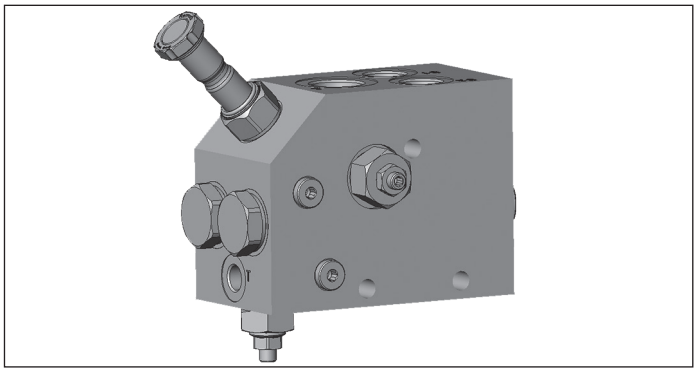
rexroth
A Bosch Company

5-Way heavy duty flow control, with pressure compensated and solenoid controlled priority flow, for two pumps systems

RE 18309-54
Edition: 01.2023
Replaces: 02.2022

A-VRFC3C-VEI-VS

0M.43.12.80 - Y - Z



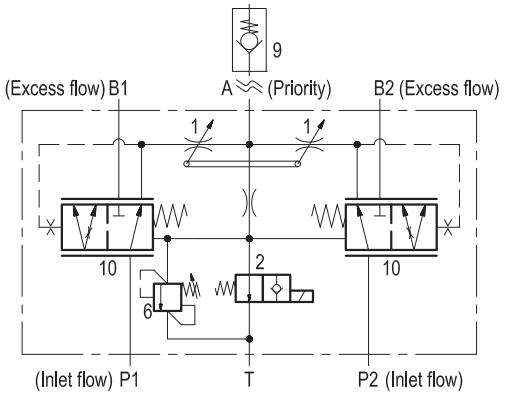
Description

The flow control valves code 0M.43.12.80 are 3 way, with two separate inlets P1 and P2 and three outlets “A” and “B1” and “B2”, the first outlet “A” being priority, pressure compensated type, with pressure relief valve, and available on demand through a solenoid cartridge; the second and third outlets “B1” and “B2” are the by-pass for all flow in excess of what demanded by priority. All flows from “A”, “B1” and “B2” 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 “B1” and “B2”.

Technical data

Max. operating pressure	350 bar (5000 psi)
Max. priority line pressure: limited by relief valve (6). See “priority pressure range”	
Back pressure at T port	max. 1.5 bar (20 psi)
Drain from T, with solenoid valve non-energized	up to 1.5 l/min. (0.4 gpm)
Weight	See “Dimensions”
Manifold material	Zinc plated steel
Fluid	Mineral oil (HL, HLP) according to DIN 51524
Fluid temperature range	-20 °C to 80 (-4 to 176 °F)
Viscosity range	20 to 380 mm^2/s (cSt)
Recommended degree of fluid contamination	Class 19/17/14 according to ISO 4406
Other technical data	see data sheet 18350-50

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



Ordering code

0M.43.12.80	Y	Z

5-Way heavy duty flow control,
with pressure compensated and solenoid controlled
priority flow, for two pumps systems

	Port sizes			Inlet flow (max)		Regulated priority flow	
	P1-P2 B1-B2	A	T	l/min (gpm)		l/min (gpm) max	l/min (gpm) per turn
				P1	P2		
03	G 1/2	G 3/4	G 1/4	100 (26)	100 (26)	150 (40)	approx. 32 (8.45)
04	G 3/4	G 1	G 1/4	200 (53)	200 (53)	250 (65)	approx. 35 (9.25)
05	G 1	G 1-1/4	G 1/4	300 (79)	300 (79)	390 (103)	approx. 46 (12.15)

	Priority pressure range		
	Adj. pressure range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting Q=5 (l/min.) bar (psi)
20	105-210 (1523-3000)	79 (1146)	200 (2900)
35	175-350 (2538-5000)	170 (2465)	350 (5000)

