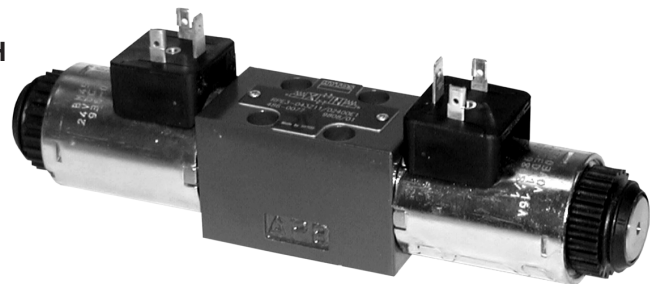
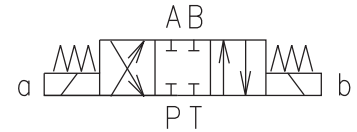


- 4/3, 4/2 way directional control valves with solenoid control
- Solenoids can be turned around their axis to any position
- Push button manual override
- Installation dimensions according to DIN 24 340 / ISO 4401 / CETOP RP121-H
- Subplates see data sheet HA 0002
- CSA Upon request



## Functional Description

The RPE3-04 directional control valves consist of cast iron housing (1), control spool (5) with two centering springs (4) and operating solenoids (2, 3).

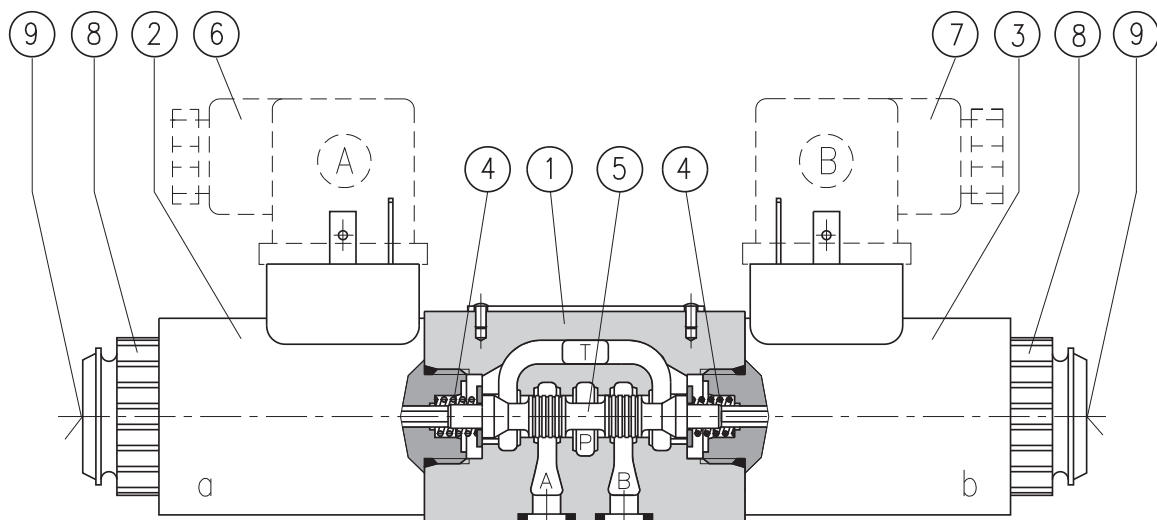
The three-position directional valves are fitted with two solenoids and two springs. Two-position directional valves have either one solenoid and one return spring or two solenoids and a detent assembly.

The operating solenoids are DC solenoids supplied through connectors A, B (6, 7). For AC supply the solenoids are provided with rectifiers, which are

integrated directly into the connectors A, B (6, 7) or inside the coil. By loosening the nut (8), the solenoid can be turned around its axis up to 360°.

In the case of solenoid malfunction or power failure, the spool of the valve can be repositioned by manual override (9), provided the pressure in the T-port does not exceed 25 bar.

