

## DIRECTIONAL CONTROL VALVES CETOP 3 / NG06 RS-AD3E02EM003



Ruhfus directional control valves are designed for subplate mounting with an interface in accordance CETOP 3 (NG06) and they are compatible with many other manufacturers. The directional control valves are intended exclusively for use in industrial oil-hydraulic systems.

The valves are optimized from their size and they combine compact dimensions with a high flow rate with a maximum capacity.

The special, precise construction of the ports and the improvement of the spools enables relatively high flow rates to be accommodated with a minimal pressure drop ( $\Delta p$ ).

The use of solenoids with wet armatures allows a very practical, safe construction completely dispensing with dynamic seals; the solenoid tube is screwed directly onto the valve chest whilst the coil is kept in position by means of a lock nut.

New constructed DC spools combine a high performance and power. The solenoids are constructed with a protection class of IP66 to DIN 40050 standards and are available in either AC or DC form in different voltage and frequencies.

The solenoid coils are normally arranged for DIN 43650 ISO 4400 type connectors. On request we could also deliver plugs with DC rectifier, signal lamps, or other needed things.

The operation of the directional valves may be electrical, pneumatic, oleodynamic, mechanical or lever. The centre position is obtained by means of calibrated length springs which reposition the spool in the centre or end of travel position once the action of the impulse is over.

We could also deliver the valves with special emergency operation actuator, for example hand lever, push buttons, or things like this. Normally they are equipped with an emergency operation actuation which could be operated by a tool.

The valves are designed for use with DIN 51524 standard hydraulic mineral oils and it is recommended that filters should be fitted to ensure a maximum contamination level of class 10 in accordance with NAS 1638  $\geq 75$ .

# RS-Valves (RS-SV0201-017)

Stand: 19.05.2017 - V1.0

Ruhfus Systemhydraulik GmbH

Büdericher Straße 7

D-41460 Neuss

Telefon +49 (2131) – 914 – 6

Fax +49 (2131) – 914 – 820

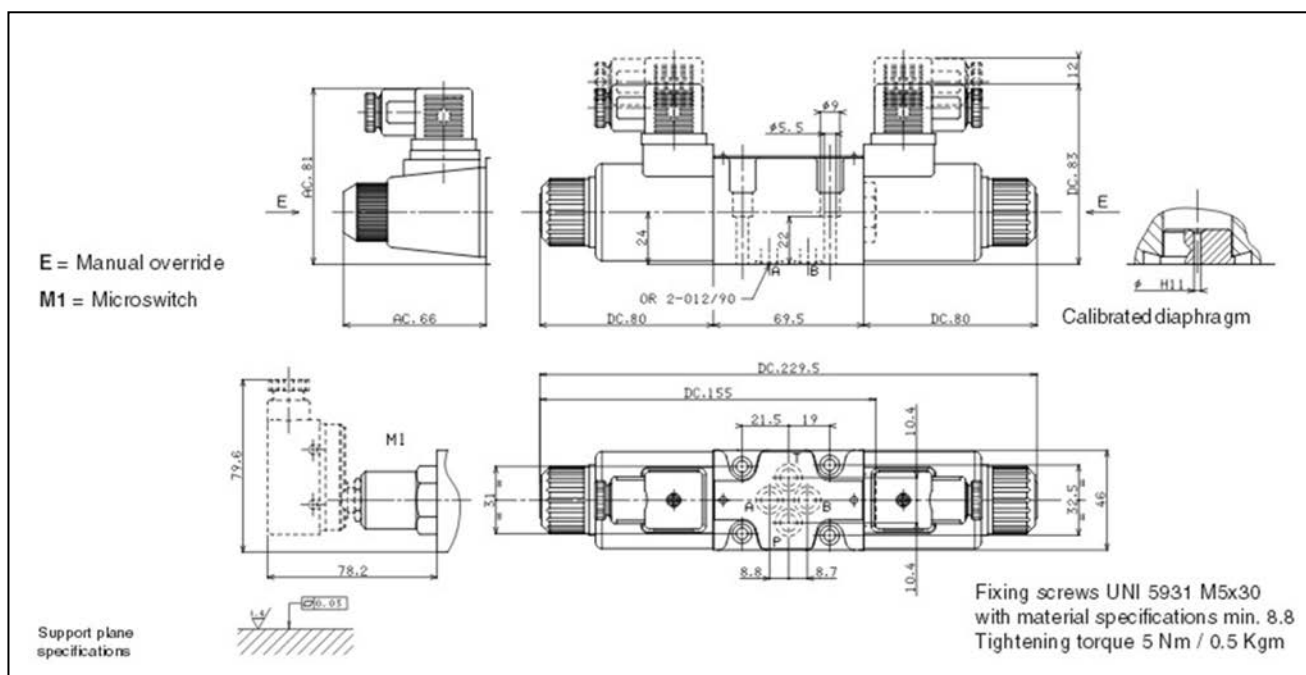
Internet <http://www.ruhfus.com>



## Technical specifications:

Max. pressure ports P/ A/ B:	320 bar
Max. pressure port T:	250 bar (DC-solenoid)
Max. pressure port T:	250 bar (AC-solenoid)
Max. flow:	60 l/min
Fluid viscosity:	10 – 500 mm <sup>2</sup> /s
Max. contamination level :	class 10 in accordance with NAS 1638 with filter $\beta_{25} \geq 75$
Duty cycle:	100% ED
Max. excitation frequency:	3 Hz
Weight with one DC solenoid:	1,65 Kg
Weight with two DC solenoids:	2,00 Kg
Weight with one AC solenoid:	1,25 Kg
Weight with two AC solenoids:	1,55 Kg

