	5	10
30	new	4WE10D4X/OFCW110N9DA	R978910127	5	10
30		4WE10D4X/OFCW110N9DAL	R978908591	5	10
30		4WE10E3X/CG12N9K4	R900945576	5	10
30		4WE10E3X/CG24N9K4	R900588201	5	10
30		4WE10E3X/CG24N9K4=CSA	R900934305	5	10
30		4WE10E3X/CW110N9K4	R900597186	5	10
30		4WE10E4X/CG12N9DA	R978907461	5	10
30		4WE10E4X/CG24N9DA	R978908742	5	10
30	new	4WE10E4X/CG24N9DAL	R978909385	5	10
30		4WE10E4X/CW110N9DA	R978908567	5	10
30		4WE10E4X/CW110N9DA/V	R978909419	5	10
30		4WE10E4X/CW110N9DAL	R900979378	5	10
30	new	4WE10EA4X/CW110N9DA	R978910021	5	10
30		4WE10EA4X/CW110N9DAL	R978908810	5	10
30		4WE10EB3X/CG24N9K4	R900595533	5	10
30	new	4WE10EB4X/CW110N9DA	R978910173	5	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30		4WE10G3X/CG12N9K4	R900503405	5	10
30		4WE10G3X/CG12N9K4 CSA	R978906366	5	10
30		4WE10G3X/CG24N9K4	R900594277	5	10
30		4WE10G3X/CW110N9K4	R900536428	5	10
30		4WE10G4X/CG12N9DA	R978908592	5	10
30	new	4WE10G4X/CG24N9DAL	R978909405	5	10
30		4WE10G4X/CW110N9DA	R978908695	5	10
30		4WE10G4X/CW110N9DAL	R978908815	5	10
30	new	4WE10GA4X/CW110N9DA	R978910549	5	10
30	new	4WE10GA4X/CW110N9DAL	R978912744	5	10
30		4WE10H3X/CG24N9K4	R900597986	5	10
30		4WE10H3X/CW110N9K4	R900517315	5	10
30		4WE10H4X/CW110N9DA	R978908593	5	10
30	new	4WE10H4X/CW110N9DAL	R978909071	5	10
30		4WE10HA3X/CG24N9K4	R900598662	5	10
30	new	4WE10HA4X/CG12N9DAL	R978007214	5	10
30		4WE10J3X/CG12N9K4	R900930080	5	10
30		4WE10J3X/CG24N9K4	R900589988	5	10
30		4WE10J3X/CG24N9K4/V	R900593677	5	10
30		4WE10J3X/CG24N9K4=CSA	R900957006	5	10
30		4WE10J3X/CW110N9K4	R900592338	5	10
30		4WE10J3X/CW110N9K4=CSA	R900940565	5	10
30	new	4WE10J4X/CG12N9DA	R978910621	5	10
30	new	4WE10J4X/CG24N9DA	R978909072	5	10
30		4WE10J4X/CG24N9DAL	R900732331	5	10
30		4WE10J4X/CG24N9DK25L	R900977484	5	10
30		4WE10J4X/CW110N9DA	R978908568	5	10
30		4WE10J4X/CW110N9DA/V	R978908908	5	10
30		4WE10J4X/CW110N9DAL	R900708880	5	10
30		4WE10J4X/CW110N9DK25L	R900963610	5	10
30	new	4WE10JA4X/CW110N9DAL	R978913850	5	10
30	new	4WE10JB4X/CW110N9DA	R978914148	5	10
30	new		R978909781	5	10
30	new		R978908808	5	10
30	new		R900961858	5	10
30	new		R978908880	5	10
30		4WE10Y4X/CW110N9DAL	R978909074	5	10
30	new		R978878225	5	10
30		4WE6C6X/EG12N9K4	R900903685	5	10
30	new		R978913831	5	10
30		4WE6C6X/EG24N9DA/62	R978878229	5	10
30	new		R978017853	5	10
30		4WE6C6X/EG24N9K4	R900561272	5	10
30		4WE6C6X/EG24N9K4/62	R978017744	5	10
30	new		R978017744	5	10
30	new	4WE6C6X/EG24N9K4/A12	R900567535	5	10
30	11600	TVVL000// L024N3N4/A12	1.900007030	J	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30	new	4WE6C6X/EG24N9K4/V	R900905548	5	10
30	new	4WE6C6X/EG96N9K4/62	R978017829	5	10
30		4WE6C6X/EW110N9DA/62	R978874587	5	10
30	new	4WE6C6X/EW110N9DA/V/62	R978890314	5	10
30	new	4WE6C6X/EW110N9DAL/62	R978874588	5	10
30	new	4WE6C6X/EW110N9DAL/V	R900900065	5	10
30		4WE6C6X/EW110N9K4	R900901748	5	10
30	new	4WE6C6X/EW110N9K4/62	R978017780	5	10
30	new	4WE6C6X/EW110N9K4/62=CSA	R978017774	5	10
30	new	4WE6C6X/EW110N9K4/V	R900919729	5	10
30	new	4WE6C6X/OFEG12N9DA/62	R978890367	5	10
30	new	4WE6C6X/OFEG12N9K4/62	R978915962	5	10
30	new	4WE6C6X/OFEG24N9DAL/62	R978017773	5	10
30	new	4WE6C6X/OFEG24N9K4	R900564107	5	10
30	new	4WE6C6X/OFEG24N9K4/62	R978017758	5	10
30	new	4WE6C6X/OFEW110N9DA/62	R978875037	5	10
30	new	4WE6C6X/OFEW110N9DAL/62	R978875038	5	10
30	new	4WE6C6X/OFEW110N9K4	R900909140	5	10
30	new	4WE6C6X/OFEW110N9K4/62	R978017798	5	10
30	new	4WE6C6X/OFEW110N9K4/62 CSA	R978898363	5	10
30	new	4WE6D6X/EG12N9DA/62	R978878237	5	10
30	new	4WE6D6X/EG12N9DA/V/62	R978895300	5	10
30	new	4WE6D6X/EG12N9K4	R900913281	5	10
30		4WE6D6X/EG12N9K4/62	R978017812	5	10
30	new	4WE6D6X/EG12N9K4/62 CSA	R978905132	5	10
30	new	4WE6D6X/EG12N9K4/V	R900783170	5	10
30	new	4WE6D6X/EG12N9K4/V/62 CSA	R978917435	5	10
30		4WE6D6X/EG24N9DA/62	R978878241	5	10
30		4WE6D6X/EG24N9DAL	R900550589	5	10
30	new	4WE6D6X/EG24N9DAL/62	R978017732	5	10
30		4WE6D6X/EG24N9DK24L2/62	R978896201	5	10
30		4WE6D6X/EG24N9K4	R900561274	5	10
30		4WE6D6X/EG24N9K4/62	R978017922	5	10
30	new	4WE6D6X/EG24N9K4/62=CSA	R901105197	5	10
30	new	4WE6D6X/EG24N9K4/A12	R900929558	5	10
30	new	4WE6D6X/EG24N9K4/B10	R900915069	5	10
30	new	4WE6D6X/EG24N9K4/B10/62	R901262824	5	10
30		4WE6D6X/EG24N9K4/V	R900564105	5	10
30	new	4WE6D6X/EG24N9K4/V/62 CSA	R978908705	5	10
30	new	4WE6D6X/EG24N9K4=CSA	R900931341	5	10
30	new	4WE6D6X/EG96N9K4	R900904957	5	10
30	new	4WE6D6X/EG96N9K4/62	R978017787	5	10
30	new	4WE6D6X/EG96N9K4/V/62=CSA	R978025630	5	10
30	new	4WE6D6X/EW110N9DA	R978020087	5	10
30		4WE6D6X/EW110N9DA/62	R978874053	5	10
30	new	4WE6D6X/EW110N9DA/V	R978032133	5	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30		4WE6D6X/EW110N9DA/V/62	R978875901	5	10
30		4WE6D6X/EW110N9DAL	R900559677	5	10
30		4WE6D6X/EW110N9DAL/62	R978017739	5	10
30	new	4WE6D6X/EW110N9DAL/B10	R900710108	5	10
30	new	4WE6D6X/EW110N9DAL/B10/62	R978030511	5	10
30	new	4WE6D6X/EW110N9DAL/V	R900578560	5	10
30	new	4WE6D6X/EW110N9DAL/V/62	R978021153	5	10
30		4WE6D6X/EW110N9K4	R900551704	5	10
30		4WE6D6X/EW110N9K4/62	R978017734	5	10
30		4WE6D6X/EW110N9K4/62=CSA	R978017841	5	10
30	new	4WE6D6X/EW110N9K4/B10	R900906820	5	10
30	new	4WE6D6X/EW110N9K4/B10V	R900964575	5	10
30	new	4WE6D6X/EW110N9K4/B12	R900925868	5	10
30	new	4WE6D6X/EW110N9K4/V	R900911653	5	10
30	new	4WE6D6X/EW110N9K4/V/62	R978023806	5	10
30	new	4WE6D6X/EW110N9K4/V/62=CSA	R978019688	5	10
30	new	4WE6D6X/EW110N9K4/V=CSA	R900962492	5	10
30	new	4WE6D6X/OEG24N9K4/62	R978017766	5	10
30	new	4WE6D6X/OEW110N9DA/62	R978874049	5	10
30	new	4WE6D6X/OEW110N9K4/62	R978017838	5	10
30	new	4WE6D6X/OFEG12N9DA/62	R978890292	5	10
30	new	4WE6D6X/OFEG12N9K4	R900924018	5	10
30	new	4WE6D6X/OFEG12N9K4/62	R978017819	5	10
30	new	4WE6D6X/OFEG12N9K4/62 CSA	R978908958	5	10
30	new	4WE6D6X/OFEG12N9K4/B10	R978032032	5	10
30	new	4WE6D6X/OFEG12N9K4/B10/62	R978911678	5	10
30	new	4WE6D6X/OFEG12N9K4/V/62	R978916765	5	10
30	new	4WE6D6X/OFEG24N9DA/62	R978892546	5	10
30	new	4WE6D6X/OFEG24N9DA/V/62	R978892867	5	10
30	new	4WE6D6X/OFEG24N9DAL/62	R978017871	5	10
30		4WE6D6X/OFEG24N9DK24L2/62	R978896205	5	10
30		4WE6D6X/OFEG24N9K4	R900567512	5	10
30		4WE6D6X/OFEG24N9K4/62	R978017763	5	10
30	new	4WE6D6X/OFEG24N9K4/62=CSA	R978017826	5	10
30	new	4WE6D6X/OFEG24N9K4/B08V	R901147438	5	10
30	new	4WE6D6X/OFEG24N9K4/B10	R900568899	5	10
30		4WE6D6X/OFEG24N9K4/V	R900903465	5	10
30	new	4WE6D6X/OFEG96N9K4	R900904958	5	10
30		4WE6D6X/OFEW110N9DA/62	R978873230	5	10
30	new	4WE6D6X/OFEW110N9DA/V/62	R978875810	5	10
30		4WE6D6X/OFEW110N9DAL	R900912994	5	10
30		4WE6D6X/OFEW110N9DAL/62	R978017810	5	10
30	new	4WE6D6X/OFEW110N9DAL/B10V	R901183229	5	10
30	new	4WE6D6X/OFEW110N9DAL/V	R900959714	5	10
30		4WE6D6X/OFEW110N9K4	R900552321	5	10
30		4WE6D6X/OFEW110N9K4/62	R978017735	5	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30	new	4WE6D6X/OFEW110N9K4/62=CSA	R978017845	5	10
30	new	4WE6D6X/OFEW110N9K4/B08	R900925207	5	10
30	new	4WE6D6X/OFEW110N9K4/B10	R900949737	5	10
30	new	4WE6D6X/OFEW110N9K4/V	R900921614	5	10
30	new	4WE6D6X/OFEW110N9K4/V/62 CSA	R978907764	5	10
30	new	4WE6E6X/EG110N9K4/V	R900758399	5	10
30		4WE6E6X/EG12N9DA/62	R978878249	5	10
30		4WE6E6X/EG12N9DAL/62	R978878250	5	10
30	new	4WE6E6X/EG12N9K4	R900903906	5	10
30		4WE6E6X/EG12N9K4/62	R978017783	5	10
30	new	4WE6E6X/EG12N9K4/62 CSA	R978905130	5	10
30	new	4WE6E6X/EG12N9K4/A12/62	R978001259	5	10
30	new	4WE6E6X/EG12N9K4/V	R900774335	5	10
30	new	4WE6E6X/EG12N9K4/V/62 CSA	R978911234	5	10
30		4WE6E6X/EG24N9DA/62	R978878253	5	10
30	new	4WE6E6X/EG24N9DA/V/62	R978890211	5	10
30		4WE6E6X/EG24N9DAL	R900979840	5	10
30		4WE6E6X/EG24N9DAL/62	R978017870	5	10
30	new	4WE6E6X/EG24N9DAL/V	R900933968	5	10
30		4WE6E6X/EG24N9K4	R900561278	5	10
30		4WE6E6X/EG24N9K4/62	R978017750	5	10
30		4WE6E6X/EG24N9K4/62=CSA	R901105198	5	10
30	new	4WE6E6X/EG24N9K4/B10V	R900957917	5	10
30	new	4WE6E6X/EG24N9K4/B12	R900931613	5	10
30		4WE6E6X/EG24N9K4/V	R900903464	5	10
30	new	4WE6E6X/EG24N9K4/V/62	R978021268	5	10
30	new	4WE6E6X/EG24N9K4/V/62 CSA	R978916601	5	10
30	new	4WE6E6X/EG96N9K4	R900904959	5	10
30	new	4WE6E6X/EG96N9K4/62	R978017789	5	10
30		4WE6E6X/EW110N9DA/62	R978875049	5	10
30		4WE6E6X/EW110N9DA/V/62	R978877942	5	10
30	new	4WE6E6X/EW110N9DAL	R901001943	5	10
30		4WE6E6X/EW110N9DAL/62	R978873115	5	10
30	new	4WE6E6X/EW110N9DAL/V	R901067547	5	10
30		4WE6E6X/EW110N9DAL/V/62	R978875745	5	10
30		4WE6E6X/EW110N9K4	R900558641	5	10
30		4WE6E6X/EW110N9K4/62	R978017737	5	10
30	new	4WE6E6X/EW110N9K4/62=CSA	R978017842	5	10
30		4WE6E6X/EW110N9K4/B12/62	R978912723	5	10
30		4WE6E6X/EW110N9K4/V	R900931049	5	10
30		4WE6E6X/EW110N9K4/V/62	R978025719	5	10
30		4WE6E6X/EW110N9K4/V/62=CSA	R978019230	5	10
30		4WE6E6X/EW110N9K4=CSA	R900940567	5	10
30		4WE6E6X/EW110NK4/V/62 CSA	R978010949	5	10
30		4WE6EA6X/EG12N9K4	R900928531	5	10
30	new		R978024420	5	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30	new	4WE6EA6X/EG24N9DAL	R900964681	5	10
30	new	4WE6EA6X/EG24N9K4	R900561280	5	10
30		4WE6EA6X/EG24N9K4/62	R978017752	5	10
30	new	4WE6EA6X/EG96N9K4/62=CSA	R978034580	5	10
30	new	4WE6EA6X/EW110N9DA/V/62	R978891959	5	10
30	new	4WE6EA6X/EW110N9DAL/62	R978875042	5	10
30	new	4WE6EA6X/EW110N9DAL/V/62	R978879878	5	10
30	new	4WE6EA6X/EW110N9K4	R900906670	5	10
30	new	4WE6EA6X/EW110N9K4/62	R978017796	5	10
30	new	4WE6EA6X/EW110N9K4/62=CSA	R978019231	5	10
30	new	4WE6EA6X/OFEW110N9DA	R978032138	5	10
30	new	4WE6EB6X/EG12N9K4	R900921992	5	10
30	new	4WE6EB6X/EG12N9K4/62 CSA	R978914474	5	10
30	new	4WE6EB6X/EG24N9K4	R900561281	5	10
30		4WE6EB6X/EG24N9K4/62	R978024421	5	10
30	new	4WE6EB6X/EW110N9DA/62	R978875045	5	10
30	new	4WE6EB6X/EW110N9K4	R900906671	5	10
30		4WE6EB6X/EW110N9K4/62	R978024422	5	10
30	new	4WE6EB6X/EW110N9K4/V/62	R978912396	5	10
30	new	4WE6EB6X/OFEW110N9K4	R901242185	5	10
30	new	4WE6F6X/EG24N9K4	R900933648	5	10
30	new	4WE6F6X/EG24N9K4/62	R978030173	5	10
30	new	4WE6F6X/EG24N9K4/V/62=CSA	R901318705	5	10
30	new	4WE6F6X/EW110N9DA/62	R978891103	5	10
30	new	4WE6F6X/EW110N9K4	R900908714	5	10
30	new	4WE6F6X/EW110N9K4/62=CSA	R901327984	5	10
30		4WE6G6X/EG12N9DA/62	R978878257	5	10
30		4WE6G6X/EG12N9DAL/62	R978017779	5	10
30	new	4WE6G6X/EG12N9K4	R900567497	5	10
30		4WE6G6X/EG12N9K4/62	R978017762	5	10
30	new	4WE6G6X/EG12N9K4/62 CSA	R978908129	5	10
30	new	4WE6G6X/EG12N9K4/A12/62	R978916692	5	10
30		4WE6G6X/EG24N9DA/62	R978878261	5	10
30		4WE6G6X/EG24N9K4	R900561282	5	10
30		4WE6G6X/EG24N9K4/62	R901224429	5	10
30	new	4WE6G6X/EG24N9K4/62 CSA	R978906689	5	10
30		4WE6G6X/EG24N9K4/V	R900552009	5	10
30		4WE6G6X/EW110N9DA/62	R978872815	5	10
30		4WE6G6X/EW110N9DA/V/62	R978877999	5	10
30	new	4WE6G6X/EW110N9DAL/62	R978875060	5	10
30	new	4WE6G6X/EW110N9DAL/V/62	R978894256	5	10
30		4WE6G6X/EW110N9K4	R900558642	5	10
30		4WE6G6X/EW110N9K4/62	R978017738	5	10
30	new	4WE6G6X/EW110N9K4/62=CSA	R978017852	5	10
30	new	4WE6G6X/EW110N9K4/V/62	R978912932	5	10
30	new	4WE6GA6X/EG125N9K4/62 CSA	R978908959	5	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30	new	4WE6GA6X/EG12N9DA/62	R978894725	5	10
30	new	4WE6GA6X/EG12N9DA/V/62	R978900420	5	10
30	new	4WE6GA6X/EG12N9K4	R900923844	5	10
30	new	4WE6GA6X/EG24N9DA/62	R978909420	5	10
30	new	4WE6GA6X/EG24N9DAL/62	R978903747	5	10
30		4WE6GA6X/EG24N9K4	R900561284	5	10
30		4WE6GA6X/EG24N9K4/62	R978024424	5	10
30	new	4WE6GA6X/EG24N9K4/V	R900939610	5	10
30	new	4WE6GA6X/EG24N9K4/V/62	R901298103	5	10
30	new	4WE6GA6X/EG24N9K4/V/62 CSA	R978009134	5	10
30	new	4WE6GA6X/EW110N9DA/62	R978875052	5	10
30	new	4WE6GA6X/EW110N9DAL/62	R978875053	5	10
30	new	4WE6GA6X/EW110N9K4	R900909139	5	10
30	new	4WE6GA6X/EW110N9K4/62	R978018469	5	10
30	new	4WE6GA6X/EW110N9K4/62 CSA	R978908357	5	10
30	new	4WE6GB6X/EG24N9K4/62 CSA	R978914690	5	10
30	new	4WE6GB6X/EG24N9K4/V	R900929635	5	10
30	new	4WE6GB6X/EW110N9K4	R900906930	5	10
30	new	4WE6GB6X/EW110N9K4/62 CSA	R978911236	5	10
30		4WE6H6X/EG12N9DA/62	R978878265	5	10
30	new	4WE6H6X/EG12N9DA/V/62	R978890853	5	10
30	new	4WE6H6X/EG12N9DAL/62	R978878266	5	10
30	new	4WE6H6X/EG12N9K4	R900903900	5	10
30	new	4WE6H6X/EG12N9K4/62	R978017782	5	10
30	new	4WE6H6X/EG12N9K4/62 CSA	R978907962	5	10
30	new	4WE6H6X/EG24N9DA/V/62	R978899193	5	10
30	new	4WE6H6X/EG24N9DAL	R900910276	5	10
30		4WE6H6X/EG24N9K4	R900561286	5	10
30		4WE6H6X/EG24N9K4/62	R978017754	5	10
30	new	4WE6H6X/EG24N9K4/62=CSA	R978017828	5	10
30	new	4WE6H6X/EG24N9K4/V	R900929366	5	10
30		4WE6H6X/EW110N9DA/62	R978875071	5	10
30	new	4WE6H6X/EW110N9DA/V/62	R978890842	5	10
30		4WE6H6X/EW110N9DAL/62	R978875072	5	10
30	new	4WE6H6X/EW110N9K4	R900906672	5	10
30		4WE6H6X/EW110N9K4/62	R978017797	5	10
30	new	4WE6H6X/EW110N9K4/62 CSA	R978905734	5	10
30	new	4WE6H6X/EW110N9K4/V	R900704185	5	10
30	new	4WE6HA6X/EG12N9K4	R900903992	5	10
30	new	4WE6HA6X/EG12N9K4/62 CSA	R978912645	5	10
30		4WE6HA6X/EG24N9K4	R900549534	5	10
30	new	4WE6HA6X/EG24N9K4/62	R978022019	5	10
30	new	4WE6HA6X/EG24N9K4/62=CSA	R978024230	5	10
30	new	4WE6HA6X/EG24N9K4/B10/62	R978918850	5	10
30	new	4WE6HA6X/EG24N9K4/V	R900554556	5	10
30	new	4WE6HA6X/EW110N9DA/62	R978875063	5	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

