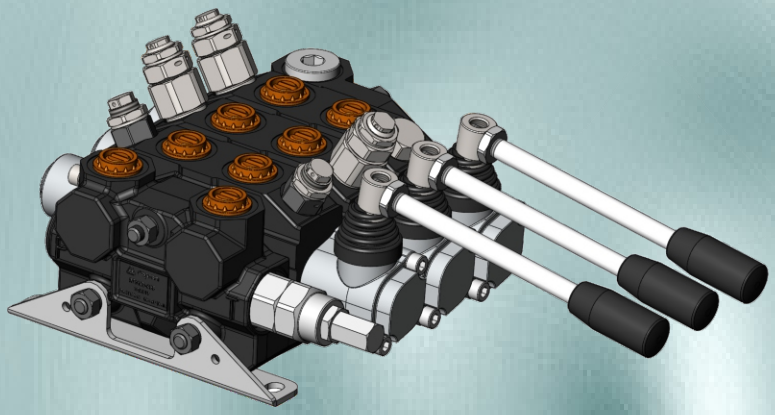
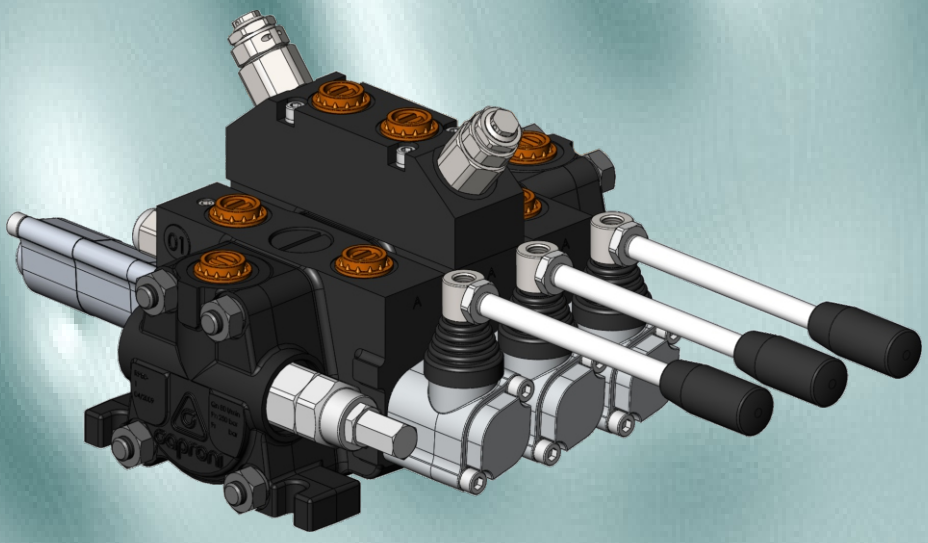




SECTIONAL DIRECTIONAL CONTROL VALVES

CONTENTS:

SECTIONAL DIRECTIONAL CONTROL VALVE TYPE RPN60

GENERAL DESCRIPTION

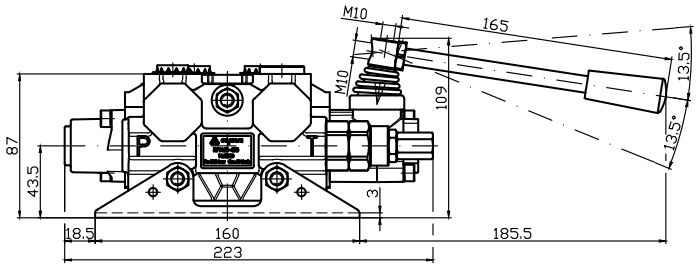
Hydraulic valve RPN60 provides change of fluid flow direction, hydro-systems pressure restriction, pump unloading in neutral position of the spools. The valve RPN60 is designed to be integrated in hydraulic systems of Mobile and Industrial Machines.
The valve assembly consists of:
Inlet cover with integrated relief valve, a combination of sections (up to 10pcs) and outlet cover. The valve RPN60 provides parallel, series or tandem distribution of the working liquid and direct passing of the flow from the pump line to the tank at neutral position (open center). Options “closed centre” and “carry over” are possible with additional shut-off plug in port N. There are different control options: spring–centering in “neutral” position, detent, automatic kick-out, hydraulic, pneumatic, electro-hydraulic and electro-pneumatic control.

TECHNICAL DATA

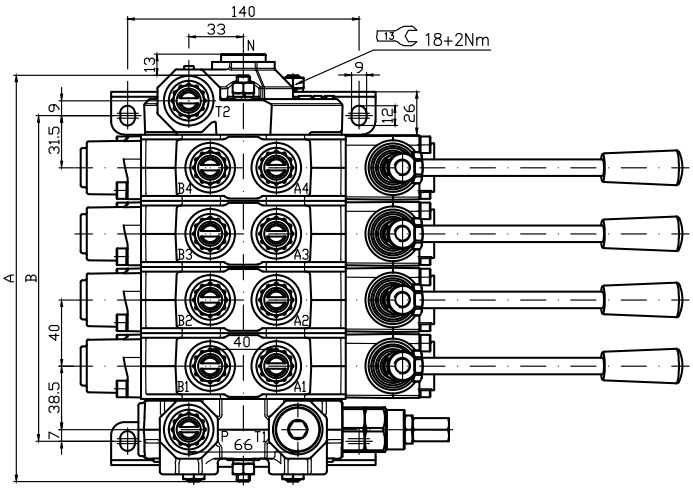
Rated flow	60 l/min
Max. pressure	P=300 bar; T=30 bar
Spool stroke	±6 mm
Working temperature range	-15...+80 °C
Working liquid	hydraulic oil HLP DIN51524
Liquid viscosity	15...300cSt
Nominal filtration	ISO4406: 19/16 (recommended filter element - 0,025mm mesh)
Internal leakage at 120 bar , t=40°C and viscosity 46cSt	max. 8cm³/min; max 3cm³/min (special version)
Actuating force	less than 200N

