

## Products ... ... for mobile hydraulic applications

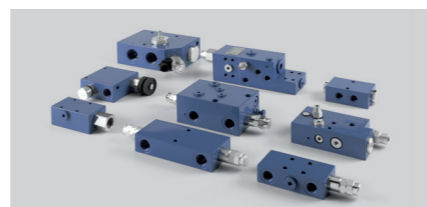
### Mechanical and Electric Cartridge Valves

Pressure control valves	$p_{max}$	350 bar
Counter balance valves	$Q_{max}$	300 L/min
Directional control valves	Ports	up to SAE 20
Flow control valves		



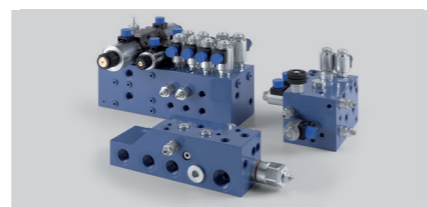
### Parts-in-Body Valves

Load holding / Motion control valves	$p_{max}$	420 bar
Boom lowering control valves	$Q_{max}$	500 L/min
PO check valves	Ports	up to 1 1/4 SAE6000
Pressure control valves		
Flow control valves		



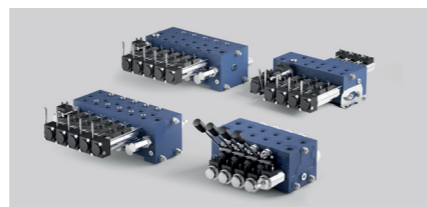
### Hydraulic Integrated Circuits

Weight lifting	$p_{max}$	350 bar
Earth moving	$Q_{max}$	200 L/min
Agricultural vehicles		
Industrial vehicles		

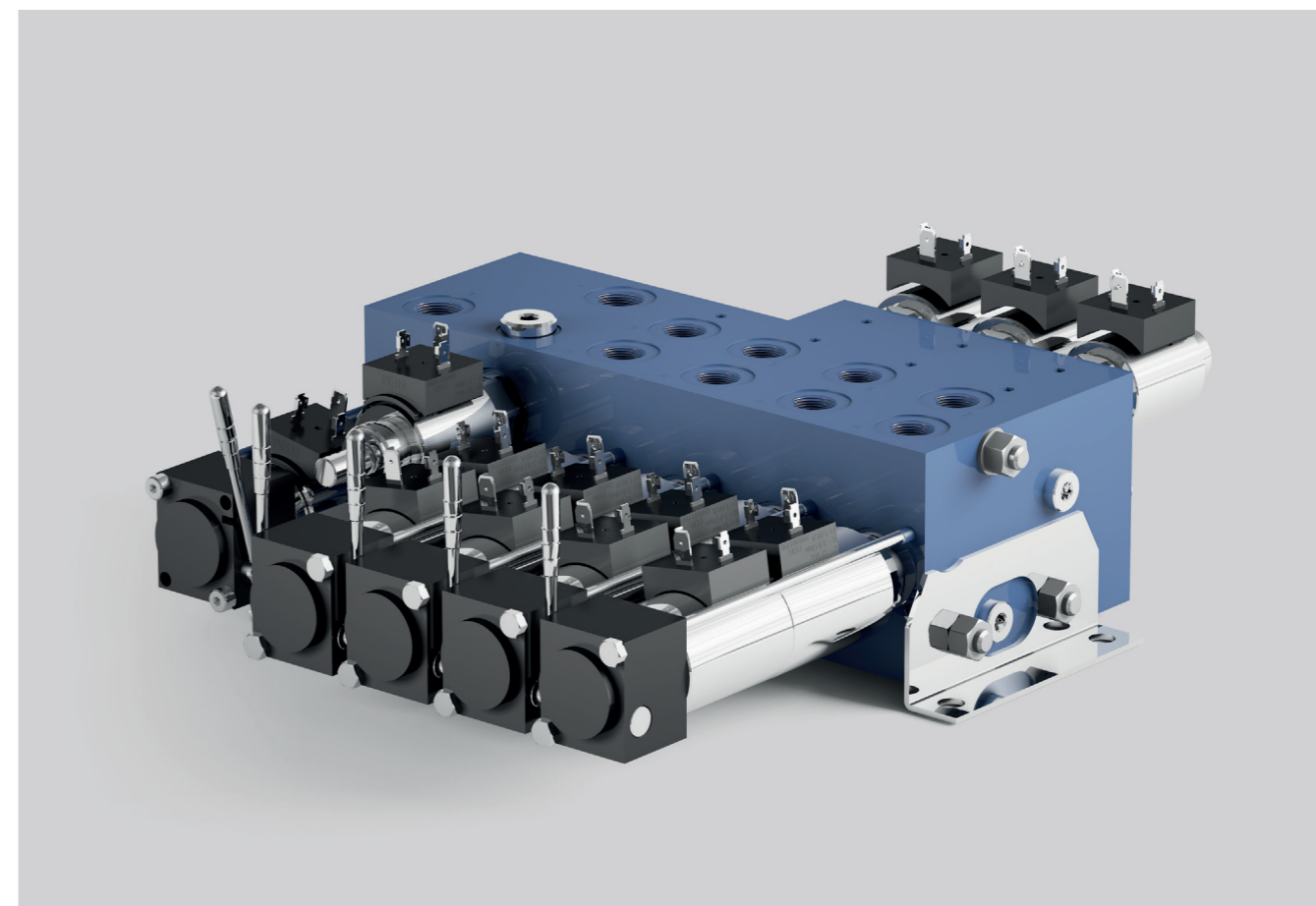


### Directional Control Valves

Flow sensing	$p_{max}$	350 bar
Load sensing	$Q_{max}$	70 L/min
Load independent	Ports	BSP 3/8"



## Directional control valves catalogue NVS3



## Table of contents

NVS3 introduction	5
Applications, technical data and hydraulic layouts	6
Dimensions	8
Performance graphs	10
Order example	14
Inlet/outlet section	15
Work section	25
Custom configuration	36
Spare parts	39
General tightening torques	45
Technical specifications and General conditions	46

## Company profile

NEM, founded in 1995, is a valve manufacturer specialising in the development of hydraulic solutions for mobile, agricultural and industrial applications.

Our goal is to be a reliable partner, providing for our customers a state of the art service, delivered by highly qualified technical staff, to achieve customized solutions.

At NEM we are aware that the future of the hydraulic industry is in system engineering. We are therefore developing and manufacturing top quality products, which can be fully integrated into many different applications. NEM components ensure the highest level of performance and safety in any application; this, together with our focus on innovation, has gained us the trust and appreciation of leading machine manufacturers worldwide.

NEM firmly believes that its internal synergy ensures that all customers receive the most efficient and effective service. This is why, each and every day, we explore advances in industry related knowledge, discuss solutions, and bring into play all our expertise to ensure we are utilizing the most advanced technologies.

In order to provide our customers with the highest possible quality, NEM employs some of the most skilled professionals within the industry, who work state of the art equipment and processes. This guarantees perfect functionality of components and systems produced at our facilities.

NEM's philosophy has always been quality driven, with the customer first in mind. At NEM we understand that human capital is the most important resource and main reason for our joint success. Our company believes in people, in their talents and their personal expertise.

We source raw material and parts, develop and design components and systems, machine them using processes such as turning, grinding, lapping, drilling, honing, heat treatment, assemble and test and finally deliver to our customer's specifications.

It's our responsibility to take care of our customers as well as ensure total quality.

NEM's capabilities cover a wide spectrum of control technologies by combining mechanics, electrics and electronics to supply perfect hydraulic operating components and systems.

Hundreds of customers in many industries trust us and have taken advantage of our expertise. Our applications can be found all over the globe, under the heaviest working conditions.

It goes without saying that in NEM people go the extra mile in order to satisfy our customers and the customer of our customers.

You are kindly invited to meet the people at NEM who listen and who deliver for the benefit of our customers.

## Mechanical and Electrical Cartridge Valves

Pressure control valves  
Counterbalance valves  
Directional control valves  
Flow control valves

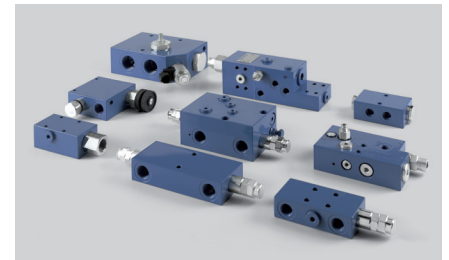
$p_{\max}$  350 bar  
 $Q_{\max}$  300 L/min  
Cavity up to SAE 20



## Parts-in-Body Valves

Load holding / Motion control valves  
Boom lowering control valves  
PO check valves  
Pressure control valves  
Flow control valves

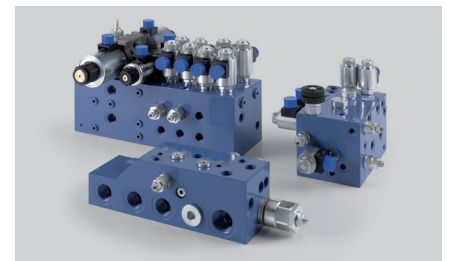
$p_{\max}$  420 bar  
 $Q_{\max}$  500 L/min  
Ports up to 1 $\frac{1}{4}$  SAE6000



## Hydraulic Integrated Circuits

Weight lifting  
Earth moving  
Agricultural vehicles  
Industrial vehicles

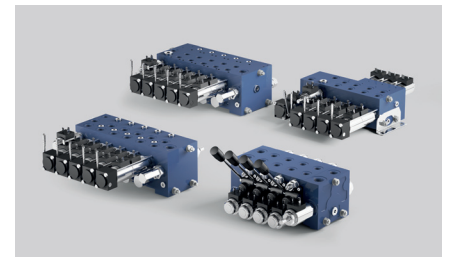
$p_{\max}$  350 bar  
 $Q_{\max}$  200 L/min



## Directional Control Valves

Flow sensing (patented)  
Load sensing  
Load independent

$p_{\max}$  350 bar  
 $Q_{\max}$  70 L/min  
Ports BSP 3/8"



General features	NVS3	NVE3	NVE4	NVD2
<b>BODY MATERIAL</b>				
Steel		(x)	x	
Cast iron				x
Aluminum	x	x	x	
Working section number	1-10	1-10	1-10	1-10
<b>MAXIMUM PRESSURE</b>				
Maximum working pressure (bar)	210	250 (350) <sup>1)</sup>	250 (350) <sup>1)</sup>	350
Maximum back pressure on port T (bar)	10	20	20	10
<b>MAXIMUM FLOW</b>				
Maximum inlet flow (L/min)	30	50	70	50
Maximum regulated flow on port A & B (L/min)	30	30	35	40
<b>PUMP</b>				
Configuration for fixed displacement pump	x	x	x	x
Configuration for variable displacement pump	(x)	x	x	x

Option chart	NVS3	NVE3	NVE4	NVD2
LS Signal pressure relief valve			x	
Pump pressure relief valve	x	x	x	x
LS signal dump valve			x	
Pump dump valve (electric 12/24 Vdc)	x	x	x	x
Pump hydraulic dump valve		x	x	x
<b>SPOOL</b>				
Manual levers	x	x	x	x
Proportional electro-hydraulic actuation 12-24 Vdc	x	x	x	x
On/off electro-hydraulic actuation 12-24 Vdc	x	x	x	x
Open centre spools (A/B to T in neutral position)	x	x	x	x
Closed centre spools (A/B closed in neutral position)	x		x	x
Spools displacement sensor	under development	under development	under development	x
CAN BUS interface actuation	under development	under development	under development	under development
<b>PORT RELIEF VALVE</b>				
Direct operated antishock valve	x	x	x	x
Plug	x	x	x	x

x = available

(x) = available on request

1) Maximum working pressure 350 bar for steel body

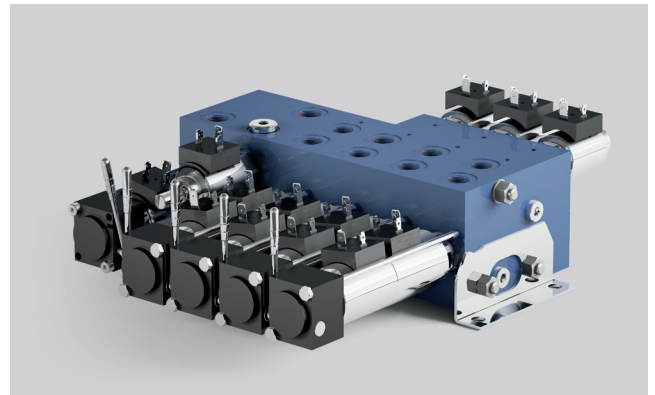


### NVS3 general features

- Load sensing version
- On-off version
- Proportional inlet flow control version
- Maximum inlet flow 30 L/min
- Maximum regulated flow 30 L/min
- Maximum working pressure up to 210 bar
- Inlet flow compensation
- Anodized aluminum
- Port relief valves
- Manual levers
- Levers sensor switches

### Advantages

- Compact design
- Modular design
- Up to 10 work sections
- Flexible hydraulic circuit configuration
- Easy customization
- Safety options



NEM-NVS3 is a compact electro-proportional actuated directional control valve designed to control a maximum flow of 30 L/min. Its architecture is based on the combination of SAE 10 DCV cartridges screwed into aluminum bodies.

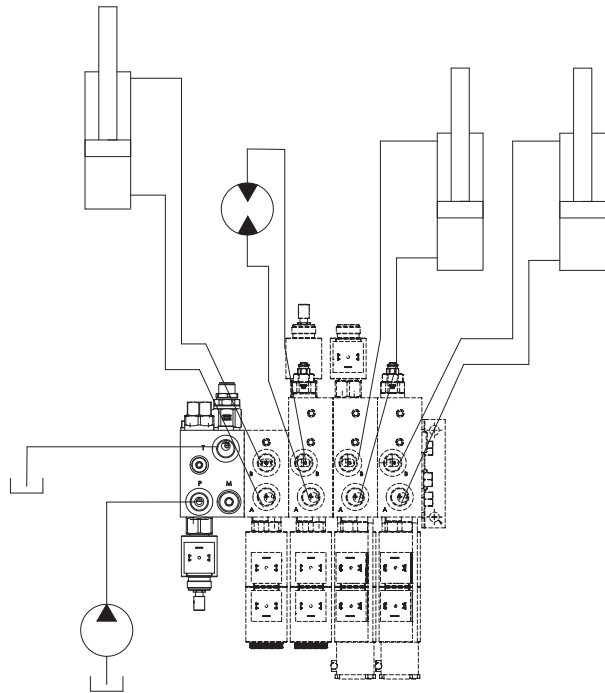
NVS3 is designed for basic applications where the flow control isn't required under simultaneous movements.

Typical applications for NVS3 are self-propelled access platforms or small cranes. Some of their most interesting features are the light weight, obtained as a result of the aluminum body and the possibility to integrate any type of valves inside the inlet and end elements in order to obtain an hydraulic integrated circuit.

Load sensing NVS3 is recommended to obtain the best operating conditions of systems composed by over-center valves.

### Applications

NVS3 typical application

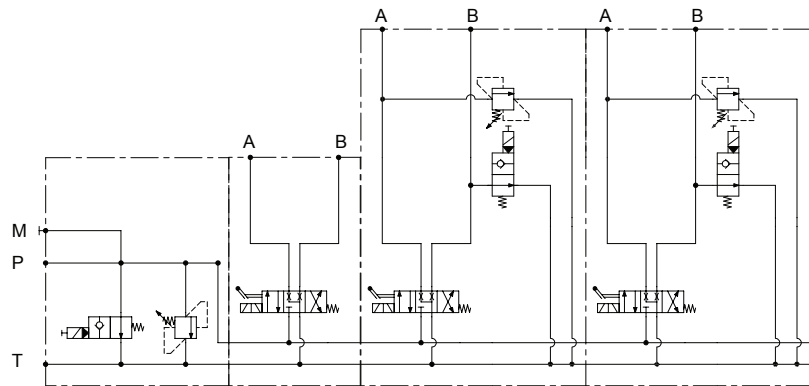


### Technical data

Maximum inlet flow	L/min	30
Maximum regulated flow on ports A & B	L/min	30
Maximum working pressure	bar	210
Maximum back pressure on port T	bar	10
Work sections		10 max.
Mounting type		With or without mounting brackets with fixing holes
Mounting position		Any
Ambient temperature	°C	-20 to 40
Seals		NBR or PTFE
Hydraulic fluid		Mineral oil HLP to DIN 51524
Fluid temperature range	°C	-20 to 90
Viscosity range	mm/s <sup>2</sup>	15 to 250
Contamination level		NAS 1638 class 9 (20/18/15 ISO 4406:1999)
Filtration degree	µm	20
Filtration level	$\beta_{20}$	≥ 75

