

Products for mobile hydraulic applications

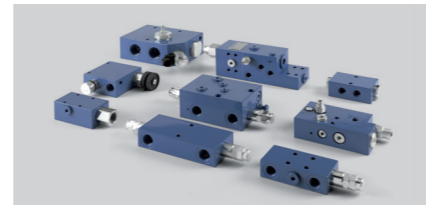
Mechanical and Electric Cartridge Valves

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		



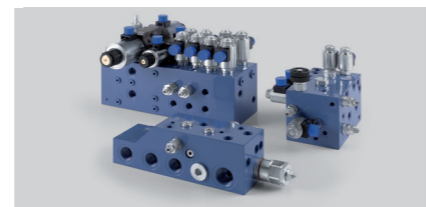
Parts-in-Body Valves

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		



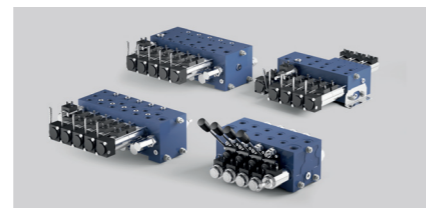
Hydraulic Integrated Circuits

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 NVE3

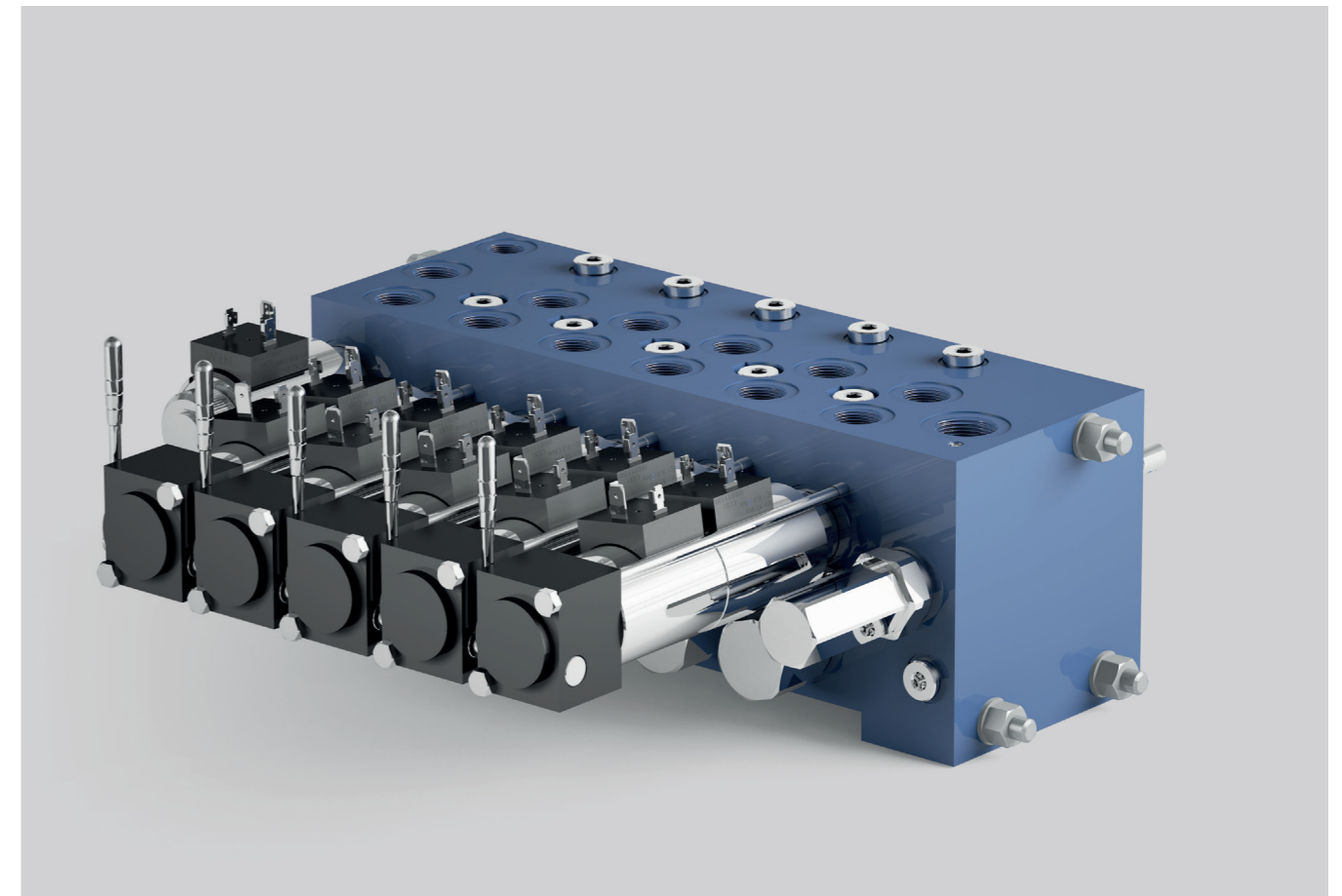


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Company profile

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

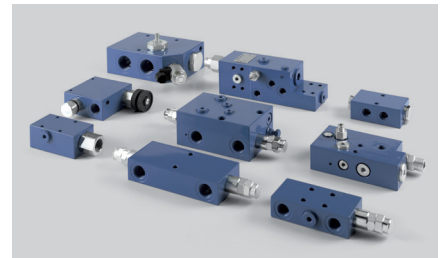
p_{\max} 350 bar
 Q_{\max} 300 L/min
Cavity up to SAE 20



Parts-in-Body Valves

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

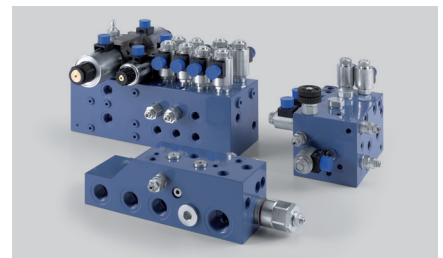
p_{\max} 420 bar
 Q_{\max} 500 L/min
Ports up to 1 $\frac{1}{4}$ SAE6000



Hydraulic Integrated Circuits

Weight lifting
Earth moving
Agricultural vehicles
Industrial vehicles

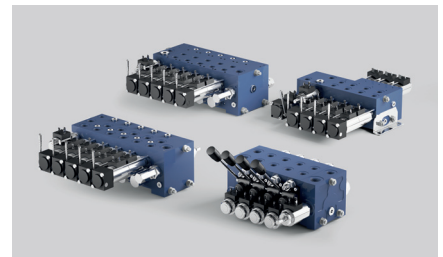
p_{\max} 350 bar
 Q_{\max} 200 L/min



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

Option chart	NVE3	NVE4	NVD2	NVS3
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	
SPOOL				
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	x	under development
CAN BUS interface actuation	under development	under development	under development	under development
PORT RELIEF VALVE				
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



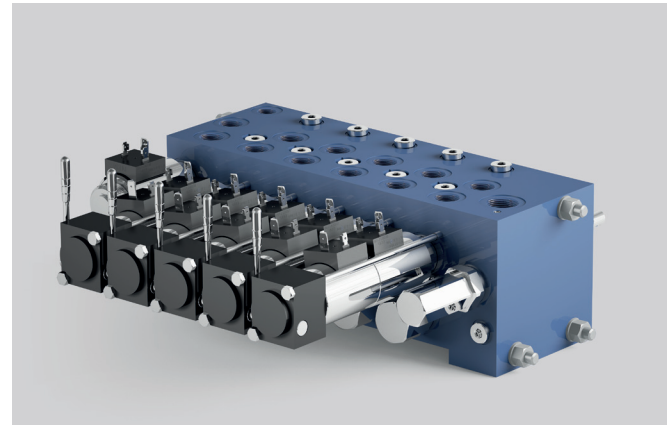
NVE3 Load independent directional control valve

NVE3 general features

- Modular design
- Anodized aluminum
- Maximum inlet flow 50 L/min
- Maximum regulated flow 30 L/min
- Inlet flow compensation
- Load independent flow regulation
- Simultaneous movements
- Maximum working pressure up to 250 bar
- SAE 10/4 electro proportional and ON-OFF directional valves
- Port relief valves
- Manual levers
- Levers sensor switches
- Open centre spools (A/B to T in neutral position)
- Dump valve built in inlet section
- Open and Closed center configurations:
 - Open center for fixed displacement pumps
 - Closed center for variable displacement pump

Advantages

- Compact design
- Light weight (aluminium body)
- Up to 8 work sections
- Flexible hydraulic circuit configuration
- Easy customization
- Safety options



Starting from its light and compact architecture, NVE3 valve guarantees the best results in terms of precision and movement control in any application and has been specially designed for lifting machines.

NVE3 is a compact electro-proportional actuated load independent directional control valve, designed to control a maximum inlet flow of 50 L/min and to regulate a maximum flow of 30 L/min on the working sections.

Many features in addition to countless configuration options make NVE3 highly flexible and easily adaptable to the different applications range.

By means of the pressure compensation principle, the NVE3 keeps the ΔP constant through cartridge spool control; flow rate regulation and consequently motion

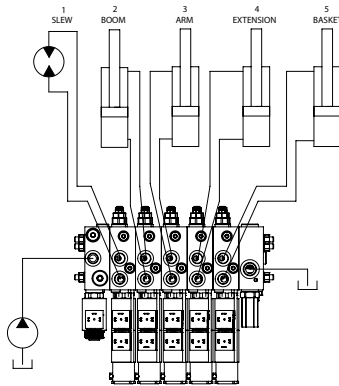
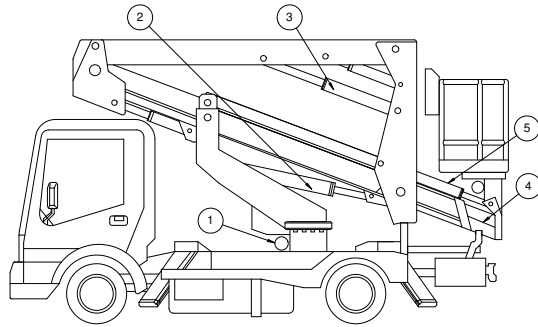
control is entirely independent from any load variation. In addition to the obvious benefits in regulation, the system also allows significant energy saving.

The architecture is based on the combination of SAE 10 DCV cartridges screwed into aluminum bodies. Different maximum flow sizing are available for the different maximum speed regulation of actuators.

The inlet elements can be configured with different types of pressure relief valves and dump valves. Thanks to his modular design it is possible to assemble up to 10 sections of 4 way 3 position proportional solenoid valves arranged in parallel.

Applications

NVE3 typical application: aerial platforms



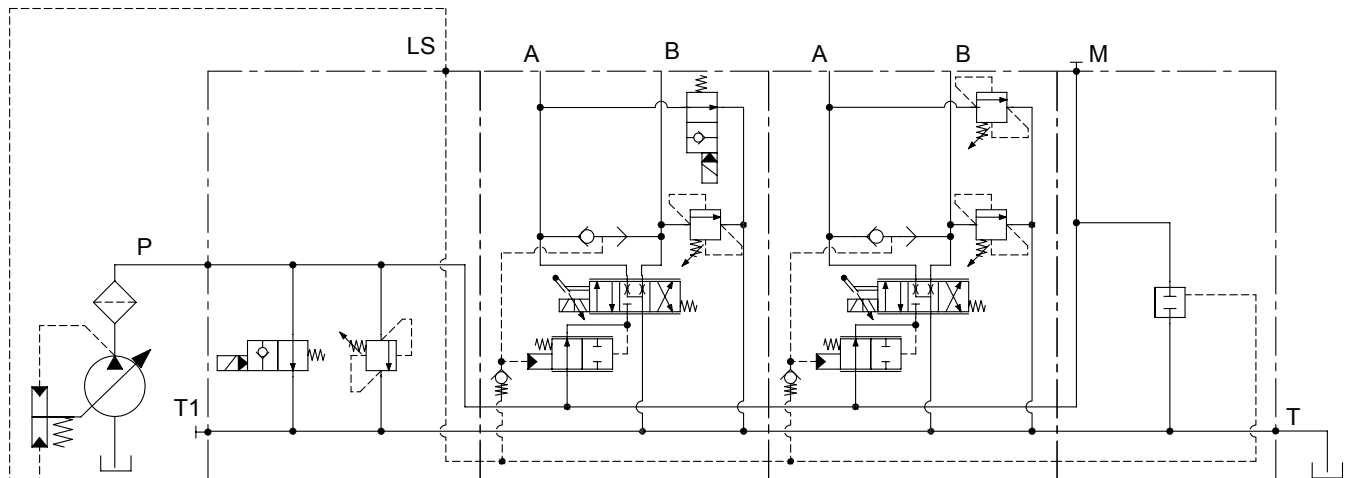
Technical data

Maximum inlet flow	L/min	50
Maximum regulated flow on ports A & B	L/min	30
Maximum working pressure	bar	250
Maximum back pressure on port T	bar	20
Work sections		10
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 80
Viscosity range	mm/s ²	10 to 460
Contamination level		NAS 1638 class 9 (20/18/15 ISO 4406:1999)
Filtration degree	µm	20
Filtration level	β ₂₀	≥ 75



