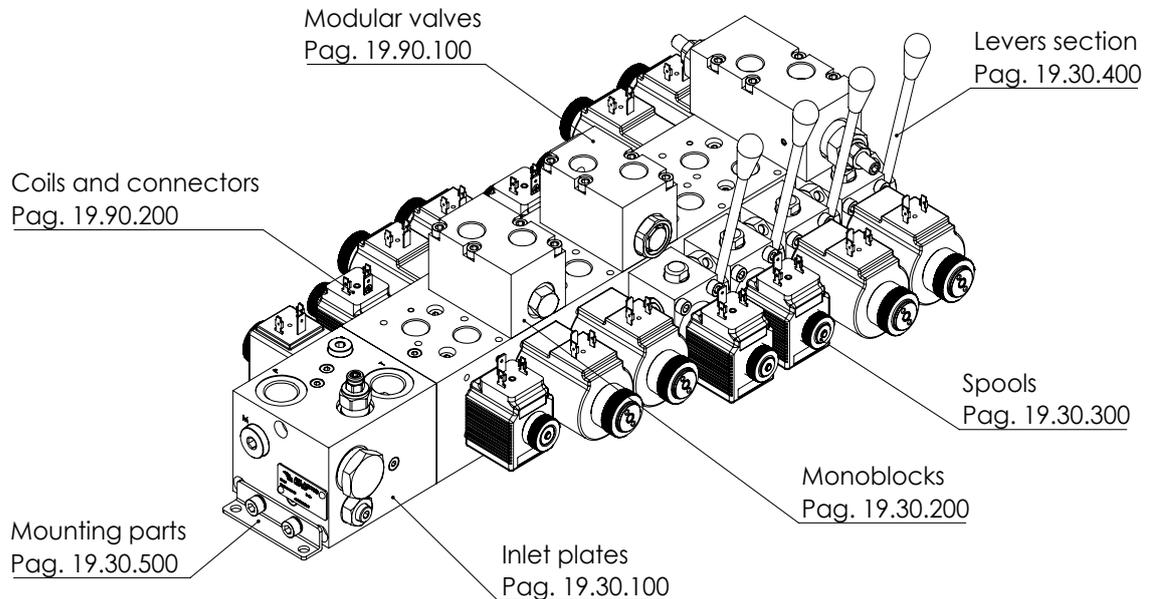




# EBP series

**MONOBLOCK  
PRE-COMPENSATED  
LOAD SENSING VALVE  
ON-OFF OR PROPORTIONAL**



## FEATURES

- Compact dimensions
- Low weight
- Custom spools
- Custom inlet blocks
- LS line on each spool section
- LS compensator on each spool section
- Sandwich valves for extra functions
- Cast iron monoblock and aluminum inlet block for standard applications
- High resistance cast iron monoblock and steel inlet block for high pressure systems
- Optional levers for manual operation
- No leak risk between sections
- Spools not under rod tension
- Zinc plated/anodized components for corrosion resistance

## SPECIFICATION \ DESCRIPTION

<b>MAXIMUM OPERATING PRESSURE</b>	Steel inlet block: 320 bar (4600 PSI) Aluminium inlet block: 210 bar (3045 PSI)
<b>MAXIMUM TANK PRESSURE</b>	20 bar (290 PSI)
<b>RATED FLOW</b>	030 series: 30 l/min (7.9 GPM) 060 series: 60l/min (15.8 GPM)
<b>COIL POWER</b>	030 series: 26 W 060 series: 33 W
<b>VOLTAGE</b>	12 V dc, 24 VDC, others on request
<b>COIL CONNECTOR</b>	DIN43650, AMP Junior, Deutsch DT04
<b>PORTS</b>	Inlet: G1/2", 1/2 JIS, 7/8-14 UNF-2B (SAE#10) Outlet: G3/8", 3/8 JIS, 3/4-16 UNF-2B (SAE#8)
<b>OPERATING TEMPERATURE</b>	NBR (ISO 1629) seals: -30, + 80 °C FKM (ISO 1629) seals: -20, +110 °C
<b>FILTRATION</b>	ISO 4406 17/14 or better
<b>MOUNTING POSITION</b>	No restrictions
<b>MATERIAL</b>	Spool body: cast iron Spool: Hardened and grounded steel Inlet block: Aluminium or steel
<b>SURFACE TREATMENT</b>	Steel: zinc plating Aluminium: anodization

EBN series is a new directional load sensing pre-compensated valve that has innovative features in terms of performance, dimension, manufacturing reliability and customization. The valve consists in an inlet block flanged to a monoblock with spools. This construction gives the advantages of high flexibility in inlet block schemes, combined with the reliability and simplicity of monoblock spool valve construction, eliminating the risk of spools blocking due to overtightening of tie rods or the risk of leakage between sections. The spool monoblock is a 2 or 3 position, 4 ways, direct acting solenoid operated type. All sections have threaded ports at the top and removable plugs for tank connections to allow the installation of flanged blocks with additional functions like crossover reliefs, reliefs to tank, relief and anticavitations, counterbalance valves, P.O. checks, flow restrictors and flow regulators. All sections are equipped with standard push button override and they can be equipped with lever for manual use.

## HOW ORDER IT

To order the separate parts please refer to each catalogue page.

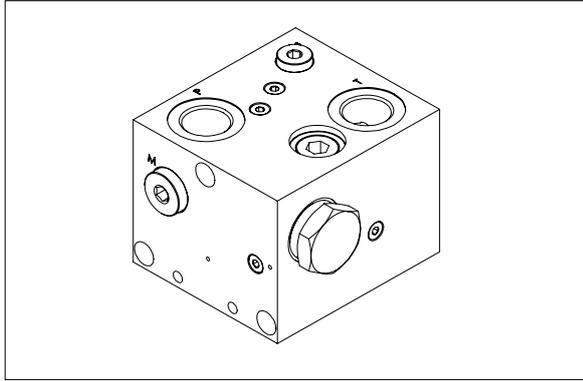
To order an assembled block, contact AFT sales network specifying the part numbers following page 19.90.900 path.

For special versions please contact AFT sales network.

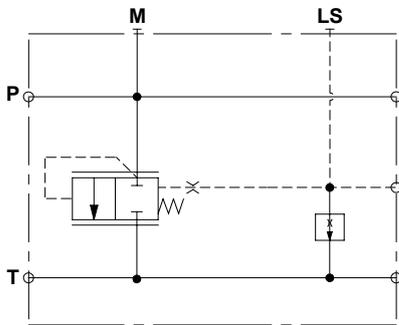
**EBP series - INLET SECTION**

**SFPL-060-ZNNN-16**

**P, T PORTS  
M PORTS**



**HYDRAULIC SCHEME**

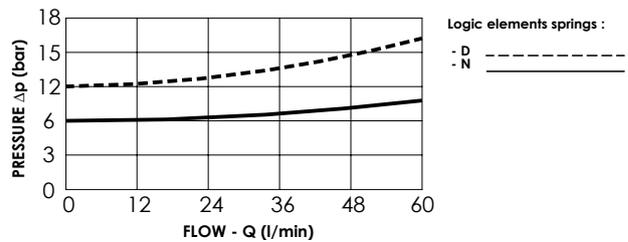


This inlet section is equipped with two thread ports (P,T) available in two different types G 1/2" or 3/4"-16 UNF plus a third threaded port M for pressure measuring available in G 1/4" or 7/16"-20. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

**TECHNICAL DATA**

<b>Max pressure</b>	210/320 bar
<b>Rated flow</b>	60 l/min
<b>Hydraulic fluid</b>	Mineral oil DIN 51524
<b>Fluid viscosity</b>	10-500 mm <sup>2</sup> /s
<b>Fluid temperature</b>	-25°C/75°C
<b>Environment temperature</b>	-25°C/60°C
<b>Weight</b>	1,2 Kg

**PRESSURE DROP LOGIC ELEMENT**



**ORDERING DETAILS: SEPARATE ELEMENTS**

**SFPL-060- \* \* NN-16 - \*\*\* -N**

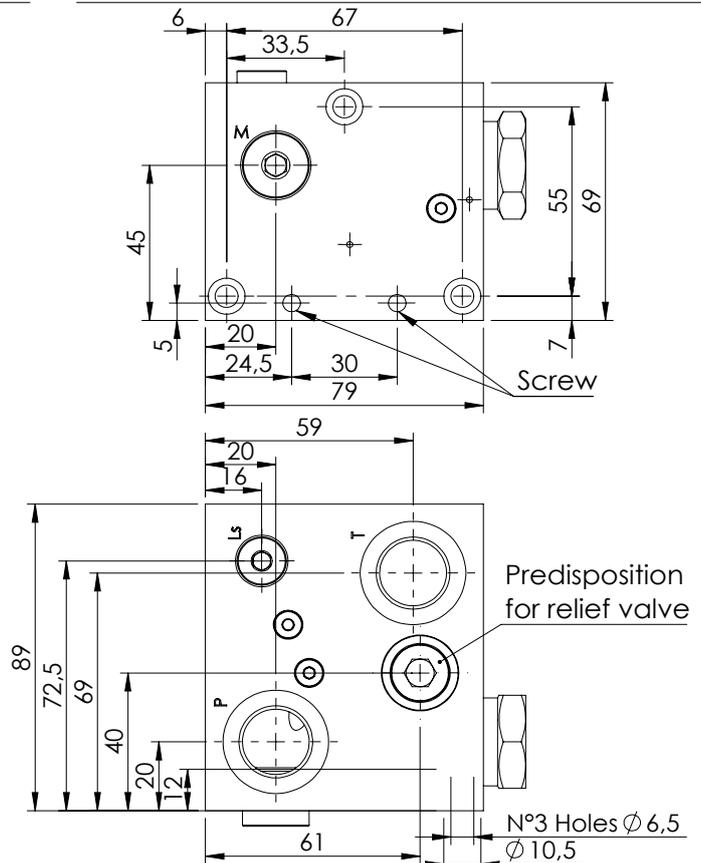
<b>*</b>	<b>MATERIAL TYPE</b>
<b>A</b>	Steel zinc-plated (320 bar)
<b>Z</b>	Aluminium anodized (210 bar)