30 new 4WE6HA6X/EW110N9DAL/V/62 R978893575 30 new 4WE6HA6X/EW110N9K4 R900906460 30 new 4WE6HA6X/EW110N9K4/B10 R978031520 30 new 4WE6HA6X/EW110N9K4=CSA R900916446 30 new 4WE6HB6X/EG24N9DA/62 R978893179 30 4WE6HB6X/EG24N9K4 R900553670 30 new 4WE6HB6X/EG24N9K4/A12/62 R978911060 30 new 4WE6HB6X/EG24N9K4/V R900729410	5 5 5 5 5 5	10 10 10 10 10
30 new 4WE6HA6X/EW110N9K4/B10 R978031520 30 new 4WE6HA6X/EW110N9K4=CSA R900916446 30 new 4WE6HB6X/EG24N9DA/62 R978893179 30 4WE6HB6X/EG24N9K4 R900553670 30 new 4WE6HB6X/EG24N9K4/A12/62 R978911060 30 new 4WE6HB6X/EG24N9K4/V R900729410	5 5 5 5	10 10 10
30 new 4WE6HA6X/EW110N9K4=CSA R900916446 30 new 4WE6HB6X/EG24N9DA/62 R978893179 30 4WE6HB6X/EG24N9K4 R900553670 30 new 4WE6HB6X/EG24N9K4/A12/62 R978911060 30 new 4WE6HB6X/EG24N9K4/V R900729410	5 5 5	10 10
30 new 4WE6HB6X/EG24N9DA/62 R978893179 30 4WE6HB6X/EG24N9K4 R900553670 30 new 4WE6HB6X/EG24N9K4/A12/62 R978911060 30 new 4WE6HB6X/EG24N9K4/V R900729410	5 5	10
30	5	
30		10
30 <i>new</i> 4WE6HB6X/EG24N9K4/V R900729410	5	
		10
	5	10
30 new 4WE6HB6X/EW110N9K4 R900909144	5	10
30 <i>new</i> 4WE6J6X/EG110N9DA/62 R978892973	5	10
30 <i>new</i> 4WE6J6X/EG12N9DA R978020086	5	10
30 4WE6J6X/EG12N9DA/62 R978878274	5	10
30 4WE6J6X/EG12N9DAL/62 R978878275	5	10
30 4WE6J6X/EG12N9K4 R900567496	5	10
30 4WE6J6X/EG12N9K4/62 R978017761	5	10
30 <i>new</i> 4WE6J6X/EG12N9K4/62 CSA R978905419	5	10
30 <i>new</i> 4WE6J6X/EG12N9K4/B10 R900935677	5	10
30 <i>new</i> 4WE6J6X/EG12N9K4/B12/62/V R978031709	5	10
30 <i>new</i> 4WE6J6X/EG12N9K4K/62 R901246196	5	10
30 <i>new</i> 4WE6J6X/EG24N9DA R978020085	5	10
30 4WE6J6X/EG24N9DA/62 R978878278	5	10
30 4WE6J6X/EG24N9DAL R900920381	5	10
30 <i>new</i> 4WE6J6X/EG24N9DAL/62 R978017815	5	10
30 <i>new</i> 4WE6J6X/EG24N9DAL/B10 R900979944	5	10
30 <i>new</i> 4WE6J6X/EG24N9DAL/N12/62 R978896729	5	10
30 4WE6J6X/EG24N9DK24L2/62 R978896206	5	10
30 4WE6J6X/EG24N9DK25L/62 R978017767	5	10
30 4WE6J6X/EG24N9K4 R900561288	5	10
30 4WE6J6X/EG24N9K4/62 R978017756	5	10
30 4WE6J6X/EG24N9K4/62=CSA R901105200	5	10
30 <i>new</i> 4WE6J6X/EG24N9K4/A12 R900567271	5	10
30 <i>new</i> 4WE6J6X/EG24N9K4/B10 R900548271	5	10
30 <i>new</i> 4WE6J6X/EG24N9K4/B10=CSA R900957815	5	10
30 4WE6J6X/EG24N9K4/V R900548772	5	10
30 <i>new</i> 4WE6J6X/EG24N9K4/V/62 R978024425	5	10
30 <i>new</i> 4WE6J6X/EG96N4K4=CSA R901028055	5	10
30 <i>new</i> 4WE6J6X/EG96N9K4 R900909593	5	10
30 <i>new</i> 4WE6J6X/EG96N9K4/62 R978017802		10
30 <i>new</i> 4WE6J6X/EG96N9K4/V R900949273	5	10
30 <i>new</i> 4WE6J6X/EW110N9DA R978019413	5	10
30 4WE6J6X/EW110N9DA/62 R978874065	5	10
30 <i>new</i> 4WE6J6X/EW110N9DA/V R978018772		10
30 new 4WE6J6X/EW110N9DA/V/62 R978875805	5	10
30 4WE6J6X/EW110N9DAL R900553481	5	10
30 4WE6J6X/EW110N9DAL/62 R978017736	5	10
30		10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30	new	4WE6J6X/EW110N9DAL/N12V/62	R978878845	5	10
30	new	4WE6J6X/EW110N9DAL/V	R900578218	5	10
30	new	4WE6J6X/EW110N9DAL/V/62	R978021922	5	10
30		4WE6J6X/EW110N9DK25L/62	R978017785	5	10
30		4WE6J6X/EW110N9K4	R900551703	5	10
30		4WE6J6X/EW110N9K4/62	R978017733	5	10
30	new	4WE6J6X/EW110N9K4/62=CSA	R978017813	5	10
30	new	4WE6J6X/EW110N9K4/B08	R900908786	5	10
30	new	4WE6J6X/EW110N9K4/B10	R900912188	5	10
30	new	4WE6J6X/EW110N9K4/B10/62	R978021624	5	10
30	new	4WE6J6X/EW110N9K4/B10=CSA	R900956829	5	10
30	new	4WE6J6X/EW110N9K4/B10N10/62	R978908790	5	10
30	new	4WE6J6X/EW110N9K4/B10V	R900946083	5	10
30	new	4WE6J6X/EW110N9K4/N12/62	R978910843	5	10
30	new	4WE6J6X/EW110N9K4/V	R900910785	5	10
30	new	4WE6J6X/EW110N9K4/V/62	R978024426	5	10
30	new	4WE6J6X/EW110N9K4/V=CSA	R900962493	5	10
30	new	4WE6J6X/EW110N9K4=CSA	R900916703	5	10
30	new	4WE6JA6X/EG12N9K4	R900923495	5	10
30	new	4WE6JA6X/EG12N9K4/A12/62	R978910767	5	10
30	new	4WE6JA6X/EG24N9K4	R900561290	5	10
30		4WE6JA6X/EG24N9K4/62	R978017757	5	10
30	new	4WE6JA6X/EG24N9K4/V	R900554557	5	10
30	new	4WE6JA6X/EG24N9K4=CSA	R900957299	5	10
30	new	4WE6JA6X/EW110N9DA/62	R978874057	5	10
30	new	4WE6JA6X/EW110N9DAL/62	R978874058	5	10
30	new	4WE6JA6X/EW110N9DAL/V	R900964300	5	10
30	new	4WE6JA6X/EW110N9K4	R900905452	5	10
30	new	4WE6JA6X/EW110N9K4/62	R978024428	5	10
30	new	4WE6JA6X/EW110N9K4/B10V	R901111218	5	10
30	new	4WE6JA6X/EW110N9K4/V	R900918061	5	10
30	new	4WE6JB6X/EG24N9DA/62	R978892258	5	10
30		4WE6JB6X/EG24N9K4	R900561291	5	10
30	new	4WE6JB6X/EG24N9K4/62	R978024429	5	10
30	new	4WE6JB6X/EG24N9K4/V	R900932917	5	10
30		4WE6JB6X/EW110N9DA/62	R978874061	5	10
30	new	4WE6JB6X/EW110N9DAL	R978018512	5	10
30		4WE6JB6X/EW110N9K4	R900906202	5	10
30		4WE6JB6X/EW110N9K4/62	R978024431	5	10
30	new	4WE6L6X/EG24N9DAL/62	R978898130	5	10
30	new	4WE6L6X/EG24N9K4	R900901751	5	10
30		4WE6L6X/EG24N9K4/62	R978024432	5	10
30		4WE6L6X/EW110N9DAL/62	R978891157	5	10
30		4WE6L6X/EW110N9K4	R900906462	5	10
30		4WE6LA6X/EG12N9K4/A12/62	R978933518	5	10
30	new	4WE6LA6X/EW110N9K4	R900919093	5	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30	new	4WE6LB6X/EG24N9K4=AN	R900763384	5	10
30	new	4WE6M6X/EG24N9DAL	R900765945	5	10
30	new	4WE6M6X/EG24N9K4	R900577475	5	10
30	new	4WE6M6X/EG24N9K4/62	R978017771	5	10
30	new	4WE6M6X/EG24N9K4/62 CSA	R978909824	5	10
30	new	4WE6M6X/EW110N9DA/62	R978878850	5	10
30	new	4WE6M6X/EW110N9DAL/62	R978879585	5	10
30	new	4WE6M6X/EW110N9K4	R900904559	5	10
30	new	4WE6M6X/EW110N9K4/62=CSA	R978017843	5	10
30	new	4WE6M6X/EW110N9K4/V	R900923360	5	10
30	new	4WE6M6X/EW110N9K4/V/62=CSA	R901328365	5	10
30	new	4WE6M6X/EW110N9K4=CSA	R900940568	5	10
30	new	4WE6MA6X/EG24N9K4	R900546939	5	10
30	new	4WE6MA6X/EG24N9K4/62	R978025541	5	10
30	new	4WE6MA6X/EW110N9DAL/V/62	R978909633	5	10
30	new	4WE6MA6X/EW110N9K4	R900959972	5	10
30	new	4WE6MB6X/EG24N9K4	R900577367	5	10
30	new	4WE6U6X/EG24N9K4/V/62=CSA	R978035381	5	10
30		4WE6W6X/EG12N9K4/62	R978898240	5	10
30		4WE6W6X/EG24N9K4	R900568233	5	10
30		4WE6W6X/EG24N9K4/62	R978017764	5	10
30	new	4WE6W6X/EG24N9K4/62=CSA	R978017868	5	10
30	new	4WE6W6X/EW110N9DAL/62	R978892081	5	10
30	new	4WE6Y6X/EG12N9DA/62	R978878282	5	10
30	new	4WE6Y6X/EG12N9K4	R900942273	5	10
30	new	4WE6Y6X/EG12N9K4/62 CSA	R978905637	5	10
30	new	4WE6Y6X/EG12N9K4/V	R901008606	5	10
30	new	4WE6Y6X/EG12N9K4/V/62=CSA	R978020055	5	10
30	new	4WE6Y6X/EG24N9DA/62	R978878286	5	10
30	new	4WE6Y6X/EG24N9DAL	R900935501	5	10
30		4WE6Y6X/EG24N9K4	R900561276	5	10
30		4WE6Y6X/EG24N9K4/62	R978017748	5	10
30	new	4WE6Y6X/EG24N9K4/62=CSA	R978017823	5	10
30	new	4WE6Y6X/EG24N9K4/B12	R900908877	5	10
30	new	4WE6Y6X/EG24N9K4/V	R900909636	5	10
30	new	4WE6Y6X/EG24N9K4/V/62	R901274620	5	10
30	new	4WE6Y6X/EG24N9K4/V/62 CSA	R978902121	5	10
30	new	4WE6Y6X/EG24N9K4=CSA	R900929714	5	10
30	new	4WE6Y6X/EG96N9K4	R900909273	5	10
30	new	4WE6Y6X/EG96N9K4/62	R978017800	5	10
30	new	4WE6Y6X/EW110N9DA	R978032040	5	10
30	new	4WE6Y6X/EW110N9DA/62	R978874546	5	10
30	new	4WE6Y6X/EW110N9DA/V/62	R978891254	5	10
30	new		R900962944	5	10
30		4WE6Y6X/EW110N9DAL/62	R978017864	5	10
30	new		R978878937	5	10
30	new	4WE6Y6X/EW110N9K4	R900905896	5	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
30		4WE6Y6X/EW110N9K4/62	R978017791	5	10
30	new	4WE6Y6X/EW110N9K4/62=CSA	R978017846	5	10
30	new	4WE6Y6X/EW110N9K4/V	R900910847	5	10
30	new	4WE6Y6X/EW110N9K4/V/62 CSA	R978901065	5	10
30	new	4WE6Y6X/EW110N9K4=CSA	R900942177	5	10
		4WEH - Directional Spool Valve			
31		4WEH10J4X/6EG24N9ETK4/B10	R900948924	5	10
31		4WEH10J4X/6EW110N9ETK4/B10	R900717396	5	10
31	new	4WEH16D7X/6EW110N9ETK4/B10	R900965804	5	10
31	new	4WEH16E7X/6EG24N9EK4/B10	R900978983	5	10
31	new	4WEH16E7X/6EG24N9ETDAL/B10	R901236007	5	10
31		4WEH16E7X/6EG24N9ETK4/B10	R900923971	5	10
31	new	4WEH16E7X/6EG24N9TK4/B10	R900933564	5	10
31	new	4WEH16E7X/6EW110N9EDAL/B10	R901225031	5	10
31		4WEH16E7X/6EW110N9ETDAL/B10	R901225039	5	10
31	new	4WEH16EA7X/6EW110N9ETK4/B10	R900705278	5	10
31	new	4WEH16EB7X/6EG24N9TK4	R900931973	5	10
31		4WEH16J7X/6EG24N9ETK4/B10	R900930431	5	10
31		4WEH16J7X/6EG24N9K4	R900925580	5	10
31	new	4WEH16J7X/6EG24N9TK4	R900927255	5	10
31	new	4WEH16J7X/6EW110N9EK4/B10	R900959609	5	10
31		4WEH16J7X/6EW110N9ETK4/B10	R900939187	5	10
31	new	4WEH16JB7X/6EW110N9EK4/B10	R901025600	5	10
31	new	4WEH22D7X/6EW110N9DA	R978899831	5	10
31		4WEH22D7X/6EW110N9EDAL/B10	R978913434	5	10
31		4WEH22D7X/6EW110N9ETDAL/B10	R978891600	5	10
31	new	4WEH22D7X/6EW110N9K4	R900935725	5	10
31	new	4WEH22D7X/OF6EW110N9K4/B10	R978010140	5	10
31		4WEH22E7X/6EG24N9EK4/B10	R900932659	5	10
31	new	4WEH22E7X/6EW110N9DA	R978892640	5	10
31		4WEH22E7X/6EW110N9EDAL/B10	R901225767	5	10
31		4WEH22E7X/6EW110N9ETDA/B10	R901225778	5	10
31		4WEH22E7X/6EW110N9ETDAL/B10	R901205276	5	10
31		4WEH22E7X/6EW110N9ETK4/B10	R901211089	5	10
31	new	4WEH22E7X/6EW110N9K4	R900911063	5	10
31		4WEH22E7X/6EW110N9TDA	R978907992	5	10
31	new	4WEH22G7X/6EG24N9K4	R978002840	5	10
31		4WEH22G7X/6EW110N9DA	R978892609	5	10
31		4WEH22G7X/6EW110N9K4	R900939327	5	10
31		4WEH22H7X/6EG12N9TK4	R978910815	5	10
31		4WEH22J7X/6EG24N9EK4/B10	R900977313	5	10
31		4WEH22J7X/6EG24N9ETK4/B10	R900932049	5	10
31	new	4WEH22J7X/6EW110N9DA	R978896846	5	10
31		4WEH22J7X/6EW110N9EK4/B10	R900939179	5	10
31	new	4WEH22J7X/6EW110N9K4	R900912919	5	10
- •		Z4WEH-Directional Shut-Off Valves	1.5555.2316		
	-	Z4WEH10E63-4X/6EG24NETK4/B10	R900977314	5	