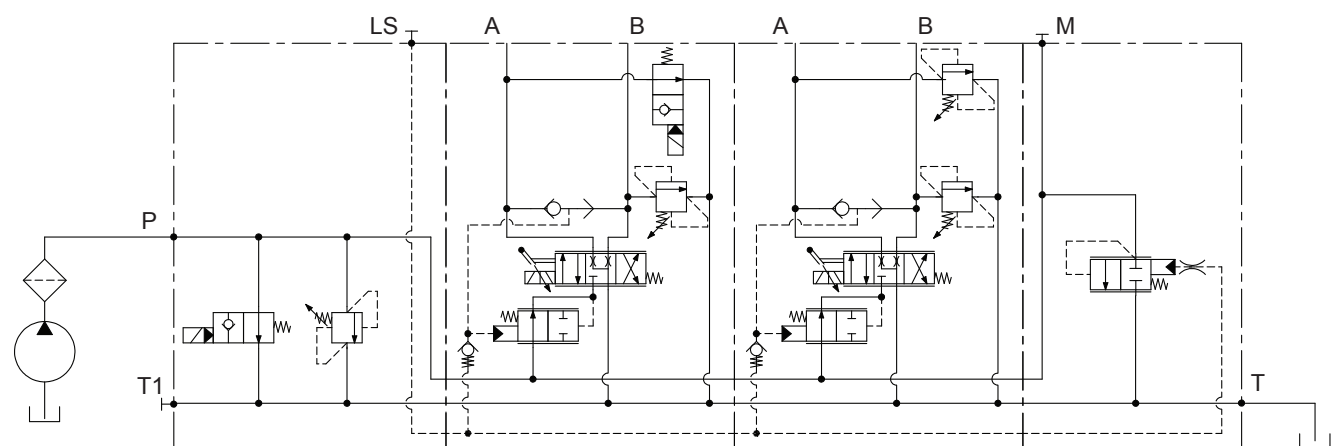
Closed center layout

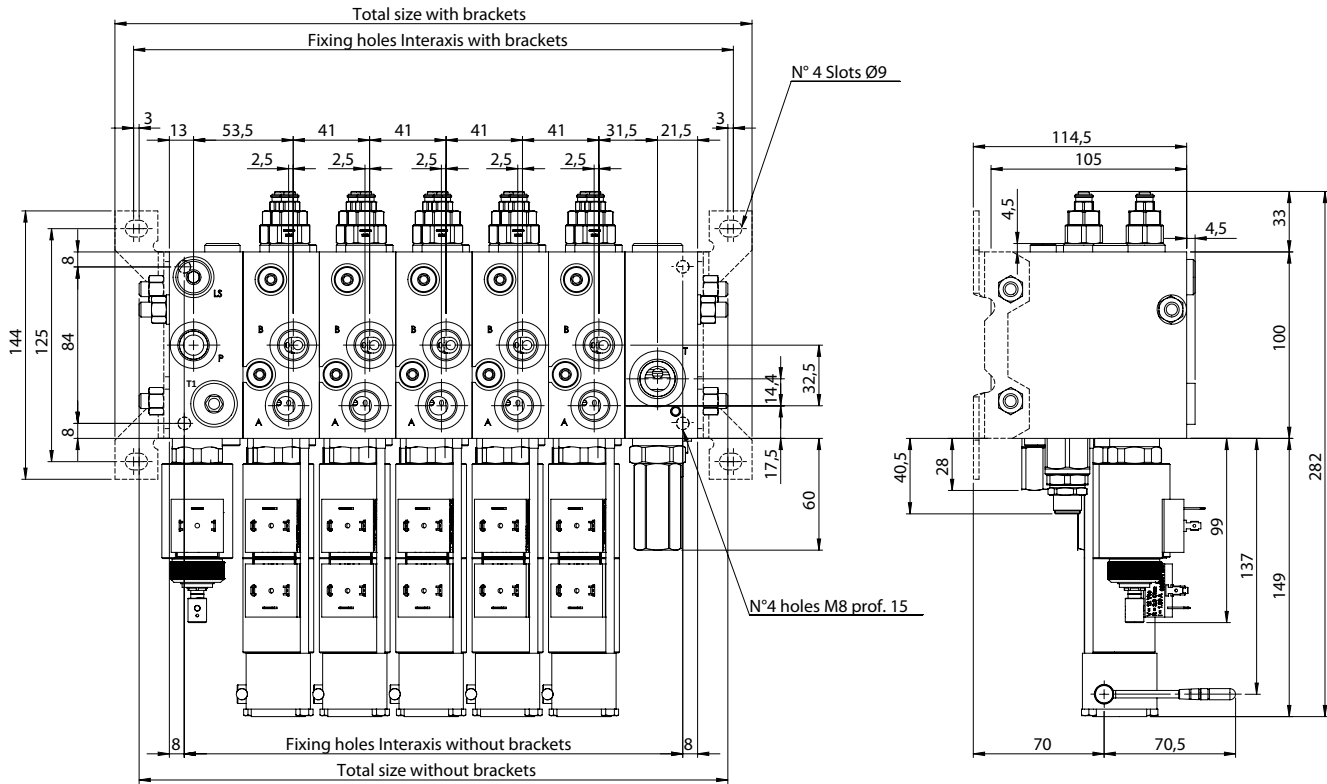
Closed center for variable displacement pump



Open center layout

Open center for fixed displacement pump





TOTAL SIZE [mm]

	NVE3/1	NVE3/2	NVE3/3	NVE3/4	NVE3/5	NVE3/6	NVE3/7	NVE3/8
With brackets	178	219	260	301	342	383	424	465
Without brackets	152	193	234	275	316	357	398	439

FIXING HOLES INTERAXIS [mm]

	NVE3/1	NVE3/2	NVE3/3	NVE3/4	NVE3/5	NVE3/6	NVE3/7	NVE3/8
With brackets	158	199	240	281	322	363	404	445
Without brackets	103,5	144,5	185,5	226,5	267,5	308,5	349,5	390,5

SINGLE SECTION WEIGHT [kg]

Inlet	Working	Outlet
1,9	2,6	1,4

TOTAL WEIGHT [kg]

NVE3/1	NVE3/2	NVE3/3	NVE3/4	NVE3/5	NVE3/6	NVE3/7	NVE3/8
5,9	8,5	11,1	13,7	16,3	18,9	21,5	24,1

STANDARD PORTS SIZE [BSPP (ISO-228)]

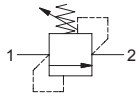
Inlet port P	User port A	User port B	Outlet port T	Port T1	Port LS	Port M
3/8" BSPP	3/8" BSPP	3/8" BSPP	1/2" BSPP	3/8" BSPP	1/4" BSPP	1/4" BSPP

PORTS SIZE [SAE (ASME B1.1-2003)]

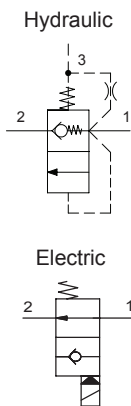
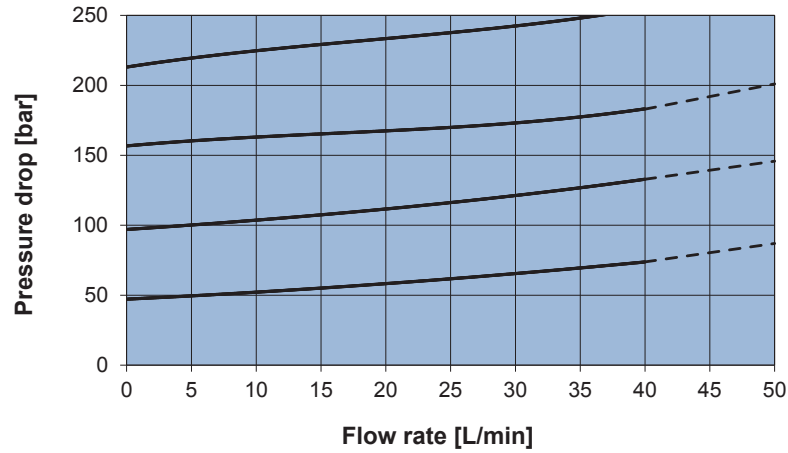
Inlet port P	User port A	User port B	Outlet port T	Port T1	Port LS	Port M
3/4-16 UNF-2B (SAE 8)	3/4-16 UNF-2B (SAE 8)	3/4-16 UNF-2B (SAE 8)	7/8-14 UNF-2B (SAE 10)	3/4-16 UNF-2B (SAE 8)	5/8-18 UNF-2B (SAE 6)	5/8-18 UNF-2B (SAE 6)



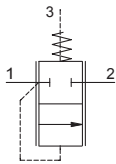
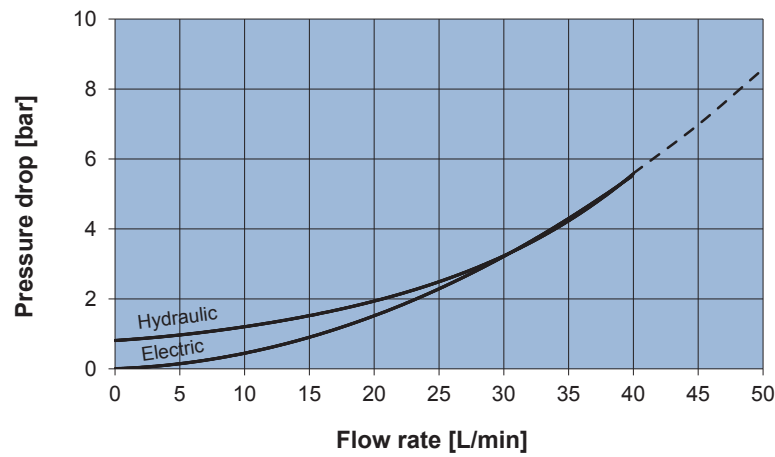
General performance characteristics



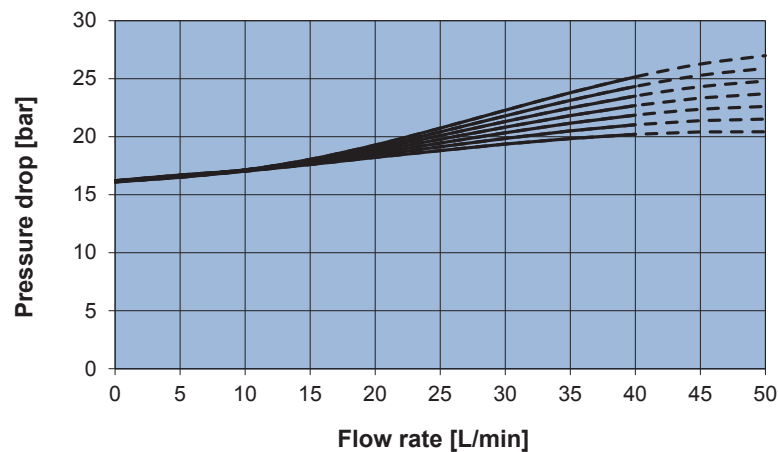
MAIN RELIEF VALVES PRESSURE DROP CHARACTERISTICS



INLET DUMP LINE PRESSURE DROP CHARACTERISTICS



INLET PRESSURE COMPENSATOR CHARACTERISTICS

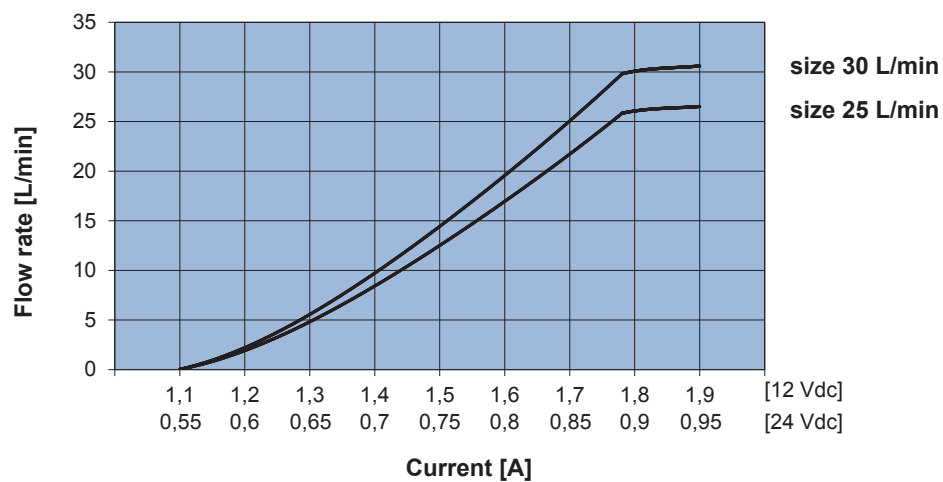
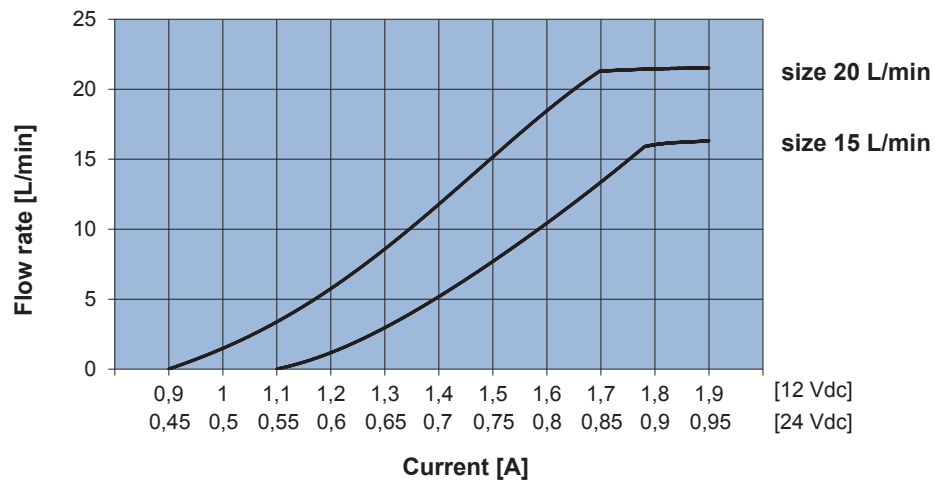
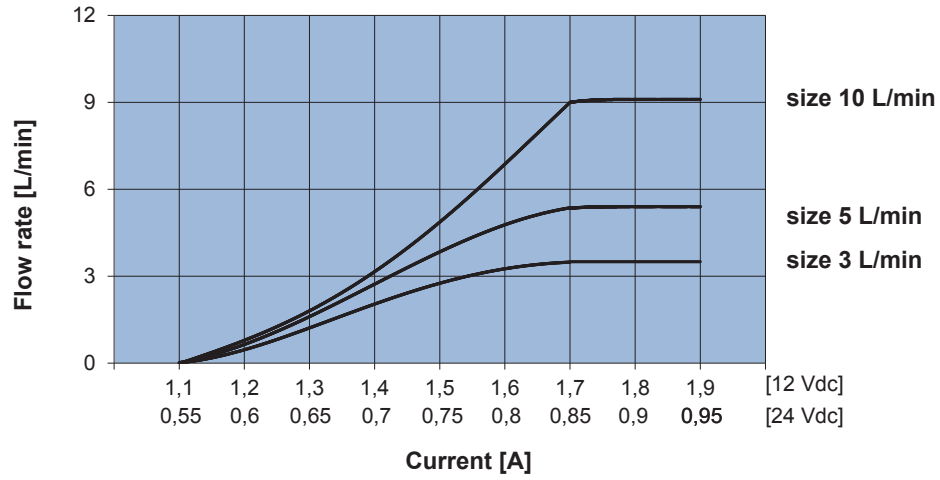


