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Use of the products in this catalogue must comply with the operating limits given in the technical specifications. The type of application and operating conditions must be assessed as normal or in malfunction in order to avoid endangering the safety of people and/or items.

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The products shown on this catalog are parts of v.p.s. brevini **line.**

INTRODUCTION

Read this instructions carefully before installation. All operations must be carried out by qualified personnel following the instructions.

The user must periodically inspect, based on the conditions of use and the substances used, the presence of corrosion, dirt, the state of wear and correct function of the valves.

HYDRAULIC FLUID

Use only mineral oil (HL, HLP) according to DIN 51524. Use of other different fluids may damage the good operation of the valve.

VISCOSITY

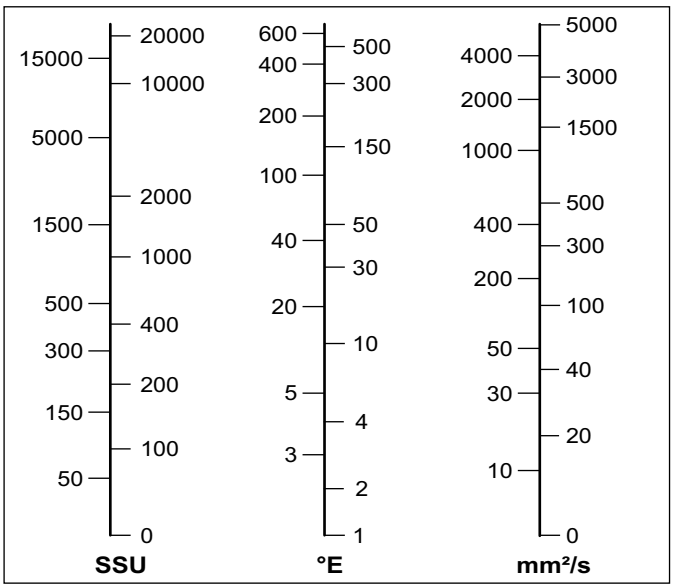
The oil viscosity must be in the range of 10 mm²/s to 500 mm²/s.
Recommended oil viscosity 46 mm²/s (32 mm²/s for Cartridge valves)

Table 1: ISO viscosity grades

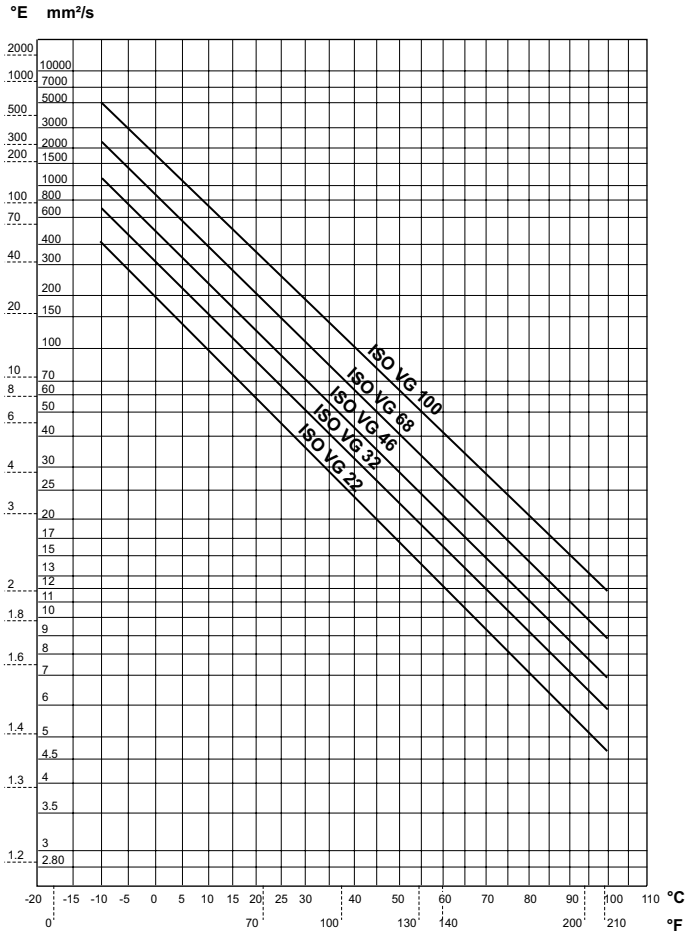
Viscosity grade	Average kinematic viscosity mm²/s @ 40°C	Kinematic-viscosity limits mm²/s @ 40°C	
		min.	max.
ISO VG 10	10	9.00	11.0
ISO VG 15	15	13.5	16.5
ISO VG 22	22	19.8	24.2
ISO VG 32	32	28.8	35.2
ISO VG 46	46	41.4	50.6
ISO VG 68	68	61.2	74.8
ISO VG 100	100	90.0	110

= Values used in the chart "Oil viscosity according to temperature"

CONVERSION TABLE SSU / °E / mm²/s



OIL VISCOSITY ACCORDING TO TEMPERATURE



CONTAMINATION

Oil contamination is the main cause of faults and malfunction in hydraulic systems. Abrasive particles in the fluid erode or block moving parts, leading to system malfunction.
The valves we are offering do not require filtering characteristics any higher than those needed for usual hydraulic components such as pumps, motors, etc.

However, accurate filtering does guarantee reliability and a long life to all the system's hydraulic parts. Reliable performance and long working life for all oil-pressure parts is assured by maintaining the level of fluid contamination within the limits specified in the data sheet of the valve.

Hydraulic fluid must also be cleaned properly before filling the hydraulic circuit, especially when commissioning a new system, as this is when the oil contamination generally peaks due to its flushing effect on the components, and the running-in of the pump.
Maximum contamination level is required on datasheet of the valve according to ISO 4406:1999.

In the following table there is the correspondence between ISO 4406:1999 and old standard NAS 1638 for information purpose:
The standard ISO 4406:1999 defines the contamination level with three numbers that relate with the number of particles of average dimension equal or greater than 4 µm, 6 µm e 14 µm, in 1 ml of fliuid.

In following table there is a reference to reccomended contamination level and correspondence with old NAS 1638 standard.

Table 2: Reccomanded contamination level.

Type of system Type of valve	Oil filtration recommendations		
	Cleanliness class recommended		Absolute filtration micron rating (**)
	ISO 4406 : 1999	NAS 1638 (*)	
Systems or components operating at HIGH PRESSURE > 250 bar (3600 psi) HIGH DUTY CYCLE APPLICATIONS Systems or components with LOW dirt tolerance	18 / 16 / 13	7 - 8	5
Systems or components operating at MEDIUM / HIGH PRESSURE Systems and components with moderate dirt tolerance	19 / 17 / 14	9	10
Systems or components operating at LOW PRESSURE < 100 bar (1500 psi) LOW DUTY CYCLE APPLICATIONS Systems and components with GOOD dirt tolerance	20 / 18 / 15	10 - 11	20

* Contamination class NAS 1638: it is determined by counting the total particles of different size ranges contained in 100 ml of fluid.

** Absolute filtration: it is a characteristic of each filter, it refers the size (in micron) of the largest sperical particle wich may pass through the filter.

WORKING TEMPERATURES

Ambient temperature range: -25°C to +60°C
Fluid temperature range (NBR seals): -25°C to +75°C
Thermal shocks can affect the performance and the expected life of the product, hence it is necessary to protect the product from these conditions.