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



# Ordering Code

**RPE3-04**   /

**Solenoid Operated Directional Control Valve**

**no designation**  
**V**

**Seals**  
NBR  
FPM (Viton)

**Nominal size**

**no designation**

**Orifice in P-Port**  
without orifice  
**D1** Ø0.8 mm  
**D2** Ø1.0 mm  
**D3** Ø1.2 mm  
**D4** Ø1.5 mm  
**D5** Ø0.7 mm

**Number of valve positions**

two positions **2**  
three positions **3**

**no designation**  
**N2**





**Manual override**  
standard  
covered with rubber protective boot

**Functional symbols**


see the table functional symbols

**Rated supply voltage of solenoids**

(at the coil terminals)

- 12 V DC / 2.41 A  **01200**
- 14 V DC / 1.66 A 01400
- 21 V DC / 1.14 A 02100
- 24 V DC / 1.16 A  **02400**
- 42 V DC / 0.59 A 04200
- 48 V DC / 0.56 A 04800
- 60 V DC / 0.41 A 06000
- 102 V DC / 0.24 A 10200
- 205 V DC / 0.12 A 20500
- 24 V AC / 1.44 A / 50 (60) Hz 02450
- 115V AC / 0.26 A / 50 (60) Hz  **11550**
- 230 V AC / 0.14 A / 50 (60) Hz  **23050**

The AC coils correspond with E5 type.

CSA Upon request 

**\*Electrical connector, EN 1745301-803**

- no designation** without connector
- K1** connector without rectifier
  - K2** connector without rectifier with LED and quenching diode
  - K3** connector with rectifier
  - K4** connector with rectifier with LED and quenching diode
  - K5** connector without rectifier

**Type of solenoid coil**

- E1** with terminal for the connector, EN 1745301-803
- E2** with terminal for the connector, EN 1745301-803 and quenching diode
- E3** with AMP-Junior-Timer-connector
- E4** with AMP-Junior-Timer-connector and quenching diode
- E5** with integrated rectifier and with terminal for the connector, EN 1745301-803

Note: For other solenoid coil consult factory

**FOR PREFERRED TYPES SEE BOLD TYPING IN ORDERING CODE, FUNCTIONAL SYMBOLS AND TABLE OF PREFERRED TYPES ON PAGE 8**

Recommended solenoid coils used with electrical connector with rectifiers - type designation K3, K4

Rated supply source voltage (permissible rated voltage variation ± 10 %)	Type designation of the solenoid voltage
24 V AC / 1.44 A / 50 (60) Hz	02100
115 V AC / 0.26 A / 50 (60) Hz	10200
230 V AC / 0.14 A / 50 (60) Hz	20500

**Note:** Electrical connectors have to be ordered separately. See see pages 6 and 8.

# Technical Data

Nominal size	mm	04	
Maximum flow	L/min	see p-Q characteristics	
Maximum operating pressure at ports P, A, B	bar	320	
Maximum operating pressure at port T	bar	210	
Pressure drop	bar	see Δp-Q characteristics	
Hydraulic fluid	Hydraulic oils of power classes (HL, HLP) to DIN 51524		
Fluid temperature range (NBR / Viton)	°C	-30 ... +80 / -20 ... +80	
Ambient temperature, max.	°C	+50	
Viscosity range	mm <sup>2</sup> /s	20 ... 400	
Maximum degree of fluid contamination	Class 21/18/15 to ISO 4406 (1999)		
Maximum allowable voltage variation	%	AC: ±10	DC: ±10
Maximum switching frequency	1/h	15 000	
Switching time, ON; at v = 32 mm <sup>2</sup> /s	ms	30 ... 50	
Switching time, OFF; at v = 32 mm <sup>2</sup> /s	ms	AC: 70 ... 100	DC: 30 ... 50
Duty cycle	%	100	
Service life	cycles	10 <sup>7</sup>	
Enclosure type to EN 60 529	IP 65		
Weight - valve with 1 solenoid - valve with 2 solenoid	kg	0.9 1.25	
Mounting position	optional		

