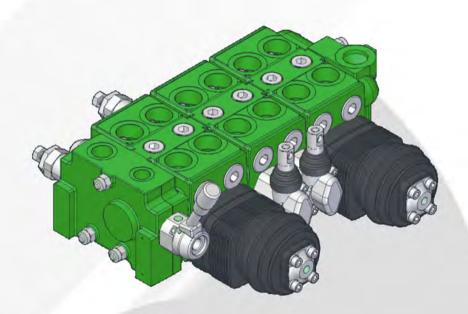
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SECTIONAL VALVE VD8A

Technical catalogue



COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
=ISO 9001/2000=



DIRECTIONAL CONTROL VALVE **SECTIONAL TYPE**

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The data in this catalogue refers to the standard product.

The policy of Salami S.p.A. consists of a continuous improvement of its products. It reserves the right to change the specifications of the different products whenever necessary and without giving prior information. If any doubts, please get in touch with our sales departement.





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DIRECTIONAL CONTROL VALVE **SECTIONAL TYPE**

GENERAL FEATURES

Among all hydraulic directional control valves used in the field of mobile equipment applications, the spool valve is the most popular.

The sectional valve type allows construction flexibility. Salami VD8A directional control valve is modular construction and consist of an inlet section, up to 8 working modules and an outlet section. All these elements are secured in one block by means of tie-rods. (For more than 8 working modules please contact our sales dept.)

FEATURES

VD8A directional control valve has the following:

- cast-iron body (inlet section, working section, outlet section)
- parallel circuit, load check valve protection on each section
- series circuit, load check valve protection on each section (possibility of 2nd load check valve on series line)
- tandem circuit, load check valve protection on each section
- several types of mid modules
- possibility of venting valve
- possibility of power beyond configuration
- spool construction in steel, hardened and chromium-plated to obtain a higher surface hardness and a better corrosion resistance
- several types of spool: double, single acting, spool motor, float position etc.
- minimum tolerance between the spools and the body to obtain a minimum internal leakage
- interchangeabilty of all the spools
- possibility of auxiliary valve either on port A or B or on both
- several spool control devices and spool positioning devices

VALVE AND DEVICE TYPES

In order to meet the most stringent demands and to offer a wider range of applications, the following types of valves and devices are available:

Valves

- direct main relief valve: controls the maximum pressure in the circuit when one or more spools are on end stroke located on "A" or "B" port side, can be:
 - direct type version up to 260 bar 3700 psi
 - pilot operated with anticavitation version up to 350 bar 5000 psi
- electric and external piloted venting valve: located in the opposite cavity of the main relief valve and is available as 12 or 24 Vdc and normally open or normally closed versions (available also as venting valve for the ports A and B)
- overload and anticavitation valve on port A or/and B: set at a higher value (in comparison with the main relief valve), it protects the working ports from load induced pressures, avoids cavitation in the system created by the inertia.
- · anti-cavitation check valve on port A or/and B: avoids cavitation in the system created by the inertia.
- flow restrictor: directly fitted on the "A/B" ports orifice

Devices

- · handle controls
- handle safety devices: avoids accidental operation of the spool
- cross lever: allows to acting two spools with one manual joystick
- · cable remote control
- control device for microswitches: for the operation with electric d.c. motor driven pumps at one or more rotation speeds
- hydraulic kick-out: returns the spool automatically to the neutral position when the preset pressure of port "A" or "B" is exceeded
- anti-tilt device: the spool returns automatically in neutral position when the pressure reaches a pre-set value to avoid cranes from becoming unstable
- pneumatic proportional control
- · electropneumatic control
- hydraulic proportional control
- direct electric on-off control with emergency manual device
- electrohydraulic on-off and proportional control
- · several spool positionings device to return the spool to neutral position or to lock the spool on working position

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TECHNICAL DATA

Spools	from 1 to 8 (for more)	working modules pla	s. contact our sales department
Nominal flow Max flow*	Q	75 l/min 90 l/min	(20 gpm US) (24 gpm US)
Max pressure	port P ports A/B port T*	350 bar 350 bar 25 bar	(5100 psi) (5100 psi) (363 psi)
Internal leakage at 160 bar (2285 psi)	ports A/B → T	25 ÷ 35 cm ³ /s	min (1.52 ÷ 2.13 cu.in./min)
For lower leakage please	contact our sales dept.		
In case of solenoid contro	ol the leakage is	120 ÷ 160 cm ³ /r	min (7.32 ÷ 9.76 cu.in./min)
Spool stroke (positions 1	and 2)	± 7 mm	(0,28 in.)
Spool stroke (position 4,	float or regenerative)	± 7 + 5 mm	(0.28 + 0.19 in.)
For solenoid control - spo	ool stroke	± 5 mm	(0,19 in.)
*In case you need the max f	low please contact our sales	s dept.	
*For higher back pressure p	ease contact our sales dep	t.	
All technical data carried out	using mineral oil with viscos	sity of 16 cSt and cont	amination level 19/16 as ISO 4406.

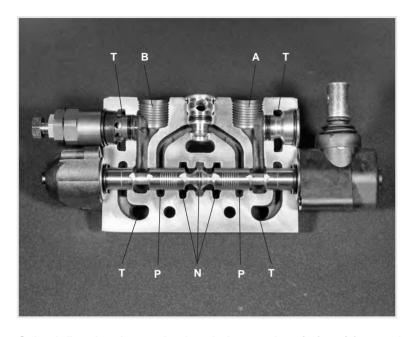
Nominal flow meaning: flow causing 1 bar (14.5 psi) pressure drop each section, with spools in neutral position

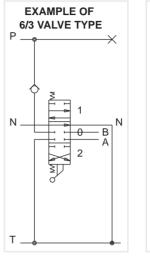
WORKING CONDITIONS

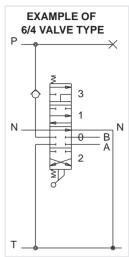
Hydraulic fluid	mineral oil according to D	mineral oil according to DIN 51524						
Viscosity								
	viscosity range	10400 mm ² /sec	(0.157.13 sq.in./sec)					
	optimal viscosity	1275 mm ² /sec	(0.191.16 sq.in./sec)					
Temperature								
	fluid range temperature	-2085 °C	(-4185 °F) NBR seals					
	suggested range	3060 °C	(86140 °F) NBR seals					
Maximum contamina	tion level	NAS 1683: class 9) ISO 4406: 19/16					
Room temperature		-3060 °C	(-22140 °F)					
Working limits		see diagrams at p	page 6					
Pressure drop		see diagrams at p	page 7					
For operation with fire re	esistant fluid, please contact our sa	les denartment						

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OPERATING PRINCIPLE







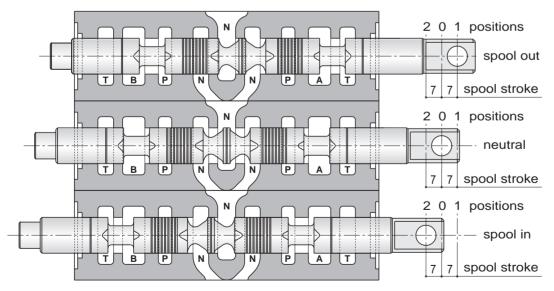
The picture show the P working module with the paths N - P - A - B - T.

Salami directional control valves belong to the 6/3 (or 6/4) type; they can control 6 gallery in 3 (or 4) spool positions simultaneously.

They are open circuit types: when the spool is in neutral position, the fluid flows directly to the tank with minimum internal pressure drops (approximatively 1 bar / 14.5 psi for each spool at nominal flow).

When the spool is moved from this position, the neutral gallery is gradually throttled and the connection between pump and actuator, through the corresponding port, is made.

When a pressure exceeds the value of the pressure existing in port A or B, the fluid flows through the load check valve to the actuator.



IMPORTANT

Looking at this side of the spool, we usually say: spool in when the spool is pushed into the valve and spool out when it is pulled out of the valve.

Independing on assembling of the spool on "A" or "B" side

There are two characteristic phases in the spool stroke (7 mm - 0,275 in.):

- a) the overlap phase (about 18% of the stroke) guarantees minimum internal leakages in neutral position;
- b) the progressive flow regulation phase (82% of the stroke).

Both pictures show a 6/3 valve type with double acting spool only as principle of functioning. Salami VD8A is available in different solutions.

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HYDRAULIC FLUIDS

Usually a mineral-base oil with a good viscosity index should be used, preferably with good lubricating properties and corrosion, oxidation and foaming resistant.

Sometimes the fluids supplied by the manufacturers do not satisfy purity requirements (see page 3 WORKING CONDITIONS). It is therefore necessary to filter the fluid carefully before filling. Your supplier can give you the information about NAS class of its fluids. To maintain the proper purity class, the use of filters of high dirt capacity with clogging indicator is recommended.

Under humidity conditions it is necessary to use hygroscopic salts.

For operation with fire resistant and ecological fluids, please contact our technical department.

INSTALLATION

When proceeding to mount the unit on the structure and to connect fittings to work ports, it is necessary to comply with the values of tightening torques.

The attachment of linkages to spools should not affect their operation. The mounting position can be vertical with inlet module on the top or horizontal.

FITTING TYPE	P and PL ports	A and B ports	T and TL ports		
BSP (ISO 228/1)	G 3/4	G 1/2	G 3/4		
with o-ring seal	60 / 44.2	50 / 36.9	60 / 44.2		
with copper washer	70 / 51.6	60 / 44.3	70 / 51.6		
with steel washer	70 / 51.6	60 / 44.3	70 / 51.6		
SAE	SAE 10 (7/8-14 UNF)	SAE 10 (7/8-14 UNF)	SAE 12 (1 1/16-12 UN)		
with o-ring seal	60 / 44.2	60 / 44.2	95 / 70.1		

FILTRATION

The contamination of the fluid in the system greatly affects the life of the unit. Above all, contamination may result in irregular operation, wear of seals in valve housings and failures. Once the initial contamination level of the system has been reached, it is necessary to limit any increase of contamination installing an efficient filtration system (see working conditions page 3).

PIPES

Pipes should be as short as possible, without restrictions or sharp bends (especially the return lines). Before connecting pipes to the fittings of the corresponding components, make sure that they are free from burrs and other contamination.

As a first approximation, for a mobile machine with standard length pipes, their width should guarantee the following values of fluid speed*:

6 ÷ 10 m/sec	inlet pipe	19,7 ÷ 32,8 ft/sec	inlet pipe
3 ÷ 5 m/sec	outlet pipe	9,9 ÷ 16,4 ft/sec	outlet pip
3 + 3 m/3cc	outlet pipe	3,3 + 10,4 10300	outiot pip

the lowest values of fluid speed are required in case of wide temperature range and/or for continuous duty.