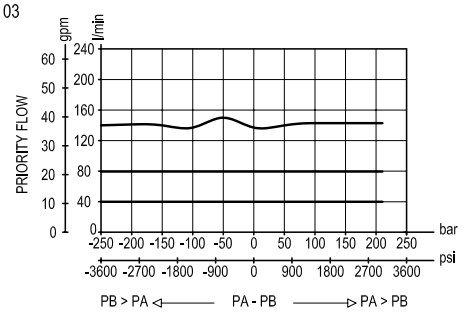
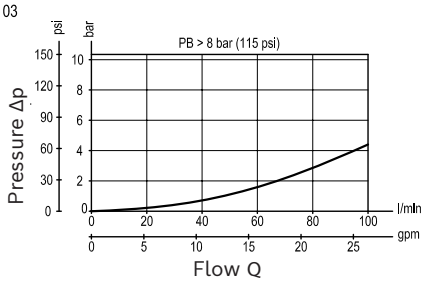
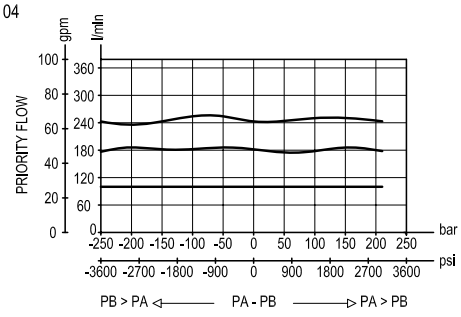
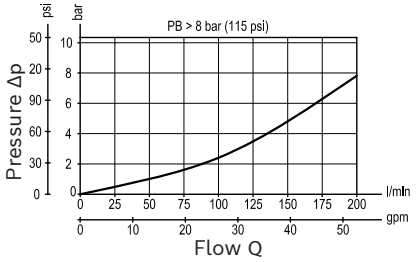
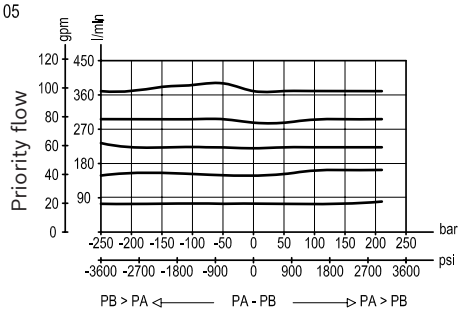
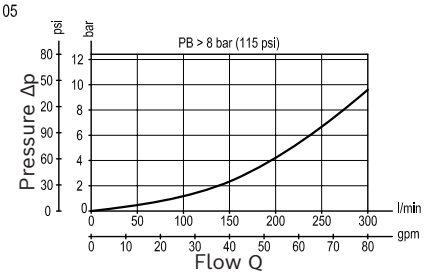
Note: the spare part is delivered with a different setting from the setting of the cartridges used in the block; please refer to cartridge valves datasheet for standard setting data and bar adjustment for each turn of the screw.

Tamper resistant cap
ordering code 11.04.23.002
Mat. no. R930000752

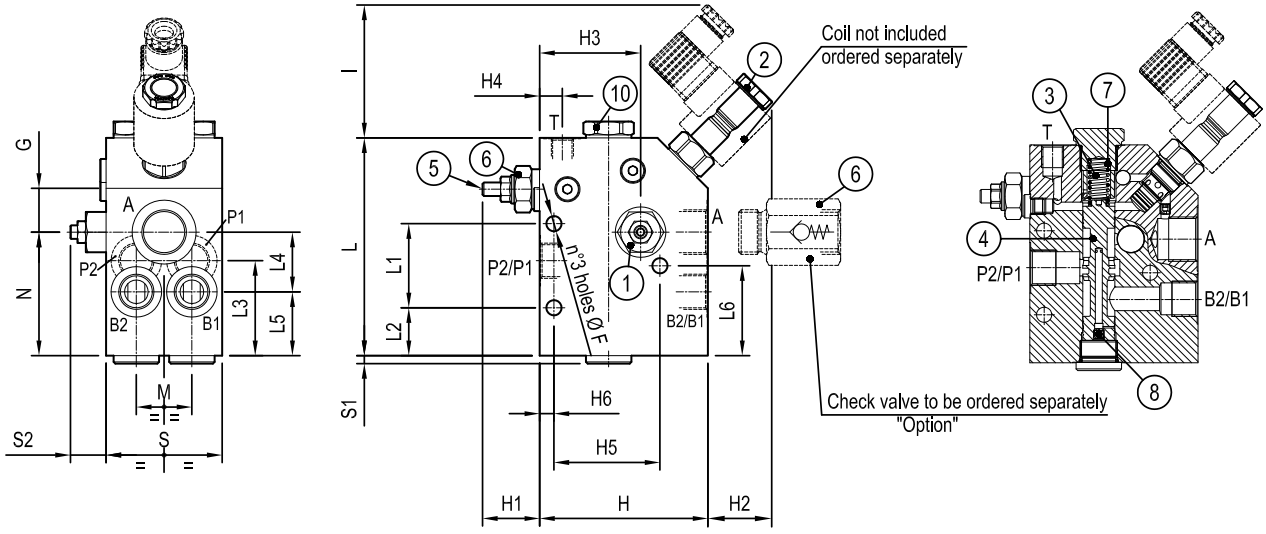
Type	Material number
0M431280032000D	R930067642
0M431280033500A	R930067643
0M431280042000D	R930067644
0M431280043500A	R930067645
0M431280052000E	R930069299
0M431280053500A	R930069300

