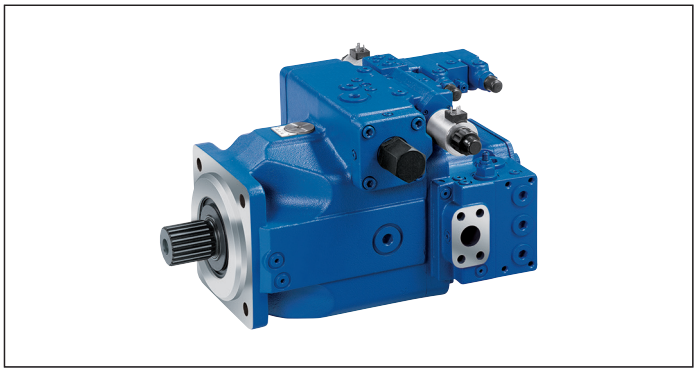
RE 92084/2021-04-21
Replaces: 07.2004

rexroth
A Bosch Company

Electro-hydraulic control with proportional solenoid EP



- A4VSG, sizes 40 to 1000
- A4CSG, sizes 250 to 750
- Nominal pressure 350 bar
- Maximum pressure 400 bar
- For closed circuit

Features

- Electro proportional control by a current signal
- High control accuracy
- Standard spring-centering of the stroking cylinder
- Resets to neutral position in the event of a signal failure
- With manual override
- Modular design
- Short control time

Related documentation	
Variable pump A4VSG	Data sheet 92100
Variable pump A4CSG	Data sheet 92105
Mounting block SDVB (NG 40-180)	Data sheet 95534
Mounting block SDVB (NG 1000)	Data sheet 95533

Contents

Type code

01	02	03	04		05	06	07	08	09	10	11
	G		**EP..**	**/**							

Axial piston unit			**40**	**71**	**125**	**180**	**250**	**355**	**500**	**750**	**1000**	
01	Swashplate design, variable		●	●	●	●	●	●	●	●	●	**A4VS**
	Compact unit, swashplate design, variable		–	–	–	–	●	●	●	●	–	**A4CS**

Operating mode		**40**	**71**	**125**	**180**	**250**	**355**	**500**	**750**	**1000**	
02	Pump, closed circuit	●	●	●	●	●	●	●	●	●	**G**

Size (NG)		**40**	**71**	**125**	**180**	**250**	**355**	**500**	**750**	**1000**
03	Geometric displacement $V_{g\,max}$ [cm3]	**40**	**71**	**125**	**180**	**250**	**355**	**500**	**750**	**1000**

Control device				**40**	**71**	**125**	**180**	**250**	**355**	**500**	**750**	**1000**	
04	Electro-hydraulic control with proportional solenoid[2]												
	without pressure control			●	●	●	●	●	●	●	○	○	**EP[1]**
	with pressure control		in **A**	○	○	●	●	●	●	●	○	○	**EPA**
	with pressure control	remote controlled	in **A**	○	○	●	●	●	●	○	○	○	**EPGA**
	with pressure control		in **B**	○	○	●	●	●	●	●	○	○	**EPB**
	with pressure control	remote controlled	in **B**	○	○	●	●	●	●	○	○	○	**EPGB**
	with pressure control	both sides	in **A** and **B**	●	●	●	●	●	●	●	●	○	**EPD**
	with pressure control	remote controlled on both sides	in **A** and **B**	●	●	●	●	●	●	●	○	○	**EPG**

Series			**40**	**71**	**125**	**180**	**250**	**355**	**500**	**750**	**1000**	
05	Series 1, index 1	A4VSG	●	●	–	–	–	–	–	–	–	**11**
	Series 3, index 0	A4VSG, A4CSG	–	–	●	●	▲	●	▲	●	●	**30**
	Series 3, index 3	Efficiency-optimized rotary group	–	–	–	–	●	–	●	–	–	**33**

Direction of rotation

06		

Sealing material

07		

Drive shaft

08		

Mounting flange

09		

Working port

10		

Information on items 06 to 14 can be found in data sheets 92100 (A4VSG) and 92105 (A4CSG)

Valves

13		

Filtration

14		

● = Available ○ = On request – = Not available
▲ = Not for new projects

1) Alternating direction of rotation only possible with EP and following consultation. With EP(G)A, EP(G)B, EPD and EPG, an alternating direction of rotation is not possible.
2) Operating voltage U = 24 V

Notice

- ▶ Note the project planning notes on page 26.
- ▶ In addition to the type code, please specify the relevant technical data when placing your order.

Hydraulic fluid and cleanliness level

Which hydraulic fluids are suitable and approved for the relevant axial piston variable pumps can be found in the relevant data sheets 92100 and 92105.

Selection of hydraulic fluid

Bosch Rexroth evaluates hydraulic fluids on the basis of the Fluid Rating according to the technical data sheet 90235. Hydraulic fluids with positive evaluation in the Fluid Rating are provided in the following technical data sheet:

- 90245: Bosch Rexroth Fluid Rating List for Rexroth hydraulic components (pumps and motors)

EP.. – Electro-hydraulic control with proportional solenoids

Function

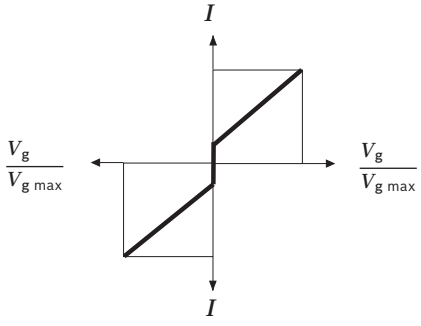
Depending on the preselected current strength, the stroking cylinder of the pump is charged with control pressure via two proportional solenoids on the EP control module. This allows the swashplate – and, thereby, the displacement – to be continuously adjusted. Amplifiers with pulse width modulation are recommended for controlling the solenoids (dither frequency and current range see Table on page 6).

For the purpose of control, we recommend:

- VT-MSPA2 see data sheet 30232

For A4CSG and version **F** with integrated boost pump (for A4VSG with mounted boost pump), the control is supplied internally with the control pressure from the boost circuit. This saves using a separate control pressure pump. The mechanical swivel angle limitation can be set at both sides from $V_{g\,max}$ to 50% $V_{g\,max}$, for size 500 $V_{g\,max}$ to 70% $V_{g\,max}$.
A proportional solenoid is assigned to each flow direction. The proportional solenoids should not be operated with a current higher than the rated current.

▼ **Characteristic curve**

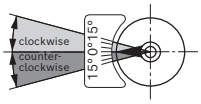


Allocation of direction of rotation – solenoid – flow direction

A proportional solenoid is assigned to each swivel direction.

Direction of rotation	Solenoid	Swiveling range[1)]	Flow direction	Pressure side
right	b	right	**B** to **A**	**A**
	a	left	**A** to **B**	**B**
left	b	right	**A** to **B**	**B**
	a	left	**B** to **A**	**A**

1) cf. swivel angle indicator



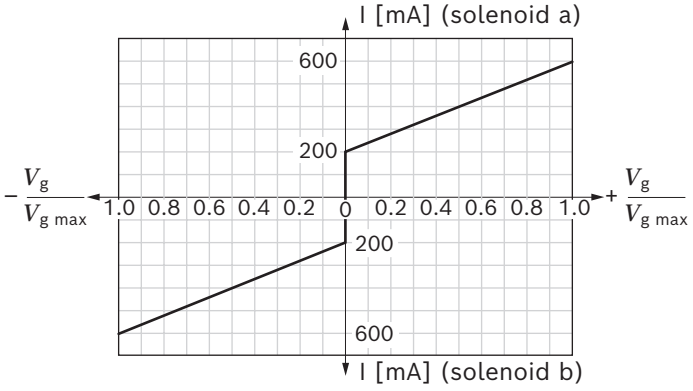
Notice

The spring feedback in the controller and pump control spring centering are no safety devices.
The controller can stick in an undefined position due to internal contamination (contaminated hydraulic fluid, abrasion or residual contamination from system components). As a result, the flow in the axial piston unit will no longer respond correctly to the operator's specifications.
Check whether the application on your machine requires additional safety measures to bring the driven consumer to a safe position (immediate stop). If necessary, make sure these are appropriately implemented.

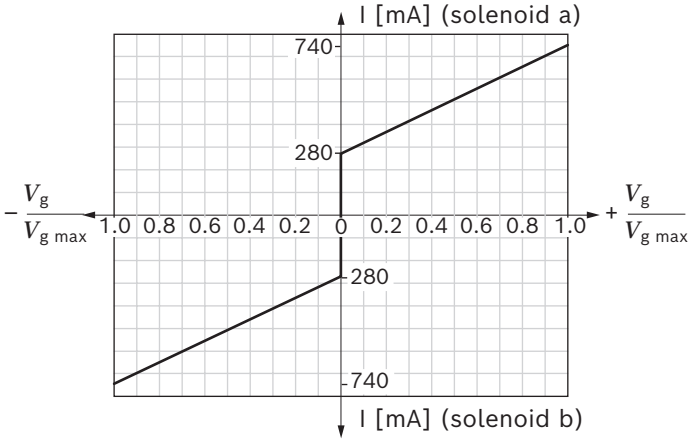
Technical data EP.. – hydraulic

Size			NG	40	71	125/180	250/355	500	750
Maximum boost pressure (A4VSG: measuring points see data sheet 92100) (A4CSG: measured in **M_{K4}**)			bar				25		
Minimum boost pressure	Series 30		bar	16	16	16	16	16	20
	Series 33		bar	–	–	–	15[2]	15[2]	–
Minimum required Control pressure		p_{min}	bar				double boost pressure +5 bar for size 355 (measured in **M_1, M_{ABP}** or **P)**		
Control stroke		s_{max}	mm	14.2	17.1	20.7	25.9	32.6	37
Control area		A	cm²	3.9	6.4	9	14.4	18.8	28.5
Control volume		$V_{S\ max}$	cm³	5.5	11	18.7	37.3	61.4	105
Actuating time for EP without pressure controller[1] and 200 bar high pressure approx.		t_{min}	s	0.08	0.09	0.10	0.3	0.4	0.7
Repeat accuracy							<2% of $V_{g\ max}$		
Control loop performance hysteresis							5 to 7% of $V_{g\ max}$		
Weight of the valve parts			kg			0.677	0.677	1.050	1.050
Maximum characteristic shift at 90° inclination			mA			38	38	59	59

▼ **Characteristic curve**
NG 40 and 71



▼ **Characteristic curve**
NG125 to 750



1) Swivel times with mounted pressure controller are longer and depend on the system settings on the customer side
2) With neutral position controls, the boost pressure must not fall below 15 bar.

Technical data, solenoid for A4VSG and A4CSG

The axial piston units are equipped with the following solenoids with manual override.

