

E-motion Plus check and metering valve

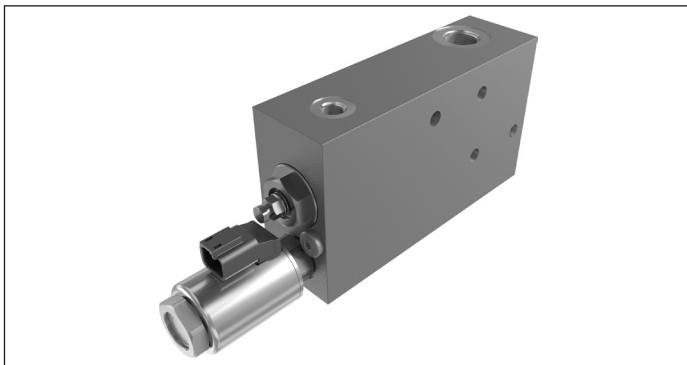
PATENTED APPLICATION FILED

E-motion Plus valve

RE 18309-25

Edition: 11.2023

Replaces: 05.2022



Maximum operating pressure: 420 bar (6090 psi)

Max. flow: 150 l/min (40 gpm)

Description

The electro hydraulic E-motion Plus valve offers very fine boom lowering control and provides leak-free load holding function when the joystick is released in neutral position. Lifting operations (V2-C2) are performed with very limited pressure losses ensuring energy saving and higher speed movement.

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 cylinder head side to the main control valve (C2-V2), allows maximum lowering speed with limited pressure into the cylinder rod side and gives the possibility to change the behavior of the machine only by adjusting the pilot stage parameters.

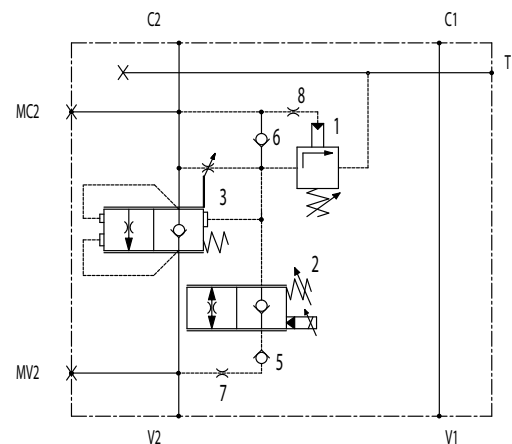
For safety reasons the valve is directly flanged on the cylinder and provides a compact installation with the elimination of the pilot piping.

Main Field of Application

Telehandlers

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Note

Port identified with MC2 and MV2 are not protected with calibrated orifice but in direct connection with pressure channels.

Technical data

General			
Weight	kg (lbs)	5.60 (12.35)	
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)	150 (40)	
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 ² /s	15....380	
Permissible degree of fluid contamination		Class 19/17/14 according to ISO 4406	
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

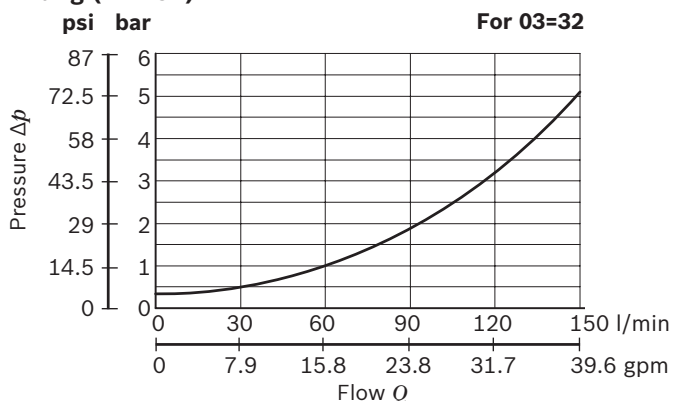
Note

for applications outside these parameters, please consult us.

Characteristic curves

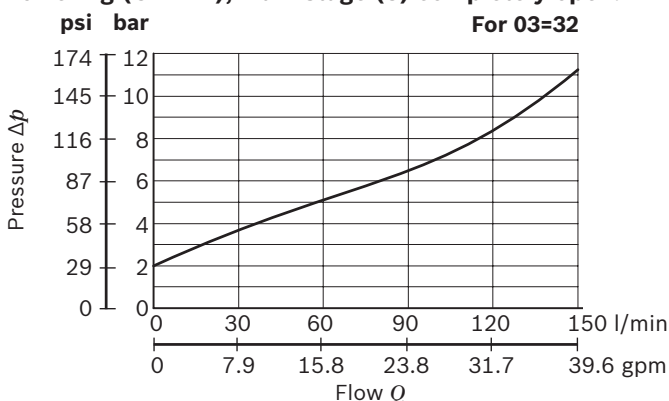
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic

Lifting (V2->C2)