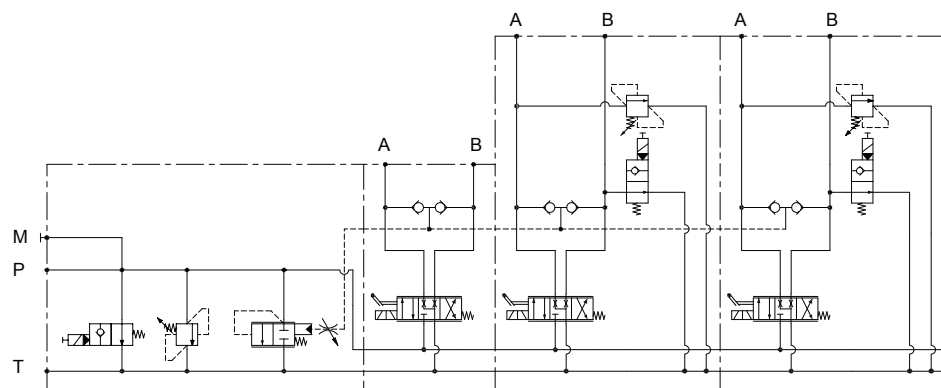


## NVS3 On/Off

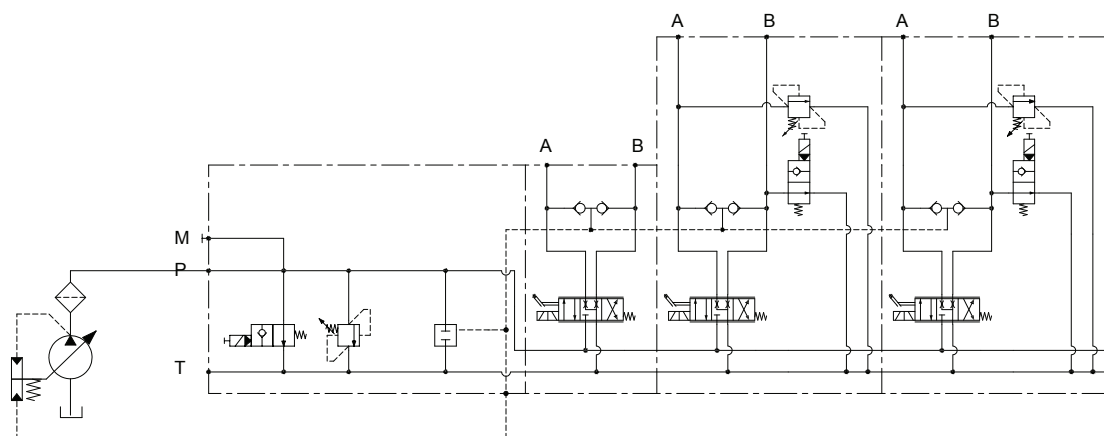


## NVS3 Compensated

For fixed displacement pump

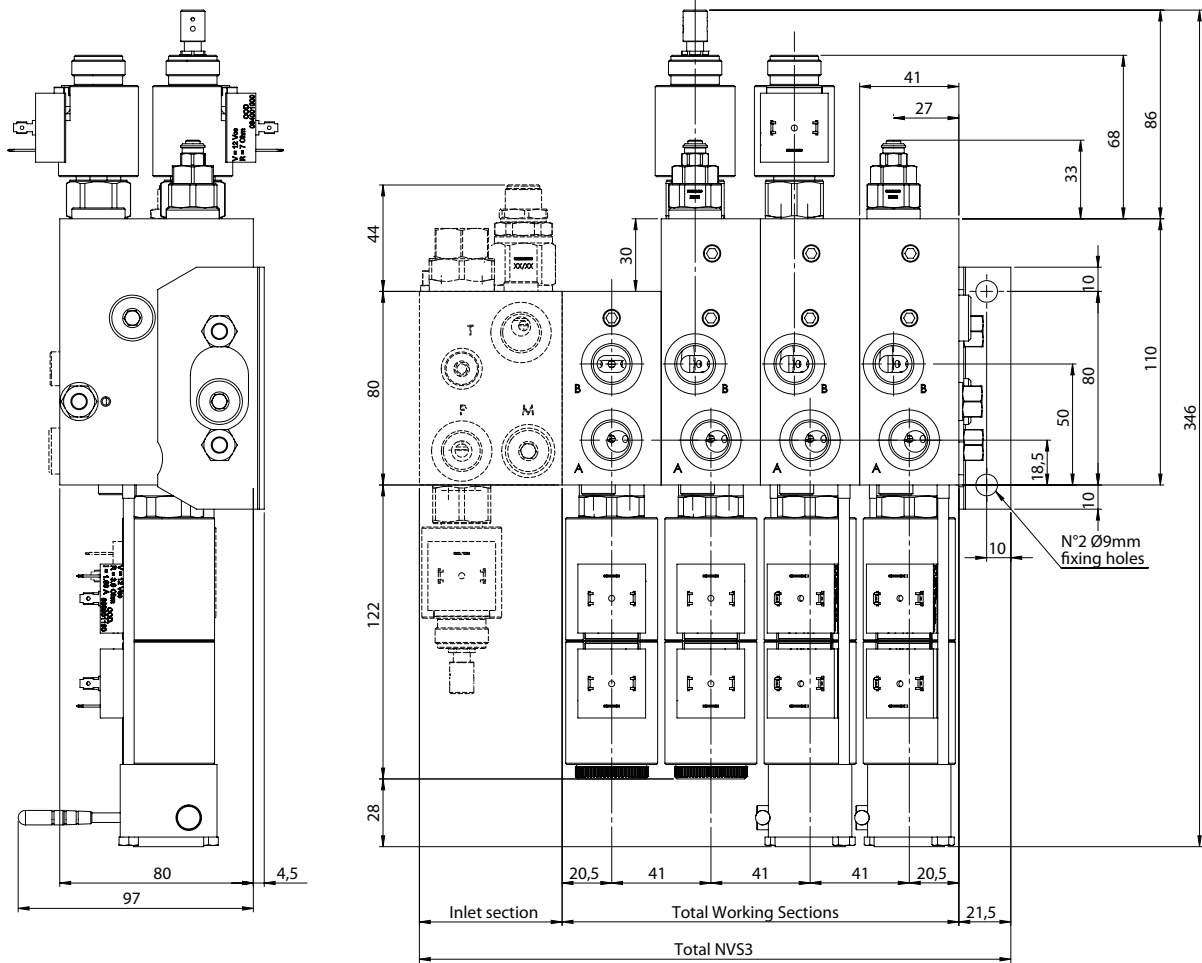


For variable displacement pump





## Dimensions



TOTAL SIZE<sup>1)</sup>[mm]

Inlet Section Type	NVS3/1	NVS3/2	NVS3/3	NVS3/4	NVS3/5	NVS3/6	NVS3/7	NVS3/8	NVS3/9	NVS3/10
IS / LS	121,5	162,5	203,5	244,5	285,5	326,5	367,5	408,5	449,5	490,5
IPC	141,5	182,5	223,5	264,5	305,5	346,5	387,5	428,5	469,5	510,5

SINGLE SECTION WEIGHT [Kg]

IS / LS	IPC	WSLS	WSULS
1,7	2,8	2,0	3,0

STANDARD PORTS SIZE [BSPP ISO-228]

Inlet port P	User port A	User port B	Outlet port T	Port M
3/8" BSPP	3/8" BSPP	3/8" BSPP	3/8" BSPP	1/4" BSPP

STANDARD PORTS SIZE [SAE ASME B1.1-2003]

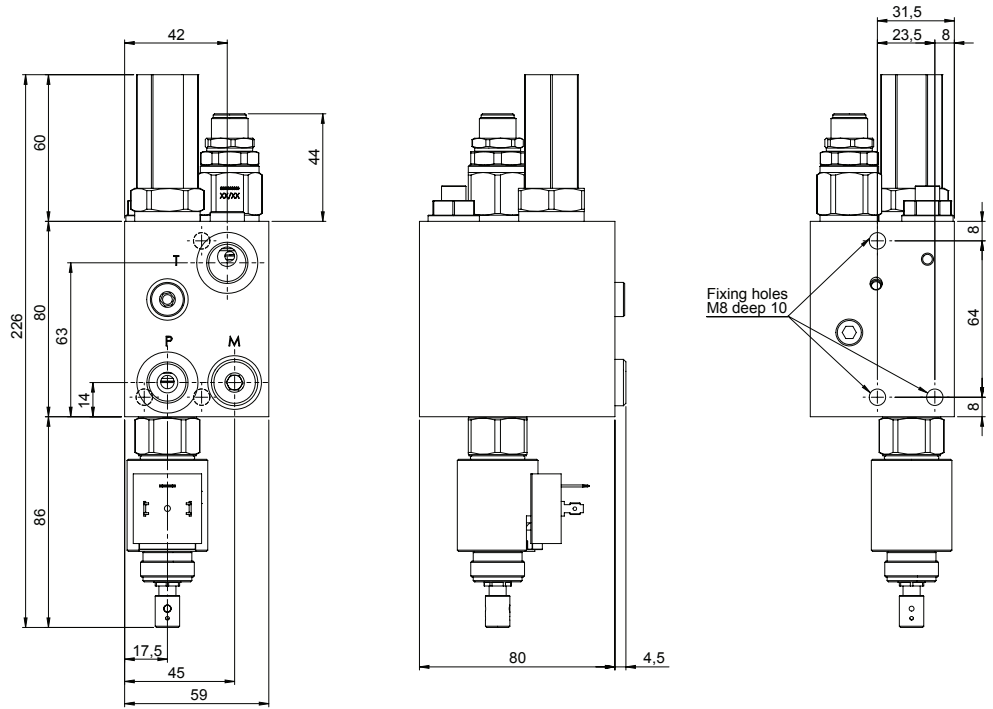
Inlet port P	User port A	User port B	Outlet port T	Port M
3/4-16 UNF-2B (SAE 8)	3/4-16 UNF-2B (SAE 8)	3/4-16 UNF-2B (SAE 8)	3/4-16 UNF-2B (SAE 8)	5/8-18 UNF-2B (SAE 6)

<sup>1)</sup>referred to a distributor with only one entry module

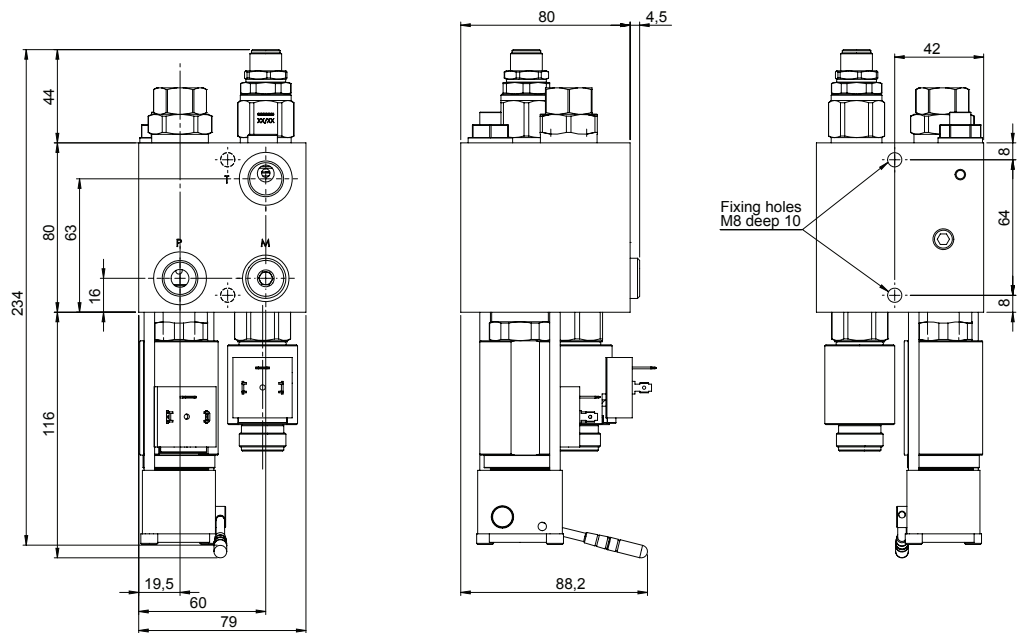


## Inlet section dimensions

### IS / LS

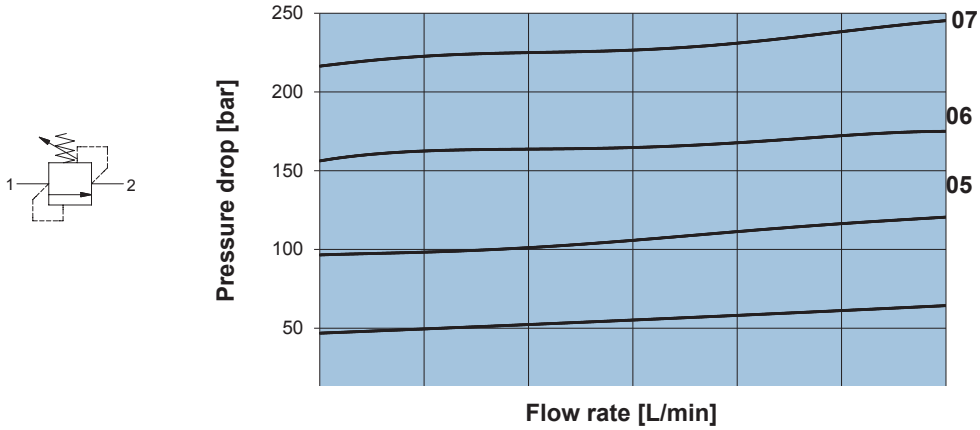


### IPC

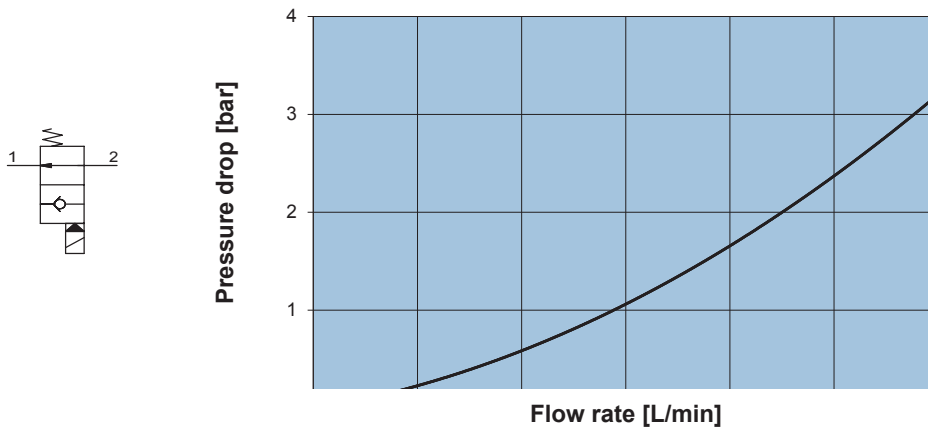


### Performance characteristics

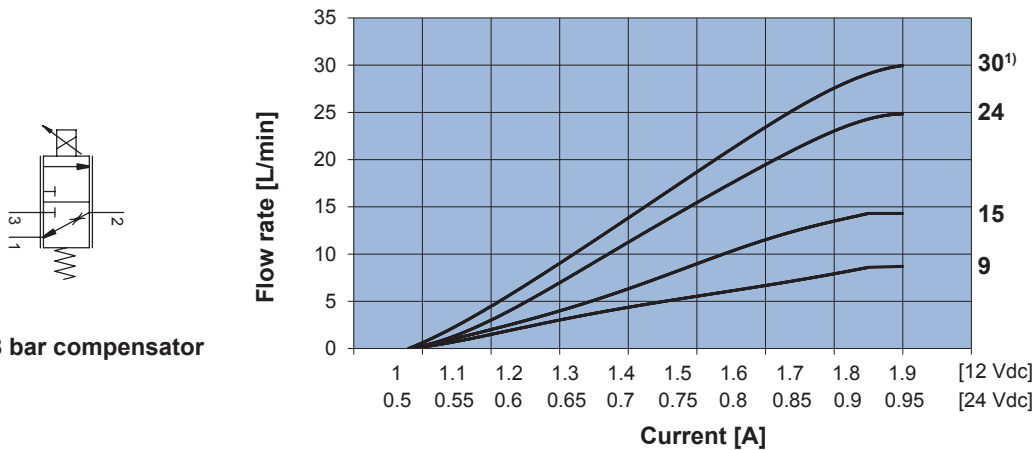
MAIN RELIEF VALVES PRESSURE DROP CHARACTERISTICS



INLET DUMP LINE PRESSURE DROP CHARACTERISTICS



INLET PROPORTIONAL FLOW REGULATOR CHARACTERISTICS



With 8 bar compensator

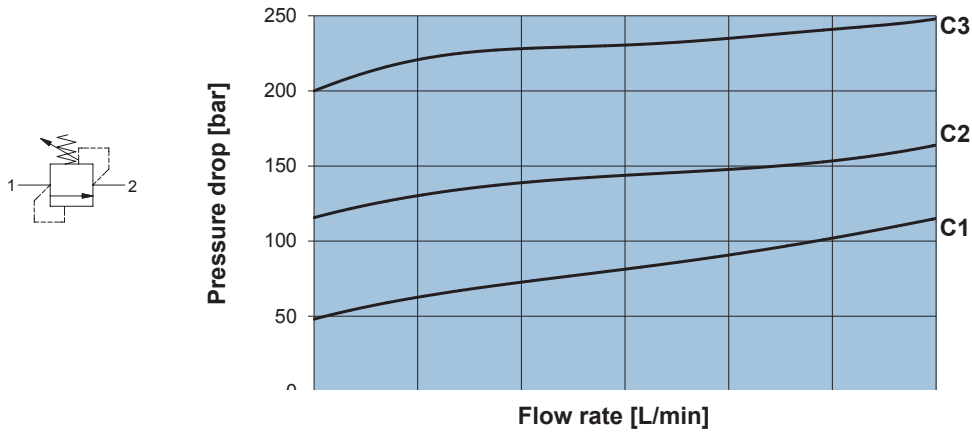
<sup>1)</sup> Only with 11 bar compensator

Note:  
Technical data and diagrams are measured with mineral oil HLP to DIN 51524 of 46 cSt and at 40 °C oil temperature.

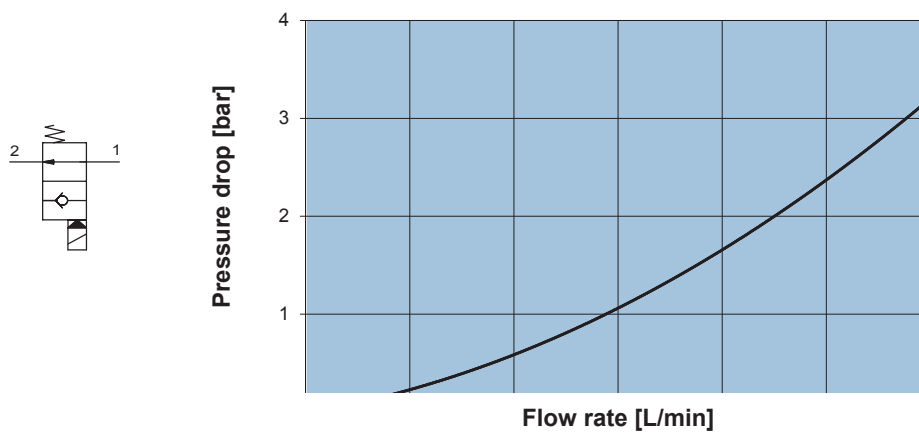


### Performance characteristics

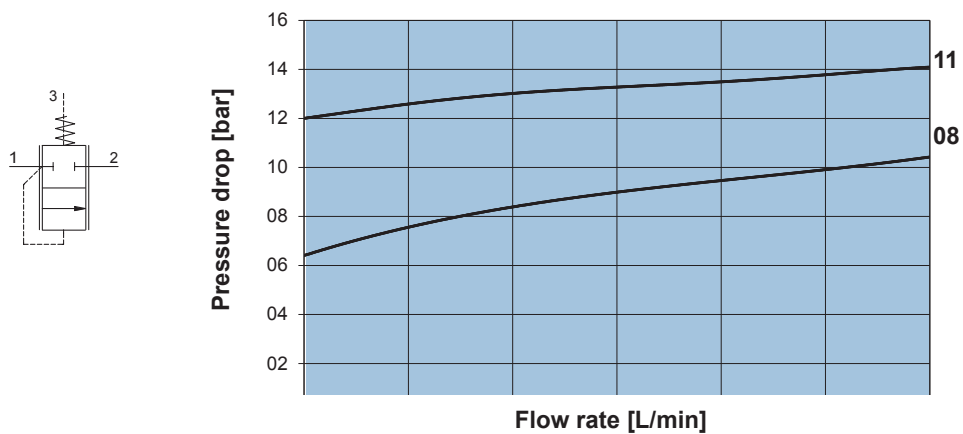
ANTI-SHOCK CHARACTERISTICS



PORT DUMP VALVE PRESSURE DROP CHARACTERISTICS



INLET PRESSURE COMPENSATOR CHARACTERISTICS

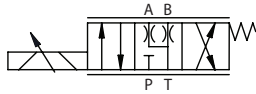


Note:

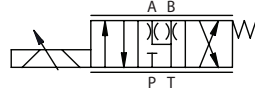
Technical data and diagrams are measured with mineral oil HLP to DIN 51524 of 46 cSt and at 40 °C oil temperature.