*
$$v = \frac{21.2 \times Q}{d^2}$$
 $v = \text{fluid speed [m/sec]}, Q = \text{flow [l/min]}, d = \text{pipe internal diameter [mm]}$



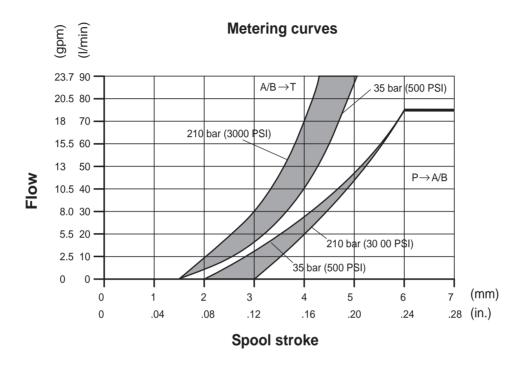
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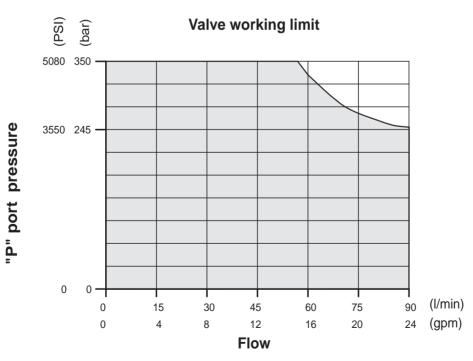


PERFORMANCE DATA

The characteristics in this catalogue are typical measured results. During measuring a mineral based hydraulic oil with a viscosity of 16 cSt at a temperature of 50°C was used.

FOR FURTHER DETAILS PLEASE CONTACT OUR SALES DEPARTEMENT





The data of this diagram have been obtained with a force of: stroke beginning 120 N - stroke end 180 N and standard leakage data.



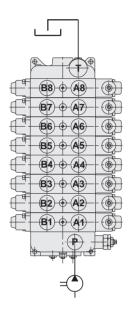


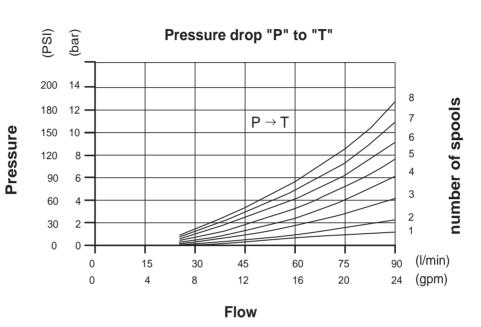
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PERFORMANCE DATA

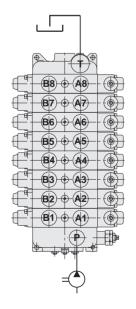
The characteristics in this catalogue are typical measured results. During measuring a mineral based hydraulic oil with a viscosity of 16 cSt at a temperature of 50°C was used.

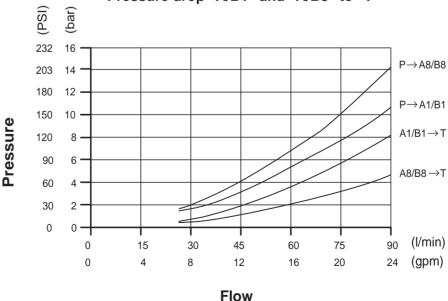
FOR FURTHER DETAILS PLEASE CONTACT OUR SALES DEPARTEMENT





Pressure drop "P" to "A/B1" and to "A/B8" Pressure drop "A/B1" and "A/B8" to "T"





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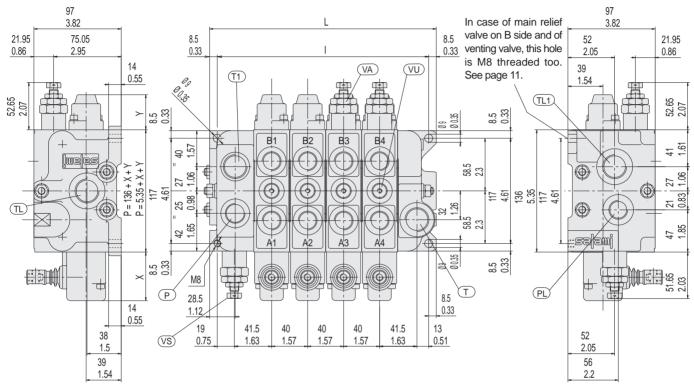
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DIMENSIONS FROM 1 TO 8 WORKING MODULES

FIXING HOLES THREADS: PORTS THREADED BSP (ISO 228) - M8x1.25 ISO 262 PORTS THREADED METRIC (ISO 262) - M8x1.25 ISO 262 PORTS THREADED SAE UN-UNF (ISO 725) - 5/16 18 UNC

PORTS THREADED BSPF O-RING BOSS (JIS B 2351) - M8x1.25 ISO 262

On request are available working modules with distance between axis of 38 mm - 1.49 inch. Please get in touch with our sales dept.



The drawing shown is just an example. The overall dimensions you read are valid for all the VD8A except the parametric dimensions "L" and "I" depending of the number of working sections. The parametric dimension "P" depends on a fixed dimension of 136 mm (11 in.) to wich you have to had the "X" and "Y" dimensions that you can find in the spool controls and spool positionings pages.

INDEX:

= top inlet port

PL = side inlet port

Т = top outlet port

TL = side outlet port

= top outlet port*

TL1 = side outlet port*

A/B = work ports

VS = main relief valve(adjustable)

VA = overload valve

= load check valve

*Only in case of inlet and outlet first module the end module is closed

Spoo	ols	1	2	3	4	5	6	7	8
-1	mm in	115 <i>4.5</i> 3	155 6.10	195 7.68	235 9.25	275 10.83	315 12.40	355 19.97	395 <i>15.55</i>
	111	4.55	0.70	7.00	9.20	10.03	12.40	19.91	13.33
l i	mm	143.5	183.5	223.5	263.5	303.5	343.5	383.5	423.5
_	in	5.65	7.22	8.80	10.37	11.95	13.52	15.10	16.67
Mass	kg	11	14.5	18	21.5	25	28.5	32	35.5
IVIASS	lb	24.2	31.9	39.6	47.3	55	62.7	70.4	78.1

For different size and thread ports, please contact our sales departement

			•	
PORT SIZES	P - PL - P3	T - TL	A - B	
BSP ISO 228	G 1/2	G 3/4	G 1/2	
SAE ISO 176	SAE#10 7/8 - 14 UNF	SAE#12 1-1/16 - 12 UNF	SAE#10 7/8 - 14 UNF	
ISO 262 - ISO 6149	M 22 x 1.5	M 27 x 2	M 22 x 1.5	
BSPF JIS B 2351	G 1/2	G 3/4	G 1/2	

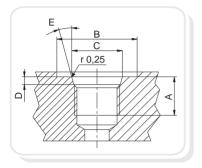
On request you can have all the ports BSP ISO 228 - G 3/4 in this case auxiliary valves are not available.



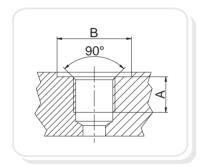


PORTS

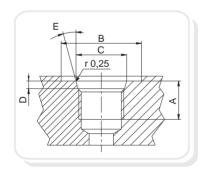
Following are standard ports. For different port types, please contact our sales department.



SAE UN-UNF (ISO 725)									
Dimensions 7/8 -14 UNF mm In. SAE10		1"1/16 -12 UN SAE12		1"5/16 -12 UN SAE16					
А		17	0,67	20	0,79	20	0,79		
В		34	1,34	41	1,61	49	1,92		
С		23,9	0,94	29,2	1,15	35,5	1,40		
D		2,5 0,10		3,3	0,13	3,3	0,13		
E		15°		15°		15°			

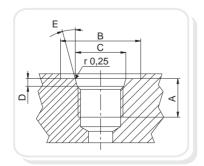


BSP (ISO 228)									
Dimen	sions	G.	1/2	G.	2/4	C	21		
mm	ln.	G1/2		G3/4		G1			
A		16	0,63	18	0,71	20	0,79		
В		27 1,06		33 1,30		40 1,57			



	METRIC (ISO 262 - ISO 6149)*										
Dimer	nsions	M22 x 1.5 M27 x 2									
mm	ln.	ISO 262 ISO 6149			6149	ISO 262		ISO 6149			
A	٨	16	0.63	16	0,63	18	0,71	19	1,75		
В	3	31,5	1.24	34	1,34	37,7	1,48	40	1,57		
C	;			23,8	0,94			29,4	1,16		
D)			2,4	0.09			3,1	0,12		

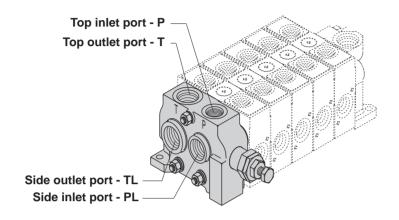
^{*}Available for quantity, please contact our sales dept.

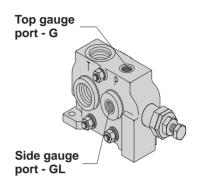


	BSPF O-RING BOSS (JIS B 2351)									
Dimensions										
mm	ln.	G 1/2		G 3/4		G 1				
А		16	0,63	17	0,67	21	0,83			
В		34	1,34	45	1,77	51	2.01			
С		22.6	0,89	29,8	1,17	35,8	1,41			
D		2,5 0,10		3,5 0,14		3,5	0,14			
Е		15°		15°		15°				

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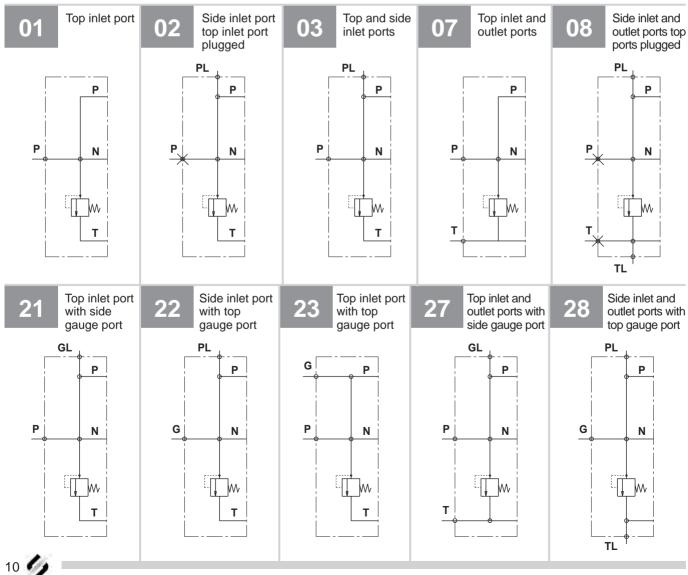
INLET MODULE (HYDRAULIC CIRCUITS)





Gauge ports are available with the following threads: BSP (ISO 228) - G 1/4 SAE UN-UNF (ISO725) - SAE 4

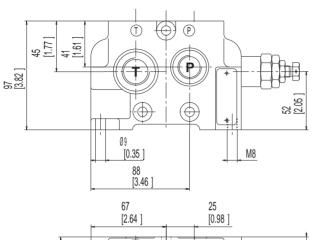
COMMERCIAL CODES

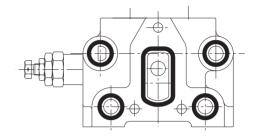


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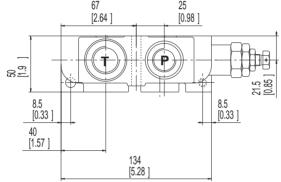
INLET MODULE (DIMENSIONS)

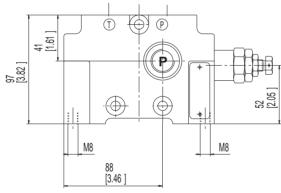
IN ALL THESE COMMERCIAL CODES PORT SIZE ARE SHOWN ON PAGE 8 PLEASE LOOK AT THE DIFFERENCES BETWEEN FIXING HOLES

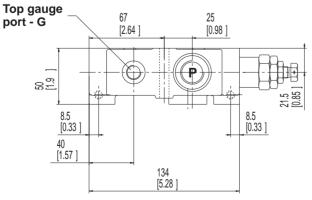


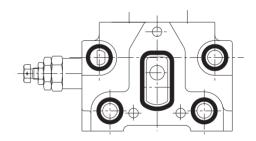


Inlet module:commercial codes 07 - 08 - 21 - 22 - 27 - 28 are built always with this dimensions drw.







