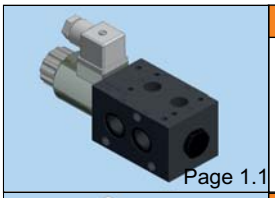
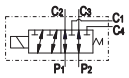
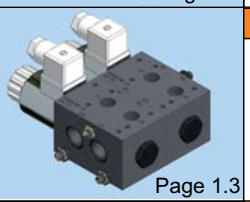
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Tel.:+359 431 62 228
+359 431 68 440
e-mail: info@hpt-bg.com
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DIRECTIONAL CONTROL VALVES

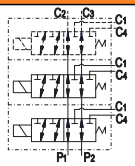

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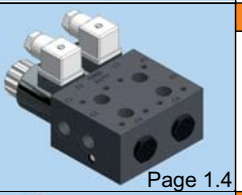
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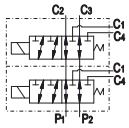

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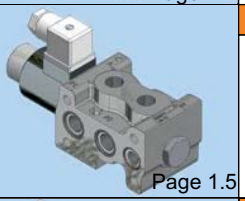
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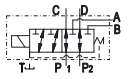

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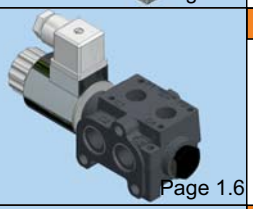
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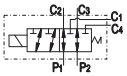

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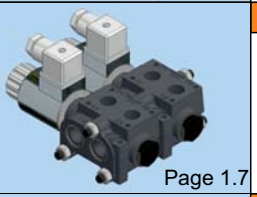
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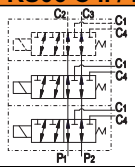

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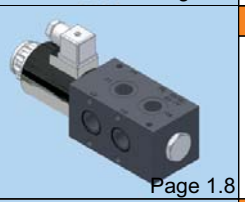
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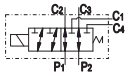

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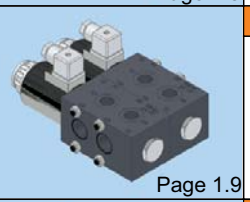
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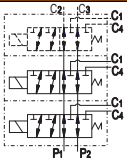

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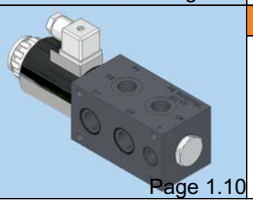
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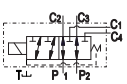

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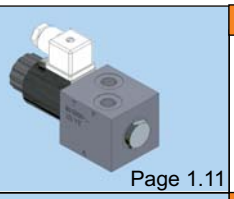
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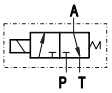

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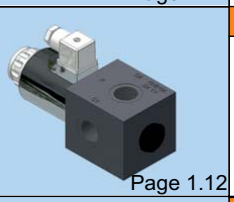
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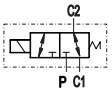

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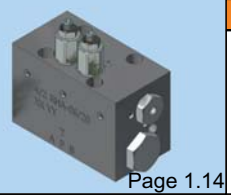
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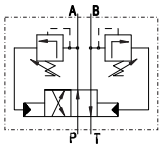

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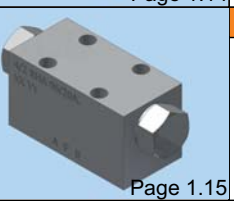
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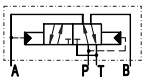

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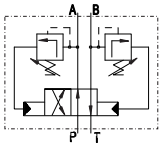

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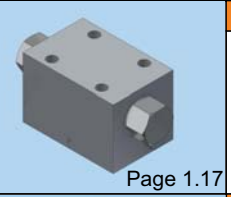
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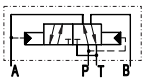

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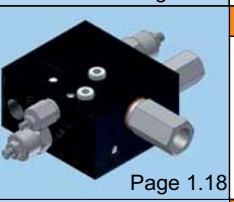
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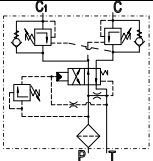

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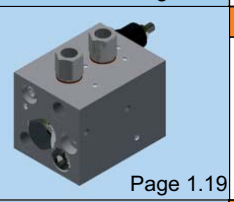
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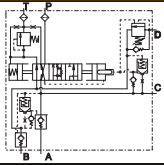

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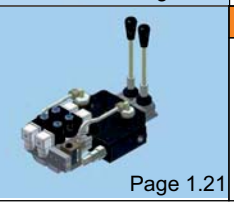
RHAW4-10




Page 1.19

RHAW5-10



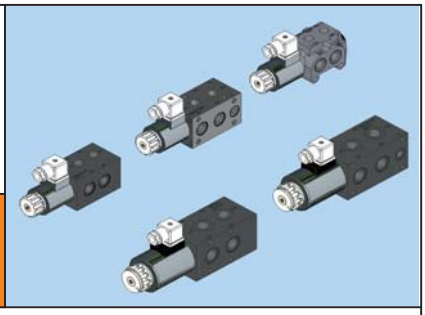

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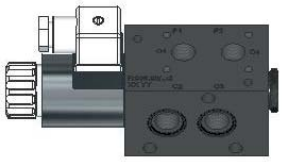
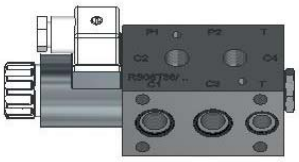
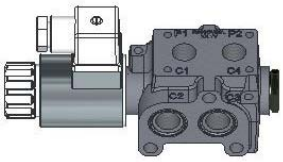
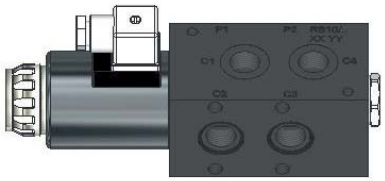
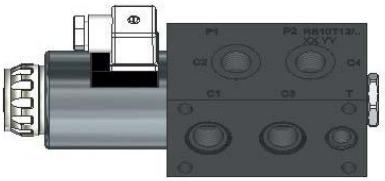
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SOLENOID OPERATED DIRECTIONAL CONTROL VALVES

RS..

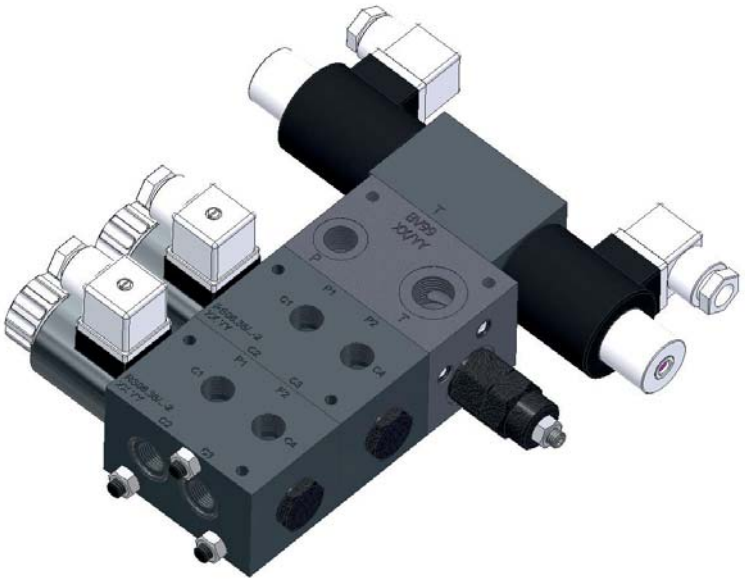


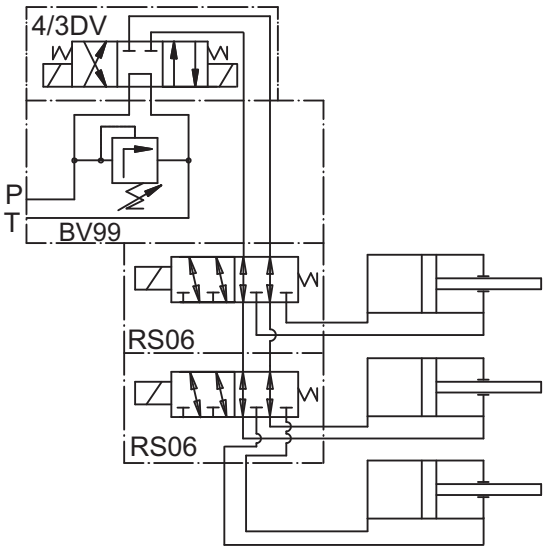






The solenoid directional control valves of the RS type are used to control the motion of one or more consumers. Usually one 4/3 directional control valve is used in the system, by which the necessary direction of the motion is determined. A similar connection diagram is shown below.

The 4/3 directional control valve is mounted on separate hydraulic block (BV99 of our production list), to which the necessary number of the directional control valve of the RS can be joined. The flow from BV99 is supplied to a directional control valve of the RS type, which specifies which one of the consumers will function. In case of more than two consumers, one additional RS directional control valve is added for every additional consumer.The stacking of the directional control valves (up to 10 units) is realized by pins and nuts, and the sealing between them is fulfilled by frontal O-rings. This pattern provides an economy of one solenoid per each consumer and an improved compactness.

Three types of solenoids are manufactured, which differ by the nominal flow – RS04 (10 L/min), RS06 (50 L/min) and RS10 (100 L/min),as the maximum pressure for all of them is 250 bar. Beside the options of RS06 and RS10, RS06..T and RS10..T are also offered for maximum pressure of 350 bar. They have one additional port "T", which leads the leakages out of the chamber of the directional control valve and has to be connected to the tank. The maximum allowed pressure at port "T" is 200 bar.

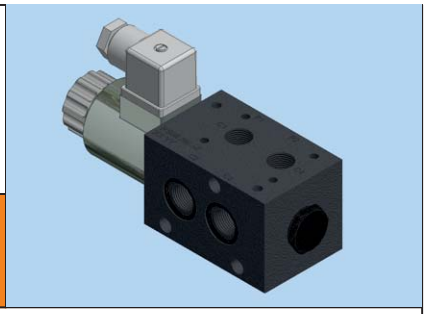


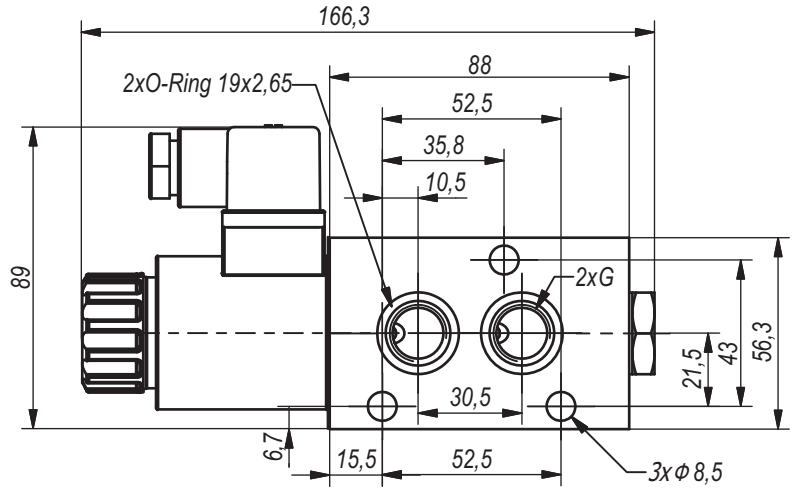


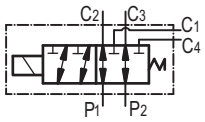
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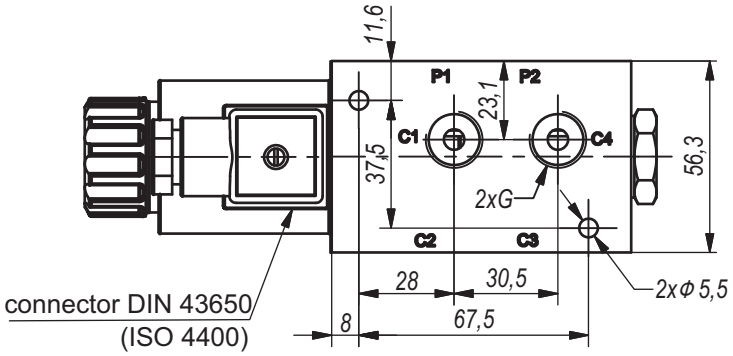
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

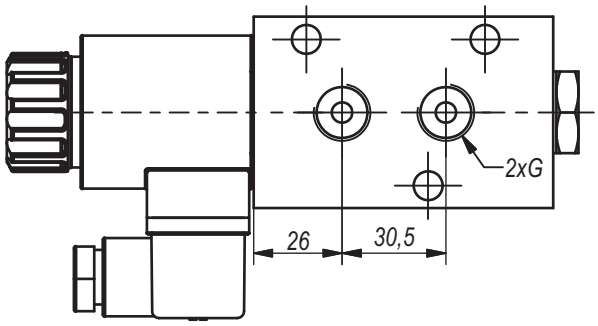
RS06 . .. / ..-2



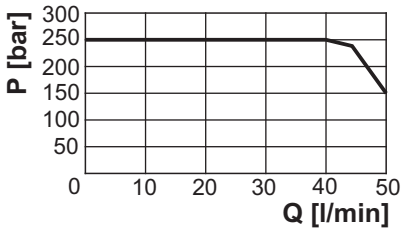








Operating limit



Internal leakage - 20 cm^3/min
mineral oil with 46 cSt viscosity
and at 100 bar pressure

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	*bar*	250
Maximal flow rate	*L/min*	50
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	*μm*	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%

Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for the solenoid - 25 N.m.