<b>*</b>	<b>LOGIC ELEMENT SPRING</b>
<b>D</b>	Spring setting 12 bar (CD000103)
<b>N</b>	Spring setting 6 bar (CD000073)

<b>***</b>	<b>PORTS</b>		
	<b>P line</b>	<b>T line</b>	<b>M</b>
<b>G12</b>	G 1/2"	G 1/2"	G 1/4"
<b>U34</b>	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF

<b>QUICK CODE</b>	
DESCRIPTION	CODE
SFPL-060-ZNNN-16-G12-N	SF000048

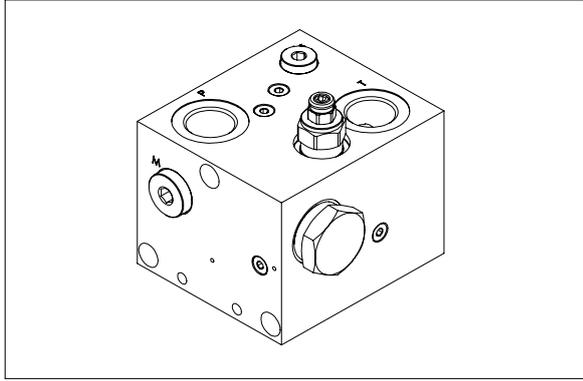
**OVERALL DIMENSIONS**



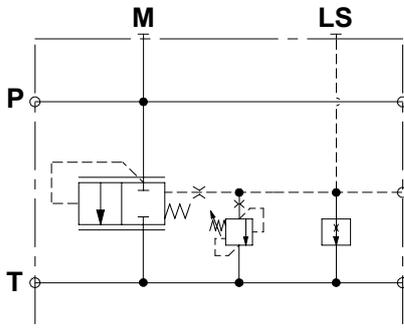
**EBP series - INLET SECTION**

**SFPL-060-ZNNN-17**

**RELIEF VALVE  
M PORTS**



**HYDRAULIC SCHEME**

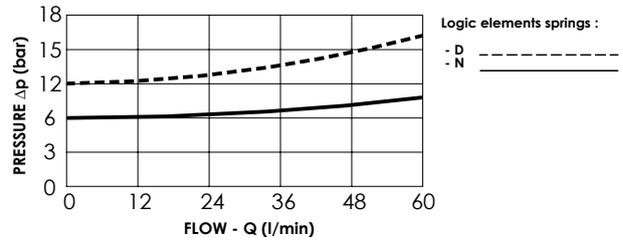


This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. This inlet section is equipped with two thread ports (P,T) available in two different types G 1/2" or 3/4"-16 UNF plus a third threaded port M for pressure measuring available in G 1/4" or 7/16"-20. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

**TECHNICAL DATA**

<b>Max pressure</b>	210/320 bar
<b>Rated flow</b>	60 l/min
<b>Hydraulic fluid</b>	Mineral oil DIN 51524
<b>Fluid viscosity</b>	10-500 mm <sup>2</sup> /s
<b>Fluid temperature</b>	-25°C/75°C
<b>Environment temperature</b>	-25°C/60°C
<b>Weight</b>	1,3 Kg

**PRESSURE DROP LOGIC ELEMENT**



**ORDERING DETAILS: SEPARATE ELEMENTS**

**SFPL-060-\*\*\*N-17-\*\*\*-N**

<b>*</b>	<b>MATERIAL TYPE</b>
<b>A</b>	Steel zinc-plated (310 bar)
<b>Z</b>	Aluminium anodized (210 bar)

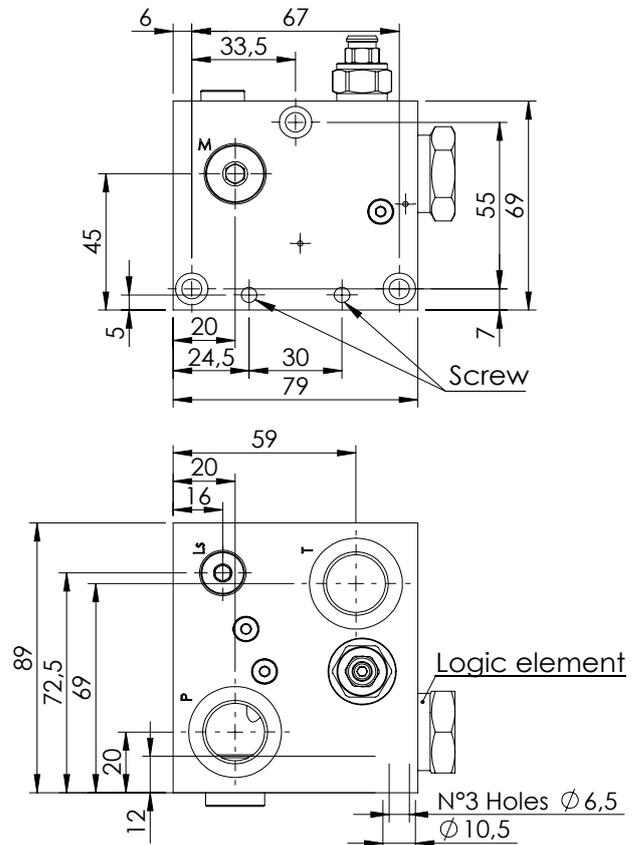
<b>*</b>	<b>LOGIC ELEMENT SPRING</b>
<b>D</b>	Spring setting 12 bar (CD000103)
<b>N</b>	Spring setting 6 bar (CD000073)

<b>*</b>	<b>SETTING RANGE</b>
<b>N</b>	Max setting 210 bar (CP000029)
<b>A</b>	Max setting 110 bar (CP000030)
<b>B</b>	Max setting 350 bar (CP000002)

<b>***</b>	<b>PORTS</b>		
	<b>P line</b>	<b>T line</b>	<b>M</b>
<b>G12</b>	G 1/2"	G 1/2"	G 1/4"
<b>U34</b>	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF

<b>QUICK CODE</b>	
DESCRIPTION	CODE
SFPL-060-ZNNN-17-G12-N	SF000047

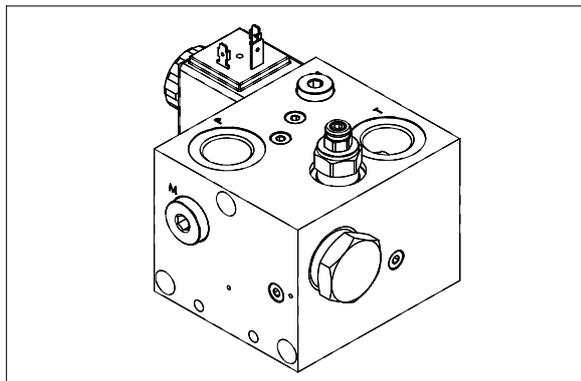
**OVERALL DIMENSIONS**



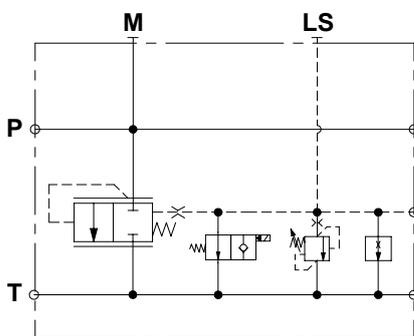
**EBP series - INLET SECTION**

**SFPL-060-ZNNN-19**

**RELIEF VALVE  
UNLOADING VALVE**



**HYDRAULIC SCHEME**

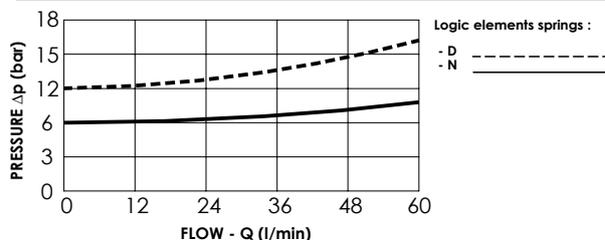


This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. It is present an unloading solenoid valve normally open with emergency operating on Ls signal. There are two thread ports (P, T) available in two different types G 1/2" or 3/4"-16 UNF plus M port available in G 1/4". Max inlet flow 60 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

**TECHNICAL DATA**

<b>Max pressure</b>	210/320 bar
<b>Rated flow</b>	60 l/min
<b>Hydraulic fluid</b>	Mineral oil DIN 51524
<b>Fluid viscosity</b>	10-500 mm <sup>2</sup> /s
<b>Fluid temperature</b>	-25°C/75°C
<b>Environment temperature</b>	-25°C/60°C
<b>Weight</b>	1,4 Kg

