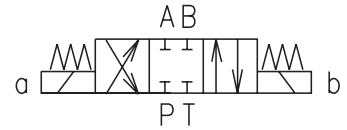


- 4/3, 4/2 way directional control valves
- Four-land spool - reduced functional dependence on fluid viscosity
- Push button manual override
- Installation dimensions to DIN 24 340 / ISO 4401 / CETOP RP121-H
- Subplates see data sheet HU 0002
- CSA Upon request



Functional Description

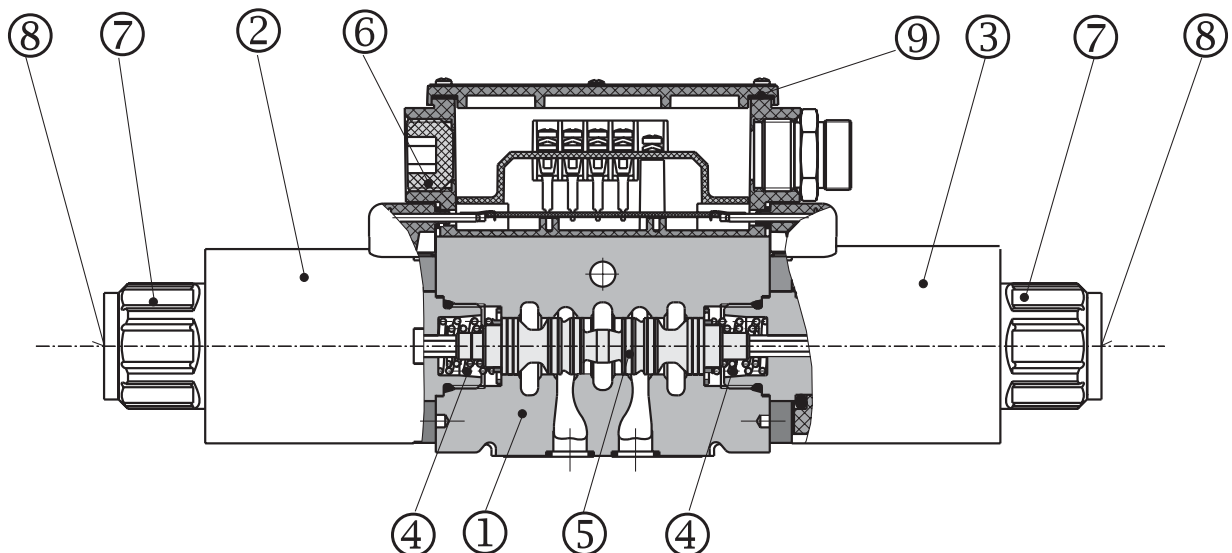
The RPEW4 directional control valves consist of housing (1), a control spool (5) with two centering springs (4) and cylindrical operating solenoids (2, 3), electric wirebox (9) and connector (6).

The three-position directional control valves are fitted with two solenoids and two springs. Two-position directional control valves have either one solenoid and one return spring or two solenoids and a detent assembly.

The solenoids are supplied with DC and AC - voltage through the 1/2 NPT Ports on the wirebox (optional on both sides) or through Connector Item (3 - Pin single solenoid, 5 - Pin - double solenoid) see wiring diagram

(page 7). The wires are connected to a terminal plate inside the wirebox. Optional lights are installed on this terminal plate for shift indication. The lights are visible as raised arrows on the valve label. The solenoids are retained by the Nut (7) and plug-in to the wirebox. Plug-in design allows easy removal without wire change. In the case of solenoid malfunction or power failure, the spool of the valve can be shifted by manual override (8), provided the pressure in T- port does not exceed 25 bar (363 PSI).

The valve housing (1) is phosphate coated and the solenoids (2, 3) are zinc coated.