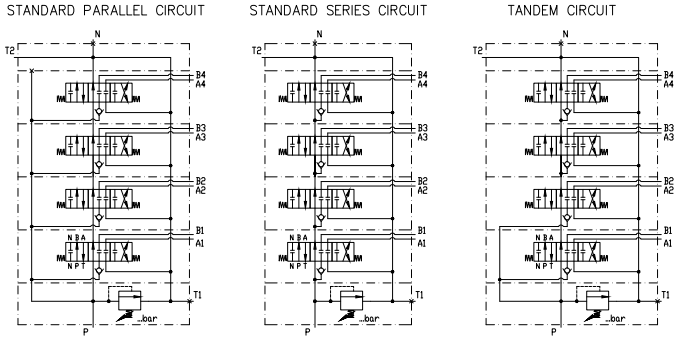
DIMENSIONS

RPN60/4/Q/4x/P1CLA1/R/PT2/G/N



Type	n	A mm	B mm	Weight kg
RPN60-1...	1	126	77	6.4
RPN60-2...	2	166	117	9.0
RPN60-3...	3	206	157	11.6
RPN60-4...	4	246	197	14.2
RPN60-5...	5	286	237	16.9
RPN60-6...	6	326	277	19.5
RPN60-7...	7	366	317	22.2
RPN60-8...	8	406	357	24.9
RPN60-9...	9	446	397	27.6
RPN60-10...	10	486	437	30.3





ORDERING CODE

RPN60EHI / 3 / Q / P 1 CL A 1 E1 CAB** / R / PT2 / G / N

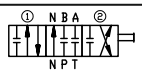
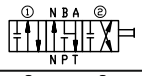
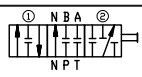
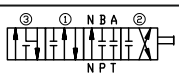
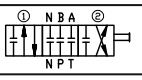
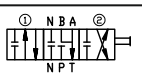
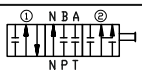
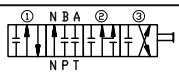
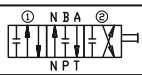
type of control	Code
without control	omit
On-Off internal electro-hydraulic	EHI
On-Off external electro-hydraulic	EHE
On-Off electro-pneumatic	EPC
On-Off hydraulic	HC
On-Off pneumatic	PC

number of the spools

relief valve	Code
setting range 20...300bar (example of required settings 180bar)	Q Q180
shut-off plug installed	K

type of connection	Code
Parallel	P
Series*	S

* The scheme (connection type S) needs special body.

spools	Code
	1
	2
	3
	4
	5*
	6
	7
	9*
	10*
	12
	13

* The scheme (spool code 5 , 9 , 10) needs special body with extra machining.

Code	operation control
C CL CLO CLR CLS H Z	see page 3/4
J...	see page 4/4

Code	lever position
A	at port side A (standard)
B	at port side B

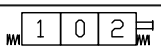
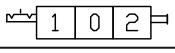
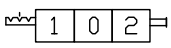
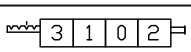
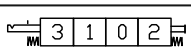
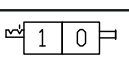
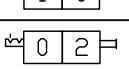
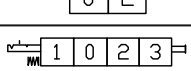
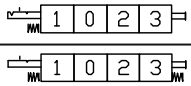
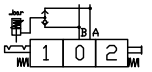
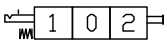
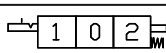
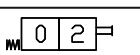
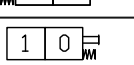
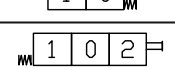
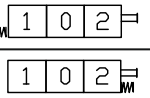
Code	hydraulic power output
R	open center (port N connected to T)
W	closed center (port N - shut-off plug installed)
C	carry over (port N - shut-off plug installed)

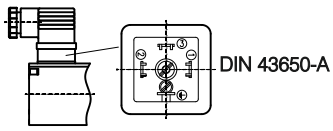
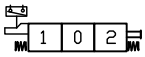
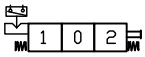
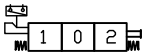
auxiliary port valves - see next page

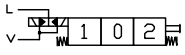
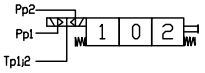
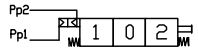
standard port threads	
Code	P , A , B , T1 , T2 , N
G	G1/2"-A
U	7/8-14UNF-2B

Code	application
N	normal
T	tropical

Code	used conn. ports
PT1	P and T1
PT2	P and T2
PT3	P and T3(N)

Code	spool control
1	
2	
3	
4	
5	
6	
7	
9	
10	
11*	 Adjustment range of automatic kick-out feature - 60...180bar
12	
13	
14	
15	
16	
17	

Code	micro switch: max. current/voltage - 5A/250V AC protection - IP67 contact configuration
Code	 DIN 43650-A
omit	without microswitch
E1	
E2	
E3	

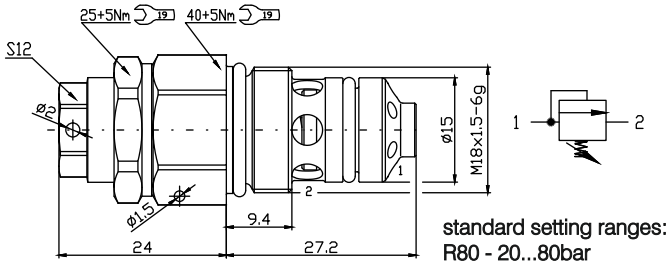
Code	spool control	
20-12 20-24 20-11 20-22	12VDC 24VDC 110VRAC 220VRAC	ON-OFF EHI & EHE 
30-12 30-24 30-11 30-22	12VDC 24VDC 110VRAC 220VRAC	ON-OFF EPC 
32		ON-OFF HC & PC 

* The kit (spool control code 11) needs special spool.