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Page Number	Description	Par	t Number	Maximum Quantity	Shipment ¹ (Business Days)
	Pressure Control Valves	~ <u></u>			
		<			
00	DBD-Pressure Relief Valves	Doo	0.400001	_	10
33	DBDH 10 K1X/100		0423891	5	10
33	DBDH 10 K1X/200		00424190	5	10
33	DBDH 6 G1X/200/12	1111	0345310	5	10
33	DBDH 6 G1X/315/12		00458278	5	10
33	DBDH 6 G1X/400/12		0385305	5	10
33	DBDH 6 K1X/100		0424199	5	10
33	DBDH 6 K1X/200		00424200	5	10
33	DBDS 10 G1X/200/12		0341591	5	10
33	DBDS 10 G1X/315/12		0377746	5	10
33	DBDS 10 K1X/200		0424149	5	10
33	DBDS 10 K1X/25		0420276	5	10
33	DBDS 10 K1X/315		0424150	5	10
33	DBDS 10 K1X/315V		0424151	5	10
33	DBDS 20 K1X/200	112.5	0424269	5	10
33	DBDS 20 K1X/315	R90	0424271	5	10
33	DBDS 20 K1X/400	R90	0424203	5	10
33	DBDS 30 K1X/200		0424286	5	10
33	DBDS 30 K1X/315	R90	0424288	5	10
33	DBDS 6 G1X/200/12	R90	0341066	5	10
33	DBDS 6 G1X/315/12	R90	0352672	5	10
33	DBDS 6 K1X/100	R90	0423723	5	10
33	DBDS 6 K1X/200	R90	0423724	5	10
33	DBDS 6 K1X/315	R90	0423725	5	10
33	DBDS 6 K1X/315V	R90	0428388	5	10
33	DBDS 6 K1X/400	R90	0423726	5	10
	DZT-Pressure Relief Valves				
34	DZT-XA2-1X/160	081	1104126	3	10
	ZDB(K) & Z2DB-Pressure Relief Valves				
35	Z2DB 10 VD2-4X/200V	R90	0411358	5	10
35	Z2DB 6 VC2-4X/200V	R90	0411312	5	10
35	Z2DB 6 VC2-4X/315V	R90	0411318	5	10
35	Z2DB 6 VD2-4X/200V	R90	0411314	5	10
35	ZDB 10 VA2-4X/200V	R90	0422189	5	10
35	ZDB 6 VA2-4X/200V	R90	0409886	5	10
35	ZDB 6 VB2-4X/100V	R90	0409936	5	10
35	ZDB 6 VB2-4X/200V	R90	0409854	5	10
35	ZDB 6 VB2-4X/315V		0409896	5	10
35	ZDB 6 VP2-4X/315V		0409898	5	10
35	ZDBK 6 VP2-1X/210V		0564564	5	10
	DB & DBW-Pressure Relief Valves	1100			
36	DB 10-2-5X/200/12	Rac	0535928	3	10
36	DB 20-2-5X/315/12		0511690	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
36	DB 30-2-5X/315/12	R900558107	3	10
36	DBW 10 A2-5X/200Y6EW110N9K4/12	R978030501	3	10
36	DBW10A2-5X/200-6EG24N9K4/12	R978912159	3	10
36	DBW20A2-5X/200-6EG24N9K4/12	R978010494	3	10
36	DBW20A2-5X/200-6EW110N9K4/12	R978910390	3	10
	DR-Pressure Reducing Valve			
37	DR 6 DP2-5X/150YM/12	R900479792	5	10
	ZDR-Pressure Reducing Valve			
38	ZDR 10 DP2-5X/150YM	R900410880	5	10
38	ZDR 10 DP2-5X/150YM/12	R900582108	5	10
38	ZDR 10 DP2-5X/210YM/12	R900582564	5	10
38	ZDR 10 DP2-5X/75YM/12	R900513528	5	10
38	ZDR 10 VP5-3X/200YM/12	R900512452	5	10
38	ZDR 6 DA2-4X/150Y	R900410849	5	10
38	ZDR 6 DA2-4X/150Y/12	R900427723	5	10
38	ZDR 6 DA2-4X/75Y	R900410813	5	10
38	ZDR 6 DA2-4X/75Y/12	R900430193	5	10
38	ZDR 6 DP2-4X/150YM	R900483787	5	10
38	ZDR 6 DP2-4X/150YM/12	R900404754	5	10
38	ZDR 6 DP2-4X/210YM	R900483788	5	10
38	ZDR 6 DP2-4X/210YM/12	R900433350	5	10
38	ZDR 6 DP2-4X/25YM/12	R900404346	5	10
38	ZDR 6 DP2-4X/75YM	R900404346	5	10
38	ZDR 6 DP2-4X/751W ZDR 6 DP2-4X/75YM/12	R900403730	5	10
30	ZDRK-Pressure Reducing Valve	K900401210	5	10
20		B00070000	5	10
39	ZDRK 6 VP5-1X/100YMV/12	R900700999	5	10
39	ZDRK 6 VP5-1X/210YMV/12	R900566912	5	10
39	Flow Control Valves	R900700998	5	10
	Throttle Valves			
40	MG 10 G1X/V	R900422145	5	10
	Double Throttle Check Valves			
41	Z2FS 10-3-3X/V	R900523737	5	10
41	Z2FS 10-5-3X/V	R900517812	5	10
41	Z2FS 16-8-3X/S	R900459203	5	10
41	Z2FS 16-8-3X/S2	R900457256	5	10
41	Z2FS 16-8-3X/S2V	R900473688	5	10
41	Z2FS 16-8-3X/SV	R900470529	5	10
41	Z2FS 22-3X/SV	R900474580	5	10
41	Z2FS 22-8-3X/S2	R900443176	5	10
41	Z2FS 22-8-3X/S2V	R900468786	5	10
41	Z2FS 6-2-4X/1Q	R900481621	5	10
41	Z2FS 6-2-4X/1QV	R900481623	5	10
	Z2FS 6-2-4X/2QV	R900481624	5	10
41				

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
41	Z2FSK 10-2-1X/2QV	R900564522	5	10
41	Z2FSK 6-2-1X/2QV	R900564521	5	10
	2-Way Flow Control Valves			
42	2FRM 10-3X/10L	R900424887	5	10
42	2FRM 10-3X/25L	R900423255	5	10
42	2FRM 10-3X/50L	R900420286	5	10
42	2FRM 10-3X/50LB	R900423261	5	10
42	2FRM 16-3X/100L	R900424905	5	10
42	2FRM 6 B36-3X/1.5QRV	R900205507	5	10
42	2FRM 6 B36-3X/16QMV	R900205510	5	10
42	2FRM 6 B36-3X/16QRV	R900205511	5	10
42	2FRM 6 B36-3X/25QRV	R900205513	5	10
42	2FRM 6 B36-3X/3QRV	R900205517	5	10
42	2FRM 6 B36-3X/6QRV	R900205519	5	10
	Proportional Valves			
	4WRP & 4WRPE-Proportional Directional Valves			
43	4WRP 10 EA63S-1X/G24Z4/M	0811403001	5	10
43	4WRPE 10 E50SJ-2X/G24K0/A1M	0811404770	5	10
43	4WRPE 10 E80SJ-2X/G24K0/A1M	0811404771	5	10
43	4WRPE 10 EA80SJ-2X/G24K0/A1M	0811404750	5	10
43	4WRPE 10 V80M-2X/G24K0/A1M-837	0811404552	5	10
43	4WRPE 10 W80SJ-2X/G24K0/A1M	0811404773	5	10
43	4WRPE 6 E18SJ-2X/G24K0/A1M	0811404140	5	10
43	4WRPE 6 E32SJ-2X/G24K0/A1M	0811404141	5	10
	4WRPH & 4WRPEH-High Response Directional Valve			
44	4WRPEH 10 C3 B100L-2X/G24K0/A1M	0811404801	5	10
44	4WRPEH 10 C3 B50L-2X/G24K0/A1M	0811404800	5	10
44	4WRPEH 10 C4 B100L-2X/G24K0/A1M	0811404803	5	10
44	4WRPEH 6 C B40L-2X/G24K0/F1M	0811404640	5	10
44	4WRPEH 6 C3 B04L-2X/G24K0/A1M	0811404600	5	10
44	4WRPEH 6 C3 B04P-2X/G24K0/A1M	0811404605	5	10
44	4WRPEH 6 C3 B12L-2X/G24K0/A1M	0811404601	5	10
44	4WRPEH 6 C3 B15P-2X/G24K0/A1M	0811404642	5	10
44	4WRPEH 6 C3 B24L-2X/G24K0/A1M	0811404602	5	10
44	4WRPEH 6 C3 B40L-2X/G24K0/A1M	0811404603	5	10
44	4WRPEH 6 C3 B40L-2X/G24K0/F1M	0811404634	5	10
44	4WRPEH 6 C4 B12L-2X/G24K0/A1M	0811404611	5	10
44	4WRPEH 6 C4 B24L-2X/G24K0/A1M	0811404612	5	10
44	4WRPEH 6 C4 B40L-2X/G24K0/A1M	0811404613	5	10
44	4WRPH 10 C4 B100L-2X/G24Z4/M	0811404061	5	10
44	4WRPH 6 C3 B12L-2X/G24Z4/M	0811404034	5	10
44	4WRPH 6 C3 B15P-2X/G24Z4/M	0811404047	5	10
44	4WRPH 6 C3 B24L-2X/G24Z4/M	0811404035	5	10
44	4WRPH 6 C3 B40L-2X/G24Z4/M	0811404036	5	10
44	4WRPH 6 C4 B40L-2X/G24Z4/M	0811404039	5	10

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45 45 45			Part Number	Maximum Quantity	(Business Days)
45		4WRA & 4WRAE-Proportional Directional Valves			
		4WRA 10 E60-2X/G24N9K4/V	R900902097	5	10
45		4WRA 10 W60-2X/G24N9K4/V	R900907650	5	10
		4WRAE 10 E60-2X/G24N9K31/A1V	R900558356	5	10
45		4WRAE 10 W60-2X/G24N9K31/A1V	R900900988	5	10
45		4WRAE 6 W30-2X/G24N9K31/A1V	R900900987	5	10
		4WRA(E)B-Proportional Directional Control Valves			
46	new	4WRAB6E03-1X/G12N9K4/MR	R978916804	5	10
46		4WRAB6E06-1X/G12N9K4/MR	R978910358	5	10
46	new	4WRAB6E12-1X/G12N9K4/MR	R978879705	5	10
46		4WRAB6E25-1X/G12N9K4/MR	R978898190	5	10
46		4WRAB6E25-1X/G24N9K4/MR	R978879339	5	10
46	new	4WRAB6EA12-1X/G12N9K4/MR	R978911432	5	10
46	new	4WRAB6W03-1X/G12N9K4/MR	R978911679	5	10
46	new	4WRAB6W12-1X/G12N9DA/MR	R978908145	5	10
46		4WRAB6W25-1X/G12N9K4/MR	R978877472	5	10
46		4WRAEB6E12-1X/G24N9DK26/MR	R978879310	5	10
46		4WRAEB6E25-1X/G24N9DK26/MR	R978878558	5	10
46	new	4WRAEB6EA25-1X/G24N9DK26/MR	R978890224	5	10
46		4WRAEB6W25-1X/G24N9DK26/MR	R978878559	5	10
46	new	4WRAEB6WA25-1X/G24N9DK26/MR	R978879793	5	10
		4WREE-Proportional Directional Valves			
47		4WREE 10 E1-75-2X/G24K31/A1V	R900927232	5	10
47		4WREE 10 E50-2X/G24K31/A1V	R900927231	5	10
47		4WREE 10 E75-2X/G24K31/A1V	R900927230	5	10
47		4WREE 10 V50-2X/G24K31/A1V	R900927235	5	10
47		4WREE 10 V75-2X/G24K31/A1V	R900924607	5	10
47		4WREE 10 W50-2X/G24K31/A1V	R900931371	5	10
47		4WREE 10 W75-2X/G24K31/A1V	R900927233	5	10
47		4WREE 6 E08-2X/G24K31/A1V	R900912156	5	10
47		4WREE 6 E16-2X/G24K31/A1V	R900920567	5	10
47		4WREE 6 E32-2X/G24K31/A1V	R900907114	5	10
47		4WREE 6 E32-2X/G24K31/F1V	R900925733	5	10
47		4WREE 6 EA16-2X/G24K31/A1V	R900913433	5	10
47		4WREE 6 V08-2X/G24K31/A1V	R900919455	5	10
47		4WREE 6 V1-16-2X/G24K31/A1V	R90093307	5	10
47		4WREE 6 V16-2X/G24K31/A1V	R900937193	5	10
47		4WREE 6 V32-2X/G24K31/A1V	R900907440		10
47		4WREE 6 W16-2X/G24K31/A1V	R900911681	5 5	10
47		4WREE 6 W32-2X/G24K31/A1V	R900925657		
47			R900911004	5	10
10		4WRVE-High Response Directional Valves	0011404001	0	10
48		4WRVE 16 V200M-2X/G24K0/B5M	0811404291	3	10
40		4WRLE-High Response Directional Valves	0044404540	_	10
49		4WRLE 10 E80SJ-3X/G24ETK0/A1M	0811404713	3	10
49 49		4WRLE 10 V55L-3X/G24ETK0/A1M 4WRLE 10 V55M-3X/G24ETK0/A1M	R901125218 0811404661	5 3	10 10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
49	4WRLE 10 V85L-3X/G24ETK0/A1M	R901125217	5	10
49	4WRLE 10 V85M-3X/G24ETK0/A1M	0811404662	3	10
49	4WRLE 10 W80SJ-3X/G24ETK0/A1M	0811404707	3	10
49	4WRLE 16 EZ180SJ-3X/G24ETK0/A1M	0811404319	3	10
49	4WRLE 16 EZ180SJ-3X/G24K0/A1M	0811404305	3	10
49	4WRLE 16 V120L-3X/G24ETK0/A1M	R901128116	5	10
49	4WRLE 16 V120M-3X/G24K0/A1M	0811404250	3	10
49	4WRLE 16 V200L-3X/G24ETK0/A1M	R901128117	5	10
49	4WRLE 16 V200M-3X/G24K0/A1M	0811404251	3	10
49	4WRLE 16 WZ180SJ-3X/G24K0/A1M	0811404307	3	10
49	4WRLE 25 EZ350SJ-3X/G24ETK0/A1M	0811404481	3	10
49	4WRLE 25 EZ350SJ-3X/G24K0/A1M	0811404454	3	10
49	4WRLE 25 V370M-3X/G24K0/A1M	0811404430	5	10
49	4WRLE 25 WZ350SJ-3X/G24K0/A1M	0811404456	3	10
	4WRSE-High Response Directional Valves			
50	4WRSE 10 V80-3X/G24K0/A1V	R900579286	5	10
	4WRZE-4/2, 4/3 Proportional Directional Valves			
51	4WRZE 16 E150-7X/6EG24N9ETK31/A1V	R900945995	3	10
	FESX-Proportional Cartridge Throttle Valves			
52	FESX 25CA-1X/210LZ4M	0811402515	5	10
52	FESX 32CA-1X/320LZ4M	0811402614	5	10
	FESXE-Proportional Cartridge Throttle Valves			
53	FESXE 40CA-1X/500LK0B1M	0811402622	5	10
	DBETBX-Pressure Relief Valves			
54	DBETBX-1X/180G24-37Z4M	0811402003	5	10
	DBETBEX-Proportional Pressure Relief Valves			
55	DBETBEX-1X/180G24K31A1M	0811402071	5	10
55	DBETBEX-1X/250G24K31A1M	0811402073	5	10
	DBE6X-Proportional Pressure Relief Valves			
56	DBE 6X-1X/315G24-8NZ4M	0811402043	5	10
	DBEE6-Proportional Pressure Relief Valves	0011102010		
57	DBEE 6-2X/315G24K31A1M	R901323940	5	10
	DBETX-Proportional Pressure Relief Valves	11001020010		
58	DBETX-1X/180G24-25NZ4M	0811402031	5	10
58	DBETX-1X/180G24-8NZ4M	0811402017	5	10
58	DBETX-1X/250G24-8NZ4M	0811402019	5	10
	DBETX-1X/315G24-25NZ4M	0811402032	5	10
59	DBET & DBETE-Proportional Pressure Relief Valves	0011402002		10
59	DBET-6X/200G24K4V	R901000846	5	10
59	DBET-6X/350G24K4V	R901000848	5	10
59	DBETE-6X/200G24K31A1V	R901029968	5	10
59	DBETE-6X/315G24K31A1V	R901029969	5	10
59	DBETE-6X/350G24K31A1V	R901029909	5	10
09	DBETR-Proportional Pressure Relief Valves	11301029970	3	10
60	DBETR-Proportional Pressure Relief Valves DBETR-1X/230G24K4M	R900370146	5	10
00	DDL11(-17/2000/241/41VI	K900370146	3	10

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		Quantity	(Business Days)
DBEME-Proportional Pressure Relief Valves			
DBEME 10-5X/200YG24K31M	R900954708	3	10
DBEME 10-5X/315YG24K31M	R900536812	3	10
DRE6-Proportional Pressure Reducing Valves			
DRE 6-1X/100MG24K4M	R900932943	5	10
DRE6X-Proportional Pressure Reducing Valves			
DRE 6X-1X/175MG24-8NZ4M	0811402055	5	10
DREB6X-Proportional Pressure Reducing Valves			
DREB 6X-1X/175MG24-25Z4M	0811402051	5	10
3DREP & 3DREPE-Proportional Pressure Reducing Valves			
3DREP 6 C-2X/25EG24N9K4/M	R900955887	5	10
3DREP 6 C-2X/25EG24N9K4/M-674	R901205987	5	10
3DREP 6 C-2X/25EG24N9K4/V	R900929529	5	10
3DREPE 6 A-2X/25EG24N9K31/A1V	R900925526	5	10
3DREPE 6 C-2X/25EG24N9K31/A1V	R900925484	5	10
3DREPE 6 C-2X/25EG24N9K31/F1V	R900926984	5	10
DREBE6-Proportional Pressure Reducing Valves			
DREBE 6X-1X/175MG24K31A1M	0811402080	5	10
DREBE 6X-1X/175MG24K31F1M	0811402083	5	10
ZDREE-Proportional Pressure Reducing Valves			
	R901198302	3	10
Proportional Electronics			
	D000033833	5	10
-	R900033623	5	10
	D000780310	5	10
	R900782310	5	10
· · · · · · · · · · · · · · · · · · ·	D000000000		10
1. 2000 070	R900033828	5	10
	D004005444	_	4.0
	R901005414	5	10
	0044405444	_	10
			10
			10
	0811405145	5	10
	Doodoooo	_	10
			10
	R901002095	5	10
	Doocoatance		10
	R900211788	5	10
		_	
			10
			10
MDSD-2X/0	R978886065	5	10
	DRE 6-1X/100MG24K4M DRE6X-Proportional Pressure Reducing Valves DRE 6X-1X/175MG24-8NZ4M DREB6X-Proportional Pressure Reducing Valves DREB 6X-1X/175MG24-25Z4M 3DREP & 3DREPE-Proportional Pressure Reducing Valves 3DREP 6 C-2X/25EG24N9K4/M 3DREP 6 C-2X/25EG24N9K4/M-674 3DREP 6 C-2X/25EG24N9K4/V 3DREPE 6 A-2X/25EG24N9K31/A1V 3DREPE 6 C-2X/25EG24N9K31/A1V 3DREPE 6 C-2X/25EG24N9K31/F1V DREBE6-Proportional Pressure Reducing Valves DREBE 6X-1X/175MG24K31A1M DREBE 6X-1X/175MG24K31F1M ZDREE-Proportional Pressure Reducing Valves ZDREE 10 VP2-2X/200XLMG24K31A1M	DRE 6-1X/100MG24K4M R900932943 DRE 6X-Proportional Pressure Reducing Valves 0811402055 DRE 6X-1X/175MG24-8NZ4M 0811402051 DREB 6X-Proportional Pressure Reducing Valves 0811402051 JDREP 6 S-2X/25EG24N9K4/M R900955887 JDREP 6 C-2X/25EG24N9K4/M R901205987 JDREP 6 C-2X/25EG24N9K4/M R900925526 JDREP 6 C-2X/25EG24N9K4/M R900929529 JDREPE 6 A-2X/25EG24N9K31/A1V R90092526 JDREPE 6 C-2X/25EG24N9K31/A1V R900925484 JDREPE 6 C-2X/25EG24N9K31/F1V R90092584 JDREPE 6 C-2X/25EG24N9K31/F1V R900926984 DREBE6-Proportional Pressure Reducing Valves DREBE6-Proportional Pressure Reducing Valves DREBE 6X-1X/175MG24K31A1M 0811402080 DREBE 6X-1X/175MG24K31A1M 0811402080 DREBE 10 VP2-2X/200XLMG24K31A1M R901198302 Proportional Electronics VT-VSPA1-1-1X - Analog Amplifier R900033823 VT-VSPA1-2-1X - Analog Amplifier R900033823 VT-SSPA1-50-1X/V0/0-24 R90003624 VT-SSPA1-50-1X/V0/0-24 R901005414 VT-SSPA1-508-20/V0 08	DRE 6-1X/100MG24K4M