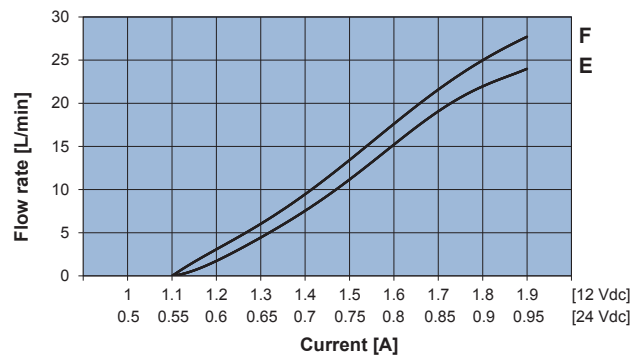
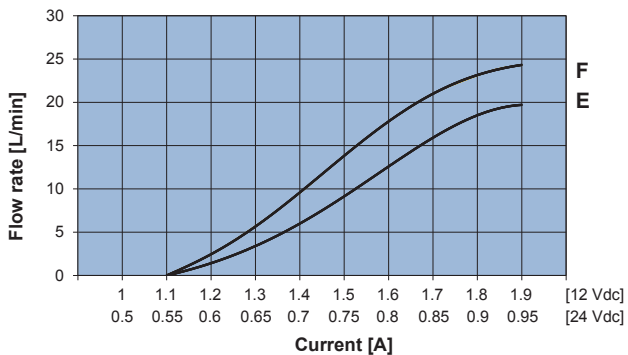
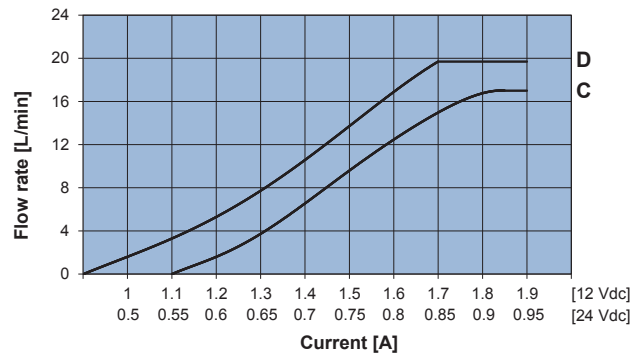
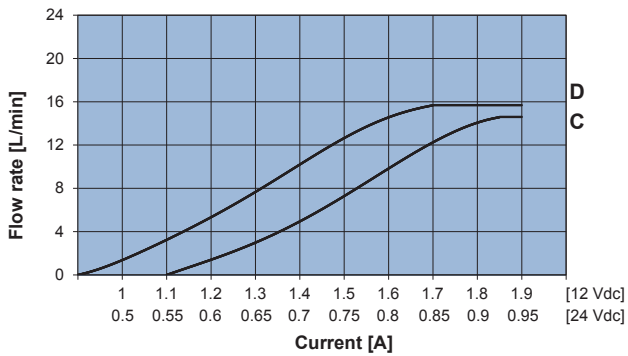
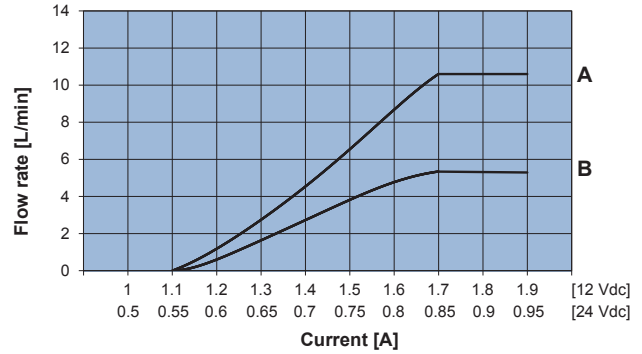
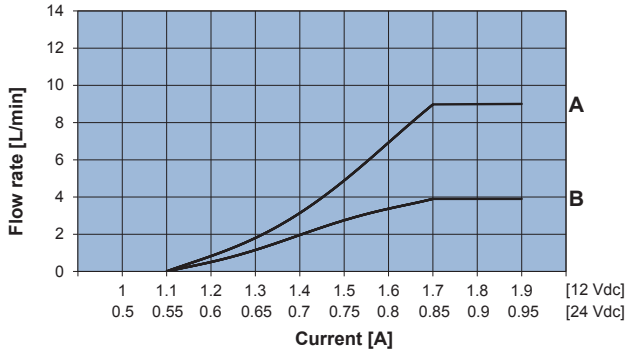
## Spool metering graphs



With 8 bar compensator



With 11 bar compensator

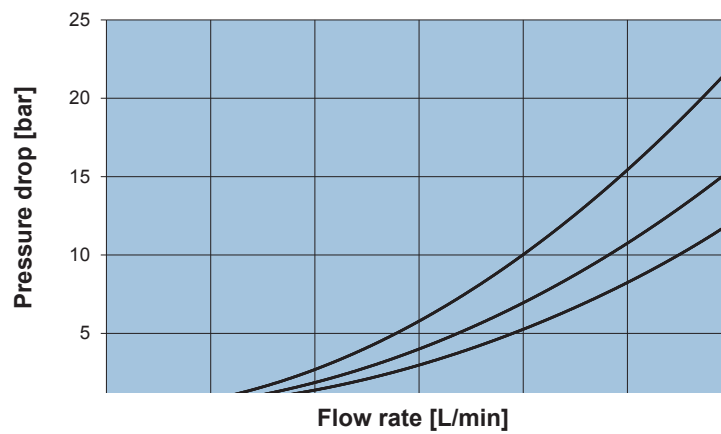
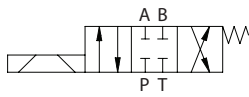
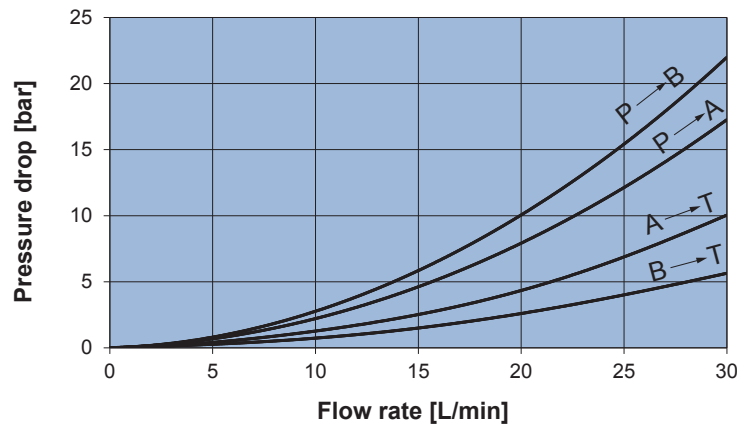
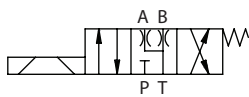


Note:

Technical data and diagrams are measured with mineral oil HLP to DIN 51524 of 46 cSt and at 40 °C oil temperature.



## Spool metering graphs



**Note:**

Technical data and diagrams are measured with mineral oil HLP to DIN 51524 of 46 cSt and at 40 °C oil temperature.

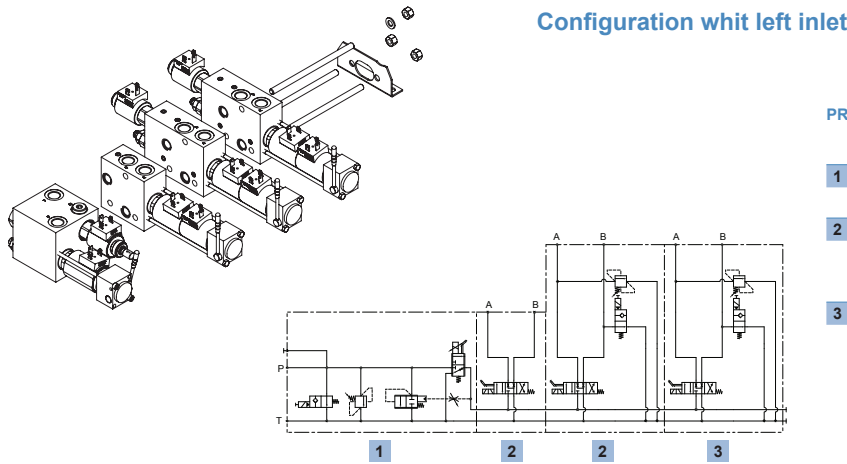


## Ordering string example

### HOW TO ORDER :

To order the assembled block, specify the configuration string of the sections in progressive order

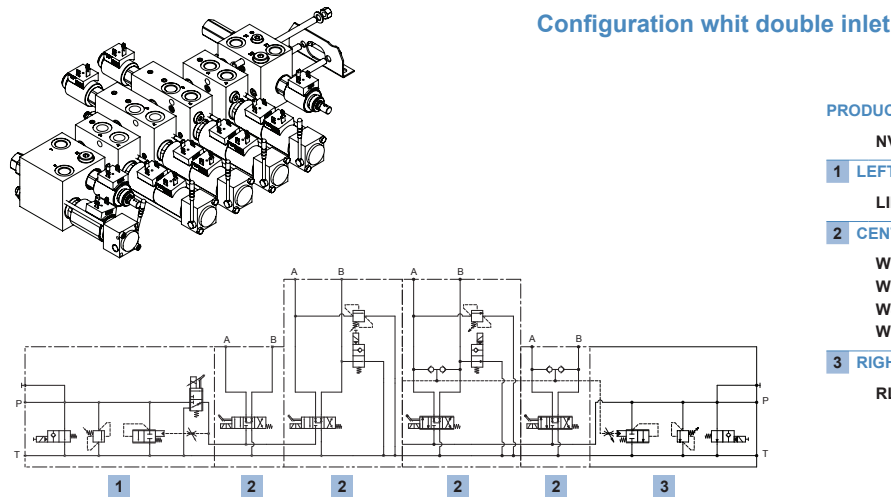
For special configurations not present in the catalog, contact NEM customer care



**PRODUCT TYPE AND NUMBER OF WORK SECTION**

NVS3/3

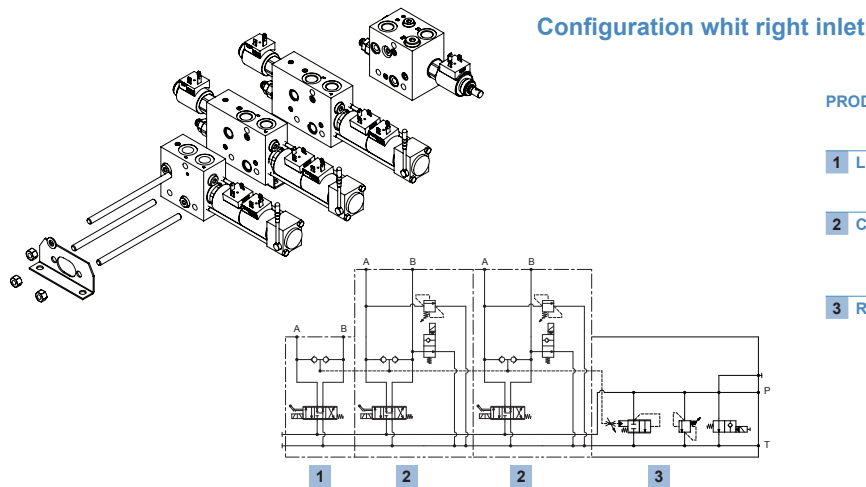
- 1 LEFT CLOSING SECTION**  
LIPG38 - NA5(D12D) - 06(180) - 08 - 24L(P12D)
- 2 CENTRAL SECTION**  
W1G38 - 1L (C12D) - 31 - 1A0  
W2G38 - 1L (C12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)
- 3 RIGHT CLOSING SECTION**  
RW2G38 - 1L (C12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)



**PRODUCT TYPE AND NUMBER OF WORK SECTION**

NVS3/4

- 1 LEFT CLOSING SECTION**  
LIPG38 - NA5(D12D) - 06(180) - 08 - 24L(P12D)
- 2 CENTRAL SECTION**  
W1G38 - 1L (C12D) - 31 - 1A0  
W2PG38 - 1L (C12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)  
W4G38 - 24PL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)  
W3 G38 - 24PL (S12D) - 31 - 1A0
- 3 RIGHT CLOSING SECTION**  
RLSG38 - NA5 - D12D - 06(180) - 11



**PRODUCT TYPE AND NUMBER OF WORK SECTION**

NVS3/3

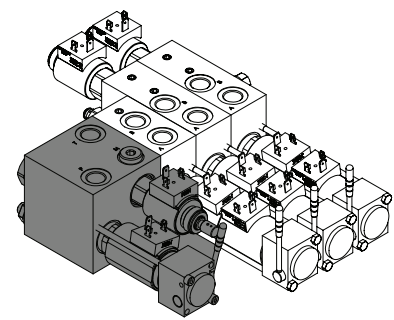
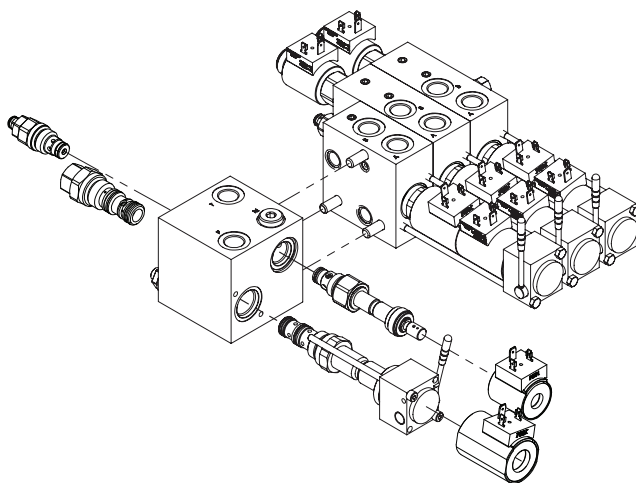
- 1 LEFT CLOSING SECTION**  
LW3 G38 - 24PL (S12D) - 31 - 1A0
- 2 CENTRAL SECTION**  
W4G38 - 24PL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)  
W4G38 - 24PL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)
- 3 RIGHT CLOSING SECTION**  
RLSG38 - NA5 - D12D - 06(180) - 11



#### Inlet/outlet section location

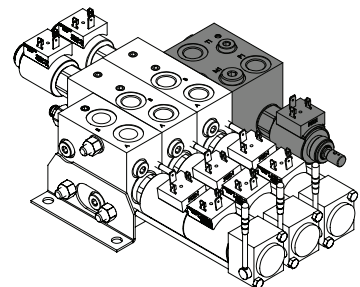
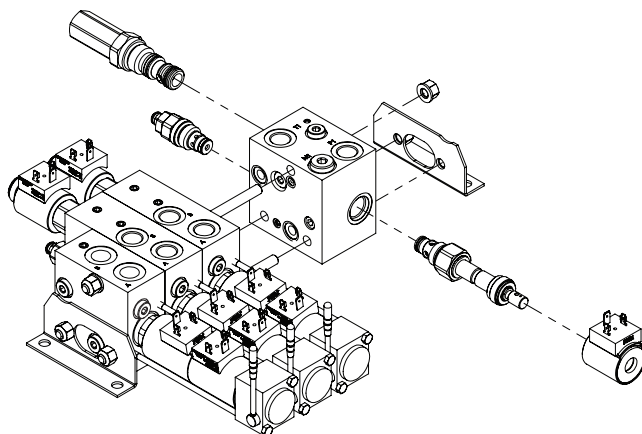
#### LEFT inlet/outlet

Inlet/outlet section mounted on the left (with respect to the lever side)



#### RIGHT inlet/outlet

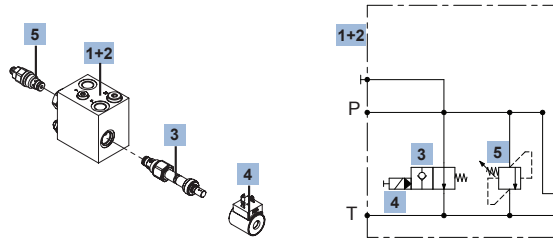
Inlet/outlet section mounted on the right (with respect to the lever side)





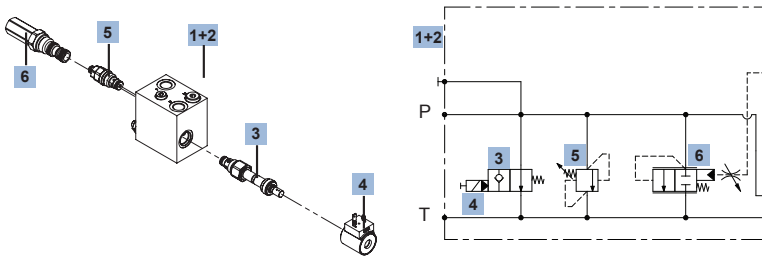
### Left inlet/outlet module

#### LIS Left inlet module for On/Off configuration LIS G38 - NA5 (D12D) - 06(180)



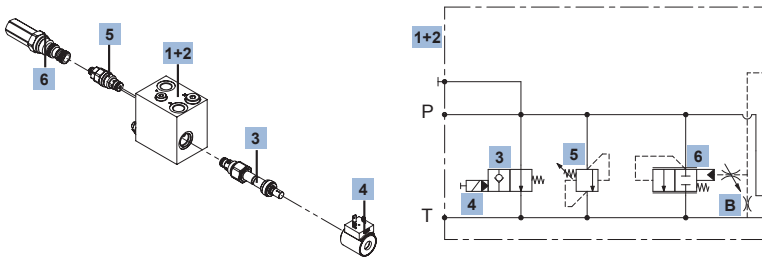
		pag.
1. LIS	Housing	16
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21

#### LLS Left inlet module for compensated configuration LLS G38 - NA5 (D12D) - 06(180) - 11



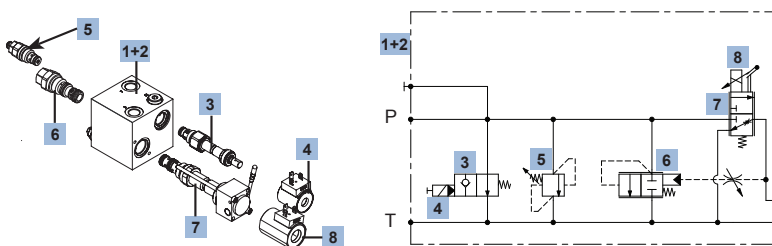
		pag.
1. LLS	Housing	16
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21
6. 11	Hydraulic compensator	22

#### LLSB Left inlet module for compensated configuration whit bleed off predisposition LLSB 0 G38 - NA5 (D12D) - 06(180) - 11



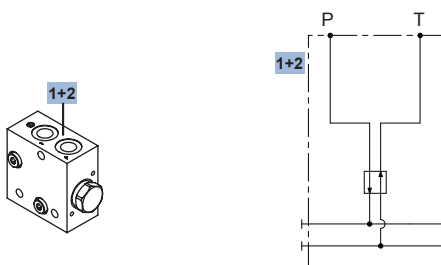
		pag.
1. LLS	Housing	16
B. 0	Bleed off	18
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21
6. 11	Hydraulic compensator	22

#### LIP Left inlet module for proportional inlet flow control LIP G38 - NA5 (D12D) - 06(180) - 08 - 24L (P12D)



		pag.
1. LLS	Housing	16
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21
6. 08	Hydraulic compensator	22
7. 24L	Flow regulator	23
8. P12D	Flow regulator coil	24

#### LDI Left direct inlet LDI G38



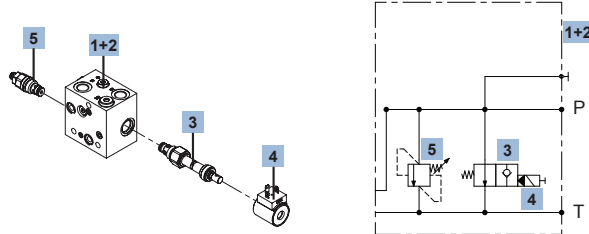
		pag.
1. LDI	Housing	16
2. G38	Port type	18



#### Right inlet/outlet module

#### RIS Right inlet module for On/Off configuration

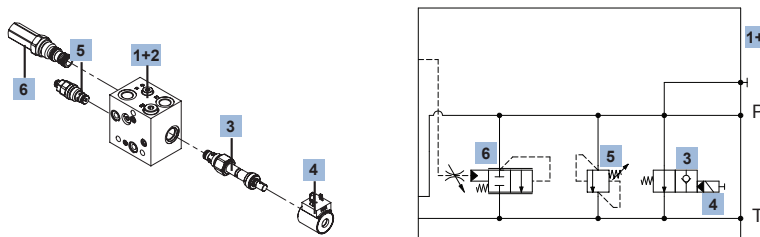
RIS G38 - NA5 - D12D - 06(180)



		pag.
1. RIS	Housing	17
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21

#### RLS Right inlet module for compensated configuration

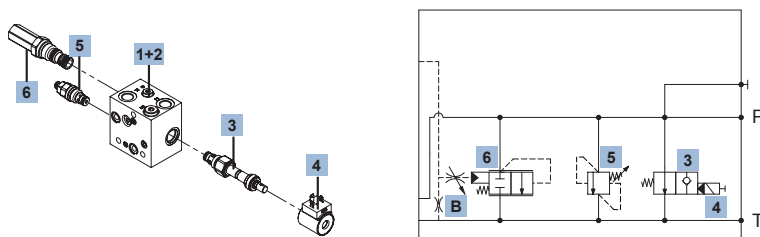
RLS G38 - NA5 - D12D - 06(180) - 11



		pag.
1. RLS	Housing	17
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21
6. 11	Hydraulic compensator	22

#### RLSB Right inlet module for compensated configuration whit bleed off predisposition

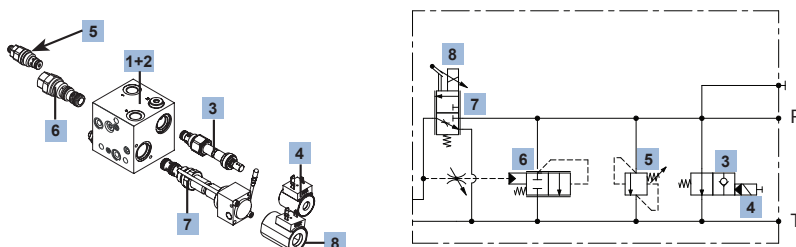
RLSB 0 G38 - NA5 - D12D - 06(180) - 11



		pag.
1. RLS	Housing	17
B. 0	Bleed off	18
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21
6. 11	Hydraulic compensator	22