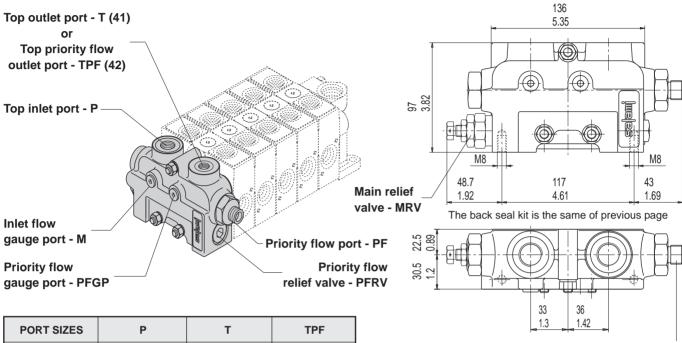


Inlet module: commercial code 23 is built always with this dimensions drw. Moreover in case of venting valve or in case you need to put the main relief valve on "B" side this is the drawing.

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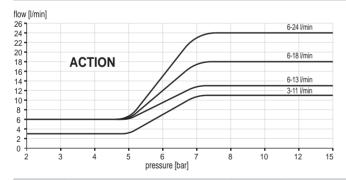


INLET MODULE WITH PRIORITY FLOW VALVE ADJUSTABLE BY POWER STEERING LOAD

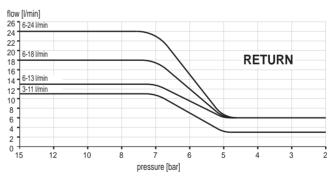


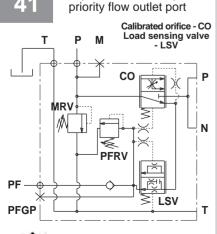
PORT SIZES	Р	Т	TPF
BSP ISO 228	G 1/2	G 3/4	G 3/8
BSP ISO 228	G 3/4	G 3/4	G 3/8
SAE ISO 176	SAE#10 7/8 - 14 UNF	SAE#10 7/8 - 14 UNF	SAE#6 9/16-18 UNF

Priority flow port is available with the following threads: BSP (ISO 228) - G 1/4 or G 3/8 SAE UN-UNF (ISO 725) - SAE 4 or SAE 6



Top inlet and outlet ports





priority flow outlet port Calibrated orifice - CO Load sensing valve LSV MRV **PFRV** LSV **PFGP** Т

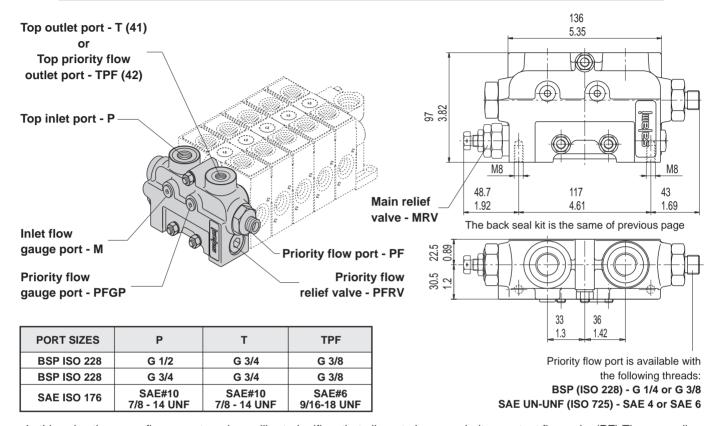
Top inlet port and

The built-in priority flow valve in this inlet module, supplies the oil to the power steering. This priority valve (PF port in dwg.) supplies always a stand by flow to the steering also when the unit is still. When the steering is operated the flow through the valve can increase or decrease according to the load induced by steering and setting range. 4 setting ranges are available:

from 3 to 11 l/min - from 0.79 to 2.9 US gpm from 6 to 13 l/min - from 1.58 to 3.43 US apm from 6 to 18 l/min - from 1.58 to 4.75 US gpm from 6 to 24 l/min - from 1.58 to 6.34 US gpm

42

INLET MODULE WITH PRIORITY FLOW VALVE (FIXED PRIORITY FLOW)

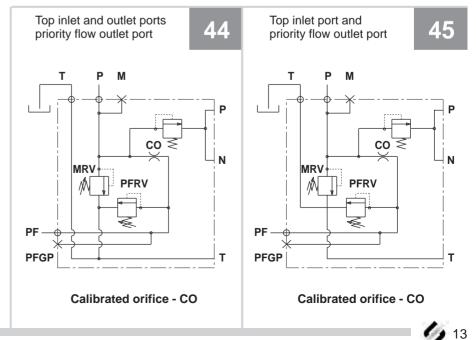


In this valve the pump flow goes trough a calibrated orifice, that allows to keep a priority constant flow value(**PF**). The exceeding pump flow goes to **P** line.

Priority flow values available are the following:

8 I/min - 2.11 gpm US11 I/min - 2.90 gpm US

12.5 l/min - 3.30 gpm US



INLET MODULES

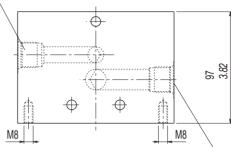
Inlet module to realize parallel circuit between two different directional control valves. It must be located on the upstream valve.

be located on the upstream valve.

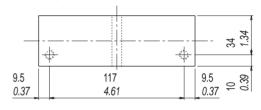
B1 A1 B2 A2

P P

Pressure port - P — The back seal kit is the same of previous page



Feeding port from power beyond - P3-

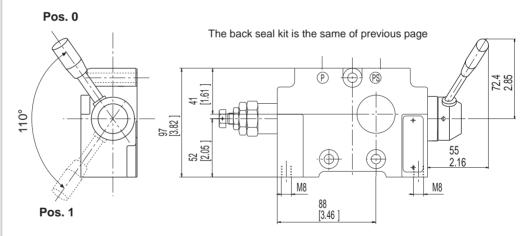


Top inlet port with manual pressure switch on "A" side and main relief valve on "B" side

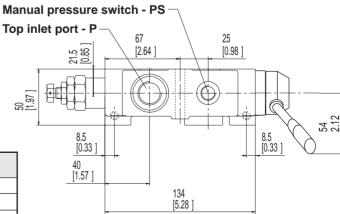
(see drw. besides)

PS P P N N T

Top inlet port with manual pressure switch on "B" side and main relief valve on "A" side (same hydraulic circuit)



Important: in 52 code **P** and **PS** ports are reversed

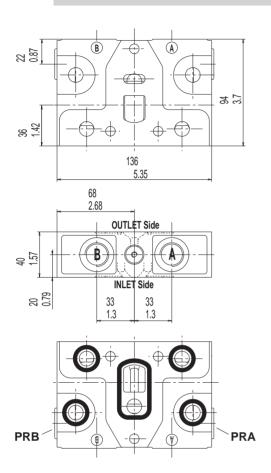


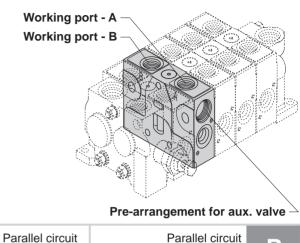
P port size see page 8

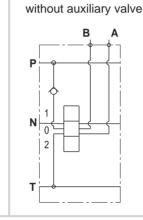
PORT SIZES	PS			
BSP ISO 228	G 3/8			
METRIC ISO 262	G 3/8			
SAE ISO 176	SAE#6 9/16-18 UNF			

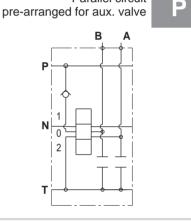
1800-OILSOL 1800-645765

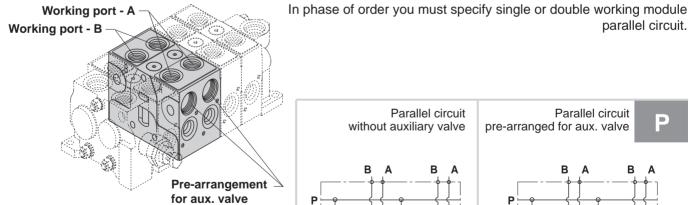
SINGLE AND DOUBLE WORKING MODULE (PARALLEL CIRCUIT)

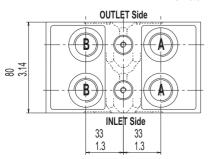








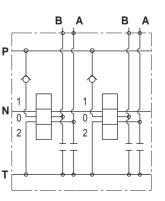




Parallel circuit without auxiliary valve В

https://oilsolutions.com.au/

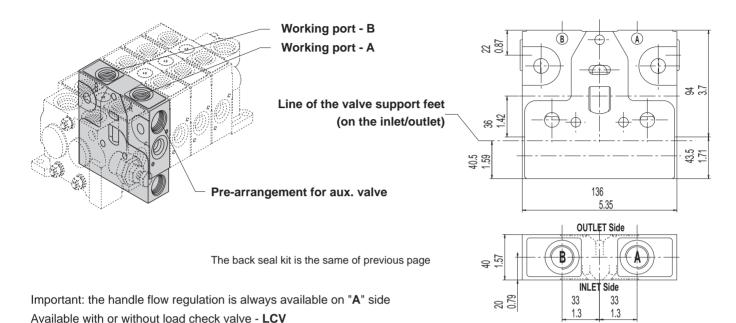
Parallel circuit pre-arranged for aux. valve

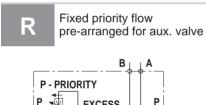


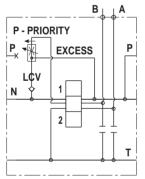
parallel circuit.