SEALS

O-rings made in Acrylonitrile Butadiene (NBR) are normally fitted on the valves. The backup rings that protect the O-rings are also made in NBR, or sometimes PTFE. Both the O-rings and the backup rings are suitable for the working temperatures mentioned above.
For different temperatures, contact our sales department.

ELECTRICAL POWER SUPPLY

The combination of permanent overvoltage and very hot temperatures can stress the solenoid. Therefore always a good heat dissipation and voltage level has to be assured.

INSTALLATION

The feet of the valve must always and perfectly rest on a plane surface.
Do not tamper the tie rod nuts (control valves) to avoid damaging the distributor.
Observe the size of the fitting threads.
Do not use solvents to avoid damaging the rubber parts of the valves.

USE AND MAINTENANCE

Observe the functional limits indicated in the technical catalogue
On a periodic basis and based on the conditions of use, check for cleanliness, state of wear or fractures and correct performance of the valve.
If the O-rings are damaged, replace them with those supplied by the manufacturer.
To assure the best working conditions at all time, check the oil
and replace it periodically (after the first 100 working hours and then after every 2000 working hours or at least once every year).
Attention: all installation and maintenance intervention must be performed by qualified staff.

TRANSPORT AND STORAGE

The valve must be handled with care to avoid damage caused by impact, which could compromise its efficiency.
In the case of storage, keep the valves in a dry place and protect against dust and corrosive substances.
When storing for periods of more than 6 months, fill the valve with preserving oils and seal it.

CONVERSION CHART

Type	SI units		Alternative units		Conversion factor
Force	Newton	(N) [kgm/s²]	Kilogram force	(kgf)	1 kgf = 9.807 N
			pound force	(lbf) [lbf/s²]	1 lgf = 4.448 N
Length	millimeter	(mm) [10 m]	inch	(in)	1 in = 25.4 mm
	meter	(km) [1000 m]	yard	(yd) [3ft]	1 m = 1.0936 yd
	kilometer	(km) [1000 m]	mile	(mile) [1760 yd]	1 mile = 1.609 km
Torque	Newton meter	(Nm)	pound force.feet	(lbf.ft)	1 lbf.ft = 1.356 Nm
Power	kiloWatt (kW)	[1000 Nm/s]	horsepower	(hp)	1 kW = 1.341 hp
			metric horsepower	(CV)	1 kW = 1.36 CV
Pressure	MegaPascal	(MPa) [N/mm²]	bar		1 MPa = 10 bar
			psi (lbf/ln²)		1 MPa = 145 psi
			ton/f/ln²		1 ton/f/ln² = 15.45 MPa
Flow rate	liter/min	(l/min)	UK gal/min		1 UK gal/min = 4.546 l/min
			US gal/min		1 US gal/min = 3.785 l/min
Temperature	Degrees Celsius	(°C)	Farenheit	(°F)	1°F = 1.8 °C+32

General specifications

MAIN CHARACTERISTICS

All the production VPS Brevini want to be a high quality production. Infact the project of each single valve and the choice of the better materials, machined with the highest tecnologies and under the strongest controls in each process, allow highest characteristics and numerous applications described in the following pages. Furthermore:

1. all the casting are made in Shell-Moulding, in special graphite cast iron. This kind of cast iron is in higt resistance, and it allows to have, with the same external overall dimensions, bigger internal gallery, and lower pressure drops;
2. all spools are made in high resistance steel, nichel plated, radial balanced and with special notches in order to have a better sensibility;
3. all springs are made in high resistence steel. Pressure setting springs are pressed before testing;
4. max tolerance of spool housing is 2 micron;
5. internal leakage at 120 bar, 50° C and oil 30 cSt is beetwen 1 and 2 cm^3/min, depending from the kind of spool and the kind of valve.

GENERAL CONDITION OF WORK

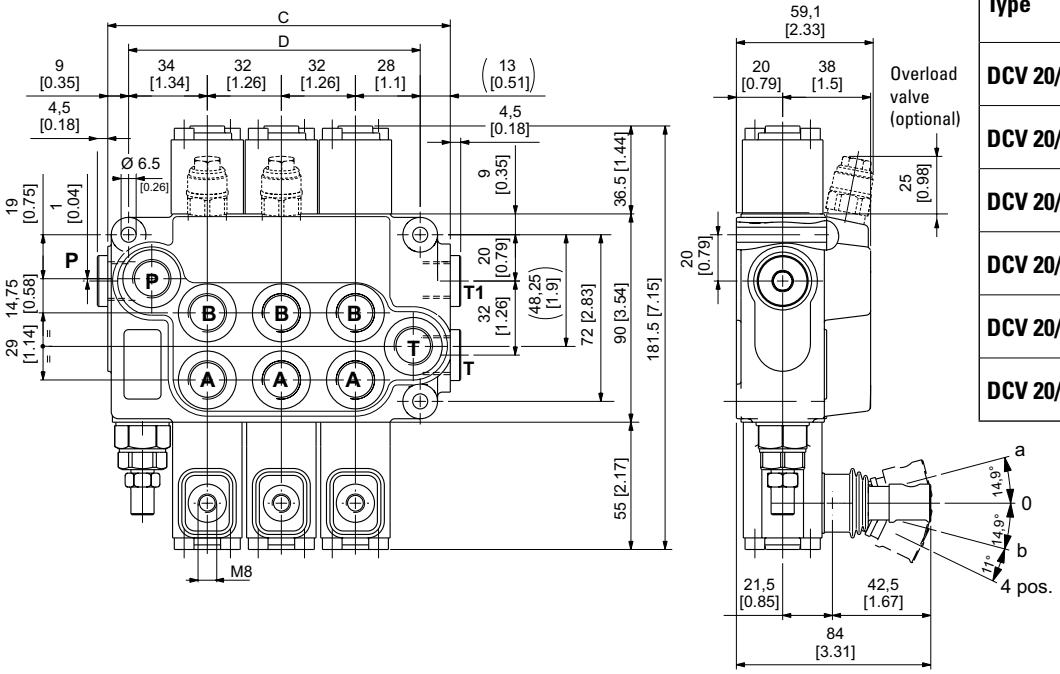
Working temperature	-25 °C ÷ +75 °C
Max back pressure	20 bar (290 PSI)
Max contamination level	NAS 1638 class 9 (19/16 ISO-4406)
Fluid oil	Mineral oil
Kinematic viscosity	10 ÷ 460 mm^2/s
Filtration	β 12 ≥ 75

Spool are available with different metering, marine protected, Viton® seals, special spring, etc.