Ordering Code


RPEW4 - 10 /

**Solenoid Operated
Directional Control
Valve with Wirebox**

Valve Size 10 (05)

Number of Valve Positions
two positions **2**
three positions **3**

Functional symbols
see the table functional symbols

Rated Supply Voltage of Wirebox (at the wirebox terminals)
12 V DC / 2.64 A **01200**
24 V DC / 1.32 A **02400**
120V AC / 60Hz*  **12060**

* DC coils with rectifier in wirebox only type of Wirebox R

Note: For other voltages consult factory

Type of Solenoid Coil for Wiring Box (Plug-In-Coil)
DC solenoid (DC and AC - rectified) **EW1**

Type of Wirebox
Wirebox for DC **K**
Wirebox AC rectified (rectifier in wirebox) **R**

Seals
no designation
V NBR
FPM (Viton)

Damping
no designation
T2 without damping
T3 nozzle
throttle screw

Manual override
no designation
N2 standard
covered with rubber boot

Wirebox Configurations:

- 50** Standard wiring box with 1/2 NPT both ends (Either side can be used for wiring, Remove cover -plug accordingly)
- 51** Standard wiring box with 1/2 NPT both ends and LED diodes (B- side plugged, A - side covert for shipping)
- 52** Wiring box with 3 PIN connector ANSI/B93.55M mounted on A-side (B-side plugged, only for single solenoid valves)
- 53** Wiring box with 3 PIN connector ANSI/B93.55M mounted on B-side (A-side plugged, only for single solenoid valves)
- 54** Wiring box with 3 PIN connector ANSI/B93.55M mounted on A-side with LED diode (B-side plugged, only for single solenoid valves)
- 55** Wiring box with 3 PIN connector ANSI/B93.55M mounted on B-side with LED diode (A-side plugged, only for single solenoid valves)
- 56** Wiring box with 5 PIN connector ANSI/B93.55M mounted on A-side (B-side plugged, only for double solenoid valves)
- 57** Wiring box with 5 PIN connector ANSI/B93.55M mounted on B-side (A-side plugged, only for double solenoid valves)
- 58** Wiring box with 5 PIN connector ANSI/B93.55M mounted on A-side with ILED diode (B-side plugged, only for double solenoid valves)
- 59** Wiring box with 5 PIN connector ANSI/B93.55M mounted on B-side with LED diode (A-side plugged, only for double solenoid valves)

CSA Upon request 

Technical Data		
Valve size	mm (US)	10 (D 05)
Maximum flow	L/min (GPM)	see p-Q characteristics
Maximum operating pressure at ports P, A, B	bar (PSI)	350 (5076)
Maximum operating pressure at port T	bar (PSI)	210 (3050)
Pressure drop	bar (PSI)	see Δp-Q characteristics
Hydraulic fluid		Hydraulic oils of power classes (HL, HLP) to DIN 51524
Fluid temperature range (NBR / Viton)	°C (°F)	-30 ... +80 (-22 ... +176) / -20 ... +80 (-4 ... +176)
Ambient temperature max.	°C (°F)	+50 (+122)
Viscosity range	mm ² /s (SUS)	20 ... 400 (98 ... 1840)
Maximum degree of fluid contamination		Class 18/15 to ISO 4406. A filter with a retention rate β ₁₀ ≥ 75 is recommended.
Maximum allowable voltage variation	%	AC: ±10 DC: ±10
Maximum switching frequency	1/h	15 000
Switching time, ON; at v = 32 mm ² /s (156 SUS)	ms	AC: 50 ... 330 DC: 50 ... 120
Switching time, OFF; at v = 32 mm ² /s (156 SUS)	ms	AC: 100 ... 300 DC: 30 ... 90
Duty cycle	%	100
Service life	cycles	10 ⁷
Enclosure type to EN 60529		IP 65
Weight - valve with 1 solenoid - valve with 2 solenoids	kg (lbs)	3.9 (8.60) 5.4 (11.90)
Mounting position		unrestricted

