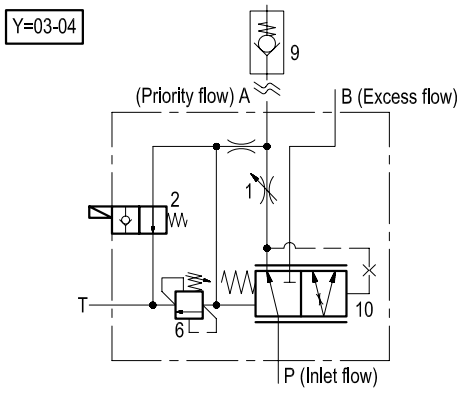
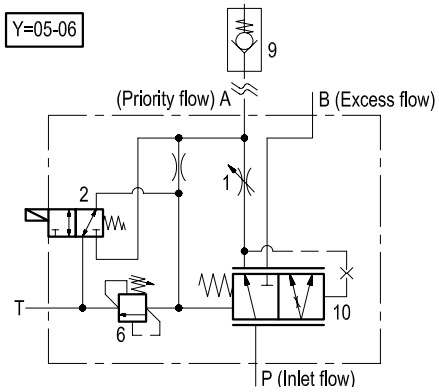
RE 18309-53/06.10
Replaces: RE 18309-53/04.10

3-Way heavy duty flow control, with pressure compensated and solenoid controlled priority flow

A-VRFC3C-VEI-VS **0M.43.20.80 - Y - Z**





Description

The flow control valves series “A-VRFC3C-VEI-VS” are 3 way, with one inlet “P” and two outlets “A” and “B”, the first outlet “A” being priority, pressure compensated type, with pressure relief valve and available on demand through a solenoid cartridge; the second outlet “B” is the by-pass for all flow in excess of what demanded by priority. Both flows from “A” and “B” ports can be employed to power different functions of the machine.
These valves provide a simple and efficient way to power hydraulic tools (such as hydraulic hammers) from the existing hydraulic system, without any need to modify the directional control valve.
They allow the simultaneous operations, independently from the respective working pressures, of both the hydraulic actuator powered by the priority outlet “A”, and of the normal functions of the machine (traction, slewing, cylinder motions, etc.) supplied by the main directional valve through the by-pass outlet “B”.

Technical data

Hydraulic

Max. operating pressure	bar (psi)	350 (5000)
Max. priority line pressure: limited by relief valve (6). See “priority pressure range” table on page 5.		
Back pressure at T port	bar (psi)	max 1.5 (20)
Drain from T, with solenoid valve non-energized	l/min (gpm)	up to 1.5 (0.4)

General

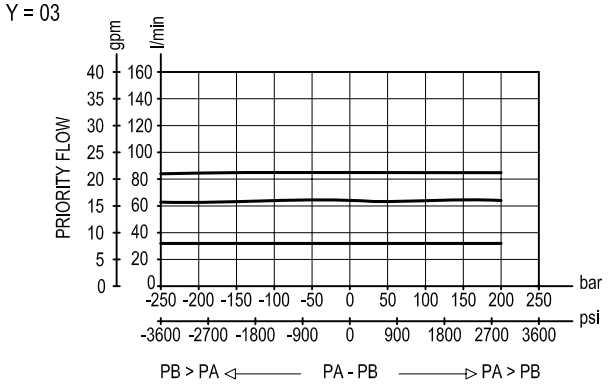
Manifold material		Steel
Weight		See “Dimensions”
Viscosity		20 to 380 mm^2/s (cSt)
Fluid temperature range	°C (°F)	between -20 (-4) and +80 (176)
Other technical data		see data sheet RE 18350-50

Note: for applications outside these parameters, please consult us.

Performance graphs

Priority Flow vs Pressure

Y = 03



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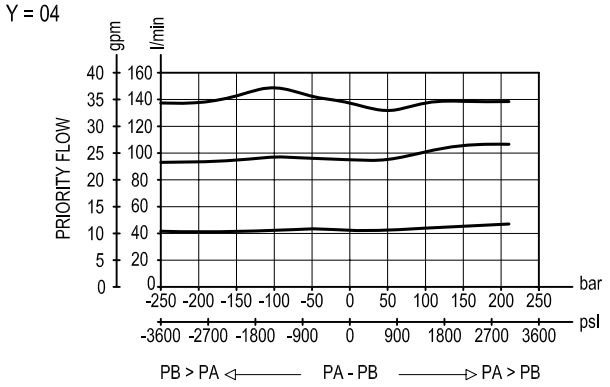