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
	VT-5041-3X - Analog Amplifier			
76	VT 5041-3X/1-0	R901236404	5	10
76	VT 5041-3X/3-0	R901196678	5	10
	VT-VRPA1-1 - Analog Amplifier			
77	VT-VRPA1-100-1X/V0/0	R901009038	5	10
77	VT-VRPA1-151-1X/V0/0	R901057060	5	10
	VT-VRPA1RTS - Electrical Amplifier			
78	VT-VRPA1-527-20/V0/RTS-2STV	0811405073	5	10
	VT-VRPA1-527RTS-2/2V - Electrical Amplifier			
79	VT-VRPA1-527-20/V0/RTS-2/2V	0811405074	5	10
	VT-VRPA1PV-RTP - Electrical Amplifier			
80	VT-VRPA1-537-10/V0/PV-RTP	0811405102	5	10
	VT-VRPA2/T1 - Analog Amplifier			
81	VT-VRPA2-1-1X/V0/T1	R900979887	5	10
81	VT-VRPA2-2-1X/V0/T1	R900979889	5	10
	VT-VRPA2-5RTP - Electrical Amplifier			
82	VT-VRPA2-527-10/V0/RTP	0811405119	5	10
82	VT-VRPA2-537-10/V0/RTP	0811405120	5	10
	VT-5035-1X - Electrical Amplifier			
83	VT 5035-1X/	R900579497	5	10
	VT-VRRA - Analog Amplifier			
84	VT-VRRA 1-527-20/V0	0811405060	5	10
84	VT-VRRA 1-527-20/V0/2STV	0811405063	5	10
84	VT-VRRA 1-537-20/V0	0811405061	5	10
-	VT-VARAP1 - p/Q Amplifier			
85	VT-VARAP1-527-20/V0	0811405152	5	10
	VT-VACAP1 - p/Q Controller			
86	VT-VACAP-500-20/V0	0811405157	5	10
	VT-HACD-3 - Control Electronics			
87	VT-HACD-3-2X/0-I-00/000	R901239533	5	10
87	VT-HACD-3-2X/E-I-00/000	R901239535	5	10
87	VT-HACD-3-2X/P-I-00/000	R901227616	5	10
	VT3002 - Card Holder		_	
88	VT 3002-1-2X/32D (card holder)	R900020153	5	10
88	VT 3002-1-2X/32F	1834486001	5	10
88	VT 3002-1-2X/48F (card holder)	R900020154	5	10
	VT-SSBA1 - Plug-in Switching Amplifier	1.000020101		10
89	VT-SSBA1-PWM-1X/V002/5	R901290194	3	10
	VT-DFP - Pilot Control Valves	11001200101		10
90	VT-DFP-A-2X/G24K0/0/V	R900703811	5	10
90	VT-DFPE-A-2X/G24K0/0A1V/V	R900712200	5	10
	VT-VETSY-1 - Service Case	1.000712200		13
91	VT-VETSY-1-1X/1-2-1-1-0/USA	R978050422	3	10
31	HM20 - Pressure Transducer	11870030422	3	10
92	HM 20-1X/100-C-K35	R901295668	5	10
92	HM 20-1X/100-C-K35 HM 20-1X/100-H-K35	R901295668	5	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
92		HM 20-1X/250-C-K35	R901296640	5	10
92		HM 20-1X/250-H-K35	R901296641	5	10
92		HM 20-1X/400-C-K35	R901295669	5	10
92		HM 20-1X/400-H-K35	R901295670	5	10
		Mobile Electronics			
93	new	BODAS Cable	R902109422	2	10
93	new	BODAS Service Diagnostic Connector	R909831291	2	10
93	new	BODAS Service Tool Full	R902109416	2	10
94	new	Fluid Temperature Sensor	0538009252	4	10
95	new	RA Amplifier 25 Pin Mating Connector	R902603063	4	10
95	new	RA2-1/10 Dual Solenoid Amplifier	R902091800	4	10
96	new	RC 52 Pin Mating Connector	R902602414	4	10
96	new	RC2-2/21 Microcontroller	R902098200	4	10
		Tie Rod Cylinders			
		Hydraulic Cylinder			
97		CDT1MF1/1.50/0.63/Z1X/S11HHDMWW	R978016333	5	5
97		CDT1MF1/1.50/0.63/Z1X/S11HHUMWW	R978010269	5	5
97		CDT1MF1/1.50/1.00/Z1X/S11HHUMWW	R978010270	5	5
97		CDT1MF1/2.00/0.63/Z1X/S11HHUMWW	R978023890	5	5
97		CDT1MF1/2.00/1.00/Z1X/S11HHDMWW	R978010272	5	5
97		CDT1MF1/2.00/1.00/Z1X/S11HHUMWW	R978013140	5	5
97		CDT1MF1/2.50/0.63/Z1X/S11HHUMWW	R978027518	5	5
97		CDT1MF1/2.50/1.00/Z1X/S11HHUMWW	R978013171	5	5
97		CDT1MF1/3.25/1.00/Z1X/S11HHUMWW	R978025419	5	5
97		CDT1MF1/3.25/1.38/Z1X/S11HHUMWW	R978011891	5	5
97		CDT1MF1/4.00/1.00/Z1X/S11HHUMWW	R978027519	5	5
97		CDT1MF1/4.00/1.38/Z1X/S11HHUMWW	R978021984	5	5
97		CDT1MF2/1.50/0.63/Z1X/S11HHUMWW	R978010313	5	5
97		CDT1MF2/1.50/1.00/Z1X/S11HHUMWW	R978010314	5	5
97		CDT1MF2/2.00/0.63/Z1X/S11HHUMWW	R978027521	5	5
97		CDT1MF2/2.00/1.00/Z1X/S11HHDMWW	R978010316	5	5
97		CDT1MF2/2.00/1.00/Z1X/S11HHUMWW	R978018073	5	5
97		CDT1MF2/2.50/0.63/Z1X/S11HHUMWW	R978027522	5	5
97		CDT1MF2/2.50/1.00/Z1X/S11HHUMWW	R978024890	5	5
97		CDT1MF2/3.25/1.00/Z1X/S11HHUMWW	R978027523	5	5
97		CDT1MF2/3.25/1.38/Z1X/S11HHUMWW	R978027524	5	5
97		CDT1MF2/4.00/1.00/Z1X/S11HHUMWW	R978027525	5	5
97		CDT1MF2/4.00/1.38/Z1X/S11HHUMWW	R978027526	5	5
97		CDT1MP1/1.50/0.63/Z1X/S11HHUMWW	R978010355	5	5
97		CDT1MP1/1.50/1.00/Z1X/S11HHDMWW	R978027528	5	5
97		CDT1MP1/1.50/1.00/Z1X/S11HHUMWW	R978010356	5	5
97		CDT1MP1/2.00/0.63/Z1X/S11HHUMWW	R978023862	5	5
97		CDT1MP1/2.00/1.00/Z1X/S11HHUMWW	R978018105	5	5
97		CDT1MP1/2.00/1.38/Z1X/S11HHDMWW	R978033430	5	5
97		CDT1MP1/2.50/0.63/Z1X/S11HHUMWW	R978027530	5	5
97		CDT1MP1/2.50/1.00/Z1X/S11HHUMWW	R978017878	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
97	CDT1MP1/3.25/1.00/Z1X/S11HHUMWW	R978012966	5	5
97	CDT1MP1/3.25/1.38/Z1X/S11HHUMWW	R978027531	5	5
97	CDT1MP1/4.00/1.00/Z1X/S11HHUMWW	R978027532	5	5
97	CDT1MP1/4.00/1.38/Z1X/S11HHUMWW	R978027533	5	5
97	CDT1MS2/1.50/0.63/Z1X/S11HHUMWW	R978010399	5	5
97	CDT1MS2/1.50/1.00/Z1X/S11HHUMWW	R978010400	5	5
97	CDT1MS2/2.00/0.63/Z1X/S11HHUMWW	R978027536	5	5
97	CDT1MS2/2.00/1.00/Z1X/S11HHUMWW	R978027537	5	5
97	CDT1MS2/2.00/1.38/Z1X/S11HHUMWW	R978010403	5	5
97	CDT1MS2/2.50/0.63/Z1X/S11HHUMWW	R978027538	5	5
97	CDT1MS2/2.50/1.00/Z1X/S11HHUMWW	R978018526	5	5
97	CDT1MS2/3.25/1.00/Z1X/S11HHUMWW	R978027539	5	5
97	CDT1MS2/3.25/1.38/Z1X/S11HHUMWW	R978027540	5	5
97	CDT1MS2/4.00/1.00/Z1X/S11HHUMWW	R978024912	5	5
97	CDT1MS2/4.00/1.38/Z1X/S11HHUMWW	R978026121	5	5
97	CDT1MS4/1.50/0.63/Z1X/S11HHUMWW	R978025011	5	5
97	CDT1MS4/1.50/1.00/Z1X/S11HHUMWW	R978027543	5	5
97	CDT1MS4/2.00/0.63/Z1X/S11HHUMWW	R978027545	5	5
97	CDT1MS4/2.00/1.00/Z1X/S11HHUMWW	R978027547	5	5
97	CDT1MS4/2.50/0.63/Z1X/S11HHUMWW	R978027549	5	5
97	CDT1MS4/2.50/1.00/Z1X/S11HHUMWW	R978027551	5	5
97	CDT1MS4/3.25/1.00/Z1X/S11HHUMWW	R978027553	5	5
97	CDT1MS4/3.25/1.38/Z1X/S11HHUMWW	R978027555	5	5
97	CDT1MS4/4.00/1.00/Z1X/S11HHUMWW	R978027557	5	5
97	CDT1MS4/4.00/1.38/Z1X/S11HHUMWW	R978027559	5	5
97	CDT1MT1/2.00/1.38/Z1X/S11HHUMWW	R978033429	5	5
97	CDT1MX0/1.50/0.63/Z1X/S11HHUMWW	R978024680	5	5
97	CDT1MX0/1.50/1.00/Z1X/S11HHUMWW	R978027562	5	5
97	CDT1MX0/2.00/0.63/Z1X/S11HHUMWW	R978027564	5	5
97	CDT1MX0/2.00/1.00/Z1X/S11HHUMWW	R978027566	5	5
97	CDT1MX0/2.50/0.63/Z1X/S11HHUMWW	R978027568	5	5
97	CDT1MX0/2.50/1.00/Z1X/S11HHUMWW	R978027570	5	5
97	CDT1MX0/3.25/1.00/Z1X/S11HHUMWW	R978027572	5	5
97	CDT1MX0/3.25/1.38/Z1X/S11HHUMWW	R978027574	5	5
97	CDT1MX0/4.00/1.00/Z1X/S11HHUMWW	R978027576	5	5
97	CDT1MX0/4.00/1.38/Z1X/S11HHUMWW	R978027578	5	5
97	CDT1MX1/1.50/0.63/Z1X/S11HHUMWW	R978027580	5	5
97	CDT1MX1/1.50/1.00/Z1X/S11HHUMWW	R978027582	5	5
97	CDT1MX1/2.00/0.63/Z1X/S11HHUMWW	R978027584	5	5
97	CDT1MX1/2.00/1.00/Z1X/S11HHUMWW	R978027586	5	5
97	CDT1MX1/2.50/0.63/Z1X/S11HHUMWW	R978027588	5	5
97	CDT1MX1/2.50/1.00/Z1X/S11HHUMWW	R978027590	5	5
97	CDT1MX1/3.25/1.00/Z1X/S11HHUMWW	R978027592	5	5
97	CDT1MX1/3.25/1.38/Z1X/S11HHUMWW	R978027594	5	5
97	CDT1MX1/4.00/1.00/Z1X/S11HHUMWW	R978027596	5	5
97	CDT1MX1/4.00/1.38/Z1X/S11HHUMWW	R978027598	5	5
97	CDT1MX1/4.00/1.30/Z1X/S11HHUMWW	R978027600	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
97	CDT1MX2/1.50/1.00/Z1X/S11HHUMWW	R978027602	5	5
97	CDT1MX2/2.00/0.63/Z1X/S11HHUMWW	R978027604	5	5
97	CDT1MX2/2.00/1.00/Z1X/S11HHUMWW	R978027606	5	5
97	CDT1MX2/2.50/0.63/Z1X/S11HHUMWW	R978027608	5	5
97	CDT1MX2/2.50/1.00/Z1X/S11HHUMWW	R978027610	5	5
97	CDT1MX2/3.25/1.00/Z1X/S11HHUMWW	R978027612	5	5
97	CDT1MX2/3.25/1.38/Z1X/S11HHUMWW	R978027614	5	5
97	CDT1MX2/4.00/1.00/Z1X/S11HHUMWW	R978027616	5	5
97	CDT1MX2/4.00/1.38/Z1X/S11HHUMWW	R978027618	5	5
97	CDT1MX3/1.50/0.63/Z1X/S11HHUMWW	R978027620	5	5
97	CDT1MX3/1.50/1.00/Z1X/S11HHUMWW	R978027622	5	5
97	CDT1MX3/2.00/0.63/Z1X/S11HHUMWW	R978027624	5	5
97	CDT1MX3/2.00/1.00/Z1X/S11HHUMWW	R978027626	5	5
97	CDT1MX3/2.50/0.63/Z1X/S11HHUMWW	R978027628	5	5
97	CDT1MX3/2.50/1.00/Z1X/S11HHUMWW	R978027630	5	5
97	CDT1MX3/3.25/1.00/Z1X/S11HHUMWW	R978027632	5	5
97	CDT1MX3/3.25/1.38/Z1X/S11HHUMWW	R978027634	5	5
97	CDT1MX3/4.00/1.00/Z1X/S11HHUMWW	R978027636	5	5
97	CDT1MX3/4.00/1.38/Z1X/S11HHUMWW	R978027638	5	5
97	CDT4ME5/1.50/0.63/Z1X/S11HHUMWW	R978003328	5	5
97	CDT4ME5/1.50/1.00/Z1X/S11HHDMWW	R978003331	5	5
97	CDT4ME5/1.50/1.00/Z1X/S11HHUMWW	R978003330	5	5
97	CDT4ME5/2.00/1.00/Z1X/S11HHDMWW	R978003377	5	5
97	CDT4ME5/2.00/1.00/Z1X/S11HHUMWW	R978003376	5	5
97	CDT4ME5/2.00/1.38/Z1X/S11HHDMWW	R978003379	5	5
97	CDT4ME5/2.00/1.38/Z1X/S11HHUMWW	R978003378	5	5
97	CDT4ME5/2.50/1.00/Z1X/S11HHDMWW	R978003425	5	5
97	CDT4ME5/2.50/1.00/Z1X/S11HHUMWW	R978003424	5	5
97	CDT4ME5/2.50/1.38/Z1X/S11HHDMWW	R978003427	5	5
97	CDT4ME5/2.50/1.38/Z1X/S11HHUMWW	R978003426	5	5
97	CDT4ME5/3.25/1.38/Z1X/S11HHDMWW	R978003473	5	5
97	CDT4ME5/3.25/1.38/Z1X/S11HHUMWW	R978003472	5	5
97	CDT4ME5/3.25/1.75/Z1X/S11HHDMWW	R978003475	5	5
97	CDT4ME5/3.25/1.75/Z1X/S11HHUMWW	R978003474	5	5
97	CDT4ME5/4.00/1.75/Z1X/S11HHDMWW	R978003521	5	5
97	CDT4ME5/4.00/1.75/Z1X/S11HHUMWW	R978003520	5	5
97	CDT4ME5/4.00/2.00/Z1X/S11HHDMWW	R978003523	5	5
97	CDT4ME5/4.00/2.00/Z1X/S11HHUMWW	R978003522	5	5
97	CDT4ME6/1.50/0.63/Z1X/S11HHDMWW	R978930513	5	5
97	CDT4ME6/1.50/0.63/Z1X/S11HHUMWW	R978043265	5	5
97	CDT4ME6/1.50/1.00/Z1X/S11HHDMWW	R978930514	5	5
97	CDT4ME6/1.50/1.00/Z1X/S11HHUMWW	R978011196	5	5
97	CDT4ME6/2.00/1.00/Z1X/S11HHDMWW	R978930515	5	5
97	CDT4ME6/2.00/1.00/Z1X/S11HHUMWW	R978043266	5	5
97	CDT4ME6/2.00/1.38/Z1X/S11HHDMWW	R978930516	5	5
97	CDT4ME6/2.00/1.38/Z1X/S11HHUMWW	R978043267	5	5
97	CDT4ME6/2.50/1.00/Z1X/S11HHDMWW	R978930517	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
97	CDT4ME6/2.50/1.00/Z1X/S11HHUMWW	R978043268	5	5
97	CDT4ME6/2.50/1.38/Z1X/S11HHDMWW	R978930518	5	5
97	CDT4ME6/2.50/1.38/Z1X/S11HHUMWW	R978034810	5	5
97	CDT4ME6/3.25/1.38/Z1X/S11HHDMWW	R978930520	5	5
97	CDT4ME6/3.25/1.38/Z1X/S11HHUMWW	R978043269	5	5
97	CDT4ME6/3.25/1.75/Z1X/S11HHDMWW	R978930521	5	5
97	CDT4ME6/3.25/1.75/Z1X/S11HHUMWW	R978018874	5	5
97	CDT4ME6/4.00/1.75/Z1X/S11HHDMWW	R978930523	5	5
97	CDT4ME6/4.00/1.75/Z1X/S11HHUMWW	R978043270	5	5
97	CDT4ME6/4.00/2.00/Z1X/S11HHDMWW	R978930524	5	5
97	CDT4ME6/4.00/2.00/Z1X/S11HHUMWW	R978043271	5	5
97	CDT4MF1/1.50/0.63/Z1X/S11HHDMWW	R978003333	5	5
97	CDT4MF1/1.50/0.63/Z1X/S11HHUMWW	R978003332	5	5
97	CDT4MF1/1.50/1.00/Z1X/S11HHDMWW	R978003335	5	5
97	CDT4MF1/1.50/1.00/Z1X/S11HHUMWW	R978003334	5	5
97	CDT4MF1/2.00/1.00/Z1X/S11HHUMWW	R978003380	5	5
97	CDT4MF1/2.00/1.00/Z1X/S11HHDMWW	R978003381	5	5
97	CDT4MF1/2.00/1.38/Z1X/S11HHDMWW	R978003383	5	5
97	CDT4MF1/2.00/1.38/Z1X/S11HHUMWW	R978003383	5	5
97	CDT4MF1/2.50/1.00/Z1X/S11HHDMWW	R978003382	5	5
97	CDT4MF1/2.50/1.00/Z1X/S11HHDMWW	R978003429	5	5
97	CDT4MF1/2.50/1.38/Z1X/S11HHDMWW	R978003428	5	5
97	CDT4MF1/2.50/1.38/Z1X/S11HHUMWW	R978003430	5	5
97	CDT4MF1/3.25/1.38/Z1X/S11HHDMWW	R978003477	5	5
97	CDT4MF1/3.25/1.38/Z1X/S11HHUMWW	R978003476	5	5
97	CDT4MF1/3.25/1.75/Z1X/S11HHDMWW	R978003479	5	5
97	CDT4MF1/3.25/1.75/Z1X/S11HHUMWW	R978003478	5	5
97	CDT4MF1/4.00/1.75/Z1X/S11HHDMWW	R978003525	5	5
97	CDT4MF1/4.00/1.75/Z1X/S11HHUMWW	R978003524	5	5
97	CDT4MF1/4.00/2.00/Z1X/S11HHDMWW	R978003527	5	5
97	CDT4MF1/4.00/2.00/Z1X/S11HHUMWW	R978003526	5	5
97	CDT4MF2/1.50/0.63/Z1X/S11HHDMWW	R978003337	5	5
97	CDT4MF2/1.50/0.63/Z1X/S11HHUMWW	R978003336	5	5
97	CDT4MF2/1.50/1.00/Z1X/S11HHDMWW	R978003339	5	5
97	CDT4MF2/1.50/1.00/Z1X/S11HHUMWW	R978003338	5	5
97	CDT4MF2/2.00/1.00/Z1X/S11HHDMWW	R978003385	5	5
97	CDT4MF2/2.00/1.00/Z1X/S11HHUMWW	R978003384	5	5
97	CDT4MF2/2.00/1.38/Z1X/S11HHDMWW	R978003387	5	5
97	CDT4MF2/2.00/1.38/Z1X/S11HHUMWW	R978003386	5	5
97	CDT4MF2/2.50/1.00/Z1X/S11HHDMWW	R978003433	5	5
97	CDT4MF2/2.50/1.00/Z1X/S11HHUMWW	R978003432	5	5
97	CDT4MF2/2.50/1.38/Z1X/S11HHDMWW	R978003435	5	5
97	CDT4MF2/2.50/1.38/Z1X/S11HHUMWW	R978003434	5	5
97	CDT4MF2/3.25/1.38/Z1X/S11HHDMWW	R978003481	5	5
97	CDT4MF2/3.25/1.38/Z1X/S11HHUMWW	R978003480	5	5
97	CDT4MF2/3.25/1.75/Z1X/S11HHDMWW	R978003483	5	5
97	CDT4MF2/3.25/1.75/Z1X/S11HHUMWW	R978003482	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
97	CDT4MF2/4.00/1.75/Z1X/S11HHDMWW	R978003529	5	5
97	CDT4MF2/4.00/1.75/Z1X/S11HHUMWW	R978003528	5	5
97	CDT4MF2/4.00/2.00/Z1X/S11HHDMWW	R978003531	5	5
97	CDT4MF2/4.00/2.00/Z1X/S11HHUMWW	R978003530	5	5
97	CDT4MF5/4.00/1.75/Z1X/S11HEUMWW	R978034028	5	5
97	CDT4MP1/1.50/0.63/Z1X/S11HHDMWW	R978003341	5	5
97	CDT4MP1/1.50/0.63/Z1X/S11HHUMWW	R978003340	5	5
97	CDT4MP1/1.50/1.00/Z1X/S11HHDMWW	R978003343	5	5
97	CDT4MP1/1.50/1.00/Z1X/S11HHUMWW	R978003342	5	5
97	CDT4MP1/2.00/1.00/Z1X/S11HHDMWW	R978003389	5	5
97	CDT4MP1/2.00/1.00/Z1X/S11HHUMWW	R978003388	5	5
97	CDT4MP1/2.00/1.38/Z1X/S11HHDMWW	R978003391	5	5
97	CDT4MP1/2.00/1.38/Z1X/S11HHUMWW	R978003390	5	5
97	CDT4MP1/2.50/1.00/Z1X/S11HHDMWW	R978003437	5	5
97	CDT4MP1/2.50/1.00/Z1X/S11HHUMWW	R978003436	5	5
97	CDT4MP1/2.50/1.38/Z1X/S11HHDMWW	R978003439	5	5
97	CDT4MP1/2.50/1.38/Z1X/S11HHUMWW	R978003438	5	5
97	CDT4MP1/3.25/1.38/Z1X/S11HHDMWW	R978003485	5	5
97	CDT4MP1/3.25/1.38/Z1X/S11HHUMWW	R978003484	5	5
97	CDT4MP1/3.25/1.75/Z1X/S11HHDMWW	R978003487	5	5
97	CDT4MP1/3.25/1.75/Z1X/S11HHUMWW	R978003486	5	5
97	CDT4MP1/4.00/1.75/Z1X/S11HHDMWW	R978003533	5	5
97	CDT4Mii 1/4.00/1.75/Z1X/S11HHDMWW	R978003533	5	5
97	CDT4MP1/4.00/1.79/Z1X/S11HHDMWW	R978003535	5	5
97	CDT4MP1/4.00/2.00/Z1X/S11HHDMWW	R978003533	5	5
97	CDT4MS2/1.50/0.63/Z1X/S11HHDMWW	R978003334	5	5
	CDT4MS2/1.50/0.63/Z1X/S11HHUMWW			
97 97		R978003344	5	5
	CDT4MS2/1.50/1.00/Z1X/S11HHDMWW	R978003347	5	5
97	CDT4MS2/1.50/1.00/Z1X/S11HHUMWW	R978003346	5	5
97	CDT4MS2/2.00/1.00/Z1X/S11HHDMWW	R978003393	5	5
97	CDT4MS2/2.00/1.00/Z1X/S11HHUMWW	R978003392	5	5
97	CDT4MS2/2.00/1.38/Z1X/S11HHDMWW	R978003395	5	5
97	CDT4MS2/2.00/1.38/Z1X/S11HHUMWW	R978003394	5	5
97	CDT4MS2/2.50/1.00/Z1X/S11HHDMWW	R978003441	5	5
97	CDT4MS2/2.50/1.00/Z1X/S11HHUMWW	R978003440	5	5
97	CDT4MS2/2.50/1.38/Z1X/S11HHDMWW	R978003443	5	5
97	CDT4MS2/2.50/1.38/Z1X/S11HHUMWW	R978003442	5	5
97	CDT4MS2/3.25/1.38/Z1X/S11HHDMWW	R978003489	5	5
97	CDT4MS2/3.25/1.38/Z1X/S11HHUMWW	R978003488	5	5
97	CDT4MS2/3.25/1.75/Z1X/S11HHDMWW	R978003491	5	5
97	CDT4MS2/3.25/1.75/Z1X/S11HHUMWW	R978003490	5	5
97	CDT4MS2/4.00/1.75/Z1X/S11HHDMWW	R978003537	5	5
97	CDT4MS2/4.00/1.75/Z1X/S11HHUMWW	R978003536	5	5
97	CDT4MS2/4.00/2.00/Z1X/S11HHDMWW	R978003539	5	5
97	CDT4MS2/4.00/2.00/Z1X/S11HHUMWW	R978003538	5	5
97	CDT4MS4/1.50/0.63/Z1X/S11HHDMWW	R978003349	5	5
97	CDT4MS4/1.50/0.63/Z1X/S11HHUMWW	R978003348	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
97	CDT4MS4/1.50/1.00/Z1X/S11HHDMWW	R978003351	5	5
97	CDT4MS4/1.50/1.00/Z1X/S11HHUMWW	R978003350	5	5
97	CDT4MS4/2.00/1.00/Z1X/S11HHDMWW	R978003397	5	5
97	CDT4MS4/2.00/1.00/Z1X/S11HHUMWW	R978003396	5	5
97	CDT4MS4/2.00/1.38/Z1X/S11HHDMWW	R978003399	5	5
97	CDT4MS4/2.00/1.38/Z1X/S11HHUMWW	R978003398	5	5
97	CDT4MS4/2.50/1.00/Z1X/S11HHDMWW	R978003445	5	5
97	CDT4MS4/2.50/1.00/Z1X/S11HHUMWW	R978003444	5	5
97	CDT4MS4/2.50/1.38/Z1X/S11HHDMWW	R978003447	5	5
97	CDT4MS4/2.50/1.38/Z1X/S11HHUMWW	R978003446	5	5
97	CDT4MS4/3.25/1.38/Z1X/S11HHDMWW	R978003493	5	5
97	CDT4MS4/3.25/1.38/Z1X/S11HHUMWW	R978003492	5	5
97	CDT4MS4/3.25/1.75/Z1X/S11HHDMWW	R978003495	5	5
97	CDT4MS4/3.25/1.75/Z1X/S11HHUMWW	R978003494	5	5
97	CDT4MS4/4.00/1.75/Z1X/S11HHDMWW	R978003541	5	5
97	CDT4MS4/4.00/1.75/Z1X/S11HHUMWW	R978003540	5	5
97	CDT4MS4/4.00/2.00/Z1X/S11HHDMWW	R978003543	5	5
97	CDT4MS4/4.00/2.00/Z1X/S11HHUMWW	R978003542	5	5
97	CDT4MT1/1.50/0.63/Z1X/S11HHDMWW	R978003321	5	5
97	CDT4MT1/1.50/0.63/Z1X/S11HHUMWW	R978003320	5	5
97	CDT4MT1/1.50/1.00/Z1X/S11HHDMWW	R978003323	5	5
97	CDT4MT1/1.50/1.00/Z1X/S11HHUMWW	R978003322	5	5
97	CDT4MT1/2.00/1.00/Z1X/S11HHDMWW	R978003369	5	5
97	CDT4MT1/2.00/1.00/Z1X/S11HHUMWW	R978003368	5	5
97	CDT4MT1/2.00/1.38/Z1X/S11HHDMWW	R978003371	5	5
97	CDT4MT1/2.00/1.38/Z1X/S11HHUMWW	R978003370	5	5
97	CDT4MT1/2.50/1.00/Z1X/S11HHDMWW	R978003417	5	5
97	CDT4MT1/2.50/1.00/Z1X/S11HHUMWW	R978003416	5	5
97	CDT4MT1/2.50/1.38/Z1X/S11HHDMWW	R978003419	5	5
97	CDT4MT1/2.50/1.38/Z1X/S11HHUMWW	R978003418	5	5
97	CDT4MT1/3.25/1.38/Z1X/S11HHDMWW	R978003465	5	5
97	CDT4MT1/3.25/1.38/Z1X/S11HHUMWW	R978003464	5	5
97	CDT4MT1/3.25/1.75/Z1X/S11HHDMWW	R978003467	5	5
97	CDT4MT1/3.25/1.75/Z1X/S11HHUMWW	R978003466	5	5
97	CDT4MT1/4.00/1.75/Z1X/S11HHDMWW	R978003513	5	5
97	CDT4MT1/4.00/1.75/Z1X/S11HHUMWW	R978003512	5	5
97	CDT4MT1/4.00/2.00/Z1X/S11HHDMWW	R978003515	5	5
97	CDT4MT1/4.00/2.00/Z1X/S11HHUMWW	R978003514	5	5
97	CDT4MT2/1.50/0.63/Z1X/S11HHDMWW	R978003325	5	5
97	CDT4MT2/1.50/0.63/Z1X/S11HHUMWW	R978003324	5	5
97	CDT4MT2/1.50/1.00/Z1X/S11HHDMWW	R978003327	5	5
97	CDT4MT2/1.50/1.00/Z1X/S11HHUMWW	R978003326	5	5
97	CDT4MT2/2.00/1.00/Z1X/S11HHDMWW	R978003373	5	5
97	CDT4MT2/2.00/1.00/Z1X/S11HHUMWW	R978003372	5	5
97	CDT4MT2/2.00/1.38/Z1X/S11HHDMWW	R978003375	5	5
97	CDT4MT2/2.00/1.38/Z1X/S11HHUMWW	R978003374	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
97	CDT4MT2/2.50/1.00/Z1X/S11HHDMWW	R978003421	5	5
97	CDT4MT2/2.50/1.00/Z1X/S11HHUMWW	R978003420	5	5
97	CDT4MT2/2.50/1.38/Z1X/S11HHDMWW	R978003423	5	5
97	CDT4MT2/2.50/1.38/Z1X/S11HHUMWW	R978003422	5	5
97	CDT4MT2/3.25/1.38/Z1X/S11HHDMWW	R978003469	5	5
97	CDT4MT2/3.25/1.38/Z1X/S11HHUMWW	R978003468	5	5
97	CDT4MT2/3.25/1.75/Z1X/S11HHDMWW	R978003471	5	5
97	CDT4MT2/3.25/1.75/Z1X/S11HHUMWW	R978003470	5	5
97	CDT4MT2/4.00/1.75/Z1X/S11HHDMWW	R978003517	5	5
97	CDT4MT2/4.00/1.75/Z1X/S11HHUMWW	R978003516	5	5
97	CDT4MT2/4.00/2.00/Z1X/S11HHDMWW	R978003519	5	5
97	CDT4MT2/4.00/2.00/Z1X/S11HHUMWW	R978003518	5	5
97	CDT4MX0/1.50/0.63/Z1X/S11HHDMWW	R978003305	5	5
97	CDT4MX0/1.50/0.63/Z1X/S11HHUMWW	R978003304	5	5
97	CDT4MX0/1.50/1.00/Z1X/S11HHDMWW	R978003307	5	5
97	CDT4MX0/1.50/1.00/Z1X/S11HHUMWW	R978003306	5	5
97	CDT4MX0/2.00/1.00/Z1X/S11HHDMWW	R978003353	5	5
97	CDT4MX0/2.00/1.00/Z1X/S11HHUMWW	R978003352	5	5
97	CDT4MX0/2.00/1.38/Z1X/S11HHDMWW	R978003355	5	5
97	CDT4MX0/2.00/1.38/Z1X/S11HHUMWW	R978003354	5	5
97	CDT4MX0/2.50/1.00/Z1X/S11HHDMWW	R978003401	5	5
97	CDT4MX0/2.50/1.00/Z1X/S11HHUMWW	R978003400	5	5
97	CDT4MX0/2.50/1.38/Z1X/S11HHDMWW	R978003403	5	5
97	CDT4MX0/2.50/1.38/Z1X/S11HHUMWW	R978003402	5	5
97	CDT4MX0/3.25/1.38/Z1X/S11HHDMWW	R978003449	5	5
97	CDT4MX0/3.25/1.38/Z1X/S11HHUMWW	R978003448	5	5
97	CDT4MX0/3.25/1.75/Z1X/S11HHDMWW	R978003451	5	5
97	CDT4MX0/3.25/1.75/Z1X/S11HHUMWW	R978003451	5	5
97	CDT4MX0/4.00/1.75/Z1X/S11HHDMWW	R978003497	5	5
97	CDT4MX0/4.00/1.75/Z1X/S11HHUMWW	R978003497	5	5
				5
97 97	CDT4MX0/4.00/2.00/Z1X/S11HHDMWW	R978003499	5 5	5
	CDT4MX0/4.00/2.00/Z1X/S11HHUMWW	R978003498		
97	CDT4MX1/1.50/0.63/Z1X/S11HHDMWW	R978003309	5	5
97	CDT4MX1/1.50/0.63/Z1X/S11HHUMWW	R978003308	5	5
97	CDT4MX1/1.50/1.00/Z1X/S11HHDMWW	R978003311	5	5
97	CDT4MX1/1.50/1.00/Z1X/S11HHUMWW	R978003310	5	5
97	CDT4MX1/2.00/1.00/Z1X/S11HHDMWW	R978003357	5	5
97	CDT4MX1/2.00/1.00/Z1X/S11HHUMWW	R978003356	5	5
97	CDT4MX1/2.00/1.38/Z1X/S11HHDMWW	R978003359	5	5
97	CDT4MX1/2.00/1.38/Z1X/S11HHUMWW	R978003358	5	5
97	CDT4MX1/2.50/1.00/Z1X/S11HHDMWW	R978003405	5	5
97	CDT4MX1/2.50/1.00/Z1X/S11HHUMWW	R978003404	5	5
97	CDT4MX1/2.50/1.38/Z1X/S11HHDMWW	R978003407	5	5
97	CDT4MX1/2.50/1.38/Z1X/S11HHUMWW	R978003406	5	5
97	CDT4MX1/3.25/1.38/Z1X/S11HHDMWW	R978003453	5	5
97	CDT4MX1/3.25/1.38/Z1X/S11HHUMWW	R978003452	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
97	CDT4MX1/3.25/1.75/Z1X/S11HHDMWW	R978003455	5	5
97	CDT4MX1/3.25/1.75/Z1X/S11HHUMWW	R978003454	5	5
97	CDT4MX1/4.00/1.75/Z1X/S11HHDMWW	R978003501	5	5
97	CDT4MX1/4.00/1.75/Z1X/S11HHUMWW	R978003500	5	5
97	CDT4MX1/4.00/2.00/Z1X/S11HHDMWW	R978003503	5	5
97	CDT4MX1/4.00/2.00/Z1X/S11HHUMWW	R978003502	5	5
97	CDT4MX2/1.50/0.63/Z1X/S11HHDMWW	R978003313	5	5
97	CDT4MX2/1.50/0.63/Z1X/S11HHUMWW	R978003312	5	5
97	CDT4MX2/1.50/1.00/Z1X/S11HHDMWW	R978003315	5	5
97	CDT4MX2/1.50/1.00/Z1X/S11HHUMWW	R978003314	5	5
97	CDT4MX2/2.00/1.00/Z1X/S11HHDMWW	R978003361	5	5
97	CDT4MX2/2.00/1.00/Z1X/S11HHUMWW	R978003360	5	5
97	CDT4MX2/2.00/1.38/Z1X/S11HHDMWW	R978003363	5	5
97	CDT4MX2/2.00/1.38/Z1X/S11HHUMWW	R978003362	5	5
97	CDT4MX2/2.50/1.00/Z1X/S11HHDMWW	R978003409	5	5
97	CDT4MX2/2.50/1.00/Z1X/S11HHUMWW	R978003408	5	5
97	CDT4MX2/2.50/1.38/Z1X/S11HHDMWW	R978003411	5	5
97	CDT4MX2/2.50/1.38/Z1X/S11HHUMWW	R978003410	5	5
97	CDT4MX2/3.25/1.38/Z1X/S11HHDMWW	R978003457	5	5
97	CDT4MX2/3.25/1.38/Z1X/S11HHUMWW	R978003456	5	5
97	CDT4MX2/3.25/1.75/Z1X/S11HHDMWW	R978003459	5	5
97	CDT4MX2/3.25/1.75/Z1X/S11HHUMWW	R978003458	5	5
97	CDT4MX2/4.00/1.75/Z1X/S11HHDMWW	R978003505	5	5
97	CDT4MX2/4.00/1.75/Z1X/S11HHUMWW	R978003504	5	5
97	CDT4MX2/4.00/2.00/Z1X/S11HHDMWW	R978003507	5	5
97	CDT4MX2/4.00/2.00/Z1X/S11HHUMWW	R978003506	5	5
97	CDT4MX3/1.50/0.63/Z1X/S11HHDMWW	R978003317	5	5
97	CDT4MX3/1.50/0.63/Z1X/S11HHUMWW	R978003316	5	5
97	CDT4MX3/1.50/1.00/Z1X/S11HHDMWW	R978003319	5	5
97	CDT4MX3/1.50/1.00/Z1X/S11HHUMWW	R978003318	5	5
97	CDT4MX3/2.00/1.00/Z1X/S11HHDMWW	R978003365	5	5
97	CDT4MX3/2.00/1.00/Z1X/S11HHUMWW	R978003364	5	5
97	CDT4MX3/2.00/1.38/Z1X/S11HHDMWW	R978003367	5	5
97	CDT4MX3/2.00/1.38/Z1X/S11HHUMWW	R978003366	5	5
97	CDT4MX3/2.50/1.00/Z1X/S11HHDMWW	R978003413	5	5
97	CDT4MX3/2.50/1.00/Z1X/S11HHUMWW	R978003412	5	5
97	CDT4MX3/2.50/1.38/Z1X/S11HHDMWW	R978003415	5	5
97	CDT4MX3/2.50/1.38/Z1X/S11HHUMWW	R978003414	5	5
97	CDT4MX3/3.25/1.38/Z1X/S11HHDMWW	R978003461	5	5
97	CDT4MX3/3.25/1.38/Z1X/S11HHUMWW	R978003460	5	5
97	CDT4MX3/3.25/1.75/Z1X/S11HHDMWW	R978003463	5	5
97	CDT4MX3/3.25/1.75/Z1X/S11HHUMWW	R978003462	5	5
97	CDT4MX3/4.00/1.75/Z1X/S11HHDMWW	R978003509	5	5
97	CDT4MX3/4.00/1.75/Z1X/S11HHUMWW	R978003508	5	5
97	CDT4MX3/4.00/1.79/Z1X/S11HHDMWW	R978003508	5	5
97	CDT4MX3/4.00/2.00/Z1X/S11HHUMWW	R978003511	5	5