			MONOBLOCK VALVES		MODULAR VALVES			
			DCV 20	DCV 40	DCV 30	DCV 50	DCV 80	DCV MG
Features	Max section	N.o	6	6	12	12	12	10
	Max flow	l/min	40	70	40	70	120	230
		GPM	10.6	18.5	10.6	18.5	31.7	60.7
	Max pressure	BAR	400	400	350	350	350	350
		psi	5800	5800	5075	5075	5075	5075
Circuit	Parallel		●	●	●	●	●	●
	Series				●	●	●	●
	Tandem				●	●	●	●
Main relief valve	Direct		●	●	●			
	Piloted					●	●	●
Port relief valves	Overload		●	●	●	●	●	●
	Anti cavitation				●	●	●	●
	Combined				●	●	●	●
Threads	BSP		3/8"	1/2"	3/8"	1/2"	3/4"	1" - 3/4" (1)
				3/8" (1)			1/2" (1)	
	SAE		9/16" - 18UNF (SAE 6)	3/4" - 16UNF (SAE 8)	9/16" - 18UNF (SAE 6)	7/8" -1 4UNF (SAE 10)	7/8" - 14UNF (SAE 10)	1" 5/16 - 12UNF (SAE 16)
				7/8" 14UNF (SAE 10) (1)			1" 5/16 - 12UNF (SAE 12) (1)	
Spool stroke	A ÷ B	mm	± 5	± 5	± 5	± 5	± 7	± 8
		inch	± 0.20	± 0.20	± 0.20	± 0.20	± 0.28	± 0.31
	4a position	mm	- 3.5	- 5	- 3.5	- 5	- 5.5	- 5.5
		inch	- 0.14	- 0.20	- 0.14	- 0.20	- 0.22	- 0.22
	Series	mm	—	—	± 4.5	± 4.5	± 5.5	± 8
		inch			± 0.18	± 0.18	± 0.22	± 0.31

(1) Threads availables on request

OVERALL DIMENSIONS



Type	C mm [inch]	D mm [inch]	Weight kg [lb]
DCV 20/1	80 [3.15]	62 [2.44]	2.10 [4.62]
DCV 20/2	112 [4.41]	94 [3.70]	3.25 [7.15]
DCV 20/3	144 [5.67]	126 [4.96]	4.35 [9.57]
DCV 20/4	176 [6.93]	158 [6.22]	5.45 [11.99]
DCV 20/5	208 [8.19]	190 [7.48]	6.55 [14.41]
DCV 20/6	240 [9.45]	222 [8.74]	7.65 [16.83]

mm [inch]

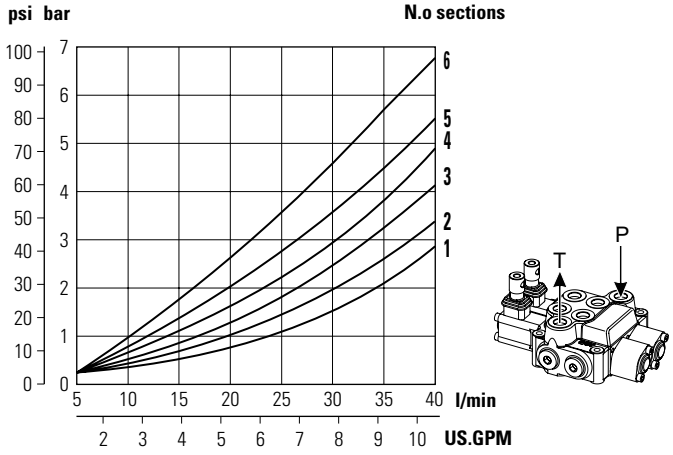
CHARACTERISTIC PRESSURE DROP FLOW CURVES

Technical data

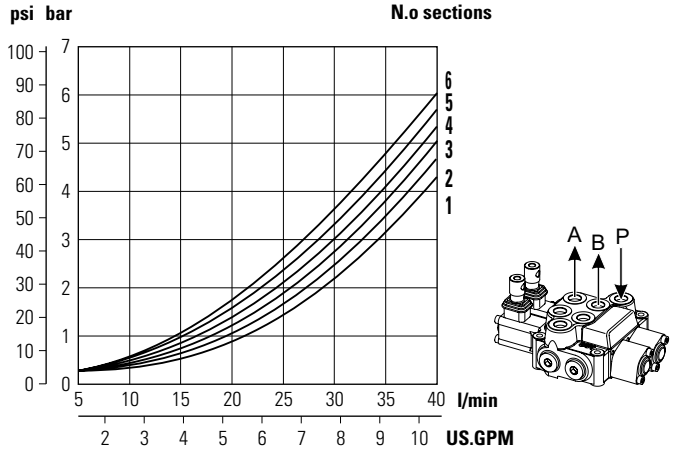
Flow	l/min	40
	GPM	10.6
Max pressure	BAR	400
	psi	5800
Oil viscosity	CST	30
Oil temperature	°C	50

Metering curves are different for each typee of spool.
Therefore particular curves are supplied on request

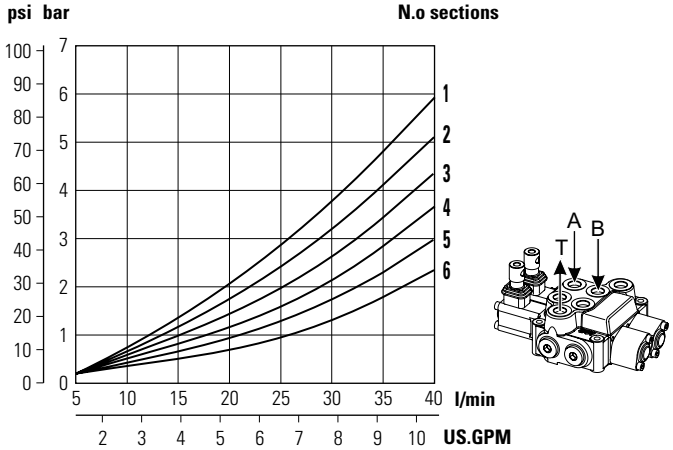
Inlet pressure drop between inlet port (P) and outlet port (T)



Inlet pressure drop between inlet port (P) and work ports (A/B)

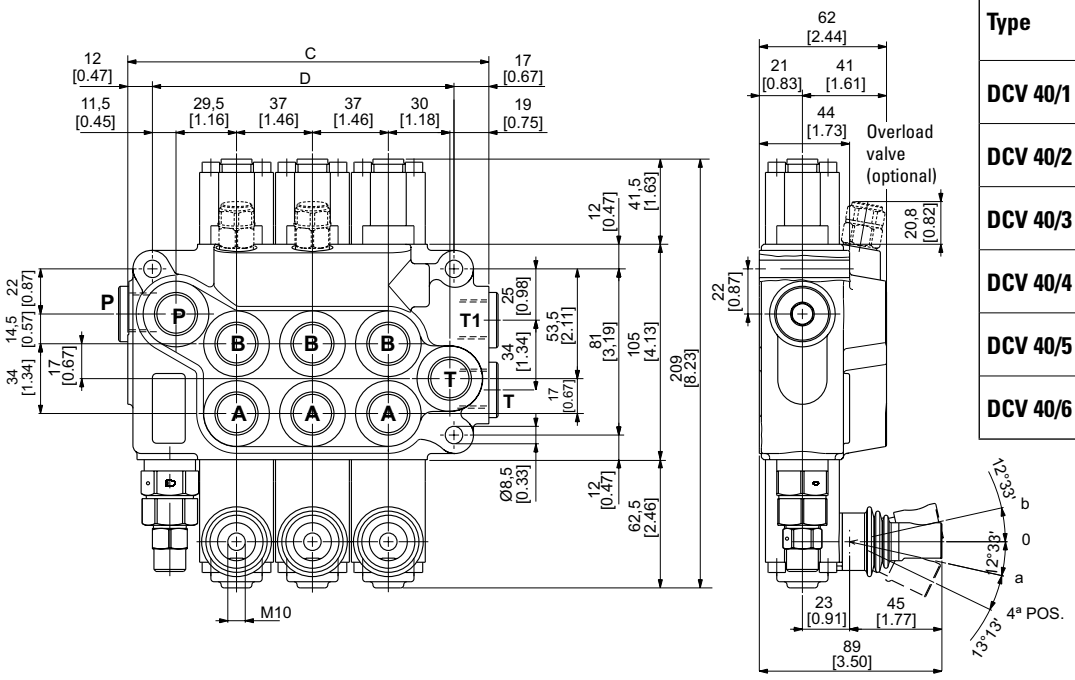


Inlet pressure drop between work ports (A/B) and outlet port (T)