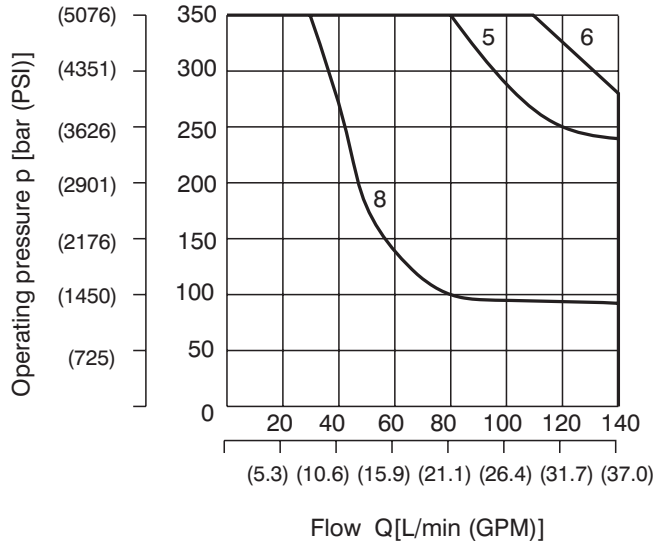
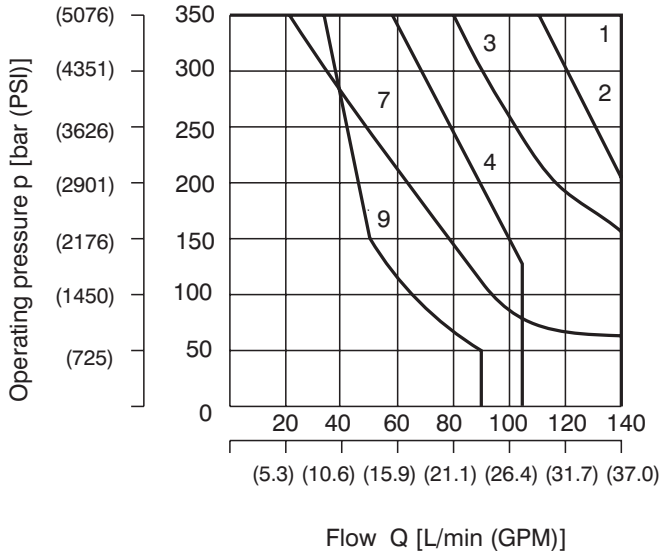
Spool Symbols

Designation	Symbol	Interposition	Designation	Symbol	Interposition
Z11			P51		
C11			Y51		
H11			C51		
P11			B51		
Y11			Z51		
L21			H51		
B11			X11		
C21			C11		
R11			H11		
R21			J15		
A51			J75		

p-Q Characteristics

Measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

Operating limits for maximum hydraulic power transferred by the directional valve. For respective spool type - see spool symbols. The power curves hold true for symmetrical valve flows (e.g. flows in directions P-A and B-T are identical). In case of an asymmetric flow, the power curves can lie substantially lower. In such cases we highly recommend to consult the respective power curve with the valve manufacture.