Note:

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

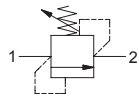
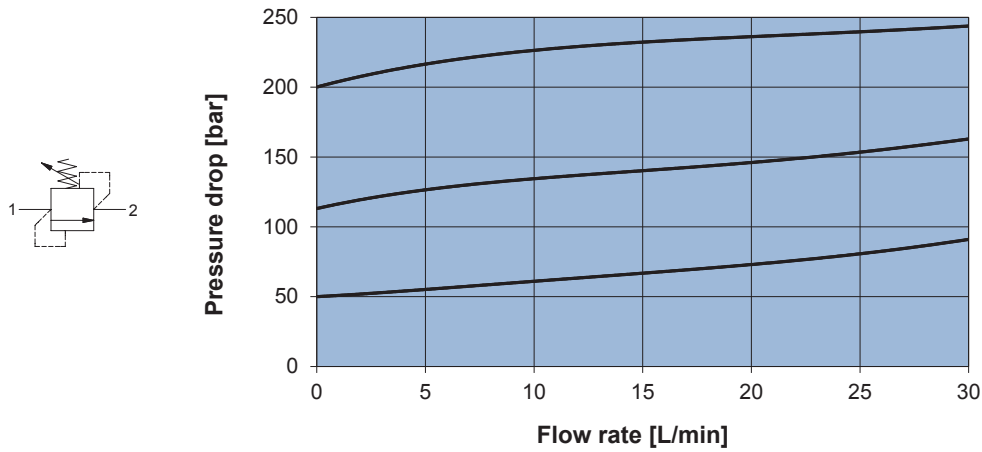


Note:
Technical data and diagrams are measured with mineral oil HLP to DIN 51524 of 46 cSt and at 40 °C oil temperature.

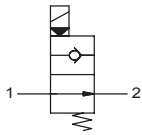
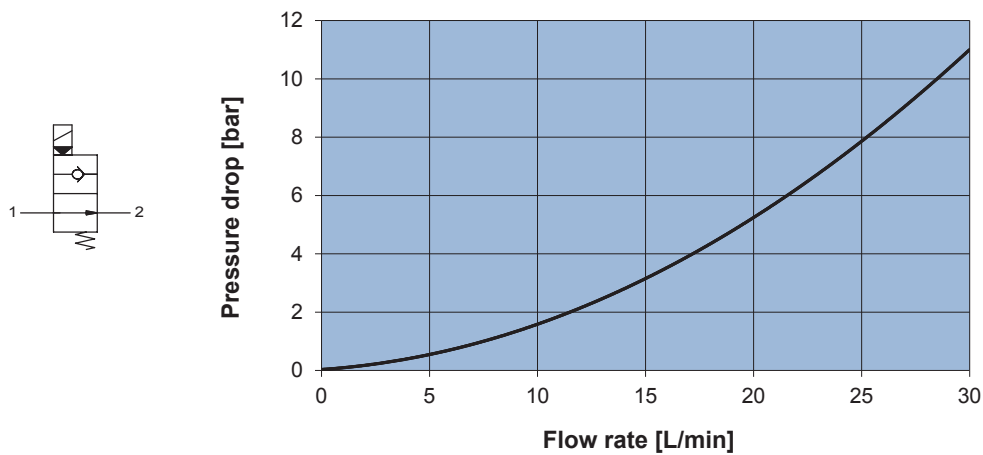


Working section performance characteristics

ANTI-SHOCK CHARACTERISTICS



PORT DUMP VALVES CHARACTERISTICS



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

NVE3/3

→ **PRODUCT TYPE:**

NVE3
/3

Product type
Working section number

1 ILG38 - MRV3(210) - DV1(C12D) - OC2

→ **INLET ARRANGEMENT:**

page 13

2 W2G38 - C14 - 25PL(S12D) - 31 - 1A0 - A/C2(200P) - B/NA4(D12D)

→ **WORK SECTION ARRANGEMENT:**

page 19

3 ORG12 - CC16 - OC2

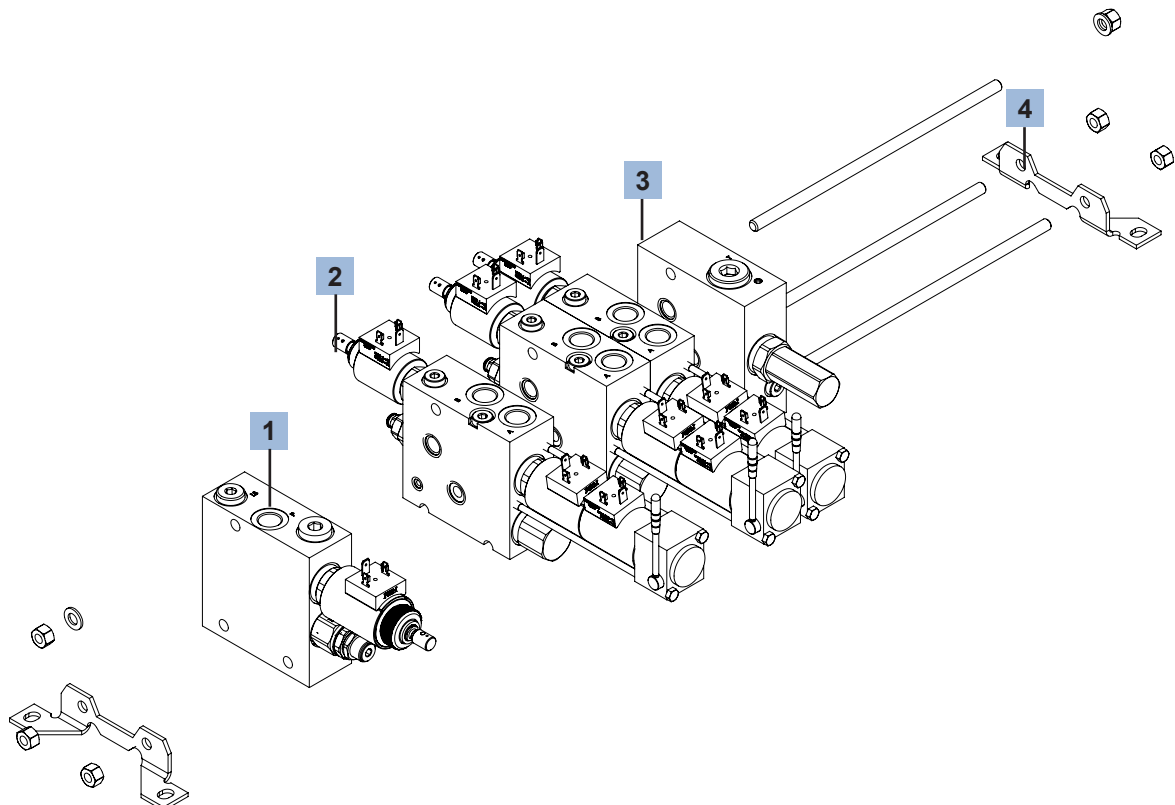
→ **OUTLET ARRANGEMENT:**

page 27

4 WB

→ **MOUNTING:**

page 30



Note: order row 2 must be repeated for each work section



Inlet section

IL G38 - MRV3(210) - DV1 (C12D) - OC2

1+2 HOUSING + PORT P and PORT T1 TYPE

page 14

ILG38	Left inlet with port P and T1 type GAS 3/8" BSPP
IRG38	Right inlet with port P and T1 type GAS 3/8" BSPP
ILU08	Left inlet with port P and T1 type SAE8 3/4-16 UNF-2B (SAE8)
IRU08	Right inlet with port P and T1 type SAE8 3/4-16 UNF-2B (SAE8)

3 PRESSURE RELIEF VALVE

page 15

MRV1(...)	Pressure relief valve with setting range 50 to 120 bar
MRV2(...)	Pressure relief valve with setting range 120 to 200 bar
MRV3(...)	Pressure relief valve with setting range 200 to 350 bar
MRVP	Pressure relief valve plug

4 DUMP VALVE

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DVP	Dump valve Plug
DV0	Hydraulic pilot operated dump valve
DV1	Electric dump valve without emergency operation
DV2	Electric dump valve with push button emergency
DV3	Electric dump valve with push and twist emergency

5 DUMP VALVE COIL

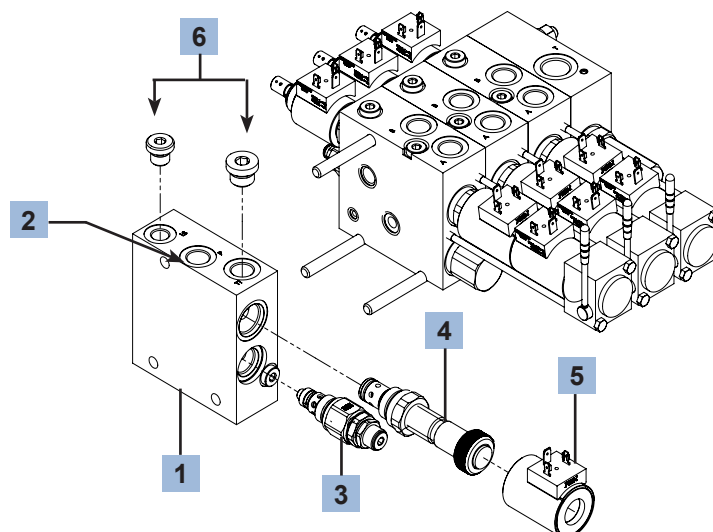
page 17

C12D	Coil 12 V, connector DIN 43650, standard circuit
C12A	Coil 12 V, connector AMP-JUNIOR, circuit with diode
C12S	Coil 12 V, connector DEUTSCH DT4, circuit with diode
C24D	Coil 24 V, connector DIN 43650, standard circuit
C24A	Coil 24 V, connector AMP-JUNIOR, circuit with diode
C24S	Coil 24 V, connector DEUTSCH DT4, circuit with diode

6 PORT LOCATION

page 18

OC1	Open center layout, discharge on port T1
OC2	Open center layout, discharge on port T
CC1	Closed center layout, discharge on port T1
CC2	Closed center layout, discharge on port T

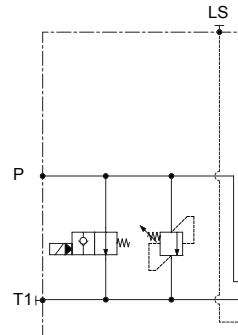
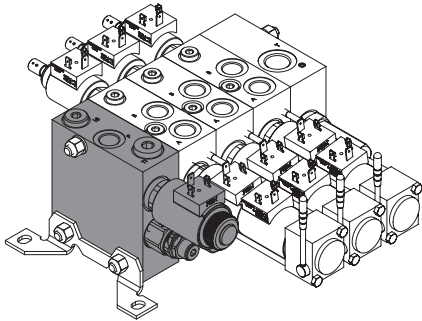


1. Housing

IL G38 - MRV3(210) - DV1 (C12D) - OC2

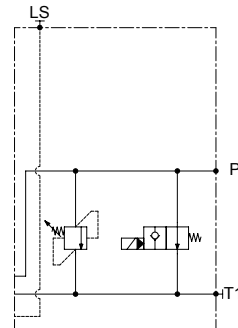
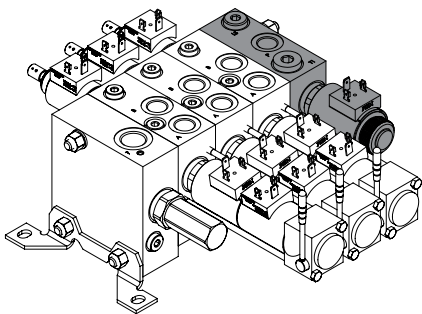
IL

LEFT inlet section
(with respect to the lever side)



IR

RIGHT inlet section
(with respect to the lever side)



2. Port P and T1 type

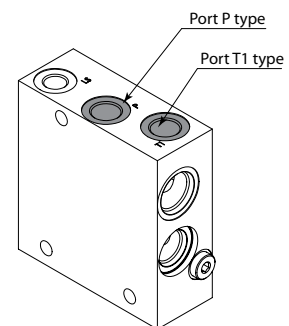
IL G38 - MRV3(210) - DV1 (C12D) - OC2

G38

Port **P** and **T1** G3/8" BSPP
ports size ISO-228

U08

Port **P** and **T1** 3/4-16 UNF-2B
port size SAE 8 (ASME B1.1-2003)



3. Pressure relief valve

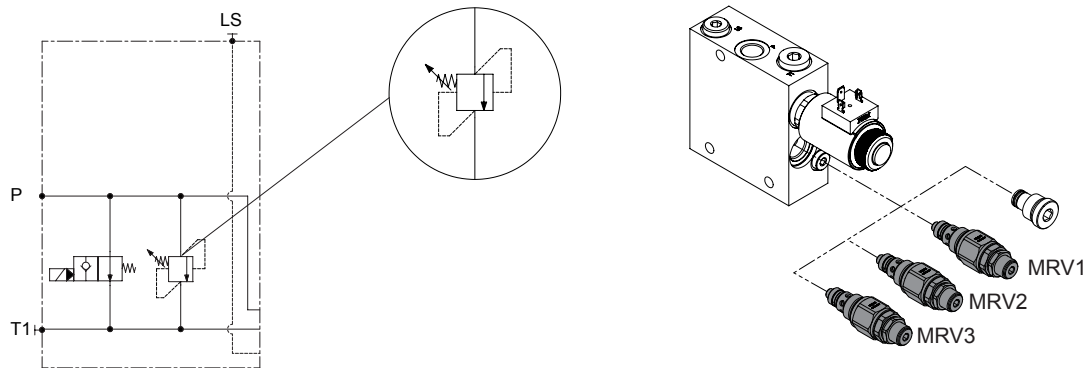
IL G38 - **MRV3(210)** - DV1 (C12D) - OC2