ORDERING CODE

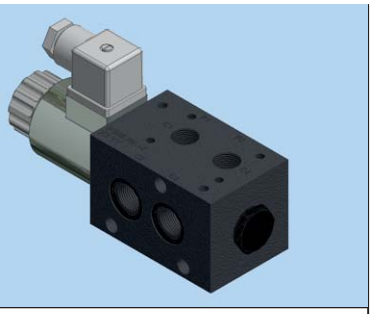
RS06 38 / 12-2

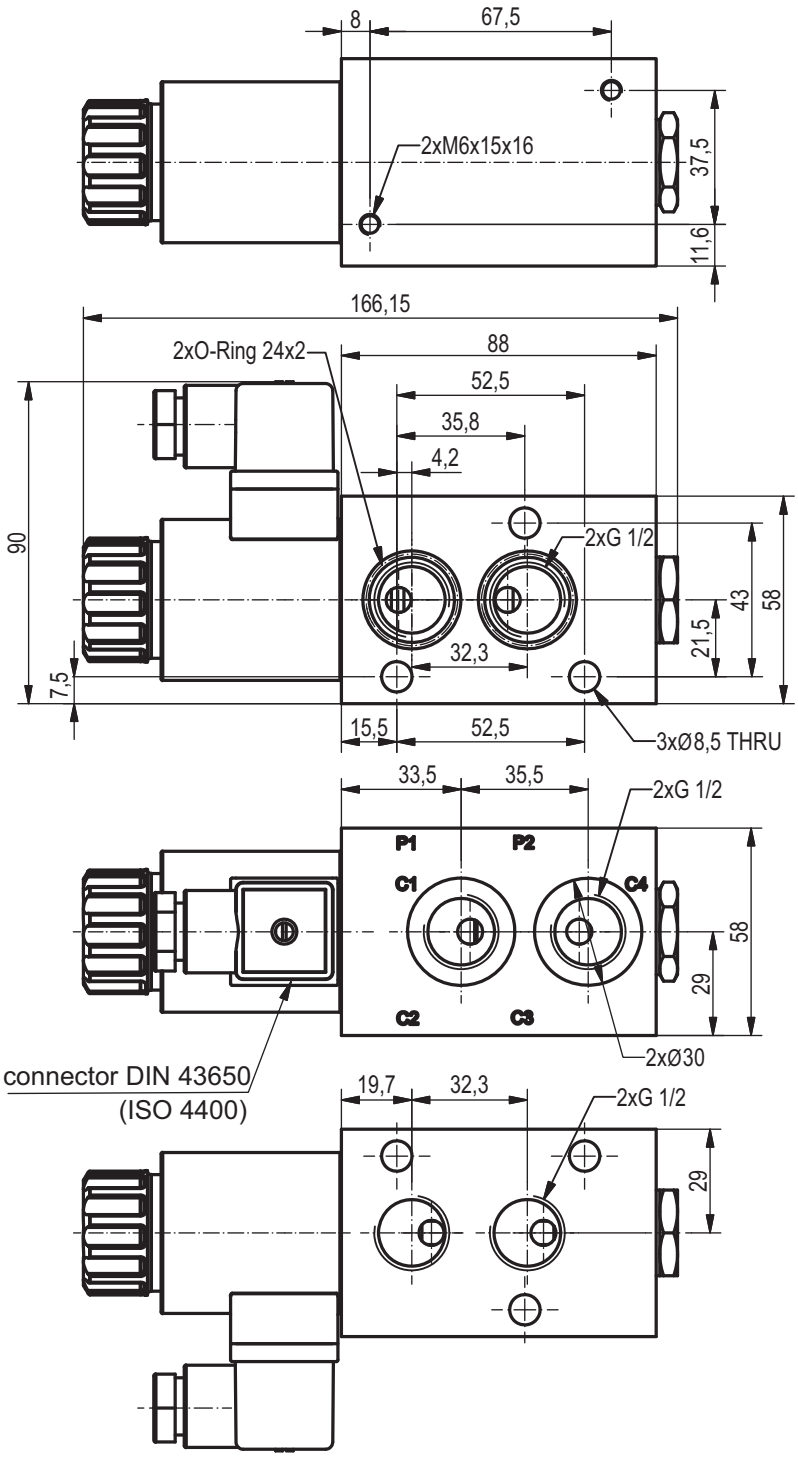
- RS06 — Type
- 38 — Port threads "G" - code: **G3/8" - 38**
- 12-2 — Series
- Operating voltage - code:
  12V / 00Hz - 12
  24V / 00Hz - 24
  110V/50Hz - 110
  220V/50Hz - 220

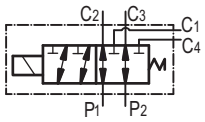
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SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

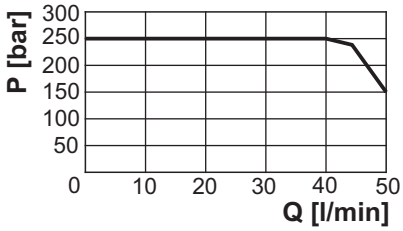
RS06 . .. / ..-2







Operating limit



Internal leakage - 20 cm^3/min
mineral oil with 46 cSt viscosity
and at 100 bar pressure

Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for the solenoid - 25 N.m.

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	bar	250
Maximal flow rate	L/min	50
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%

ORDERING CODE

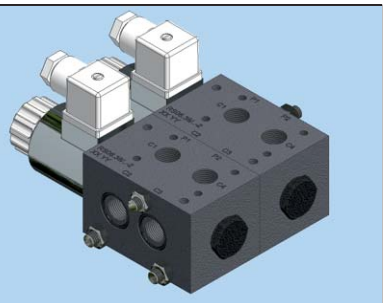
RS06 12 / 12-2

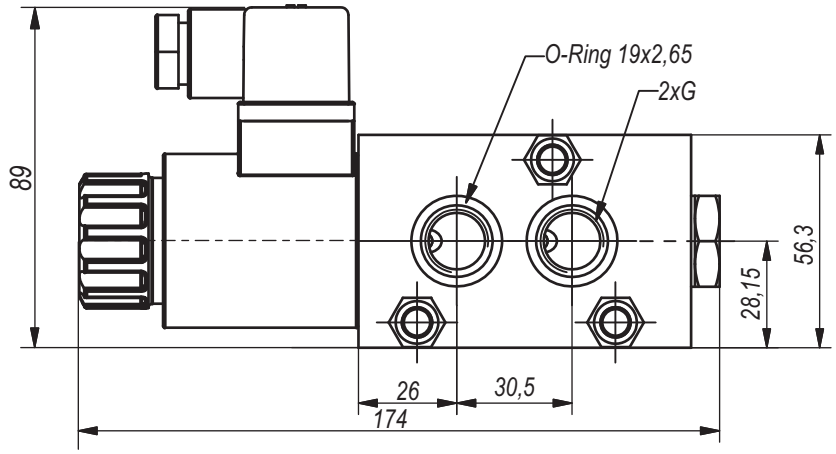
- RS06 — Type
- 12 — Port threads "G" - code: **G1/2" - 12**
- 12-2 — Series
- Operating voltage - code: **12V / 00Hz - 12**, **24V / 00Hz - 24**, **110V/50Hz - 110**, **220V/50Hz - 220**

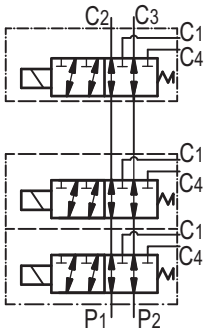
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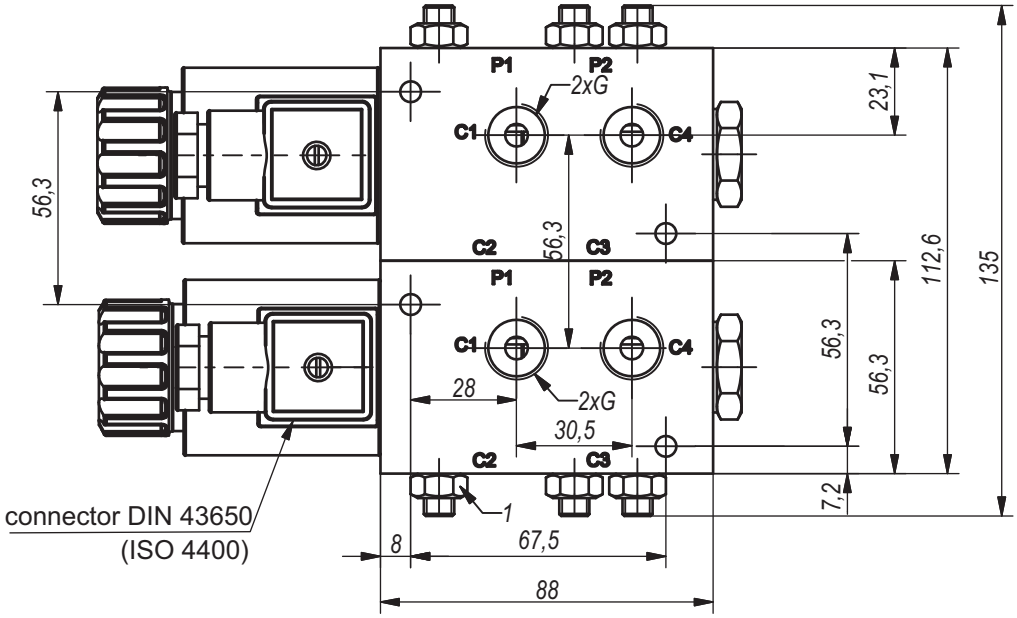
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

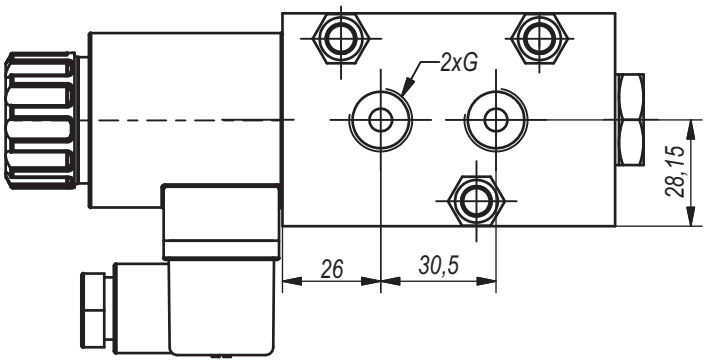
. RS06 . .. / ..-2











Note:
1.It is possible to make stacks with up to 8 directional control valves. A stack with 2 valves is shown.
2. For technical data see page 1.2.
3. Tightening torque for the solenoid - 25 N.m.
4. Tightening torque for the nuts (position 1) - 20...23 N.m.

ORDERING CODE

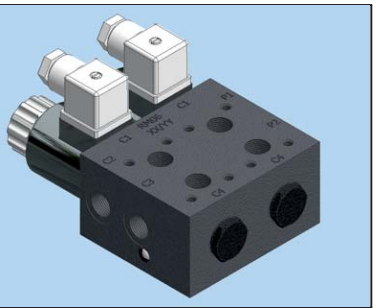
2 RS06 38 / 12 - 2

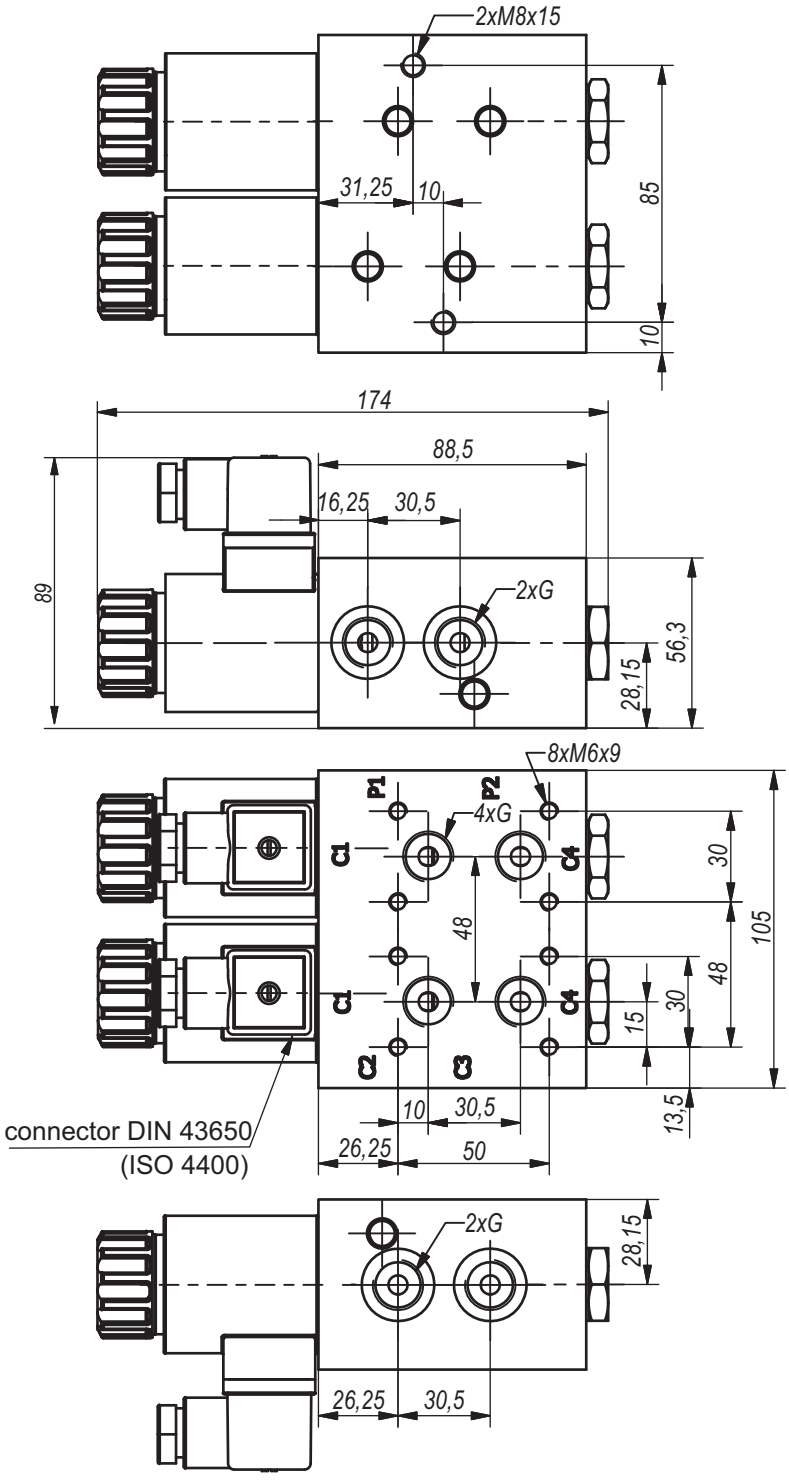
- **2** — Number of sections: **2...8**
- **RS06** — Type
- **38** — Port threads "G" - code: **G3/8" - 38**
- **12** — Operating voltage - code: **12V / 00Hz - 12**, **24V / 00Hz - 24**, **110V/50Hz - 110**, **220V/50Hz - 220**
- **2** — Series

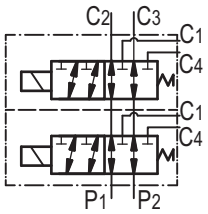
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SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

RM 06 .. / ..-2







Note:
1. The RM directional control valves are of the RS type, as two directional control valves are mounted in one block (monoblock directional control valve).
2. For technical data see p. 1.2.
3. Tightening torque for the solenoids to the directional control valves -25 N.m.