Size			**40/71**	**125 to 355** **500 to 1000**
Device connector			DIN EN ISO 175301-803-A002M	DIN EN ISO 175301-803-A002M
Resistance	R_{20}	Ω	22.7	20.2
Rated current	I_{nom}	A DC	0.6	0.8
Control current	Start of control	at $V_{g\,min}$	200 mA	280 mA
	End of control	at $V_{g\,max}$	600 mA	740 mA
Max. flow control range	$I_G = 1.1 \times I_{nom}$	A	0.77	1.05
Rated voltage	U_R	V	24	24
Dither frequency for PWM signal			100 to 200 Hz (Recommendation 100 Hz)	100 to 200 Hz (Recommendation 100 Hz)
Insulating material class			H (ϑ_{max} 180 °C)	H (ϑ_{max} 180 °C)
Duty cycle	ED		S1 (100%)	S1 (100%)
Ambient temperature	ϑ_A	°C	On request	On request
Type of protection according to DIN VDE 0470/EN 60529			IP65	IP65
Manual override			Pressure plate in rubber bellow	
Force for the actuation of manual override			180 N for $V_{g\,max}$	180 N for $V_{g\,max}$

Calculation of resistance

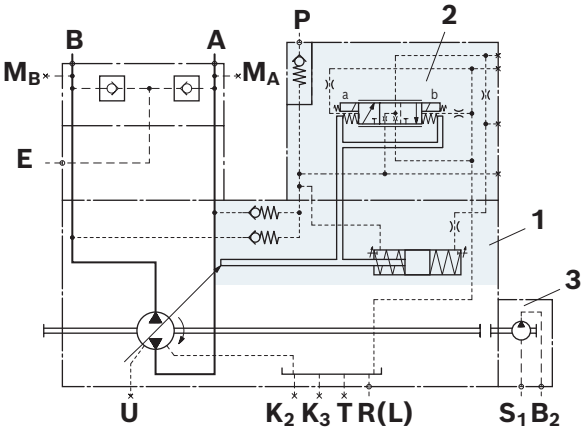
at $\vartheta > 20$ °C

$$R_W = \frac{R_{20} \times (235+\vartheta)}{255}$$

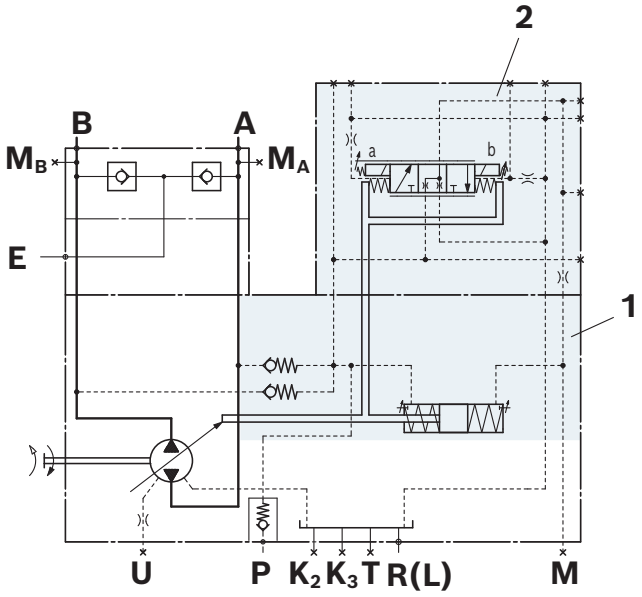
Notice
Detailed dimensions and technical data of the respective products can be found in the data sheets listed on page 1.