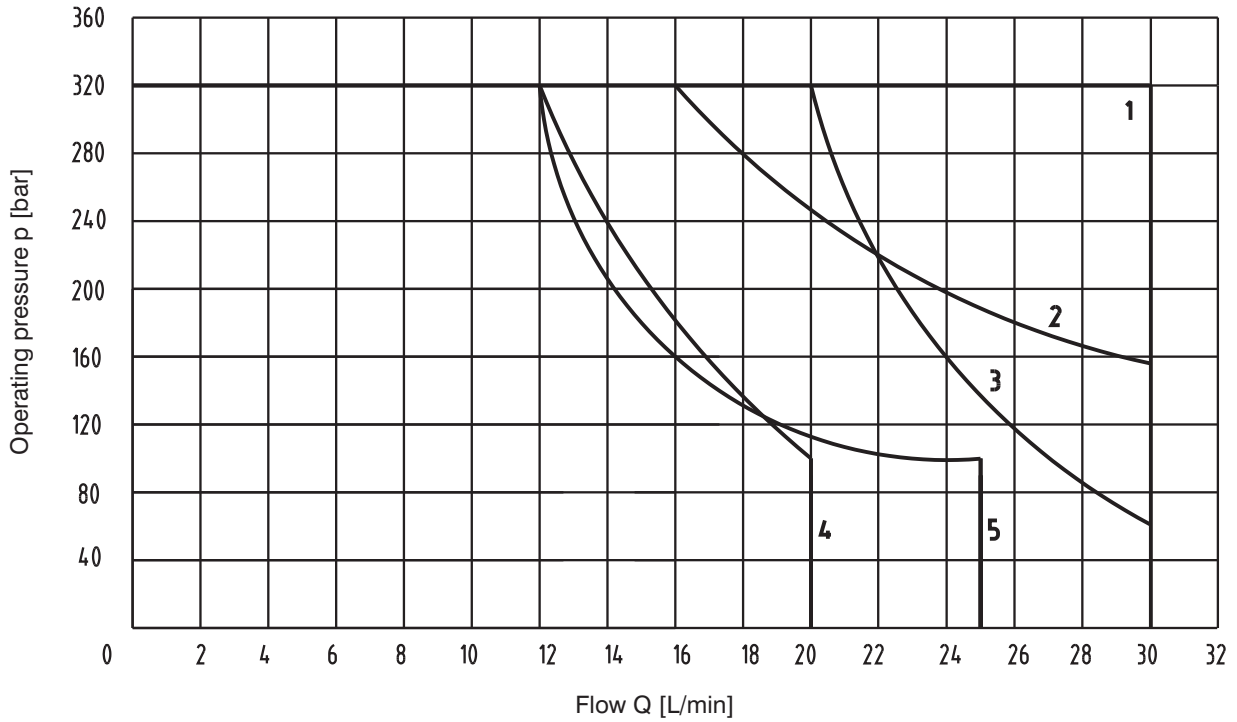
# Functional Symbols

Designation	Symbol	Interposition	Designation	Symbol	Interposition
<b>Z11</b>			<b>P51</b>		
<b>C11</b>			<b>Y51</b>		
<b>H11</b>			<b>C51</b>		
<b>P11</b>			<b>Z51</b>		
<b>Y11</b>			<b>Z11</b>		
<b>L21</b>			<b>X11</b>		
<b>B11</b>			<b>C11</b>		
<b>Y71</b>			<b>H11</b>		
<b>R11</b>			<b>J15</b>		
<b>R21</b>			<b>J75</b>		
<b>A51</b>					

# p-Q Characteristic

Measured at  $v = 32 \text{ mm}^2/\text{s}$

Operating limits for maximum hydraulic power transferred by the directional valve. For respective spool type - see functional symbols.

