

## Check and Metering E-valve

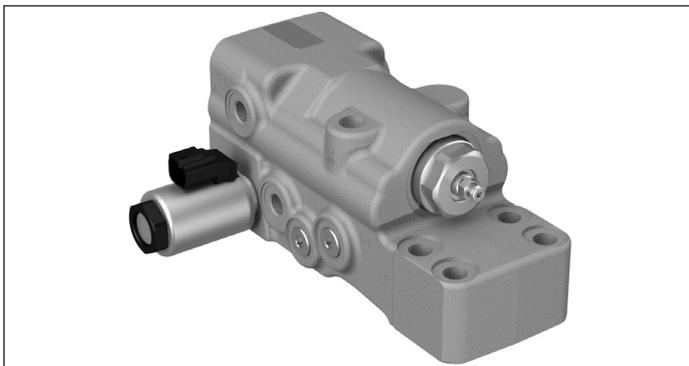
**PATENT APPLICATION FILED**

E-valve 5.0

**RE 18309-24**

Edition: 11.2023

Replaces: 10.2023



Size 5.0

Series E-valve

Maximum operating pressure: 420 bar (6090 psi)

Max. flow: 500 l/min. (132 gpm)

### Description

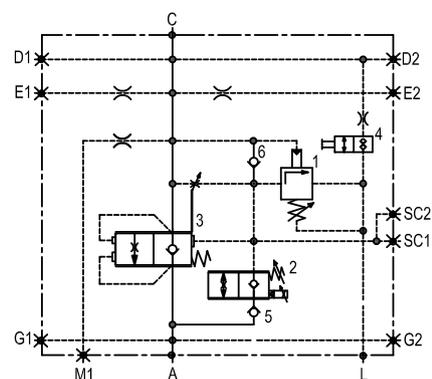
The electro hydraulic check and metering E-valve for excavators prevents uncontrolled lowering of the actuator in case of hose failure and provides the load holding when the joystick is released in neutral position. Lifting operations are performed with very limited pressure losses across the valve. The valve includes also a pressure relief stage (1) which prevents any overloads into the cylinder. The actuation of the valve is performed by energizing the electro-proportional pilot stage (2) whose setting and characteristic curve are determined by changing the electrical parameters. Based on the two stages opening principle (2, 3), the valve provides flow metering from the cylinder to the main control valve and offers the possibility to change the behavior of the machine only by adjusting the pilot stage parameters. For safety reasons, the valve is directly mounted on the cylinder flange and provides a compact installation with the elimination of the pilot piping and the positioning of all hydraulic ports on the back surface. The valve is also equipped with a by-pass function (4) which can be used for emergency boom lowering in case of power supply failure.

### Main Field of Application

Excavators  
Material Handlers

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### Note

Ports D2, E1, E2, SC2, G1, G2, M1 to be drilled on request.

Port identified with D1 and SC1 are not protected with calibrated orifice but in direct connection with pressure channels.

## Technical data

General			
Weight	kg (lbs)	9.30 (20.50)	
Manifold material		Zinc plated cast iron	
Ambient temperature range	°C (°F)	-30....+110 (-22....+230)	
Salt spray test	h	500	
Hydraulic			
Max. operating pressure	bar (psi)	420 (6090)	
Max. pressure at C-A ports	bar (psi)	420 (6090)	
Max. pressure at L port	bar (psi)	25 (362.6)	
Max. flow	l/min. (gpm)	500 (132)	
Opening current range	mA	600 - 1600 (Voltage 12 V) and 350 - 700 (Voltage 24 V)	
Setting		Setting is done at 5 l/min (C->A) with a pilot current which determines a load pressure reduction from 100 bar to 80 bar. Standard setting is 650 (0/+100) mA pilot current for 12V versions. Standard setting is 300 (0/+50) mA pilot current for 24V versions.	
Fluid		Mineral oil (HL, HLP) according DIN 51524	
Fluid temperature range	°C (°F)	-30....+100 (-22....+212)	
Viscosity range	mm <sup>2</sup> /s	15....380	
Permissible degree of fluid contamination		Class 19/17/14 according to ISO 4406	
MTTFD		150 years see RE 18350-51	
Other technical data		see data sheet 18350-50	
Electrical			
Type of voltage		DC Voltage	
Standard Voltage	V	12 DC ± 15%	24 DC ± 15%
Power	W	20 (cold coil at 20°C)	20 (cold coil at 20°C)
Resistance at 20°C	Ω	2.3 ± 5%	11.5 ± 5%
Resistance at max. hot valve (Rmax)	Ω	3.8	18.5
Max. current (Imax)	mA	1760	800
Minimum terminal voltage to get Imax at Rmax	V	6.7	14.5
Duty cycle ED		100%	100%
Insulation class of coil		H	H
Coil protection		IP 69K	IP 69K
Coil weight	kg (lbs)	0.24 (0.53)	0.24 (0.53)
Coil connector		DT04-2P DEUTSCH	DT04-2P DEUTSCH
Recommended dither freq. (PWM)	Hz	200	200