Circuit diagrams EP A4VSG NG40 to 355

- Size 40 to 71[1)]
  Example: A4VSG71EP/11R-XXB10H020N

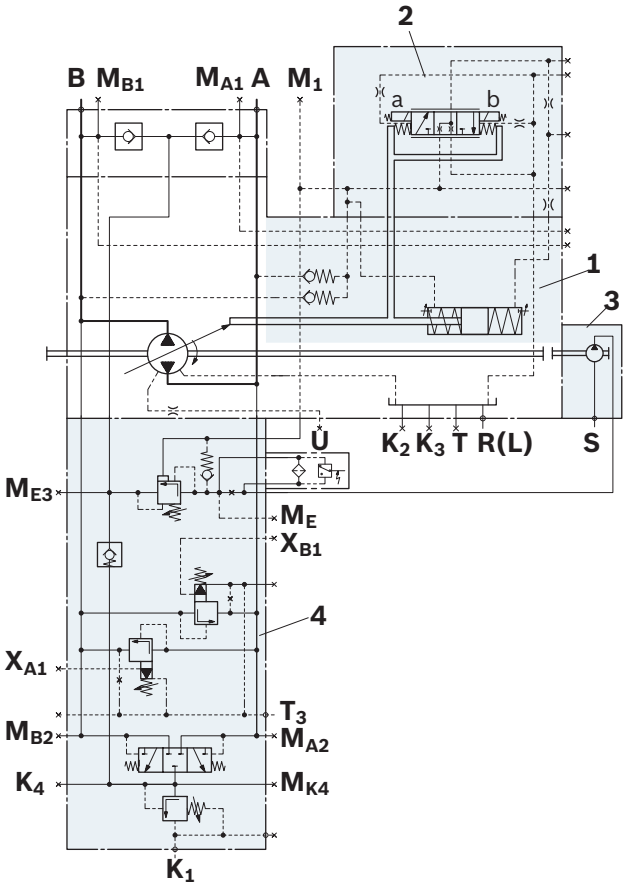


- Size 125 to 355[1)]
  Example: A4VSG125EP/30R-XXB10N000N



1 Pump with hydraulic control device
2 Proportional valve
3 Boost pump

- Sizes 40 to 180[1)]
  Example: A4VSG125EP/30R-XXB10H024F

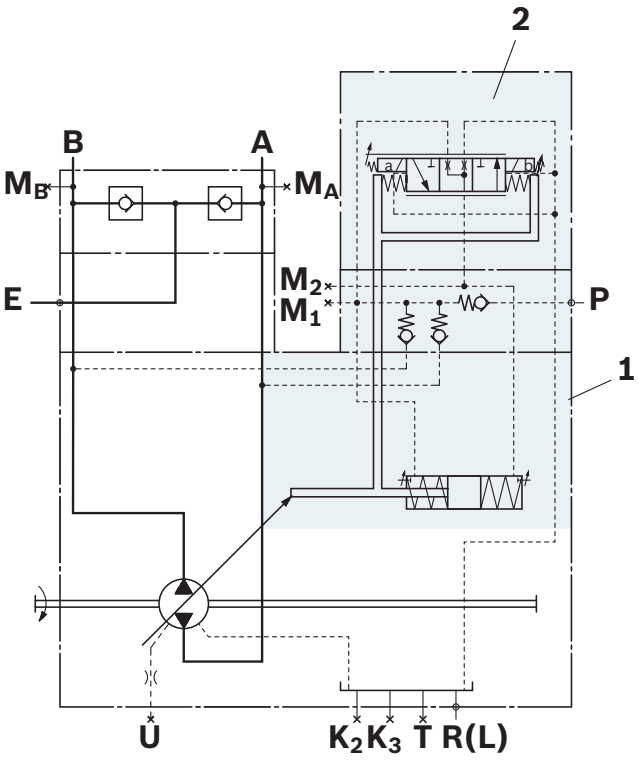


1 Pump with hydraulic control device
2 Proportional valve
3 Boost pump
4 Flush and pressure relief valve block SDVB 16

1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

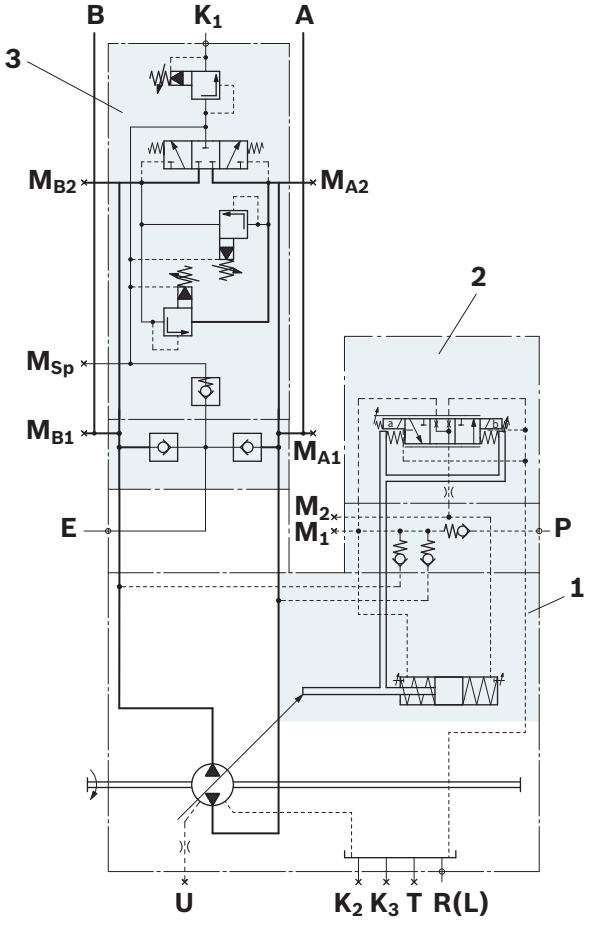
Circuit diagrams EP A4VSG NG500 to 1000

▶ Size 500[1)]
Example: A4VSG500EP/30R-XXH10XXX0N



1 Pump with hydraulic control device
2 Proportional valve

▶ Size 1000[1)]
Example: A4VSG1000EP/30R-XXH10XXX9N

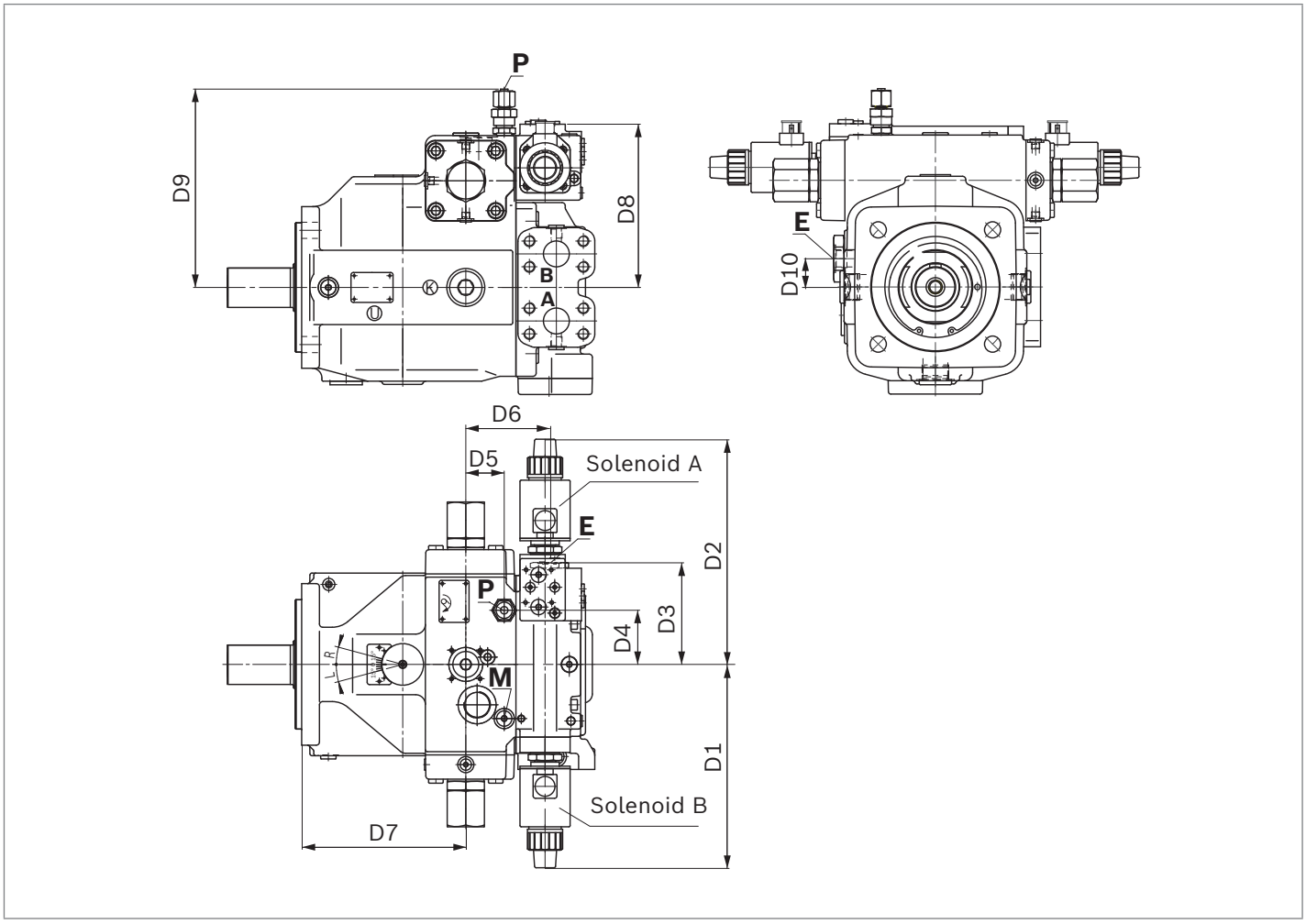


1 Pump with hydraulic control device
2 Proportional valve
3 Flush and pressure relief valve block SDVB

1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

Dimensions EP A4VSG NG40 to 180

- Sizes 40 to 180[3)]
  Example: A4VSG125EP/30R-XXB10N00



Size	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
40	175	175	97	57.5	83	89	144	134	195	25
71	175	175	101.5	57.5	94	80	166	152	210	25
125	252	279	123.5	67	47.5	102	203	202	245.4	35
180	252	279	157.5	62	47.5	102	203	202	244	29

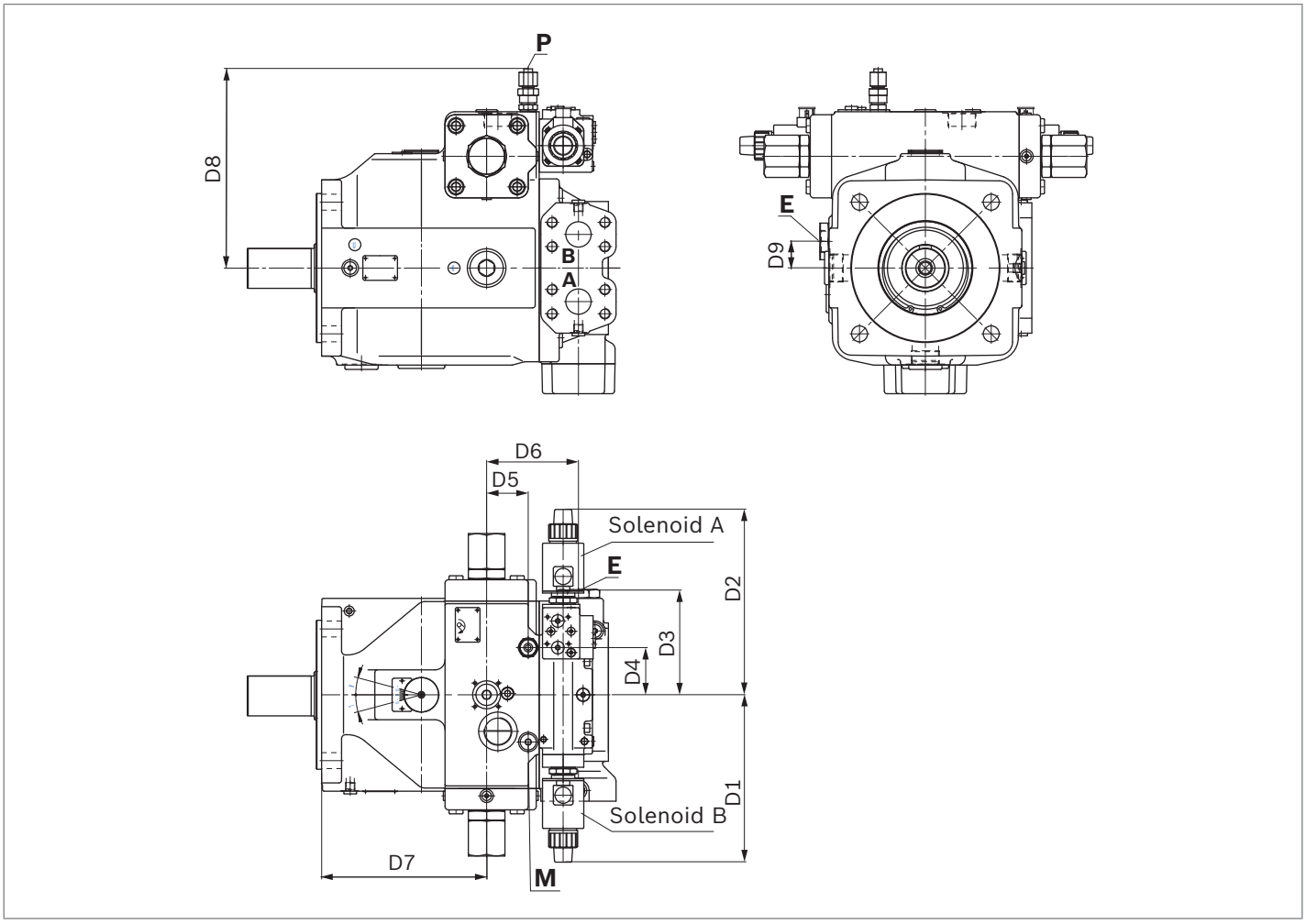
Ports		Standard	Size	p_{max} [bar][1)]	State[2)]
M	Measuring port	DIN 3852[4)]	M14 × 1.5; 12 deep	400	X
P	Control pressure	DIN 3853 form W	S8	See table on page 5.	O
E	Boost pressure supply (NG 40 to 71)	DIN 3852[4)]	M18 × 1.5; 12 deep		O
	Boost pressure supply (NG 125 to 180)		M22 × 1.5; 14 deep		O

For dimensions with flushing and pressure relief valve block SDVB 16, see data sheets 95534 and 92100

1) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
2) O = Must be connected (plugged on delivery)
X = Plugged (in normal operation)
3) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request
4) The countersink may be deeper than specified in the standard.

Dimensions EP A4VSG NG250 to 500

▶ Size 250 to 500[3)]
Example: A4VSG250EP/3xR-XXB10N00



Size	D1	D2	D3	D4	D5	D6	D7	D8	D9
250	252	279	157.5	71	62.5	138	248	299.5	40
355	252	279	178	71	62.5	145	248	297.5	33.5
500	On request								

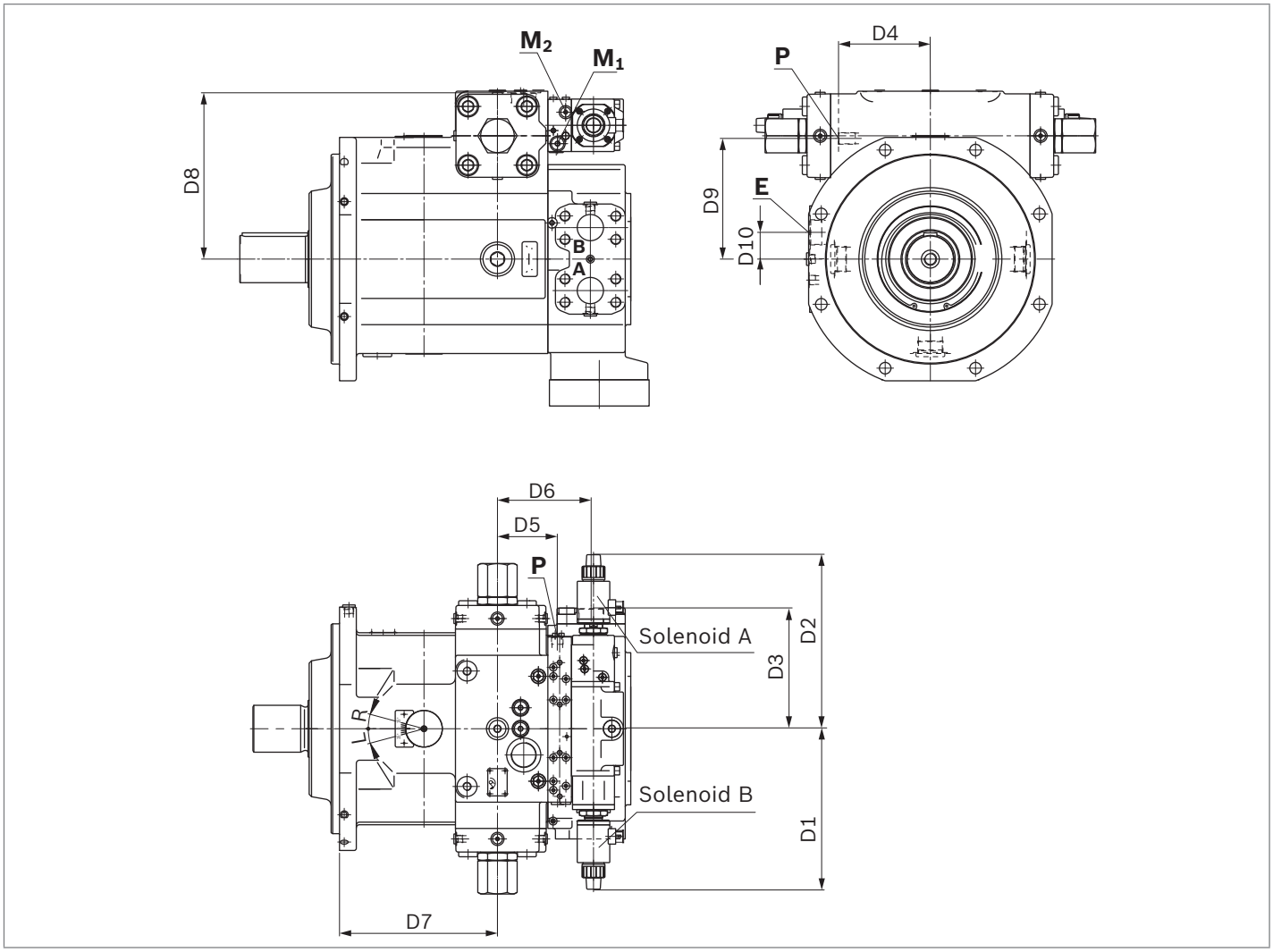
Ports		Standard	Size	p_{max} [bar]	State[2)]
M	Measuring port	DIN 3852[4)]	M14 × 1.5; 12 deep	400	X
P	Control pressure (NG 250 to 355)	DIN 3853 form W	S12	See table on page 5.	O
E	Boost pressure supply NG 250 to 355	DIN 3852	M33 × 2; 18 deep		O

For dimensions with flushing and pressure relief valve block SDVB 16, see data sheets 95534 and 92100

1) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
2) O = Must be connected (plugged on delivery)
X = Plugged (in normal operation)
3) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request
4) The countersink may be deeper than specified in the standard.