#### RIP Right module for proportional inlet flow regulation

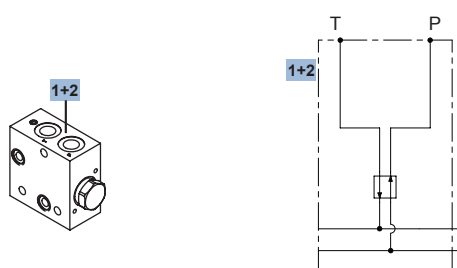
RIP G38 - NA5 - D12D - 06(180) - 08 - 24L - P12D



		pag.
1. RLS	Housing	17
2. G38	Port type	18
3. NA5	Dump valve	19
4. D12D	Dump valve coil	20
5. 06 (180)	Relief valve	21
6. 08	Hydraulic compensator	22
7. 24L	Flow regulator	23
8. P12D	Flow regulator coil	24

#### RDI Right direct inlet

RDI G38



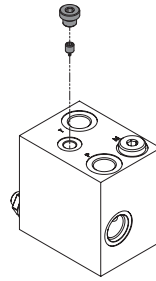
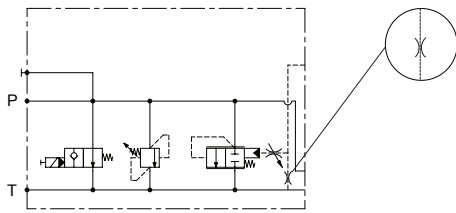
		pag.
1. RDI	Housing	17
2. G38	Port type	18



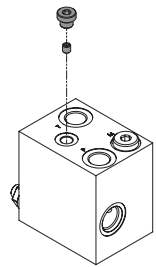
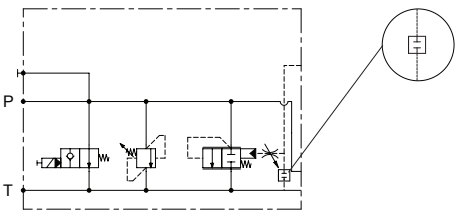
**B. Bleed off**

LLSB 0 G38 - NA5 (D12D) - 06(180) - 11

**0** With bleed off

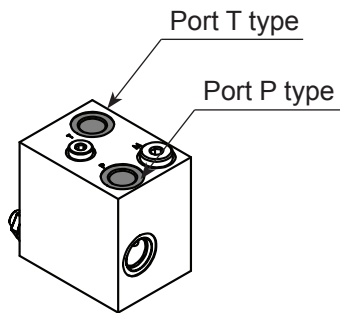


**P** Bleed off plug



**2. Port type**

LLSB 0 G38 - NA5 (D12D) - 06(180) - 11



**G38** Port P and T G3/8" BSPP ports size ISO-228

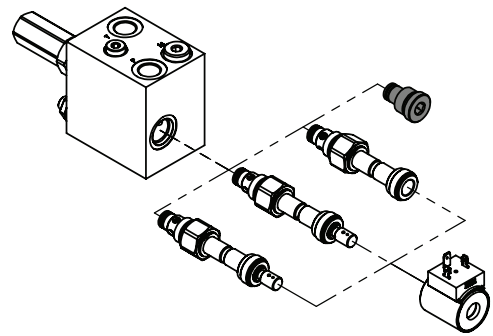
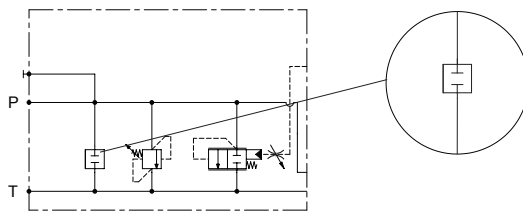
**U08** Port P and T 3/4-16 UNF-2B port size SAE 8 (ASME B1.1-2003)



## 3. Dump valve

LLS G38 - **NA5** (D12D) - 06(180) - 11

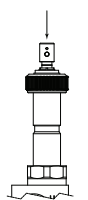
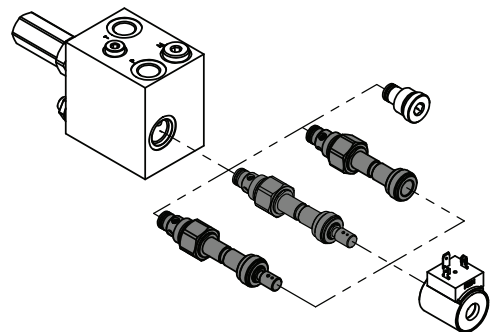
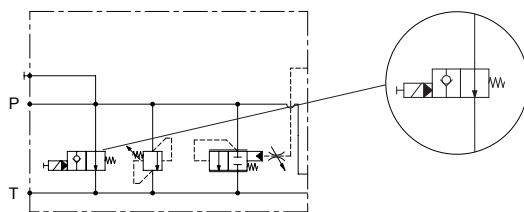
**NP** Plug, without dump valve



**NA0** Electric dump valve without emergency operation

**NA4** Electric dump valve with push button emergency

**NA5** Electric dump valve with push and twist emergency



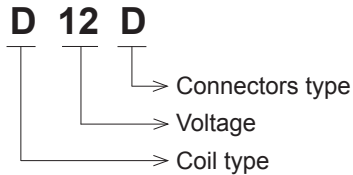
**NA4**  
push button



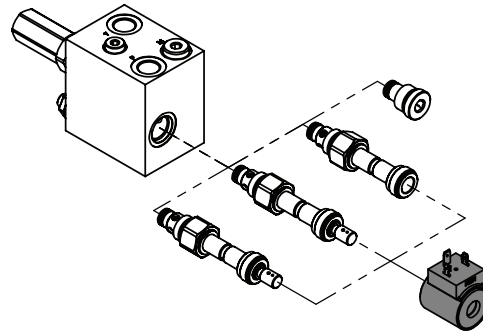
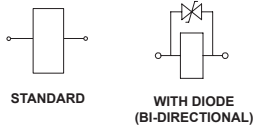
**NA5**  
push and twist

### 4. Dump valve coil

LLS G38 - NA5 (D12D) - 06(180) - 11



**ELECTRIC CIRCUITS**



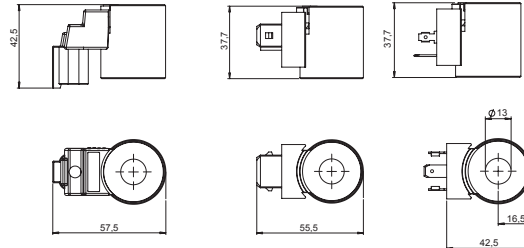
### On-off coil

Wire insulation class	H(>185 °C)
ED	100%
Coil power at 20 °C	20,5 W
Ambient temperature	-20 +40 °C
Weight	0,16 Kg

AMP - JUNIOR

DEUTSCH DT4

DIN 43650



Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
<b>D12D</b>	DIN 43650	IP65	H	12	7	STANDARD	<b>094001000</b>
<b>D24D</b>				24	28		<b>094002000</b>
<b>D12S</b>	DEUTSCH DT4	IP67	H	12	7	WITH DIODE	<b>094101000</b>
<b>D24S</b>				24	28		<b>094102000</b>
<b>D12A</b>	AMP - JUNIOR	IP65	H	12	7	STANDARD	<b>094201000</b>
<b>D24A</b>				24	28		<b>094202000</b>

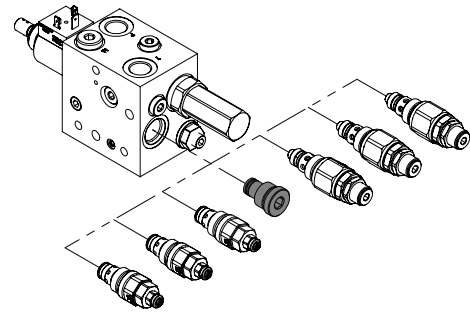
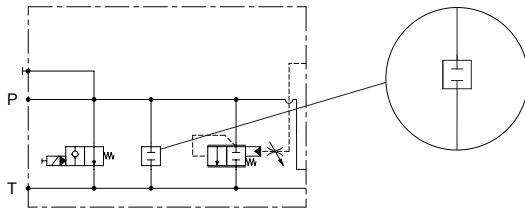


## 5. Relief valve

LLS G38 - NA5 (D12D) - 06 (180) - 11

**NP**

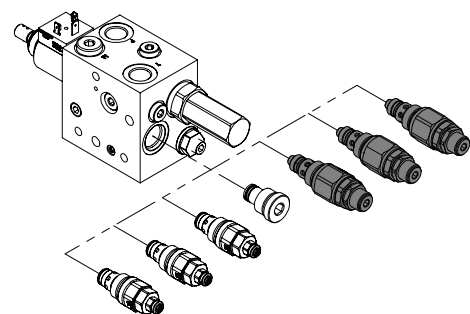
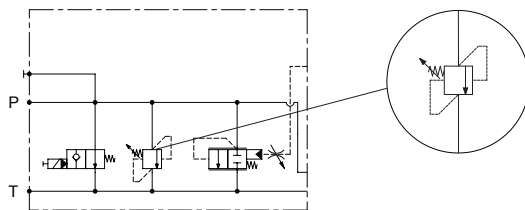
Plug, without valve



**05(...)** Relief valve, cracking pressure (20÷100)

**06(...)** Relief valve, cracking pressure (40÷200)

**07(...)** Relief valve, cracking pressure (50÷210<sup>1)</sup>)



<sup>1)</sup> Cracking pressure max 350 bar

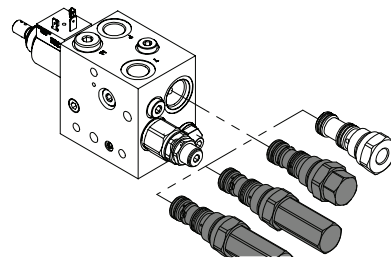
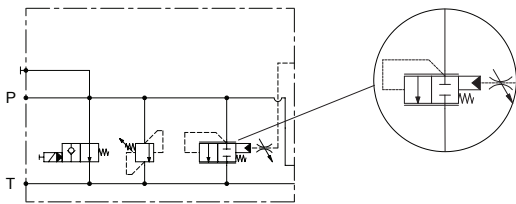
**Note: If the input flow is not specified, the relief will be calibrated with a reference flow rate of 30 L/min**

**6. Hydraulic compensator**

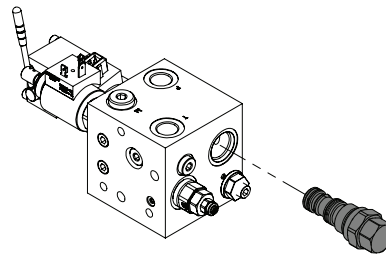
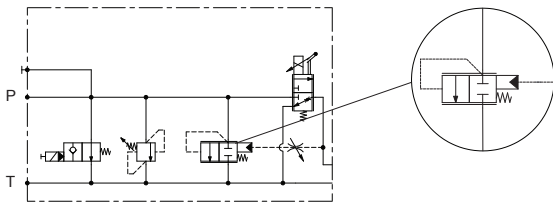
LLS G38 - NA0 (D12D) - 05 (180) - 11

**08** Hydraulic compensator, cracking pressure 8 bar

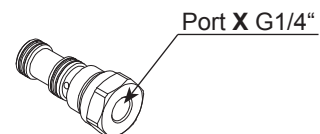
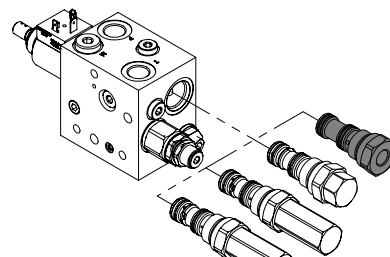
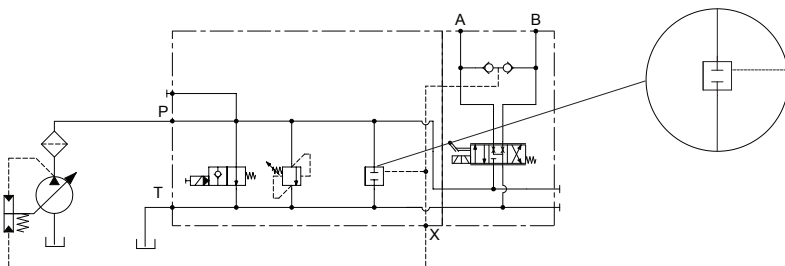
**11** Hydraulic compensator, cracking pressure 11 bar



LIP G38 - NA0 (D12D) - 05 (180) - 24L - 83 - P12D

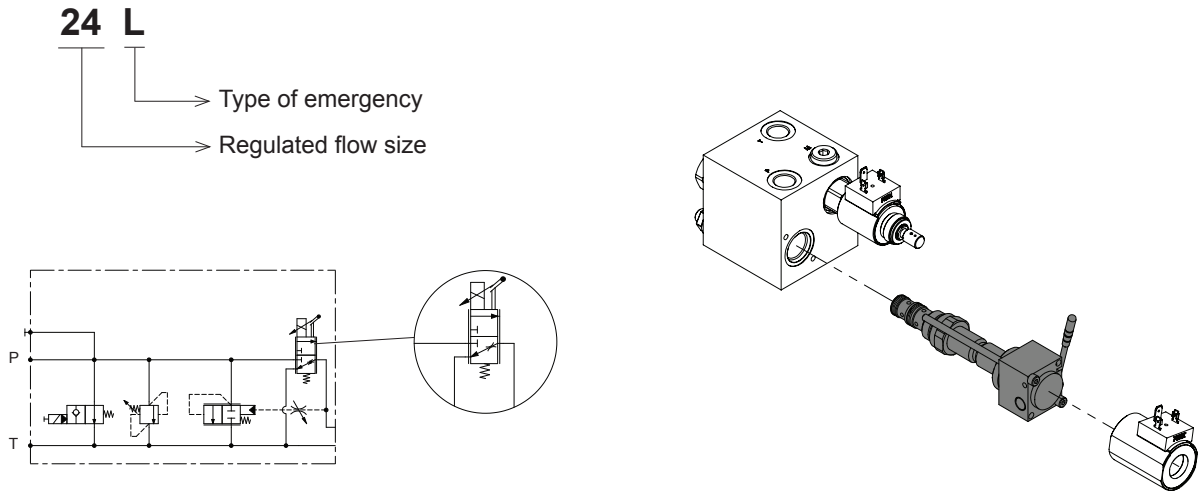


**LS** Plug, for variable displacement pump



## 7. Flow regulator

LIP G38 - NA0 (D12D) - 05 (180) - 08 - **24L** - P12D



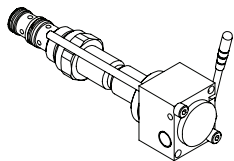
### Regulated flow size

<b>09</b>	9 L/min
<b>15</b>	15 L/min

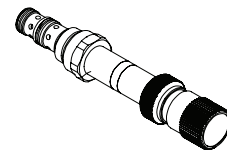
<b>24</b>	24 L/min
<b>30</b>	30 L/min

### Type of emergency

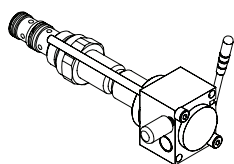
<b>L</b>	Emergency with lever
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<b>H</b>	Emergency with handknob
----------	-------------------------



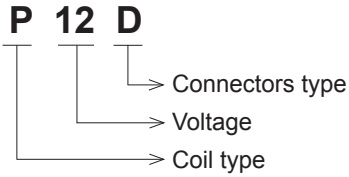
<b>R</b>	Emergency with lever and restrain
----------	-----------------------------------



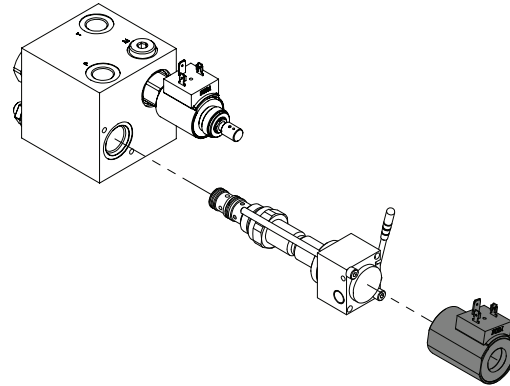
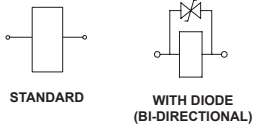


### 8. Flow regulator coil

LIP G38 - NA5 (D12D) - 06 (180) - 08 - 83 - P12D



ELECTRIC CIRCUITS



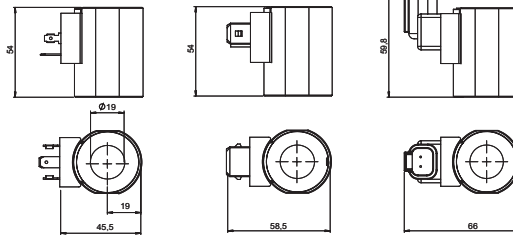
### Proportional coil

Wire insulation class	H(>185 °C)
ED	100%
Coil power at 20 °C	36 W
Max current at 24 Vdc	0,9 A
Max current at 12 Vdc	1,8 A
PWM	120 Hz
Ambient temperature	-20 +40 °C
Weight	0,16Kg

AMP - JUNIOR

DIN 43650

DEUTSH DT4



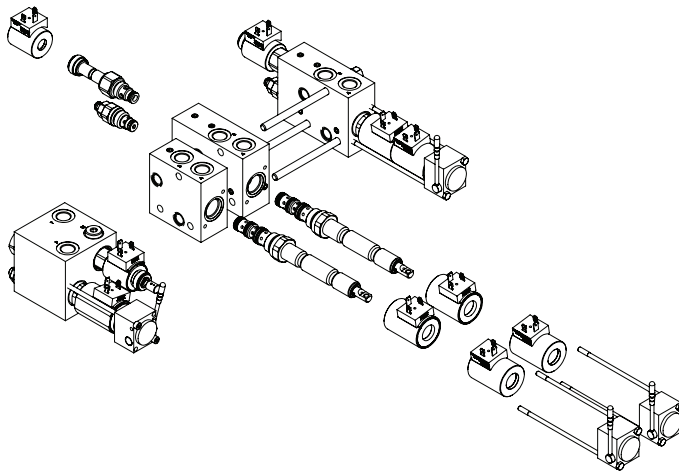
Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
<b>D12D</b>	DIN 43650	IP65	H	12	3,9	STANDARD	<b>095001191</b>
<b>D24D</b>				24	14,5		<b>095002191</b>
<b>D12S</b>	DEUTSCH DT4	IP65	H	12	3,9	STANDARD	<b>095101190</b>
<b>D24S</b>				24	14,5		<b>095102190</b>
<b>D12A</b>	AMP - JUNIOR	IP65	H	12	3,9	STANDARD	<b>095201190</b>
<b>D24A</b>				24	14,5		<b>095202190</b>



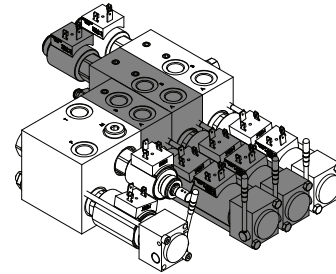
**Work section location**

**CENTRAL work**

Work section mounted in central position

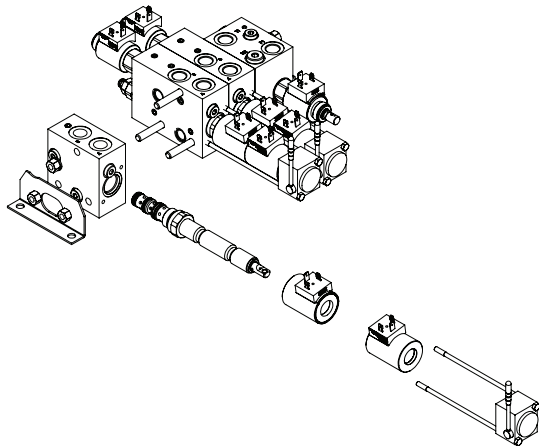


see page 24 ÷ 25

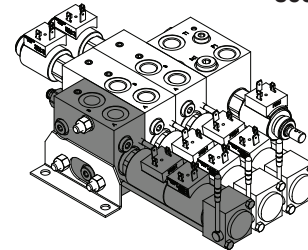


**LEFT work**

Work section mounted on the left, (with respect to the lever side)