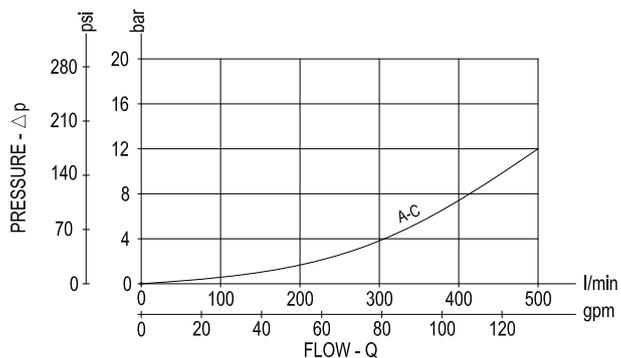
### Note

for applications outside these parameters, please consult us.

## Characteristic curves

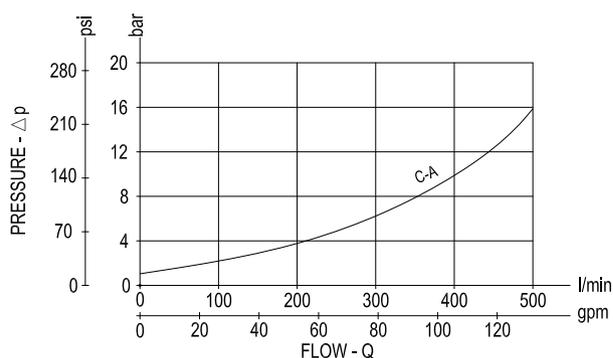
### $\Delta p = f(Q)$ Pressure drop - Flow rate characteristic