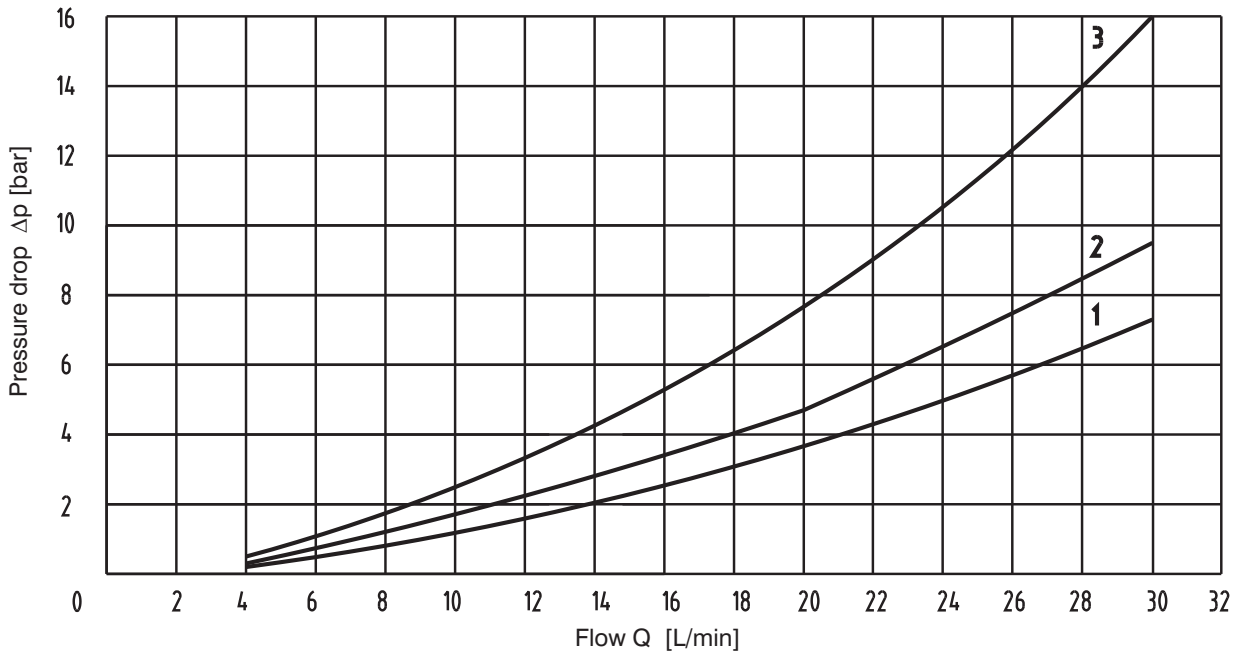


Z11	C11	H11	P11	Y11	L21	B11	Y71	R11	R21	A51	P51	Y51	C51	Z51	X11	J15	J75
1	2	1	1	1	4	1	5	1	3	4	1	1	2	1	1	1	4

# $\Delta p$ -Q Characteristic

Measured at  $v = 32 \text{ mm}^2/\text{s}$

Pressure drop  $\Delta p$  related to flow rate.



	Z11	C11	H11	P11	Y11	L21	B11	Y71	R11	R21	A51	P51	Y51	C51	Z51	X11	J15	J75
P-A	1	3	1	1	1	1	1	2	2	2	1			3		2	2	1
P-B	1	3	1	1	1	1	1		2	2	1	1	1		1	2	2	1
A-T	1	3	1	1	1	1	1	2	2	2		1	1		1	2	2	
B-T	1	3	1	1	1	1	1	1	2	2				3		2	2	
P-T		2	2											2				



## Type of the Solenoid Coil

Designation	Dimensional sketch	Description
<b>E1</b>		Solenoid coil with terminal for the electrical connector, EN 1745301-803
<b>E2</b>		Solenoid coil with integrated quenching diode (bipolar transil diode) and terminal for the electrical connector, EN 1745301-803
<b>E3</b>		Solenoid coil with terminal for AMP-Junior-Timer electrical connector.
<b>E4</b>		Solenoid coil with integrated quenching diode (bipolar transil diode) and terminal for AMP-Junior-Timer electrical connector.
<b>E5</b>		Solenoid coil with integrated rectifier and terminal for the electrical connector, EN 1745301-803

## Electrical Connector, EN 1745301-803

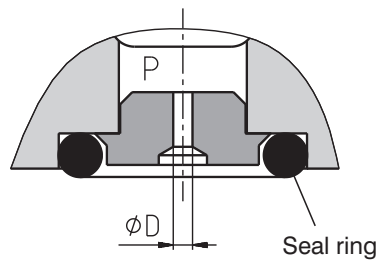
Designation	Type	Model	Max. input voltage	
<b>K1</b>	Connector B (black)	without rectifier - M16x1.5 ( bushing bore $\varnothing$ 6-8 mm)	230 V AC/DC	
	Connector A (grey)			
<b>K5</b>	Connector B (black)	without rectifier - M16x1.5 ( bushing bore $\varnothing$ 4-6 mm)	230 V AC/DC	
	Connector A (grey)			
<b>K2</b>	Connector B (black)	without rectifier with LED and quenching diode - M16x1.5 ( bushing bore $\varnothing$ 6-8 mm)	12...24 V DC	
	Connector A (grey)			
<b>K3</b>	Connector B (black)	with rectifier - M16x1.5 ( bushing bore $\varnothing$ 6-8 mm)	230 V AC	
	Connector A (grey)			
<b>K4</b>	Connector B (black)	with rectifier with LED and quenching diode - M16x1.5 ( bushing bore $\varnothing$ 6-8 mm)	230 V AC	
	Connector A (grey)			