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
	Mobile Controls			
	Hydraulic Pilot Control			
98	1-2 TH6 L 06-10/M 05	R907225176	3	10
98	1-2 TH6 L 97-10/M 05	R908352025	3	10
98	1-2 TH6 M 06-10/M 05	R907225383	3	10
98	1-2 TH6 M 97-10/M 05	R908352026	3	10
98	1-2 TH6 P 06-10/M 05	R907223668	3	10
98	1-2 TH6 P 97-10/M 05	R908352027	3	10
98	1-2 TH6 T 97-10/M 05	R908353005	3	10
98	1-2TH6L06-1X/M05 SO418	R978728584	3	10
98	1-2TH6M06-1X/M05 SO418	R978728585	3	10
98	2 TH6 L 06-10/M 05	R907223719	3	10
98	2 TH6 L 06-10/M 05 S418	R908351214	3	10
98	2 TH6 M 06-10/M 05	R907223721	3	10
98	2 TH6 P 06-10/M 05	R907223723	3	10
98	2 TH6 P 06-10/M 05 S418	R908351216	3	10
	Compact Hydraulics			
	Check, Poppet Type			
99	VUCN-08A-00 043120005600000	R901007308	3	10
99	VUCN-08A-A0 0431200056A0000	R930006992	3	10
100	VUCN-10A-00 043123008500000	R901106596	3	10
	Shuttle, Ball Type			
101	049405005600000 SELB-08A	R901161981	3	10
	Relief			
102	VSBN-08A-S-35 041149735635000	R901113601	3	10
103	VSBN-10A-20 041155038520000	R901113610	3	10
103	VSBN-10A-35 041155038535000	R901115702	3	10
	Relief, Poppet Type			
104	VSDN-10A-10 041523038510000	R930005643	3	10
104	VSDN-10A-35 041523038535000	R930005644	3	10
	Relief			
105	VSPN-10A-20 041208038520000	R901097722	3	10
105	VSPN-10A-35 041208038535000	R901104103	3	10
	Relief, Spool Type			
106	VSPN-16A-20 041207032720000	R901104106	3	10
106	VSPN-16A-35 041207032735000	R901104107	3	10
	Pressure Reducing			
107	VRPR-10A-04-A 04950403850400A	R901102333	3	10
107	VRPR-10A-08-A 04950403850800A	R901109742	3	10
108	VRPX-10A-10 049307038510000	R901104118	3	10
108	VRPX-10A-20 049307038520000	R901106468	3	10
	Pilot Operated Check			
109	VSON-08U-G-00 043306102000000	R901104068	3	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹ (Business Days)
	Counterbalance			
110	VBSN-08U-RS-1.5:1-P-20-A 045243312020000	R930006114	3	10
110	VBSN-08U-RS-1.5:1-P-35-A 045243312035000	R930006115	3	10
110	VBSN-08U-RS-3:1-10-A 045243032010000	R930006109	3	10
110	VBSN-08U-RS-3:1-20-A 045243032020000	R930006110	3	10
110	VBSN-08U-RS-3:1-35-A 045243032035000	R930006111	3	10
110	VBSN-08U-RS-8:1-20-A 045243102020000	R930006112	3	10
110	VBSN-08U-RS-8:1-35-A 045243102035000	R930006113	3	10
111	VBSN-08UU-RS-4:1-20 045242102020000	R930006107	3	10
111	VBSN-08UU-RS-9:1-20-A 045242372020000	R930006108	3	10
112	VBSN-12U-RS-2:1-P-20 045244428620000	R930006120	3	10
112	VBSN-12U-RS-2:1-P-35 045244428635000	R930006121	3	10
112	VBSN-12U-RS-4:1-20 045244038620000	R930006116	3	10
112	VBSN-12U-RS-4:1-35 045244038635000	R930006117	3	10
112	VBSN-12U-RS-8:1-20 045244108620000	R930006118	3	10
112	VBSN-12U-RS-8:1-35 045244108635000	R930006119	3	10
113	VBSP-08U-RS-3:1-20-A 045415032020000	R930006122	3	10
113	VBSP-08U-RS-3:1-35-A 045415032035000	R930006123	3	10
114	VBSP-12U-RS-4:1-20 045416038620000	R930006124	3	10
114	VBSP-12U-RS-4:1-35 045416038635000	R930006125	3	10
	Flow Control Valve			
115	VSTXX06CA.18X03 OD21010356	R901109366	3	10
116	VSTXX09CA.36X03 OD210103360000	R901109830	3	10
	Needle Restrictor			
117	040105038500000, STVU-10A	R930005606	3	10
118	040106035600000, STFU	R930001067	3	10
	Solenoid Operated Valve			
119	OD1310513000000 (Alt code OD1310511A0000)	R901126871	3	10
119	OD1310777000000 (Alt code OD1310771A0000)	R901113686	3	10
120	OD1431788000000 (Alt code OD1410782A0000)	R901113701	3	10
121	OD1432788000000 (Alt code OD1420782A0000)	R901113706	3	10
122	VEI8A2A06.18K05.3ANCC218S OD1505183AS000	R901083058	3	10
123	VEI8A2A06.18K06.1ANAC218S OD1506181AS000	R901091130	3	10
124	VEI8A2A09.36K05.3ANCC222S OD1505363AS000	R901090947	3	10
125	VEI8A2A09.36K06.1ANAC220S OD1506361AS000	R901080489	3	10
126	VEI8A2A12.75K05.3ANCC225S OD1505753AS000	R901094745	3	10
127	VEI8A2A12.75K06.1ANAC225S OD1506751AS000	R901095953	3	10
	Inlet Plate-Basic			
128	TA0056	R987271816	3	10
	Inlet Plate-Relief & Dump			
129	TA05562P0000A	R987271843	3	10
	4/3, 4/2 Directional Valve			
130	L8010B201000030	R933002825	3	10
130	L8010E201000030	R933003504	3	10
131	L8011B201000030	R933002824	3	10
131	L8011E201000030	R933003457	3	10
132	L8080B2S6000030	R933003627	3	10

