



PRODUCT CATALOG VALVE TECHNOLOGY

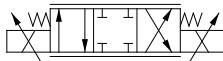
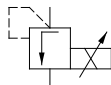
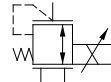
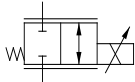


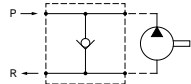
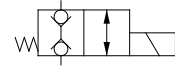
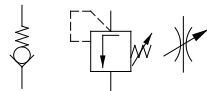
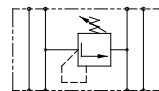

LEADERSHIP IN **HYDRAULIC** SOLUTIONS

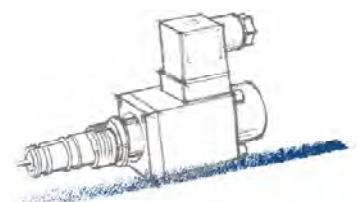
WEBER-HYDRAULIK ValveTech GmbH

Felix-Wankel-Straße 4 • D-78467 Konstanz
Tel.: +49 7531 9748-0 • Fax.: +49 7531 9748-44
www.weber-hydraulik.com • info.de-k@weber-hydraulik.com



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Subplate Mounting Valves

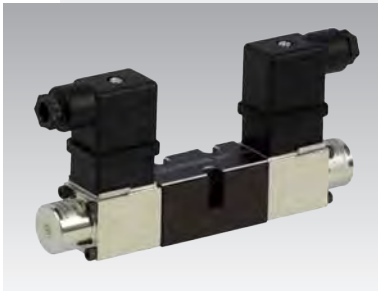
W4_E-5PS03

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 5 l/min
size NG 3 (company standard)

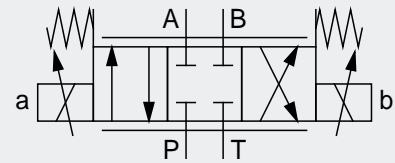
W4_E-1AS06

direct operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 25 l/min
size NG 6, DIN 24340 A06

Proportional directional valve W42E-5PS03 and W43E-5PS03



direct operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 5 l/min
 size NG 3 (company standard)



010111_W4_E-5PS03_e
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Characteristics

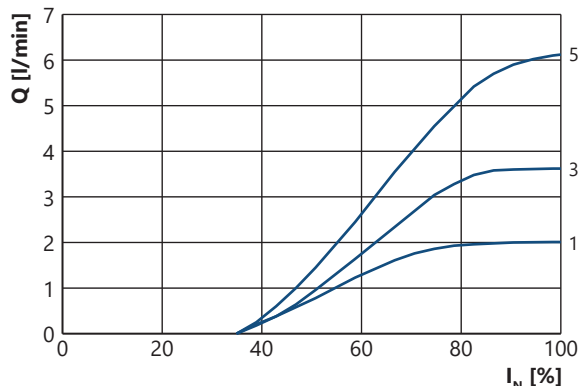
- proportional directional valve in spool design
- miniature edition
- minimum oil leakage
- spring centred spool
- maintenance-free
- available with various volume flows

Technical data

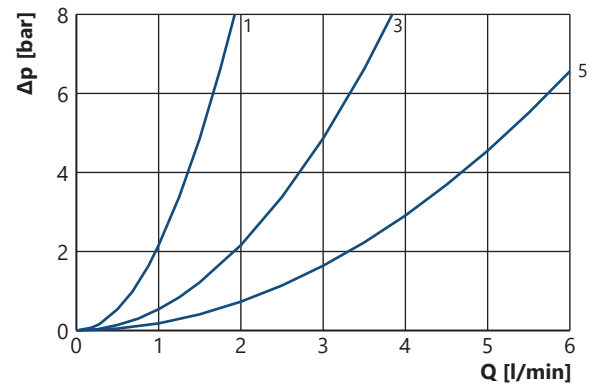
<i>Hydraulic</i>	Operating pressure max.:	315 bar port T: 75 bar summed pressure A, B: 350 bar	
	Flow rate:	1, 3, 5 l/min at $\Delta p = 7$ bar	
	Flow direction:	see symbols in type code	
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request	
	Viscosity range:	10 - 350 cSt	
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$	
	Repeatability:	< 3% with optimized PWM-signal*	
	Hysteresis:	< 5% with optimized PWM-signal*	
		* at 20% to 100% of the nominal valve current	
	<hr/>		
	<i>Mechanic</i>	Design :	spool type, direct operated
Size:		NG 3 (company standard)	
Fluid temperature:		-20 °C to +80 °C	
Ambient temperature:		-20 °C to +50 °C	
Storage temperature:		-30 °C to +60 °C (non-condensing)	
Installation position:		any, preferably horizontal	
Maximum acceleration:		5 g	
Weight:		4/2-way-design: 0,42 kg 4/3-way-design: 0,58 kg	
Material:		valve parts: steel seals: NBR, Viton optional	
Surface protection:		coil: zinc coated body: nitrocarburized	
<hr/>			
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC	
	Nominal valve current:	1,3 A (12 V), 0,63 A (24 V)	
	Nominal resistance (R20):	5,9 Ω (12 V), 24,0 Ω (24 V)	
	Power consumption:	9,6 W at nominal valve current	
	Shifting time:	100% ED	
	Control command:	PWM-signal	
	PWM-frequency:	typically 140 Hz (depending on application)	
	Protection class:	IP65 with correctly mounted and locked mating connector	
	Electric termination:	electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape B, unterminated wire	
	Electronic controllers:	see chapter 6 "electronics and sensor technology" as well as our online catalogue at www.weber-hydraulik.com .	

Performance

Flow rate diagram (Q/I) W4_E-5PS03 at $\Delta p = 7$ bar



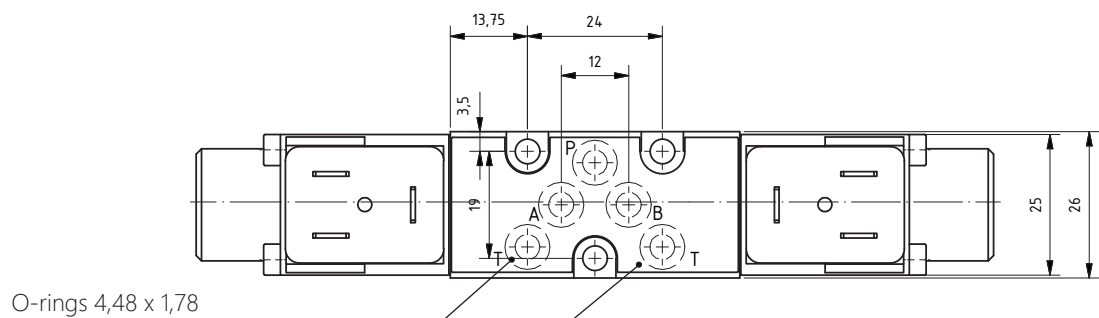
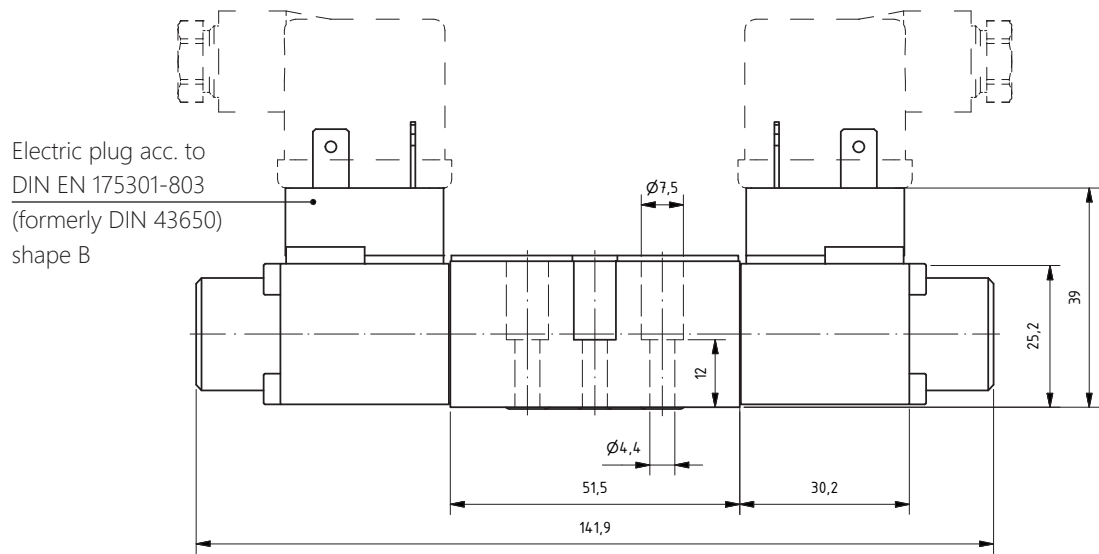
Pressure drop diagram ($\Delta p/Q$) W4_E-5PS03 at I_N



NOTE Maximum tolerance of flow rate $\pm 10\%$ at symmetric flow. Maximum pressure drop at control edge Δp : 20 bar.

Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions



Port pattern NG 3
(company standard)

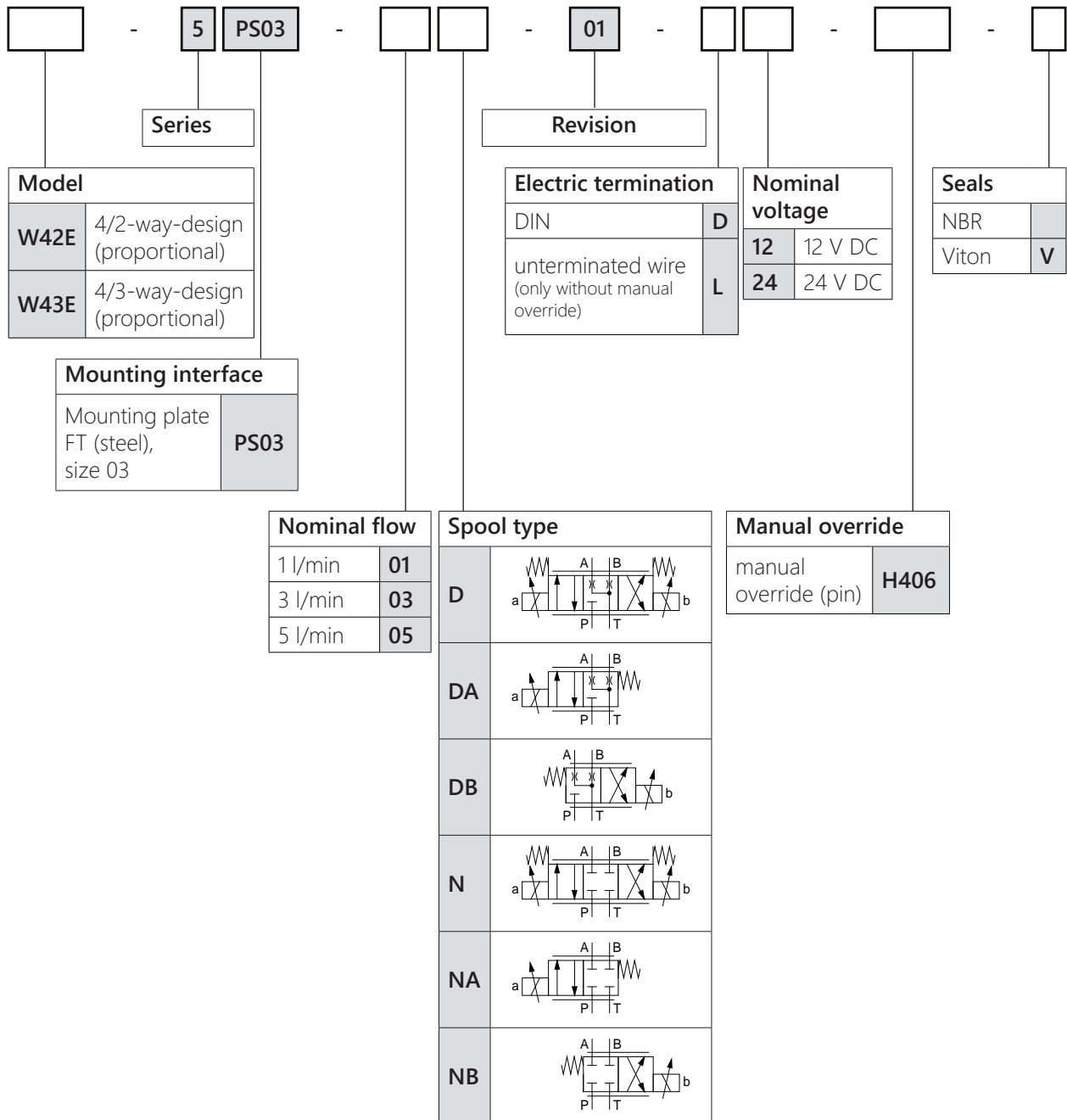
HM3/17 48 05

NOTE The valve must be mounted with fitting screws according to DIN EN ISO 4762 M4 x 30 - 12.9. Installation torque: $2,2 \pm 0,2$ Nm, screw-in depth min. 7 mm.

NOTE For the appropriate mounting plates, see our „*accessories*“ in the appendix or contact us.

NOTE For a detailed drawing of the port pattern please see chapter 12 „general information“ under the category „*port patterns*“ or our online catalogue at www.weber-hydraulik.com.

Type code



Accessories and additional information

<i>Accessories/spare parts</i>	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape B, black	149.0005
	Socket connector DIN EN 175301-803*, shape B, grey	149.0004
	Adapter plug DIN EN 175301-803*, shape B to shape A	109.0006
	Seal kit W43_-5PS03 (NBR)	405.0066
	Seal kit W43_-5PS03 (Viton)	405.0067
	Adapter plate NG 6 to NG 3, including seals and screws	203.0153
	Mounting plate NG 3, ports sidewise	151.0171

NOTE For the appropriate electronic controllers, see chapter 6 „electronics and sensor technology“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

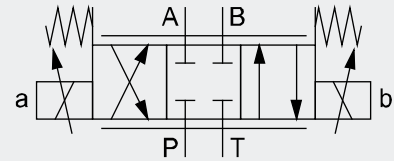
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Proportional directional valve W42E-1AS06 and W43E-1AS06



direct operated, solenoid operated
 operating pressure max. 350 bar
 volume flow max. 25 l/min
 size NG 6, DIN 24340 A06



010130_W4_E-1AS06_e
 07.2018

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Characteristics

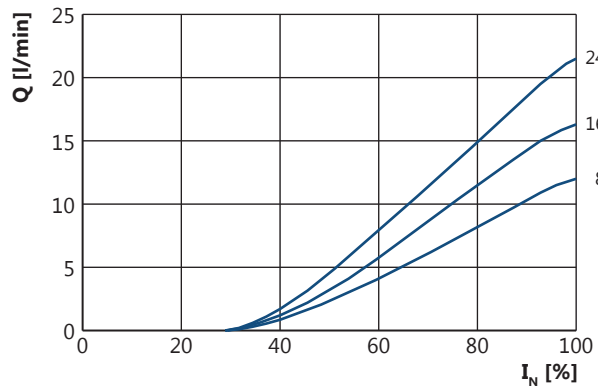
- proportional directional spool valve
- spring centred spool
- controls volume and direction of flow rate
- maintenance-free
- rotatable and replaceable coils

Technical data

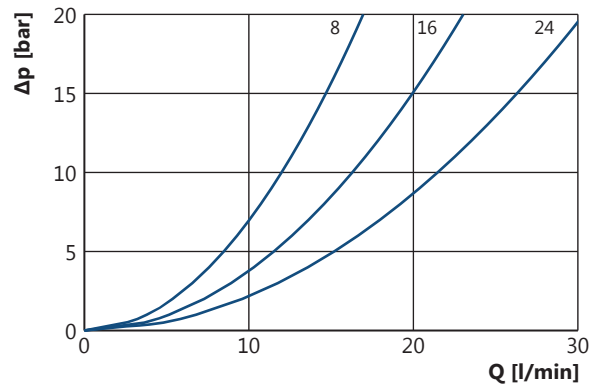
<i>Hydraulic</i>	Operating pressure:	port P, A, B: 350 bar port T: 210 bar
	Flow rate:	8, 16, 24 l/min
	Flow direction:	see symbols in type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
	* at 20 % to 100 % of the nominal valve current	
	<hr/>	
<i>Mechanic</i>	Design :	spool type, direct operated
	Size:	NG 6 (DIN 24340 A06, ISO 4401-03, CETOP 3)
	Fluid temperature:	-20 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	5 g
	Weight:	4/2-way-design: 1,6 kg 4/3-way-design: 2,1 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	coil: zinc-nickel body: comparable
<hr/>		
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,8 A (12 V), 0,9 A (24 V)
	Nominal resistance (R20):	2,7 Ω (12 V), 12,6 Ω (24 V)
	Power consumption:	21,6 W (at nominal valve current)
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 85 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, respectively AMP Junior Timer
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

Flow rate diagram (Q/I) W4_E-1AS06
at $\Delta p = 10$ bar



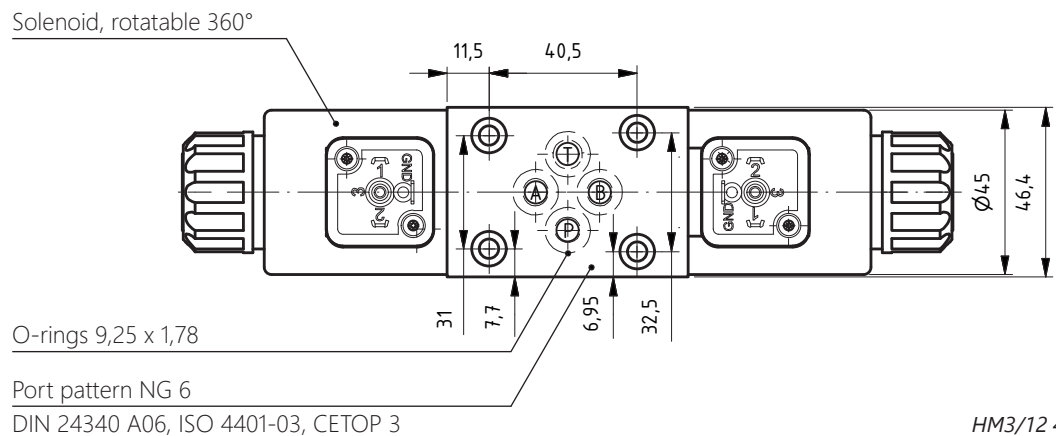
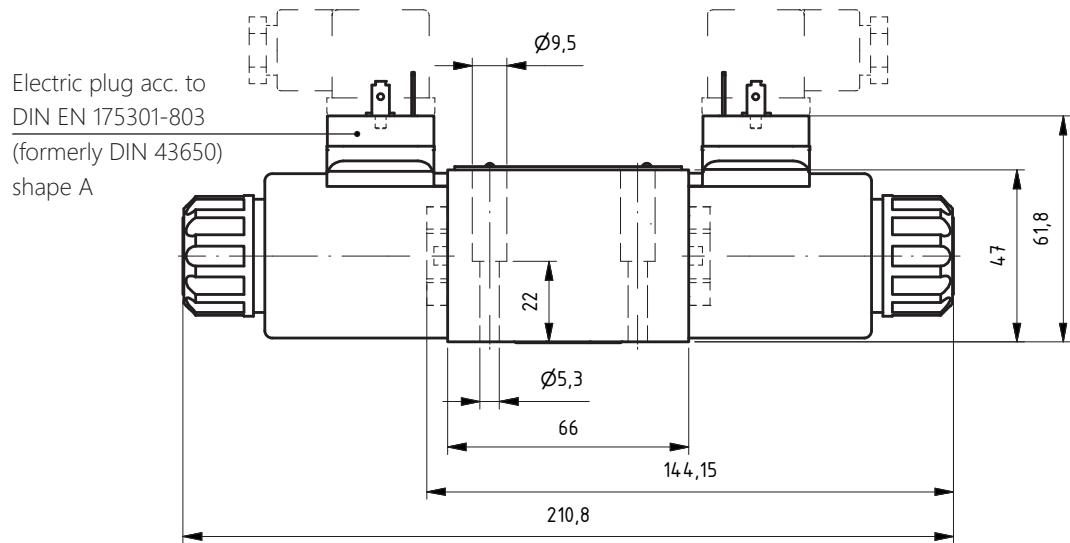
Pressure drop diagram ($\Delta p/Q$) W4_E-1AS06 at I_N



NOTE Maximum tolerance of flow rate $\pm 10\%$ at symmetric flow. Maximum pressure drop at control edge Δp : 20 bar.

Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt).

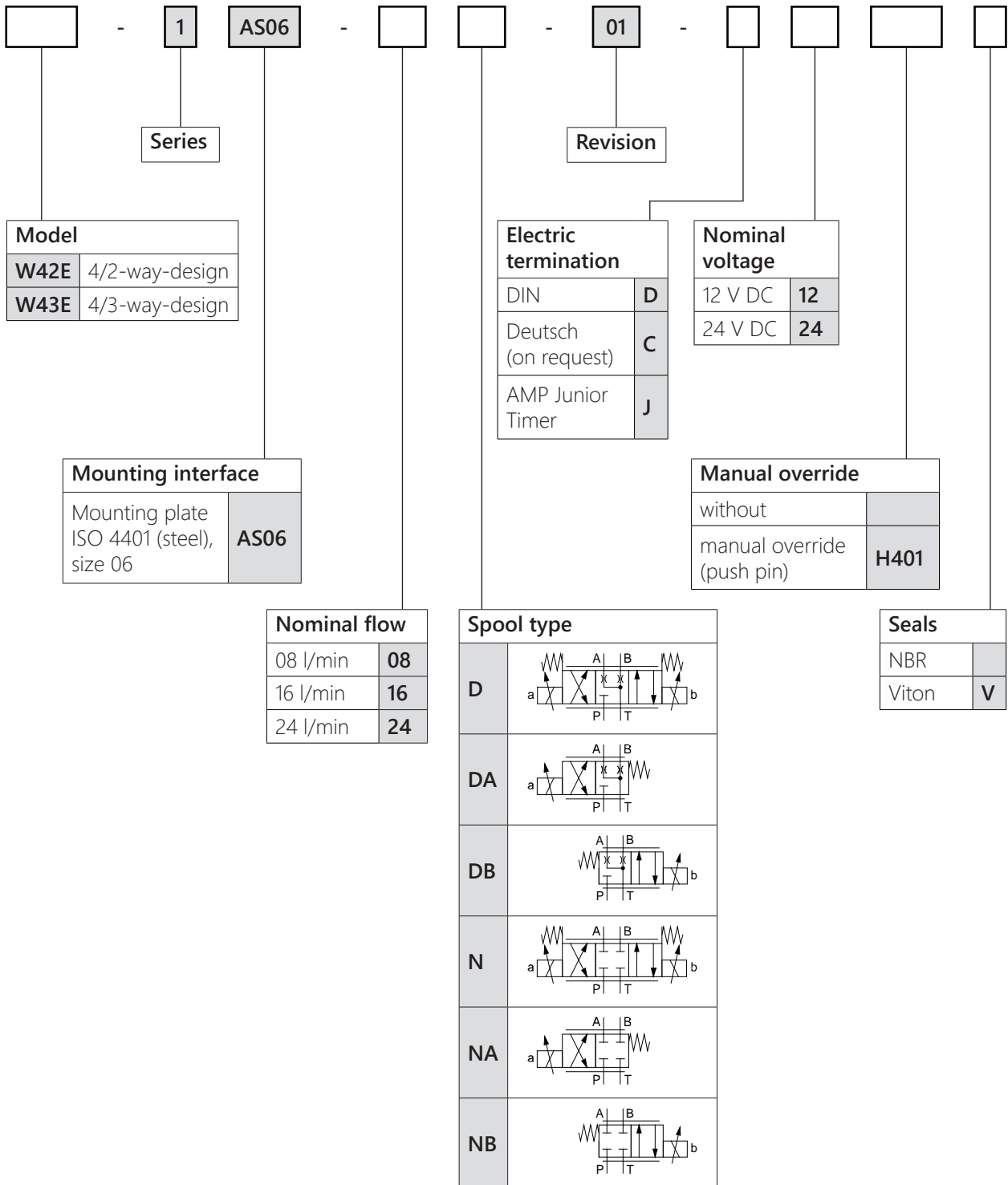
Dimensions



NOTE The valve must be mounted with fitting screws according to DIN EN ISO 4762 M5 x 30 - 8.8. Installation torque: 7 Nm, screw-in depth min. 8 mm.

NOTE For a detailed drawing of the port pattern please see chapter 11 „general information“ under the category „port patterns“ or our online catalogue at www.weber-hydraulik.com.

Type code



Accessories and additional information

<i>Accessories/spare parts</i>	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape A, black	149.0007
	Socket connector DIN EN 175301-803*, shape A, grey	149.0008
	Screw M5 x 30 DIN EN ISO 4762 (formerly DIN 912), 8.8, zinc plated	801.0024
	Seal kit W4_E-1AS06 (NBR)	405.0070
	Seal kit W4_E-1AS06 (Viton)	405.0071
	Coil 12 V DIN EN 175301-803*, shape A	147.0011
	Coil 24 V DIN EN 175301-803*, shape A	147.0009
	Coil 12 V, AMP Junior Timer	147.0007
	Coil 24 V, AMP Junior Timer	147.0010

* (formerly DIN 43650)

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

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WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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direct operated types

DBE-1RS10

direct operated, solenoid operated
operating pressure max. 500 bar
volume flow max. 4,5 l/min
in-line body G 1/4"

EPDBDS 02

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 2 l/min
cavity T-8A

EPDBD 03

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 3 l/min
cavity EPDBD 03

EPDBD 05

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 12 l/min
various cavities, degressive version available

EPDBD 05-EX acc. to ATEX-directive

direct operated, solenoid operated
operating pressure max. 250 bar
volume flow max. 12 l/min
cavity EPDBD 05

pilot operated types

EPDB 08

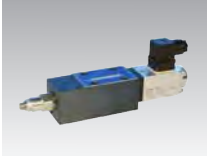
pilot operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 80 l/min
various cavities, degressive version available

EPDBS 10

pilot operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 150 l/min
cavity T-3A, degressive version available

Proportional Valves with large nominal size

pilot operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 760 l/min
suitable in-line bodies and subplates up to NG 25



pilot operated types

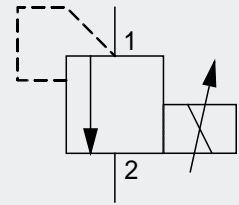
EPDZA-06

pilot operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 40 l/min
mounting plate NG 6

Proportional pressure relief valve DBE-1RS10



direct operated, solenoid operated
 operating pressure max. 500 bar
 volume flow max. 4,5 l/min
 in-line body G 1/4"



020110_DBE-1RS10_e
 07.2018

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Characteristics

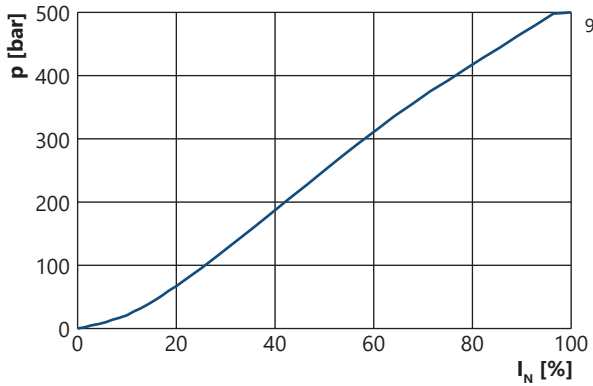
- proportional pressure relief valve in spool design
- high-pressure valve up to 500 bar
- minimum oil leakage
- maintenance-free
- rotatable and replaceable coil

Technical data

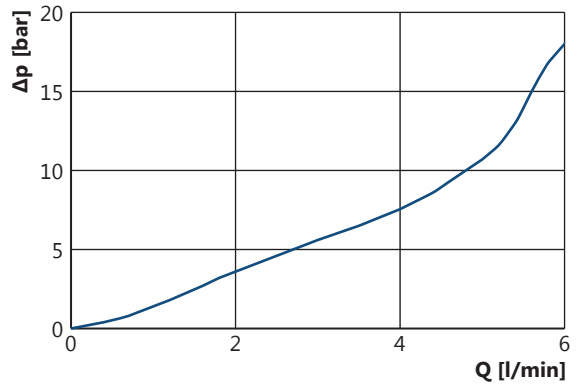
<i>Hydraulic</i>	Operating pressure max.:	500 bar (dynamic, with free return flow in port T)
	Operating pressure min.:	10 bar
	Flow rate:	4 l/min at differential pressure control $\Delta p = 10$ bar
	Flow direction:	P to T (T to P not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current
<i>Mechanic</i>	Design :	spool valve in in-line body, direct operated by solenoid
	Size:	G 1/4"
	Fluid temperature:	-20 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Weight:	3,7 kg
	Material:	steel
Surface protection:	coil: zinc coated steel in-line body: steel	
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	2,8 A (12 V), 1,4 A (24 V)
	Nominal resistance (R20):	3,2 Ω (12 V), 12,8 Ω (24 V)
	Power consumption:	35 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

Pressure drop diagram (p/I) DBE-1RS10 at Q = 1,5 l/min

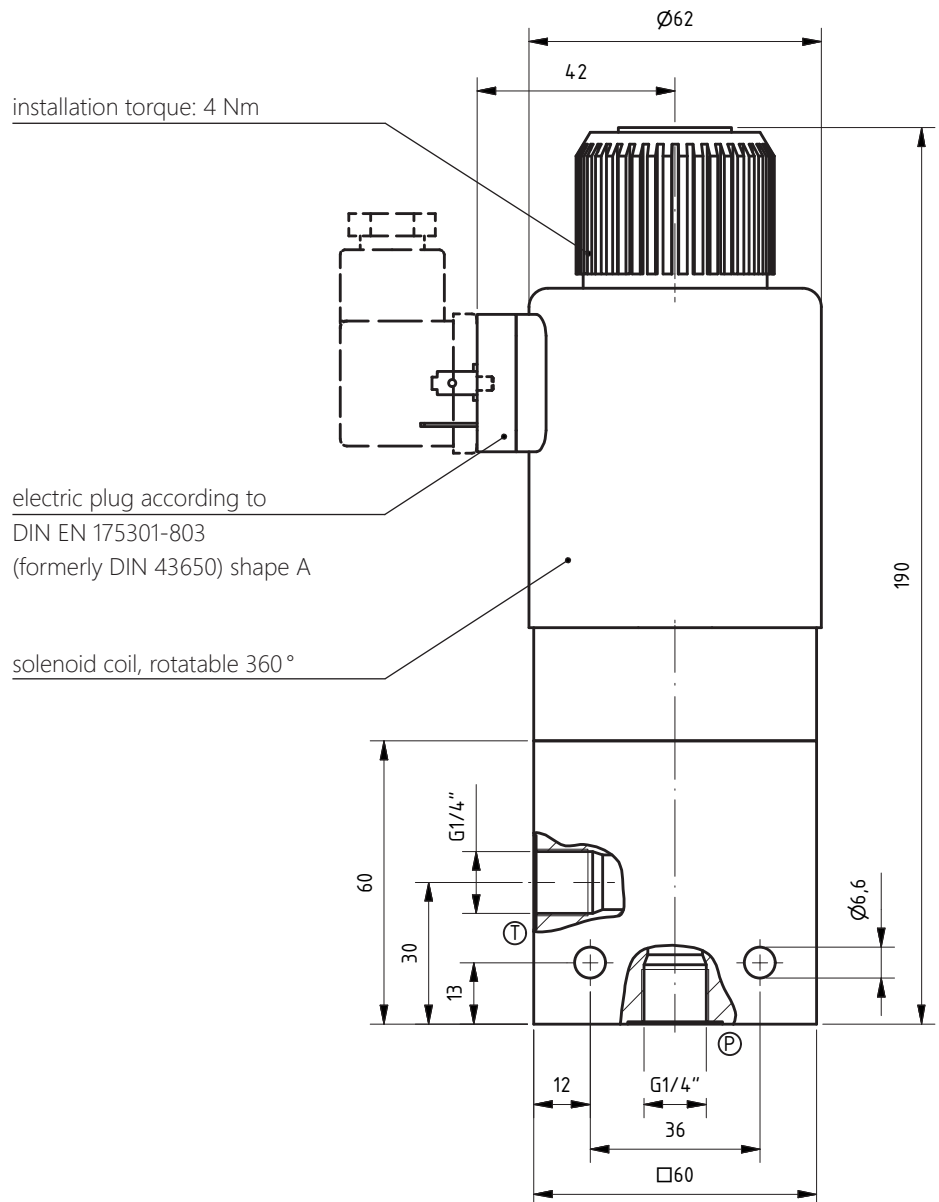


Pressure drop diagram (Δp/Q) DBE-1RS10 at I = 0 mA (currentless)

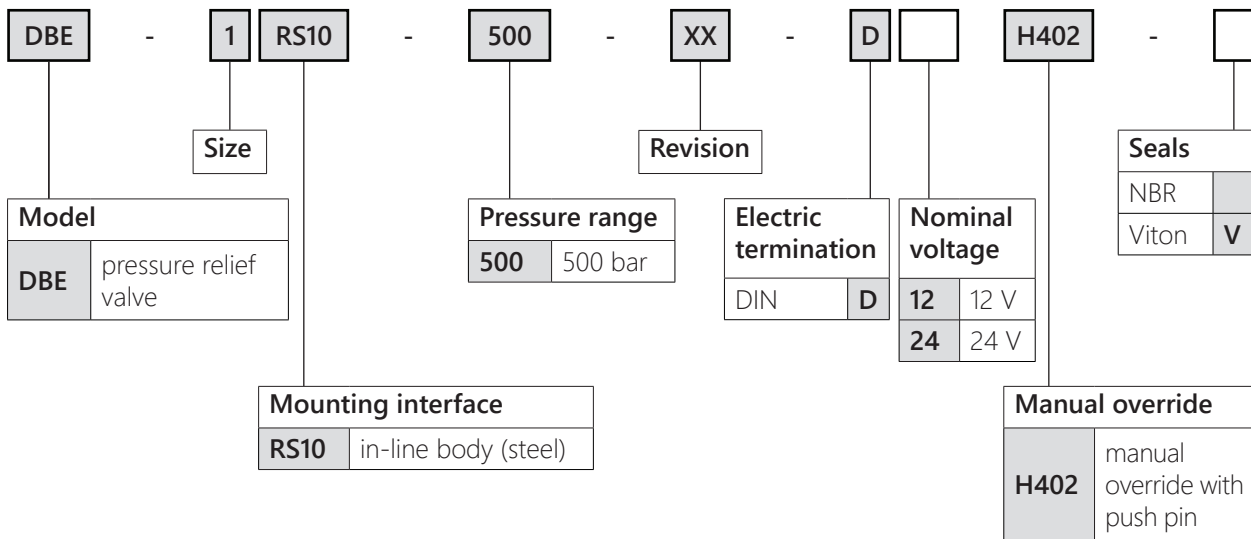


Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions



HM3/13 16 07

Type code**Accessories and additional information**

Accessories/ spare parts	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape A, black	149.0007
	Coil 12 V, DIN EN 175301-803*, shape A	147.0015
	Coil 24 V, DIN EN 175301-803*, shape A	147.0014

* (formerly DIN 43650)

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

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WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

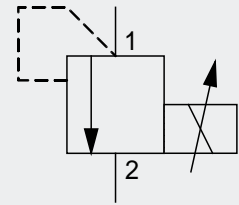
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info.de-k@weber-hydraulik.com

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Proportional pressure relief valve EEPDBDS 02



direct operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 2 l/min
 stepped bore T-8A



020120_EPDBDS02_e
 01.2016

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Characteristics

- screw-in valve for stepped bore T-8A
- miniature edition (edge length of solenoid: 25 mm)
- suitable as pilot valve
- low vibration
- maintenance-free

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar (with free return flow in port 2)
	Flow rate:	see pressure drop diagram
	Flow rate min.:	0,2 l/min
	Pressure setting range:	see type code
	Flow direction:	1 to 2 (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3% with optimized PMW-signal*
	Hysteresis:	< 5% with optimized PMW-signal*
		* at 20% to 100% of the nominal valve current

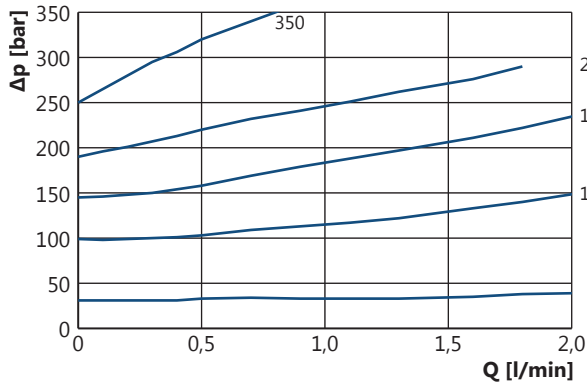
NOTE The pressure on port 2 adds directly to the set pressure.

<i>Mechanic</i>	Design :	screw-in valve, direct operated by solenoid
	Size:	T-8A stepped bore
	Fluid temperature:	-10 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,24 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel, partially burnished

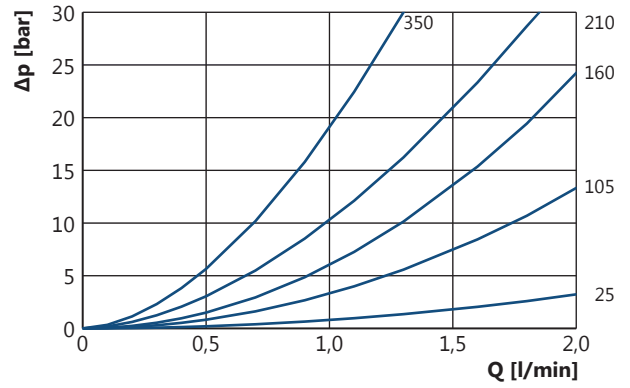
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,2 A (12 V), 0,63 A (24 V)
	Nominal resistance (R20):	6 Ω (12 V), 24 Ω (24 V)
	Power consumption:	9,6 W at nominal valve current
	Shifting time:	100% ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape B, unterminated wire
	Electronic controllers:	see chapter 6 "electronics and sensor technology" as well as our online catalogue at www.weber-hydraulik.com .

Performance

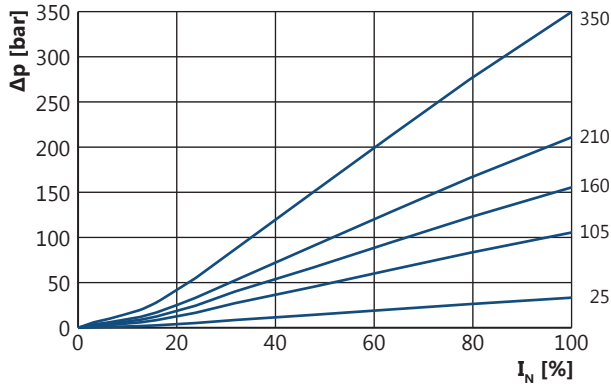
Pressure drop diagram ($\Delta p/Q$) EEPDBDS 02 at I_N



Pressure drop diagram ($\Delta p/Q$) EEPDBDS 02 at $I = 0$ mA (currentless)



Pressure drop diagram ($\Delta p/I$) EEPDBDS 02 at $Q = 0,5$ l/min



Test conditions

Oil: HLP 32, temperature: 40 °C (~32 cSt)
 Higher volume flow and viscosity lead to higher pressure at port 1. The higher the pressure setting range, the stronger this effect will be.

Dimensions

Screw-in valve
EEPDBDS 02

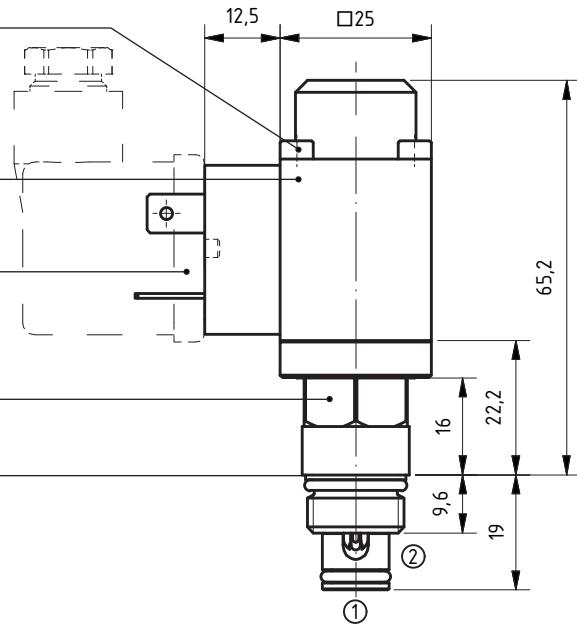
installation torque: 4 Nm

solenoid, rotatable 4 x 90°

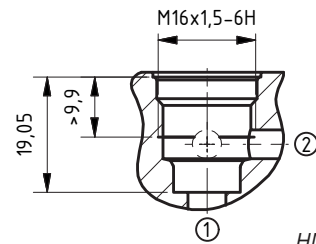
electric plug according to
DIN EN 175301-803
(formerly DIN 43650) shape B

installation torque: 60 to 65 Nm
SW 24

locating shoulder T-8A



Cavity T-8A

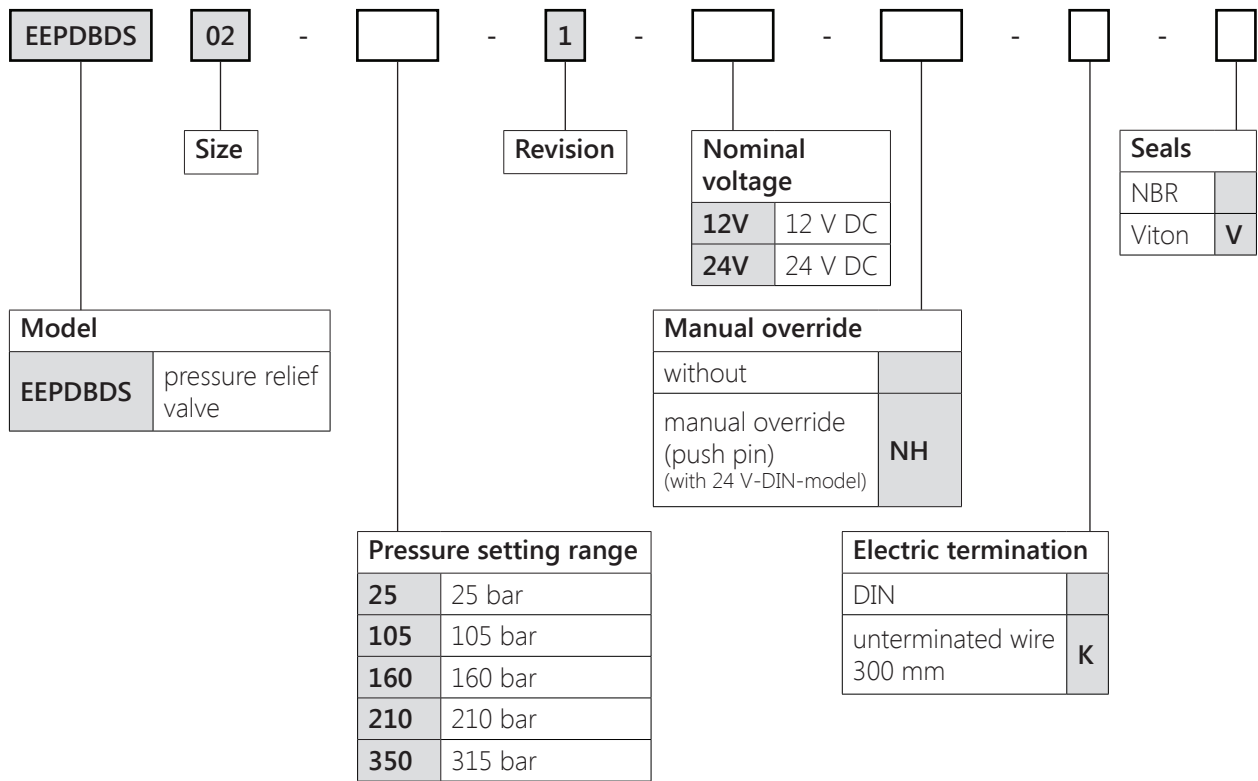


HM4/14 08 20

NOTE For a detailed drawing of the cavity T-8A, please see chapter 12 „general information“ under the category „valve cavities and port patterns“, or our online catalogue at www.weber-hydraulik.com.

NOTE We also provide a variety of suitable manifolds for T-8A. Please contact us for further assistance.

Type code



Appendix

*Accessories/
spare parts*

Part:	Article number:
Socket connector DIN EN 175301-803*, shape B, black	149.0005
Seal kit EEPDBDS 02 (NBR)	405.0072
Seal kit EEPDBDS 02 (Viton)	405.0069

* (formerly DIN 43650)

NOTE For the appropriate electronic controllers, see chapter 6 „electronics and sensor technology“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

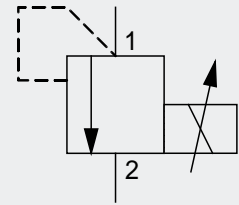
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info.de-k@weber-hydraulik.com

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Proportional pressure relief valve EPDBD 03



direct operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 3 l/min
 cavity EEPDBD 03



020130_EPDBD_03_e
 07.2018

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Accessories and additional information	6

Characteristics

- slip-in valve for cavity EEPDBD 03
- miniature edition (edge length of solenoid: 25 mm)
- suitable as pilot valve
- low vibration
- maintenance-free

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar (with free return flow in port 2) with aluminium in-line body max. 250 bar
	Flow rate:	2,6 l/min at Δp according to pressure drop diagrams
	Pressure setting range:	see type code
	Flow direction:	1 (P) to 2 (T) (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta_{5(c)} > 200$
	Repeatability:	< 3 % with optimized PMW-signal*
	Hysteresis:	< 5 % with optimized PMW-signal*
		* at 20 % to 100 % of the nominal valve current and approximately 10 to 63 cSt

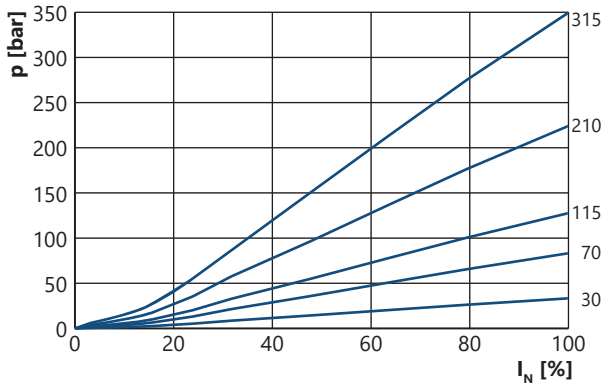
NOTE The pressure on port 2 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design :	EEPDBD slip-in valve, EPDBDR in in-line body, direct operated by solenoid
	Size:	03
	Fluid temperature:	-20 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably with solenoid facing down
	Weight:	EEPDBD 03: 0,24 kg EPDBDR 03: 0,34 kg
	Material:	valve parts: steel, in-line body: aluminium seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel, partially burnished in-line body: anodized aluminium

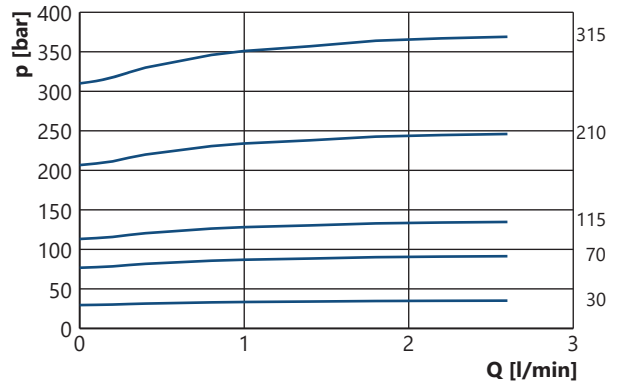
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,2 A (12 V), 0,63 A (24 V)
	Nominal resistance (R20):	6 Ω (12 V), 24 Ω (24 V)
	Power consumption:	9,6 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape B, unterminated wire
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

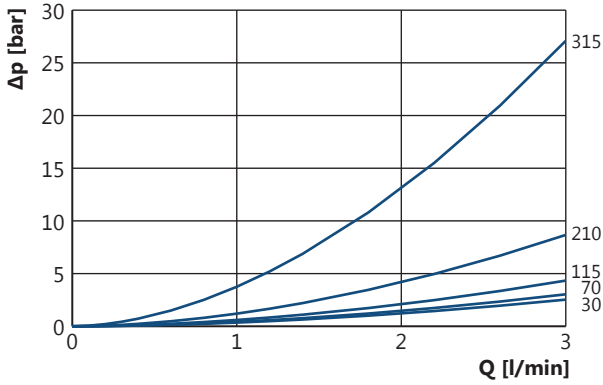
Pressure drop diagram (p/I) EEPDBD 03 at Q = 1,0 l/min



Pressure drop diagram (p/Q) EEPDBD 03 at I_N



Pressure drop diagram (Δp/Q) EEPDBD 03 at I = 0 mA (currentless)



Test conditions

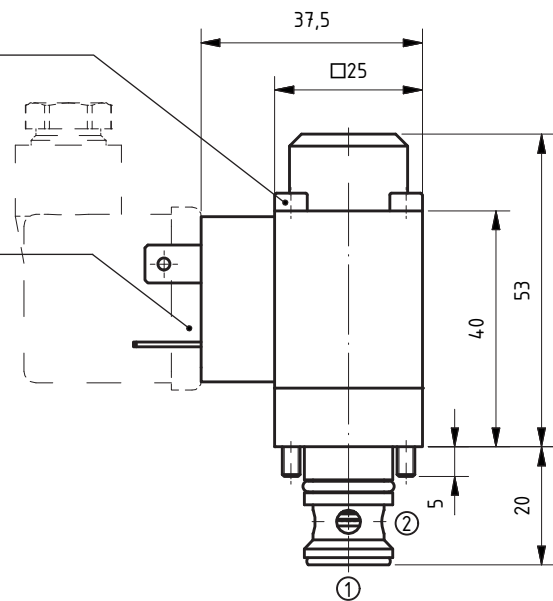
Oil: HLP 32, temperature: 40 °C (~32 cSt)
 Higher volume flow and viscosity lead to higher pressure at port 1. The higher the pressure setting range, the stronger this effect will be.

Dimensions

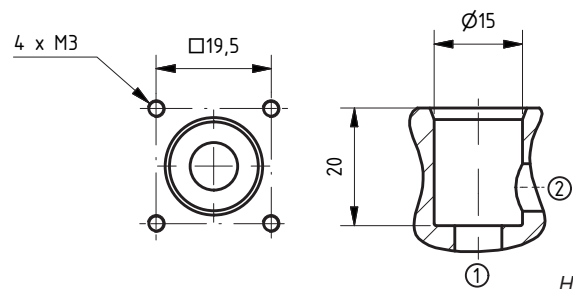
Slip-in valve
EEPDBD 03

installation torque: 2,14 Nm
SW 5,5

electric plug according to
DIN EN 175301-803
(formerly DIN 43650) shape B



Cavity EEPDBD 03

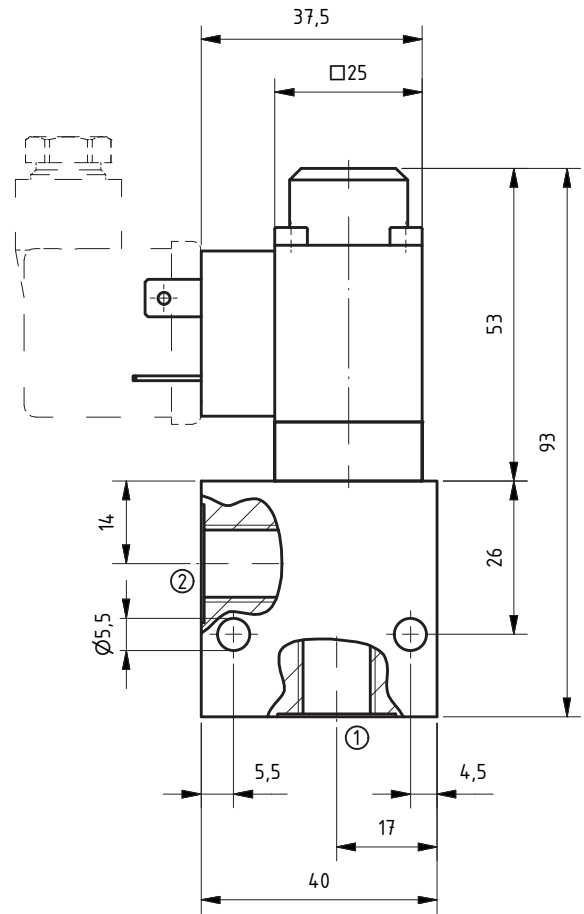


HM4/01 32 10

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

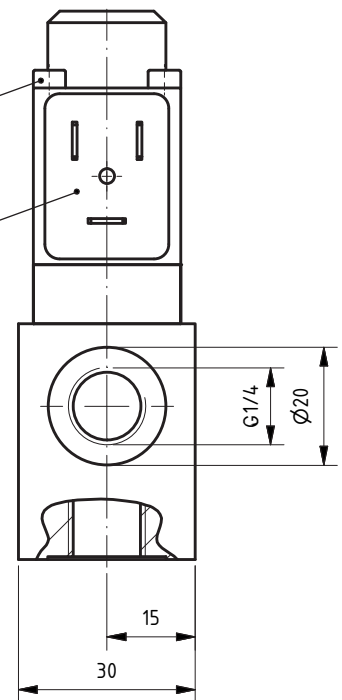
Dimensions

*Slip-in valve in
in-line body G 1/4"
EPDBDR 03*

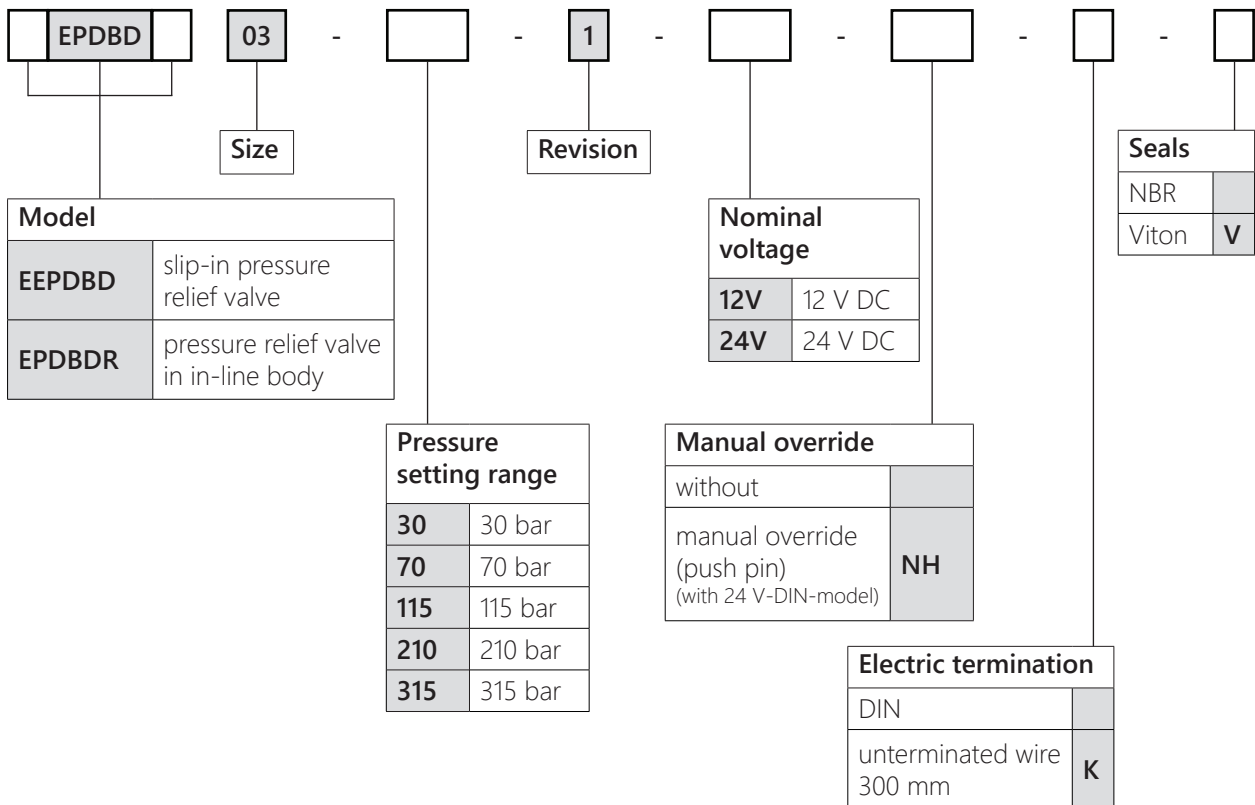


installation torque: 2,14 Nm
SW 5,5

electric plug according to
DIN EN 175301-803
(formerly DIN 43650) shape B



HM4/01 32 10

Type code**Accessories and additional information**

Accessories/ spare parts	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape B, black	149.0005
	Seal kit EEPDBD 03 (NBR)	405.0076
	Seal kit EEPDBD 03 (Viton)	405.0077

* (formerly DIN 43650)

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

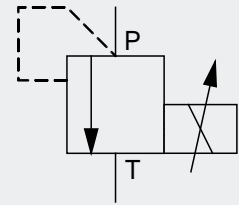
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info.de-k@weber-hydraulik.com

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Proportional pressure relief valve EPDBD 05



direct operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 12 l/min
 cavity EPDBD 05 or
 cavity T-10A or C-10-2



020140_EPDBD_05_e
 07.2016

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Characteristics

- proportional pressure relief valve in spool design
- slip-in valve for cavity EEPDBD 05
- or screw-in valve for cavity T-10A
- or screw-in valve for cavity C-10-2
- suitable as pilot valve
- low vibration
- maintenance-free
- degressive versions available
- versions according to the ATEX-directive for the use in potentially explosive atmospheres available (see datasheet 020141_EPDBD_05_EX_e)

Technical Data

<i>Hydraulic</i>	Operating pressure max.:	315 bar (with free return flow in port T), for aluminium manifolds: 210 bar max. pressure at port T: 35 bar
	Flow rate:	pressure range 25-115 bar: 12 l/min pressure range 175-315 bar: 8 l/min at $\Delta p = 10$ bar
	Pressure setting range:	see type code
	Flow direction:	P to T (T to P not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3 % with optimized PMW-signal*
	Hysteresis:	< 5 % with optimized PMW-signal*
		* at 20 % to 100 % of the nominal valve current.

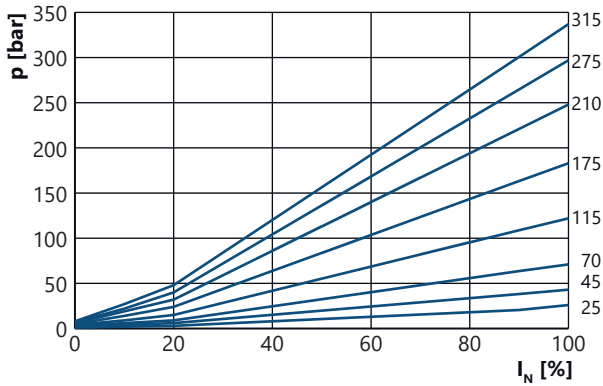
NOTE The pressure at port T adds directly to set pressure.

<i>Mechanic</i>	Design:	EEPDBD slip-in valve, EPDBDR in in-line body, ZEPDBD in sandwich body NG 6, EPDBDA in mounting plate NG 6 EEPDBDS screw-in valve T-10A EEPDBDM screw-in valve C-10-2, direct operated
	Size:	05
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	EEPDBD 05: 0,7 kg, EPDBDR 05: 1,13 kg, ZEPDBD(05/06): 1,05 kg, EPDBDA (05/06): 0,99 kg EEPDBDS 05: 0,74 kg, EEPDBDM: 0,73 kg
	Material:	valve parts and in-line body: steel, sandwich body and mounting plate: aluminium; seals: NBR, optional Viton
	Surface protection:	exterior parts and in-line body: zinc coated steel, par- tially burnished, sandwich body and mounting plate: anodized aluminium

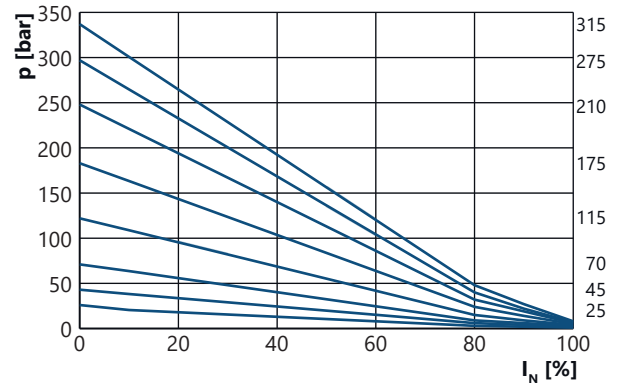
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 shape A, AMP Junior Timer, unterminated wire
	Electronic controllers:	see chapter 6 "electronics and sensor technology" as well as our online catalogue at www.weber-hydraulik.com

Performance

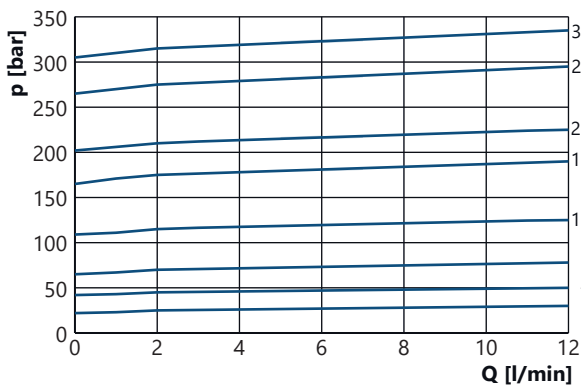
Pressure drop diagram (p/I) EPDBD 05 at Q = 0,8 l/min



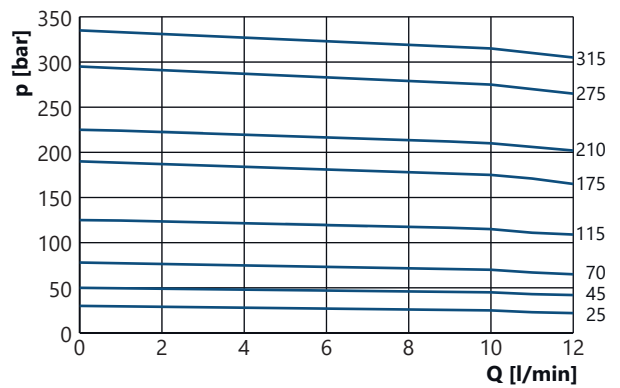
Pressure drop diagram (p/I) EPDBD 05 degressive version at Q = 0,8 l/min



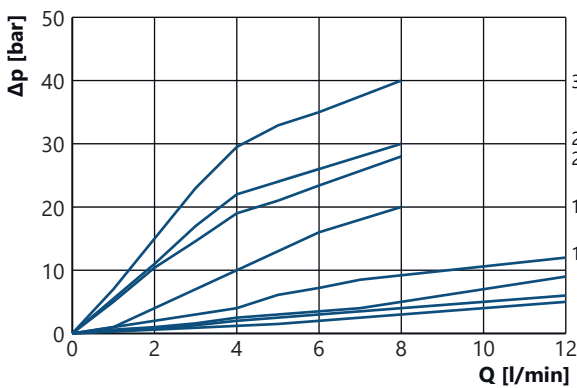
Pressure drop diagram (p/Q) EPDBD 05 at I_N



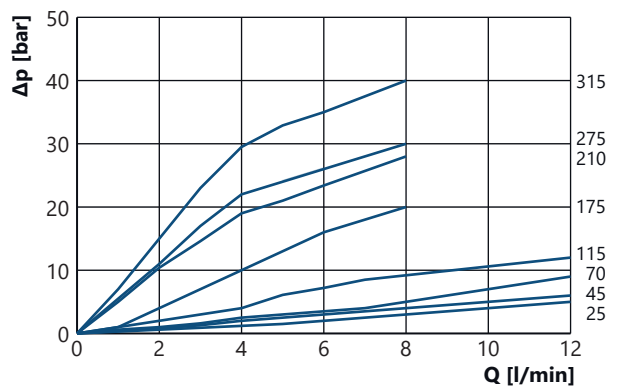
Pressure drop diagram (p/Q) EPDBD 05 degressive version at I_N



Pressure drop diagram ($\Delta p/Q$) EPDBD 05 at I = 0 mA (currentless)



Pressure drop diagram ($\Delta p/Q$) EPDBD 05 degressive version at I = 100% (full current)

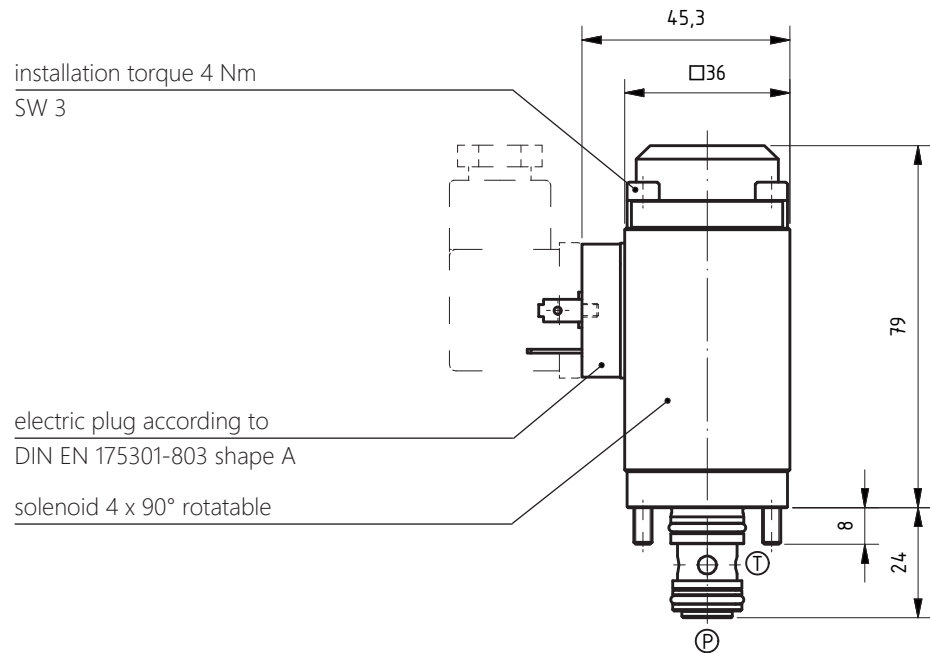


Test conditions

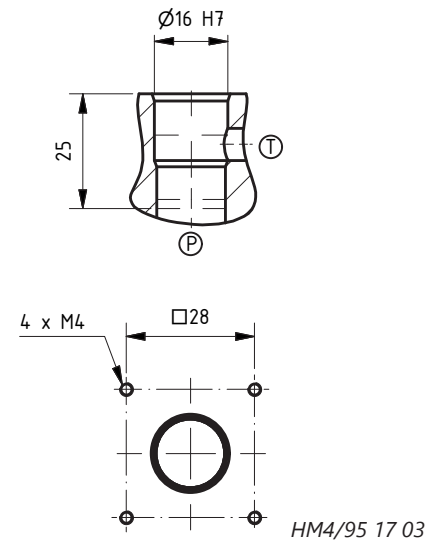
Oil: HLP 32, temperature: 40 °C (~32 cSt)
 Higher volume flow and viscosity lead to higher pressure at port P. The higher the pressure setting range, the stronger this effect will be.

Dimensions

Slip-in valve
EEPDBD 05



Cavity
EEPDBD 05

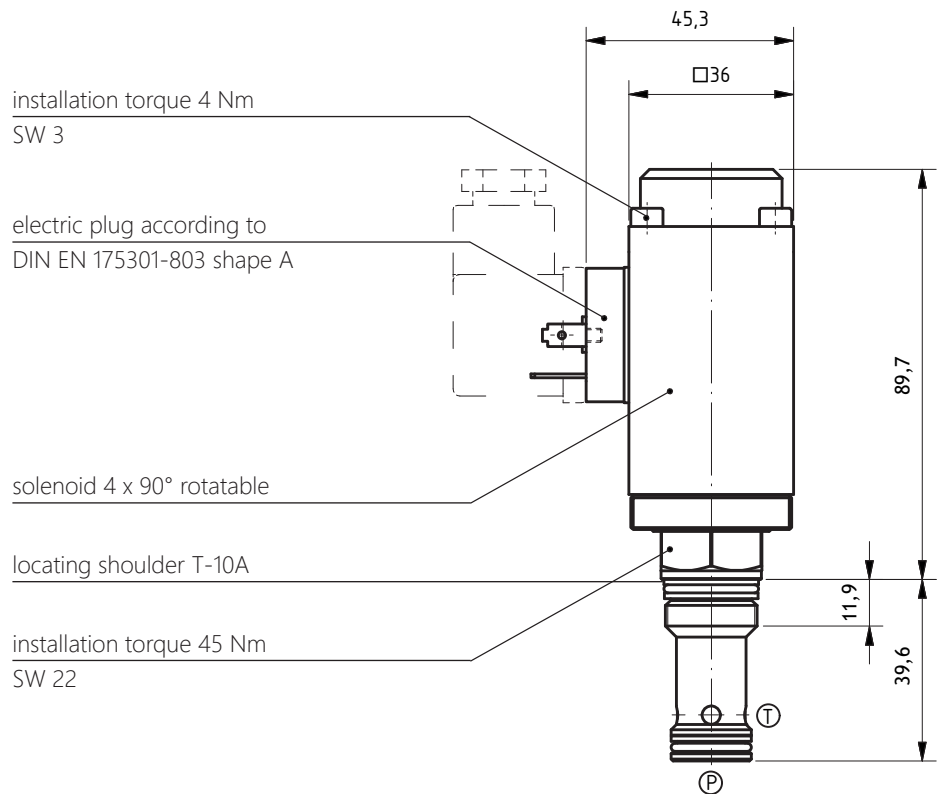


NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „*valve cavities and port patterns*“ or our online catalogue at www.weber-hydraulik.com.

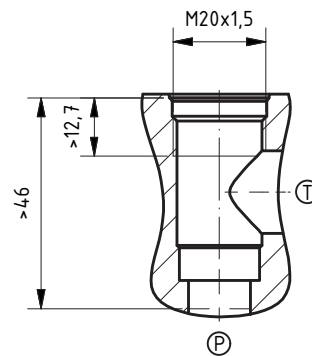
NOTE The valve is also available as EPDBDR 05 in in-line body, as ZEPDBD (05/06) in a sandwich body NG 6 and as EPDBDA (05/06) in a mounting plate NG 6. Dimension sheets are available upon request.

Dimensions

Screw-in valve EEPDBDS 05



Cavity T-10A



HM4/91 42 01

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as degressive version.

Dimensions

Screw-in valve EEPDBDM 05

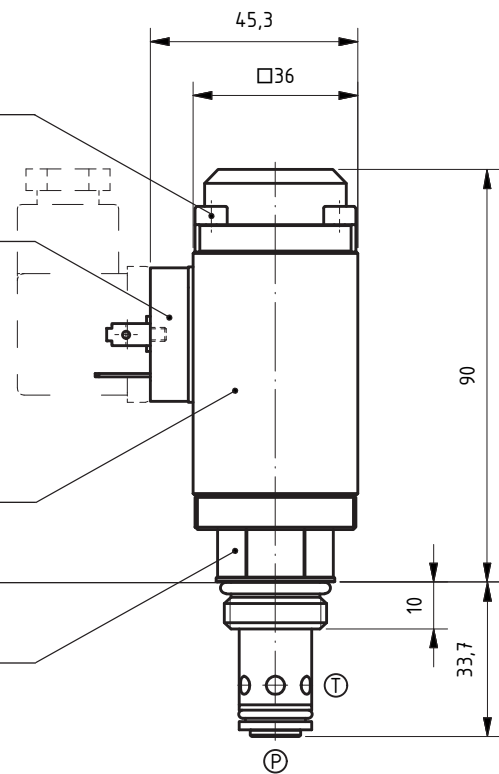
installation torque 4 Nm
SW 3

electric plug according to
DIN EN 175301-803 shape A

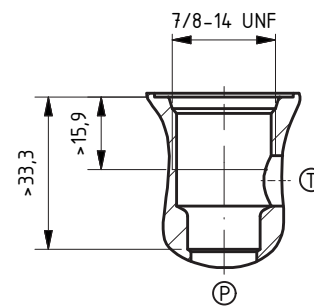
solenoid 4 x 90° rotatable

locating shoulder C-10-2

installation torque 45 Nm
SW 22



Cavity C-10-2



H4/94 47 01

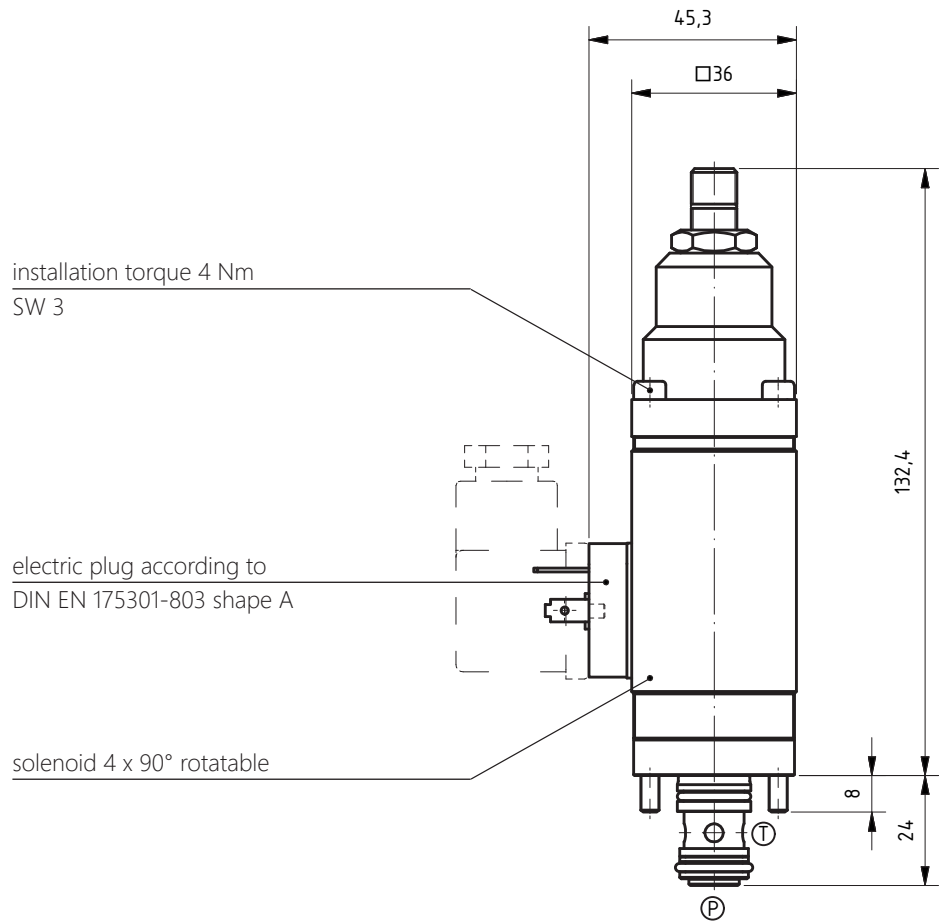
NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „*valve cavities and port patterns*“ or our online catalogue at www.weber-hydraulik.com.

NOTE We also provide a variety of suitable manifolds for C-10-2. Please contact us for further assistance.

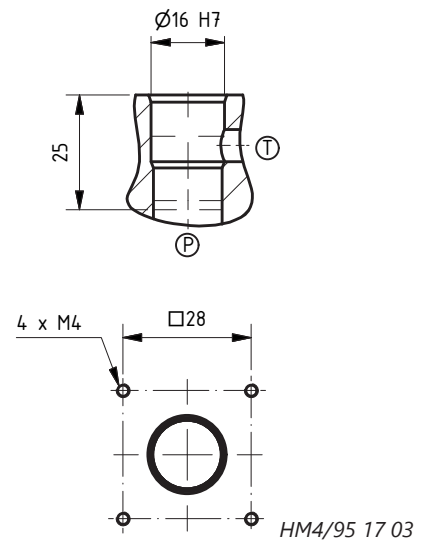
NOTE The valve is also available as degressive version.

Dimensions

*Slip-in valve
EEPDBD 05
degressive*



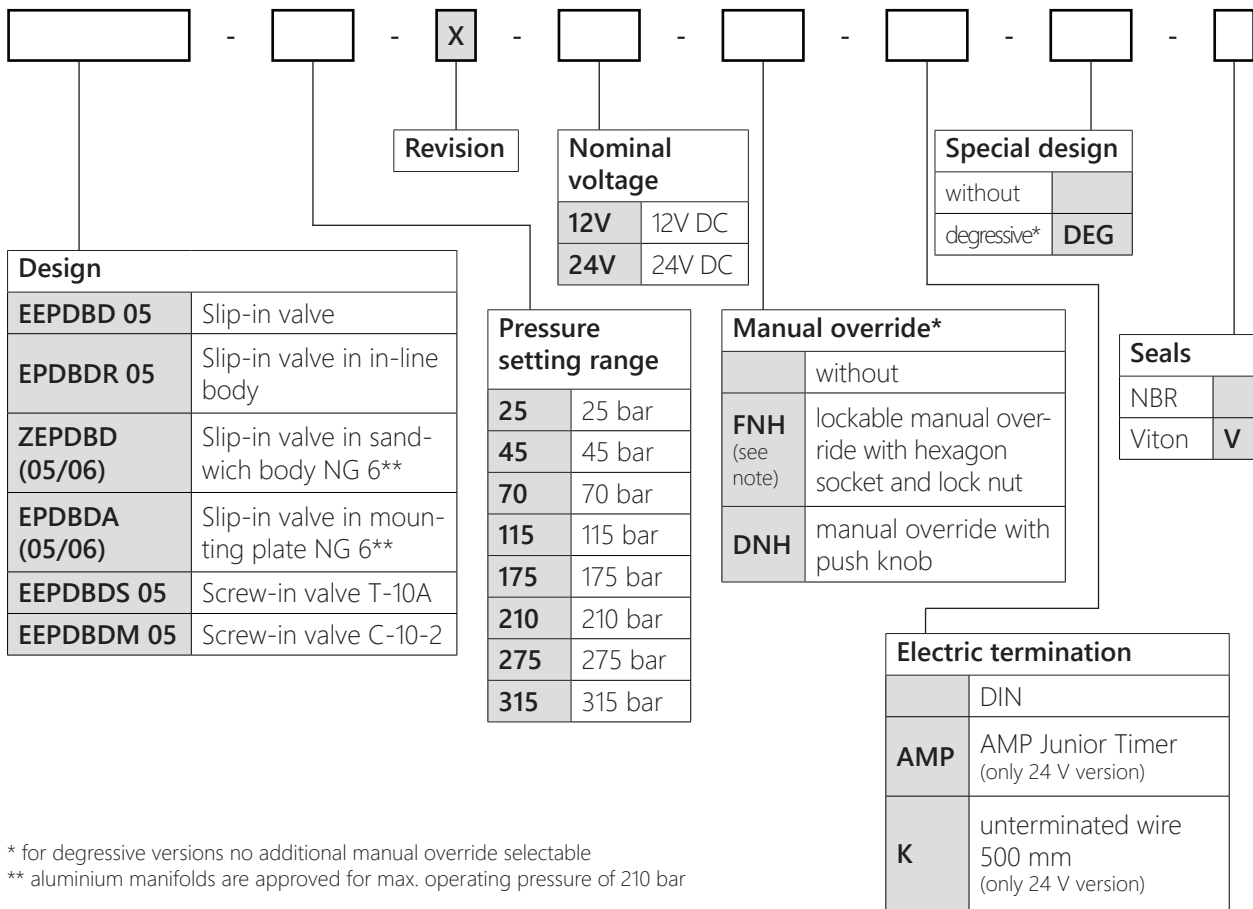
Cavity EEPDBD 05



NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

NOTE The degressive version of the valve is also available as EEPDBDS 05 (with cavity T-10A) or as EEPDBDM 05 (with cavity C-10-2).

Type code



* for degressive versions no additional manual override selectable
 ** aluminium manifolds are approved for max. operating pressure of 210 bar

NOTE FOR FNH



The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure relief function of the valve. Be aware that the valve can not fulfil its pressure relief function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.

The FNH should never be screwed in and locked when used in conjunction with a running system! The application as a pressure relief valve with extended throttle function is dangerous and not suggested. All liability for doing so lies with the operator!

Appendix

<i>Accessories/ spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Seal kit EEPDBD 05 (NBR)	405.0050
	Seal kit EEPDBD 05 (Viton)	405.0051
	Seal kit T-10A (NBR)	405.0013
	Seal kit T-10A (Viton)	405.0037
	Seal kit C-10-2 (NBR)	405.0079
	Seal kit C-10-2 (Viton)	405.0080

NOTE For appropriate electronic controllers, see chapter 6 „*electronics and sensor technology*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

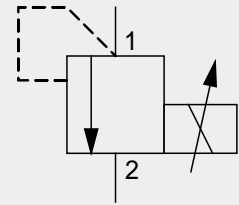
www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Proportional pressure relief valve EPDBD 05 acc. to ATEX-directive



direct operated, solenoid operated
 operating pressure max. 250 bar
 volume flow max. 12 l/min
 cavity EPDBD 05



020141_EPDBD_05_EX_e
 07.2017

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Characteristics



- proportional pressure relief valve in spool design
- according to the ATEX-directive for the use in potentially explosive atmospheres
- slip-in valve for cavity EPDBD 05
- suitable as pilot valve
- low vibration
- maintenance-free

Technical Data


<i>Hydraulic</i>	Operating pressure max.:	250 bar (with free return flow in port 2), Tank pressure max.: 35 bar
	Flow rate:	pressure range 20-80 bar: 12 l/min pressure range 120-220 bar: 8 l/min at $\Delta p = 10$ bar
	Pressure setting range:	see type code
	Flow direction:	1 (P) to 2 (T) (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta_{5(c)} > 200$
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current

NOTE The pressure at port 2 adds directly to the set pressure.

<i>Mechanic</i>	Design:	EEPDBD slip-in valve, EPDBDR in in-line body, ZEPDBD in sandwich body NG 6, EPDBDA in mounting plate NG 6, direct operated
	Size:	05
	Fluid temperature:	-30 °C to +50 °C
	Ambient temperature:	-30 °C to +50 °C
	Storage temperature:	-30 °C to +50 °C (non-condensing)
	Installation position:	any
	Weight:	EEPDBD 05: 2,7 kg, EPDBDR 05: 3,1 kg, ZEPDBD(05/06) and EPDBDA (05/06): 3,0 kg
	Material:	valve parts and in-line body: steel, sandwich body and mounting plate: aluminium; seals: NBR, optional Viton
	Surface protection:	exterior parts and in-line body: zinc coated steel, partially burnished, sandwich body and mounting plate: anodized aluminium

<i>Electric</i>	Nominal voltage:	24 V DC
	Nominal valve current:	0,6 A
	Nominal resistance (R20):	23,1 Ω
	Power consumption:	15,6 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 85 Hz (depending on application)
	Protection system:	IP67 according to IEC/EN 60529, IP69K according to DIN 40050-9 with intended assembling
	Protection class:	III according to DIN VDE 0580
	Electric termination:	15 meter connecting cable FL4G11Y 2x1,5 mm ² with explosive protection acc. to the ATEX-directive IECEx/ATEX  0637,  II 2G Ex mb IIC T4 Gb, II 2D Ex mb IIIC T130° Db in acc. with EN 60079-0:2012/IEC 60079-0:2011, EN 60079-18:2009/IEC 60079-18:2009

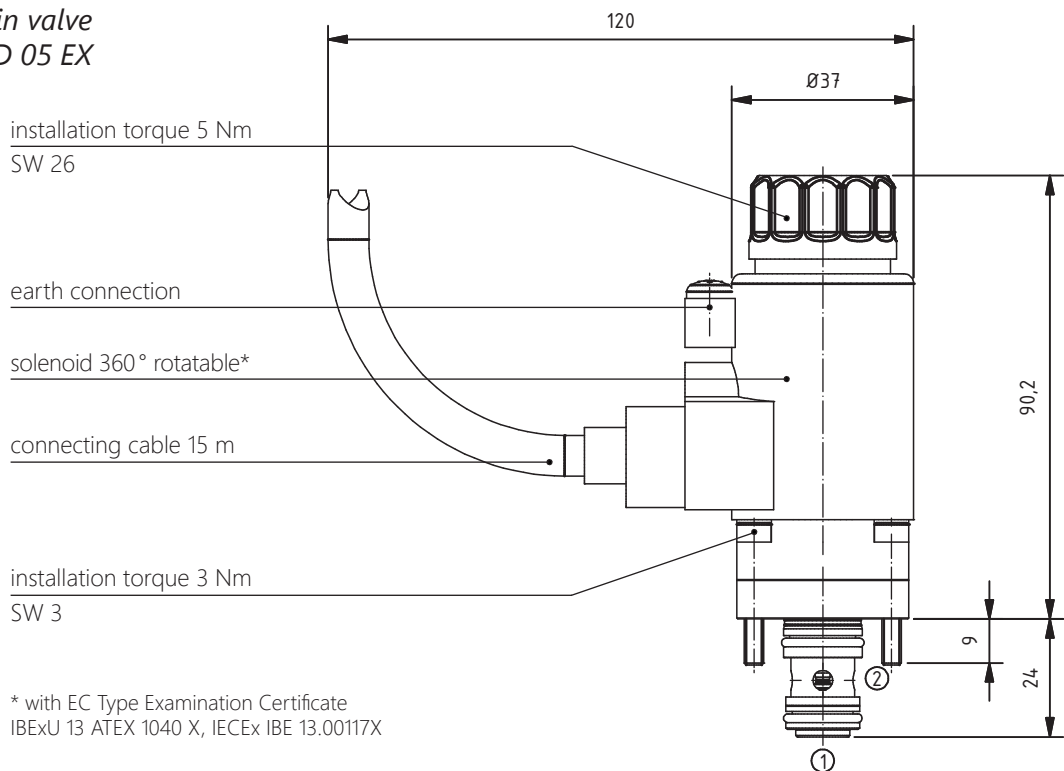
Technical Data

Electric EC Type Examination Cert.: IBExU 13 ATEX 1040 X, IECEx IBE 13.00117X
 Electronic controllers: see chapter 6 "electronics and sensor technology" as well as our online catalogue at www.weber-hydraulik.com.
 Electronics that are used in explosion protected areas must be Ex-certified!

Performance Performance graphs upon request.

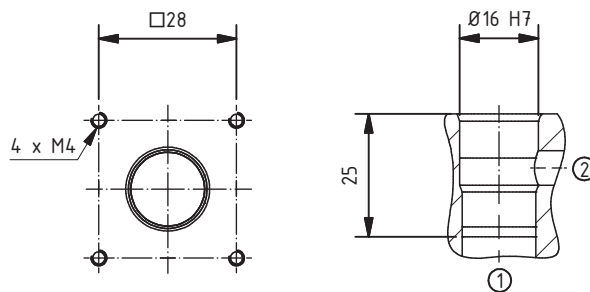
Dimensions

*Slip-in valve
EEPDBD 05 EX*



* with EC Type Examination Certificate
IBExU 13 ATEX 1040 X, IECEx IBE 13.00117X

*Cavity
EEPDBD 05 EX*

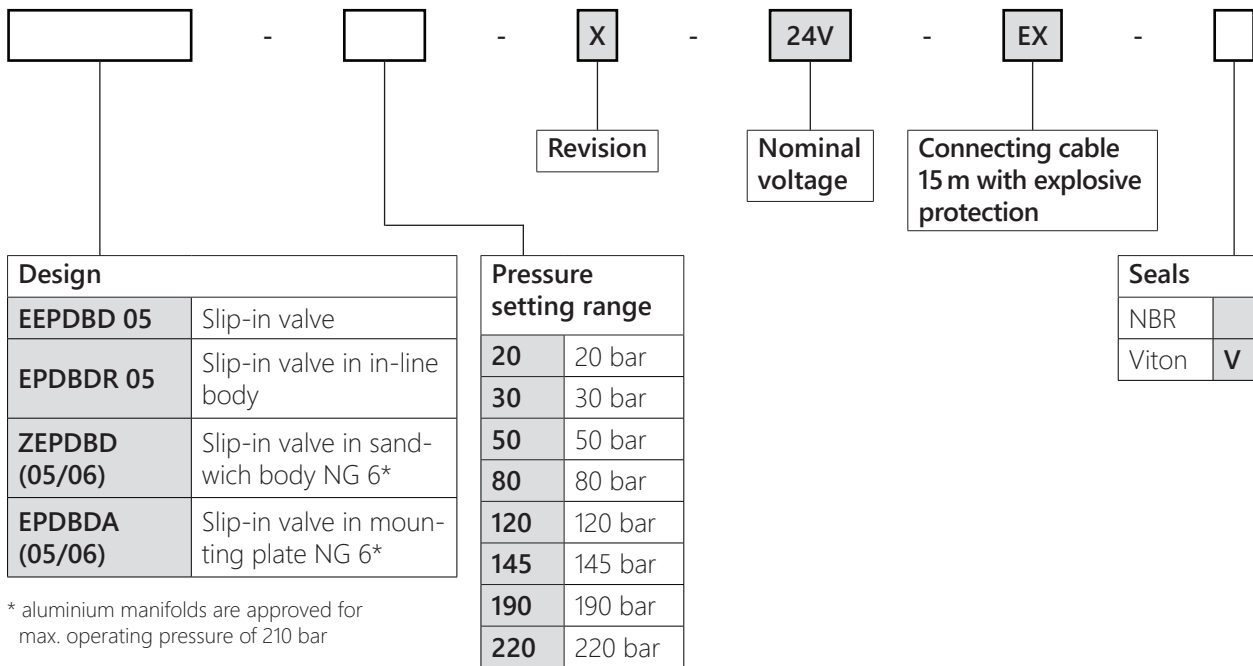


HM4/09 22 04

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDBDR 05 in in-line body, as ZEPDBD (05/06) in a sandwich body NG 6 and as EPDBDA (05/06) in a mounting plate NG 6. Dimension sheets are available upon request.

Type code



Appendix

Accessories/
spare parts

Article:

Article number:

Seal kit EEPDBD 05 (NBR)

405.0050

Seal kit EEPDBD 05 (Viton)

405.0051

NOTE



For the appropriate electronic controllers, see chapter 6 „*electronics and sensor technology*“ as well as our online catalogue at www.weber-hydraulik.com.

Please consider whether the electronic controller will be located inside or outside of the explosion protected area. Electronics that are used in explosion protected areas must be certified according to the ATEX-directive!

Set-up

The solenoid coil may only be operated when installed on the appropriate valve. Further information can be found in the provided operation manual of the solenoid. When operating the valve, information contained in the provided operation manual of the solenoid, as well as our general operating manual must be followed precisely!

Single or multiple mounting of the valve in single operation must have a minimum size of 46 x 46 x 66 mm and a base plate $\geq 46 \times 30 \times 66$ mm. The material must be Fe or material with the same or better thermal conductivity.