ORDERING CODE

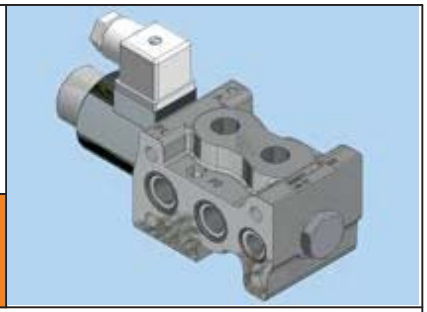
RM 06 .. / .. - 2

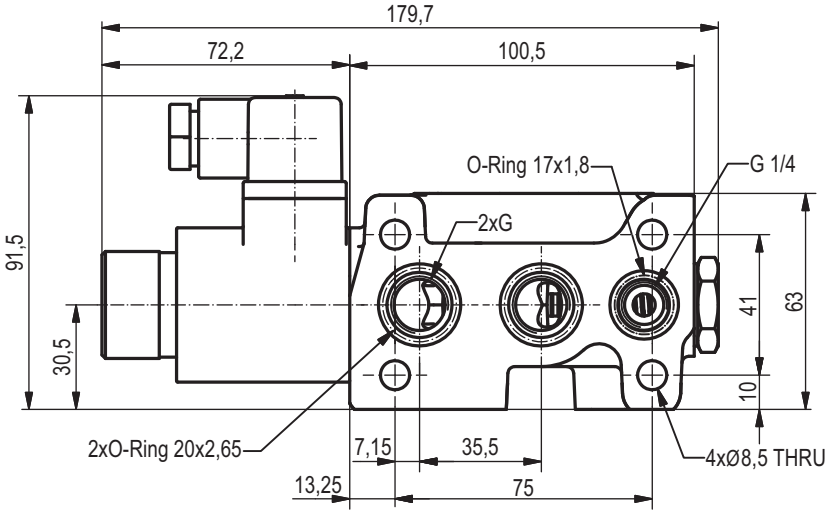
- RM 06 — Type
- .. — Port threads "G" - code: **G3/8" - omit**
- / .. — Operating voltage - code: **12V / 00Hz - 12**, **24V / 00Hz - 24**
- - 2 — Series

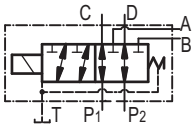
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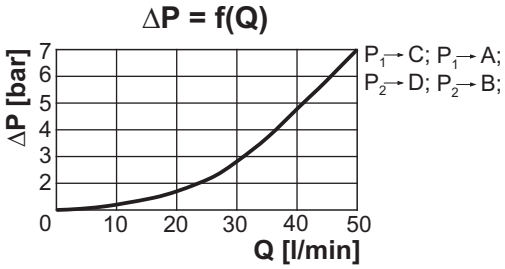
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

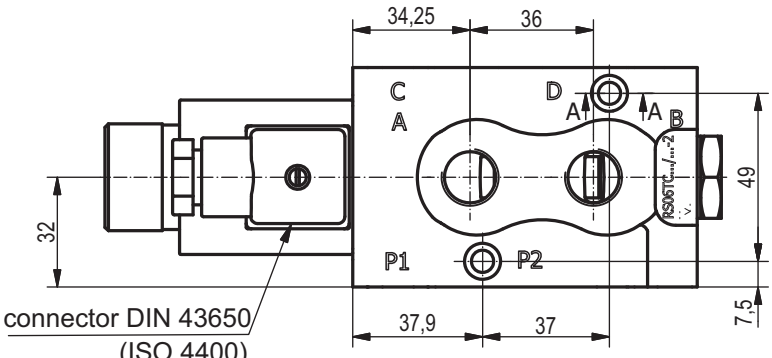
. RS06 TC 38/ ..-2

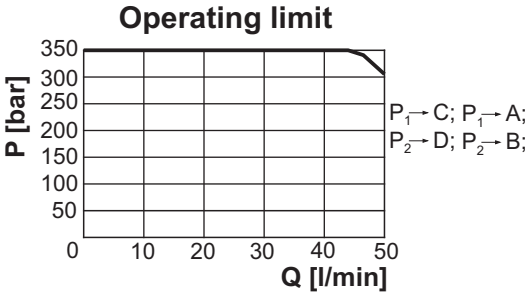




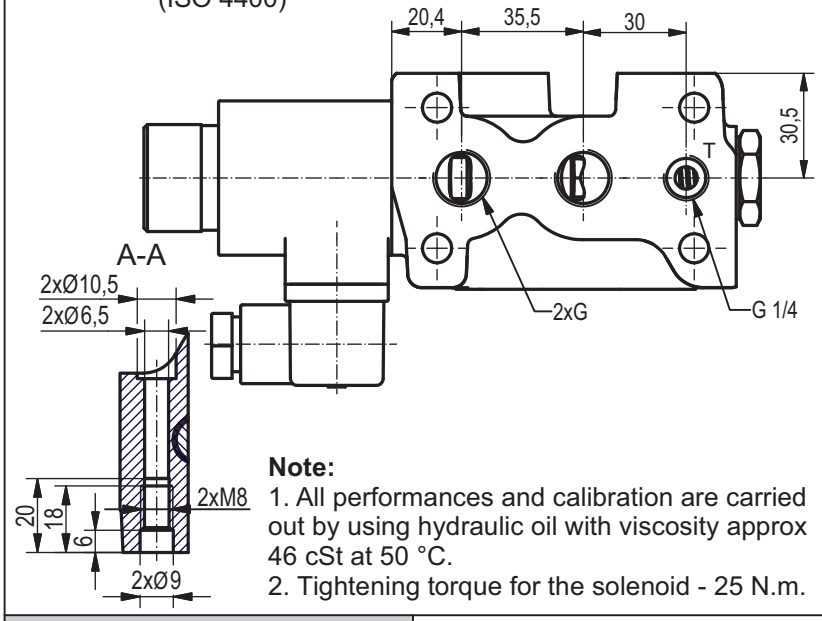








Internal leakage - 20 cm³/min mineral oil with 46 cSt viscosity and at 100 bar pressure



Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for the solenoid - 25 N.m.

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	*bar*	350
Maximal pressure port "T"	*bar*	200
Maximal flow rate	*L/min*	50
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	*μm*	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%

ORDERING CODE

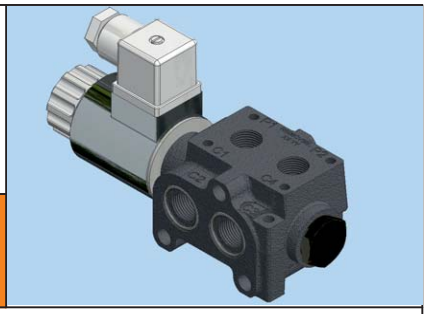
2 RS06TC 38 / 12 - 2 — Series

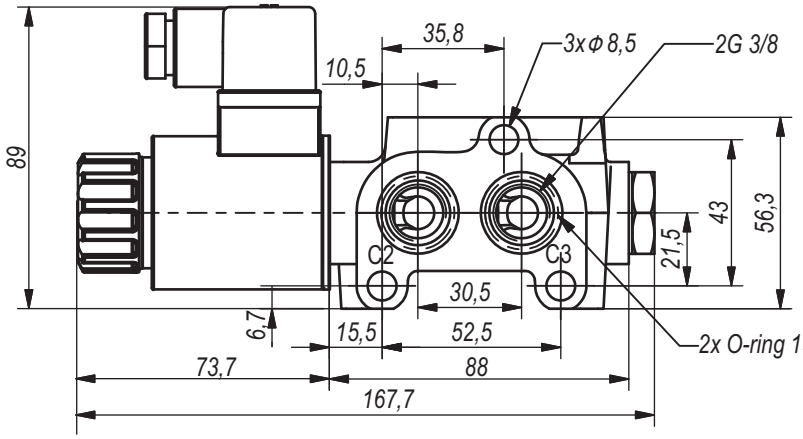
Number of sections	Type	Port threads"G" - code	Operating voltage - code
Number of sections: **2...8** One section: **Omit**		**G3/8" - 38**	**12V / 00Hz - 12** **24V / 00Hz - 24**

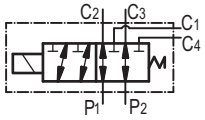
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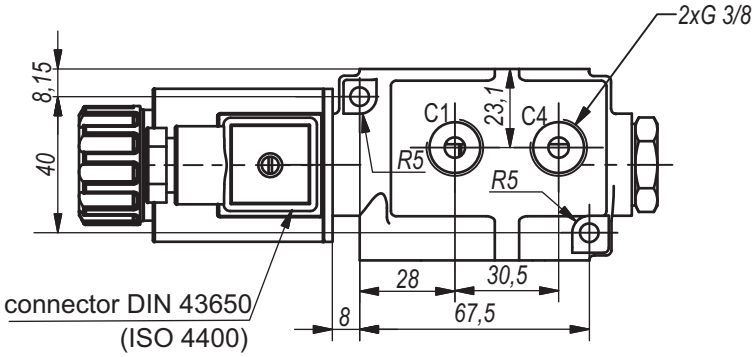
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

. RS06C . .. / ..-2

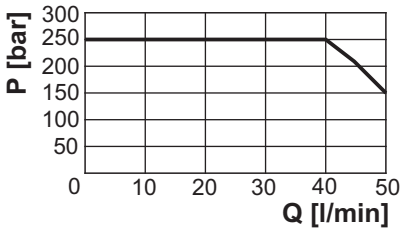




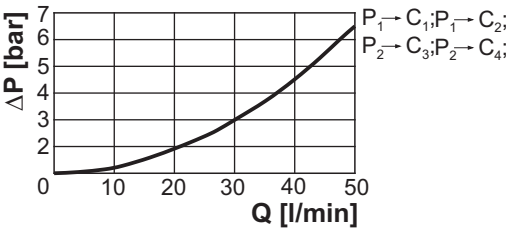


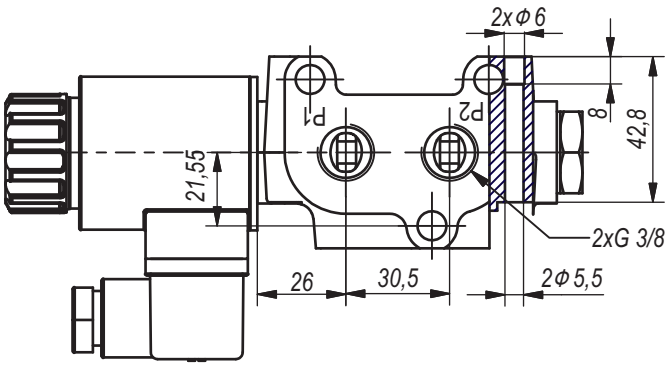


Operating limit



ΔP = f(Q)





Internal leakage - 20 cm^3/min
mineral oil with 46 cSt viscosity
and at 100 bar pressure

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	*bar*	250
Maximal flow rate	*L/min*	50
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	*μm*	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%

Note:

1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for solenoid - 25 N.m.