^{1) &}quot;Shipment" defined as – not to exceed the time from receipt of order to Bosch Rexroth Hydraulics to shipment ex-factory (Bosch Rexroth plant location).

Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
132	L8080E2l6000030	R933009115	3	10
130	L8410B201000030	R933003509	3	10
130	L8410E201000030	R933003600	3	10
131	L8411B201000030	R933003616	3	10
131	L8411E201000030	R933003617	3	10
132	L8480B2S6000030	R933003633	3	10
132	L8480E2l6000030	R933009116	3	10
133	L884A00AB010030	R987271883	3	10
134	L886A020AS20030	R987273979	3	10
	Exit Plate-Basic			
135	TC0000	R987271812	3	10
	Power Packs and Motor Pump Groups Power Packs, Fixed Displacement			
136	PP10/G2005/2BM1	R978931253	3	10
136	PP10/G2005/3BM1	R978931277	3	10
136	PP10/G2005/5BM1	R978931297	3	10
136	PP10/G2008/2BM1	R978931426	3	10
136	PP10/G2008/3BM1	R978931450	3	10
136	PP10/G2008/5BM1	R978931470	3	10
136	PP10/G2008/7.5BM1	R978931490	3	10
136	PP20/G2011/10BM1	R978932366	3	10
136	PP20/G2011/3BM1	R978932408	3	10
136	PP20/G2011/5BM1	R978932429	3	10
136	PP20/G2011/7.5BM1	R978932451	3	10
136	PP20/G2016/10BM1	R978932508	3	10
136	PP20/G2016/5BM1	R978932614	3	10
136	PP20/G2016/7.5BM1	R978932635	3	10
136	PP5/G2004/2BM1	R978932910	3	10
136	PP5/G2004/3BM1	R978932932	3	10
136	PP5/G2004/5BM1	R978932952	3	10
136	PP5/G2005/2BM1	R978933040	3	10
136	PP5/G2005/3BM1	R978933062	3	10
136	PP5/G2005/5BM1	R978933083	3	10
100	Close-Coupled Motor Pump Groups	1137030000		10
137	MPGB002HTYZ4DEOFS1HAZPF12004K1NN	R978020520	3	10
137	MPGB002HTYZ4DEOFS1HAZPF12005K1NN	R978020524	3	10
137	MPGB002HTYZ4DEOFS1HAZPF12008K1NN	R978020530	3	10
137	MPGB003HTYZ4DEOFS1HAZPF12004K1NN	R978020521	3	10
137	MPGB003HTYZ4DEOF3THAZPF12004KTNN	R978020525	3	10
137	MPGB003HTYZ4DEOF3THAZPF12008K1NN	R978020523	3	10
137	MPGB003HTYZ4DEOFS1HAZPF12011K1NN	R978020537	3	10
137	MPGB005HTYZ4DEOFSTHAZPF12004K1NN	R978020522	3	10
137	MPGB005HTYZ4DEOFS1HAZPF12005K1NN	R978020522	3	10
137	MPGB005HTYZ4DEOFSTHAZFFT2005KTNN MPGB005HTYZ4DEOFSTHAZPF12008K1NN	R978020532	3	10
137	MPGB005HTYZ4DEOFSTHAZFFT2006KTNN MPGB005HTYZ4DEOFSTHAZPFT2011K1NN	R978020532	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
137	MPGB005HTYZ4DEOFS1HAZPF12016K1NN	R978020542	3	10
137	MPGB010HTYZ4DEOFS1HAZPF12011K1NN	R978020732	3	10
137	MPGB010HTYZ4DEOFS1HAZPF12016K1NN	R978020544	3	10
137	MPGB7.5HTYZ4DEOFS1HAZPF12008K1NN	R978020533	3	10
137	MPGB7.5HTYZ4DEOFS1HAZPF12011K1NN	R978020731	3	10
137	MPGB7.5HTYZ4DEOFS1HAZPF12016K1NN	R978020543	3	10
	Close-Coupled Motors			
138	MTRB10H1450/1800R215TYZ50/60HZ F1 SAE A	R978020358	3	5
138	MTRB2H1450/1800R145TYZ50/60HZ F1 SAE A	R978020354	3	5
138	MTRB3H1450/1800R145TYZ50/60HZ F1 SAE A	R978020355	3	5
138	MTRB5H1450/1800R184TYZ50/60HZ F1 SAE A	R978020356	3	5
138	MTRB7.5H1450/1800R213TYZ50/60HZ F1 SAE A	R978020357	3	5
	Pre-assembled Filter/Cooler			
139	MFC3HLB1.0H4/DEOFAF/011030S/09003AJ	R978026410	3	5
139	MFC3HLB1.0H4/DEOFAF/011030S/09003JJ	R978026411	3	5
139	MFC3HLB1.0H4/DEOFAF/011030S/09010AJ	R978052055	3	10
139	MFC3HLB1.0H4/DEOFAF/011030S/09010JJ	R978052056	3	10
139	MFC3HLB1.0H4/DEOFAF/016030S/09003AJ	R978026412	3	5
139	MFC3HLB1.0H4/DEOFAF/016030S/09003JJ	R978026413	3	5
139	MFC3HLB1.0H4/DEOFAF/016030S/09010AJ	R978052057	3	10
139	MFC3HLB1.0H4/DEOFAF/016030S/09010JJ	R978052058	3	10
139	MFC3HLB2.0H4/DEOFAF/022030S/09003AJ	R978026418	3	5
139	MFC3HLB2.0H4/DEOFAF/022030S/09003JJ	R978026419	3	5
139	MFC3HLB2.0H4/DEOFAF/022030S/09010AJ	R978052061	3	10
139	MFC3HLB2.0H4/DEOFAF/022030S/09010JJ	R978052062	3	10
139	MFC3HLB2.0H4/DEOFAF/028030S/09003AJ	R978026420	3	10
139	MFC3HLB2.0H4/DEOFAF/028030S/09003JJ	R978026421	3	10
139	MFC3HLB2.0H4/DEOFAF/028030S/09010AJ	R978052063	3	10
139	MFC3HLB2.0H4/DEOFAF/028030S/09010JJ	R978052064	3	10
139	MFC3HRB1.0H4/DEOFAF/011030S/09003AJ	R978026374	3	10
139	MFC3HRB1.0H4/DEOFAF/011030S/09003JJ	R978026375	3	10
139	MFC3HRB1.0H4/DEOFAF/011030S/09010AJ	R978052031	3	10
139	MFC3HRB1.0H4/DEOFAF/011030S/09010JJ	R978052032	3	10
139	MFC3HRB1.0H4/DEOFAF/016030S/09003AJ	R978026376	3	10
139	MFC3HRB1.0H4/DEOFAF/016030S/09003JJ	R978026377	3	10
139	MFC3HRB1.0H4/DEOFAF/016030S/09010AJ	R978052033	3	10
139	MFC3HRB1.0H4/DEOFAF/016030S/09010JJ	R978052034	3	10
139	MFC3HRB2.0H4/DEOFAF/022030S/09003AJ	R978026382	3	10
139	MFC3HRB2.0H4/DEOFAF/022030S/09003JJ	R978026383	3	5
139	MFC3HRB2.0H4/DEOFAF/022030S/09010AJ	R978052037	3	10
139	MFC3HRB2.0H4/DEOFAF/022030S/09010JJ	R978052038	3	10
139	MFC3HRB2.0H4/DEOFAF/028030S/09003AJ	R978026384	3	5
139	MFC3HRB2.0H4/DEOFAF/028030S/09003JJ	R978026385	3	5
139	MFC3HRB2.0H4/DEOFAF/028030S/09010AJ	R978052039	3	10
139	MFC3HRB2.0H4/DEOFAF/028030S/09010JJ	R978052040	3	10
139	MFC3VLB1.0H4/DEOFAF/011030S/09003AJ	R978026338	3	10
139	MFC3VLB1.0H4/DEOFAF/011030S/09003JJ	R978026339	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
139	MFC3VLB1.0H4/DEOFAF/011030S/09010AJ	R978052007	3	10
139	MFC3VLB1.0H4/DEOFAF/011030S/09010JJ	R978052008	3	10
139	MFC3VLB1.0H4/DEOFAF/016030S/09003AJ	R978026340	3	10
139	MFC3VLB1.0H4/DEOFAF/016030S/09003JJ	R978026341	3	10
139	MFC3VLB1.0H4/DEOFAF/016030S/09010AJ	R978052009	3	10
139	MFC3VLB1.0H4/DEOFAF/016030S/09010JJ	R978052010	3	10
139	MFC3VLB2.0H4/DEOFAF/022030S/09003AJ	R978026346	3	10
139	MFC3VLB2.0H4/DEOFAF/022030S/09003JJ	R978026347	3	10
139	MFC3VLB2.0H4/DEOFAF/022030S/09010AJ	R978052013	3	10
139	MFC3VLB2.0H4/DEOFAF/022030S/09010JJ	R978052014	3	10
139	MFC3VLB2.0H4/DEOFAF/028030S/09003AJ	R978026348	3	10
139	MFC3VLB2.0H4/DEOFAF/028030S/09003JJ	R978026349	3	10
139	MFC3VLB2.0H4/DEOFAF/028030S/09010AJ	R978052015	3	10
139	MFC3VLB2.0H4/DEOFAF/028030S/09010JJ	R978052016	3	10
139	MFC3VRB1.0H4/DEOFAF/011030S/09003AJ	R978026302	3	10
139	MFC3VRB1.0H4/DEOFAF/011030S/09003JJ	R978026303	3	10
139	MFC3VRB1.0H4/DEOFAF/011030S/09010AJ	R978051983	3	10
139	MFC3VRB1.0H4/DEOFAF/011030S/09010JJ	R978051984	3	10
139	MFC3VRB1.0H4/DEOFAF/016030S/09003AJ	R978026304	3	10
139	MFC3VRB1.0H4/DEOFAF/016030S/09003JJ	R978026305	3	10
139	MFC3VRB1.0H4/DEOFAF/016030S/09010AJ	R978051985	3	10
139	MFC3VRB1.0H4/DEOFAF/016030S/09010JJ	R978051986	3	10
139	MFC3VRB2.0H4/DEOFAF/022030S/09003AJ	R978026310	3	10
139	MFC3VRB2.0H4/DEOFAF/022030S/09003JJ	R978026311	3	10
139	MFC3VRB2.0H4/DEOFAF/022030S/09010AJ	R978051989	3	10
139	MFC3VRB2.0H4/DEOFAF/022030S/09010JJ	R978051990	3	10
139	MFC3VRB2.0H4/DEOFAF/028030S/09003AJ	R978026312	3	10
139	MFC3VRB2.0H4/DEOFAF/028030S/09003JJ	R978026313	3	10
139	MFC3VRB2.0H4/DEOFAF/028030S/09010AJ	R978051991	3	10
139	MFC3VRB2.0H4/DEOFAF/028030S/09010JJ	R978051992	3	10
	Accumulators	$\overline{\mathbb{Q}}$		
	Bladder-Type Accumulators			
140	ACCUM CHARGE KIT HAB-5X 3K AND 5K	R978046091	3	10
140	ACCUM CLAMP HAB-5X 10-50L 3K PSI	R978044766	3	10
140	ACCUM GAUGE BLK HAB-5X 10-50L ASME 3KPSI	R978048584	3	10
140	ACCUM GAUGE BLK HAB-5X 10-50L ASME 5KPSI	R978048583	3	10
140	CLAMPING BANDTIGHT 110-120 MM	1531316021	3	10
140	CLAMPING BANDTIGHT 160-170 MM	1531316022	3	10
140	HAB10-207-5X/1U09G-6N111-ASME	R978045724	3	10
140	HAB1-207-5X/1U14G-6N111-ASME	R978045719	3	10
140	HAB20-207-5X/1U09G-6N111-ASME	R978045736	3	10
140	HAB35-207-5X/1U09G-6N111-ASME	R978045748	3	10
140	HAB4-207-5X/1009G-6N111-ASME	R978045748	3	10
140	TINDY 201 ON TOOLS ON THE TAOMIL	1370043721	3	10