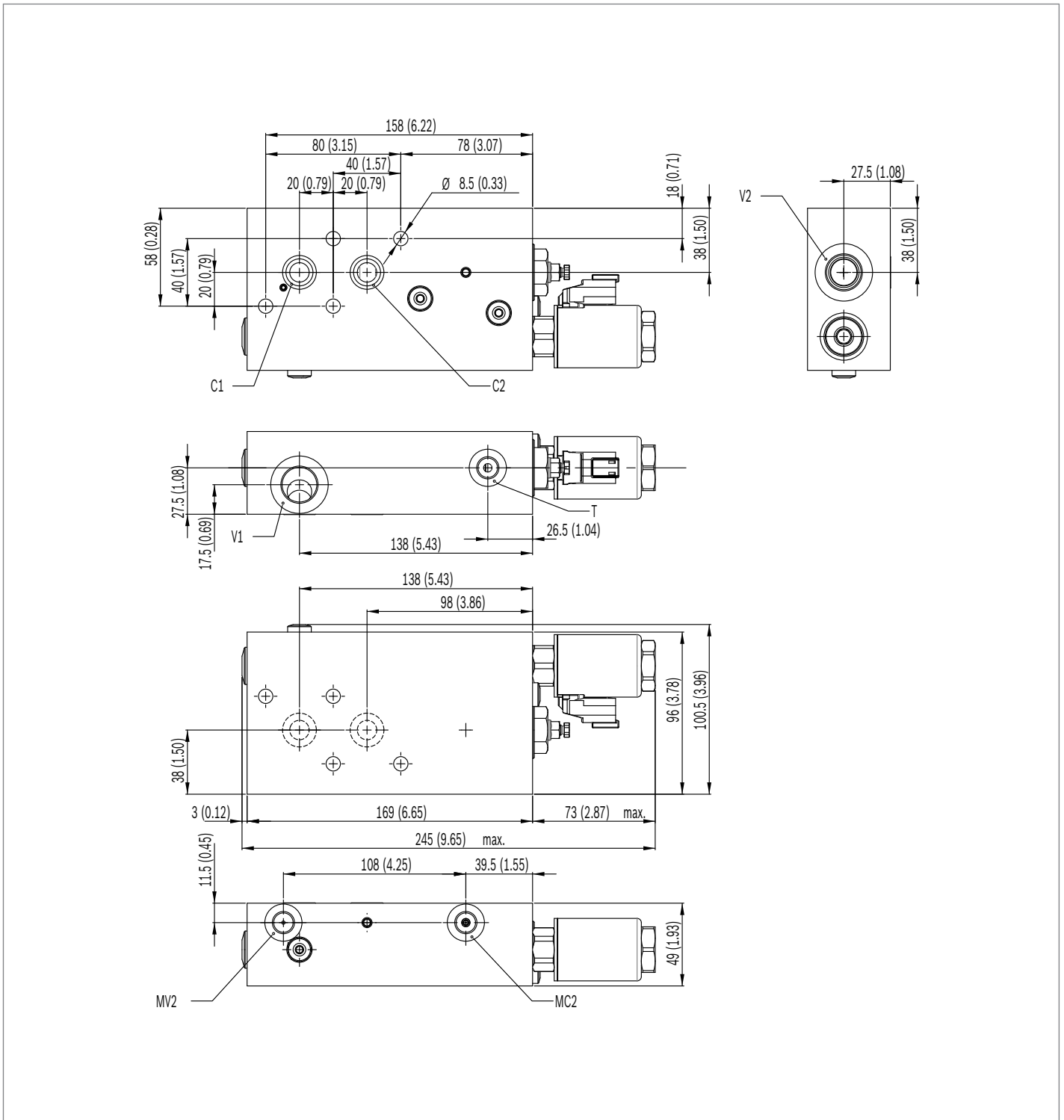
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic

Lowering (C2->V2), main stage (3) completely open.



Measured with hydraulic fluid ISO-VG46 at 36° ± 2 °C (97° ± 36 °F); ambient temperature 23 °C (73 °F).

External dimensions and fittings



Ports	Size
V1 - V2	M22x1.5 - ISO 9974-1
C1 - C2	$\varnothing 11.5 (0.45)$
MC2 - MV2 - T	G 1/4" - ISO 1179-1

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Ordering details

Ordering details

01	02	03	04	05	06
0G.0A	01	--	0	-	--

Family

01	E-motion Plus	0G.0A
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C1-C2 Flange

02	Ø 11,5 mm (0,45")	01
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V1-V2 Lateral ports

03	M 22x1,5 - Metric ISO 9974-1	32
	G3/4 - BSPP ISO 1179-1	04

Main stage

04	Spool type	0
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Pilot stage

05	12 V	1
	24 V	2

Valve 1	Adj. pressure range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) 5 l/min	
06	100-350 (1450-5000)	92 (1334)	350 (5000)	35
	300-460 (4350-6700)	168 (2436)	420 (6000)	42

C1-C2 Flange seal kit

E000000000000008

Type	Material number
0G0A01320235000	R930085422
0G0A01320242000	R930086223
0G0A01040235000	R930086224
0G0A01040242000	R930086225

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