The installation of these electrical components must be carried out by an electrician with adequate qualifications.

Each solenoid must be short-circuit fuse protected suitable to its nominal valve current (max. $3 \times I_N$ according to IEC/EN 60127-2). This could, for example, be a motor protecting switch with thermal quick release and short-circuit protection (adjusted to the rated current).

The installed fuse must have a voltage rating equal or larger than the rated voltage of the solenoid, and the fuse should be installed in the associated power supply. If this is not possible, the fuse can be installed separately if the appropriate safety instructions are carefully considered.

When connecting the fuse to the circuit, it is of utmost importance to consider whether the fuse will be located inside, or outside of the explosion protected area. If the fuse will be connected to the circuit inside of the explosion protected area, then it must be mounted in an Ex-certificated terminal box.

For equipotential bonding, a ground terminal is provided on the outside of the solenoid.

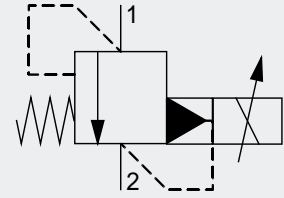
Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „*general operating manual*“ or will be provided upon request.

Proportional pressure relief valve EPDB 08



pilot operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 80 l/min
 cavity T-10A or C-10-2



020210_EPDB_08_e
 07.2018

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Characteristics

- proportional pressure relief valve in spool design
- screw-in valve for cavity T-10A
- or slip-in valve for cavity C-10-2
- low vibration
- maintenance-free
- degressive version available

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar (with free return flow in port 2) with aluminium manifolds 210 bar max. pressure at port 2: 35 bar
	Flow rate:	80 l/min
	Pressure setting range	see type code
	Flow direction:	1 (P) to 2 (T) (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current

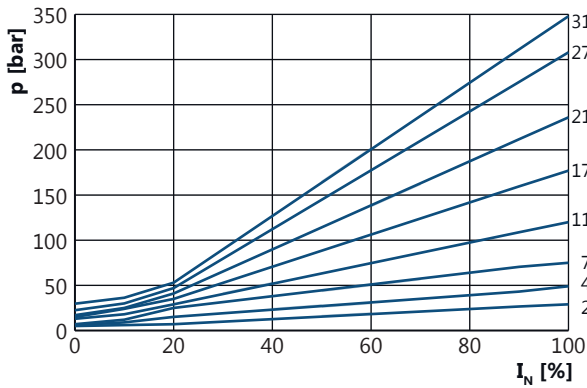
NOTE The pressure on port 2 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design:	EEPDBS screw-in valve T-10A or EEPDBM screw-in valve C-10-2, EPDBSA screw-in valve in mounting plate NG 6, pilot operated
	Size:	08
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	EEPDBS 08 and EEPDBM 08: 0,7 kg, EPDBSA 08: 1,1 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel, partially burnished

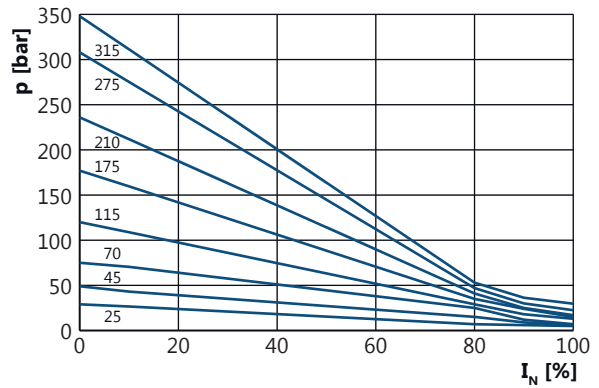
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, unterminated wire
Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com	

Performance

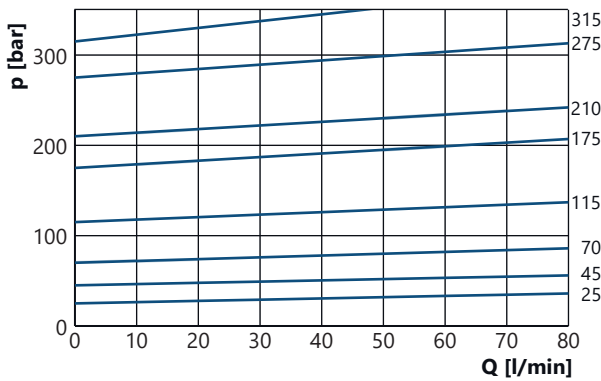
Pressure drop diagram (p/I) EEPDB 08 at Q = 20 l/min



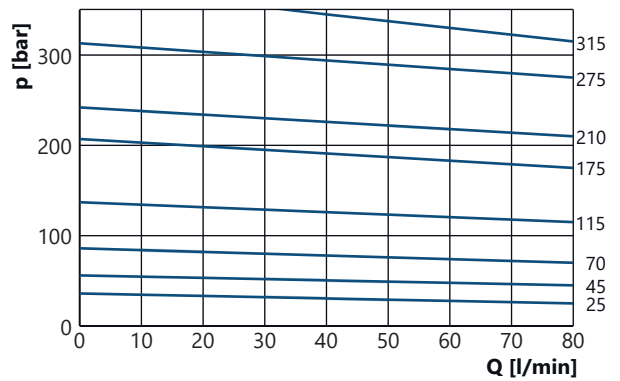
Pressure drop diagram (p/I) EEPDB 08 degressive version at Q = 20 l/min



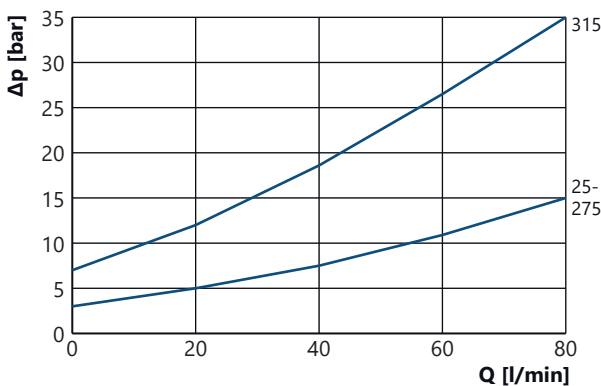
Pressure drop diagram (p/Q) EEPDB 08 at I_N



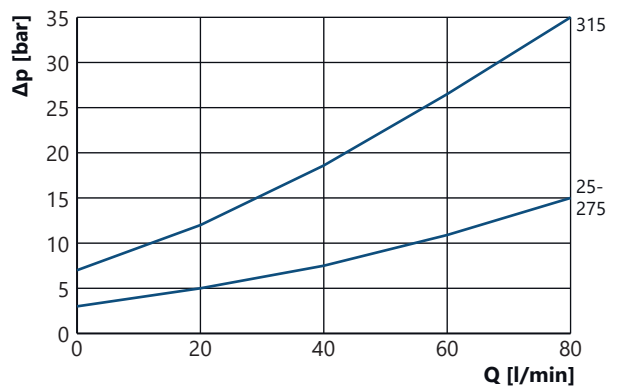
Pressure drop diagram (p/Q) EEPDB 08 degressive version at I_N



Pressure drop diagram (Δp/Q) EEPDB 08 at I = 0 mA (currentless)



Pressure drop diagram (Δp/Q) EEPDB 08 degressive version at I = 100 % (full current)

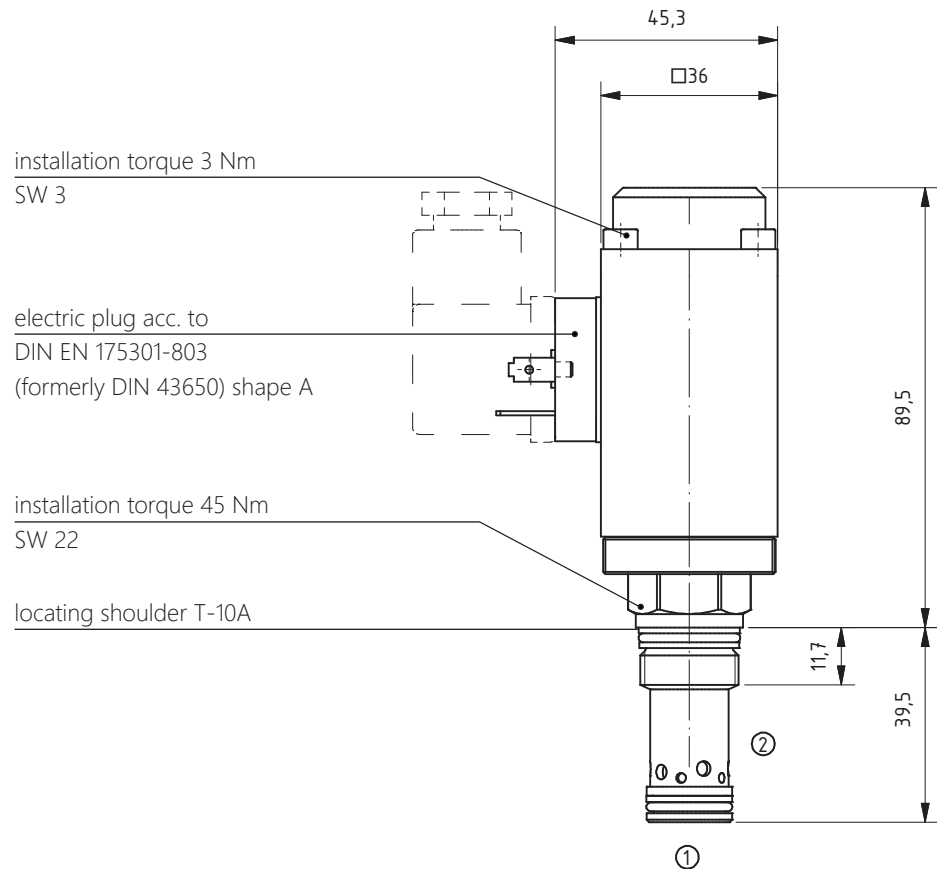


Test conditions

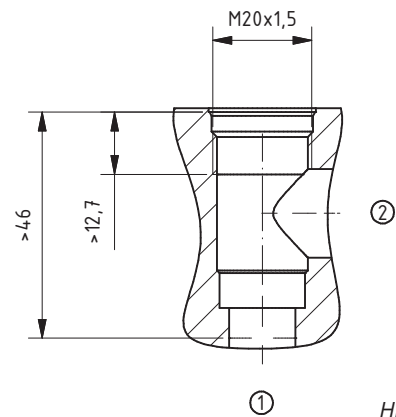
Oil: HLP 32, temperature: 40 °C (~32 cSt).
Higher volume flow and viscosity lead to higher pressure at port 1. The higher the pressure setting range, the stronger this effect will be.

Dimensions

Screw-in valve EEPDBS 08



Cavity T-10A



HM4/94 14 04

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDBSA (08/06) in a mounting plate NG 6. Please contact us for further information.

Dimensions

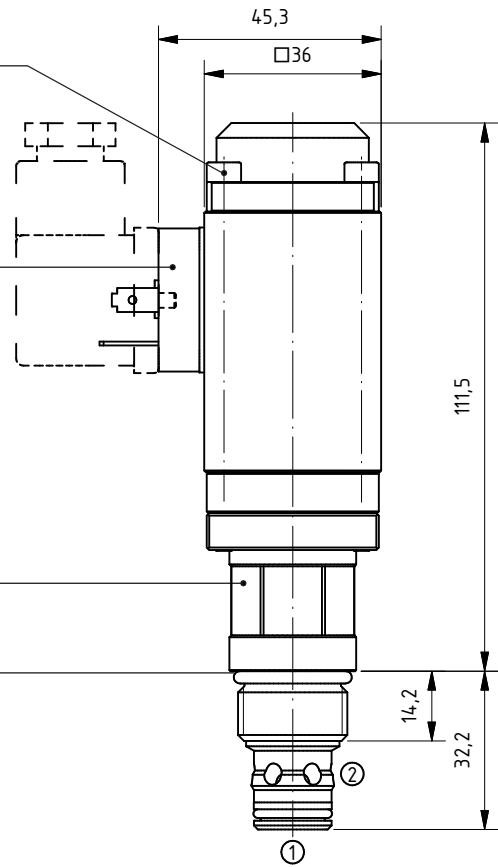
*Slip-in valve
EEPDBM 08*

installation torque 3 Nm
SW 3

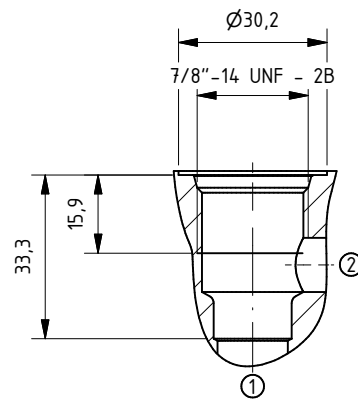
electric plug acc. to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque 45 Nm
SW 22

locating shoulder C-10-2



Cavity C-10-2



H4/93 41 03

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE We also provide a variety of suitable manifolds for C-10-2. Please contact us for further assistance.

NOTE The slip-in valve EEPDBM 08 is also available as degressive version.

Dimensions

Screw-in valve
EEPDBS 08 degressive



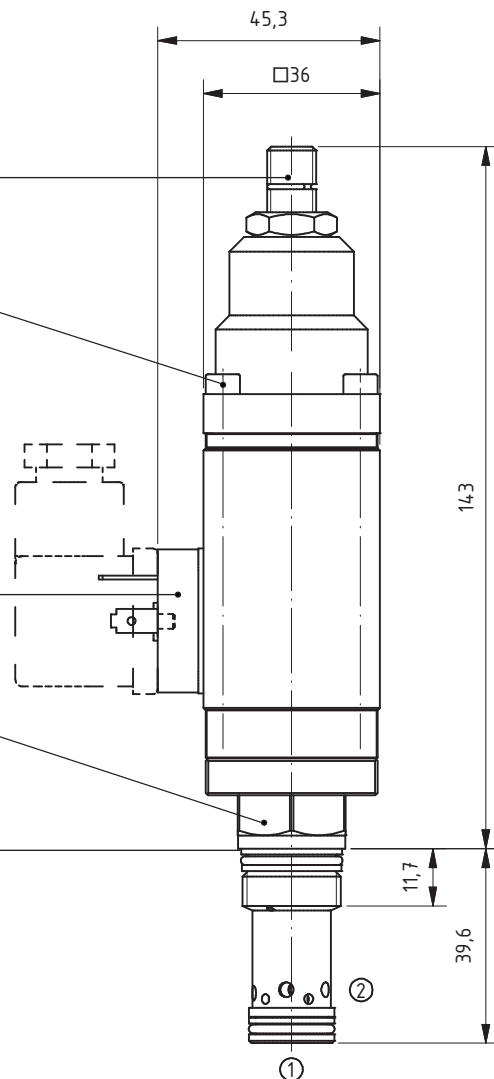
Do not adjust!

installation torque 3 Nm
SW 3

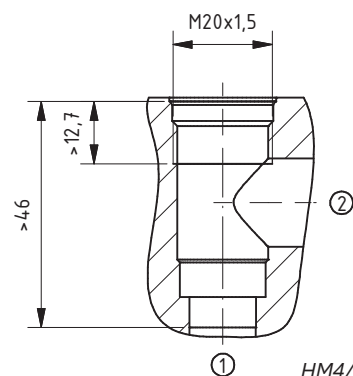
electric plug acc. to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque 45 Nm
SW 22

locating shoulder T-10A



Cavity T-10A

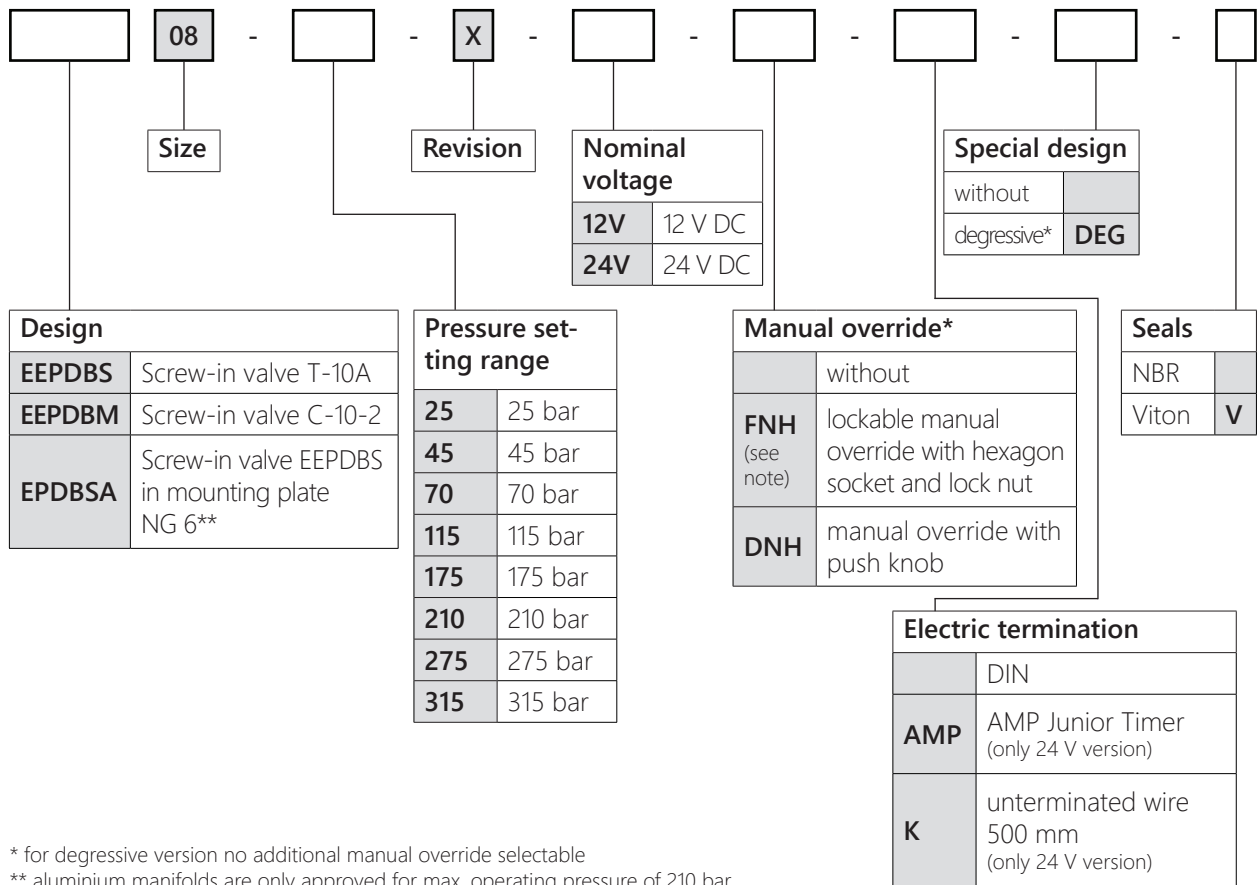


HM4/06 51 01

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

Type code



NOTE FOR FNH



The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure relief function of the valve. Be aware that the valve can not fulfil its pressure relief function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.

The FNH should never be screwed in and locked when used in conjunction with a running system! The application as a pressure relief valve with extended throttle function is dangerous and not suggested. All liability for doing so lies with the operator! In case the manual override FNH is screwed in to achieve a throttle function (even though this is not suggested), the reduction of the nominal valve current has to be taken into consideration.

Accessories and additional information

<i>Accessories/ spare parts</i>	Part:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Seal kit T-10A (NBR)	405.0013
	Seal kit T-10A (Viton)	405.0037
	Seal kit C-10-2 (NBR)	405.0079
	Seal kit C-10-2 (Viton)	405.0080

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

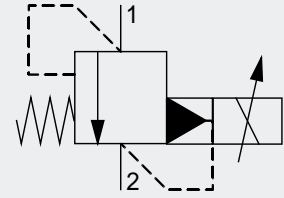
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info.de-k@weber-hydraulik.com

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Proportional pressure relief valve EPDBS 10



pilot operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 150 l/min
 cavity T-3A



020220_EPDBS_10_e
 07.2018

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Performance	3
Dimensions	4
Type code	6
Accessories and additional information	6

Characteristics

- proportional pressure relief valve in spool design
- screw-in valve for cavity T-3A
- low vibration
- maintenance-free
- degressive version available

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar (with free return flow in port 2) max. pressure at port 2: 35 bar
	Flow rate:	150 l/min
	Pressure setting range:	see type code
	Flow direction:	1 (P) to 2 (T) (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current

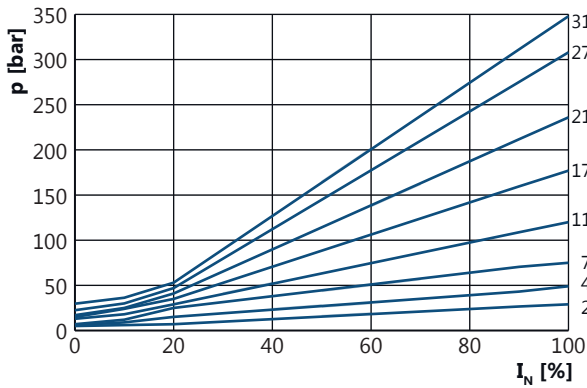
NOTE The pressure on port 2 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design:	EEPDBS screw-in valve T-3A, EPDBSA screw-in valve in mounting plate NG 10, pilot operated
	Size:	10
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	EEPDBS 10: 0,84 kg, EPDSA 10: 1,78 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel, partially burnished

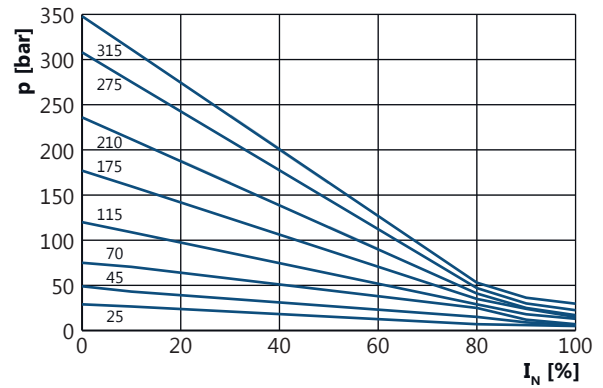
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, unterminated wire
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

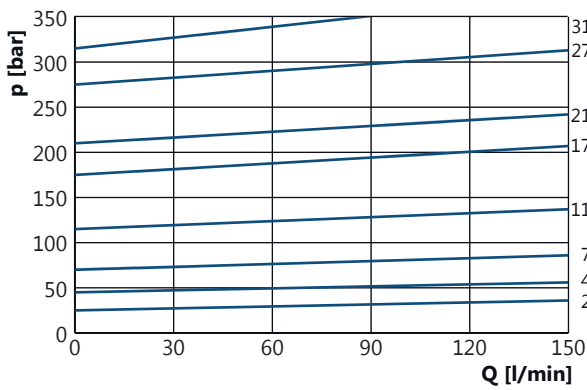
Pressure drop diagram (p/I) EPDBS 10 at Q = 35 l/min



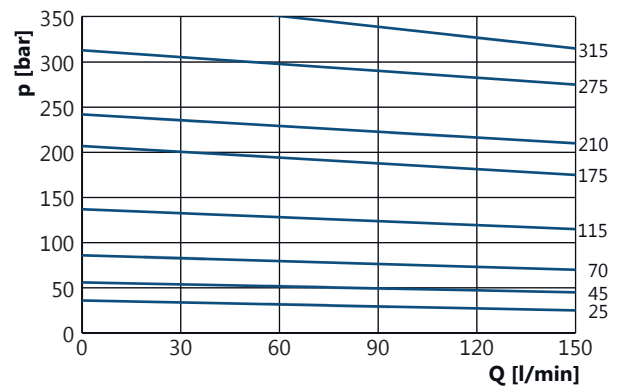
Pressure drop diagram (p/I) EPDBS 10 degressive version at Q = 35 l/min



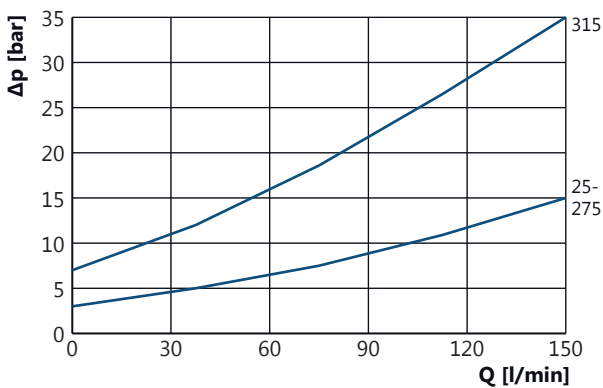
Pressure drop diagram (p/Q) EPDBS 10 at I_N



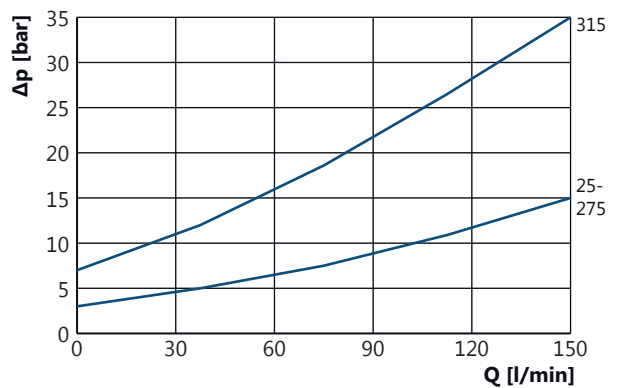
Pressure drop diagram (p/Q) EPDBS 10 degressive version at I_N



Pressure drop diagram ($\Delta p/Q$) EPDBS 10 at I = 0 mA (currentless)



Pressure drop diagram ($\Delta p/Q$) EPDBS 10 degressive version at I = 100 % (full current)



Test conditions

Oil: HLP 32, temperature: 40 °C (~32 cSt).

Higher volume flow and viscosity lead to higher pressure at port 1. The higher the pressure setting range, the stronger this effect will be.

Dimensions

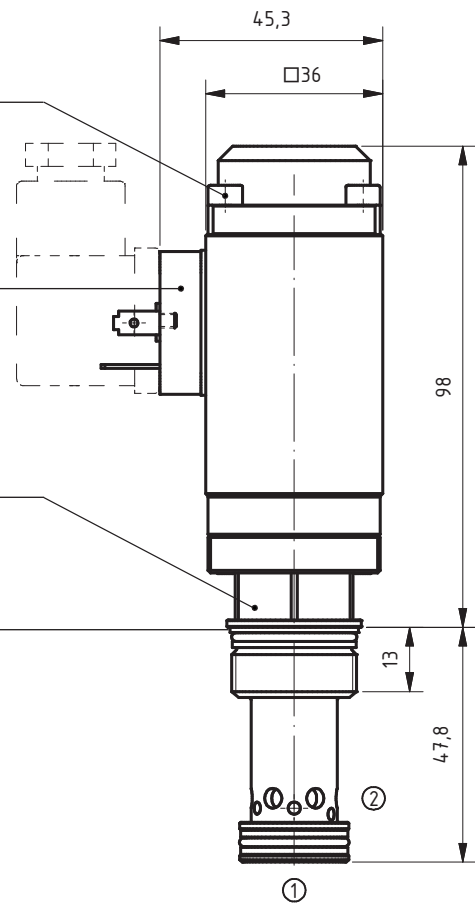
Screw-in valve EEPDBS 10

installation torque: 3 Nm
SW 3

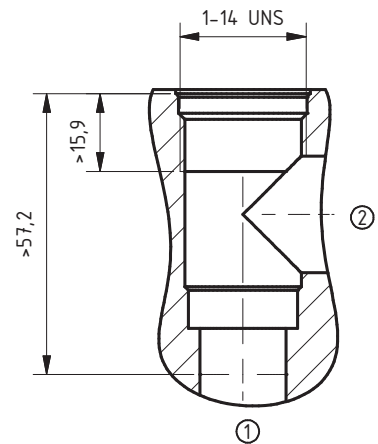
electric plug acc. to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque: 65 Nm
SW 24

locating shoulder T-3A



Cavity T-3A



HM4/92 12 02

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDBSA 10 in a mounting plate NG 10. Dimension sheets are available upon request.

Dimensions

Screw-in valve
EEPDBS 10
degressive version



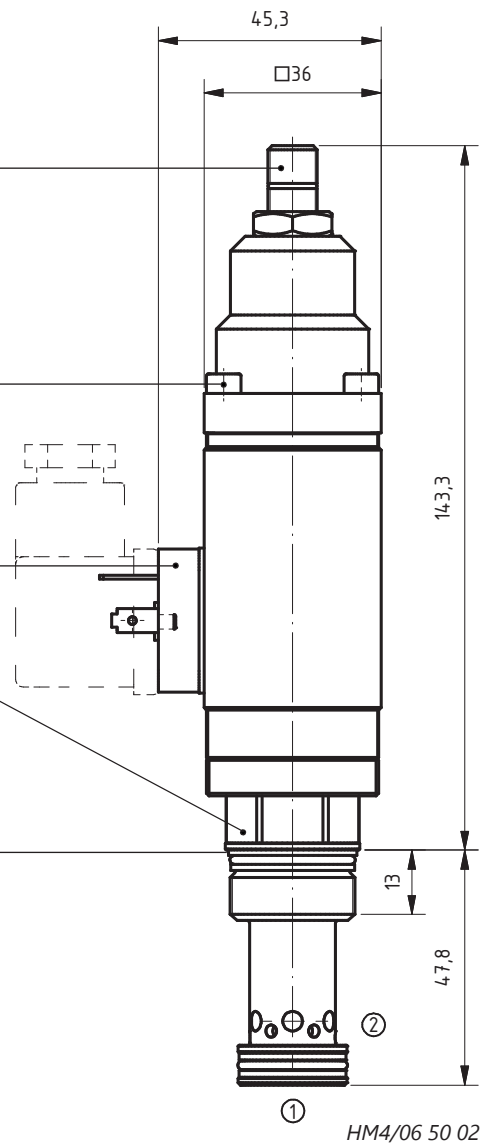
Do not adjust!

installation torque: 3 Nm
SW 3

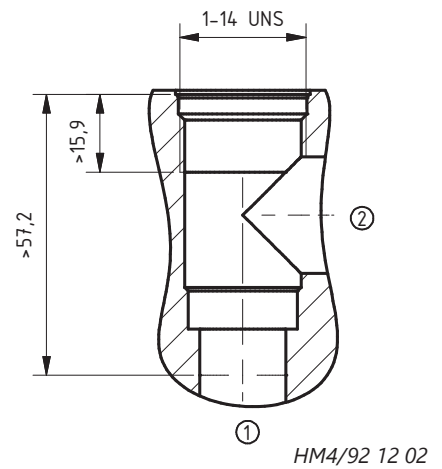
electric plug acc. to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque 65 Nm
SW 24

locating shoulder T-3A



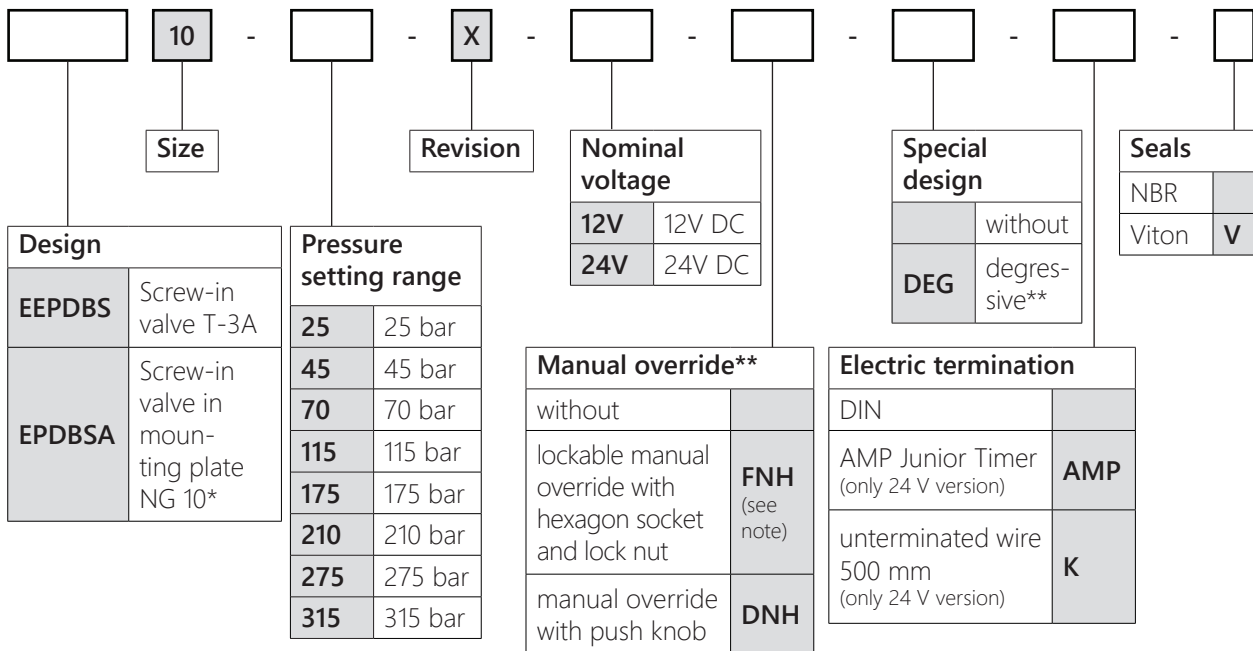
Cavity T-3A



NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

Type code



* aluminium manifolds are only approved for max. operating pressure of 210 bar

** for degressive version no additional manual override selectable

NOTE FOR FNH



The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure relief function of the valve. Be aware that the valve can not fulfil its pressure relief function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.

The FNH should never be screwed in and locked when used in conjunction with a running system! The application as a pressure relief valve with extended throttle function is dangerous and not suggested. All liability for doing so lies with the operator! In case the manual override FNH is screwed in to achieve a throttle function (even though this is not suggested), the reduction of the nominal valve current has to be taken into consideration.

Accessories and additional information

Accessories/ spare parts	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape A, black	149.0007
	Seal kit T-3A (NBR)	405.0040
	Seal kit T-3A (Viton)	405.0041

* formerly DIN 43650

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

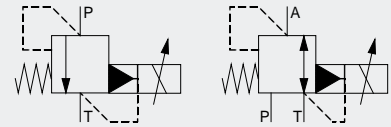
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info.de-k@weber-hydraulik.com

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Pilot-operated proportional valves with large nominal size



pressure relief valves
pressure control valves
pilot operated, solenoid operated
max. operating pressure 315 bar
max. volume flow 760 l/min



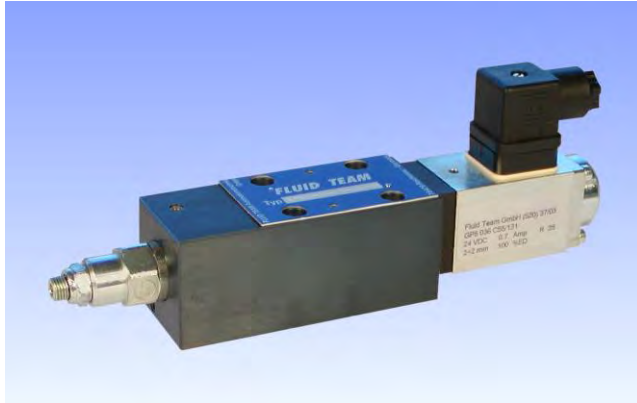
020230_Info16_25_e
07.2018

- Pilot-operated proportional pressure relief valves or pressure control valves with large nominal size
- Modular set-up out of proportional pilot valves and mechanical cartridge valves with cavities up to T-19A
- Pressure relief valves up to 760 l/min
- Pressure control valves up to 320 l/min
- Suitable in-line bodies and subplates up to NG 25
- Varied combinations with different technical characteristics possible

- We would be happy to develop with you the ideal solution for your project.

Proportional Sequence Valve EPDZA

Cover Plate CETOP/ISO 3 • max. 350 bar • max. 40 l/min



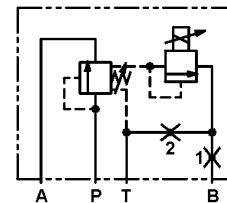
Description

The proportional sequence valve EPDZA lets the oil of P flow after A, starting from a proportionally adjustable opening pressure. If the pressure drops again, the valve closes with small hysteresis. Contrary to standard pressure relief valves the actual opening pressure remains constantly, independent of pressure fluctuations in channel A. The EPDZA consists of a mechanical pressure relief valve, which is pilot-controlled by a proportional pressure relief valve. The spring chamber of the mechanical valve is separately relieved over channel T. If the pressure fluctuations are negligible in the T-channel, the pilot flow can be led also after T (plug 1, see symbol). Otherwise it must flow off after channel B (plug 2). The valve has a mechanical maximum pressure setting. Below this setting the valve works proportionally.

Applications

- The EPDZA is used for the more exact setting of consumer or system pressures, since it is independent of pressure fluctuations of the flowing off oil.
- For clamping and brake functions, in order to guarantee that a certain pressure is given before the oil flows to further consumers.

Symbol



Technical Data

for terms and definitions see chapter 12

Hydraulic

Rated Pressure:	max. 350 bar
Rated Flow:	max. 40 l/min
Pressure Ranges:	see model code
Minimum Pressure:	see model code. Flow rate and viscosity dependently. Pressure at port T adds directly to the setting.
Fluids:	oils as per DIN 51524, others upon request
Viscosity Range:	10 – 350 cSt
Filtration:	class 18/16/13, filter β 6...10 \geq 75
Pilot Flow (from P to B):	appr. 0,15 – 0,20 l/min
Leakage (from P to T):	max. 50 ccm/min/ 100 bar/ 32 cSt
Repeatability:	< X% *
Hysteresis:	< X% *
Linearity:	< X% *

* at optimum dither signal between the 20% and 100% values of the pressure range

Mechanical

Design:	piston-sleeve style pilot operated
Ambient Temperature:	-20 °C – +50 °C
Fluid Temperature:	-20 °C – +80 °C

Installation:	no restrictions
Weight:	1,33 kg
Materials:	valve parts: steel body: aluminium seals: NBR, Viton backup rings: Teflon, PU solenoid: zinc plated ext. valve parts: zinc plated, burnished body: anodised
Surface Protection:	

Electrical

Nominal Voltage:	24 V DC; 12 V DC
Rated Current:	700 mA (24 V); 1700 mA (12 V)
Nominal Resistance (R_{20}):	25 Ω (24 V); 4 Ω (12 V)
Wattage:	max. 20 W
Cyclic Duration Factor:	100 %
Control Command:	PWM (Pulse-Width-Modulated DC)
Dither Frequency:	preferably 140 Hz
Environmental Protection:	IP 65
Electrical Termination:	plug as per DIN 43650 form A, incl. square connector Pg9
Control Devices:	see chapter 6 'Electronic Amplifiers'

Performance

Oil: HLVP 32, temperature: 40 °C (~ 32 cSt). I= 100 % = 700 mA (24 V) or 1700 mA (12 V).
Higher oil flows and higher viscosities will cause higher pressures at port P.

Pressure vs. Current ($\Delta p/I$) at Q=

Pressure vs. Flow ($\Delta p/Q$) at max. setting

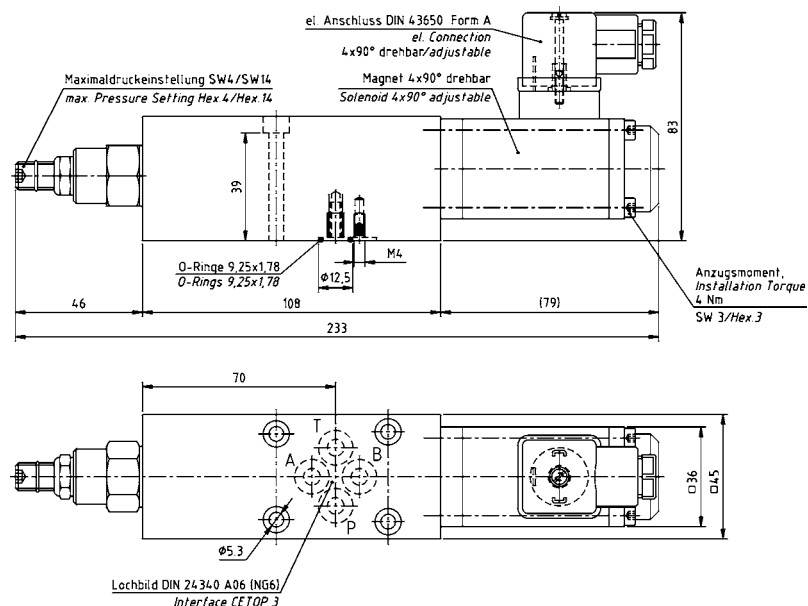
Pressure vs. Flow ($\Delta p/Q$) no current (I= 0 mA)

Leakoil from P to T ($Q/\Delta p$) below setting

Model Code

EPDZA 06	-	350	-	0	-	*	-	24V	/	*
Proportional Sequence Valve, Pilot Operated, Size 06		Pressure Range		Pilot Flow Plug		Design		Nominal Voltage		Special Executions
		350 = X - 350 bar		0 = to B and T (no plug) 1 = to T 2 = to B		(intern)		12V DC 24V DC		

Dimensions [mm]



H3-941302



direct operated types

EPDRD3-04

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 4 l/min
cavity EPDRD3-04, mounting plates NG 4 and NG 6

EPDRD3-04 acc. to ATEX-directive

direct operated, solenoid operated
operating pressure max. 250 bar
volume flow max. 4 l/min
cavity EPDRD3-04, mounting plates NG 4 and NG 6

EPDRD3-05

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 12 l/min
cavity T-11A or C-10-3

pilot operated types

EPDR3-06

pilot operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 30 l/min
sandwich body or mounting plate NG 6

EPDR3-08

pilot operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 40 l/min
cavity T-11A or C-10-3

EPDRS3-10

pilot operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 80 l/min
cavity T-2A

Proportional Valves with large nominal size

pilot operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 320 l/min
suitable in-line bodies and subplates up to NG 25

Accessories

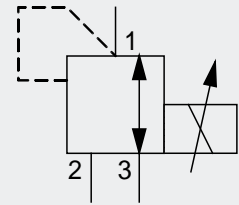
Pressure Sequence Body ZRV-06

pressure control from 0 bar
operating pressure max. 250 bar
volume flow max. 30 l/min
pressure sequence body NG 6

Proportional pressure control valve EPDRD3-04



direct operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 4 l/min
 cavity EPDRD3-04



030110_EPDRD3_04_e
 07.2018

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Characteristics

- 3-way proportional pressure control valve in spool design
- slip-in valve for cavity EPDRD3-04
- suitable as pilot valve
- compact design
- minimum oil leakage
- low vibration
- maintenance-free
- degressive version available
- versions according to the ATEX-directive for the use in potentially explosive atmospheres available (see datasheet 030111_EPDRD3_04_EX_e)
- also usable as 2-way proportional pressure reducing valve (after consultation with WEBER-HYDRAULIK ValveTech)

Technical Data

<i>Hydraulic</i>	Operating pressure max.:	port 2 (P): 315 bar, with aluminium manifolds: 210 bar port 1 (A): 45 bar, pressure port 3 (T) < pressure port 1 (A)
	Flow rate:	4 l/min
	Pressure setting range:	see type code
	Flow direction:	see symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current.

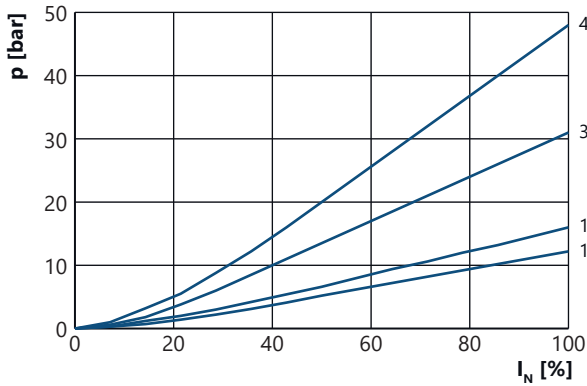
NOTE The pressure on port 3 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design:	EEPDRD slip-in valve, EPDRDR in in-line body, EPDRDA in mounting plate NG 4 or NG 6, direct operated
	Size:	04
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Maximum acceleration:	5 g, crossways
	Weight:	EEPDRD3-04: 0,7 kg, EPDRDR3-04: 0,96 kg, DEPDRDR3-04: 1,86 kg, EPDRDA3-04/04: 0,92 kg, EPDRDA3-04/06: 0,98 kg, DEPDRDA3-04/06: 1,82 kg
	Material:	valve parts: steel, in-line body and mounting plate: aluminium; seals: NBR, optional Viton
Surface protection:	solenoid: zinc coated steel in-line body and mounting plate: anodized aluminium	

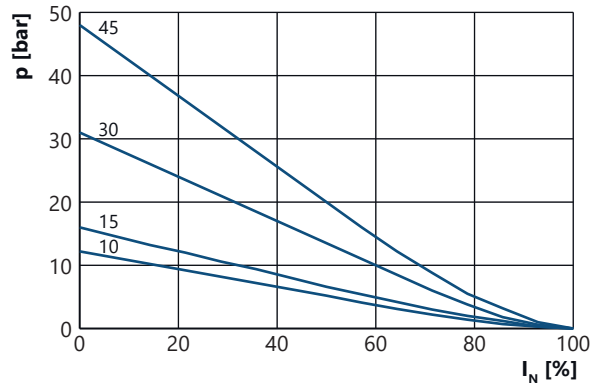
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 shape A, AMP Junior Timer, unterminated wire
Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com	

Performance

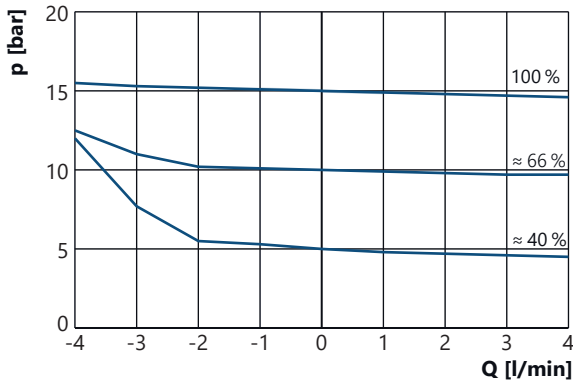
Pressure drop diagram (p/I) EPDRD3-04 at Q = 0 l/min (static)



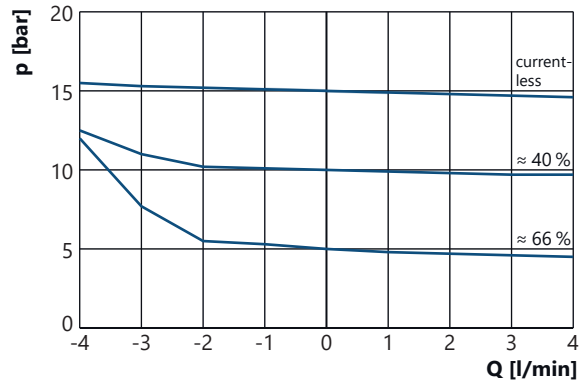
Pressure drop diagram (p/I) EPDRD3-04 degressive version at Q = 0 l/min (static)



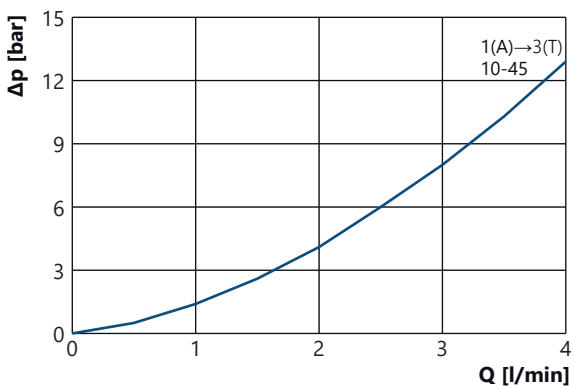
Pressure drop diagram (p/Q) EPDRD3-04 with 15 bar spool at various currents



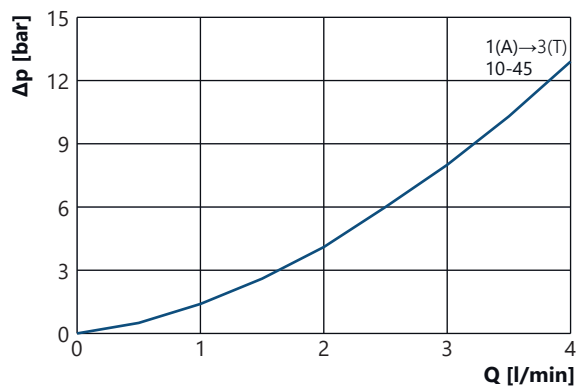
Pressure drop diagram (p/Q) EPDRD3-04 degressive version with 15 bar spool at various currents



Pressure drop diagram (Δp/Q) EPDRD3-04 at I = 0 mA (currentless)



Pressure drop diagram (Δp/Q) EPDRD3-04 degressive version at I = 100% (full current)



Test conditions

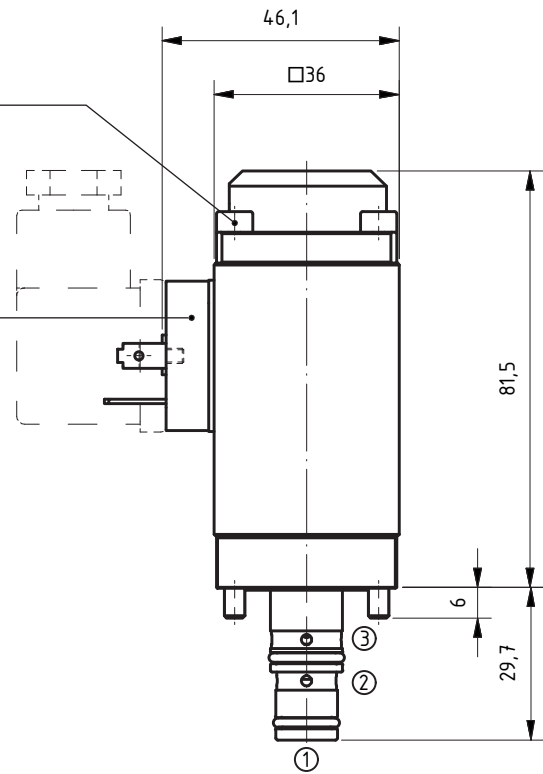
Oil: HLP 32, temperature: 40 °C (~32 cSt)
Higher viscosities change the characteristic curves.

Dimensions

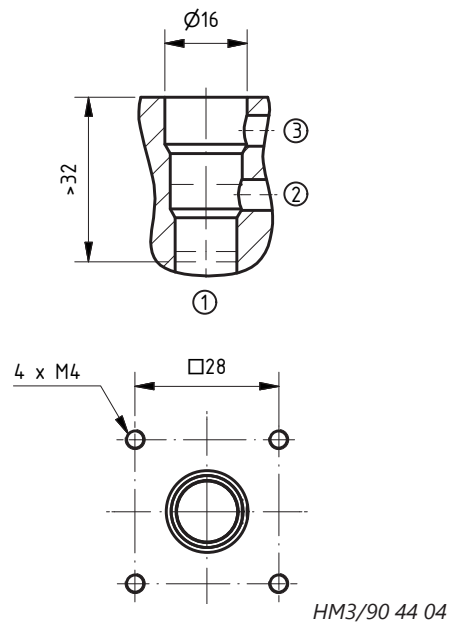
Slip-in valve EEPDRD3-04

installation torque 3 Nm
SW 3

electric plug according to
DIN EN 175301-803 shape A



Cavity EPDRD3-04



NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDRDA3-04/04 in a mounting plate NG 4 or as EPDRDA3-04/06 in a mounting plate NG 6. Dimension sheets are available upon request.

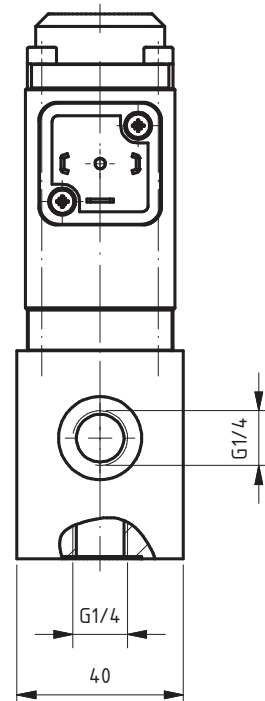
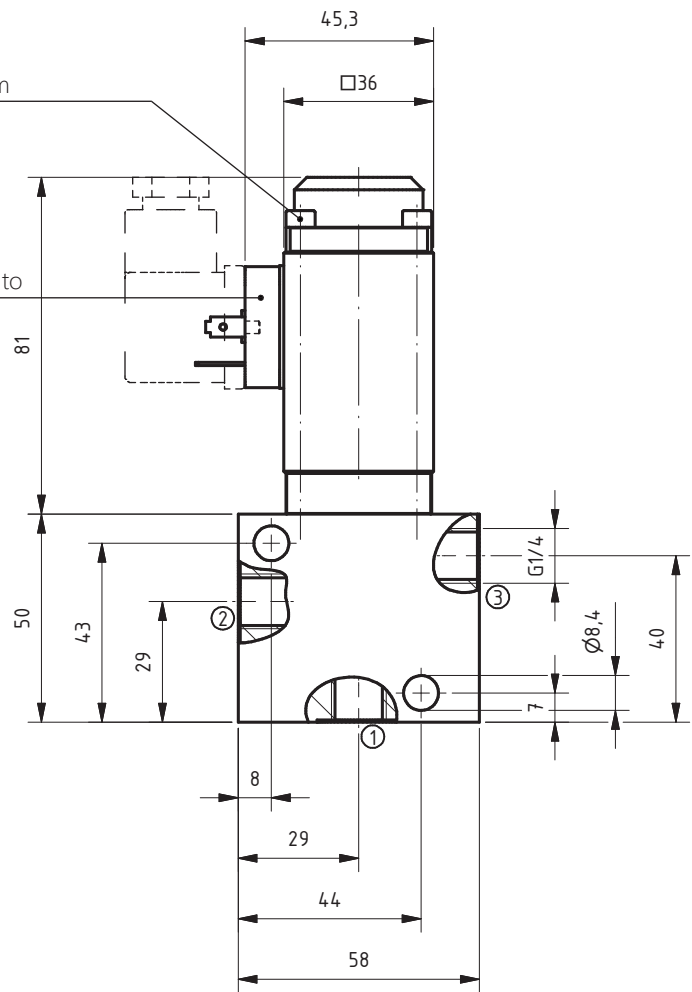
NOTE The valve is also available as degressive version.

Dimensions

*Slip-in valve in
in-line body G 1/4"
EPDRDR3-04*

installation torque 3 Nm
SW 3

electric plug according to
DIN EN 175301-803
shape A

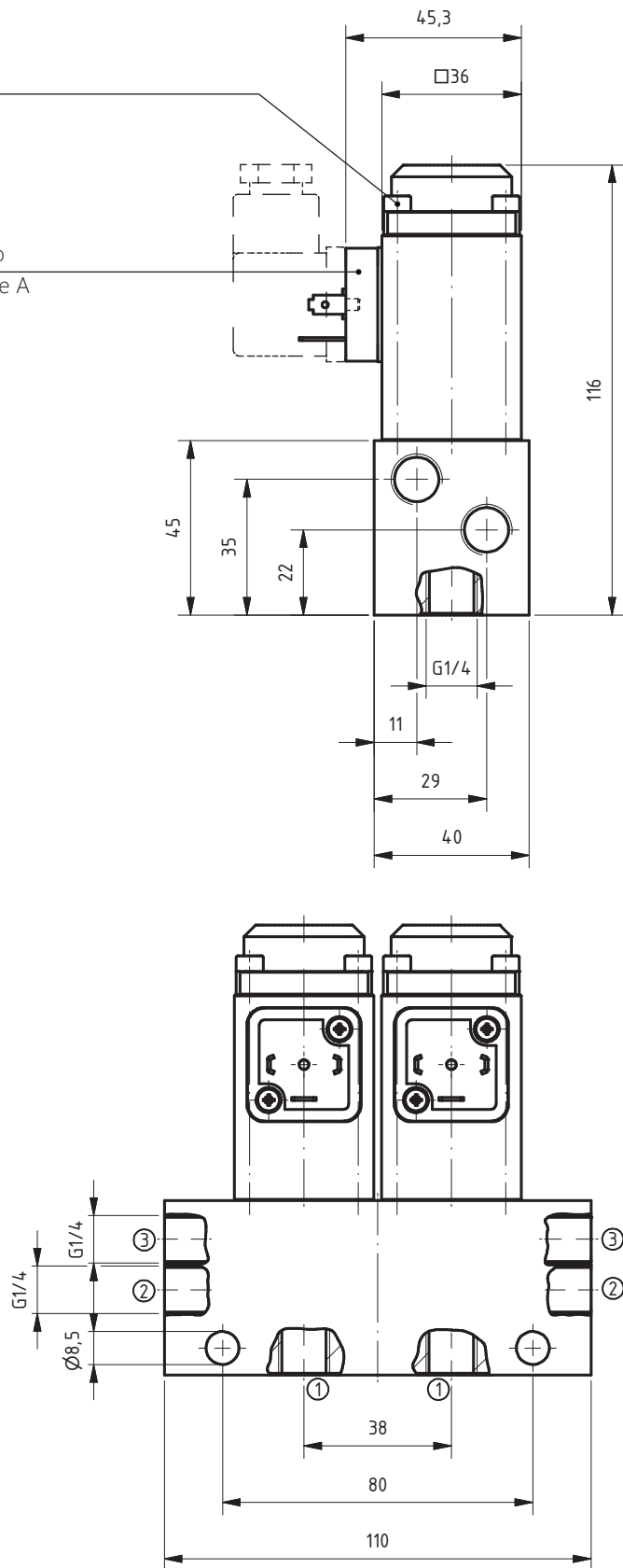


Dimensions

Two slip-in valves in
double-in-line body
G 1/4" DEPDRDR3-04

installation torque 3 Nm
SW 3

electric plug according to
DIN EN 175301-803 shape A



HM4/98 35 03

Dimensions

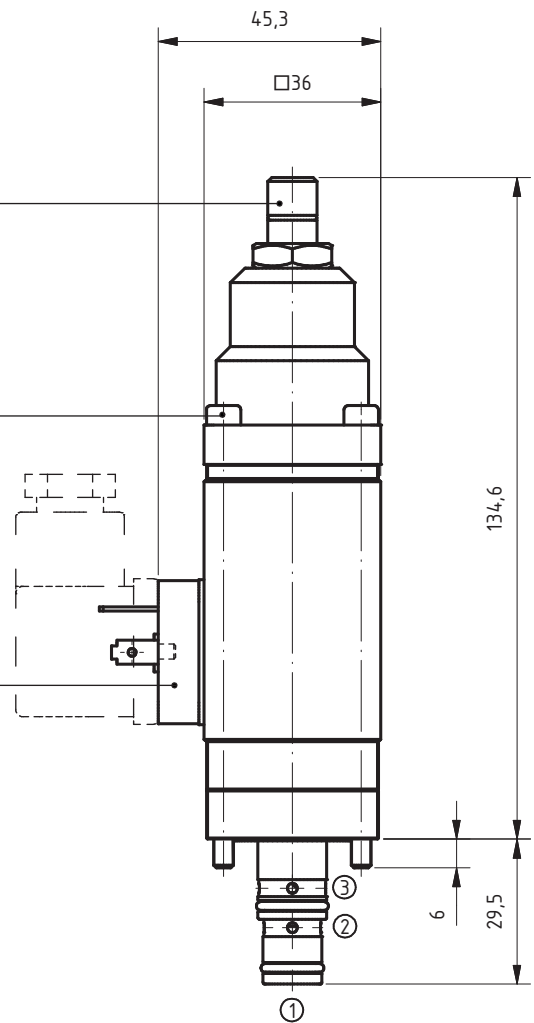
*Slip-in valve
EEPDRD3-04
degressive*



Do not adjust!

installation torque 3 Nm
SW 3

electric plug according to
DIN EN 175301-803 shape A

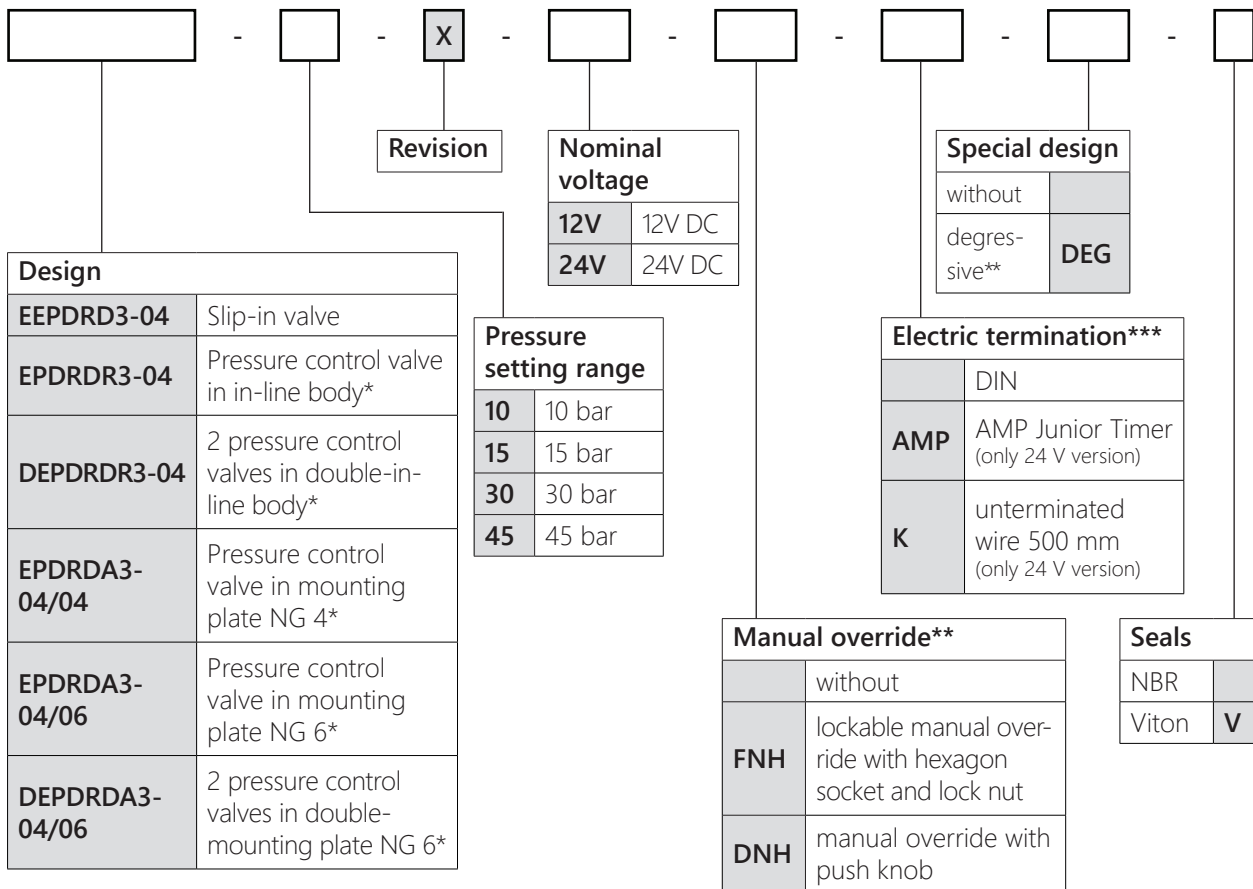


HM4/12 46 04

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDRDR3-04 in an in-line body, and as EPDRDA3-04/04 in a mounting plate NG 4 or as EPDRDA3-04/06 in a mounting plate NG 6. Dimension sheets are available upon request.

Type code



* aluminium manifolds are approved for max. operating pressure of 210 bar

** for degressive versions no additional manual override selectable

*** DEUTSCH plug on request

NOTE FOR FNH



The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure control function of the valve. Be aware that the valve can not fulfil its pressure control function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.

The FNH should never be screwed in and locked when used in conjunction with a running system!

Accessories and additional information

<i>Accessories/ spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Seal kit EPDRD3-04 (NBR)	405.0060
	Seal kit EPDRD3-04 (Viton)	405.0097

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

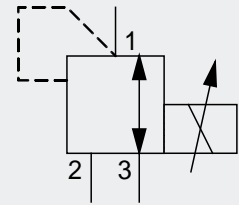
www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Proportional pressure control valve EPDRD3-04 acc. to ATEX-directive



direct operated, solenoid operated
 operating pressure max. 250 bar
 volume flow max. 4 l/min
 cavity EPDRD3-04



030111_EPDRD3_04_EX_e
 07.2018

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Accessories and additional information	4
Set-up	5

Characteristics



- 3-way proportional pressure control valve in spool design
- according to the ATEX-directive for the use in potentially explosive atmospheres
- slip-in valve for cavity EPDRD3-04
- suitable as pilot valve
- compact design
- minimum oil leakage
- low vibration
- maintenance-free
- also usable as 2-way proportional pressure reducing valve (after consultation with WEBER-HYDRAULIK ValveTech)

Technical Data

<i>Hydraulic</i>	Operating pressure max.:	port 2 (P): 250 bar, with aluminium manifolds: 210 bar port 1 (A): 45 bar, pressure port 3 (T) < pressure port 1 (A)
	Flow rate:	4 l/min
	Pressure setting range:	see type code
	Flow direction:	see symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20% to 100% of the nominal valve current

NOTE The pressure on port 3 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design:	EEPDRD slip-in valve, EPDRDR in in-line body, EPDRDA in mounting plate NG 4 or NG 6, direct operated
	Size:	04
	Fluid temperature:	-30 °C to +50 °C
	Ambient temperature:	-30 °C to +50 °C
	Storage temperature:	-30 °C to +50 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Maximum acceleration:	5 g, crossways
	Weight:	EEPDRD3-04: 2,7 kg, EPDRDR3-04: 2,96 kg, DEPDRDR3-04: 3,86 kg, EPDRDA3-04/04: 1,92 kg, EPDRDA3-04/06: 1,98 kg, DEPDRDA3-04/06: 3,82 kg
	Material:	valve parts: steel, in-line body and mounting plate: aluminium; seals: NBR, optional Viton
	Surface protection:	solenoid: zinc coated steel, partially burnished, in-line body and mounting plate: anodized aluminium

<i>Electric</i>	Nominal voltage:	24 V DC
	Nominal valve current:	0,6 A
	Nominal resistance (R20):	23,1 Ω
	Power consumption:	15,6 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 85 Hz (depending on application)
	Protection system:	IP67 according to IEC/EN 60529, IP69K according to DIN 40050-9 with intended assembling
	Protection class:	III according to DIN VDE 0580
	Electric termination:	15 meter connecting cable FL4G11Y 2x1,5 mm ² with explosive protection acc. to the ATEX-directive IECEx/ATEX  0637,  II 2G Ex mb IIC T4 Gb, II 2D Ex mb IIC T130° Db in acc. with EN 60079-0:2012/ IEC 60079-0:2011, EN 60079-18:2009/ IEC 60079-18:2009

Technical Data

Electric EC Type Examination Cert.: IBExU 13 ATEX 1040 X, IECEx IBE 13.00117X

Electronic controllers: see chapter 6 *“electronics and sensors”* as well as our online catalogue at www.weber-hydraulik.com.



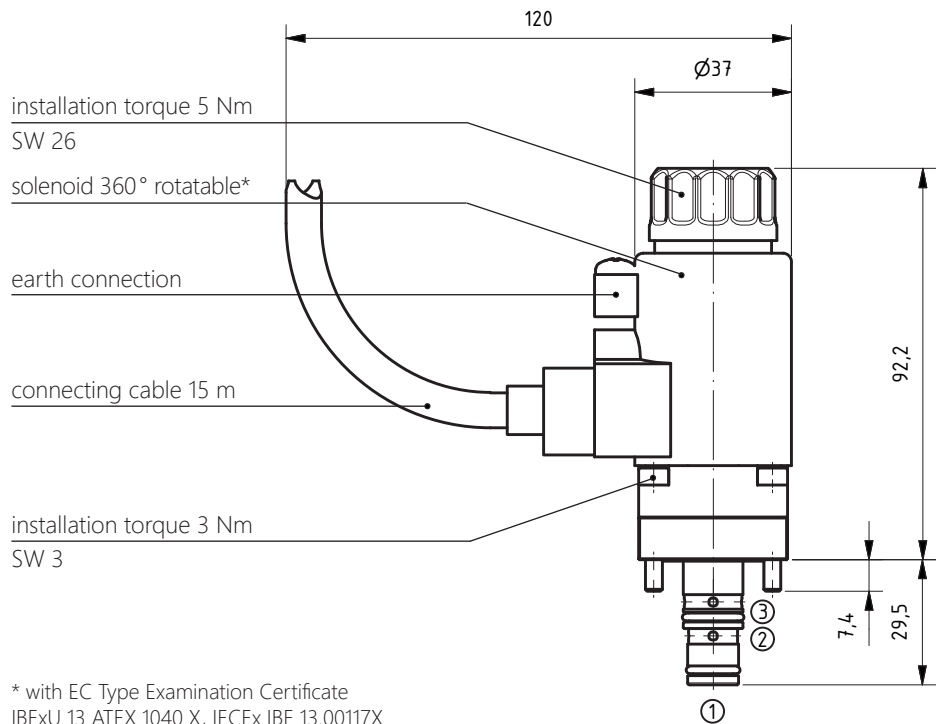
Electronics that are used in explosion protected areas must be Ex-certified!

Performance

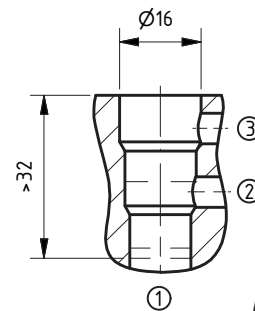
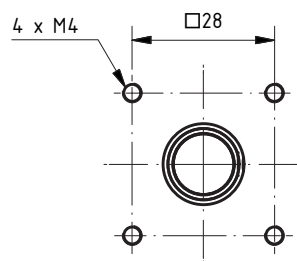
Performance graphs upon request.

Dimensions

*Slip-in valve
EPDRD3-04 EX*



*Cavity
EPDRD3-04*

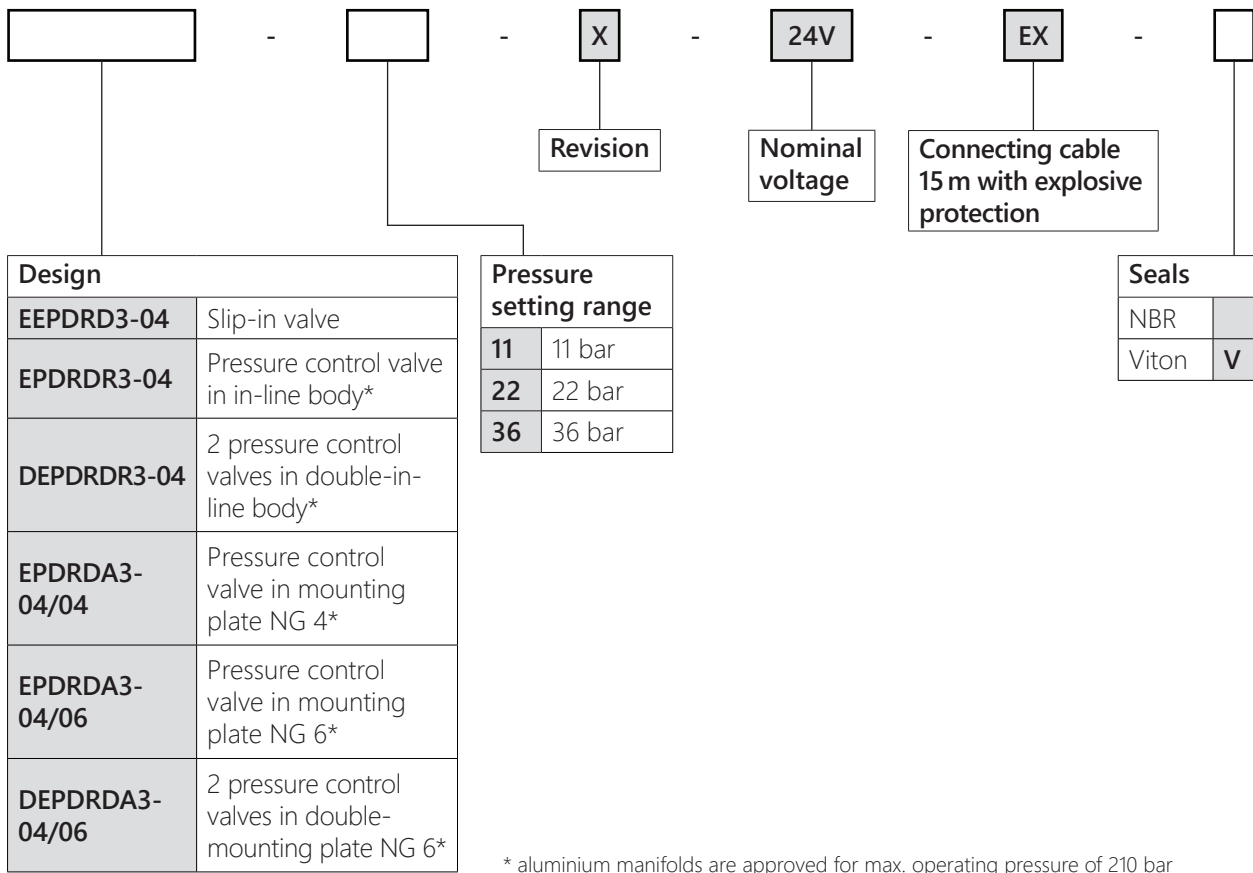


HM3/14 44 11

NOTE For a detailed drawing of the cavity please see chapter 11 *„general information”* or our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDRDR3-04 in an in-line body, and as EPDRDA3-04/04 in a mounting plate NG 4 or as EPDRDA3-04/06 in a mounting plate NG 6. Dimension sheets are available upon request.

Type code



Accessories and additional information

Accessories/ spare parts	Article:	Article number:
	Seal kit EEPDRD3-04 (NBR)	405.0060
	Seal kit EEPDRD3-04 (Viton)	405.0097

NOTE



For the appropriate electronic controllers, see chapter 6 „electronics and sensors“ as well as our online catalogue at www.weber-hydraulik.com. Please consider whether the electronic controller will be located inside or outside of the explosion protected area. Electronics that are used in explosion protected areas must be certified according to the ATEX-directive!

Set-up

The solenoid coil may only be operated when installed on the appropriate valve. Further information can be found in the provided operation manual of the solenoid. When operating the valve, information contained in the provided operation manual of the solenoid, as well as our general operating manual must be followed precisely!

Single or multiple mounting of the valve in single operation must have a minimum size of 46 x 46 x 66 mm and a base plate $\geq 46 \times 30 \times 66$ mm. The material must be Fe or material with the same or better thermal conductivity.

The installation of these electrical components must be carried out by an electrician with adequate qualifications.

Each solenoid must be short-circuit fuse protected suitable to its nominal valve current (max. $3 \times I_N$ according to IEC/EN 60127-2). This could, for example, be a motor protecting switch with thermal quick release and short-circuit protection (adjusted to the rated current).

The installed fuse must have a voltage rating equal or larger than the rated voltage of the solenoid, and the fuse should be installed in the associated power supply. If this is not possible, the fuse can be installed separately if the appropriate safety instructions are carefully considered.

When connecting the fuse to the circuit, it is of utmost importance to consider whether the fuse will be located inside, or outside of the explosion protected area. If the fuse will be connected to the circuit inside of the explosion protected area, then it must be mounted in an Ex-certificated terminal box.

For equipotential bonding, a ground terminal is provided on the outside of the solenoid.

Manual

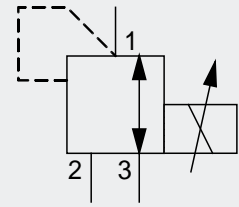
Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



Proportional pressure control valve EPDRD3-05



direct operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 12 l/min
 cavity T-11A or C-10-3



030120_EPDRD3_05_e
 07.2018

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Characteristics

- 3-way proportional pressure control valve in spool design
- screw-in valve for cavity T-11A or
- screw-in valve for cavity C-10-3
- minimum oil leakage
- low vibration
- maintenance-free
- degressive version available
- also usable as 2-way proportional pressure reducing valve (after consultation with WEBER-HYDRAULIK ValveTech)

Technical Data

<i>Hydraulic</i>	Operating pressure max.:	315 bar, with aluminium manifolds: 210 bar pressure at port 3 (T) < pressure at port 1 (A)
	Flow rate:	12 l/min
	Pressure setting range:	see type code
	Flow direction:	see symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current.

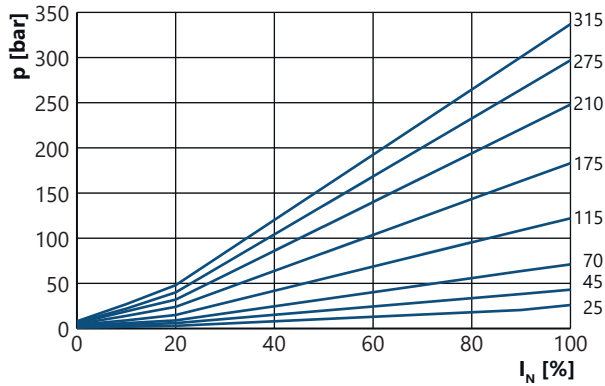
NOTE The pressure on port 3 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design:	EEPDRDS screw-in valve T-11A, EEPDRDM screw-in valve C-10-3, or EPDRDSA screw-in valve in mounting plate NG 6, direct operated
	Size:	05
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Maximum acceleration:	5 g, crossways
	Weight:	EEPDRDS3-05: 0,76 kg, EEPDRDM3-05: 0,86 kg, EPDRDSA3-05/06: 1,07 kg
	Material:	valve parts: steel, mounting plate: aluminium, seals: NBR, optional Viton
	Surface protection:	exterior parts: zinc coated steel, partially burnished mounting plate: anodized aluminium

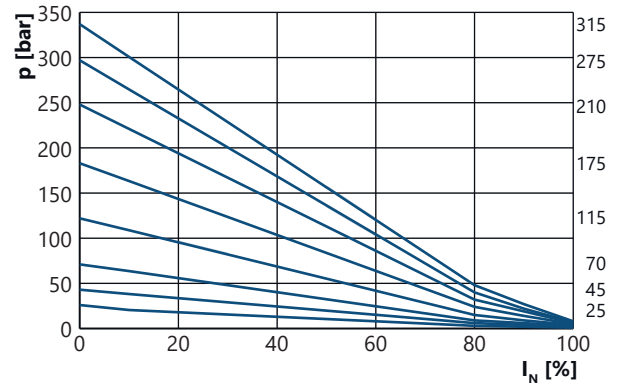
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 shape A, AMP Junior Timer, unterminated wire
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com

Performance

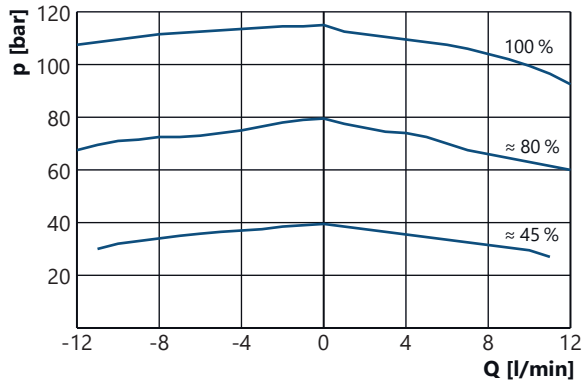
Pressure drop diagram (p/I) EPDRD3-05 at Q = 0 l/min (static)



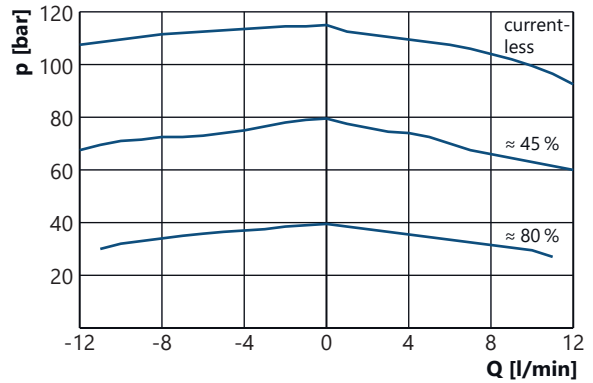
Pressure drop diagram (p/I) EPDRD3-05 degressive version at Q = 0 l/min (static)



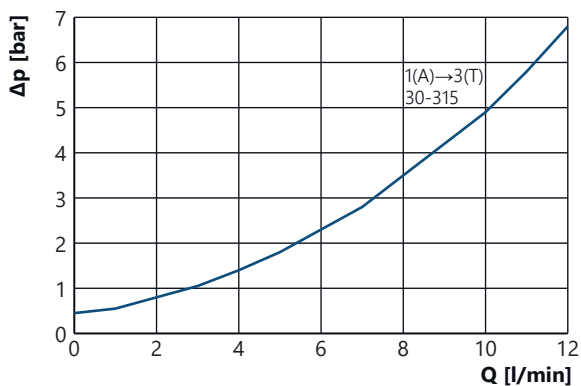
Pressure drop diagram (p/Q) EPDRD3-05 with 115 bar spool at various currents



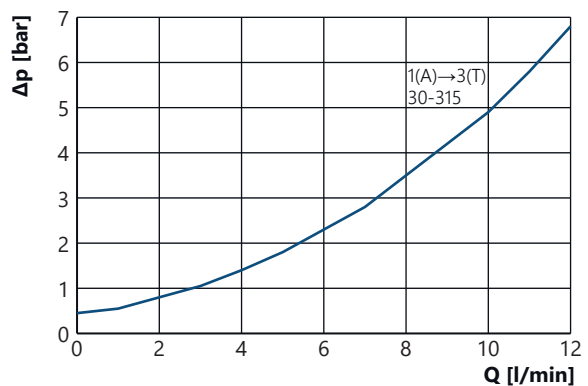
Pressure drop diagram (p/Q) EPDRD3-05 degressive version with 115 bar spool at various currents



Pressure drop diagram (Δp/Q) EPDRD3-05 at I = 0 mA (currentless)



Pressure drop diagram (Δp/Q) EPDRD3-05 degressive version at I = 100% (full current)

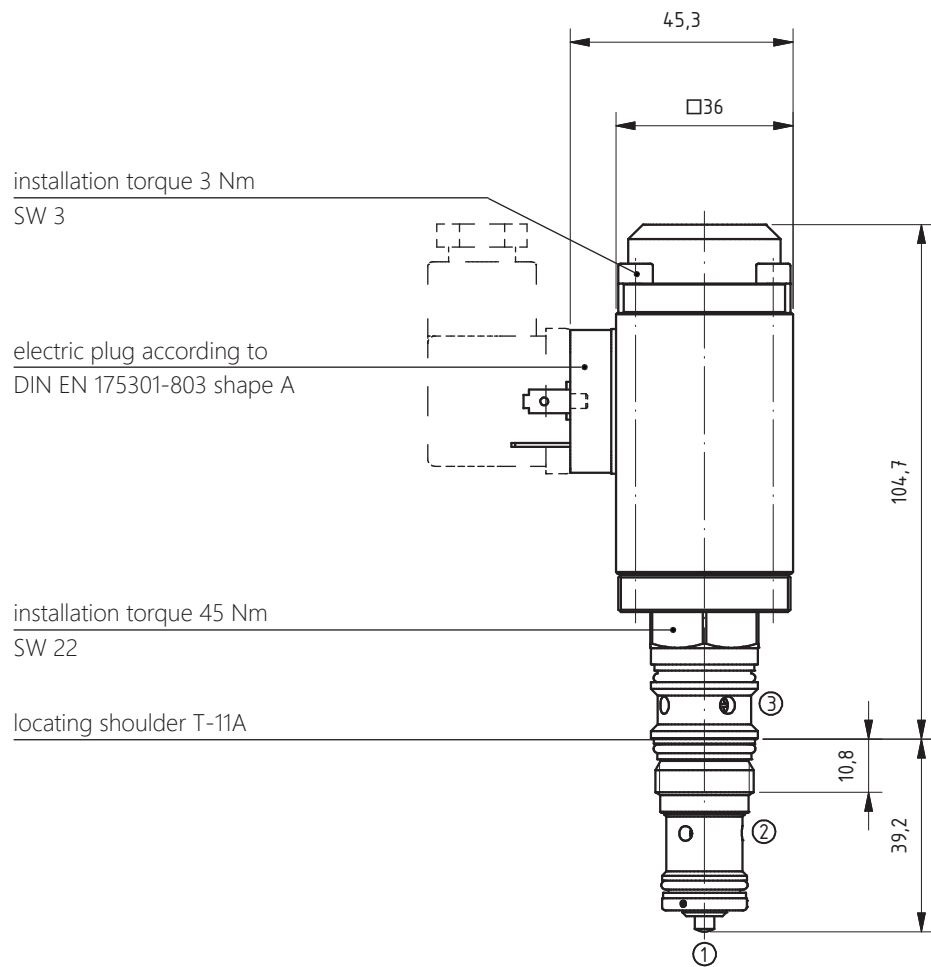


Test conditions

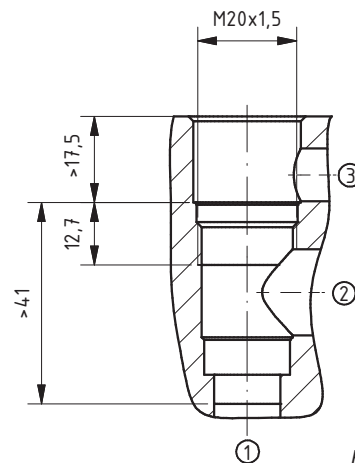
Oil: HLP 32, temperature: 40 °C (~32 cSt)
Higher viscosities change the characteristic curves.

Dimensions

Screw-in valve
EEPDRDS3-05



Cavity T-11A



HM4/04 18 09

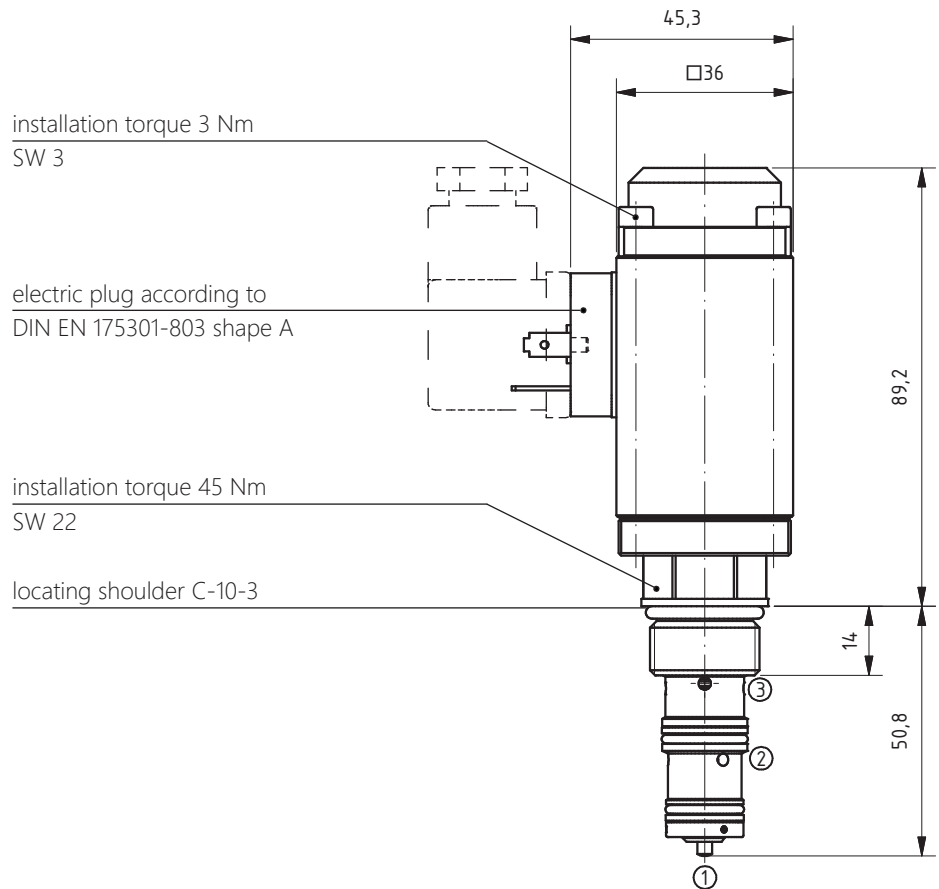
NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

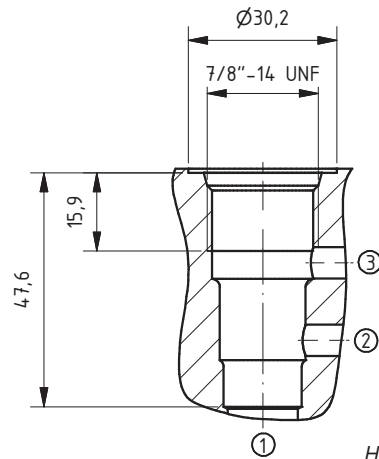
NOTE The valve is also available as degressive version.

Dimensions

*Screw-in valve
EEPDRDM3-05*



Cavity C-10-3



HM3/07 18 03

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE We also provide a variety of suitable manifolds for C-10-3. Please contact us for further assistance.

NOTE The valve is also available as degressive version.