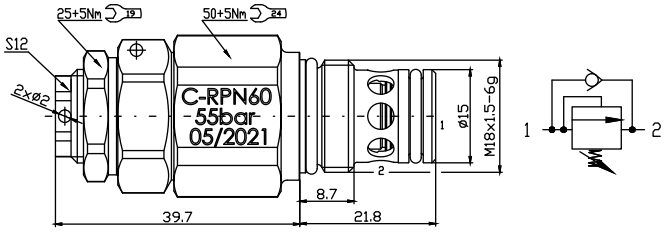
** Repeat for each spool. In case of identical spools ordering code example is:
RPN60 / 3 / Q / 3x / P1CL A1 / R / PT2 / G / N

AUXILIARY PORT VALVES

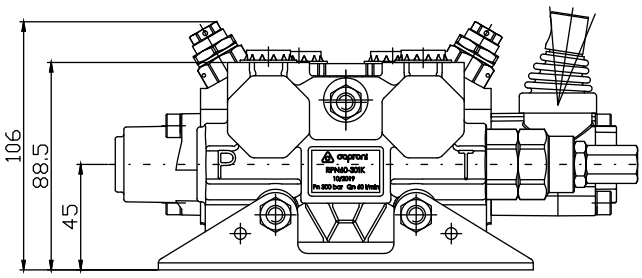
Pressure relief valve R		Relief and anticavitation valve C	Code
standard settings - 80 ; 150 ; 250 ; 350bar	R80 ; R150 R250 ; R350	standard setting - 200bar	CAB
example with valve on port A and B set at 250	RAB250		
example with valve on port A and B set at 70bar (port A) and 220bar (port B)	RA70RB220	example with valve on port A and B set at 50bar (port A) and 250bar (port B)	CA50CB250

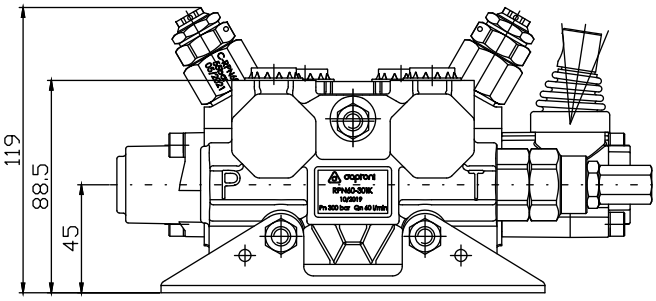


standard setting ranges:
R80 - 20...80bar
R150 - 81...150bar
R250 - 151...250bar
R350 - 251...350

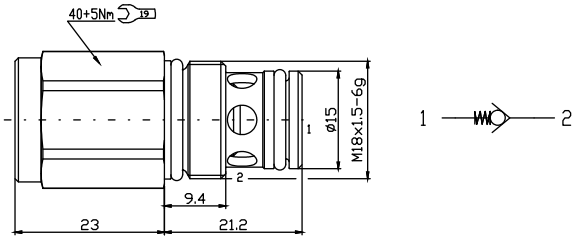


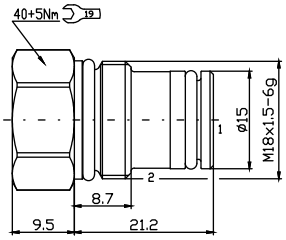
standard setting range:
C... - 50...300bar

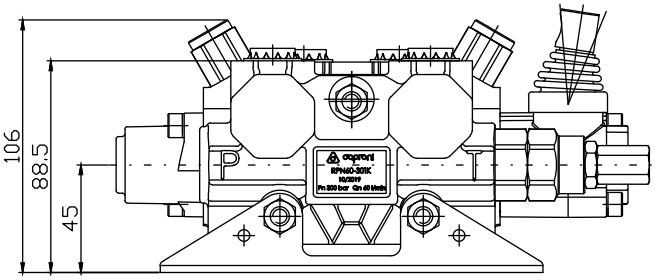


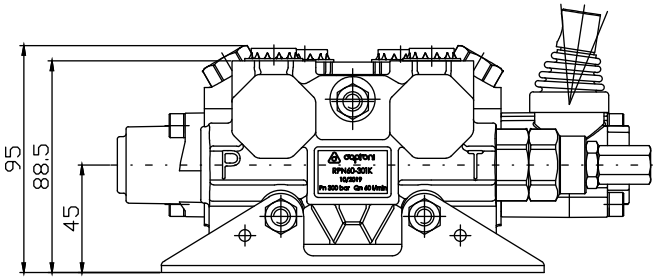


Anticavitation valve K	Code	Valve blanking plug P	Code
with valve on port A and B	KAB	with plug on port A and B	PAB