Type	Material number

Characteristic curves

	Priority flow vs pressure	By-pass line pressure drop
Version	Y = 03 	Y = 03 
Version	Y = 04 	Y = 04 
Version	Y = 05 	Y = 05 

Dimensions



21 (0.83)	4.5 (0.18)	109 (4.29)	70.5 (2.78)	42 (1.65)	61 (2.4)	78 (3.07)	32.5 (1.28)	76 (2.99)	173 (6.81)		14.5 (0.57)	90 (3.54)	16.5 (0.65)	80 (3.15)		30 (1.52)	139 (5.47)	9 (0.35)	41 (1.61)	56 (2.21)	103 (4.06)	G 1	
21 (0.83)	4.5 (0.18)	89 (3.5)	59 (2.32)	34 (1.34)	47 (1.85)	61 (2.4)	34 (1.34)	50 (1.97)	140 (5.51)	71.5 (2.81)	17.5 (0.69)	73 (2.87)	16.5 (0.65)	73.5 (2.89)	38.5 (1.52)	30 (1.52)	124 (4.88)	9 (0.35)	29 (1.14)	46 (1.81)	81 (3.19)	G 3/4	10.7 (23.6)
21 (0.83)	4.5 (0.18)	69 (2.72)	53.5 (2.11)	38 (1.5)	35.5 (1.4)	56.5 (2.22)	28.5 (1.12)	50 (1.97)	129.5 (5.1)	71.5 (2.81)	8.5 (0.34)	63 (2.48)	13.5 (0.53)	60 (2.36)	38.5 (1.52)	30 (1.52)	100 (3.94)	9 (0.35)	26 (1.02)	33 (1.3)	73.5 (2.89)	G 1/2	6.5 (14.3)
S2	S1	S	L6	L5	L4	L3	L2	L1	L	I	H6	H5	H4	H3	H2	H1	H	F	G	M	N	Port sizes	Weight kg (lbs)

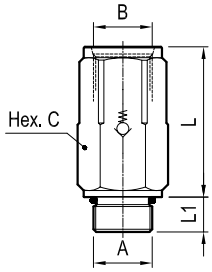
Fitting and connections

- 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 “P1” and “P2” (inlets) to the main line from the pumps.
- 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 “B1” and “B2” (by-pass, or excess flow outlet) to the lines 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

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.

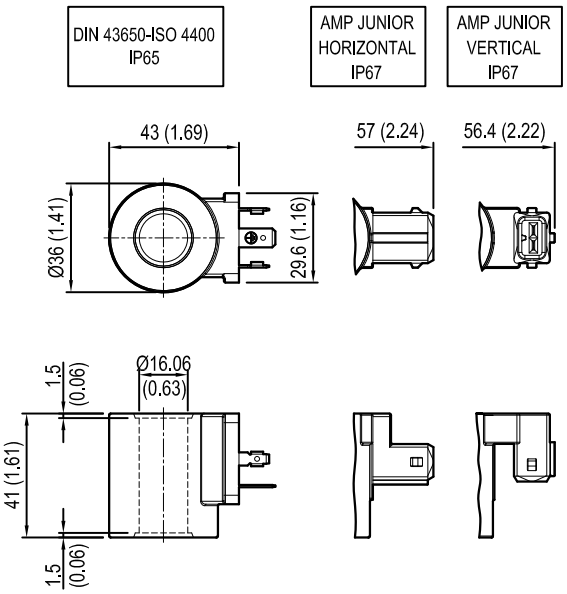
Adjustment of maximum priority pressure

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.

COILS

Ordering code: **OD.02.36 - X - Y - Z**

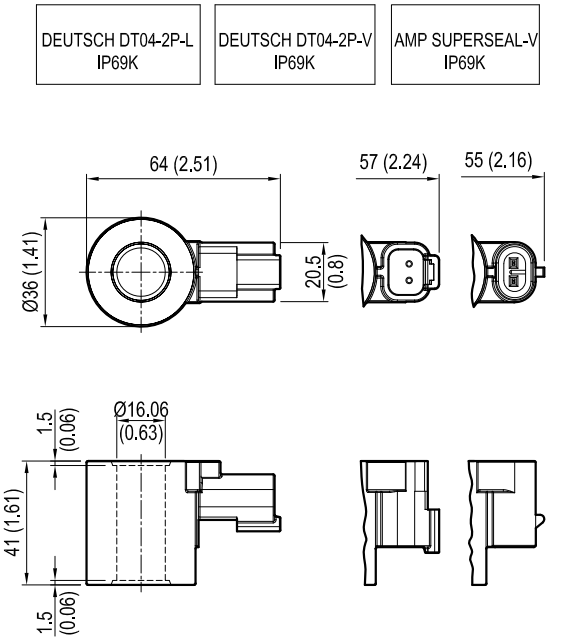
Attention: indicated coils fit every hammer valve versions