ORDERING CODE

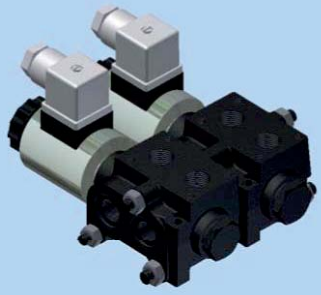
RS06C 38 / 12 - 2

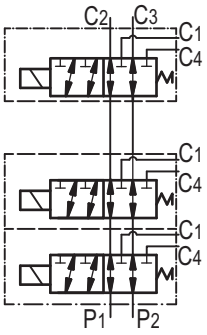
- RS06C — Type
- 38 — Port threads "G" - code: **G3/8" - 38**
- 12 — Operating voltage - code: **12V / 00Hz - 12**, **24V / 00Hz - 24**, **110V/50Hz - 110**, **220V/50Hz - 220**
- 2 — Series

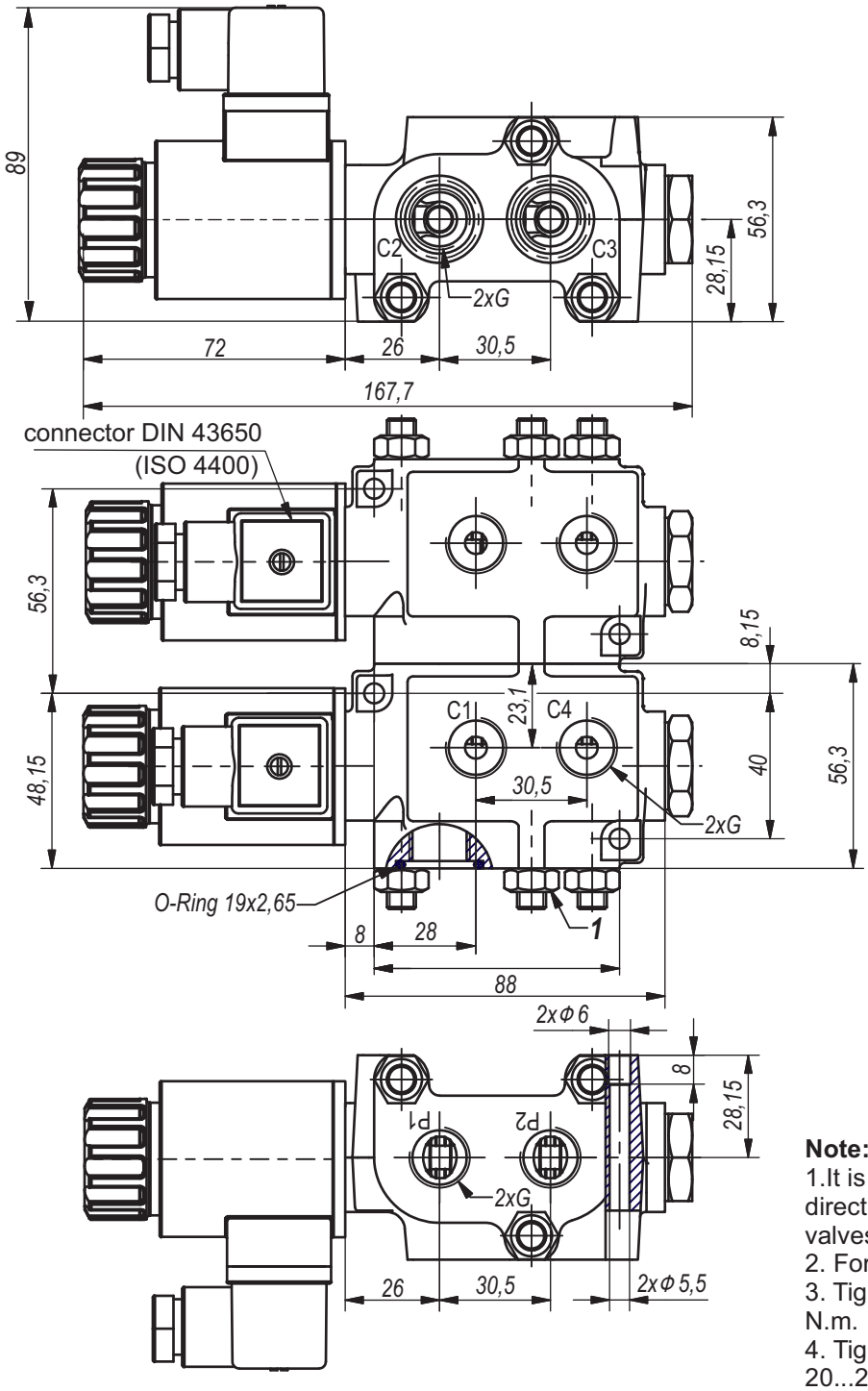
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SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

. RS06 C . .. / ..-2







Note:
1.It is possible to make stacks with up to 8 directional control valves. A stack with 2 valves is shown.
2. For technical data see page 1.3.
3. Tightening torque for the solenoid - 25 N.m.
4. Tightening torque for the nuts (position 1) - 20...23 N.m.

ORDERING CODE

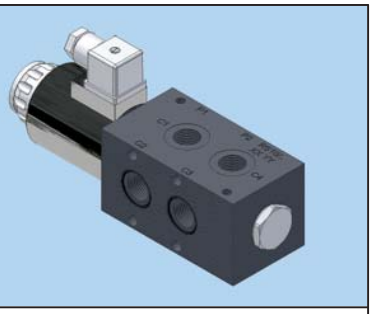
2 RS06C 38 / 12 - 2 — Series

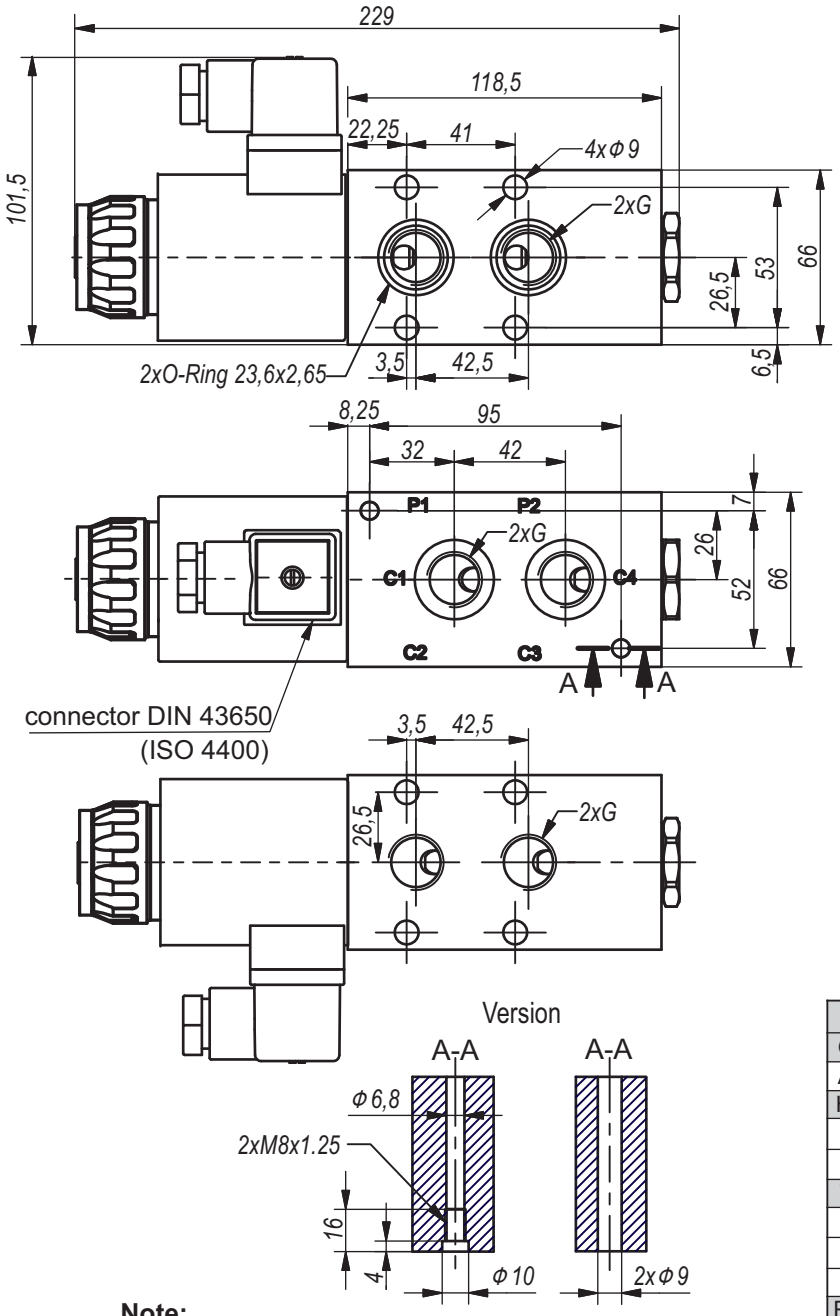
Number of sections: **2...8**	Type	Port threads "G" - code: **G3/8" - 38**	Operating voltage - code: **12V / 00Hz - 12**, **24V / 00Hz - 24**, **110V/50Hz - 110**, **220V/50Hz - 220**

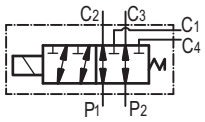
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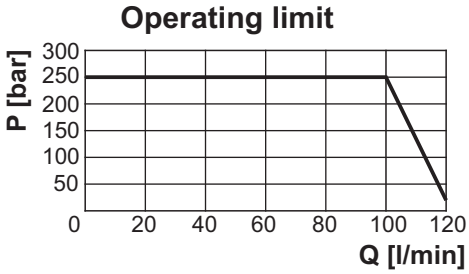
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

. RS10 .. / .. .-2









Internal leakage - 30 cm^3/min
mineral oil with 46 cSt viscosity
and at 100 bar pressure

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	bar	250
Maximal flow rate	L/min	100
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%
	V AC	110/50Hz
		220/50Hz

Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for the solenoid - 30 N.m.

ORDERING CODE

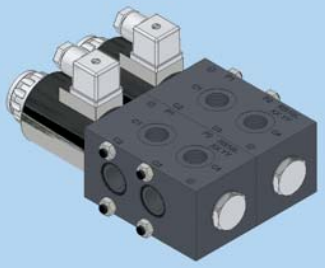
RS10 .. / 12 . - 2 Series

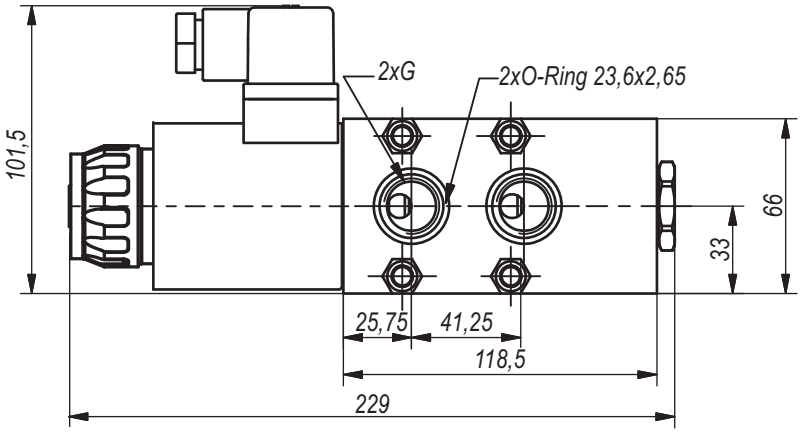
Type	Port threads "G" - code	Operating voltage - code:	Version - code:
	G1/2" - omit	**12V / 00Hz - 12** **24V / 00Hz - 24** **110V/50Hz - 110** **220V/50Hz - 220**	**2xM8 - omit** **2xΦ9 - B**

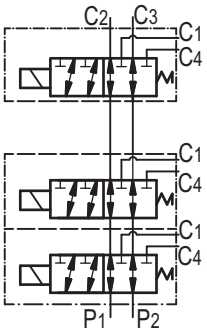
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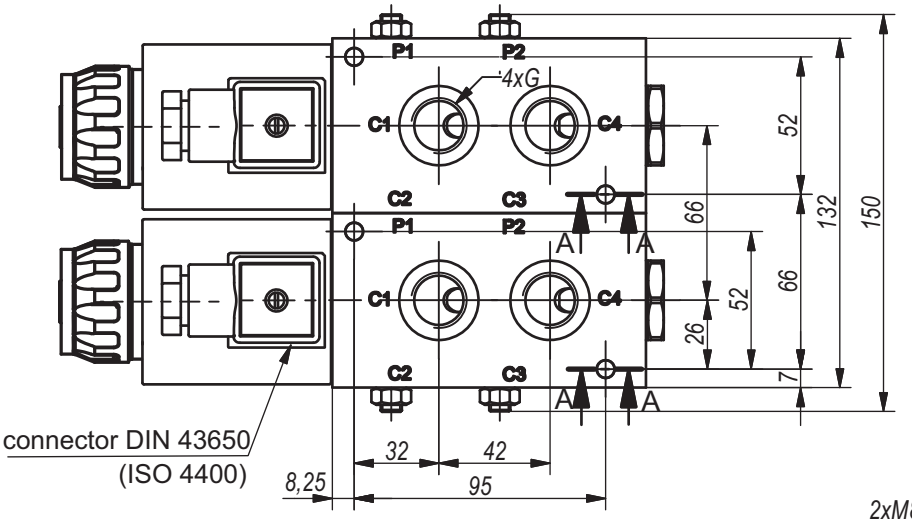
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

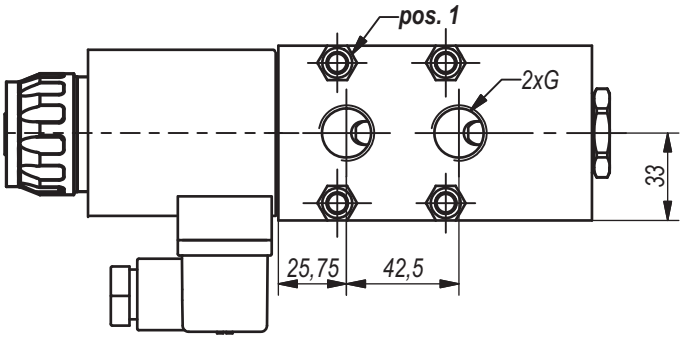
. RS10 .. / .. .-2



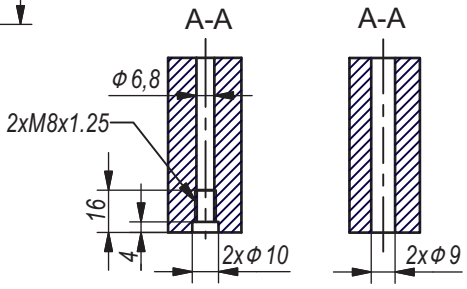








Version



Note:
1.It is possible to make stacks with up tu 4 directional control valves. A stack with 2 valves is shown.
2. For technical data see page 1.7.
3. Tightening torque for the solenoid - 30 N.m.
4. Tightening torque for the nuts (position 1) - 20...23 N.m.