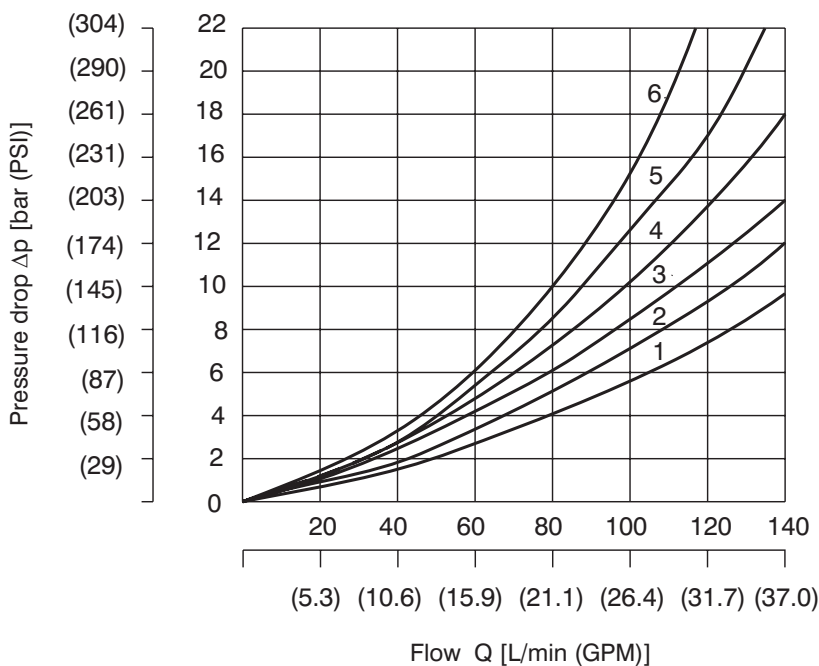


Z11	Z51	H11	H51	P11	P51	Y11	Y51	C11	C51	R11	X11	B11	B51	L21	R21	J15	J75	A51	C21
1	1	1	1	1	1	5	5	3	3	2	2	4	4	7	2	6	6	8	9

Δp-Q Characteristics

Measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

Pressure drop Δp related to flow rate.