MONOBLOCK

OVERALL DIMENSIONS



Type	C mm [inch]	D mm [inch]	Weight kg [lb]
DCV 40/1	102 [4.02]	73 [2.87]	3.57 [7.85]
DCV 40/2	139 [5.47]	110 [4.33]	5.45 [11.99]
DCV 40/3	176 [6.93]	147 [5.79]	7.30 [16.06]
DCV 40/4	213 [8.39]	184 [7.24]	9.15 [20.13]
DCV 40/5	250 [9.84]	221 [8.70]	11.00 [24.20]
DCV 40/6	287 [11.30]	258 [10.16]	12.85 [28.27]

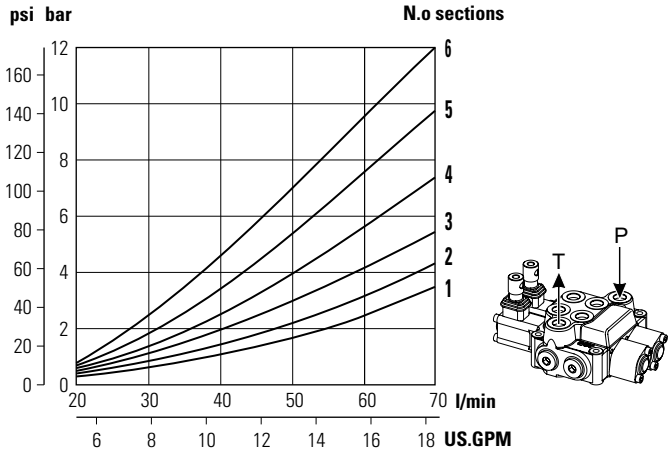
CHARACTERISTIC PRESSURE DROP FLOW CURVES

DCV 40 technical data

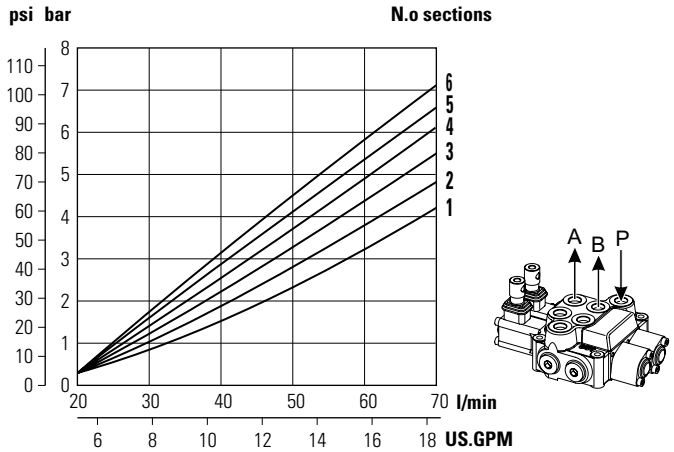
Flow	l/min	70
	GPM	18.5
Max pressure	BAR	400
	psi	5800
Oil viscosity	CST	30
Oil temperature	°C	50

Metering curves are different for each typee of spool.
Therefore particular curves are supplied on request

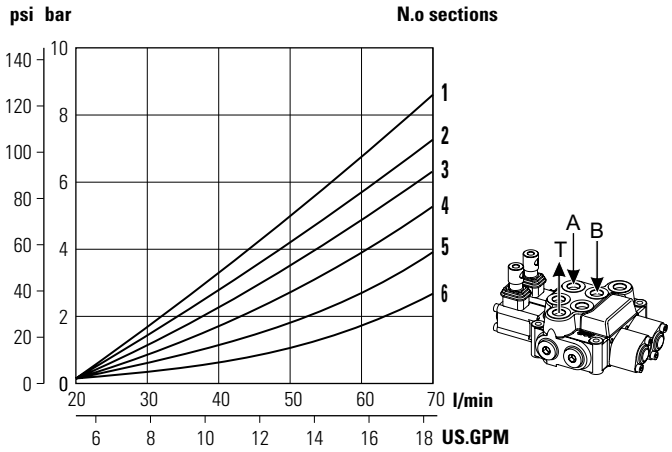
Inlet pressure drop between inlet port (P) and outlet port (T)



Inlet pressure drop between inlet port (P) and work ports (A/B)



Inlet pressure drop between work ports (A/B) and outlet port (T)



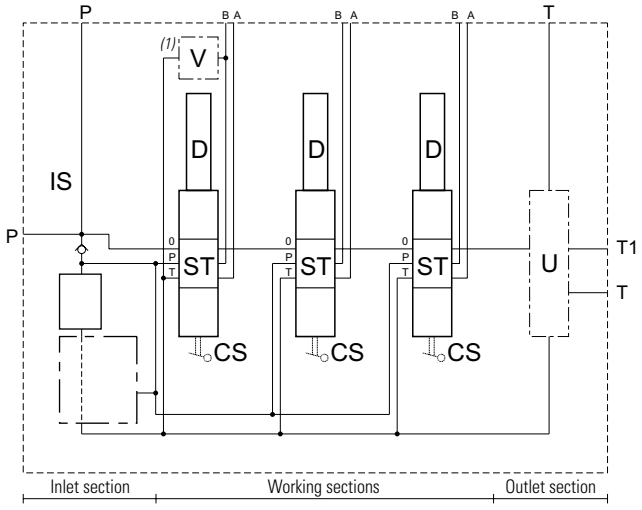
Ordering code

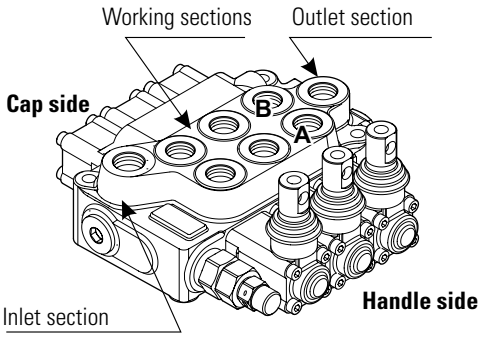
Model	Inlet section			Working sections (repeat for any section)					Outlet section	Threads
DCV ** / *	IS*	***	(***)	ST**	CS**	D**	V**(***)	W*	Xn	U*	F*

Description	Page
Size: DCV20 DCV40 N.o working sections	5-6
Inlet type	8
Valves arrangement	9
Main relief valve setting	9
Spools	10
Spool control handle side	11
Spool control cap side	16
Service port valves *(1)*	21
Overload valve setting	21
Hand lever	21
Working section repeated for n. times	21
Outlet	22
Threads	22

------ Optional fields

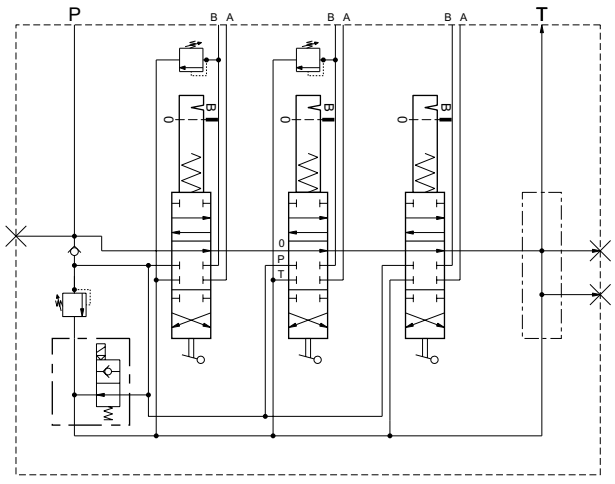
HYDRAULIC SCHEME





(1) Service port valves optional, is required a special monoblock body.