ORDERING CODE

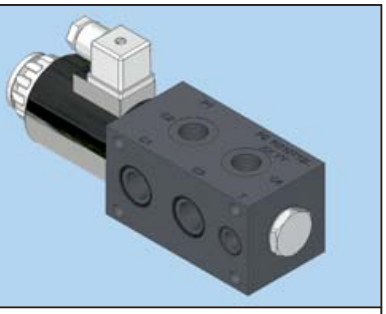
2 RS10 .. / 12 B - 2 Series

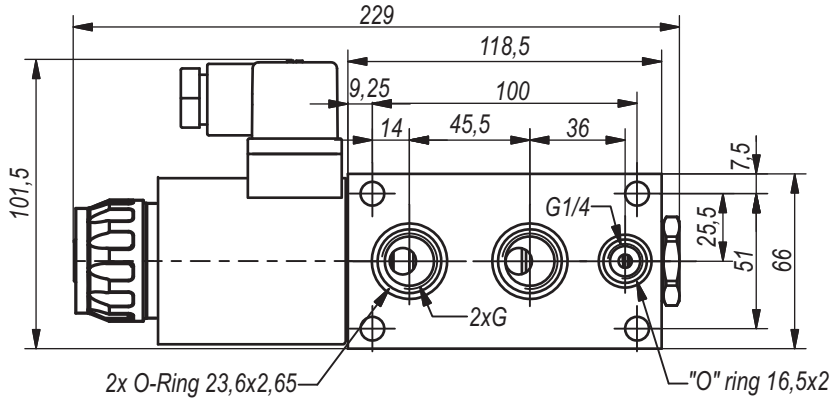
Number of sections: **2...4**	Type	Port threads "G" - code **G1/2" - omit**	Operating voltage - code: **12V / 00Hz - 12** **24V / 00Hz - 24** **110V/50Hz - 110** **220V/50Hz - 220**	Version - code: **2xM8 - omit** **2xΦ9 - B**

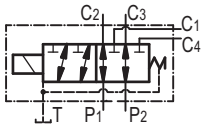
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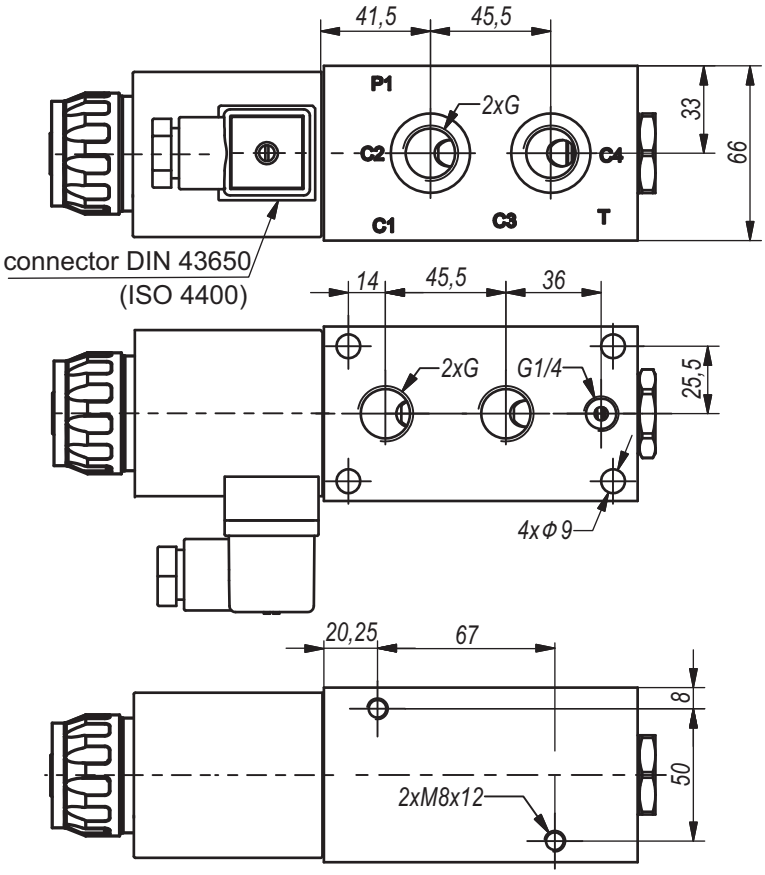
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

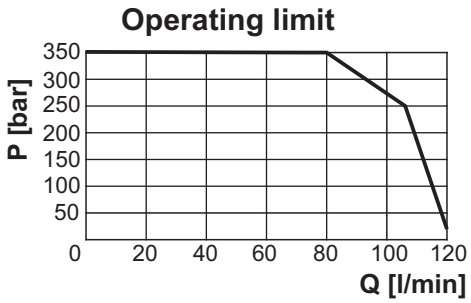
. RS10T .. / ..-2











Internal leakage - 30 cm^3/min
mineral oil with 46 cSt viscosity
and at 100 bar pressure

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	bar	350
Maximal pressure port "T"	bar	200
Maximal flow rate	L/min	100
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%
	V AC	110/50Hz
		220/50Hz

Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for the solenoid - 30 N.m.

ORDERING CODE

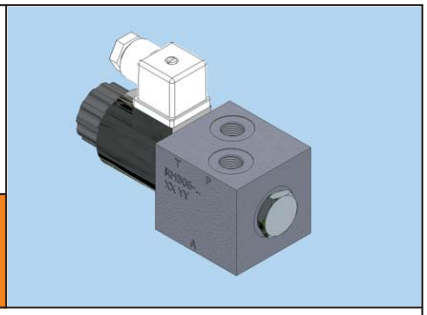
. **RS10T** **12** / **12** - **2** Series

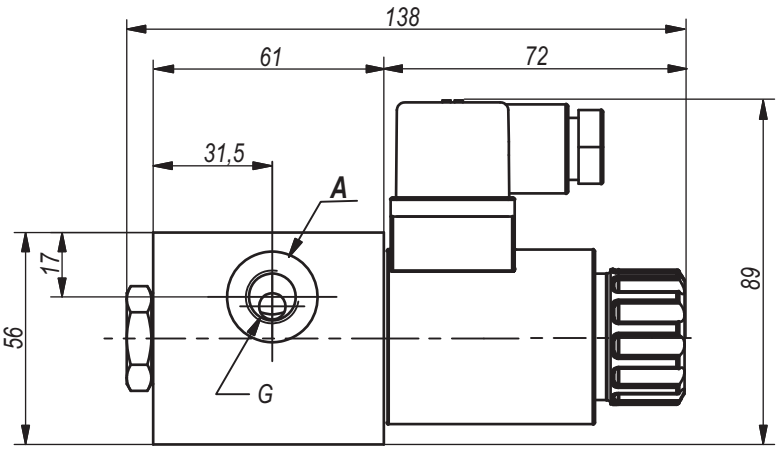
Number of sections: **2...4** One section: **Omit**	Type	Port threads "G" - code **G1/2" - 12**	Operating voltage - code: **12V / 00Hz - 12** **24V / 00Hz - 24** **110V/50Hz - 110** **220V/50Hz - 220**

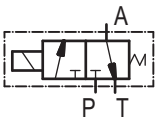
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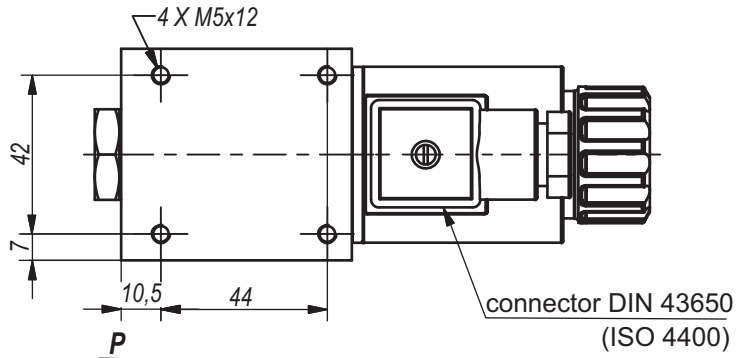
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

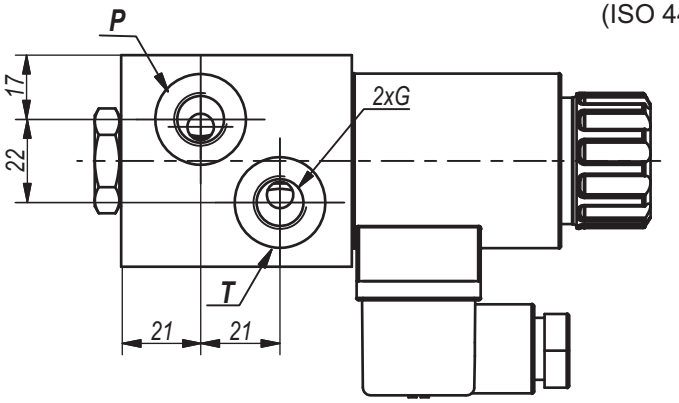
RHB06- .. / ... .-2



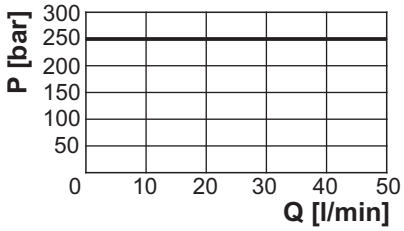








Operating limit



Internal leakage - 8 cm^3/min mineral oil with 46 cSt viscosity and at 100 bar pressure

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	bar	250
Maximal flow rate	L/min	50
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%
	V AC	110/50Hz
		220/50Hz

Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for the solenoid - 25 N.m.

ORDERING CODE

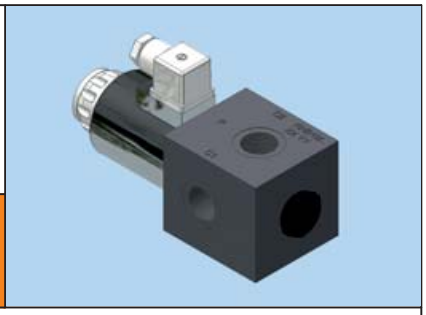
RHB06 - .. / 12 P - 2 Series

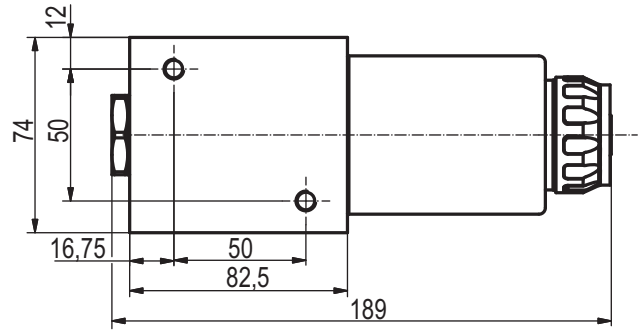
Type	Port threads "G" - code: **M14x1,5 - omit** **G3/8" - 38**	Operating voltage - code: **12V / 00Hz - 12** **24V / 00Hz - 24** **110V/50Hz - 110** **220V/50Hz - 220**	Version - code

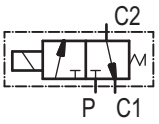
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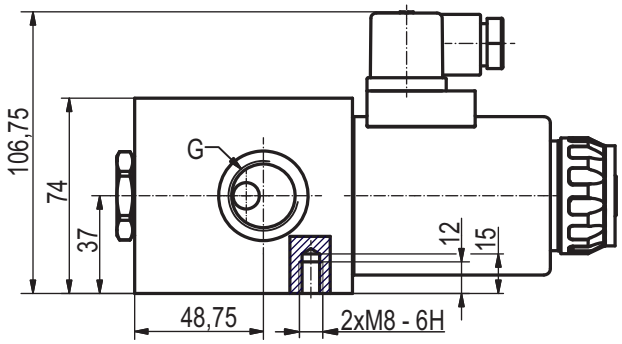
SOLENOID OPERATED DIRECTIONAL CONTROL VALVE

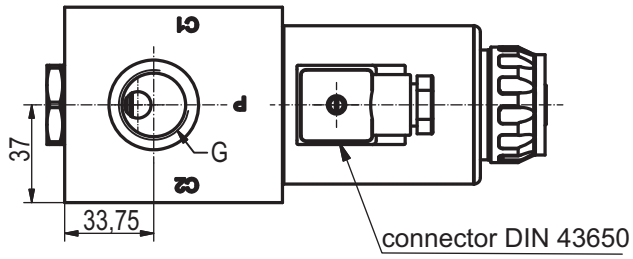
RHB10- .. / ...-2

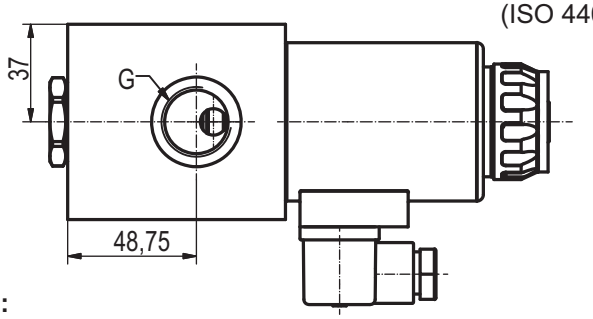




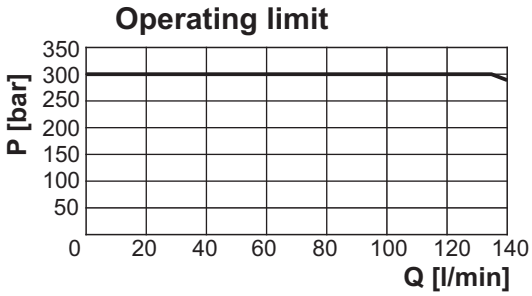








Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Tightening torque for the solenoid - 25 N.m.