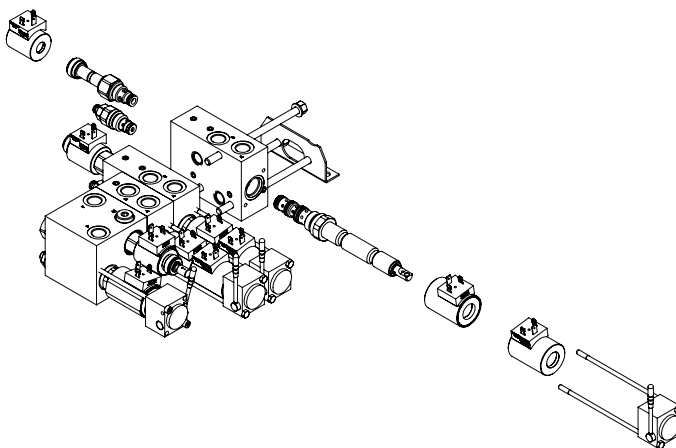


see page 26

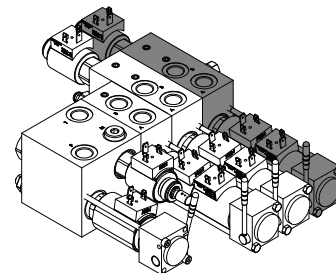


**RIGHT work**

Work section mounted on the right (with respect to the lever side)



see page 27

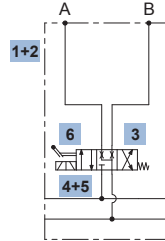
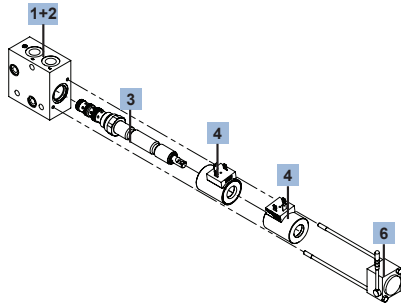


### Central work module

**W1**

Central work module for On/Off configuration

**W1 G38 - 1L (C12D) - 31 - 1A0**

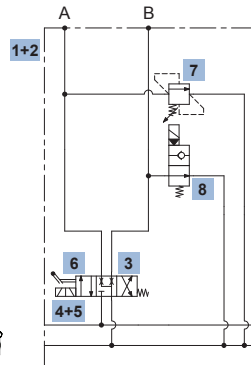
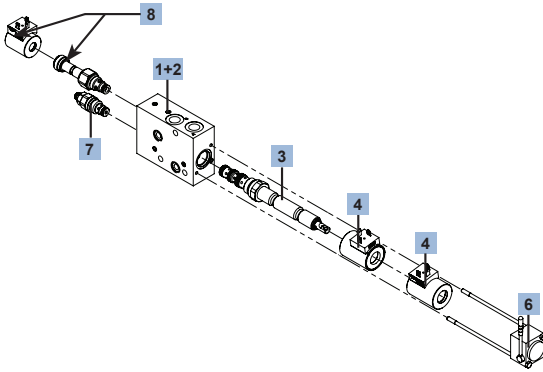


		pag.
1. <b>W1</b>	Housing	26
2. <b>G38</b>	Port type	30
3. <b>1L</b>	Directional cartridge	30
4. <b>C12D</b>	Directional cartridge coil	32
5. <b>31</b>	Coil connectors orientation	33
6. <b>UL0</b>	Control type	34

**W2**

Central work module for On/Off configuration with auxiliary valves cavities

**W2 G38 - 1L (C12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)**

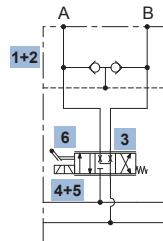
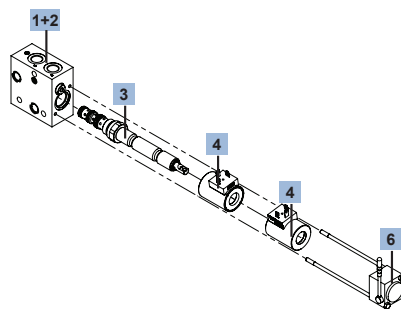


		pag.
1. <b>W2</b>	Housing	26
2. <b>G38</b>	Port type	30
3. <b>1L</b>	Directional cartridge	30
4. <b>C12D</b>	Directional cartridge coil	32
5. <b>31</b>	Coil connectors orientation	33
6. <b>UL0</b>	Control type	34
7. <b>A/C2(180P)</b>	Auxiliary valve side A	35
8. <b>B/NA0(D12D)</b>	Auxiliary valve side B	35

**W3**

Central work module for compensated configuration

**W3 G38 - EPL (S12D) - 31 - 1A0**

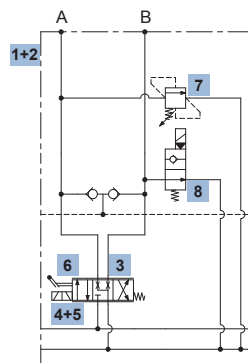
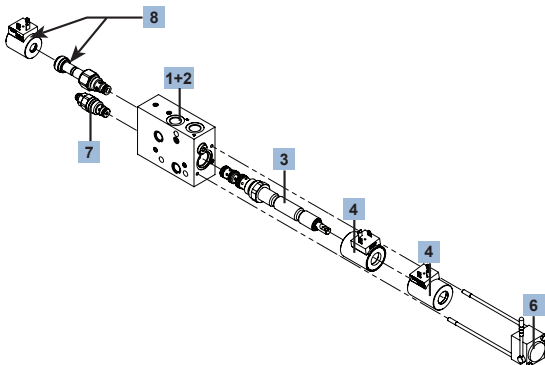


		pag.
1. <b>W3</b>	Housing	26
2. <b>G38</b>	Port type	30
3. <b>EPL</b>	Directional cartridge	31
4. <b>S12D</b>	Directional cartridge coil	32
5. <b>31</b>	Coil connectors orientation	33
6. <b>UL0</b>	Control type	34

**W4**

Central work module for compensated configuration with auxiliary valves cavities

**W4 G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)**



		pag.
1. <b>W4</b>	Housing	26
2. <b>G38</b>	Port type	30
3. <b>EPL</b>	Directional cartridge	31
4. <b>C12D</b>	Directional cartridge coil	32
5. <b>31</b>	Coil connectors orientation	33
6. <b>UL0</b>	Control type	34
7. <b>A/C2(180P)</b>	Auxiliary valve side A	35
8. <b>B/NA0(D12D)</b>	Auxiliary valve side B	35

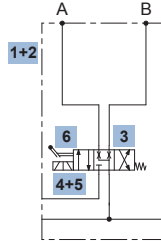
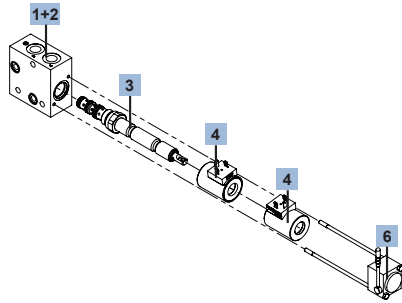


### Central work module for double inlet configuration

#### W1P

Central work module for On/Off configuration

W1P G38 - 1L (C12D) - 31 - 1A0

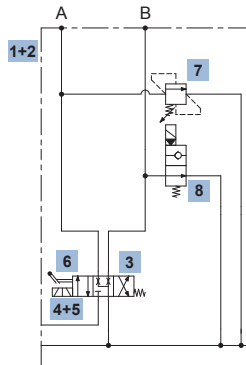
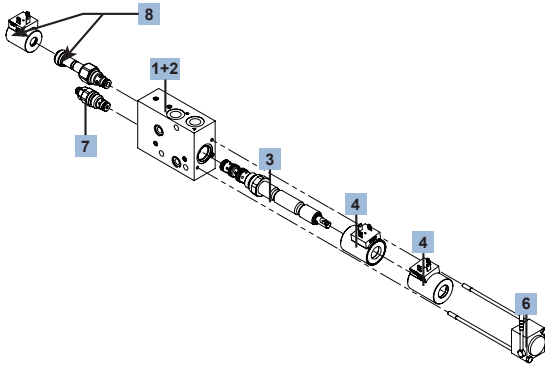


		pag.
1. W1P	Housing	27
2. G38	Port type	30
3. 1L	Directional cartridge	30
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34

#### W2P

Central work module for On/Off configuration with auxiliary valves cavities

W2P G38 - 1L (C12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

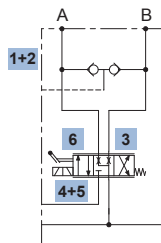
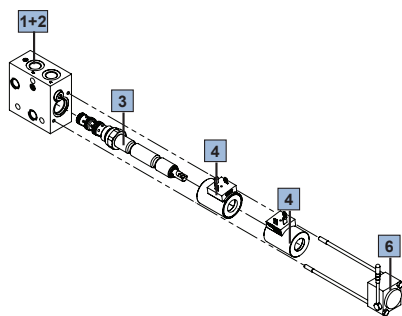


		pag.
1. W2P	Housing	27
2. G38	Port type	30
3. 1L	Directional cartridge	30
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34
7. A/C2(180P)	Auxiliary valve side A	35
8. B/NA0(D12D)	Auxiliary valve side B	35

#### W3P

Central work module for compensated configuration

W3P G38 - EPL (S12D) - 31 - 1A0

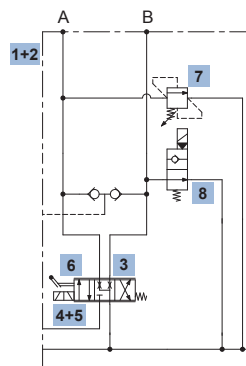
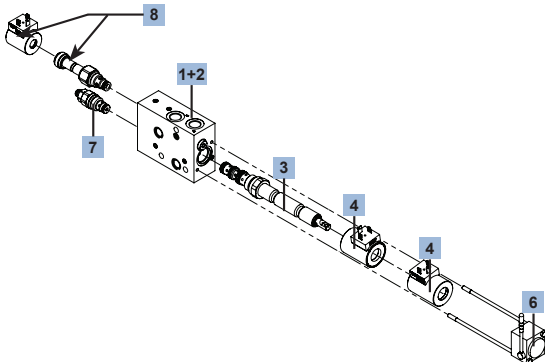


		pag.
1. W3P	Housing	27
2. G38	Port type	30
3. EPL	Directional cartridge	31
4. S12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34

#### W4P

Central work module for compensated configuration with auxiliary valves cavities

W4P G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)



		pag.
1. W4P	Housing	27
2. G38	Port type	30
3. EPL	Directional cartridge	31
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34
7. A/C2(180P)	Auxiliary valve side A	35
8. B/NA0(D12D)	Auxiliary valve side B	35

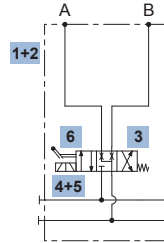
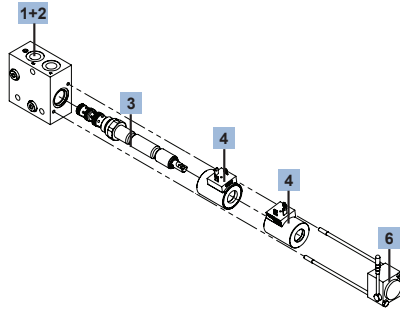


### Left work module

#### LW1

Left work module for On/Off configuration

LW1 G38 - 1L (C12D) - 31 - 1A0

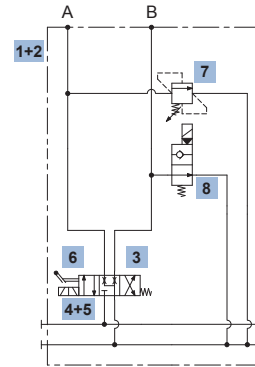
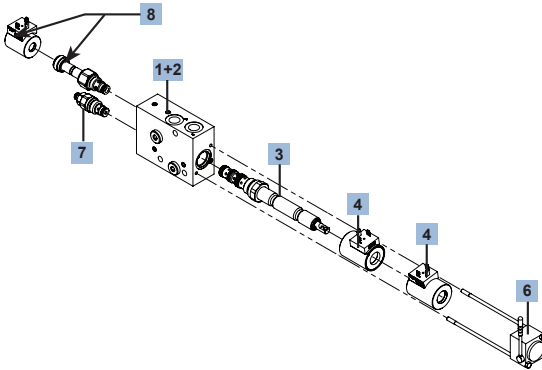


		pag.
1. LW1	Housing	28
2. G38	Port type	30
3. 1L	Directional cartridge	30
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34

#### LW2

Left work module for On/Off configuration with auxiliary valves cavities

LW2 G38 - 1L (C12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

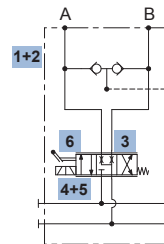
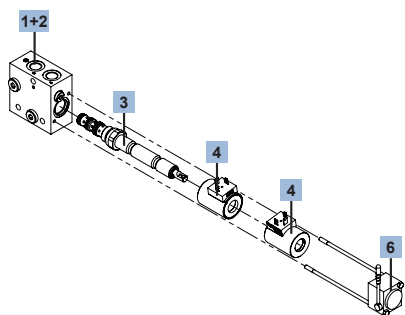


		pag.
1. LW2	Housing	28
2. G38	Port type	30
3. 1L	Directional cartridge	30
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34
7. A/C2(180P)	Auxiliary valve side A	35
8. B/NA0(D12D)	Auxiliary valve side B	35

#### LW3

Left work module for compensated configuration

LW3 G38 - EPL (S12D) - 31 - 1A0

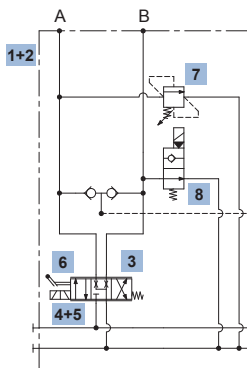
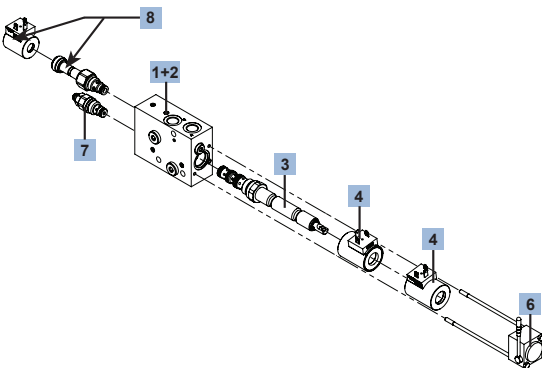


		pag.
1. LW1LS	Housing	28
2. G38	Port type	30
3. EPL	Directional cartridge	31
4. S12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34

#### LW4

Left work module for compensated configuration with auxiliary valves cavities

LW4 G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)



		pag.
1. LW2LS	Housing	28
2. G38	Port type	30
3. EPL	Directional cartridge	31
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34
7. A/C2(180P)	Auxiliary valve side A	35
8. B/NA0(D12D)	Auxiliary valve side B	35

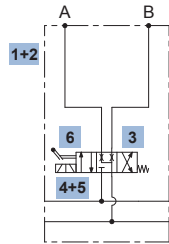
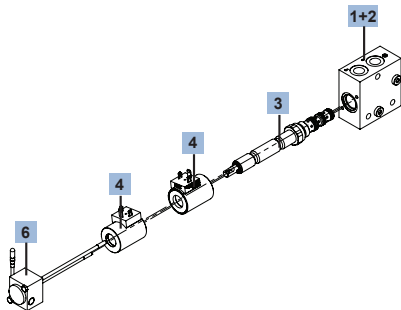


### Right work module

#### RW1

Right work module for On/Off configuration

RW1 G38 - 1L (C12D) - 31 - 1A0

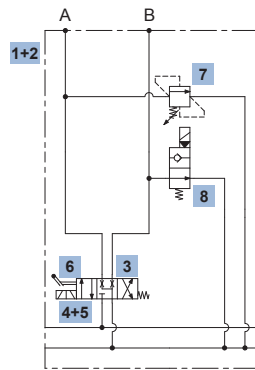
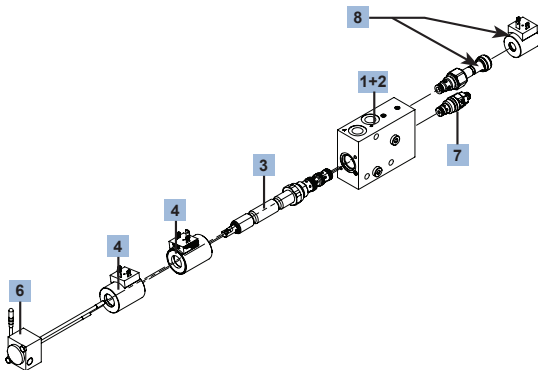


		pag.
1. RW1	Housing	29
2. G38	Port type	30
3. 1L	Directional cartridge	30
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34

#### RW2

Right work module for On/Off configuration with auxiliary valves cavities

RW2 G38 - 1L (C12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

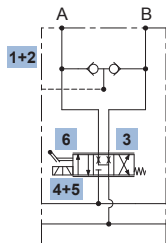
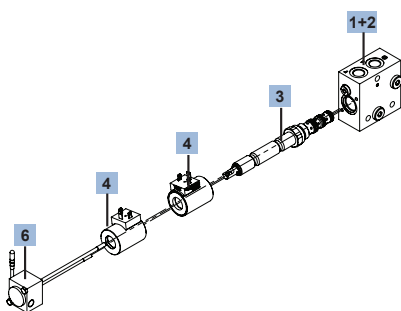


		pag.
1. RW2	Housing	29
2. G38	Port type	30
3. 1L	Directional cartridge	30
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34
7. A/C2(180P)	Auxiliary valve side A	35
8. B/NA0(D12D)	Auxiliary valve side B	35

#### RW3

Right work module for compensated configuration

RW3 G38 - EPL (S12D) - 31 - 1A0

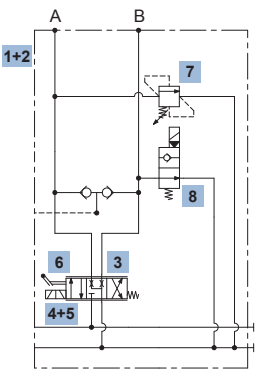
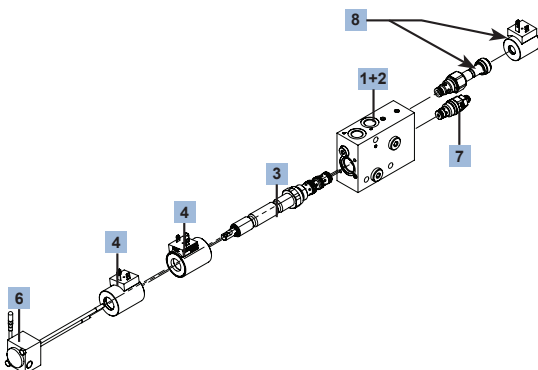


		pag.
1. RW3	Housing	29
2. G38	Port type	30
3. EPL	Directional cartridge	31
4. S12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34

#### RW4

Right work module for compensated configuration with auxiliary valves cavities

RW4 G38 - EPL(S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

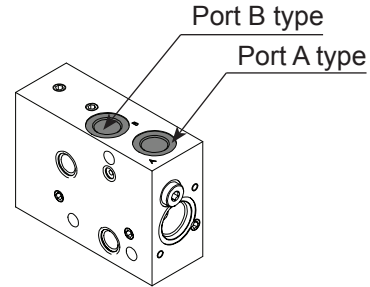


		pag.
1. RW4	Housing	29
2. G38	Port type	30
3. EPL	Directional cartridge	31
4. C12D	Directional cartridge coil	32
5. 31	Coil connectors orientation	33
6. UL0	Control type	34
7. A/C2(180P)	Auxiliary valve side A	35
8. B/NA0(D12D)	Auxiliary valve side B	35