**PRESSURE DROP LOGIC ELEMENT**

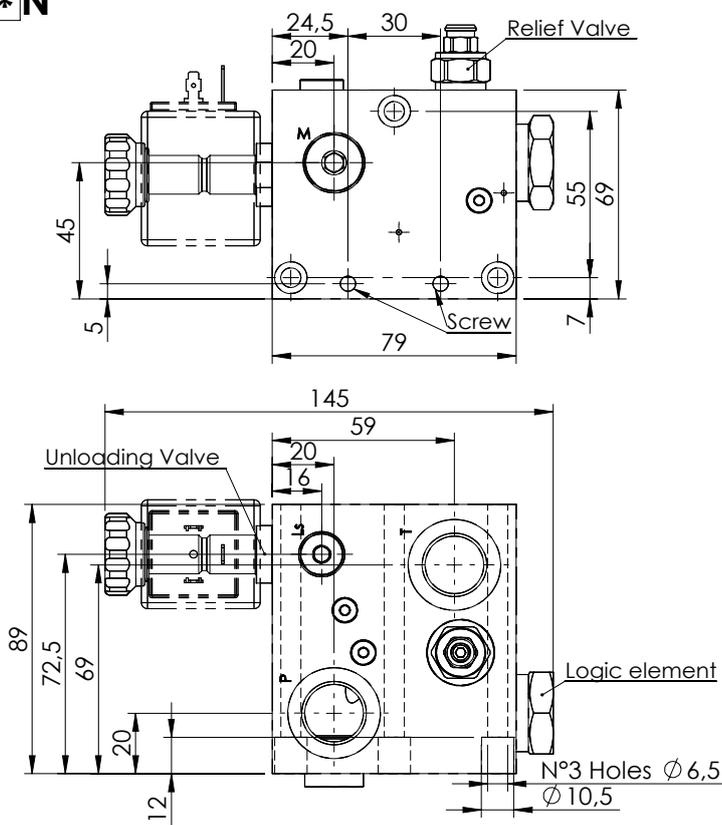


**ORDERING DETAILS: SEPARATE ELEMENTS**

**SFPL-060-\*\*\*N-19-\*\*\*-\*\*\*N**

<b>*</b>	<b>MATERIAL TYPE</b>		
<b>A</b>	Steel zinc-plated	(320 bar)	
<b>Z</b>	Aluminium anodized	(210 bar)	
<b>*</b>	<b>LOGIC ELEMENT SPRING</b>		
<b>D</b>	Spring setting	12 bar (CD000103)	
<b>N</b>	Spring setting	6 bar (CD000073)	
<b>*</b>	<b>SETTING RANGE</b>		
<b>N</b>	Max setting	210 bar (CP000029)	
<b>A</b>	Max setting	110 bar (CP000030)	
<b>B</b>	Max setting	350 bar (CP000002)	
<b>***</b>	<b>PORTS</b>		
	<b>P line</b>	<b>T line</b>	<b>M</b>
<b>G12</b>	G 1/2"	G 1/2"	G 1/4"
<b>U34</b>	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF
<b>*</b>	<b>VOLTAGE</b>		
	no coils		
<b>A</b>	12 V DC		
<b>B</b>	24 V DC		
<b>**</b>	<b>COILS TYPE</b>		
	no coils		
<b>HR</b>	Hirshmann (ISO 4400 DIN 43650)		
<b>DT</b>	Deutsch (DT04-2P)		
<b>AJ</b>	Amp junior (AJ type)		
	<b>QUICK CODE</b>		
	DESCRIPTION	CODE	
	SFPL-060-ZNNN-19-G12-N	SF000046	
	Unloading valve	CE000873	

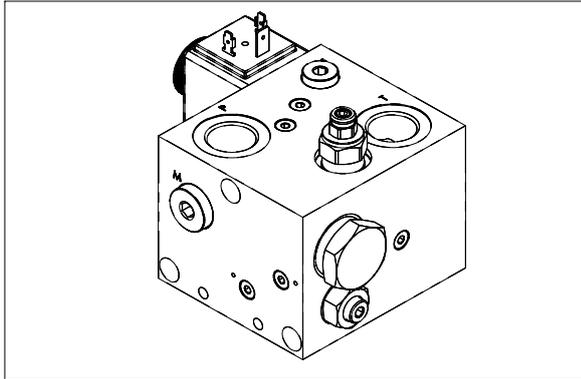
**OVERALL DIMENSIONS**



**EBP series - INLET SECTION**

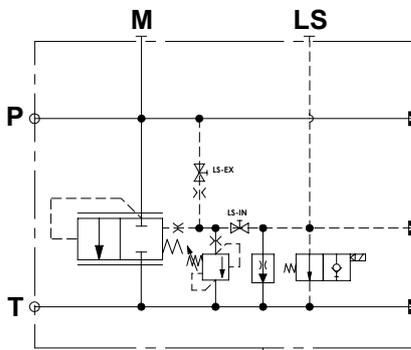
**SFPL-060-ZNNN-20**

**RELIEF VALVE  
UNLOADING VALVE WITH  
EXTERNAL OR INTERNAL LS**



This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. It is present an unloading compensator normally closed operating with Ls signal. There are two thread ports (P, T) available in two different types G 1/2" or 3/4"-16 UNF plus M port available in G 1/4". Max inlet flow 60 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

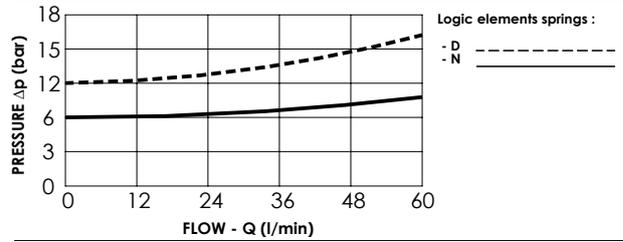
**HYDRAULIC SCHEME**



**TECHNICAL DATA**

<b>Max pressure</b>	210/320 bar
<b>Rated flow</b>	60 l/min
<b>Hydraulic fluid</b>	Mineral oil DIN 51524
<b>Fluid viscosity</b>	10-500 mm <sup>2</sup> /s
<b>Fluid temperature</b>	-25°C/75°C
<b>Environment temperature</b>	-25°C/60°C
<b>Weight</b>	1,4 Kg

**PRESSURE DROP LOGIC ELEMENT**

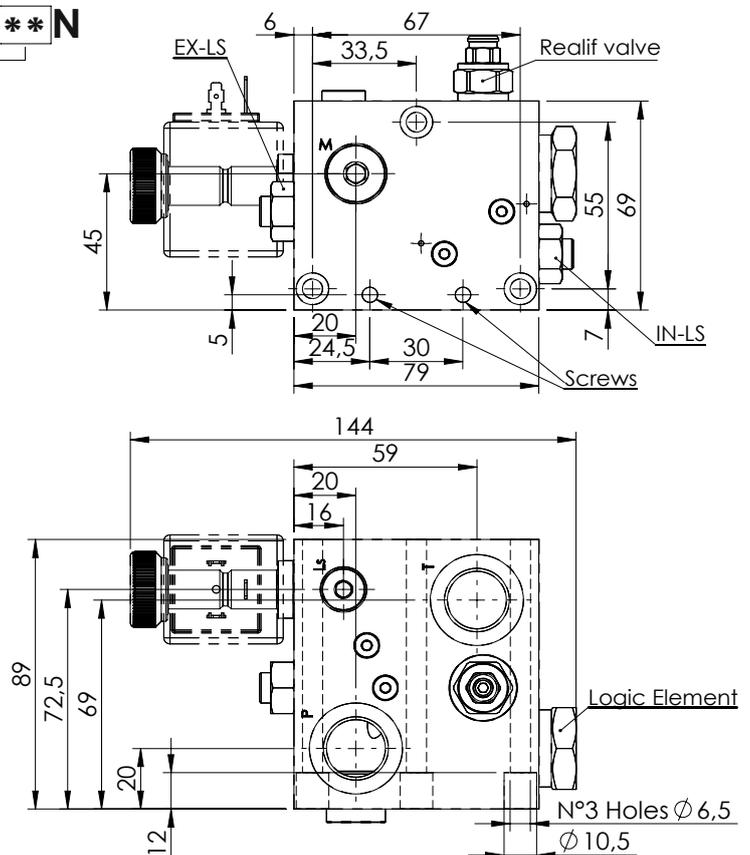


**ORDERING DETAILS: SEPARATE ELEMENTS**

**SFPL-060-\*\*\*N-20-\*\*\*-\*\*\*N**

<b>* MATERIAL TYPE</b>			
<b>A</b>	Steel zinc-plated	(320 bar)	
<b>Z</b>	Aluminium anodized	(210 bar)	
<b>* LOGIC ELEMENT SPRING</b>			
<b>D</b>	Spring setting 12 bar	(CD000103)	
<b>N</b>	Spring setting 6 bar	(CD000073)	
<b>* SETTING RANGE</b>			
<b>N</b>	Max setting 210 bar	(CP000029)	
<b>A</b>	Max setting 110 bar	(CP000030)	
<b>B</b>	Max setting 350 bar	(CP000002)	
<b>*** PORTS</b>			
	<b>P line</b>	<b>T line</b>	<b>M</b>
<b>G12</b>	G 1/2"	G 1/2"	G 1/4"
<b>U34</b>	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF
<b>* VOLTAGE</b>			
	no coils		
<b>A</b>	12 V DC		
<b>B</b>	24 V DC		
<b>** COILS TYPE</b>			
	no coils		
<b>HR</b>	Hirshmann (ISO 4400 DIN 43650)		
<b>DT</b>	Deutsch (DT04-2P)		
<b>AJ</b>	Amp junior (AJ type)		
<b>QUICK CODE</b>			
	<b>DESCRIPTION</b>	<b>CODE</b>	
	SFPL-060-ZNNN-20-G12-N	SF000041	
	Unloading valve	CE000873	