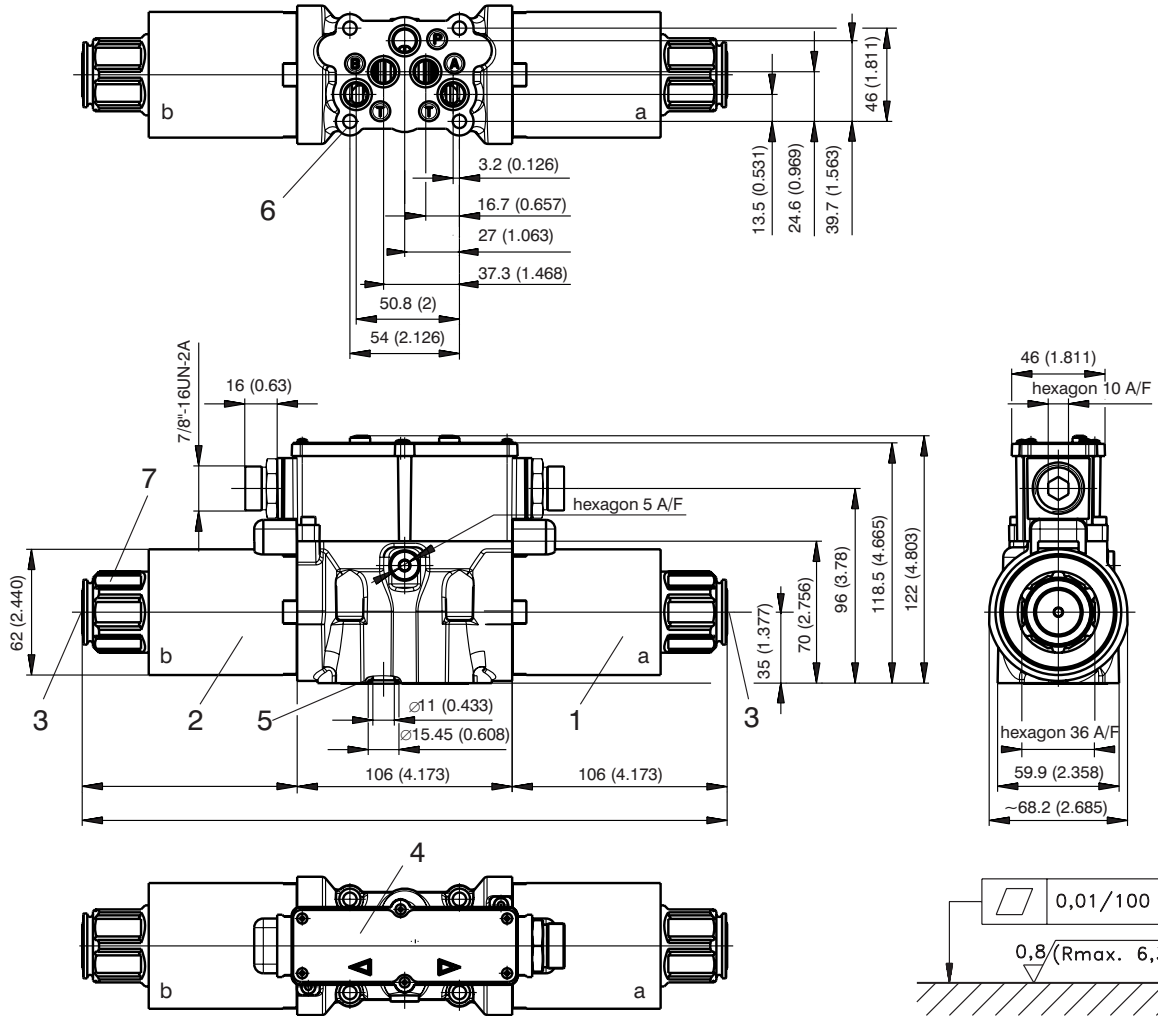


	P-A	P-B	A-T	B-T	P-T
Z11	1	1	2	2	
Z51		1	2		
H11	1	1	2	2	1
H51		1	2		1
P11	1	1	2	2	
P51		1	2		
Y11	1	1	2	2	
Y51		1	2		
C11	4	3	4	5	1
C51	4			5	1
R11	1	1	2	2	
X11	1	1	2	2	
B11	1	1	2	2	
B51		1	2		
L21	1	1	1	2	2
R21	1	1	1	3	
J15	1	2	2	3	
J75	1	1			
A51	1	1			
C21	6	6	6	6	4

Valve Dimensions

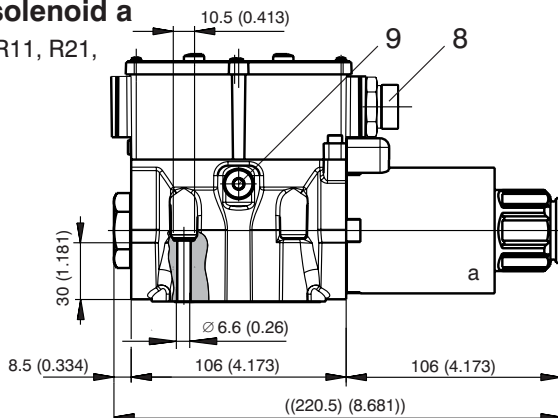
Dimensions in millimeters and inches

Valve with two solenoids



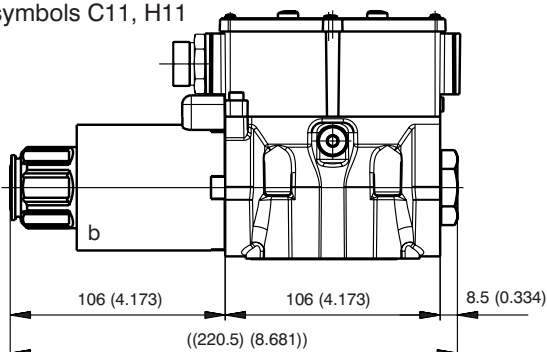
Valve with one solenoid a

Functional symbols R11, R21, Y51, C51, Z51, H51,



Valve with one solenoid b

Functional symbols C11, H11

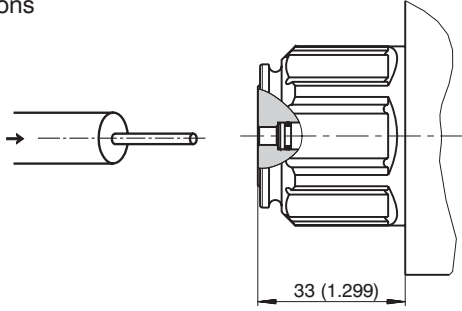


- 1 Solenoid a (Nut torque 6Nm)
- 2 Solenoid b (Nut torque 6Nm)
- 3 Manual override
- 4 Name plate
- 5 Square ring 12.42 x 1.68 (5 pcs.) supplied with valve
- 6 4 mounting holes
- 7 Retaining nut of the solenoid
- 8 Electrical connector

Manual Override

Standard

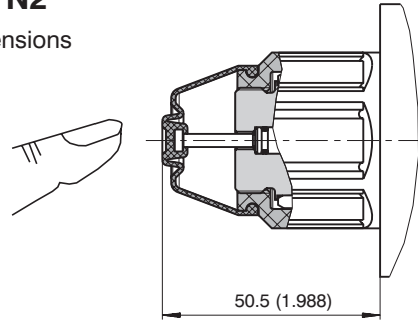
No designation
Dimensions



Standard model of the manual override.
Standard retaining nut of the solenoid.