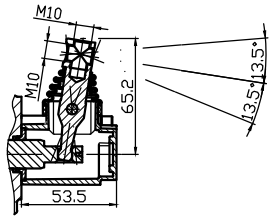
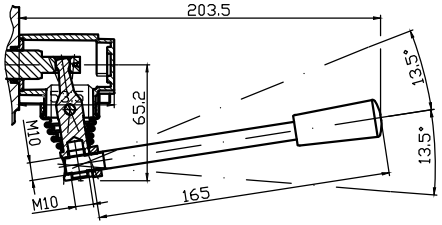
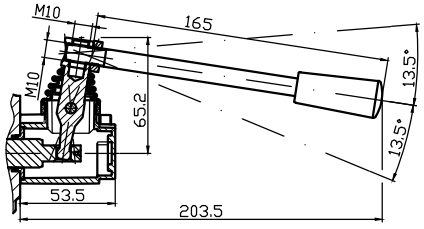
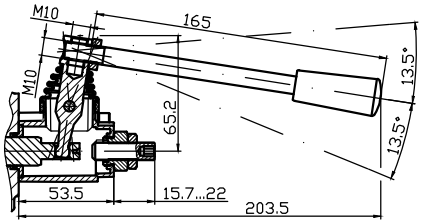
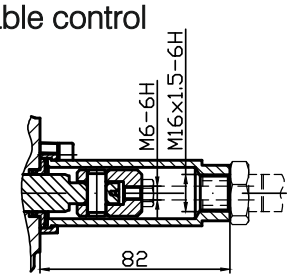
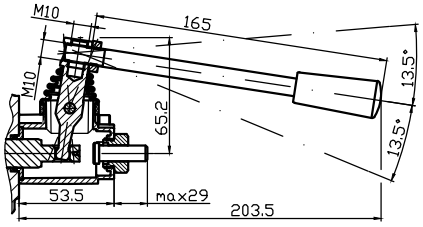
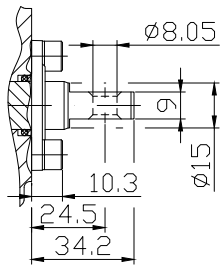






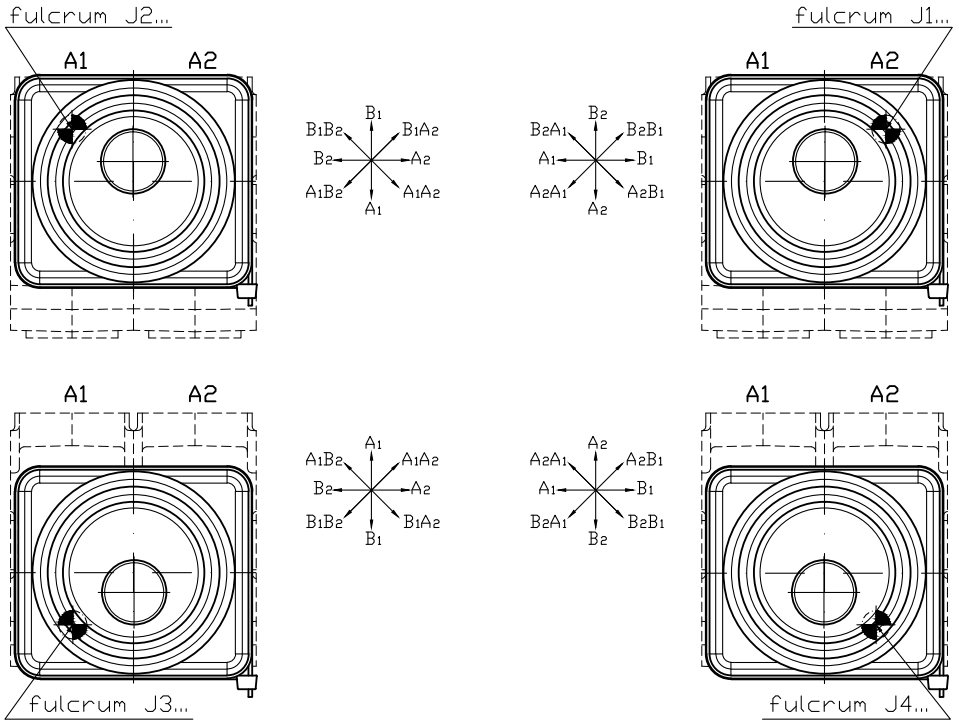
All auxiliary port valves use the same cavity - they are interchangeable.

OPERATION CONTROL

operation control	Code	operation control	Code
without standard hand lever 	C	with standard hand lever at 180° 	CLO
with standard hand lever 	CL	with stroke (flow) limiter 	CLR
with cable control  Cables , single levers and joystick controls - on request	H	with limit switch 	CLS
without lever , with dust-proof plate 	Z		

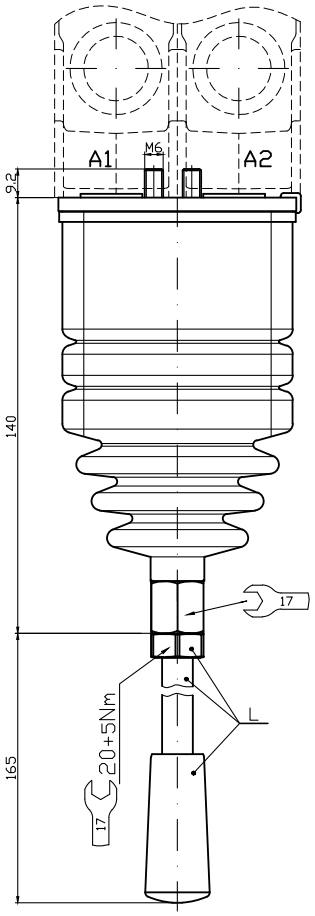
OPERATION CONTROL

Working scheme by assembly on the side of threaded ports A (standard)