ORDERING CODE EXAMPLE



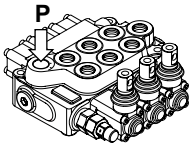
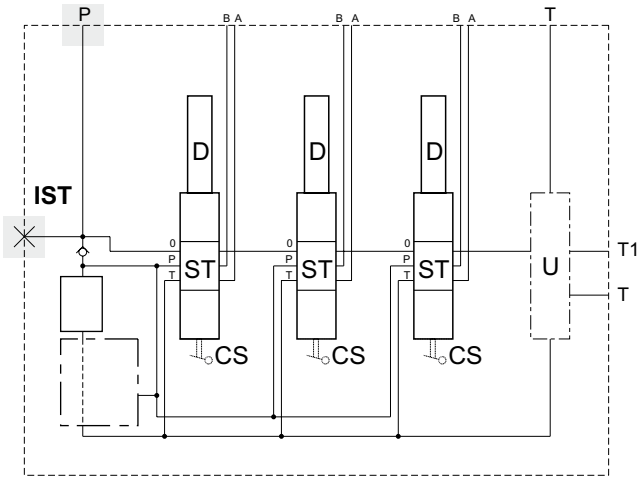
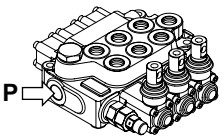
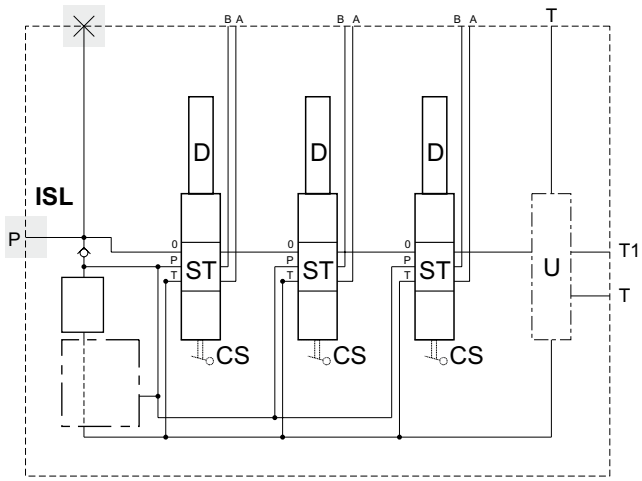
DCV40/3	- DCV40 3 sections monoblock
IST	- Top inlet
004	- Direct main relief valve + Solenoid dump valve 24V N. Open
(200)	- Valve setting 200 BAR
ST1	- Spool, 3 position, double acting
CS1	- Spool control handle side
D4	- Spool control cap side, 3 pos. spring centred spool, detent in “b”
VB1(150)	- Overload valve in position “B” - Setting 150 bar
W2	- Standard handle lever
X2	- Working section repeated for n. 2 times
ST1	- Spool, 3 position, double acting
CS1	- Spool control handle side
D4	- Spool control cap side, 3 pos. spring centred spool, detent in “b”
W2	- Standard handle lever
US	- Top outlet
F4	- 1/2” BSP threads

Inlet section

Inlet type

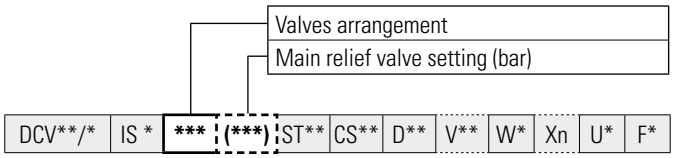
DCV**/*	**IS***	***	(***)	ST**	CS**	D**	V**	W*	Xn	U*	F*

IS* *Inlet type*

**	Description	Drawing
IST *(1)*	Top inlet (standard)	 
ISL *(2)*	Side inlet	 

(1) RIGHT inlet section with top inlet (IDT). On request, contact our sales department.
(2) RIGHT inlet section with side inlet (IDL). On request, contact our sales department.

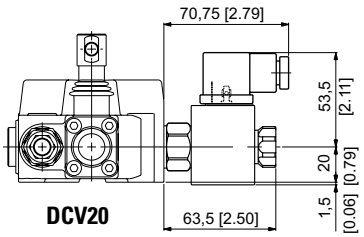
Inlet section

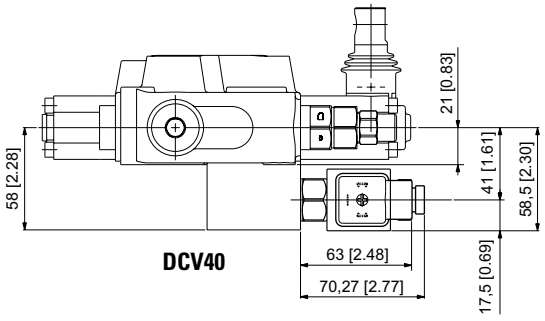


***** (***)** ***Valves arrangements and main relief valve setting***

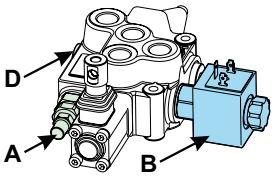
***	(***)	Arrangements A*	B*	D*
001	*(1)*	A1	—	D0
002	*(1)*	A1	B6	D0
003	*(1)*	A1	B7	D0
004	*(1)*	A1	B8	D0
005	*(1)*	A1	B9	D0
006	*(1)*	A1	B10	D0
007	*(1)*	A1	B11	D0
008	*(1)*	A1	B12	D0
009	*(1)*	A1	B13	D0
010	*(1)*	A1	—	D15
011	—	A14	—	D0
012	—	A14	—	D15
013	—	A14	B6	D0
014	—	A14	B7	D0
015	—	A14	B8	D0
016	—	A14	B9	D0
017	—	A14	B10	D0
018	—	A14	B11	D0
019	—	A14	B12	D0
020	—	A14	B13	D0

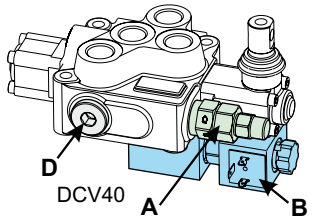
(1) Specify pressure relief valve setting (from 20 to 400 bar)