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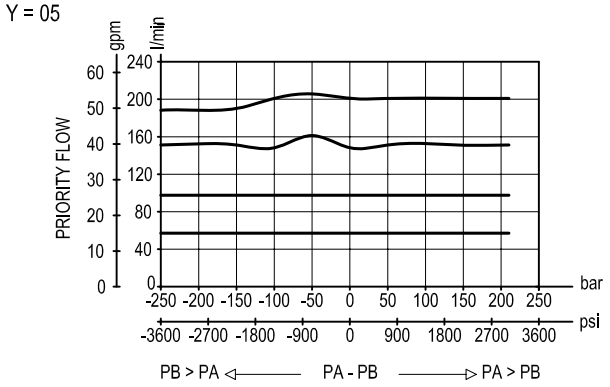

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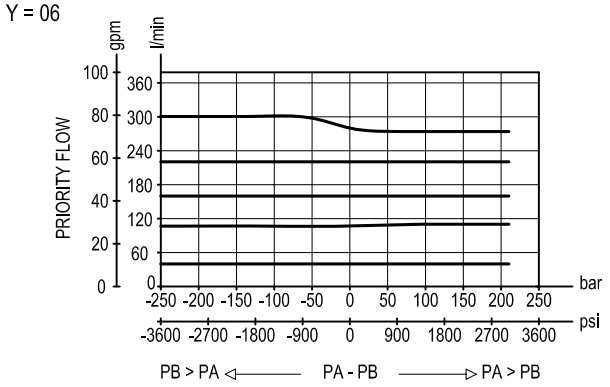

By-pass line pressure drop

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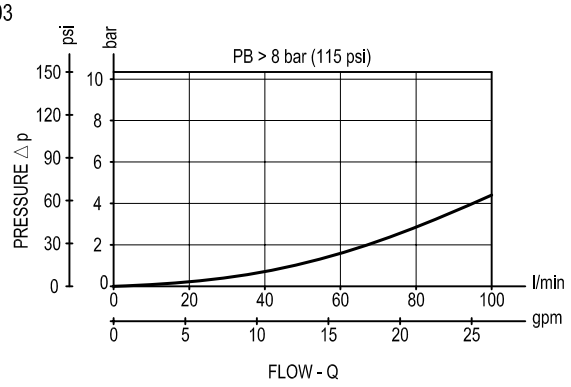

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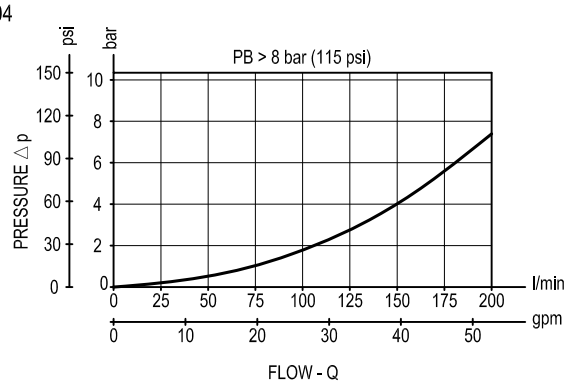

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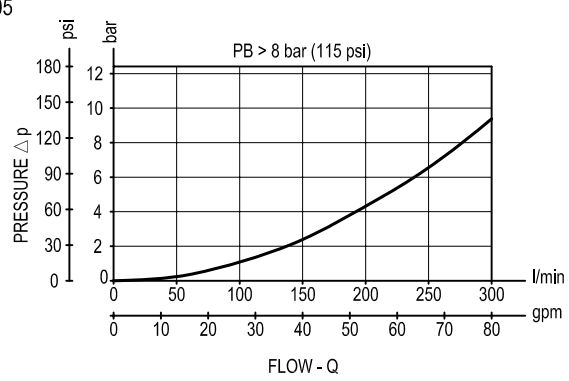