Internal leakage - 10 cm^3/min
mineral oil with 46 cSt viscosity
and at 100 bar pressure

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	*bar*	250
Maximal flow rate	*L/min*	140
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	*µm*	25 or better
- temperature	°C	-20...+80
Power supply		
Voltage	V DC	12±5%
		24±5%
	V AC	110/50Hz
		220/50Hz

ORDERING CODE

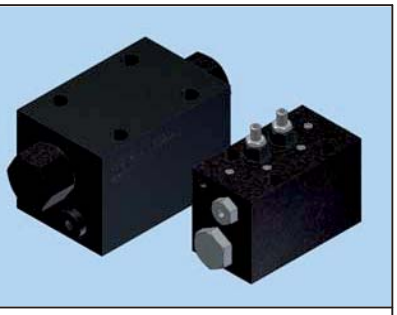
RHB10 - .. / 12 - 2 — Series

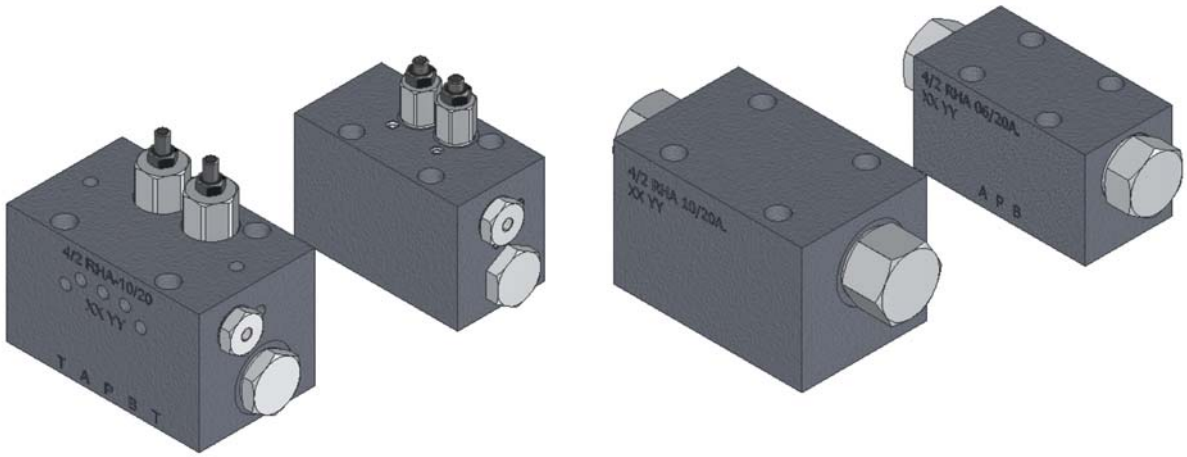
- Type
- Port threads "G" - code: **G3/4" - omit**
- Operating voltage - code:
  12V / 00Hz - 12
  24V / 00Hz - 24
  110V/50Hz - 110
  220V/50Hz - 220

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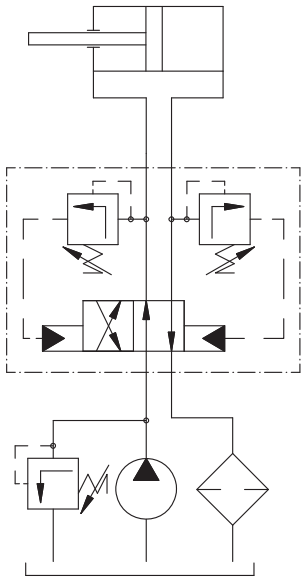
HYDRAULIC DIRECTIONAL CONTROL VALVES WITH AUTOMATIC SWITCHING

4/2 RHA...





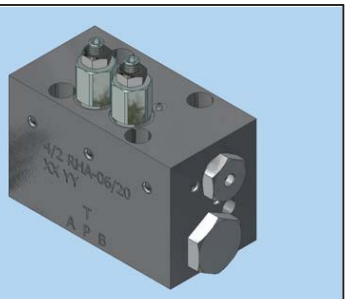
This type directional control valves are designed to control the motion of cylinders, assigning them a continuous oscillating movement. The motion switchtakes place when the cylinder reaches the end of its stroke, without any sensor needed to report that. According to the mode of indication of this end position, two kinds of directional control valves are produced.
In the first type - 4/2RHA..-the switch is as a result of the pressure. At the end of the stroke the pressure peaks up to the value at which the safety valve of the system is adjusted. This results in the switch of the directional control valve and a reverse in the motion of the cylinder. The value of the pressure needed to switch to each direction can be adjusted by a separate valve. The adjustment must not exceed 90% of the adjustment of the safety valve of the system. The switch can also be performed at a random position of the cylinder, as far as the value of the pressure reaches the value of the adjustment needed to make the switch to the corresponding direction. The directional control valves of this type are mostly used in automated press machines, where a motion switch has to be done when reaching a predetermined stress force. They are not suitable for the reverse of the movement of massive parts, where in the course of their acceleration the pressure reaches the value at which the safety valve of the system is adjusted.
In the other type - 4/2RHA..A– after the cylinder comes to the end of its stroke, the flow stops to zero value, thus causing the directional control valve to switch. The motion switch here does not depend on the pressure. To the purpose of providing more reliable work of the directional control valve, its connection to the cylinder needs to be realized by hoses with minimum length of 1000 mm. In case of systems working at great cyclic pressure, the usage of cylinder with regulated buffer at the end of the stroke is recommended.

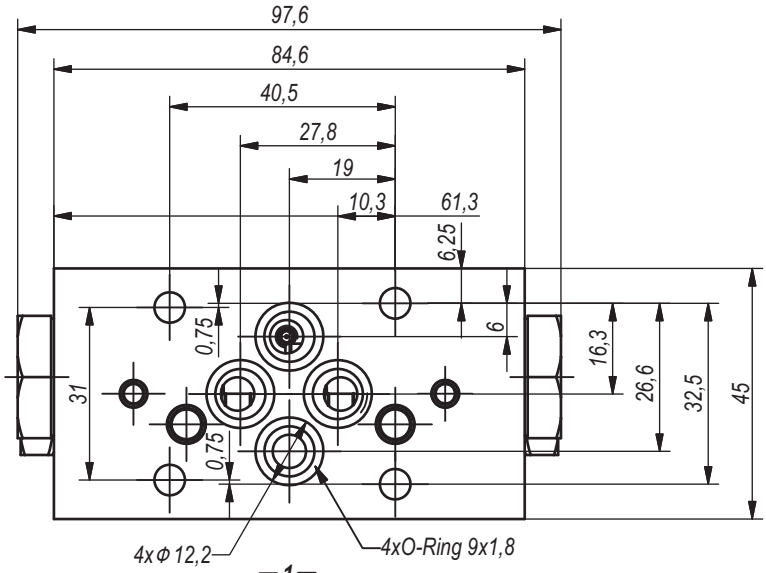


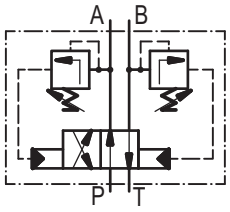
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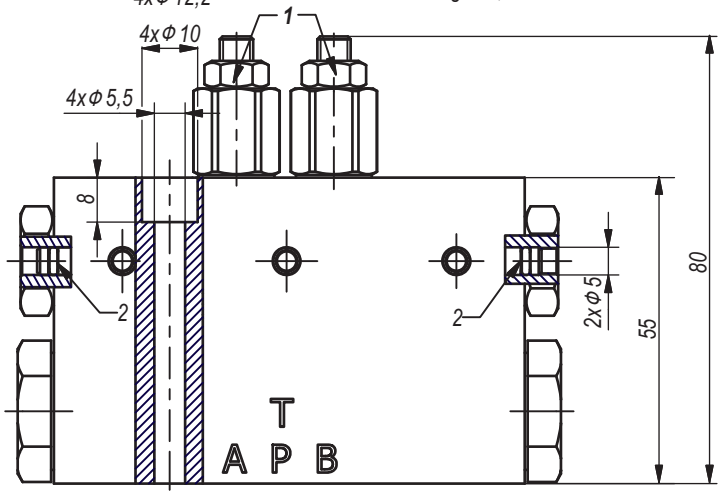
HYDRAULIC DIRECTIONAL CONTROL VALVES WITH AUTOMATIC SWITCHING

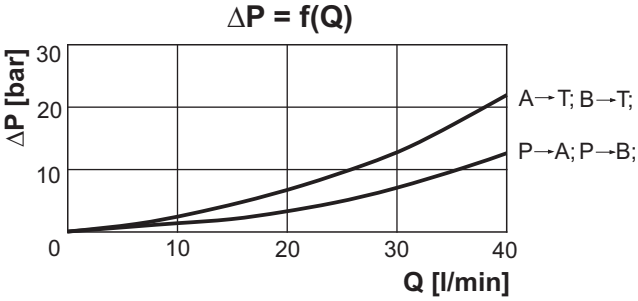
4/2 RHA06/20











Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Initial switching of the directional control valve
- by push pins (position 2).
3. Mounting plate:
- acc. to ISO 4401-AB-03-4A (CETOP3)
4. Tightening torque of the connecting screws on the mounting plate - 8,5 N.m.

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Working pressure P_w	bar	50...200
Pressure adjustment of relief valves (position 1)	bar	P_w+10%P_w
Flow rate	L/min	3...40
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80

ORDERING CODE

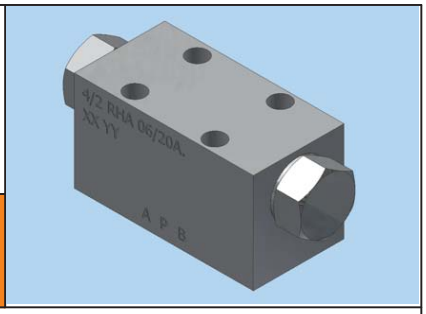
4/2 RHA06 / 20

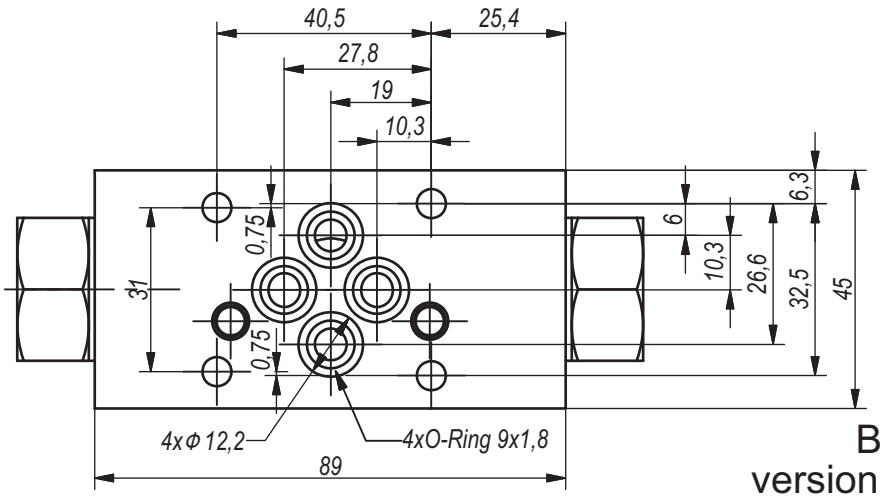
- 4/2 RHA06 — Type
- 20 — Working pressure - code: **50...200 bar - 20**

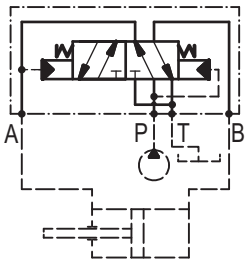
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HYDRAULIC DIRECTIONAL CONTROL VALVES WITH AUTOMATIC SWITCHING

4/2 RHA06/20A

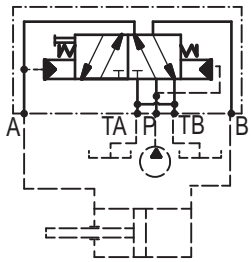






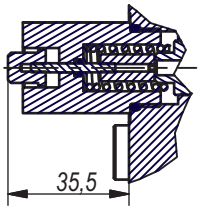
scheme 1

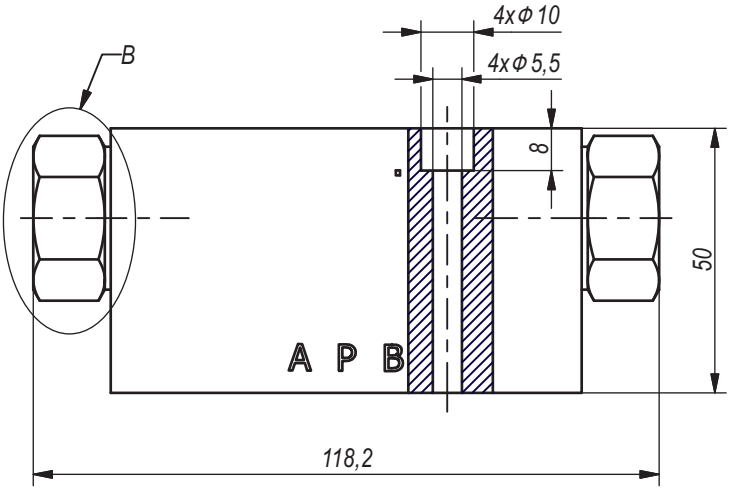
version "AM"

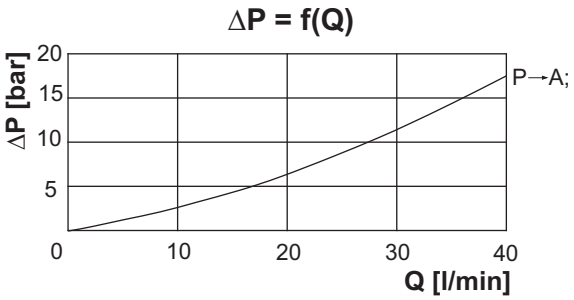


scheme 2

B
version "AM"







Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Mounting plate:
- acc. to ISO 4401-AB-03-4A (CETOP3)
3. Tightening torque of the connecting screws on the mounting plate - 8,5 N.m.