Dimensions

Screw-in valve
EEPDRDS3-05
degressive



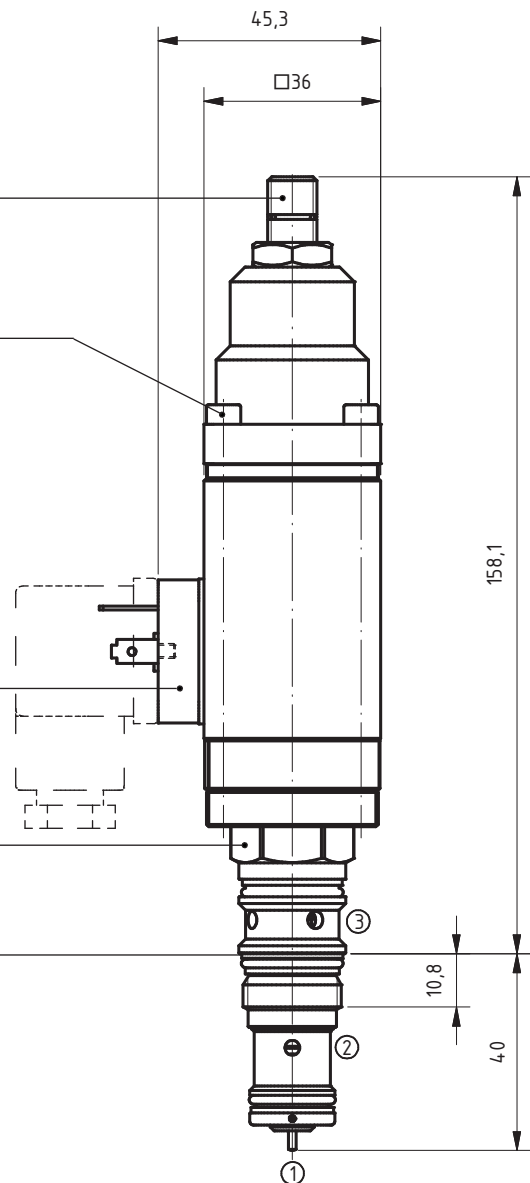
Do not adjust!

installation torque 3 Nm
SW 3

electric plug according to
DIN EN 175301-803 shape A

installation torque 45 Nm
SW 22

locating shoulder T-11A



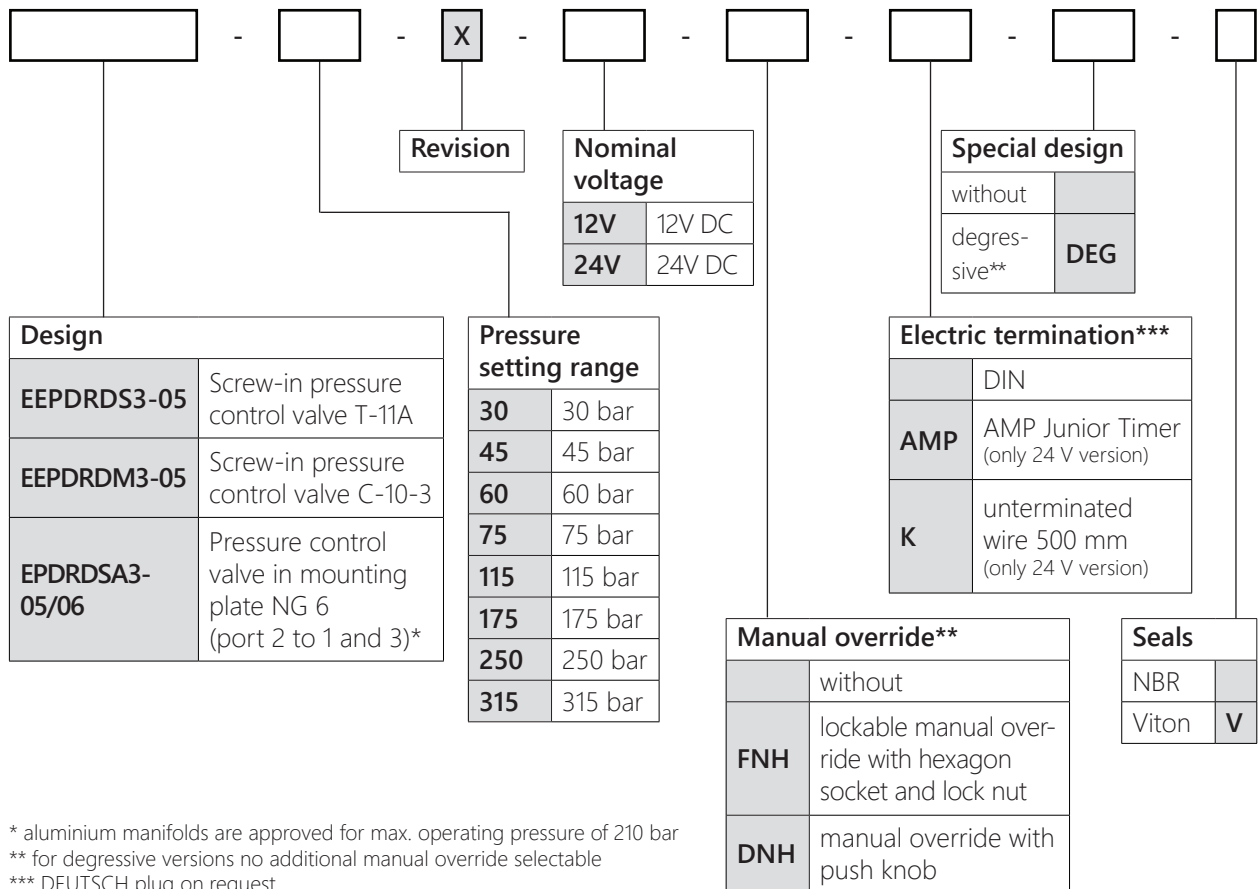
HM4/14 39 03

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

NOTE The degressive version of the valve is also available as EEPDRDM3-05 (with cavity C-10-3).

Type code



NOTE FOR FNH



The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure control function of the valve. Be aware that the valve can not fulfil its pressure control function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.
The FNH should never be screwed in and locked when used in conjunction with a running system!

Accessories and additional information

<i>Accessories/ spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Seal kit T-11-A (NBR)	405.0038
	Seal kit T-11-A (Viton)	405.0039
	Seal kit C-10-3 (NBR)	405.0063
	Seal kit C-10-3 (Viton)	405.0096

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Proportional Pressure Reducing/Relieving Valve Size 06

pilot operated • 3-way function • max. 315 bar • max. 30 l/min



Description

The proportional pressure reducing/relieving valve size 06 is a pilot operated valve. It reduces a higher input pressure into a lower consumer pressure. The consumer pressure can be set proportionally to the solenoid current. If the adjusted pressure on the consumers side is exceeded, the pressure relief function of the valve is used (3 way function). It flows so long oil from the consumer after T, until the adjusted pressure is again reached.

The valve is applicable also as a pure pressure-reducing valve (2-way-function). The third port (T) may not be closed however. All internal parts are hardened and ground/ honed. In order to achieve an optimal resolution,

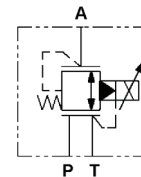
numerous pressure ranges are available. The valve has a precise and good-natured responding mode.

Note: if the difference between input pressure and consumer pressure is very high, the oil should be very clean (filtration up to 3 µm is necessary).

Designs

The valve is available in a sandwich body CETOP/ISO 3 (DIN 24340 A06, NG 6).

Symbol



Technical Data

for terms and definitions see chapter 12

Hydraulic

Rated Pressure:	port P and A: max. 315 bar port T: not higher than port A pressure max. 30 l/min
Rated Flow:	max. 30 l/min
Pressure Ranges:	see model code
Minimum Pressure:	appr. 6 bar
Fluids:	oils as per DIN 51524, others upon request
Viscosity Range:	10 – 350 cSt
Pilot Flow:	appr. 0,15 – 0,20 l/min/ 32 cSt
Filtration:	class 18/16/13, filter β 6...10 ≥ 75

Mechanical

Ambient Temperature:	-20 °C – +50 °C
Fluid Temperature:	-20 °C – +80 °C
Installation:	no restrictions
Weight:	1,51 kg
Materials:	valve parts: steel seals: NBR backup rings: Teflon, PU solenoid: zinc plated body: anodised ext. valve parts: burnished
Surface Protection:	

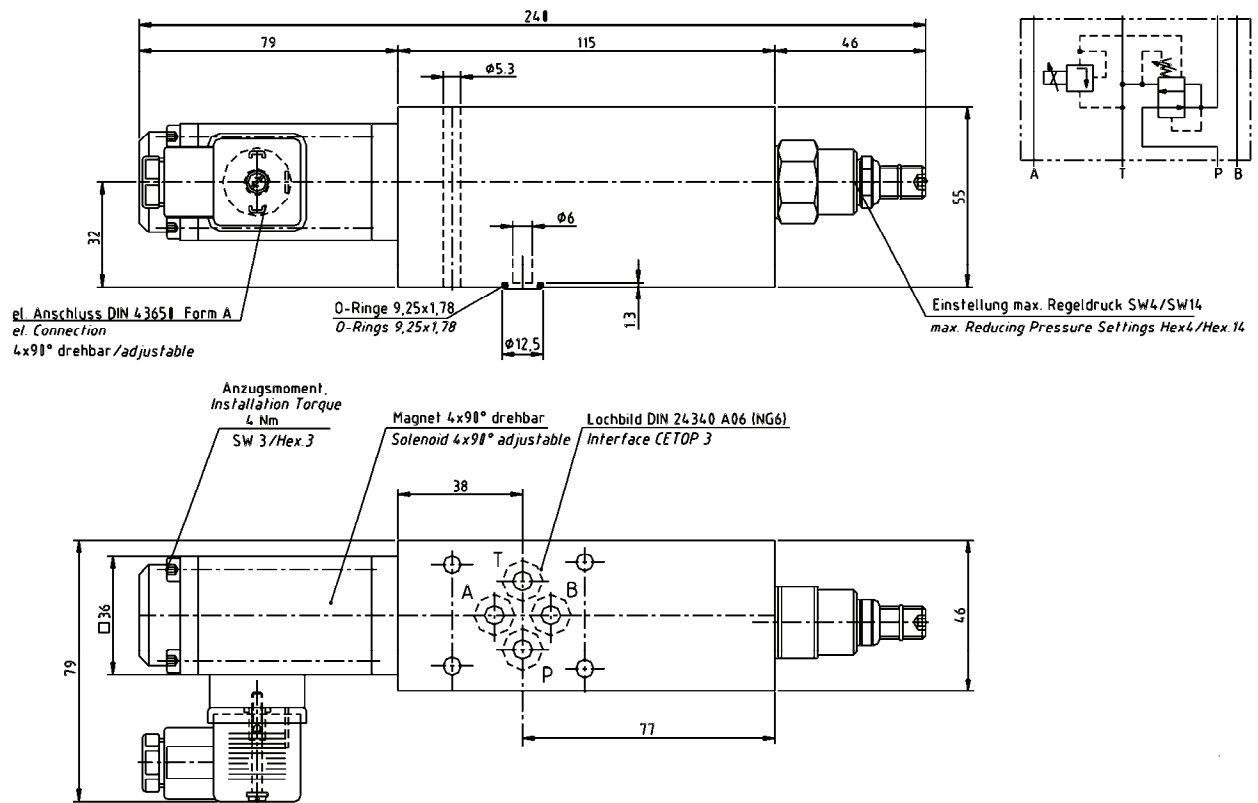
Electrical

Nominal Voltage:	24 V DC; 12 V DC
Rated Current:	700 mA (24 V); 1700 mA (12 V)
Nominal Resistance (R ₂₀):	25 Ω (24 V); 4 Ω (12 V)
Power Consumption:	17 W (24 V); 20 W (12 V)
Cyclic Duration Factor:	100 %
Control Command:	PWM (Pulse-Width-Modulated DC)
Dither Frequency:	preferably 140 Hz
Environmental Protection:	IP 65
Electrical Termination:	plug as per DIN 43650 form A, incl. square connector Pg9
Control Devices:	see chapter 6 'Electronic Amplifiers'

Model Code

ZEPDR3-06		-	175	-	*	-	24V	/	*
3-Way Proportional Pressure Reducing Valve, pilot operated, size 06			Pressure Range		Design		Nominal Voltage		Special Executions
deliverable executions:			25 = 25 bar		(intern)		12V = 12 V DC		
Sandwich body: ZEPDR3-06 = CETOP/ISO 03 (NG 6) function in P			45 = 45 bar				24V = 24 V DC		
			70 = 70 bar						
			115 = 115 bar						
			175 = 175 bar						
			210 = 210 bar						
			315 = 315 bar						

Dimensions (mm)

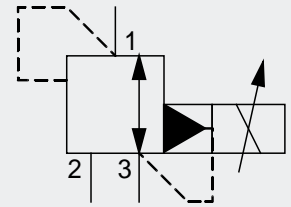


H3-940907

Proportional pressure control valve EPDR3-08



pilot operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 40 l/min
 cavity T-11A or C-10-3



030220_EPDR3_08_e
 07.2018

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Characteristics

- 3-way proportional pressure control valve in spool design
- screw-in valve for cavity T-11A or
- screw-in valve for cavity C-10-3
- low vibration
- maintenance-free
- degressive version available
- also usable as 2-way proportional pressure reducing valve (after consultation with WEBER-HYDRAULIK ValveTech)

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar, with aluminium manifolds: 210 bar
	Flow rate:	40 l/min
	Pressure setting range:	see type code
	Flow direction:	see hydraulic symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current

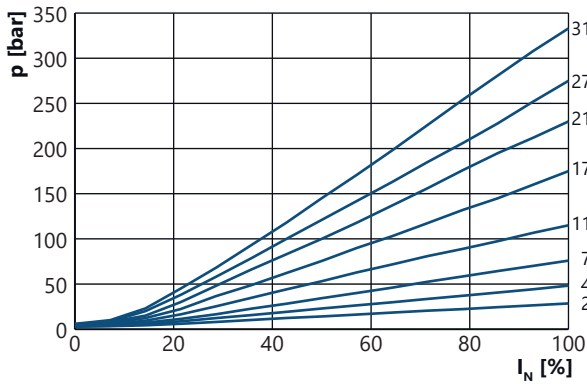
NOTE The pressure on port 3 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design:	EEPDRS screw-in valve T-11A or EEPDRM screw-in valve C-10-3, EPDRSA screw-in valve in mounting plate NG 6, pilot operated
	Size:	08
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Maximum acceleration	5 g, crossways
	Weight:	EEPDRS3-08: 0,76 kg, EEPDRM3-08: 0,79 kg, EPDRSA3-08/06: 1,01 kg
	Material:	valve parts: steel, mounting plate: aluminium seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel, mounting plate: anodized aluminium

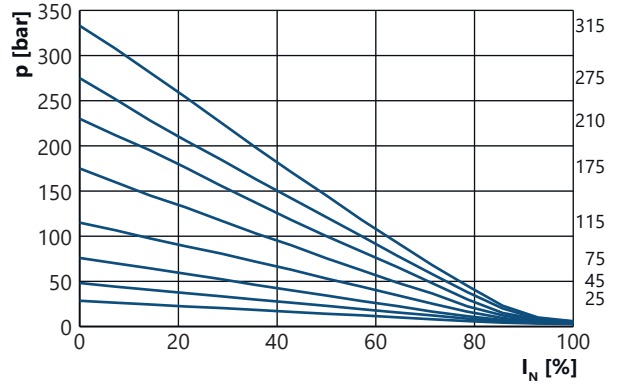
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, unterminated wire
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com

Performance

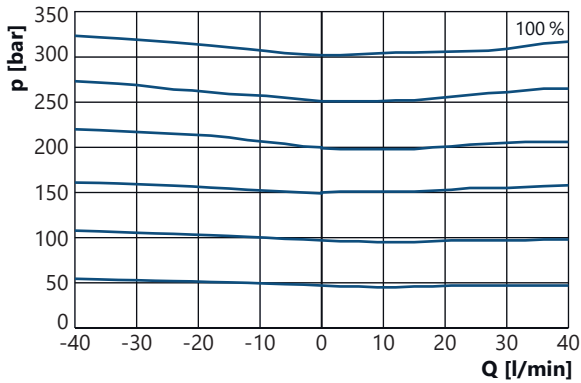
Pressure drop diagram (p/I) EPDR3-08 at Q = 1,0 l/min



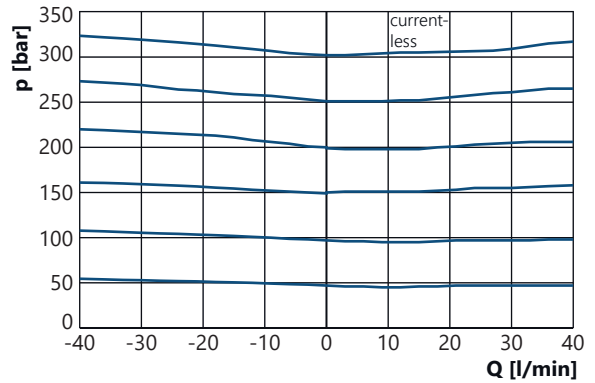
Pressure drop diagram (p/I) EPDR3-08 depressive version at Q = 1,0 l/min



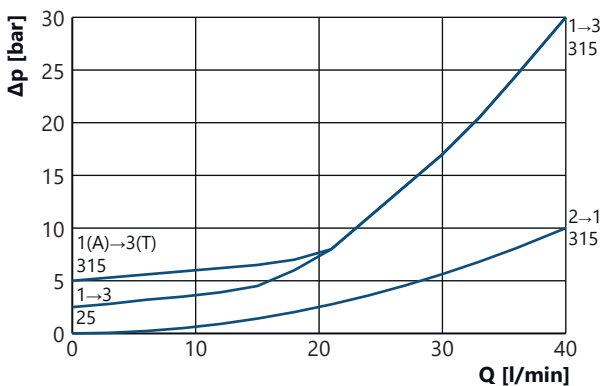
Pressure drop diagram (p/Q) EPDR3-08 with 315 bar spool at various currents



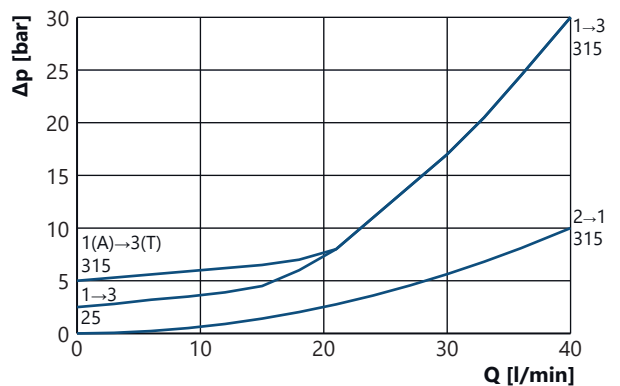
Pressure drop diagram (p/Q) EPDR3-08 depressive version with 315 bar spool at various currents



Pressure drop diagram ($\Delta p/Q$) EPDR3-08 at I = 0 mA (currentless)



Pressure drop diagram ($\Delta p/Q$) EPDR3-08 depressive version at I = 100% (full current)

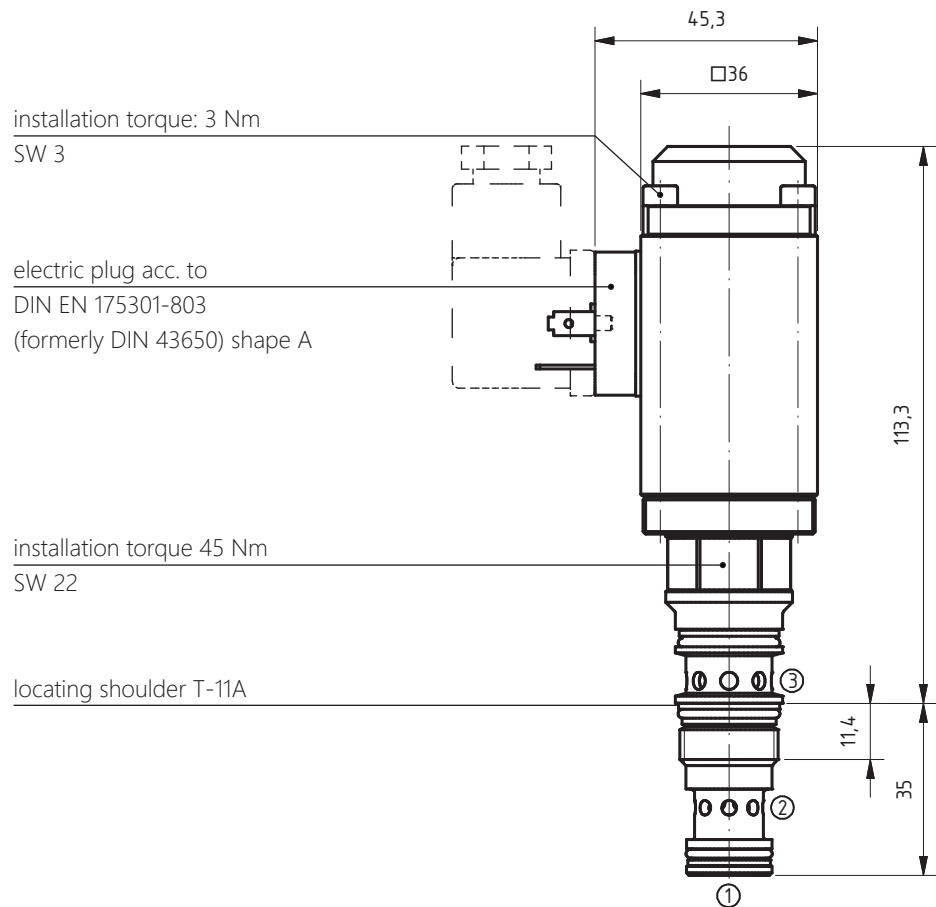


Test conditions

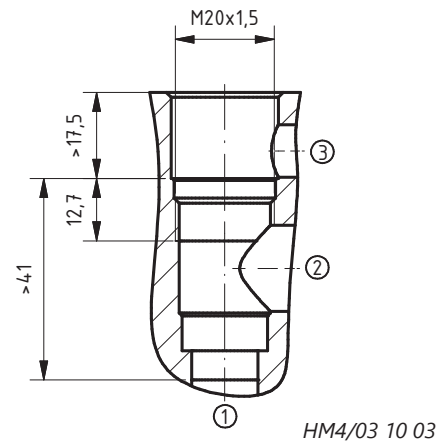
Oil: HLP 32, temperature: 40 °C (~32 cSt)
Higher viscosities change the characteristic curves.

Dimensions

Screw-in valve EEPDRS3-08



Cavity T-11A



HM4/03 10 03

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

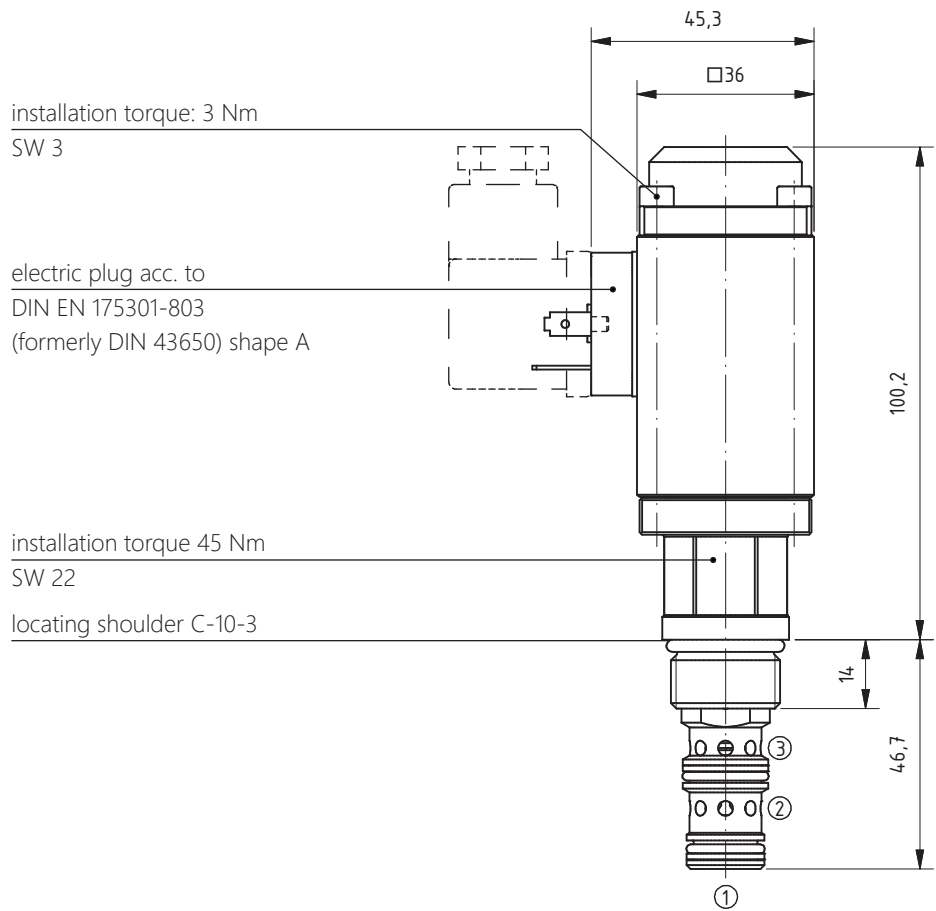
NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDRSA3 08/06 in a mounting plate NG 6. Dimension sheets are available upon request.

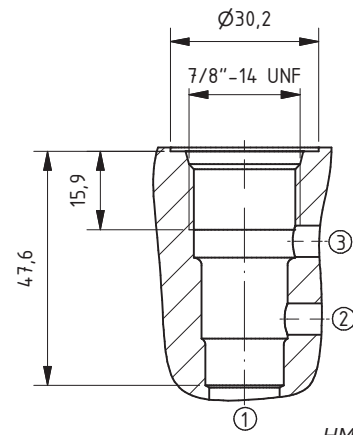
NOTE The valve is also available as degressive version.

Dimensions

Screw-in valve
EEPDRM3-08



Cavity C10-3



HM4/03 13 01

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE We also provide a variety of suitable manifolds for C-10-3. Please contact us for further assistance.

NOTE The valve is also available as degressive version.

Dimensions

Screw-in valve
EEPDRS3 08
degressive



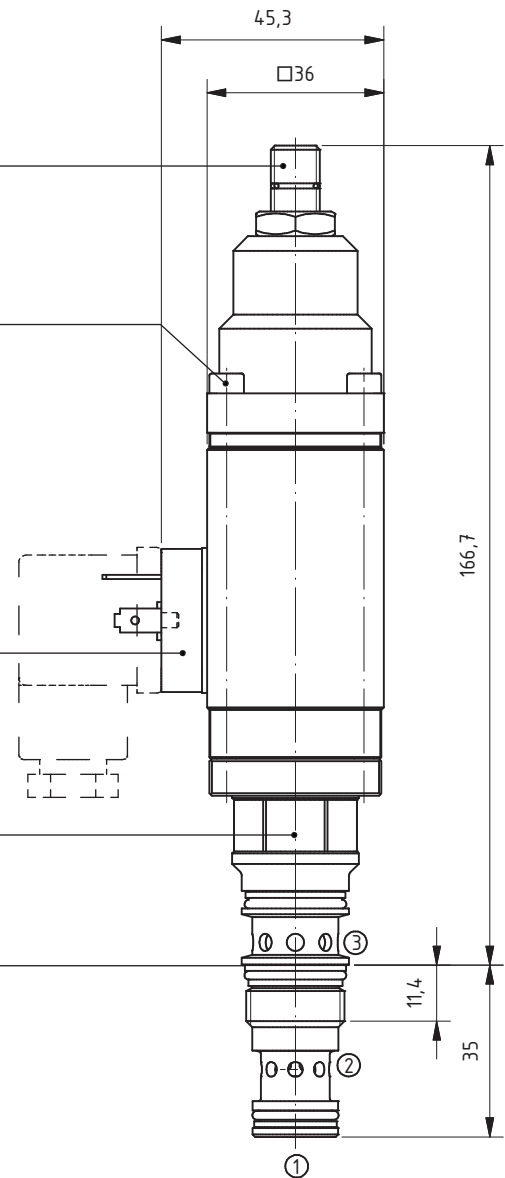
Do not adjust!

installation torque: 3 Nm
SW 3

electric plug acc. to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque 45 Nm
SW 22

locating shoulder T-11A



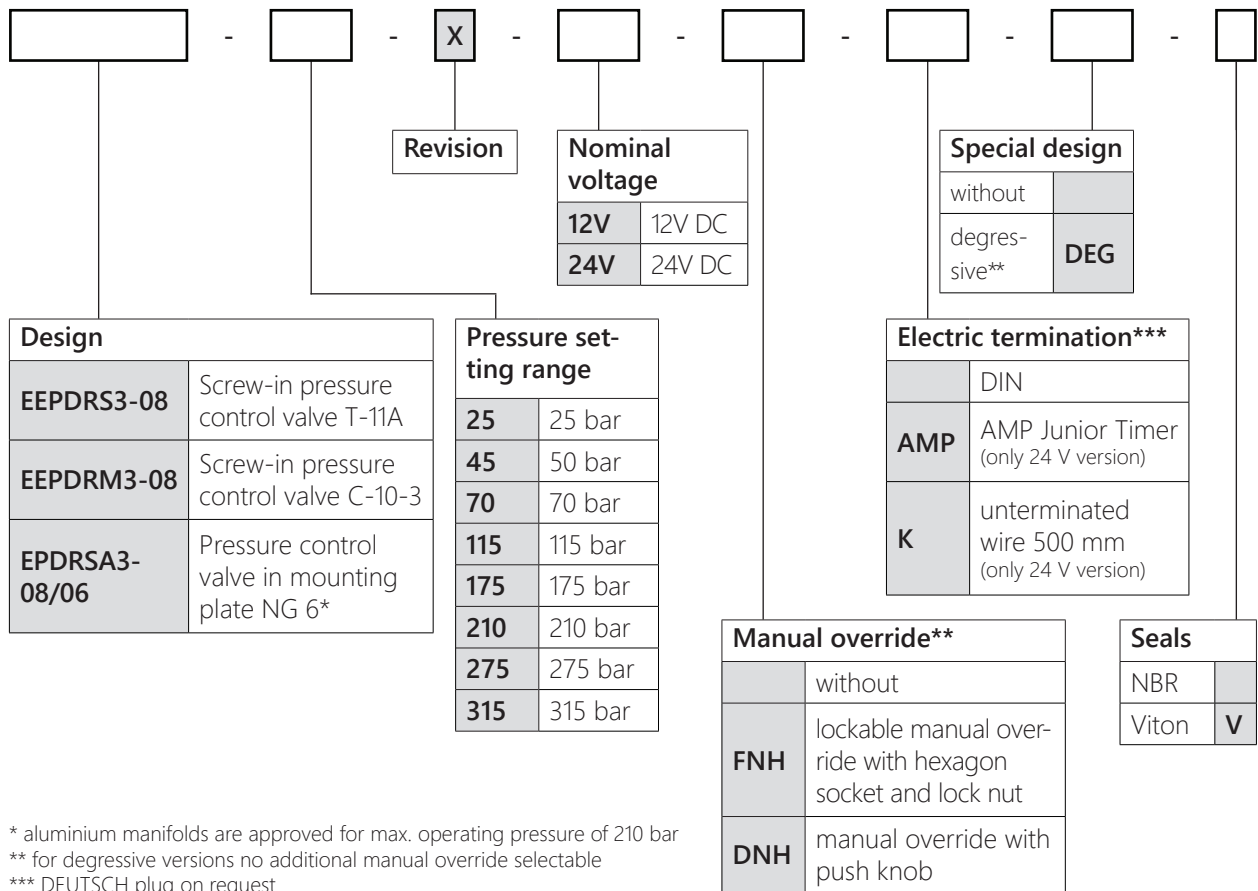
HM4/15 46 02

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

NOTE The degressive version of the valve is also available as EEPDRM3-08 (with cavity C-10-3).

Type code



NOTE FOR FNH



The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure control function of the valve. Be aware that the valve can not fulfil its pressure control function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.
The FNH should never be screwed in and locked when used in conjunction with a running system!

Accessories and additional information

<i>Accessories/ spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Seal kit T-11A (NBR)	405.0038
	Seal kit T-11A (Viton)	405.0039
	Seal kit C-10-3 (NBR)	405.0063
	Seal kit C-10-3 (Viton)	405.0096

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

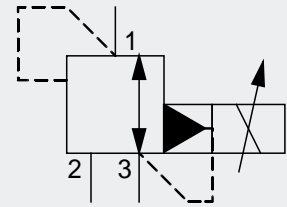
www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Proportional pressure control valve EPDRS3-10



pilot operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 80 l/min
 cavity T-2A



030230_EPDRS3_10_e
 07.2018

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Characteristics

- 3-way proportional pressure control valve in spool design
- screw-in valve for cavity T-2A
- low vibration
- maintenance-free
- degressive version available
- also usable as 2-way proportional pressure reducing valve (after consultation with WEBER-HYDRAULIK ValveTech)

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar, with aluminium manifolds: 210 bar
	Flow rate:	80 l/min
	Pressure setting range:	see type code
	Flow direction:	see hydraulic symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current

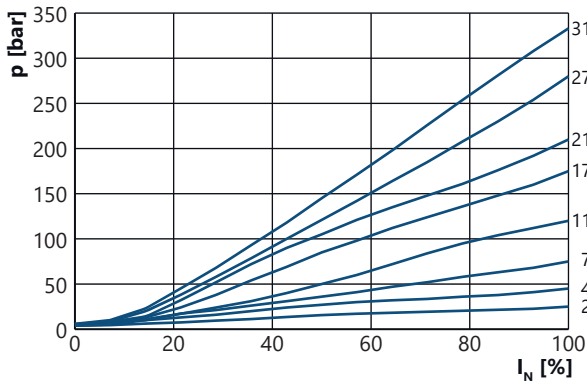
NOTE The pressure on port 3 (T) adds directly to the set pressure. The total pressure of ports A and T must not exceed the maximum operating pressure.

<i>Mechanic</i>	Design:	EEPDRS screw-in valve T-2A, EPDRSA screw-in valve in mounting plate NG 10, pilot operated
	Size:	10
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Maximum acceleration:	5 g, crossways
	Weight:	EEPDRS3-10: 0,86 kg, EPDRSA3-10: 1,69 kg
	Material:	valve parts: steel, mounting plate: aluminium seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel, mounting plate: anodized aluminium

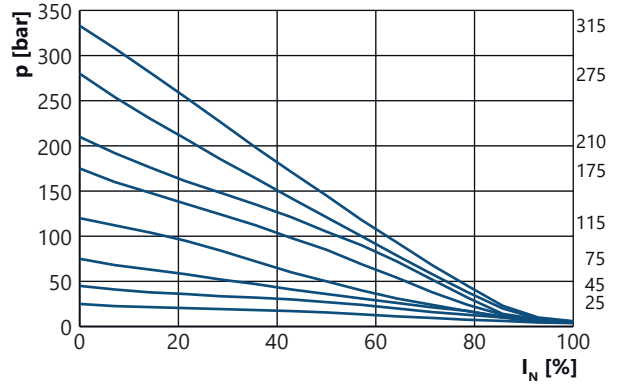
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, unterminated wire
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com

Performance

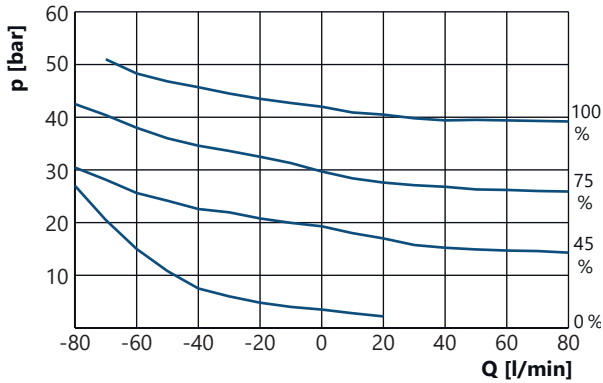
Pressure drop diagram (p/I) EPDRS3-10 at Q = 1,0 l/min



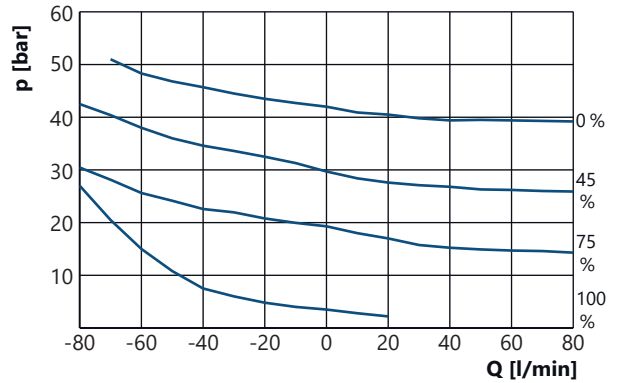
Pressure drop diagram (p/I) EPDRS3-10 degressive version at Q = 1,0 l/min



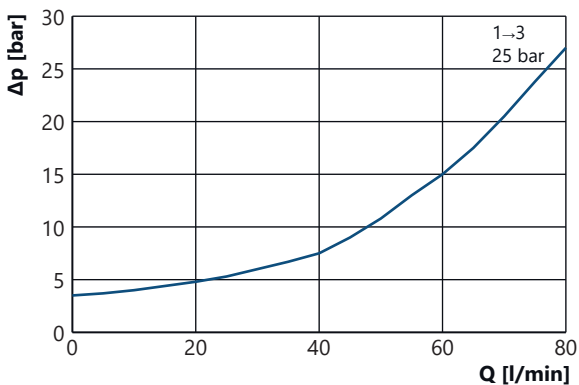
Pressure drop diagram (p/Q) EPDRS3-10 with 25 bar spool at various currents



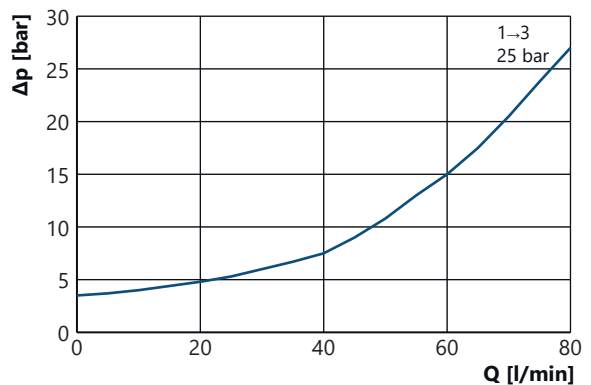
Pressure drop diagram (p/Q) EPDRS3-10 degressive version with 25 bar spool at various currents



Pressure drop diagram ($\Delta p/Q$) EPDRS3-10 at I = 0 mA (currentless)



Pressure drop diagram ($\Delta p/Q$) EPDRS3-10 degressive version at I = 100% (full current)



Test conditions

Oil: HLP 32, temperature: 40 °C (~32 cSt)
Higher viscosities change the characteristic curves.

Dimensions

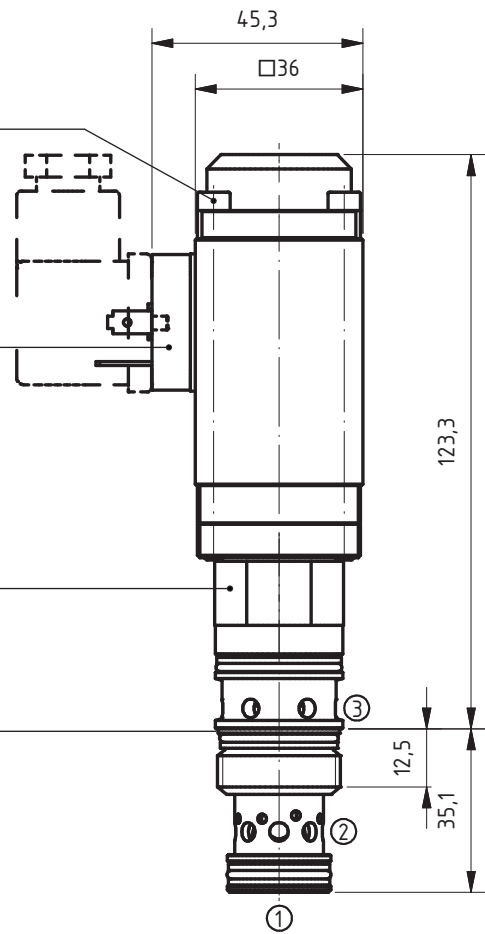
Screw-in valve EEPDRS3-10

installation torque 3 Nm
SW 3

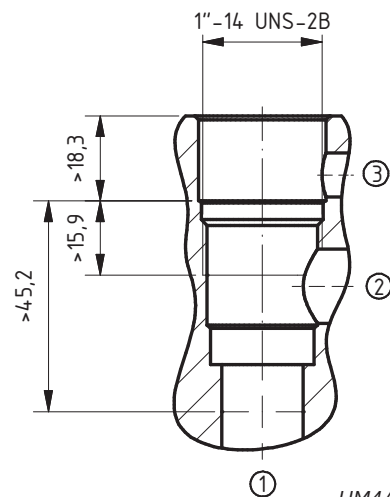
electric plug acc. to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque 65 Nm
SW 24

locating shoulder T-2A



Cavity T-2A



HM4/05 25 01

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as EPDRSA3-10 in a mounting plate NG 10. Dimension sheets are available upon request.

NOTE The valve is also available as degressive version.

Dimensions

Screw-in valve
EEPDRS3-10
degressive



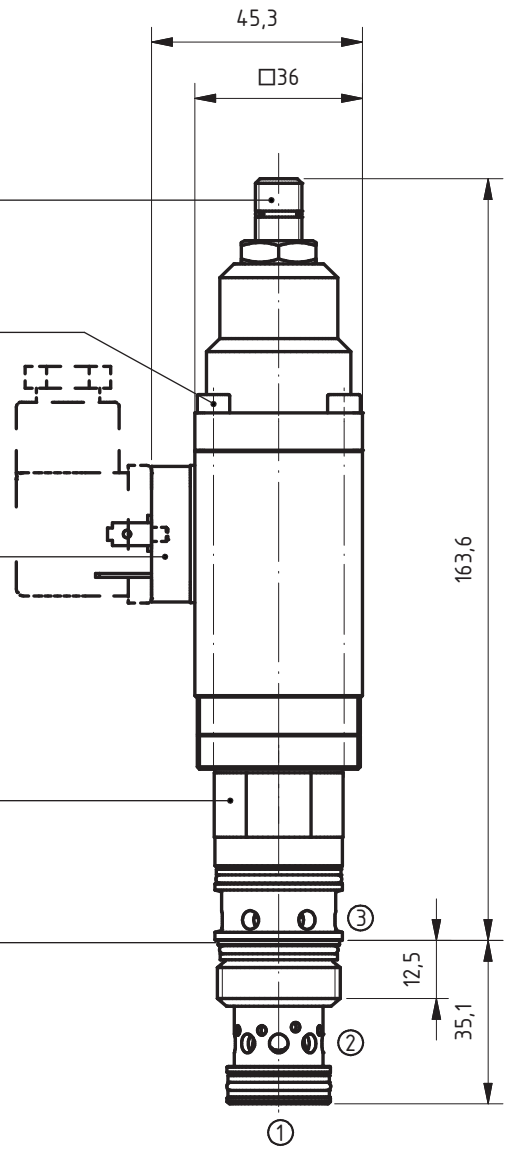
Do not adjust!

installation torque 3 Nm
SW 3

electric plug acc. to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque 65 Nm
SW 22

locating shoulder T-2A

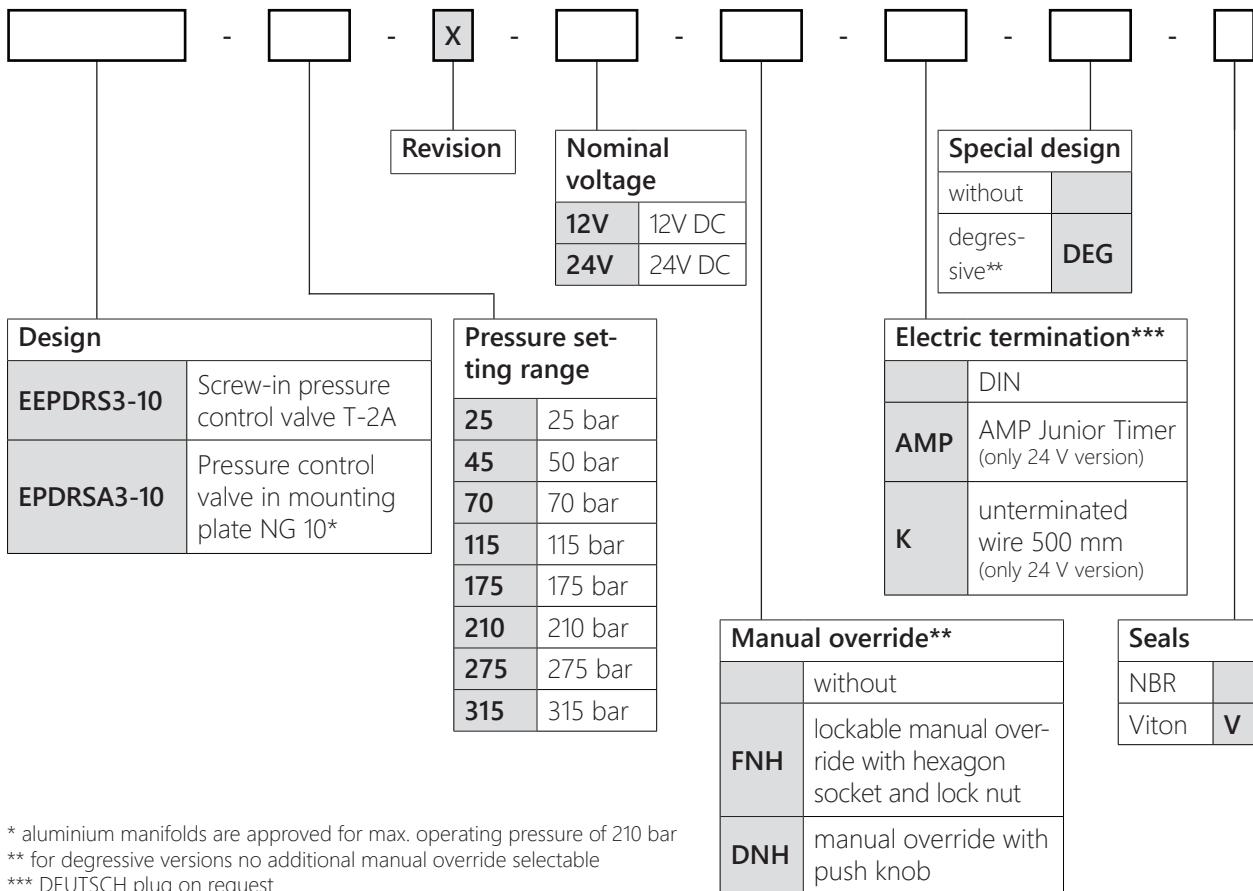


HM4/15 50 14

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

Type code



NOTE FOR FNH



The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure control function of the valve. Be aware that the valve can not fulfil its pressure control function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.

The FNH should never be screwed in and locked when used in conjunction with a running system!

Accessories and additional information

<i>Accessories/ spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Seal kit T-2A (NBR)	405.0042
	Seal kit T-2A (Viton)	405.0043

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

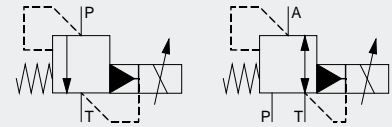
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Pilot-operated proportional valves with large nominal size



pressure relief valves
pressure control valves
pilot operated, solenoid actuated
max. operating pressure 315 bar
max. volume flow 320 l/min



030240_Info16_25_e
07.2018

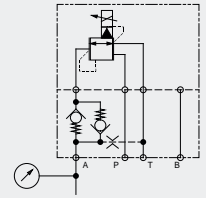
- pilot-operated proportional pressure relief valves or pressure control valves with large nominal size
- modular set-up out of proportional pilot valves and mechanical cartridge valves with cavities up to T-19A
- pressure relief valves up to 760 l/min
- pressure control valves up to 320 l/min
- suitable in-line bodies and subplates up to NG 25
- varied combinations with different technical characteristics possible

- We would be happy to develop with you the ideal solution for your project.

Pressure sequence body ZRV06



pressure control from 0 bar
 operating pressure max. 250 bar
 volume flow max. 30 l/min
 pressure sequence body NG 6



030310_ZRV06_e
 07.2018

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Type code	4
Accessories and additional information	4

Characteristics

- enables pressure control from 0 bar, with pilot operated proportional pressure control valves
- available with nozzle or plug

Technical data

<i>Hydraulic</i>	Operating pressure max.:	250 bar
	Flow rate max.:	30 l/min
	Flow direction:	from A to T, from P to A
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Opening pressure:	to A (pre-load pressure): 6 bar from A (check valve): 2 bar

NOTE The use of the pressure sequence body ZRV reduces the max. pressure control-range of the proportional pressure control valve to approximately 2 bar respectively 6 bar.

NOTE The pressure control range can not be below tank pressure.

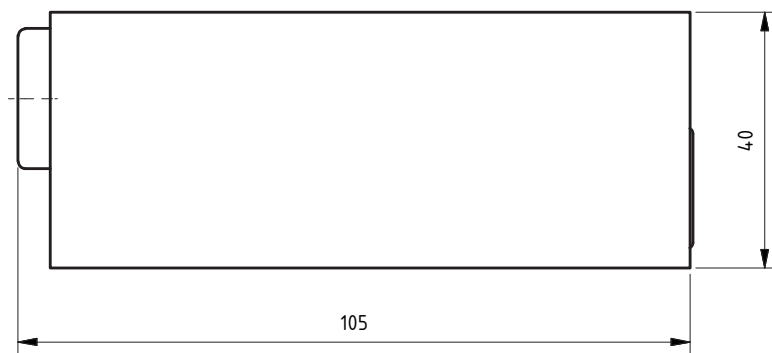
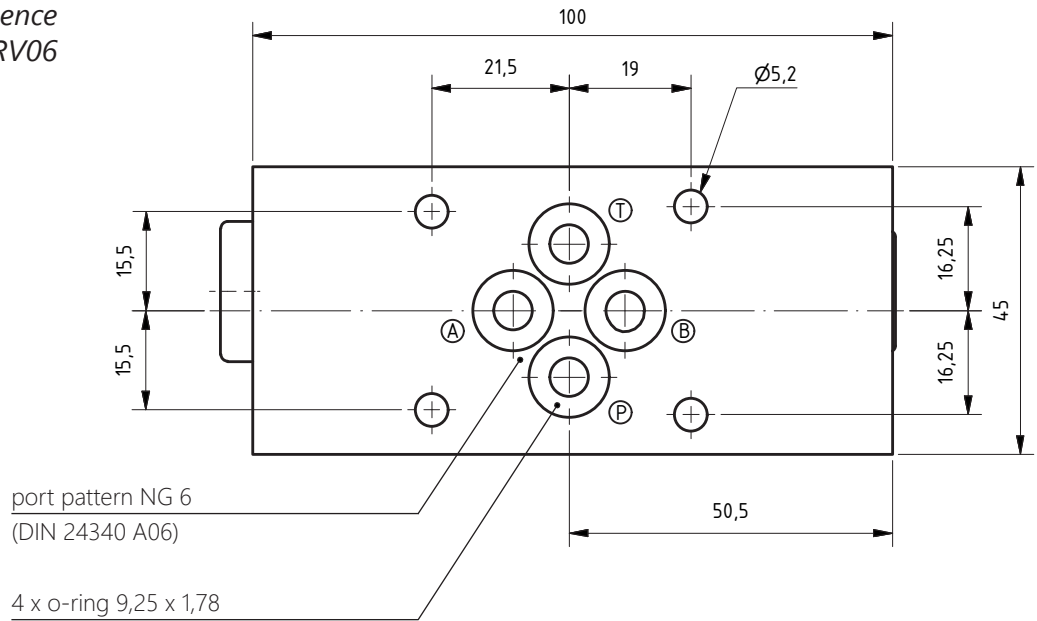
<i>Mechanic</i>	Design:	pressure sequence body ZRV for pressure control valves
	Size:	06
	Fluid temperature:	-20 °C to +70 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Weight:	0,47 kg
	Material:	valve parts: steel, pressure sequence body: aluminium, seals: NBR
Surface protection:	pressure sequence body: anodized aluminium	

Performance

Performance graphs upon request.

Dimensions

Pressure sequence
body ZRV06



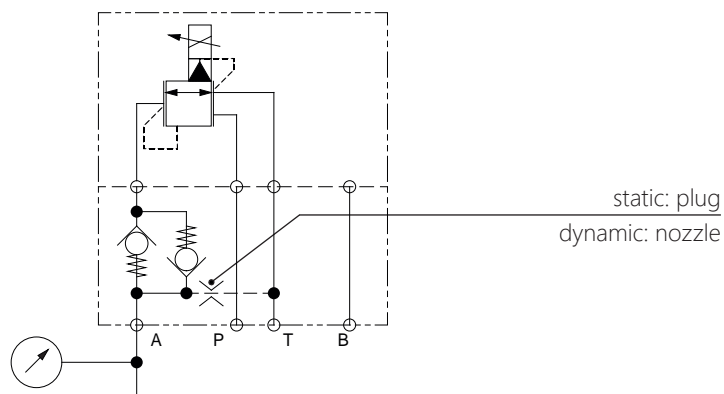
HM4/020602

NOTE For a detailed drawing of the port pattern please see chapter 11 „*general information*“ under the category „*port patterns*“ or our online catalogue at www.weber-hydraulik.com.

NOTE The valve must be mounted with fitting screws according to DIN EN ISO 4762 M5 x 50 - 9.8. Installation torque: 4,5 Nm, screw-in depth min. 10 mm.

Symbol

Example with
pressure control valve



Type code

ZRV06	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	X								
Pressure sequence body NG 6		Pre-load pressure		Nozzle		Revision									
		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center; border-right: 1px solid black;">2</td> <td>2 bar</td> </tr> <tr> <td style="text-align: center; border-right: 1px solid black;">5</td> <td>6 bar</td> </tr> </table>	2	2 bar	5	6 bar		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center; border-right: 1px solid black;">B</td> <td>with nozzle (0,5 mm)</td> </tr> <tr> <td style="text-align: center; border-right: 1px solid black;">X</td> <td>with plug</td> </tr> </table>	B	with nozzle (0,5 mm)	X	with plug			
2	2 bar														
5	6 bar														
B	with nozzle (0,5 mm)														
X	with plug														

Accessories and additional information*Accessories/
spare parts***Article:**

4 x o-ring 9,25 x 1,78 (NBR)

Article number:

401.0128

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

www.weber-hydraulik.com
 info.de-k@weber-hydraulik.com

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PVDE2-11

direct operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 25 l/min
cavity PVDE2-11 or T-13A

PVDE2-11 acc. to ATEX-directive

direct operated, solenoid operated
operating pressure max. 250 bar
volume flow max. 20 l/min
cavity PVDE2-11

PVDES2-14

direct operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 80 l/min
cavity T-5A

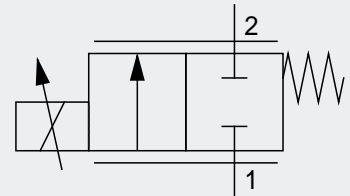
PVDES2-18

direct operated, solenoid operated
operating pressure max. 210 bar
volume flow max. 195 l/min
cavity T-16A

Proportional throttle valve PVDE_2-11



direct operated, solenoid operated
 operating pressure max. 350 bar
 volume flow max. 25 l/min
 cavity PVDE2-11 or T-13A



040110_PVDE_2-11_e
 07.2018

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Characteristics

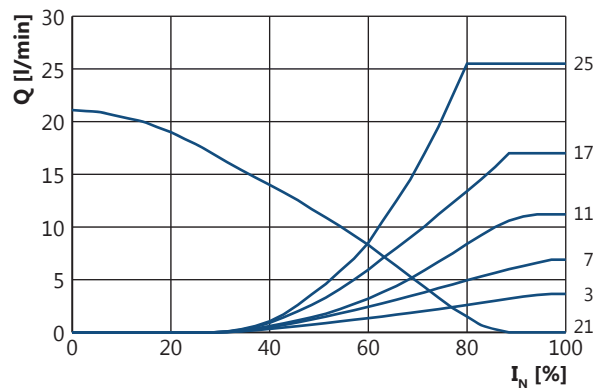
- proportional 2/2-way throttle valve
- normally open or normally closed models
- slip-in valve for cavity PVDE2-11
- or screw-in valve for cavity T-13A
- maintenance-free
- also available with EX-plug according to the ATEX-directive for the use in potentially explosive atmospheres (see datasheet 040111_PVDE_2-11_EX_e)

Technical data

<i>Hydraulic</i>	Operating pressure max.:	350 bar, differential pressure control Δp max. 25 bar
	Flow rate:	3, 7, 11, 17 l/min, 21 l/min (only SO), 25 l/min (only SG) at differential pressure control $\Delta p = 10$ bar
	Performance limit:	max. nominal flow rate also at a higher differential pressure control Δp
	Flow direction:	1 to 2 (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3 % with optimized PMW-signal*
	Hysteresis:	< 5 % with optimized PMW-signal*
		* at 20 % to 100 % of the nominal valve current
	<hr/>	
<i>Mechanic</i>	Design :	PVDE slip-in design, PVDR in in-line body, PVDEZ in sandwich body or PVDES screw-in design, direct operated
	Size:	11
	Fluid temperature:	-20 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	3 g
	Weight:	PVDE2-11: 0,61 kg, PVDR2-11: 1,27 kg, PVDZ2-06-11: 1,81 kg, PVDES2-11: 0,72 kg
	Material:	valve parts and manifold: steel seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel
	<hr/>	
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4,0 Ω (12 V), 25,0 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer or unterminated wire
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

Flow rate diagram (Q/I) PVDE2-11 at $\Delta p = 10$ bar



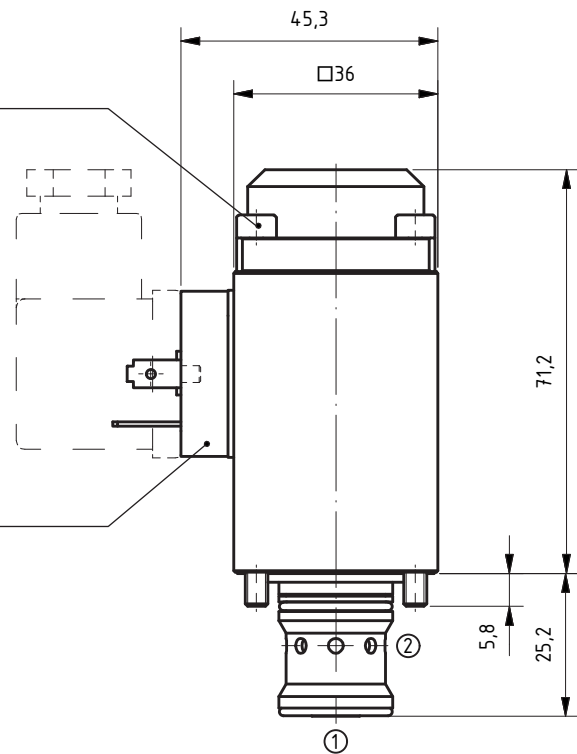
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

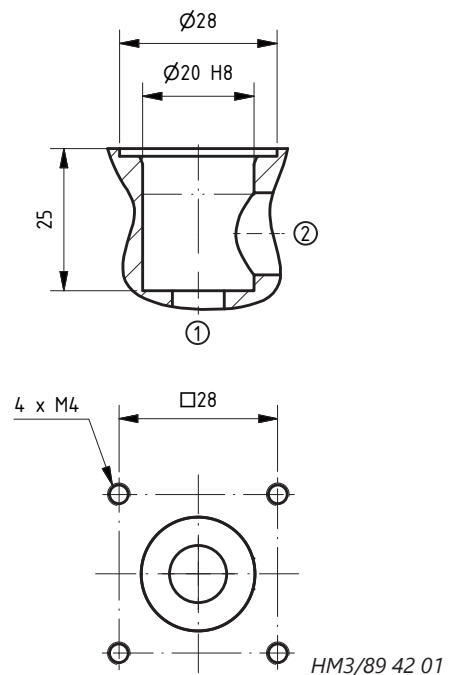
Slip-in valve
PVDE2-11

installation torque: 3 Nm
SW 3

electric plug according to
DIN EN 175301-803
(formerly DIN 43650) shape A



Cavity PVDE2-11

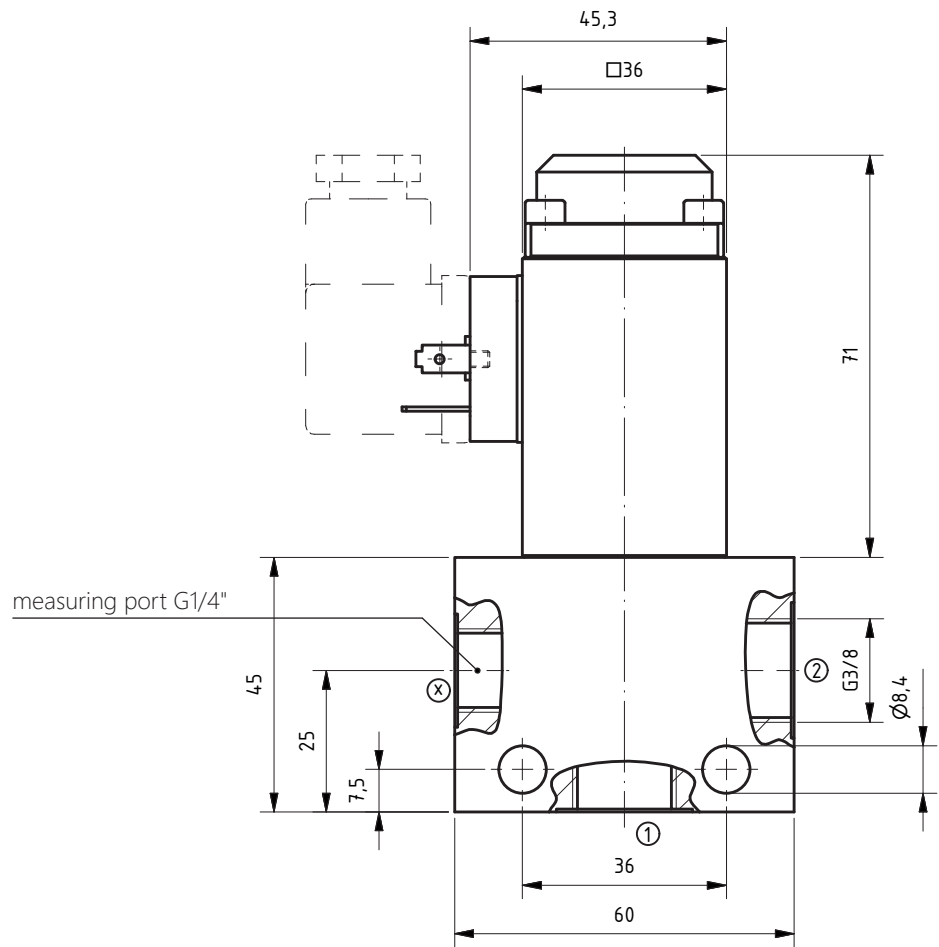
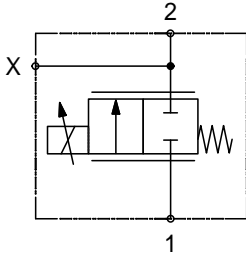


NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE The slip-in valve is also available as PVDZ2-11/... in a sandwich body. Please contact us for further information.

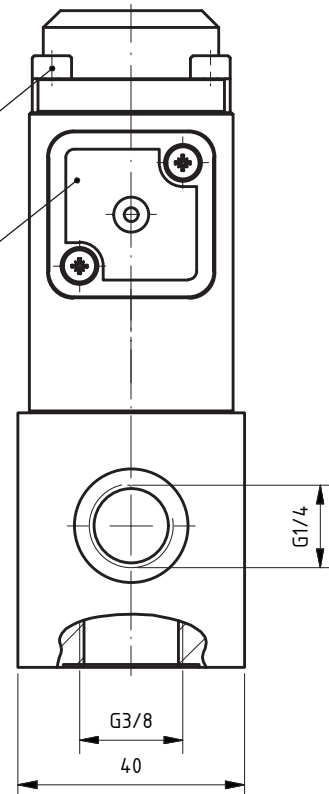
Dimensions

Slip-in valve in
in-line body G3/8"
PVDR2-11



installation torque: 3 Nm
SW 3

electric plug according to
DIN EN 175301-803
(formerly DIN 43650) shape A



H4/94 09 01

Dimensions

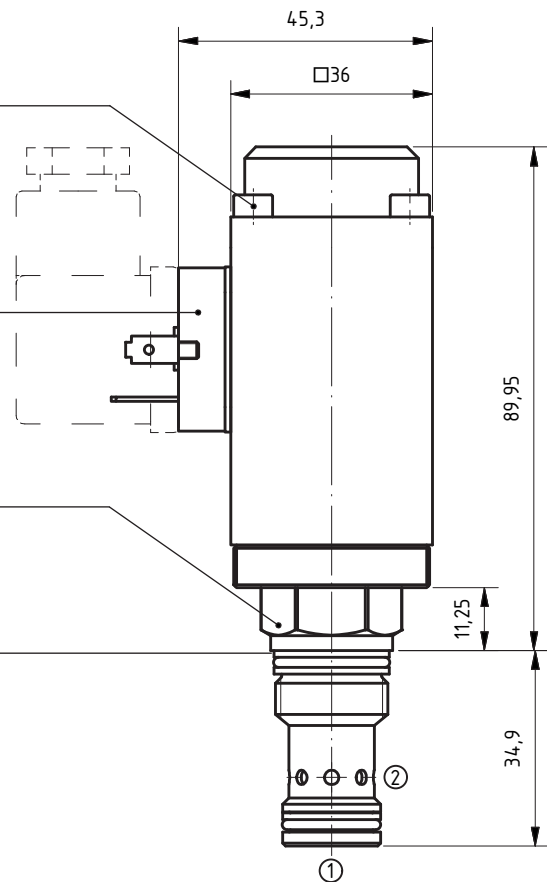
Screw-in valve PVDES2-11

installation torque: 3 Nm
SW 3

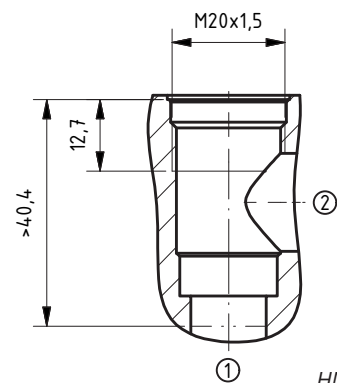
electric plug according to
DIN EN 175301-803
(formerly DIN 43650) shape A

installation torque: 45 Nm
SW 22

locating shoulder T-13A



Cavity T-13A

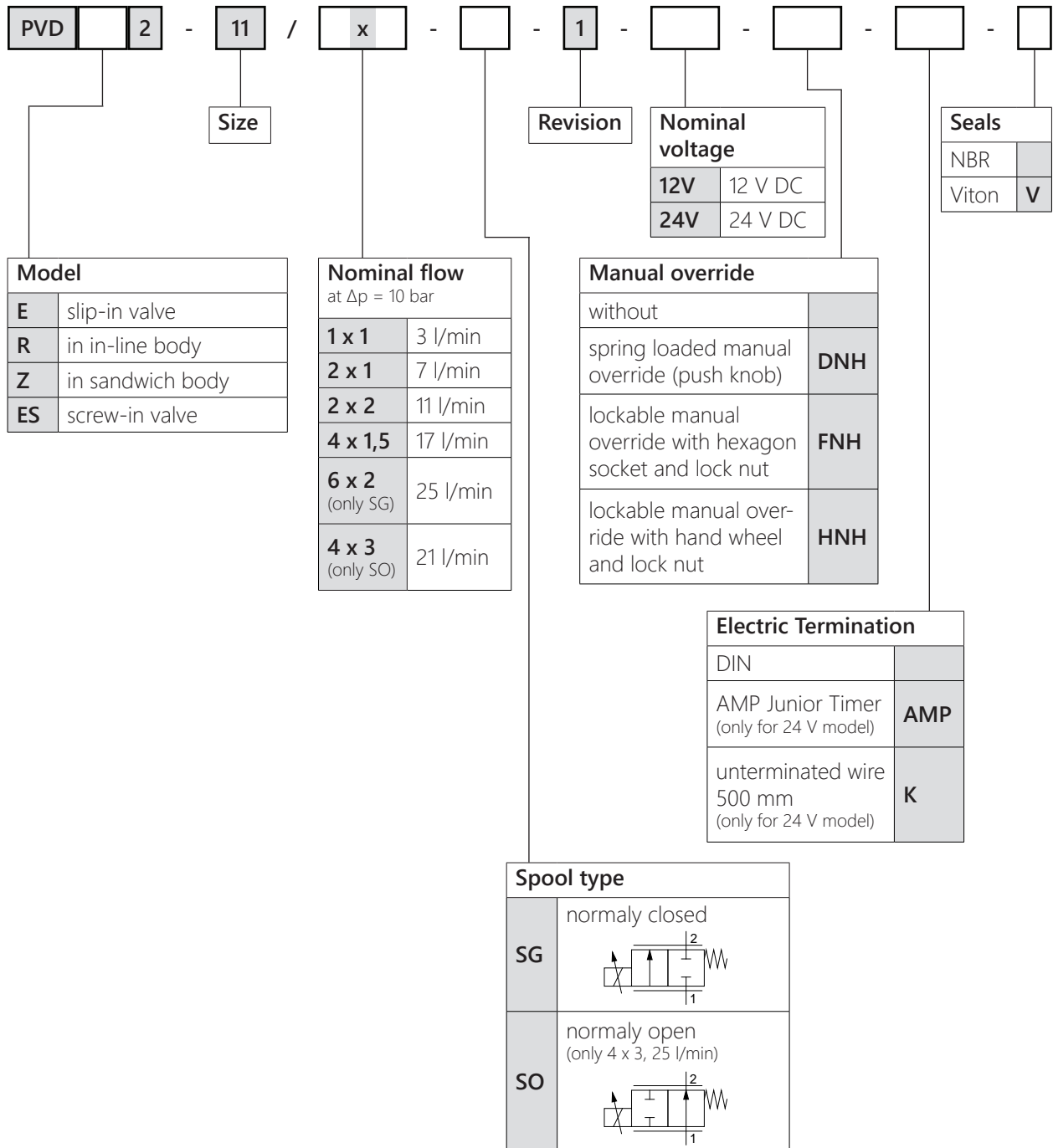


HM4/04 44 01

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE We also provide a variety of suitable manifolds for T-13A. Please contact us for further assistance.

Type code



Accessories and additional information

<i>Accessories/ spare parts</i>	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape A, black	149.0007
	Socket connector DIN EN 175301-803*, shape A, grey	149.0008
	Seal kit PVDE2-11 (NBR)	405.0020
	Seal kit PVDE2-11 (Viton)	405.0068
	Seal kit T-13A (NBR)	405.0013
	Seal kit T-13A (Viton)	405.0037
	a variety of alternative solenoids with manual overrides are available on request	

* (formerly DIN 43650)

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

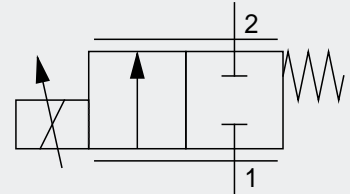
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Proportional throttle valve PVDE_2-11-EX according to ATEX-directive



direct operated, solenoid operated
 operating pressure max. 250 bar
 volume flow max. 20 l/min
 cavity PVDE2-11



040111_PVDE_2-11_EX_e
 07.2018



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Characteristics

- proportional 2/2-way throttle valve in spool design
- according to the ATEX-directive for the use in potentially explosive atmospheres
- normally open or normally closed models
- slip-in valve for cavity PVDE2-11
- maintenance-free

Technical data

<i>Hydraulic</i>	Operating pressure max.:	250 bar, differential pressure control Δp max. 25 bar
	Flow rate:	2,4, 5,6, 8,8, 13,6 l/min; 16,8 l/min (only SO), 20 l/min (only SG) at differential pressure control $\Delta p = 10$ bar
	Performance limit:	max. nominal flow rate also at a higher differential pressure control Δp
	Flow direction:	1 to 2, (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal**
		* at 20 % to 100 % of the nominal valve current
<i>Mechanic</i>	Design :	PVDE slip-in design, PVDR in in-line body, or PVDEZ in sandwich body, direct operated by solenoids
	Size:	11
	Fluid temperature:	-30 °C to +50 °C
	Ambient temperature:	-30 °C to +50 °C
	Storage temperature:	-30 °C to +50 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	3 g crossways
	Weight:	PVDE2-11: 2,6 kg, PVDR2-11: 3,27 kg, PVDZ2-06-11: 3,8 kg
	Material:	valve parts and manifold: steel seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel
<i>Electric</i>	Nominal voltage:	24 V DC
	Nominal valve current:	0,6 A
	Nominal resistance (R20):	23,1 Ω
	Power consumption:	15,6 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 85 Hz (depending on application)
	Protection system:	IP67 according to IEC/EN 60529, IP69K according to DIN 40050-9 with intended assembling
	Protection class:	III according to DIN VDE 0580
	Electric termination:	15 meter connecting cable FL4G11Y 2x1,5 mm ² with explosive protection acc. to the ATEX-directive IECEx/ATEX  0637,  II 2G Ex mb IIC T4 Gb, II 2D Ex mb IIIC T130° Db in acc. with EN 60079-0:2012/ IEC 60079-0:2011, EN 60079-18:2009/ IEC 60079-18:2009

Technical Data

Electric EC Type Examination Cert.: IBExU 13 ATEX 1040 X, IECEx IBE 13.00117X

Electronic controllers: see chapter 6 *“electronics and sensors”* as well as our online catalogue at www.weber-hydraulik.com.



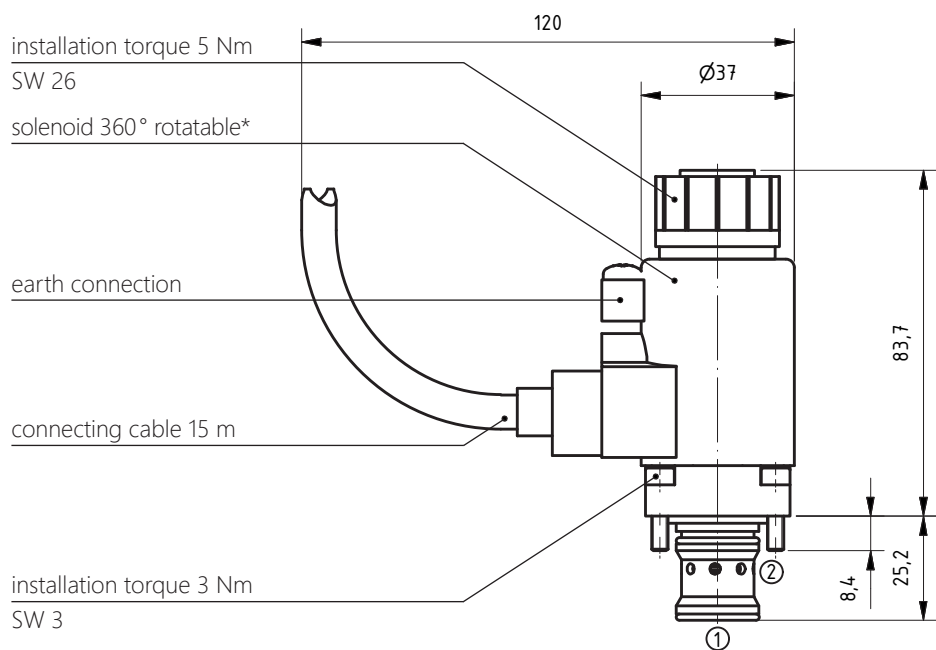
Electronics that are used in explosion protected areas must be Ex-certified!

Performance

Performance graphs upon request

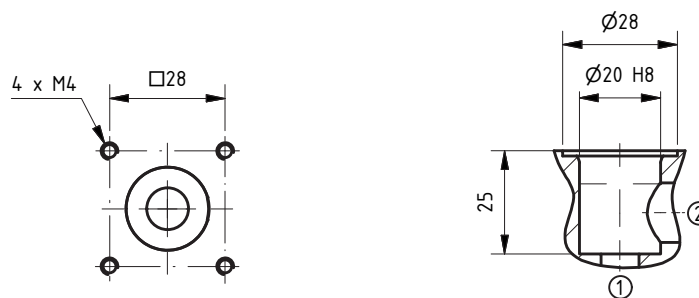
Dimensions

*Slip-in valve
PVDE2-11-EX*



* with EC Type Examination Certificate
IBExU 13 ATEX 1040 X, IECEx IBE 13.00117X

Cavity PVDE2-11



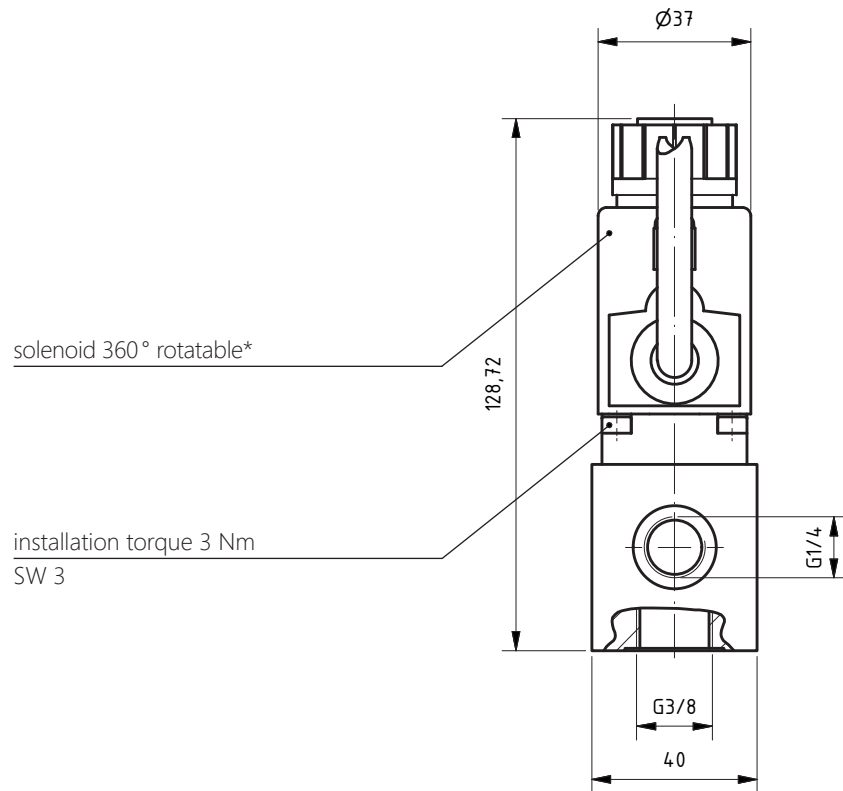
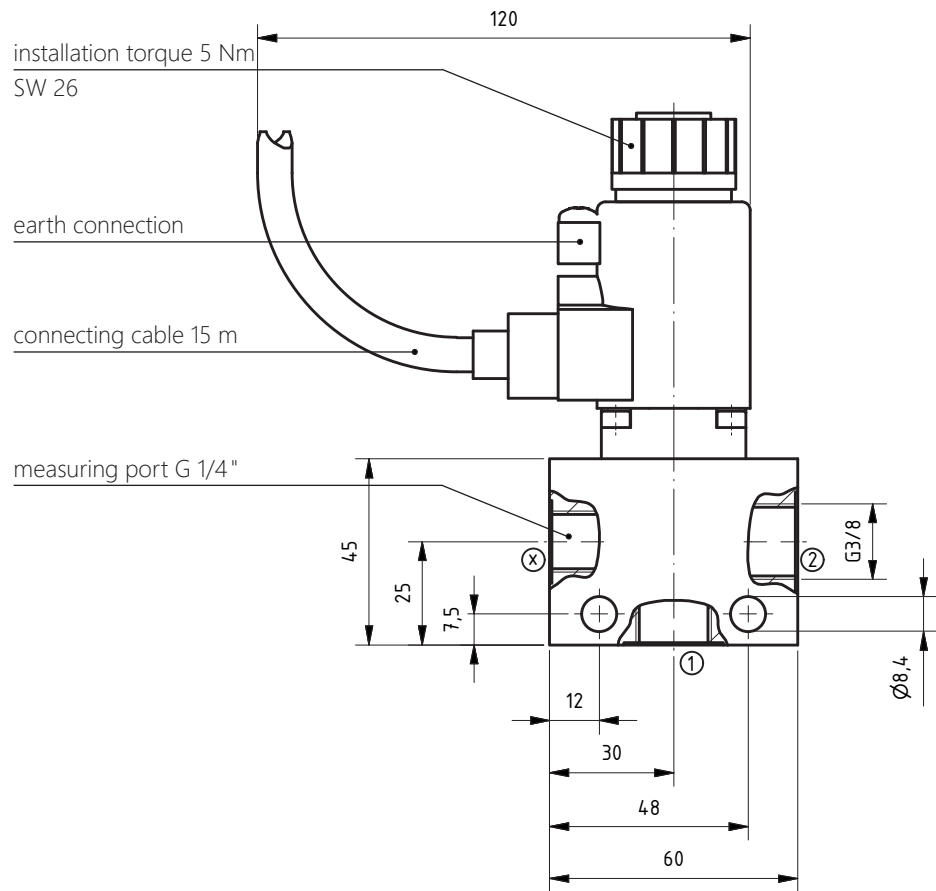
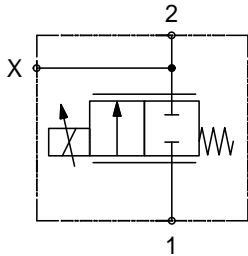
HM4/10 12 08

NOTE For a detailed drawing of the cavity please see chapter 11 *„general information”* or our online catalogue at www.weber-hydraulik.com.

NOTE The slip-in valve is also available as PVDZ2-11/...EX in a sandwich body. Dimension sheets are available upon request. Please contact us for further information.

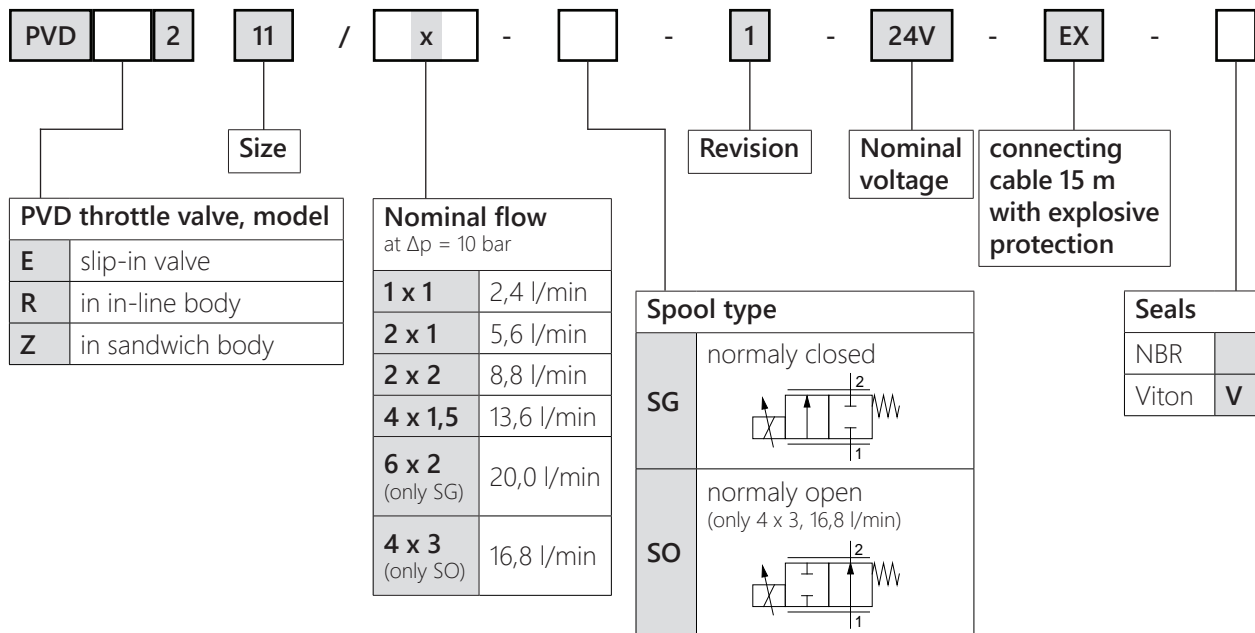
Dimensions

*Slip-in valve in
in-line body G 3/8"*
PVDR2-11_EX



* with EC Type Examination Certificate
IBExU 13 ATEX 1040 X, IECEx IBE 13.00117X

Type code



Accessories and additional information

Accessories/
spare parts

Part:	Article number:
Seal kit PVDE2-11 (NBR)	405.0020
Seal kit PVDE2-11 (Viton)	405.0068

NOTE



For the appropriate electronic controllers, see chapter 6 „electronics and sensors“ as well as our online catalogue at www.weber-hydraulik.com. Please consider whether the electronic controller will be located inside or outside of the explosion protected area. Electronics that are used in explosion protected areas must be certified according to the ATEX-directive!

Set-up

The solenoid coil may only be operated when installed on the appropriate valve. **Further information can be found in the provided operation manual of the solenoid. When operating the valve, information contained in the provided operation manual of the solenoid, as well as our general operating manual- must be followed precisely!**

Single or multiple mounting of the valve in single operation must have a minimum size of 46 x 46 x 66 mm and a base plate $\geq 46 \times 30 \times 66$ mm. The material must be Fe or material with the same or better thermal conductivity.

The installation of these electrical components must be carried out by an electrician with adequate qualifications.

Each solenoid must be short-circuit fuse protected suitable to its nominal valve current (max. $3 \times I_N$ according to IEC/EN 60127-2). This could, for example, be a motor protecting switch with thermal quick release and short-circuit protection (adjusted to the rated current).

The installed fuse must have a voltage rating equal or larger than the rated voltage of the solenoid, and the fuse should be installed in the associated power supply. If this is not possible, the fuse can be installed separately if the appropriate safety instructions are carefully considered.

When connecting the fuse to the circuit, it is of utmost importance to consider whether the fuse will be located inside, or outside of the explosion protected area. If the fuse will be connected to the circuit inside of the explosion protected area, then it must be mounted in an Ex-certificated terminal box.

For equipotential bonding, a ground terminal is provided on the outside of the solenoid.

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

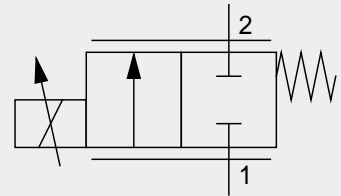
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Proportional throttle valve PVDES2-14



direct operated, solenoid operated
 operating pressure max. 350 bar
 volume flow max. 80 l/min
 cavity T-5A



040120_PVDES2-14_e
 07.2018

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Characteristics

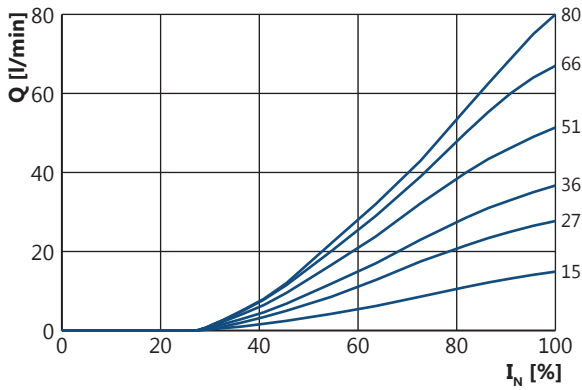
- proportional 2/2-way throttle valve in spool design
- normally open or normally closed models
- screw-in valve for cavity T-5A
- maintenance-free
- rotatable and replaceable solenoid coil

Technical data

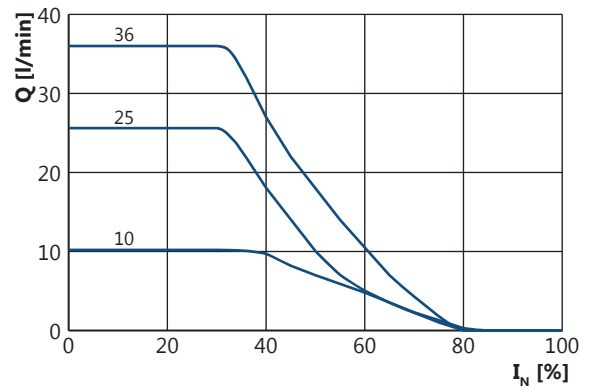
<i>Hydraulic</i>	Operating pressure max.:	350 bar, differential pressure control Δp max. 25 bar
	Flow rate:	see type code at differential pressure control $\Delta p = 10$ bar
	Performance limit:	max. nominal flow rate also at a higher differential pressure control Δp
	Flow direction:	1 to 2 (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
		* at 20 % to 100 % of the nominal valve current
	<i>Mechanic</i>	Design :
Size:		14
Fluid temperature:		-20 °C to +65 °C
Ambient temperature:		-20 °C to +50 °C
Storage temperature:		-30 °C to +60 °C (non-condensing)
Installation position:		any
Maximum acceleration:		5 g
Weight:		PVDES: 0,7 kg, PVDR: 2,1 kg
Material:		valve parts and manifolds: steel seals: NBR, Viton optional
Surface protection:		exterior parts: zinc coated steel
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	12 V: DIN and AMP 2,3 A, Deutsch 2,0 A 24 V: DIN and AMP 1,1 A
	Nominal resistance (R20):	12 V: DIN and AMP 2,7 Ω , Deutsch 3,85 Ω 24 V: DIN and AMP 12,6 Ω
	Power consumption:	23 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, Deutsch connector
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

Flow rate diagram (Q/I) PVDES2-14 at $\Delta p = 10$ bar, normally closed



Flow rate diagram (Q/I) PVDES2-14 at $\Delta p = 10$ bar, normally open



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Screw-in valve
PVDES2-14

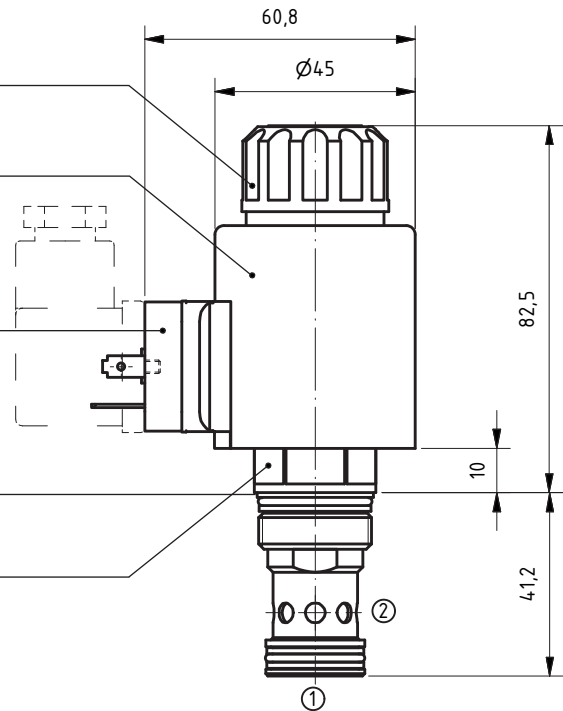
installation torque: 4 Nm

solenoid coil,
rotatable 360°

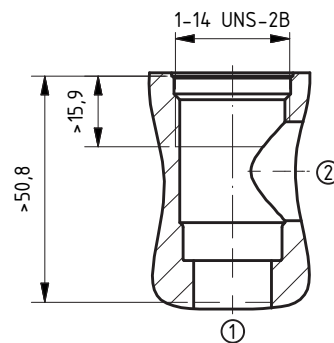
electric plug according
to DIN EN 175301-803
(formerly DIN 43650)
shape A

locating shoulder T-5A

installation torque: 60 to 65 Nm
SW 24



Cavity T-5A

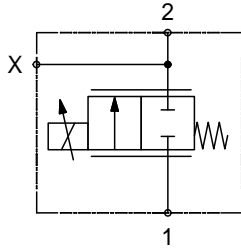


HM4/10 18 10

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

Dimensions

Screw-in valve in
in-line body G1/2"
PVDR2-14

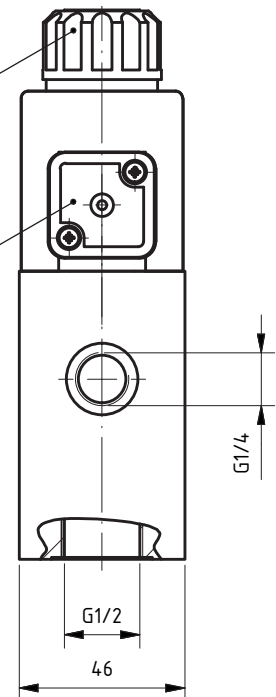
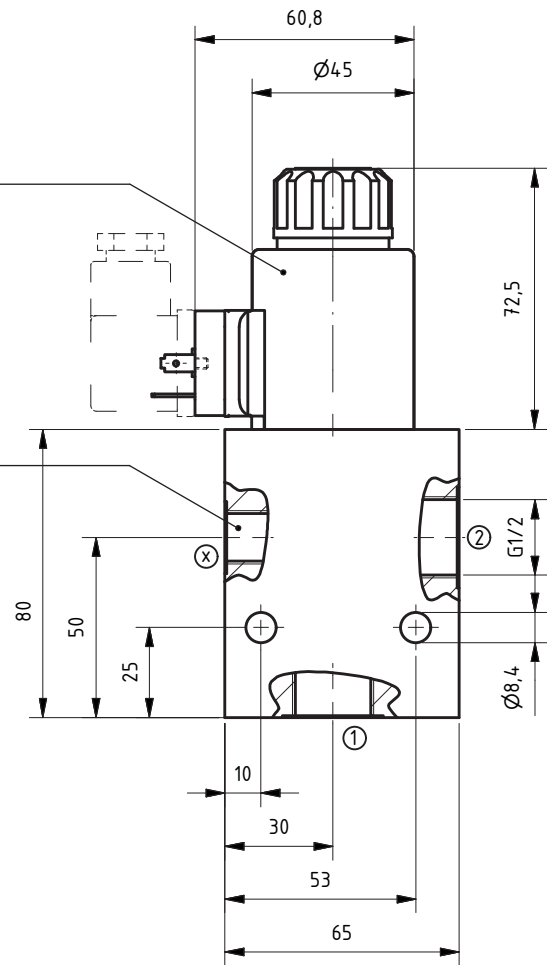


solenoid coil,
rotatable 360°

measuring port G1/4"

installation torque: 4 Nm

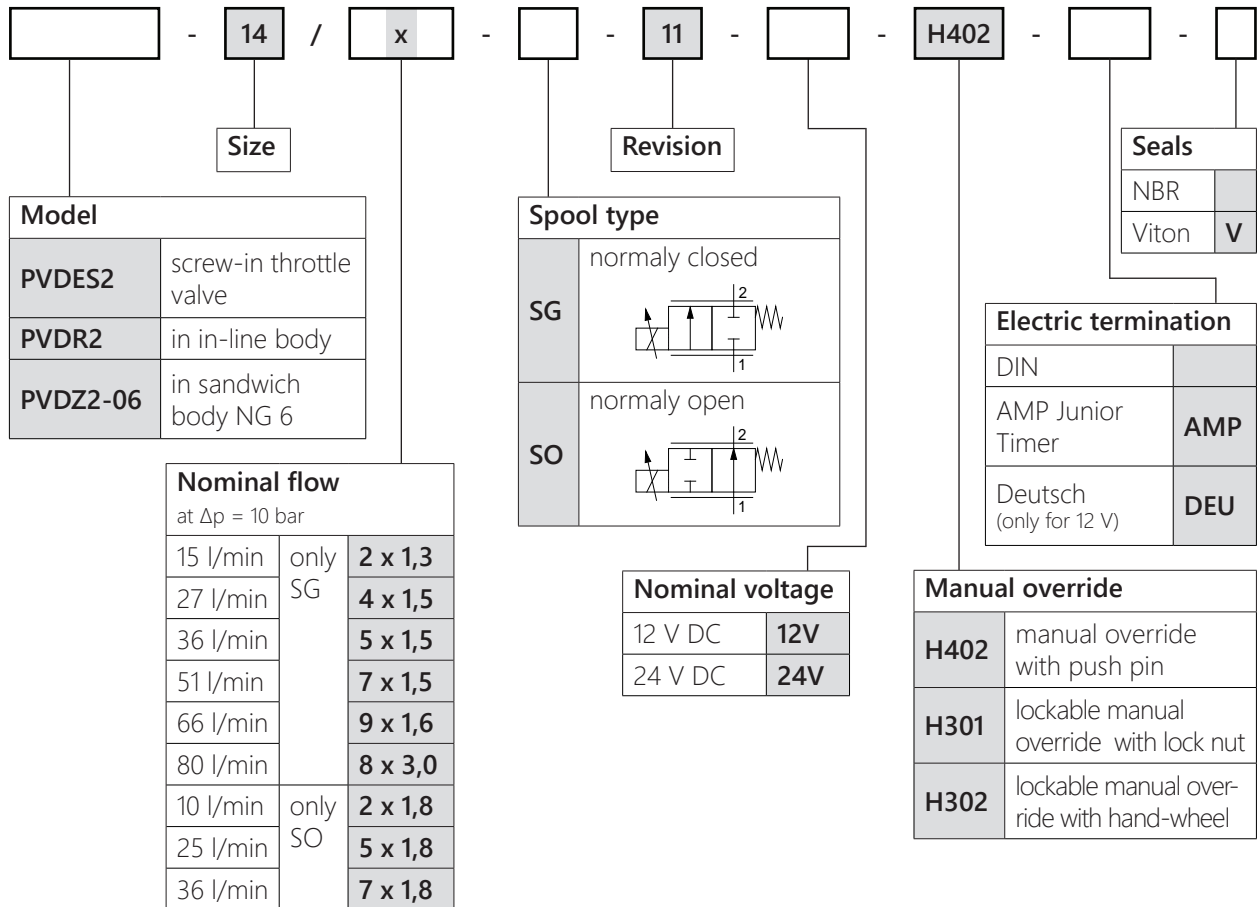
electric plug according
to DIN EN 175301-803
(formerly DIN 43650)
shape A



HMA/14 11 28

NOTE The valve is also available as PVDZ2-06 in a sandwich body. Please contact us for further information.