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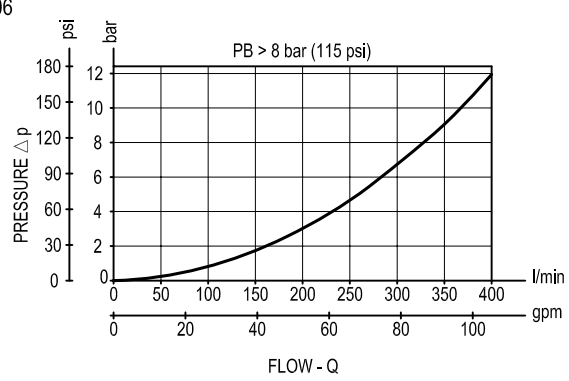
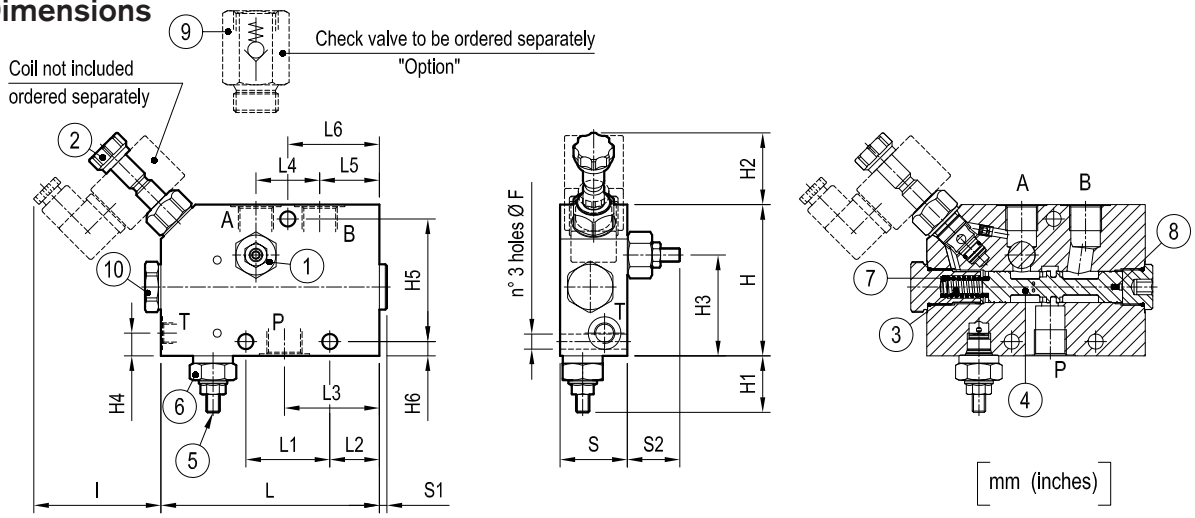


Dimensions



32 (1.26)	5 (0.2)	70 (2.76)	86 (3.39)	54.5 (2.15)	62.5 (2.46)	88.5 (3.48)	48 (1.89)	76 (2.99)	190 (7.48)	68 (2.68)	18 (0.71)	90 (3.54)	14 (0.55)	92 (3.62)	41 (1.61)	34 (1.34)	130 (5.12)	9 (0.35)	G 1-1/4	12.5 (27.5)
32 (1.26)	5 (0.2)	60 (2.36)	74.5 (2.93)	46.5 (1.83)	56.5 (2.22)	78 (3.07)	36.5 (1.44)	76 (2.99)	173 (6.81)	68 (2.68)	15 (0.59)	90 (3.54)	13.5 (0.53)	80.5 (3.17)	41 (1.61)	34 (1.34)	120 (4.72)	9 (0.35)	G 1	9 (19.8)
32 (1.26)	5 (0.2)	50 (1.97)	59 (2.32)	37 (1.46)	44 (1.73)	61 (2.4)	34 (1.34)	50 (1.97)	140 (5.51)	73 (2.87)	13.5 (0.53)	73 (2.87)	13 (0.51)	69.5 (2.74)	41 (1.61)	34 (1.34)	100 (3.94)	9 (0.35)	G 3/4	4.8 (10.6)
32 (1.26)	5 (0.2)	40 (1.58)	54.5 (2.15)	35.5 (1.4)	38 (1.5)	56.5 (2.22)	29.5 (1.16)	50 (1.97)	130 (5.12)	76 (2.99)	8.5 (0.34)	73 (2.87)	12.5 (0.49)	60 (2.36)	41 (1.61)	34 (1.34)	90 (3.54)	8.5 (0.34)	G 1/2	3.4 (7.5)
S2	**S1**	**S**	**L6**	**L5**	**L4**	**L3**	**L2**	**L1**	**L**	**I**	**H6**	**H5**	**H4**	**H3**	**H2**	**H1**	**H**	**F**	**Port sizes**	**Weight** kg (lbs)

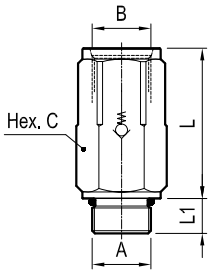
Fitting and connections

When positioning and tightening the valve, avoid any deflection of the body which could prevent the internal spool from sliding freely and impair the metering performance; it is recommended to use the 3 available fixation holes as locating points and to fit 3 equal spacers (metal washers), one on each point, between the valve body and the supporting structure.