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Working pressure	bar	20...200
Flow rate	L/min	3...30
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80

ORDERING CODE

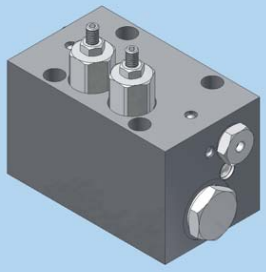
4/2 RHA06 / 20 A

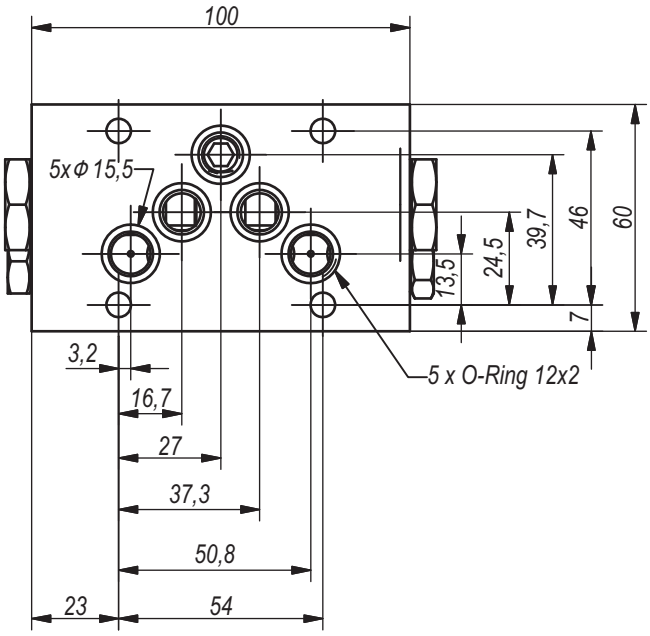
- **4/2 RHA06** — Type
- **20** — Working pressure - code: **50...200 bar - 20**
- **A** — Version - code: **scheme 1 - A**, **scheme 2 - AM**

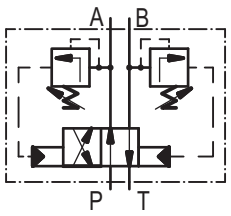
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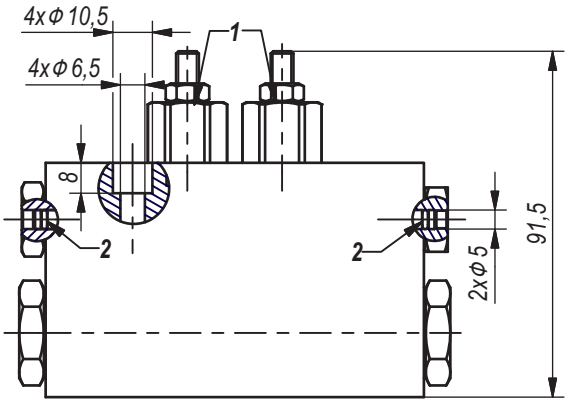
HYDRAULIC DIRECTIONAL CONTROL VALVES WITH AUTOMATIC SWITCHING

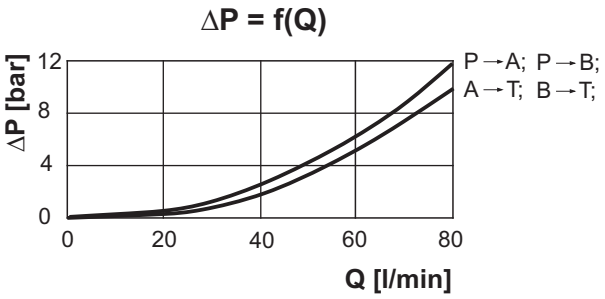
4/2 RHA10/20











Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Initial switching of the directional control valve
- by push pins (position 2).
3. Mounting plate:
- acc. to ISO 4401-AB-05-4A (CETOP5)
4. Tightening torque of the connecting screws on the mounting plate - 14 N.m.

TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Working pressure P_w	bar	50...200
Pressure adjustment of relief valves (position 1)	bar	P_w+10%P_w
Flow rate	L/min	5...80
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80

ORDERING CODE

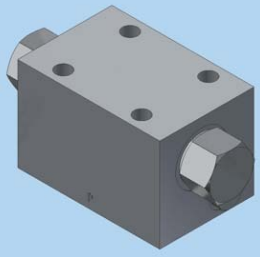
4/2 RHA10 / 20

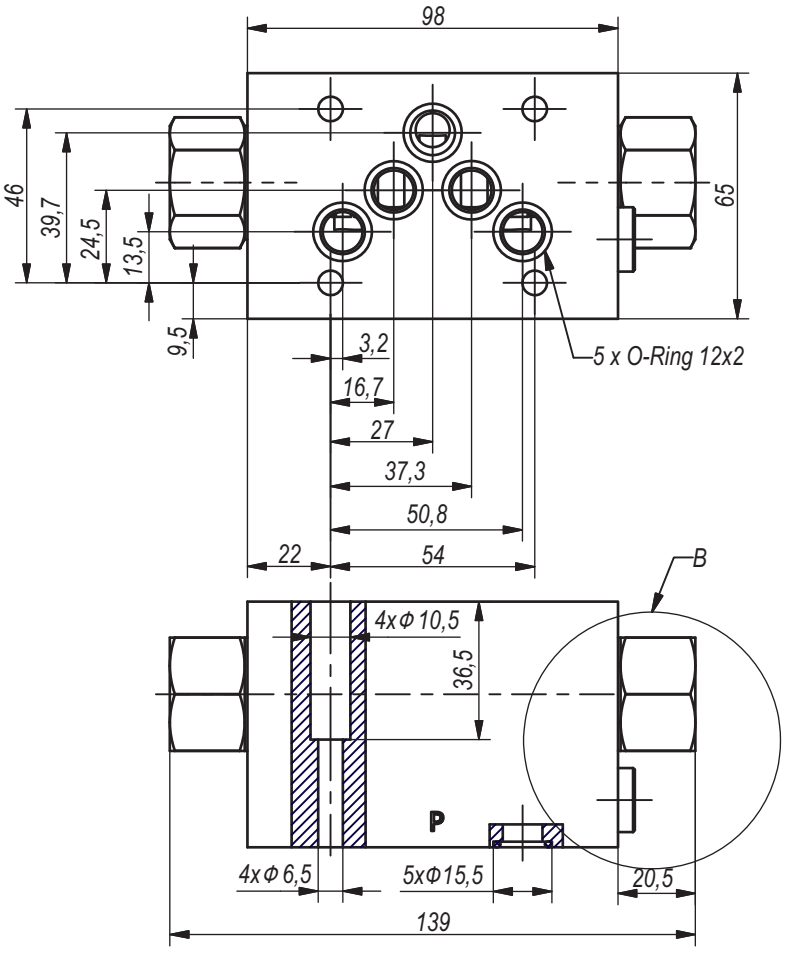
- 4/2 RHA10 — Type
- 20 — Working pressure - code: **50...200 bar - 20**

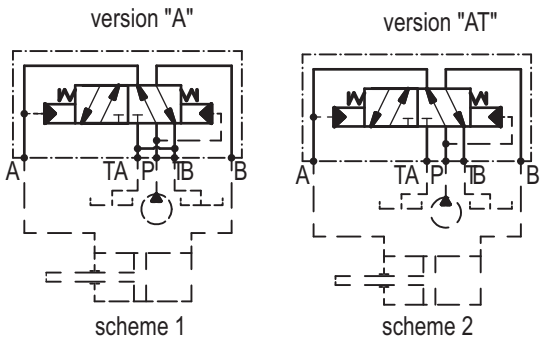
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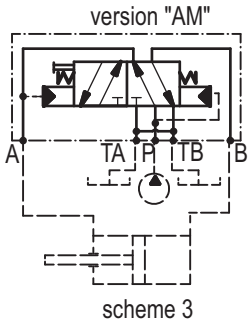
HYDRAULIC DIRECTIONAL CONTROL VALVES WITH AUTOMATIC SWITCHING

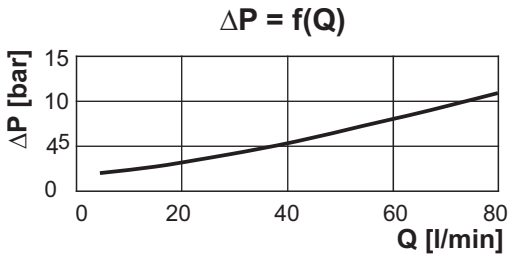
4/2 RHA10/20A.



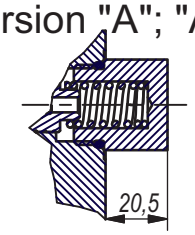




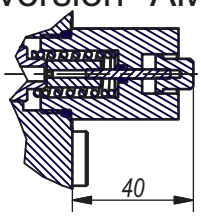




B
version "A"; "AT"



B
version "AM"



TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Working pressure	bar	20...200
Flow rate	L/min	3...80
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80

Note:
1. All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C.
2. Mounting plate:
- acc. to ISO 4401-AB-05-4A (CETOP5)
3. Tightening torque of the connecting screws on the mounting plate - 14 N.m.

ORDERING CODE

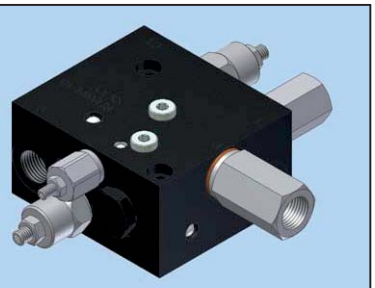
4/2 RHA10 / 20 A

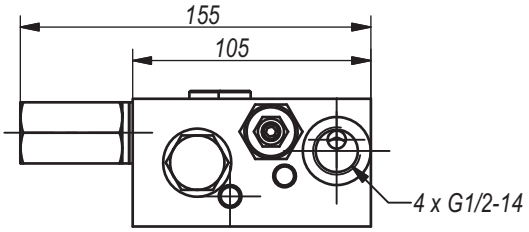
Type	Working pressure - code: **50...200 bar - 20**	Version - code: **A - see scheme 1**, **AT - see scheme 2**, **AM - see scheme 3**

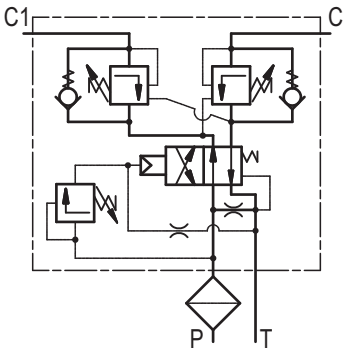
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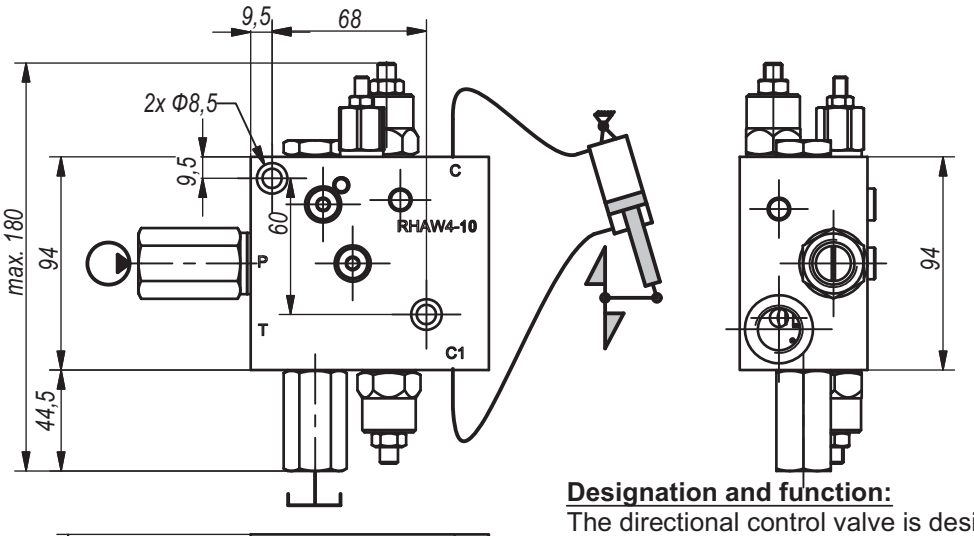
HYDRAULIC DIRECTIONAL CONTROL VALVE WITH AUTOMATIC SWITCHING

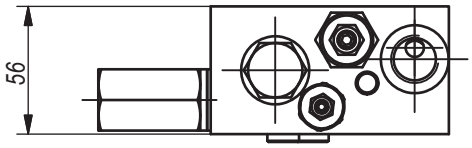
RHAW4-10







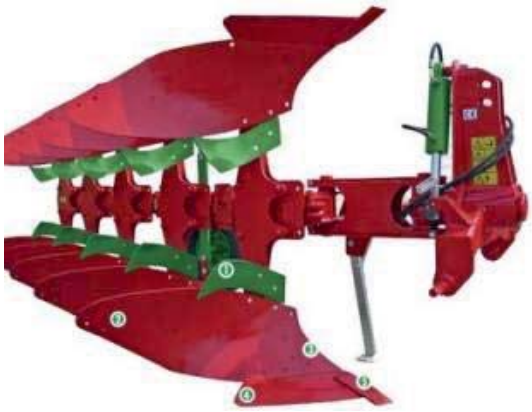




Note: All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C

Designation and function:

The directional control valve is designed to control the flow of the oil, driving the hydraulic cylinder for turning a tractor-driven plough. When a flow is supplied to the port P of the block, the cylinder makes one full cycle of retraction and extension and keeps hydraulically locked, despite the fact that there is pressure at the input port. It is necessary to wait for 3-4 seconds after the supply of the flow stops, till the next action, in order to restore the position of the switching spool in the directional control valve. On the next flow supply the cycle repeats itself.