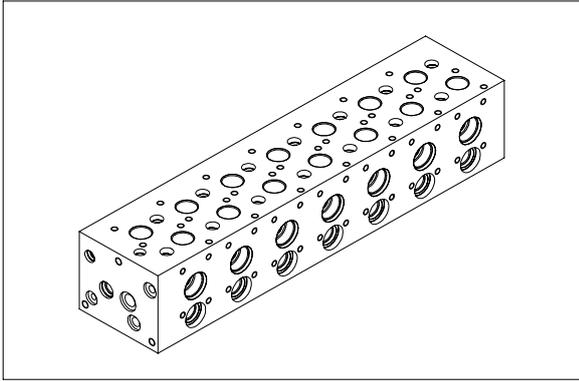
**OVERALL DIMENSIONS**



# LDPP-060-NNNN

## CAST-IRON MANIFOLD

In LDPP/S-060-C plug are included in the manifold



The manifold's valve can be ordered with 3 types of ports for connection nipples G 3/8" 9/16"-18 UNF ( SAE6 ) and M16x1,5. Standard version is G 3/8" for other type of ports we will mounting flangiabe elemtens it change G 3/8" to 9/16"-18 UNF ( SAE6 ) or M16x1,5 (can look that in dimension drawing). Manifold it's made in cast-iron with zinc-plated (black) surface treatment with sealant. It isn't a modular block for reduce to minimun the leakage through the section and also for haven't problem with screw torque. Also can easely open, removing plug, extra T connection for different kind of use such as modular valve flangiabe on distributor.

### TECHNICAL DATA

<b>Max pressure</b>	320 bar
<b>Rated flow</b>	60 l/min
<b>Material</b>	Cast-iron
<b>Surface treatment</b>	Zinc-plated black
<b>Weight for single section</b>	2,5 kg
<b>Wight for additional sections</b>	+ 1,5 Kg each

### ORDERING DETAILS: SEPARATE ELEMENTS

LDP \* - 060-NNNN - \*\* - \*\*\*

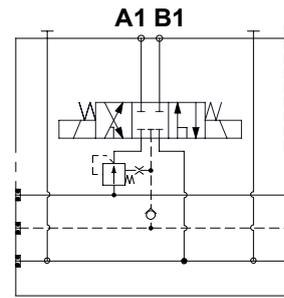
*	TYPE OF MANIFOLD
S	Series connection
P	Parallel connection

**	NUMBER OF SECTION
01	manifold with one section
02	manifold with two sections
03	manifold with three sections
04	manifold with four sections
05	manifold with five sections
06	manifold with six sections
07	manifold with seven sections

***	PORTS		
	P line	T line	M
G38	G 3/8"	G 3/8"	G 1/4"
U09	9/16"-18 UNF	9/16"-18 UNF	7/16"-20 UNF

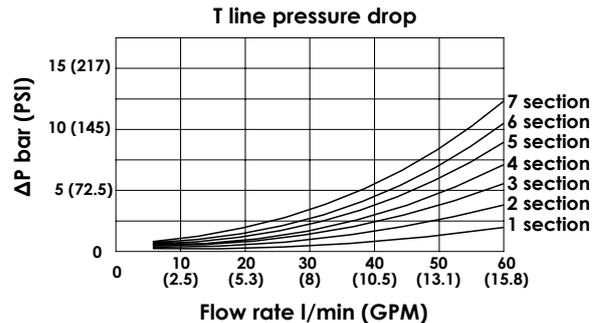
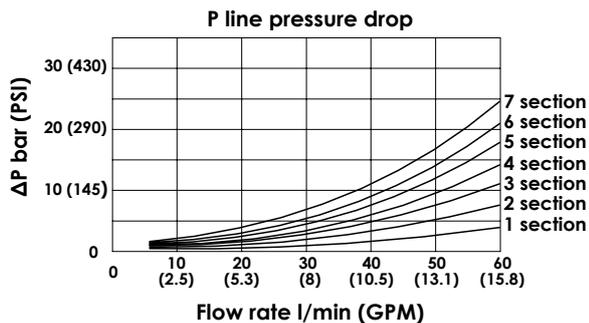
QUICK CODE	
DESCRIPTION	CODE
LDPP-060-NNNN-01-G12	LD000289
LDPP-060-NNNN-02-G12	LD000293
LDPP-060-NNNN-03-G12	LD000292
LDPP-060-NNNN-04-G12	LD000291
LDPP-060-NNNN-05-G12	LD000290
LDPP-060-NNNN-06-G12	LD000279
LDPP-060-NNNN-07-G12	LD000284