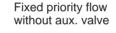
P

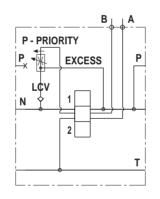
WORKING MODULE WITH ADJUSTABLE OR FIXED PRIORITY FLOW VALVE PRESSURE COMPENSATED

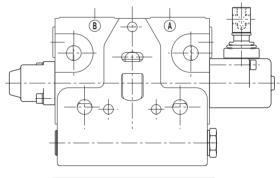




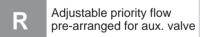


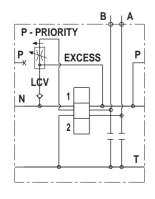




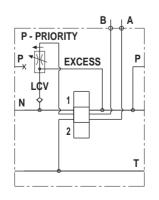


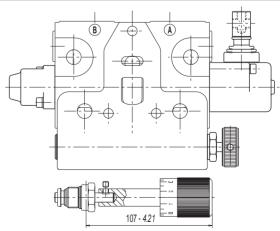
Available values of fixed flow I/min 4.5 6 9 10 16 US gpm 1.9 1.6 2.4 2.6 4.2





Adjustable priority flow without aux. valve



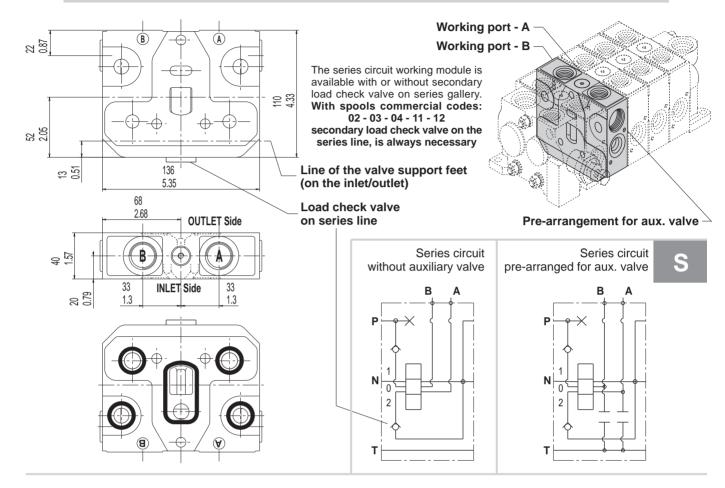


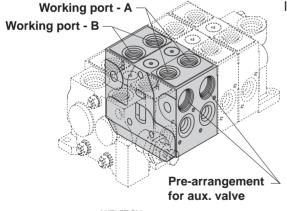
Adjustable flow with LCV: 45 l/min - 12 US gpm Adjustable flow without LCV: 60 l/min - 16 US gpm

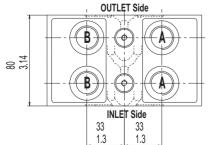




SINGLE AND DOUBLE WORKING MODULE (SERIES CIRCUIT)

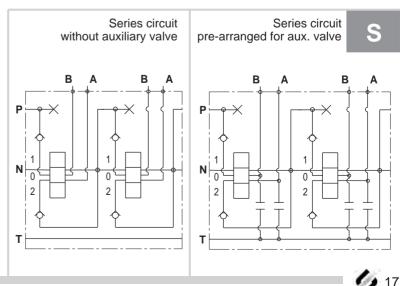




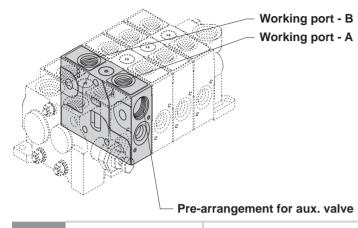


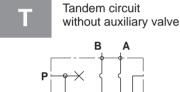
In phase of order you must specify single or double working module series circuit.

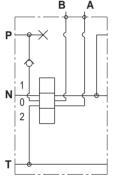
Available only for quantity, please contact our sales dept.

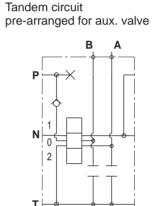


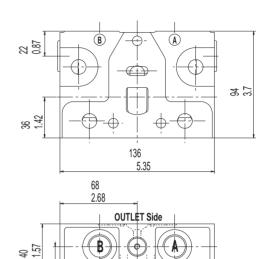
WORKING MODULE (TANDEM CIRCUIT)

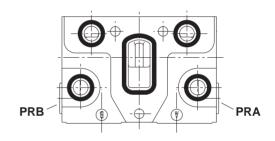












INLET Side

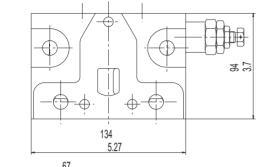
1.3

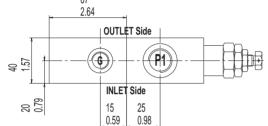
33 1.3

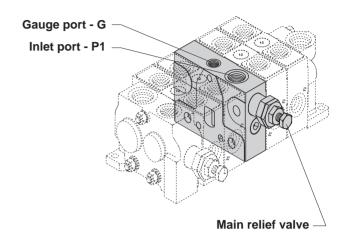
20 0.79



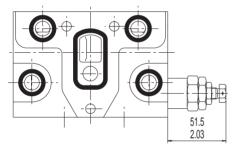
MID INLET MODULE (HYDRAULIC CIRCUITS)



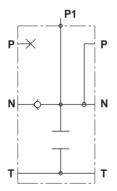




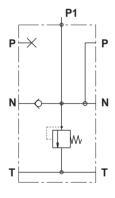
Gauge port is available with the following threads: BSP (ISO 228) - G 1/4 SAE UN-UNF (ISO725) - SAE 4



Mid inlet for second pump with combining flows without main relief valve



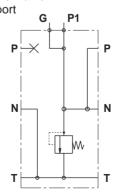
Mid inlet for second pump with combining flows and main relief valve



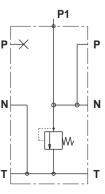
P × P N N T

Mid outlet

Mid inlet for second pump with split flows and main relief valve + gauge port

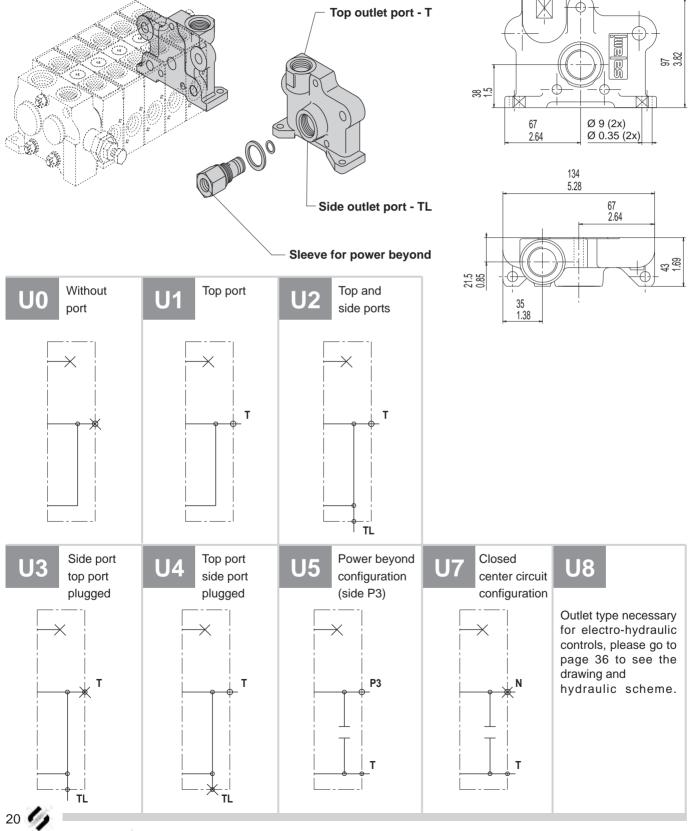


Mid inlet for second pump with split flows and main relief valve



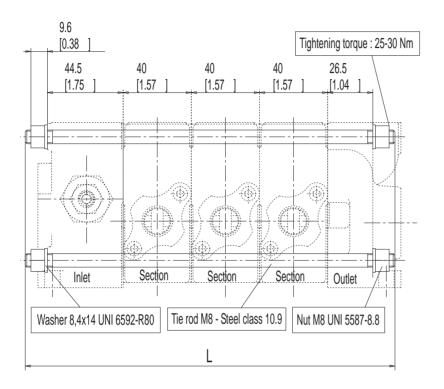


OUTLET MODULE (HYDRAULIC CIRCUITS)

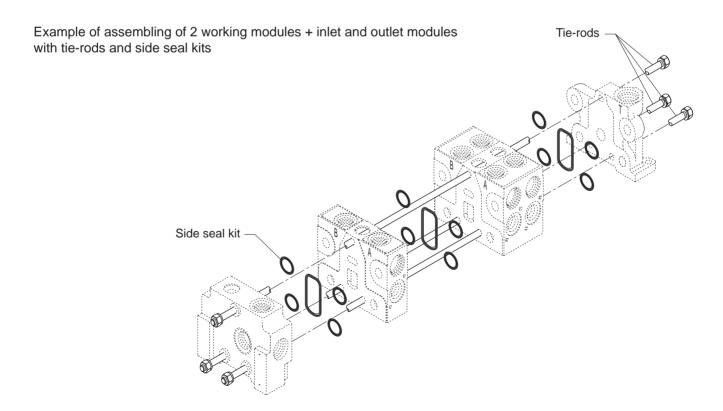


E0.06.0911.02.02

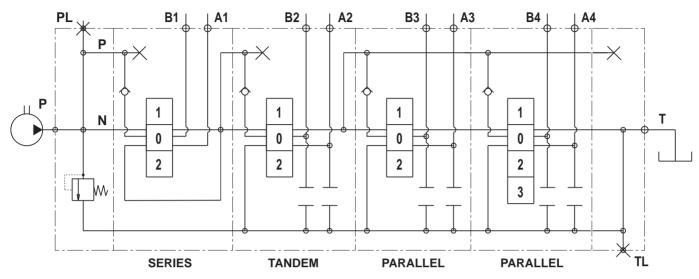
ASSEMBLING TIE RODS



Length L			
mm. [inch]			
137 [5.39]			
177 [6.97]			
217 [8.54]			
257 [10.12]			
297 [11.69]			
337 [13.27]			
377 [14.84]			
417 [16.42]			



CIRCUIT AND SPOOL TYPES



The circuits available are:

parallel type, series type, tandem type as shown in the picture above (tandem type with priority flow valve is available too, see page 16). You can have main relief valve or venting valve in the inlet(see page 14), the working sections can have pre-arrangement for auxiliary valves or not (you can mount venting valve too).