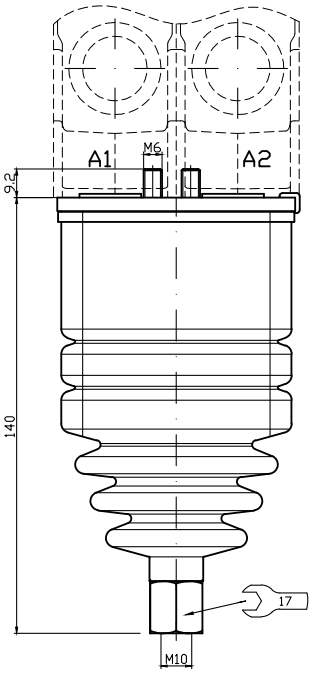
joystick with standard hand lever

Code: J1L ; J2L ; J3L ; J4L



joystick without standard hand lever

Code: J1 ; J2 ; J3 ; J4



SECTIONAL DIRECTIONAL CONTROL VALVE TYPE RPN80

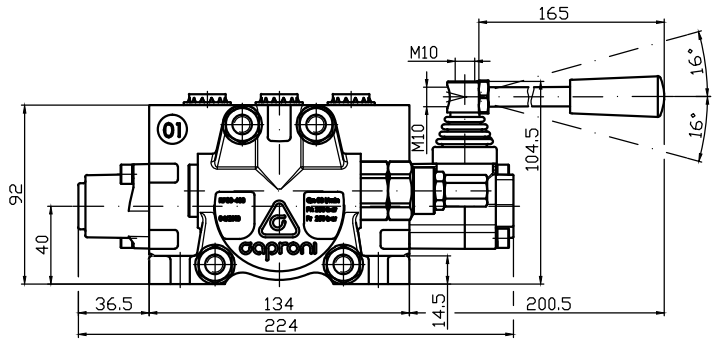
GENERAL DESCRIPTION

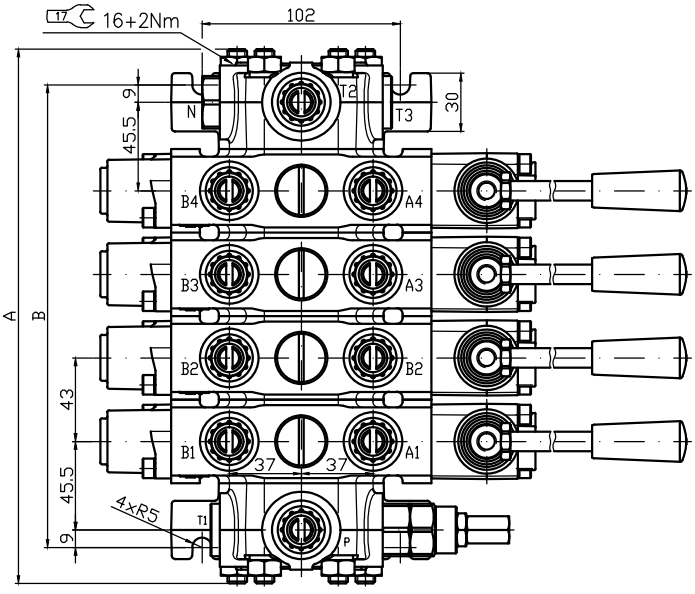
Hydraulic valve RPN80 provides change of fluid flow direction, hydro-systems pressure restriction, pump unloading in neutral position of the spools. The valve RPN80 is designed to be integrated in hydraulic systems of Mobile and Industrial Machines.
The valve assembly consists of:
Inlet cover with integrated relief valve, a combination of sections (up to 10pcs) and outlet cover. The valve RPN80 provides parallel, series or tandem distribution of the working liquid and direct passing of the flow from the pump line to the tank at neutral position (open center). Options “closed centre” and “carry over” are possible with additional shut-off plug in port N. There are different control options: spring–centering in “neutral” position, detent, automatic kick-out, hydraulic, pneumatic, electro-hydraulic and electro-pneumatic control.

TECHNICAL DATA

Rated flow	80 l/min
Max. pressure	P=250 bar; T=20 bar
Spool stroke	±7 mm
Working temperature range	-15...+80 °C
Working liquid	hydraulic oil HLP DIN51524
Liquid viscosity	15...300cSt
Nominal filtration	ISO4406: 19/16 (recommended filter element - 0,025mm mesh)
Internal leakage at 120 bar , t=40°C and viscosity 46cSt	max. 8cm³/min; max 3cm³/min (special version)
Actuating force	less than 300N

DIMENSIONS

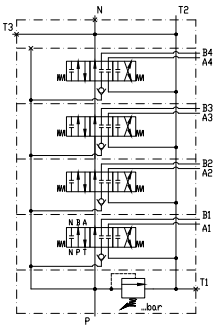




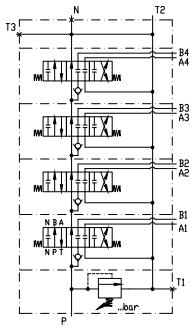
RPN80/4/Q/4x/P1CLA1/R/PT2/G/N

Type	n	A mm	B mm	Weight kg
RPN80-1...	1	146	109	7.0
RPN80-2...	2	189	152	10.0
RPN80-3...	3	232	195	13.1
RPN80-4...	4	275	238	16.1
RPN80-5...	5	318	281	19.2
RPN80-6...	6	361	324	22.3
RPN80-7...	7	404	367	25.4
RPN80-8...	8	447	410	28.5
RPN80-9...	9	490	453	31.6
RPN80-10...	10	533	496	34.7

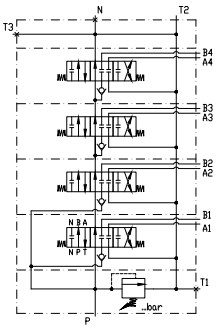
STANDARD PARALLEL CIRCUIT



STANDARD SERIES CIRCUIT



TANDEM CIRCUIT



ORDERING CODE

RPN80EHI / 3 / Q / P 1 CL A 1 E1 CAB** / R / PT1 / G / N

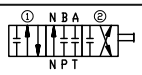
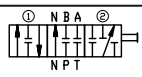
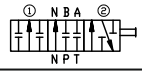
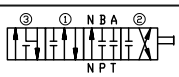
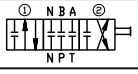
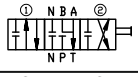
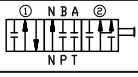
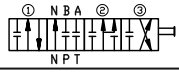
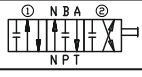
type of control	Code
without control	omit
On-Off internal electro-hydraulic	EHI
On-Off external electro-hydraulic	EHE
On-Off electro-pneumatic	EPC
On-Off hydraulic	HC
On-Off pneumatic	PC

number of the spools

relief valve	Code
setting range 20...300bar (example of required settings 180bar)	Q Q180
shut-off plug installed	K

type of connection	Code
Parallel	P
Series*	S

* The scheme (connection type S) needs special body.

spools	Code
	1
	2
	3
	4
	5
	6
	7
	9*
	10*
	12
	13

* The scheme (spool code 9 and 10) needs special body with extra machining.