### MANIFOLD CONFIGURATIONS



LDPP-060

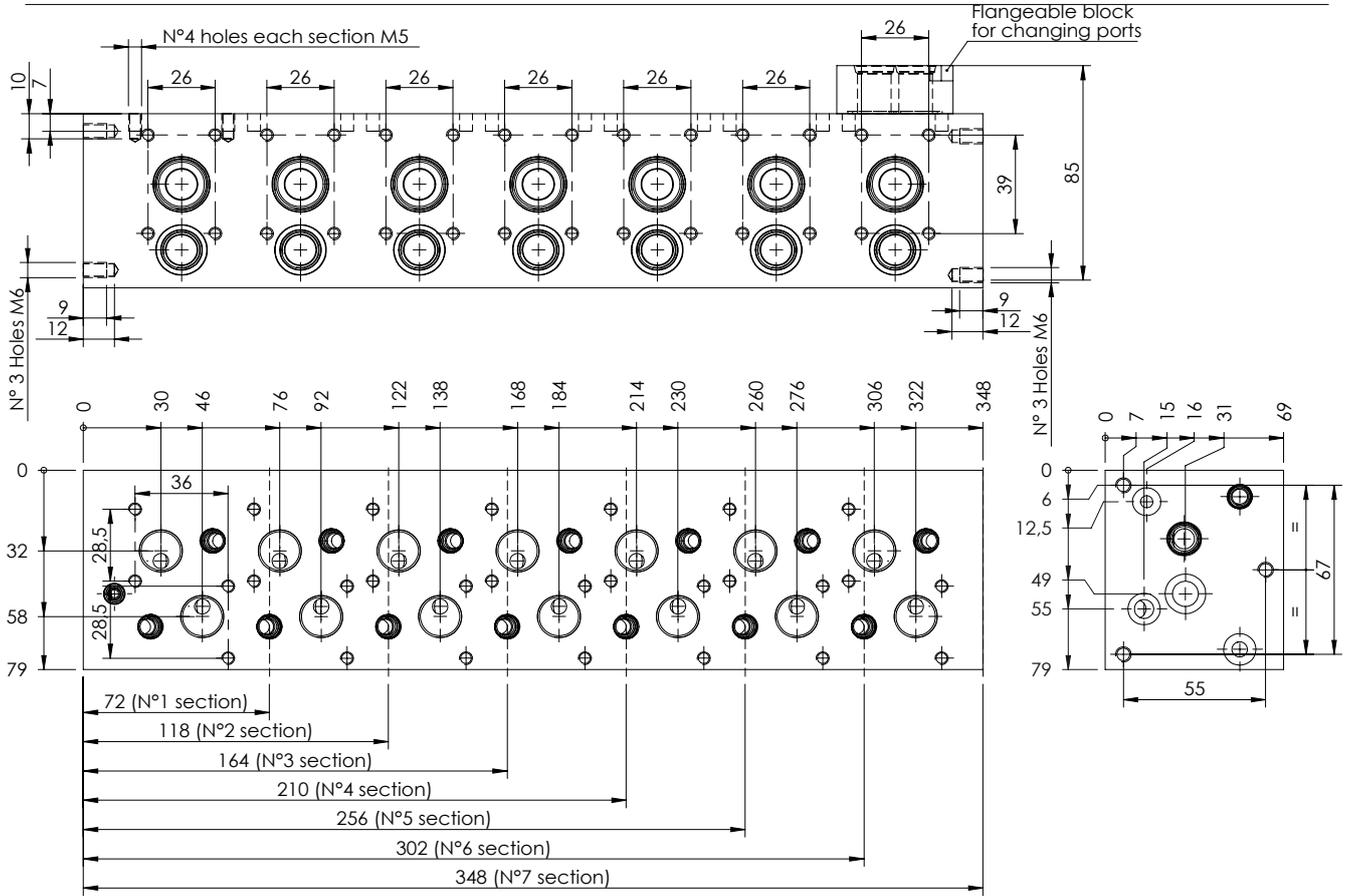
### MONOBLOCK PRESSURE DROP



**LDPP-060-NNNN**

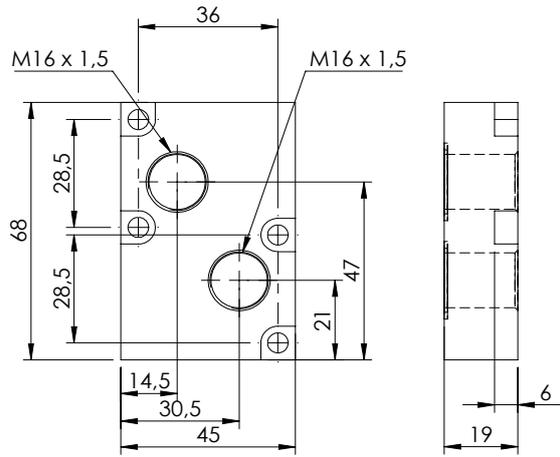
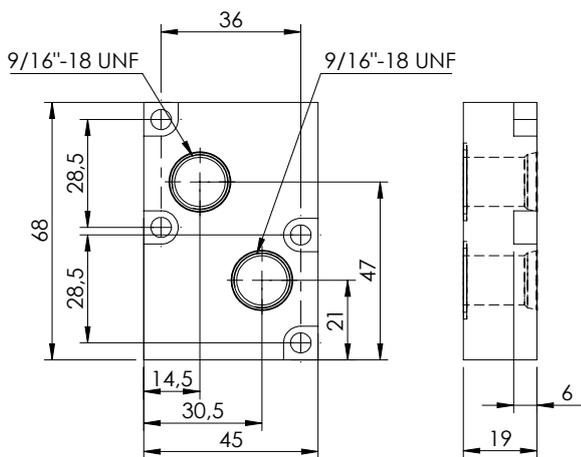
**CAST-IRON  
MANIFOLD**

**GAS VERSION**



**SAE VERSION**

**METRIC VERSION**



This top flangeable block transform the monoblock to a UNF version.

This top flangeable block transform the monoblock to a Metric version.

**Quick code: MP000096**

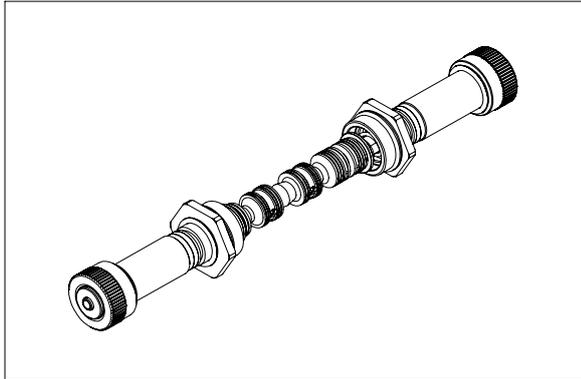
**Quick code: MP000097**

**EBP series - SPOOL SECTION**



**SHNE-030-LSON**

**30 L/MIN  
SOLENOID VALVE**



This spool group is rated for 30 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

**TECHNICAL DATA**

<b>Max pressure</b>	320 bar
<b>Rated flow</b>	30 l/min
<b>Max excitation frequency</b>	3 Hz
<b>Duty cycle</b>	100 % ED
<b>Hydraulic fluid</b>	Mineral oil DIN 51 524
<b>Fluid viscosity</b>	10/500 mm <sup>2</sup> /s
<b>Fluid temperature</b>	-25°C/75°C
<b>Enviroment temperature</b>	-25°C/60°C
<b>Weight with one solenoid</b>	0,12 Kg
<b>Weight with two solenoid</b>	0,15 kg

**ORDERING DETAILS: SEPARATE ELEMENTS**

**SH\*\* - 030 - LS \*\* - \*\* - 396 - \*\* N**

<b>*</b>	<b>VERRIDE TYPE</b>
<b>N</b>	Standard
<b>P</b>	Push
<b>V</b>	Screw

<b>*</b>	<b>SECTION TYPE</b>
<b>E</b>	Solenoid operated
<b>L</b>	Solenoid operated plus lever operated
<b>M</b>	Lever operated

<b>**</b>	<b>ACTUATION TYPE</b>
<b>ON</b>	On/Off
<b>SS</b>	Soft shift

<b>**</b>	<b>SPOOL TYPE</b>
<b>...</b>	See table n°1

<b>*</b>	<b>COILS VOLTAGE</b>
	no coils
<b>A</b>	12 V DC
<b>B</b>	24 V DC

<b>**</b>	<b>COILS TYPE</b>
	no coils
<b>HR</b>	Hirschmann (ISO 4400 DIN 43650)
<b>DT</b>	Deutshc (DT04-2P)
<b>AJ</b>	Amp Junior (AJ type)

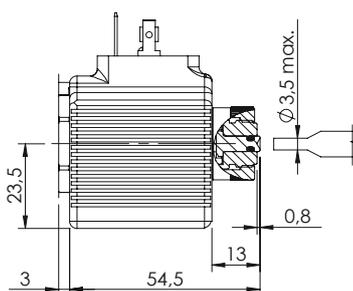
<b>QUICK CODE</b>	
DESCRIPTION	CODE
SHNE-030-LSON-74-396	
SHNE-030-LSON-75-396	

**HYDRAULIC SYMBOLS**

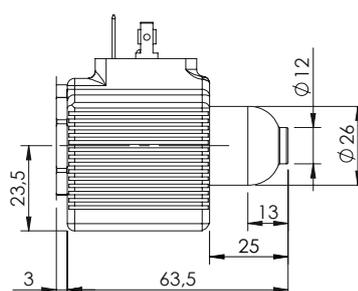
Table n°1

SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION		
	a	b	a	b	
<b>74</b>					
<b>75</b>					
SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION		
a	b	a	b	a	b

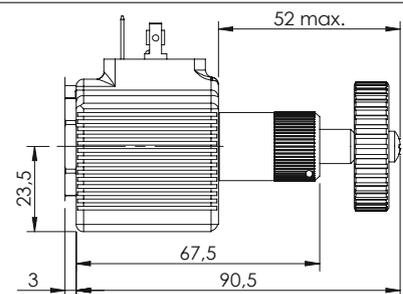
**VERRIDE TYPE**



**VERRIDE TYPE "N"**



**VERRIDE TYPE "P"**

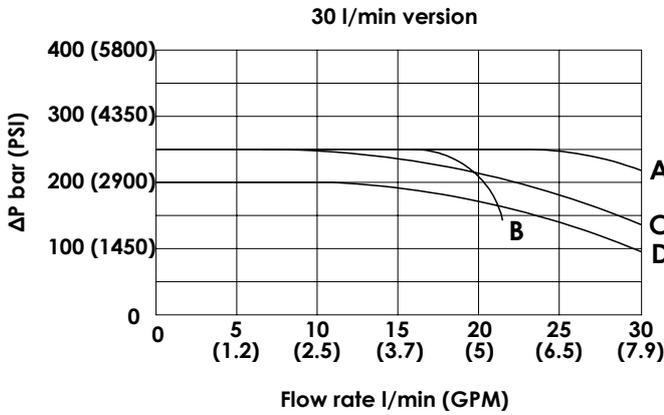


**VERRIDE TYPE "V"**

# SHNE-030-LSON

30 L/MIN  
SOLENOID VALVE

## PERFORMANCE LIMITS CURVES - STANDARD SECTION



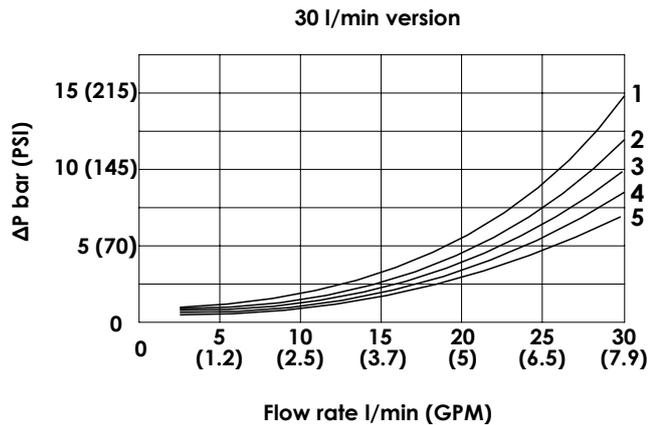
Spool type	Performance limits curve
74	A
75	A
	B
	A
	A
	A
	C
	D

The tests are carried out with hot solenoids , powered with 90 % of nominal voltage, with 50 ° C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm<sup>2</sup> / s @ 40 ° C .

The values in the diagram refer to tests carried out with flow simultaneously in both directions ( P > A, B > T ).