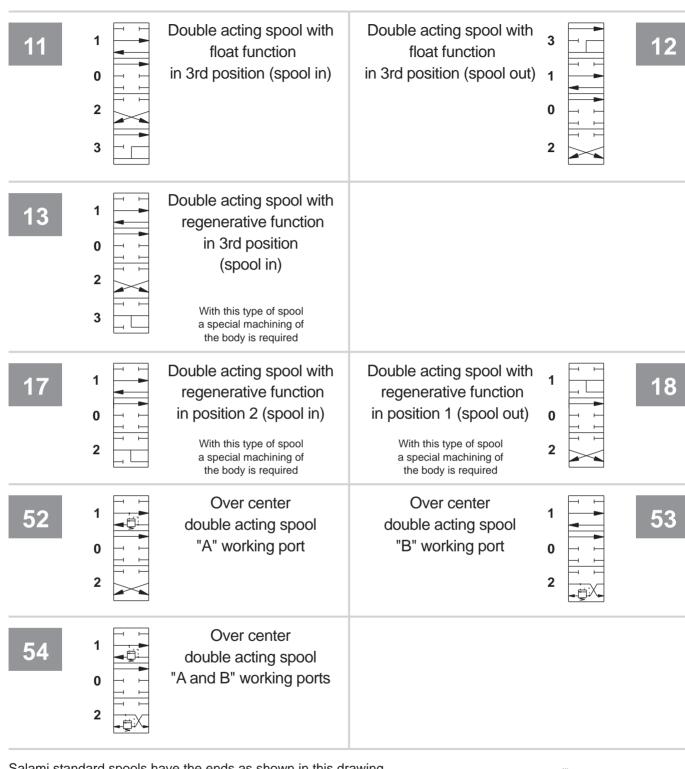
The spools can be 3 or 4 positions (as sown here below) moreover VD8A is available for power beyond just adding a sleeve (see page 20).

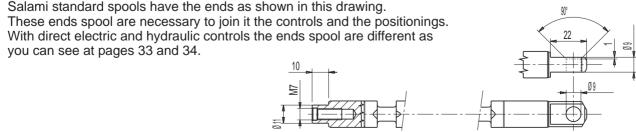
As you can read at page 44, the spools can be types "A" nominal flow or "C" 2/3 of nominal flow.



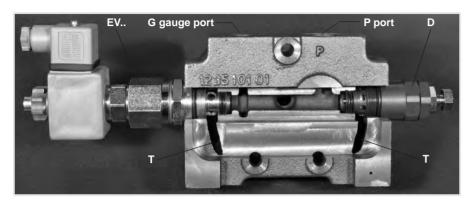
DIRECTIONAL CONTROL VALVE SECTIONAL TYPE

VD8A





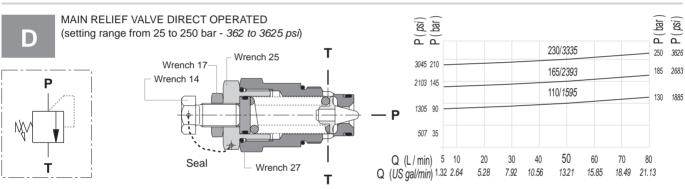
MAIN RELIEF VALVES

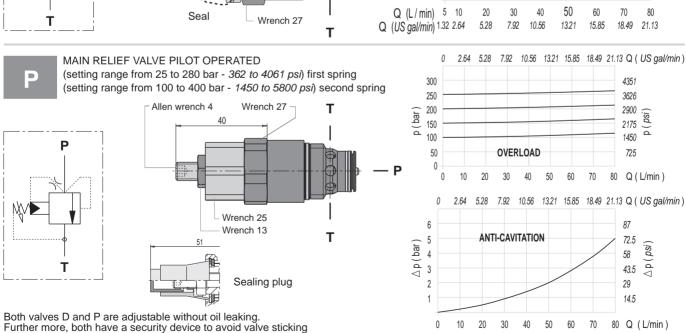


The main relief valve can be mounted on "A" or "B" side, in case of venting valve this is at the opposite side of the main relief. All the testing values of this page have been obtained with nominal flow of 50 L/min - 13.21 gpm, viscosity 16cST and oil temperature 50°C - 122°F.

Max tightening torque: wrench 13 - 24 Nm wrench 17 - 27 Nm wrench 25 - 35 Nm wrench 27 - 40 Nm wrench 30 - 75 Nm Allen wrench 8 - 27 Nm

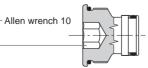








PLUG FOR MAIN RELIEF SEAT WITHOUT VALVE

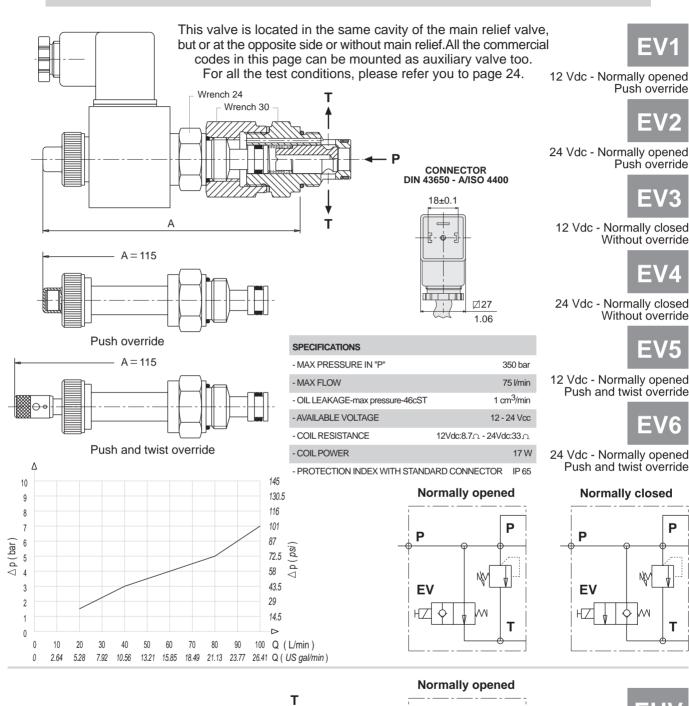




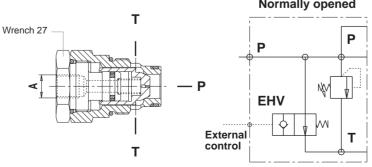




VENTING VALVES (AVAILABLE AS AUXILIARY VALVE TOO)



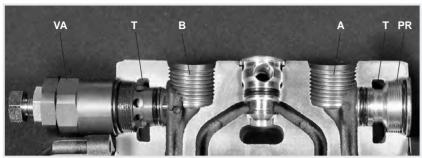




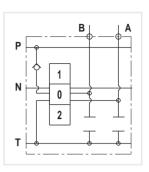


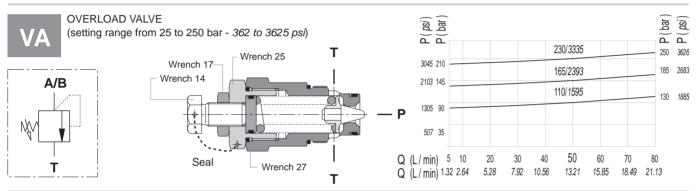
External piloted venting valve

AUXILIARY VALVES

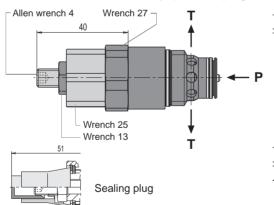


This picture shows the position of the auxiliary valves For the tightening torque please see page 24.





OVERLOAD AND ANTI-CAVITATION VALVE (setting range from 25 to 280 bar - 362 to 4061 psi) first spring (setting range from 100 to 400 bar - 1450 to 5800 psi) second spring



7.92 10.56 13.21 15.85 18.49 21.13 Q (US gal/min) 300 4351 250 3626 00 par) d (par) 2900 2900 (isd 2175 d 1450 OVERLOAD 50 725 0 ٥ 10 20 30 40 50 60 70 80 Q (L/min)

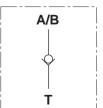
0 2.64 5.28 7.92 10.56 13.21 15.85 18.49 21.13 Q (US gal/min) 87 ANTI-CAVITATION 72.5 5 △p(bar) psi 4 58 43.5 d ⊲ 3 2 29 14.5 10 20 50 0 30 40 60 70 80 Q (L/min)

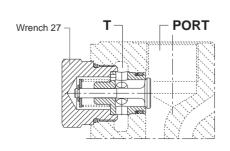
Both valves AR and VR are adjustable without oil leaking. Further more, both have a security device to avoid valve sticking

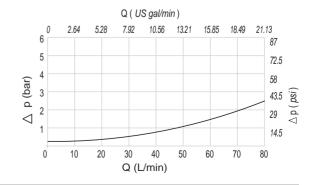


A/B

Т



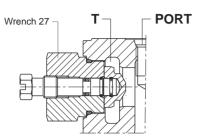




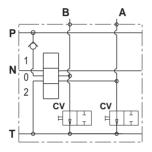


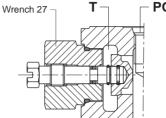


AUXILIARY VALVES

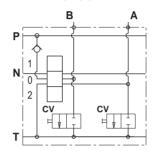


OPENED





CLOSED



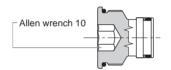
PORT



CONVERSION VALVE

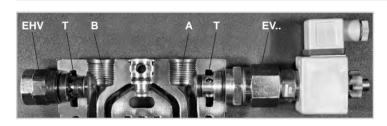
The conversion valve CV allows to obtain single acting function starting from double acting spool just connecting the port to tank. For example starting from a double acting spool to obtain a single acting "A" port function, we must open the CV valve sending "B" port to tank line.



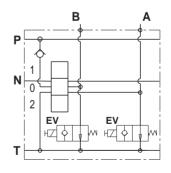




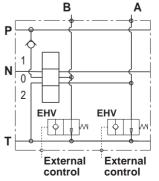




As you can read at page 25, all venting valve are also available as auxiliary venting valve, the commercial codes and technical data are the same of page 25.









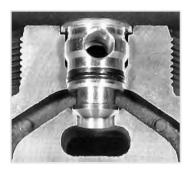


Electric venting valve



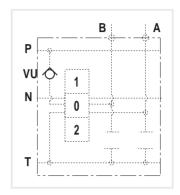
Electric venting valve

OTHER VALVES



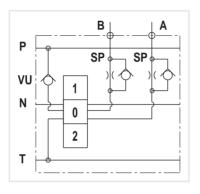
This is the load check valve VU which is built in every working module between ports and you need not to specify in phase of ordering because it is part of the module.

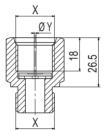
In the series circuit working module you can have another load check valve on the series line as you can see in the drawing of page 17.

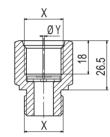


SP

Flow restrictor $P \longrightarrow A/B$

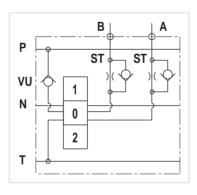


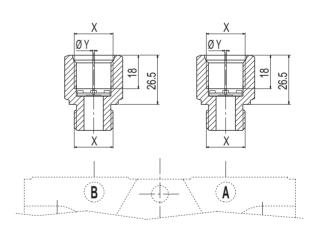




ST

Flow restrictor A/B → T



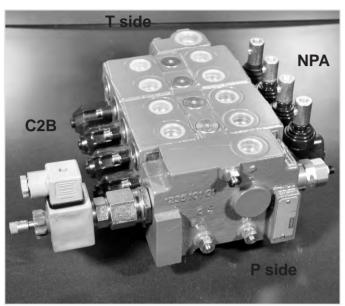


For tightening torque, please refer you to page 5.