Type code



Accessories and additional information

Accessories/ spare parts	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape A, black	149.0007
	Socket connector DIN EN 175301-803*, shape A, grey	149.0008
	Seal kit T-5A (NBR)	405.0040
	Seal kit T-5A (Viton)	405.0041
	Coil 12 V, DIN EN 175301-803*, shape A	147.0011
	Coil 24 V, DIN EN 175301-803*, shape A	147.0009
	Coil 12 V, AMP Junior Timer	147.0007
	Coil 24 V, AMP Junior Timer	147.0010
	Coil 12 V, Deutsch connector	147.0012

* (formerly DIN 43650)

NOTE For the appropriate electronic controllers, see chapter 6 „electronics and sensors“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „general operating manual“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

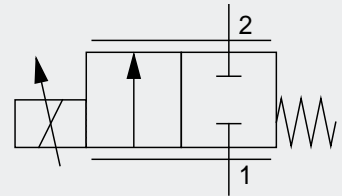
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info.de-k@weber-hydraulik.com

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Proportional throttle valve PVDES2-18



direct operated, solenoid operated
 operating pressure max. 210 bar
 volume flow max. 195 l/min
 stepped bore T-16A



040130_PVDES2-18_e
 01.2016

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Characteristics

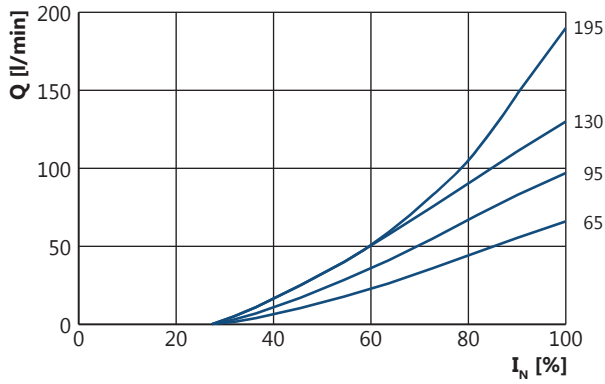
- proportional 2/2-way throttle valve in spool design
- normally open or normally closed models
- screw-in valve for stepped bore T-16A
- high flow rate
- maintenance-free
- rotatable and replaceable solenoid coil

Technical data

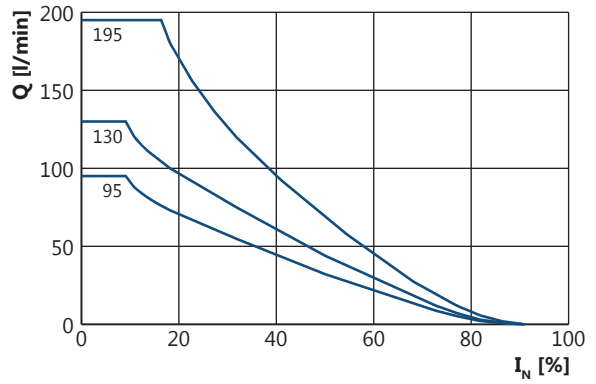
<i>Hydraulic</i>	Operating pressure max.:	210 bar (dynamic) differential pressure control Δp max. 25 bar
	Flow rate:	65, 95, 130, 195 l/min at differential pressure control $\Delta p = 10$ bar
	Performance limit:	max. nominal flow rate also at a higher differential pressure control Δp
	Flow direction:	1 to 2 (2 to 1 not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3% with optimized PMW-signal*
	Hysteresis:	< 5% with optimized PMW-signal*
		* at 20% to 100% of the nominal valve current
<i>Mechanic</i>	Design :	screw-in valve, direct operated by solenoids
	Size:	T-16A stepped bore
	Fluid temperature:	-20 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	3 g
	Weight:	1,9 kg including coil
	Material:	valve parts: steel seals: NBR, Viton optional
Surface protection:	exterior parts: zinc coated steel	
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	2,2 A (12 V), 1,1 A (24 V)
	Nominal resistance (R20):	3,2 Ω (12 V), 13,4 Ω (24 V)
	Power consumption:	20 W (12V), 21 W (24V) at nominal valve current
	Shifting time:	100% ED
	Control command:	PWM-signal
	PWM-frequency:	typically 85 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A
	Electronic controllers:	see chapter 6 "electronics and sensor technology" as well as our online catalogue at www.weber-hydraulik.com .

Performance

Flow rate diagram (Q/I) PVDES2-18 at $\Delta p = 10$ bar, normally closed



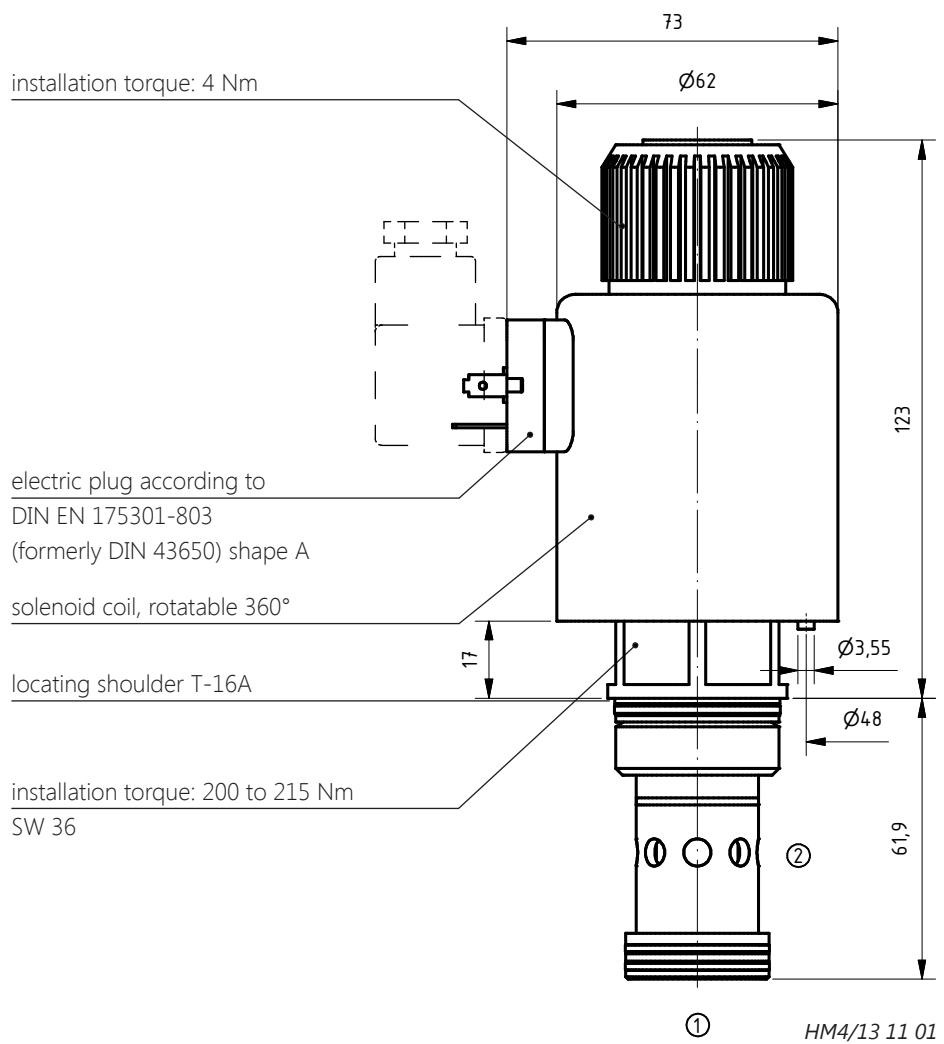
Flow rate diagram (Q/I) PVDES2-18 at $\Delta p = 10$ bar, normally open



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

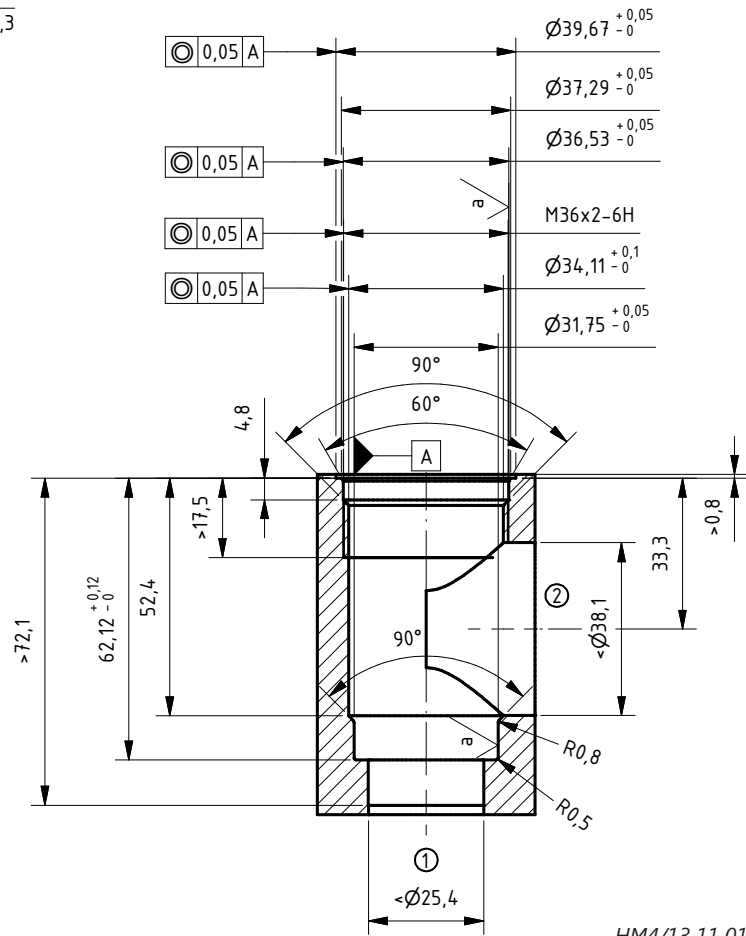
Screw-in valve
PVDES2-18



Dimensions

Cavity T-16A

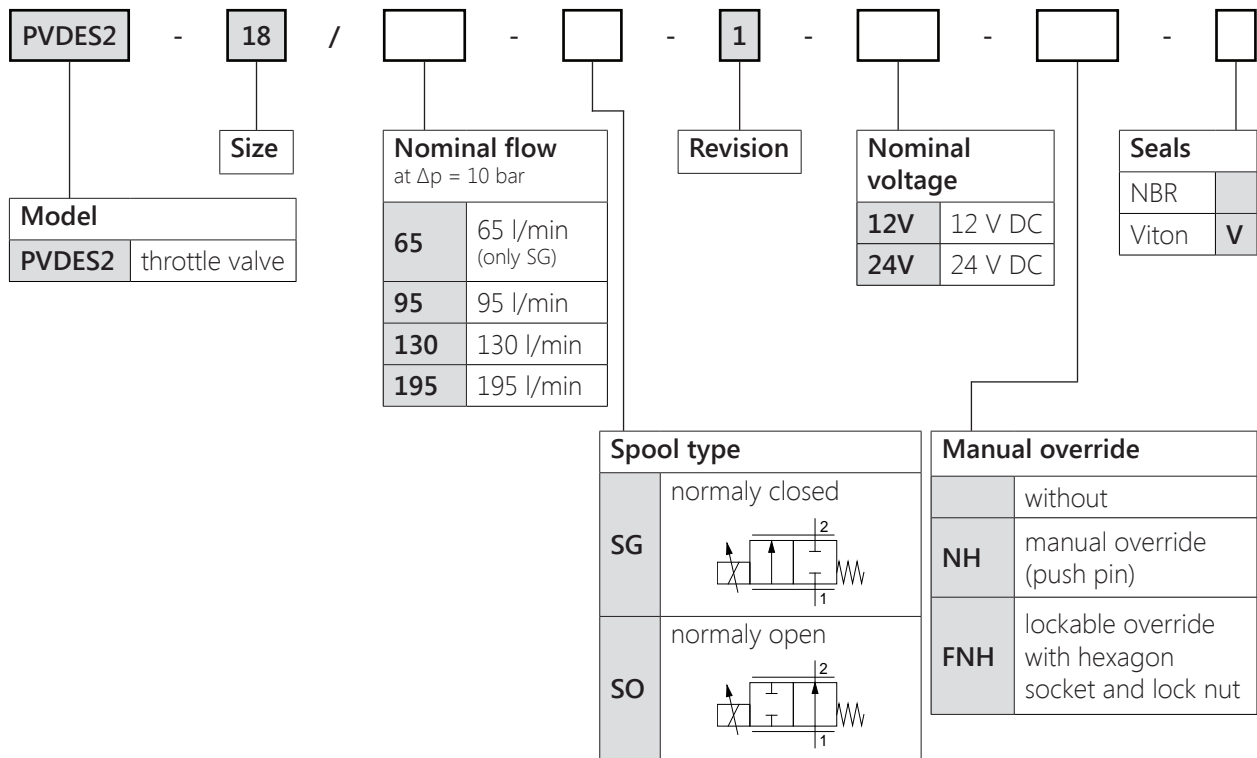
$$\sqrt{a} = \sqrt{Rz\ 6,3}$$



HM4/13 11 01

NOTE For appropriate manifolds see chapter 10 „manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

Type code



Appendix

*Accessories/
spare parts*

Part:	Article number:
Socket connector DIN EN 175301-803*, shape A, black	149.0007
Socket connector DIN EN 175301-803*, shape A, grey	149.0008
Seal kit T-16A (NBR)	097.0013
Seal kit T-16A (Viton)	097.0011
Coil 12 V, DIN EN 175301-803*, shape A	147.0015
Coil 24 V, DIN EN 175301-803*, shape A	147.0014

* (formerly DIN 43650)

NOTE For the appropriate electronic controllers, see chapter 6 „electronics and sensor technology“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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EPSR2-11 and EPSR3-11

direct operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 20 l/min
in-line body, sandwich body or mounting plate NG 6

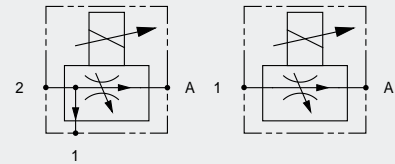
EPSR2-14 and EPSR3-14

direct operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 70 l/min
in-line body or sandwich body NG 6 or NG 10

Proportional flow control valve EPSR2-11 and EPSR3-11



direct operated, solenoid operated
 operating pressure max. 350 bar
 volume flow max. 20 l/min
 in in-line body, sandwich body NG 6
 or mounting plate NG 6



050110_EPSR_11_e
 07.2018

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Characteristics

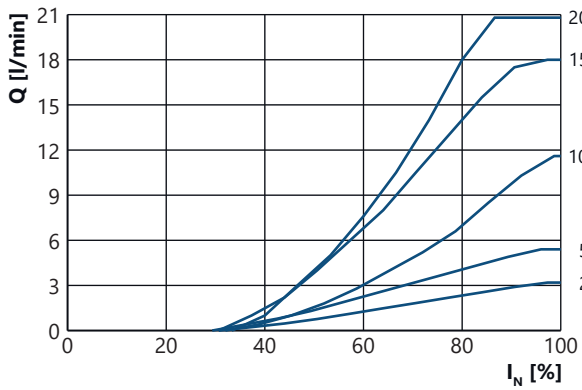
- 2- or 3-way proportional flow control valve in in-line body, in sandwich body NG 6 or in mounting plate NG 6
- normally open or normally closed models
- available with or without check valve
- maintenance-free

Technical data

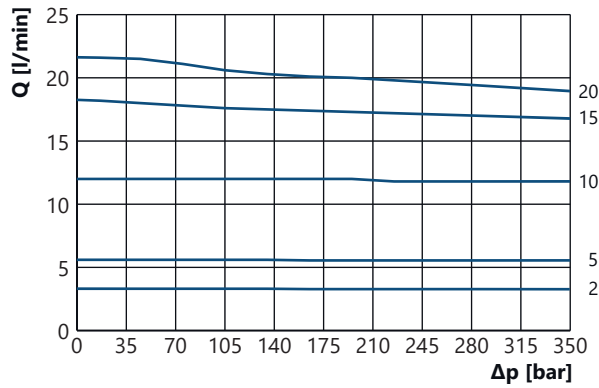
<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	see type code, at differential pressure control $\Delta p = 7$ bar
	Flow direction:	see symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
	* at 20 % to 100 % of the nominal valve current	
	<hr/>	
<i>Mechanic</i>	Design:	Slip-in valve in in-line body or in sandwich-body or mounting plate NG 6
	Size:	11
	Fluid temperature:	-20 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	3 g, crossways
	Weight:	EPSR: 2,39 kg, EPSRV: 1,63 kg, ZEPSR: 2,41 kg, EPSRA: 1,84 kg
	Material:	valve parts and manifolds: steel, seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel
<hr/>		
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, unterminated wire
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

Flow rate diagram (Q/I) EPSR2-11



Pressure drop diagram (p/Q) EPSR2-11



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

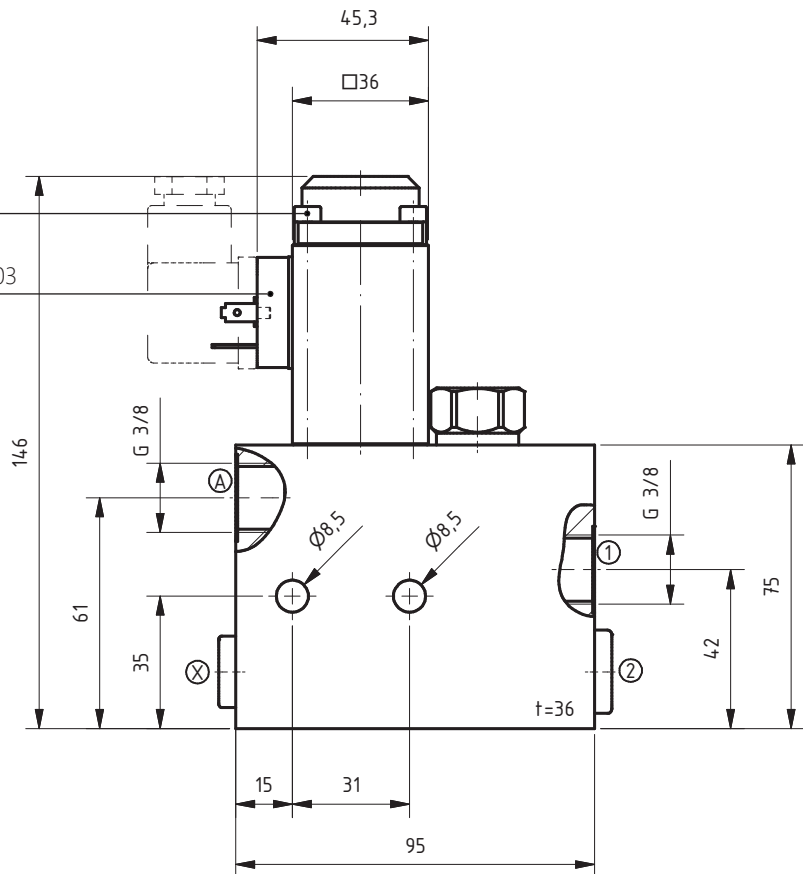
Dimensions

Proportional flow control valve in in-line body EPSR 11

installation torque 3 Nm

SW 3

electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A

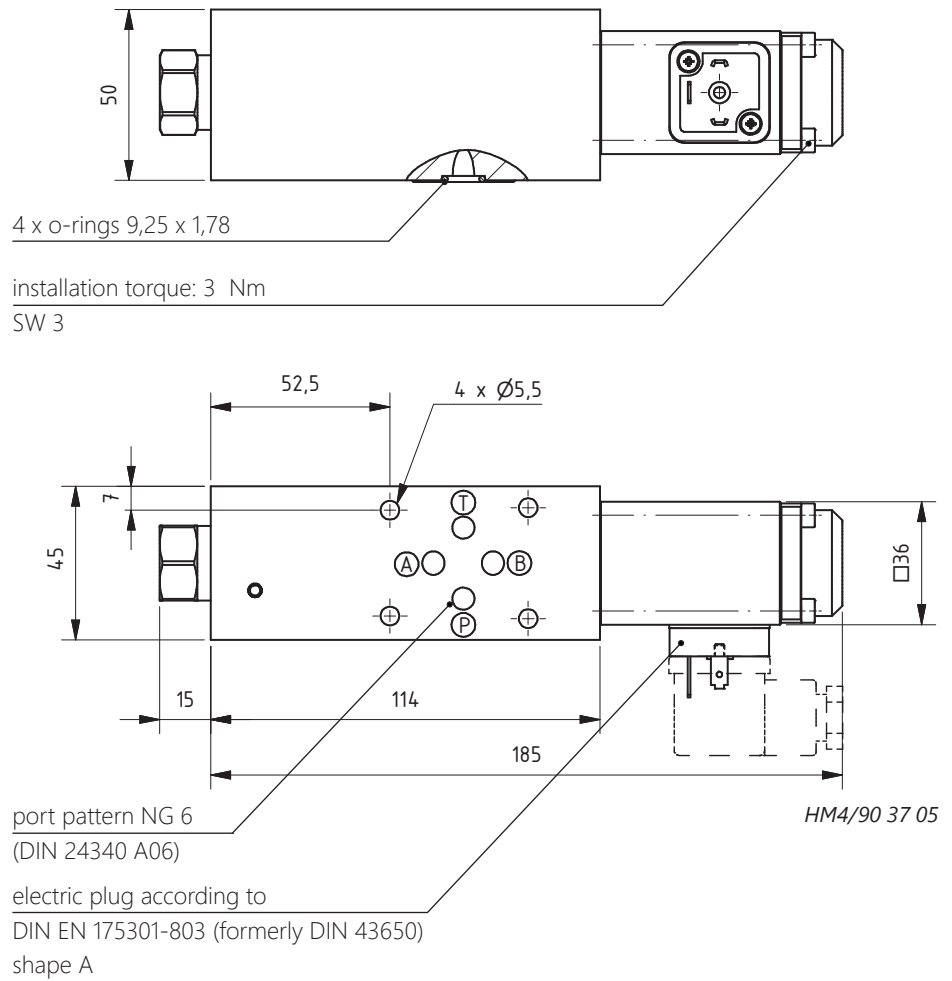


HM3/90 08 02

NOTE The valve is also available as EPSRA-06-11 in a mounting plate NG 6. Dimension sheets are available upon request.

Dimensions

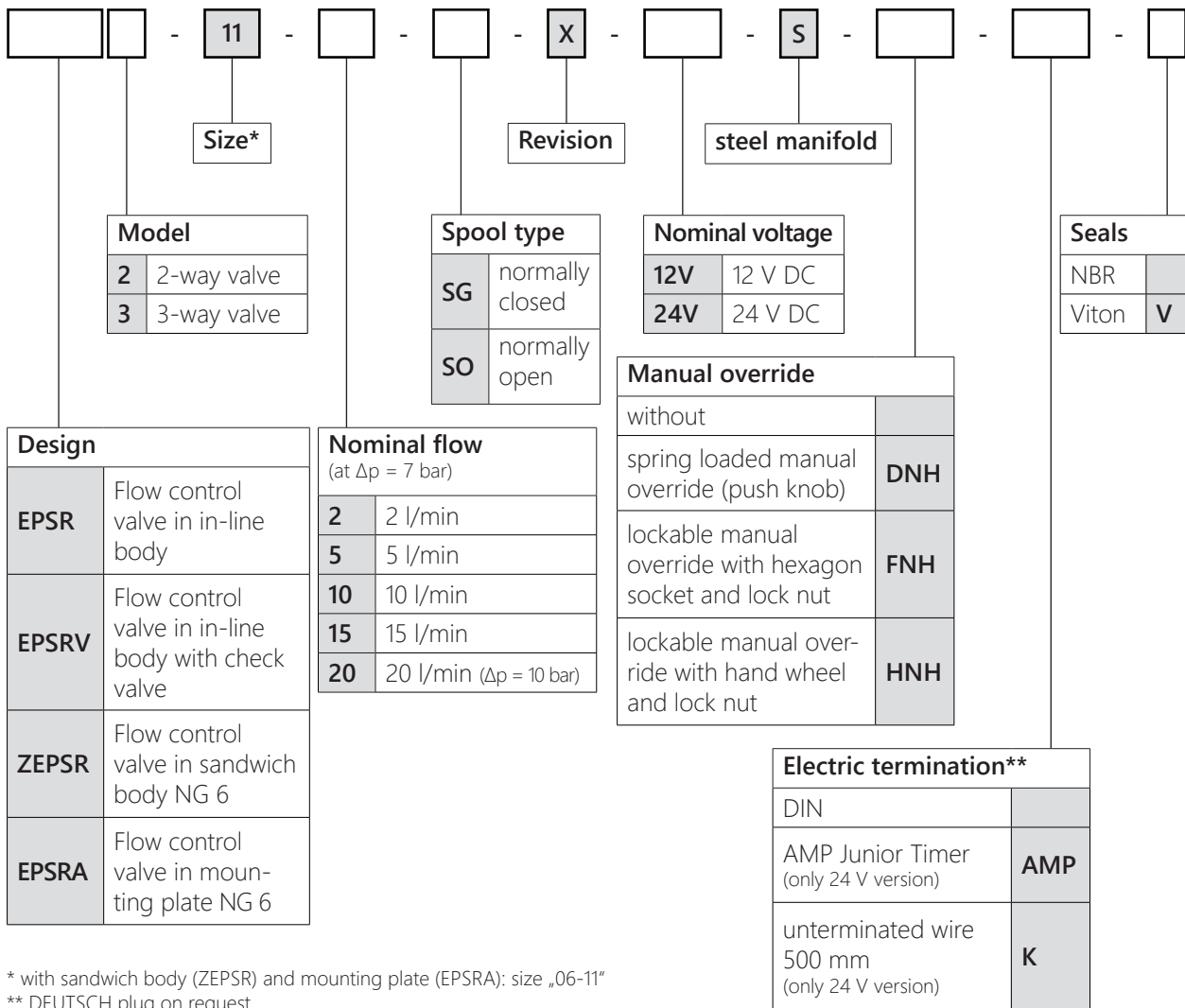
Proportional flow control valve in sandwich body NG 6 ZEPSR 06-11



NOTE For a detailed drawing of the port pattern please see chapter 11 „*general information*“ under the category „*port patterns*“ or our online catalogue at www.weber-hydraulik.com.

NOTE The valve must be mounted with fitting screws according to DIN EN ISO 4762 M5 x 60 - 12.9. Installation torque: 6 Nm, screw-in depth min. 8 mm.

Type code



Accessories and additional information

<i>Accessories / spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Seal kit PVDE2-11 (NBR)	405.0020
	Seal kit PVDE2-11 (Viton)	405.0068
	Seal kit T-13A (NBR)	405.0013
	Seal kit T-13A (Viton)	405.0037
	4 x o-ring 9,25 x 1,78 (NBR)	401.0128
	4 x o-ring 9,25 x 1,78 (Viton)	401.0147
	A variety of alternative electric terminations and manual overrides are available on request	

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

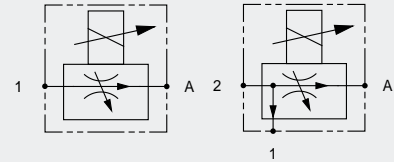
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Proportional flow control valve EPSR2-14 and EPSR3-14



direct operated, solenoid operated
 operating pressure max. 350 bar
 volume flow max. 70 l/min
 in in-line body or
 sandwich body NG 6 or NG 10



050120_EPSR_14_e
 07.2018

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Characteristics

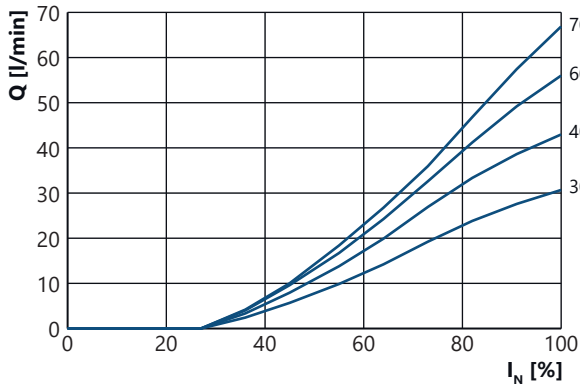
- 2- or 3-way proportional flow control valve in in-line body or in sandwich body NG 6 or NG 10
- normally open or normally closed models
- versions available where surplus flow can be pressurised
- maintenance-free
- rotatable and replaceable coils

Technical data

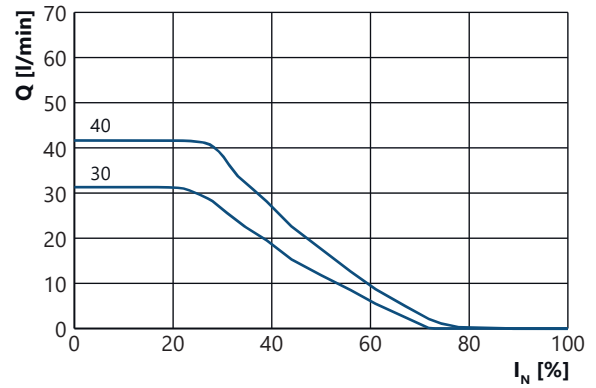
<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	see type code, at differential pressure control $\Delta p = 7$ bar
	Flow direction:	2-way: 1 to A, 3-way: 2 to A (1 = tank)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	Repeatability:	< 3 % with optimized PWM-signal*
	Hysteresis:	< 5 % with optimized PWM-signal*
	* at 20 % to 100 % of the nominal valve current	
	<hr/>	
<i>Mechanic</i>	Design:	Screw-in valve in in-line body or in sandwich-body NG 6 or NG 10
	Size:	14
	Fluid temperature:	-20 °C to +65 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	5 g, crossways
	Weight:	EPSR: 4,30 kg, ZEPSR2-06: 3,88 kg, ZEPSR3-06: 2,69 kg ZEPSR3-10: 5,65 kg
	Material:	valve parts and manifolds: steel, seals: NBR, Viton optional
Surface protection:	exterior parts: zinc coated steel	
<hr/>		
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	12 V: DIN and AMP 2,3 A, DEUTSCH 2,0 A 24 V: DIN and AMP 1,1 A
	Nominal resistance (R20):	12 V: DIN and AMP 2,7 Ω , DEUTSCH 3,85 Ω 24 V: DIN and AMP 12,6 Ω
	Power consumption:	23,0 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, DEUTSCH
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com .

Performance

Flow rate diagram (Q/I) EPSR2-14 at $\Delta p = 7$ bar, normally closed



Flow rate diagram (Q/I) EPSR2-14 at $\Delta p = 7$ bar, normally open

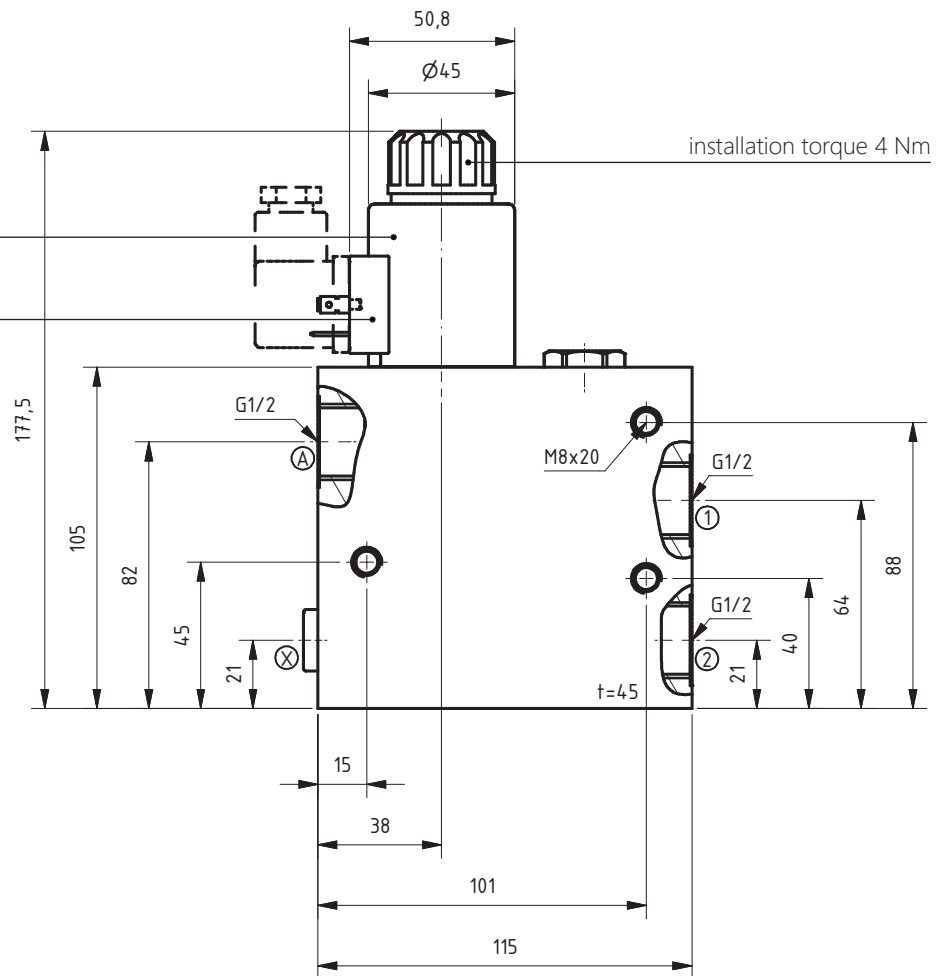


Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Proportional flow control valve in in-line body EPSR 14

solenoid coil
360° rotatable
electric plug according to
DIN EN 175301-803 shape A

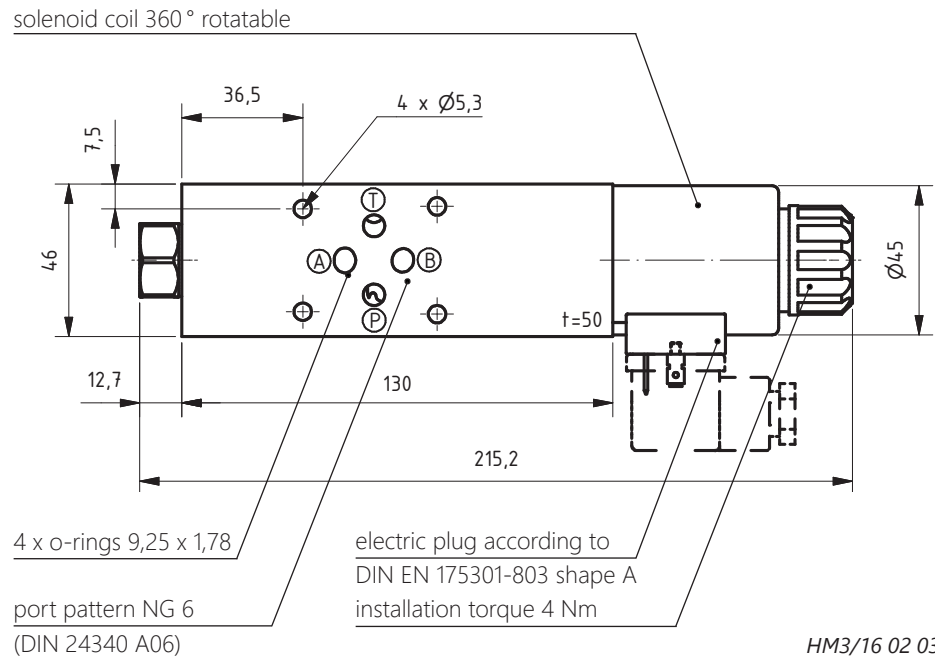


HM3/12 27 14

NOTE The valve is also available as EPSRR, where the surplus flow can be pressurised and can therefore be supplied to a second actuator. Please contact us for further information.

Dimensions

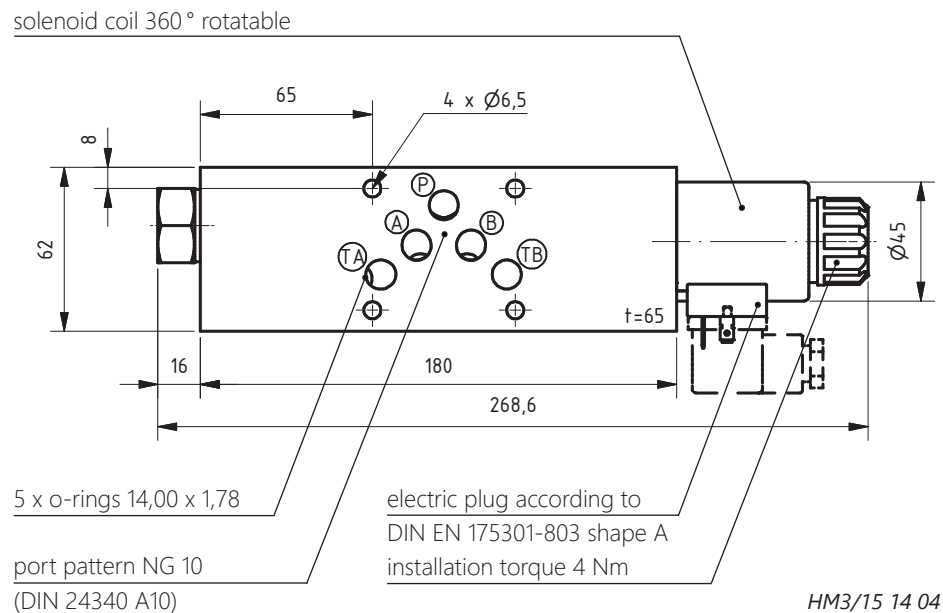
Proportional flow control valve in sandwich body NG 6 ZEPSR-06-14



NOTE

The valve must be mounted with fitting screws according to DIN EN ISO 4762 M5 x 60 - 12.9. Installation torque: $6,3 \pm 0,3$ Nm, screw-in depth min. 8 mm.

Proportional flow control valve in sandwich body NG 10 ZEPSR-10-14



NOTE

Operating pressure max.: P, A, B: 350 bar; TA, TB: 10 bar.

NOTE

The valve is also available as EPSRA2-10-14 in a mounting plate NG 10. Dimension sheets are available upon request.

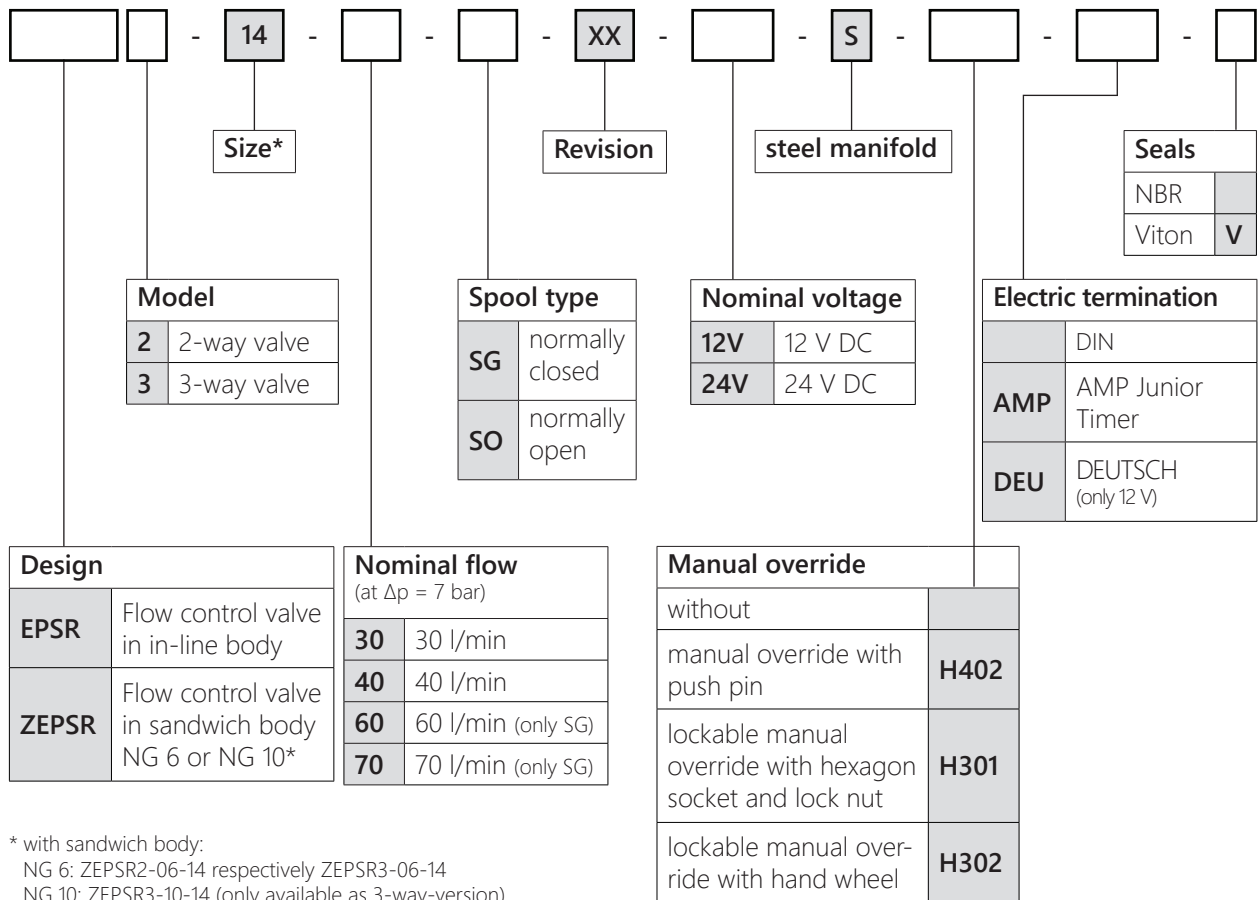
NOTE

The valve must be mounted with fitting screws according to DIN EN ISO 4762 M6 x 30 - 12.9. Installation torque: $10 \pm 0,5$ Nm, screw-in depth min. 8 mm.

NOTE

For a detailed drawing of the port pattern please see chapter 11 „general information“ under the category „port patterns“ or our online catalogue at www.weber-hydraulik.com.

Type code



* with sandwich body:
 NG 6: ZEPSR2-06-14 respectively ZEPSR3-06-14
 NG 10: ZEPSR3-10-14 (only available as 3-way-version)

NOTE The valve is also available as **EPSRR** where the surplus flow can be pressurised and can therefore be supplied to a second actuator. Please contact us for further information.

Accessories and additional information

<i>Accessories / spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Socket connector DIN EN 175301-803, shape A, grey	149.0008
	Coil 12 V, DIN EN 175301-803, shape A	147.0011
	Coil 24 V, DIN EN 175301-803, shape A	147.0009
	Coil 12 V, AMP Junior Timer	147.0007
	Coil 24 V, AMP Junior Timer	147.0010
	Coil 12 V, DEUTSCH connector	147.0012
	Seal kit EPSR2(3)-14 (NBR)	405.0116
	Seal kit EPSR2(3)-14 (Viton)	405.0117
	Seal kit ZEPSR2-06-14 (NBR)	405.0118
	Seal kit ZEPSR2-06-14 (Viton)	405.0119
	Seal kit ZEPSR3-06-14 (NBR)	405.0120
	Seal kit ZEPSR3-06-14 (Viton)	405.0121
	Seal kit ZEPSR2(3)-10-14 (NBR)	405.0122
	Seal kit ZEPSR2(3)-10-14 (Viton)	405.0123

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Proportional Chopper Amplifier

SC-/ ESC-/ DSC-2000

electric amplifier for proportional valves
operating voltage 8-35 V DC
maximum current 2,6 A



VB-3A

electric amplifier for proportional valves
maximum current 1600 mA
input signal 0-5 V and 0-10 V or
input signal 0-20 mA and 4-20 mA



Accessories

Pressure Transmitter MODS

piezoresistive
shock and vibration resistant
nominal voltage 12-32 V DC
measuring range 6-600 bar

Proportional Chopper Amplifier SC-/ESC-/DSC-2000



electric amplifier for
proportional valves
operating voltage 8-35 V DC
maximum current 2,6 A

060110_SC2000_e
07.2018

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Characteristics

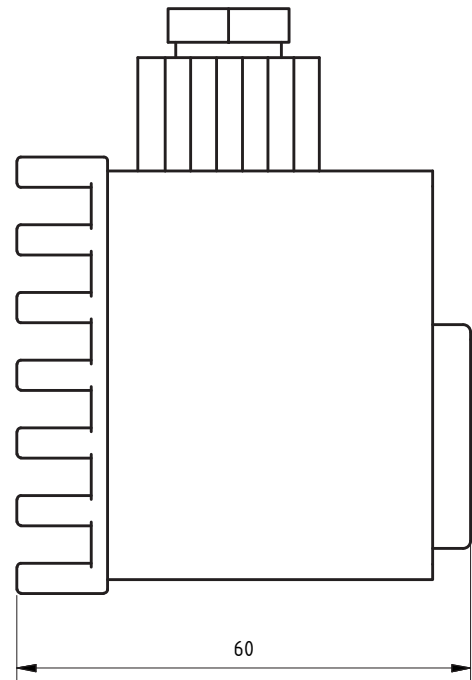
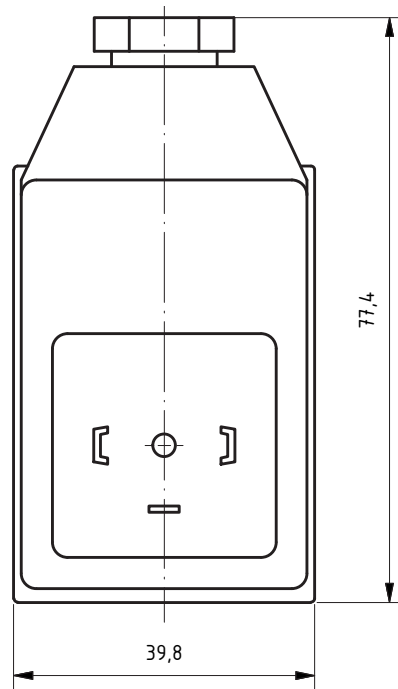
- compact design
- compensating the temperature-dependent magneto-resistance of the proportional solenoid
- multi-course potentiometers for adjusting I_{min} , I_{max} and time ramp
- LED signaling
- fuse-protected output 2 A or 3 A
- external voltage or current control

Technical data

<i>Mechanic</i>	Design:	amplifier module, amplifier for installation onto mounting rails, double amplifier for 2 prop. solenoids for installation onto mounting rails
	Ambient temperature:	-20 °C to +60 °C
	Installation position:	any
	Weight:	SC-2000: 0,32 kg ESC-2000: 0,08 kg DSC-2000: 0,14 kg
	Maximum acceleration:	2 G
	<hr/>	
<i>Electric</i>	Operating voltage:	8 to 35 V DC
	Nominal voltage (solenoid):	12 V DC, 24 V DC
	Nominal resistance (solenoid):	2,5 to 60 Ω
	Maximum current:	0 to 2,6 A adjustable
	Minimum current:	0 to 0,6 A adjustable
	Dither frequency:	140 Hz, 85 Hz, 300 Hz
	Stand-by current consumption:	0,016 A
	Ramp generator:	0 to 5 s adjustable
	Protection class:	IP65
	Fuse:	Wickmann microfuse 2 A (max. 3 A)
	Shifting time:	100 % ED
	Input signal:	0 to 10 V (0 to 5 V) 0 to 20 mA (external load resistor) 4 to 20 mA (special version)
	Deviation:	0,6 % / Ω for temperature fluctuations of the solenoid 0,3 % / V for voltage fluctuations
Electromagnetic compatibility:	CE conform to EMV standard 2004/108/EG Transient emissions EMA: EN 55 011-1B Stability EMB: EN 50 082-2	

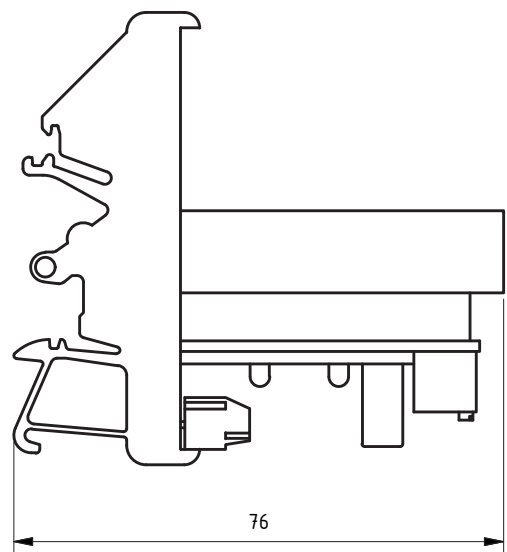
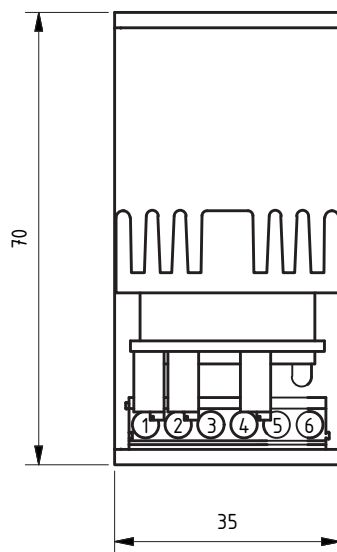
Dimensions

SC-2000-U



HE4/152316

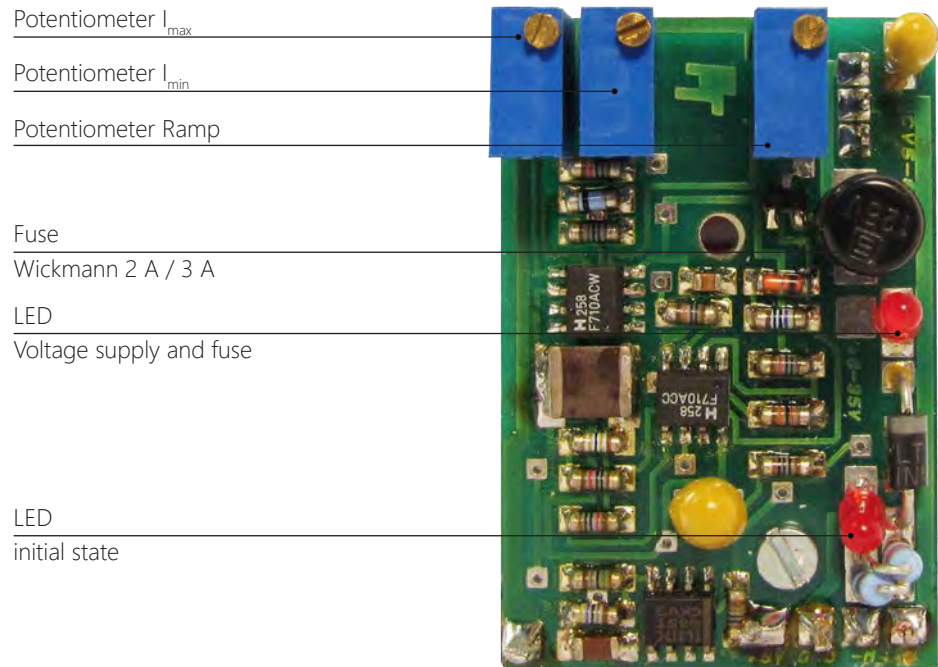
ESC-2000-U



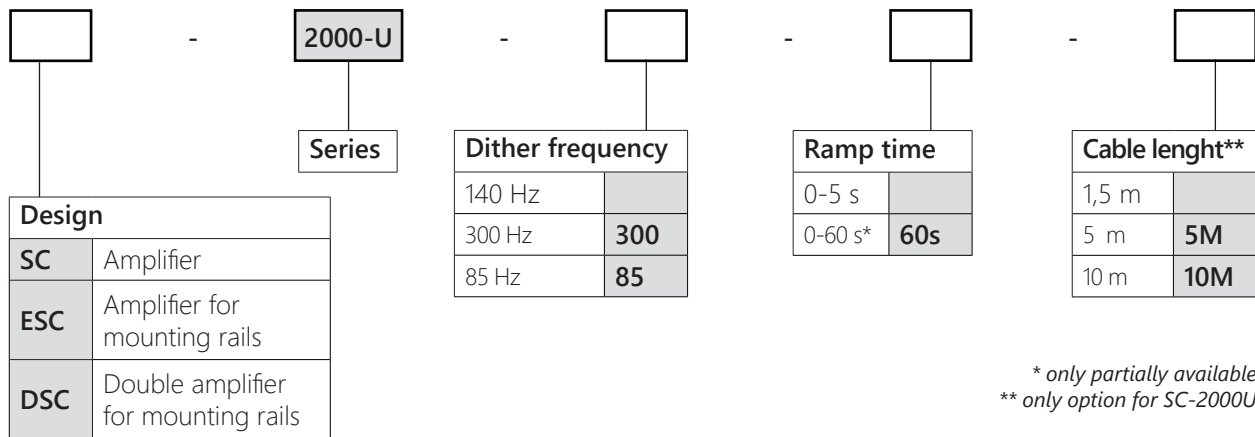
HE4/152315

NOTE For the double amplifier DSC-2000-U a second board will be integrated. The dimensions stay the same.

Operational elements



Type code



Accessories and additional information

Accessories/spare parts

Part:	Article number:
Adapter plug DIN EN 175301-803 shape B to shape A	109.0006
Replacement fuse 2 A	109.0003
Replacement fuse 3,15 A	109.0004

Set up

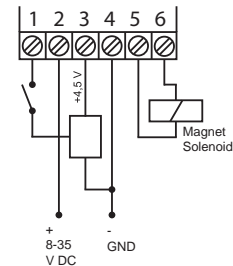
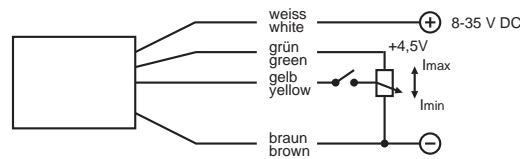
NOTE The chopper amplifier has to be adjusted on-load (with connected prop. solenoid). Never disconnect the solenoid while the operating current is connected.

To get optimal results and to avoid defects on the chopper amplifier and the valves, adjust the chopper amplifier with the following instructions

Adjust minimum current (I_{min}) always before maximum current (I_{max}).

Potentiometer control

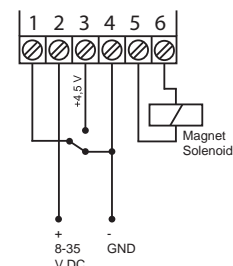
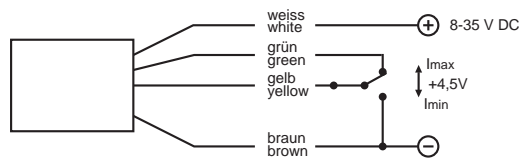
- ▶ Connect supply voltage (see figure).
- ▶ Connect external potentiometer (see figure).



- ▶ Switch on hydraulic supply.
- ▶ Observe the function of the valve.
- ▶ Set external potentiometer to minimum value.
- ▶ Adjust the I_{min} potentiometer so that there is no hydraulic outlet (pressure or volume flow).
- ▶ Set external potentiometer to maximum value.
- ▶ Adjust the I_{max} potentiometer so that the desired max. pressure or volume flow is reached.
- ▶ The chopper amplifier is adjusted. The desired adjustment range is between the minimum value and the maximum value.
- ▶ If there is still a dead range, repeat the basic adjustments (I_{min} and I_{max}).
- ▶ Adjust the ramp potentiometer to the desired value (0-5s).

Two-point control

- ▶ Connect supply voltage (see figure).
- ▶ Connect selector switch (min./max. value, see figure).
- ▶ Adjust selector switch to minimum value (1 to 4 connected).



- ▶ Switch on hydraulic supply.
- ▶ Observe the function of the valve.
- ▶ Adjust the I_{min} potentiometer so that there is no hydraulic outlet (pressure or volume flow).

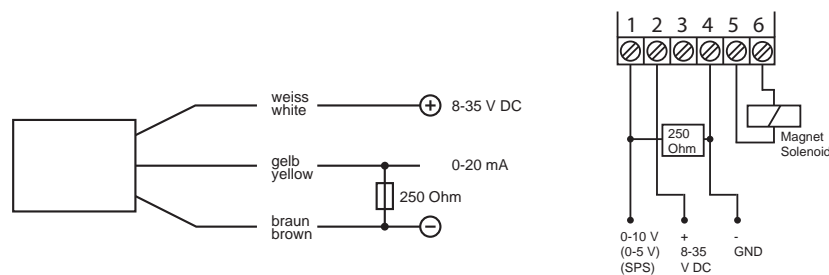
Set up

Two-point control

- ▶ Adjust selector switch to maximum value (1 to 3 connected).
- ▶ Adjust the I_{\max} potentiometer so that the desired max. pressure or volume flow is reached.
- ▶ The chopper amplifier is adjusted. The desired adjustment range is between the minimum value and the maximum value.
- ▶ If there is still a dead range, repeat the basic adjustments (I_{\min} and I_{\max}).
- ▶ Adjust the ramp potentiometer to the desired value (0-5s).

External current control 0 -20 mA

- ▶ Connect load resistor (250 Ω , see figure).
- ▶ Connect supply voltage (see figure).
- ▶ Connect external current control (see figure).

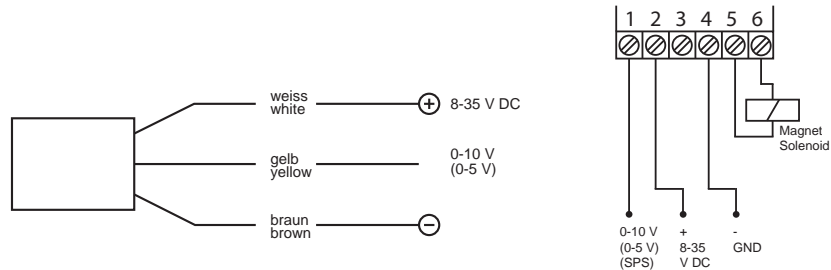


- ▶ Switch on hydraulic supply.
- ▶ Observe the function of the valve.
- ▶ Adjust external current to approx. 0,05 mA.
- ▶ Adjust the I_{\min} potentiometer so that there is no hydraulic outlet (pressure or volume flow).
- ▶ Adjust external current to 20 mA.
- ▶ Adjust the I_{\max} potentiometer so that the desired max. pressure or volume flow is reached.
- ▶ The chopper amplifier is adjusted. The desired adjustment range is between the minimum value and the maximum value.
- ▶ If there is still a dead range, repeat the basic adjustments (I_{\min} and I_{\max}).
- ▶ Adjust the ramp potentiometer to the desired value (0-5s).

Set up

External voltage control

- ▶ Connect supply voltage (see figure).
- ▶ Connect external voltage control (5/10 V, see figure).



- ▶ Switch on hydraulic supply.
- ▶ Observe the function of the valve.
- ▶ Adjust external voltage to approx. 0,005 V.
- ▶ Adjust the I_{\min} potentiometer so that there is no hydraulic outlet (pressure or volume flow).
- ▶ Adjust external voltage to accumulated value (5/10 V).
- ▶ Adjust the I_{\max} potentiometer so that the desired max. pressure or volume flow is reached.
- ▶ The chopper amplifier is adjusted. The desired adjustment range is between the minimum value and the maximum value.
- ▶ If there is still a dead range, repeat the basic adjustments (I_{\min} and I_{\max}).
- ▶ Adjust the ramp potentiometer to the desired value (0-5s).

Proportional Chopper Amplifier VB-3A



electric amplifier for
proportional valves
maximum current 1600 mA
input signal 0-5 V and 0-10 V or
input signal 0-20 mA and 4-20 mA

060120_VB-3A_e
07.2018

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Technical data	2
Dimensions	2
Front panel	3
Connections	3
Type code	4
Set up	4

Characteristics

- compensating the temperature-dependent magneto-resistance of the proportional solenoid
- multi-course potentiometers for adjusting I_{min} , I_{max} and time ramp
- 2 ramp functions
- dither frequency adjustable between 100 Hz and 500 Hz
- LED signaling
- external enable function
- for installation onto mounting rails according to DIN EN50022 or 50035

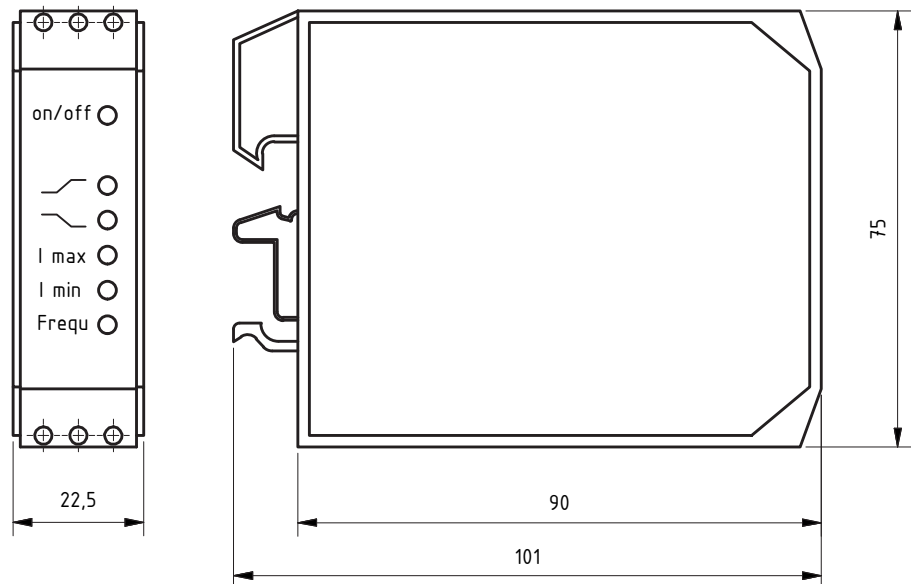
Technical data

<i>Mechanic</i>	Design:	chopper amplifier for installation onto mounting rails
	Ambient temperature:	-20 °C to +60 °C
	Installation position:	any
	Weight:	0,10 kg
	Maximum acceleration:	2 G

<i>Electric</i>	Operating voltage:	12 V DC to 36 V DC
	Nominal voltage (solenoid):	12 V DC, 24 V DC
	Auxiliary voltage:	10 V DC (max. 20 mA current consumption)
	Maximum current:	0 mA to 1600 mA adjustable
	Minimum current:	0 mA to 500 mA adjustable
	Stand-by current consumption:	40 mA
	Dither frequency:	100 Hz to 500 Hz adjustable
	Ramp generator:	up and down ramp separately adjustable up to 80 mA/s
	Protection class:	IP20
	Shifting time:	100% ED
	Input signal:	0-5 V, 0-10 V, optional 0-20 mA, 4-20 mA
	Output:	short-circuit-proof
Electric termination:	screw terminals up to 1,5 qmm	

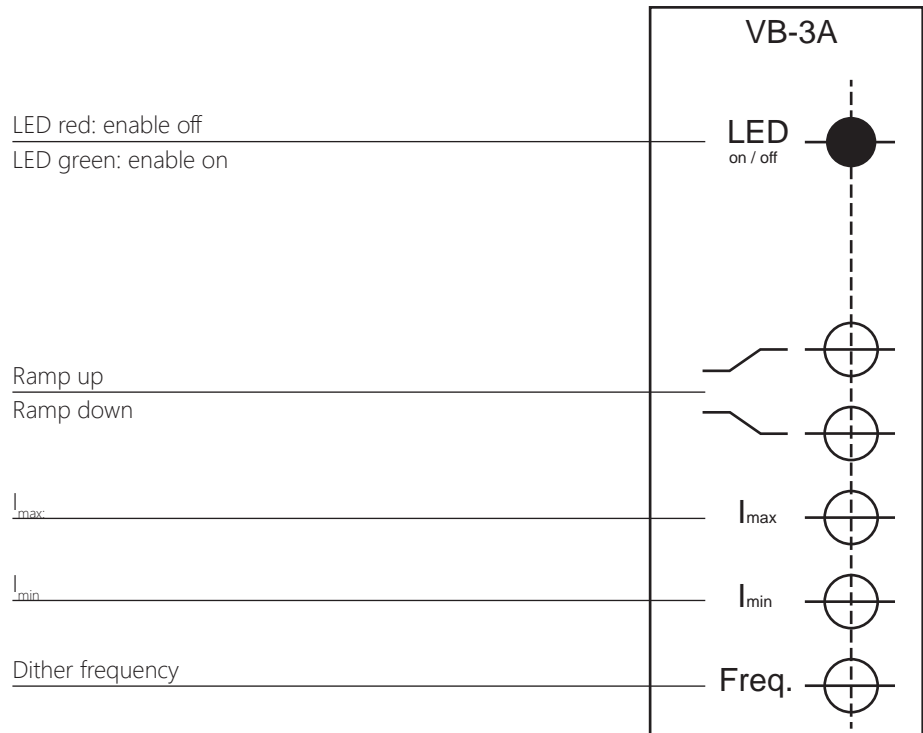
Dimensions

Chopper amplifier
VB-3A



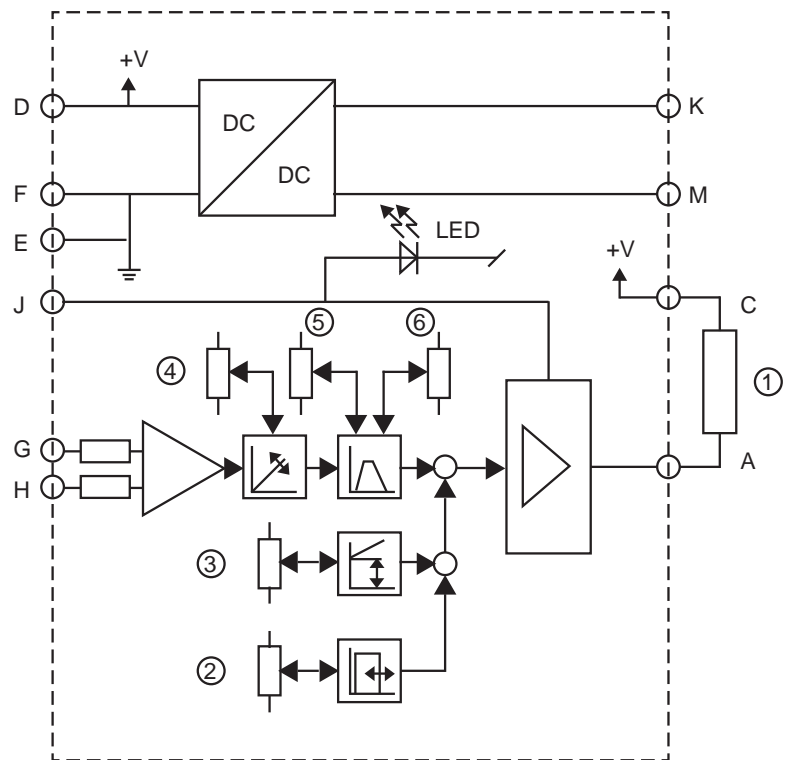
HE4/152318

Front panel

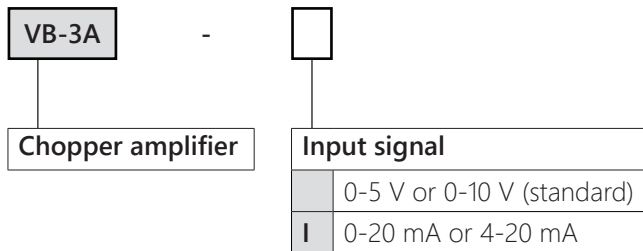


Connections

Legend	
1	solenoid
2	dither frequency
3	I_{min}
4	I_{max}
5	ramp up
6	ramp down
A, C	connection solenoid
M	0 V
K	10 V
D	12-36 V DC
F, E	0 V
J	enable
G, H	input



Type code



Set up

NOTE The chopper amplifier has to be adjusted on-load (with connected proportional solenoid).
Never disconnect the solenoid while the operating current is connected.

To get optimal results and to avoid defects on the chopper amplifier and the valves, adjust the chopper amplifier with the following instructions.

Adjust minimum current (I_{\min}) always before maximum current (I_{\max}).

Basic adjustment

- ▶ Connect supply voltage (+ to D, - to F).
- ▶ To activate the amplifier, connect the enable supply to terminal J.
- ▶ Connect solenoid to terminal A and C.
- ▶ **Connect input signal:**
 - **External voltage control (SPS):**
 - ▶ Connect external voltage control to terminals H (5/10 V+) and G (-/GND).
 - **Potentiometer control:**
 - ▶ Bridge terminal M to terminal G.
 - ▶ Connect external potentiometer to terminals K (10 V+), M (0 V) and H (center tap).
 - **External current control (VB-3A-I):**
 - ▶ Connect external current control to terminals H (+) and E (-).
- ▶ Switch on operating voltage and hydraulic supply.
- ▶ Observe the function of the valve.
- ▶ Set input signal to minimum value.
- ▶ Adjust the I_{\min} potentiometer so that there is no hydraulic outlet (pressure or volume flow).
- ▶ Set input signal to maximum value.
- ▶ Adjust the I_{\max} potentiometer so that the desired max. pressure or volume flow is reached.
- ▶ The chopper amplifier is adjusted. The desired adjustment range is between the minimum value and the maximum value.
- ▶ If there is still a dead range, repeat the basic adjustments (I_{\min} and I_{\max}).

Set up

Basic adjustment for ramp time and dither frequency

- The ramp-up time can be adjusted with the ramp potentiometer. To extend the ramp time, turn potentiometer to the left.

The basic adjustment of the dither frequency (125 Hz) is suitable for most applications. The frequency has to be changed if:

- large valves are pilot operated with small proportional valves (lower frequency) or
- the frequency should be less audible (higher frequency). Though the hysteresis can decline.

Enable

By switching the enable voltage, the ramps are bypassed.

Enable voltage: < 1 V: enable off
> 4 V to 36 V: enable on



Pressure Transmitter MODS



piezoresistive
 shock and vibration resistant
 nominal voltage 12 - 32 V DC
 measuring range 6 - 600 bar

060210_MODS_e
 07.2018

Table of contents

Contents	Page
Characteristics	1
Technical data	2
Dimensions	3
Pin assignment	3
Type code	4

Characteristics

- robust
- compact
- pressure peak resistant
- overload protected
- with reverse voltage protection
- limitation of power loss
- electronic calibration
- stainless steel
- fully welded, "dry" measuring cell, therefore no internal transmission media
- applicable with all standard signals for industry, hydraulics and pneumatics
- various signal-, thread- and connecting options available
- Certifications: German Lloyd (GL) for maritime applications
 CE-Directive 2014/30/EU
 CE-Directive 2016/68/EU
 Railway applications (DIN EN 50155)

Technical data

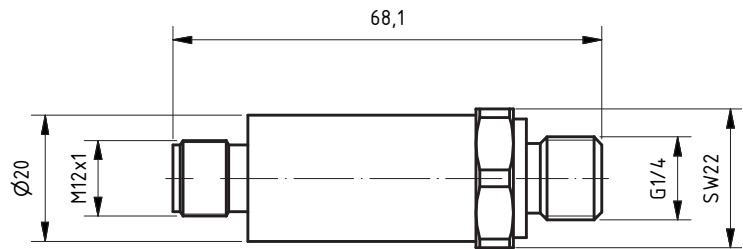
<i>Hydraulic</i>	Measuring range:	see type code
	Pressure type:	relative pressure
	Overload pressure:	2 x full scale*
	Burst pressure:	3 x full scale*
<hr/>		
<i>Mechanic</i>	Design:	screw-in pressure transmitter
	Fluid temperature:	-40 °C to +125 °C
	Ambient temperature:	-40 °C to +105 °C
	Installation position:	any
	Weight:	0,1 kg
	Material:	stainless steel
	Measuring principle:	piezoresistive
	Shock resistance:	1000 g according to IEC 68-2-32
	Vibration resistance:	20 g according to IEC 68-2-36
Damping:	∅0,6 mm at hydraulic connector, integrated in sensor	
<hr/>		
<i>Electric</i>	Nominal voltage:	12 - 32 V DC or 5 V DC ±10 %
	Protection class:	IP67 (according to plug-system, if correctly mounted)
	Response time (10 - 90 %):	< 1 ms
	Output signal:	see type code
	Electric termination:	Electric plug M12x1, 4-pin Electric plug DIN EN 175301-803 (formerly DIN 43650) shape A, 3-pin + PE
	Electromagnetic compatibility:	25 V/m (according to DIN EN 61000-4-3)
	Temperature coefficient in compensated temperature range:	< 0,1% / 10 K
	Radiation:	< 30 BµV/m (according to DIN 61000-4-3)
	Accuracy @ RT:	< 0,50 % of the range
	Stability/Year:	< 0,10 % of the range
	Repeatability:	< 0,10 % of the range
	Non-linearity:	< 0,15 % of the range

NOTE Due to electronic calibration the pressure transmitter has a total error of <0,5% of full scale*. Customised versions with better accuracy are available on request.

* integral linearity error

Dimensions

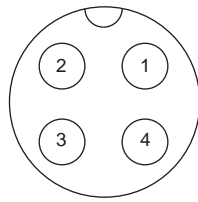
MODS



HE4/152321

Pin assignment

electric plug
M12x1, 4-pin

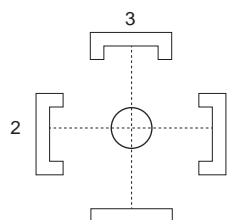


View on MODS-sensor

Output signal	Pin 1	Pin 2	Pin 3	Pin 4
A	supply voltage + (12 - 32 V DC)	n.c.	output signal 4 - 20 mA	n.c.
B	supply voltage + (12 - 32 V DC)	n.c.	GND	output signal 0 - 20 mA
C	supply voltage + (12 - 32 V DC)	n.c.	GND	output signal 0 - 10 V DC
D	supply voltage + (5 V DC ±10%)	n.c.	GND	output signal 0,5 - 4,5 V DC ratiometric
E	supply voltage + (12 - 32 V DC)	output signal 4 - 20 mA	GND	n.c.

n.c. = not connected

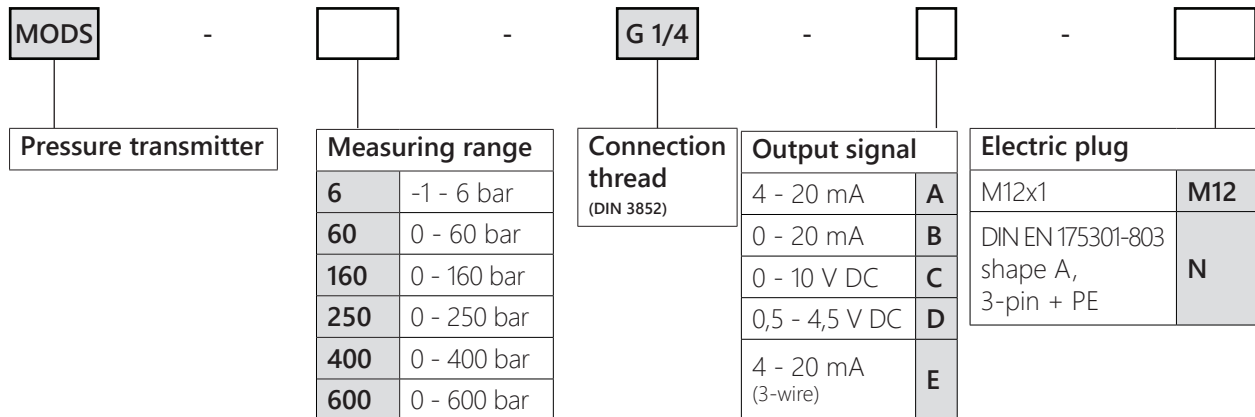
electric plug
DIN EN 175301-803
shape A,
3-pin + PE



View on MODS-sensor

Output signal	Pin 1	Pin 2	Pin 3
C	supply voltage + (12 - 32 V DC)	GND	output signal 0 - 10 V DC

Type code



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

www.weber-hydraulik.com
 info.de-k@weber-hydraulik.com

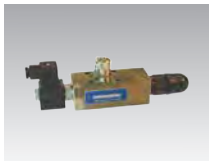
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Pressure Valves

Accumulator Charging Valve SLV

pilot operated
operating pressure max. 315 bar
volume flow max. 60 l/min
mounting plate NG 6, NG 10



Hydraulic Accumulator Safety Block HSB-06

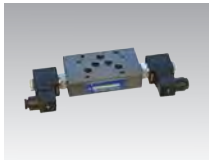
direct operated, manuell or solenoid operated
operating pressure max. 350 bar
volume flow max. 40 l/min
mounting plate NG6



Flow Valves/Throttle Valves

Rapid Traverse/Creep Valve ZMSR

operating pressure max. 250 bar
volume flow max. 30 l/min
sandwich body NG 6



On/Off Valves

Pressure Discharge Valve ZMSVD2

operating pressure max. 315 bar
volume flow max. 30 l/min
sandwich body NG 6, NG 10, NG 16
discharge from A and B to T



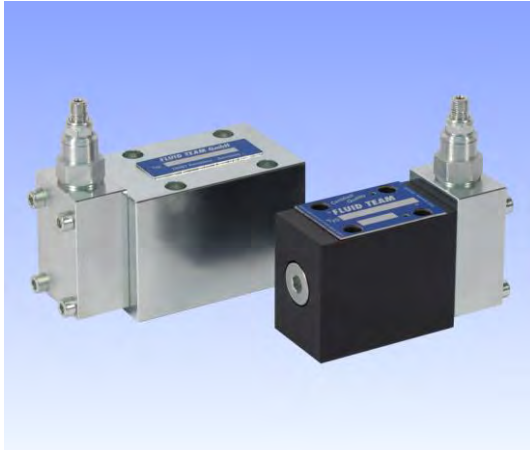
Check Valves

Hydraulic Motor Anti Cavitation Valve HNV

cavitation protection for orbital engines
with hollow bolts G3/8"

Accumulator Load Valve SLV

Cover Plate NG 6, NG 10 • max. 315 bar • max. 30 respectively 60l/min



Description

The FLUID TEAM accumulator load valve SLV is a shift valve with a pressure-dependent shifting point. The shift pressure is measured in port B. If the shift pressure is reached, the valve opens the connection of port P after T, the pump is in pressure-free circulation. As soon as the pressure sank in port B on the reset point, the valve closes the connection of P after T, the accumulator will be loaded again. The reset pressure lies approx. 15% below adjusted shift pressure (= reset hysteresis). The SLV is available as a cover plate CETOP/ISO 3 (SLV 6) and CETOP/ISO 5 (SLV 10). The setting of the shift pressure can be done in the factory. If the accumulator is fitted directly to the cover plate, devices with integrated check valve are available.

Technical Data

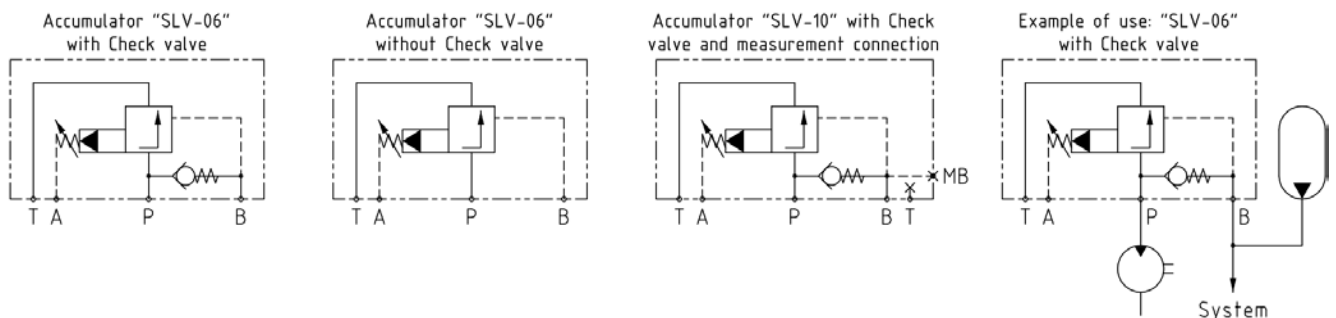
Hydraulic

Rated pressure: max. 315 bar
 Switching pressure: see model code
 Hysteresis: see model code
 Rated flow: SLV 6: max. 30 l/min
 SLV 10: max. 60 l/min
 Fluids: Oils as per DIN 51524,
 Others upon request
 Viscosity: 3 – 400 cSt
 Filtration: min. 25 µm

Design: pilot operated
 Operation temperature: -20 °C – +80 °C
 Installation: no restrictions
 Weight: SLV 6: 1,3 kg
 SLV 10: 1,9 kg
 Materials: valve parts: steel
 body: aluminium
 seals: NBR (Viton available)
 back up rings: Teflon; PU
 valve zinc plated
 body anodised
 Surface protection:

Mechanic

Symbols

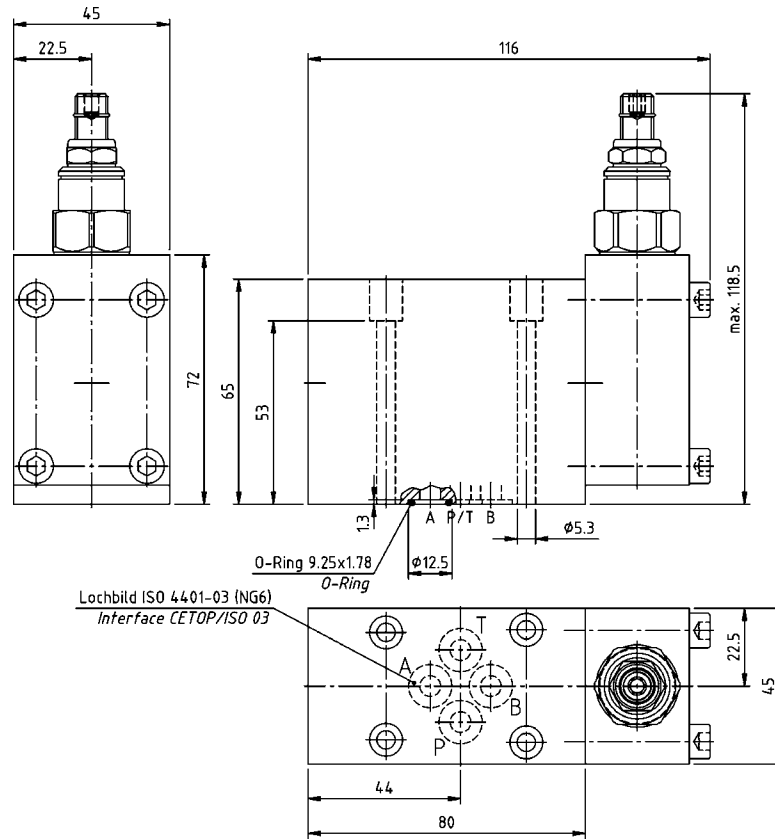


Model Code

SLV 6	-	210	-	15	-	3	-	RV
Accumulator Load Valve Surface Mount Body		Shift Pressure Range		Hysteresis		Design		Check Valve „P“ to „B“
Deliverable executions:		55 = 18 – 55 bar 105 = 28 – 105 bar 210 = 70 – 210 bar 350 = 140 – 315 bar		15 = 15% On request: 20 = 20% 30 = 30% 50 = 50%		internal		0 = without check valve RV = with check valve
NG 6	SLV 6							
NG 10	SLV 10							

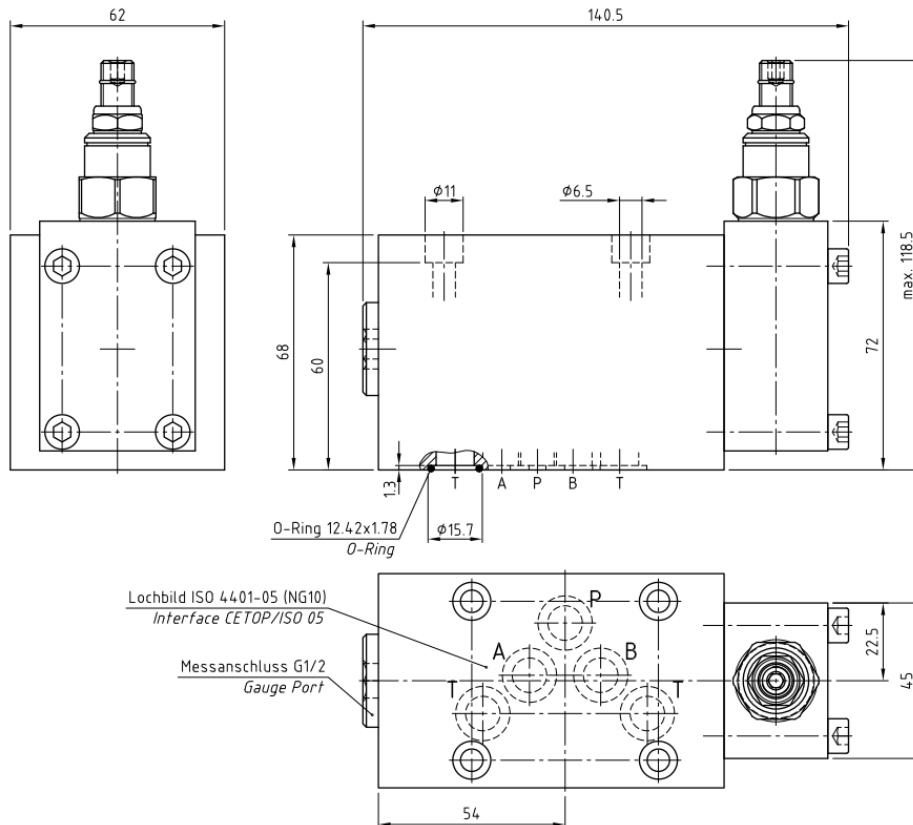
Dimensions [mm]

SLV 6 with / without Check Valve



HM3/071401

SLV 10



HM3/001401

Accumulator Safety Valve HSB-06

cover plate CETOP 3 • pressure relief valve as per 97/23/EC • max. 40 l/min



Description

The hydraulic accumulator safety valve HSB-06 is used for the prescribed security and discharge of hydraulic systems with accumulators. By the execution as CETOP/ISO 3 (NG 6) cover plate is an assembly without pipework in sandwich body packs possible. Additional functions, e.g. (restrictor-) check valves, are simple with standard bodies to add. By the internal connection of the channels A, B and P there are additional connection possibilities, e.g. for the accumulator, for consumers, measuring etc.