## 2. Port type

W3 G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

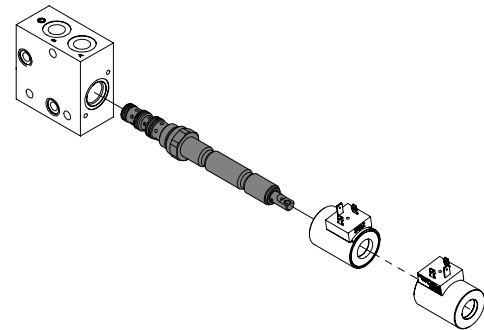
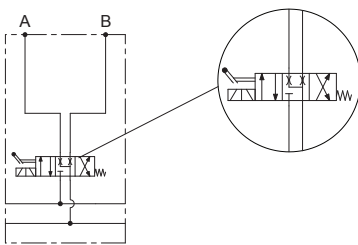
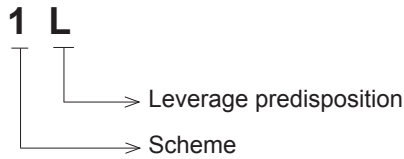


**G38** Port **P** and **T** G3/8" BSPP  
ports size ISO-228

**U08** Port **P** and **T** 3/4-16 UNF-2B  
port size SAE 8 (ASME B1.1-2003)

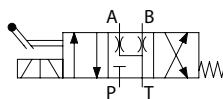
## 3. Directional cartridge for On/Off configuration

W1 G38 - 1L (C12D) - 31 - 1A0

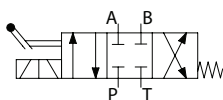


### Scheme

**1**

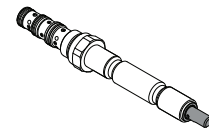


**2**

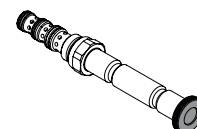


### Control predisposition

**L<sup>1)</sup>** With control predisposition



**0** Without control predisposition

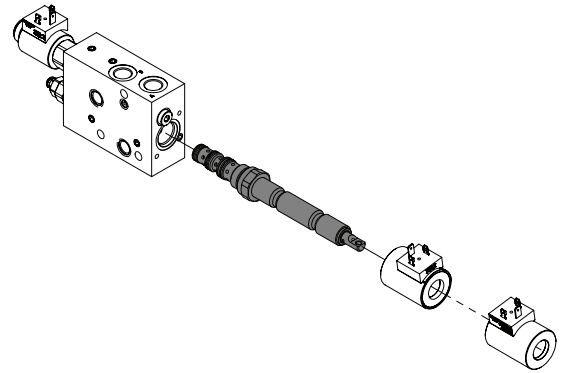
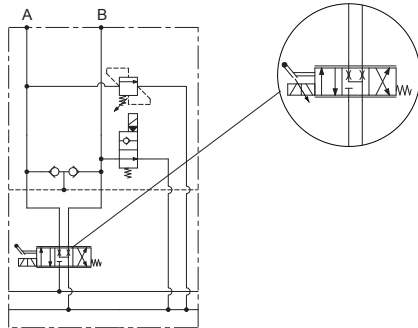
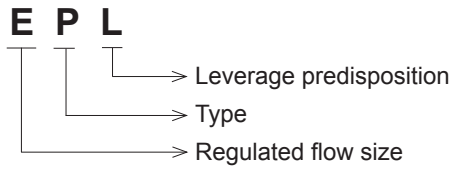


<sup>1)</sup> necessary to select control type option, see page 34



### 3. Directional cartridge for compensated configuration

W3 G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

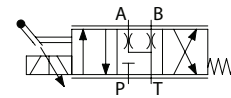


#### Regulated flow size

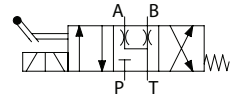
	8 bar compensator	11 bar compensator
<b>A</b>	4 L/min	5 L/min
<b>B</b>	9 L/min	11 L/min
<b>C</b>	15 L/min	17 L/min
<b>D</b>	16 L/min	20 L/min
<b>E</b>	20 L/min	24 L/min
<b>F</b>	23 L/min	27 L/min

#### Type

**P** Proportional cartridge

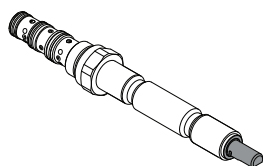


**N** On/off cartridge

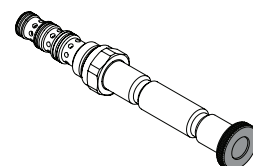


#### Control predisposition

**L<sup>1)</sup>** With control predisposition



**0** Without control predisposition



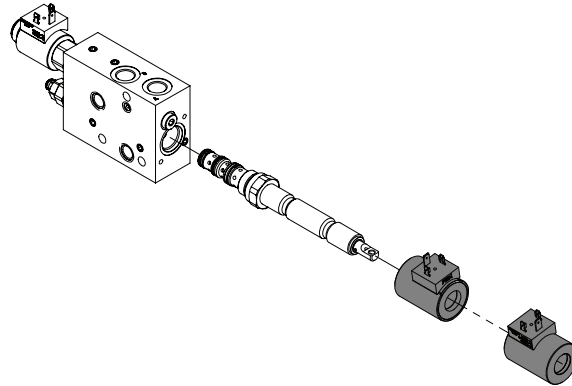
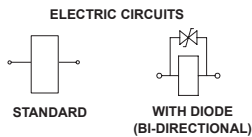
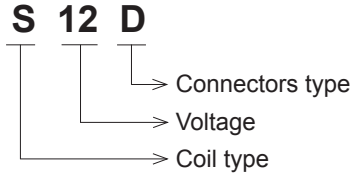
<sup>1)</sup> necessary to select control type option, see page 34





## 4. Directional cartridge coil

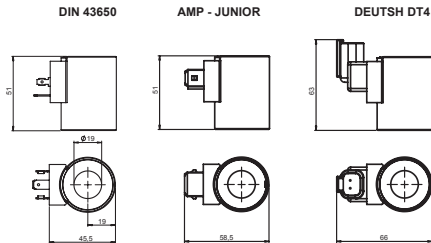
W3 G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)



### Proportional coil

Available only for proportional cartridges

Wire insulation class	H(>185 °C)
ED	100%
Coil power at 20 °C	36 W
Max current at 24 Vdc	0,9 A
Max current at 12 Vdc	1,9 A
PWM	120 Hz
Ambient temperature	-20 +40 °C
Weight	0,28 Kg

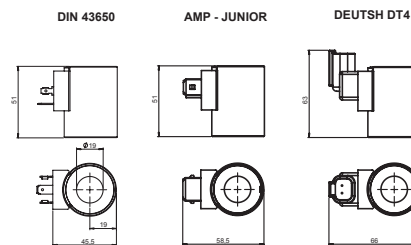


Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
<b>S12D</b>	DIN 43650	IP65	H	12	3,9	STANDARD	<b>098001190</b>
<b>S24D</b>				24	14,5		<b>098002190</b>
<b>S12S</b>	DEUTSCH DT4	IP65	F	12	3,9	WITH DIODE	<b>098101190</b>
<b>S24S</b>				24	14,5		<b>098102190</b>
<b>S12A</b>	AMP - JUNIOR	IP65	F	12	3,9	WITH DIODE	<b>098201190</b>
<b>S24A</b>				24	14,5		<b>098202190</b>

### On-off coil

Available only for on-off cartridges

Wire insulation class	H(>185 °C)
ED	100%
Coil power at 20 °C	24 W
Ambient temperature	-20 +40 °C
Weight	0,28 Kg

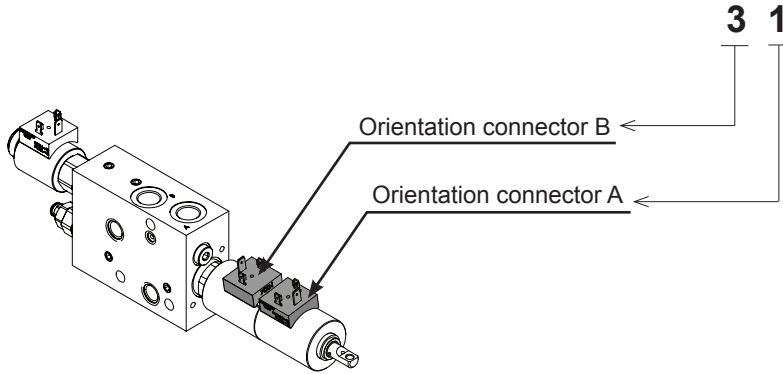


Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
<b>C12D</b>	DIN 43650	IP65	H	12	6,8	STANDARD	<b>098011190</b>
<b>C24D</b>				24	24		<b>098012190</b>
<b>C12S</b>	DEUTSCH DT4	IP65	F	12	6,8	WITH DIODE	<b>098111190</b>
<b>C24S</b>				24	24		<b>098112190</b>
<b>C12A</b>	AMP - JUNIOR	IP65	F	12	6,8	WITH DIODE	<b>098211190</b>
<b>C24A</b>				24	24		<b>098212190</b>

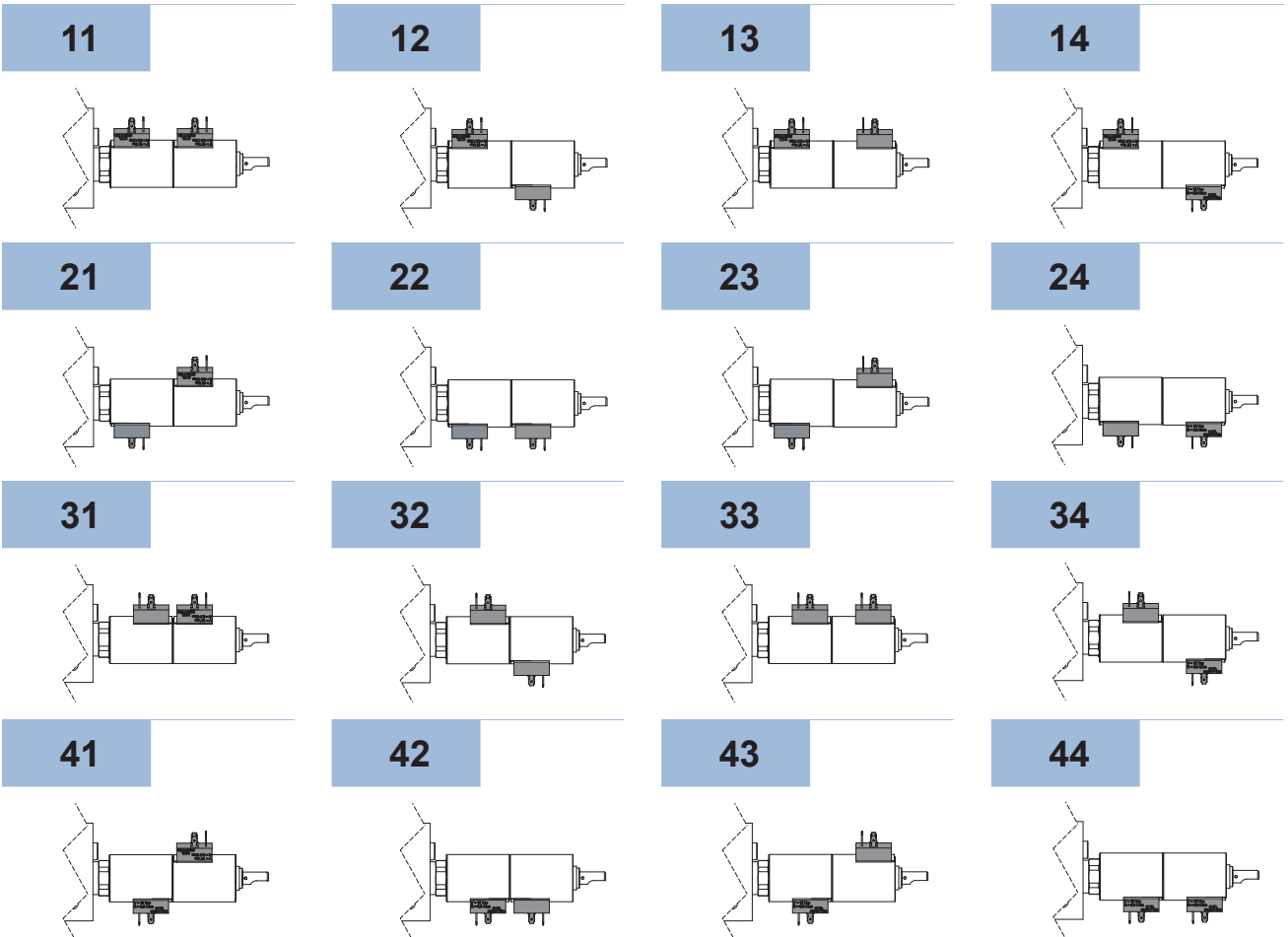


## 5. Coil connectors orientation

W3 G38 - EPL (S12D) - **31** - 1A0 - A/C2(180P) - B/NA0(D12D)



### Coil connector orientation



All the previous options available also for AMP-Junior type

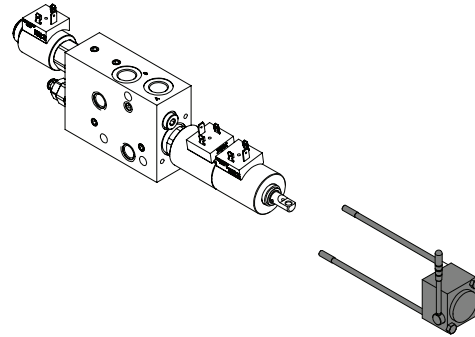
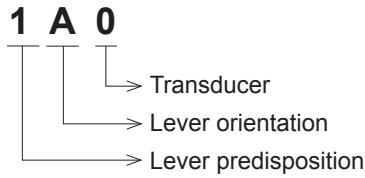
For DEUTSCH DT4 type, options 34 and 43 available only (see the images below)



## 6. Control type<sup>1)</sup>

W3 G38 - EPL (S12D) - 31 - **1A0** - A/C2(180P) - B/NA0(D12D)

<sup>1)</sup> Necessary to select cartridge with leverage predisposition.  
If cartridge without lever predisposition as been select,  
then select the 000 control type option



### Lever predisposition

**0** Command without lever

Handle rod must be ordered separately (code: 3032060750)

**1** Command with lever

### Lever orientation

**A** Command with high lever on the left

**C** Command with high lever on the right

**B** Command with lower lever on the left

**D** Command with lower lever on the right

### Transducer

**0** Without transducer

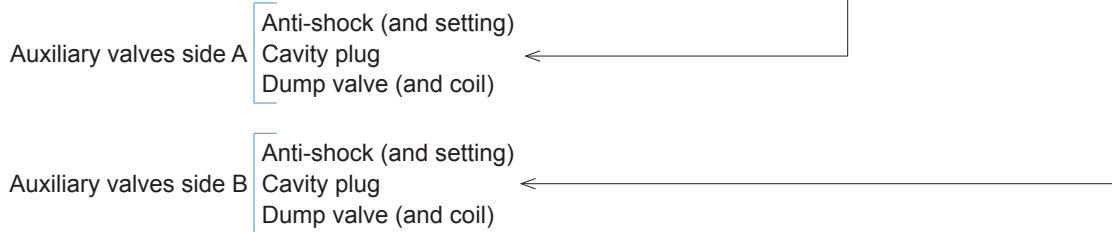
**1** With position transducer

*For position transducer contact NEM customer care*



### 7-8. Auxiliary valves

#### W3 G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)



### Anti-shock

<b>C1(...)</b>	Cracking pressure (20÷120 P) or full flow setting <sup>1)</sup> (60÷100 Q)
<b>C2(...)</b>	Cracking pressure (121÷170 P) or full flow setting (101÷180 Q)
<b>C3(...)</b>	Cracking pressure (171÷250 <sup>2)</sup> P) or full flow setting (181÷ 250 <sup>2)</sup> Q)

<sup>1)</sup> Referred to the maximum capacity of the cartridge  
<sup>2)</sup> Pressure setting max 350 bar

### Setting type

Specify the setting type

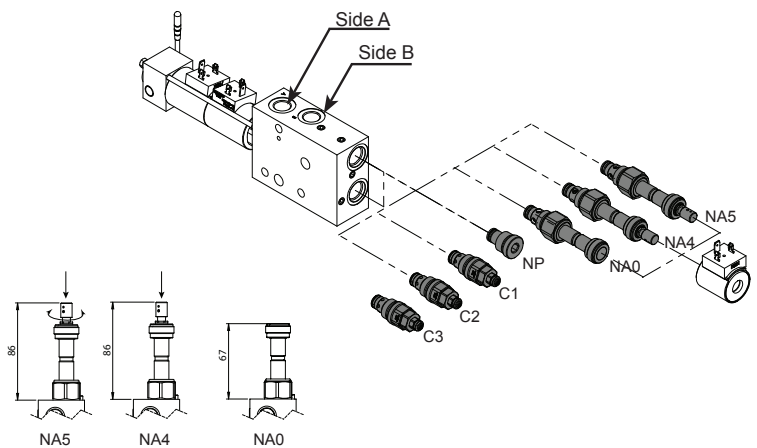
<b>P</b>	Cracking pressure
<b>Q</b>	Full flow

### Cavity plug

<b>NP</b>	Plug (without valve)
-----------	----------------------

### Dump valve

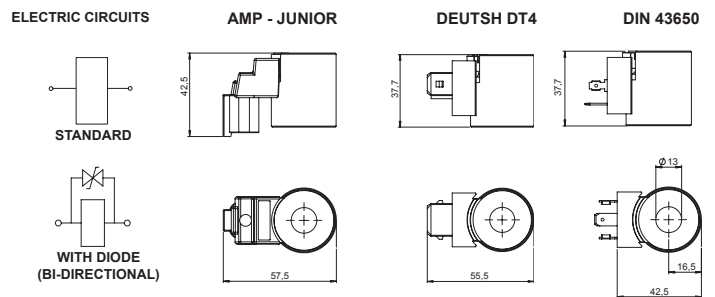
<b>NA0(...)</b>	Electric dump valve without emergency operation
<b>NA4(...)</b>	Electric dump valve with push button emergency
<b>NA5(...)</b>	Electric dump valve with push and twist emergency



### Dump valve coil

#### On-off

Wire insulation class	H(>185 °C)
ED	100%
Coil power at 20 °C	20,5 W
Ambient temperature	-20 +40 °C
Weight	0,16 Kg



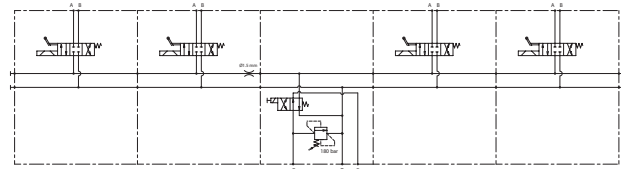
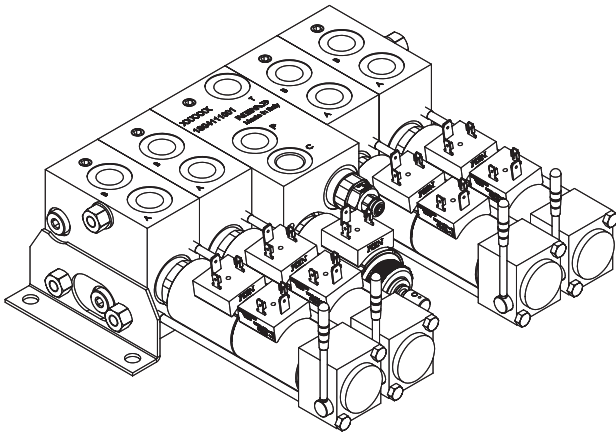
Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
<b>D12D</b>	DIN 43650	IP65	H	12	7	STANDARD	<b>094001000</b>
<b>D24D</b>				24	28		<b>094002000</b>
<b>D12S</b>	DEUTSCH DT4	IP67	H	12	7	WITH DIODE	<b>094101000</b>
<b>D24S</b>				24	28		<b>094102000</b>
<b>D12A</b>	AMP - JUNIOR	IP65	H	12	7	STANDARD	<b>094201000</b>
<b>D24A</b>				24	28		<b>094202000</b>



### Custom configuration

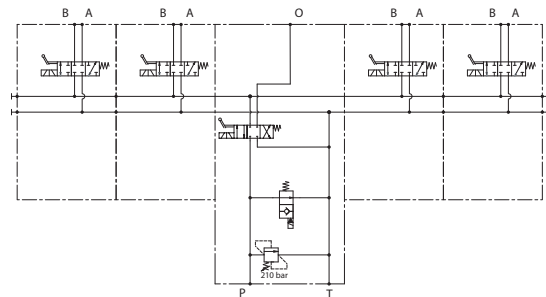
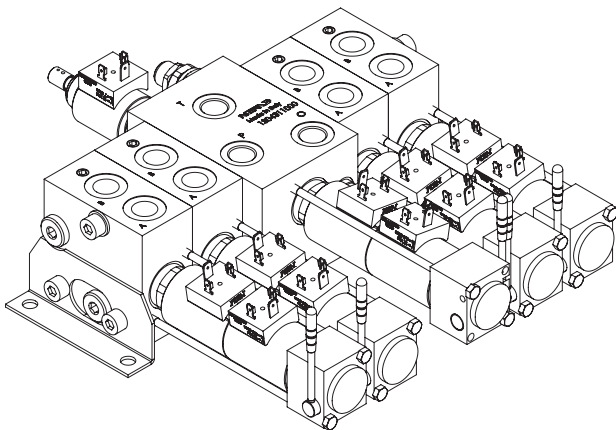
Customized versions maybe realized on request. Contact the NEM-hydraulics customer care in order to know special circuit configurations already available and also to evaluate the feasibility of new versions.