X			φ Y					
available threads			available measures					
*M22 x 1.5	SAE 10	G 1/2	ф2	φ 2.5	φ 2.75	ф3	ф 3.25	φ 4.5

^{*}Available for quantity, please contact our sales dept.

SPOOL CONTROLS AND SPOOL POSITIONINGS

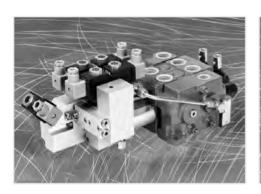


This picture shows the VD8A assembled, in this case you have a manual control "NP" on A side and a spring return in neutral position "C2" on B side. In this case the manual control "NP" is used directly to have the spool movement, in other case, for example with electro-hydraulic control, there is only a safety lever. Considering that VD8A is a simmetrical valve, all spool controls and positionings can be placed on both sides A or B.In case of hydraulic kickout "G2 - G4 - G5" and with spools types 13 - 17 - 18, you can also decide A or B side but after that this is the final position because with this type of control and spools the working module have a special machining.

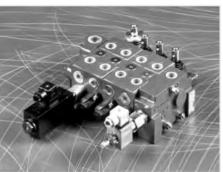
In this and following pages you can find all spool controls and spool positionings, they are all assembled with socket hexagon head screw or in some case hexagon head screw:

M5 x 0.8 with tightening torque of 4.5 ± 0.5 Nm.

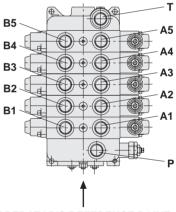
The drw. here below show the reference to fix A and B side from the point of view of the operator.



VD8A - 2 working modules with electro-hydraulic controls H1/H2 - H3/H4



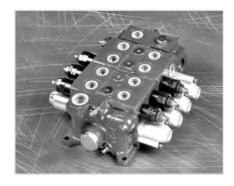
VD8A - 4 working modules (2 bi-blocks) with miscellaneous of controls NP - E7/E8 - C2 and EV on inlet m.



OPERATOR'S REFERENCE POINT



VD8A - 4 working modules with electro-pneumatic control P1/P2



VD8A - 4 working modules (2 bi-blocks) with hydraulic prop. control IP

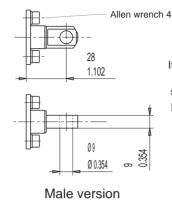
https://oilsolutions.com.au/

SPOOL CONTROLS

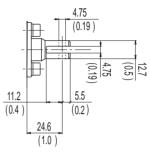
SL

Without lever box





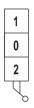
If you order SL we will supply the male version, which is the standard.For the female version please specify it when ordering.

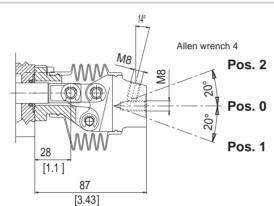


Female version available for spools from 01 to 06 for the other spools please get in touch with our sales dept.

NL

Low effort protected lever



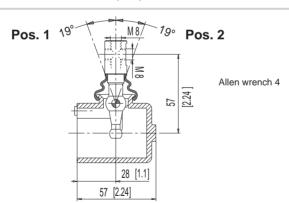


This lever can be assembled turned of 180°

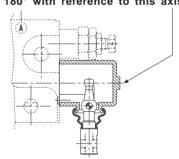
NP

Standard protected lever



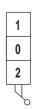


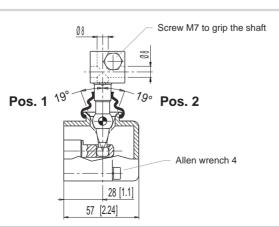
This lever can be assembled turned of 180° In case of auxiliary valve it must be assembled turned of 180° with reference to this axis



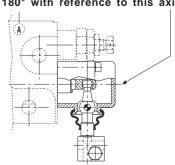
MP

Protected clamp lever





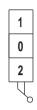
This lever can be assembled turned of 180° In case of auxiliary valve it must be assembled turned of 180° with reference to this axis



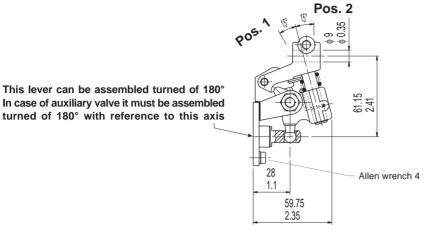
VD8A



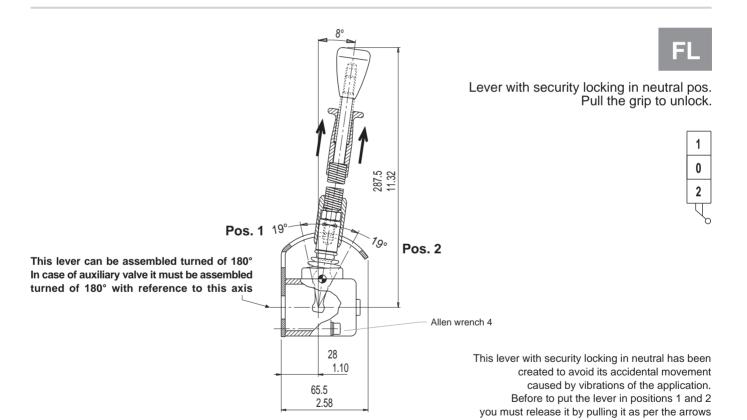
Lever with security locking in neutral pos. Side shift to unlock



This lever with security locking in neutral pos. has been created to avoid its accidental movement caused by vibrations of the application.



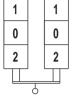
Necessary side shift to release the security locking

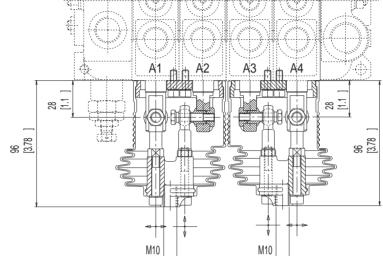


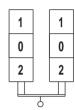


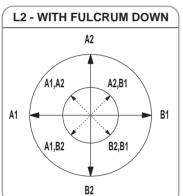
Cross lever for 2 spools fulcrum on down-stream spool

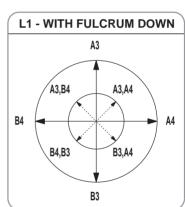
Cross lever for 2 spools fulcrum on up-stream spool











STANDARD SHAFTS

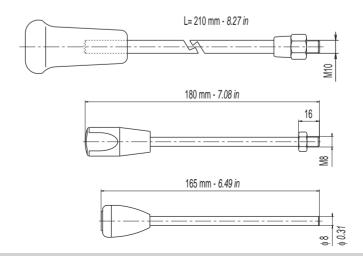
For different diameter and/or length, please get in touch with our sales dept.

Shaft with ergonomic knob for cross lever L1/L2

R202 8996 0

Shaft with threaded end R202 9018 0

Shaft for clamp lever R202 8839 0





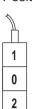
End spool with hole \$9 mm.

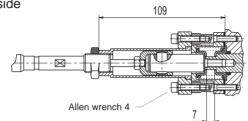
D1

Devices for cable remote control for both the ends of spool. For more details about cables, please consult our catalogue cable remote controls.

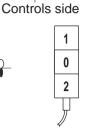


End spool with threaded hole M7 Positionings side





Allen wrench 4



E1

Electric push-pull control 3 positions 12 Vdc

Working conditions for this control:

Flows up to 70 l/min - 18.5 US gpm Pressure up to 240 bar - 3500 psi



1

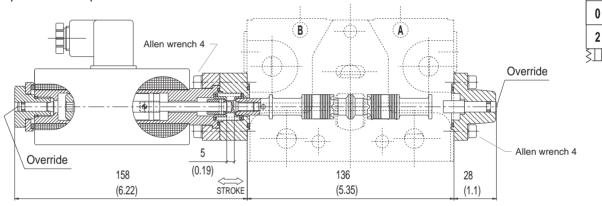
The stroke for this control is of 5 mm, for this reason the spools are different of standard.

The available spools are from 01 to 06.

Without lever for electric control with override device

E2

Electric push-pull control 3 positions 24 Vdc



ELECTRICAL DATA

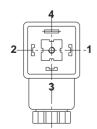
PUSH - PULL SOLENOID

- VOLTAGE: 12Vdc OR 24Vdc

- COIL POWER: 60 Watt at 20°C

- PROTECTION INDEX WITH CONNECTOR: IP 65

- HEAVY DUTY 70%



CONNECTOR DIN 43650 - A/ISO 4400

ELECTRIC CONNECTIONS SCHEME

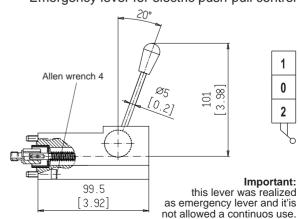


NEGATIVE POLE
 SPOOL IN
 SPOOL OUT

3) SPOOL OUT4) GROUND WIRE

To avoid an excessive wearing of the contacts, depending on the sparking of these parts, we suggest a suitable protection (for example diodes)

Emergency lever for electric push-pull control



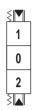
https://oilsolutions.com.au/

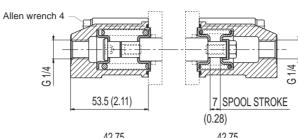
DIRECTIONAL CONTROL VALVE SECTIONAL TYPE



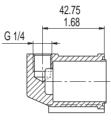
Important: when you order please specify top or side ports

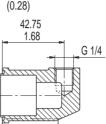
Hydraulic proportional control

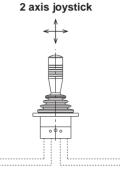




XA, XB, XF PORTS: G 1/4





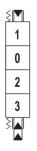


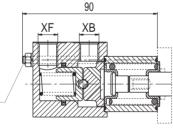
For more information please consult our catalogue SHRC hydraulic remote controls.