MRV1(...) Relief valve with spring 1, cracking pressure (50÷120)

MRV2(...) Relief valve with spring 2, cracking pressure (120÷200)

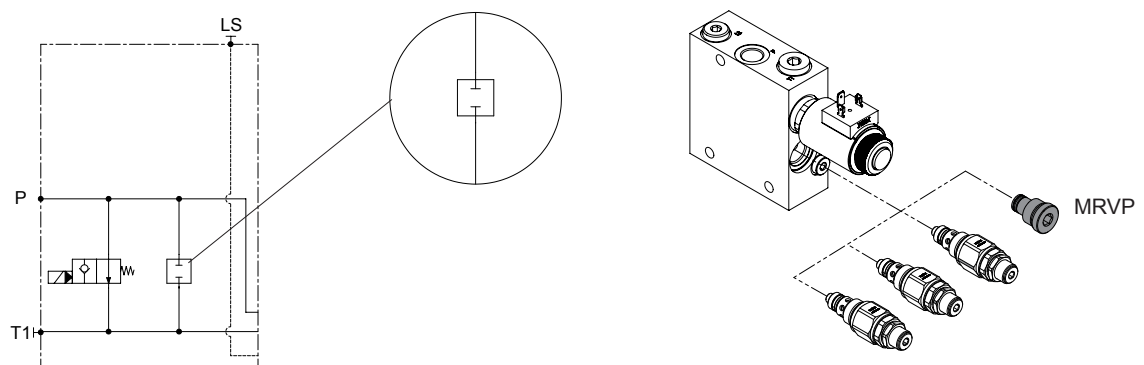
MRV3(...) Relief valve with spring 3, cracking pressure (200÷250¹⁾)

¹⁾ Cracking pressure max 350 bar



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

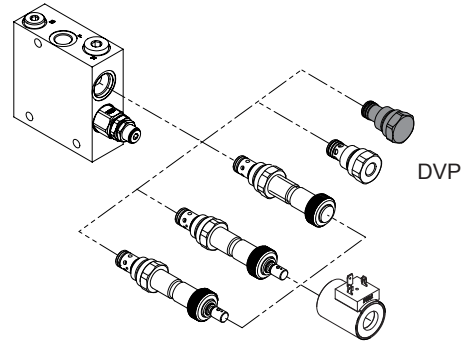
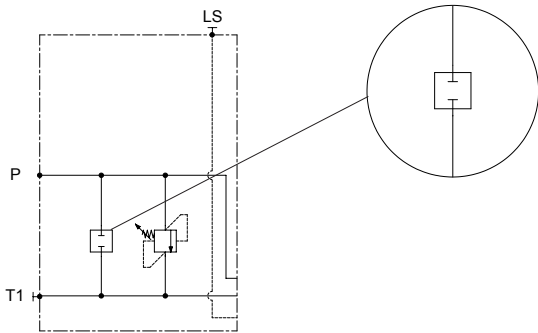
MRVP Plug, all port closed



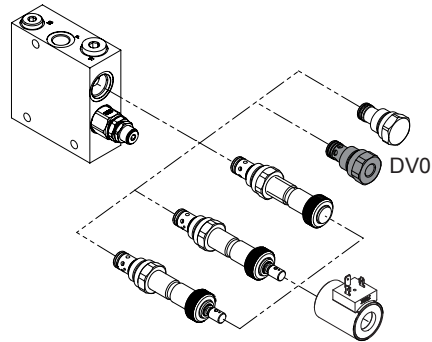
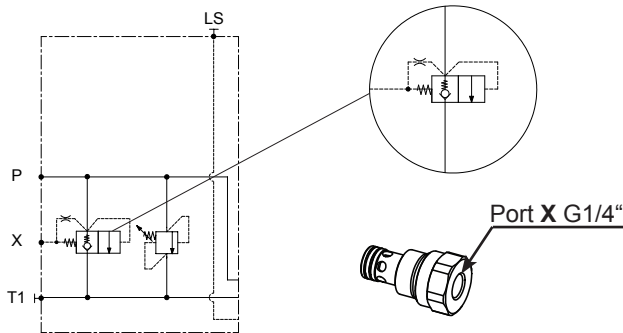
4. Dump valve

IL G38 - MRV3(210) - DV1 (C12D) - OC2

DVP Plug (all port closed)



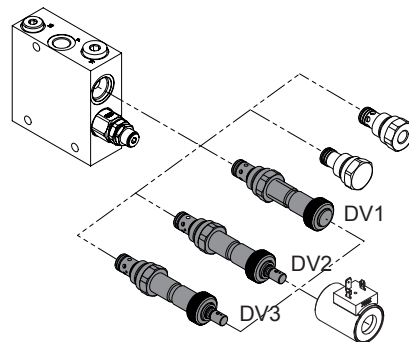
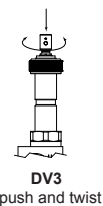
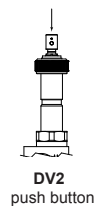
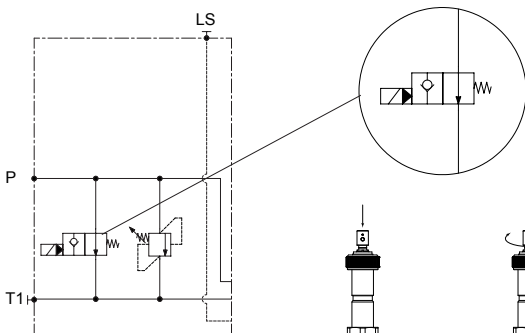
DV0 Hydraulic pilot operated dump valve



DV1(...) Electric dump valve without emergency operation

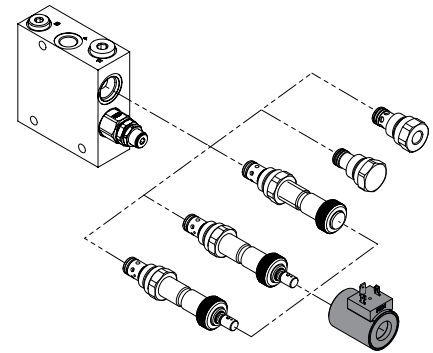
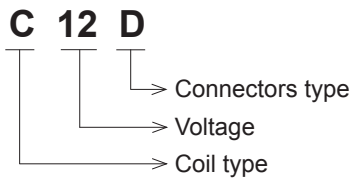
DV2(...) Electric dump valve with push button emergency

DV3(...) Electric dump valve with push and twist emergency

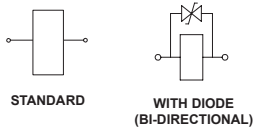


5. Dump valve coil

IL G38 - MRV3(210) - DV1 (C12D) - OC2

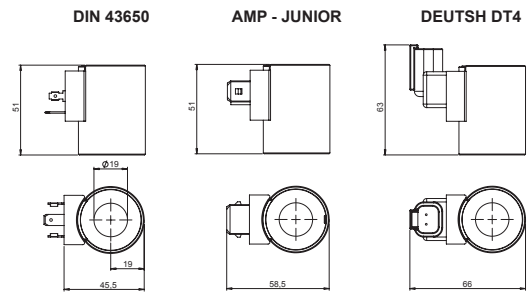


ELECTRIC CIRCUITS



On-off coil

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



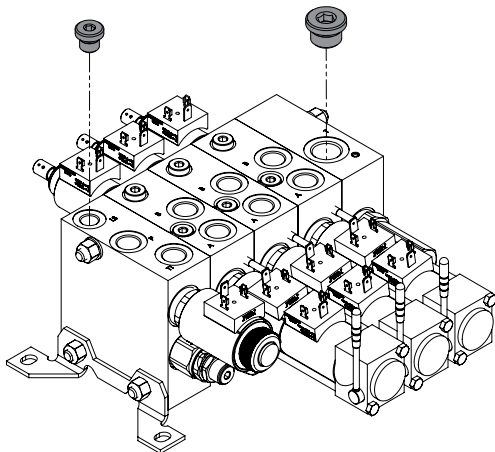
Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
C12D	DIN 43650	IP65	H	12	6,8	STANDARD	098011190
C24D				24	24		098012190
C12S	DEUTSCH DT4	IP67	F	12	6,8	WITH DIODE	098111190
C24S				24	24		098112190
C12A	AMP - JUNIOR	IP65	F	12	6,8	WITH DIODE	098211190
C24A				24	24		098212190



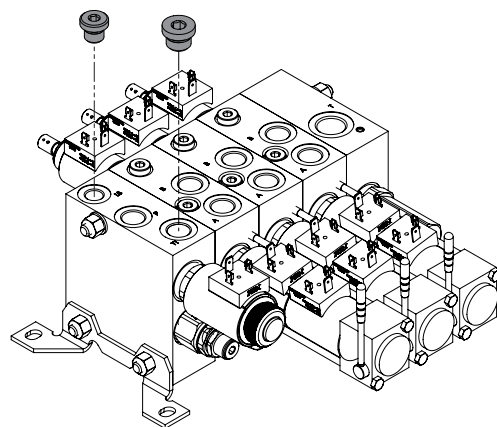
6. Port location

IL G38 - MRV3(210) - DV1 (C12D) - **OC2**

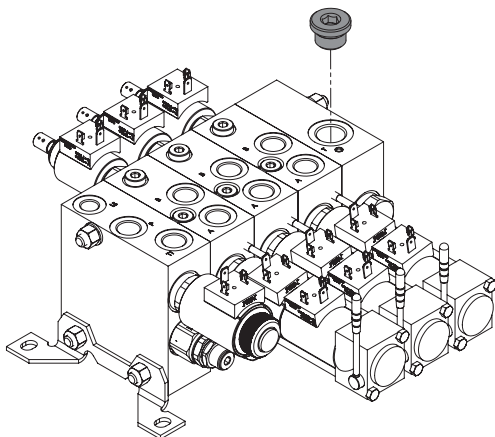
OC1 Open center layout, discharge on (T1)



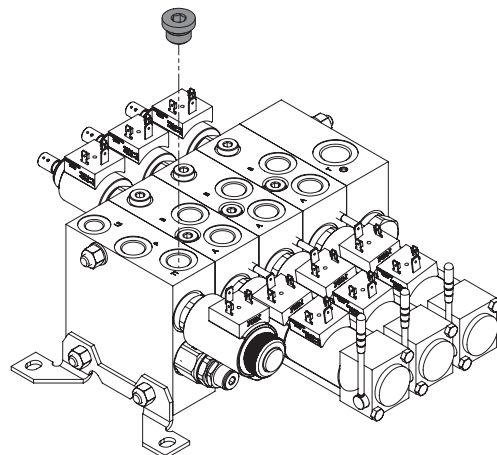
OC2 Open center layout, discharge on (T)



CC1 Closed center layout, discharge on (T1)



CC2 Closed center layout, discharge on (T)

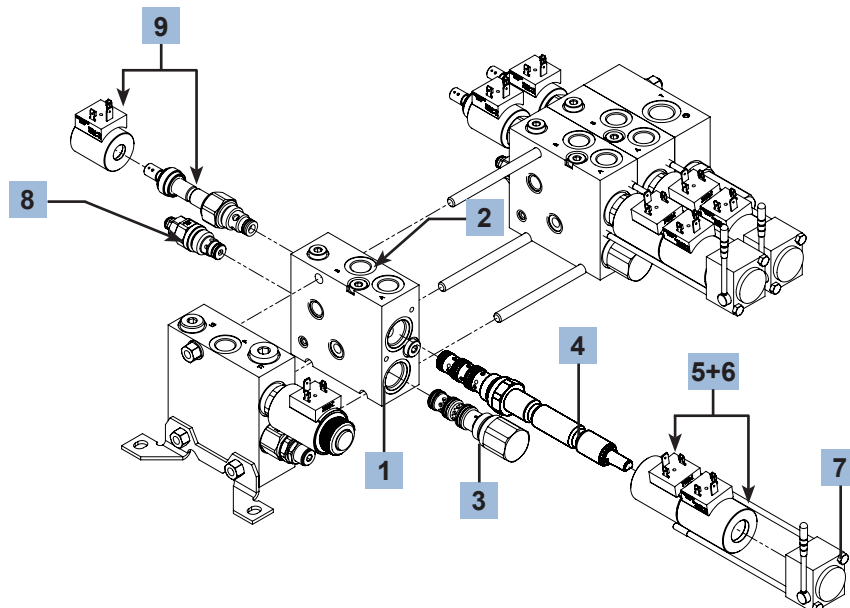


*For more information see page 7 of the catalogue.