TECHNICAL DATA		
General		
Ambient temperature	°C	-20...+50
Hydraulic		
Maximal pressure	bar	200
Supply flow range	L/min	10...50
Control range of the switching pressure	bar	50...200
Adj. pressure range overcenter valve (pos. 1)	bar	100...250
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	μm	25 or better
- temperature	°C	-20...+80

ORDERING CODE

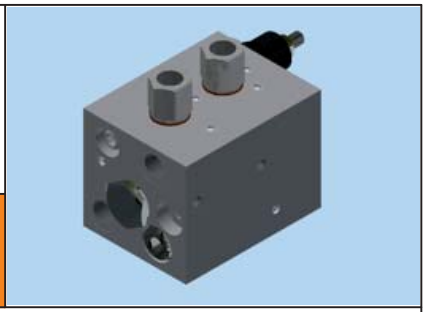
RHAW4-10

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HYDRAULIC DIRECTIONAL CONTROL VALVE WITH AUTOMATIC SWITCHING

RHAW5-10



Designation and function (see fig.1):

The directional control valve is designed for an automatic control of the process of changing directions of multi-hull reversible plows. It controls the sequential action of the two hydraulic cylinders, mounted on the plow. The sequence of operations is performed as follows:

When oil is supplied from the directional control valve DV to the tractor, the cylinder C1 is activated first. Its purpose is to straighten the frame, on which the plow hulls are mounted. After the move reaches its end, the supply of oil for this cylinder is stopped and the oil starts flowing to the other one – C2. It starts rotating the frame around its axis. After reaching an intermediate position during that rotation, the cylinder stops for a moment, which leads to a reverse of the directional control valve and the oil starts flowing to the opposite end of the cylinder C2 till it reaches the end of its stroke. The reverse process is fast which provides continuous rotation of the frame when passing through the intermediate position. Simultaneously with that a 180° rotation is performed as well. Afterwards the C1 is activated again, going to its starting position. In this way the frame is tilted again to its working position. After that process the directional control valve stays in that state till the flow of oil from the DV directional control valve to the tractor is stopped.

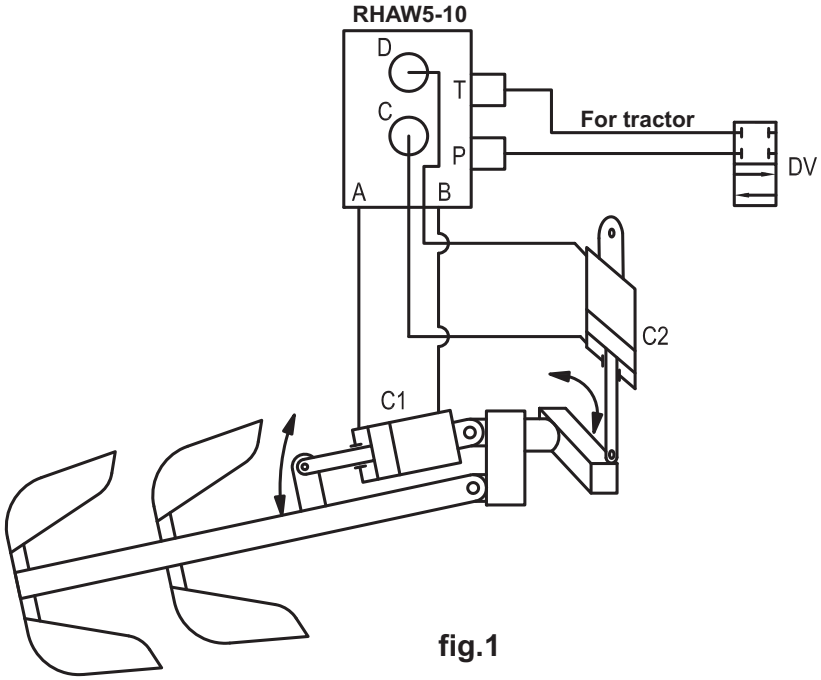


fig.1

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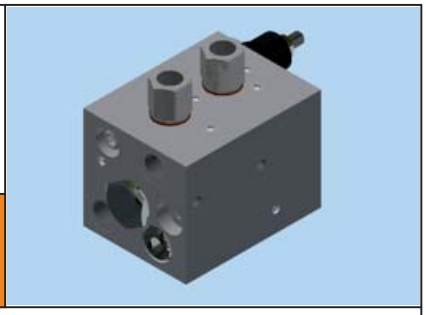
RHAW5-10

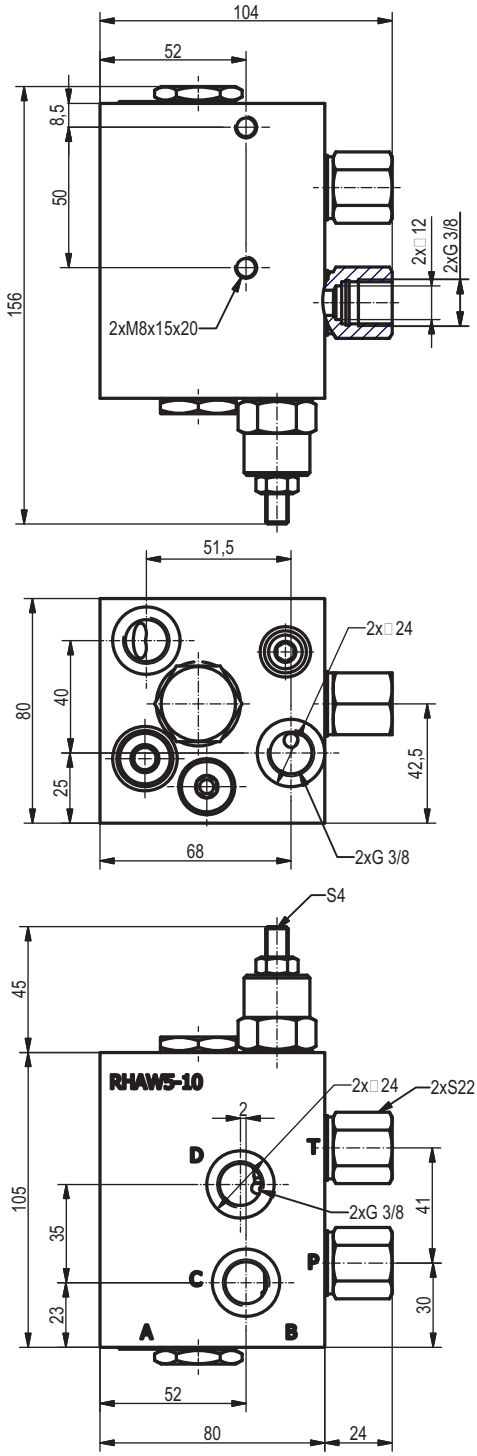
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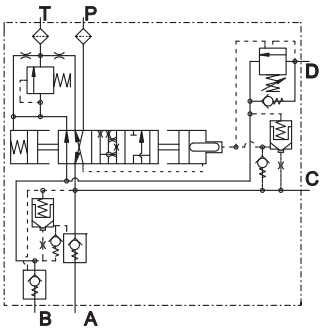
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HYDRAULIC DIRECTIONAL CONTROL VALVE WITH AUTOMATIC SWITCHING

RHAW5-10







TECHNICAL DATA		
General		
Ambient temperature	^{o}C	-20...+50
Hydraulic		
Maximal pressure	*bar*	200
Flow rate	*L/min*	20
Working fluid - mineral oil		
- viscosity	mm^2/s	10...100
- filtration level	*μm*	25 or better
- temperature	^{o}C	-20...+80

Note: All performances and calibration are carried out by using hydraulic oil with viscosity approx 46 cSt at 50 °C

ORDERING CODE

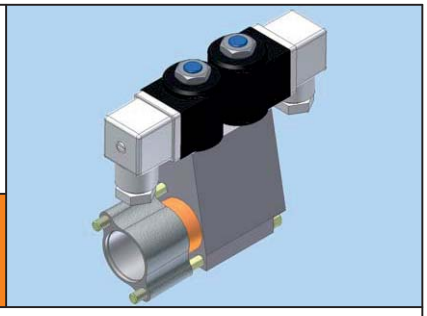
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ELECTRO-HYDRAULIC OPERATING UNIT

EHO..-..



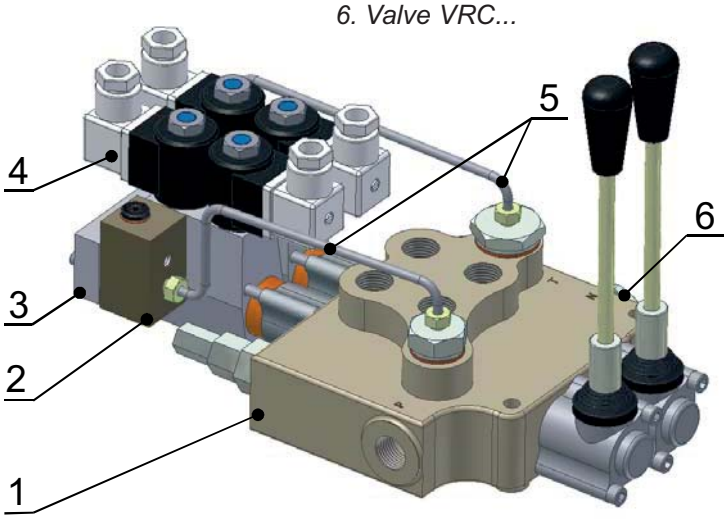
The electro-hydraulic operating unit **EHO…** is designed for coupling to manually operated, hydraulic directional control valves of the **P40, P70, P80, P100** and **P120** types, which are produced by the Bulgarian company BADESHTNOST AD, as an additional option for electric operation. It can be mounted on a monoblock or sectional implementation, with no limit to the number of the sections. It is fixed by two screws M6 at the place of the decorative cap, closing the spring package of the section. The existing screw, which holds the spring, is removed and the connector of the unit is screwed on its place. The hydraulic inlets and outlets of all the sections are joined together by a collector, which is fixed by two screws to each section.

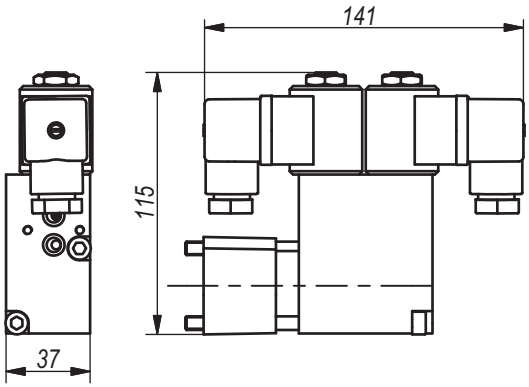
The oil supply can be realized in two ways:

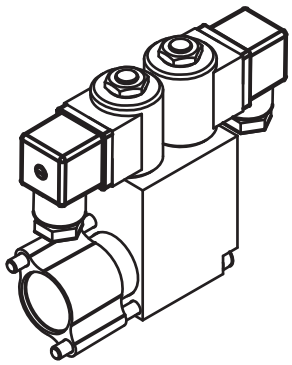
- from external source with pressure between 10 to 20 bar;
- from the flow which supplies the directional control valve. For that purpose, some flow is directed from one of the inlets **P**, by a pipe and a nipple to a reducing valve, mounted on the collector and providing the necessary supply pressure. The outlet line is connected to the free outlet **T** of the directional control valve by a special transient nipple. The connections are made by ш8 steel tubes. To provide minimum pressure of 10 bar in the case of non-operating (unloaded) directional control valve, a back pressure valve **VRC...** is mounted in the seat **N**, designed to maintain the minimum pressure during the running of the flow.

The electro-hydraulic operating unit is shown below, mounted on a double monoblock directional control valve P80 with own supply.

1. *Directional control valve 2R80…*
2. *Reducing valve*
3. Collector
4. *Operating units EHO…*
5. Supplying tubes
6. *Valve VRC...*







Technical characteristics of EHO.R..-..		
Supply pressure	*bar*	min.10 max.20
Maximum pressure in the outlet line of the directional control valve	*bar*	20
Supply voltage	*V*	12, 24 VDC; 220 VAC
Consumption per 1 solenoid	*W*	18
Type of the basic directional control valve		P40; P80

ORDERING CODE

EHO 2 R80 - 12

Type	Number of sections : **1...**	Type of the directional control valve : **R40, R70, R80, R100, R120**	Supply voltage : **12, 24, 220**

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ELECTRO-HYDRAULIC OPERATING UNIT

EHO..-..