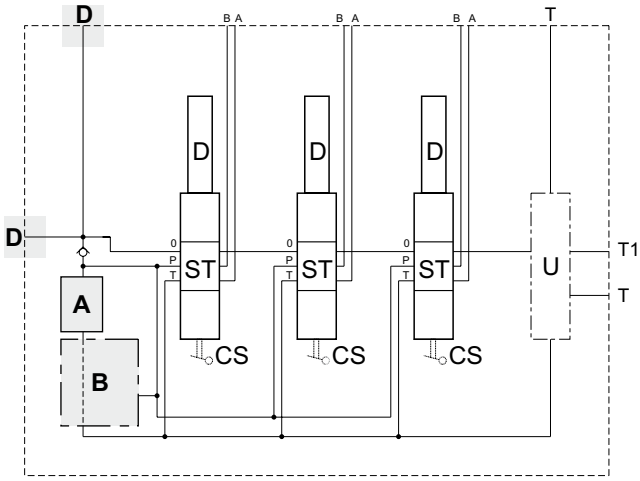




Valves choice







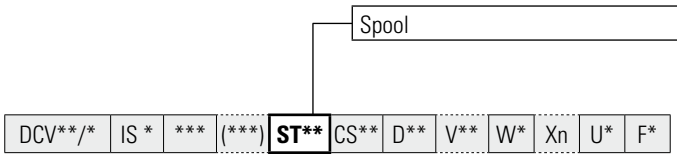
A1	Direct main relief valve	
A14	Valve seat with plug	
B6 *(2)*	Solenoid dump valve 12V work NORMALLY OPEN	P T *(3)*
B8 *(2)*	Solenoid dump valve 24V work NORMALLY OPEN	
B10 *(2)*	Solenoid dump valve 26V work NORMALLY OPEN	
B12 *(2)*	Solenoid dump valve 30V work NORMALLY OPEN	
B7 *(2)*	Solenoid dump valve 12V work NORMALLY CLOSED	P T *(3)*
B9 *(2)*	Solenoid dump valve 24V work NORMALLY CLOSED	
B11 *(2)*	Solenoid dump valve 26V work NORMALLY CLOSED	
B13 *(2)*	Solenoid dump valve 30V work NORMALLY CLOSED	
D0	Plug - Standard (position selectet with IST or ISL)	
D15	Pressure gauge connection (replace the plug selected with IST or ISL)	P

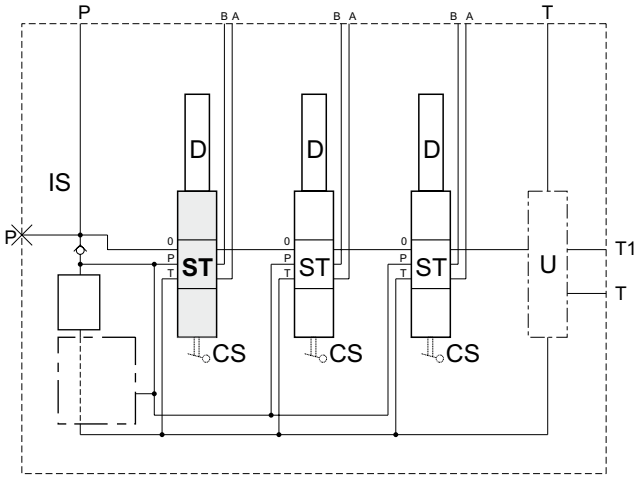
(2) Include block (DCV40) and special monoblock body

(3) Solenoid features

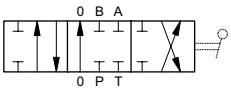
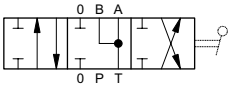
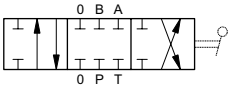
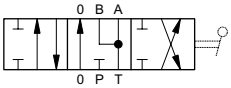
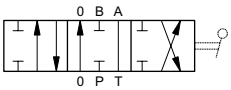
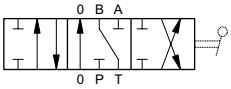
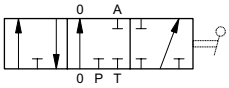
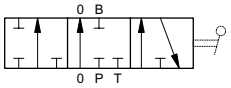
	12V	24V	26V
Resistance ohm (±7%)	8.7	32	37.5
Connector	DIN 43650 ISO 4400		
Protection degree	IP65		
Ambient temperature	-30 +60 °C		
Power	20 W		

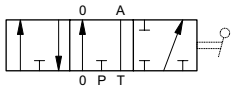
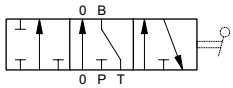
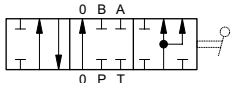
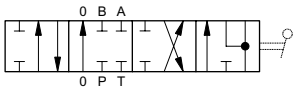
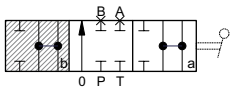
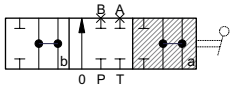
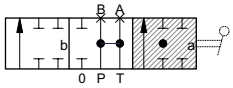
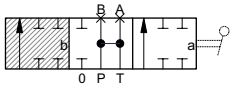
Working sections





ST** *Spool*

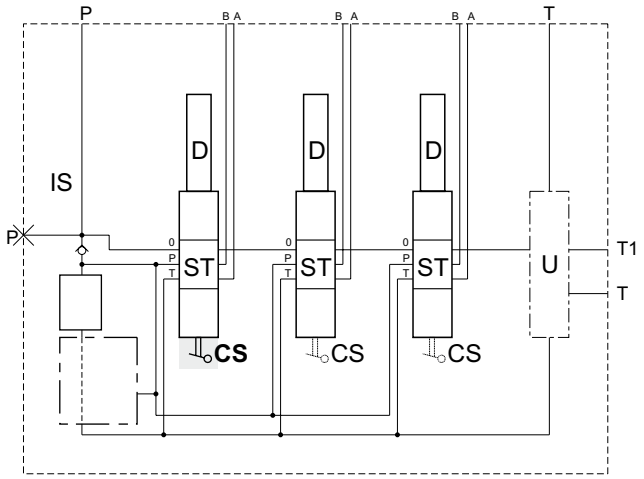
**	Description	Symbol
ST1 **ST1G** *(1)*	3 position, double acting	
ST2	3 positions, double acting, - Lc blocked - A and B open	
ST3	3 positions, double acting, - Lc blocked - A and B blocked	
ST4 **ST4G** *(1)*	3 positions, double acting, - A and B open	
ST5 **ST5G** *(1)*	3 positions, double acting, - A open - B blocked	
ST6 **ST6G** *(1)*	3 positions, double acting, - A blocked - B open	
ST7	3 positions, single acting in A	
ST8	3 positions, single acting in B	

**	Description	Symbol
ST9	3 positions, single acting in A - A open	
ST10	3 positions, single acting in B - B open	
ST11	3 positions, double acting regenerative in A (not standard)	
ST12	4 positions, double acting with 4th float position	
ST23	2 positions with function dead man (unactivated) in “a” position ; working position in “0”	
ST24	2 positions with function dead man (unactivated) in “b” position ; working position in “0”	
ST27	2 positions with function dead man (unactivated) in “0” position ; working position in “b”	
ST28	2 positions with function dead man (unactivated) in “0” position ; working position in “a”	