W2 G38 - CL - 25PL (S12D) - 31 - 1A0 - A/ C2(200P) - B/ NA4 (D12D)

1+2	HOUSING + PORTS A and B TYPE	page 20
	<p>W1G38 Work section without auxiliary valves, port A and B type GAS 3/8" BSPP</p> <p>W2G38 Work section with auxiliary valves, port A and B type GAS 3/8" BSPP</p> <p>W1U08 Work section without auxiliary valves, port A and B type SAE8 3/4-16 UNF-2B</p> <p>W2U08 Work section with auxiliary valves, port A and B type SAE8 3/4-16 UNF-2B</p>	
3	PRESSURE COMPENSATOR	page 21
	<p>C0 By pass plug</p> <p>CL Hydraulic pressure compensator</p>	
4	DIRECTIONAL CARTRIDGE	page 22
	<p>10PL Proportional cartridge (max.regulated flow = 10 l/min) with lever predisposition</p> <p>25PL Proportional cartridge (max.regulated flow = 25 l/min) with lever predisposition</p> <p>10N0 On/off directional cartridge (regulated flow = 10 l/min), no lever predisposition</p> <p>25NL On/off directional cartridge (regulated flow = 25 l/min), with lever predisposition</p> <p>...</p>	
5	DIRECTIONAL CARTRIDGE COIL	page 23
	<p>S12D Proportional coil 12 V, connector DIN 43650</p> <p>S12A Proportional coil 12 V, connector AMP-JUNIOR, circuit with diode</p> <p>S12S Proportional coil 12 V, connector DEUTSCH DT4, circuit with diode</p> <p>S24D Proportional coil 24 V, connector DIN 43650</p> <p>C12D On/off coil 12 V, connector DIN 43650</p> <p>...</p>	
6	COIL CONNECTOR ORIENTATION	page 24
	<p>31 Orientation of cartridge coil (coil up)</p> <p>...</p>	
7	CONTROL TYPE	page 25
	<p>1A0 Emergency operation with high lever on the left, no position transducer</p> <p>1B0 Emergency operation with lower lever on the left, no position transducer</p> <p>...</p>	
8	AUXILIARY VALVE SIDE A	page 26
	<p>A/C2(...) Anti-shock valve side A</p> <p>A/NA4(D12D) Dump valve and on/off coil side A</p> <p>...</p>	
9	AUXILIARY VALVE SIDE B	page 26
	<p>B/C2(...) Anti-shock valve side B</p> <p>B/NA4(D12D) Dump valve and on/off coil side B</p> <p>...</p>	

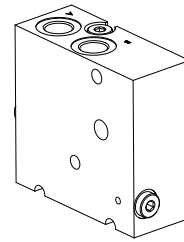
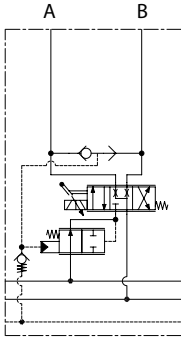


1. Housing

W2 G38 - CL - 25PL (S12D) - 31 - 1A0 - A/ C2(200P) - B/ NA4 (D12D)

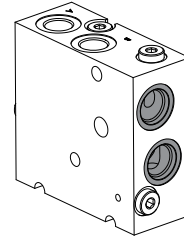
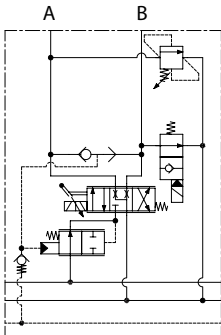
W1

Housing **WITHOUT** anti-shock and/or dump valve cavities



W2

Housing **WITH** anti-shock and/or dump valve cavities



2. Port A and B type

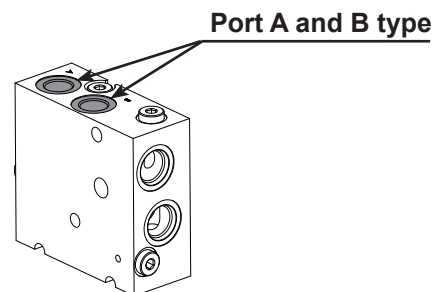
W2 G38 - CL - 25PL (S12D) - 31 - UL0 - A/ C2(200P) - B/ NA4 (D12D)

G38

Port **A** and **B** G3/8" BSPP
ports size ISO-228

U08

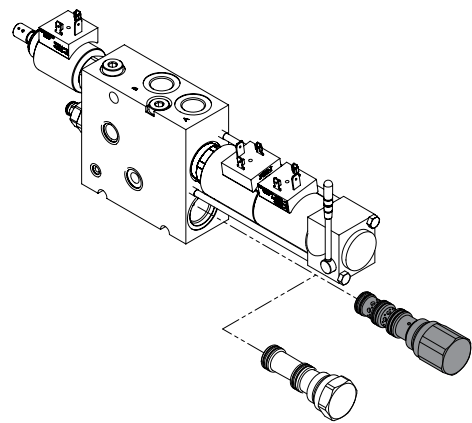
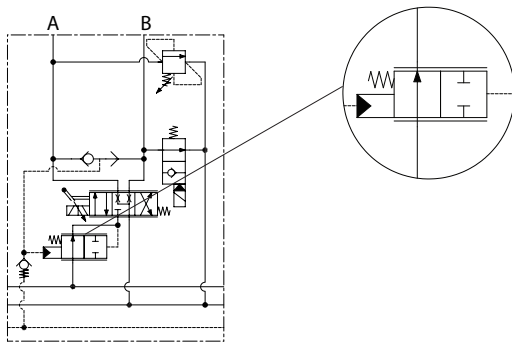
Port **A** and **B** 3/4-16 UNF-2B
port size SAE 8 (ASME B1.1-2003)



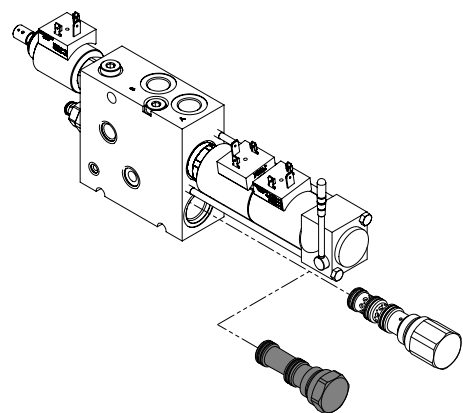
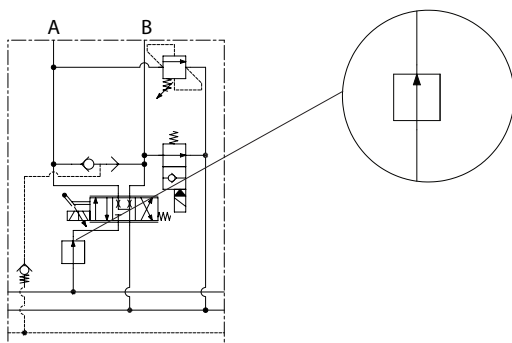
3. Hydraulic pressure compensator

W2 G38 - **CL** - 25PL (S12D) - 31 - 1A0 - A/ C2(200P) - B/ NA4 (D12D)

CL Local compensator

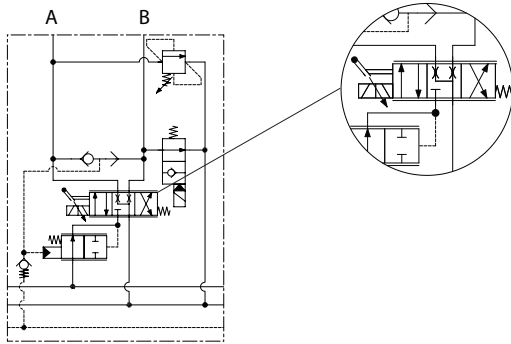


C0 Without local compensator



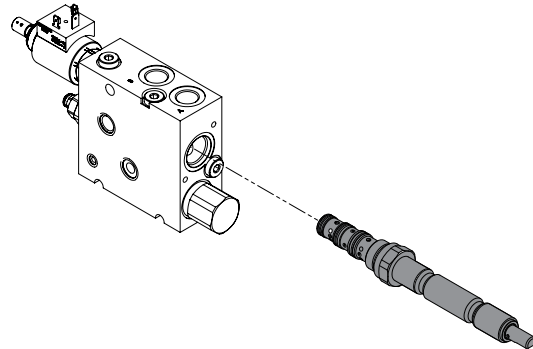
4. Directional cartridge

W2 G38 - CL - **25PL** (S12D) - 31 - 1A0 - A/ C2 (200P)- B/ NA4 (D12D)



25 P L

- Leverage predisposition
- Type
- Regulated flow size

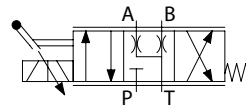


Regulated flow size

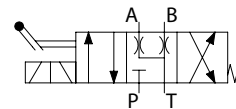
03	3 L/min
05	5 L/min
10	10 L/min
15	15 L/min
20	20 L/min
25	25 L/min
30	30 L/min

Type

P Proportional cartridge

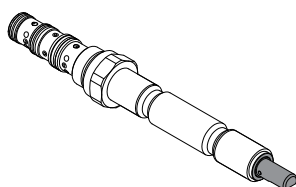


N On/off cartridge

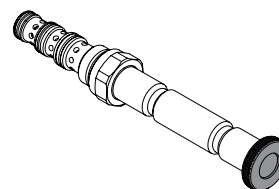


Leverage predisposition

L¹⁾ With leverage predisposition



0 Without leverage predisposition

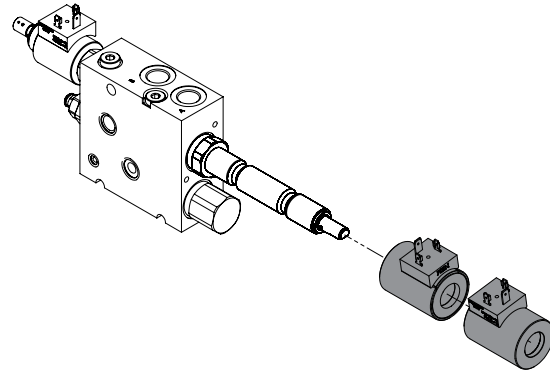
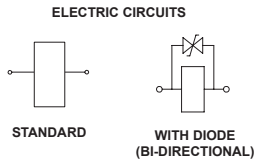
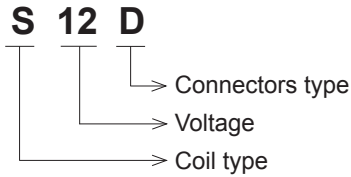


¹⁾ necessary to select control type option, see page 25



5. Directional cartridge coil

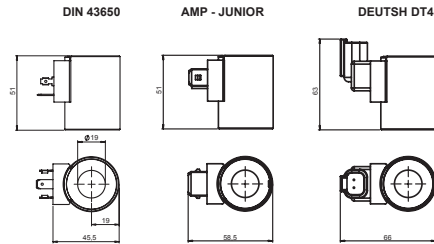
W2 G38 - CL - 25PL (S12D) - 31 - 1A0 - A/ C2(200P) - B/ NA4 (D12D)



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

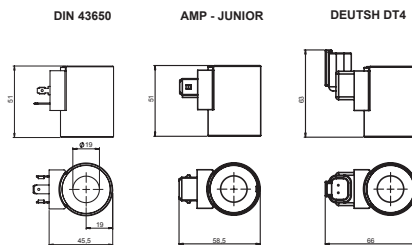


Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
S12D	DIN 43650	IP65	H	12	3,9	STANDARD	098001190
S24D				24	14,5		098002190
S12S	DEUTSCH DT4	IP65	F	12	3,9	WITH DIODE	098101190
S24S				24	14,5		098102190
S12A	AMP - JUNIOR	IP65	F	12	3,9	WITH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

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

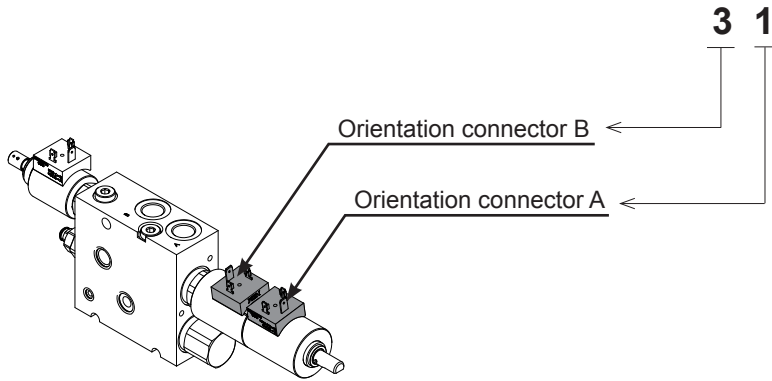


Order code	Connector	Protection class	Coil thermal insulation class	Voltage [V]	Resistance [Ω]	Circuit	NEM code
C12D	DIN 43650	IP65	H	12	6,8	STANDARD	098011190
C24D				24	24		098012190
C12S	DEUTSCH DT4	IP65	F	12	6,8	WITH DIODE	098111190
C24S				24	24		098112190
C12A	AMP - JUNIOR	IP65	F	12	6,8	WITH DIODE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

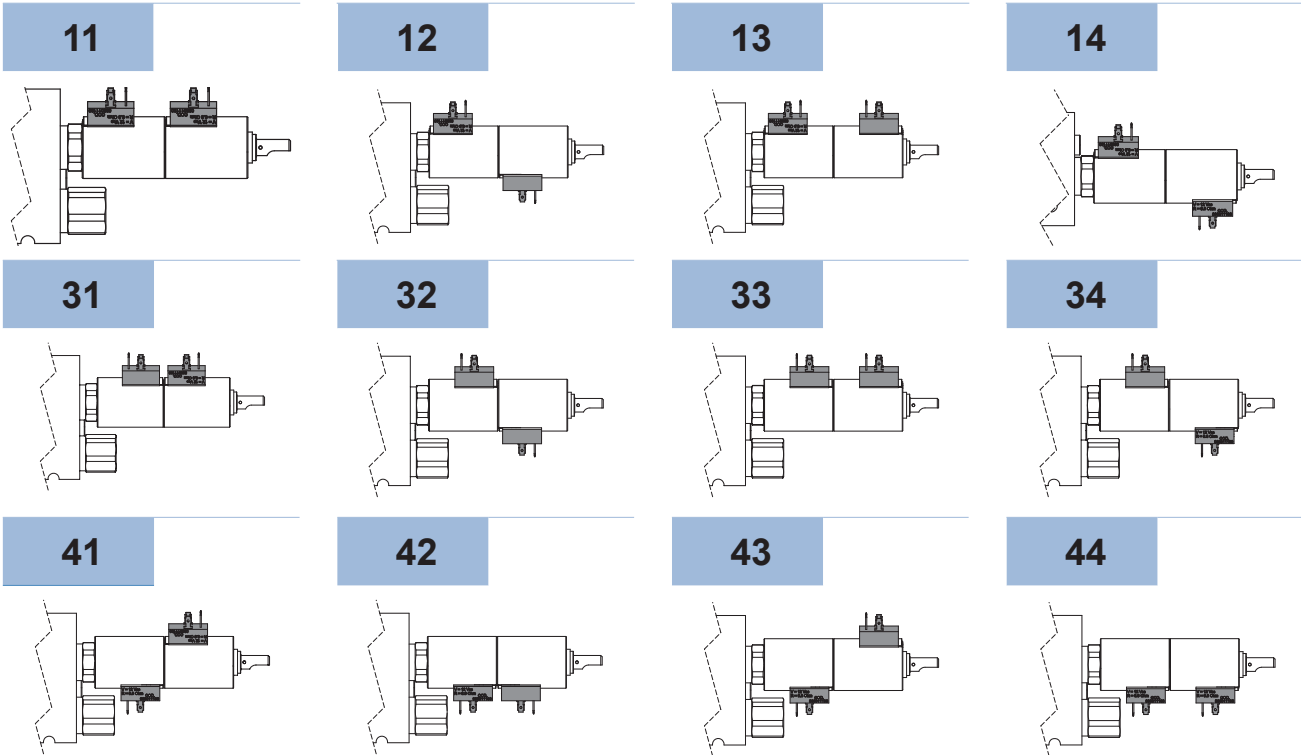


6. Coil connectors orientation

W2 G38 - CL - 25PL (S12D) - 31 - 1A0- A/ C2(200P) - B/ NA4 (D12D)