[mm / Inches]

TECHNICAL DATA
Weight: 0.18 kg (0.40 lbs)
Power: 20 W
Heat insulation Class H: 180°C (356°F)
Ambient temperature range: -30/+90°C (-22/+194°F)
Further performance limits in terms of temperature and voltage fluctuations: please refer to data sheet of the solenoid valve where D36 coil is mounted.

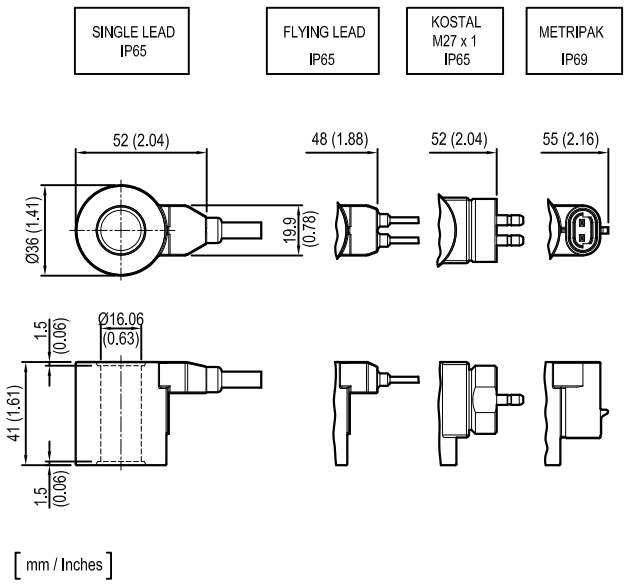
X	Y	Connections	Circuit	Voltage
01	30	DIN 43650 - ISO 4400	Standard	DC
07	30	AMP JUNIOR H	Standard	DC
07	3P	AMP JUNIOR V	Standard	DC
14	30	DIN 43650 - ISO 4400	Bidirectional Diode	DC
15	30	AMP JUNIOR H	Bidirectional Diode	DC
15	3P	AMP JUNIOR V	Bidirectional Diode	DC



[mm / Inches]

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

Dimensions [mm (inches)]



X	Y	Connections	Circuit	Voltage
0G	03	SINGLE LEAD *	Standard	DC
02	03	FLYING LEAD **	Standard	DC
03	30	KOSTAL M27x01	Standard	DC
40	3P	METRIPAK	Standard	DC
0H	03	SINGLE LEAD *	Bidirectional Diode	DC
23	03	FLYING LEAD **	Bidirectional Diode	DC
12	30	KOSTAL M27x01	Bidirectional Diode	DC
41	3P	METRIPAK	Bidirectional Diode	DC

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

Note: Single lead and Flying lead coil also available with 1000 mm lenght; ordering code with Y=10 in place of Y=03

Z	Voltage V	Resistance Ohm (±7%)	Power W	Current A	
	Nominal	aT = 20 °C (68 °F)		I Max.	I Nom.
OB	12 DC	7.4	20	1.67	1.04
OC	24 DC	28.4	20	0.83	0.54
OD	48 DC	106.5	20	0.42	0.29
OU*	96 DC	451	20	0.21	0.14
AH*	205 DC	2062	20	0.10	0.06

***** OU and AH versions especially designed in cases of AC supply voltage (respectively for 110AC and 220 AC) to be used in conjunction with connector with circuit including wave rectifier. Ambient temperature range for OU and AH versions: -30°C / + 75°C

Note: diode available only for 12 V DC and 24 V DC coils.
Diode set at 27 V DC for 12 V DC coil and at 39 V DC for 24 V DC coil.

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.43.12.80.03.20	OD150218A000000 R930059442
0M.43.12.80.03.35	
0M.43.12.80.04.20	
0M.43.12.80.04.35	
0M.43.12.80.05.20	
0M.43.12.80.05.35	

RELIEF CARTRIDGE	
Port size	Ordering code
0M.43.12.80.03.20	041149035620000 R901097728
0M.43.12.80.04.20	
0M.43.12.80.05.20	
0M.43.12.80.03.35	041149035635000 R901091914
0M.43.12.80.04.35	
0M.43.12.80.05.35	

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