## Overall Dimensions:



# RS-Valves (RS-SV0201-017)

Stand: 19.05.2017 - V1.0

Ruhfus Systemhydraulik GmbH

Büdericher Straße 7

D-41460 Neuss

Telefon +49 (2131) – 914 – 6

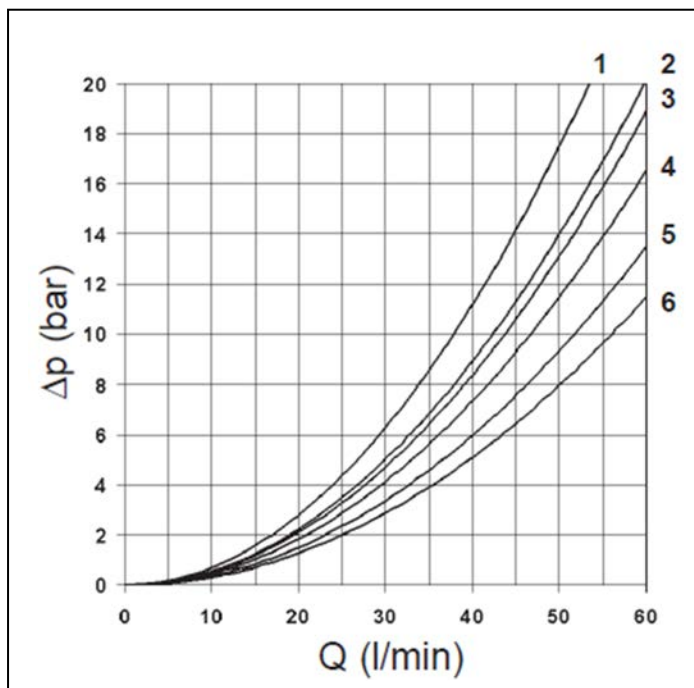
Fax +49 (2131) – 914 – 820

Internet <http://www.ruhfus.com>



## Pressure drops:

The diagram shows the pressure drop curves for spools during normal usage. The fluid used is a mineral oil with a viscosity of 46 mm<sup>2</sup>/s at 40°C.



Spool-type	Connections				
	P -> A	P -> B	A -> T	B -> T	P -> T
01	5	5	5	5	
02	6	6	6	6	5
03	5	5	6	6	
04	1	1	1	1	4
44	1	1	1	1	2
05	5	5	5	5	
06	5	5	6	5	
66	5	5	5	6	
07		4	6		
08	6	6			
09		5		5	
10	5	5	1	5	
11	4				
22		4	6		
12		5		6	
13		5	6	6	
14	2	1	1	1	2
28	1	2	1	1	2
15 – 19	4	4	6	6	
16	5	5	4	4	
17 – 21	1	3			
18	5	5			
20	4	4	4	4	
	Curve-no.				