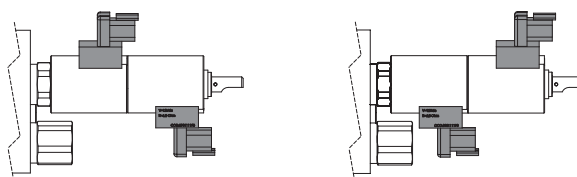


Coil connector orientation



All the previous options available also for AMP-Junior type

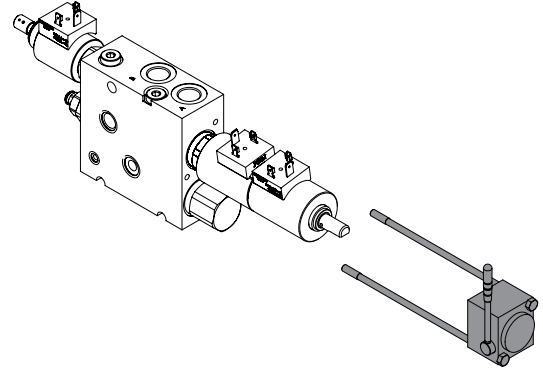
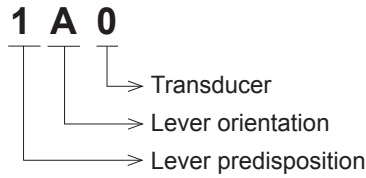
For DEUTSCH DT4 type, options 34 and 43 available only (see the images below)



7. Control type¹⁾

W2 G38 - CL - 25PL (S12D) - 31 - **1A0** - A/ C2(200P) - B/ NA4 (D12D)

¹⁾ 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

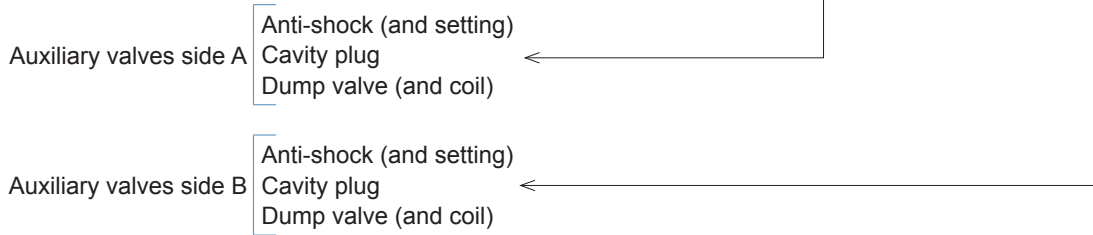
1 With position transducer

For position transducer contact NEM customer care



8-9. Auxiliary valves

W2 G38 - CL - 25PL (S12D) - 31 - 1A0 - **A/ C2 (200 P)** - **B/ NA4 (D12D)**



Anti-shock

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

¹⁾ Referred to the maximum capacity of the cartridge
²⁾ Pressure setting max 350 bar

Setting type

Specify the setting type

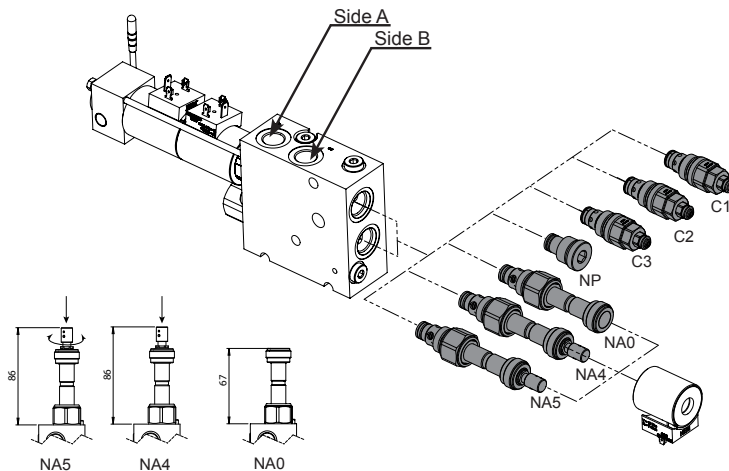
P	Cracking pressure
Q	Full flow

Cavity plug

NP	Plug (without valve)
-----------	----------------------

Dump valve

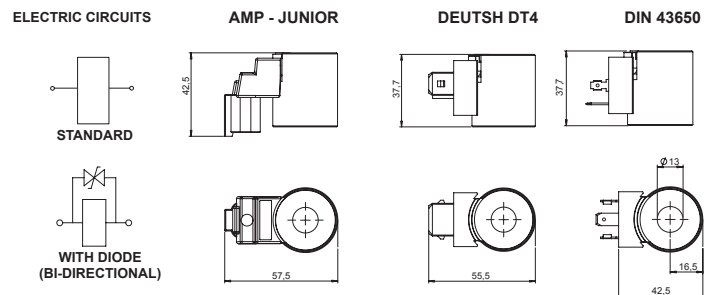
NA0(...)	Electric dump valve without emergency operation
NA4(...)	Electric dump valve with push button emergency
NA5(...)	Electric dump valve with push and twist emergency



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
D12D	DIN 43650	IP65	H	12	7	STANDARD	094001000
D24D				24	28		094002000
D12S	DEUTSCH DT4	IP67	H	12	7	WITH DIODE	094101000
D24S				24	28		094102000
D12A	AMP - JUNIOR	IP65	H	12	7	STANDARD	094201000
D24A				24	28		094202000



Outlet section

OR G12 - CC16 - OC2

1+2 HOUSING + PORT P and PORT T1 TYPE

page 28

ORG12	Right outlet, port T type GAS 1/2" BSPP
OLG12	Left outlet, port T type GAS 1/2" BSPP
ORU10	Right outlet, port T type SAE 10, 7/8-14 UNF-2B
OLU10	Left outlet, port T type SAE 10, 7/8-14 UNF-2B

3 PRESSURE COMPENSATOR

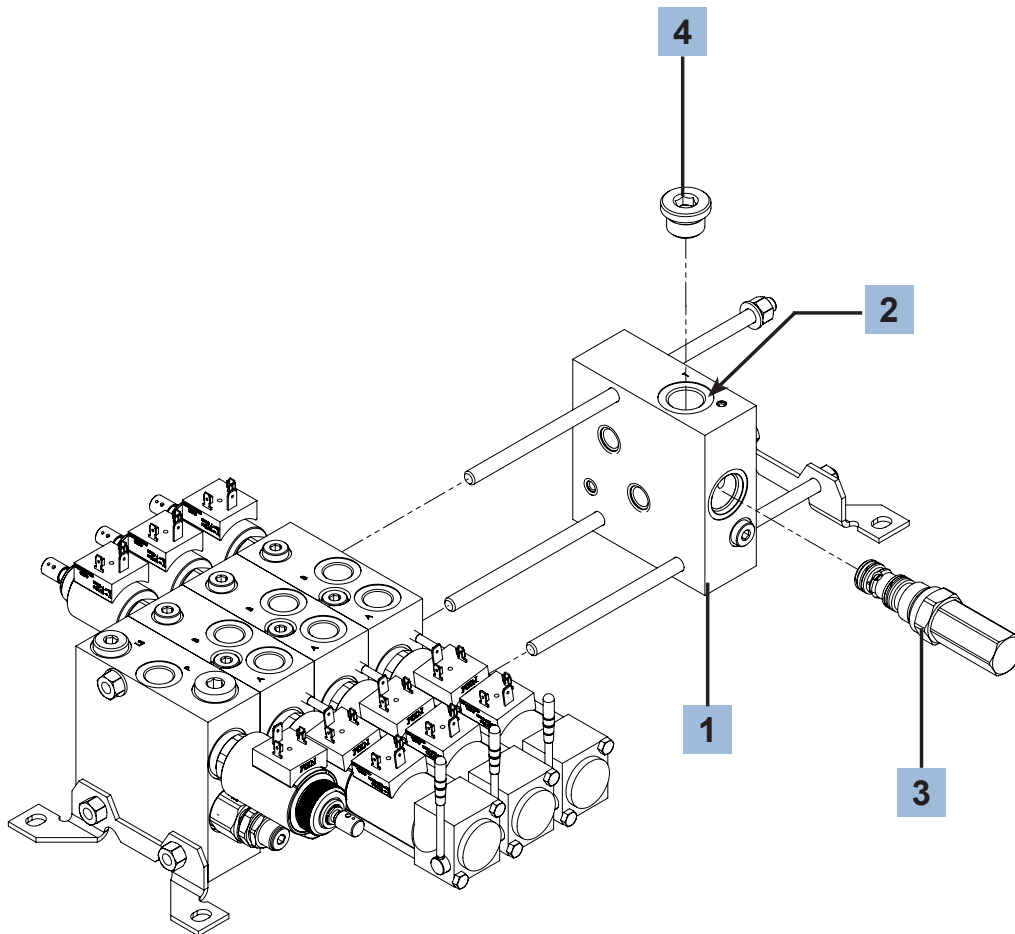
page 29

C00	By pass plug
CL	Hydraulic pressure compensator

4 PORT LOCATION

page 29

OC1	Open center layout, discharge on port T1
OC2	Open center layout, discharge on port T
CC1	Closed center layout, discharge on port T1
CC2	Closed center layout, discharge on port T

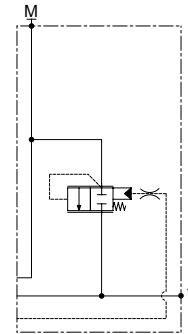
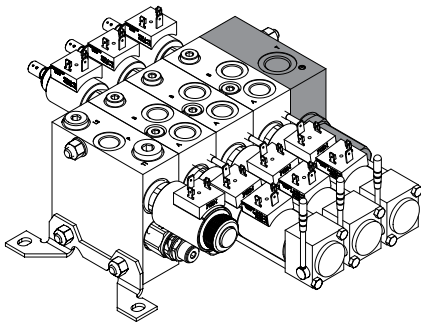


1. Housing

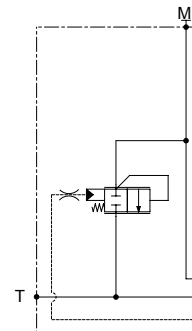
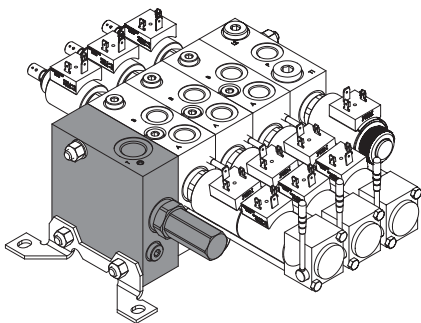
OR G12 - CC16 - OC2

Available combinations	IL	IR	OL	OR
IL - OR	x			x
IR - OL		x	x	

OR RIGHT outlet section
(with respect to the lever side)



OL LEFT outlet section
(with respect to the lever side)

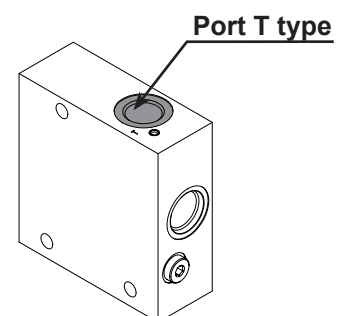


2. Port T type

OR G12 - CC16 - OC2

G12 Port T G1/2" BSPP
ports size ISO-228

U10 Port T 7/8-14 UNF-2B
port size SAE 10 (ASME B1.1-2003)