Dimensions EP A4VSG NG750 to 1000

▶ Size 750 to 1000[3)]
Example: A4VSG750EP/30R-XXB10N00



Size	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
750	315	332	229	175	114	178.5	301	317	230	51
1000	On request									

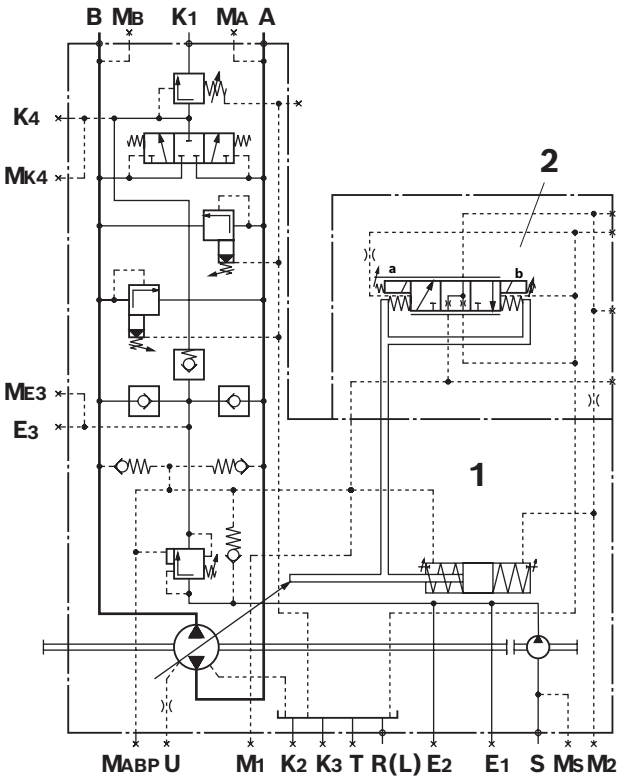
Ports		Standard	Size	p_{max} [bar][1)]	State[2)]
M1	Measuring port	DIN 3852[4)]	M18 × 1.5; 12 deep	400	X
M2	Measuring port	DIN 3852[4)]	M14 × 1.5; 12 deep	400	X
P	Control pressure (NG 750)	DIN 3852	M22 × 1.5; 32 deep	See table on page 5.	O
E	Boost pressure supply NG 750	DIN 3852	M48 × 2; 29 deep		O

For dimensions with flushing and pressure relief valve block SDVB for NG 1000, see data sheets 95533 and 92100

1) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
2) O = Must be connected (plugged on delivery)
X = Plugged (in normal operation)
3) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request
4) The countersink may be deeper than specified in the standard.

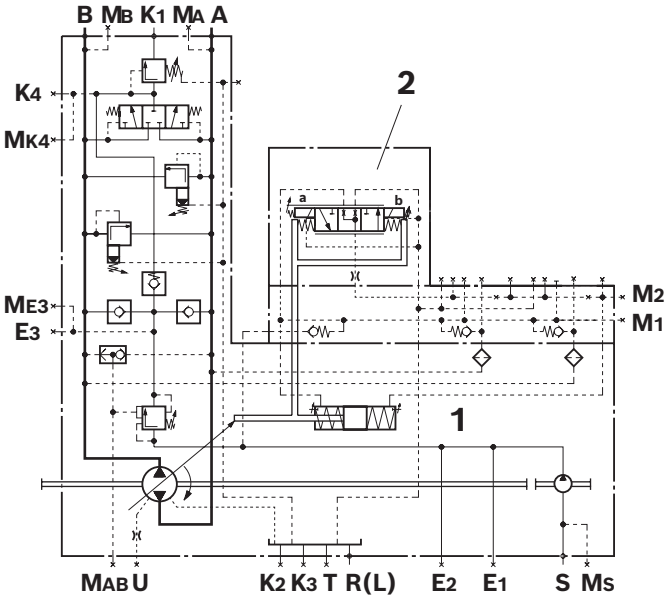
Circuit diagrams EP A4CSG NG250 to 750

▶ Size 250 to 355[1)]
Example: A4CSG250EP/3xR-XXB35F994N



1 Pump with hydraulic control device
2 Proportional valve

▶ Size 500 to 750[1)]
Example: A4CSG500EP/3xR-XXH35F994N

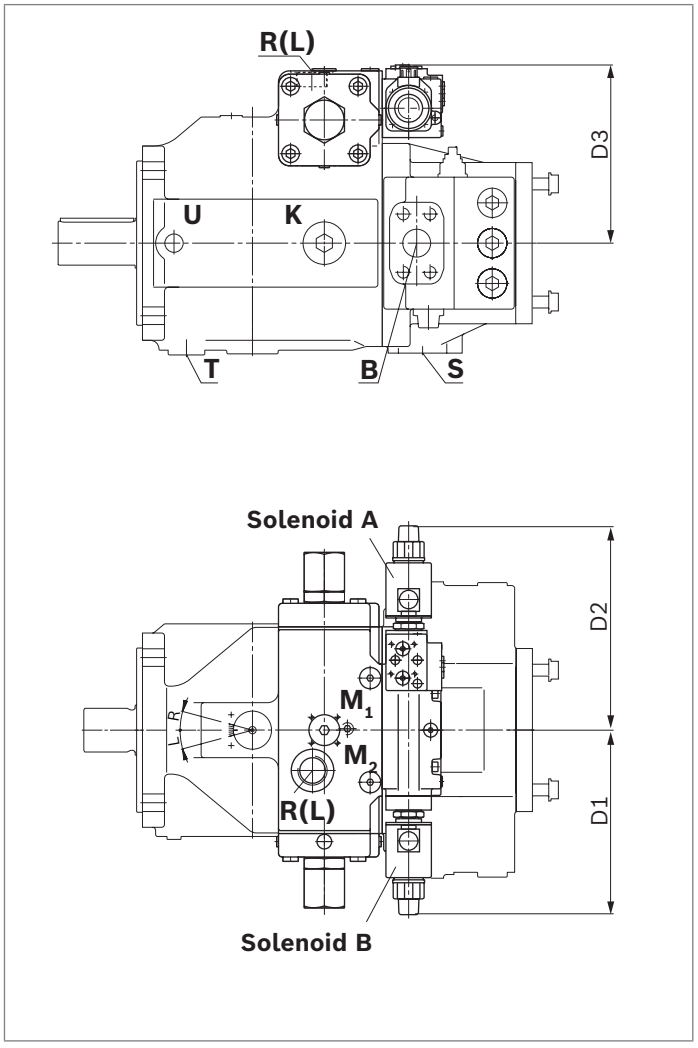


1 Pump with hydraulic control device
2 Proportional valve

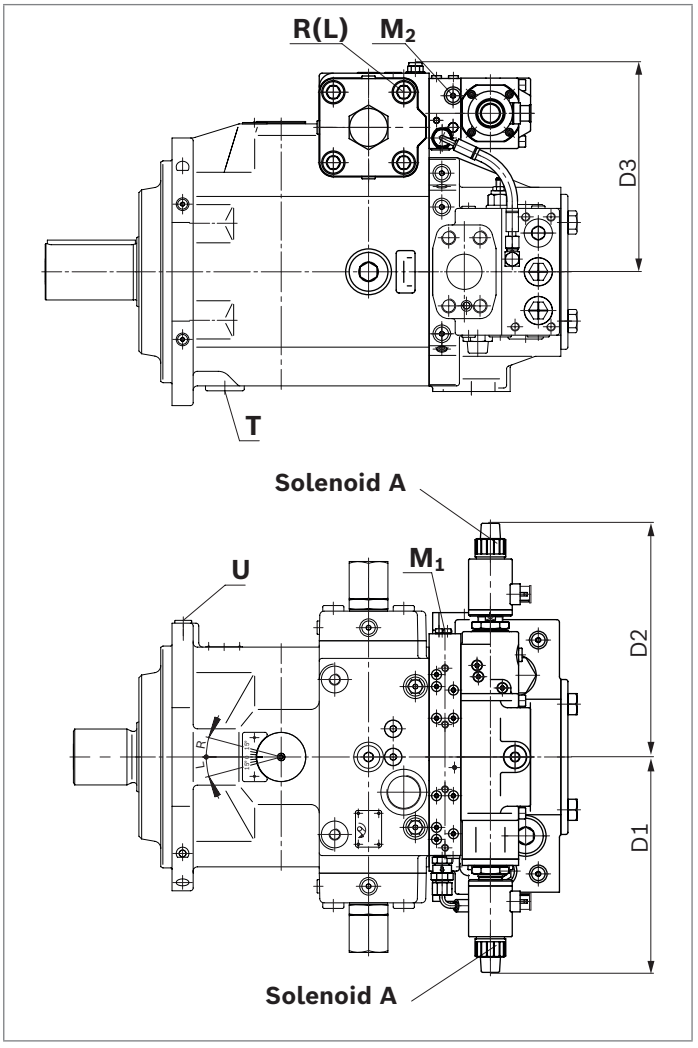
1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

Dimensions EP A4CSG NG250 to 750

▶ Size 250 to 355[3)]
Example: A4CSG250EP/3xR-XXB35F994N



▶ Size 500 to 750[3)]
Example: A4CSG500EP/3xR-XXH35F994D



Size	D1	D2	D3
250	252	279	243
355	252	279	243

Size	D1	D2	D3
500	306	332	297
750	315	332	327

Ports		Size	Standard	Size	p_{max} [bar][1)]	State[2)]
M1	Measuring port	250 to 355	DIN 3852[4)]	M18 × 1.5; 12 deep	400	X
		500 to 750	DIN 3852	M22 × 1.5; 14 deep	400	X
M2	Measuring port	250 to 355	DIN 3852[4)]	M18 × 1.5; 12 deep	400	X
		500 to 750	DIN 3852	M14 × 1.5; 12 deep	400	X

Overall dimensions of the A4CSG see data sheet 92105

1) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
2) O = Must be connected (plugged on delivery)
X = Plugged (in normal operation)
3) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request
4) The countersink may be deeper than specified in the standard.