## Manual Override

STANDARD	RUBBER BOOT
<p><b>no designation</b> Dimensions</p> <p>16,1</p> <p>a</p> <p>Description Standard model of the manual override. Standard retaining nut of the solenoid.</p>	<p>Designation <b>N2</b> Dimensions</p> <p>22,3</p> <p>a</p> <p>Description Manual override protected by rubber boot.</p>

### Orifice in P-Port

Type	∅D (mm)
<b>D1</b>	0.8
<b>D2</b>	1.0
<b>D3</b>	1.2
<b>D4</b>	1.5
<b>D5</b>	0.7



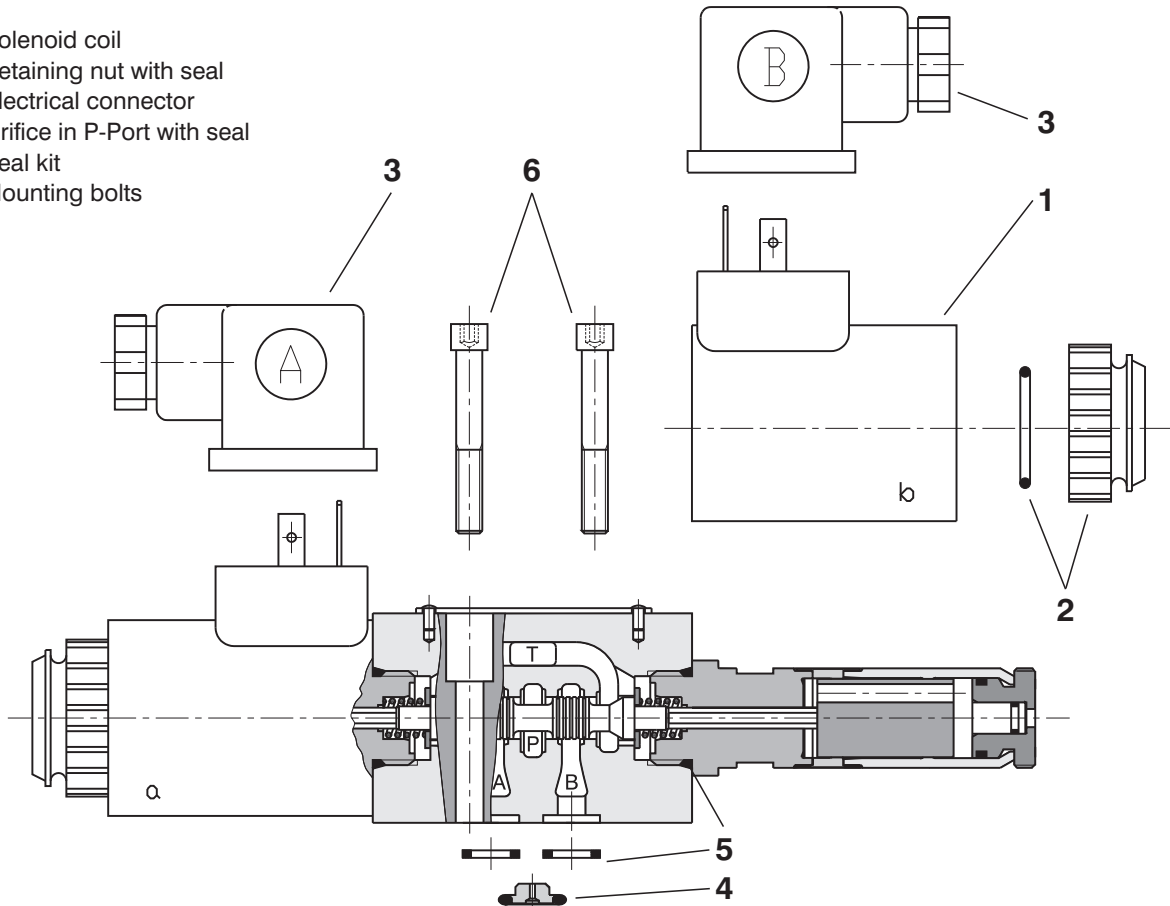
P-Port orifices limits the flow into the directional control valve.

**Attention:**

When the orifice in P port is additionally mounted the standard used square ring NBR is replaced with O-ring from Viton.