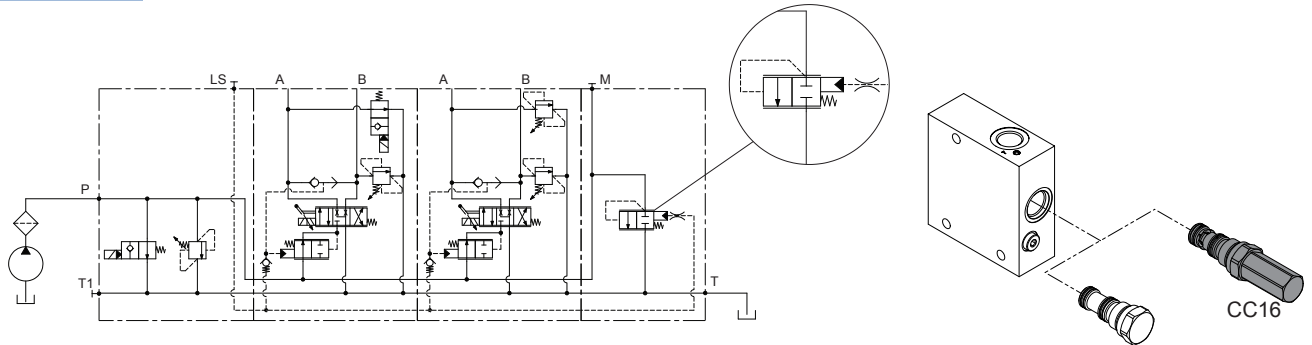


3. Hydraulic compensator

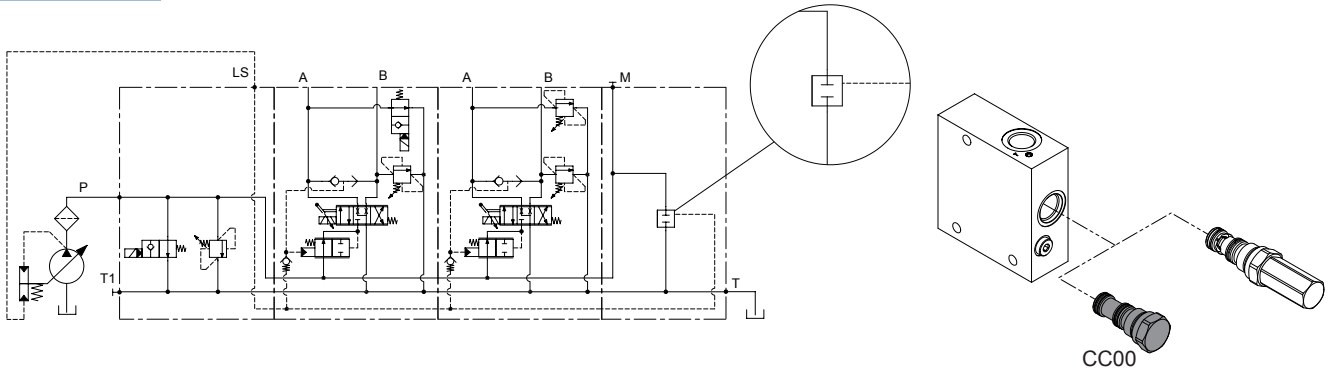
OR G12 - CC16 - OC2

Available combination	OC1	OC2	CC1	CC2
CC16	x	x		
CC00			x	x

CC16 Pressure setting 16 bar



CC00 Plug for closed center layout



4. Port location

OR G12 - CC16 - OC2

OC2* Open center layout, discharge on (T)

CC1* Closed center layout, discharge on (T1)

CC2* Closed center layout, discharge on (T)

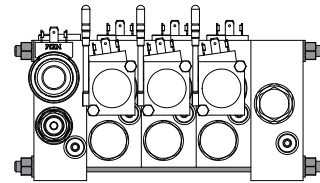
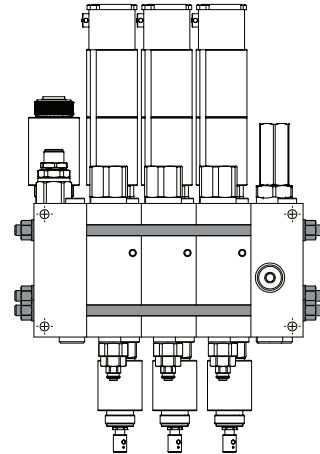
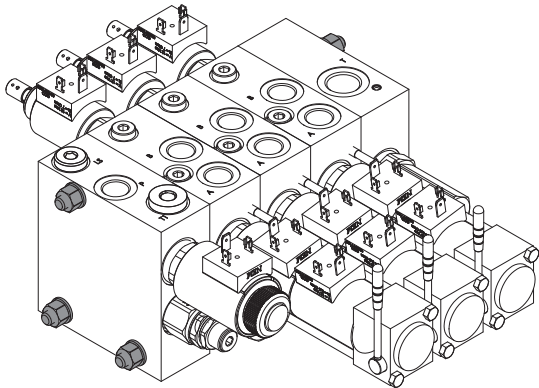
***Choose the same configuration of the inlet section.**
For more information see page 18 of the catalogue.



Mounting type

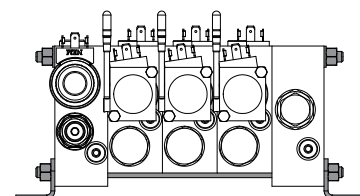
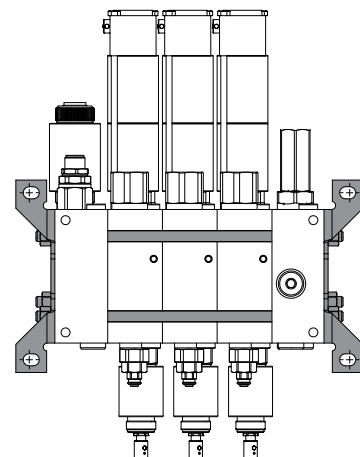
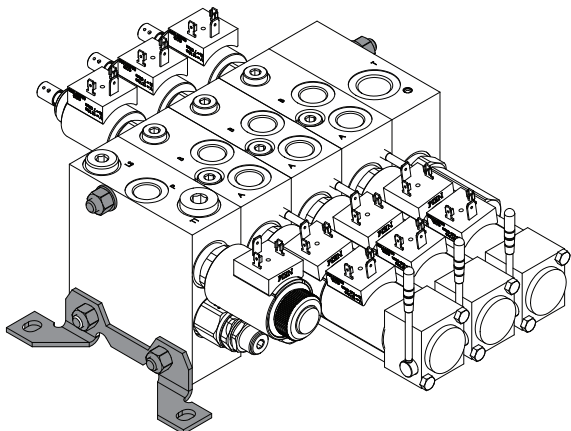
NB

Without brackets



WB

With brackets

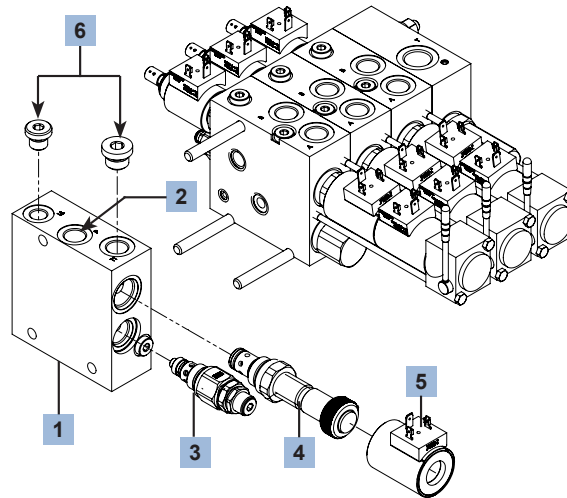




NVE3
SPARE PARTS



Inlet section - spare parts



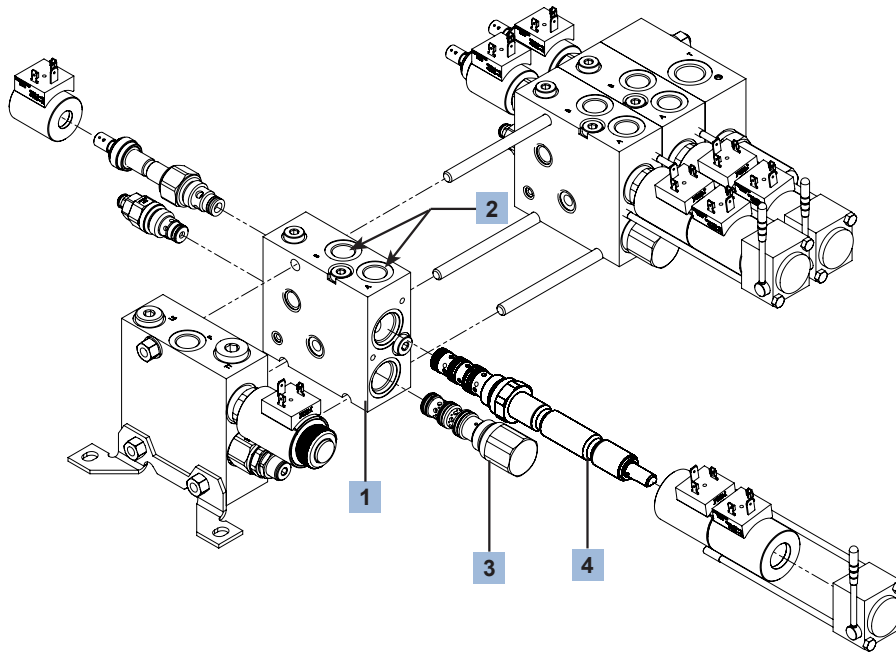
Inlet ordering code example: ILG38-MRV3(210)-DV1(C12D)-OC2

Ordering code

1+2	Inlet module (with respect to the lever side) Left inlet (port P and T1 type GAS 3/8" BSPP) Right inlet (port P and T1 type GAS 3/8" BSPP) Left inlet (port P and T1 type (SAE 8, 3/4-16 UNF-2B) Right inlet (port P and T1 type (SAE 8, 3/4-16 UNF-2B)	ILG38 IRG38 ILU08 IRU08	5NVE31000011 5NVE31000012 5NVE31000014 5NVE31000015
3	Pressure relief valve (spring type and setting) Plug (w/o pressure relief valve) Pressure setting range 50 to 120 bar, setting at (...) Pressure setting range 120 to 200 bar, setting at (...) Pressure setting range 200 to 250 ¹⁾ bar, setting at (...) <small>Note: the Main Relief Valve setting is referred to the selected Inlet flow</small> <small>¹⁾Cracking pressure max 350 bar</small>	MRVP MRV1(...) MRV2(...) MRV3(...)	9273193600 0022310000 0022320000 0022330000
4	Dump valve Plug (without dump valve) Hydraulic pilot operated dump valve Electric dump valve without emergency operation Electric dump valve with push button emergency Electric dump valve with push and twist emergency	DVP DV0 DV1 DV2 DV3	9273274600 0553010000 0553010400 0553010500 0203002600
5	Coil 12 V, connector DIN 43650 24 V, connector DIN 43650 12 V, connector DEUTSCH DT4, circuit with diode 24 V, connector DEUTSCH DT4, circuit with diode 12 V, connector AMP-JUNIOR, circuit with diode 24 V, connector AMP-JUNIOR, circuit with diode <small>(dump valve coil, not present if DVP or DV4 option has been selected)</small>	C12D C24D C12S C24S C12A C24A	098011190 098012190 098111190 098112190 098211190 098212190
6	Port location Open center layout, discharge on (T1), GAS version Open center layout, discharge on (T1), SAE version Open center layout, discharge on (T), GAS version Open center layout, discharge on (T), SAE version Closed center layout, discharge on (T1), GAS version Closed center layout, discharge on (T1), SAE version Closed center layout, discharge on (T), GAS version Closed center layout, discharge on (T), SAE version <small>(hydraulic layout, select the same option for the output)</small>	OC1 OC2 CC1 CC2	5NVE30700000 5NVE30700001 5NVE30700002 5NVE30700003 5NVE30700004 5NVE30700005 5NVE30700006 5NVE30700007
6	Plug Plug port T1 (GAS 3/8" BSPP) Plug port LS (GAS 1/4" BSPP) Plug port T1 (SAE 8, 3/4-16 UNF-2B) Plug port LS (SAE 6, 5/8-18 UNF-2B)		4275161402 4275131501 4275191500 4275141200



Work section - spare parts



Work ordering code example: **W2G38-CL-25PL(S12D)-31-1A0-A/C2(200P)-B/NA4(D12D)**

Ordering code

1+2 Work module

- Without auxiliary valves, port A,B type GAS 3/8" BSPP
- With auxiliary valves, port A,B type GAS 3/8" BSPP
- Without auxiliary valves, port A,B type SAE 8, 3/4-16 UNF-2B
- With auxiliary valves, port A,B type SAE 8, 3/4-16 UNF-2B

W1G38	5NVE31000020
W2G38	5NVE31000002
W1U08	5NVE31000016
W2U08	5NVE31000017

3 Hydraulic pressure compensator

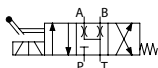
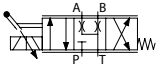
- By pass plug
- Cracking pressure 14 bar

C0	9273277601
CL	024310230000

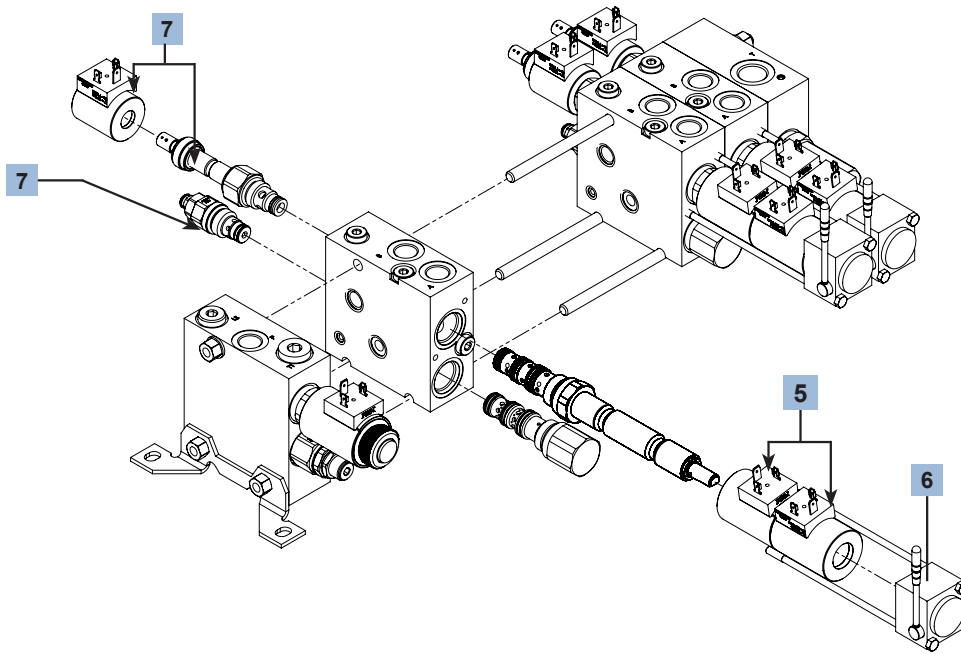
4 Directional cartridge

- 3 L/min proportional type, lever predisposition
- 5 L/min proportional type, lever predisposition
- 10 L/min proportional type, lever predisposition
- 15 L/min proportional type, lever predisposition
- 20 L/min proportional type, lever predisposition
- 25 L/min proportional type, lever predisposition
- 30 L/min proportional type, lever predisposition
- 3 L/min proportional type, no lever predisposition
- 5 L/min proportional type, no lever predisposition
- 10 L/min proportional type, no lever predisposition
- 15 L/min proportional type, no lever predisposition
- 20 L/min proportional type, no lever predisposition
- 25 L/min proportional type, no lever predisposition
- 30 L/min proportional type, no lever predisposition
- 3 L/min, on/off type, lever predisposition
- 5 L/min, on/off type, lever predisposition
- 10 L/min, on/off type, lever predisposition
- 15 L/min, on/off type, lever predisposition
- 20 L/min, on/off type, lever predisposition
- 25 L/min, on/off type, lever predisposition
- 30 L/min, on/off type, lever predisposition
- 3 L/min, on/off type, no lever predisposition
- 5 L/min, on/off type, no lever predisposition
- 10 L/min, on/off type, no lever predisposition
- 15 L/min, on/off type, no lever predisposition
- 20 L/min, on/off type, no lever predisposition
- 25 L/min, on/off type, no lever predisposition
- 30 L/min, on/off type, no lever predisposition