Rubber boot

Type **N2**
Dimensions

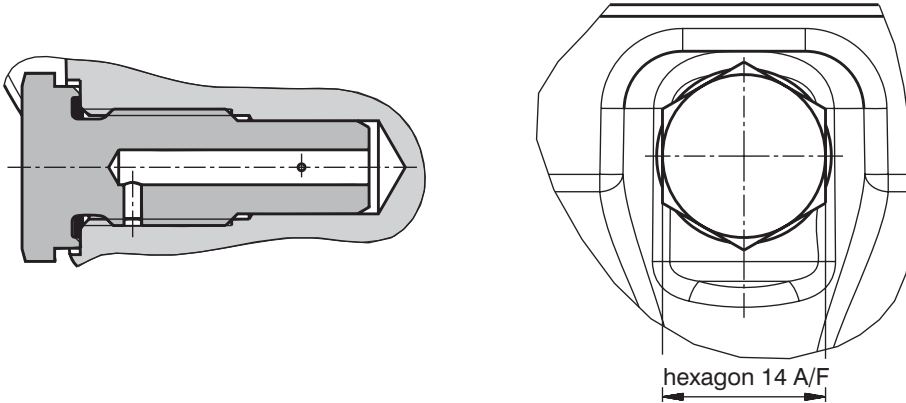


Manual override protected by the rubber boot.

Soft Shifting Spool Options Delay Time

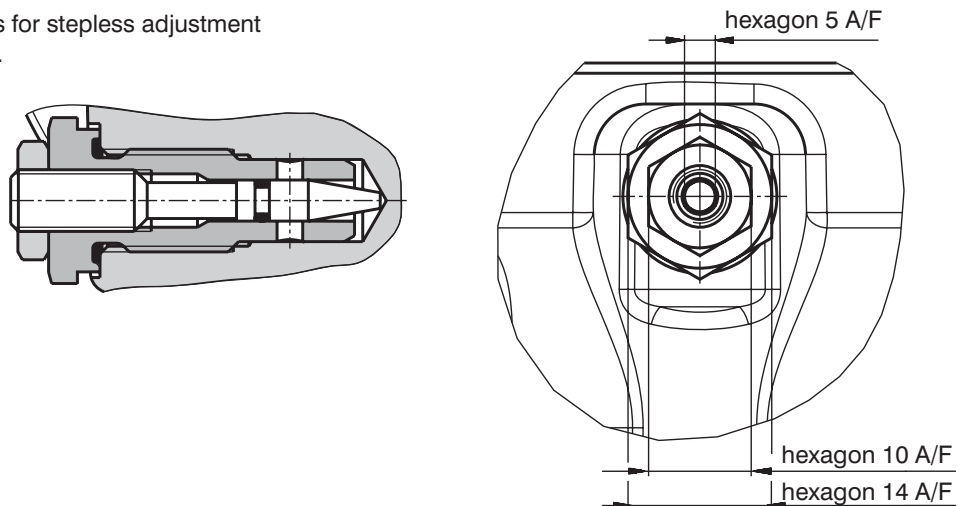
T2 - Nozzle $\varnothing 0.157 (0.6)$

The orifice extends the valve shifting time.