The direct operated pressure relief valve is according to 97/23/EC, and can be supplied preset. Various options stand to the selection: pressure discharge manually (with screw) or electrically (over 2/2 poppet valve) as well as a Minimesse® measure coupling in P.

Technical Data

for terms and definitions see chapter 12

Hydraulic

Rated Pressure: with manual discharge: 350 bar
with electrical discharge: 250 bar
Flow Rate: max. 40 l/min
Adjustment Range: see diagram at page 2
Fluids: oils as per DIN 51524,
others on request
Viscosity Range: 12 – 230 cSt
Filtration: class 18/16/13, filter β 6...10 \geq 75

Mechanic

Ambient Temperature: manual discharge: -20 °C – +60 °C
electrical discharge: -20 °C – +50 °C
Fluid Temperature: -20 °C – +60 °C
Installation: no restrictions
Weight: 2,1 kg (with el. discharge)
Materials: valve parts, body: steel; seals: NBR,
back up rings: Teflon, PU
Surface Protection: valves: zinc plated, phosphated
body: zinc plated

sandwich body check valve
if A = consumer port

sandwich body needle valve with free
flow check, for fast loading and slow
unloading of the accumulator

Electrical

Nominal Voltage: 24 V DC \pm 10%
Power Consumption: 22 W
Nominal Resistance (R_{20}): 26 Ω
Cyclic Duration Factor: 100 %
Environmental Protection: IP 65
Electrical Termination: plug as per DIN 43650 form A,
incl. square connector Pg9

subplate body with interface CETOP/ISO 3
B = accumulator port
A = consumer or gauge port

Symbols / Assembling Examples

Model Code

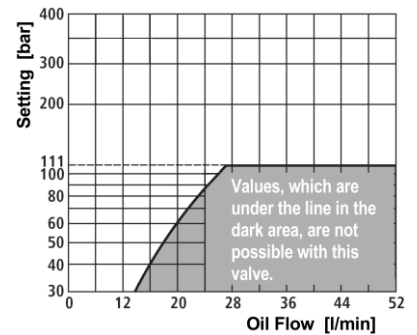
HSB-06	-	E	-	M	-	210
Accumulator Safety Valve CETOP 3		Pressure Discharge		Gauge Port		Suffix
		A = manual (screw) E = electrical, 24 V DC, normally open		O = plugged M = Minimesse coupling M16x2		setting [bar] special executions

Safety Regulations for presetted Pressure Relief Valves after Pressure Equipment Directive 97/23/EC

After 97/23/EC the increase of the system pressure due to the oil flow may not be larger than 10 % of the adjusted pressure setting. **Note!** The system pressure increases due to the increasing flow rate by the back pressure in the blow-off line (port T). Before the order of a presetted valve it must be considered that the existing flow rate of the application is less than the maximum flow rate in the diagram at the right side. This diagram shows the maximally permissible flow rate related to the setting pressure. The indicated maximally permissible flow rate q_{Vmax} may not be exceeded. Blow-off (T) lines of relief valves must out-flow safely.

Absolutely consider the operation notes!

- In the work the indicated pressure is set with a flow rate by 2 l/min.
- The indicated maximally permissible flow rate applies to applications without back-pressure in the blow-off line (port T).
- With removing the valve's sealing the permission after DGRL is no longer valid!
- Always consider the 'pressure equipment directive 97/23/EC'-guidelines!



Dimensions (mm)

HSB-06-A-O-... manual discharge

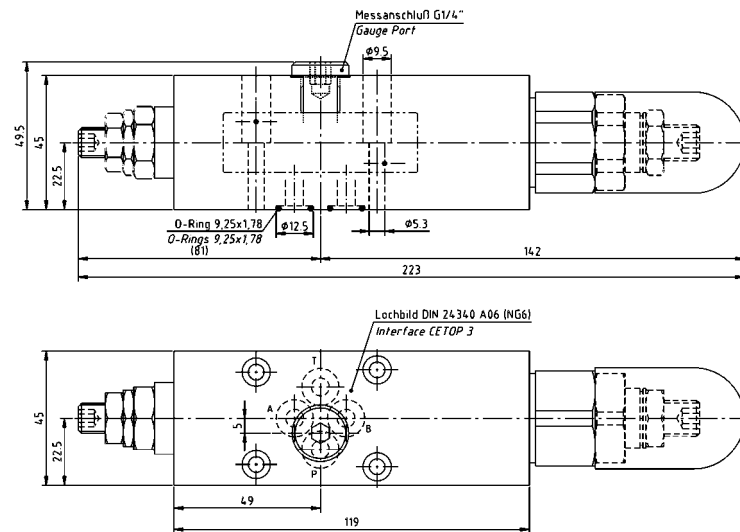


Abb. Meßanschluß verschlossen

H3-033902

HSB-06-E-M-... electrical discharge

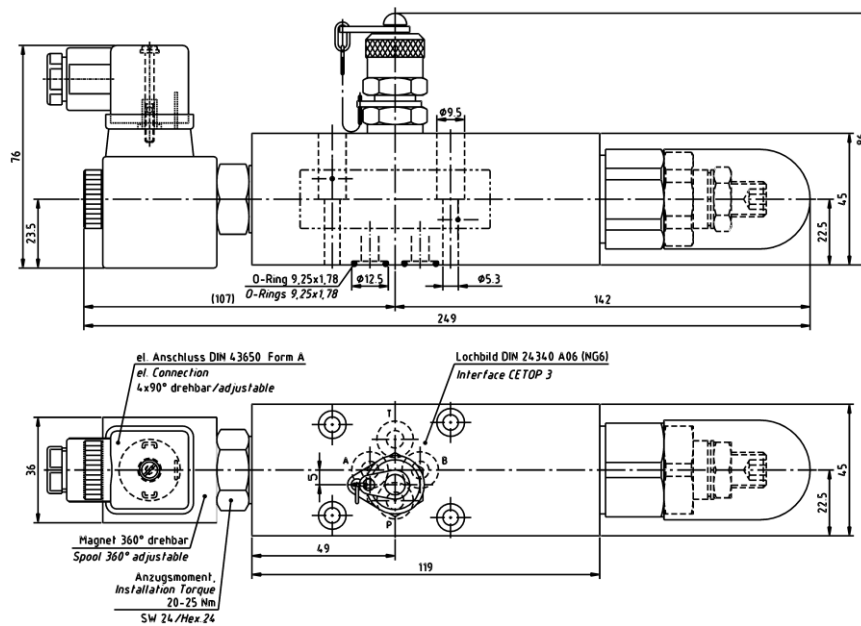


fig. with Minimes® coupling

H3-033903

High/low flow rate shift valve ZMSRP2, ZMSRT2

sandwich body CETOP/ISO 3 • in P or T • max. 30 l/min

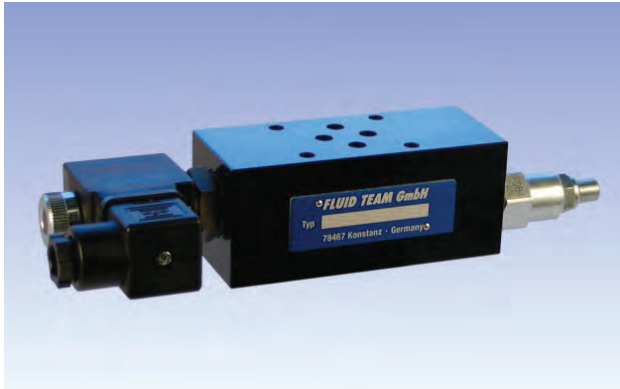


fig. ZMSRP2

Description

With the FLUID TEAM high/low flow rate shift valve ZMSR*2 it is possible to shift between two flow rate values. If the 2/2 poppet valve is open, the entire approaching oil can flow through the sandwich body. If it is closed, the flow control valve comes to function. Here it can be chosen between a pressure compensated 2-way flow control valve and a restrictor (needle) valve. Because of the sharp-edged orifice these valves are very insensitive to viscosity. Due to the balanced needle these valves are easily adjustable even with high pressures. For the 2/2 poppet valve you can choose between the version 'normally closed' and 'normally open'. The ZMSRP2 limits the approaching oil flow in P, the ZMSRT2 limits the oil flow running off to T.

Technical Data

for terms and definitions see chapter 12

Hydraulical

Rated Pressure: max. 250 bar
 Rated Flow: max. 30 l/min (through poppet valve)
 Fluids: oils as per DIN 51524, others upon request
 Viscosity Range: 10 – 350 cSt
 Filtration: class 18/16/13, filter $\beta_{6...10} \geq 75$

Mechanical

Ambient Temperature: -20 °C – +50 °C
 Fluid Temperature: -20 °C – +80 °C
 Installation: no restrictions
 Weight: 0,9 kg
 Materials: valve parts: steel
 body: aluminium
 seals: NBR
 back up rings: Teflon, PU
 Surface Protection: valve: zinc plated
 body: anodised

Electrical

Nominal Voltage: 24V DC, 12V DC, 205V DC; $\pm 10\%$
 Nominal Resistance (R_{20}): 24V: 22 Ω ; 12V: 5,8 Ω ; 205V: 1,6 k Ω
 Power Consumption: 27 W
 Cyclic Duration Factor: 100 %
 Environmental Protection: IP 65
 Electrical Termination: plug as per DIN 43650 form A, incl. coupler socket Pg9

Symbols

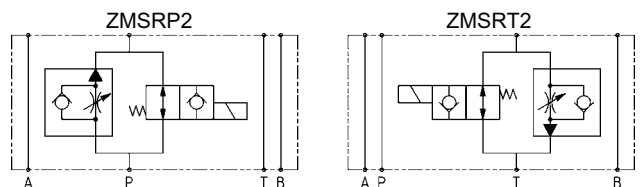


fig. with flow control valve (FDBA) and 2/2 poppet valve normally open (MSVT-07)

Note: for further technical data see data sheet MSVT (chapter 8).

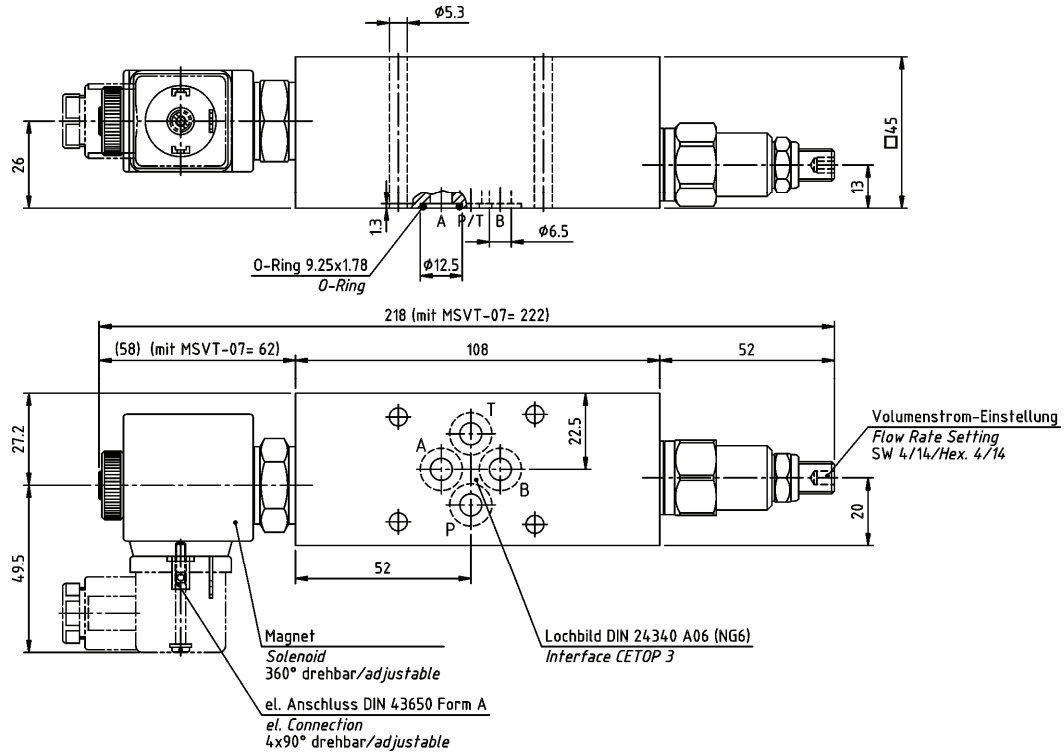
Model Code

ZMSRP2-06	-	FDBA	-	L	A	N	-	MSV3	-	24V
High/Low Flow Rate Shift Valve	Flow Control Valve						Poppet Valve	Voltage		
deliverable executions:	Type	Control	Adjustment Range	Seals	MSVT-03 normally closed MSVT-07 normally open		12V DC 24V DC 205V DC			
Function in P	ZMSRP2-06	L = screw with lock nut	A = - for FDBA: 1 – 23 l/min - for NCCB: orifice- \varnothing 0 – 4,8 mm	N = NBR						
Function in T	ZMSRT2-06									
FDBA = pressure compensated NCCB = needle valve										

Dimensions (mm)

ZMSRP2-06-...

Function in P

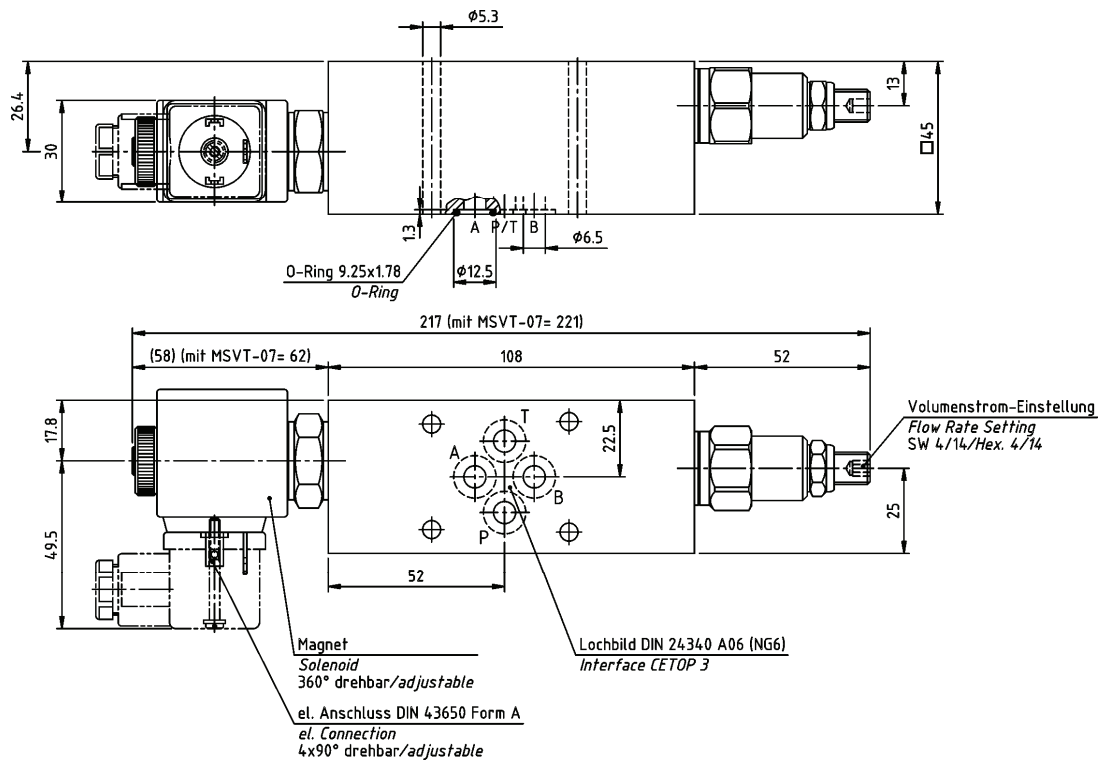


Turn screw clockwise to decrease flow.
 Complete adjustment range in 5 turns.
 Leakage at shutoff: < 0,4 l/min/ 315 bar/ 32 cSt.

H3/91 20 01

ZMSRT2-06-...

Function in T

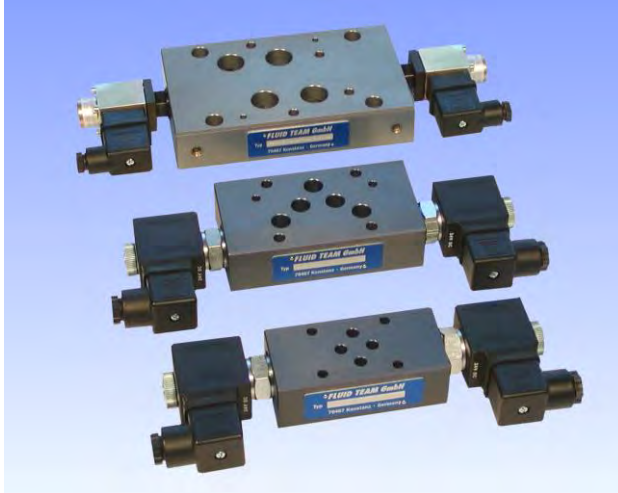


notes for flow control valve: see above

H3/91 25 09

Pressure Discharge Valve ZMSVD2

Sandwich Body CETOP/ISO 3, 5, 7 • opens A and B to T

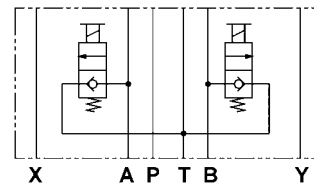


Description

With the pressure discharge valve ZMSVD2 is simple eliminating of residual pressures in the A and B channels of sandwich packages possible. The channels A and B are dischargeable thereby separately over two 2/2-way poppet valves to the tank (T channel). By the use of compact valves increase in altitude is small.

Symbol

CETOP/ISO 5 with X and Y channel shown



Application

The ZMSVD2 finds particularly in tooling machines use. Example: core strain discharge of injection moulding machines (before tool changes).

Technical Data

for terms and definitions see chapter 12

Hydraulic

Rated Pressure: max. 315 bar
 Rated Flow over CETOP/ISO 3, 5: max. 30 l/min
 Poppet Valve: CETOP/ISO 7: max. 2 l/min
 Fluids: oils as per DIN 51524, others upon request
 Viscosity Range: 10 – 350 cSt
 Filtration: class 20/18/14, filter β 10...16 \geq 75
 Leakage: max. 5 drops/ min.

Mechanic

Ambient Temperature: -20 °C – +50 °C
 Fluid Temperature: -20 °C – +80 °C
 Installation: no restrictions
 Weight: CETOP/ISO 3: 0,84 kg
 CETOP/ISO 5: 1,06 kg
 CETOP/ISO 7: 1,39 kg

Materials:

valve parts: steel
 body: Aluminium
 seals: NBR
 back up rings: Teflon, PU
 valve: zinc plated, burnished
 body: anodised

Surface Protection:

Electrical

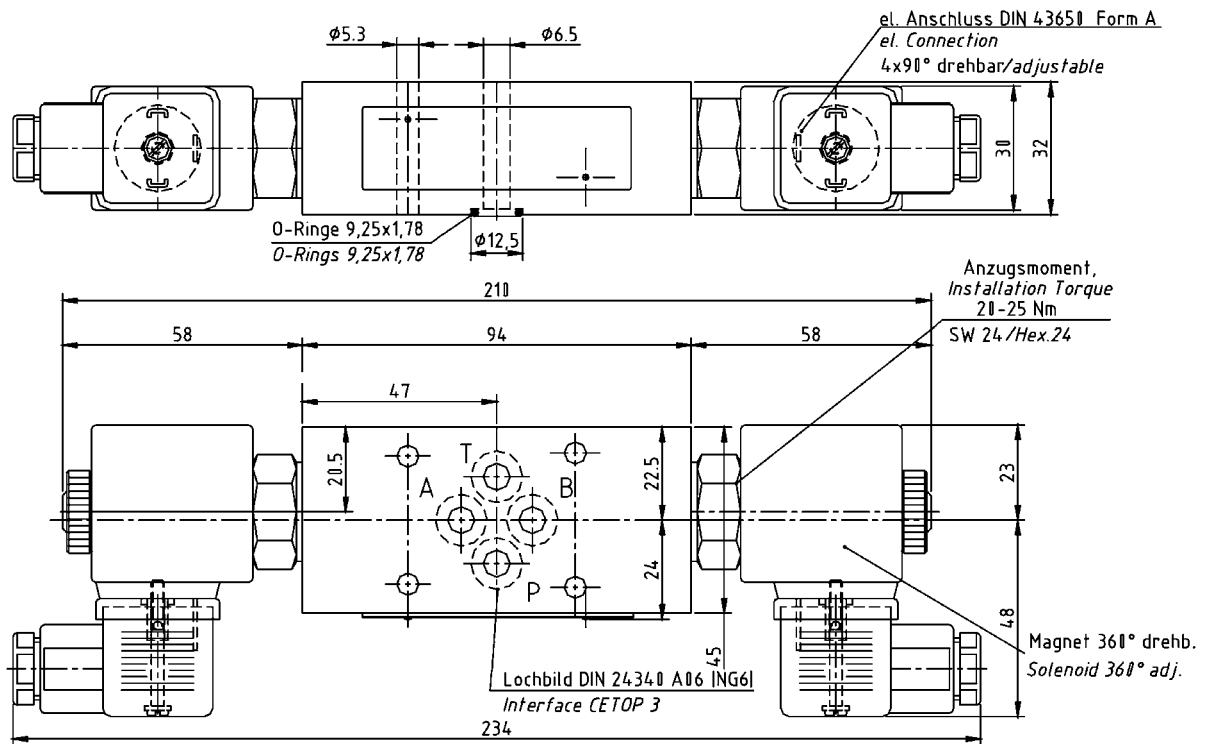
Nominal Voltage: 24 V DC, 12 V DC, \pm 10%
 Nominal Resistance (R_{20}): CETOP/ISO 3, 5: 24V: 26 Ω ; 12V: 8 Ω
 CETOP/ISO 7: 24V: XX Ω ; 12V: X Ω
 Wattage: 22 W
 Cyclic Duration Factor: 100 %
 Environmental Protection: IP 65
 Electrical Termination: CETOP/ISO3, 5: plug as per DIN 43650 form A, incl. square connector Pg9
 CETOP/ISO 7: plug as per DIN 43650 form B, incl. square connector Pg7

Model Code

ZMSVD2	-	A/T-B/T	-	1	-	24V
Pressure Discharge Valve, Sandwich Body		Function		Design		Voltage
deliverable executions:		A/T-B/T = discharge from A and B to T				24V DC 12V DC
CETOP/ISO 3 (NG 6)	ZHD/ND-06					
CETOP/ISO 5 (NG 10)	ZHD/ND-10					
CETOP/ISO 5 (with X + Y)	ZHD/ND-10Y					
CETOP/ISO 7 (NG 16)	ZHD/ND-16					

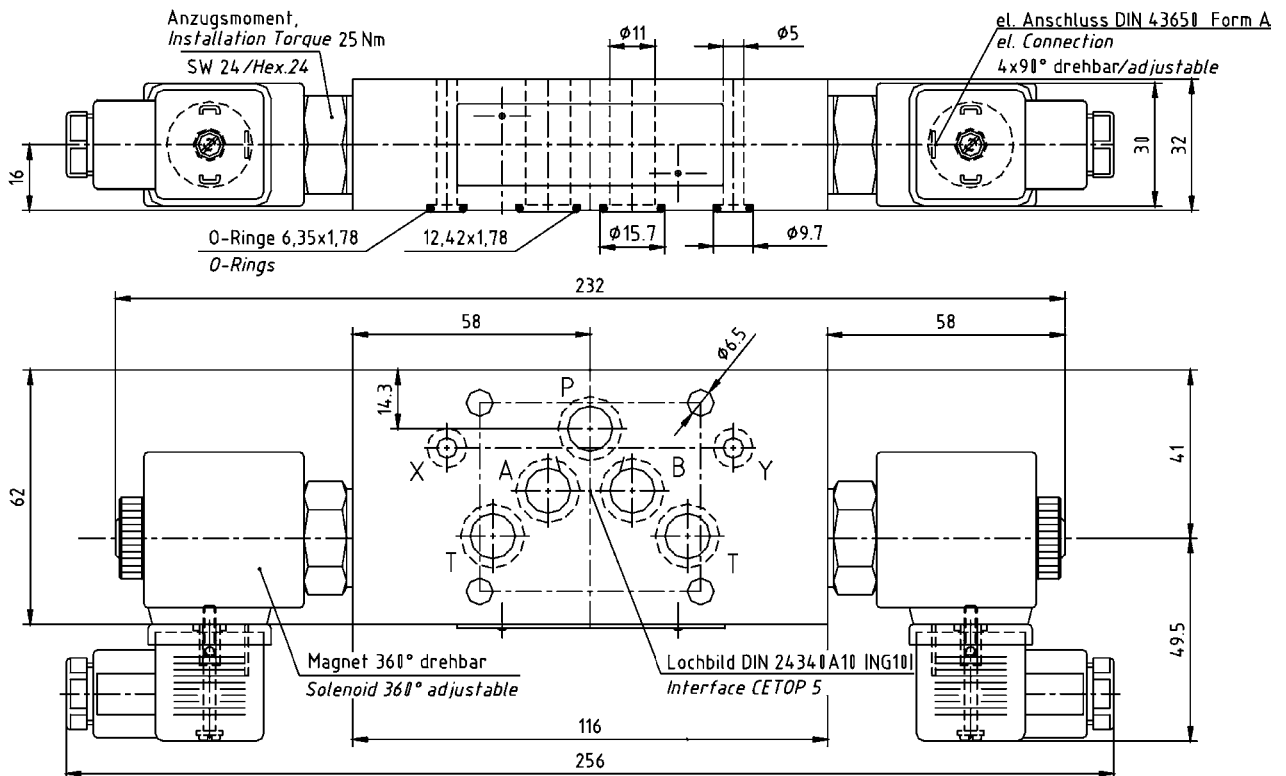
Dimensions [mm]

ZMSVD2-06-... CETOP/ISO 3 (NG 6)



H3-000703

ZMSVD2-10Y-... *) CETOP/ISO 5 (NG 10)

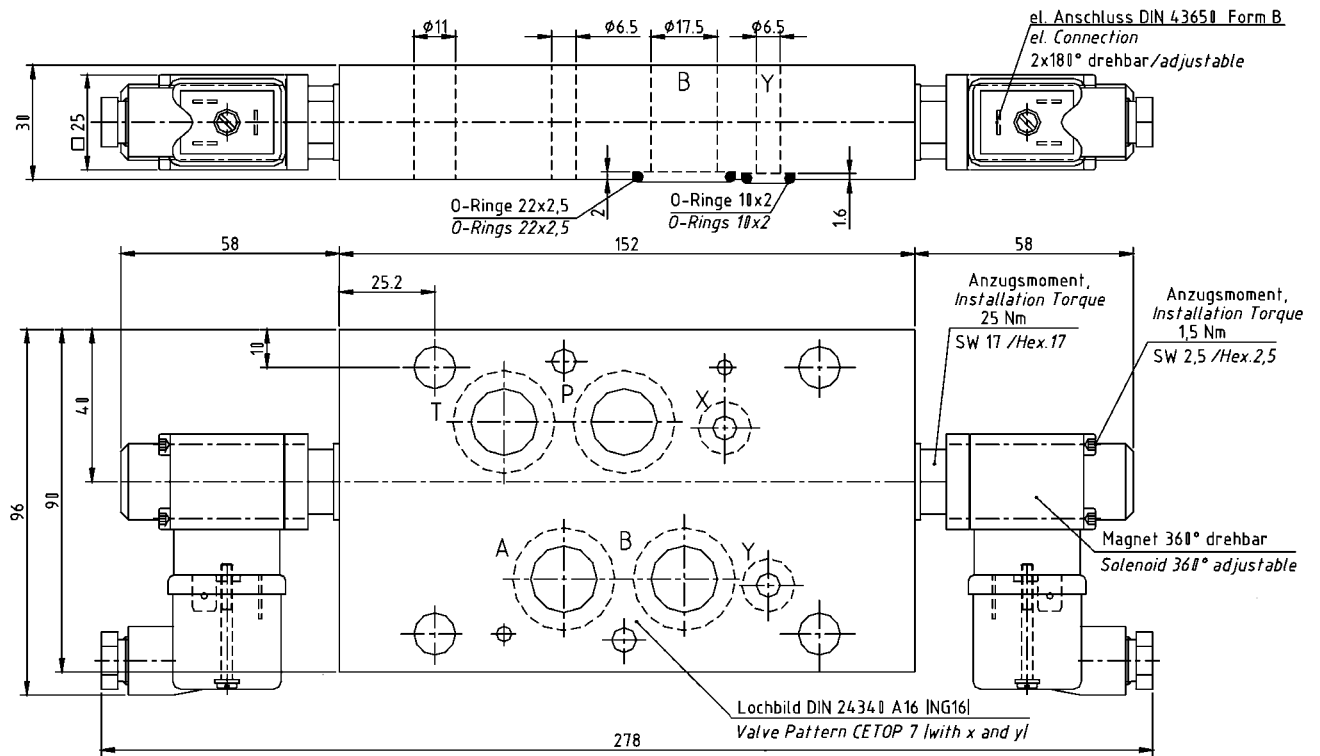


*) fig. shows interface with X- and Y-channel. The other dimensions are identic.

H3-000705

ZMSVD2-16-...

CETOP/ISO 7 (NG 16)

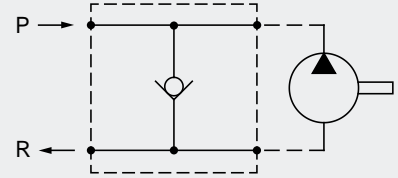


H3-930202

Bypass anti cavitation valve HNV



cavitation protection for orbital motors
with hollow bolts G 3/8"



070410_HNV_e
07.2018

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Type code	3
Set-up	3
Accessories and additional information	3

Characteristics

- hydraulic motor bypass valve
- cavitation protection for Danfoss OMM and similar motors
- the check valve ensures a backflow of oil in case of motor overrun
- space-saving installation possible
- maintenance-free

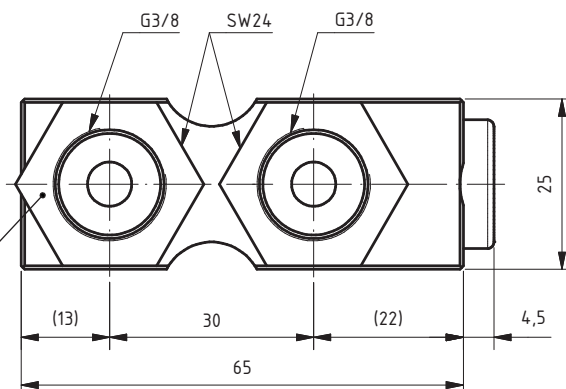
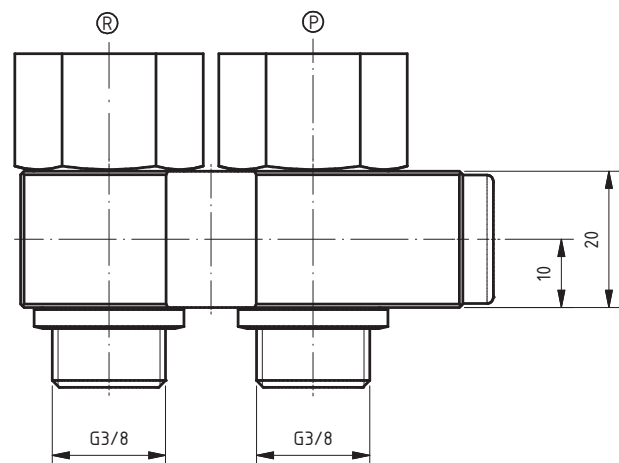
Technical data

<i>Hydraulic</i>	Operating pressure max.:	210 bar
	Flow rate max.:	10 l/min
	Opening pressure at check valve:	0,3 bar
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	bypass anti cavitation valve
	Size:	G 3/8"
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,23 kg
	Material:	body: aluminium
Surface protection:	hollow bolts and steel sealing rings: steel aluminium: anodized, steel: zinc coated	

Dimensions

Bypass anti cavitation valve HNV



installation torque 45 - 50 Nm
SW24

HM4/94 45 01

Type code

Article description	Article number
Bypass anti cavitation valve HNV including G 3/8" hollow bolts	203.0029

Set-up

The installation torque values of port P and R are maximum values which are not to be exceeded (Nm, couter material steel), otherwise this might lead to damage at the steel sealing ring. The correct installation torque must be guaranteed by using the necessary tools (torque wrench) and procedure.

If leakage occurs at the steel sealing ring despite the correct installation torque, the system must never be tightened with a higher torque, but it might be necessary to replace the bypass anti cavitation valve and/or its counterpart, as well as the steel sealing ring.

The system is designed to absorb hydraulic forces. If there are any mechanic forces, e.g. applied through hydraulic tubing, this may lead to failure.

Any hydraulic tubing must be mounted with the system beeing turned off and stress-relieved.

Accessories and additional information

<i>Accessories/ spare parts</i>	Article:	Article number:
	hollow bolt G 3/8"	805.0001
	steel sealing ring R 3/8"	809.0011
<i>Manual</i>	Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „ <i>general operating manual</i> “ or will be provided upon request.	



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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2/2-way Poppet Valves

2/2-way Poppet Valve MSVT

direct operated or pilot operated
normally open or normally closed
operating pressure max. 350 bar
volume flow max. 40 l/min

Sandwich Body 2/2-double Poppet Valve ZMSV2

pilot operated, normally closed
operating pressure max. 315 bar
volume flow max. 80 l/min
sandwich body NG 6, NG 10

3/2-way Poppet Valves

3/2-way Compact Poppet Valve MSV3/2

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 20 l/min
cavity MSV3/2

3/2-way Poppet Valve S32S-A1X34

direct operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 30 l/min
cavity S32S-X34

Spool Valves

4/2, 4/3 Directional Valve W4_S-5PS03

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 8 l/min
size NG 3

4/2, 4/3 Directional Valve W4_S-A1AS06

direct operated, solenoid operated
operating pressure max. 350 bar
volume flow max. 80 l/min
size NG 6

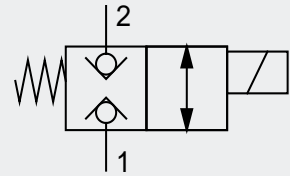
4/2, 4/3 Directional Valve W4_S-A2AS06

direct operated, solenoid operated
operating pressure max. 250 bar
volume flow max. 50 l/min
size NG 6

2/2-way poppet valve MSVT



solenoid operated
operating pressure max. 350 bar
volume flow max. 40 l/min



080120_MSVT_e
01.2018

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Characteristics

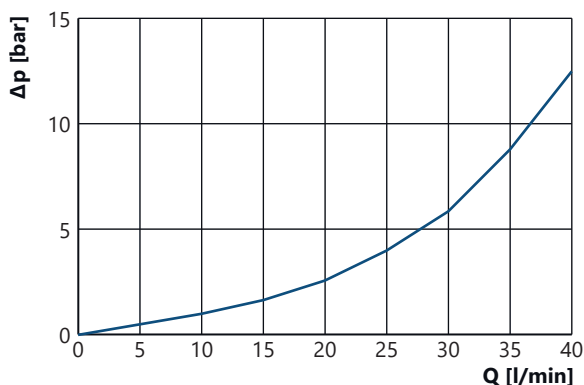
- screw-in poppet valve
- pilot operated or direct operated available
- normally open or normally closed models available
- maintenance-free

Technical Data

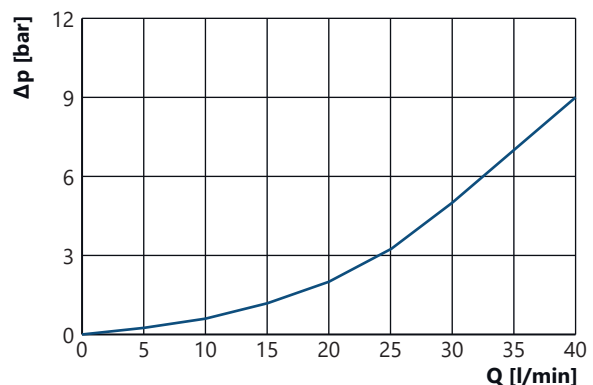
<i>Hydraulic</i>	Operating pressure max.:	350 bar (MSVT 20 and MSVT 21: 250 bar, flow from 1 to 2: 150 bar)
	Flow rate:	40 l/min (MSVT 20: 15 l/min, MSVT 21: 30 l/min)
	Flow direction:	from 2 to 1 (1 to 2)
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	3 - 400 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta_{5(c)} > 200$
<i>Mechanic</i>	Design:	Screw-in valve
	Fluid temperature:	-10 °C to +80 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,31 kg
	Material:	valve parts: steel, coil: plastic seals: NBR
Surface protection:	burnished/zinc coated	
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal resistance (R20):	8 Ω (12 V), 26 Ω (24 V)
	max. power consumption:	18 W (12 V), 22 W (24 V)
	Shifting-time:	100% ED
	Protection class:	IP65 correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A
	Electronic controllers:	see chapter 6 "electronics and sensor technology" as well as our online catalogue at www.weber-hydraulik.com .

Performance

Pressure drop diagram ($\Delta p/Q$) MSVT-03 and MSVT-04

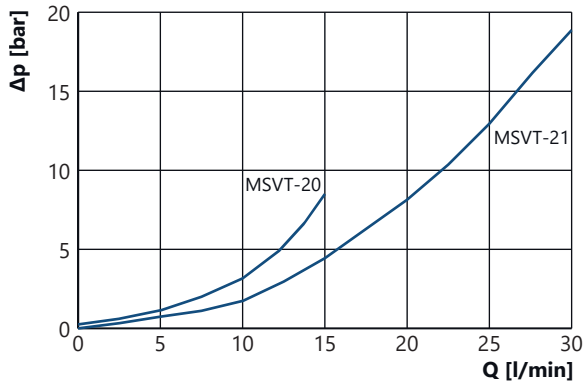


Pressure drop diagram ($\Delta p/Q$) MSVT-07

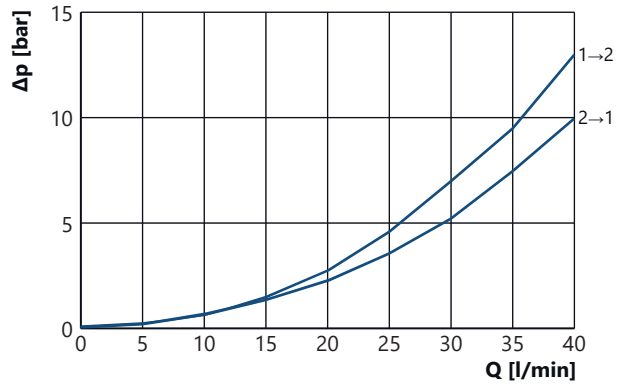


Performance

Pressure drop diagram ($\Delta p/Q$) MSVT-20 and MSVT-21



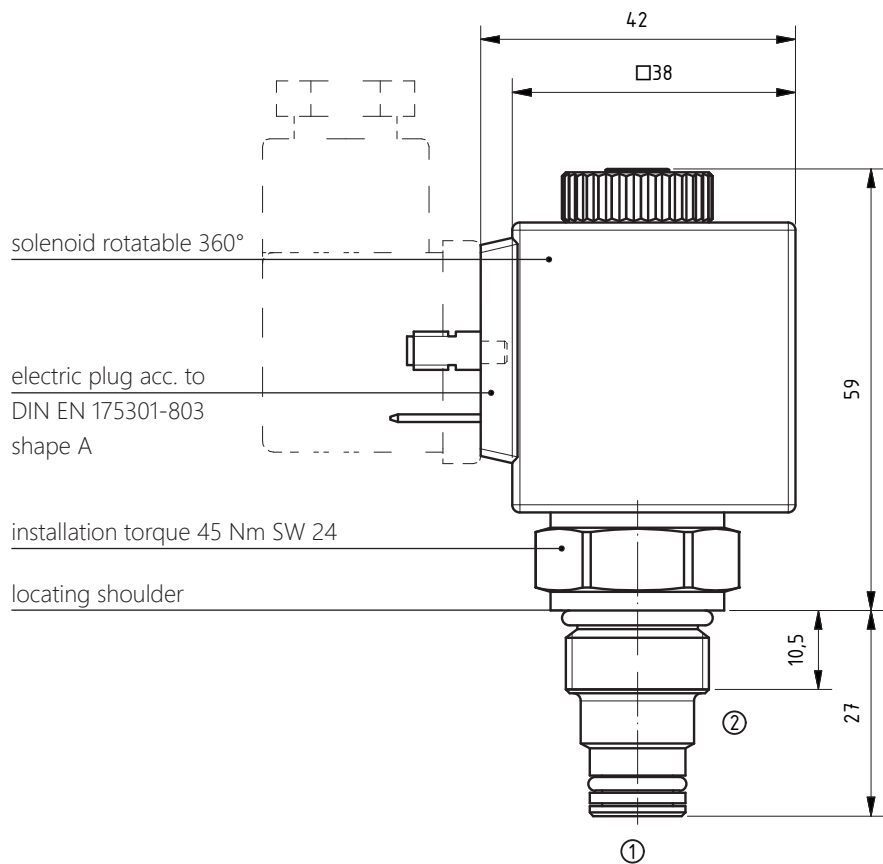
Pressure drop diagram ($\Delta p/Q$) MSVT-22



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

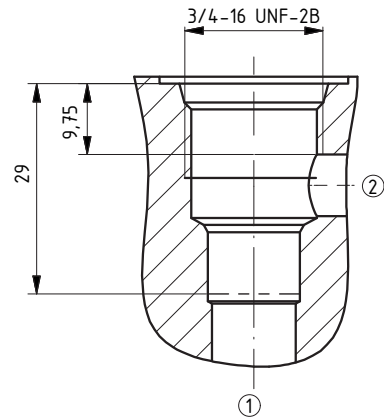
Screw-in valve MSVT



HM4/07 13 04

Dimension

Cavity MSVT



NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Model	
03	normally closed
04	normally closed with manual override
07	normally open
20	bi-directional, normally closed (15 l/min)
21	bi-directional, normally closed (25 l/min)
22	bi-directional, normally closed

Nominal voltage	
12 V	12 V DC
24 V	24 V DC

Accessories and additional information

<i>Accessories / spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Socket connector DIN EN 175301-803, shape A, grey	149.0008

NOTE For appropriate electronic controllers, see chapter 6 „electronics and sensor technology“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Sandwich body-2/2-double poppet valve ZMSV2

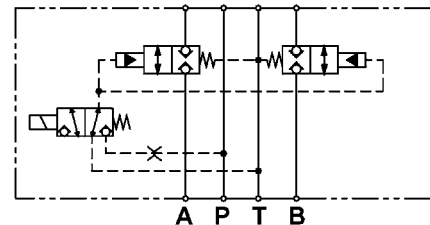
NG 6, NG 10 • one solenoid valve operates A and B • max. 80 l/min



Description

The ZMSV2 includes two hydraulically controlled 2/2-way-poppet valves. They are both operated by a pilot valve. Therefore channel A and B can be shut off tight, regardless of the load pressure. The switching process is slightly damped, to avoid negative effects of sudden decompression. The minimum switching pressure (pressure difference between channel P and T) should be at least 20 bar. The sandwich bodies are available in size NG 6 or NG 10 (also with X-and Y-channel).

Symbol



Technical Data

for terms and definitions see chapter 12

Hydraulic

Rated pressure: max. 315 bar
 Rated flow: NG 6: max. 40 l/min
 NG 10: max. 80 l/min
 Minimum pressure: 20 bar (P-T)
 Fluids: hydraulic fluids acc. to DIN 51524,
 others upon request
 Viscosity Range: 10 – 300 cSt
 Filtration: min. 25 µm, optimally 15 µm
 Leakage: max. 5 drops/min.

Mechanic

Ambient temperature: -20 °C – +40 °C
 Fluid temperature: -20 °C – +80 °C
 Installation position: any
 Weight: NG 6: 1,76 kg; NG 10: 3,10 kg

Materials:

valve parts: steel
 body: aluminium
 Seals: NBR, Viton optional
 Backup rings: Teflon, PU
 body: anodized
 ext. valve parts: zinc plated, burnished

Seals:

Surface protection:

Electric

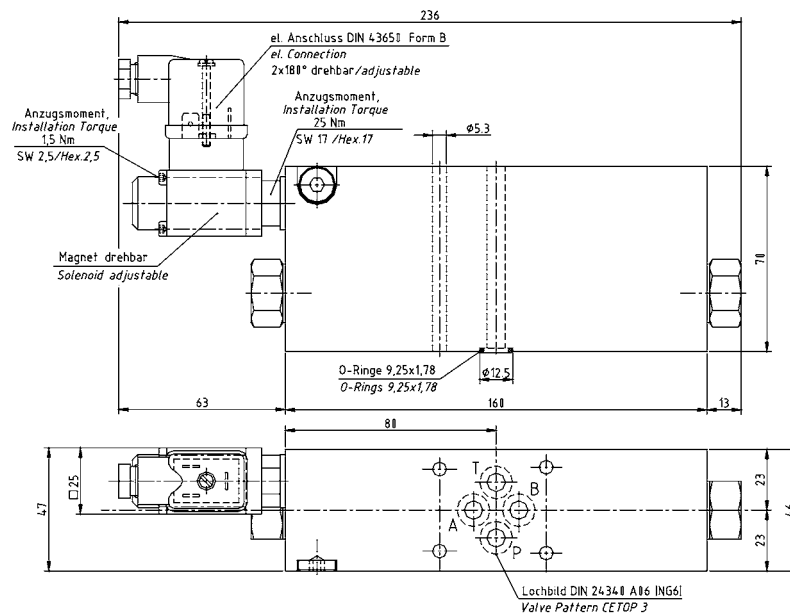
Nominal voltage: 24 V DC ± 10 %
 Nominal resistance (R₂₀): 29 Ω
 Power consumption: max. 20 W
 Shifting time: 100 % ED
 Protection class: IP 65
 Electric termination: electric plug acc. to DIN 43650
 shape B, incl. female connector Pg7

Type code

ZMSV2-06-A/B		SGV	*	24V	*
Sandwich body-2/2-double poppet valve, in A and in B		Function	Revision	Nominal voltage	Special designs
Available models:		SGV = normally closed, pilot operated	(in-house)	24 V DC	
NG 6 (DIN 24340 A06)	ZMSV2-06-A/B				
NG 10 (DIN 24340 A10)	ZMSV2-10-A/B				
NG 10 (DIN 24340 A10 with X and Y)	ZMSV2-10Y-A/B				

Dimensions

NG 6



H3-954407

NG 10

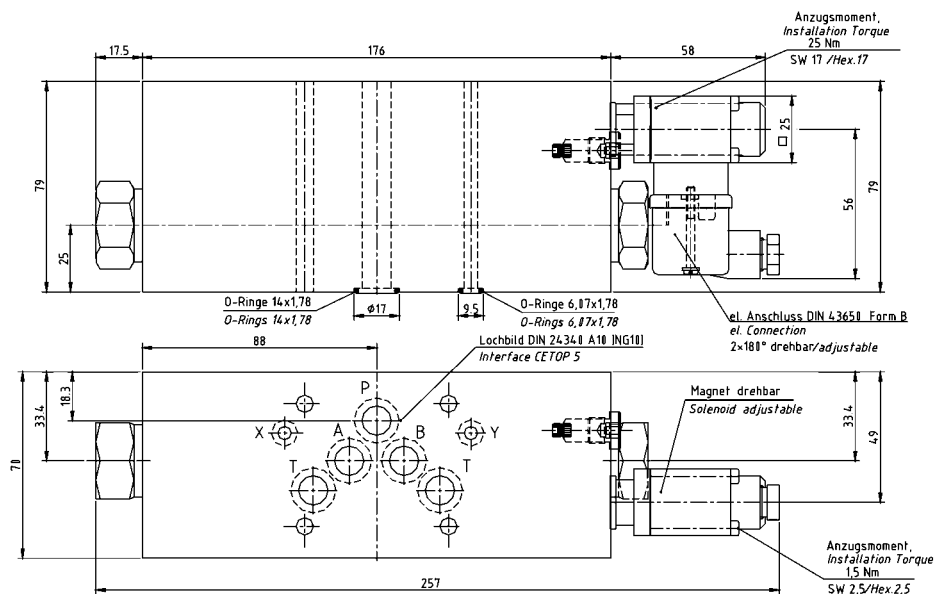


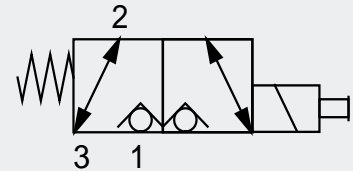
Fig. shows model with X and Y channel

H3-934301

3/2-way poppet valve MSV32



direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 20 l/min



080220_MS32_e
07.2018

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Accessories and additional information	4

Characteristics

- screw-in poppet valve
- with manual override
- also available in in-line body or mounting plate NG 6
- maintenance-free

Technical Data

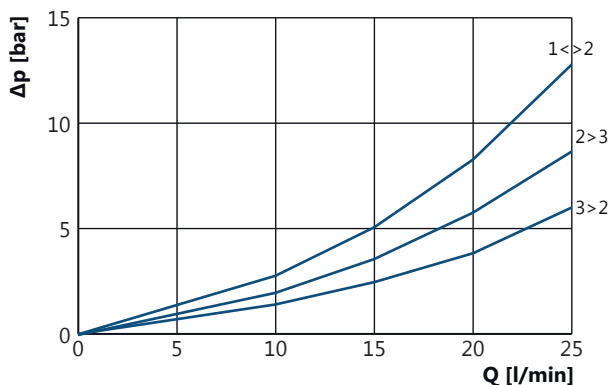
<i>Hydraulic</i>	Operating pressure max.:	315 bar
	Flow rate:	20 l/min
	Flow direction:	see symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	3 - 400 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta_{5(c)} > 200$

<i>Mechanic</i>	Design:	screw-in poppet valve
	Size:	MSV3/2
	Fluid temperature:	-10 °C to +80 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,42 kg
	Material:	valve parts: steel seals: NBR, backup rings: PU, Teflon
Surface protection:	zinc coated steel	

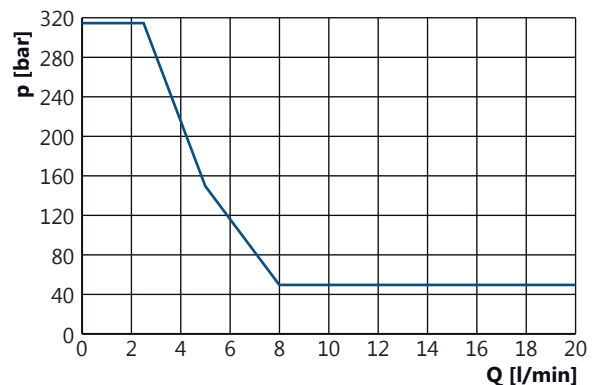
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal resistance (R20):	5,8 Ω (12 V), 22 Ω (24 V)
	Max. power consumption:	27 W
	Shifting time:	100 % ED
	Protection class:	IP65 correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com

Performance

Pressure drop diagram ($\Delta p/Q$) at I_N

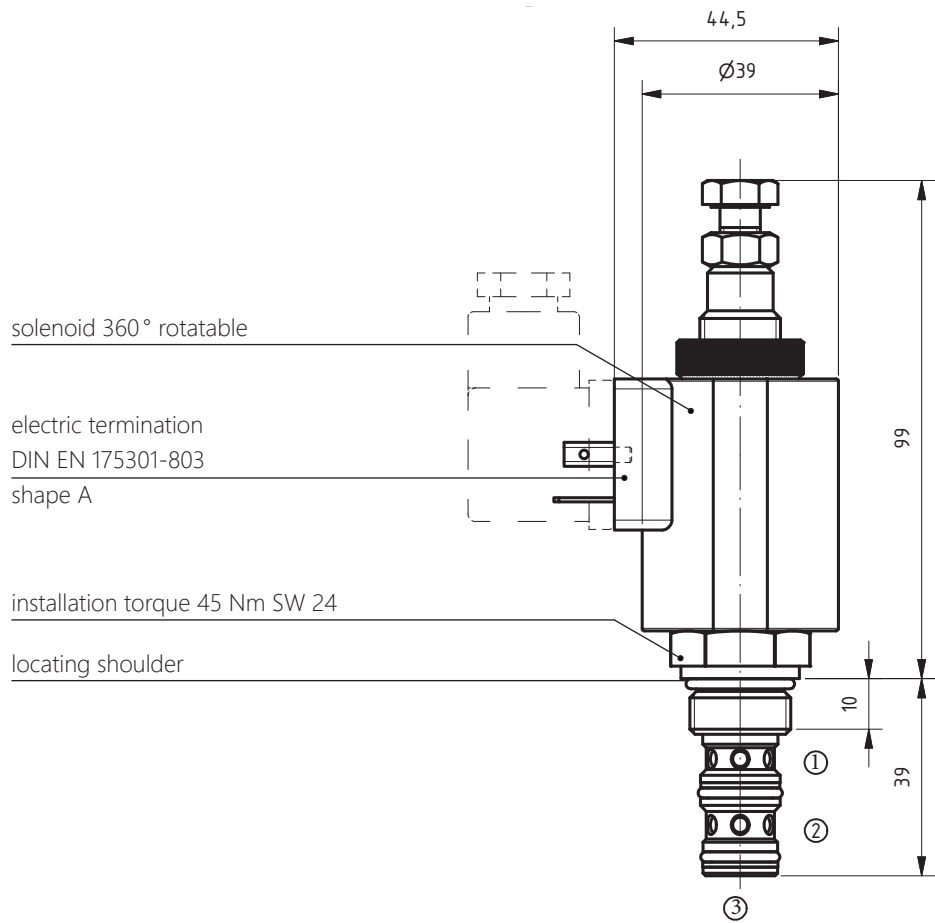


Switching power diagram (p/Q) at I_N

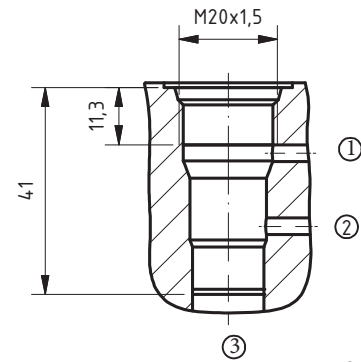


Dimensions

Screw-in valve
MSV3/2



Cavity MSV3/2



HM4/94 44 01

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available as LMSVA-06 in a mounting plate NG 6. Dimension sheets are available upon request.

Type code

	-		-	NH	-		-	
		Nominal voltage		lockable manual override		Electric Termination		Body
		12 V	12 V DC			DIN		without
		24 V	24 V DC			AMP Junior Timer	AMP	in-line body G 3/8" 90°
3/2-way poppet valve								G3/8
MSV3/2	screw-in valve							
LMSVA-06-321	in mounting plate NG 6, 0-position P closed							
LMSVA-06-322	in mounting plate NG 6, 0-position P open							

Accessories and additional information

<i>Accessories / spare parts</i>	Article:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Socket connector DIN EN 175301-803, shape A, grey	149.0008
	Sealing kit MSV32 (NBR)	405.0006

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

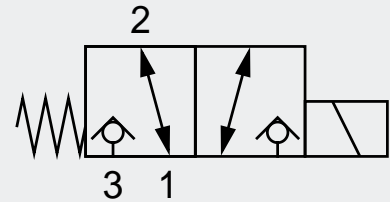
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3/2-way poppet valve S32S-A1X34



direct operated, solenoid operated
 operating pressure max. 350 bar
 volume flow max. 30 l/min



080221_S32S_A1X34_e
 07.2018

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Characteristics

- 3/2-way- screw-in poppet valve
- leak-free
- for on-off bi-directional control of flow to actuators with leak-free closing in both directions
- all ports can be fully pressurized
- maintenance-free
- rotatable and replaceable coil

Technical Data

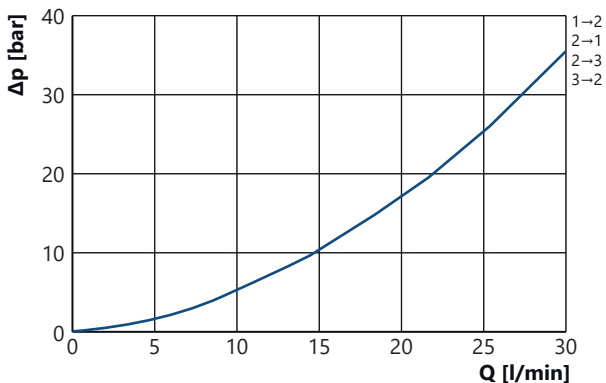
Hydraulic	Operating pressure max.:	350 bar
	Flow rate:	30 l/min
	Flow direction:	see symbol
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	3 - 400 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta_{5(c)} > 200$

Mechanic	Design:	screw-in poppet valve
	Size:	34
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,43 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	exterior parts: zinc coated steel (240 h salt spray test acc. to ISO 9227)

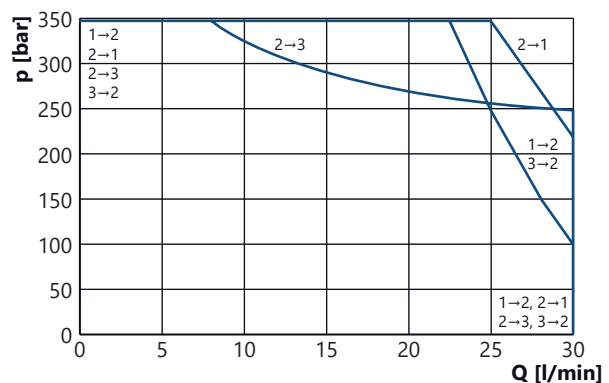
Electric	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	2,0 A (12 V), 0,93 A (24 V)
	Nominal resistance (R20):	6 Ω (12 V), 26 Ω (24 V)
	Shifting time:	100% ED
	Protection class:	IP65 correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803, shape A
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com

Performance

Pressure drop diagram ($\Delta p/Q$)



Switching power diagram (p/Q)



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

*Screw-in valve
S32S-A1X34*

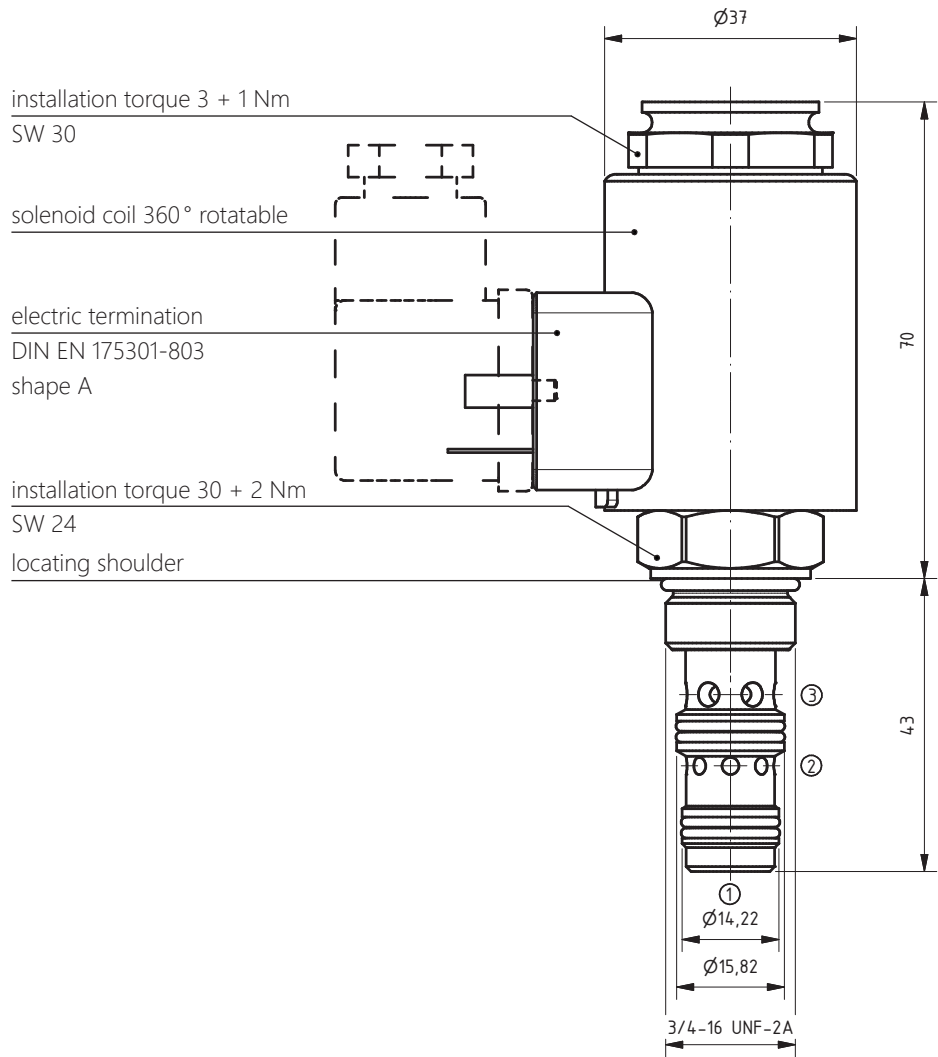
installation torque 3 + 1 Nm
SW 30

solenoid coil 360° rotatable

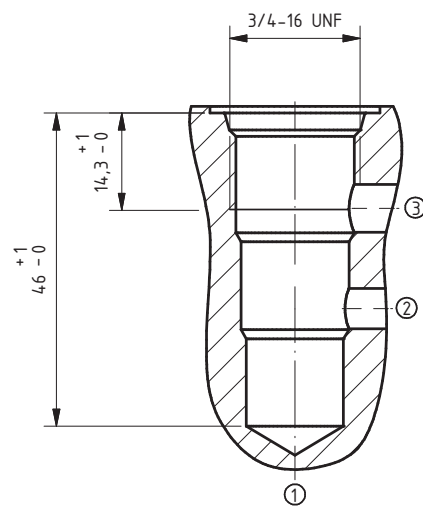
electric termination
DIN EN 175301-803
shape A

installation torque 30 + 2 Nm
SW 24

locating shoulder



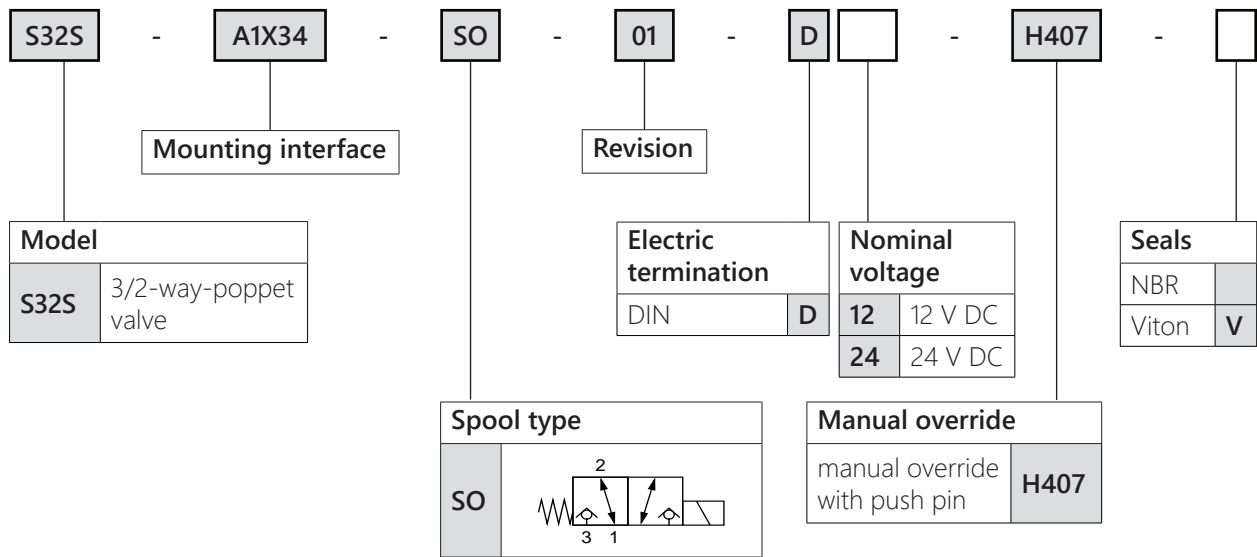
Cavity S32S-X34



HM3/17 04 02

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Accessories and additional information

Accessories / spare parts

Appropriate manifolds, different electric terminations and various kinds of manual overrides are available upon request. Please contact us for further information.

NOTE

For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.

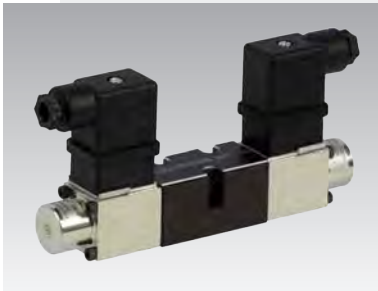


WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

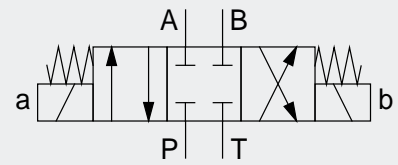
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On/off directional valve W42S-5PS03 and W43S-5PS03



direct operated, solenoid operated
 operating pressure max. 315 bar
 volume flow max. 8 l/min
 size NG 3 (company standard)



080311_W4_S-5PS03_e
 05.2018

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Characteristics

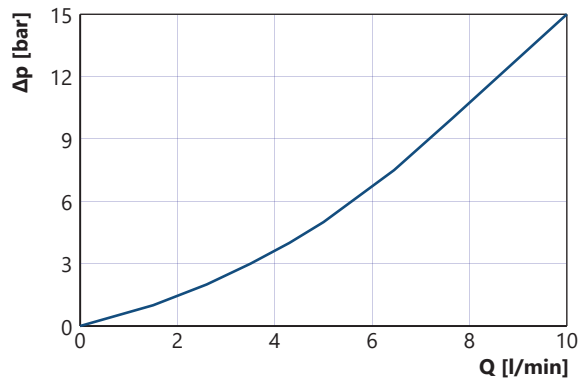
- on/off directional spool valve
- miniature edition
- 2-way- or 3-way-version available
- spring centred spool
- maintenance-free

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar port T: 75 bar summed pressure A, B: 350 bar
	Flow rate:	8 l/min at $\Delta p = 7$ bar
	Flow direction:	see symbols in type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$
	<hr/>	
<i>Mechanic</i>	Design :	spool type, direct operated
	Size:	NG 3 (company standard)
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any, preferably horizontal
	Maximum acceleration:	5 g
	Weight:	4/2-way-design: 0,42 kg 4/3-way-design: 0,62 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	coil: zinc coated body: nitrocarburized
<hr/>		
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,3 A (12 V), 0,63 A (24 V)
	Nominal resistance (R20):	5,9 Ω (12 V), 24,0 Ω (24 V)
	Power consumption:	9,6 W at nominal valve current
	Shifting time:	100% ED
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape B, unterminated wire
	Electronic controllers:	see chapter 6 "electronics and sensor technology" as well as our online catalogue at www.weber-hydraulik.com .

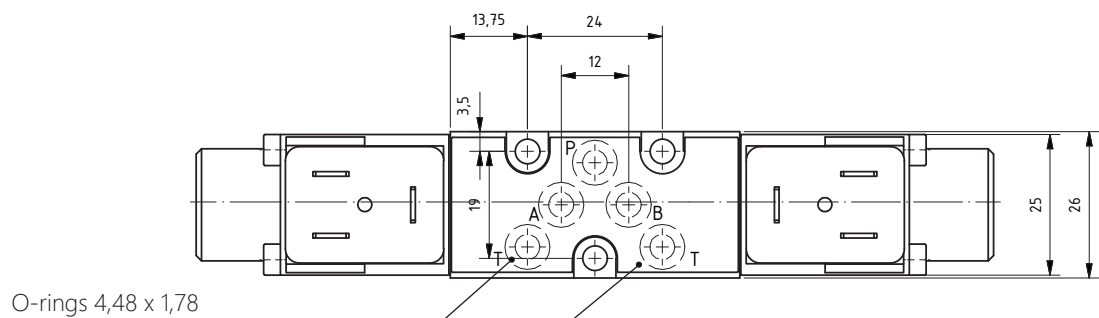
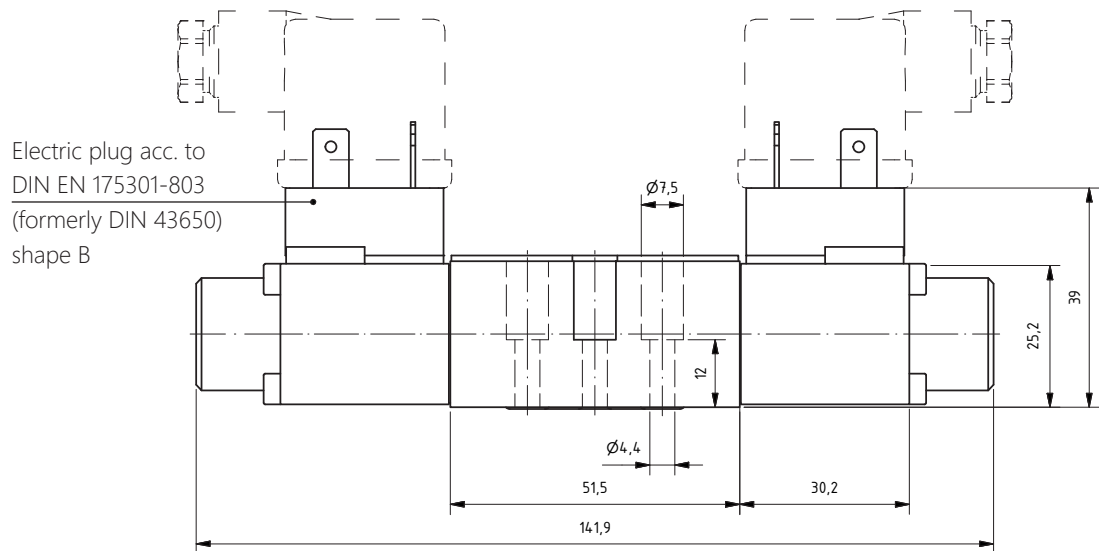
Performance

Pressure drop diagram ($\Delta p/Q$) W4_S-5PS03



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions



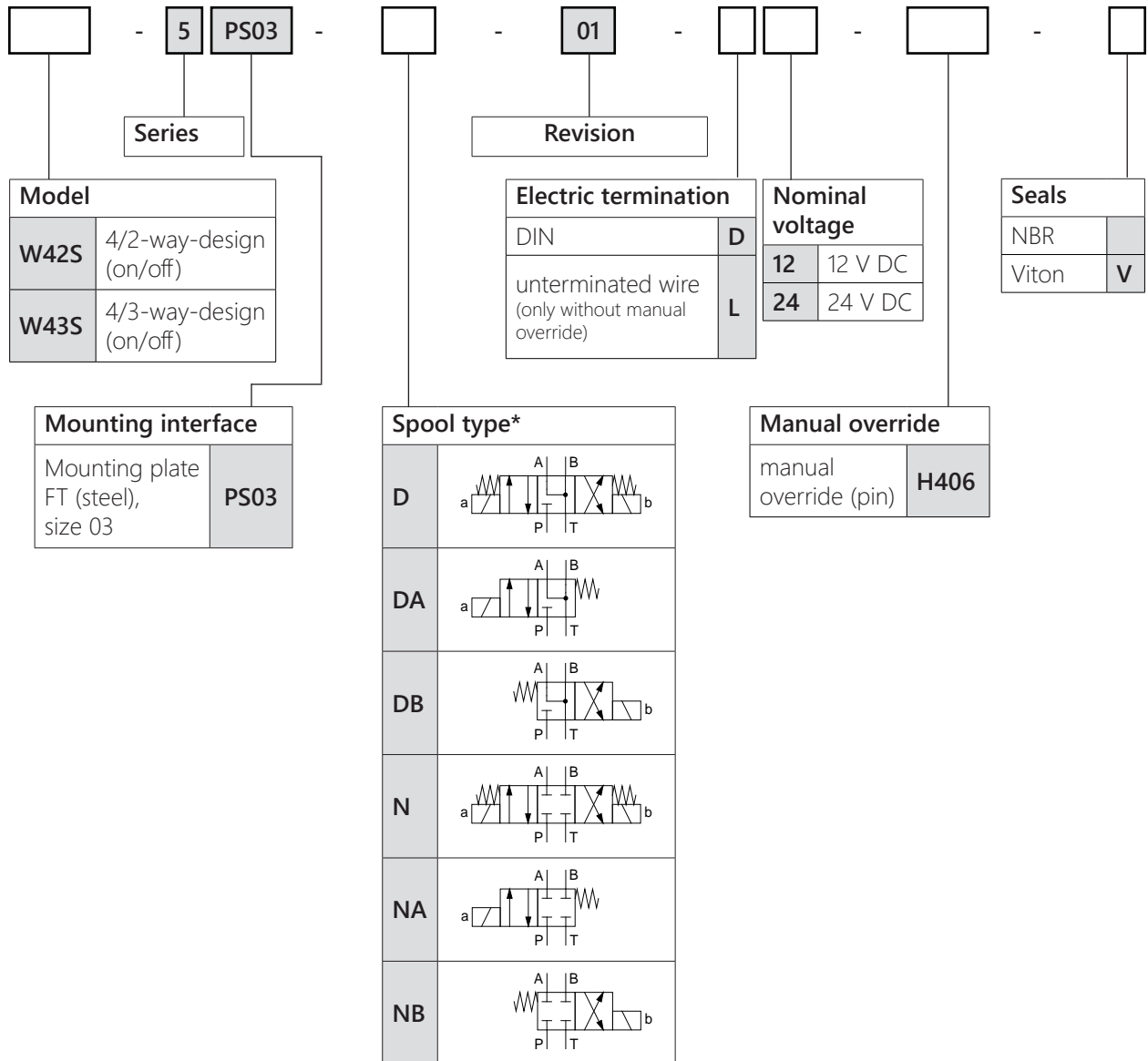
HM3/17 48 05

NOTE The valve must be mounted with fitting screws according to DIN EN ISO 4762 M4 x 30 - 12.9. Installation torque: $2,2 \pm 0,2$ Nm, screw-in depth min. 7 mm.

NOTE For the appropriate mounting plates, see our „*accessories*“ in the appendix or contact us.

NOTE For a detailed drawing of the port pattern please see chapter 12 „*general information*“ under the category „*port patterns*“ or our online catalogue at www.weber-hydraulik.com.

Type code



*Other spool types are available upon request.

Accessories and additional information

<i>Accessories/spare parts</i>	Part:	Article number:
	Socket connector DIN EN 175301-803*, shape B, black	149.0005
	Socket connector DIN EN 175301-803*, shape B, grey	149.0004
	Adapter plug DIN EN 175301-803*, shape B to shape A	109.0006
	Seal kit W43_-5PS03 (NBR)	405.0066
	Seal kit W43_-5PS03 (Viton)	405.0067
	Adapter plate NG 6 to NG 3, including seals and screws	203.0153
	Mounting plate NG 3, ports sidewise	151.0171

NOTE For the appropriate electronic controllers, see chapter 6 „electronics and sensor technology“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

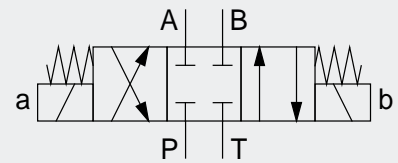
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On/off directional valve W42S-A1AS06 and W43S-A1AS06



direct operated, solenoid operated
 operating pressure max. 350 bar
 volume flow max. 80 l/min
 size NG 6, DIN 24340 A06



080330_W4_S-A1AS06_e
 07.2018

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Characteristics

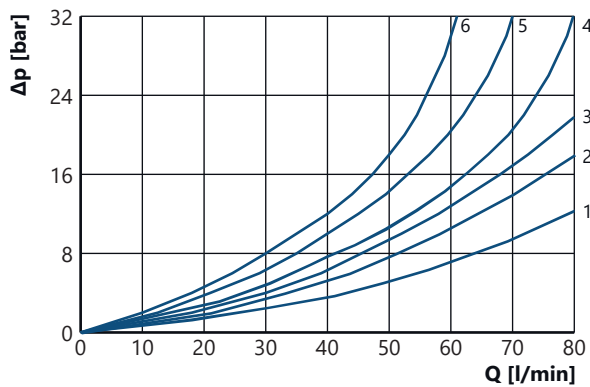
- on/off directional spool valve
- 2-way- or 3-way-version available
- spring centred spool
- maintenance-free
- rotatable and replaceable coils

Technical Data

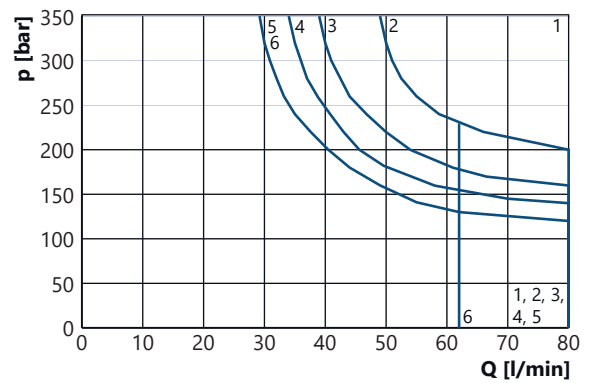
<i>Hydraulic</i>	Operating pressure max.:	port P, A, B: 350 bar port T: 210 bar
	Flow rate max.:	80 l/min
	Flow direction:	see symbols in type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	20 - 400 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 21/18/15, filter with β 5(c) > 200
	<hr/>	
<i>Mechanic</i>	Design:	spool type, direct operated by solenoids
	Size:	NG 6 (DIN 24340 A06, ISO 4401-03, CETOP 3)
	Fluid temperature:	-30 °C to +80 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	5 g
	Weight:	4/2-way-design: 1,6 kg 4/3-way-design: 2,2 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	solenoid: zinc coated body: phosphatised
<hr/>		
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	2,7 A (12 V), 1,3 A (24 V)
	Nominal resistance (R20):	4,41 Ω (12 V), 18,6 Ω (24 V)
	Power consumption max.:	32,6 W (12 V), 31 W (24 V)
	Shifting time:	100 % ED
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, DEUTSCH
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com

Performance

Pressure drop diagram ($\Delta p/Q$) W4_S-A1AS06



Switching power diagram (p/Q) W4_S-A1AS06 at I_N



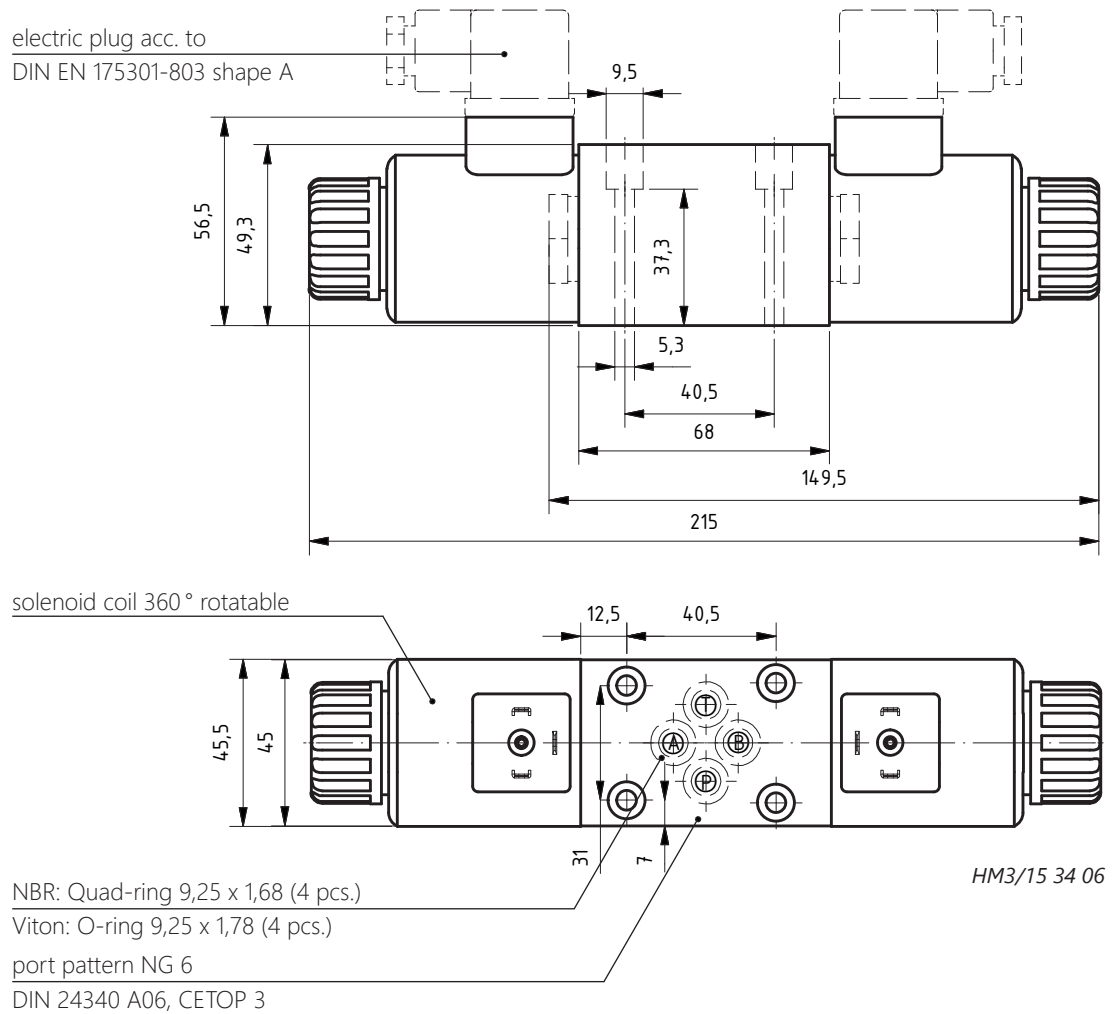
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

spool type*	P-A	P-B	A-T	B-T	P-T
N	2	2	3	3	
NA		2	3		
NB	2	2	3	3	
D	2	2	2	2	
H	2	2	2	3	3
C	5	5	5	6	3
CA	2			3	4
CB	5	5	5	6	3
R11	2	2	3	3	
R21	2	2	3	3	

spool type*	
N	1
NA	1
NB	1
D	2
H	3
C	6
CA	6
CB	6
R11	3
R21	4

* The different spool types are pictured in the type code on page 5.

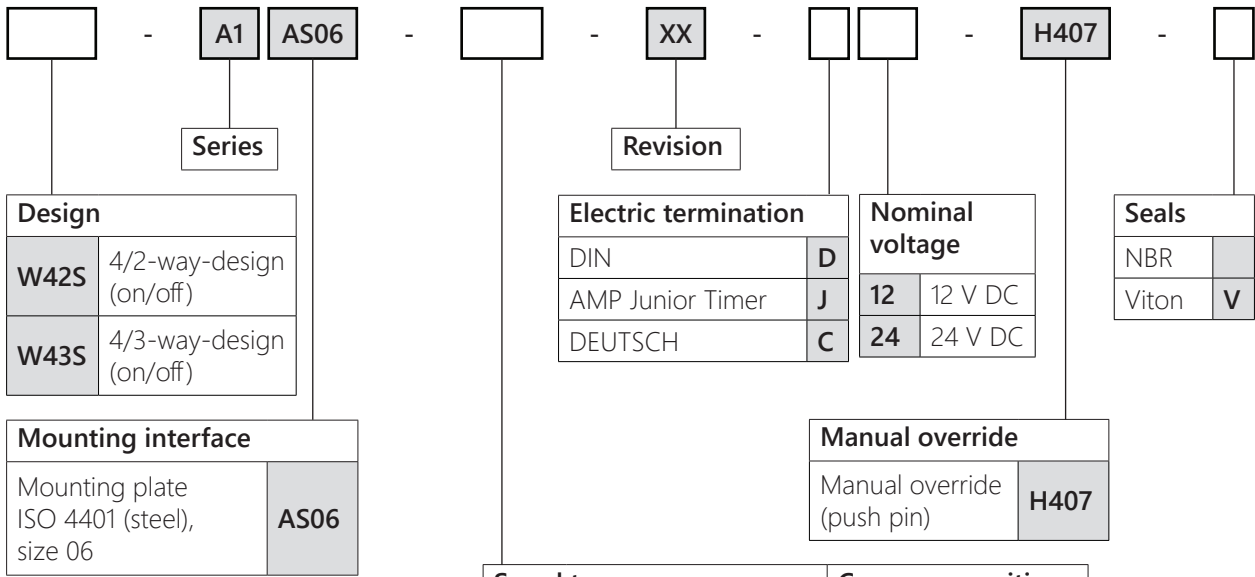
Dimensions



NOTE The valve must be mounted with four fitting screws according to DIN EN ISO 4762 M5 x 45 - 10.9. Installation torque: 8,9 Nm.

NOTE For a detailed drawing of the port pattern please see chapter 11 „*general information*“ under the category „*port patterns*“ or our online catalogue at www.weber-hydraulik.com.

Type code



Spool type		Crossover position
N		
NA		
NB		
D		
H		
C		
CA		
CB		
R11		
R21		

Accessories and additional information

<i>Accessories/spare parts</i>	Part:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Socket connector DIN EN 175301-803, shape A, grey	149.0008
	Srew DIN EN ISO 4762 M5 x 45 - 10.9	on request
	Seal kit W4_S-A1AS06 (NBR)	on request
	Seal kit W4_S-A1AS06 (Viton)	on request
	Coil 12 V DIN EN 175301-803, shape A	on request
	Coil 24 V DIN EN 175301-803, shape A	on request
	Coil 12 V, AMP Junior Timer	on request
	Coil 24 V, AMP Junior Timer	on request
	Coil 12 V, DEUTSCH	on request
	Coil 24 V, DEUTSCH	on request

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.

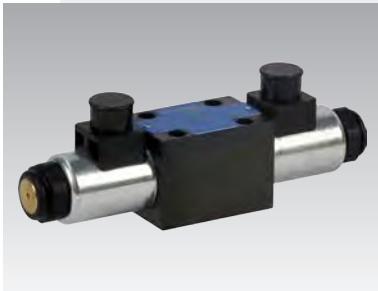


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 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

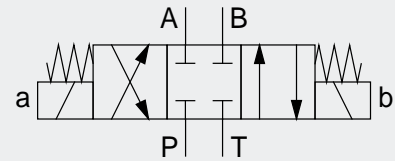
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On/off directional valve W42S-A2AS06 and W43S-A2AS06



direct operated, solenoid operated
 operating pressure max. 250 bar
 volume flow max. 50 l/min
 size NG 6, DIN 24340 A06



080340_W4_S-A2AS06_e
 07.2018

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Characteristics

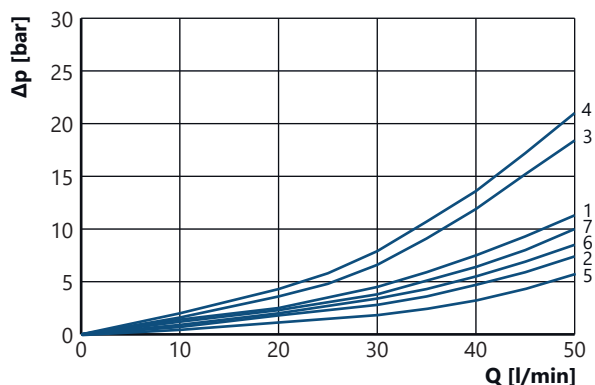
- on/off directional spool valve
- 2-way- or 3-way-version available
- spring centred spool
- maintenance-free
- rotatable and replaceable coils

Technical Data

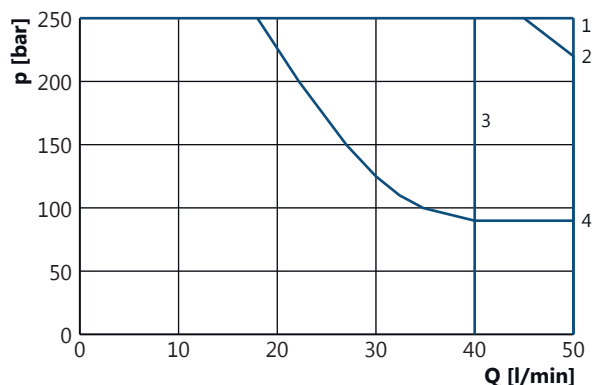
<i>Hydraulic</i>	Operating pressure max.:	port P, A, B: 250 bar port T: 100 bar
	Flow rate max.:	50 l/min
	Flow direction:	see symbols in type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	20 - 400 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 21/18/15, filter with β 5(c) > 200
	<hr/>	
<i>Mechanic</i>	Design:	spool type, direct operated by solenoids
	Size:	NG 6 (DIN 24340 A06, ISO 4401-03, CETOP 3)
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Maximum acceleration:	5 g
	Weight:	4/2-way-design: 1,4 kg 4/3-way-design: 1,6 kg
	Material:	valve parts: steel seals: NBR, Viton optional
	Surface protection:	solenoid: zinc coated body: phosphatised
<hr/>		
<i>Electric</i>	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	2,41 A (12 V), 1,16 A (24 V)
	Nominal resistance (R20):	4,9 Ω (12 V), 19 Ω (24 V)
	Power consumption max.:	28,9 W (12 V), 31 W (24 V)
	Shifting time:	100 % ED
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	electric plug according to DIN EN 175301-803 (formerly DIN 43650) shape A, AMP Junior Timer, Deutsch DT04-2P
	Electronic controllers:	see chapter 6 " <i>electronics and sensors</i> " as well as our online catalogue at www.weber-hydraulik.com

Performance

Pressure drop diagram ($\Delta p/Q$) W4_S-A1AS06



Switching power diagram (p/Q) W4_S-A1AS06 at I_N



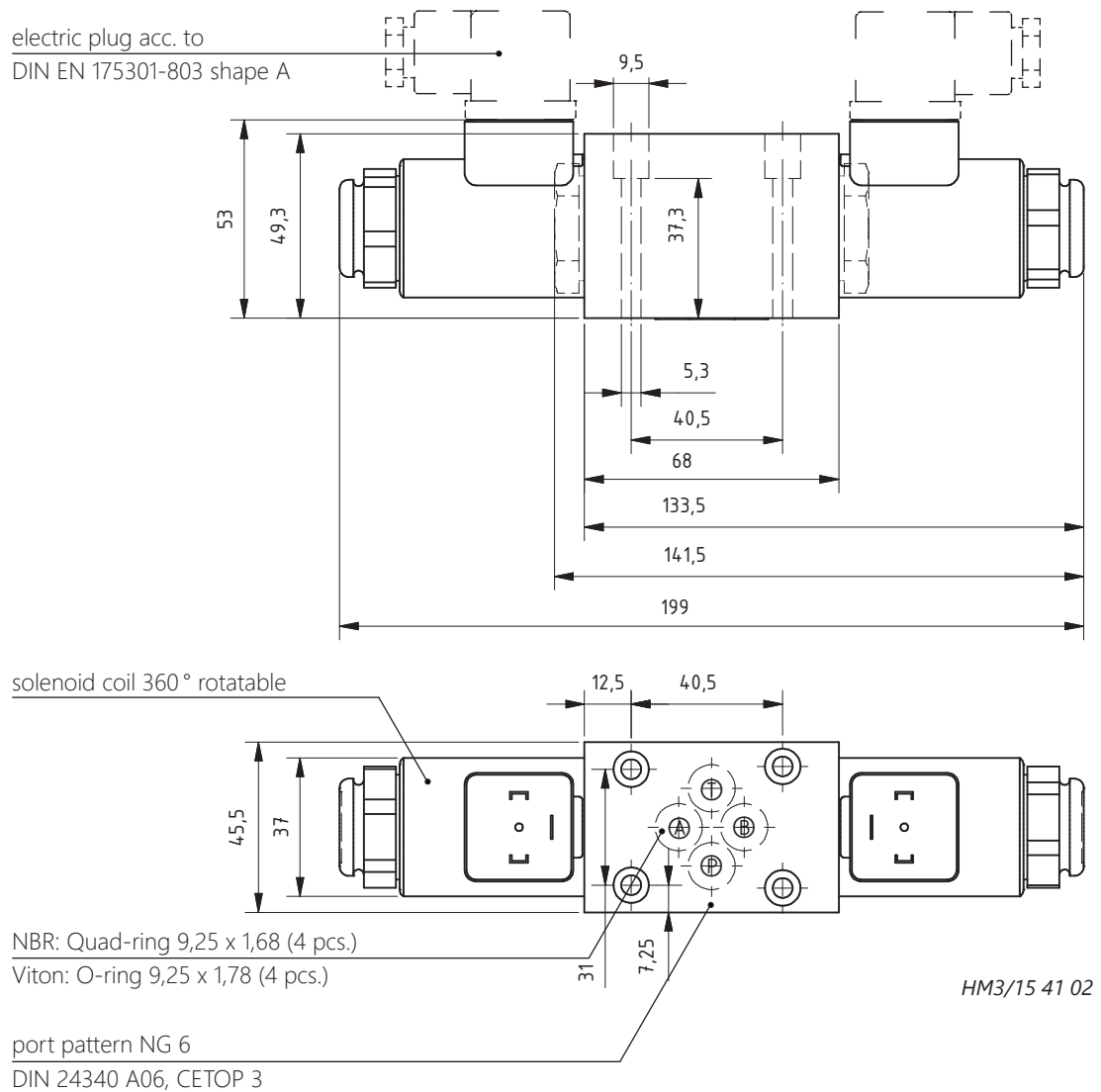
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Spool type*	P-A	P-B	A-T	B-T	P-T
N	1	1	1	1	
NA		1	1		
NB	1	1	1	1	
D	6	6	5	5	
H	5	5	5	5	
C	4	4	4	4	7
CA	4			4	7
CB	4	4	4	4	7
R11	2	3	3	2	

Spool type*	
N	2
NA	2
NB	2
D	3
H	1
C	4
CA	4
CB	4
R11	1

* The different spool types are pictured in the type code on page 5.