Listed below, some of the existing special NVS3 structures have been reported such as examples.



#### Configuration with central inlet

NVS3/4  
 LW1 G38 - 2L (C12D) - 31 - 1A0  
 W1 G38 - 2L (C12D) - 31 - 1A0 - P15  
 C1 G38 - CT431/2/5 (C12D) - 06 (180)  
 W1 G38 - 2L (C12D) - 31 - 1A0  
 RW1 G38 - 2L (C12D) - 31 - 1A0

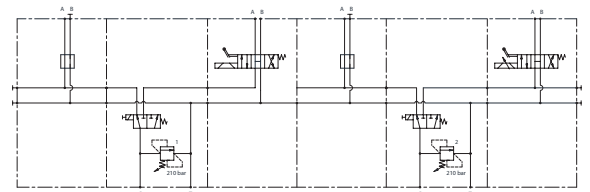
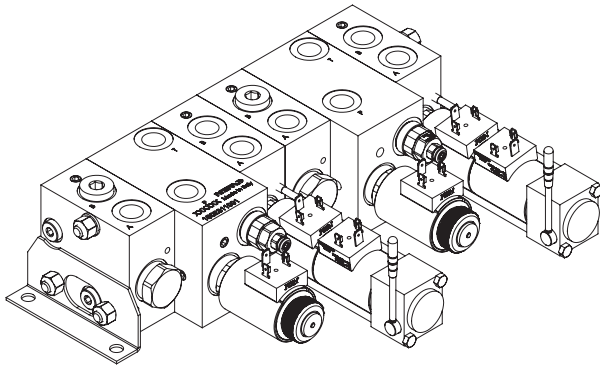


#### Configuration with central inlet

NVS3/4  
 LW1 G38 - 5L (C12D) - 31 - 1A0  
 W1 G38 - 5L (C12D) - 31 - 1A0  
 C1 G38 - NA0 - 2L (C12D) - 07 (210)  
 W1 G38 - 5L (C12D) - 31 - 1A0  
 RW1 G38 - 5L (C12D) - 31 - 1A0

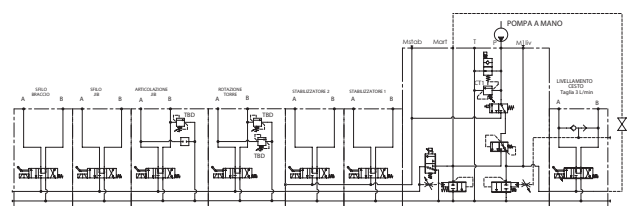
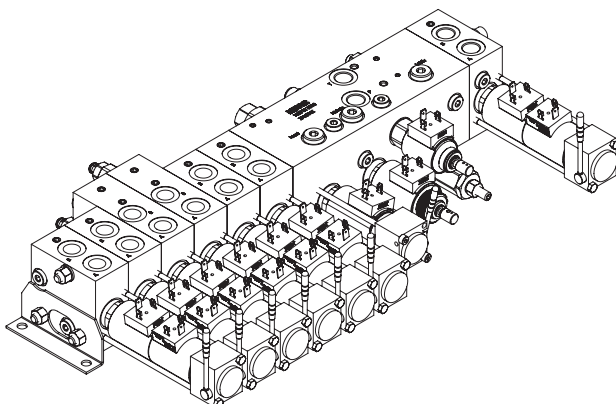


### Custom configuration



#### Configuration with two central inlet

- NVS3/4
- LDI G38 - PB
- CI3 G38 - CT463/2/0 (C12D) - 07 (210)
- W1P G38 - 4L (C12D) - 31 - 1A0
- W1 G38 - PP-PA
- CI3 G38 - CT463/2/0 (C12D) - 07 (210)
- RW1 G38 - 4L (C12D) - 31 - 1A0



#### Configuration with central inlet for compensated configuration and on/off configuration

- NVS3/7
- LW1 G38 - 1L (C12D) - 31 - 1A0
- W1 G38 - 1L (C12D) - 31 - 1A0
- W2 G38 - 1L (C12D) - 31 - 1A0 - A/NP - B/C2(210)
- W2 G38 - 1L (C12D) - 31 - 1A0 - A/C2(210) - B/C2(210)
- W5 G38 - 1L (C12D) - 31 - 1A0
- W5 G38 - 1L (C12D) - 31 - 1A0
- CI4 G38 - NA5 (D12D) - CT552/2/5 (C12D)-VP3 - 07 (210) - 08 - 24L (P12D) - 08
- RW3 G38 - 1L (C12D) - 31 - 1A0



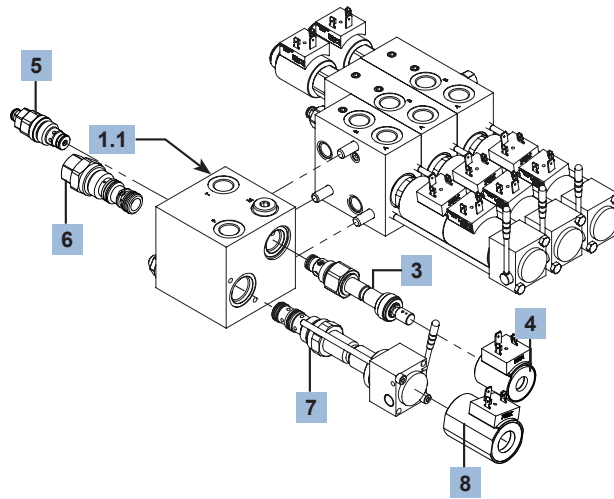


## **SPARE PARTS**





## Inlet section - summary options & spare parts

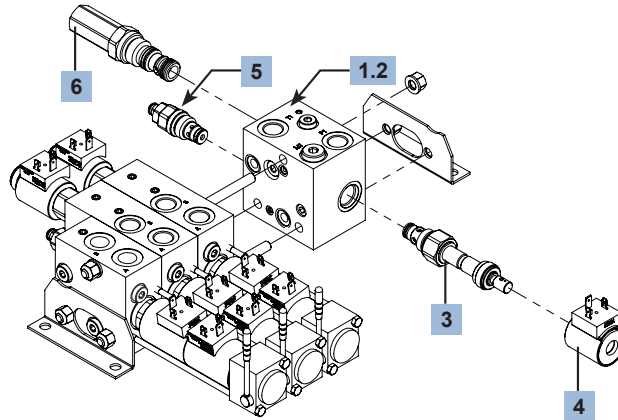


**Inlet ordering code example: LIP-NA5(D12D)-06(180)-08**

		<u>Ordering code</u>
<b>1.1</b>	<b>Left inlet module</b>	
	Left inlet module for on/off configuration, port type GAS 3/8"	<b>LISG38</b> 910105821101
	Left inlet module for compensated configuration, port type GAS 3/8"	<b>LLSG38</b> 9101058211
	Left inlet for compensated configuration with bleed off, port GAS 3/8"	<b>LLSB0G38</b> 910105821000
	Left inlet for compensated configuration with bleed off plug, port GAS 3/8"	<b>LLSBPG38</b> 910105821004
	Left inlet module for proportional inlet flow control, port type GAS 3/8"	<b>LIPG38</b> 9101058210
	Left direct inlet module, port type GAS 3/8"	<b>LDIG38</b> 910800121000
	Left inlet module for on/off configuration, port type SAE 8, 3/4-16 UNF	<b>LISU08</b> On request
	Left inlet module for compensated configuration, port type SAE 8, 3/4-16 UNF	<b>LLSU08</b> On request
	Left inlet for compensated config. with bleed off, port SAE 8, 3/4-16 UNF	<b>LLSB0U08</b> On request
	Left inlet for compensated config. with plugged bleed off, port SAE 8, 3/4-16 UNF	<b>LLSBPU08</b> On request
	Left inlet module for proportional inlet flow control, port type SAE 8, 3/4-16 UNF	<b>LIPU08</b> On request
	Left direct inlet module, port type SAE 8, 3/4-16 UNF	<b>LDIU08</b> On request
<b>1.2</b>	<b>Right inlet module</b>	
	Right inlet module for on/off configuration, port type GAS 3/8"	<b>RISG38</b> On request
	Right inlet module for compensated configuration, port type GAS 3/8"	<b>RLSG38</b> 9131760007
	Right inlet for compensated configuration with bleed off, port GAS 3/8"	<b>RLSB0G38</b> 910105821001
	Right inlet for compensated configuration with bleed off plug, port GAS 3/8"	<b>RLSBPG38</b> On request
	Right inlet module for proportional inlet flow control, port type GAS 3/8"	<b>RIPG38</b> On request
	Right direct inlet module, port type GAS 3/8"	<b>RDIG38</b> 91080022100
	Right inlet module for on/off configuration, port type SAE 8, 3/4-16 UNF	<b>RISU08</b> On request
	Right inlet module for compensated configuration, port type SAE 8, 3/4-16 UNF	<b>RLSU08</b> On request
	Right inlet for compensated configuration with bleed off, port SAE 8, 3/4-16 UNF	<b>RLSB0U08</b> On request
	Right inlet for compensated config. with plugged bleed off, port SAE 8, 3/4-16 UNF	<b>RLSBPU08</b> On request
	Right inlet module for proportional inlet flow control, port type SAE 8, 3/4-16 UNF	<b>RIPU08</b> On request
	Right direct inlet module, port type SAE 8, 3/4-16 UNF"	<b>RDIU08</b> On request
<b>3</b>	<b>Dump valve</b>	
	Plug, without valve	<b>NP</b> 9273193600
	Electric dump valve without emergency operation	<b>NA0</b> 0552000000
	Electric dump valve with push button emergency	<b>NA4</b> 0552000400
	Electric dump valve with push and twist emergency	<b>NA5</b> 0552000500
<b>4</b>	<b>Dump valve coil</b>	
	Dump valve coil, 12 V, connector DIN 43650	<b>D12D</b> 094001000
	Dump valve coil, 24 V, connector DIN 43650	<b>D24D</b> 094002000
	Dump valve coil, 12 V, connector DEUTSCH DT4, circuit with diode	<b>D12S</b> 094101000
	Dump valve coil, 24 V, connector DEUTSCH DT4, circuit with diode	<b>D24S</b> 094102000
	Dump valve coil, 12 V, connector AMP-JUNIOR	<b>D12A</b> 094201000
	Dump valve coil, 24 V, connector AMP-JUNIOR	<b>D24A</b> 094202000



## Inlet section - summary options & spare parts

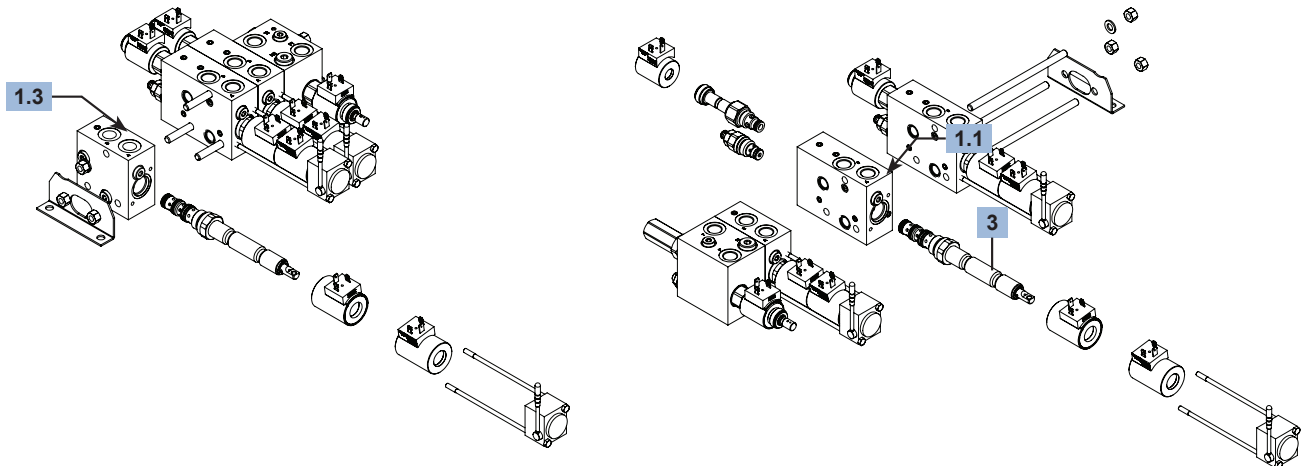


**Inlet ordering code example: RLS-NA5(D12D)-06(180)-11**

		<u>Ordering code</u>
<b>5 Relief valve</b>		
Plug, without valve	<b>NP</b>	9273193600
Relief valve, cracking pressure (15 ÷ 50)	<b>04(...)</b>	0022300000
Relief valve, cracking pressure (20 ÷ 100)	<b>05(...)</b>	0022310000
Relief valve, cracking pressure (40 ÷ 200)	<b>06(...)</b>	0022320000
Relief valve, cracking pressure (50 ÷ 350)	<b>07(...)</b>	0022330000
<b>6 Hydraulic compensator</b>		
Hydraulic compensator, cracking pressure 8 bar	<b>08</b>	0203001200
Hydraulic compensator, cracking pressure 11 bar	<b>11</b>	0203001300
Plug, for variable displacement pump	<b>LS</b>	927327610000
Plug, without valve	<b>TP</b>	9273276130
<b>7 Flow regulator</b>		
9 L/min flow regulator, emergency with lever	<b>09L</b>	0353030301
15 L/min flow regulator, emergency with lever	<b>15L</b>	0353050301
24 L/min flow regulator, emergency with lever	<b>24L</b>	0353080301
30 L/min flow regulator, emergency with lever	<b>30L</b>	0353000301
9 L/min flow regulator, emergency with lever and restrain	<b>09R</b>	0353030601
15 L/min flow regulator, emergency with lever and restrain	<b>15R</b>	0353050601
24 L/min flow regulator, emergency with lever and restrain	<b>24R</b>	0353080601
30 L/min flow regulator, emergency with lever and restrain	<b>30R</b>	0353000601
9 L/min flow regulator, emergency with handknob	<b>09H</b>	0353030701
15 L/min flow regulator, emergency with handknob	<b>15H</b>	0353050701
24 L/min flow regulator, emergency with handknob	<b>24H</b>	0353080701
30 L/min flow regulator, emergency with handknob	<b>30H</b>	0353000701
<b>8 Flow regulator coil</b>		
Flow regulator coil, 12 V, connector DIN 43650	<b>P12D</b>	095001191
Flow regulator coil, 24 V, connector DIN 43650	<b>P24D</b>	095002191
Flow regulator coil, 12 V, DEUTSCH DT4	<b>P12S</b>	095101190
Flow regulator coil, 24 V, DEUTSCH DT4	<b>P24S</b>	095102190
Flow regulator coil, 12 V, AMP-JUNIOR	<b>P12A</b>	095201190
Flow regulator coil, 24 V, AMP-JUNIOR	<b>P24A</b>	095202190



### Work section - summary options & spare parts



**Work ordering code example:** LW3G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

W3G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

#### Ordering code

#### 1.1 Central work module

Central work module for on/off configuration, port GAS 3/8"	<b>W1G38</b>	9101031213
Central work module for on/off configuration, with auxiliary valve, port GAS 3/8"	<b>W2G38</b>	9101031211
Central work module for compensated configuration, port GAS 3/8"	<b>W3G38</b>	9101031215
Central work for compensated configuration, with auxiliary valve, port GAS 3/8"	<b>W4G38</b>	9101031210
Central work module for on/off config. (line P plug), port GAS 3/8"	<b>W1PG38</b>	On request
Central work module for on/off config. (line P plug), with aux. valve, port GAS 3/8"	<b>W2PG38</b>	On request
Central work module for compensated config. (line P plug), port GAS 3/8"	<b>W3PG38</b>	On request
Central work for compensated config. (line P plug), with aux. valve, port GAS 3/8"	<b>W4PG38</b>	On request
Central work module for on/off configuration, port SAE 8, 3/4-16 UNF	<b>W1U08</b>	On request
Central work module for on/off configuration, with aux valve, port SAE 8, 3/4-16	<b>W2U08</b>	On request
Central work module for compensated configuration, port SAE 8, 3/4-16 UNF	<b>W3U08</b>	On request
Central work for compensated configuration, with aux valve, port SAE 8, 3/4-16	<b>W4U08</b>	On request
Central work module for on/off config. (line P plug), port SAE 8, 3/4-16 UNF	<b>W1PU08</b>	On request
Central work module for on/off config. (line P plug), with aux valve, port SAE 8, 3/4-16	<b>W2PU08</b>	On request
Central work module for compensated config. (line P plug), port SAE 8, 3/4-16 UNF	<b>W3PU08</b>	On request
Central work for compensated config. (line P plug), with aux valve, port SAE 8, 3/4-16	<b>W4PU08</b>	On request

#### 1.2 Right work module

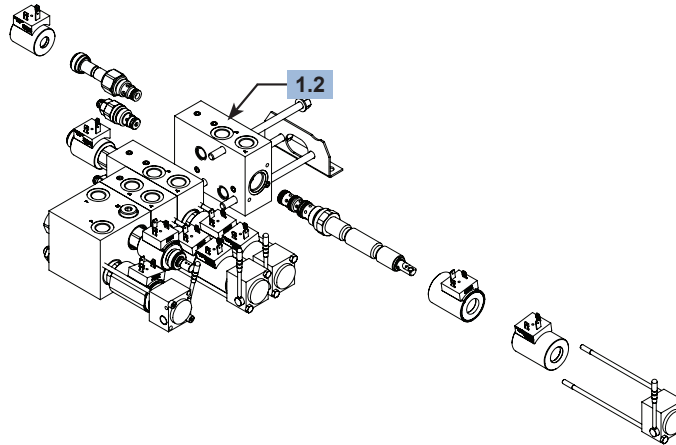
Right work module for on/off configuration, port GAS 3/8"	<b>RW1G38</b>	9101031219
Right work module for on/off configuration, with auxiliary valve, port GAS 3/8"	<b>RW2G38</b>	9101031218
Right work module for compensated configuration, port GAS 3/8"	<b>RW3G38</b>	9101031217
Right work for compensated configuration, with auxiliary valve, port GAS 3/8"	<b>RW4G38</b>	9101031220
Right work module for on/off configuration, port SAE 8, 3/4-16 UNF	<b>RW1U08</b>	On request
Right work module for on/off configuration, with aux valve, port SAE 8, 3/4-16	<b>RW2U08</b>	On request
Right work module for compensated configuration, port SAE 8, 3/4-16 UNF	<b>RW3U08</b>	On request
Right work for compensated configuration, with aux valve, port SAE 8, 3/4-16	<b>RW4U08</b>	On request