Code	operation control
C CL CLO CLR CLS CP H Z	see page 3/4
J...	see page 4/5

Code	lever position
A	at port side A (standard)
B	at port side B

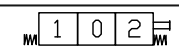
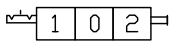
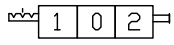
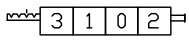
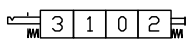
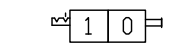
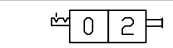
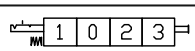
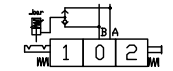
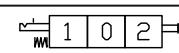
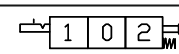
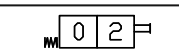
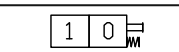
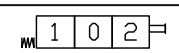
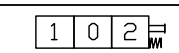
standard port threads		
Code	P , A , B , T1 , T2 , T3	N
G	G1/2"-A	M24x1,5-6H

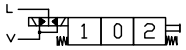
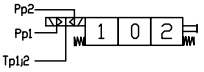
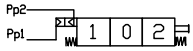
Code	application
N	normal
T	tropical

Code	used conn. ports
PT1	P and T1
PT2	P and T2
PT3	P and T3

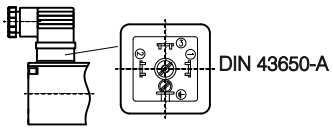
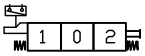
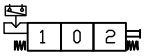
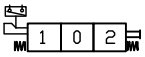
Code	hydraulic power output
R	open center (port N connected to T)
W	closed center (port N - shut-off plug installed)
C	carry over (port N - shut-off plug installed)

auxiliary port valves - see next page

Code	spool control
1	
2	
3	
4	
5	
6	
7	
9	
11*	 Adjustment range of automatic kick-out feature - 60...180bar
12	
13	
14	
15	
16	
17	

Code	spool control
20-12 20-24 20-11 20-22	12VDC 24VDC 110VRAC 220VRAC ON-OFF EHI & EHE 
30-12 30-24 30-11 30-22	12VDC 24VDC 110VRAC 220VRAC ON-OFF EPC 
32	ON-OFF HC & PC 

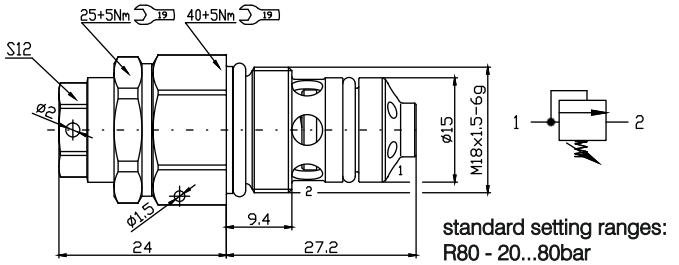
* The kit (spool control code 11) needs special spool.

Code	micro switch: max. current/voltage - 5A/250V AC protection - IP67 contact configuration
Code	 DIN 43650-A
omit	without microswitch
E1	
E2	
E3	

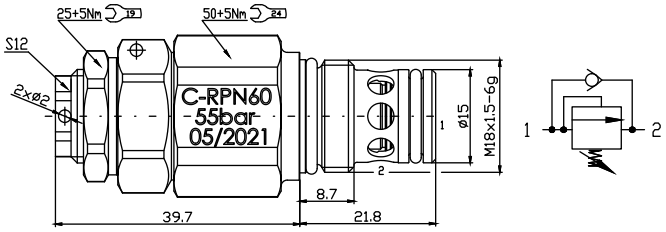
** Repeat for each spool. In case of identical spools ordering code example is:
RPN80 / 3 / Q / 3x / P1CL A1 / R / PT2 / G / N

AUXILIARY PORT VALVES

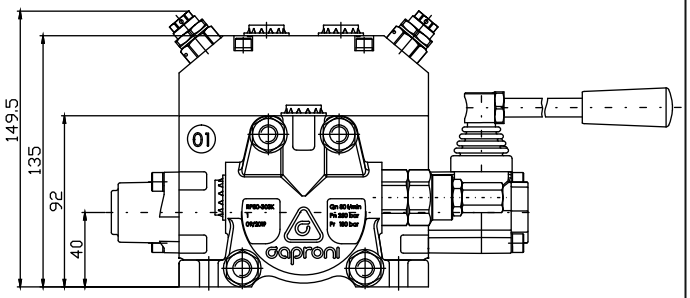
Pressure relief valve R		Relief and anticavitation valve C	Code
standard settings - 80 ; 150 ; 250 ; 350bar	R80 ; R150 R250 ; R350	standard setting - 200bar	CAB
example with valve on port A and B set at 250	RAB250		
example with valve on port A and B set at 70bar (port A) and 220bar (port B)	RA70RB220	example with valve on port A and B set at 50bar (port A) and 250bar (port B)	CA50CB250

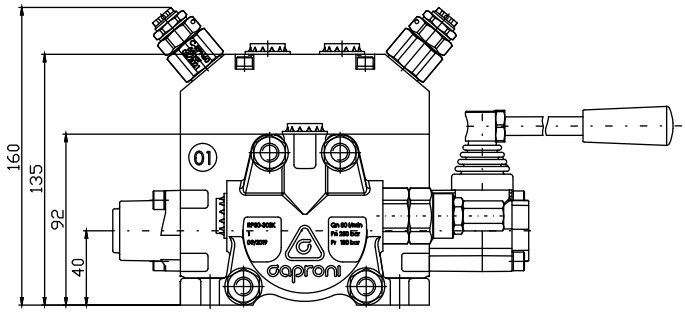


standard setting ranges:
R80 - 20...80bar
R150 - 81...150bar
R250 - 151...250bar
R350 - 251...350