Connections to the hydraulic system:

- Port “P” (inlet) to the main line from the pump.
- Port “A” (priority outlet) to the line feeding the hydraulic hammer, or the attachment. Important: for the correct metering of the compensating spool the priority outlet shall be always pressurized, with a back-pressure of at least 8-9 bar (115-130 psi); if necessary, fit a check valve with the needed cracking pressure.
- Port “B” (by-pass, or excess flow outlet) to the line delivering the oil to the main directional valve.
- Port “T” to a tank line. It is absolutely necessary that port “T” is connected to a low pressure tank line, 1-1.5 bar max (15-22 psi max).

Sleeve type check valves



Port sizes A - B	Cracking pressure bar (psi)	Dimensions mm (inches)			Ordering code
		C	L	L1	
G 1/2	8 (115)	30 (1.18)	57 (2.24)	14 (0.55)	043117000301000 R930000444
G 3/4	8 (115)	36 (1.42)	69 (2.72)	16 (0.63)	043117000401000 R930000445
G 1	8 (115)	46 (1.81)	82 (3.23)	18 (0.71)	043117000501000 R930000446
G 1 1/4	8 (115)	55 (2.17)	102 (4.02)	20 (0.79)	043117000601000 R930000447

Adjustment of priority flow

The volume of priority flow from port “A” can be easily modified by turning the screw (1): the flow increases by turning the screw counter-clockwise and, once adjusted to the desired level, it remains constant independently from the working pressure.

Adjustment of maximum priority pressure

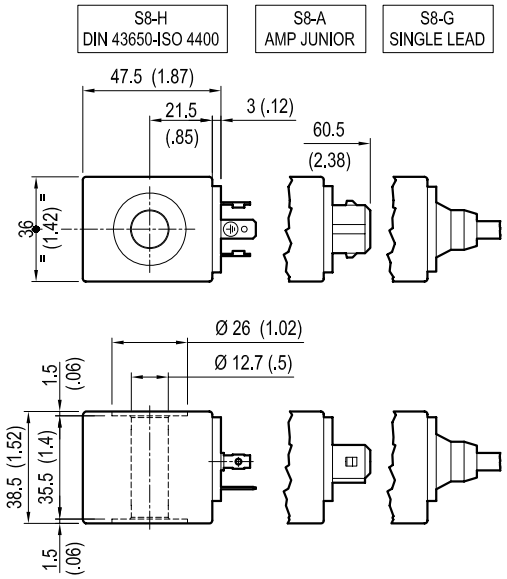
The maximum pressure in the priority line “A” can be adjusted by turning the screw (5) of the small relief cartridge (6) which controls the maximum pressure in the chamber (3): when this “pilot” cartridge opens, the pressure in chamber (3) drops and the priority flow is stopped.

Note: the relief cartridge (6) controls only the maximum pressure in the priority outlet “A”, and does not control the pressure in the by-pass and main line: the main line must be protected by another relief valve, capable to discharge the full oil flow.

Ordering code: **OD.02.17 - X - Y - Z**

COILS

Attention: indicated coils fit every hammer valve versions

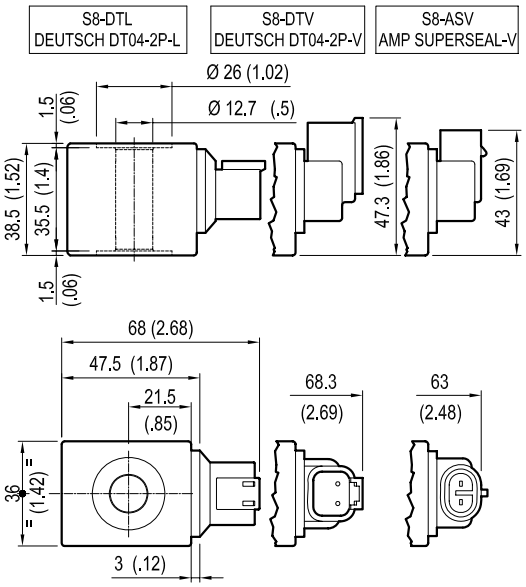


TECHNICAL DATA
Weight: 0.180 kg (0.4 lbs)
Encapsulating material: IXEF
Heat insulation Class H: 180°C (356°F)
Ambient temperature range: -30/+60°C (-86/+140°F)
Inlet voltage fluctuations must not exceed ±10% of nominal voltage to obtain correct operation and long life coils.