EP.. – Electro-hydraulic control with proportional solenoids and pressure controller

Pressure control EPA, EPB, EPD

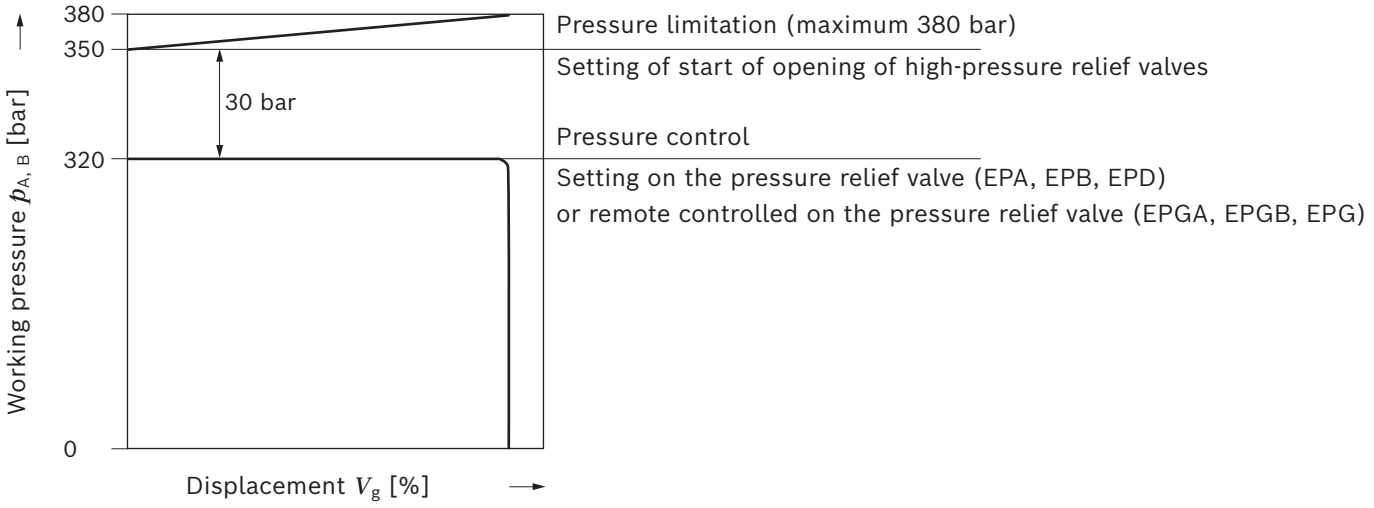
Function

The pressure control is an additional function which controls the displacement of the pump as soon as the set pressure command value has been reached. If the pressure setting at the pressure control valve is exceeded, the pressure control valve opens and swivels the pump back until the set pressure is reached again.
Setting range: 50 to 350 bar
350 bar is the standard setting, please state other values in plain text when ordering. The setting values, however, must be 30 bar lower than the high-pressure relief valve setting (A4CSG) since the occurring pressure peaks and the maximum pressure are safeguarded by these.

Notice

The spring feedback in the controller and pump control spring centering are no safety devices.
The controller can stick in an undefined position due to internal contamination (contaminated hydraulic fluid, abrasion or residual contamination from system components). As a result, the flow in the axial piston unit will no longer respond correctly to the operator's specifications.
Check whether the application on your machine requires additional safety measures to bring the driven consumer to a safe position (immediate stop). If necessary, make sure these are appropriately implemented.

▼ **Characteristic curve**



The following pressure control systems are optionally available

- EPA on one side in port **A**
- EPB on one side in port **B**
- EPD on both sides in ports **A** and **B**

EPG.. – Electro-hydraulic control with proportional solenoids and remote-controlled pressure controller

Pressure control remote controlled

Function

The pressure control is remote controlled via the port $\mathbf{X_A}$ or $\mathbf{X_B}$. The external pressure relief valves are not included in the scope of delivery.
Recommendation DBD 6 (RE 25 402)
The maximum line length should not exceed 2 m.
The differential pressure at the pressure control valve is set as standard to 30 bar. The pilot fluid consumption is then approx. 2 l/min.

Notice

Setting the remote controlled pressure control:
The setting value for the external pressure relief valve plus the differential pressure value at the pressure control valve determines the level of pressure control.

Example:

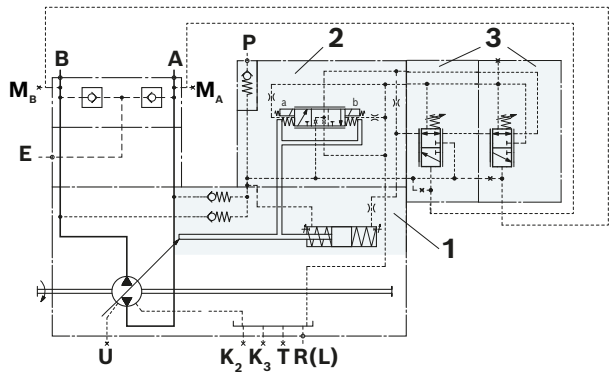
– external pressure relief valve	320 bar
– differential pressure on pressure control valve	30 bar
– resulting pressure control of 320 + 30 =	350 bar

The following remote controlled pressure controls are available as an option

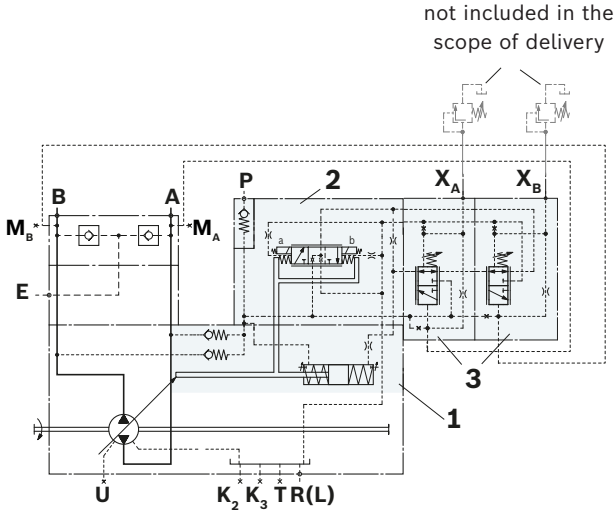
- EPGA on one side in port **A**
- EPGB on one side in port **B**
- EPG on both sides in ports **A** and **B**

Circuit diagrams EPD, EPG A4VSG NG40 to 71

- Size 40 to 71[1)]
  Example: A4VSG71**EPD**

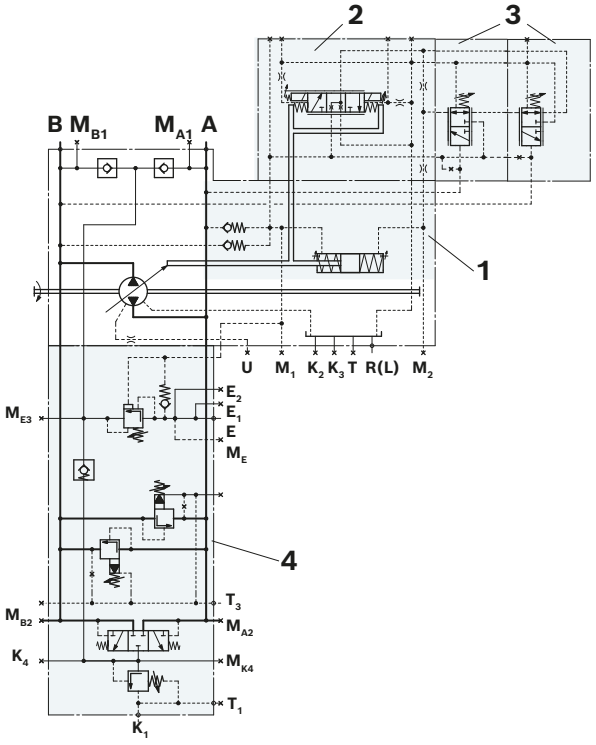


- Size 40 to 71[1)]
  Example: A4VSG71**EPG**



1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A** and **B**

- Size 40 to 71[1)]
  Example: A4VSG71EPD/.....XXX4N

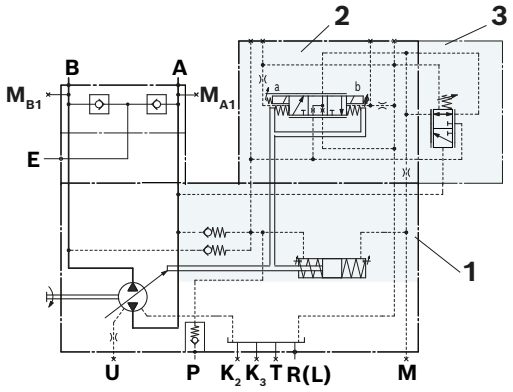


1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A** and **B**
4 Flush and pressure relief valve block SDVB 16

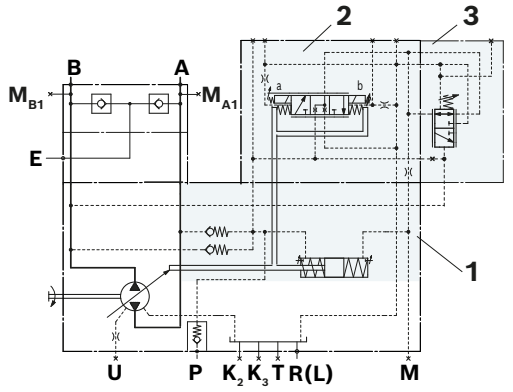
1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

Circuit diagrams EPA, EPB, EPD A4VSG NG125 to 355

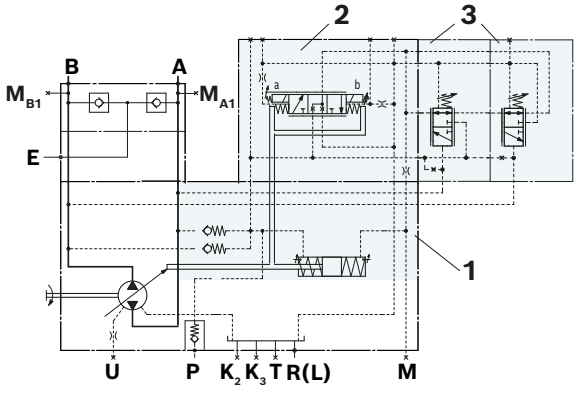
- Size 125 to 355[1)]
  Example: A4VSG125**EPA**