In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

## PRESSURE DROP CURVES - STANDARD SECTION

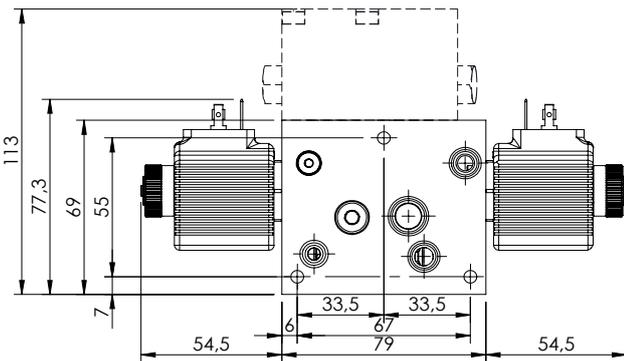


Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
74	3	3	4	4	/
75	3	3	5	5	/
	2	2	1	1	2
	/	3	4	/	/
	/	3	5	/	/
	2	/	/	1	/
	/	3	4	/	/
	/	2	3	/	/

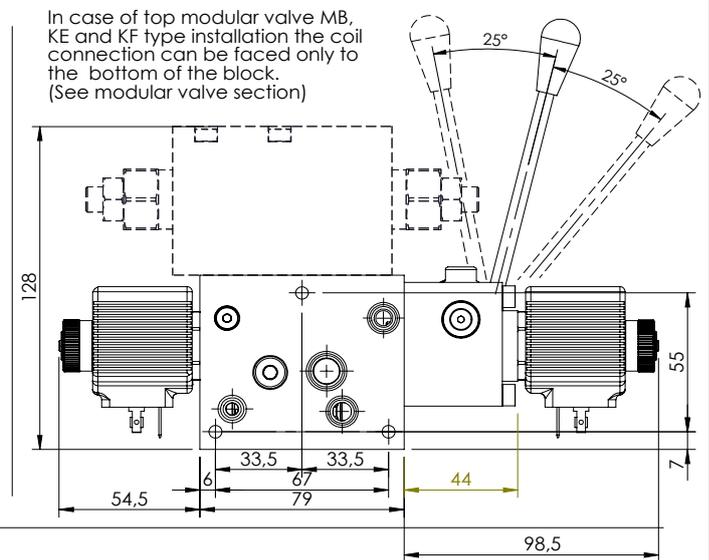
The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm<sup>2</sup>/s at 40 ° C ; the tests are performed at a 40 ° C temperature

## OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

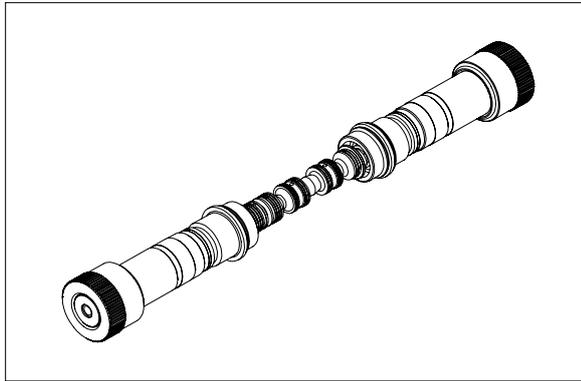


In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



# SHNE-060-LSON

60 L/MIN  
SOLENOID VALVE



This spool group is rated for 60 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

## TECHNICAL DATA

Max pressure	320 bar
Rated flow	60 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm <sup>2</sup> /s
Fluid temperature	-25°C/75°C
Enviroment temperature	-25°C/60°C
Weight with one solenoid	0,2 Kg
Weight with two solenoid	0,4 kg

## ORDERING DETAILS: SEPARATE ELEMENTS

SH\* \*- 060 - LS \*\* - \*\* -396 - \*\* \*N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	ACTUATION TYPE
ON	On/Off
SS	Soft shift

**	SPOOL TYPE
...	See table n°1

*	COILS VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

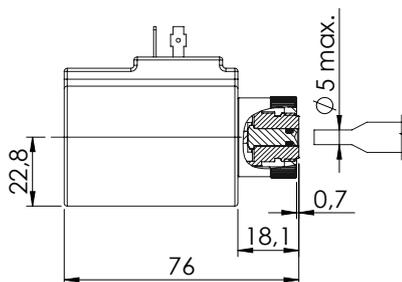
QUICK CODE	
DESCRIPTION	CODE
SHNE-060-LSON-74-396	
SHNE-060-LSON-75-396	

## HYDRAULIC SYMBOLS

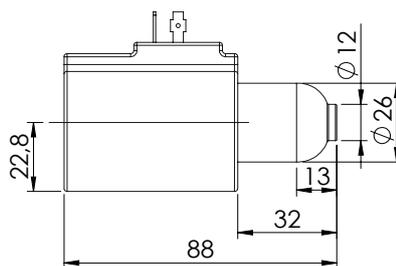
Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION
74		
75		
SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION
a b	a b	a b

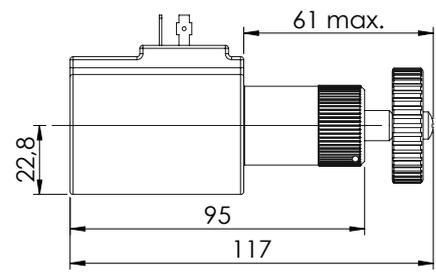
## VERRIDE TYPE



VERRIDE TYPE "N"

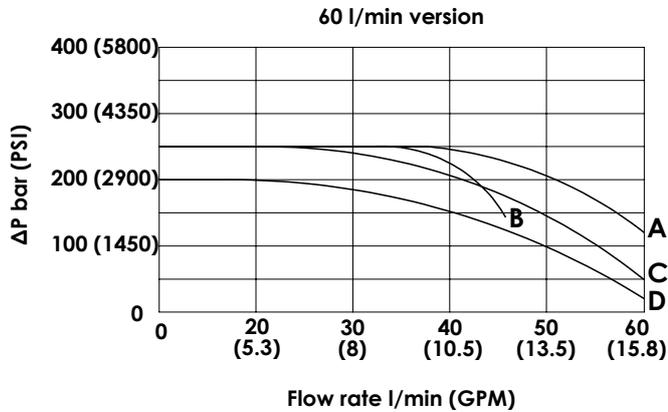


VERRIDE TYPE "P"



VERRIDE TYPE "V"

PERFORMANCE LIMIT CURVES - STANDARD SECTION



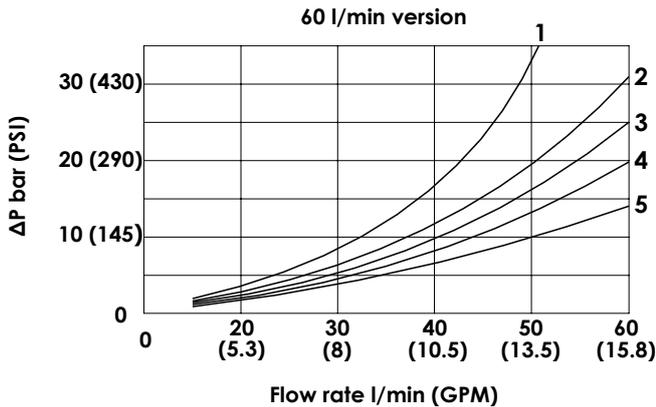
Spool type	Performance limits curve
74	A
75	A
	B
	A
	A
	A
	C
	D

The tests are carried out with hot solenoids, powered with 90 % of nominal voltage, with 50 °C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm<sup>2</sup> / s @ 40 °C.

The values in the diagram refer to tests carried out with flow simultaneously in both directions ( P > A, B > T ).

In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

PRESSURE DROP CURVES - STANDARD SECTION

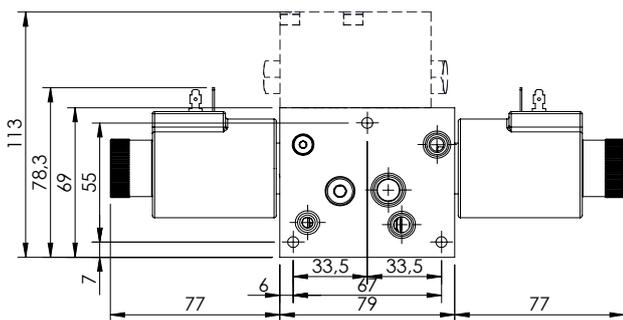


Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
74	3	3	4	4	/
75	3	3	5	5	/
	2	2	1	1	2
	/	3	4	/	/
	/	3	5	/	/
	2	/	/	1	/
	/	3	4	/	/
	/	2	3	/	/

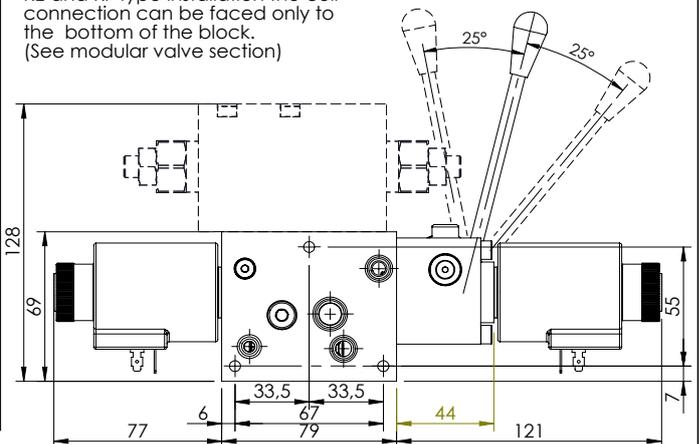
The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm<sup>2</sup>/s at 40 °C ; the tests are performed at a 40 °C temperature

OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

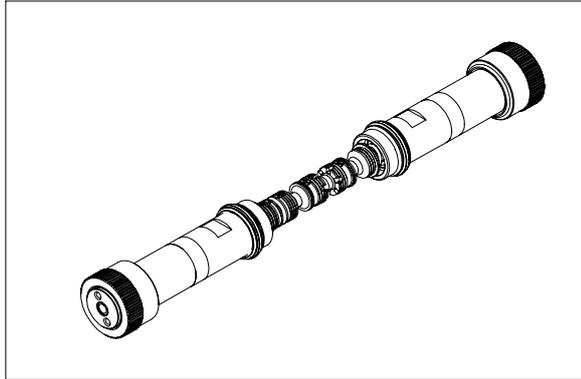


In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



# SHNE-050-LSPR

50 L/MIN  
PROPORTIONAL  
SOLENOID VALVE



This spool group is rated for 50 lpm and for a maximum pressure of 320 bar; the spool is actuated by proportional tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

## TECHNICAL DATA

Max pressure	320 bar
Rated flow	50 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Max current	1.76A (12 V dc) 0.88A (24 V dc)
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm <sup>2</sup> /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight with one solenoid	0,2 Kg
Weight with two solenoid	0,4 kg

## ORDERING DETAILS: SEPARATE ELEMENTS

SH\*\* - 0\*\* - LSPR - \*\* - 396 - \*\* \* N

*	<b>VERRIDE TYPE</b>
N	Standard
P	Push
V	Screw

*	<b>SECTION TYPE</b>
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	<b>SPOOL FLOW</b>
20	20 l/min at 12 bar - 10 l/min at 6 bar
35	35 l/min at 12 bar - 20 l/min at 6 bar
50	50 l/min at 12 bar - 30 l/min at 6 bar

**	<b>SPOOL TYPE</b>
...	See table n°1

*	<b>COILS VOLTAGE</b>
	no coils
A	12 V DC
B	24 V DC

**	<b>COILS TYPE</b>
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

<b>QUICK CODE</b>	
DESCRIPTION	CODE
SHNE-030-LSPR-77-396	
SHNE-030-LSPR-78-396	

## TECHNICAL FEATURES

Proportionl type	Spool flow	Rated flow with 12 bar ΔP	Maximum flow	Max. operating pressure
All	20	15	20	320
All	35	30	35	320
All	50	45	50	320

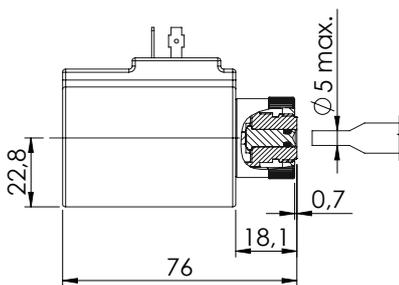
Proportionl type	Spool flow	Rated flow with 6 bar ΔP	Maximum flow	Max. operating pressure
All	20	10	15	320
All	35	20	25	320
All	50	30	35	320

## HYDRAULIC SYMBOLS

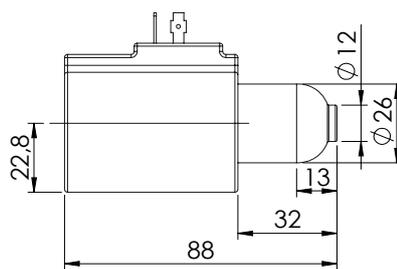
Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION
77		
78		

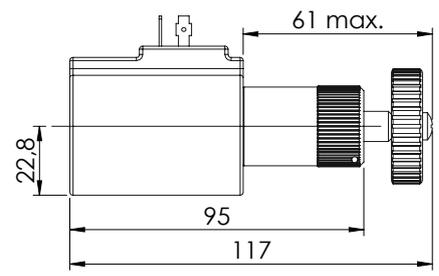
## VERRIDE TYPE



VERRIDE TYPE "N"

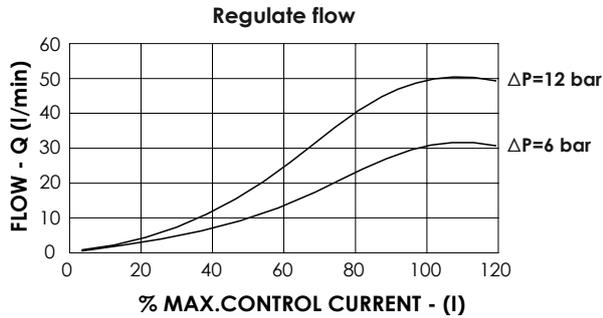


VERRIDE TYPE "P"

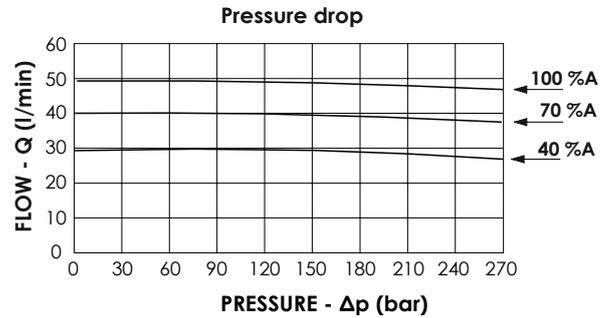


VERRIDE TYPE "V"

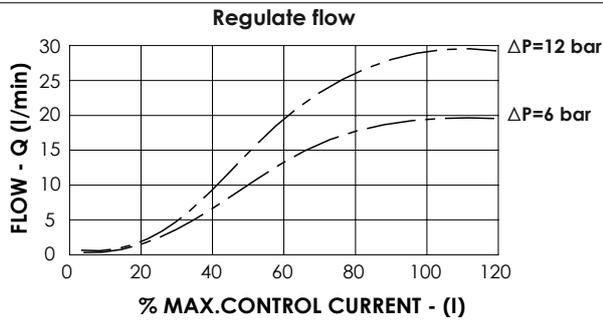
**FLOW DIAGRAM - 050**



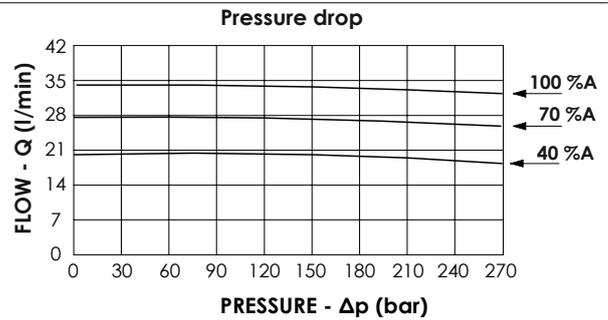
**COMPESATION DIAGRAM - 050**



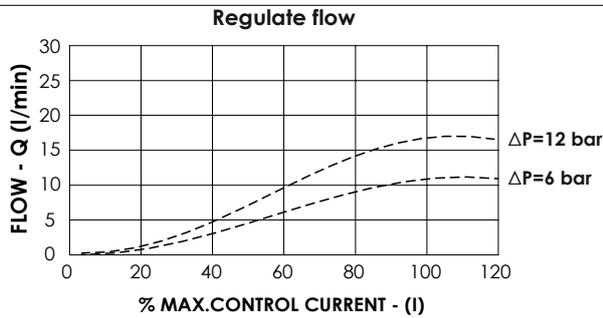
**FLOW DIAGRAM - 035**



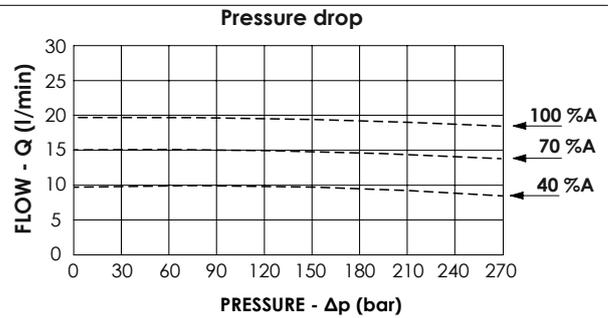
**COMPENSATION DIAGRAM - 035**



**FLOW DIAGRAM - 020**



**COMPENSATION DIAGRAM - 020**



Spool type:

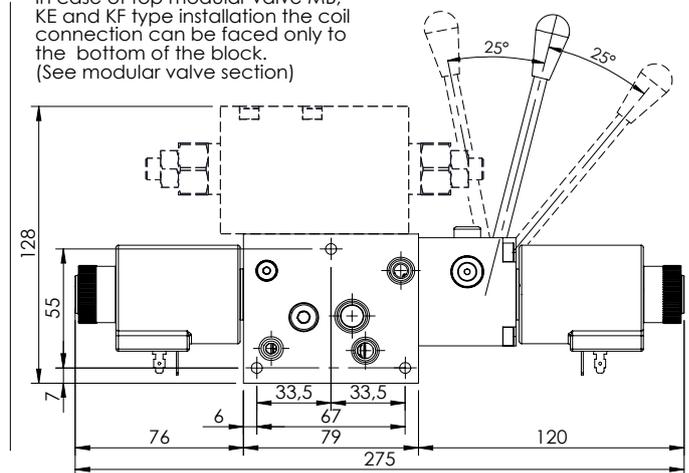
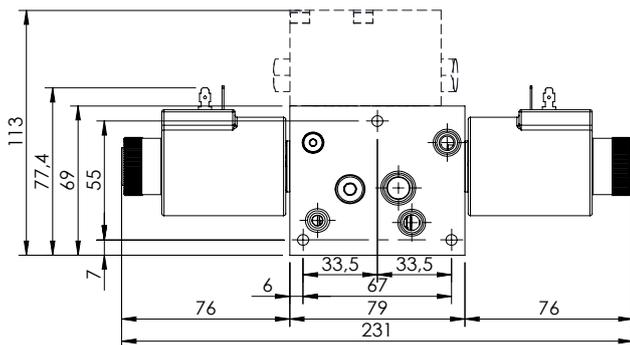
- 10 \_\_\_\_\_
- 20 \_\_\_\_\_
- 30 \_\_\_\_\_