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Page Number	Description		Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
	Diaphragm-Type Accumulators				
141	ACCUM CHARGE KIT FOR HAD UNIT	S WITH GAS VALVE TYPE 2	0538103013	3	10
141	HAD0,075-250-1X/0U12C-2N111-US	A	0531610632	3	10
141	HAD0,16-250-1X/0F02A-2N111-USA		0531600600	3	10
141	HAD0,16-250-1X/0U12C1-2N111-US	A	0531600611	3	10
141	HAD0,35-160-1X/0F08A-2N111-USA		0531601533	3	10
141	HAD0,35-160-1X/0U04A-2N111-USA		0531601549	3	10
141	HAD0,7-207-1X/0F08A-2N111-USA		0531602581	3	10
141	HAD1,4-207-1X/0U04C-2N111-USA		0531603501	3	10
141	HAD2,8-207-1X/0F08C-2N111-USA	ı	0531613500	3	10
	Filtration Systems	\Leftrightarrow			
	Return Line Filters & Filter Elements	- 10 TEN			
142	1.0040 H10XL-A00-0-M		R928005837	5	1
142	1.0063 H10XL-A00-0-M		R928005855	5	1
142	1.0063 H16XL-A00-0-M		R928028571	5	1
142	1.0100 H10XL-A00-0-M		R928005873	5	1
142	1.0100 H16XL-A00-0-M		R928028572	5	1
142	10TEN0040-H10XLA00-V2.2-M-U4		R928040132	3	10
142	10TEN0040-H10XLA00-V2.2-M-U4-F		R928036298	3	10
142	10TEN0063-H10XLA00-V2.2-M-U9		R928040133	3	10
142	10TEN0063-H10XLA00-V2.2-M-U9-F		R928036321	3	10
142	10TEN0100-H10XLA00-V2.2-M-U9		R928040134	3	10
142	10TEN0100-H10XLA00-V2.2-M-U9-F		R928036322	3	10
142	ACC-R-10TEN0040-0100-R110		R928038744	3	10
142	ACC-R-10TEN0040-0100-R150		R928038745	3	10
142	ACC-R-10TEN0040-0100-R250		R928038746	3	10
142	new M010 0-6 BAR		R928019224	5	5
142	Plug-in connector for WE type indicator		R900031155	3	5
142	WE-1SP-M12X1		R928028409	3	5
142	WE-2SP-M12X1		R928028410	3	5
142	WE-2SPSU-M12X1		R928028411	3	5
	Return Line Filters & Filter Elements	- 10 FRE(N)			
143	1.0160 H10XL-A00-0-M		R928005891	5	1
143	1.0250 H10XL-A00-0-M		R928005927	5	1
143	1.0400 H10XL-A00-0-M		R928005963	5	1
143	1.0630 H10XL-A00-0-M		R928005999	5	1
143	1.1000 H10XL-A00-0-M		R928006035	5	1
143	10 FRE 0015-H10XL-A00-07V2.2-U6N	ЛОО	R928038396	3	10
143	10 FRE 0018-H10XL-A00-07V2.2-U6N	ЛОО	R928038395	3	10
143	10 FREN 0160-H10XL-A00-07V2.2-U	SM00	R928022766	3	10
143	10 FREN 0250-H10XL-A00-07V2.2-U	6M00	R928022767	3	10
143	10 FREN 0400-H10XL-A00-07V2.2-00	0M00	R928019463	3	10
143	10 FREN 0630-H10XL-A00-07V2.2-00	0M00	R928019478	3	10
143	10 FREN 1000-H10XL-A00-07V2.2-00		R928019465	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
143	Plug-in connector for WE type indicator	R900031155	3	5
143	WE-1SP-M12Z1	R928028409	3	5
143	WE-2SP-M12X1	R928028410	3	5
143	WE-2SPSU-M12X1	R928028411	3	5
	Inline Filter with Filter Element – 50LEO			
144	50LE0130-H10XLA00-V5,0-M-U9	R928050745	3	10
144	50LE0130-H3XLA00-V5,0-M-U9	R928050772	3	10
144	50LE0150-H10XLA00-V5,0-M-U9	R928050824	3	10
144	50LE0150-H3XLA00-V5,0-M-U9	R928050852	3	10
	Inline Filter with Filter Element – 110LEN, 110LEO			
145	110LE0150-H10XLA00-V5,0-M-U9	R928046927	3	10
145	110LEN0040-H10XLA00-V5,0-M-U4	R928046923	3	10
145	110LEN0063-H10XLA00-V5,0-M-U4	R928046924	3	10
145	110LEN0100-H10XLA00-V5,0-M-U4	R928046925	3	10
145	110LEN0160-H10XLA00-V5,0-M-U6	R928050465	3	10
145	110LEN0250-H10XLA00-V5,0-M-U6	R928046929	3	10
145	110LEN0400-H10XLA00-V5,0-M-U6	R928046930	3	10
	Pressure Line Filters & Filter Elements - 245 LE(N)			
146	2.0040 H10XL-B00-0-M	R928006656	5	1
146	2.0063 H10XL-B00-0-M	R928006710	5	1
146	2.0100 H10XL-B00-0-M	R928006764	5	1
146	2.0130 H10XL-B00-0-M	R928022312	5	1
146	2.0150 H10XL-B00-0-M	R928022321	5	1
146	2.0160 H10XL-B00-0-M	R928006818	5	1
146	2.0250 H10XL-B00-0-M	R928006872	5	1
146	2.0400 H10XL-B00-0-M	R928006926	5	1
146	245 LE 0130-H10XLA00-V5.0-M-U5	R928030731	3	10
146	245 LE 0150-H10XLA00-V5.0-M-U5	R928030732	3	10
146	245 LEN 0040-H10XLA00-V5.0-M-U3	R928030728	3	10
146	245 LEN 0063-H10XLA00-V5.0-M-U4	R928030729	3	10
146	245 LEN 0100-H10XLA00-V5.0-M-U4	R928030730	3	10
146	245 LEN 0160-H10XLA00-V5.0-M-U6	R928030733	3	10
146	245 LEN 0250-H10XLA00-V5.0-M-U6	R928030734	3	10
146	245 LEN 0400-H10XLA00-V5.0-M-U6	R928030735	3	10
146	Plug-in connector for WE type indicator	R900031155	3	5
146	WE-1SP-M12X1	R928028409	3	5
146	WE-2SP-M12X1	R928028410	3	5
146	WE-2SPSU-M12X1	R928028411	3	5
	Line Filter – 350 LEN			
147	2.0040H10XL-A00-0-M	R928006647	5	1
147	2.0063H10XL-A00-0-M	R928006701	5	1
147	2.0100H10XL-A00-0-M	R928006755	5	1
147	2.0130H10XL-A00-0-M	R928022276	5	1
147	2.0150H10XL-A00-0-M	R928022285	5	1
147	2.0160H10XL-A00-0-M	R928006809	5	1
147	2.0250H10XL-A00-0-M	R928006863	5	1

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
147	2.0400H10XL-A00-0-M	R928006917	5	1
147	2.0630H10XL-A00-0-M	R928006971	5	1
147	2.1000H10XL-A00-0-M	R928007025	5	1
147	350LE0130-H10XLA00-V5,0-M-U5	R928033731	3	10
147	350LE0150-H10XLA00-V5,0-M-U5	R928033732	3	10
147	350LEN0040-H10XLA00-V5,0-M-U3	R928033728	3	10
147	350LEN0063-H10XLA00-V5,0-M-U4	R928033729	3	10
147	350LEN0100-H10XLA00-V5,0-M-U4	R928033730	3	10
147	350LEN0160-H10XLA00-V5,0-M-U6	R928033733	3	10
147	350LEN0250-H10XLA00-V5,0-M-U6	R928033734	3	10
147	350LEN0400-H10XLA00-V5,0-M-U6	R928033735	3	10
147	350LEN0630-H10XLA00-V5,0-M-S8	R928034512	3	10
147	350LEN1000-H10XLA00-V5,0-M-S8	R928034513	3	10
	Manifold Mount Pressure Filters & Filter Elements - 245 PSF(N)			
148	2.0040 H10XL-B00-0-M	R928006656	5	1
148	2.0063 H10XL-B00-0-M	R928006710	5	1
148	2.0100 H10XL-B00-0-M	R928006764	5	1
148	2.0130 H10XL-B00-0-M	R928022312	5	1
148	2.0150 H10XL-B00-0-M	R928022321	5	1
148	2.0160 H10XL-B00-0-M	R928006818	5	1
148	2.0250 H10XL-B00-0-M	R928006872	5	1
148	2.0400 H10XL-B00-0-M	R928006926	5	1
148	245 PSF 0130-H10XLB00-V5.0-M	R928024395	3	10
148	245 PSF 0150-H10XLB00-V5.0-M	R928024396	3	10
148	245 PSFN 0040-H10XLB00-V5.0-M	R928024392	3	10
148	245 PSFN 0063-H10XLB00-V5.0-M	R928024393	3	10
148	245 PSFN 0100-H10XLB00-V5.0-M	R928024394	3	10
148	245 PSFN 0160-H10XLB00-V5.0-M	R928024397	3	10
148	245 PSFN 0250-H10XLB00-V5.0-M	R928024398	3	10
148	245 PSFN 0400-H10XLB00-V5.0-M	R928024399	3	10
148	Plug-in connector for WE type indicator	R900031155	3	5
148	WE-1SP-M12X1	R928028409	3	5
148	WE-2SP-M12X1	R928028410	3	5
148	WE-2SPSU-M12X1	R928028411	3	5
	Manifold Mount Pressure Filters & Filter Elements – 350 PSF(N)			_
149	2.0130 H10XL-B00-0-M	R928022312	5	1
149	2.0150 H10XL-B00-0-M	R928022321	5	1
149	2.0160 H10XL-B00-0-M	R928006818	5	1
149	2.0250 H10XL-B00-0-M	R928006872	5	1
149	2.0400 H10XL-B00-0-M	R928006926		1
149	2.0630 H10XL-B00-0-M	R928006980	5	1
149	2.1000 H10XL-B00-0-M	R928007034	5	1
149	350 PSF 0130-H10XLB00-V5.0-M	R928026493	3	10
149	350 PSF 0150-H10XLB00-V5.0-M	R928026494	3	10
149	350 PSFN 0160-H10XLB00-V5.0-M	R928026495	3	10
149	350 PSFN 0250-H10XLB00-V5.0-M	R928026496		10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
149	350 PSFN 0400-H10XLB00-V5.0-M	R928026497	3	10
149	350 PSFN 0630-H10XLB00-V5.0-M	R928026498	3	10
149	350 PSFN 1000-H10XLB00-V5.0-M	R928026499	3	10
149	Plug-in connector for WE type indicator	R900031155	3	5
149	WE-1SP-M12X1	R928028409	3	5
149	WE-2SP-M12X1	R928028410	3	5
149	WE-2SPSU-M12X1	R928028411	3	5
	Manifold Mount Pressure Filters & Filter Elements - 450 PBFN			
150	2.0040 H3XL-B00-0-M	R928006654	5	1
150	2.0063 H3XL-B00-0-M	R928006708	5	1
150	2.0100 H3XL-B00-0-M	R928006762	5	1
150	2.0130 H3XL-B00-0-M	R928022310	5	1
150	2.0150 H3XL-B00-0-M	R928022319	5	1
150	2.0160 H3XL-B00-0-M	R928006816	5	1
150	2.0250 H3XL-B00-0-M	R928006870	5	1
150	2.0400 H3XL-B00-0-M	R928006924	5	1
150	2.0630 H3XL-B00-0-M	R928006978	5	1
150	2.1000 H3XL-B00-0-M	R928007032	5	1
150	450 PBFN 0040-H3XLB00-V5.0-M	R928023331	3	10
150	450 PBFN 0063-H3XLB00-V5.0-M	R928023332	3	10
150	450 PBFN 0100-H3XLB00-V5.0-M	R928023333	3	10
150	450 PBFN 0130-H3XLB00-V5.0-M	R928023334	3	10
150	450 PBFN 0150-H3XLB00-V5.0-M	R928023335	3	10
150	450 PBFN 0160-H3XLB00-V5.0-M	R928023336	3	10
150	450 PBFN 0250-H3XLB00-V5.0-M	R928023337	3	10
150	450 PBFN 0400-H3XLB00-V5.0-M	R928023338	3	10
150	450 PBFN 0630-H3XLB00-V5.0-M	R928023339	3	10
150	450 PBFN 1000-H3XLB00-V5.0-M	R928023340	3	10
150	Plug-in connector for WE type indicator	R900031155	3	5
150	WE-1SP-M12X1	R928028409	3	5
150	WE-2SP-M12X1	R928028410	3	5
150	WE-2SPSU-M12X1	R928028411	3	5
	Desiccant Air Breather			
151	Adapter G 1-1/4 female to male G 1	R978918035	3	10
151	BFSK 130 H10XL-S00-000-00M0	R928018782	3	10
151	BFSK 45/21 H10XL-S00-0-0000M0	R928018776	3	10
151	BFSK 45/21 H3XL-S00-0-0000M0	R928035220	3	10
151	BFSK 60/21 H10XL-S00-000-00M0	R928018778	3	10
151	BFSK 90 H10XL-S00-000-00M0	R928018780	3	10
	Breather Filters			
152	BF 7 SL 130 P10-S00-000-00M00	R928018790	3	10
152	BF 7 SL 45/21 P10-S00-000-00M00	R928018784	3	10
152	BF 7 SL 90 P10-S00000-00M00	R928018787	3	10
152	BFS20 P10-F00	R928022920	3	10
152	FEF 1 P10 M00 -0056 (directly interchangeable w/ ELF P 3 F 10 W 1.X)	R928039092	3	10
152	FEFO S10-F00	R928018808	3	10

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
152		FEF1 P10-F00	R928018811	3	10
152		FEF1 P5-F00	R928019973	3	10
152		TLFI 5-65H10XL-S00-000-00M00	R928018828	3	10
152		TLFI 5-65H3XL-S00-000-00M00	R928041318	3	10
152		TLFI 6-80H10XL-S00-000-00M00	R928018831	3	10
152		TLFIII 5-65H10XL-S00-000-00M00	R928018870	3	10
152		TLFIII 5-65H3XL-S00-000-00M00	R928036735	3	10
152		TLFIII 6-80H10XL-S00-000-00M00	R928018873	3	10
		Popular Cross-over Filter Elements			
153		1.0045 G25-A00-0-M	R928005636	5	1
153		1.0045 H10XL-A00-0-M	R928005639	5	1
153		1.0045 H20XL-A00-0-M	R928005640	5	1
153		1.0060 G25-A00-0-M	R928005672	5	1
153	new	1.1401 G40-A00-0-M	R928045173	5	1
153		10.110LA H10XL-A00-6-M SO3000	R928017483	5	1
153		10.1300LA H10XL-A00-6-M SO3000	R928017667	5	1
153		10.1300LA H6XL-A00-6-M SO3000	R928017668	5	1
153		10.160LA H10XL-A00-6-M SO3000	R928017506	5	1
153		10.240LA H10XL-A00-6-M SO3000	R928017529	5	1
153		10.2600LA H10XL-A00-0-M SO3000	R928037731	5	1
153		10.330LA H10XL-A00-6-M SO3000	R928017552	5	1
153		10.330LA H10XL-A00-B6-M SO3000	R928035218	5	1
153		10.500LA H10XL-A00-6-M SO3000	R928017575	5	1
153		10.660LA H10XL-A00-6-M SO3000	R928017598	5	1
153		16.7400/R H20XL-S00-0-M	R928016662	5	1
153		16.7500/R P10-S00-0-M	R928019959	5	1
153		16.7500/S H10XL-S00-0-M	R928016677	5	1
153		16.7500/S H3XL-S00-0-M	R928016673	5	1
153		16.8304/X H6XL-S00-0-V	R928016729	5	1
153	new	16.8700/R H10XL-S00-0-M	R928016804	5	1
153		16.9600/T H6XL-E00-0-M	R928016950	5	1
153	new		R928045584	5	1
153		2.0020 G25-A00-0-M	R928006374	5	1
153	new	2.0020 H6XL-A00-0-M	R928006376	5	1
153	new		R928006699	5	1
153		2.0100 H10XL-A00-0-M	R928006755	5	1
153		2.0100 H10XL-B00-0-M	R928006764	5	1
153		2.0250 H3XL-A00-0-M	R928006861	5	1
153	new	2.0250 H6XL-A00-0-M	R928006862	5	1
153		2.0250 H6XL-B00-0-M	R928006871	5	1
153	new	2.56 P10-A00-0-M	R928019029	5	1
153		2.90 H10XL-C00-0-M	R928025500	5	1
153	new		R928046179	5	1
153	new	4.06 P10-A00-0-M	R928022781	5	1
153	new		R928028012	5	1
153	new		R902603750	5	1