- Size 125 to 355[1)]
  Example: A4VSG125**EPB**

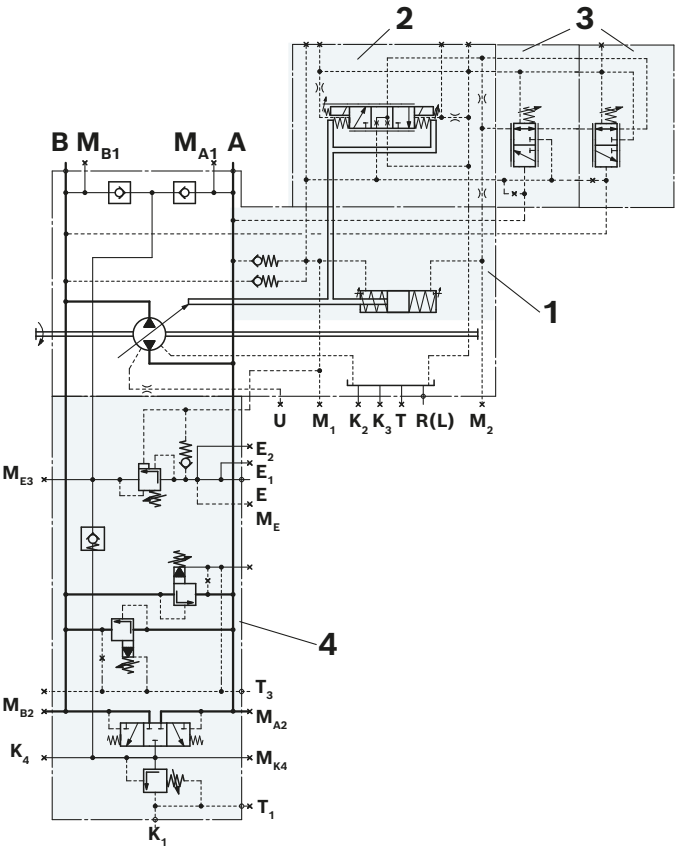


- Size 125 to 355[1)]
  Example: A4VSG125**EPD**



1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**, **B**

- Size 125 to 180[1)]
  Example: A4VSG125EPD/.....XXX4N

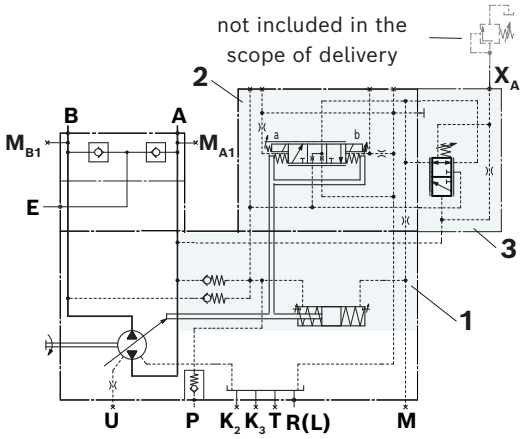


1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A** and **B**
4 Flush and pressure relief valve block SDVB 16

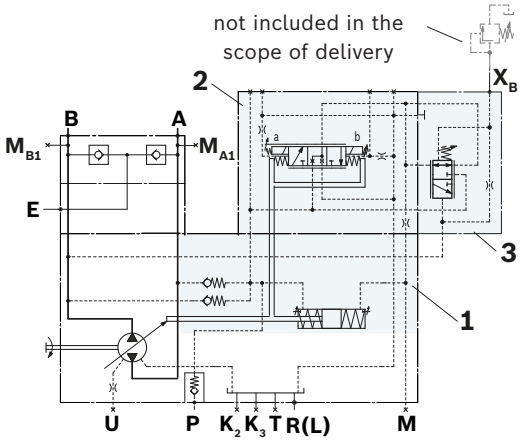
1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

Circuit diagrams EPGA, EPGB, EPG A4VSG NG125 to 355

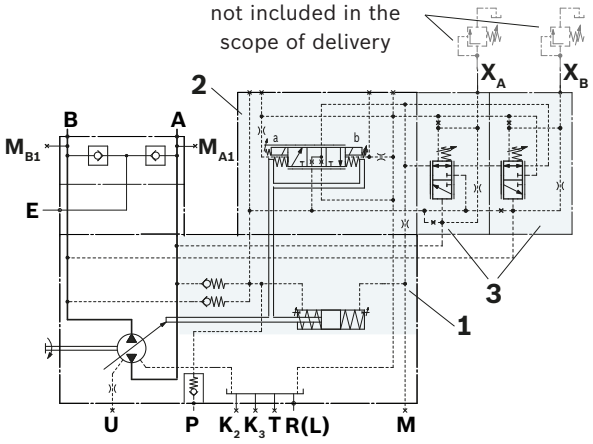
- Size 125 to 355[1)]
  Example: A4VSG125**EPGA**



- Size 125 to 355[1)]
  Example: A4VSG125**EPGB**

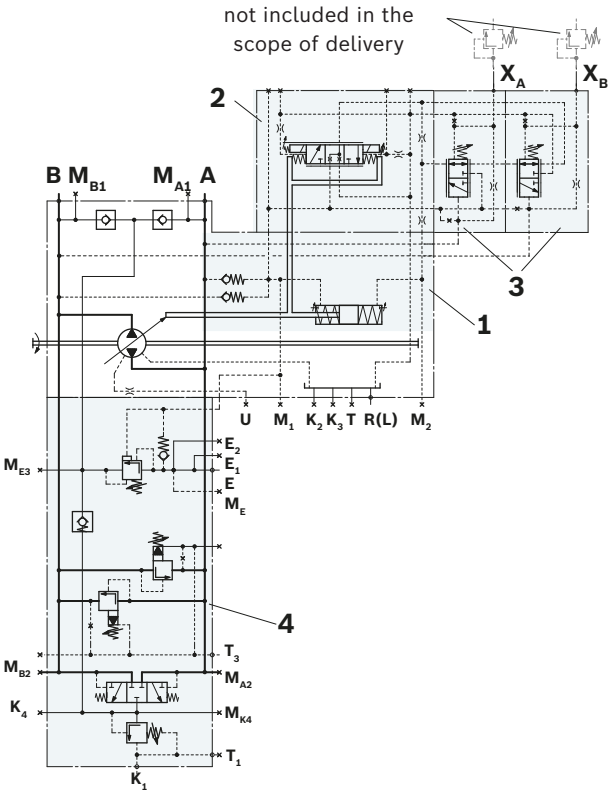


- Size 125 to 355[1)]
  Example: A4VSG125**EPG**



1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**, **B**

- Size 125 to 180[1)]
  Example: A4VSG125**EPG**/.....XXX4N

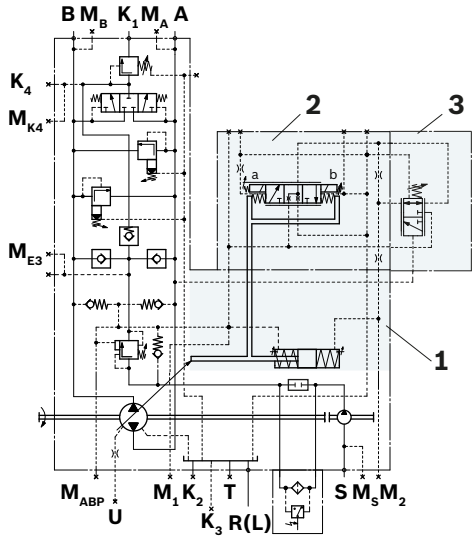


1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A** and **B**
4 Flush and pressure relief valve block SDVB 16

1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

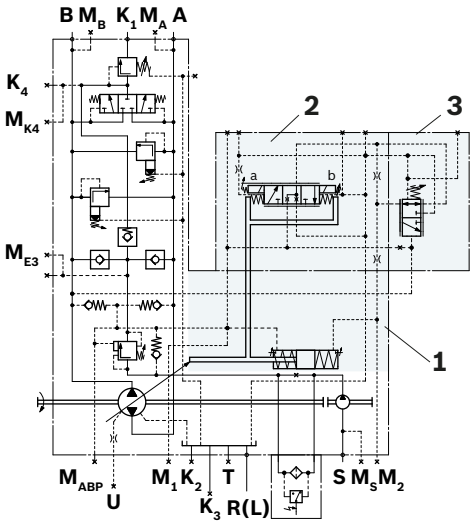
Circuit diagrams EPA, EPB, EPD A4CSG NG250 to 355

- Size 250 to 355[1)]
  Example: A4CSG250**EPA**



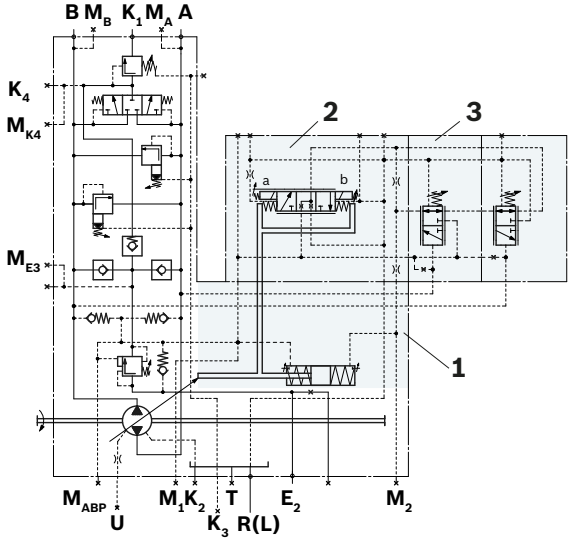
1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**

- Size 250 to 355[1)]
  Example: A4CSG250**EPB**



1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **B**

- Size 250 to 355[1)]
  Example: A4CSG250**EPD**

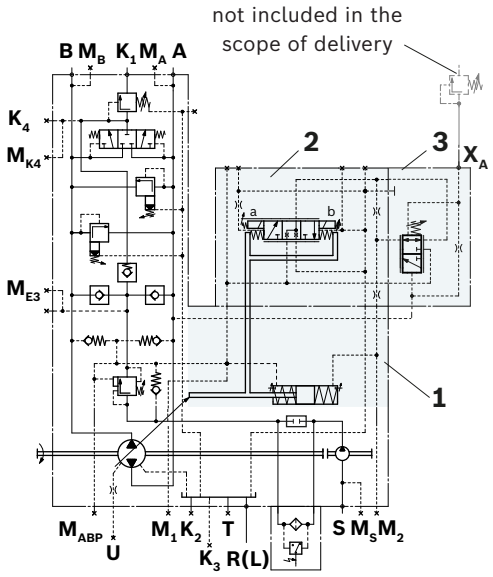


1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**, **B**

1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

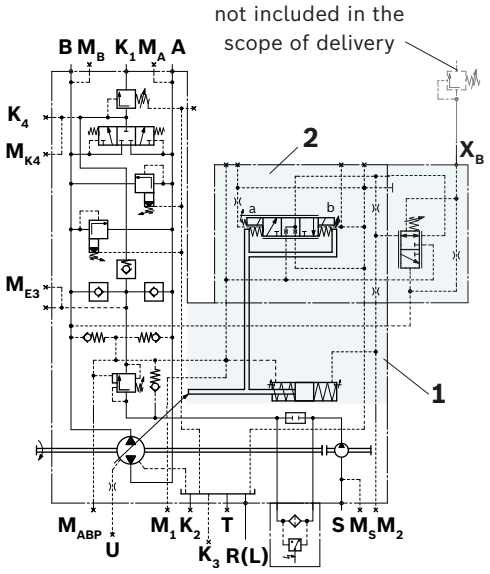
Circuit diagrams EPGA, EPGB, EPG A4CSG NG250 to 355