X	Y	Connections	Circuit	Voltage
01	30	DIN 43650 - ISO 4400	Standard	DC-RAC
07	30	AMP JUNIOR	Standard	DC only
0G	03	SINGLE LEAD	Standard	DC only *
14	30	DIN 43650 - ISO 4400	Bidirectionl Diode	DC only
15	30	AMP JUNIOR	Bidirectional Diode	DC only
0H	03	SINGLE LEAD	Bidirectional Diode	DC only *

* Length 300mm (11.8 inches). Ext. diameter 6.3mm (0.25 inches). External and internal Shealth Silicone rubber.

Z	Voltage V	Resistance Ohm (±7%)	Power W	Current A		ΔT °C (°F)
	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
OB	12 DC	7.4	20	1.62	1.19	105-110 (221-230)
OC	24 DC	28.5	20	0.85	0.61	
OG	14 DC		20			
AC	26 DC	34.3	20	0.76	0.54	



X	Y	Connections	Circuit	Voltage
20	30	DEUTSCH DT04-2P-L	Standard	DC only
20	3P	DEUTSCH DT04-2P-V	Standard	DC only
30	3P	AMP SUPERSEAL-V	Standard	DC only
22	30	DEUTSCH DT04-2P-L	Bidirectionl Diode	DC only
22	3P	DEUTSCH DT04-2P-V	Bidirectional Diode	DC only
32	3P	AMP SUPERSEAL-V	Bidirectional Diode	DC only

Z	Voltage V	Resistance Ohm (±7%)	Power W	Current A		ΔT °C (°F)
	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
OB	12 DC	7.4	20	1.62	1.19	105-110 (221-230)
OC	24 DC	28.5	20	0.85	0.61	
AC	26 DC	34.3	20	0.76	0.54	

Protection IP69 - DIN 40050 part 9
These coils have passed the THERMAL SHOCK DUNK TEST

Note: Please refer to data sheet RE 18325-90 for coils and connectors readily available and for further details.

SPARE PARTS

SOLENOID CARTRIDGE	
Port size	Ordering code
0M.43.20.80.03.20	OD1502181AS000 R901091102
0M.43.20.80.03.35	
0M.43.20.80.04.20	
0M.43.20.80.04.35	
0M.43.20.80.05.20	OD132067390000 R934000629
0M.43.20.80.05.35	
0M.43.20.80.06.20	
0M.43.20.80.06.35	

RELIEF CARTRIDGE	
Port size	Ordering code
0M.43.20.80.03.20	041148035620000 R901104097
0M.43.20.80.04.20	
0M.43.20.80.05.20	
0M.43.20.80.06.20	
0M.43.20.80.03.35	041148035635000 R901104099
0M.43.20.80.04.35	
0M.43.20.80.05.35	
0M.43.20.80.06.35	

Ordering code

0M.43.20.80	Y	Z

3-Way heavy duty flow control, with pressure compensated and solenoid controlled priority flow

	Priority pressure range		
	Adj. pressure range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting Q=5 (l/min.) bar (psi)
= 20	50-210 (725-3000)	48 (696)	200 (2900)
= 35	100-350 (1450-5000)	95 (1378)	350 (5000)

	Port sizes		Inlet flow (max)	Regulated priority flow	
	P-A-B	T	l/min (gpm)	l/min (gpm) max	l/min (gpm) per turn
= 03	G 1/2	G 1/4	100 (26)	85 (23)	approx. 18 (4.8)
= 04	G 3/4	G 1/4	200 (53)	140 (37)	approx. 20 (5.3)
= 05	G 1	G 1/4	300 (79)	220 (58)	approx. 26 (6.9)
= 06	G 1-1/4	G 1/4	400 (106)	300 (80)	approx. 28 (7.4)

Type	Material number
0M432080032000C	R930004377
0M432080033500C	R930004378
0M432080042000D	R930000028
0M4320800435000	R930006085
0M432080052000D	R930004383
0M432080053500A	R930006086
0M432080062000D	R930004385
0M4320800635000	R930000353

Type	Material number

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