# RS-Valves (RS-SV0201-017)

Stand: 19.05.2017 - V1.0

Ruhfus Systemhydraulik GmbH

Büdericher Straße 7

D-41460 Neuss

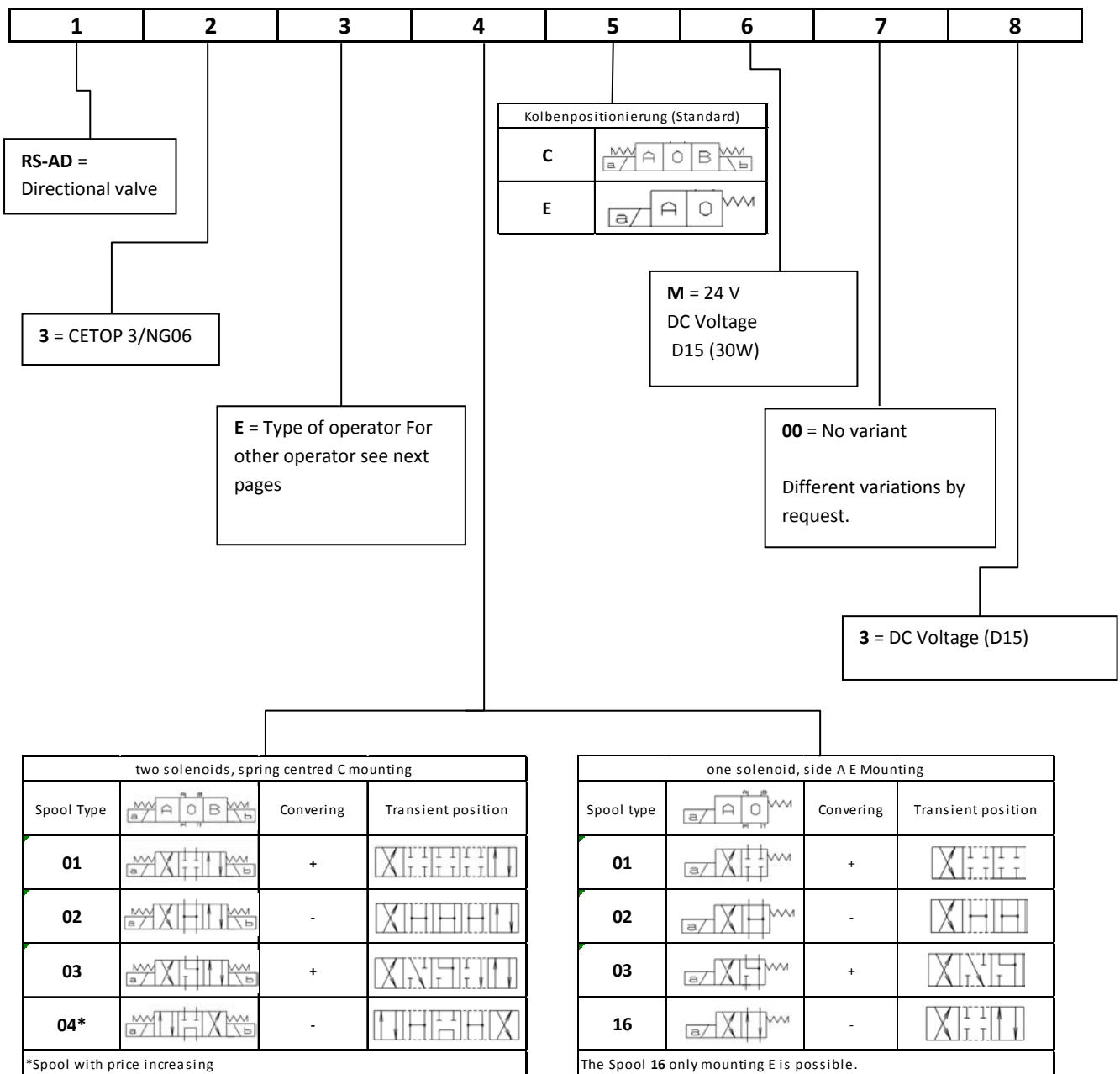
Telefon +49 (2131) – 914 – 6

Fax +49 (2131) – 914 – 820

Internet <http://www.ruhfus.com>



## Type Code:



Different types on request.

# RS-Valves (RS-SV0201-017)

Stand: 19.05.2017 - V1.0

Ruhfus Systemhydraulik GmbH

Büdericher Straße 7

D-41460 Neuss

Telefon +49 (2131) – 914 – 6

Fax +49 (2131) – 914 – 820

Internet <http://www.ruhfus.com>



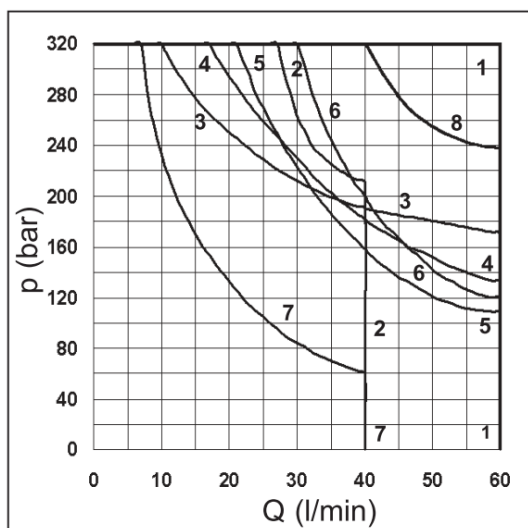
## Limits of use:

The tests have been carried out with solenoids at operating temperature and a voltage 10% less than rated voltage with a fluid temperature of 40°C. The fluid used was a mineral oil with a viscosity of 46 mm<sup>2</sup>/s at 40°C. The values in the diagram refers to tests carried out with the oil flow in two directions simultaneously T = 2 bar (e.g.. from P to A and the same time B to T). In the case where valves 4/2 and 4/3 were used with the flow in one direction only, the limits of use could have variations which may even be negative. Rest times: the values are indicative and depend on following parameters: hydraulic circuit, fluid used and variations in hydraulic scales (pressure P, flow Q, temperature T).

Direct current: Energizing 30 ÷ 50 ms

De-energizing 10 ÷ 30 ms.

Direct current solenoids (DC)



Spool-type	Solenoids DC
01	1
02	1
03	8
04	6
11-22	4
	Curves-No.