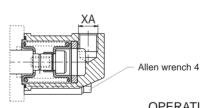
Salami hydraulic

Spool Stroke (in) 0.04 0.08 0.12 0.16 0.19 0.23 0.27 △ p (bar) ∆ p (psi) Spool Stroke (mm)

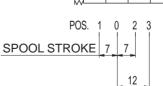
Hydraulic proportional control with third float position (spool in)



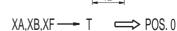




OPERATING SCHEME BA



XB



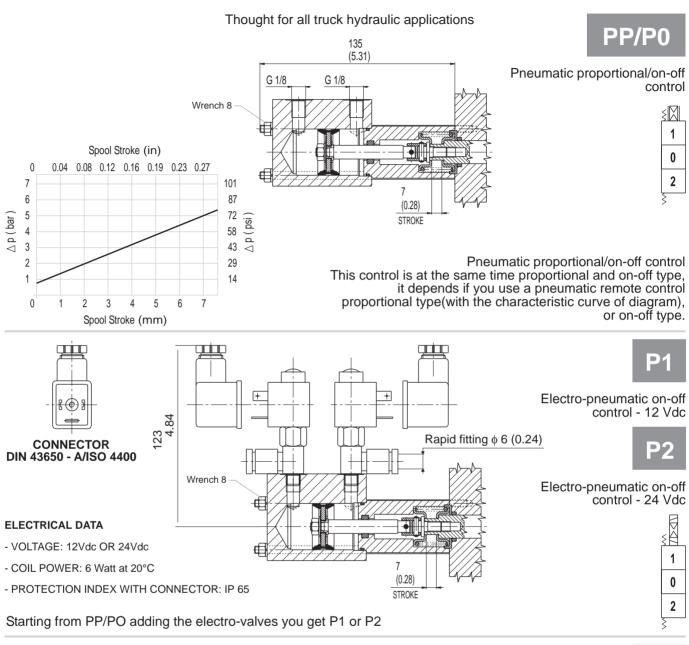
Pressure
$$\longrightarrow$$
 XB \Longrightarrow POS. 1

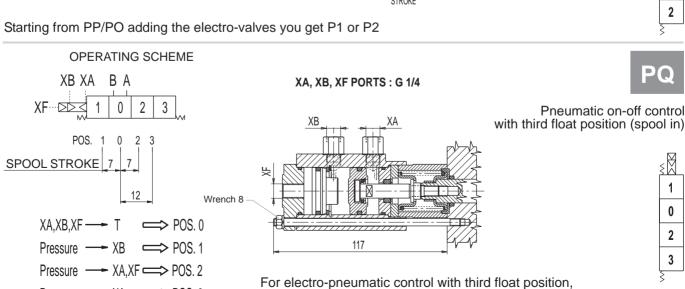
Wrench 8

Spool Stroke (in) Spool Stroke (mm)

△ p (bar)

VD8A





please get in touch with our sales dept.

→ XA

DIRECTIONAL CONTROL VALVE **SECTIONAL TYPE**

Preliminary specifications about electro-hydraulic controls

Before to introduce electro-hydraulic single modules it is necessary to specify the adding hydraulic components necessary for the right functioning of it. As you can see in the drawing and hydraulic scheme it needs a pressure reducing valve "PRV" at the inlet of piloting circuit that reduce the pressure of "P" line at the max value of 25 bar (363) psi), a back pressure "CPV" on neutral line that assure a min. pressure of 8 bar (116 psi) and some accessories as fittings, pipe and filter. The pressure reduction at the piloting circuit inlet and the minimum value of

Pp - in case without pipe thread G1/8 female Pp line (- PRV Tp - G 1/8 Tp line CPV CONNECTOR DIN 43650 - A/ISO 4400 PROTECTION INDEX IP65 (4) (4)

neutral line can be obtained also with external standard valves made by valve manufacturers, for this reason Salami electro-hydraulic controls can be supplied without "PRV" and "CPV".

In this case is necessary to specify it in phase of order.

Our standard supply has the "Tp" port opened, we recommend to connect it directly to tank because a counter-pressure could be cause of malfunction.

With reference to page 20, "OUTLET MODULES", the outlet U8 is shown in the hydraulic scheme here below, remember that with a special sleeve instead of "CPV" valve you can change U8 in a power beyond outlet type "U5".

INDEX

PRV - pressure reducing valve

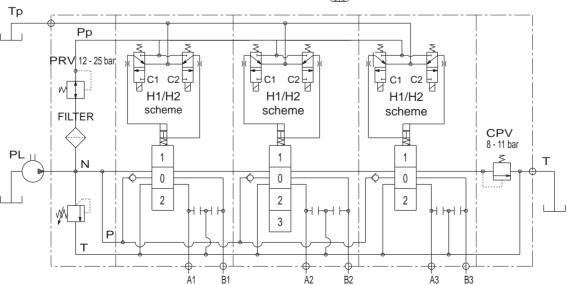
CPV - counter pressure valve

Pp - pressure piloting line

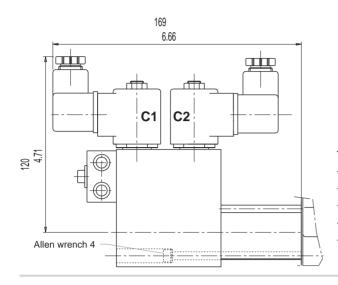
Tp - tank piloting line

PL - P port

TL - T port







OPERATING INSTRUCTIONS please see the hydraulic circuit

of page before

C1 - C2 coils de-energized ⇒ POS. 0 coil energized **C1** ⇒ POS. 1

C2 ➡ POS. 2 coil energized

TECHNICAL DATA

- MAX PRESSURE IN "P" 30 bar - MAX FLOW 2 l/min - AVAILABLE VOLTAGE 12 - 24 Vcc - COIL RESISTANCE 12Vdc:7.2Ω - 24Vdc:41.5Ω - POWER 14 W (20°C)

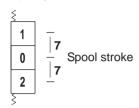
ON-OFF electro-hydraulic control 12 Vdc

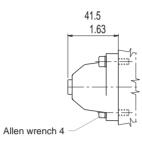
ON-OFF electro-hydraulic control 24 Vdc

sales@oilsolutions.com.au

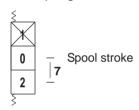
SPOOL POSITIONINGS

Spring centered to neutral position





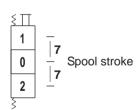
Two positions (neutral/pos. 2) with spring return in neutral

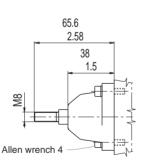


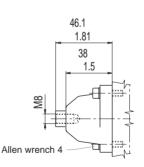
C6

Two positions (neutral/pos. 1) with spring return in neutral

Spring centered to neutral (pivot threaded male for remote control)



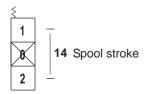


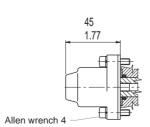


Spring centered to neutral (pivot threaded female for remote control)

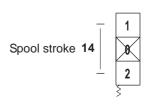
Spool stroke
$$7 - \frac{7}{1} = \frac{1}{0}$$

Two positions (pos. 1/pos. 2) with spring return in pos. 1





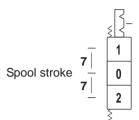
Two positions (pos1/pos. 2) with spring return in pos. 2



DIRECTIONAL CONTROL VALVE SECTIONAL TYPE

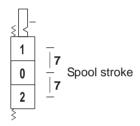
R2

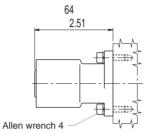
Detent on pos. 1/pos. 2 with spring return in neutral



R5

Detent on pos. 2 with spring return in neutral





R4

Detent on pos. 1 with spring return in neutral

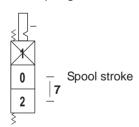
Spool stroke
$$7 \begin{vmatrix} 7 \\ 7 \\ 7 \end{vmatrix} = 2$$

R7

Two positions with detent on pos. 1 with spring return in neutral

R6

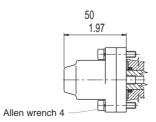
Two positions with detent on pos. 2 with spring return in neutral



CO

Detent on each intermediate positions

$$\begin{array}{c|c}
\hline
1 \\
\hline
0 \\
\hline
2
\end{array}$$
Spool stroke



Detent on pos. 1/pos. 2 and neutral position

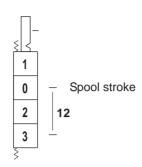
Spool stroke
$$7 \begin{vmatrix} 7 \\ 7 \\ 7 \end{vmatrix} = 2$$

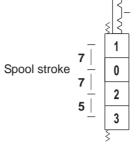
VD8A

DIRECTIONAL CONTROL VALVE SECTIONAL TYPE

F1

Detent on pos. 3 with spring return in neutral



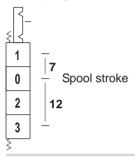


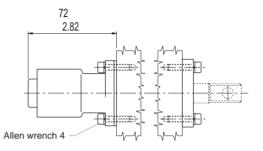
F2

Detent on pos. 1/pos. 2/pos. 3 with spring return in neutral

F3

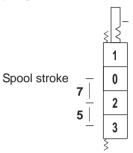
Detent on pos. 1/pos. 3 with spring return in neutral





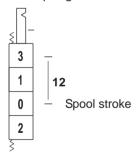
F4

Detent on pos. 2/pos. 3 with spring return in neutral



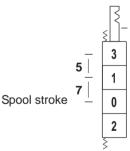
F5

Detent on pos. 3 with spring return in neutral



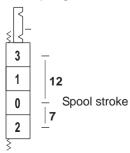
F6

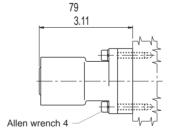
Detent on pos. 1/pos. 3 with spring return in neutral



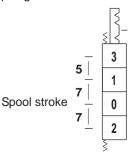
F8

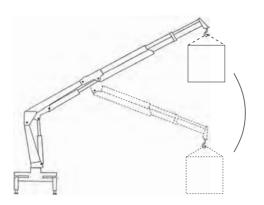
Detent on pos. 2/pos. 3 with spring return in neutral





Detent on pos. 1/pos. 2/pos. 3 with spring return in neutral





For manifacturers using load and overturning torque limiting device for hydraulically operated cranes, Salami VDM8 valve is available with some devices that allow the manifacturer to supply a pressure signal inside itself. This pressure signal, acting on the area of a piston of 18 mm(0.71 inc.) diameter, reacts to the force of the manual control bringing back the spool at the position 0.

These devices are only available in combination with manual control.

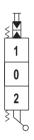
Device for spool positioning in 0 from the positions 1 and 2 by an external pressure signal. For tie-rod connection.

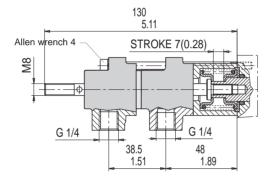
Device for spool positioning in 0 from the positions 1 and 2 by an external pressure signal.

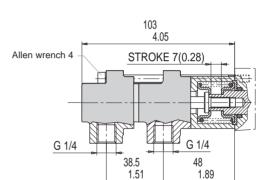
1

0

2



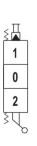


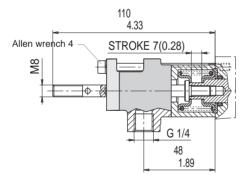


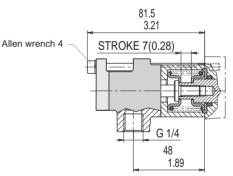
Device for spool positioning in 0 from the position 1 D8 by an external pressure signal. For tie-rod connection.

Device for spool positioning in 0 from the position 1 by an external pressure signal.