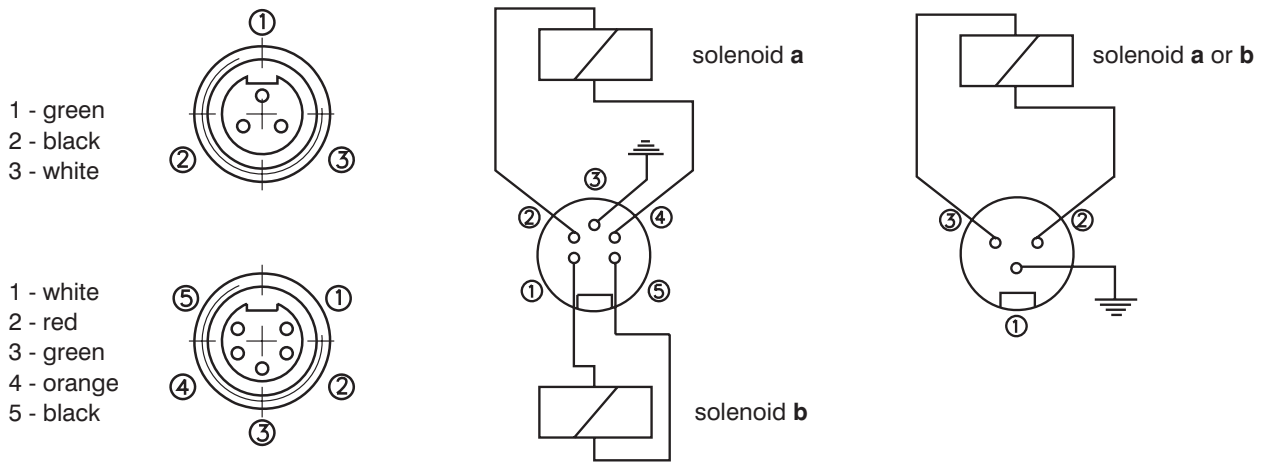


T3 - Throttle Screw

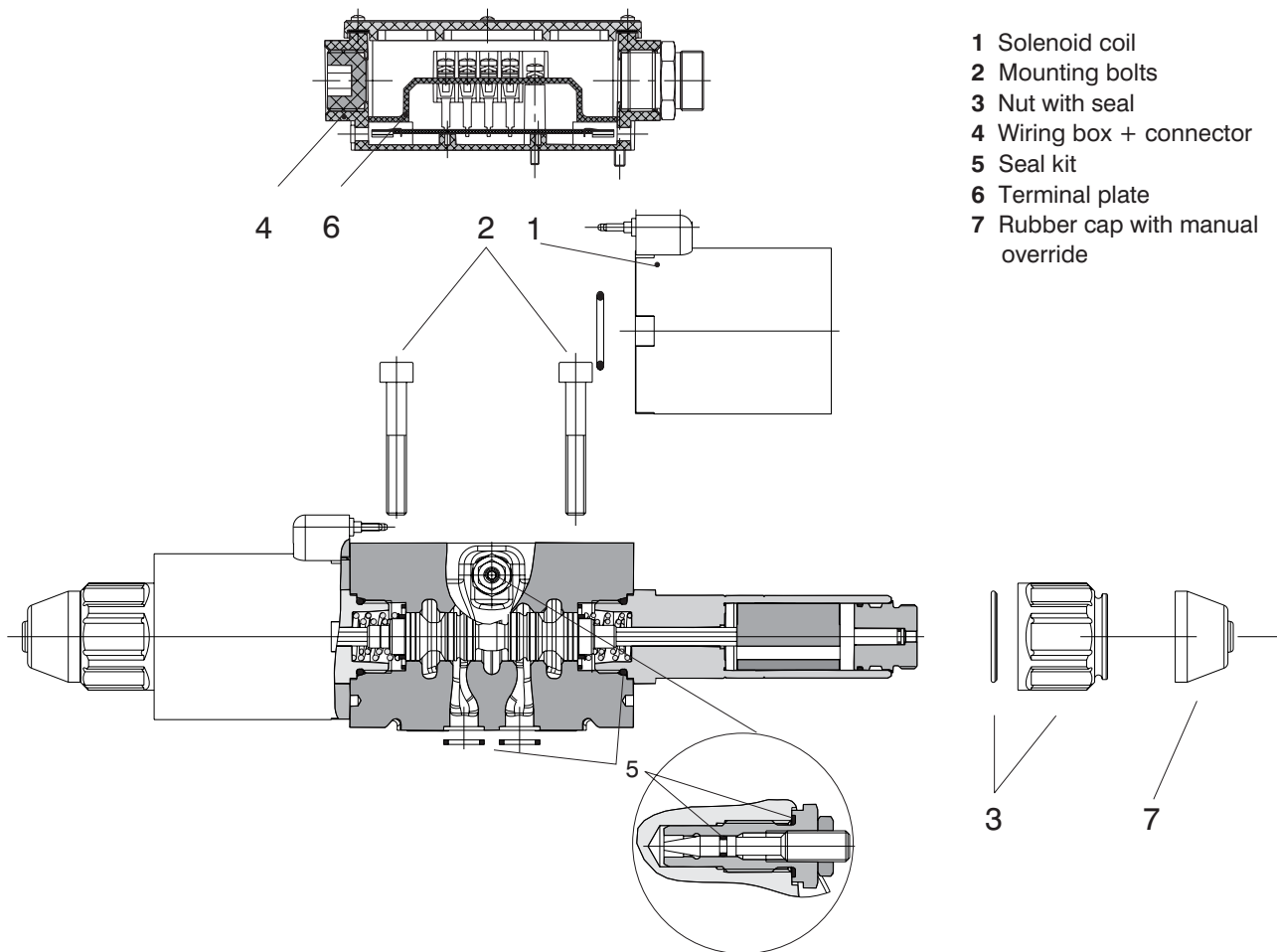
The control orifice allows for stepless adjustment of the valve shifting time.