▶ Size 250 to 355[1)]
Example: A4CSG250**EPGA**



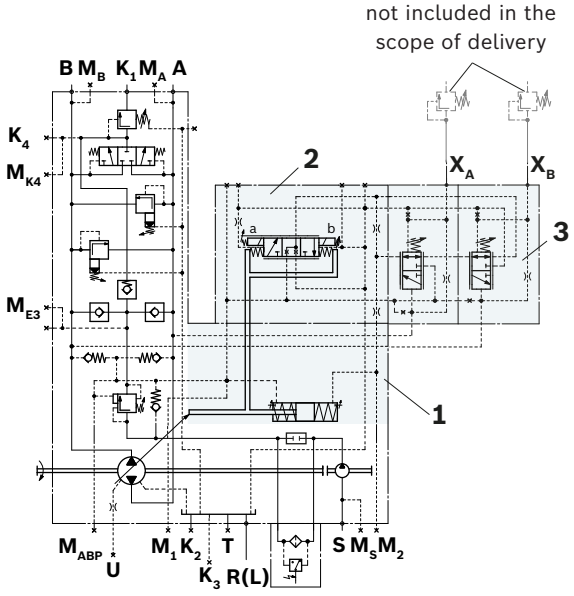
1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**

▶ Size 250 to 355[1)]
Example: A4CSG250**EPGB**



1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **B**

▶ Size 250 to 355[1)]
Example: A4CSG250**EPG**

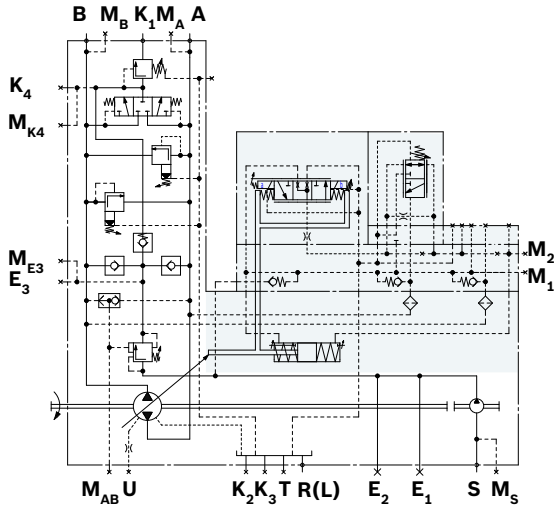


1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**, **B**

1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

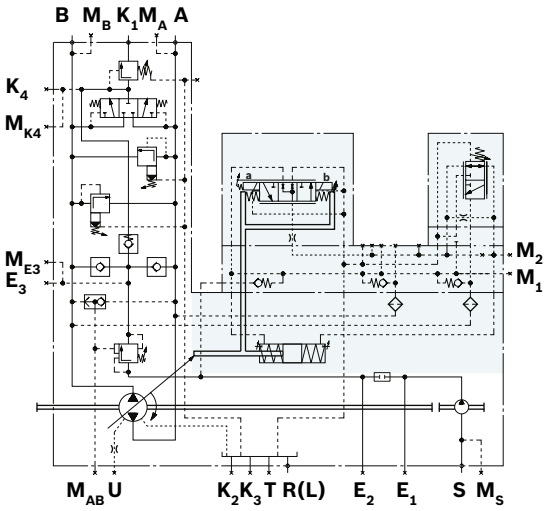
Circuit diagrams EPA, EPB, EPD A4CSG NG500 to 750

- Size 500 to 750[1)]
  Example: A4CSG500**EPA**



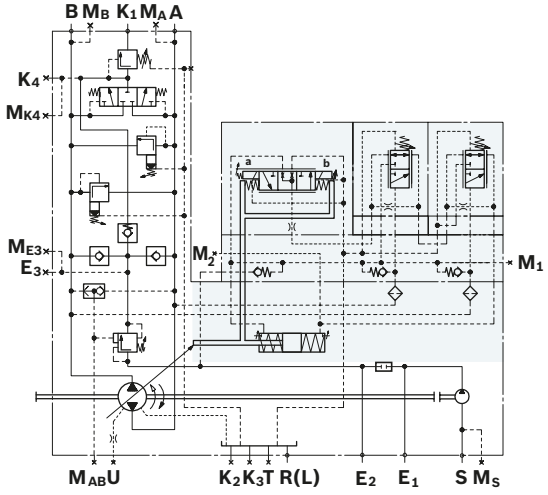
1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**

- Size 500 to 750[1)]
  Example: A4CSG500**EPB**



1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **B**

- Size 500 to 750[1)]
  Example: A4CSG500**EPD**



1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**, **B**

1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

Circuit diagrams EPGA, EPGB, EPG A4CSG NG500 to 750

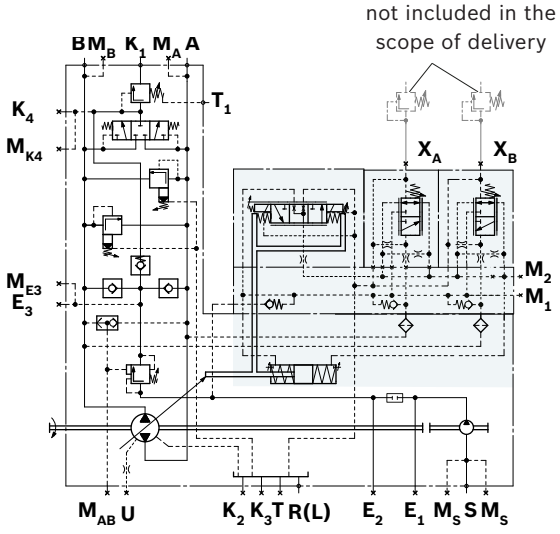
▶ Size 500 to 750[1)]

On request

▶ Size 500 to 750[1)]

On request

▶ Size 500 to 750[1)]
Example: A4CSG500**EPG**

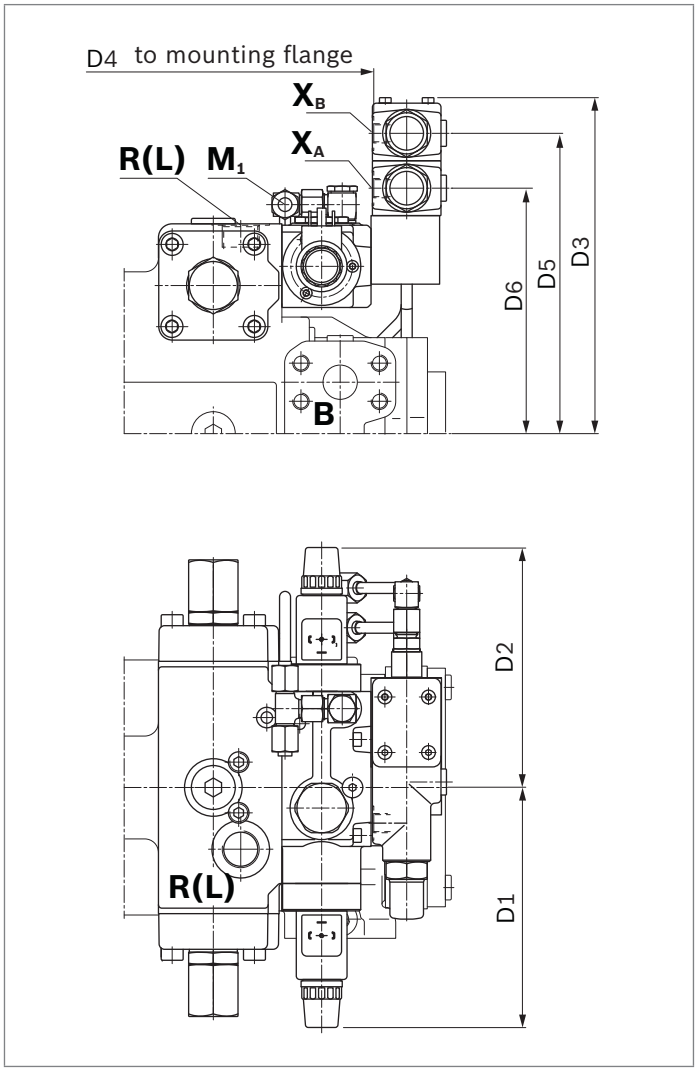


1 Pump with hydraulic control device
2 Proportional valve
3 Control valves, pressure side **A**, **B**

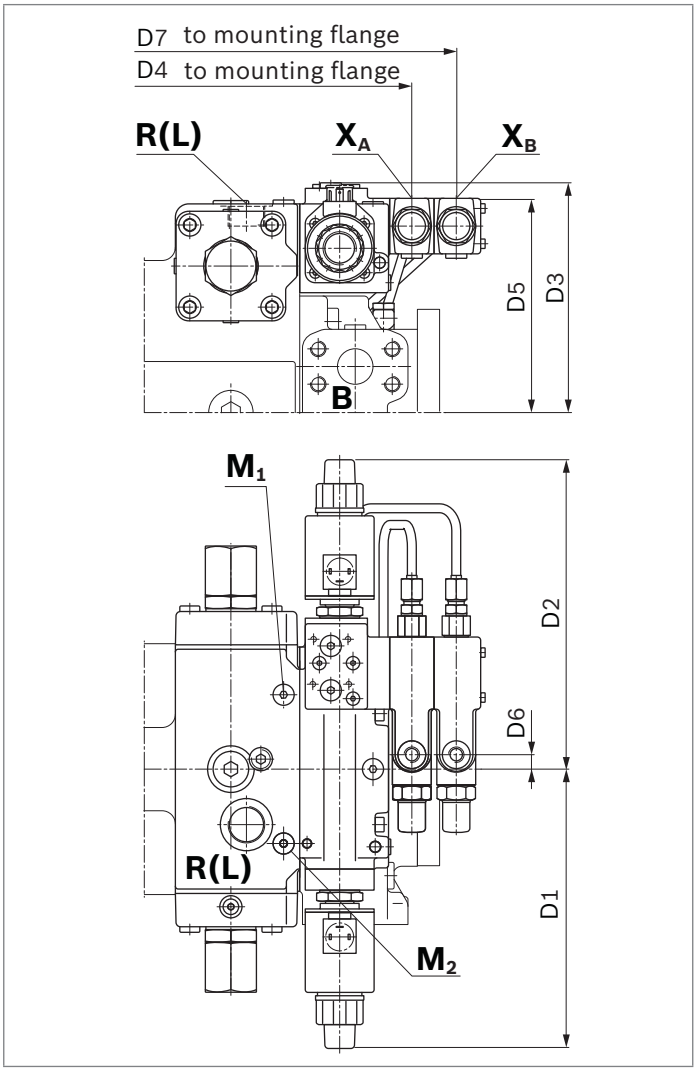
1) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request

Dimensions EPD/EPG A4VSG NG40 to 180

- Size 40 to 71[3)]
  Example: A4VSG71EPG/11R-XXB10....



- Size 125 to 180[3)]
  Example: A4VSG125EPG/30R-XXB10....