Device for spool positioning in 0

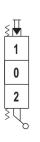
2

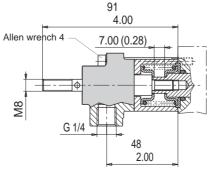
⋛⋒ 1

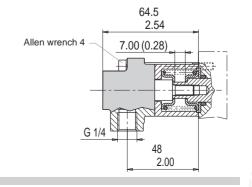
0

Device for spool positioning in 0 from the position 2 by an external pressure signal. For tie-rod connection.

from the position 2 by an external pressure signal.





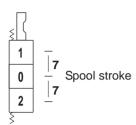


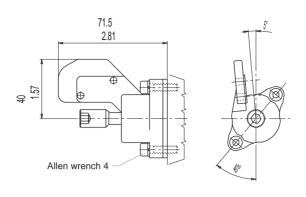
1800-OILSOL 1800-645765

DIRECTIONAL CONTROL VALVE SECTIONAL TYPE



Pre-arrangement for electrical device



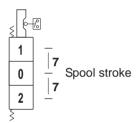


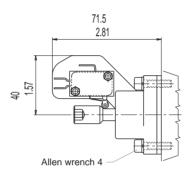
CM

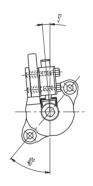
MICROSWITCH TYPE: SAIA - BURGESS XGK - 88

For more information please get in touch with our sales dept.

Spool positioning with microswitch to start an electric motor (available also for single acting spools)



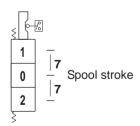


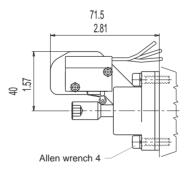


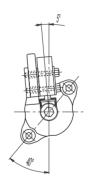
PROTECTION INDEX IP65

CW

Spool positioning with waterproof microswitch to start an electric motor (available also for single acting spools)



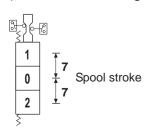


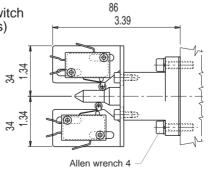


PROTECTION INDEX IP67

CD

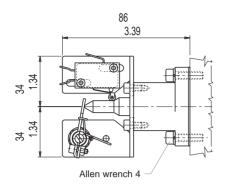
Spool positioning with double microswitch (available also for single acting spools)

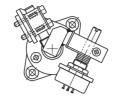




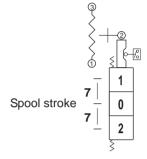
PROTECTION INDEX IP65

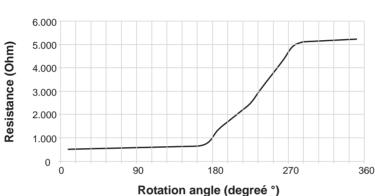
DIRECTIONAL CONTROL VALVE SECTIONAL TYPE





Spool positioning with microswitch to start an electric motor and potentiometer to run up speed motor (available also for single acting spools)

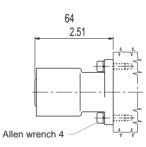


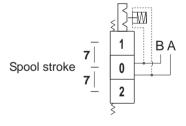


IMPORTANT:

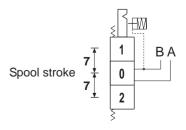
When you order, please specify the setting pressure of the device. With this type of spool positiong a special machining of the body is required.

Detent on pos. 1/pos. 2 with hydraulic kick-out

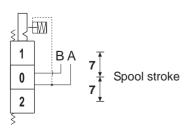


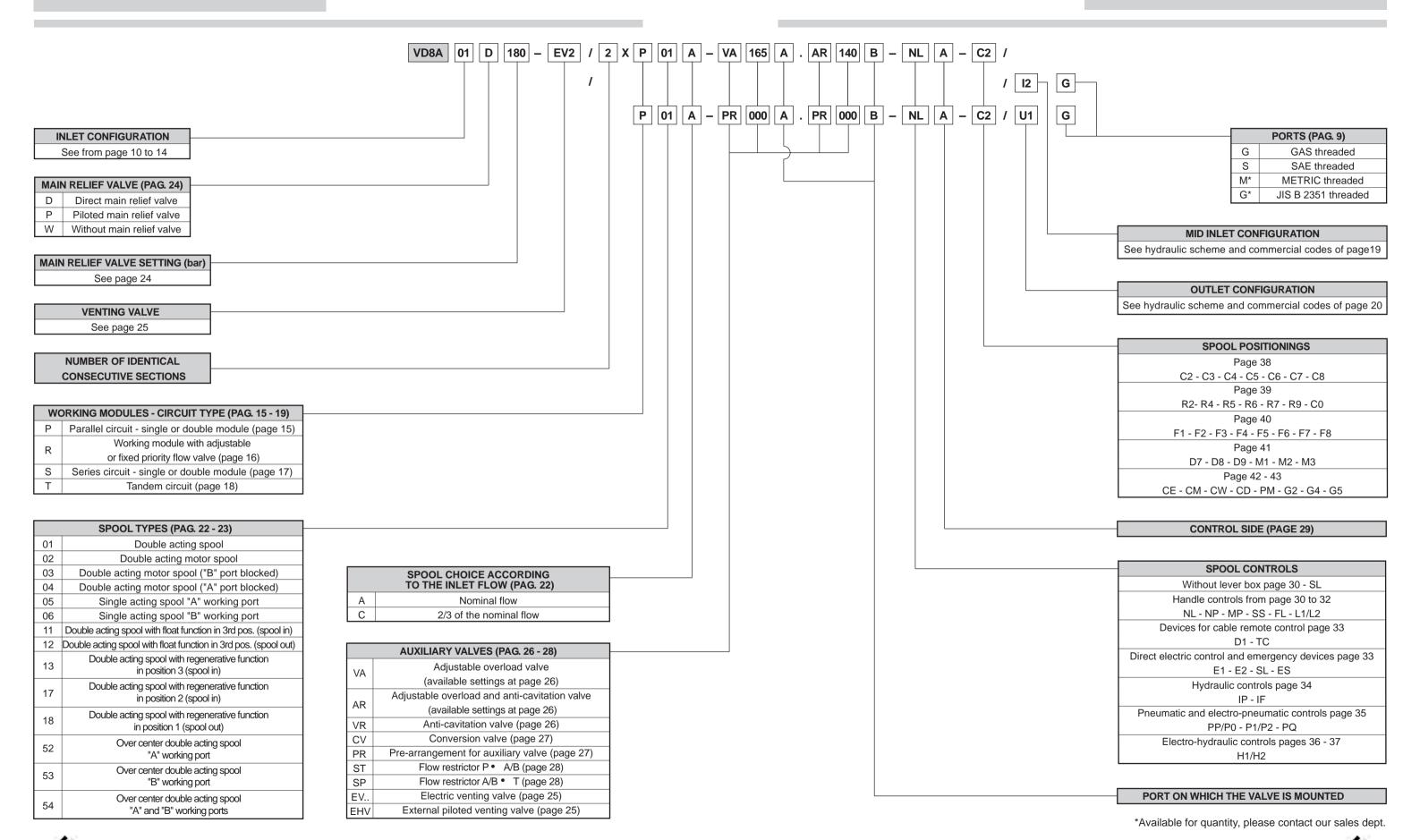


Detent on pos. 1 with hydraulic kick-out



Detent on pos. 2 with hydraulic kick-out





E0.06.0911.02.02





DESCRIPTION OF THE NEW PRODUCT IDENTIFICATION LABEL

Based on the firm certification ISO 9001 - UNI EN 29001, section 4.8 (identification and tracebility of the product), we have adopted a new identification label starting from the 1st march 1995. Pls, see following example:

Α								
В								
	3	D						
E	salami	∃F	G					

A = Product short descritpion (eg. VD8A/FDD/U4G).

B = Customer part number.

C = Salami part number (eg. 6235 0025 0).

D = Production code (for Salami management)

E = Rotation sense (only for pumps).

F = Production date (see data sheet here below)

G = Progressive number of assembling.

Only for pumps 2PB and 2PZ (except triple 2PB) the identification product is marked on the top of the pump body as shown here below:

SALAMI 09/02 MADE IN ITALY 4010998 612271211 nr. 13 2PB 19S B25 B5

Product short description.

Salami part number and progressive number of assembling.

Production code (for Salami management).

Mounth and year of made: maybe in the future you can find this type of production date in the label beside too.

Rotation sense.

ASSEMBLED	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
JANUARY	7 A	8 M	9 M	0 M	1 M	2 M	3 M	4 M	5 M	6 M	7 M	08M	09M	10M	11M	12M
FEBRUARY	7 B	8 N	9 N	0 N	1 N	2 N	3 N	4 N	5 N	6 N	7 N	08N	09N	10N	11N	12N
MARCH	70	8 P	9P	0 P	1 P	2 P	3 P	4 P	5 P	6 P	7 P	08P	09P	10P	11P	12P
APRIL	7 D	8 Q	9 Q	ØQ	1 Q	2 Q	3 Q	4 Q	5 Q	6 Q	7Q	08Q	09Q	10Q	11Q	12Q
MAY	7E	8 R	9R	0R	1 R	2 R	3 R	4 R	5R	6 R	7 R	08R	09R	10R	11R	12R
JUNE	7F	85	98	05	15	25	35	45	58	68	78	085	095	105	115	125
JULY	7 G	8 T	91	0 T	1 T	2 T	3 T	4 T	5 T	6 T	7 T	08T	7E0	10T	1 1 T	12T
AUGUST	7 H	8U	90	0 U	1 U	2 U	3U	4 U	5 U	6 U	7 U	08U	09U	10U	1 1 U	12U
SEPTEMBER	7 I	8 V	9V	0 V	1 V	2V	3 V	4 V	5 V	6 V	70	08V	09V	10V	110	120
OCTOBER	7 J	82	92	0Z	12	27	32	4 Z	52	62	72	08Z	09Z	102	112	122
NOVEMBER	7 K	8 X	9X	ΘX	1 X	2 X	3 X	4 X	5 X	6 X	7 X	08X	09X	10X	11X	12X
DECEMBER	7L	8 Y	9 Y	0 Y	1 Y	2 Y	3 Y	4 Y	5 Y	6 Y	7 Y	08Y	09Y	10Y	11Y	12Y



WARRANTY

- We warrant products sold by us to be free from defects in material and workmanship.
- Our sole obligation to buyer under this warranty is the repair or replacement, at our option, of any products or parts thereof which, under normal use and proper maintenance, have proven defective in material or workmanship, this warranty does not cover ordinary wear and tear, abuse, misuse, averloading, alteration.
- No claims under this warranty will be valid unless buyer notifies SALAMI in writing within a reasonable time of the buyer's discovery of such defects, but in no event later than twelve (12) mounths from date of shipment to buyer.
- Our obligation under this warranty shall not include any transportation charges or cost of installation, replacement, field repair, or other charges related to returning products to us; or any liability for directs, indirects or consequential damage or delay. If requested by us, products or parts for which a warranty claim is made are to be returned transportation prepaid to our factory. The risk of loss of any products or parts thereof returned to SALAMI will be on buyer.
- No employee or representative is authorized to change any warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of SALAMI.



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