### Spare Parts

- 1 Solenoid coil
- 2 Retaining nut with seal
- 3 Electrical connector
- 4 Orifice in P-Port with seal
- 5 Seal kit
- 6 Mounting bolts



#### Solenoid coil

Type designation of the coil voltage	Type of the coil				
	E1	E2	E3	E4	E5
	Ordering number				
01200	936-0022	936-0690	936-0670	936-0680	
*01200	493-0001				
01400	936-0650	936-0691	936-0673	936-0681	
02100	936-0651	936-0692	936-0674	936-0682	
02400	936-0026	936-0693	936-0672	936-0683	
*02400	493-0002				
04200	936-0653	936-0695	936-0676	936-0685	
04800	936-0031	936-0696	936-0677	936-0686	
06000	936-0654	-	-	-	
10200	936-0655	-	-	-	
20500	936-0036	-	-	-	
02450					936-2125
11550					936-2175
*11550					493-0003
23050					936-2185
*23050					493-0004

\* CSA Upon request

<b>Solenoid retaining nut with seal</b>			
Type of the nut	Seal ring	Ordering number	
Standard nut	18 x 1.5	486-9010	
Nut with rubber boot		486-9013	
<b>Electrical connector, EN 175301-803</b>			
Type designation	Connector A grey	Connector B black	
	Ordering number		
K1	936-9902	936-9901	
K5	936-9906	936-9905	
K2	936-9908	936-9907	
K3	936-9904	936-9903	
K4	936-9910	936-9909	
<b>Orifice in P-Port</b>			
Type designation	∅D (mm)	Seal ring	Ordering number
D1	0.8	7.65 x 1.78	486-9005
D2	1.0		486-9006
D3	1.2		486-9007
D4	1.5		486-9008
D5	0.7		486-9014
<b>Seal kit</b>			
Type	Dimensions, number		Ordering number
	Square ring	O-ring	
Standard NBR70	7.65 x 1.68 (4 pcs.)	16 x 2 (2 pcs.)	486-9002
Viton	7.65 x 1.78 (4 pcs.)	16 x 2 (2 pcs.)	486-9009
<b>Mounting bolts</b>			
Dimensions, number		Tightening torque	Ordering number
M5 x 35 DIN 912-10.9 (4 pcs.)		5 Nm	486-9011
<b>Preferred Types of Valves</b>			
Type	Ordering Number	Type	Ordering Number
RPE3-042Z11/01200E1	486-0017	RPE3-042R11/02400E1	486-0091
RPE3-043Z11/01200E1	486-0001	RPE3-042R21/02400E1	486-0092
RPE3-043C11/01200E1	486-0002	RPE3-042A51/02400E1	486-0090
RPE3-043H11/01200E1	486-0003	RPE3-042Y51/02400E1	486-0088
RPE3-043Y11/01200E1	486-0005	RPE3-042J15/02400E1	486-0100
RPE3-042R11/01200E1	486-0015	RPE3-042Z11/23050E5	486-0230
RPE3-042R21/01200E1	486-0016	RPE3-043Z11/23050E5	486-0258
RPE3-042A51/01200E1	486-0014	RPE3-043C11/23050E5	486-0262
RPE3-042Y51/01200E1	486-0012	RPE3-043H11/23050E5	486-0257
RPE3-042J15/01200E1	486-0024	RPE3-043Y11/23050E5	486-0260
RPE3-042Z11/02400E1	486-0093	RPE3-042R11/23050E5	486-0259
RPE3-043Z11/02400E1	486-0077	RPE3-042R21/23050E5	486-0622
RPE3-043C11/02400E1	486-0078	RPE3-042A51/23050E5	486-0261
<b>Caution!</b>			
<ul style="list-style-type: none"> <li>For directional valves with two solenoids, one solenoid must be without power before the other solenoid can be powered. Switching time for directional valves with detent assembly (impulse control) should not be shorter than 60 ms.</li> <li>Other functional symbols on request.</li> <li>The packing foil is recyclable.</li> <li>The protecting plate can be returned to the manufacturer.</li> <li>Mounting bolts M5 x 35 DIN 912-10.9 or studs must be ordered separately.</li> <li>Tightening torque of the bolts is 5 Nm.</li> <li>The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.</li> </ul>			
ARGO-HYTOS s.r.o. CZ - 543 15 Vrchlaví Tel.: +420-499-403111, Fax: +420-499-403421 E-mail: sales.cz@argo-hytos.com www.argo-hytos.com			