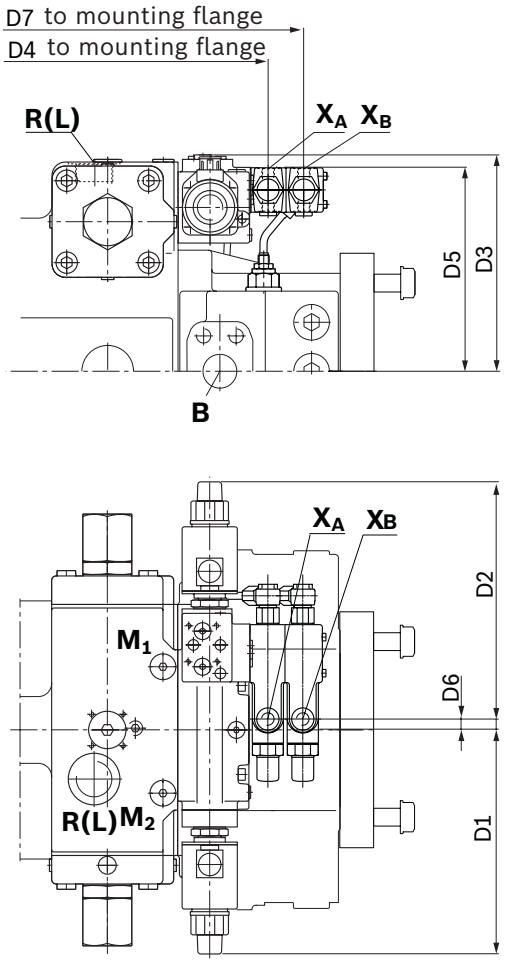
Size	D1	D2	D3	D4	D5	D6	D7
40	175	175	229	256	203	163	–
71	175	175	245	283	249	179	–
125	252	279	207	163	192	13	203
180	252	279	207	163	192	13	203

Ports		Standard	Size	p_{max} [bar][1)]	State[2)]
XA, XB	Pilot pressure port remote controlled pressure controller (EPGA, EPGB and EPG)	DIN 3852[4)]	M14 × 1.5; 12 deep	400	O
M1	Measuring port for NG 40 to 71	DIN 3853	S8 form W	400	X
	Measuring port for NG 125 to 180	DIN 3852[4)]	M14 × 1.5; 12 deep	400	X
M2	Measuring port	DIN 3852[4)]	M14 × 1.5; 12 deep	400	X

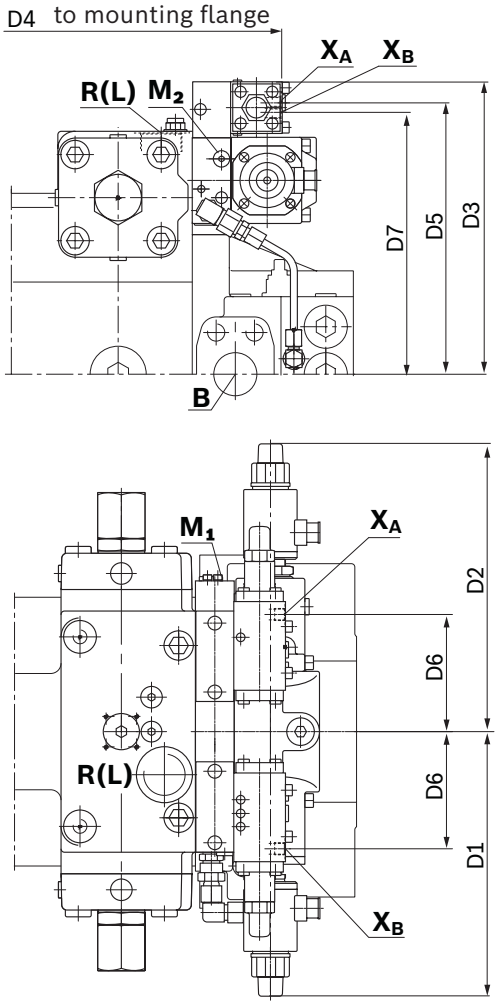
1) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
2) O = Must be connected (plugged on delivery)
X = Plugged (in normal operation)
3) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request
4) The countersink may be deeper than specified in the standard.

Dimensions EPD/EPG A4VSG and A4CSG NG250 to 750

- Size 250 to 355[3)]
  Example: A4CSG250EPG/3xR-....



- Size 500 to 750[3)]
  Example: A4CSG500EPG/3xR-....



Size	D1	D2	D3	D4	D5	D6	D7
250	252	279	243	428	228	13	468
355	252	279	243	428	228	13	468
500	306	332	342	469	315	136	304
750	315	332	372	501	345	136	334

Ports		Standard	Size	p_{max} [bar][1)]	State[2)]
XA, XB	Pilot pressure port remote controlled pressure controller (EPGA, EPGB and EPG)	DIN 3852[4)]	M14 × 1.5; 12 deep	400	O
M1	Measuring port for NG 250 to 355	DIN 3852[4)]	M18 × 1.5; 12 deep	400	X
	Measuring port for NG 500 to 750	DIN 3852	M22 × 1.5; 14 deep	400	X
M2	Measuring port for NG 250 to 355	DIN 3852[4)]	M18 × 1.5; 12 deep	400	X
	Measuring port for NG 500 to 750	DIN 3852	M14 × 1.5; 12 deep	400	X

1) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
2) O = Must be connected (plugged on delivery)
X = Plugged (in normal operation)
3) Representation of clockwise rotation.
Representation of counter-clockwise rotation on request
4) The countersink may be deeper than specified in the standard.

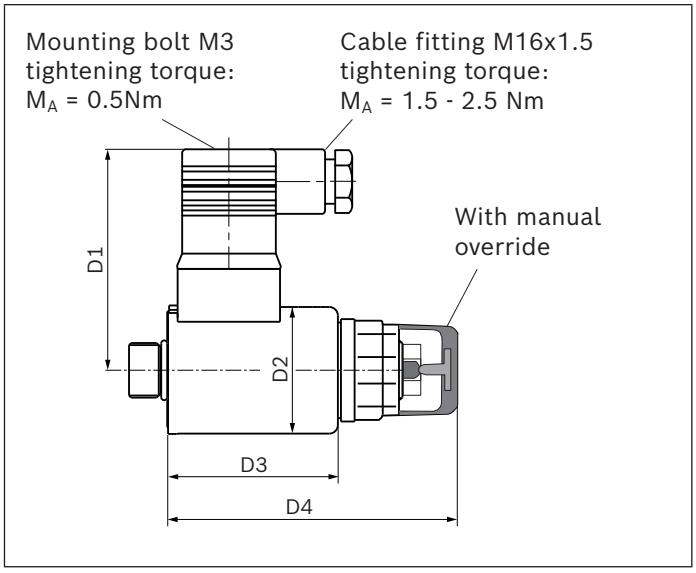
Connector for solenoids

HIRSCHMANN DIN EN 175 301-803-A /ISO 4400
Without bidirectional suppressor diode _____ H

Type of protection according to DIN/EN 60529_____IP65

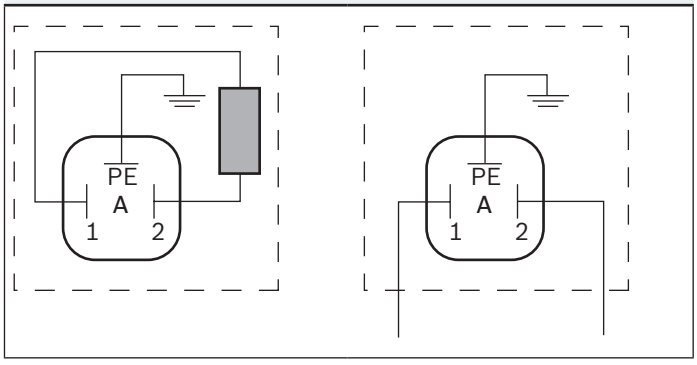
The seal ring in the cable fitting is suitable for lines of diameter 4.5mm to 10mm.
The plug-in connector is not included in the scope of delivery.
This can be supplied by Bosch Rexroth on request (material number: R902602623).

Notice
If necessary, you can change the position of the connector by turning the solenoid body.
The procedure can be found in operating instructions 92100-01-B and 92105-01-B.



NG	D1	D2	D3	D4
40 to 71	71.5	Ø37	50	86
125 to 1000	84	Ø63	72	123.7

Connector on solenoid according to DIN 43650	Plug-in connector DIN EN 175301-803-A Line screw fitting M16x1.5



Project planning notes

- The A4VSG and A4CSG axial piston variable pumps are designed to be used in closed circuit.
- Project planning, installation and commissioning of the axial piston units requires the involvement of skilled personnel.
- Before using the axial piston unit, please read the corresponding instruction manual completely and thoroughly. If necessary, this can be requested from Bosch Rexroth.
- Before finalizing your design, request a binding installation drawing. If you need a 3D installation model, please consult the responsible contact person at Bosch Rexroth.
- The specified data and notes contained herein must be observed.
  More information on the products can be found in the data sheets listed on page 1.
- Depending on the operating conditions of the axial piston unit (working pressure, fluid temperature), the characteristic curve may shift.
- The characteristic curve may also shift due to the dither frequency or control electronics.
- Preservation: Our axial piston units are supplied as standard with preservation protection for a maximum of 12 months. If longer preservation protection is required (maximum 24 months), please specify this in plain text when placing your order. The preservation periods apply under optimal storage conditions, details of which can be found in the data sheet 90312 or the instruction manual.
- Not all versions of the product are approved for use in a safety function according to ISO 13849. Please consult the proper contact at Bosch Rexroth if you require reliability parameters (e.g. $MTTF_d$) for functional safety.
- Depending on the type of control used, electromagnetic effects can be produced when using solenoids. Use of the recommended direct current (DC) on the electromagnet does not produce any electromagnetic interference (EMI) nor is the electromagnet influenced by EMI. A possible electromagnetic interference (EMI) exists if the solenoid is supplied with modulated direct current (e.g. PWM signal). The machine manufacturer should conduct appropriate tests and take appropriate measures to ensure that other components or operators (e.g. with a pacemaker) are not affected by this potentiality.
- Pressure controllers are not safeguards against pressure overload. Be sure to add a pressure relief valve to the hydraulic system.
- For drives that are operated for a long period of time with constant rotational speed, the natural frequency of the hydraulic system can be stimulated by the excitation frequency of the pump (rotational speed frequency x 9). This can be prevented with suitably designed hydraulic lines.
- Please note the details regarding the tightening torques of port threads and other threaded joints in the instruction manual.
- The ports and fastening threads are designed for the p_{max} permissible pressures of the respective ports, see the connection tables. The machine or system manufacturer must ensure that the connecting elements and lines correspond to the specified application conditions (pressure, flow, hydraulic fluid, temperature) with the necessary safety factors.
- The working ports and function ports are only intended to accommodate hydraulic lines.

Safety instructions

- During and shortly after operation, there is a risk of getting burnt on the axial piston unit and especially on the solenoids. Take the appropriate safety measures (e.g. by wearing protective clothing).
- Moving parts in control equipment (e.g. valve spools) can, under certain circumstances, get stuck in position as a result of contamination (e.g. contaminated hydraulic fluid, abrasion, or residual dirt from components). As a result, the hydraulic fluid flow and the build-up of torque in the axial piston unit can no longer respond correctly to the operator's specifications. Even the use of various filter elements (external or internal flow filtration) will not rule out a fault but merely reduce the risk. The machine/system manufacturer should test whether additional measures are required on the machine for the relevant application in order to bring the driven consumer into a safe position (e.g. safe stop) and make sure any measures are properly implemented.

Bosch Rexroth AG
An den Kelterwiesen 14
72160 Horb a.N.
Germany
Tel. +49 7451 92-0
info.ma@boschrexroth.de
www.boschrexroth.com