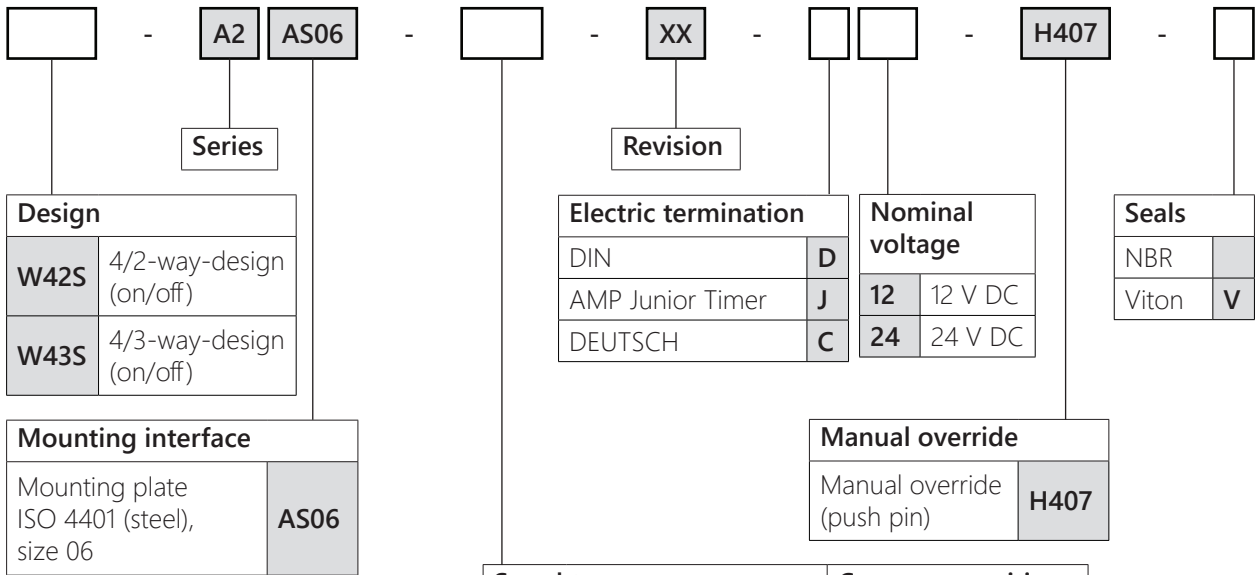
Dimensions



NOTE The valve must be mounted with fitting screws according to DIN EN ISO 4762 M5 x 45 - 10.9. Installation torque: 8,9 Nm.

NOTE For a detailed drawing of the port pattern please see chapter 11 „general information“ under the category „port patterns“ or our online catalogue at www.weber-hydraulik.com.

Type code



	Spool type	Crossover position
N		
NA		
NB		
D		
H		
C		
CA		
CB		
R11		

Accessories and additional information

<i>Accessories/spare parts</i>	Part:	Article number:
	Socket connector DIN EN 175301-803, shape A, black	149.0007
	Socket connector DIN EN 175301-803, shape A, grey	149.0008
	Screw DIN EN ISO 4762 M5 x 45 - 10.9	on request
	Seal kit W4_S-A2AS06 (NBR)	on request
	Seal kit W4_S-A2AS06 (Viton)	on request
	Coil 12 V DIN EN 175301-803, shape A	on request
	Coil 24 V DIN EN 175301-803, shape A	on request
	Coil 12 V, AMP Junior Timer	on request
	Coil 24 V, AMP Junior Timer	on request
	Coil 12 V, Deutsch DT04-2P	on request
	Coil 24 V, Deutsch DT04-2P	on request

NOTE For the appropriate electronic controllers, see chapter 6 „*electronics and sensors*“ as well as our online catalogue at www.weber-hydraulik.com.

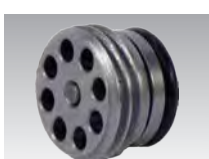
Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

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Pressure Relief Valves

Pressure Relief Valve DBT

direct operated
operating pressure max. 350 bar
volume flow max. 50 l/min
cavity T-13A

Pressure Relief Valve EDB

direct operated, with anti-cavitation/check function
operating pressure max. 420 bar
volume flow max. 60 l/min
cavity EDB, T-10A or T-13A

Pressure Relief Valve DBG1

direct operated
operating pressure max. 365 bar
volume flow max. 15 l/min
cavity DBG1

Pressure Relief Valve DBG4

direct operated
operating pressure max. 350 bar
volume flow max. 30 l/min
cavity DBG4

Pressure Relief Valve DB12-FT

direct operated
operating pressure max. 350 bar
volume flow max. 100 l/min
with CE type examination

Check Valves

Double Check Valve DRV

direct operated
pre-load function
operating pressure max. 350 bar
volume flow max. 50 l/min

Check Valve RKR

operating pressure max. 350 bar
volume flow max. 80 l/min

Check Valve RHR

operating pressure max. 350 bar
volume flow max. 120 l/min

Check Valve RBR

operating pressure max. 350 bar
volume flow max. 80 l/min



Shuttle Valves

Shuttle Valve FTRW

operating pressure max. 350 bar
volume flow max. 15 l/min



Flow Valves/ Throttle Valves

Hose Burst Valve RBS1

operating pressure max. 350 bar
volume flow max. 150 l/min



Flow Control Valve VCD

operating pressure max. 315 bar
volume flow max. 150 l/min



Flow Control Valve VCL

operating pressure max. 210 bar
volume flow max. 35 l/min



Flow Control Valve VCM

operating pressure max. 315 bar
volume flow max. 9 l/min



Throttle Valve STO

operating pressure max. 315 bar
screw- in valve for cavity STO



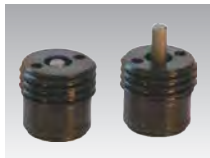
Throttle Valve STE

operating pressure max. 315 bar
screw- in valve for cavity STE



Throttle Valve STD

operating pressure max. 350 bar
screw- in valve for cavity STD



Component Coupling Check Valves

Component Coupling Check Valve KK-M14 x 1,5

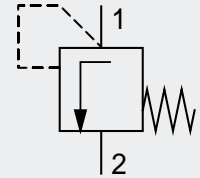
operating pressure max. 315 bar

volume flow max. 20 l/min

Pressure relief valve DBT



direct operated
operating pressure max. 350 bar
volume flow max. 50 l/min



090110_DBT_e
02.2018

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Characteristics

- screw-in pressure relief valve
- also available in in-line body or sandwich body
- compact design
- maintenance-free

Technical Data

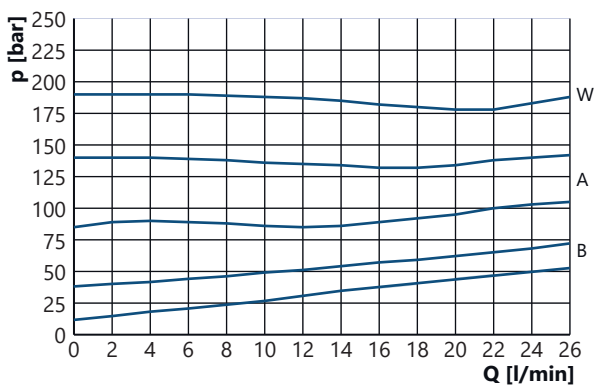
Hydraulic	Operating pressure max.:	350 bar
	Tank pressure max.:	DBT1: 350 bar, DBT2 and DBT3: 20 bar
	Flow rate:	see type code
	Flow direction:	1 (P) to 2 (T)
	Pressure setting range:	see type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

NOTE The pressure at port 2 adds directly to the set pressure.

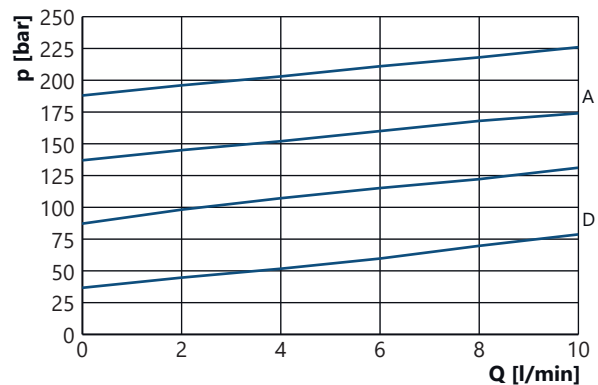
Mechanic	Design:	screw-in valve
	Fluid temperature:	-30 °C to +80 °C
	Ambient temperature:	-30 °C to +80 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	DBT1, DBT3: 0,14 kg DBT2: 0,10 kg
	Material:	valve parts: steel seals: NBR, backup rings: PU, teflon
	Surface protection:	zinc coated

Performance

Pressure diagram (p/Q) DBT1 and DBT3



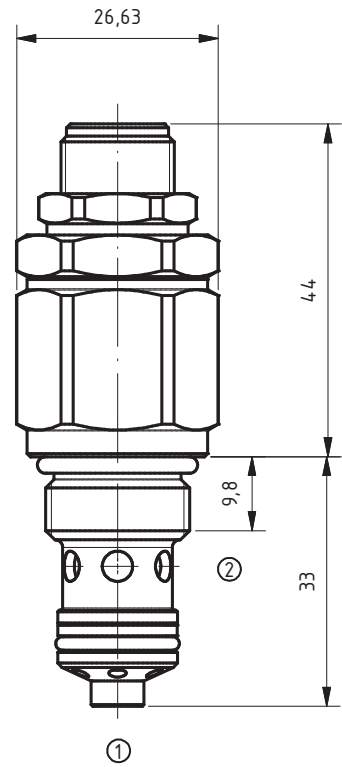
Pressure diagram (p/Q) DBT2



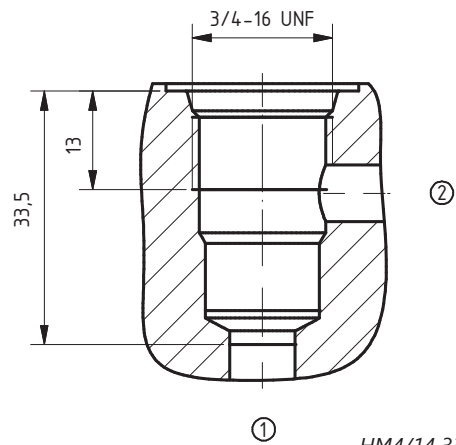
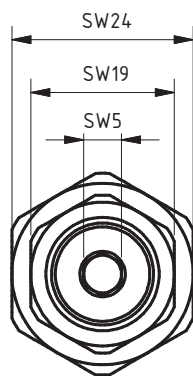
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Screw-in valve DBT1



Cavity DBT1



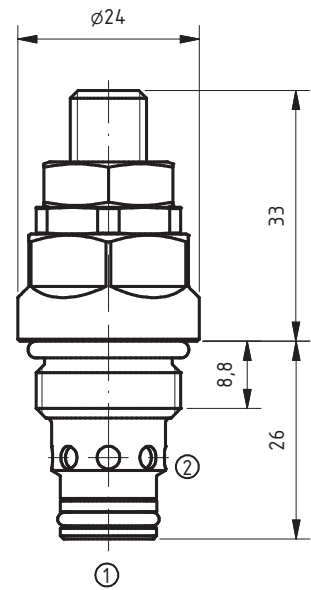
HM4/14 33 09

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

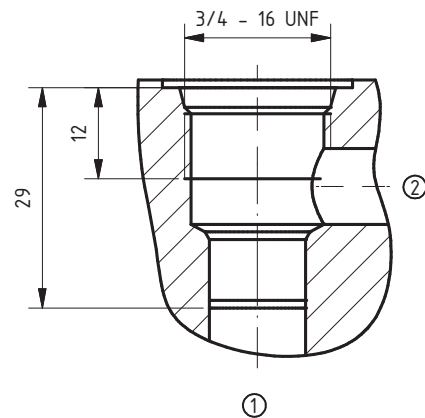
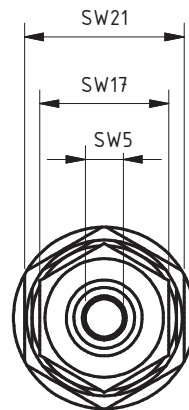
NOTE The valve is also available in an in-line body. Dimension sheets are available upon request.

Dimensions

Screw-in valve DBT2



Cavity DBT2 (STO)



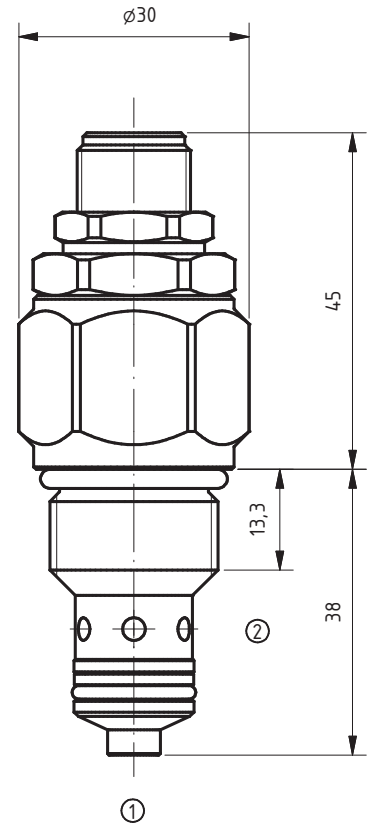
HM4/14 33 08

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

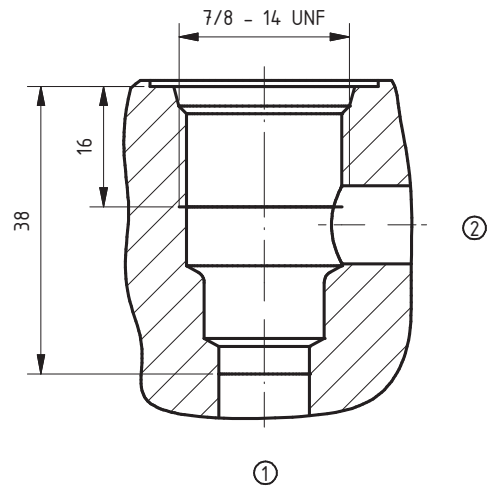
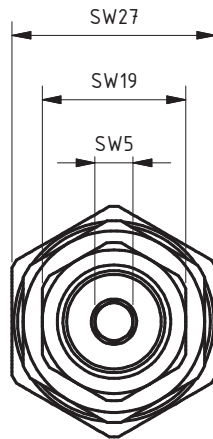
NOTE The valve is also available in an in-line body. Dimension sheets are available upon request.

Dimensions

Screw-in valve DBT3



Cavity DBT3 (C-10-2)



HM4/14 33 10

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE The valve is also available in an in-line body or in a sandwich body. Dimension sheets are available upon request.

Type code

DBT1 - **L** **N** -

Pressure relief valve max. 25 l/min

Setting screw with lock nut

Seal NBR

Pressure setting range	
20-130 bar	B
40-180 bar	A
180-350 bar	W

Symbol	Body	
	without	
	in-line body G 3/8	RG3

DBT2 - **L** **N** -

Pressure relief valve max. 10 l/min

Setting screw with lock nut

Seal NBR

Pressure setting range	
10-60 bar	D
40-270 bar	A

Symbol	Body	
	without	
	in-line body G 3/8	9702

DBT3 - **L** **N** -

Pressure relief valve max. 50 l/min

Setting screw with lock nut

Seal NBR

Pressure setting range	
40-200 bar	A
180-350 bar	W

Symbol	Body	
	in-line body G 3/8	RG2
	sandwich body NG 6	ZW6

Accessories and additional information

<i>Accessories / Spare parts</i>	Article:	Article number:
	Seal kit DBT1 (NBR)	407.0003
	Seal kit DBT3 (NBR)	407.0007
<i>Manual</i>	Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „ <i>general operating manual</i> “ or will be provided upon request.	



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

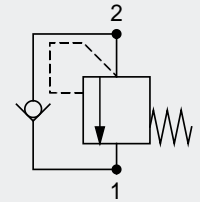
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Pressure relief valve EDB



direct operated
with anti-cavitation/check function
max. operating pressure 420 bar
max. volume flow 60 l/min
cavity EDB, T-10A or T-13A



090120_EDB_e
07.2018

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Characteristics

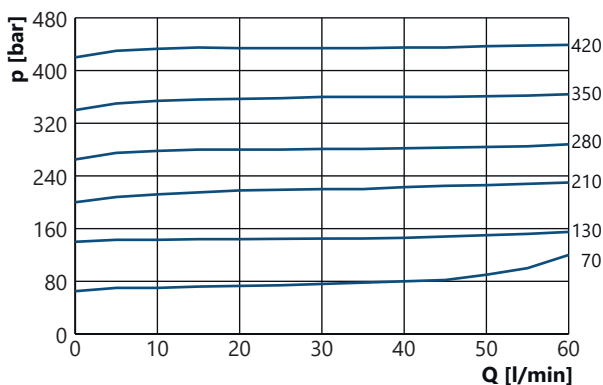
- pressure relief valve with anti-cavitation/check function
- slip-in valve for cavity EDB or
- screw-in valve T-10A or T-13A
- also available in in-line body or as double slip-in valve in in-line body
- compact design
- low leakage
- maintenance-free

Technical data

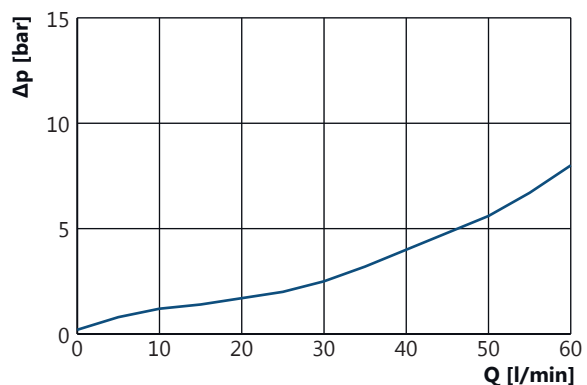
<i>Hydraulic</i>	Operating pressure max.:	EDB: 420 bar EDB38, DEDB, EDB10, EDB13: 350 bar	
	Flow rate:	EDB: max. 60 l/min EDB38, DEDB, EDB10, EDB13: max. 50 l/min	
	Pressure setting range:	see type code	
	Opening pressure anti-cavitation valve:	<0,5 bar	
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request	
	Viscosity range:	7,4 - 420 cSt	
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200	
	Hysteresis:	10 %	
	<i>Mechanic</i>	Design :	EDB: slip-in valve, EDB38: slip-in valve in in-line body, DEDB: double valve in in-line body, EDB10/EDB13: cartridge valve T-10A/T-13A
		Fluid temperature:	-30 °C to +80 °C
Ambient temperature:		-30 °C to +80 °C	
Storage temperature:		-30 °C to +60 °C (non-condensing)	
Installation position:		any	
Weight:		EDB: 0,015 kg, EDB38: 0,3 kg, DEDB: 1,15 kg, EDB10/EDB13: 0,06 kg	
Material:		valve parts: steel seals: NBR, Viton optional	
Surface protection:		exterior parts: zinc coated steel	

Performance

Pressure drop diagram (p/Q) EDB from 2 to 1



Pressure drop diagram (Δp /Q) anti-cavitation/ check valve from 1 to 2



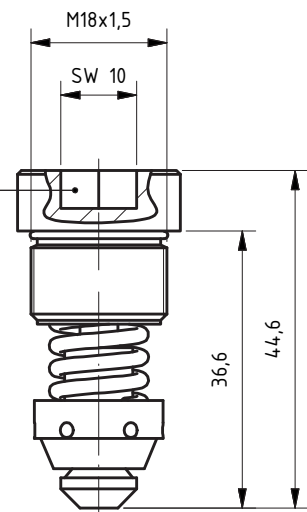
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)
Factory pressure settings established at Q = 10 l/min.

NOTE With manifolds the performance may vary.

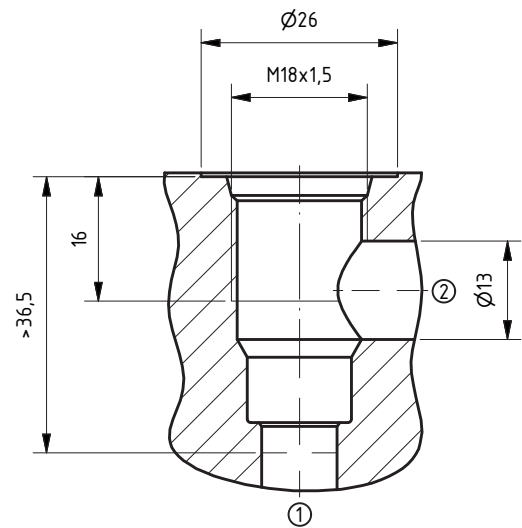
Dimensions

Slip-in valve EDB

installation torque: 35-40 Nm



Cavity EDB



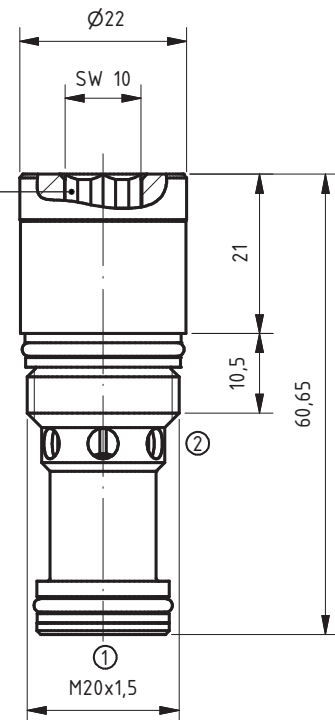
HE4/15 26 01

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

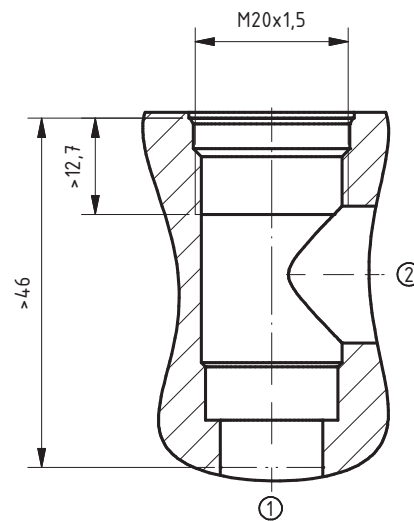
Dimensions

Cartridge valve
EDB10

installation torque: 35-40 Nm



Cavity T-10A



HE4/15 27 10

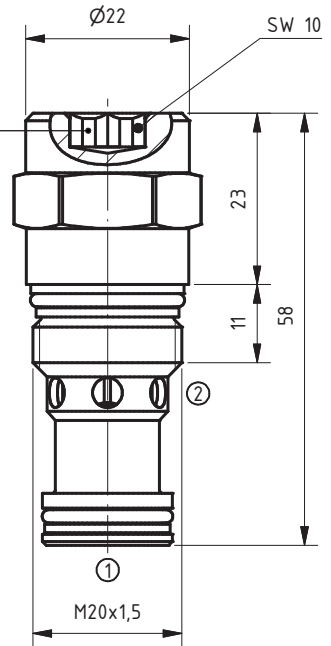
NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

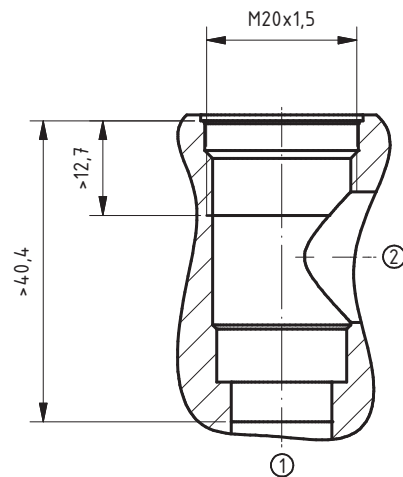
Dimensions

Cartridge valve
EDB13

installation torque: 35-40 Nm



Cavity T-13A



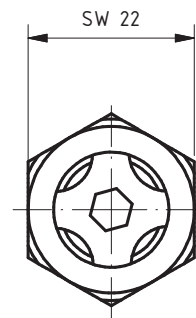
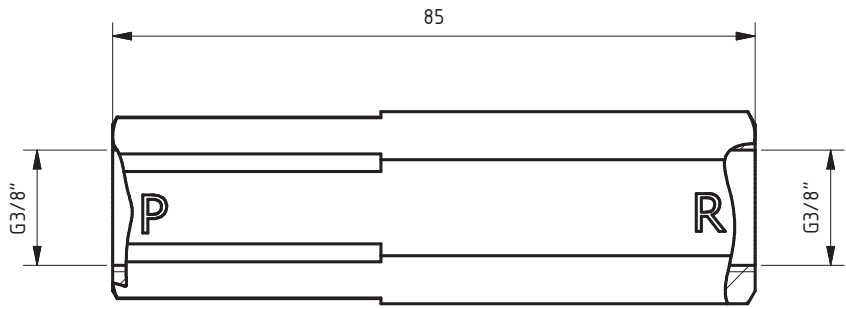
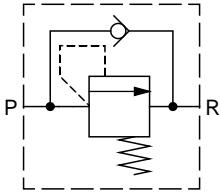
HE4/15 27 11

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

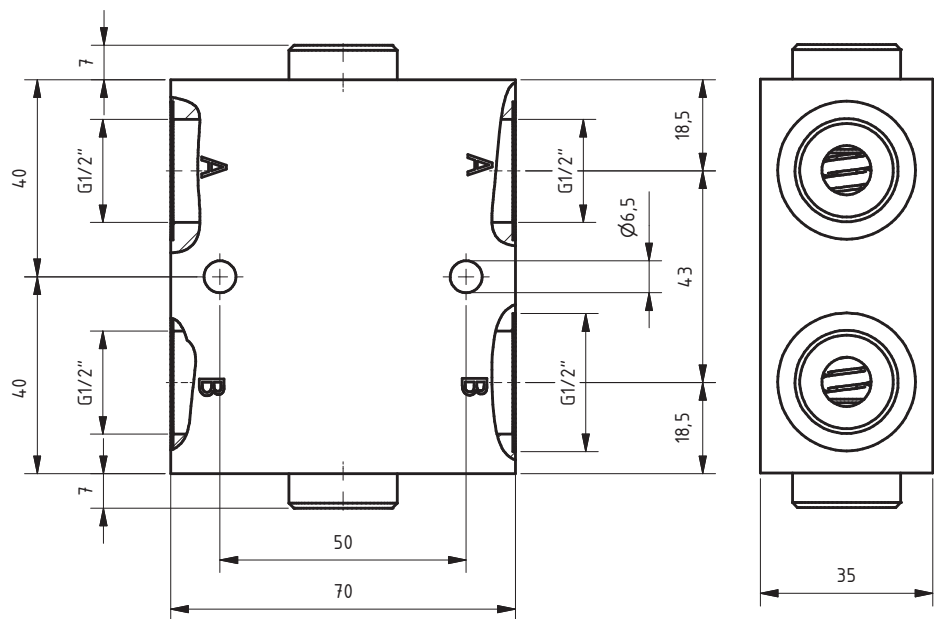
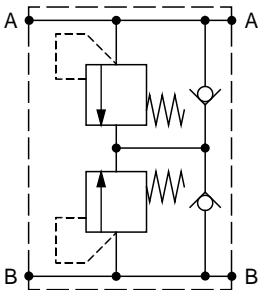
Dimensions

*Slip-in valve in
in-line body
EDB38*



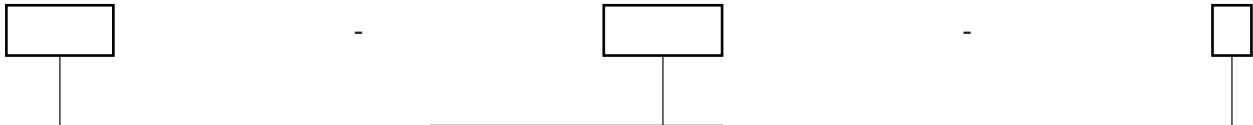
HM4/08 04 14

*double slip-in valve
in in-line body
DEDB*



HM3/15 37 06

Type code



Design	
EDB	slip-in valve
EDB38	slip-in valve in in-line body (G 3/8")
DEDB	double slip-in valve in in-line body (G 1/2")
EDB10	cartridge valve T-10A
EDB13	cartridge valve T-13A

Pressure setting range*	
20-70 bar	20-70
71-130 bar	71-130
131-210 bar	131-210
211-280 bar	211-280
281-350 bar	281-350
351-420 bar**	351-420

Locking screw	
with locking screw, with CV*** spring	
without locking screw, with CV spring	F
without locking screw, without CV spring	O

* also available with pre-adjusted pressure setting according to your needs. Please contact us.
 ** only available for EDB
 *** CV = check valve

NOTE Factory pressure settings are established at Q = 10 l/min.

Accessories and additional information

Accessories/ spare parts	Part:	Article number:
	Seal kit T-10A/T-13A (NBR)	405.0036
	Seal kit T-10A/T-13A (Viton)	405.0037

NOTE For appropriate manifolds see chapter 10 „connecting plates and manifolds“ as well as our online catalogue at www.weber-hydraulik.com.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „general operating manual“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

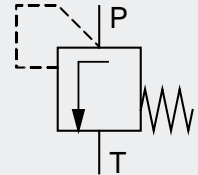
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Pressure relief valve DBG1



direct operated
 max. operating pressure 370 bar
 max. volume flow 17 l/min



090130_DBG1_e
 03.2016

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Characteristics

- screw-in pressure relief valve
- compact design
- maintenance-free

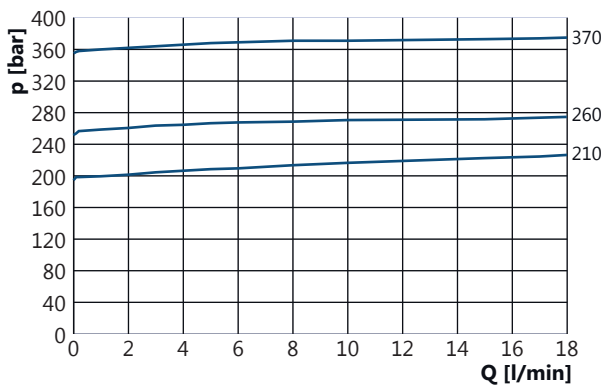
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	370 bar
	Tank pressure max.:	100 bar
	Flow rate:	see type code
	Flow direction:	P (1) to T (2)
	Pressure setting range:	see type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	screw-in valve
	Fluid temperature:	-30 °C to +80 °C
	Ambient temperature:	-40 °C to +80 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,067 kg
	Material:	valve parts: steel seal: NBR, PTFE
Surface protection:	exterior parts: zinc coated steel	

Performance

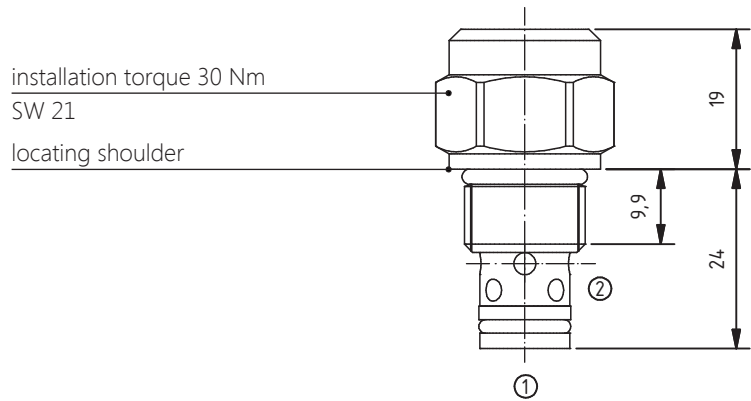
Pressure drop diagram ($\Delta p/Q$) DBG1



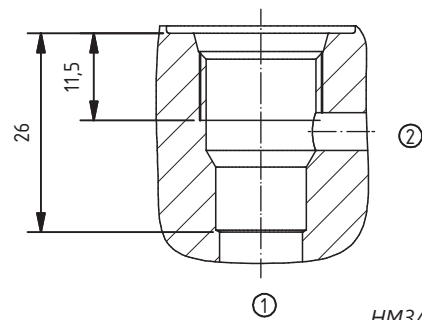
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

*Screw-in valve
DBG1*



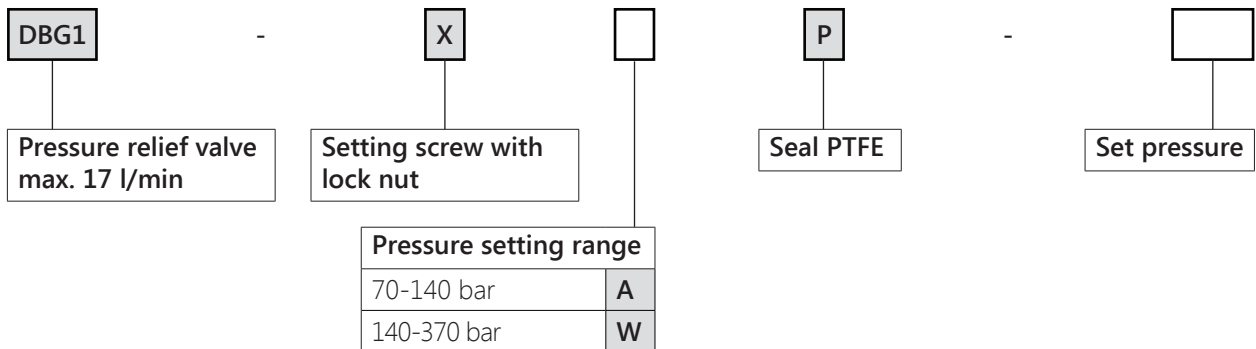
Cavity DBG1



HM3/09 49 08

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

Type code



Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

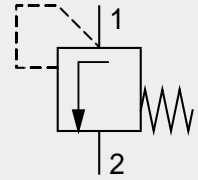
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Pressure relief valve DBG4



direct operated
max. operating pressure 350 bar
max. volume flow 30 l/min



090140_DBG4_e
07.2018

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Characteristics

- screw-in pressure relief valve
- compact design
- low leakage
- maintenance-free

Technical Data

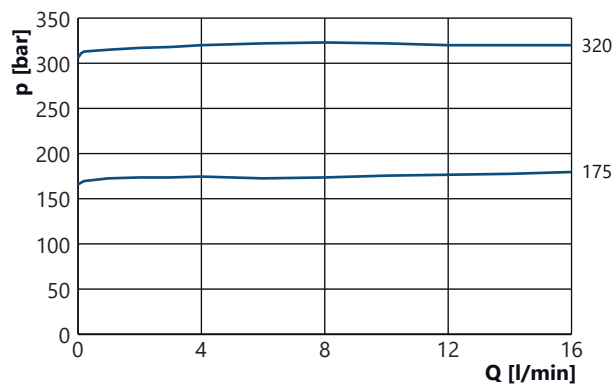
<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Tank pressure max.:	100 bar
	Flow rate:	30 l/min
	Flow direction:	1 (P) to 2 (T)
	Pressure setting range:	175 bar respectively 320 bar $\pm 3\%$
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$

NOTE The pressure at port 2 (T) adds directly to the set pressure.

<i>Mechanic</i>	Design:	screw-in valve
	Fluid temperature:	-30 °C to +80 °C
	Ambient temperature:	-40 °C to +80 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,215 kg
	Material:	valve parts: steel, seals: NBR
Surface protection:	exterior parts: zinc coated steel	

Performance

Pressure drop diagram (p/Q) DBG4

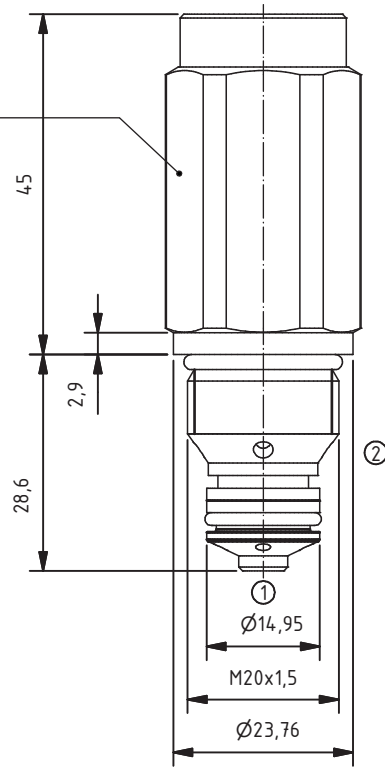


Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

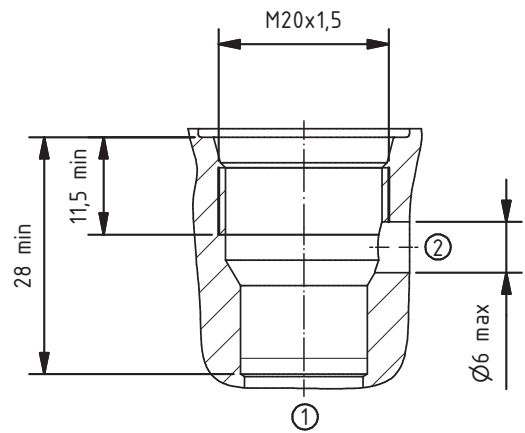
Dimensions

Screw-in valve DBG4

installation torque 25 +5 Nm
SW 24



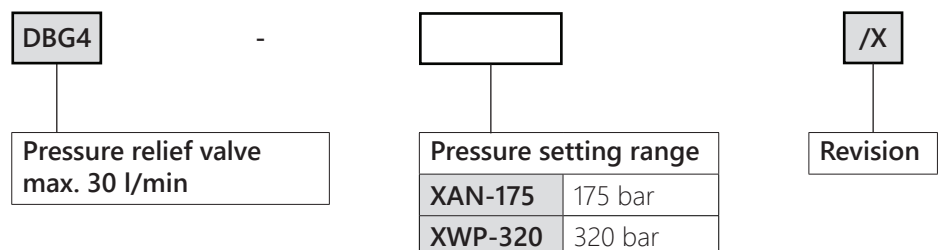
Cavity DBG4



HM3/09 49 15

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Accessories and additional information

<i>Accessories / Spare parts</i>	Article:	Article number:
	Seal kit DBT4 (NBR)	405.0114

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

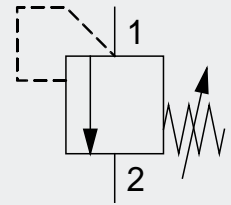
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info.de-k@weber-hydraulik.com

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Pressure relief valve DB12-FT



direct operated
max. operating pressure 350 bar
max. volume flow 100 l/min



090150_DB12-FT_e
07.2018

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Characteristics

- screw-in pressure relief valve
- available with CE type examination
- low-vibration
- maintenance-free

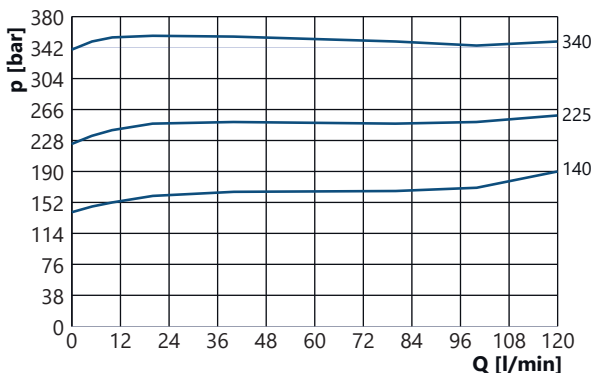
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	100 l/min
	Pressure setting range:	10 - 350 bar
	Flow direction:	1 (P) to 2 (T) pressure relief function
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	DB12-FT-XWN: screw-in valve plumbed, DB12-FT-LWN: screw-in valve adjustable
	Fluid temperature:	-30 °C to +85 °C
	Ambient temperature:	-30 °C to +80 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,45 kg
	Material:	valve parts: steel seals: NBR, PTFE
	Surface protection: CE type examination:	exterior parts: zinc coated steel 01 202 111-B-2054 acc. to 97/23/EG (for DB12-FT-XWN)

Performance

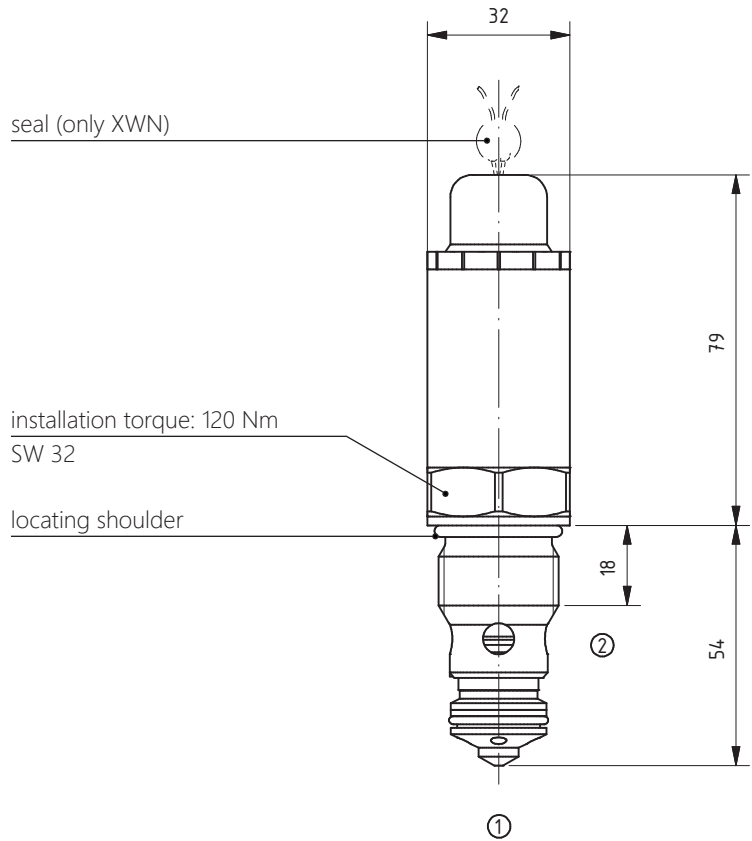
Pressure drop diagram (p/Q) DB12-FT



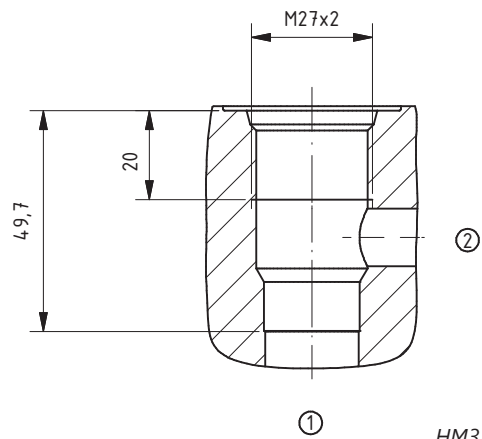
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Screw-in valve
DB12-FT



Cavity DB12-FT

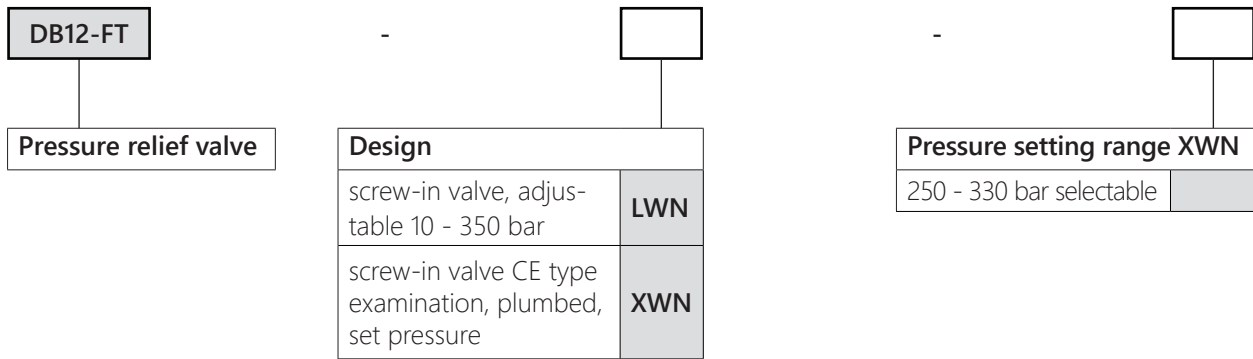


HM3/09 13 22

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

NOTE Suitable manifolds are available upon request.

Type code



Appendix

Accessories / spare parts

Article:

Seal kit DB12-FT (NBR)

Article number:

405.0084

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „*general operating manual*“ or will be provided upon request.



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 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

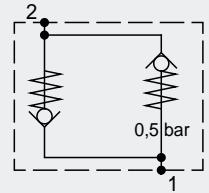
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Double check valve DRV



direct operated
pre-load function
max. operating pressure 350 bar
max. volume flow 50 l/min



090210_DRV_e
03.2017

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Technical Data	2
Performance	2
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Type code	4
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Characteristics

- double check valve with pre-load function
- also available in in-line body
- compact design
- maintenance-free

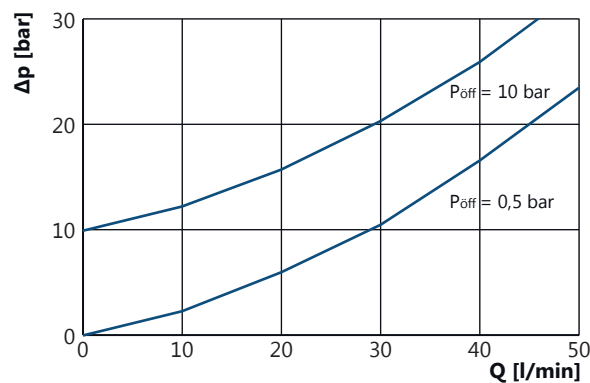
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	max. 50 l/min
	Flow direction:	from 1 to 2: sequence pressure from 2 to 1: bypass
	Pressure setting range:	see type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	Screw-in valve
	Size:	G 1/2"
	Fluid temperature:	-30 °C to +80 °C
	Ambient temperature:	-30 °C to +80 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,06 kg
	Material:	valve parts: steel seals: NBR

Performance

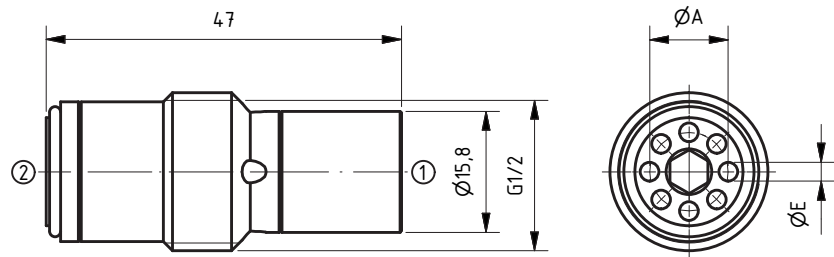
Pressure drop diagram ($\Delta p/Q$) DRV



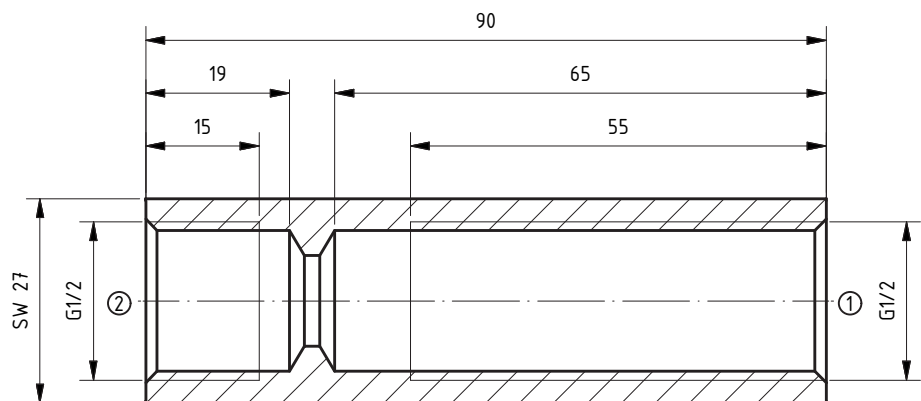
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Double check valve
DRV



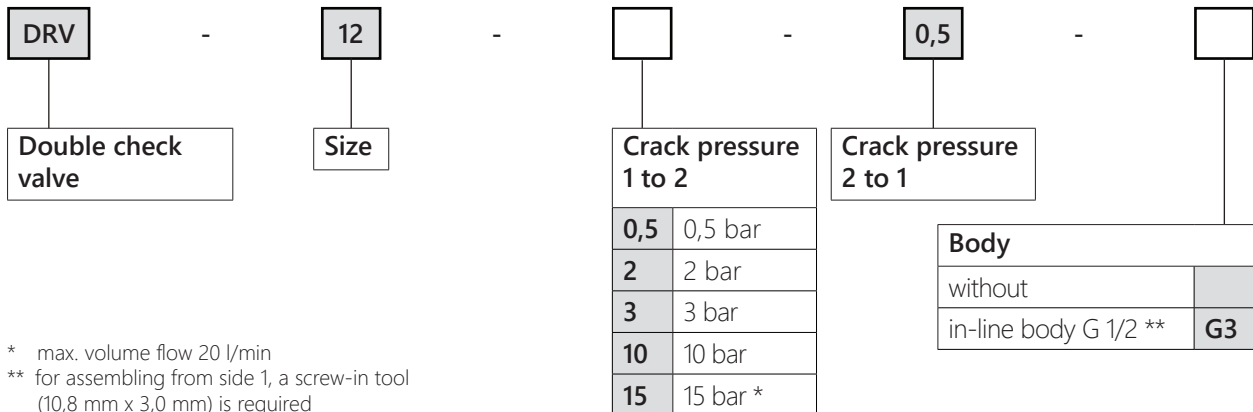
DRV in body G3



HE4/14 31 07

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „*valve cavities and port patterns*“ or our online catalogue at www.weber-hydraulik.com.

Type code



* max. volume flow 20 l/min

** for assembling from side 1, a screw-in tool (10,8 mm x 3,0 mm) is required

Appendix

Accessories / spare parts

Part:

Screw-in tool

Article number:

139.0002

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „*general operating manual*“ or will be provided upon request.



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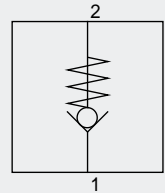
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Check valve RKR



operating pressure max. 350 bar
volume flow max. 80 l/min



090220_RKR_e
02.2018

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Accessories and additional information	3

Characteristics

- screw-in check valve
- reciprocally mountable
- various sizes available
- compact design
- maintenance-free

Technical Data

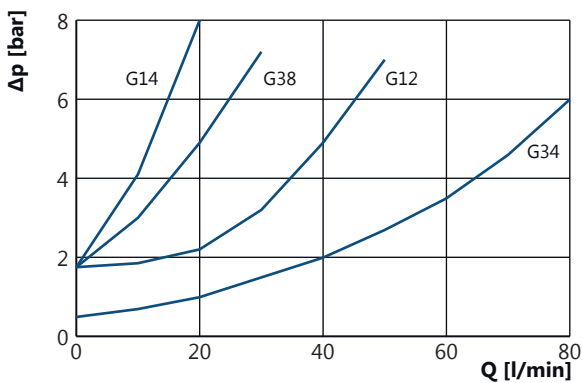
<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	max. 80 l/min
	Flow direction:	from 1 to 2
	Pressure setting range:	see type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$	

NOTE The pressure at port 2 adds directly to crack pressure.

<i>Mechanic</i>	Design:	screw-in valve
	Size:	see type code
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	see table
Material:	valve parts: steel seals: NBR	

Performance

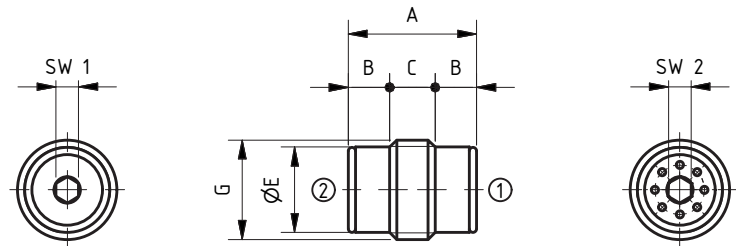
Pressure drop diagram ($\Delta p/Q$) RKR



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Check valve RKR

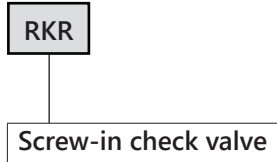


HE4/14 31 13

Size G	A [mm]	B [mm]	C [mm]	E [mm]	SW 1	SW 2	Weight [kg]	Inst. torque [Nm]
G 1/4"	17,0	5,5	6,0	11,3	3	3	0,011	8
G 3/8"	18,5	5,5	7,5	14,8	4	3	0,019	11
G 1/2"	22,5	6,5	9,5	18,5	6	5	0,036	24
G 3/4"	28,5	7,0	14,5	24,1	8	8	0,074	40

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Size	Volume flow max. [l/min]	Crack pres- sure [bar]	Special crack pressure [bar]
14 G 1/4"	20	2,1	-
38 G 3/8"	30	1,3	4
12 G 1/2"	50	1,8	0,5 / 3 / 10 / 15
34 G 3/4"	80	0,4	2 / 3

Accessories and additional information

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.

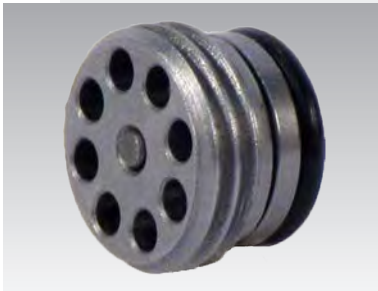


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 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

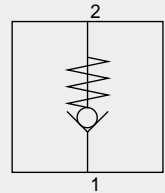
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Check valve RHR



operating pressure max. 350 bar
volume flow max. 120 l/min



090230_RHR_e
02.2018

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Accessories and additional information	3

Characteristics

- screw-in check valve
- various sizes available
- compact design
- maintenance-free

Technical Data

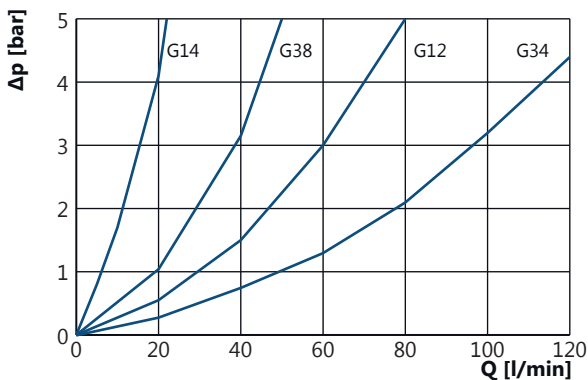
<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	max. 120 l/min
	Flow direction:	from 1 to 2
	Pressure setting range:	see type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
<i>Filtration:</i>	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200	

NOTE The pressure at port 2 adds directly to crack pressure.

<i>Mechanic</i>	Design:	screw-in valve
	Size:	G 1/4", G 3/8", G 1/2", G 3/4"
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature	-20 °C to +60 °C (non-condensing)
	Installation position	any
	Weight:	see table at dimensions
	Material:	valve parts: steel seals: NBR

Performance

Pressure drop diagram ($\Delta p/Q$) RHR

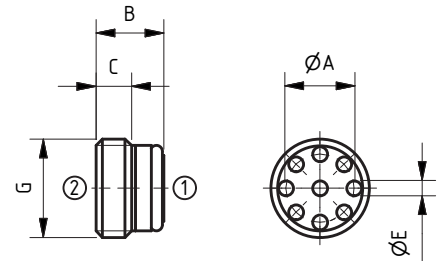


Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Check valve RHR

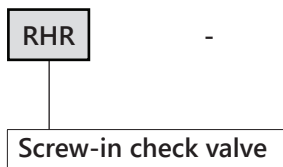
Size G	A Ø [mm]	B [mm]	C [mm]	E Ø [mm]	Weight [kg]	Inst. torque [Nm]
G 1/4"	8,5	8,8	4,2	2,2	0,004	8
G 3/8"	10,8	12	7	3	0,011	11
G 1/2"	14,2	14,7	8	3,8	0,021	24
G 3/4"	18,5	17	9	4,6	0,035	60



HE4/14 31 12

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Size	Volume flow max. [l/min]	Crack pressure [bar]
14 G 1/4"	20	0,2
38 G 3/8"	50	0,2
12 G 1/2"	80	0,2
34 G 3/4"	120	0,1

Accessories and additional information

Accessories / spare parts	Article:	Article number:
	Mounting tool W1 for RHR-14	139.0001
	Mounting tool W2 for RHR-38	139.0002
	Mounting tool W5 for RHR-12	139.0005
	Mounting tool W7 for RHR-34	139.0020

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



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 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

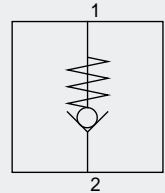
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Check valve RBR



operating pressure max. 350 bar
volume flow max. 80 l/min



090240_RBR_e
02.2018

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Characteristics

- screw-in ball-type check valve
- various sizes available
- compact design
- maintenance-free

Technical Data

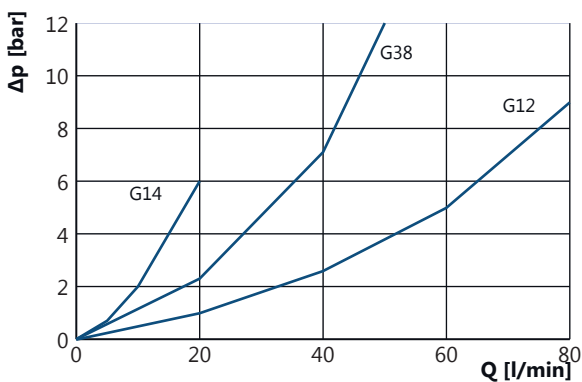
<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	max. 80 l/min
	Flow direction:	from 2 to 1
	Pressure setting range:	see type code
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

NOTE The pressure at port 1 adds directly to crack pressure.

<i>Mechanic</i>	Design:	ball-type screw-in valve
	Size:	see type code
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature	-20 °C to +60 °C (non-condensing)
	Installation position	any
	Weight:	see table
Material:	valve parts: steel seals: NBR	

Performance

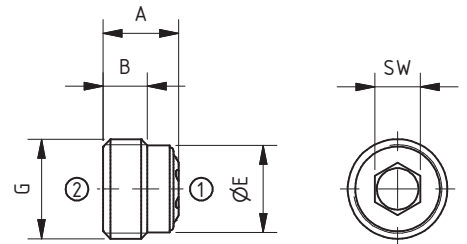
Pressure drop diagram ($\Delta p/Q$) RBR



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Check valve RBR

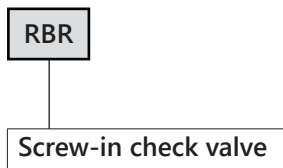


HE4/14 31 10

Size G	A [mm]	B [mm]	E Ø [mm]	SW	Weight [kg]	Inst. torque [Nm]
G 1/4"	10	6	11,5	6	0,005	8
G 3/8"	11,5	7	15	6	0,015	11
G 1/2"	13,5	8	18,7	8	0,020	24

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



An empty box is connected by a vertical line to a table of performance data.

Size	Volume flow max. [l/min]	Crack pressure [bar]
14 G 1/4"	20	0,3
38 G 3/8"	50	0,3
12 G 1/2"	80	0,3

Accessories and additional information

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



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 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

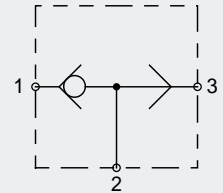
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Shuttle valve FTRW



operating pressure max. 350 bar
volume flow max. 15 l/min



090310_FTRW_e
07.2018

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Characteristics

- screw-in shuttle valve
- sizes G1/8" or G1/4" available
- compact design
- maintenance-free

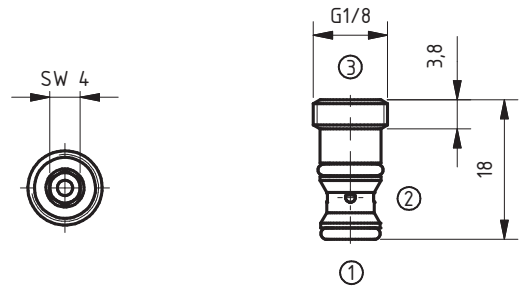
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	FTRW-2,5: 315 bar FTRW-5: 350 bar
	Flow rate:	FTRW-2,5: 8 l/min FTRW-5: 15 l/min
	Flow direction	from 1 or 3 to 2
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

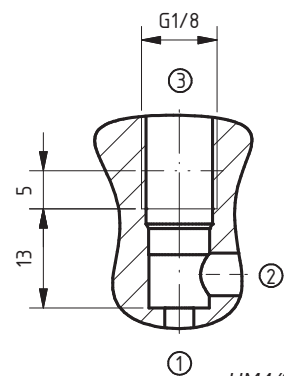
<i>Mechanic</i>	Design:	screw-in valve
	Size:	G1/8" or G1/4"
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	FTRW-2,5: 0,005 kg FTRW-5: 0,012 kg
	Material:	valve parts: steel seals: NBR

Dimensions

Shuttle valve
FTRW-2,5



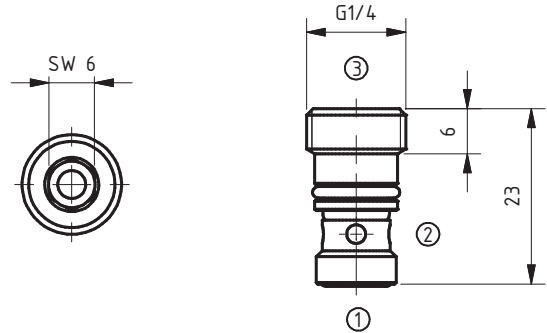
Cavity FTRW-2,5



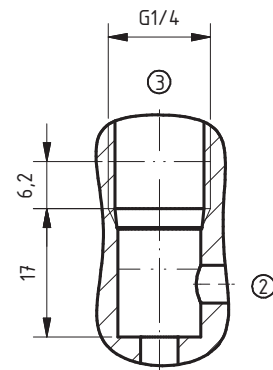
HM4/98 12 02

Dimensions

Shuttle valve
FTRW-5



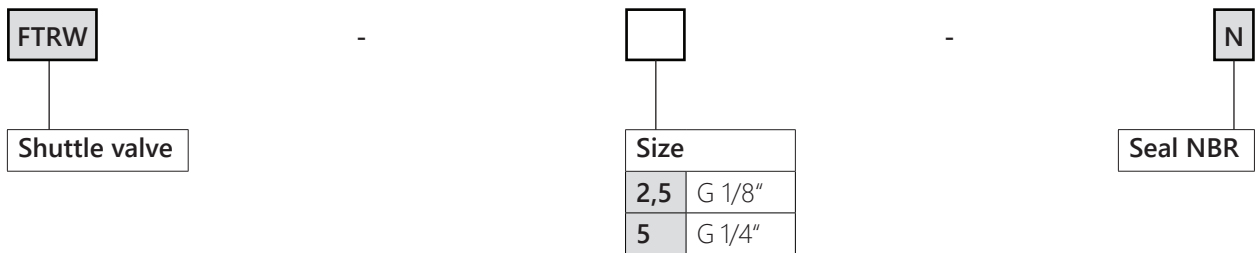
Cavity FTRW-5



① HM4/08 44 02

NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „general operating manual“ or will be provided upon request.



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Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

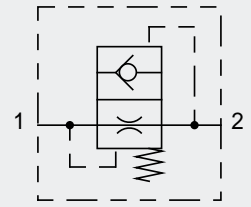
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Hose burst valve RBS1



operating pressure max. 350 bar
volume flow max. 150 l/min



090410_RBS1_e
08.2016

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Characteristics

- screw-in hose burst valve
- to prevent sudden pressure loss due to tubing or hose breaks
- various sizes available
- easy installation
- compact design
- maintenance-free

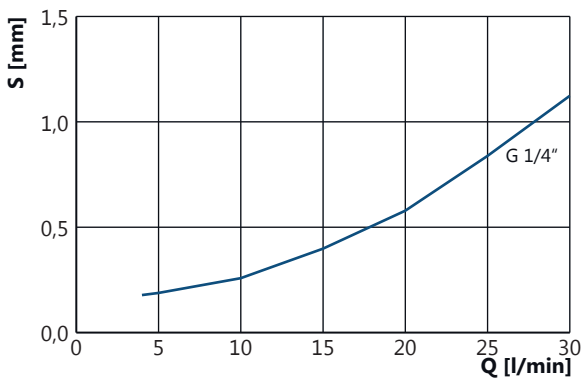
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow rate:	see type code
	Flow direction:	1 to 2: without function 2 to 1: working direction
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

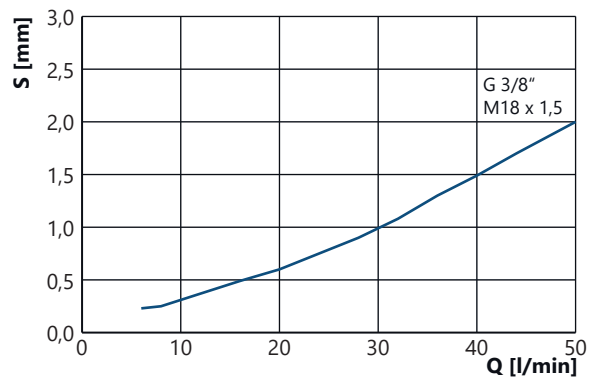
<i>Mechanic</i>	Design:	screw-in valve
	Size:	G 1/4", G 3/8", G 1/2", G 3/4", M18 x 1,5
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	see table at dimensions
	Material:	steel

Performance

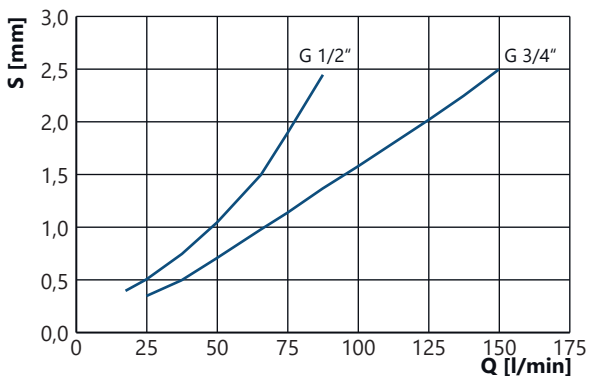
Adjusting diagram clearance (S/Q) G 1/4"



Adjusting diagram clearance (S/Q) G 3/8", M18 x 1,5

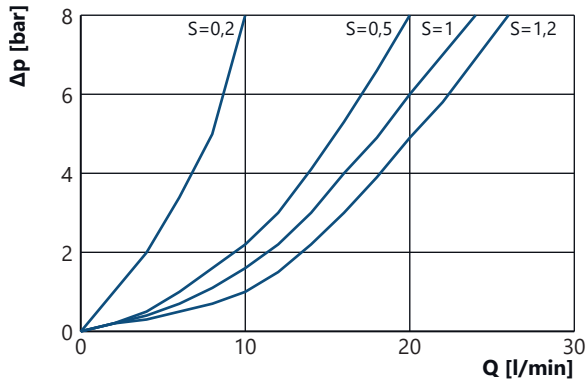


Adjusting diagram clearance (S/Q) G 1/2", G 3/4"

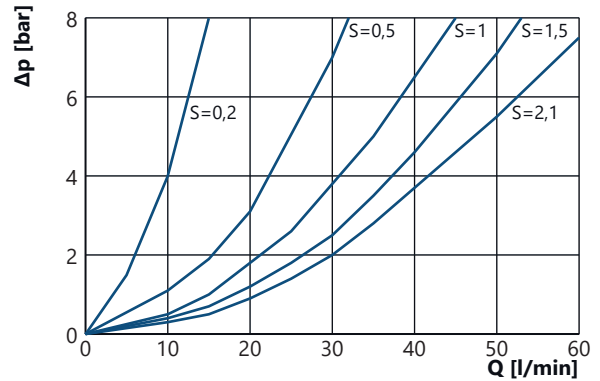


Performance

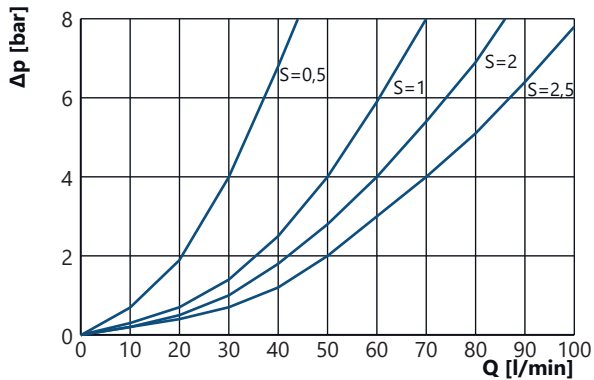
Pressure drop diagram ($\Delta p/Q$) RBS1-14



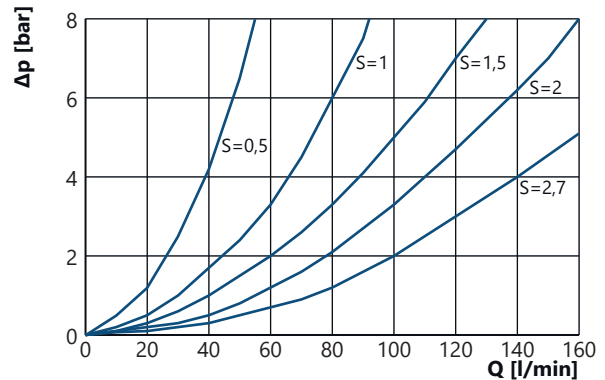
Pressure drop diagram ($\Delta p/Q$) RBS1-38, RBS1-M18



Pressure drop diagram ($\Delta p/Q$) RBS1-12



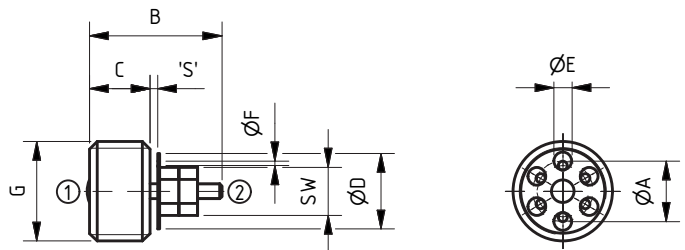
Pressure drop diagram ($\Delta p/Q$) RBS1-34



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

Hose burst valve
RBS1

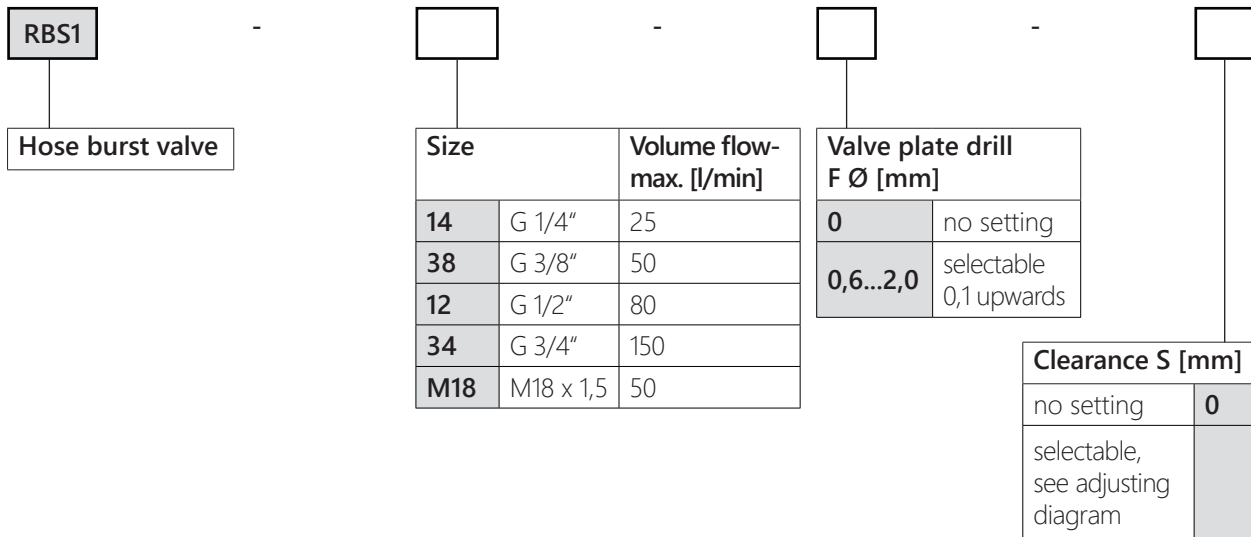


HE4/14 31 20

Size G	A \varnothing [mm]	B [mm]	C [mm]	D \varnothing [mm]	E \varnothing [mm]	F \varnothing [mm]	Weight [kg]	SW
G 1/4"	8	17,5	8	9,5	2,4	0,6...2	0,006	5,5
G 3/8"	10,5	23	10,5	12,5	3,5	0,6...2	0,012	5,5
G 1/2"	13	25	12	15	4,5	0,6...2	0,022	7
G 3/4"	16	30,5	17	18	6	0,6...2	0,047	7
M18 x 1,5	10,5	23	10,5	12,5	3,5	0,6...2	0,015	5,5

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

Type code



Appendix

Accessories / spare parts

Article:	Article number:
In-line body G 1/2"	138.0010
In-line body G 3/8"	138.0009
In-line body G 1/4"	138.0008
In-line body G 3/4"	138.0011
Mounting tool W1 for RBS1-14	139.0001
Mounting tool W3 for RBS1-38 and RBS1-M18	139.0003
Mounting tool W4 for RBS1-12	139.0004
Mounting tool W6 for RBS1-34	139.0006

NOTE Other manifolds are available upon request.

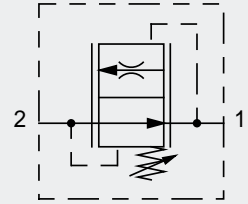
Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.

Flow control valve VCD



max. operating pressure 315 bar
max. volume flow 150 l/min



090420_VCD_e
03.2016

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Characteristics

- screw-in flow control valve
- various sizes available
- also available as meter-out or meter-in control valve in a sandwich body NG 6
- compact design
- maintenance-free

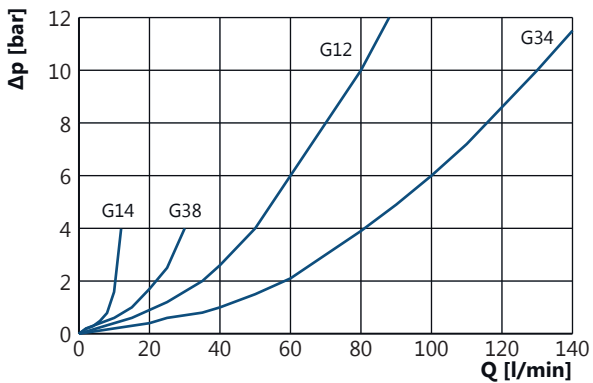
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	315 bar
	Flow rate:	see type code
	Flow direction:	1 to 2: flow control von 2 nach 1: without function
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta_{5(c)} > 200$

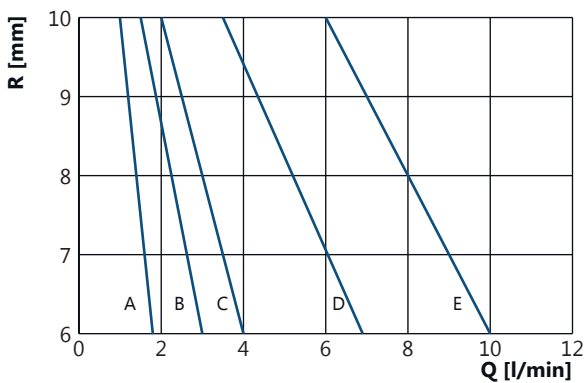
<i>Mechanic</i>	Design:	screw-in valve
	Size:	G1/2", G1/4", G3/4", G3/8"
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	see table
	Material:	steel

Performance

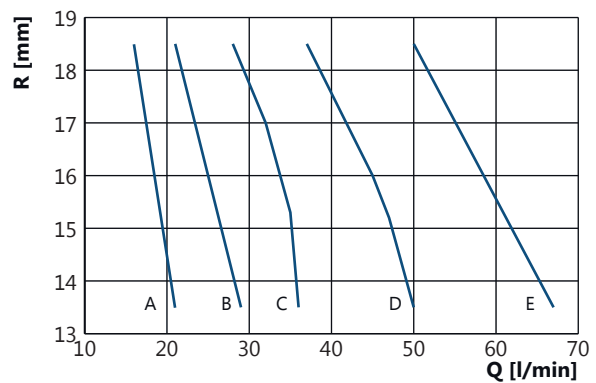
Pressure drop diagram $\Delta p/Q$ VCD



Adjusting diagram spring length R/Q G1/4"

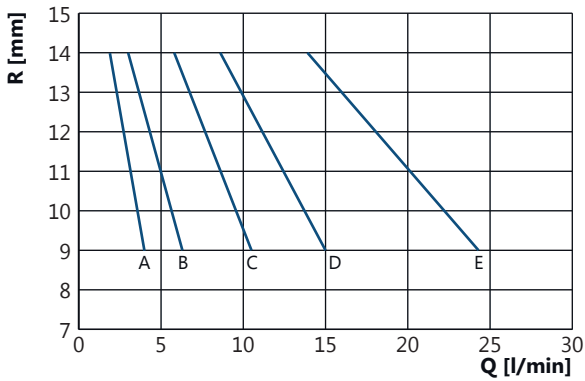


Adjusting diagram spring length R/Q G1/2"

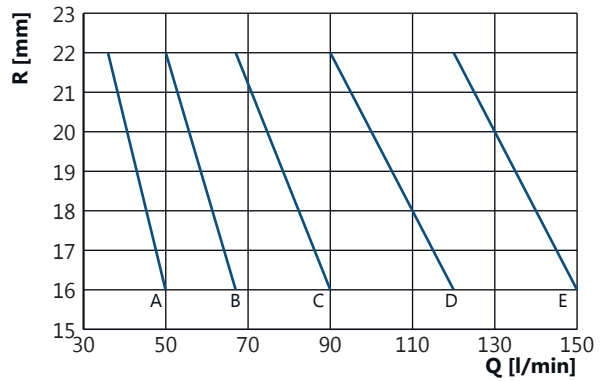


Performance

Adjusting diagram spring length R/Q G3/8"



Adjusting diagram spring length R/Q G3/4"



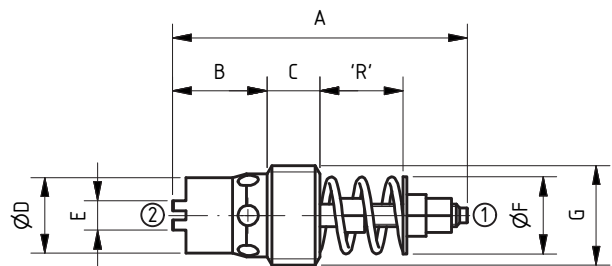
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Volume flow setting range

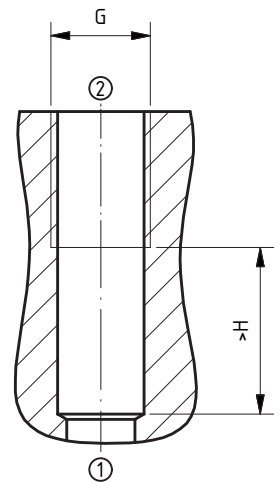
Size G	A [l/min]	B [l/min]	C [l/min]	D [l/min]	E [l/min]
G 1/4"	1-1,6	1,6-2,5	2,5-4	4-6,3	6,3-10
G 3/8"	2,5-4	4-6,3	6,3-10	10-16	16-25
G 1/2"	16-21	21-28	28-37	37-50	50-67
G 3/4"	37-50	50-67	67-90	90-120	120-150

Dimensions

Flow control valve VCD



Cavity VCD



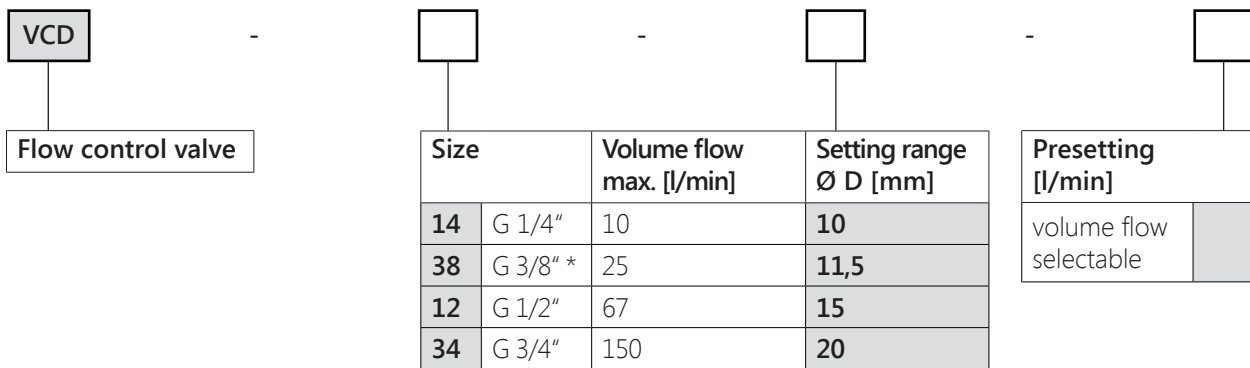
HE4/14 33 01

Dimensions

Size G	A [mm]	B [mm]	C [mm]	E [mm]	F Ø [mm]	H [mm]	Weight [kg]	SW1	SW2
G 1/4"	39	12,5	7	4	10,3	22	0,012	5,5	4,5
G 3/8"	43	13,5	7	4	14	23	0,022	7	6
G 1/2"	49	16	8	6	18,2	27	0,036	7	6
G 3/4"	60	21	10	6	23	31	0,072	7	6

NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

Type code



* **HINWEIS** The valve VCD-38 is also available as **meter-out or meter-in control valve** in a sandwich body NG 6. Dimension sheets are available up on request..

Appendix

Accessories / Spare parts

Article:	Article number:
n-line body G 1/2"	138.0010
In-line body G 3/8"	138.0009
In-line body G 1/4"	138.0008
In-line body G 3/4"	138.0011

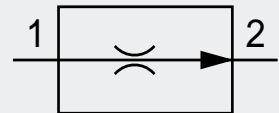
Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.

Flow control valve VCL



max. operating pressure 210 bar
max. volume flow 35 l/min



090430_VCL_e
03.2016

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Characteristics

- screw-in flow control valve
- various sizes available
- compact design
- maintenance-free

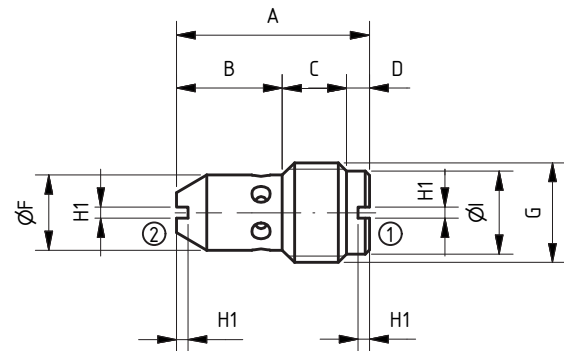
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	210 bar
	Flow rate:	see type code
	Flow direction:	1 to 2: flow control 2 to 1: free through orifice
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	screw-in valve
	Size:	G1/2", G1/4", G3/8"
	Fluid temperature:	-30 °C to +100 °C
	Ambient temperature:	-30 °C to +100 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	see table
	Material:	steel

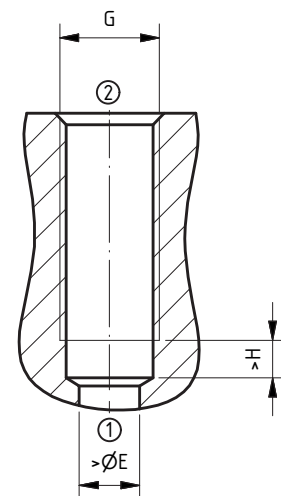
Dimensions

Flow control valve
VCL



HE4/03 48 01

Cavity VCL



NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

Dimensions

Size G	A [mm]	B [mm]	C [mm]	D [mm]	E Ø [mm]	F Ø [mm]	H [mm]	H1 [mm]	I Ø [mm]	Weight [kg]
G 1/4"	25,5	13,5	8,5	3	8	10	5	1,5	11	0,012
G 3/8"	28	15	10,5	2	11	14	5	1,5	14,5	0,024
G 1/2"	35	19,5	13	2	14	17,5	5	1,5	17,5	0,048

NOTE The valve is also available as double flow control valve DVCL in inline body G 1/4" for flow control in both directions. Dimension sheets are available upon request.

Type code



Design	
VCL	Flow control valve
DVCL	Double flow control valve (only G 1/4")



Size		max. volume flow [l/min]
14	G 1/4"	10
38	G 3/8"	20
12	G 1/2"	35



Presetting [l/min]
volume flow ranges on request

Appendix

Accessories / Spare parts

Article:

n-line body G 1/2"
In-line body G 3/8"
In-line body G 1/4"

Article number:

138.0010
138.0009
138.0008

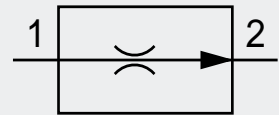
Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.

Flow control valve VCM



max. operating pressure 315 bar
max. volume flow 9 l/min



090440_VCM_e
01.2017

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Characteristics

- screw-in flow control valve
- various volume flows available
- compact design
- maintenance-free

Technical Data

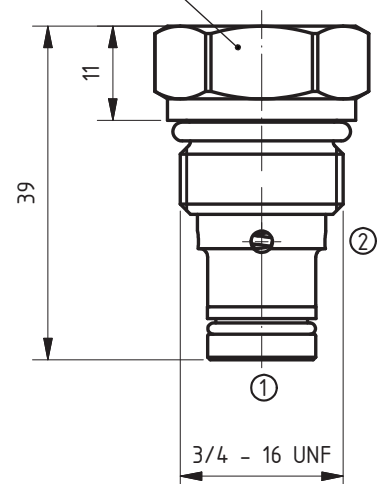
<i>Hydraulic</i>	Operating pressure max.:	315 bar
	Flow rate:	see type code at differential pressure control $\Delta p = 5,3$ bar
	Flow direction:	1 to 2: flow control 2 to 1: without function
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with $\beta 5(c) > 200$

<i>Mechanic</i>	Design:	screw-in valve
	Size:	08
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-30 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,06 kg
	Material:	valve parts: steel, seals: NBR
Surface protection:	zinc coated steel	

Dimensions

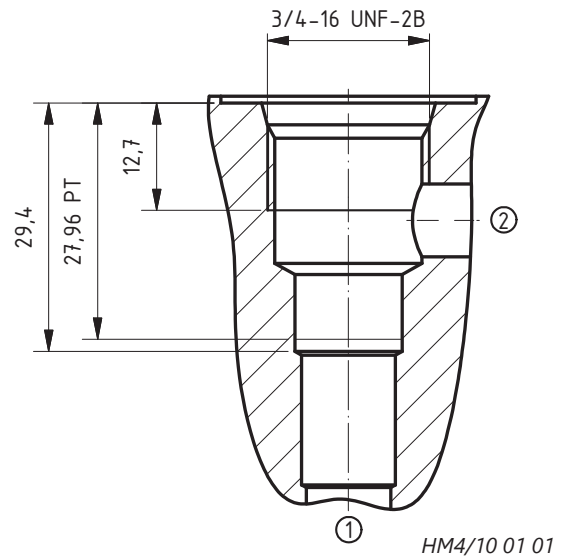
Flow control valve
VCM

installation torque 27 ± 3 Nm
SW 22



Dimensions

Cavity VC 08-2



NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ under the category „valve cavities and port patterns“ or our online catalogue at www.weber-hydraulik.com.