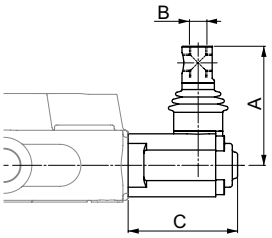
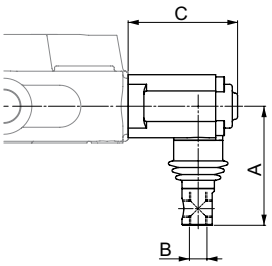
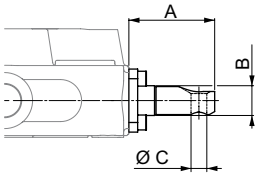
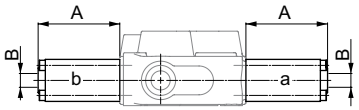
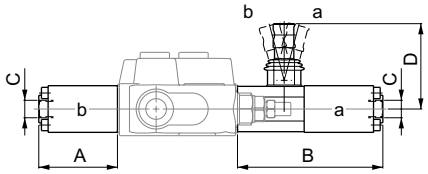
(1) **STG** = Extra metering

Spool control handle side

DCV**/*	IS *	***	(***)	ST**	**CS****	D**	V**	W*	Xn	U*	F*



CS** *Spool control handle side*

**	Description	Drawing
CS1 **CSA1** *(1)*	Standard handle B 0 A	
CS2 **CSA2** *(1)*	Handle at 180° B 0 A	
CS3	Without handle B 0 A	
CS4	Hydraulic control - Max pilot pressure 35 bar 508 psi b B 0 A a	
CS53	Hydraulic lever control b B 0 A a	

CS1 / CSA1

	A		B	C			
				CS1		CSA1	
	mm	inch		mm	inch	mm	inch
DCV 20	64	2.52	M8	55	2.17	—	—
DCV 40	62.5	2.46	M10	62.5	2.46	67.5	2.66

CS2 / CSA2

	A		B	C			
				CS2		CSA2	
	mm	inch		mm	inch	mm	inch
DCV 20	64	2.52	M8	55	2.17	—	—
DCV 40	62.5	2.46	M10	62.5	2.46	67.5	2.66

CS3

	A		B		C	
	mm	inch	mm	inch	mm	inch
DCV 20	41	1.61	12	0.47	6	0.24
DCV 40	50	1.97	17	0.67	9	0.35

CS4

	A		B
	mm	inch	
DCV 20	59	2.32	1/4" BSP
DCV 40	68	2.68	1/4" BSP

CS53

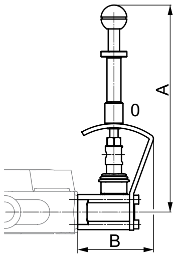
	A		B		C	D	
	mm	inch	mm	inch		mm	inch
DCV 20	59	2.32	109	4.29	1/4" BSP	64	2.52

(1) **CSA.** = Aluminium version (only DCV40)

Working sections

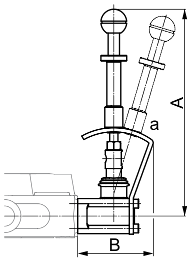
CS** Spool control handle side

CS5 / CSA5 (1) — Safety handle locked in neutral position



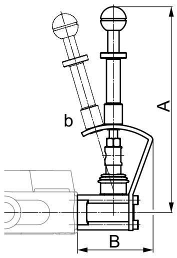
	A mm	A inch	B mm	B inch
DCV 20	200	7.87	73	2.87
DCV 40	220	8.66	77	3.03

CS6 / CSA6 (1) — Safety handle locked in position "a"



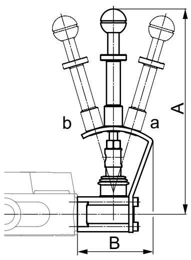
	A mm	A inch	B mm	B inch
DCV 20	200	7.87	73	2.87
DCV 40	220	8.66	77	3.03

CS7 / CSA7 (1) — Security handle locked in position "b"



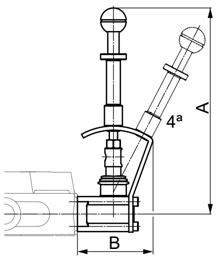
	A mm	A inch	B mm	B inch
DCV 20	200	7.87	73	2.87
DCV 40	220	8.66	77	3.03

CS8 / CSA8 (1) — Security handle locked in position "a" and "b"



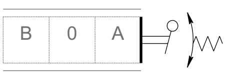
	A mm	A inch	B mm	B inch
DCV 20	200	7.87	73	2.87
DCV 40	220	8.66	77	3.03

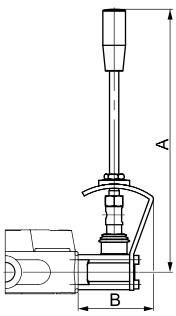
CS9 / CSA9 (1) — Security handle locked in 4th position



	A mm	A inch	B mm	B inch
DCV 20	200	7.87	73	2.87
DCV 40	220	8.66	77	3.03

CS40 / CSA40 (1) — Any positions detented lever

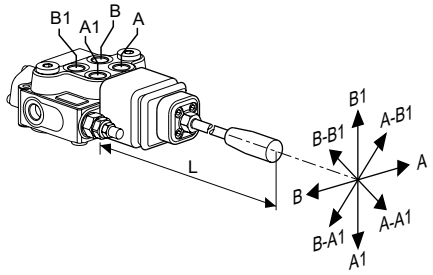
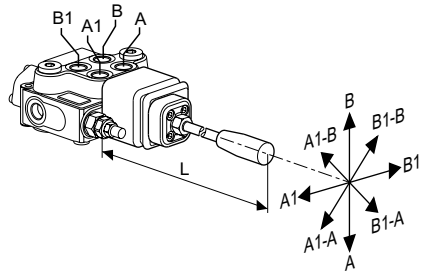
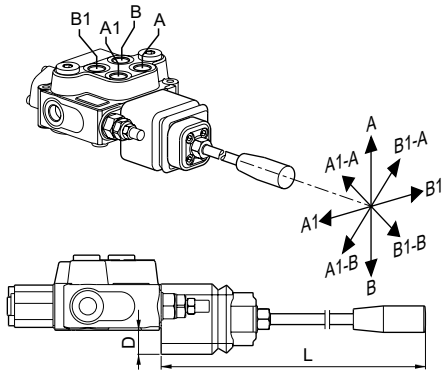
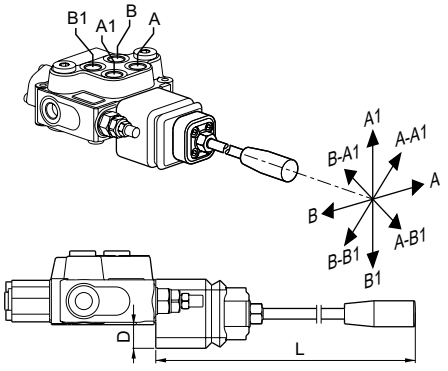
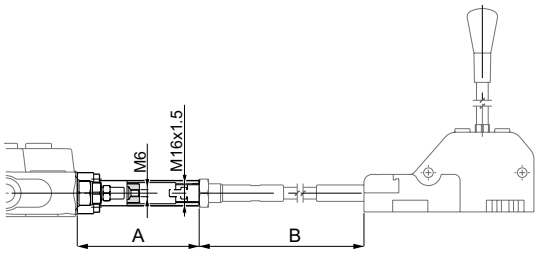