#### Lifting (A->C)

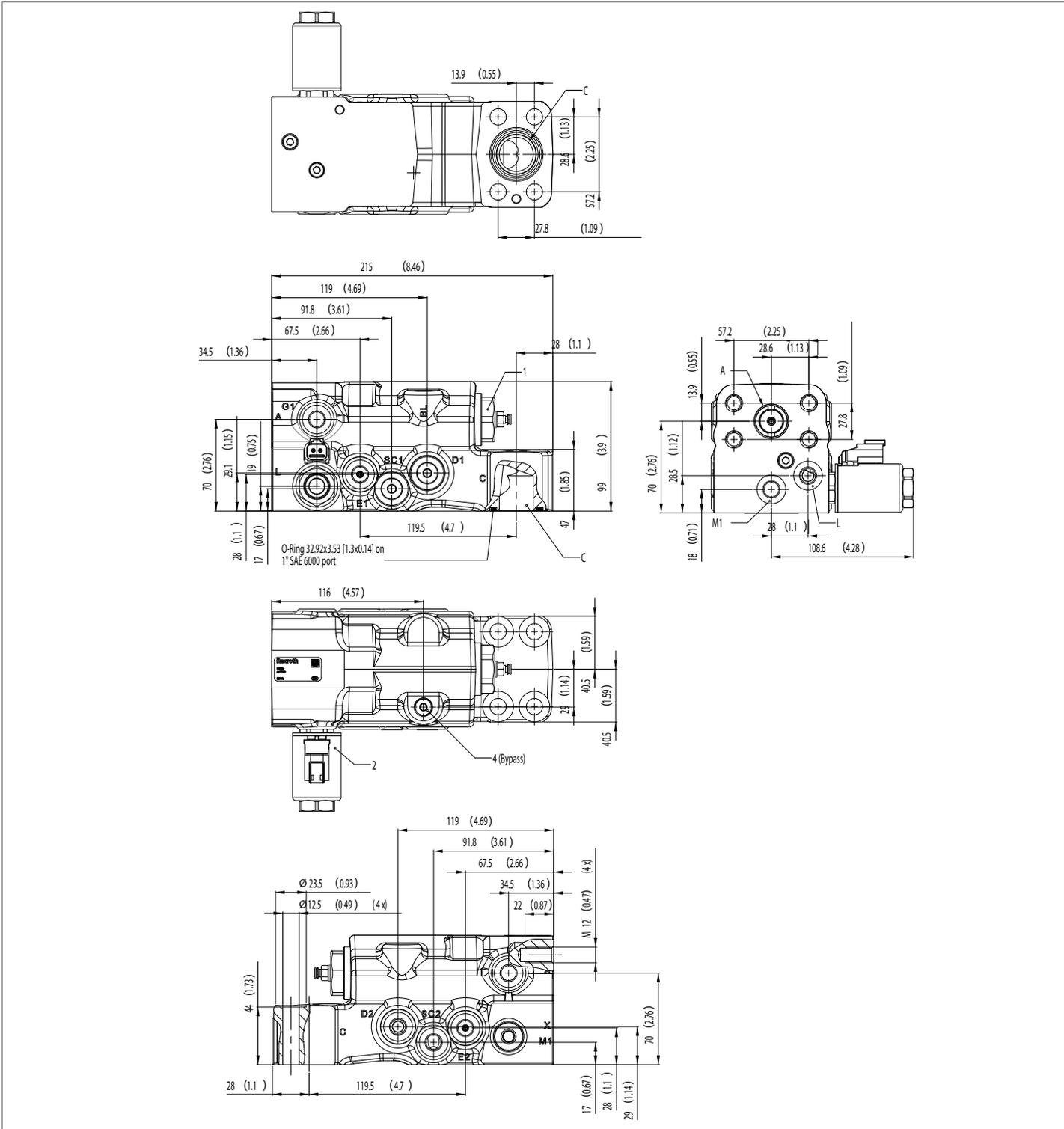


### $\Delta p = f(Q)$ Pressure drop - Flow rate characteristic

#### Lowering (C->A), main stage (3) completely open.



**External dimensions and fittings**

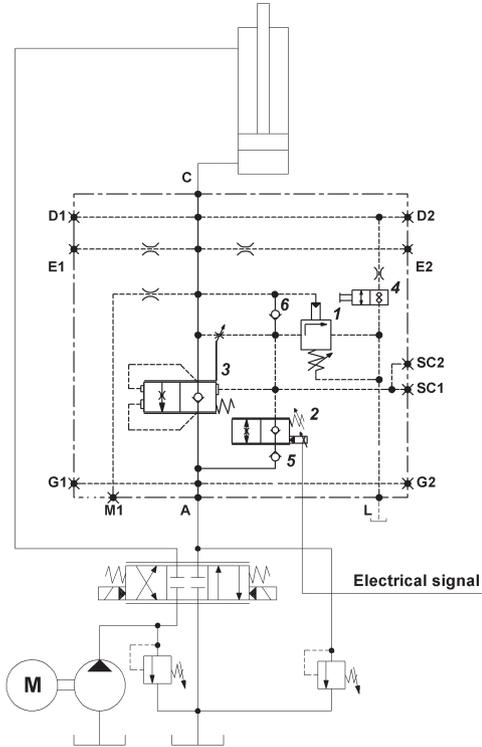


Ports	Std. size
L	G1/4 - BSPP ISO 1179-1
Optional ports: D2, E1, E2, SC2, G1, G2, M1 - to be drilled on request	G1/4 - BSPP ISO 1179-1