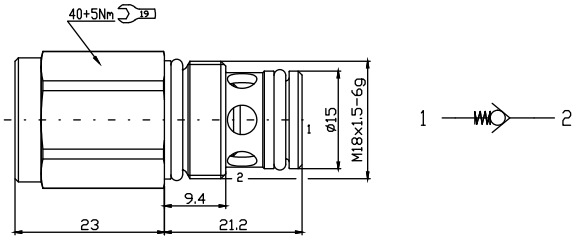


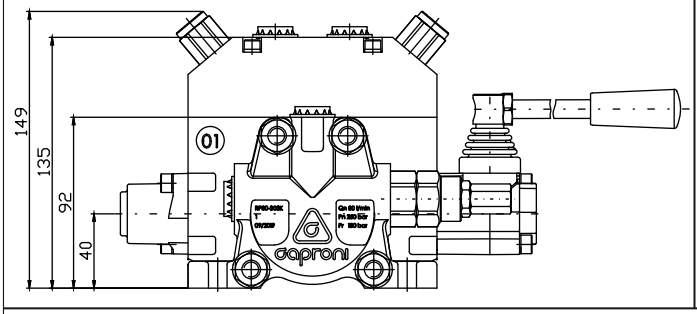
standard setting range:
C... - 50...300bar

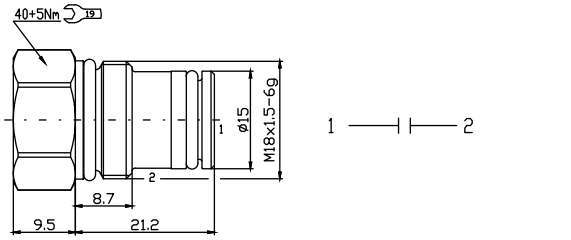


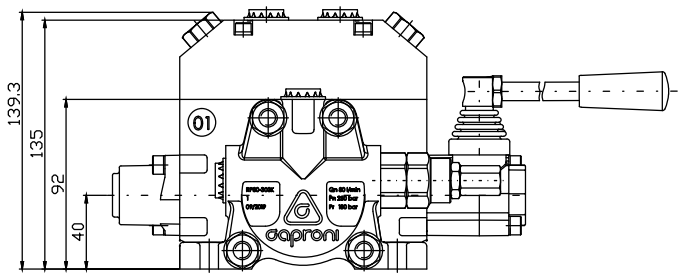


Anticavitation valve K	Code	Valve blanking plug P	Code
with valve on port A and B	KAB	with plug on port A and B	PAB



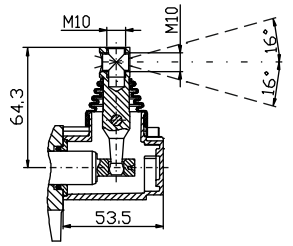
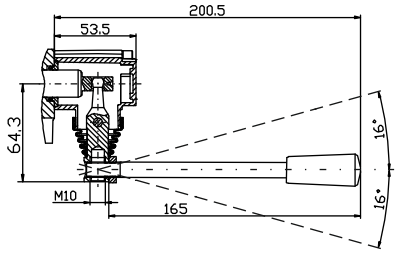
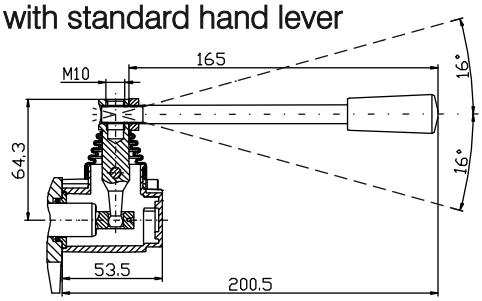
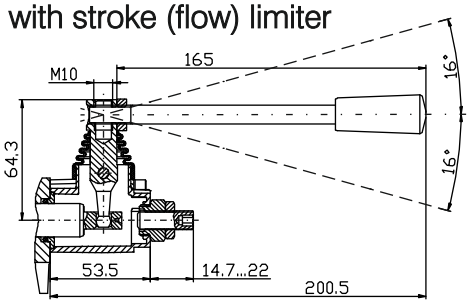
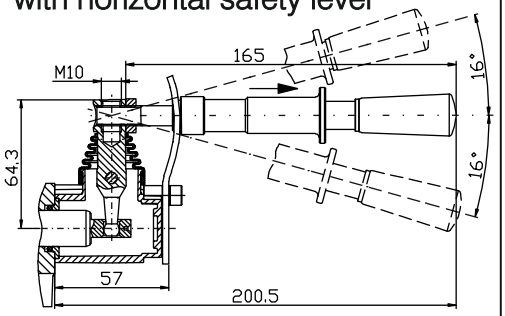
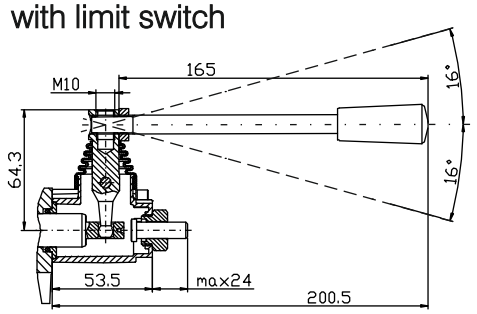
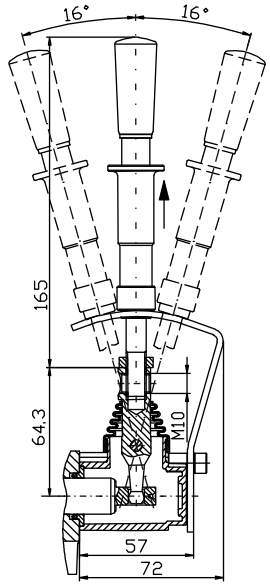
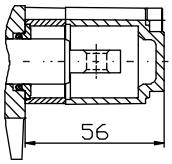
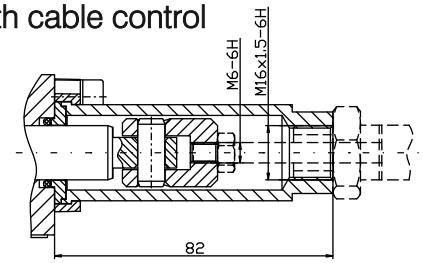
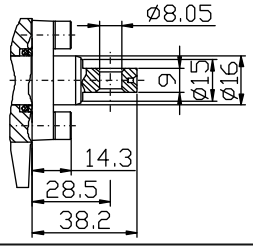