In the diagram shows the performance limits curves of standard section. The fluid used is mineral oil viscosity 46 mm<sup>2</sup>/s at 40 °C ; the tests were performed at a 40 °C temperature

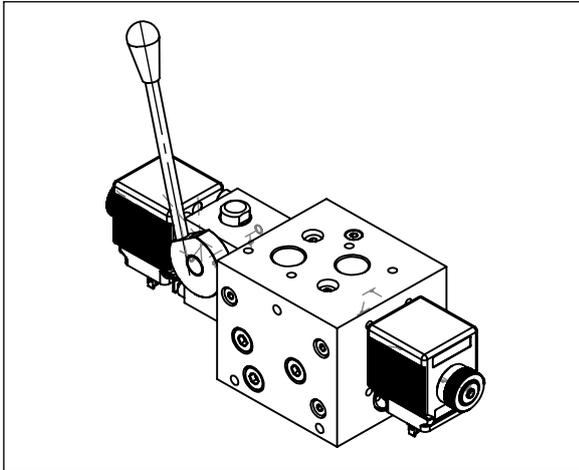
**OVERALL DIMENSION - STANDARD SECTION**

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



# MANUAL LEVER



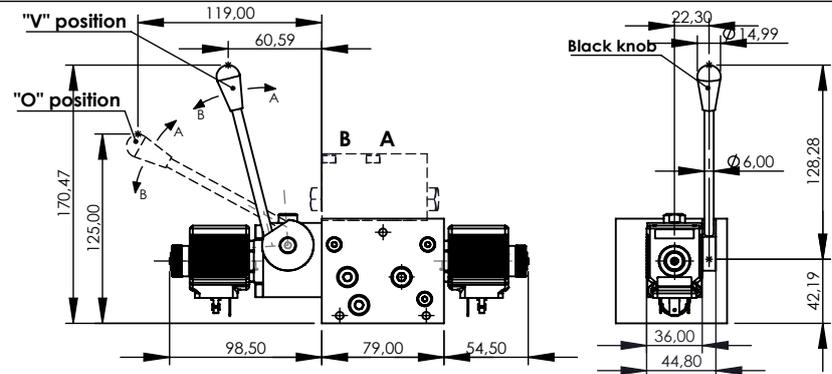
The lever option allow to operate manually the spool and can be ordered for all hydraulic schemes; in the standard version it is installed between monoblock and B port side coil. The lever is normally installed on the monoblock port side but can be installed also rotated of 180°; in each of these two positions the lever can be mounted vertical or horizontal simply removing the lever and reinstalling. The lever is not engaged during solenoid operation and doesn't move when a coil is energized.

## TECHNICAL DATA

<b>Max pressure</b>	210/320 bar
<b>Max pressure in line type</b>	210 bar
<b>Rated flow</b>	30/60 l/min
<b>Insertion</b>	100 % ED
<b>Weight more than standard</b>	3 Kg
<b>Weight more than standard</b>	3,5 kg

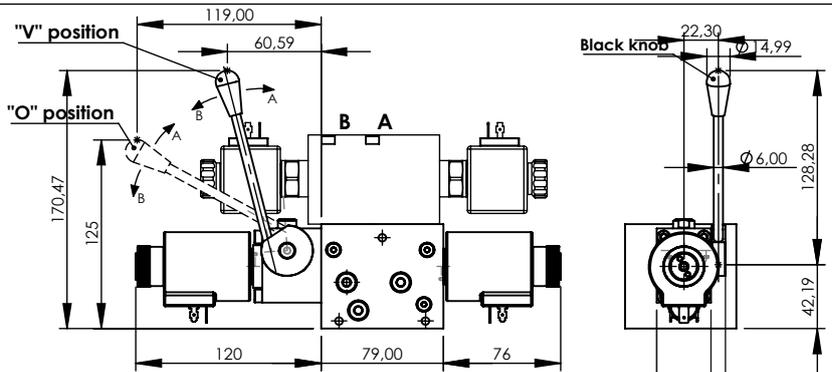
## OVERALL DIMENSIONS/ LEVER FOR 30 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



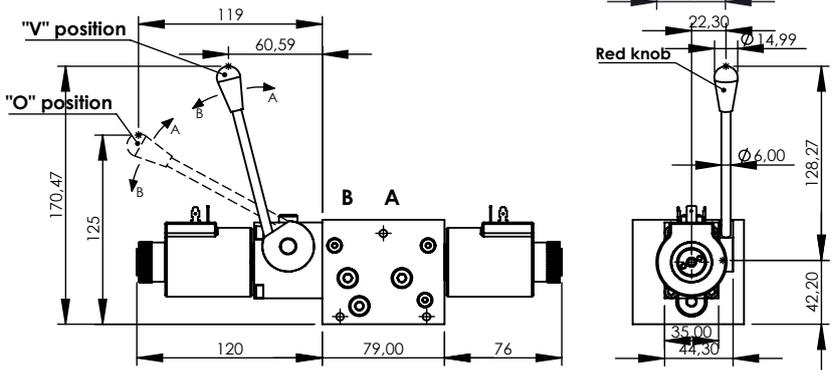
## OVERALL DIMENSIONS/ LEVER FOR 60 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.

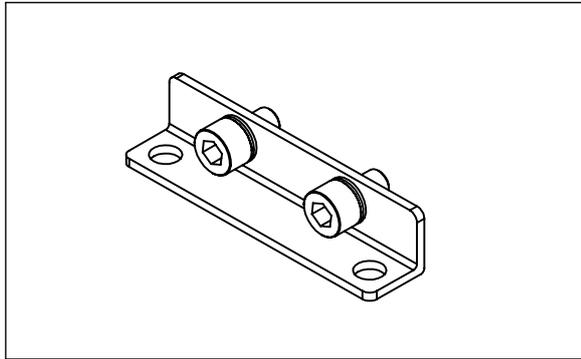


## OVERALL DIMENSION/ LEVER FOR 50 L/MIN PROPORTIONAL SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



# MOUNTING SCREW

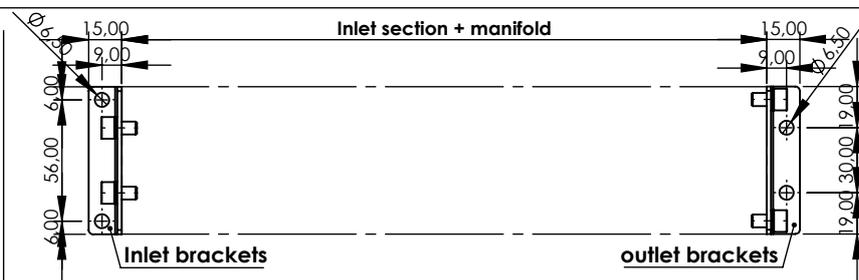
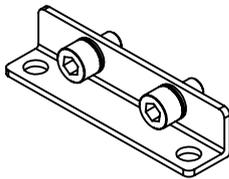


This accessories it use for mounting and fixing distributor on machine, in case the mounting brackets, or for mounting the different componets who assemble the whole distributor.

## TECHNICAL DATA

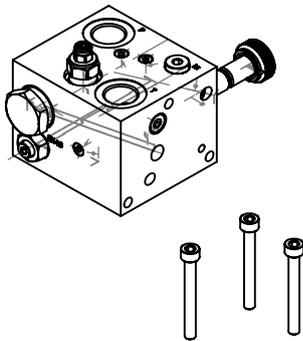
<b>Screw type</b>	ISO 4762
<b>Thread type</b>	coarse thread
<b>Standard screw</b>	resistence class 8.8
<b>High resistance screw</b>	resistence class 12.9
<b>Standard screw treatment</b>	zinc-plated (white)
<b>High res. screw treatment</b>	Anodized (black)

## MOUNTING BRACKETS



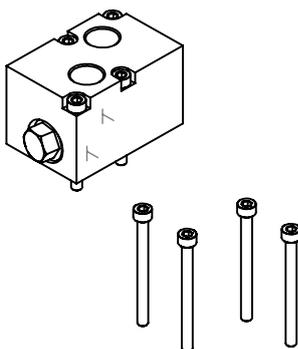
Mounting brackets	Screw lenght (mm)	Reference	Tightening Torque
PV000371	M6x10	AV000015 + PR000129	6 - 7 N/m

## MOUNTING INLET SECTION



Inlet section	Screw lenght (mm)	Reference	Tightening Torque
SF000048	85	PE000491	6 - 7 N/m
SF000047	85	PE000491	6 - 7 N/m
SF000046	85	PE000491	6 - 7 N/m
SF000041	85	PE000491	6 - 7 N/m

## FIXING STACKING MODULES



Flangiabile valve	Screw lenght (mm)	Reference	Tightening Torque
MP	M5x16	AV000035	3 - 4 N/m
MA, MC and MB	M5x45	PE000148	3 - 4 N/m
KE and MF	M5x60	AV000016	3 - 4 N/m