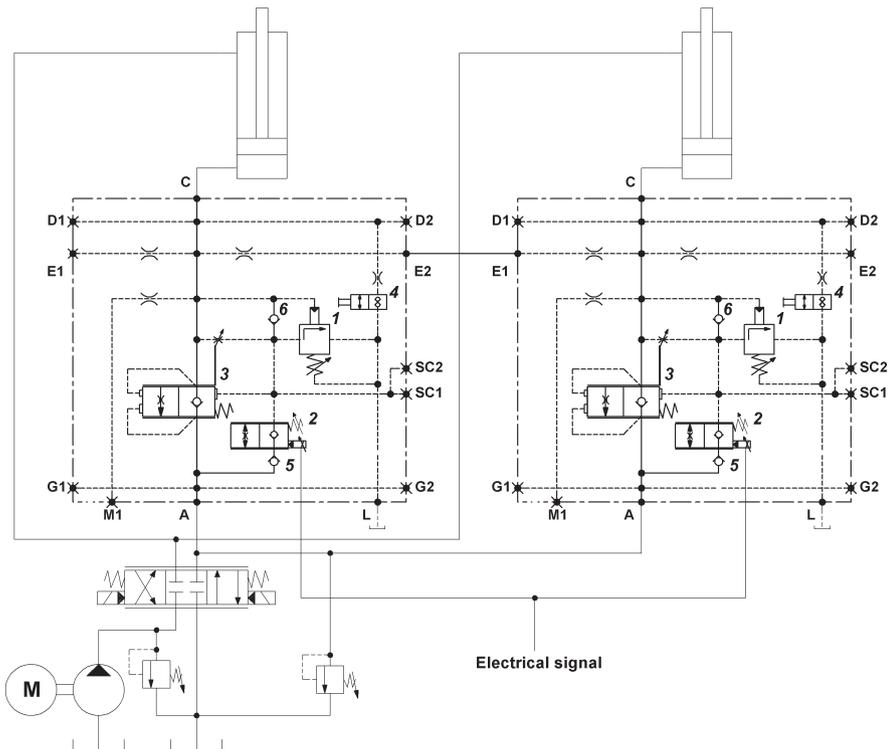
**Note**  
 Use of a carter for protection of electro-proportional pilot stage cartridge N.2 is recommended.

## Application examples

### Single Operation



### Parallel Operation



## Ordering details

01	02	03	04	05	06	07
<b>0G.E5</b>	-	--	-	<b>0</b>	-	--

### Family

01	Check and Metering E-valve 5.0	<b>0G.E5</b>
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### A-C Flange

02	3/4 SAE 6000	<b>2</b>
	1 SAE 6000	<b>3</b>

### Application

03	Single Operation. D2, E1, E2, SC2, G1, G2, M1 ports not drilled.	<b>00</b>
	Parallel operation. Left version. D2, E2, SC2, G1, G2, M1 ports not drilled.	<b>01</b>
	Parallel operation. Right version. D2, E1, SC2, G1, G2, M1 ports not drilled.	<b>02</b>

### Ports

04	G1/4 - BSPP ISO 1179-1	<b>G</b>
	G1/4 - JIS B 2351-90	<b>J</b>
	9/16-18 - SAE UNF 2B ISO 11926-1	<b>U</b>

### Main stage

05	Spool Type	<b>0</b>
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### Pilot stage

06	12 V	<b>1</b>
	24 V	<b>2</b>

Valve 1	Adj. pressure range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) 5 l/min	
07	300-460 (4350-6700)	168 (2436)	350 (5000)	<b>35</b>
	300-460 (4350-6700)	168 (2436)	420 (6090)	<b>42</b>

## Flange seal kit

E00000000000002 (R930004532) C flange 3/4 SAE 6000

E00000000000003 (R930004533) C flange 1 SAE 6000

Type	Material number
0GE5300G0242000	R930083563
0GE5301G0242000	R930083564
0GE5302G0242000	R930083566

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