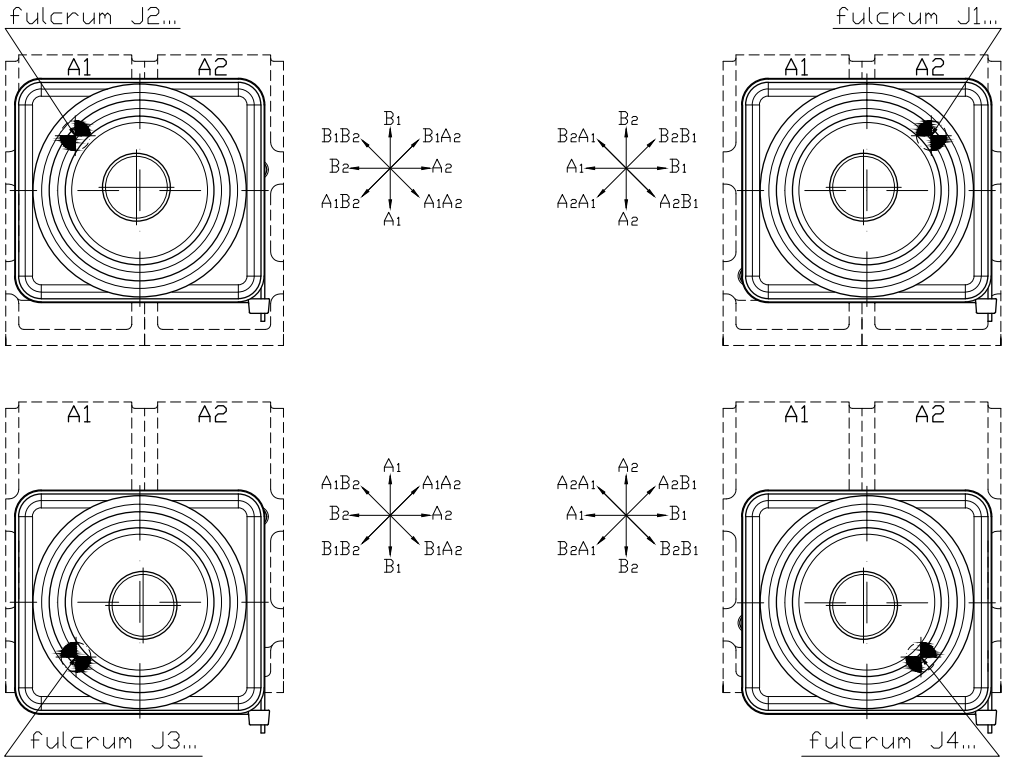
All auxiliary port valves use the same cavity - they are interchangeable.

OPERATION CONTROL

operation control	Code	operation control	Code
without standard hand lever 	C	with standard hand lever at 180° 	CLO
with standard hand lever 	CL	with stroke (flow) limiter 	CLR
with horizontal safety lever 	SHL	with limit switch 	CLS
with vertical safety lever 	SVL	with protection cap 	CP
		with cable control  Cables , single levers and joystick controls - on request	H
		without lever , with dust-proof plate 	Z

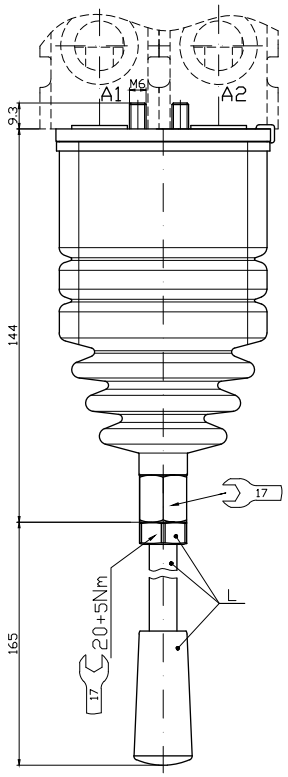
OPERATION CONTROL

Working scheme by assembly on the side of threaded ports A (standard)



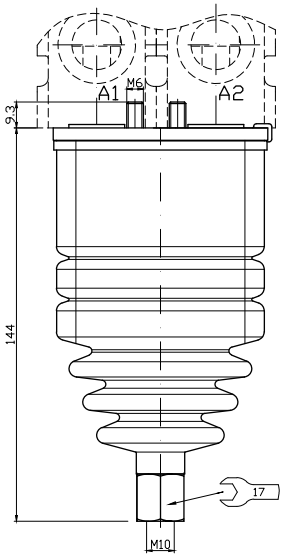
joystick with standard hand lever

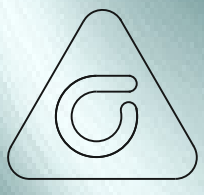
Code: J1L ; J2L ; J3L ; J4L



joystick without standard hand lever

Code: J1 ; J2 ; J3 ; J4





caproni

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