Type code

VCM-08	-																			
Flow control valve		<table border="1"> <thead> <tr> <th colspan="2">Nominal flow at $\Delta p = 5,3$ bar</th> </tr> </thead> <tbody> <tr> <td>0,85</td> <td>0,85 l/min*</td> </tr> <tr> <td>1,5</td> <td>1,5 l/min**</td> </tr> <tr> <td>2,5</td> <td>2,5 l/min**</td> </tr> <tr> <td>3,0</td> <td>3,0 l/min**</td> </tr> <tr> <td>4,2</td> <td>4,2 l/min**</td> </tr> <tr> <td>6,0</td> <td>6,0 l/min*</td> </tr> <tr> <td>7,5</td> <td>7,5 l/min*</td> </tr> <tr> <td>9,0</td> <td>9,0 l/min*</td> </tr> </tbody> </table>	Nominal flow at $\Delta p = 5,3$ bar		0,85	0,85 l/min*	1,5	1,5 l/min**	2,5	2,5 l/min**	3,0	3,0 l/min**	4,2	4,2 l/min**	6,0	6,0 l/min*	7,5	7,5 l/min*	9,0	9,0 l/min*
Nominal flow at $\Delta p = 5,3$ bar																				
0,85	0,85 l/min*																			
1,5	1,5 l/min**																			
2,5	2,5 l/min**																			
3,0	3,0 l/min**																			
4,2	4,2 l/min**																			
6,0	6,0 l/min*																			
7,5	7,5 l/min*																			
9,0	9,0 l/min*																			

* tolerance $\pm 10\%$ l/min of nominal flow
 ** tolerance $+20\%$ l/min of nominal flow

Appendix

Accessories /
Spare parts

Article:
Seal kit VCM-08 (NBR)

Article number:
405.0113

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

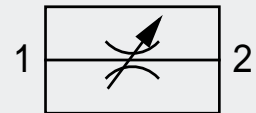
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Throttle valve STO



max. operating pressure 315 bar
screw-in valve for cavity STO



090450_STO_e
02.2018

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Accessories and additional information	4

Characteristics

- screw-in throttle valve
- for manual limitation of volume flows
- compact design
- maintenance-free

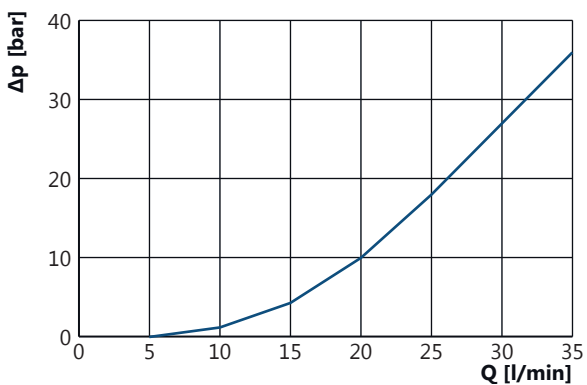
Technical Data

<i>Hydraulic</i>	Operating pressure max.:	315 bar
	Flow direction:	throttling in both directions, the pressure at port 1 should be the higher pressure
	Nominal width:	Ø 3 mm
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	screw-in valve
	Adjusting method:	with spindle-setting screw, optionally hand wheel
	Adjusting range:	approx. 4 turns
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,08 kg
Material:	valve parts: steel O-rings: NBR, backup ring: teflon	

Performance

Pressure drop diagram $\Delta p/Q$ STO fully opened

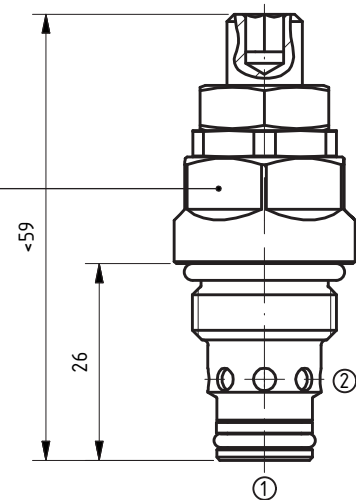


Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

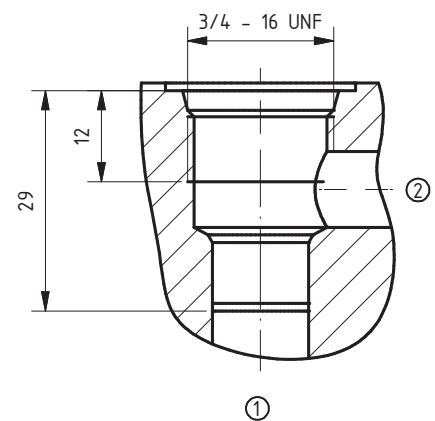
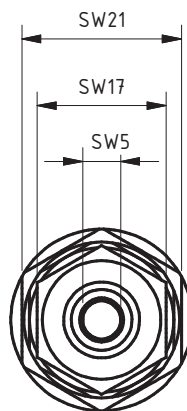
Throttle valve STO

installation torque 35 - 40 Nm
SW 21



HE4/14 33 08

Cavity STO (DBT2)



NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code

STO

Throttle valve

NOTE The valve is also available with hand wheel.

Accessories and additional information

<i>Accessories / spare parts</i>	Article:	Article number:
	Manifold straight 3/8"	093.0024
<i>Manual</i>	Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „ <i>general operating manual</i> “ or will be provided upon request.	



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Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

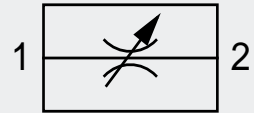
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Throttle valve STE



max. operating pressure 315 bar
screw-in valve for cavity STE



090460_STE_e
07.2018

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Characteristics

- screw-in throttle valve
- for manual limitation of volume flows
- compact design
- maintenance-free

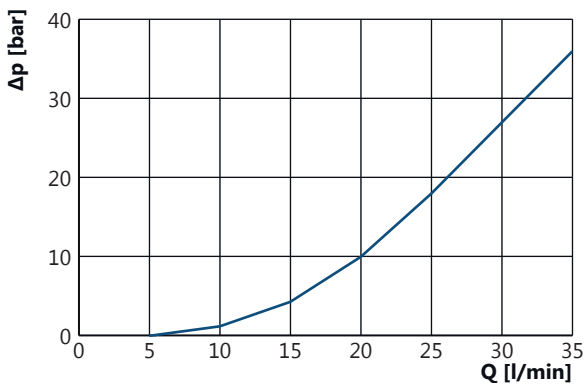
Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar
	Flow direction:	throttling in both directions
	Nominal width:	Ø 7...9 mm
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	screw-in valve
	Adjusting method:	with spindle-setting screw
	Adjusting range:	approx. 9 turns
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,03 kg
Material:	valve parts: steel O-ring: NBR, backup ring: teflon	

Performance

Pressure drop diagram $\Delta p/Q$ STO fully opened

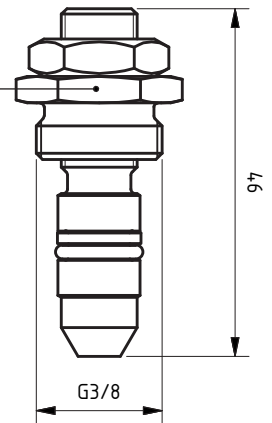


Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

Dimensions

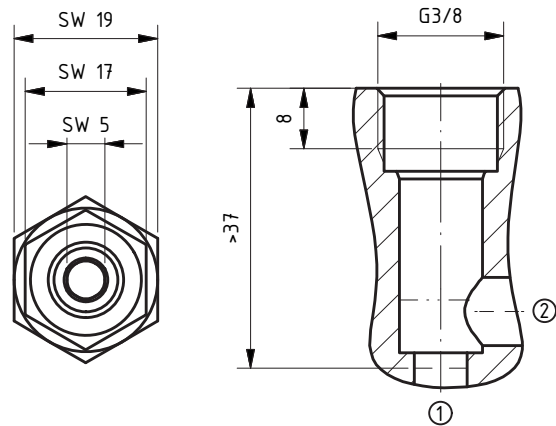
Throttle valve STE

installation torque 25 - 30 Nm
SW 19



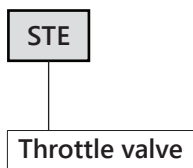
HM4/04 50 01

Cavity STE



NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Appendix

Accessories /
spare parts

Article:

Seal kit STE

Article number:

405.0030

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



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Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

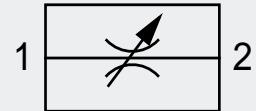
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info.de-k@weber-hydraulik.com

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Throttle valve STD



max. operating pressure 350 bar
screw-in valve for cavity STD



090470_STD_e
04.2018

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Characteristics

- screw-in throttle valve
- for manual limitation of volume flows
- compact design
- maintenance-free

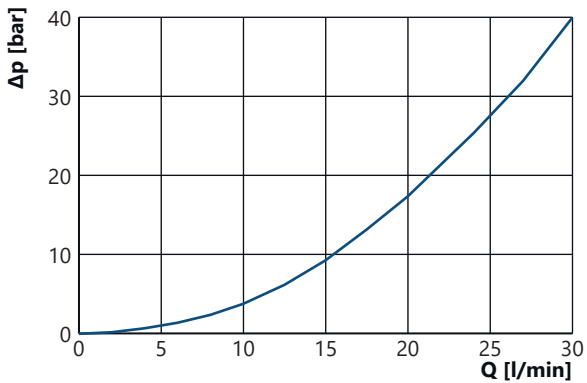
Technical data

<i>Hydraulic</i>	Operating pressure max.:	350 bar
	Flow direction:	throttling in both directions
	Nominal width:	Ø 3,5 mm
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	screw-in valve
	Adjusting method:	with spindle-setting screw
	Adjusting range:	approx. 7 turns
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,0094 kg
Material:	valve parts: steel O-ring: NBR, backup ring: teflon	

Performance

Pressure drop diagram $\Delta p/Q$ STD fully opened

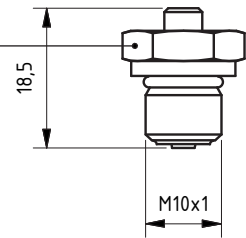


Test conditions Oil: HLP 32, temperature: 40 °C (~46 cSt)

Dimensions

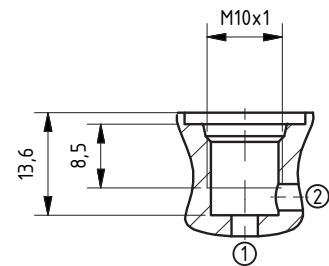
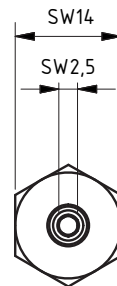
Throttle valve STD

installation torque 7,6 - 8,4 Nm
SW 14



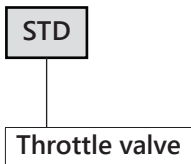
HM4/09 18 04

Cavity STD



NOTE For a detailed drawing of the cavity please see chapter 12 „general information“ or our online catalogue at www.weber-hydraulik.com.

Type code



Accessories and additional information

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category „general operating manual“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Component coupling check valve KK-M14x1,5



operating pressure max. 315 bar
volume flow max. 20 l/min

090510_KK14_e
07.2018

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Characteristics

- for use in jig manufacturing and others
- blocks oil canal of components when seperated
- compact design
- flow direction from either side
- hardened and honed parts
- low leakage
- maintenance-free

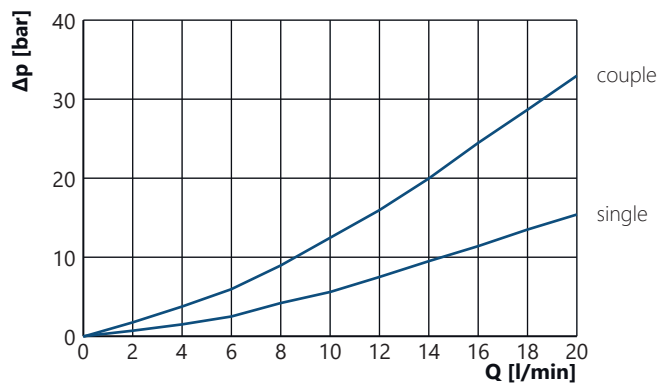
Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar
	Flow rate max.:	20 l/min
	Flow direction:	any
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200

<i>Mechanic</i>	Design:	Screw-in coupling
	Size:	M14 x 1,5
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	0,01 kg
	Material:	steel
	seals: NBR	
Surface protection:	burnished steel	

Performance

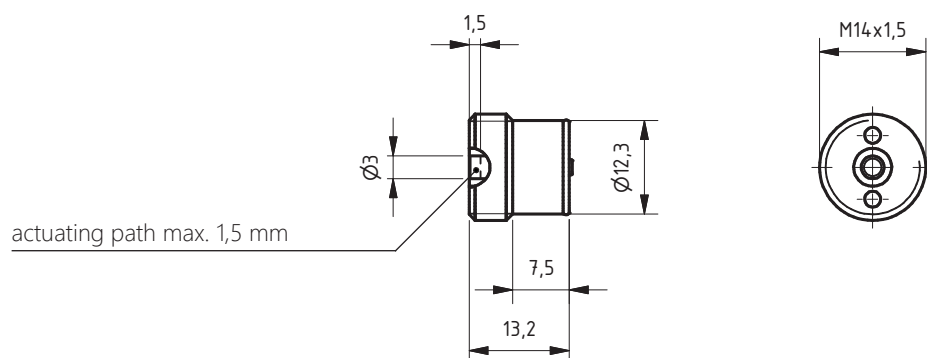
Pressure drop diagram ($\Delta p/Q$) KK-M14x1,5



Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)

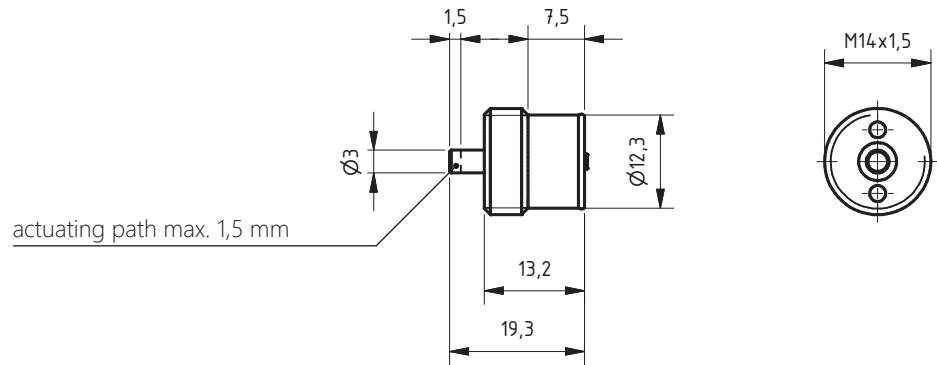
Dimensions

Component coupling
KK-M14x1,5
with short pin

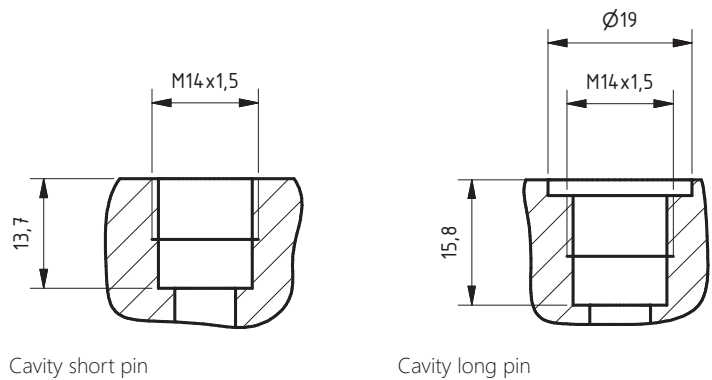


Dimensions

Component coupling
KK-M14x1,5
with long pin

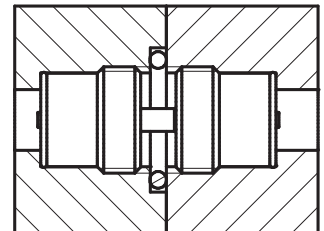


Cavity KK-M14x1,5



NOTE For a detailed drawing of the cavity please see chapter 11 „general information“ or our online catalogue at www.weber-hydraulik.com.

Mounted couplings
KK-M14x1,5



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NOTE Place corresponding o-ring in the right position of the respective cavity before mounting the couplings (see mounting instructions).

NOTE The component couplings must be mounted as pairs (one coupling with long pin combined with one coupling with short pin). Two component couplings of the same kind (long/long or short/short) are not compatible.

- NOTES**
- For external tightness the counterbore must be 2,1 mm (for o-rings with $\text{Ø } 2,62 \text{ mm}$).
 - The pins may not be exposed to radial forces.
 - The actuation path of the pin must not exceed 1,5 mm.
 - Coupling and decoupling only when system is depressurized.
 - When decoupled, the (long) pin of the valve (Art.-No.) exceeds the surface about 3,5 mm.

Type code

Component coupling	Model	Articel number
KK-M14x1,5	long pin	131.0005
KK-M14x1,5	short pin	131.0006

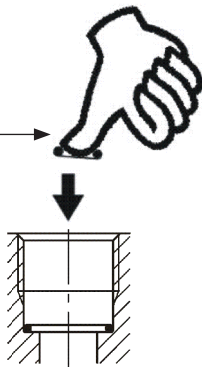
NOTE The component coupling check valves are sold in 10 pieces per unit.

Mounting instruction

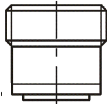
NOTE The mounting instruction is also enclosed with the shipping notes of every delivery.

KK-M14x1,5 with o-ring 11 x 1 for standard cavity according to datasheet

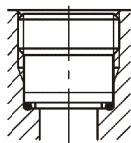
Step 1:
carefully place o-ring 11 x 1 on the bottom of the sandard cavity before screwing in the valve



Step 2:
screw valve (without o-ring) in the standard cavity



3. Result:
Mounted component coupling check valve with o-ring 11 x 1

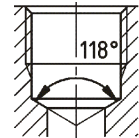


KK-M14x1,5 with o-ring 9 x 1 for customer specific cavity

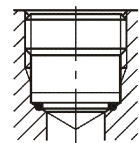
Step 1:
carefully mount o-ring 9 x 1 on valve



Step 2:
screw valve (with mounted o-ring) in the customer specific cavity



3. Result:
Mounted component coupling check valve with o-ring 9 x 1



Accessories and additional information

*Accessories/
spare parts*

Article:

Article number:

Screw-in tool AVA1C for KK M14x1,5

139.0007

O-ring 9,0 x 1,0

401.0028

O-ring 11,0 x 1,0

401.0101

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

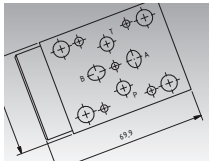
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info.de-k@weber-hydraulik.com

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Connecting Plates and Manifolds

Hollow Bolt Body HSS

for counterbalance valves or pilot to open check valves
cavity T-11A or T-2A



Connecting Plates and Manifolds

suitable for various cavities

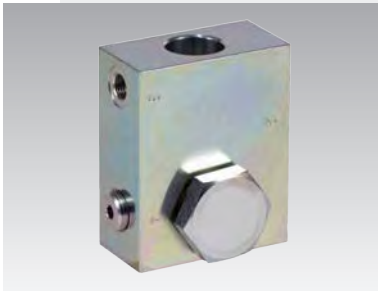
Line Mount Bodies, Tools

Line Mount Bodies, Tools

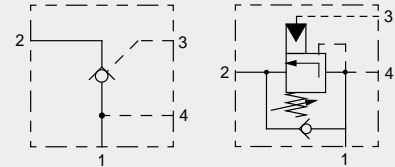
operating pressure max. 350 bar



Hollow bolt body HSS



for counterbalance valves or pilot to open check valves with cavity T-11A or T-2A



100210_HSS_e
07.2018

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Characteristics	1
Technical data	2
Dimensions	2
Table of dimensions	3
Type code	3
Set-up	4
Accessories and additional information	4

Characteristics

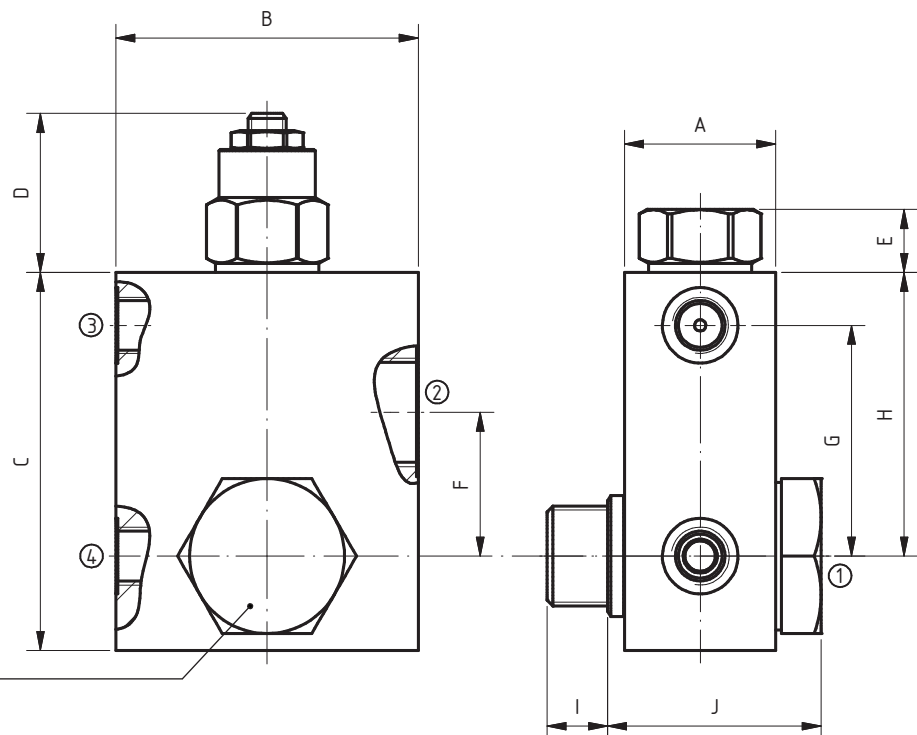
- hollow bolt body for counterbalance valves or pilot to open check valves
- space-saving installation possible
- dead space is minimized
- available in many variations
- available with already mounted valves
- turnable
- hollow bolt can be mounted from both sides
- maintenance-free

Technical data

<i>Hydraulic</i>	Operating pressure max.:	315 bar
	Flow rate:	depending on valve
	Hydraulic fluid:	mineral oil according to DIN 51524, others upon request
	Viscosity range:	7,4 - 420 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
<i>Mechanic</i>	Design:	Hollow bolt body
	Size:	G 1/4", G 3/8", G 1/2", G 3/4", M18 x 1,5
	Fluid temperature:	-20 °C to +80 °C
	Ambient temperature:	-20 °C to +80 °C
	Storage temperature:	-20 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	without valves, see <i>table of dimensions</i>
	Material:	steel seal at Usit-ring: NBR
	Surface protection:	zinc coated steel

Dimensions

Hollow bolt body HSS



for installation torque and width across flats (SW) see table of dimensions

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Table of dimensions

1	G 1/4"	G 3/8"	G 1/2"	G 3/4"	M 18 x 1,5
Cavity	T-11A	T-11A	T-11A	T-2A	T-11A
2	G 1/4"	G 3/8"	G 1/2"	G 3/4"	G 1/2"
3 and 4	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
A [mm]	30	30	30	40	30
B [mm]	60	55	65	80	65
C [mm]	75	80	85	100	80
D [mm]*	33	33	33	55	33
E [mm]**	13	13	13	17	13
F [mm]	27	27	30	38	27
G [mm]	51	51	54	61	51
H [mm]	63	63	66	75	63
I [mm]	12	12	14	16	14
J [mm]	41	39	48	57	48
SW	19	22	27	41	24
Installation torque [Nm]	22 ± 1,1	40 ± 2	65 ± 3,3	180 ± 9	50 ± 2,3
Weight [kg] ***	0,85	0,85	1,0	2,0	1,0
Article number	203.0144	203.0003	203.0005	203.0006	203.0012

* Dimension „D“ applies to counterbalance valves with L-control (e.g. CBCA-LAN)

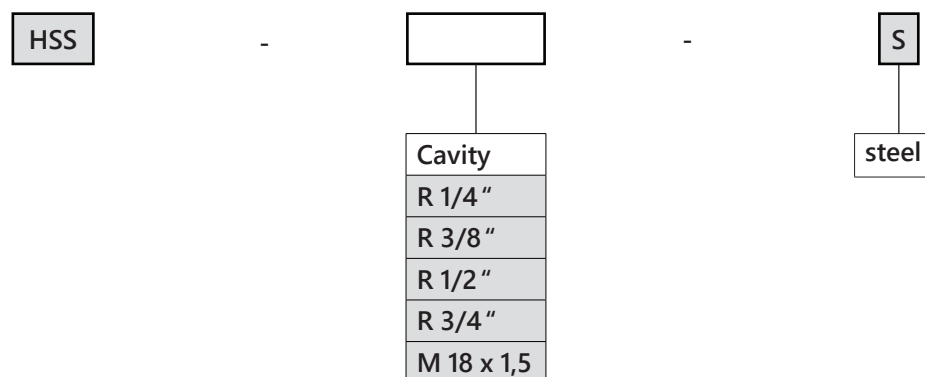
** Dimension „E“ applies to pilot to open check valves without manual load release (e.g. CKCB-XCN)

*** Weight of hollow bolt body without any valves

NOTE The installation torque values of the hollow bolt are maximum values which are not be exceeded (Nm, couter material steel). This must be guaranteed by using the necessary tools (torque wrench) and procedure.

NOTE The steel sealing ring may not be replaced by any other sealing! It has a functional purpose in absorbing forces. Other sealing rings (e.g. copper, or USIT-rings) are not permitted!

Type code



NOTE The hollow bolt bodies HSS are available with a variety of counterbalance valves and pilot to open check valves. They can also be provided with a Minimes® test-point. Please contact us for more information.

Set-up

The hollow bolt body HSS must be fitted completely before mounting on the cylinder. Through inappropriate mounting of the hollow bolt body to the cylinder, it is possible that additional forces lead to leaking due to loosened parts.

If mounted inappropriately, it is possible that the steel sealing ring damages the cylinder and/or the hollow bolt body.

If leakage occurs at the steel sealing ring despite the correct installation torque, the system must never be tightened with a higher torque, but it might be necessary to replace the cylinder and/or the hollow bolt body, as well as the steel sealing ring.

The system is designed to absorb hydraulic forces. If there are any mechanic forces, e.g. applied through hydraulic tubing, this may lead to failure.

Any hydraulic tubing must be mounted to the hollow bolt body with the system being turned off and stress-relieved.

Accessories and additional information

Accessories/ spare parts

Please contact us for fitting steel sealing rings, locking screws or valves as spare parts for the hollow bolt body HSS.

Manual

Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 11 under the category „*general operating manual*“ or will be provided upon request.

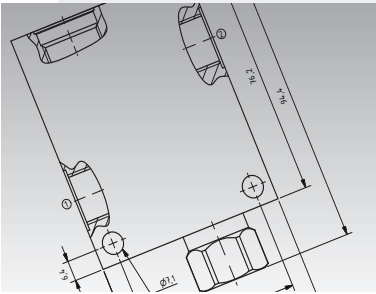


WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

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Connecting Plates and Manifolds



suitable for various cavities

100220_Manifolds_e
07.2018

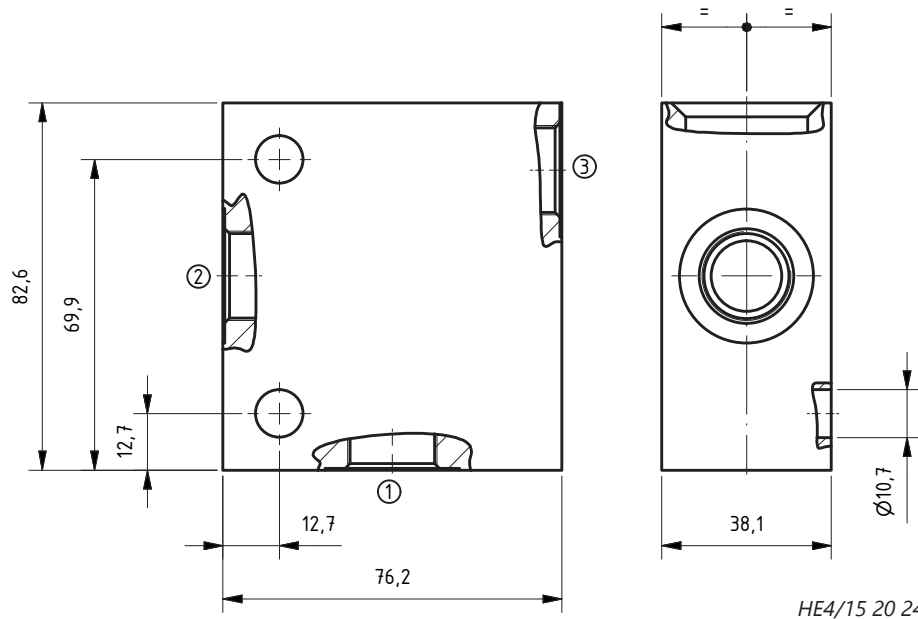
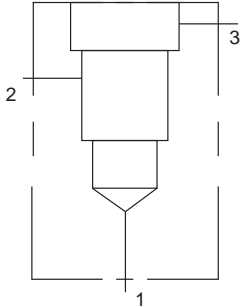
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Cavity T-10A	7
Cavity T-11A	11
Cavity T-13A	14
Cavity T-16A	16

NOTE All aluminium manifolds are approved for a maximum operating pressure of 210 bar.

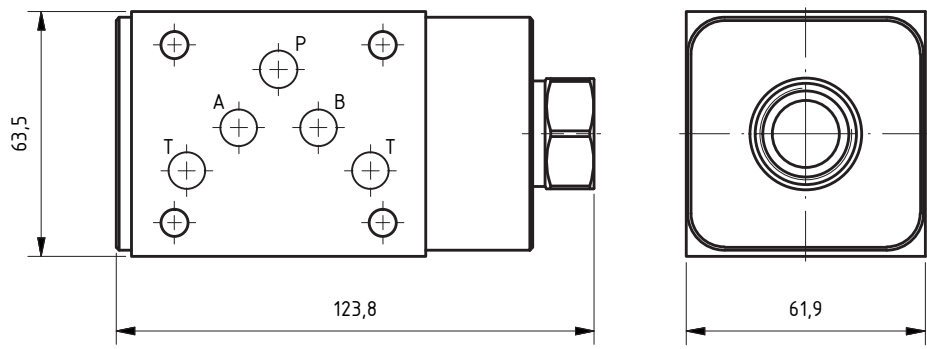
Cavity T-2A

Manifold 90°
BAV, BAW

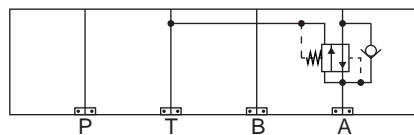


Type	Ports	Weight [kg]
BAV	G 1/2"	0,49 (Alu)
BAV/S		1,30 (Steel)
BAW	G 3/4", Port 3: G 1/2"	0,27 (Alu)
BAW/S		0,70 (Steel)

Sandwich body
NG 10 in B
BB2



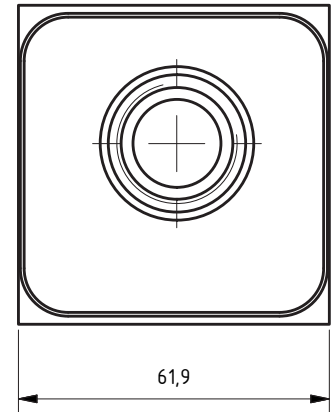
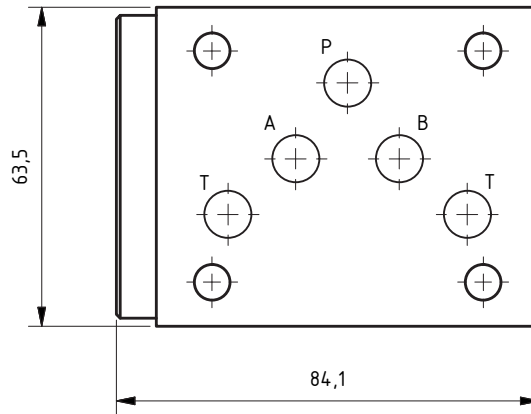
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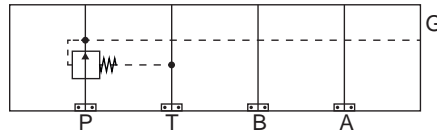
Type	Weight [kg]
BB2	1,11 (Alu)

Cavity T-2A

Sandwich body
NG 10 in P
BBP

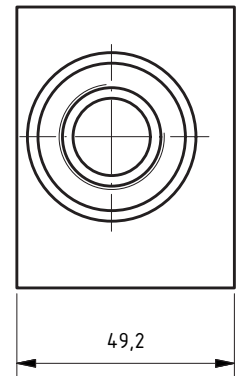
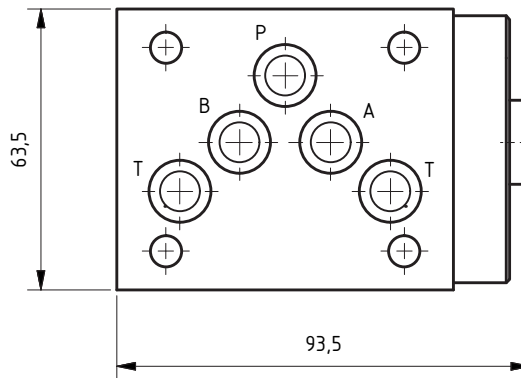


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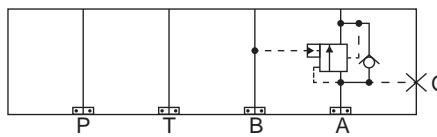


Type	Weight [kg]
BBP	0,72 (Alu)
BBP/S	1,88 (Steel)

Sandwich body
NG 10 in A
BBA



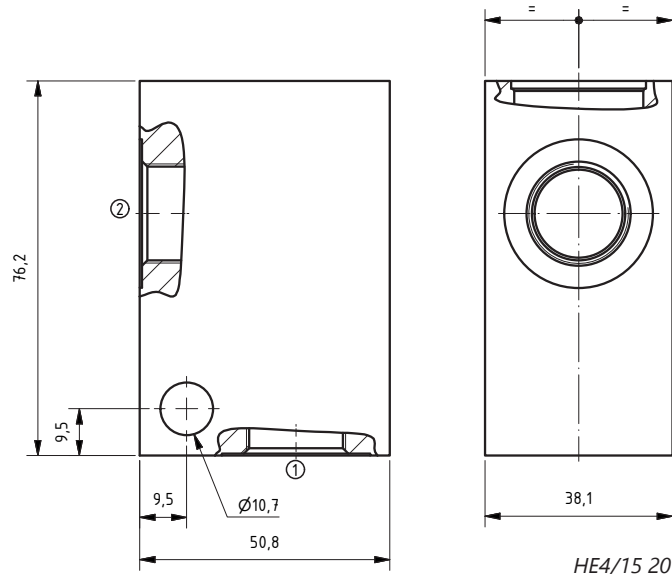
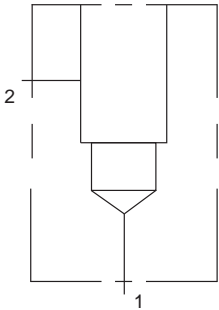
HM3/15 20 27



Type	Weight [kg]
BBA	0,57 (Alu)
BBA/S	1,47 (Steel)

Cavity T-3A

Manifold 90°
G 1/2"
CAV, CAW

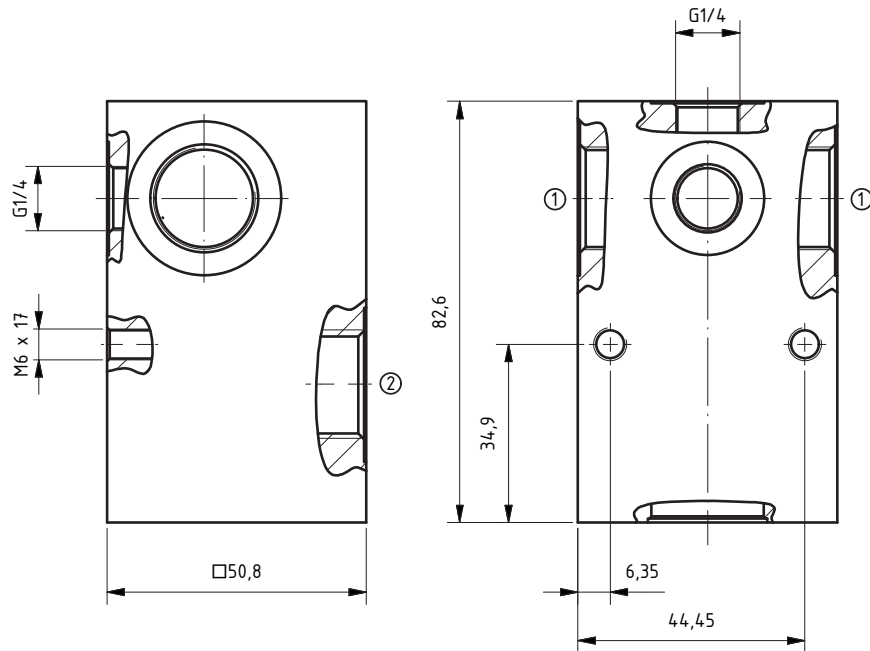
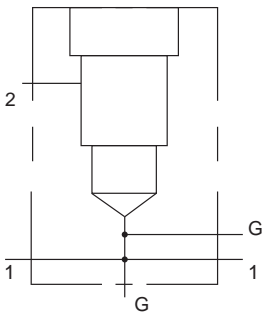


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Type	Ports	Weight [kg]
CAV	G 1/2"	0,29 (Alu)
CAV/S		0,76 (Steel)

Type	Ports	Weight [kg]
CAW	G 3/4"	0,27 (Alu)
CAW/S		0,70 (Steel)

Manifold 90°
CEV, CEW

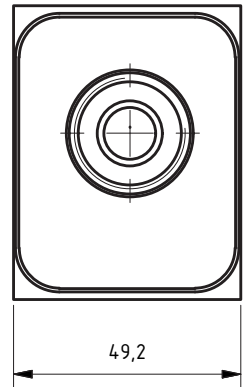
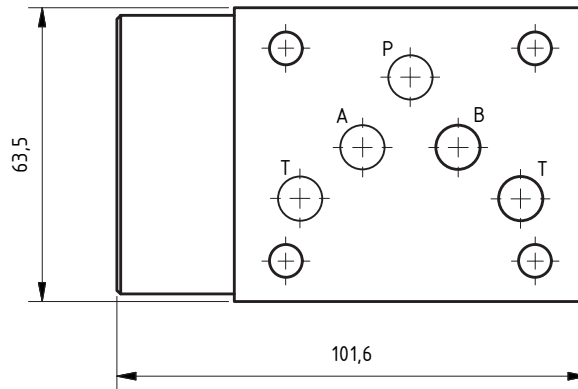


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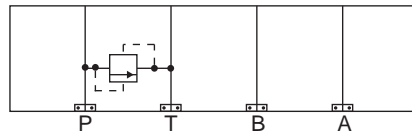
Type	Ports	Weight [kg]
CEV	G 1/2"	0,45 (Alu)
CAV/S		1,17 (Steel)
CEW	G 3/4"	0,41 (Alu)
CEW/S		1,08 (Steel)

Cavity T-3A

Sandwich body
NG 10 P→T
CBP



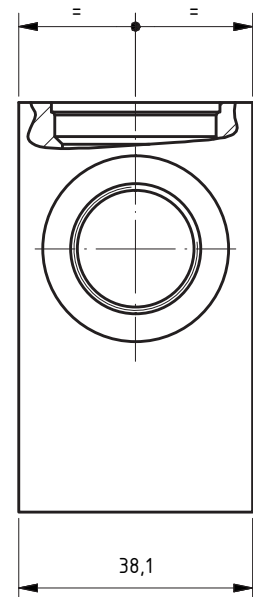
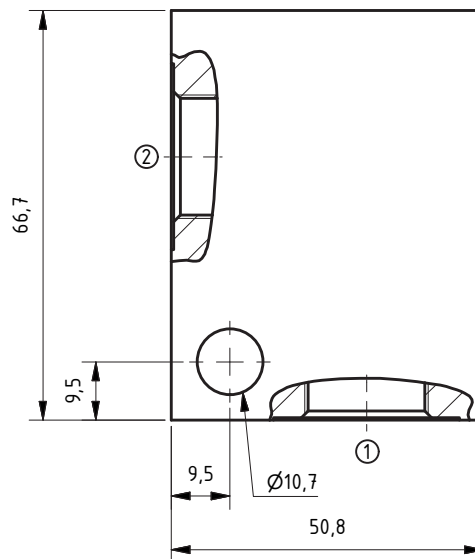
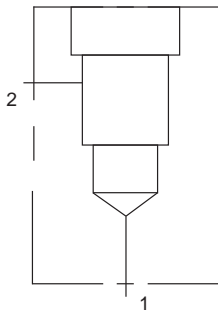
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Type	Weight [kg]
CBP	0,71 (Alu)
CBP/S	1,85 (Steel)

Cavity T-5A

Manifold 90°
G 1/2"
DAV



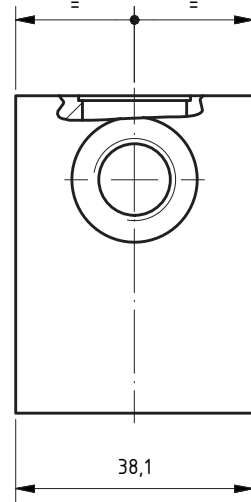
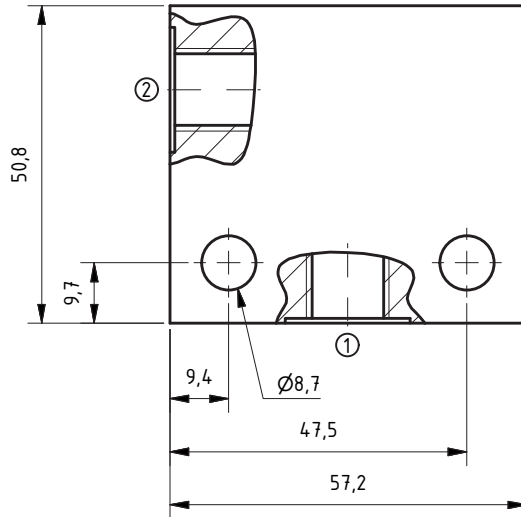
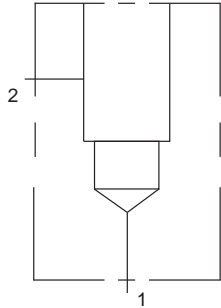
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Type	Weight [kg]
DAV	0,25 (Alu)
DAV/S	0,66 (Steel)

NOTE Other manifolds and sandwich bodies are available upon request.

Cavity T-8A

Manifold 90°
G 1/4"
WFP



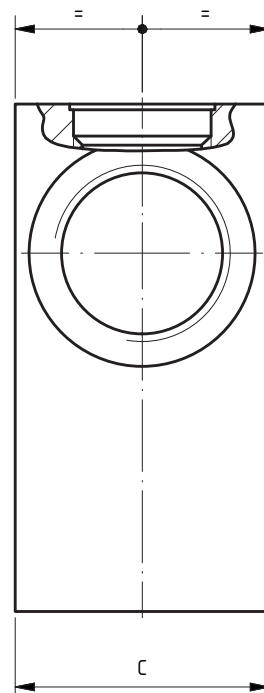
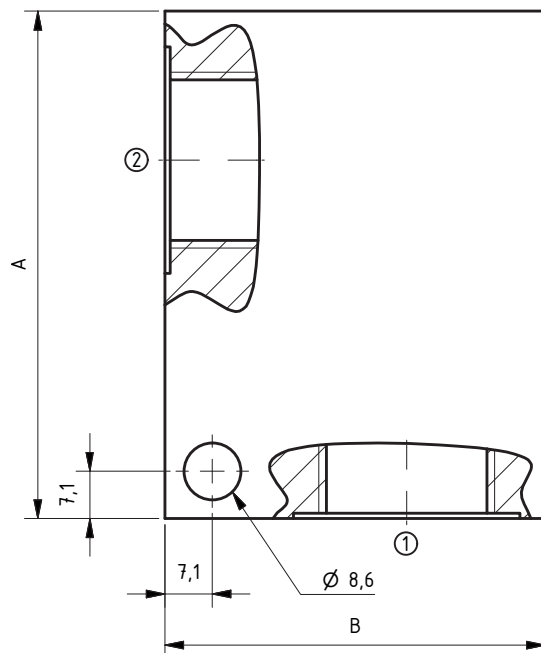
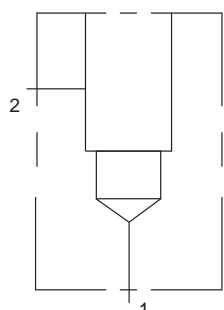
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Type	Weight [kg]
WFP	0,26 (Alu)
WFP/S	0,69 (Steel)

NOTE Other manifolds and sandwich bodies are available upon request.

Cavity T-10A

In-line body
FAU, FAV, FAW

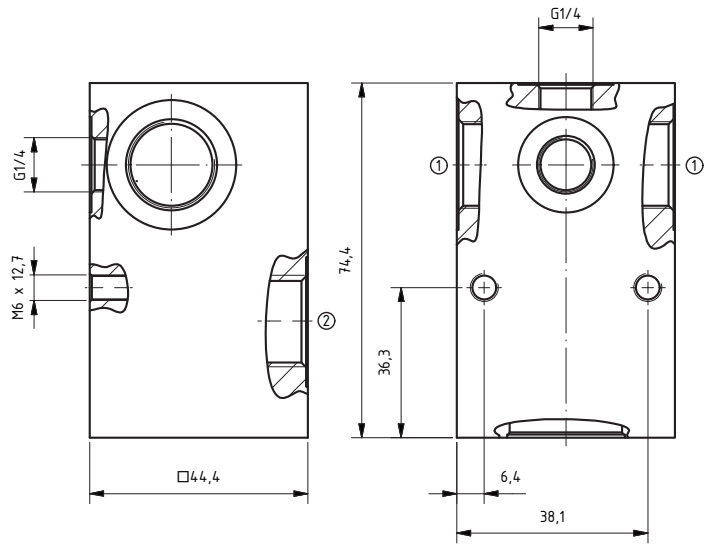
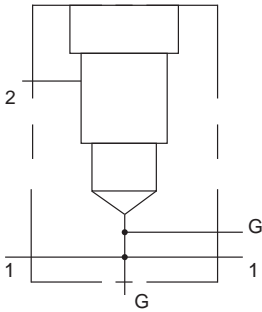


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Type	Ports	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [kg]
FAU	G 3/8"	63,5	41,1	31,8	25,4	26,2	0,20 (Alu)
FAU/S							0,48 (Steel)
FAV	G 1/2"	76,2	57,2	38,1	36,3	36,3	0,38 (Alu)
FAV/S							0,96 (Steel)
FAW	G 3/4"	76,2	57,2	38,1	36,3	36,3	0,36 (Alu)
FAW/S							0,92 (Steel)

Cavity T-10A

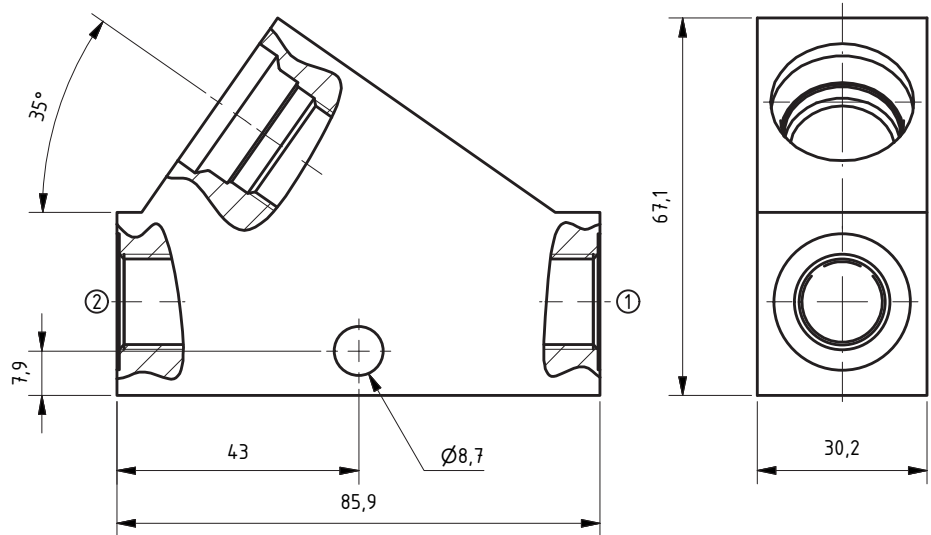
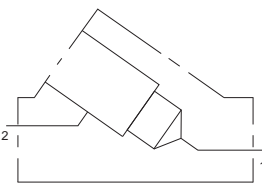
In-line body
1 open
FEU, FEV



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Type	Ports	Weight [kg]
FEU	G 3/8"	0,32 (Alu)
FEU/S		0,84 (Steel)
FEV	G 1/2"	0,30 (Alu)
FEV/S		0,80 (Steel)

Manifold straight
G 3/8"
FCU

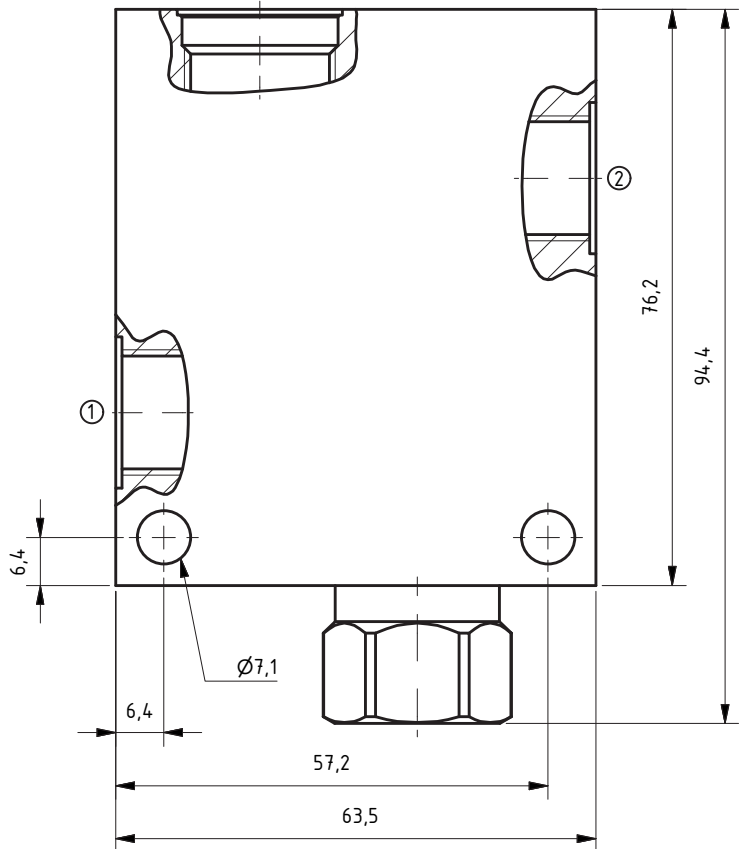
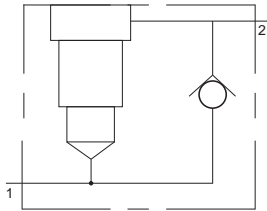


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Type	Weight [kg]
FCU	0,26 (Alu)
FCU/S	0,67 (Steel)

Cavity T-10A

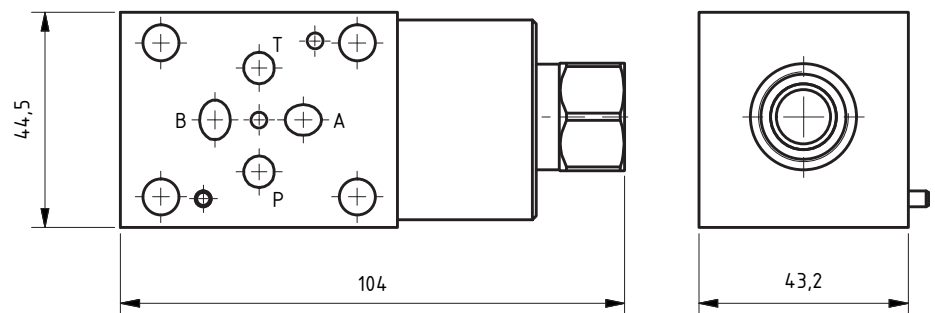
Manifold 90°
G 3/8"
FNU



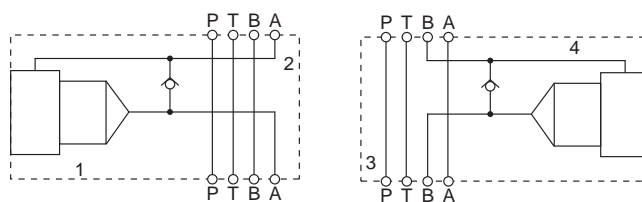
HE4/14 46 03

Type	Weight [kg]
FNU	0,42 (Alu)
FNU/S	0,92 (Steel)

*Sandwich body NG 6
FB4*



HM3/14 46 04

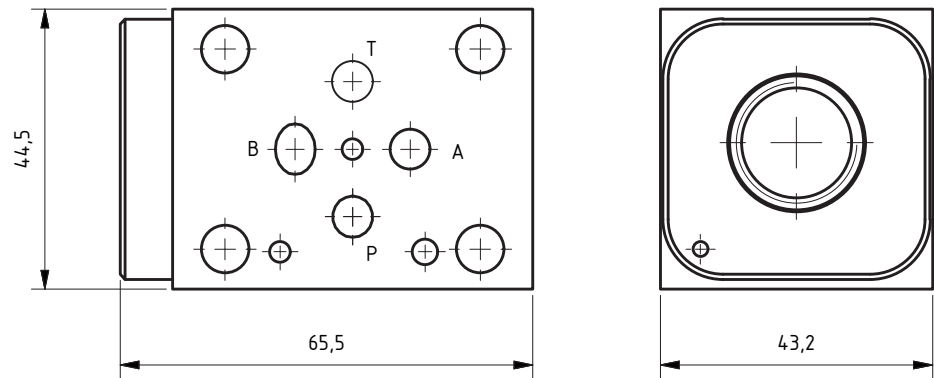


Type	Weight [kg]
FB4	0,44 (Alu)
FB4/S	0,97 (Steel)

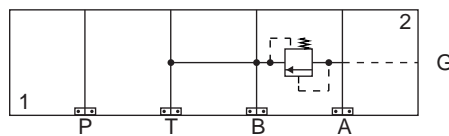
NOTE The sandwich body is available with unloading port at A or at B.

Cavity T-10A

Sandwich body NG 6
FBA, FBP, FBT

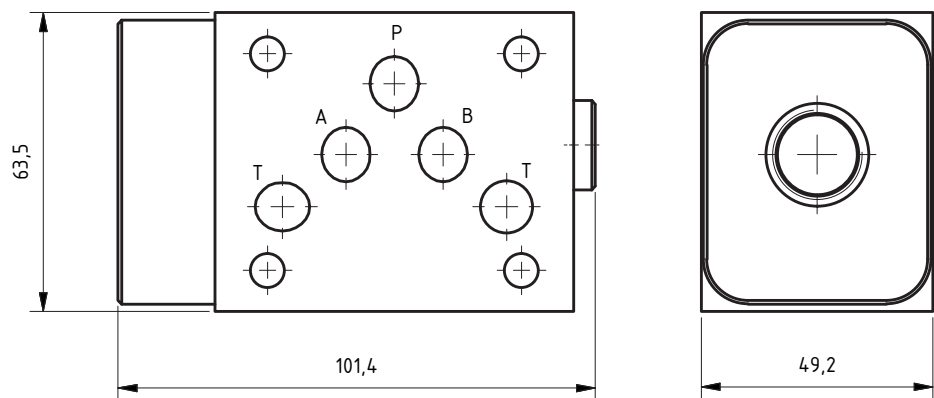


HE4/14 48 08

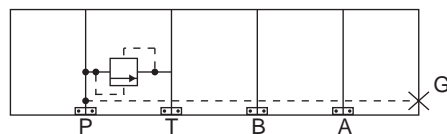


Type	Ports	Design	Weight [kg]
FBA/M	metric	A→T or B→T	0,30 (Alu)
FBA/T			0,70 (Steel)
FBP/M	metric	P→T	0,30 (Alu)
FBP/T			0,70 (Steel)
FBT/M	metric	from T	0,30 (Alu)
FBT/T			0,70 (Steel)

Sandwich body
NG 10, P→T
CBE



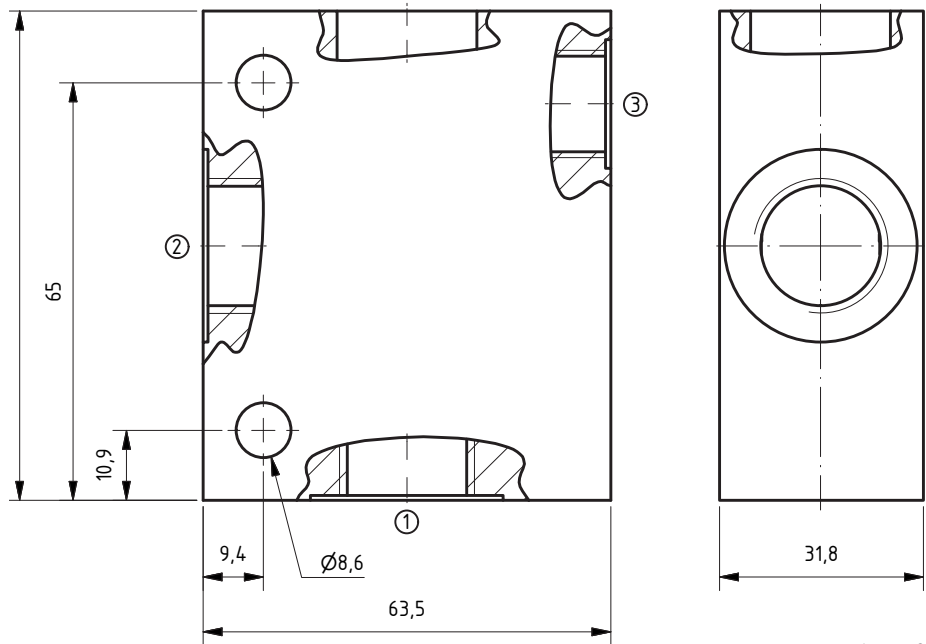
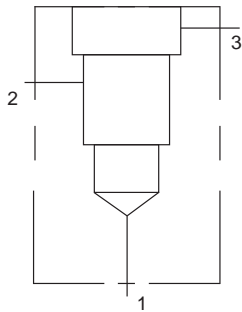
HE4/14 50 08



Type	Weight [kg]
CBE/M	0,69 (Alu)
CBE/T	1,78 (Steel)

Cavity T-11A

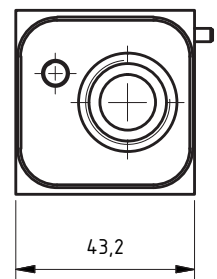
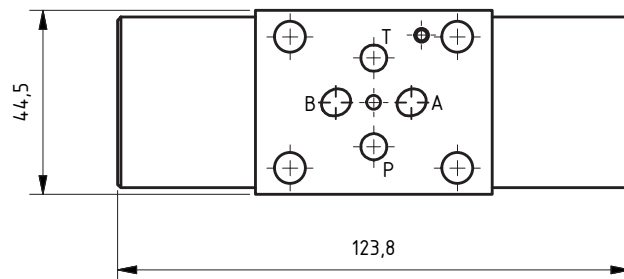
Manifold 90°
EAV, ECV, ECT, EAU,
ECU



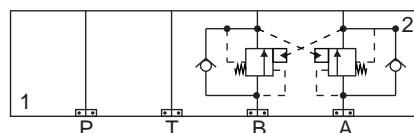
HE4/14 47 01

Type	Port 1	Port 2	Port 3	A [mm]	Weight [kg]
EAV	G 1/2"	G 1/2"	G 3/8"	61,7	0,32 (Alu)
EAV/S					0,83 (Steel)
ECV	G 1/2"	G 1/2"	G 1/4"	64,3	0,32 (Alu)
ECV/S					0,83 (Steel)
ECT	G 1/4"	G 1/4"	G 1/4"	64,3	0,34 (Alu)
ECT/S					0,89 (Steel)
EAU	G 3/8"	G 3/8"	G 3/8"	61,7	0,33 (Alu)
EAU/S					0,86 (Steel)
ECU	G 3/8"	G 3/8"	G 1/4"	64,3	0,33 (Alu)
ECU/S					0,87 (Steel)

Sandwich body NG 6
EBY



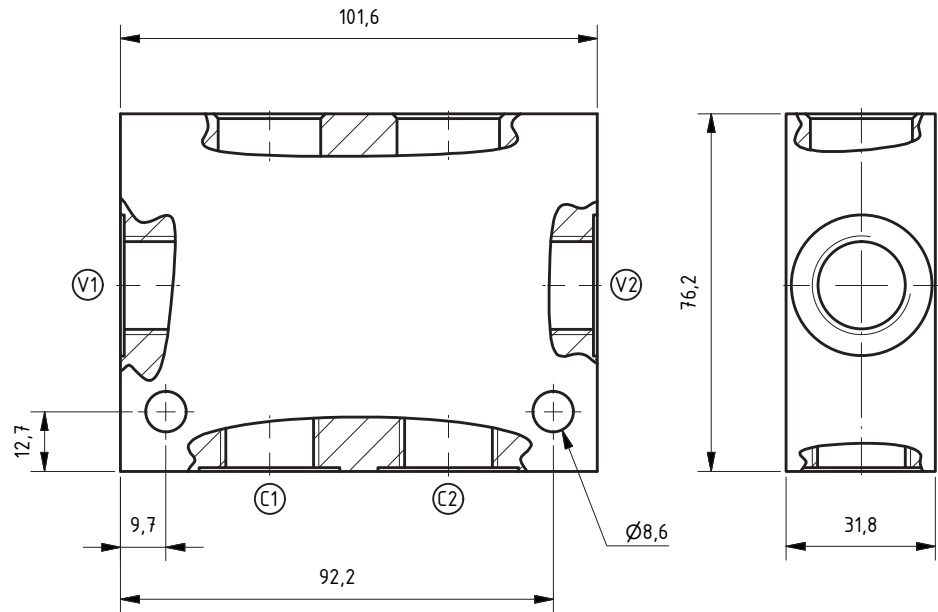
HE4/14 51 08



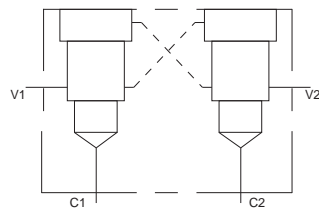
Type	Weight [kg]
EBY	0,48 (Alu)
EBY/S	1,22 (Steel)

Cavity T-11A

Manifold 90°
YEV, YEU

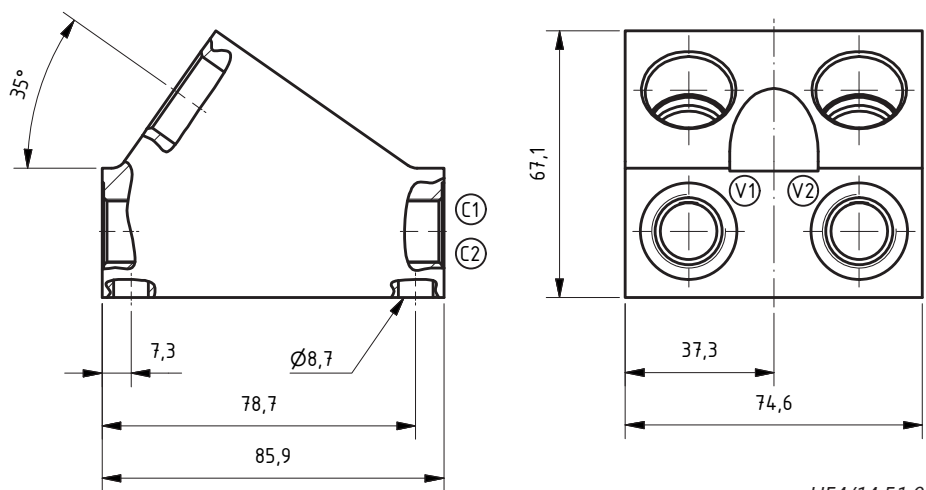


HE4/14 47 03

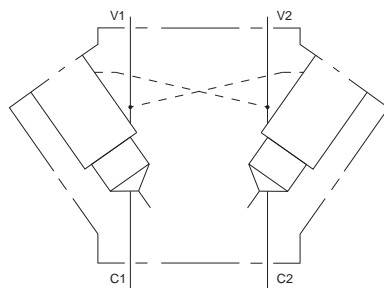


Type	Ports	Weight [kg]
YEV	G 1/2"	0,49 (Alu)
YEV/S		1,29 (Steel)
YEU	G 3/8"	0,52 (Alu)
YEU/S		1,36 (Steel)

Manifold straight
XEU



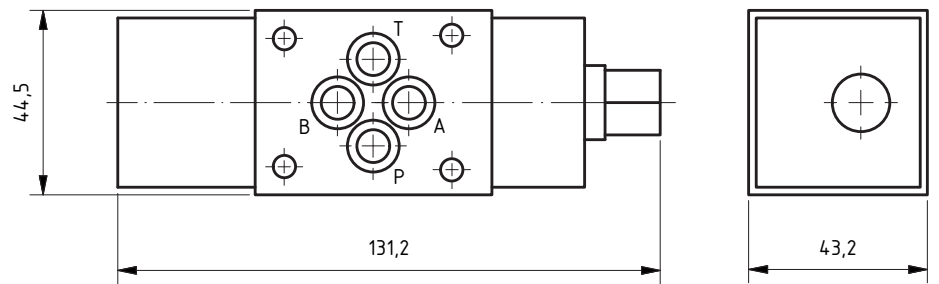
HE4/14 51 07



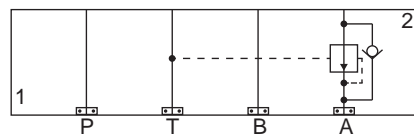
Type	Weight [kg]
XEU	0,65 (Alu)
XEU/S	1,71 (Steel)

Cavity T-11A

Sandwich body NG 6
EB2

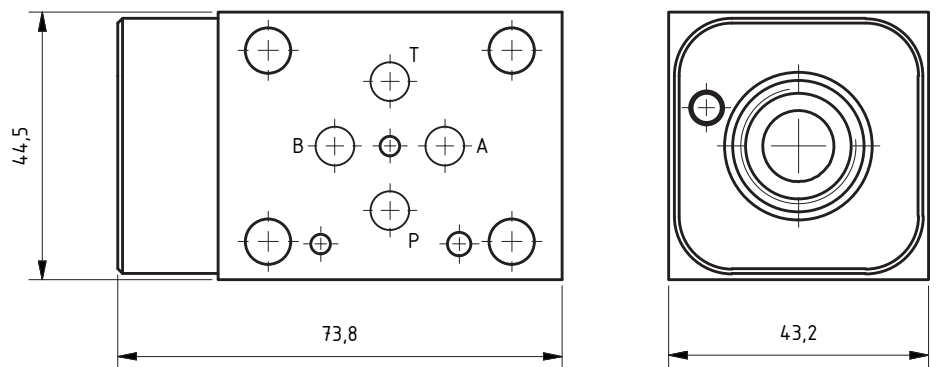


HE4/14 34 26

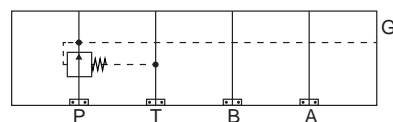


Type	Weight [kg]
EB2	0,56 (Alu)
EB2/S	1,24 (Steel)

Sandwich body NG 6
EBP



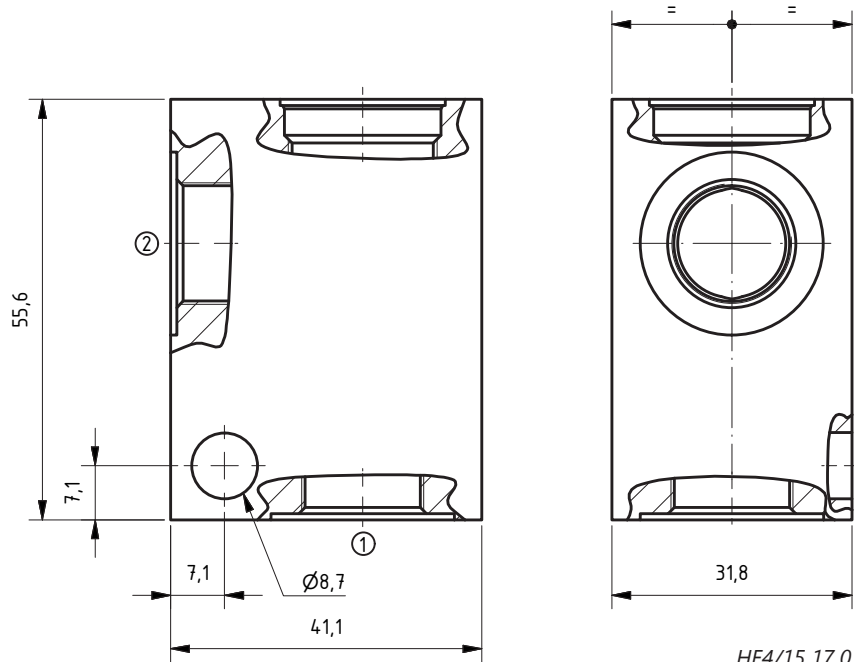
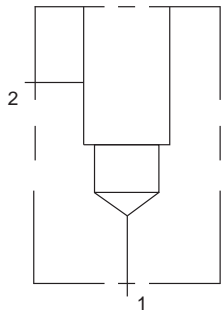
HE4/14 51 10



Type	Weight [kg]
EBP/M	0,32 (Alu)
EBP/T	0,77 (Steel)

Cavity T-13A

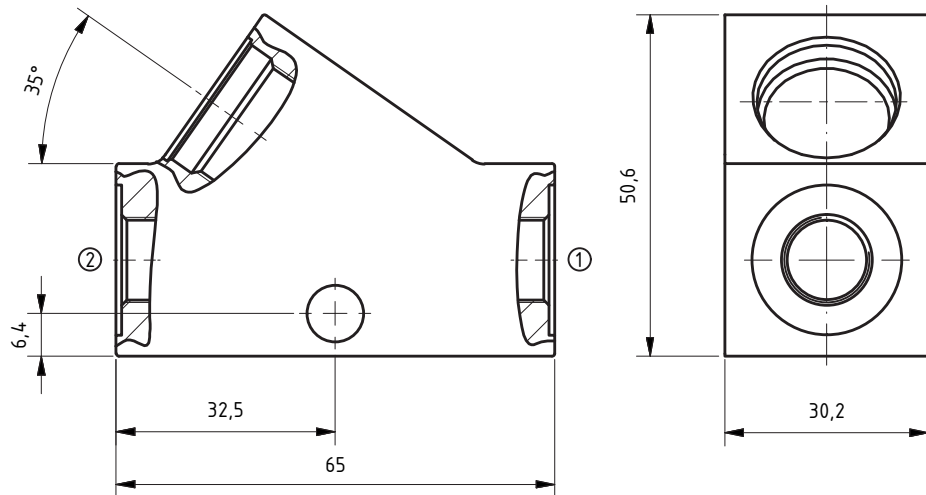
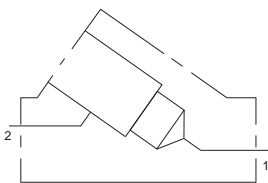
Manifold 90°
G 3/8"
GAU



HE4/15 17 03

Type	Weight [kg]
GAU	0,15 (Alu)
GAU/S	0,28 (Steel)

Manifold straight
GCT, GCU

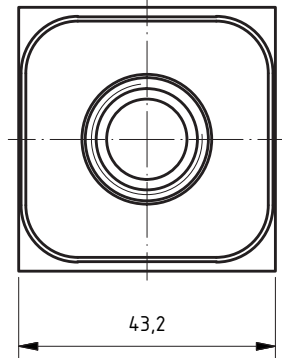
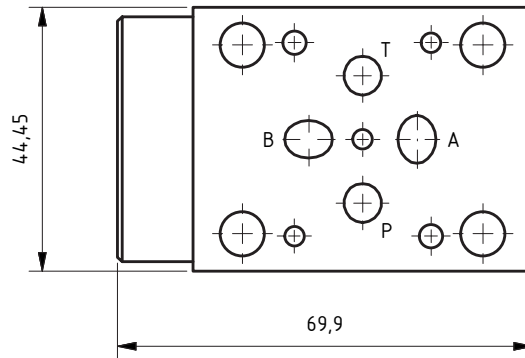


HE4/15 17 04

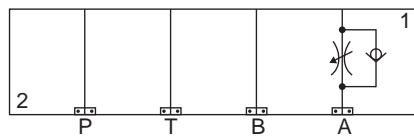
Type	Ports	Weight [kg]
GCT	G 1/4"	0,15 (Alu)
GCT/S		1,39 (Steel)
GCU	G 3/8"	0,14 (Alu)
GCU/S		0,37 (Steel)

Cavity T-13A

Sandwich body NG 6
GBA
in A or B

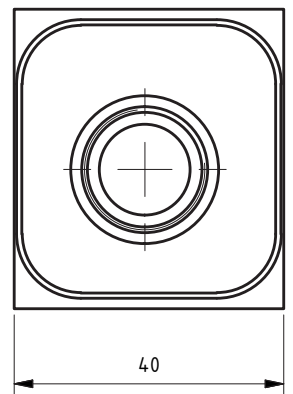
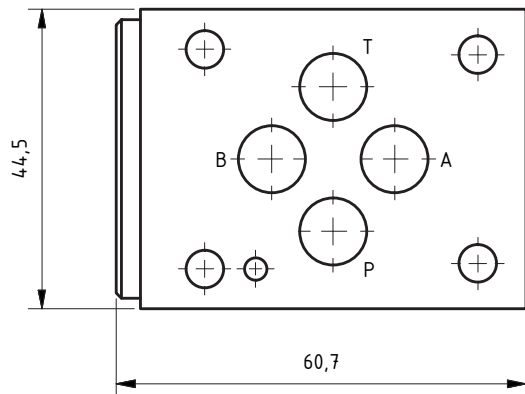


HE4/15 17 06

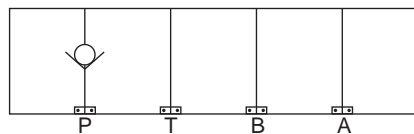


Type	Weight [kg]
GBA	0,3 (Alu)
GBA/S	0,76 (Steel)

Sandwich body NG 6
Z6S
in P



HE4/15 17 07

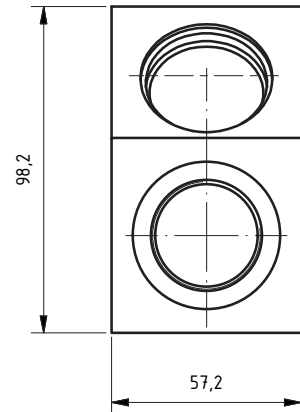
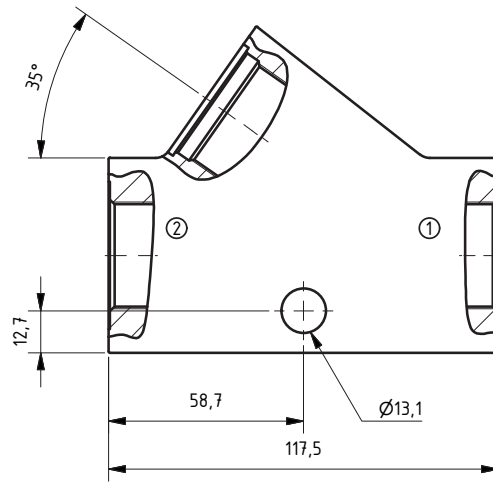
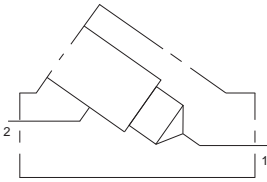


Type	Weight [kg]
Z6S	0,23 (Alu)
Z6S/S	0,61 (Steel)

NOTE Other manifolds and sandwich bodies are available upon request.

Cavity T-16A

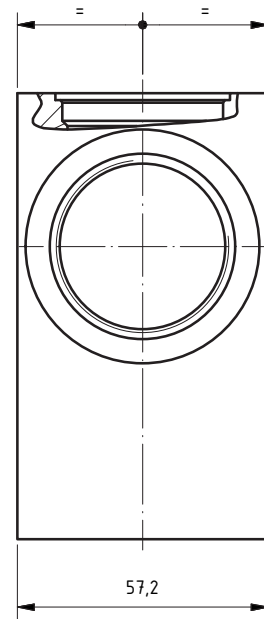
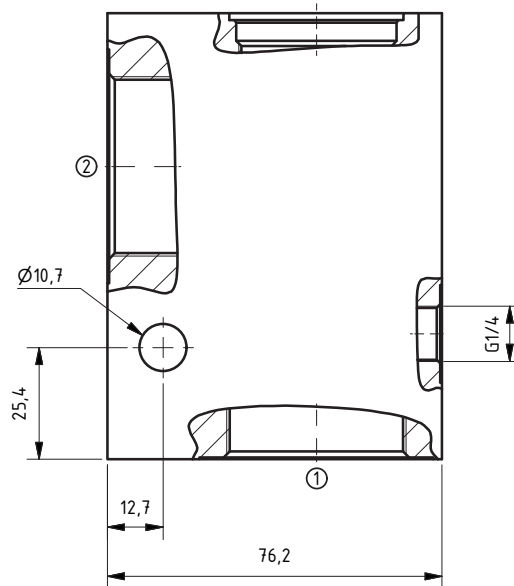
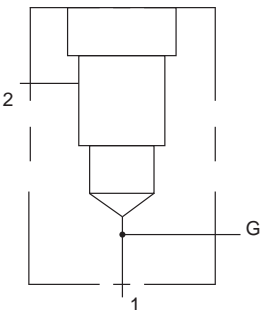
Manifold straight
ICX



HE3/15 21 03

Type	Weight [kg]
ICX	0,96 (Alu)
ICX/S	2,51 (Steel)

Manifold 90°
G 1 1/4"
IAY, IAX



HE3/15 21 02

Type	Ports	Weight [kg]
IAY	G 1 1/4"	0,8 (Alu)
IAY/S		2,09 (Steel)
IAX	G 1"	0,88 (Alu)
IAX/S		2,31 (Steel)



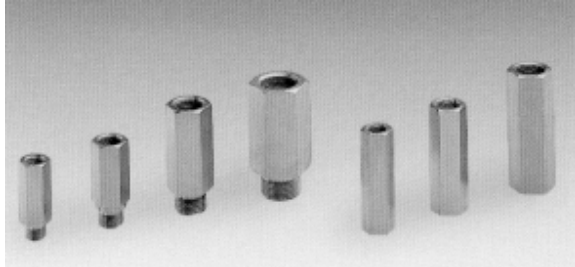
WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Line Mount Bodies, Tools

for small screw in valves • steel zinc plated • max. 350 bar

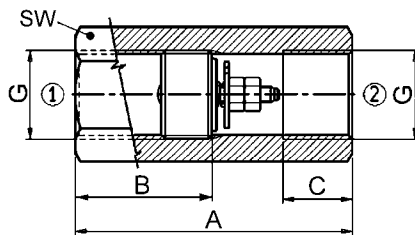


Description

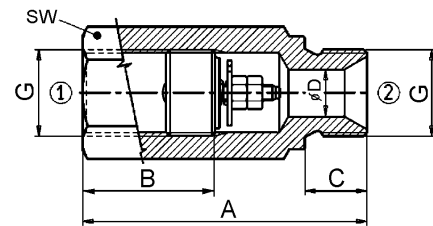
Suitable for the FLUID TEAM small screw in valve program. The zinc plating ensures a good corrosion protection. The housings are rated for 350 bar.

Deliverable Executions

female-female
type G2, G3



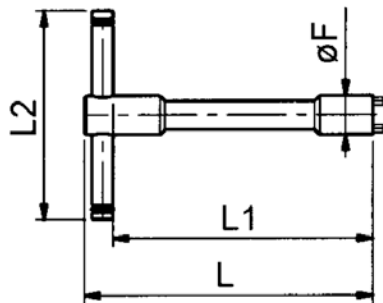
female-male with sealing shoulder
type G5, G5B, G6



Type	Size G	A	B	C	Ø D	SW (Hex.)	Weight [kg]	Torque [Nm]	Art.-No.
G2	suitable for VCD, VCL, RBS1								
	BSPP 1/4	66		13	-	19	0,09	-	138.0008
	BSPP 3/8	70	37	13	-	22	0,12	-	138.0009
	BSPP 1/2	80	42	15	-	27	0,20	-	138.0010
	BSPP 3/4	100	51	17	-	32	0,29	-	138.0011
G3	suitable for DRV, RKR, RHR								
	BSPP 1/2	90	65 *)	15	-	27	0,23	-	138.0012
G5	suitable for RBS1								
	BSPP 1/4	50	23	12	6	19	0,06	30	138.0003
	BSPP 3/8	60	25	12	9	22	0,10	50	138.0004
	BSPP 1/2	73	32	14	12	27	0,17	65	138.0005
	BSPP 3/4	110	55	16	16	32	0,32	180	138.0006
G5B	suitable for VCL, RHR, RKR								
	BSPP 3/8	60	43	12	9	22	0,10	50	138.0007
G6	suitable for VCD, VCL, RBS1					stud M12x1,5; drilling: BSPP 1/4			
	M12x1,5 / BSPP 1/4	72	42	12	6	19	0,10	30	138.0013

*) body with 118° drilling angle for O-ring sealing

Screw-In Tool



For Valve	Type	Art.- No.	L	L1	L2	ØF	Hole Circle x Pin-Ø
RBS1 G 1/4 RHR G 1/4	W1	139.0001	120	110	60	11,3	8,5 x 2,0
RHR G 3/8	W2	139.0002	120	110	60	15,0	10,8 x 2,4
RBS1 G 3/8	W3	139.0003	120	110	60	15,0	10,5 x 3,0
RBS1 G 1/2	W4	139.0004	120	110	60	18,8	13,0 x 3,9
RHR G 1/2	W5	139.0005	120	110	60	18,8	14,2 x 3,4
RBS1 G 3/4	W6	139.0006	120	110	60	24,0	16,0 x 5,5

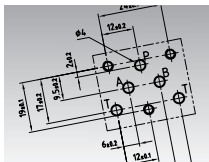


Allgemeine Geschäftsbedingungen der WEBER-HYDRAULIK Gruppe
General Terms of Sale and Supply: GTC
General Conditions of Purchase: GCP

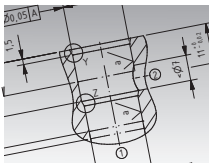


General Operating Manual
assembly
commissioning
maintenance

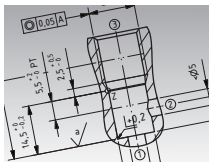
Valve Cavities and Port Patterns



Port Patterns
NG 3 to NG 25

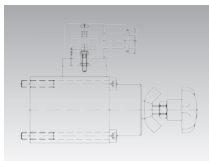


Valve Cavities
2-way designs



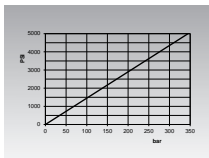
Valve Cavities
3-way designs

Manual Overrides and Electrical Connectors



Manual Overrides
designs
Electrical Connectors
designs

Test Conditions



Test Conditions and Standards
applied standards



GENERAL TERMS OF SALE AND SUPPLY OF WEBER-HYDRAULIK GROUP ("TERMS OF SALE")

Version 14.1

The following General Terms of Sale and Supply of WEBER-HYDRAULIK GROUP apply to all companies of WEBER-HYDRAULIK GROUP, which have their domicile in Germany or Austria. These companies are listed on the website www.weber-hydraulik.com. As far as in the following General Terms of Sale and Supply the words "we", "us" or "our" etc. appear these refer always to the company of WEBER-HYDRAULIK GROUP with whom the order of the customer has been placed.

§ 1 General information - scope of application

1. Our Terms of Sale apply exclusively; unless we expressly agreed in writing that the client's conditions deviating from or opposing our Terms of Sale shall apply, we do not recognize such conditions. Our Terms of Sale also apply in the event that we unconditionally effect delivery to the client even though we are aware of conditions deviating from or opposing our Terms of Sale on the client's part. Our Terms of Sale further apply to future orders; they need not be expressly agreed unless the client expressly objects to their applicability for future orders.
2. There are no oral subsidiary agreements, and oral assurances offered by our agents or employees shall only have effect if and to the extent that (i) our company confirms them in writing or (ii) they are provided by an individual or individuals vested with the requisite powers of representation (managing director, executive officer, authorized representative).
3. Our Terms of Sale only apply to enterprises as well as bodies corporate or special funds organized under public law within the meaning of § 310 (1) of the civil code (BGB).

§ 2 Offer - offer documents

1. Our quotes are subject to change and merely represent an invitation to its recipient, for its part, to submit an offer on the basis thereon. This does not apply to the extent that we expressly and in writing identified a quote as legally binding in nature. Accordingly, a contract does not have effect until the client places an order on the basis of our quote and we confirm such order.
2. In the event that an order from the client is to be qualified as an offer within the meaning of § 145 BGB, we may accept such offer within two weeks.
3. All property rights and copyrights of companies of the WEBER-HYDRAULIK GROUP relating to images, drawings, calculations and other documents are reserved. Irrespective of whether such documents are protected by law, they represent valuable business know-how; the client must neither disclose such information to third parties nor use it for commercial purposes outside of the purposes of the relevant supply contract without our express consent. This does not apply to documents that are generally known.
4. Both parties undertake not to (i) put to commercial use outside of the purposes of the relevant supply contract and (ii) disclose to third parties any of the other party's business secrets of which

WEBER-HYDRAULIK GMBH • Heilbronner Straße 30 • 74363 Güglingen, Germany
Tel +49 7135 71-0 • Fax 71-10301 • info.de-g@weber-hydraulik.com • www.weber-hydraulik.com

LEADERSHIP IN HYDRAULIC SOLUTIONS

Kreissparkasse Heilbronn
Commerzbank Heilbronn
Volksbank Brackenheim
Deutsche Bank Stuttgart

SWIFT/BIC: HEISDE66
SWIFT/BIC: DRESDEFF620
SWIFT/BIC: GENODES1VBR
SWIFT/BIC: DEUTDESS620

IBAN: DE37 6205 0000 0005 7848 33
IBAN: DE61 6208 0012 0702 0417 00
IBAN: DE29 6209 1400 0015 2630 02
IBAN: DE53 6207 0081 0015 9160 00

Sitz der Gesellschaft: Güglingen, Amtsgericht Stuttgart
HRB 320 054, Ust-IdNr.: DE 145 786 047
Geschäftsführer: Christine Grotz, Frank Klebedanz,
Ralf Schlich
Vorsitzender des Aufsichtsrates: Werner P. Schlecht

they gain knowledge in the course of their cooperation or deliveries. Such duty of confidentiality lapses if and to the extent that business secrets have become public knowledge through no fault of the other party's own. It further expires five years after the termination of the parties' cooperation. Business secrets are trade secrets within the meaning of § 17 of the unfair competition act (UWG).

5. The customer warrants the correctness of the documents which have been submitted by him such as the drawings, calculations, sketches and descriptions. We are not obliged to examine such documents.
6. We are entitled to change or modify the construction of the products to be delivered by us if such changes derive from the further development of the serial product in question and if such changed or modified products are at least economically and technically equivalent to the products ordered by the customer and if such products can be used in the same way as the products which should have been delivered originally.

§ 3 Prices - Terms of Payment

1. Unless the order confirmation or our offer provides otherwise, our prices are ex works and exclude packaging, transport and insurance.
2. VAT is not included; it is stated separately in the invoice in the legal amount in effect as of the invoice date and shall be paid separately by the client.
3. A discount for early or cash payments is subject to a separate written agreement.
4. Unless the order confirmation provides otherwise, the purchase price is due and payable (in full) within 30 days of invoice date. Payment default shall have the consequences prescribed by applicable law. Payments are deemed to have been made on time if they are received in our account on or before the due date.
5. The client may exercise rights of set-off only if and to the extent that its counter-claims have been legally established, are undisputed or were recognized by us. In addition, it may exercise a right of retention to the extent that its counter-claim arises from the same contractual relationship.
6. In the event of the client's default in payment, we are entitled to exercise the rights under § 321 BGB.
7. In the event that the parties agreed to a delivery more than four months after the execution of the relevant supply contract, we reserve the right to raise our sales prices if and to the extent that doing so is made necessary by increases in the costs of materials, energy and/or wages in the metal industry affecting our company, whereby we undertake, upon request, to furnish proof of the amount of our purchase costs. In the event that raises of this nature lead to a price increase in excess of 10%, the client is entitled to rescind the contract.

§ 4 Delivery period - default in delivery

1. Delivery periods are binding in nature only to the extent that we have confirmed them in writing.
2. A delivery period or date agreed with the client is deemed to have been extended in the event that, following the placement of an order, technical problems or technical questions which require clarification arise for reasons beyond our control.

3. To enable us to comply with our duty to deliver, the client must promptly and properly discharge its own duties. The right to invoke the defense of non-performance is reserved.
4. In the event that the client fails to accept deliveries or if it culpably breaches other duties of co-operation, we are entitled to demand indemnification against any related damages, including additional expenditures, if any. Additional claims are not affected thereby.
5. If the conditions of para. 3 are met, the risk of the accidental loss, destruction or deterioration of the object of purchase passes to the client with effect at the time it finds itself in default of acceptance or payment.
6. In the event of default of delivery, the client may rescind the contract subject to (i) applicable legal requirements and (ii) an adequate grace period having been allotted for the discharge of our obligations. A grace period allotted to us for performance purposes must not be shorter than one month.
7. Claims for damages suffered by the client as a result of default are subject to the provisions in § 7 below.
8. We are entitled, following the expiration of a grace period allotted by the client pursuant to § 323 BGB, to demand that the client declares within ten days whether he will (i) continue to insist on performance or (ii) exercise its right of rescission. If the client does not provide such a declaration in a timely fashion, we are, for our part, entitled to rescind the contract.

§ 5 Transfer of risk - packaging

1. Unless the order confirmation provides otherwise, supply is effected ex works. We are entitled to make partial deliveries.
2. Transport and other packaging required under the packaging ordinance are not taken back, save for pallets. The client must dispose of packaging at its own expense.
3. On request of the client, we shall arrange coverage for transport insurance for the delivery, with related costs to be borne by the client.
4. The risk passes to the client as soon as the goods leave our plant, an external storage facility or, in the event of deliveries of third-party goods, the facility of the supplier. In the event that delivery or pick-up is delayed due to circumstances attributable to the client, the risk passes to the client upon the receipt of the notice of delivery readiness, in which case we are entitled, following the allotment and unsuccessful expiration of an adequate grace period, to put the objects of delivery to alternative uses and supply the client under an adjusted delivery schedule.

§ 6 Liability for defects

1. Pursuant to § 377 of the commercial code (HGB), the client shall immediately examine any goods we deliver. Unless it cites defects within seven days of receipt, the delivery is deemed to have been approved. Complaints of this nature must be made in writing but may be transmitted by facsimile or email. The seven-day period for complaints does not apply to defects that cannot be detected by means of a proper examination pursuant to § 377 HGB; in this case, the defect must be cited within seven days of its discovery, and the client must furnish proof of the time at which such defect became known. We are entitled to impose reasonable requirements on the manner in which goods delivered by us are to be examined immediately upon receipt.

2. In the event that the object of purchase is defective, we may, at our option, take remedial action (e.g., removal of defect) or supply a new object, which is free from defects. Whenever defects are removed, we shall bear any expenditure related to the purpose of defect removal, including but not limited to the costs of transport, tolls, labor and materials – unless such costs increase as a result of the object of purchase having been brought to a location other than the place of delivery.
3. In the event that two attempts at remedial action fail, the client may, at its option, rescind the contract or demand a reduction of the purchase price.
4. We are entitled to refuse remedial action if and to the extent that the total related expenditures exceed 20% of the purchase price. The purchaser's right to adjust the purchase price or rescind the contract as permitted by law are not affected thereby; any resulting claims for damages are subject to § 7 below.
5. Any and all of the client's claims based on defects found in products delivered expire one year from such products' delivery.
6. The client's claims for damages due to defective products are subject to § 7 below.
7. If we examine products delivered by us because the customer has claimed that such products are defective, the customer shall bear all costs resulting therefrom, if it becomes evident that the delivered products in questions were not defective. In this case we shall invoice to the customer our usual service and maintenance fees including costs.
8. We shall have no liability for products delivered by us whatsoever if products delivered by us have been changed or modified by the customers unless the customer proves that such changes or modifications did not lead to the defects in question. Also we shall have no liability for any defect of delivered products if such products have not been used, maintained and attended to according to our regulations, unless the customer proves that this did not lead to the defects which have been claimed by the client. The customer shall comply with our regulations for maintenance, service and use of delivered products and shall keep proper records thereof. Upon our request the customer shall prove that it complied with our regulations.