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
153		62.0056K H20XL-J00-0-V	R902603298	5	1
153		62.0125K H20XL-J00-0-V	R902603243	5	1
153		62.0180K H20XL-J00-0-V	R902603004	5	1
153	new	80.130 H1XL-S00-0-M	R928037484	5	1
153		80.130 H6XL-S00-0-M	R928019201	5	1
153	new	80.30/20 P10-S00-0-V	R928028010	5	1
153	new	80.45/21 VS60-S00-0-M	R928028019	5	1
153	new	80.90 H10XL-S00-0-M	R928016614	5	1
153	new	80.90 P10-S00-0-M	R928016612	5	1
153		84.60 H10XL-S00-4-M	R928028556	5	1
153		9.110LA H10XL-A00-0-M SO3000	R928017144	5	1
153		9.110LA H10XL-A00-0-V SO3000	R928022425	5	1
153		9.110LA H3XL-F00-0-M SO3000	R928017154	5	1
153		9.110LA H6XL-A00-0-M SO3000	R928017145	5	1
153		9.160LA H10XL-A00-0-M SO3000	R928017210	5	1
153		9.160LA H3XL-F00-0-M SO3000	R928017220	5	1
153		9.240LA H10XL-A00-0-M SO3000	R928017243	5	1
153		9.240LA H10XL-F00-0-M SO3000	R928017251	5	1
153		9.240LA H3XL-F00-0-M SO3000	R928017253	5	1
153		9.280LA H10XL-A00-0-M SO3000	R928017276	5	1
153		9.280LA H20XL-A00-0-M SO3000	R928017275	5	1
153		9.280LA H6XL-A00-0-M SO3000	R928017277	5	1
153		9.30LA H20XL-F00-0-M SO3000	R928017085	5	1
153		9.30LA H3XL-F00-0-M SO3000	R928017088	5	1
153		9.330LA H10XL-A00-0-M SO3000	R928017309	5	1
153		9.330LA H10XL-F00-0-M SO3000	R928017317	5	1
153		9.330LA H3XL-F00-0-M SO3000	R928017319	5	1
153		9.330LA H6XL-F00-0-M SO3000	R928017318	5	1
153		9.500LA H20XL-A00-0-M SO3000	R928017374	5	1
153	new	9.60 G25-A00-0-V-0024	R928048442	5	1
153		9.60LA H10XL-A00-0-M SO3000	R928017111	5	1
153		9.60LA H10XL-F00-0-M SO3000	R928017111	5	1
153		9.60LA H3XL-F00-0-M SO3000	R928017121	5	1
153		9.660LA H10XL-A00-0-M SO3000	R928017408	5	1
153		9.660LA H10XL-F00-0-M SO3000	R928017416	5	1
153		9.660LA H20XL-A00-0-M SO3000	R928017410	5	1
153		9.660LA H6XL-F00-0-M SO3000	R928017417	5	1
153		99.183677 MB15-C00-0-M	R928022726	5	1
100		Accessories			
		Hydroelectric Pressure Switch			
155		HED 8 OA-2X/100K14	R901102706	3	10
155		HED 8 OA-2X/100K14/12	R901106257	3	10
155		HED 8 OA-2X/200K14/12	R901106512	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
155	HED 8 OA-2X/350K14/12	R901107091	3	10
155	HED 8 OA-2X/50K14	R901101698	3	10
155	HED 8 OA-2X/50K14/12	R901107793	3	10
155	HED 8 OH-2X/100K14	R901102360	3	10
155	HED 8 OH-2X/200K14	R901099808	3	10
155	HED 8 OH-2X/200K14S	R901102362	3	10
155	HED 8 OH-2X/350K14	R901101640	3	10
155	HED 8 OH-2X/350K14S	R901102713	3	10
155	HED 8 OH-2X/50K14	R901102349	3	10
155	HED 8 OP-2X/100K14	R901102747	3	10
155	HED 8 OP-2X/100K14S	R901106509	3	10
155	HED 8 OP-2X/350K14	R901106453	3	10
155	HED 8 OP-2X/350K14AS	R901091138	3	10
	Rotary Angle Sensor			
156	ASSEMBLY KIT VT-SWA-1-1X/SYDFEE &	R900868651	5	5
	Subplates, Bolt Kits, & Electric Connectors			
157	3P RZ5 M24 240V	R901017025	10	10
157	3P RZ55 24	R900842566	10	10
157	3P RZ55L 24-2 SPEZ&	R900057455	10	10
157	3P Z4 M SW	R901017011	10	10
157	3P Z45 B GDM201	R900011039	10	10
157	3P Z55L 12-240V	R900057453	10	10
157	3P Z5L M12 240V	R901017022	10	10
157	3P Z5L1 M 24V SPEZ	R901017026	10	10
157	4P Z24M12X1 +3MSPEZ	R900064381	10	10
157	7P Z31 BF6-3PG11KSPEZ	R900021267	10	10
157	7P Z31 BF63PG11M SPEZ	R900223890	10	10
157	BK-(4) 1/4X20X1-1/2	R978833366	3	10
157	BK-(4) 1/4X20X1-3/4	R978833367	3	10
157	BK-(4) 10X24X2	R978833365	3	10
157	BK-(4) 3/8X16X2-1/4-(2)1/4X20X2-1/4 SHCS	R978833395	3	10
157	BK-(6) 1/2X13X2-1/2	R978833387	3	10
157	G 341/12	R900341065	3	10
157	G 342/12	R900455128	5	10
157	G 646/12	R900503115	5	10
157	MS CONNECTOR FOR OBE VALVES	R978713598	3	10
	Coils & Handnuts-Directional Valves			
158	45-K4K-30G12 01	R901333224	3	10
158	GZ45-01M.N. SPEZ	R900029571	3	10
158	GZ45-3 12V	R900021462	3	10
158	GZ45-3 24V	R900021463	3	10
158	GZ45-4 24V	R900021389	3	10
158	GZ45-4 96V	R900021392	3	10
158	GZ45C-01 SPEZ	R900029574	3	10
158	GZ63 M.VN.3K	R900019841	3	10
158	GZ63-3 12V	R900207929	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
158	GZ63-3 24V	R900217812	3	10
158	GZ63-4 12V K4K	R900019792	3	10
158	GZ63-4 24V	R900019793	3	10
158	WZ45M.N. SPEZ	R900020169	3	10
158	WZ45-3 110V &	R900021464	3	10
158	WZ45-4-L110V-50/60HZ&	R900020175	3	10
158	WZ45-4-L110V50HZ+120V60HZ	R978839349	3	10
158	WZ45-4-MVN110V50/60+&	R900545268	3	10
158	WZ65LM.VN. SPEZ	R900019840	3	10
158	WZ65-0-L110V-50/60HZ&	R900019801	3	10
158	WZ65-3 110V-50/ &	R900219602	3	10
158	WZ65-4-L110V-50/60HZ&	R900019816	3	10
158	Rod Clevises for Cylinders		_	
158	ROD CLEVIS BDC-05 CD=1/2 KK=7/16-20	R978935057	3	10
158	ROD CLEVIS BDC-07 CD=3/4 KK=3/4-16	R978935058	3	5
158	ROD CLEVIS BDC-07M CD=3/4 KK=3/4-16	R978935059	3	5
158	ROD CLEVIS BDC-10 CD=1 KK=1-14	R978935060	3	5
158	ROD CLEVIS BDC-13 CD=1 3/8 KK=1 1/4-12	R978935061	3	5
158	ROD CLEVIS BDC-17 CD=1 3/4 KK=1 1/2-12	R978935061	3	5
130	Alignment Couplers for Cylinders	1(970933002	3	3
160	CPL ALIGNMENT 1000F A=1-14	R978935085	3	5
160	CPL ALIGNMENT 1250F A=1 1/4-12	R978935085	3	5
160	CPL ALIGNMENT 1500F A=1 1/2-12	R978935080	3	5
160	CPL ALIGNMENT 1300F A= 11/2-12 CPL ALIGNMENT 437F A= 7/16-20	R978935087	3	5
	CPL ALIGNMENT 437F A= 7/10-20 CPL ALIGNMENT 500F A=1/2-20			
160		R978935080	3	5 5
160	CPL ALIGNMENT 750F A=3/4-16	R978935083	3	5
101	Rod Eyes for Cylinders	DOFFCCO	0	_
161	ROD EYE BDE-05 CD=1/2 KK=7/16-20	R978935066	3	5
161	ROD EYE BDE-07 CD=3/4 KK=3/4-16	R978935067	3	5
161	ROD EYE BDE-10 CD=1 KK=1-14	R978935068	3	5
161	ROD EYE BDE-13 CD=1 3/8 KK=1 1/4-12	R978935070	3	5
161	ROD EYE BDE-17 CD=1 3/4 KK=1 1/2-12	R978935071	3	5
161	ROD EYE SPH RES-05 CD=.500 KK=7/16-20	R978935075	3	5
161	ROD EYE SPH RES-07 CD=.750 KK=3/4-16	R978935076	3	5
161	ROD EYE SPH RES-10 CD=1.000 KK=1-14	R978935077	3	5
161	ROD EYE SPH RES-13 CD=1.375 KK=1 1/4-12	R978935078	3	5
161	ROD EYE SPH RES-17 CD=1.750 KK=1 1/2-12	R978935079	3	5
	Pivot Pins for Cylinders			
162	PIVOT PINS GROOVED BDP-05G CB=0.500	R978935026	3	5
162	PIVOT PINS GROOVED BDP-07G CB=0.750	R978935027	3	5
162	PIVOT PINS GROOVED BDP-10G CB=1.000	R978935028	3	5
162	PIVOT PINS GROOVED BDP-13G CB=1.375	R978935029	3	5
162	PIVOT PINS GROOVED BDP-17G CB=1.750	R978935030	3	5
162	RET RG 0.500X0.468X0.041	R978000049	3	5
162	RET RG 1.000X0.940X0.048	R978000190	3	5
162	RET RG 1.375X1.290X0.056	R978000191	3	5

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
	Bodies & Mounting Hardware			
163	CB08-2N-A/S06	R978032340	3	10
163	CB08-2N-D/S06	R978032344	3	10
163	CB08-3N-A/S06	R978032341	3	10
163	CB08-3N-D/S06	R978032345	3	10
163	CB10-2N-A/S08	R978032348	3	10
163	CB10-2N-D/S08	R978032352	3	10
163	CB10-3N-A/S08	R978032349	3	10
163	CB10-3N-D/S08	R978032353	3	10
163	CB10-4N-A/S08	R978032351	3	10
163	CB10-4N-D/S08	R978032355	3	10
163	CB16-2N-A/S12	R978032360	3	10
163	CB16-2N-D/S12	R978032362	3	10
163	CBDT-11A-A/S08	R978041747	3	10
163	CBDT-11A-D/S08	R978041748	3	10
163	CBDT-2A-A/S10	R978041749	3	10
163	CBDT-2A-D/S10	R978041750	3	10
163	CBT-11A-A/S08	R978012829	3	10
163	CBT-11A-D/S08	R978012838	3	10
163	CBT-2A-A/S10	R978041744	3	10
163	CBT-2A-D/S10	R978041745	3	10
163	BOLT KIT K-2221A MODULE	R987281101	3	10
163	KR-FF-M6-ED-06K-2215	R933003730	3	10
163	KR-SC-M8-ED-06-02EK-2202	R933003722	3	10
163	KR-SC-M8-ED-06-03EK-2203	R933003723	3	10
163	KR-SC-M8-ED-06-04EK-2204	R933003724	3	10
	Coils - Compact Hydraulics			
164	C31-01-OB-12DC-20W-H-D12.7271-0450	R933002776	3	10
164	C31-01-OC-24DC-20W-H-D12.7271-0451	R933002777	3	10
164	C31-07-OB-12DC-20W-H-D12.7271-0452	R933002778	3	10
164	C31-07-OC-24DC-20W-H-D12.7271-0453	R933002779	3	10
164	C36-01-OB-12DC-26W-H-D14271-0510	R933000044	3	10
164	C36-01-OC-24DC-26W-H-D14271-0511	R933000053	3	10
164	C36-07-OB-12DC-26W-H-D14271-0510207	R933000048	3	10
164	C36-07-OC-24DC-26W-H-D14271-0511207	R933000058	3	10
164	C45-01-OB-12DC-33W-H-D19271-0417	R933000026	3	10
164	C45-01-OC-24DC-33W-H-D19271-0418	R933000034	3	10
164	C45-07-OB-12DC-33W-H-D19271-041717	R933000030	3	10
164	C45-07-OC-24DC-33W-H-D19271-041719	R933000032	3	10
164	D15-01-OB-12DC-36W-H-D23271-8020210	R933000092	3	10
164	D15-01-OC-24DC-36W-H-D23271-8020220	R933000093	3	10
164	D15-07-OB-12DC-36W-H-D23271-8020230	R933000094	3	10
164	D15-07-OC-24DC-36W-H-D23271-8020240	R933002798	3	10
165	S7L36DTL 24VDC 30W DIOD OD02072230OC02	R901094597	3	10
165	S7L36DTL12VDC30WDIOD CL.H OD02072230OB02	R901094595	3	10
165	S7L36HRL 110VRAC 30W CL.H OD02070130OW02	R934003806	3	10

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
165	S7L36HRL 12VDC 30W CLAS H OD02070130OB02	R901090824	3	10
165	S7L36HRL 24VDC 30W CLAS H OD02070130OC02	R901090825	3	10
165	S8.356HRL.12DC 20W CL.H OD02170130OB00	R901090821	3	10
165	S8.356HRL.24DC 20W CL.H OD02170130OC00	R901083065	3	10
165	S8.356HRL110RAC 20W CL.H OD02170130OW00	R901087981	3	10
165	S8356DTV12DC20W DIOD CL.H OD0217223POB00	R901120671	3	10
165	S8356DTV24DC20W DIOD CL.H OD0217223POC00	R901114602	3	10
	Aftermarket Parts			
	Seal Kits			
166	AZMF Rotary Shaft Lip	1510283065	3	10
166	AZMF Seal Kit	1517010195	3	10
166	AZPF Seal Kit	1517010152	3	10
166	AZPF Shaft Seal	1510283008	3	10
166	AZPN Rotary Shaft Lip	1510283023	3	10
166	AZPN Seal Kit	1517010194	3	10
166	VPV/100-164 210 BAR FKM Seals	9511230659	3	10
166	VPV/16-210BAR FKM Seals	9511230605	3	10
166	VPV/25/32-210BAR FKM Seals	9511230597	3	10
166	VPV/45-80 210 BAR FKM Seals	9511230658	3	10
	A10 Service Parts Kit			
167	A1045DFLR/3XNBR+VERP	R910915885	3	10
167	A10V 28 DFR-V KIT	R910932983	3	10
167	A10V 45 DFLR/31V+VERP	R910932984	3	10
167	A10V 71 DFLR/31V+VERP	R910932985	3	10
167	A10V28/31L+VERPACKUNG	R910947782	3	10
167	A10V28/31R+VERPACKUNG	R910947781	3	10
167	A10V28DFLR/3XNBR+VERP	R910915845	3	10
167	A10V45/31L+VERPACKUNG	R910947789	3	10
167	A10V45/31R+VERPACKUNG	R910947730	3	10
167	A10V71/31L+VERPACKUNG	R910947802	3	10
167	A10V71/31R+VERPACKUNG	R910947801	3	10
167	A10V71DFLR/3XNBR+VERP	R910915846	3	10
167	KLEINTEILA10V28+VERP	R910942158	3	10
167	KLEINTEILA10V45+VERP	R910942248	3	10
167	KLEINTEILA10V71+VERP	R910942250	3	10
107	Popular Cross-over Filter Elements	11310342230	3	10
168	1.0045 G25-A00-0-M	R928005636	5	1
168	1.0045 H10XL-A00-0-M	R928005639	5	1
168	1.0045 H10XL-A00-0-M	R928005640	5	1
168	1.0060 G25-A00-0-M	R928005672	5	1
				1
		R928045173 R928017483	5	-
168	10.110LA H10XL-A00-6-M SO3000		5	1
168	10.1300LA H10XL-A00-6-M SO3000	R928017667	5	1
168	10.1300LA H6XL-A00-6-M SO3000	R928017668	5	1
168	10.160LA H10XL-A00-6-M SO3000	R928017506	5	1

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Page Number		Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
168		10.240LA H10XL-A00-6-M SO3000	R928017529	5	1
168		10.2600LA H10XL-A00-0-M SO3000	R928037731	5	1
168		10.330LA H10XL-A00-6-M SO3000	R928017552	5	1
168		10.330LA H10XL-A00-B6-M SO3000	R928035218	5	1
168		10.500LA H10XL-A00-6-M SO3000	R928017575	5	1
168		10.660LA H10XL-A00-6-M SO3000	R928017598	5	1
168		16.7400/R H20XL-S00-0-M	R928016662	5	1
168		16.7500/R P10-S00-0-M	R928019959	5	1
168		16.7500/S H10XL-S00-0-M	R928016677	5	1
168		16.7500/S H3XL-S00-0-M	R928016673	5	1
168		16.8304/X H6XL-S00-0-V	R928016729	5	1
168	new	16.8700/R H10XL-S00-0-M	R928016804	5	1
168		16.9600/T H6XL-E00-0-M	R928016950	5	1
168	new	2.0005 G40-A00-0-V	R928045584	5	1
168		2.0020 G25-A00-0-M	R928006374	5	1
168	new	2.0020 H6XL-A00-0-M	R928006376	5	1
168	new	2.0063 H3XL-A00-0-M	R928006699	5	1
168		2.0100 H10XL-A00-0-M	R928006755	5	1
168		2.0100 H10XL-B00-0-M	R928006764	5	1
168		2.0250 H3XL-A00-0-M	R928006861	5	1
168	new	2.0250 H6XL-A00-0-M	R928006862	5	1
168		2.0250 H6XL-B00-0-M	R928006871	5	1
168	new	2.56 P10-A00-0-M	R928019029	5	1
168		2.90 H10XL-C00-0-M	R928025500	5	1
168	new	20.750 P25-S00-6-M	R928046179	5	1
168	new	4.06 P10-A00-0-M	R928022781	5	1
168	new	4.10 G200-A00-0-M	R928028012	5	1
168	new	62.0056K H10XL-J00-0-V	R902603750	5	1
168		62.0056K H20XL-J00-0-V	R902603298	5	1
168		62.0125K H20XL-J00-0-V	R902603243	5	1
168		62.0180K H20XL-J00-0-V	R902603004	5	1
168	new	80.130 H1XL-S00-0-M	R928037484	5	1
168		80.130 H6XL-S00-0-M	R928019201	5	1
168	new		R928028010	5	1
168		80,45/21 VS60-S00-0-M	R928028019	5	1
168	new		R928016614	5	1
168	new		R928016612	5	1
168		84.60 H10XL-S00-4-M	R928028556	5	1
168		9.110LA H10XL-A00-0-M SO3000	R928017144	5	1
168		9.110LA H10XL-A00-0-V SO3000	R928022425	5	1
168		9.110LA H3XL-F00-0-M SO3000	R928017154	5	1
168		9.110LA H6XL-A00-0-M SO3000	R928017145	5	1
168		9.160LA H10XL-A00-0-M SO3000	R928017210	5	1
168		9.160LA H3XL-F00-0-M SO3000	R928017210	5	1
168		9.240LA H10XL-A00-0-M SO3000	R928017243	5	1
168		9.240LA H10XL-F00-0-M SO3000 9.240LA H10XL-F00-0-M SO3000	R928017243	5	1

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Page Number	Description	Part Number	Maximum Quantity	Shipment ¹⁾ (Business Days)
168	9.240LA H3XL-F00-0-M SO3000	R928017253	5	1
168	9.280LA H10XL-A00-0-M SO3000	R928017276	5	1
168	9.280LA H20XL-A00-0-M SO3000	R928017275	5	1
168	9.280LA H6XL-A00-0-M SO3000	R928017277	5	1
168	9.30LA H20XL-F00-0-M SO3000	R928017085	5	1
168	9.30LA H3XL-F00-0-M SO3000	R928017088	5	1
168	9.330LA H10XL-A00-0-M SO3000	R928017309	5	1
168	9.330LA H10XL-F00-0-M SO3000	R928017317	5	1
168	9.330LA H3XL-F00-0-M SO3000	R928017319	5	1
168	9.330LA H6XL-F00-0-M SO3000	R928017318	5	1
168	9.500LA H20XL-A00-0-M SO3000	R928017374	5	1
168	new 9.60 G25-A00-0-V-0024	R928048442	5	1
168	9.60LA H10XL-A00-0-M SO3000	R928017111	5	1
168	9.60LA H10XL-F00-0-M SO3000	R928017119	5	1
168	9.60LA H3XL-F00-0-M SO3000	R928017121	5	1
168	9.660LA H10XL-A00-0-M SO3000	R928017408	5	1
168	9.660LA H10XL-F00-0-M SO3000	R928017416	5	1
168	9.660LA H20XL-A00-0-M SO3000	R928017407	5	1
168	9.660LA H6XL-F00-0-M SO3000	R928017417	5	1
168	99.183677 MB15-C00-0-M	R928022726	5	1
	Rineer Service Kits			
169	5/16 BALL CHECKS	R986V04286	3	10
169	M015 KT-SE-0150004	R986V01643	3	10
169	M015 KT-SE-0150940	R986V01651	3	10
169	M015 KT-SP-0150931	R986V02033	3	10
169	M015 STD TIMING PLTS	R986V04287	3	10
169	M037 C62 TIMING PLTS	R986V04288	3	10
169	M037 KT-SE-0370973	R986V01687	3	10
169	M037 KT-SE-0370979	R986V01689	3	10
169	M037 KT-SE-0370982	R986V01690	3	10
169	M037 KT-SE-0371917	R986V01696	3	10
169	M037 KT-SP-0370936	R986V02035	3	10
169	M125 KT-SE1250997	R986V01747	3	10
169	M125 KT-SP-1250930	R986V02036	3	10
169	M125 KT-SP-1250993	R986V02037	3	10
169	M125 PC TIMING PLTS	R986V04289	3	10
169	O-RINGS 2-160 NBR	R986V04301	3	10
169	VANES 1250961PC	R986V02047	3	10
169	VANES V0150930	R986V02038	3	10
169	VANES V0371914PC	R986V02041	3	10
169	VANES V1251962-2S	R986V02050	3	10

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