Connector - US - Standard - ANSI/B93.55M



Spare Parts



Wiringbox			
Type	Ordering number		
Wiring box without terminal plate	24175100		
Terminal Plates			
Type	Ordering number		
Terminal plate - basic design A+B	24173700		
Terminal plate 12V DC -LED diodes A+B	24173800		
Terminal plate 24V DC - LED diodes A+B	24173900		
*Terminal plate 120V AC - rectifier A+B	24174000		
*Terminal plate 120V AC - rectifier A+B and LED diodes A+B	24174100		
* CSA Upon request 			
Solenoid Coil			
Voltage rating	Type	Ordering number	
01200 DC	EW1	24174200	
02400 DC	EW1	24174300	
10600 DC (120V/60Hz rectified)	EW1	24174400	
Solenoid Retaining Nut with Seal			
Type of the nut	Seal ring	Ordering number	
Standard nut	O-ring 30 x 2	15900800	
Nut with rubber boot		15900900	
Electrical Connector, ANSI/B93.55M			
Type	Ordering number		
3 PIN	24007300		
5 PIN	24007400		
Seal kit			
Type	Dimensions		Ordering number
	Square ring	O-ring	
Standard NBR70	12.42 x 1.68 (5 pcs.), 11,9 x 8,4 x 1 (1 pc.)	23.81 x 2.62 (2 pcs.), 1,8 x 1 (1 pc.)	15901000
Viton	12.42 x 1.68 (5 pcs.), 11,9 x 8,4 x 1 (1 pc.)	23.47 x 2.62 (2 pcs.), 1,8 x 1 (1 pc.)	15901100
Mounting bolts			
Dimensions	Tightening torque	Ordering number	
M6 x 40 DIN 912-10.9 (4 pcs.)	14+2 Nm (10.33+1.48 lbf.ft)	15847700	
Soft Shift Conversion Kit			
T2	10 Nm (7.376 lbf.ft)	15901200	
T3	10 Nm (7.376 lbf.ft)	15901300	
Caution!			
<ul style="list-style-type: none"> In the case of directional control valves with two solenoids, any of the solenoids may be energized, but only after powering off the other. For directional control valves with other spool symbols as those shown in the table, please consult with the manufacturer. Other spool symbols on request. The plastic packaging is recyclable. The protective plate can be returned to manufacturer. Mounting bolts, studs and DIN-connectors must be ordered separately. Certified documentation is available per request. 			
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