§ 7 Liability and claims for damages

1. All claims for damages against us shall be excluded if there is neither deliberate misconduct nor gross negligence on the part of the directors the senior staff, employees and other vicarious agents of WEBER-HYDRAULIK GMBH. This limitation of liability does not apply to the violation of obligations (i) the performance of which is essential to the proper implementation of the contract and (ii) compliance with which is something the contractual partner may typically rely on ("cardinal obligations"). Even in the event of the violation of such cardinal obligations, however, the damages to be borne by WEBER-HYDRAULIK GMBH are limited to the purchase price under the relevant supply contract, furthermore the maximum amount of damages is limited to the amount of common and foreseeable damages, provided that there is neither deliberate misconduct nor gross negligence on the part of WEBER-HYDRAULIK GMBH.
2. The above limitation of liability further does not apply in cases of injuries to life, body or health.
3. Any and all of the client's claims for damages against WEBER-HYDRAULIK GMBH expire after one year from the onset of the period of limitation as prescribed by law. If, however, claim for damages of the customer should be based on willful action or grave negligence on our part or of our agents

or if such claims are based on the violation of cardinal obligations or if claims should be based on injury of life, body and health statutory law apply with the regards to the period of limitation.

4. The above limitation of liability applies to any and all of the client's claims for damages under the contractual relationship, including but not limited to those due to default, non-performance, product defects or breaches of instruction and/or information obligations. The above limitation of liability also applies to the costs of recall campaigns the client undertakes due to defects found in products we delivered, and this is true irrespective of whether the client's claim for the reimbursement of costs is based on (i) damage claims under tort law or the relevant contract, or (ii) unauthorized agency (Geschäftsführung ohne Auftrag).
5. If products which have been delivered by us should be shipped in territories outside the Federal Republic of Germany we cannot assume any guaranty that the products do not violate commercial property rights of third parties there. It is always the responsibility of the client to examine whether products delivered by us could violate commercial rights of third parties in states out of the Federal Public of Germany. The customer shall hold us harmless against all claims of third parties based on such commercial property rights. It is the responsibility of the client to examine whether the products delivered by us comply with the laws or regulations issued by competent authorities in states out of the Federal Republic of Germany and whether they conform with industrial standards. This does not apply where we have confirmed in writing that such products conform with such laws or regulations issued by competent authorities or with industrial standards.

§ 8 Retention of title

1. Title to the object of purchase shall pass to the purchaser if and when all payments due under the supply contract are made in full. In cases of the client's breach of contract, including but not limited to default in payment, we are entitled to reclaim the object of purchase. By reclaiming the object of purchase, we do not rescind the contract unless we specifically do so in writing. Pledging the object of purchase, by contrast, does entail our rescission of the contract without fail. Having taken possession of the object of purchase, we are entitled to dispose of it, with any proceeds – as adjusted by reasonable costs – to be credited against the client's liabilities.
2. The client is obligated to treat the object of purchase with care. Specifically, it shall adequately (i.e., at the replacement value) insure the object of purchase against damages caused by fire, water or theft at its own expense. In the event that maintenance and inspection work is needed, the client shall perform such work promptly and at its own expense. To secure the payment claims to which we are entitled, the client hereby already assigns to us such claims as it may have against third parties or insurers as a result of the goods subject to retention of title having been destroyed or damaged. The client is obligated to promptly provide notice of such damages and shall, upon first demand, disclose to the third party or insurer the above assignment.
3. In the event of seizures or other instances of third-party intervention, the client shall immediately notify us in writing so as to enable us to take legal action pursuant to § 771 of the code of civil procedure (ZPO).
4. The client is entitled to resell the object of purchase in the regular course of business. However, it hereby already assigns to us, in the amount of the final invoice amount (including VAT), such

claims against its own clients or third parties as may accrue to it from the resale – irrespective of whether the object of purchase was resold with or without further processing. The client remains entitled to collect such claim even beyond the assignment. Our right to collect the claim ourselves is not affected thereby. However, we undertake not to collect the claim as long as (i) the client meets its payment obligations with regard to any proceeds, (ii) it does not default on payments, (iii) no petition has been filed for the institution of insolvency or composition proceedings and (iv) there is no case of insolvency. If this is the case, we may demand that the client discloses to us any assigned claims and their debtors, provides such information as may be needed for collection and informs the debtors (third parties) of the assignment.

5. Any work the client does to process or refashion the object of purchase is always done on our behalf. In the event that the object of purchase is processed along with other items that do not belong to us, we acquire an ownership share in the new object that reflects the proportion of the value of the object of purchase (final invoice amount, including VAT) to the other items being processed, at the time of processing. The object thus created by means of processing, moreover, is subject to the same provisions as the object of purchase supplied subject to retention of title.
6. In the event that the object of purchase is inextricably combined with items that do not belong to us, we acquire an ownership share in the new object that reflects the proportion of the value of the object of purchase (final invoice amount, including VAT) to the other items being combined, at the time of combination. In the event that the combination is done in such a way that the client's object must be deemed the principal object, it is agreed that the client shall assign to us pro-rated ownership and will hold the sole or shared property so created on our behalf.
7. In order to secure our claims the client further assigns to us such claims as may arise against third parties as a result of combining the object of purchase with real property.
8. We undertake, at the client's request, to release any security to which we are entitled to the extent that the realizable value of our security exceeds the claims to be secured by more than 10%; the choice as to which security to release is ours.
9. If products delivered by us should be shipped in a state outside the Federal Republic of Germany, which does not acknowledge the above retention of title clause, the customer shall upon our first request provide us with corresponding liens or other collateral which is equivalent to the above retention of title and to make all arrangements which are necessary to this effect. The customer shall advise us whether such additional liens or other collateral is necessary.

§ 9 Self-delivery - Force Majeure

1. We are exempted from our duty to deliver if and to the extent that deliveries are made impossible by Force Majeure, which includes for example war, earthquakes, high floods and other catastrophes as well as strike, the destruction of production facilities by fire or explosion, whether at facilities of our own or those of our supplies. In the event that the obstacle to delivery continues for more than four weeks, we may rescind the contract.
2. We are not liable for delivery delays that are due to our suppliers' failure to provide raw materials, components or semi-finished products on time or at all despite our having entered into a corresponding hedge transaction, provided that the supplier's delayed – or lack of – proper delivery is not attributable to us and we have selected the supplier with usual care. In such cases,



we undertake to immediately look for a replacement for the failed supply if and to the extent that such substitute through another supplier does not impose an unreasonable burden on us – i.e., its price and quality is equivalent to that of the originally agreed supply. We shall promptly inform the client of the reasons for such delivery delays, and if such circumstances would cause the delivery to be delayed by more than two months, both we and the client may rescind the contract. Goods and services already received shall be returned, and the parties waive any further claims.

§ 10 Legal venue - place of performance

1. The place of performance as well as the legal venue for supplies and payments, including matters related to checks and bills and any disputes arising from contracts that are subject to these terms between us and the client shall be the location of the registered offices of the company of the WEBER-HYDRAULIK GROUP, with whom the order of the customer has been placed. We may also sue the client at its place of business (or residence).
2. The parties' relations inter se are subject exclusively to the laws of the state where the company of the WEBER-HYDRAULIK GROUP, with whom the order of the customer has been placed, has its registered head offices with the exemptions of the rules of private international law. The application of the UN Convention on the International Sale of Goods (CISG) is excluded.
3. In the event that one of the provisions of these General Terms of Sale and Supply is ineffective or void, the remaining provisions shall continue in full force and effect.



GENERAL CONDITIONS OF PURCHASE OF WEBER-HYDRAULIK GROUP

Version 14.1

The following General Conditions of Purchase of WEBER-HYDRAULIK Group apply to all companies of WEBER-HYDRAULIK Group, which have their domicile in Germany or Austria. These companies are listed on the website www.weber-hydraulik.com. As far as in the following General Conditions of Purchase the words “we”, “us” or “our” etc. appear these refer always to the company of WEBER-HYDRAULIK Group which has placed the order with the supplier.

§ 1 General, Scope of Agreement

1. Our conditions of purchase apply exclusively; contradictory conditions or conditions differing from our conditions of purchase issued by the supplier are not accepted, unless the applicability thereof was explicitly confirmed in writing by us. Our conditions of purchase shall also apply, if we accept delivery from the supplier without reservations and in full awareness of other conditions issued by the supplier, which may deviate from our own conditions of purchase.
2. All agreements that are made between us and the supplier regarding the execution of this contract are to be specified in writing.
3. Our conditions of purchase only apply to contractors as according to § 310 Sect. 4 BGB [Civil Code] and to public authorities.

§ 2 Quote, Offer Documents

1. Our offers are deemed to have been refused if the supplier does not accept same within 7 working days beginning with the receipt of our order in writing or by e-mail or telefax.
2. All intellectual property and copyrights to images, drawings, calculations and other documentation are reserved; these may not be made available to third parties without our explicit written permission. These are to be solely used for the manufacturing of our order; after execution of the order, these are to be returned to us without further solicitation.
3. These are to be kept confidential from third parties, insofar the provision in § 9 Sect. 4 is supplementary.

§ 3 Prices, Terms of Payment

1. The price as shown in the order is deemed binding. In the absence of other written agreement, the price is understood to include delivery free to the door including packaging. The return of the packaging requires special agreement.
2. The legal value added tax is not included in the price.
3. Invoices are only processed if these mention the order number as per the specifications in our order; the supplier is deemed responsible for all consequences arising out of the failure to meet this obligation, unless the supplier is able to establish that he is not at fault.
4. We settle the purchase price within 14 days from delivery and receipt of the invoice, unless agreed otherwise, with 3% early payment discount or within 60 days after receipt of invoice at net value.

WEBER-HYDRAULIK GMBH • Heilbronner Straße 30 • 74363 Güglingen, Germany
Tel +49 7135 71-0 • Fax 71-10301 • info.de-g@weber-hydraulik.com • www.weber-hydraulik.com

LEADERSHIP IN HYDRAULIC SOLUTIONS

Kreissparkasse Heilbronn
Commerzbank Heilbronn
Volksbank im Unterland
Deutsche Bank Stuttgart

SWIFT/BIC: HEISDE66
SWIFT/BIC: DRESDEFF620
SWIFT/BIC: GENODES1VLS
SWIFT/BIC: DEUTDESS620

IBAN: DE37 6205 0000 0005 7848 33
IBAN: DE61 6208 0012 0702 0417 00
IBAN: DE75 6206 3263 0015 2630 02
IBAN: DE53 6207 0081 0015 9160 00

Sitz der Gesellschaft: Güglingen, Amtsgericht Stuttgart
HRB 320 054, Ust-IdNr.: DE 145 786 047
Geschäftsführer: Christine Grotz, Frank Klebedanz
Ralf Schlich
Vorsitzender des Aufsichtsrates: Werner P. Schlecht

5. We retain rights to offset and withhold as per the legal prescription.

§ 4 Terms of Delivery

1. The delivery time as shown in the order is deemed binding.
2. The supplier is committed to immediately inform us in writing when circumstances arise or become apparent to him, which may result in the failure to meet the stipulated time of delivery.
3. In case of default of delivery, we are entitled to the legally prescribed claims. Specifically, we are entitled to demand damages instead of performance of delivery after the ineffectual expiry of an appropriate deadline. Should we demand damages, then the supplier has the right to prove that he was not responsible for the breach of duty.
4. If the supplier is in default of delivery we are further entitled to claim for each week of delay a contractual penalty in an amount of 0,5% of the order value (without value added tax). This contractual penalty, however, shall be limited to 5% of the entire order value (without value added tax). Such contractual penalty is to be set off against eventual damages resulting from the delay of delivery.

§ 4 a) Quality Documentation

1. The supplier is to meet the generally recognized codes of practice, the safety regulations and the agreed technical specifications for his deliveries. He guarantees to meet the WEBER-HYDRAULIK GMBH "Guidelines for Quality Assurance of Deliveries", which are to be made available to him free of charge at any time.
2. The supplier shall keep proper records with regards to his compliance with our guidelines for quality maintenance for suppliers and of all arrangements made in this respect. We are authorized to inspect compliance with such guidelines at the premises of the supplier after having notified the supplier in writing during normal working hours.

§ 5 Transfer of Risk, Documents

1. The delivery is to take place free to the door, unless agreed otherwise in writing. Risk shall pass to us upon delivery at our premises. The supplier shall maintain a proper transport insurance.
2. The supplier is committed, to specify our exact order number on all shipping documents and delivery notes; if he fails to do so, then we are not at fault for delays in the processing thereof.
3. With the discontinuation of the SVS / RVS [Insurance Terms] as of the 30th of June 1998, previous declarations of the waiver / partial waiver of insurance are not valid any longer. Since the First of July 1998, we waive freight insurance as part of the freight forwarding contract.

§ 6 Inspection for Defects, Guarantee

1. § 377 HGB (German Commercial Code) shall expressly not apply. We are only obliged to examine the goods delivered by the supplier whether there are easily recognizable defects and damages and furthermore we shall examine the quantity of the delivered goods. We will notify within 7 days the supplier in writing or by e-mail or telefax of defects or missing quantities which we detected. If we become aware of defects at later point of time we shall notify the supplier of such defects within 7 days since we have become aware of the defect in question.

2. The supplier shall maintain a proper exit control, whereby we are authorized to give instructions to the supplier in this respect at our fair discretion. Supplier shall keep proper records of this exit control and its results. We shall have the right to examine during normal business hours at the premises of the supplier the control arrangements and their documentation after having notified supplier in writing.
3. If we detect a defect of the delivered products we shall be entitled to claim an amount of € 100,00 for the examination of the product and for the preparation of the examination report. This shall not prevent us from claiming higher cost for the examination of defective products if we are entitled to claim damages.
4. §§ 437 ff BGB shall apply unrestrictedly. In accordance to these provisions we shall have the right to reduce the purchase price, to rescind the purchase contract and to claim for damages. Any claims we may have under §§ 437 ff BGB based on defects of delivered products shall be barred by statutory limitation within 36 months starting with the transfer of risk.
5. We are authorized to repair the defect ourselves at the costs of the supplier, if the supplier refuses seriously and finally or if there are special circumstances which justify that we do not set a deadline for the repair of the product (see § 323 Sec. 2 BGB). We have the right to repair such defects ourselves at the costs of the supplier only if the costs of the repairs do not exceed our damage which has to be expected if such repair is not carried out.

§ 7 Product Liability, Release, Indemnity Insurance

1. If third parties should raise claims for damages against us based on product liability the supplier shall hold us harmless upon the first request against such claims of third parties, if the existing or alleged defect has been caused by the products supplied by the supplier or if the supplier failed to advise us of potential risks which are connected with the use or integration of the products supplied by the supplier in other product. The applicability of § 254 BGB shall not be excluded.
2. If we recall products in order to avoid a product liability and if the conditions of the foregoing section apply, the supplier shall also reimburse us for all costs which result from such a recall action.
3. The supplier commits to maintain general product liability insurance with a cover of € 10 million per incident of damage to persons or property; if there are further claims for damages due to us, these remain intact.

§ 8 Protective Rights of Third Parties

1. The supplier guarantees that no industrial property rights of third parties are violated in the Federal Republic of Germany by the products delivered by the supplier.
2. If third parties raise such claims against us in this context, then the supplier is committed to indemnify us against such claims upon our first written demand; we are not entitled to enter into agreements with said third party regarding such claims without the assent of the supplier, this includes in particular the agreement upon a settlement.
3. The indemnity bond of the supplier applies to all expenses, which necessarily arise from or in the context of claims from third parties.
4. The period of limitation shall be to 10 years from the conclusion of contract.

5. § 254 BGB shall apply.

§ 9 Retention of Title, Supplies, Tools, Confidentiality

1. Insofar as parts are made available to the supplier, we reserve all property rights to the object. Processing and reworking are to be conducted by the supplier on our behalf. If our parts, which are subject to the retention of title, are processed together with items that are not in our possession, then we shall attain co-ownership of the new goods to be processed as a proportion of the value of our parts (price of purchase plus value added tax) in relation to the other goods at the time of processing.
2. If the parts provided by us are inextricably compounded with other goods that are not in our possession, then we shall attain co-ownership of the new goods as a proportion of the value of the goods that are subject to the retention of title (purchase price plus value added tax) in relation to the other compounded parts at the time of the interfusion. If the compounding takes place in such a manner that the parts of the supplier are to be regarded as the principal item, then it is deemed to be agreed that the supplier is to transfer partial ownership to us; or that the supplier retains the sole ownership or co-ownership on our behalf.
3. We retain the title to all tools; the supplier is committed to only utilize the tools in the production of the goods ordered by us. The supplier is committed to insure our tools at replacement value against fire damage, water damage, and theft at his own expense. At the same time, the supplier assigns all claims for compensation from this insurance to us at this point; we hereby accept the assignment. The supplier is committed, to conduct required maintenance and inspection works to our tools as well as all reinstatement and repair works in good time and at his own expense. We are to be immediately notified of eventual incidents; if he culpably fails to do so, the claims for damages shall remain intact. The supplier shall return to us to tools which are our property upon first demand. The supplier shall have no right of possession regarding to such tools. Supplier shall not have the right to retain such tools for whatever reason.
4. The supplier is committed, to keep strictly confidential all received diagrams, drawings, calculations and other documents and information. These must only be made available to third parties upon our explicit permission. The confidentiality clause also continues to be in force after execution of this contract; it expires, once and insofar as the production technology contained in the conveyed diagrams, drawings, calculations and other documents has become general knowledge.
5. As far as the security interests due to us as according to Section 1 and/or Section 2 exceed the purchase price of all unpaid goods subject to retention of title by more than 10%, we are obligated to release of the security interests of our choice upon the of the supplier.

§ 10 Jurisdiction, Place of Fulfillment, Applicable laws

1. If the supplier is a commercial enterprise the court at the principal place of business of the company of WEBER-HYDRAULIK Group which has placed the order shall have exclusive jurisdiction. We may also, however, file a lawsuit with the court at the principal place of business of the supplier.



2. Place of fulfillment for obligations resulting out of the business relationship is the principal place of business of the company of the WEBER-HYDRAULIK Group which has placed the order.
3. All contracts between us and the supplier are subject to the material law or the state in which the company of the WEBER-HYDRAULIK Group which has placed delivery order, has its principal place of business, excluding rules of the International Private Law and excluding the regulations of the CISG.



General operating manual

for assembly, commissioning and maintenance
of valves and hydraulic manifolds

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Important information

Range of validity of the operating manual

The present general operating manual exclusively refers to hydraulic components (in particular valves, manifolds, pressure sensors etc; referred to as valves in the following; but also analogously applies to electronic components) from WEBER-HYDRAULIK ValveTech GmbH. The following operating manual is aimed at the operator of the valves and the installation manufacturer and user. Among other things, it contains important safety information that should be known by the operator of the valves.

The indications of this general operating manual are to be inserted in the operating manual of the superordinate complete system. This operating manual should be kept accessible and always close to the valve or the superordinate machine installation.

Liability declaration

The declarations on liability for defects and claims for damages are listed in the general terms and conditions of WEBER-HYDRAULIK ValveTech GmbH. These are available to the customer at the latest since the conclusion of the contract.

Liability exclusion

The general terms and conditions apply. Among others, warranty and liability claims for personal and property damages are excluded if they can be traced back to one or more of the following causes:

- inappropriate use of the valve
- inadequate assembly, disassembly, commissioning and maintenance of the valve
- disregarding the operating manual
- disregarding the technical specifications of the valve
- unauthorized constructive modifications of the valve
- inappropriately conducted repairs
- action of foreign objects and acts of God

WEBER-HYDRAULIK ValveTech does not accept liability for incorrect, incomplete or missing information. We reserve the right to modifications.

Intended use

The commissioning, application and use of the valves may only occur as described in this operating manual. The valves may only be operated as components of a superordinate complete system, e.g. a machine installation and only in industrial domains as per the DIN EN ISO 4413 standard (Fluidics - General rules and safety-technical requirements towards hydraulic installations and their components).

The valves are **not approved** for the use in any of the following applications without the explicit written consent of WEBER-HYDRAULIK ValveTech:

- nuclear facility applications
- ordnance equipment
- aircraft or aerospace applications
- steering or braking systems for vehicles

Intended use

- amusement rides (e.g. rollercoaster)
- in explosive or hazardous environments, unless it is explicitly allowed by an indication of ATEX conformity

The valves are only planned for the use with hydraulic oils based on mineral oil under observation of the filtering requirements and the respective max. operating pressures, volumetric flows and temperatures (see respective data sheet of the valves). The use with other fluids is subject to the agreement of WEBER-HYDRAULIK ValveTech. Any use beyond this is not admissible.

The type label may not be removed or painted over.

All valves are checked by WEBER-HYDRAULIK ValveTech before delivery. Non-verified valves may not be installed.

Responsibility of the operator

The operator and user of the valves is responsible for the correct use. Indications in this operating manual pertaining to use, commissioning, storage and maintenance of the valves are thereby to be respected. The manufacturer and operator of the superordinate complete system, e.g. a machine installation, is responsible for the compliance with the applicable national and international safety and accident prevention measures for the specific application.

Selection and qualification of personnel

All works with or on the valves must be performed by trained and instructed persons with the required knowledge and experience.

Works on electrical connections and electronic components may only be performed by an authorized expert electrician.

Explanation of symbols

Safety indications in this operating manual are marked with a symbol. The individual indications are introduced by signal words that express the extent of the danger. Indications on avoidance of dangers follow.

**DANGER**

Indicates the immediate risk of death and serious bodily harm.

**WARNING**

Indicates the risk of serious injury.

**CAUTION**

Indicates the risk of slight injury or material damages.

Important safety instructions

Following the safety indications and the applicable national and international safety directives helps in avoiding accidents, faults and errors.

When designing machines and using valves, the application-specific safety and accident prevention directives are to be respected, such as e.g. DIN EN ISO 12100 (Safety of machines general design guidelines, risk assessment and risk reduction) or DIN EN ISO 4413 (Fluidics - General rules and safety-technical requirements towards hydraulic installations and their components).



DANGER

Risk of death or injury due to squirting hydraulic oil under high pressure.

- Before working on valves, release pressure from hydraulic installation.
- Check pipes, tubes and screw connections of the hydraulic installation regularly.
- Immediately remedy leaks.
- Do not modify valves.



WARNING

Health hazard through skin contact with or swallowing of hydraulic oils.

- Before working on valves, drain reservoirs which are located on a higher level.
- If hydraulic oil was swallowed or has entered the bloodstream, immediately contact a physician. Do not induce vomiting. If necessary, bind limbs.



WARNING

Health hazard due to inhalation of oil mist.

- Do not directly inhale oil mists, carry respiratory protection if necessary.



CAUTION

Danger of contamination of water and soil by leaking hydraulic oil.

- Use collection containers.
- Dispose hydraulic oil adequately.
- Immediately remedy leaks.



CAUTION

Damages to the valve due to immersion in liquids.

- Do not plunge valves in liquids.

NOTE

When manipulating hydraulic oils, the respective safety regulations applicable for the product must be observed.

Transportation and storage

Packaging and transportation

- Carefully pack and unpack the valves.
- Immediately notify any transportation damages to the transporter and WEBER-HYDRAULIK ValveTech in writing.
- Keep the original packaging.
- Only transport valves in adequate closed original packaging.
- Always transport valves with dust protection.

Storage conditions

- Storing the valves:
 - at low air humidity (<65%)
 - at temperatures from -10 to +60°C
 - without direct heat sources or sunlight
 - without exposure to ozone or ionizing radiation
 - only in adequate closed original packaging
 - always with dust protection

WEBER-HYDRAULIK ValveTech valves are usually checked with hydraulic oil in the factory and thereby protected against corrosion. If the valves were stored for more than 1 year, check for damages before assembly. If necessary, the valves can be sent to WEBER-HYDRAULIK ValveTech for inspection at added costs.

- Store seals (NBR) for max. 7 years.

NOTE

Oil residues can lead to resinification on the valves due to longer storage times.

- Remove any resinification before use.

Assembly and commissioning

The commissioning, application and use of the valves may only occur as described in this operating manual.



DANGER

Serious injury, burns or fires due to squirting hydraulic oil.

Before all works on the valves:

- Turn off the machine.
- Protect the machine against switching back on:
 - Lock main command installation and pull out key.
 - Append warning sign on the main switch.
- Switch off voltage to all lines in the hydraulic circuit.
- Release pressure from all pressure pipes and accumulators in the hydraulic circuit.

**CAUTION**

Risk of burns due to very hot valves and hydraulic connection tubes.

- Carry adequate work protection equipments (work gloves, protective goggles).
- Let all components cool off before beginning work.

Assembly conditions

- Ensure that valves or valve components remain undamaged.
 - Do not install damaged valves or valve components!
- Ensure that all seals are available and undamaged.
 - Do not install damaged seals!
- Do not directly assemble valves onto machine parts that are exposed to strong vibrations or shocks.
- Do not install valves on units that move in a jerky fashion and that do not correspond to the direction of movement of the piston.
- Assemble the valve so that no thermal overheating may occur.

Assembly

- Thoroughly clean the assembly surface/screw holes.
- Remove dust protection from the hydraulic connection.
- Assemble seals.
- Attach valve.
- Observe installation torques in the data sheet of the respective valve.
- **Slip-in valve:** tighten assembly screws in a non-distorted manner. Tighten screws crosswise.
- **Cartridge-valve:** tighten the valve at the screwing hexagon.
- Determine switch position of the valve.

NOTE

When installing valves with electrical connections or electronic components, observe the applicable directive (VDE directives or similar).

Connection

- Check adequate state of the valves.
 - If necessary, remove residues or pollution.
- Connect connection lines. Observe installation indications in the data sheet of the valve.
- Ensure that all tubes and pipes are connected.
- Ensure that all screws and connections are correctly tightened.
- Fill hydraulic installation/valve with hydraulic oil.
- Bleed hydraulic installation at the highest point.
- The valve is ready for operation.

NOTE

For correct bleeding of the hydraulic installation, observe the respective operating manual of the machine installation.

<i>Operation</i>	<p>The valves are components of a superordinate complete system.</p> <ul style="list-style-type: none">□ In order to operate this system or the superordinate machine installation, observe the corresponding operating manual.
<i>Decommissioning/ disassembly</i>	<ul style="list-style-type: none">□ Ensure that the hydraulic installation is pressure-less and at zero potential. If necessary, observe available pressure accumulators.□ Ensure that no components come loose or may move when letting off hydraulic oil.□ Disconnect connection lines.□ Collect exiting hydraulic oil with a container.□ Secure components that are to be held in position by the valves.□ Unscrew assembly screws of the valve.□ Remove valve and seals.
Maintenance and repairs	<p>Replacement components and sealing kits may be obtained from WEBER-HYDRAULIK ValveTech. Only use the sealing kits indicated on the data sheet of the valve.</p>
<i>Exchange seals</i>	<ul style="list-style-type: none">□ Disassemble valves.□ Remove all seals and dispose them adequately.□ If necessary, clean valve.□ Carefully insert new seals and ensure fitting accuracy.□ Re-attach valve. Thereby ensure that no seal slips out of place.□ Observe installation torques in the data sheet of the respective valve.□ Tighten assembly screws in a non-distorted manner crosswise or tighten the valve at the screwing hexagon.□ Determine switch position of the valve.
<i>Damages/Faults</i>	<ul style="list-style-type: none">□ Immediately notify the responsible person in case of damages or faults on valves or on the machine installation.□ If necessary, switch off the machine installation and secure it. <p>Repairs and modifications or retrofit of valves are to be exclusively performed by WEBER-HYDRAULIK ValveTech.</p>
Disposal	<ul style="list-style-type: none">□ Disassemble valves.□ Drain valve until no more hydraulic oil drips out.<ul style="list-style-type: none">□ Collect hydraulic oil and dispose it adequately.□ Dispose the seals appropriately.□ Dispose the valve as metal waste.□ Dispose electronic components adequately as per the applicable regulations.

Errors and troubleshooting

- Leaks*
- If leaks occur, stop the machine.
 - Check the causes of the leaks by trained expert personnel.
 - If the valve is leaky, exchange the seals or the complete valve.
 - Do not operate the machine further with faulty valves!

- Other*
- Contact customer service.

Technical Data

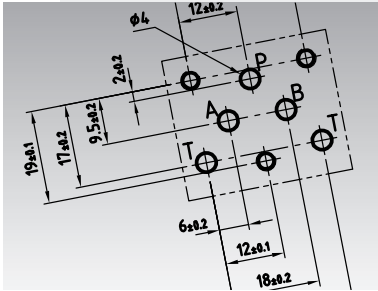
- The technical data may be found in the corresponding data sheets/dimension sheets of the valves.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Port patterns

NG 3 to NG 25

110410_port_patterns_e
07.2018

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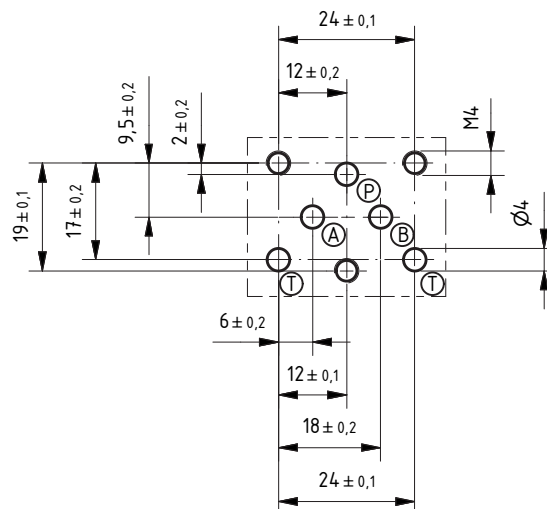
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NOTE

- Screw-in depth of mounting screws:
 steel: approximately 1,0 - 1,3 x d
 cast: approximately 1,3 - 1,5 x d
 aluminium: approximately 1,5 - 2,0 x d
 (d = diameter of thread)
- surface roughness at sealing area: Rz = 6,3

NG 3

(company standard)

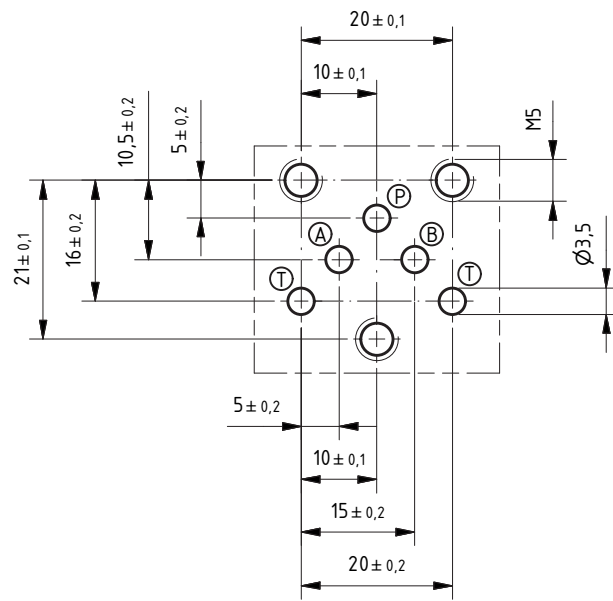


HE4/14 09 01

NOTE

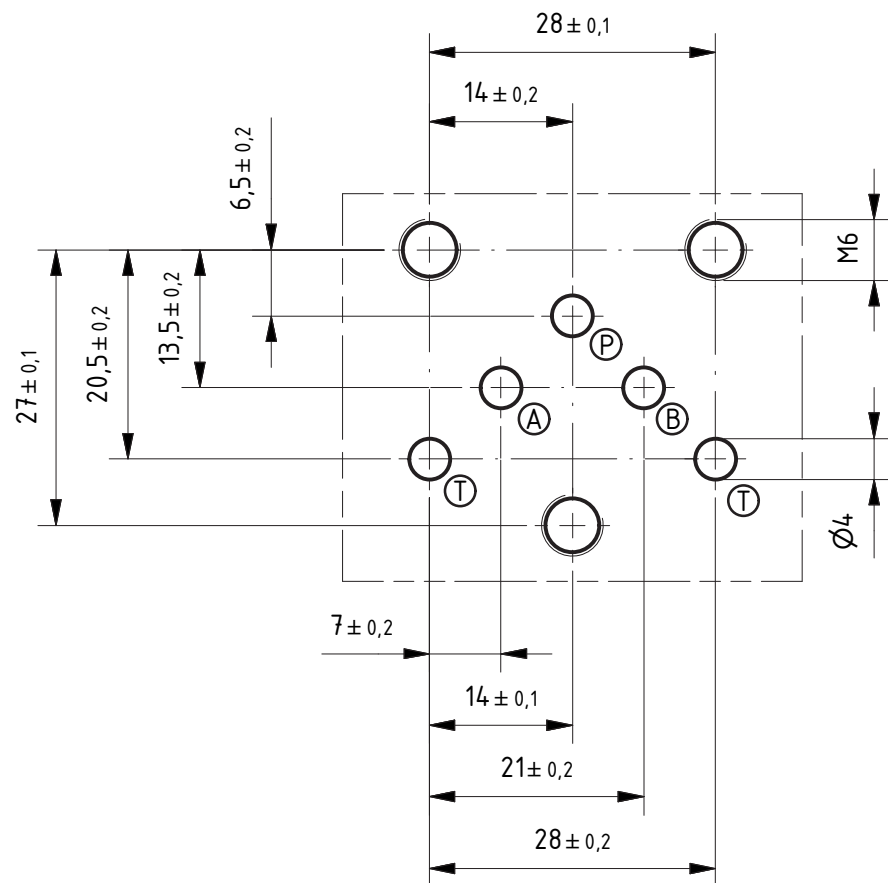
Most sandwich- and top-mount bodies have a second T-port (bottom right), unlike most subplates, which usually just have one T-port.

NG 3 compact



HE2/13 17 12

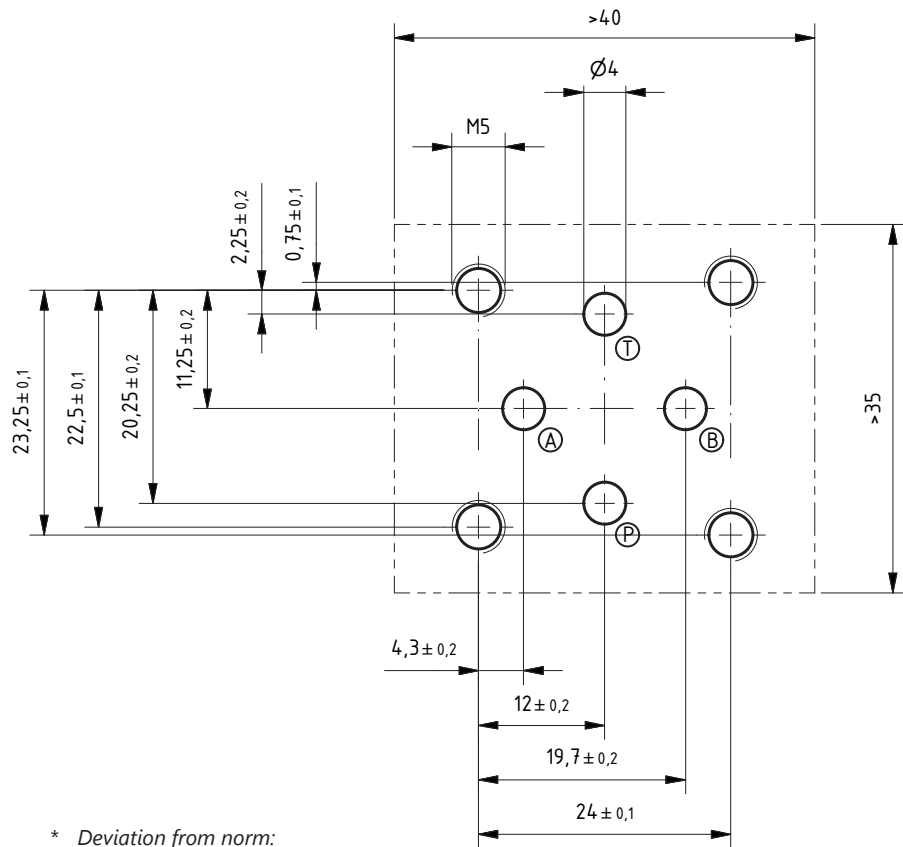
NG 4 compact



HE2/13 44 01

NG 4

ISO 4401-02-01*

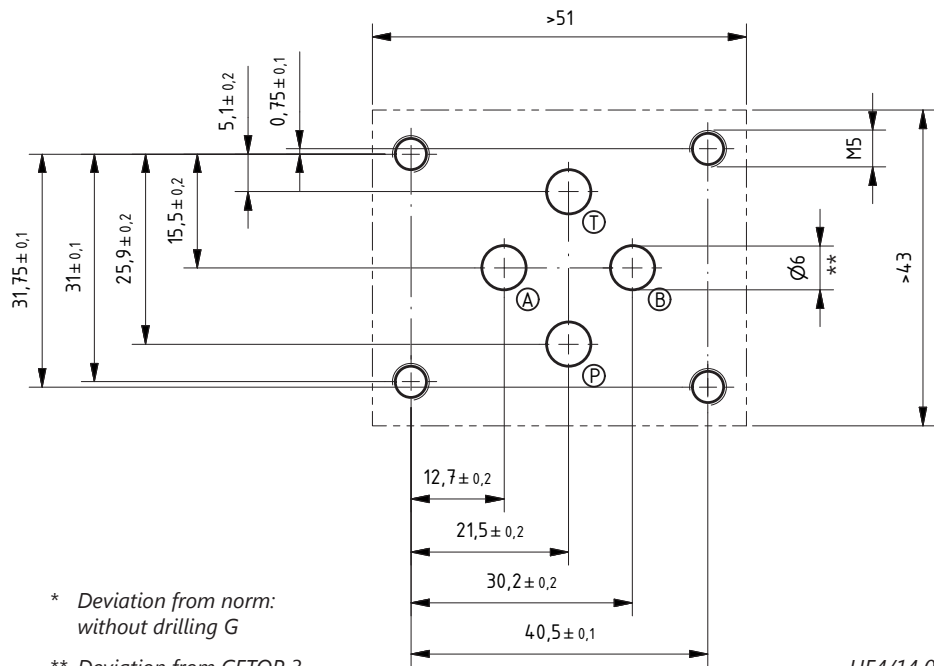


* Deviation from norm:
without drilling G

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NG 6

DIN 24340 A06
ISO 4401-03-02*
CETOP 3*



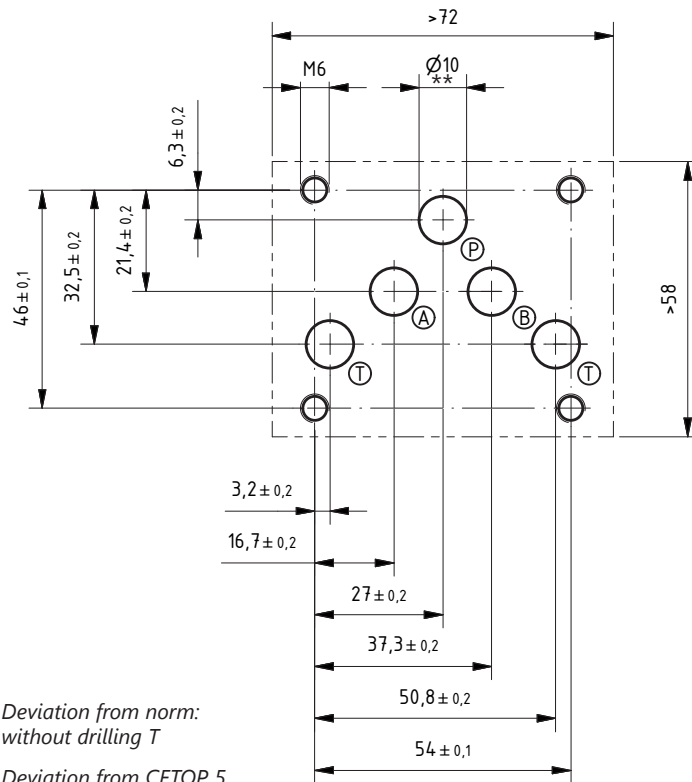
* Deviation from norm:
without drilling G

** Deviation from CETOP 3

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NG 10

DIN 24340 A10
 ISO 4401-05-04
 CETOP 5*



* Deviation from norm:
 without drilling T

** Deviation from CETOP 5

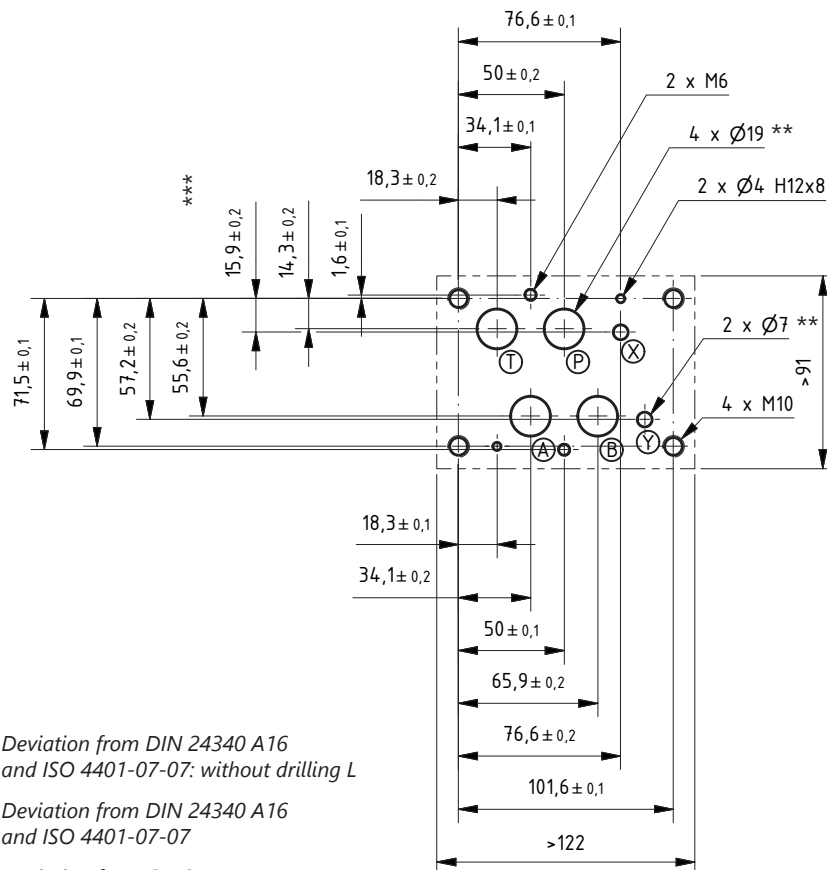
HE4/14 09 04

NOTE

Most sandwich- and top-mount bodies have a second T-port (bottom right), unlike most subplates, which usually just have one T-port.

NG 16

DIN 24340 A16*
 ISO 4401-07-07*
 CETOP 7



* Deviation from DIN 24340 A16
 and ISO 4401-07-07: without drilling L

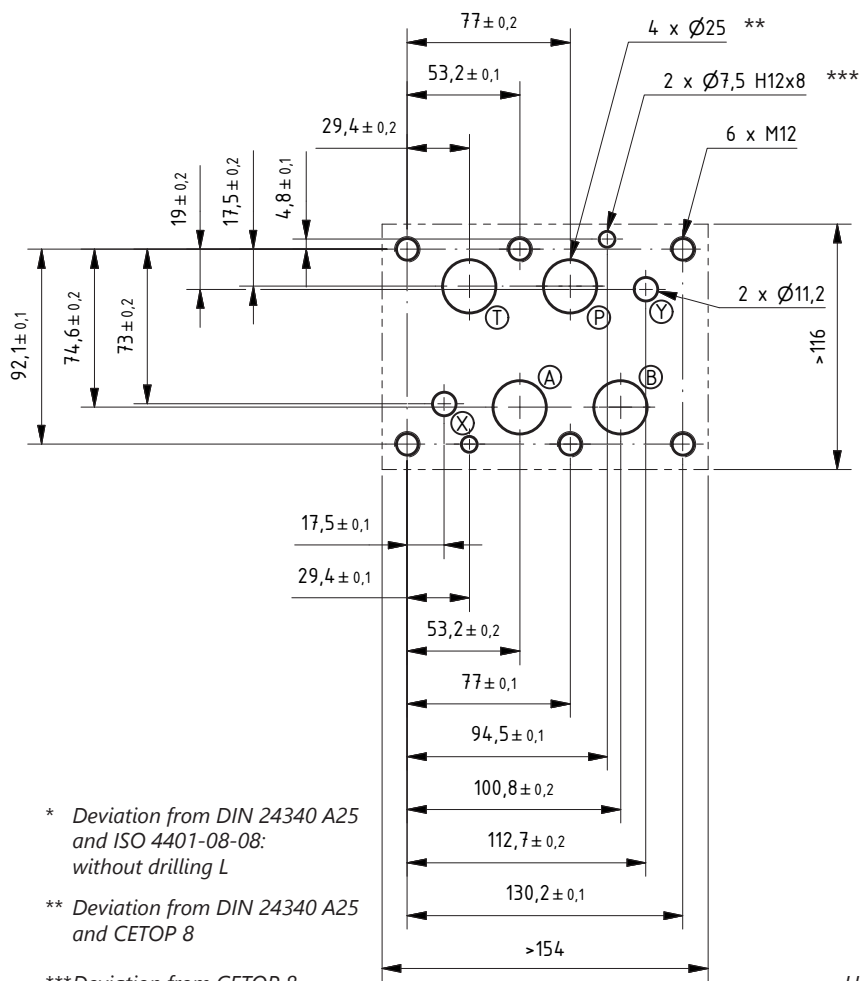
** Deviation from DIN 24340 A16
 and ISO 4401-07-07

*** Deviation from CETOP 7

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NG 25

DIN 24340 A25*
 ISO 4401-08-08*
 CETOP 8



* Deviation from DIN 24340 A25 and ISO 4401-08-08: without drilling L
 ** Deviation from DIN 24340 A25 and CETOP 8
 *** Deviation from CETOP 8

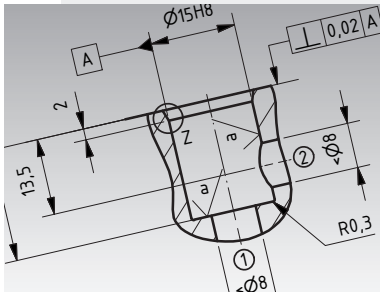
HE4/14 09 06



WEBER-HYDRAULIK ValveTech GmbH
 Felix-Wankel-Str. 4, 78467 Konstanz
 Phone: +49 7531 9748-0
 Fax: +49 7531 9748-44

www.weber-hydraulik.com
 info.de-k@weber-hydraulik.com

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Valve cavities 2-way designs

120420_cavities2_e
01.2016

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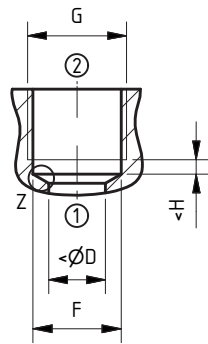
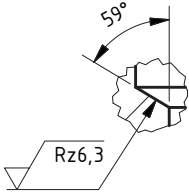
NOTE

$$\sqrt{a} = \sqrt{Rz6,3}$$

PT= reaming depth

Cavity RKR

Z (2:1)

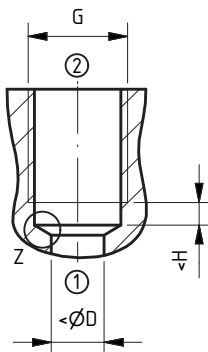
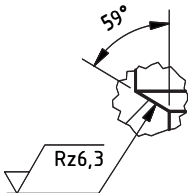


size G	Ø D max.	F (+0,1)	H max.
G 1/4"	7 mm	11,4 mm	3 mm
G 3/8"	9 mm	14,9 mm	3 mm
G 1/2"	12 mm	18,6 mm	4 mm
G 3/4"	17 mm	24,2 mm	5 mm

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Cavity RHR

Z (2:1)

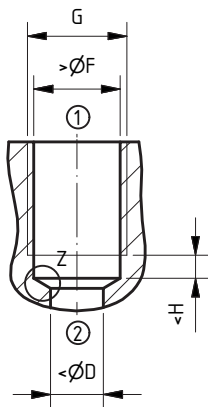
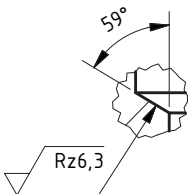


size G	Ø D max.	H max.
G 1/4"	7 mm	3 mm
G 3/8"	9 mm	3 mm
G 1/2"	12 mm	4,5 mm
G 3/4"	16 mm	4 mm

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Cavity RBR

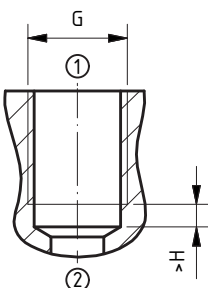
Z (2:1)



size G	Ø D max.	Ø F min.	H max.
G 1/4"	7 mm	11,6 mm	3 mm
G 3/8"	9 mm	15,1 mm	3 mm
G 1/2"	12 mm	18,8 mm	3 mm

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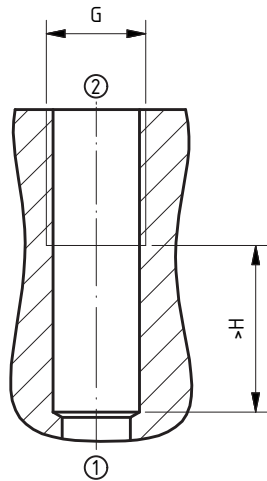
Cavity RBS1



size G	H min.
G 1/4"	11 mm
G 3/8"	11 mm
G 1/2"	15 mm
G 3/4"	15 mm
M 18 x 1,5	11 mm

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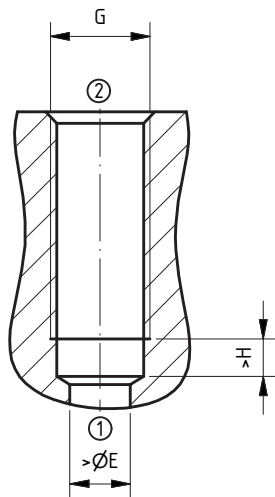
Cavity VCD



size G	H min.
G 1/4"	22 mm
G 3/8"	23 mm
G 1/2"	27 mm
G 3/4"	31 mm

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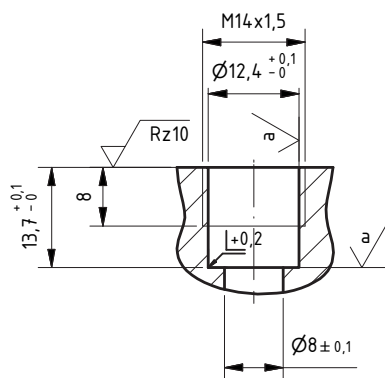
Cavity VCL



size G	Ø E min.	H min.
G 1/4"	3 mm	5 mm
G 3/8"	2 mm	5 mm
G 1/2"	2 mm	5 mm

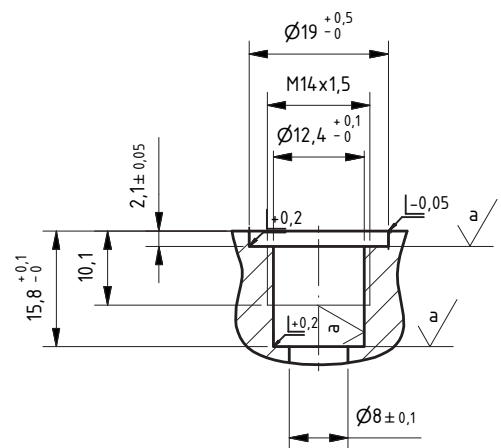
HM4/03 48 01

Cavity KK-M14



HE4/14 33 03

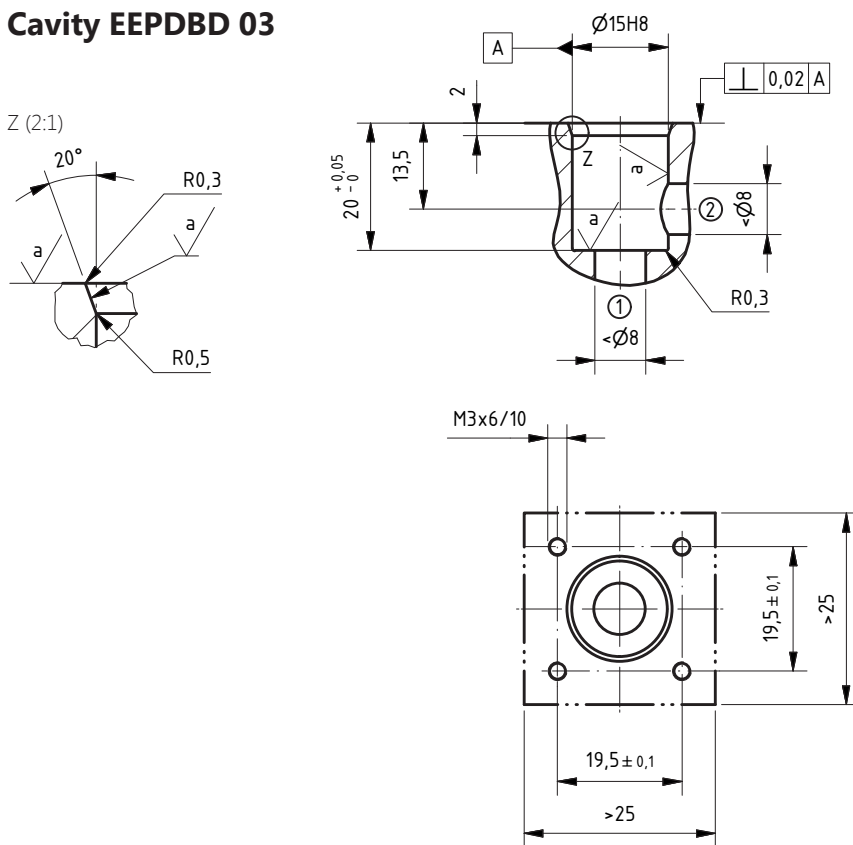
Cavity **KK-M14 x 1,5 K**
for couplings with short pin



HE4/14 33 02

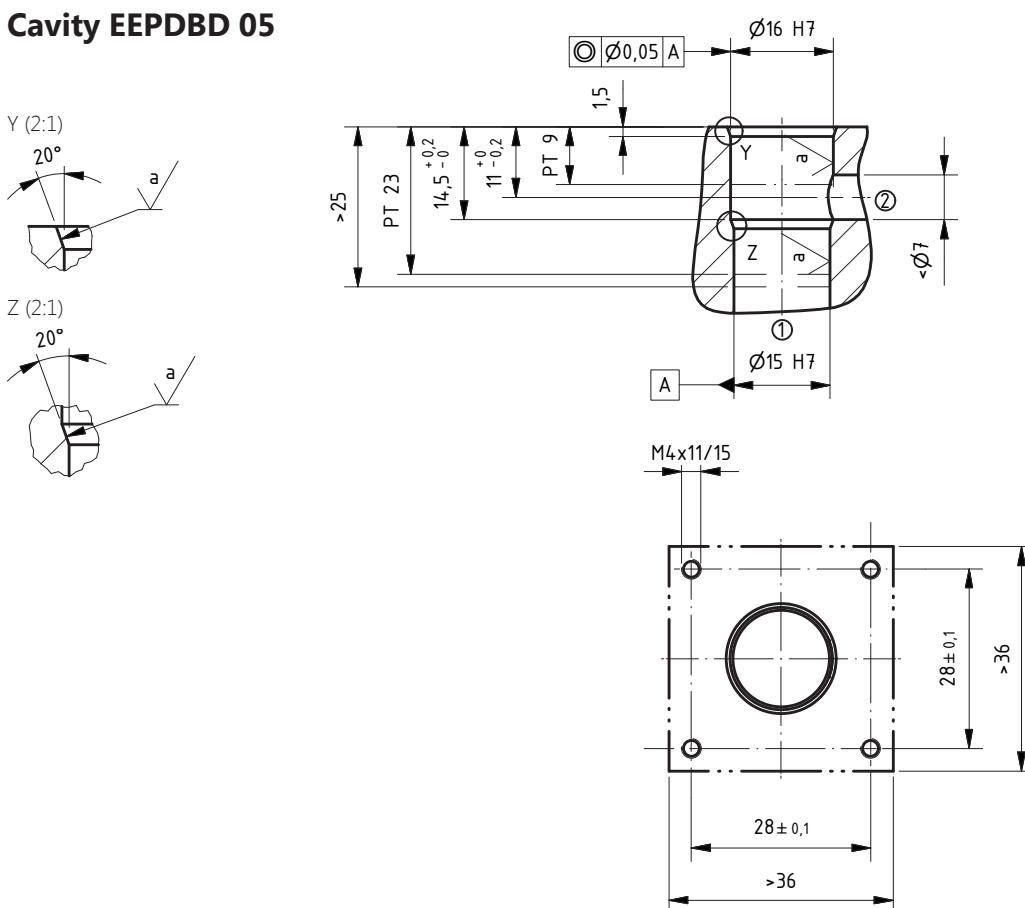
Cavity **KK-M14 x 1,5 L**
for couplings with long pin

Cavity EEPDBD 03



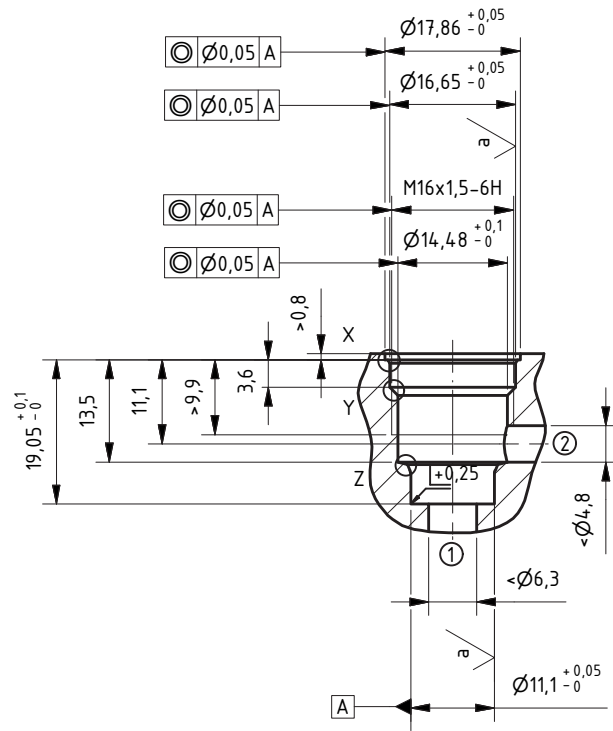
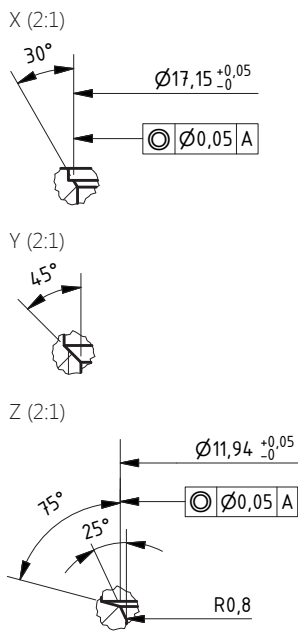
HE4/14 08 24

Cavity EEPDBD 05



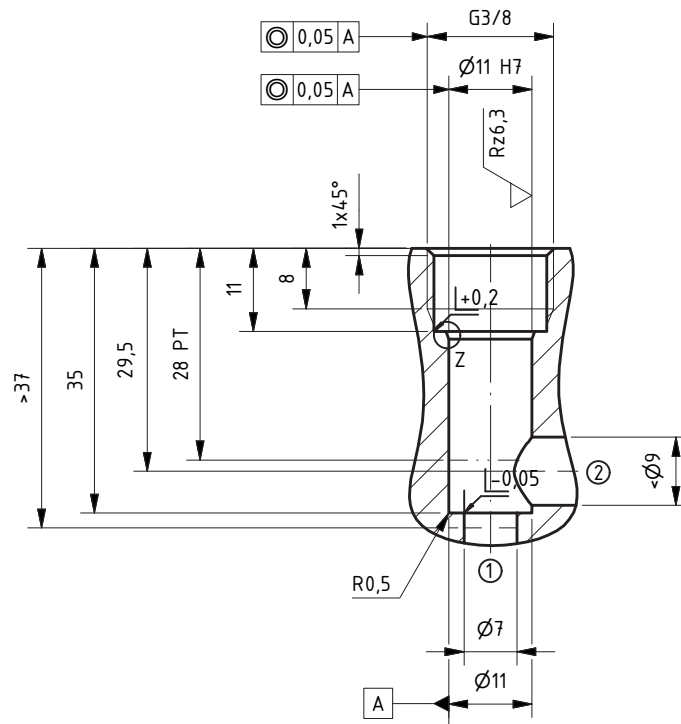
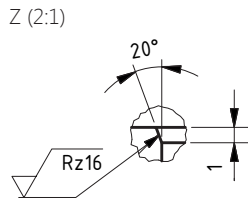
HE4/14 10 02

Cavity T-8A



HE4/14 08 20

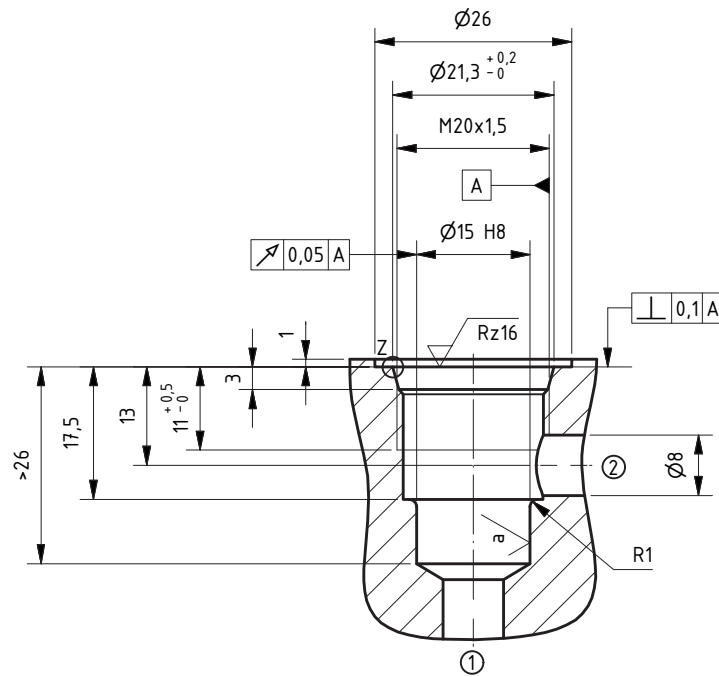
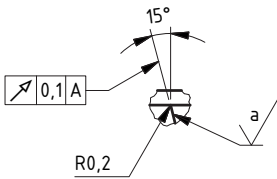
Cavity STE



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Cavity MSV

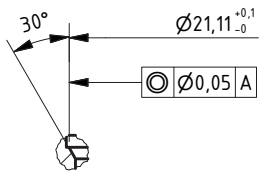
Z (2:1)



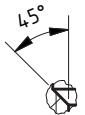
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Cavity T-10A

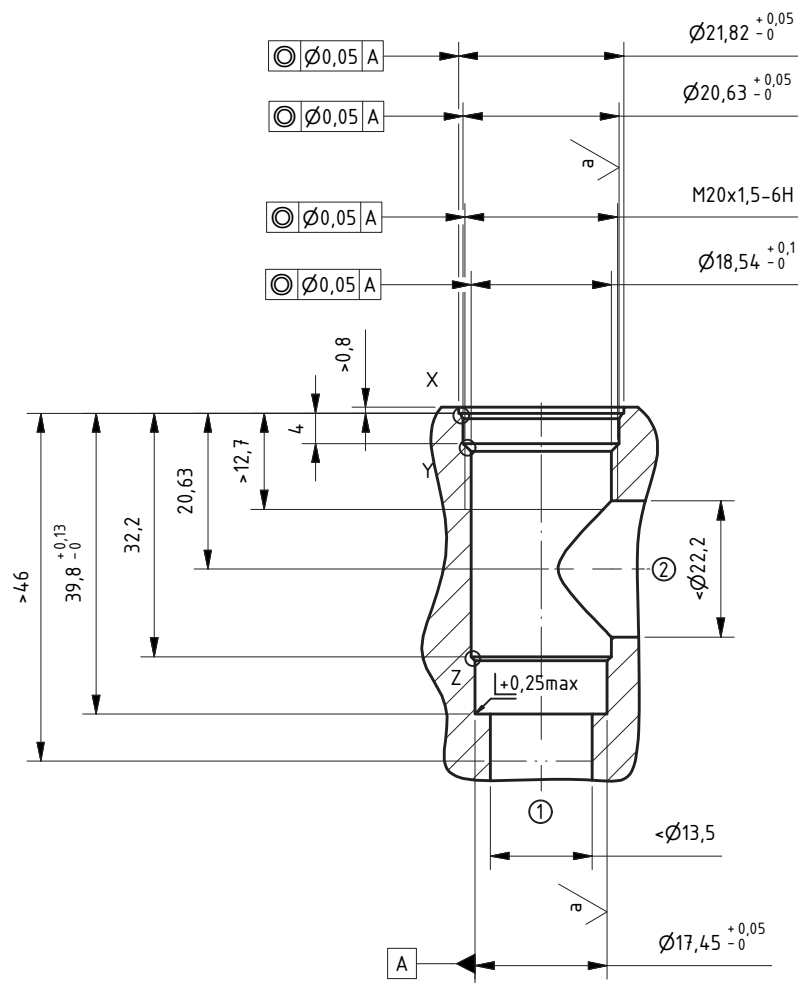
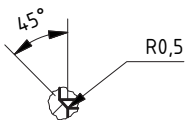
X (2:1)



Y (2:1)

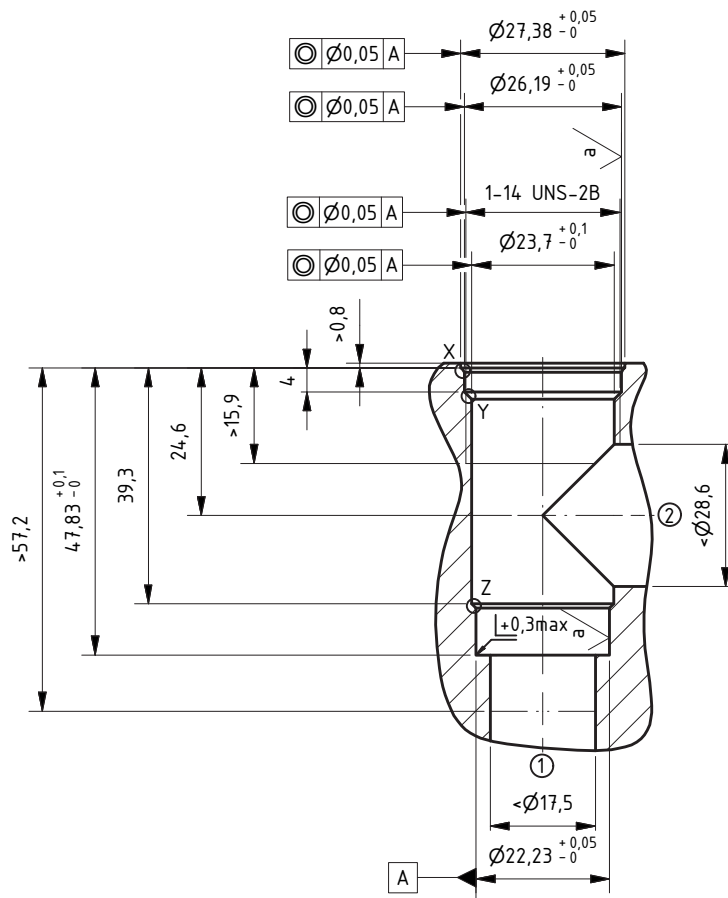
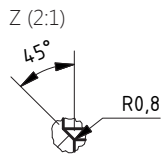
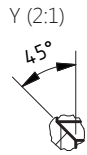
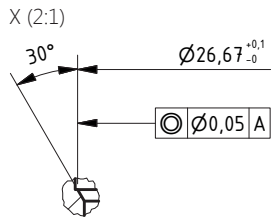


Z (2:1)



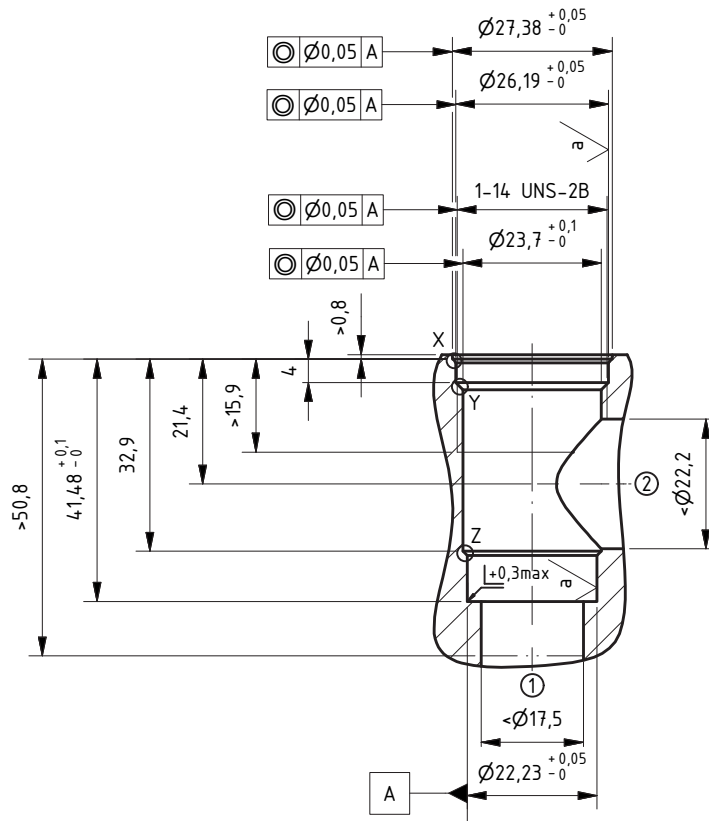
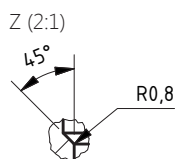
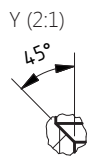
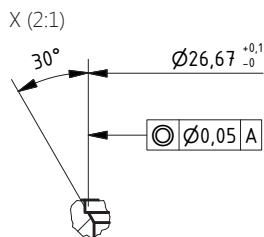
HE4/14 09 14

Cavity T-3A

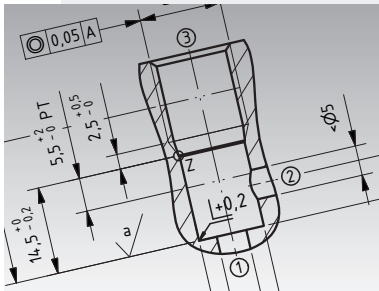


HE4/14 09 12

Cavity T-5A



HE4/14 09 13



Valve cavities 3-way designs

110430_cavities3_e
07.2018

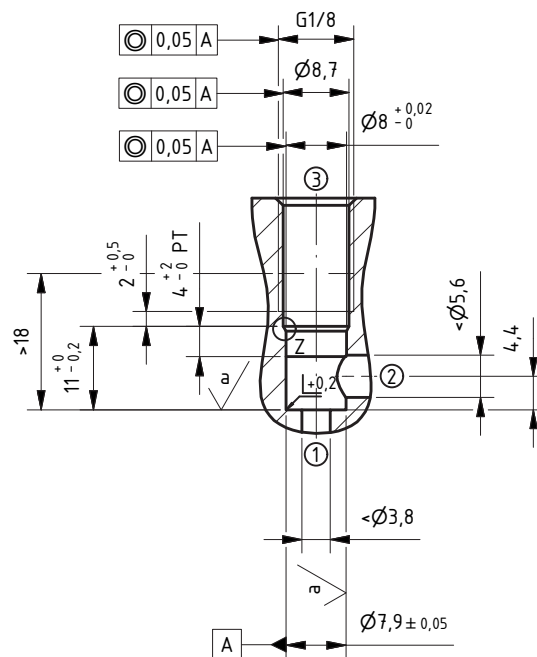
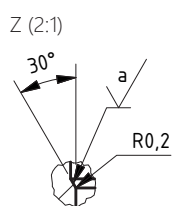
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Cavity C-10-3	4
Cavity T-11A	4
Cavity T-2A	5

NOTE

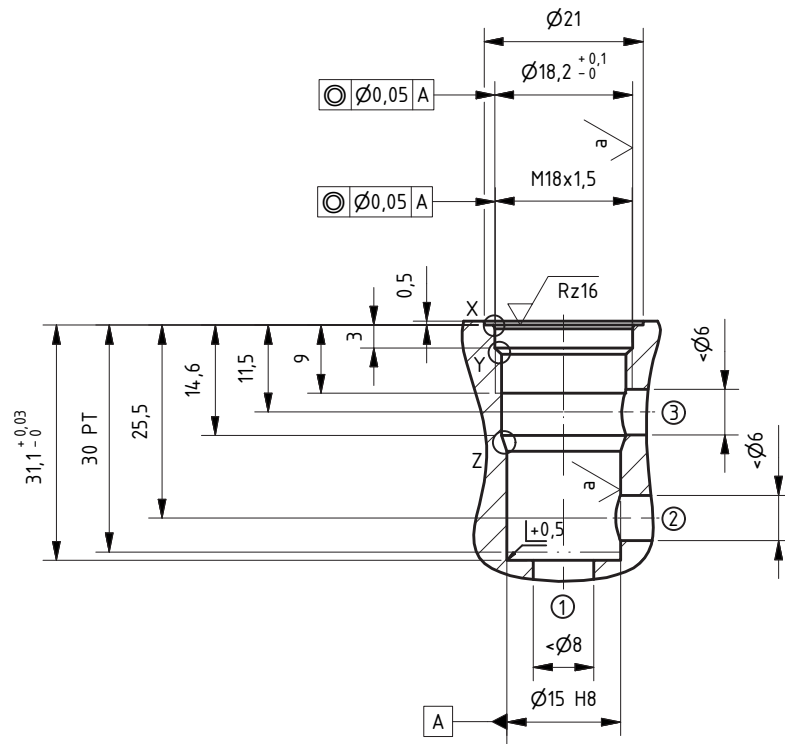
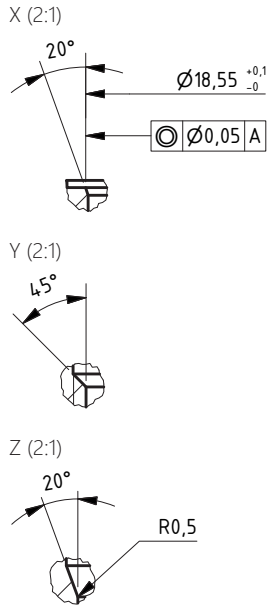
$$a = \sqrt{Rz6,3} \quad \text{PT} = \text{reaming depth}$$

Cavity FTRW-2,5



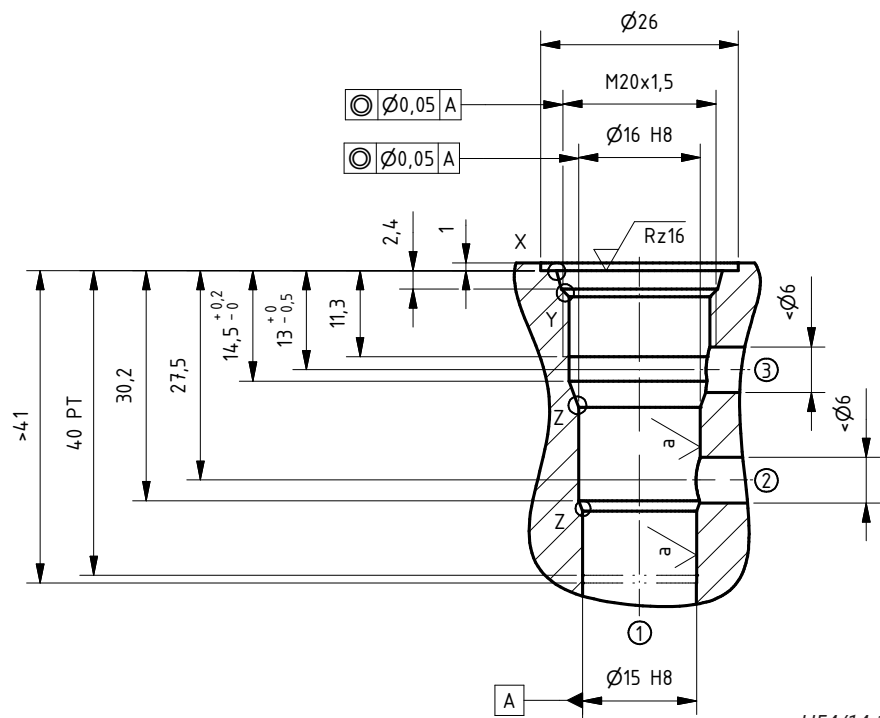
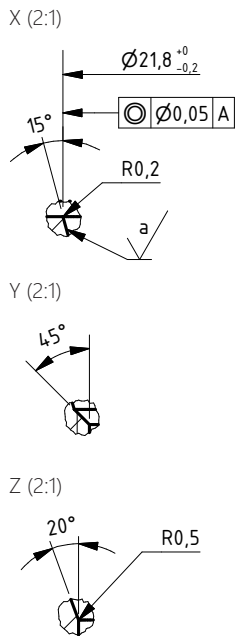
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Cavity SMSV6



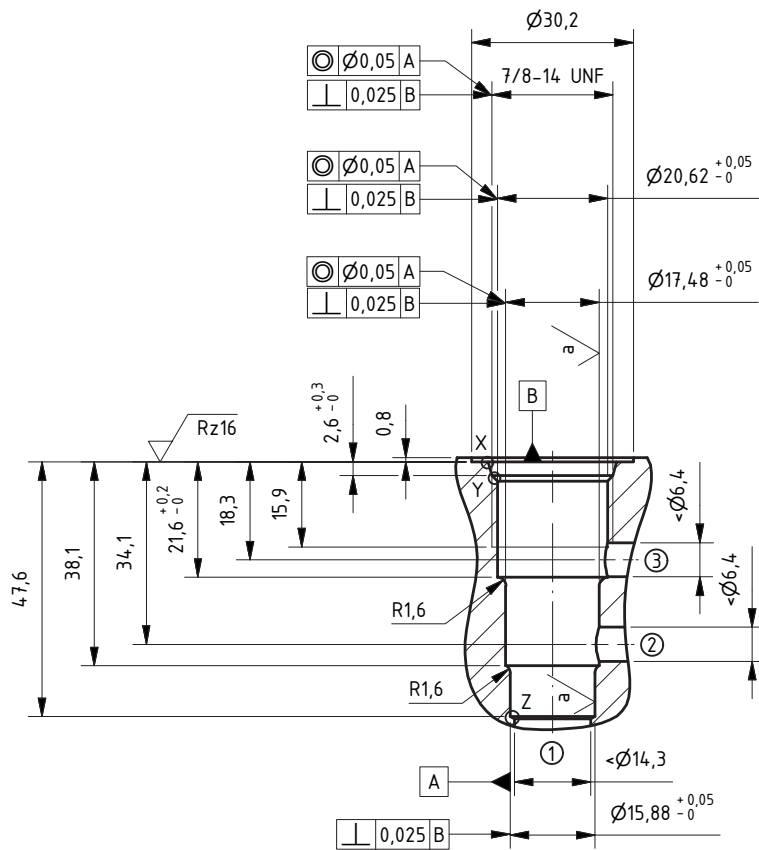
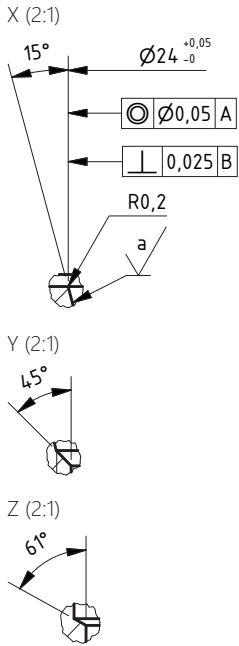
HE4/14 11 21

Cavity M(S)V3/2



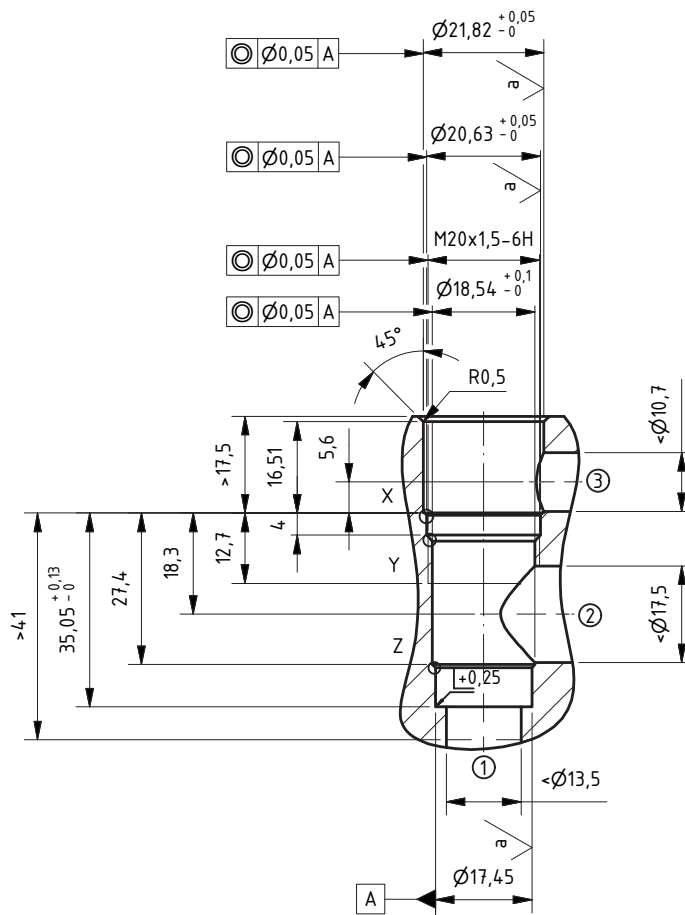
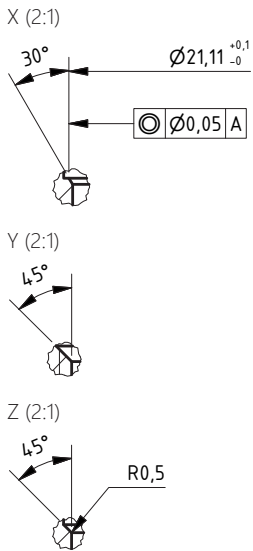
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Cavity C-10-3



HE4/14 10 18

Cavity T-11A



HE4/14 09 19



Manual overrides Designs

110510_manualoverride
07.2018

Characteristics

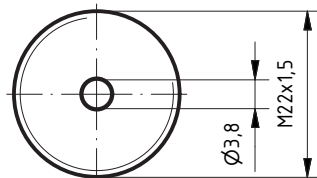
- manual override works directly on the solenoid
- available as lockable or not lockable versions
- lockable versions for mechanical standard settings of the valve
- for cases of disturbance or implementing

NOTE You can check the available manual overrides for the particular valves in the type code on the datasheet of each valve.

NOTE The pictures exemplify the designs of the manual overrides. The connections to the solenoid may vary according to the different sizes of the valves.

Manual override with push pin NH (H402)

- not lockable
- for operation the internal pin has to be pushed with a pointed object
- when releasing the pin, it switches back into the basic position
- not for continuous operation

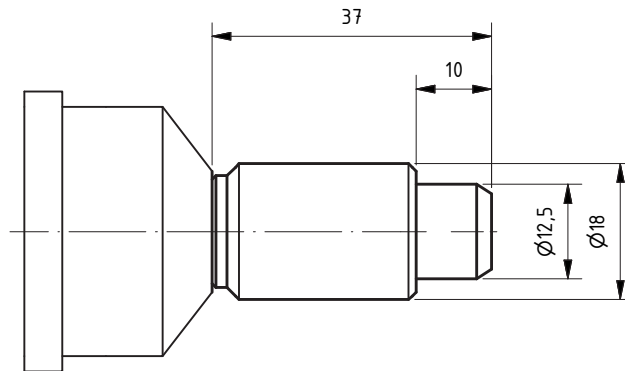


HE4/124818

*Manual override with
push knob
DNH (H405)*



- not lockable
- for operation the knob has to be pushed
- when releasing the knob, it switches back into the basic position
- not for continuous operation

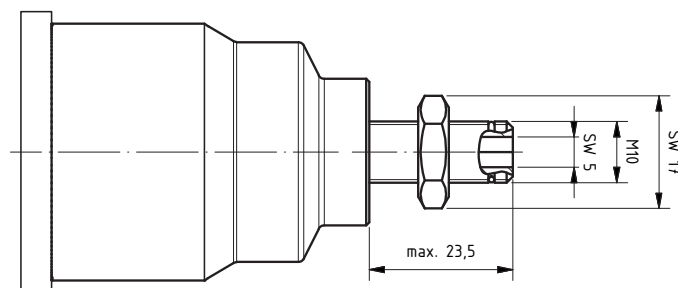


HM4/143014

*Manual override with
lock nut
FNH (H301)*



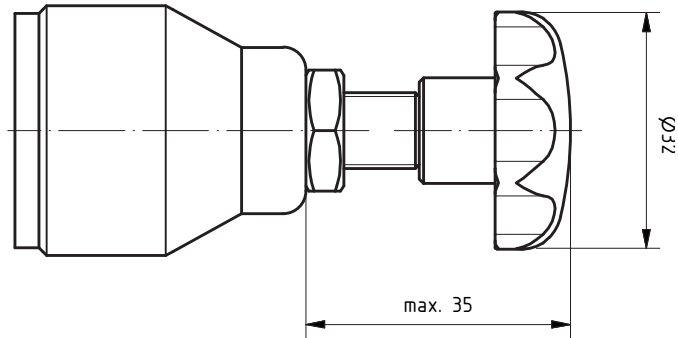
- lockable with screw
- suitable for mechanical standard settings



HE4/151906

*Manual override with
lock nut and
hand-wheel
H302*

- lockable with hand-wheel
- suitable for mechanical standard settings



HMA/143010

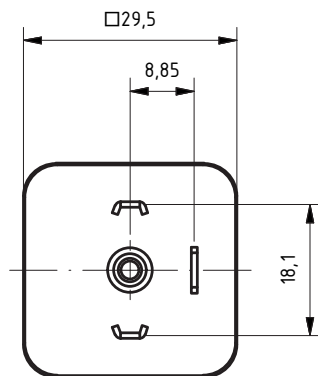


Electrical connectors Designs

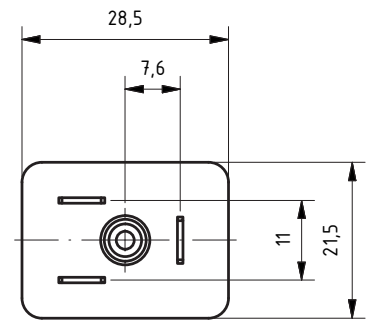
110520_el_connectors
07.2018

NOTE You can check the available connectors for the particular valves in the type code on the datasheet of each valve.

Connector DIN
43650 shape A and B



Shape A



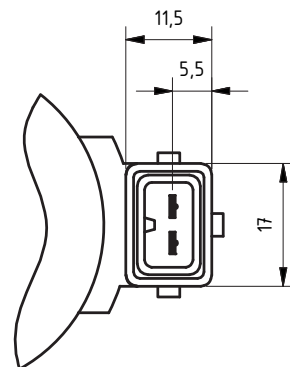
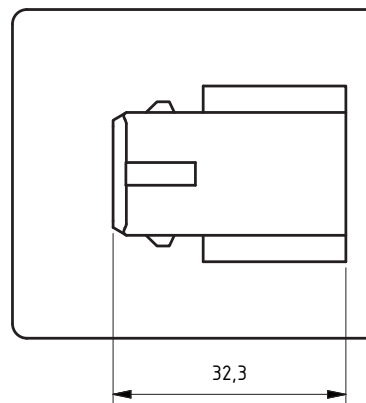
Shape B

HE4/151705

Connector AMP
Junior Timer



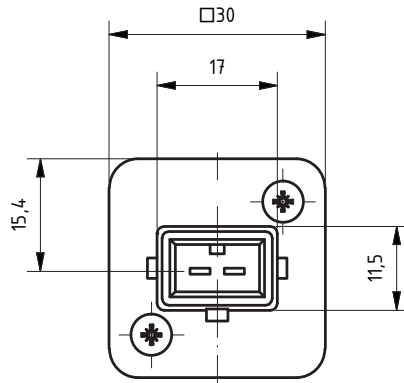
For round solenoid bodies.



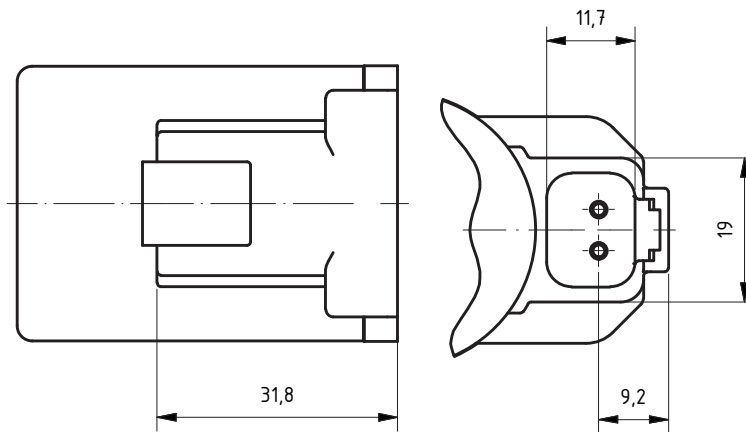
HE4/151901

*Connector AMP
Junior Timer*

For rectangular solenoid bodies.



*Connector Deutsch
DT04-2P*



HE4/151902

*Unterminated wire
300 mm*

Only available for rectangular solenoid bodies.



WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44

www.weber-hydraulik.com
info.de-k@weber-hydraulik.com

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Test conditions and standards

valid for WEBER-HYDRAULIK ValveTech valves

110610_standards
07.2018

Test conditions

- unless otherwise noted, all tests are made with hydraulic oil after DIN 51524 type HLP 32 or HLVP 32
- Oil temperature $40^{\circ}\text{C} \pm 3^{\circ}\text{C}$
- Viscosity 32 cSt
- Purity level (DIN EN ISO 4406) 16/14/11 or better

Applied standards

- Fluid technology: DIN EN ISO 4413
- Hydraulic oil: DIN 51524
- Filtration: ISO 4406
- Protection classes (IP...): EN 60529