#### 1.3 Left work module

Left work module for on/off configuration, port GAS 3/8"	<b>LW1G38</b>	9101031221
Left work module for on/off configuration, with auxiliary valve, port GAS 3/8"	<b>LW2G38</b>	On request
Left work module for compensated configuration, port GAS 3/8"	<b>LW3G38</b>	On request
Left work for compensated configuration, with auxiliary valve, port GAS 3/8"	<b>LW4G38</b>	On request
Left work module for on/off configuration, port SAE 8, 3/4-16 UNF	<b>LW1U08</b>	On request
Left work module for on/off configuration, with aux valve, port SAE 8, 3/4-16	<b>LW2U08</b>	On request
Left work module for compensated configuration, port SAE 8, 3/4-16 UNF	<b>LW3U08</b>	On request
Left work for compensated configuration, with aux valve, port SAE 8, 3/4-16	<b>LW4U08</b>	On request



## Work section - summary options & spare parts



Work ordering code example: RW3G38 - EPL (S12D) - 31 - 1A0 - A/C2(180P) - B/NA0(D12D)

### 3 Directional cartridge

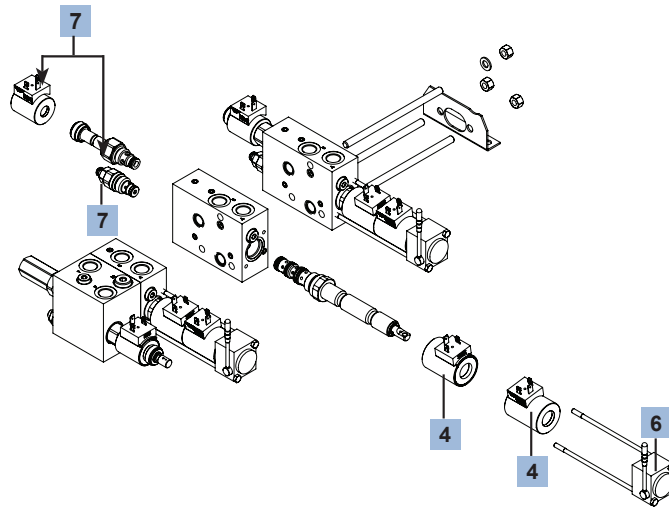
- scheme 1 with leverage predisposition, for on/off configuration
- scheme 2 with leverage predisposition, for on/off configuration
- scheme 1 without leverage predisposition, for on/off configuration
- scheme 2 without leverage predisposition, for on/off configuration
- 4/5 L/min proportional type, with lever predisposition, with 8/11 bar compensator
- 9/11 L/min proportional type, with lever predisposition, with 8/11 bar compensator
- 15/17 L/min proportional type, with lever predisposition, with 8/11 bar compensator
- 16/20 L/min proportional type, with lever predisposition, with 8/11 bar compensator
- 20/24 L/min proportional type, with lever predisposition, with 8/11 bar compensator
- 23/27 L/min proportional type, with lever predisposition, with 8/11 bar compensator
- 4/5 L/min proportional type, without lever predisposition, with 8/11 bar compensator
- 9/11 L/min proportional type, without lever predisposition, with 8/11 bar compensator
- 15/17 L/min proportional type, without lever predisposition, with 8/11 bar compensator
- 16/20 L/min proportional type, without lever predisposition, with 8/11 bar compensator
- 20/24 L/min proportional type, without lever predisposition, with 8/11 bar compensator
- 23/27 L/min proportional type, without lever predisposition, with 8/11 bar compensator
- 4/5 L/min on/off type, with lever predisposition, with 8/11 bar compensator
- 9/11 L/min on/off type, with lever predisposition, with 8/11 bar compensator
- 15/17 L/min on/off type, with lever predisposition, with 8/11 bar compensator
- 16/20 L/min on/off type, with lever predisposition, with 8/11 bar compensator
- 20/24 L/min on/off type, with lever predisposition, with 8/11 bar compensator
- 23/27 L/min on/off type, with lever predisposition, with 8/11 bar compensator
- 4/5 L/min on/off type, without lever predisposition, with 8/11 bar compensator
- 9/11 L/min on/off type, without lever predisposition, with 8/11 bar compensator
- 15/17 L/min on/off type, without lever predisposition, with 8/11 bar compensator
- 16/20 L/min on/off type, without lever predisposition, with 8/11 bar compensator
- 20/24 L/min on/off type, without lever predisposition, with 8/11 bar compensator
- 23/27 L/min on/off type, without lever predisposition, with 8/11 bar compensator

### Ordering code

<b>1L</b>	0463100200
<b>2L</b>	0463200200
<b>10</b>	0463100000
<b>20</b>	0463200000
<b>APL</b>	0473100222
<b>BPL</b>	0473100232
<b>CPL</b>	0473100215
<b>DPL</b>	0473100252
<b>EPL</b>	0473100282
<b>FPL</b>	0473100202
<b>AP0</b>	0473100020
<b>BP0</b>	0473100030
<b>CP0</b>	0473100015
<b>DP0</b>	0473100050
<b>EP0</b>	0473100080
<b>FP0</b>	0473100000
<b>ANL</b>	04631002004
<b>BNL</b>	04631002009
<b>CNL</b>	046310020016
<b>DNL</b>	046310020015
<b>ENL</b>	046310020024
<b>FNL</b>	046310020030
<b>AN0</b>	046310000004
<b>BN0</b>	046310000009
<b>CN0</b>	046310000016
<b>DN0</b>	046310000015
<b>EN0</b>	046310000024
<b>FN0</b>	046310000030



## Work section - summary options & spare parts



<b>4 Directional cartridge coil</b>			
12 V, connector DIN 43650		<b>S12D</b>	098001190
24 V, connector DIN 43650		<b>S24D</b>	098002190
12 V, connector DEUTSCH DT4, circuit with diode		<b>S12S</b>	098101190
24 V, connector DEUTSCH DT4, circuit with diode	<u>Proportional</u>	<b>S24S</b>	098102190
12 V, connector AMP-JUNIOR, circuit with diode		<b>S12A</b>	098201190
24 V, connector AMP-JUNIOR, circuit with diode		<b>S24A</b>	098202190
12 V, connector DIN 43650		<b>C12D</b>	098011190
24 V, connector DIN 43650		<b>C24D</b>	098012190
12 V, connector DEUTSCH DT4, circuit with diode		<b>C12S</b>	098111190
24 V, connector DEUTSCH DT4, circuit with diode	<u>On/Off</u>	<b>C24S</b>	098112190
12 V, connector AMP-JUNIOR, circuit with diode		<b>C12A</b>	098211190
24 V, connector AMP-JUNIOR, circuit with diode		<b>C24A</b>	098212190
<b>6 Control type</b>			
Command with high lever on the left	<b>1A</b>		0013000010
Command with lower lever on the left	<b>1B</b>		0013000013
Command with high lever on the right	<b>1C</b>		0013000013
Command with lower lever on the right	<b>1D</b>		0013000010
<b>7 Auxiliary valves</b>	<u>Side A</u>	<u>Side B</u>	
Anti-shock with spring 1 setting range (20 P÷ 120 P) or (60 Q÷ 100 Q)	<b>C1(...)</b>	<b>C1(...)</b>	0022010000
Anti-shock with spring 2 setting range (121 P÷170 P) or (101 Q÷180 Q)	<b>C2(...)</b>	<b>C2(...)</b>	0022020000
Anti-shock with spring 3 setting range (171 P÷250 <sup>1)</sup> P) or (181 P÷250 <sup>1)</sup> Q)	<b>C3(...)</b>	<b>C3(...)</b>	0022030000
Plug	<b>NP</b>	<b>NP</b>	9273193600
Electric dump valve without emergency operation	<b>NA0</b>	<b>NA0</b>	0552010000
Electric dump valve with push button emergency	<b>NA4</b>	<b>NA4</b>	0552010400
Electric dump valve with push and twist emergency	<b>NA5</b>	<b>NA5</b>	0552010500
Dump valve coil, 12 V, connector DIN 43650	<b>D12D</b>	<b>D12D</b>	0940010000
Dump valve coil, 24 V, connector DIN 43650	<b>D24D</b>	<b>D24D</b>	0940020000
Dump valve coil, 12 V, connector DEUTSCH DT4, circuit with diode	<b>D12S</b>	<b>D12S</b>	0941010000
Dump valve coil, 24 V, connector DEUTSCH DT4, circuit with diode	<b>D24S</b>	<b>D24S</b>	0941020000
Dump valve coil, 12 V, connector AMP-JUNIOR	<b>D12A</b>	<b>D12A</b>	0942010000
Dump valve coil, 24 V, connector AMP-JUNIOR	<b>D24A</b>	<b>D24A</b>	0942020000

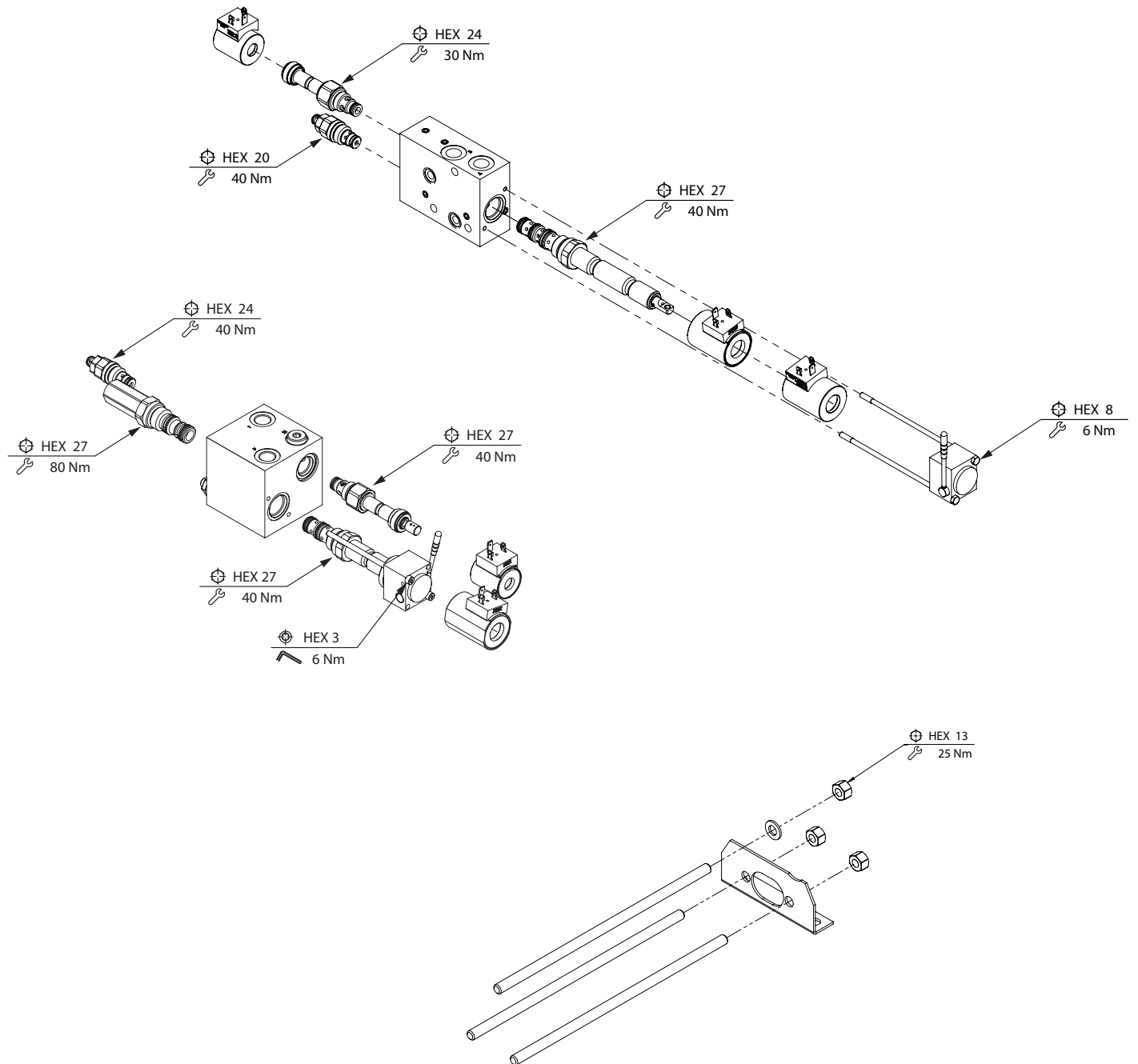
<sup>1)</sup>Pressure setting max 350 bar

### Mounting

Tie rod kit for 1 section NVS3	9297080550
Tie rod kit for 2 section NVS3	9297080950
Tie rod kit for 3 section NVS3	9296081403
Tie rod kit for 4 section NVS3	9296081803
Tie rod kit for 5 section NVS3	9296082300
Tie rod kit for 6 section NVS3	9296082700
Tie rod kit for 7 section NVS3	9296083100
Tie rod kit for 8 section NVS3	9296083500



## General tightening torques



**TECHNICAL SPECIFICATIONS  
AND GENERAL CONDITIONS**

## Technical specifications

### Filtration

The state of oil used for hydraulic systems and machines is one of the main factors for proper use and performance. Use of excessive dirty oil may lead to earlier wearing of parts and components, faster hardening and thus functional troubles of your equipment. Due Filtration is a must to assure top efficiency and life of your hydraulic equipment. Selection of the most suitable filtration systems must be done according to the technical features of your equipment. However, the following table provides most current oil recommendations.

### Disposal indications

All products, protections, plugs and packaging material at the end of their utilization have to be disposed in according with the regulations in force.

### Temperature limits

Ambient temperature:  
from -20° C to +40° C

Oil temperature:  
from -20° C to +90° C

### Polluting class ISO 4406

With two figures respectively showing the quantity of 5 and 15µ or larger particles in 1 ml oil.

### Polluting class NAS 1653

Expressed with one figure showing the quantity of variable size particles in 100 ml oil.

### Back up rings

Made out of poly-tetrafluoroethylene (PTFE).

**Q - RINGS:** special sealing gaskets with 4 shaped lobes designed to prevent gaskets pull-off chances in case of dynamic applications. All O-rings are made out of Acrylonitril-Butadiene (NBR).

### Test curves

All diagrams in this catalogue report performance curves obtained by use of mineral oil at ISO viscosity VG46 and at 40° C temperature.

### Hydraulic oils

The use of mineral based oil is recommended (like HLP to DIN 51524). All performances and calibrations are carried out by using hydraulic oil with approximate viscosity of 46 cSt at 40° C.

### Viscosity class

Normally expressed as ISO-VG in accordance to ISO DIN standards. Average viscosity is figured at 40° C (mm<sup>2</sup>/s or centistokes - cSt). Recommended oil viscosity for NEM parts is: from 10 cSt to 460 cSt.

### Design and installation work

Valves and manifolds in this catalogue are very versatile. In fact, the use on equipment complying with the European regulation no. 89/392 and following amendements is strictly recommended. No installation should be done on equipment without above mentioned European approval.

All NEM valves and manifolds are tested after assembly. Technical features and operation limits are statistically verified.

The customer is always ultimately responsible for the choice and final use of the product.

### Materials

The valves are made out high quality steel, while all movable parts are hardened and rectified.

Manifolds are produced in steel or aluminum in relation to the max working pressure

### Sealing

**O-RING.** made out of butadiene/acrylonitril(BUNA N or NBR according to ASTM standards). The ASTM standards D76 set a brittleness safety temperature of -30° C +125° C. For use at higher temperature consult our technical office.

### Cartridge valve installation

**PLEASE CAREFULLY READ THESE INSTRUCTIONS BEFORE VALVE INSTALLATION**

Check-up general valve conditions and make sure there is no dirt. Check-up gaskets and seals conditions identifying their exact location. Lubricate the seals. First hand screw the cartridge in. Tightening should be performed according to the technical data listed for each product.

### Storage

Keep valves away and protected from the sunlight and any other heat/ozone source. Make sure that an ideal storage temperature of -20 :+40° C is available.





## General conditions

### 1. General

1.1 These general conditions are applicable to all the supplies which NEM s.r.l. will carry out, on the base of purchasing orders forwarded from the Customer.

1.2 Terms like EXW, DDP and so on are referred to the so called Incoterms published by the International Chamber of Commerce, current at the date of conclusion of these General Conditions.

### 2. Purchasing orders management

2.1 Purchasing orders are binding for NEM s.r.l. only if confirmed in writing with order confirmations.

2.2 NEM s.r.l. engages itself to supply goods up to the order confirmations.

2.3 Any complaints regarding the content of the order confirmation must be notified in writing to NEM s.r.l. by 5 days and no later the forwarding of the order confirmation.

2.4 The Customer undertakes to pay the goods supplied by NEM s.r.l., according to the prices listed on the order confirmation.

### 3. Payment conditions

3.1 The Parties agree upon the payment conditions at the beginning of the supply.

3.2 In case of delay of payment, NEM s.r.l. will have the right to request of moratory interests equal to the Euribor, increased by 2 points.

3.3 In case of delay of payment, NEM s.r.l. will have the right to not execute the eventual purchasing orders in progress, even if confirmed.

### 4. Delivery and shipment

4.1 The supply of the goods will always be Ex-Works, even in the case that NEM s.r.l. had agreed with the Customer that NEM s.r.l. takes care of the shipment, or part of it.

4.2 In any case, the risks about perishment or damage of the goods will pass to the Customer, at latest, when the goods are delivered to the first carrier.

### 5. characteristics of products

5.1 NEM s.r.l. engages itself to supply good quality products, up to the technical specifications contained in technical schedules or in the catalogue.

5.2 NEM s.r.l. reserves the exclusive right to make any change to the products, which, without altering their essential features, appear to be necessary or suitable.

### 6. Complaints

6.1 The complaints regarding the apparent defects of the Products (such as, for instance, the packing, quantity, number or exterior features of the Products) must be notified in writing to NEM s.r.l. by 7 days and no later upon the receipt of the goods. Failing such notification, the Customer's right to claim the above defects will be forfeited.

6.2 The hidden defects (defects which cannot be discovered by the Customer on the basis of a careful inspection upon the receipt) shall be notified in writing to NEM s.r.l. by 7 days and no later from the discovery of the defects, and in any case no later than 18 months from the delivery of the Goods. Failing such notification, the Customer's right to claim the above defects will be forfeited.

6.3 It's agreed that, even in case of any complaint or objection, the Customer will not have the right to suspend or delay the payments due to NEM s.r.l., as well as payment of any other supplies.

### 7. Warranty

7.1 In case of any defects, lack of quality or non-conformity of the supplied Products, NEM s.r.l., at its exclusive choice, engages itself to replace or repair the defective Products provided such defects or non-conformity have been timely notified in writing to NEM s.r.l., in accordance to point nr. 6, by 18 months from the delivery of the Goods and no later.

7.2 Products repaired or replaces under warranty as above described are submitted to the same guarantee, for a period of 18 months from the date of repair or replacement.

7.3 Except in case of fraud or gross negligence, in case of defects, lack of quality or non-conformity, NEM s.r.l. undertakes only to repair or replace the defective Products, in accordance to what above described.

7.4 This guarantee ( i.e. the obligation of repairing or replacing the Products) is in lieu of any other legal guarantee or liability of the Supplier, with the exclusion of any other guarantee or liability – whether contractual or non-contractual – in connection with the Products supplied (i.e. compensation for damages, loss of profit, recall campaigns, ...).

7.5 NEM s.r.l. is covered by appropriate policy of Product Legal Liability.

### 8. Retention of title

8.1 The Goods supplied by NEM s.r.l. remain property of NEM s.r.l. until the complete payment of the supply is received.

### 9. Secrecy bond

9.1 NEM s.r.l. engages itself to treat as highly confidential all the technical or commercial information should learnt from the Customer, which are not already of public divulgence.

### 10. Patents

10.1 Except preventive written authorization of NEM s.r.l., the Customer cannot use the supplied Products, or part of them, or the descriptions or the drawings of them – whether registered patented or not – to project or make similar goods.

10.2 Even in case of preventive written authorization of NEM s.r.l., all the patents, labels and registered design, royalties and intellectual property rights related or in connection with Products supplied by NEM s.r.l., are and remain property of NEM s.r.l. The Customer undertakes to treat all of them as highly confidential.

### 11. Applicable law and jurisdiction

11.1 The supplies carried out by NEM S.r.l. are governed by these present General Conditions and, for what here not expressly provided, by the Italian Law.

11.2 The competent Law Courts of Reggio Emilia have the exclusive jurisdiction in any controversies regarding the supplies of Products by NEM s.r.l., or from the supplies arising out or to the supplies connected, in which NEM s.r.l. is part.