03PL	0473100222 + 024310210001
05PL	0473100222
10PL	0473100232
15PL	04731002x2
20PL	0473100252
25PL	0473100282
30PL	0473100202
03P0	0473100020 + 024310210001
05P0	0473100020
10P0	0473100030
15P0	0473100050
20P0	0473100070
25P0	0473100080
30P0	0473100000
03NL	046310020004 + 024310210001
05NL	046310020004
10NL	046310020009
15NL	046310020015
20NL	046310020020
25NL	0463100200
30NL	046310020030
03N0	046310000004 + 024310210001
05N0	046310000004
10N0	046310000009
15N0	046310000015
20N0	046310000020
25N0	0463100000
30N0	046310000030



Work section - spare parts



Work ordering code example: **W2G38-CL-25PL(S12D)-31-1A0-A/C2(200P)-B/NA4(D12D)**

Ordering code

5 Directional cartridge coil

12 V, connector DIN 43650	S12D	098001190
24 V, connector DIN 43650	S24D	098002190
12 V, connector DEUTSCH DT4, circuit with diode	S12S	098101190
24 V, connector DEUTSCH DT4, circuit with diode	S24S	098102190
12 V, connector AMP-JUNIOR, circuit with diode	S12A	098201190
24 V, connector AMP-JUNIOR, circuit with diode	S24A	098202190
	<i>Proportional</i>	
12 V, connector DIN 43650	C12D	098011190
24 V, connector DIN 43650	C24D	098012190
12 V, connector DEUTSCH DT4, circuit with diode	C12S	098111190
24 V, connector DEUTSCH DT4, circuit with diode	C24S	098112190
12 V, connector AMP-JUNIOR, circuit with diode	C12A	098211190
24 V, connector AMP-JUNIOR, circuit with diode	C24A	098212190
	<i>On/off</i>	

6 Control type

Command with high lever on the left	1A	0013000010
Command with lower lever on the left	1B	0013000013
Command with high lever on the right	1C	0013000013
Command with lower lever on the right	1D	0013000010

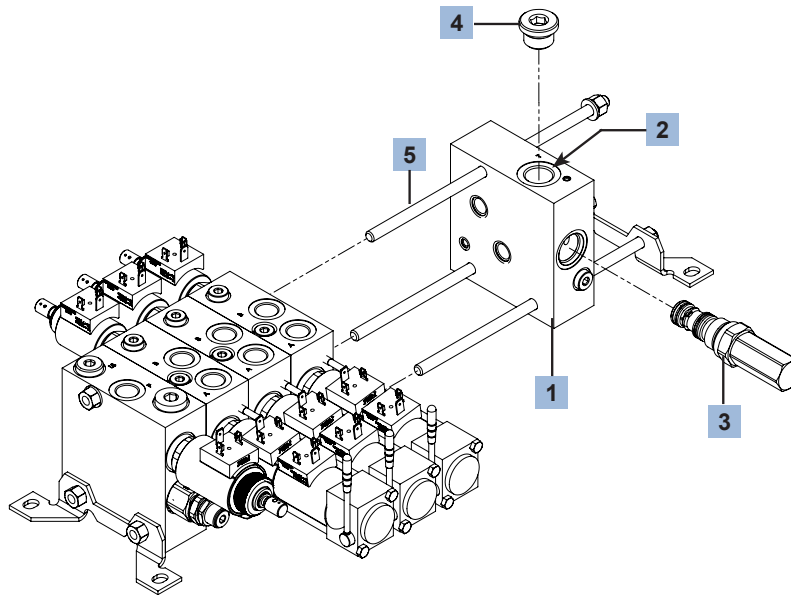
7 Auxiliary valves

	Side A	Side B	
Anti-shock with spring 1 setting range (20 P÷ 120 P) or (60 Q÷ 100 Q)	C1(...)	C1(...)	0022010000
Anti-shock with spring 2 setting range (121 P÷170 P) or (101 Q÷180 Q)	C2(...)	C2(...)	0022020000
Anti-shock with spring 3 setting range (171 P÷250 ¹ P) or (181 P÷250 ¹ Q)	C3(...)	C3(...)	0022030000
Plug	NP	NP	9273193600
Electric dump valve without emergency operation	NA0	NA0	0552010000
Electric dump valve with push button emergency	NA4	NA4	0552010400
Electric dump valve with push and twist emergency	NA5	NA5	0552010500
Dump valve coil, 12 V, connector DIN 43650	D12D	D12D	094001000
Dump valve coil, 24 V, connector DIN 43650	D24D	D24D	094002000
Dump valve coil, 12 V, connector DEUTSCH DT4, circuit with diode	D12S	D12S	094101000
Dump valve coil, 24 V, connector DEUTSCH DT4, circuit with diode	D24S	D24S	094102000
Dump valve coil, 12 V, connector AMP-JUNIOR	D12A	D12A	094201000
Dump valve coil, 24 V, connector AMP-JUNIOR	D24A	D24A	094202000

¹Pressure setting max 350 bar



Outlet section and mounting - spare parts



Outlet ordering code example

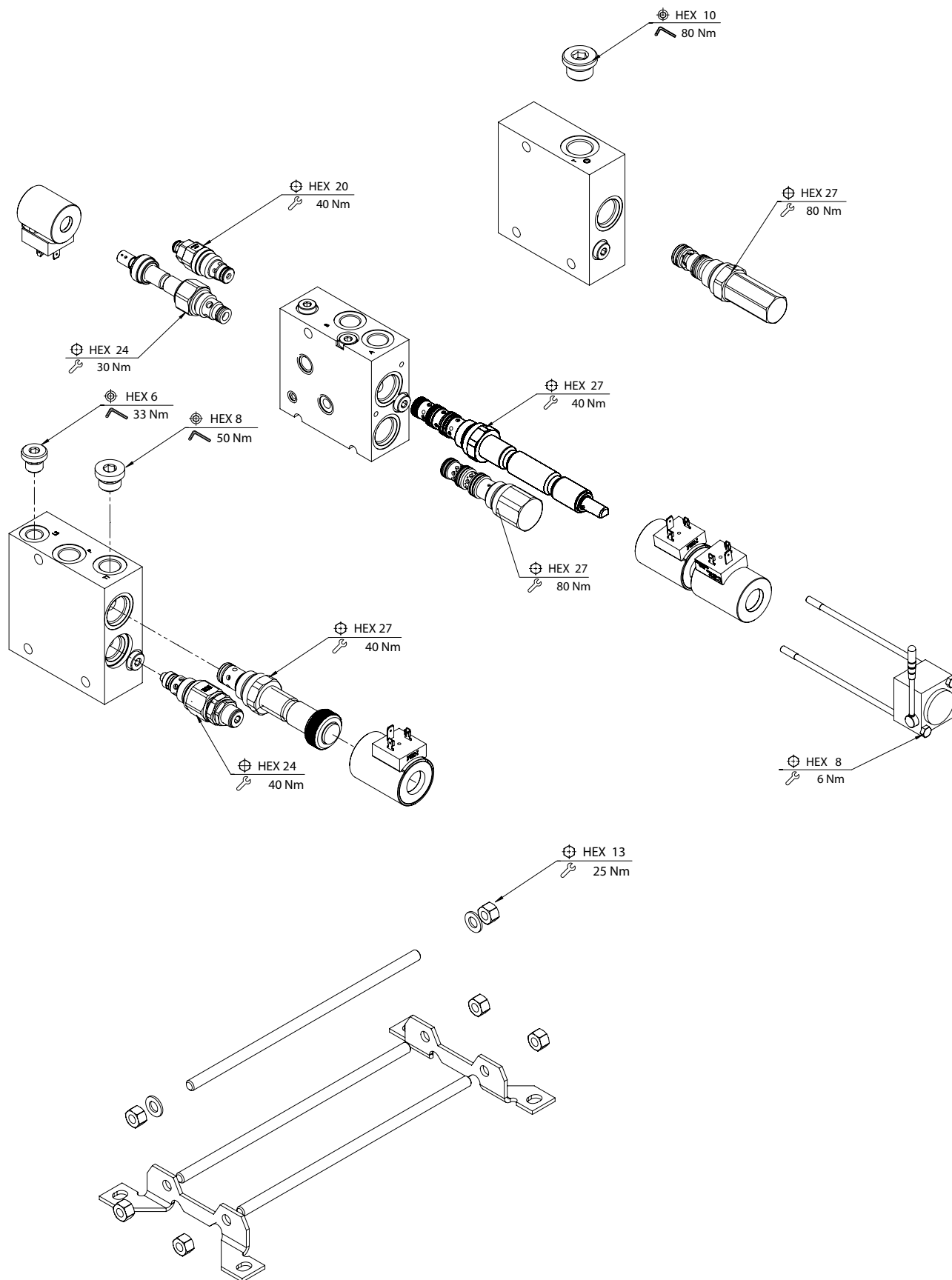
ORG12-CC16-OC2

Ordering code

1+2	Outlet module (with respect to the lever side) Right outlet, port T type GAS 1/2" BSPP Left outlet, port T type GAS 1/2" BSPP Right outlet, port T type SAE 10, 7/8-14 UNF-2B Left outlet, port T type SAE 10, 7/8-14 UNF-2B	ORG12 OLG12 ORU10 OLU10	5NVE3100001 5NVE3100013 5NVE3100018 5NVE3100019
3	Hydraulic compensator (Pre-charge setting) Plug for closed center layout Pressure setting 16 bar	CC00 CC16	9273276130 0203002500
4	Port location Open center layout, discharge on (T1), GAS version Open center layout, discharge on (T1), SAE version Open center layout, discharge on (T), GAS version Open center layout, discharge on (T), SAE version Closed center layout, discharge on (T1), GAS version Closed center layout, discharge on (T1), SAE version Closed center layout, discharge on (T), GAS version Closed center layout, discharge on (T), SAE version <small>(hydraulic outlet layout, inlet and outlet configurations must be the same)</small>	OC1 OC2 CC1 CC2	5NVE30700000 5NVE30700001 5NVE30700002 5NVE30700003 5NVE30700004 5NVE30700005 5NVE30700006 5NVE30700007
5	Plug Plug port T GAS 1/2" BSPP Plug port M GAS 1/4" BSPP Plug port T SAE 10 7/8-14 UNF-2B Plug port M SAE 6 5/8-18 UNF-2B		4275211802 4275131501 4275221600 4275141200
	Mounting Without brackets for 2 section NVE3 Without brackets for 3 section NVE3 Without brackets for 4 section NVE3 Without brackets for 5 section NVE3 Without brackets for 6 section NVE3 Without brackets for 7 section NVE3 Without brackets for 8 section NVE3 With brackets for 2 section NVE3 With brackets for 3 section NVE3 With brackets for 4 section NVE3 With brackets for 5 section NVE3 With brackets for 6 section NVE3 With brackets for 7 section NVE3 With brackets for 8 section NVE3	NB/2 NB/3 NB/4 NB/5 NB/6 NB/7 NB/8 WB/2 WB/3 WB/4 WB/5 WB/6 WB/7 WB/8	9NVE304002 9NVE304003 9NVE304004 9NVE304005 9NVE304006 9NVE304007 9NVE304008 9NVE304102 9NVE304103 9NVE304104 9NVE304105 9NVE304106 9NVE304107 9NVE304108



General tightening torques



Inlet flow

Application

Number of sections

Customer

Mounting type

Inlet section

Housing	Port type	Pressure relief valve	Pressure setting	Dump valve	Dump valve coil	Port location
		-	()	-	()	-

Work sections

N°	Housing	Port type	Local compensator	Directional cartridge	cartridge coil	connector orientation	Control type	Aux valve side A	Aux valve side B
1		-	-	()	-	-	-A/	()	-B/ ()
2		-	-	()	-	-	-A/	()	B/ ()
3		-	-	()	-	-	-A/	()	B/ ()
4		-	-	()	-	-	-A/	()	B/ ()
5		-	-	()	-	-	-A/	()	B/ ()
6		-	-	()	-	-	-A/	()	B/ ()
7		-	-	()	-	-	-A/	()	B/ ()
8		-	-	()	-	-	-A/	()	B/ ()
9		-	-	()	-	-	-A/	()	B/ ()
10		-	-	()	-	-	-A/	()	B/ ()

Outlet section

Housing	Port type	Hydraulic compensator	Port location
		-	-



**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 +80°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 (mm²/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.



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 than 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.

Notes