	A mm	A inch	B mm	B inch
DCV 40	270	10.62	77	3.03

(1) **CSA.** = Aluminium version (only DCV40)

CS** *Spool control handle side*

**	Description	Drawing
CS10 (CX) *(1)*	Cloche control with fulcrum on upstream section B 0 A B 0 A	
CS11 (CX) *(1)*	Cloche control with fulcrum on down-stream section B 0 A B 0 A	
CS12 (CX) *(1)*	Cloche control with fulcrum turned 180° on the downstream section B 0 A B 0 A	
CS13 (CX) *(1)*	Cloche control with fulcrum turned 180° on the upstream section B 0 A B 0 A	
CS14	Flexible cable control B 0 A	

	L	
	mm	inch
DCV 20	280	11.02
DCV 40	285	11.22

	L		D	
	mm	inch	mm	inch
DCV 20	280	11.02	20	0.79
DCV 40	285	11.22	20	0.79

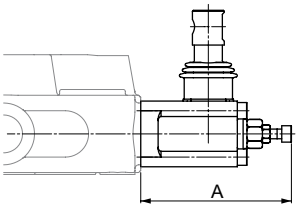
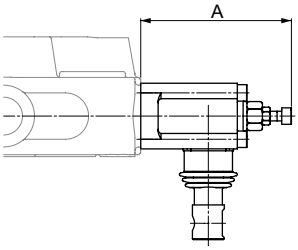
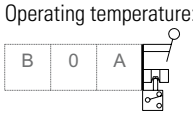
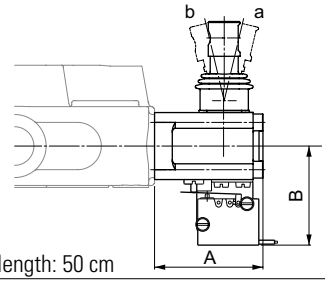
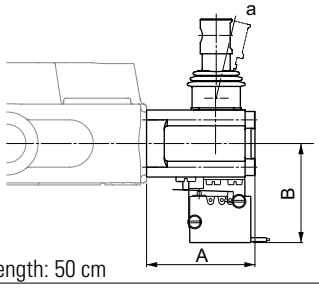
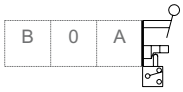
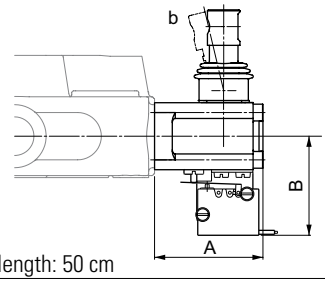
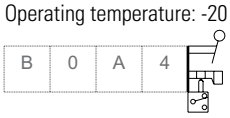
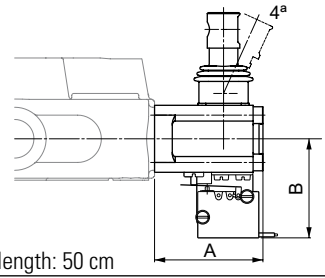
	A		B	
	mm	inch	mm	inch
DCV 20	104	4.09	*(2)*	*(2)*
DCV 40	106	4.17	*(2)*	*(2)*

(1) (CX) code required to use on 2th section

(2) Lenght cable and control, contact our commercial dept

Working sections

CS** ***Spool control handle side***

**	Description	Drawing
CS15 **CSA15** *(1)*	Spool stroke adjustment in “b” 	
CS16 **CSA16** *(1)*	Spool stroke adjustment in “b”, handle at 180° 	
CS17 **CSA17** *(1)*	Standard handle with microswitch in “a” and “b” Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm
CS18 **CSA18** *(1)*	Standard handle with microswitch in “a” Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm
CS19 **CSA19** *(1)*	Standard handle with microswitch in “b” Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm
CS20 **CSA20** *(1)*	Standard handle with microswitch in 4th position Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm

	A	
	mm	inch
DCV 20	78	3.07
DCV 40	83.5	3.28

	A				B	
	CS17		CSA17			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

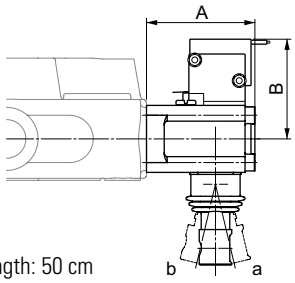
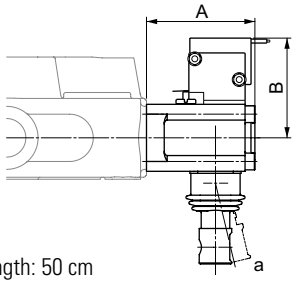
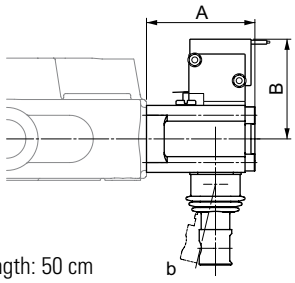
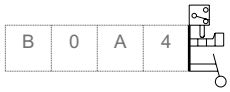
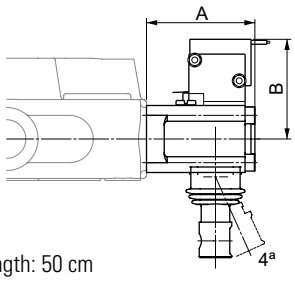
	A				B	
	CS18		CSA18			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

	A				B	
	CS19		CSA19			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

	A				B	
	CS20		CSA20			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

(1) **CSA.** = Aluminium version (only DCV40)

CS** *Spool control handle side*

**	Description	Drawing
CS21 *(1)*	Handle 180° with microswitch in “a” and “b” Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm
CS22 *(1)*	Handle 180° with microswitch in “a” Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm
CS23 *(1)*	Handle 180° with microswitch in “b” Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm
CS24 *(1)*	Handle 180° with microswitch in 4th position Protection degree: IP67 Nominal rating: 0.1 ÷ 10 A / 250VAC Minimum rating: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 Cable length: 50 cm

	A				B	
	CS21		CSA21			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

	A				B	
	CS22		CSA22			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

	A				B	
	CS23		CSA23			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

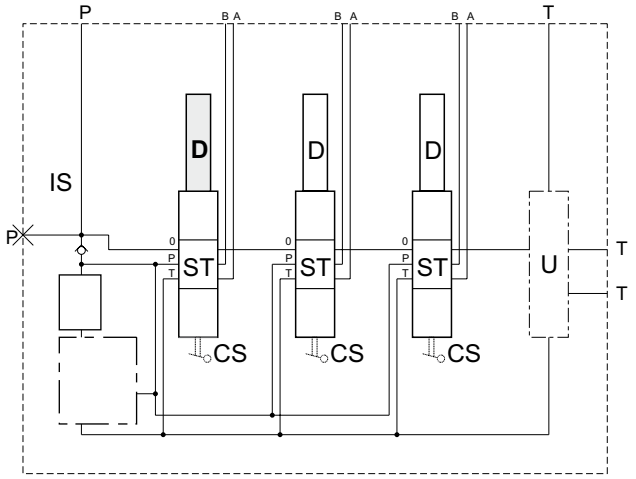
	A				B	
	CS24		CSA24			
	mm	inch	mm	inch	mm	inch
DCV 20	55	2.17	—	—	50.5	1.99
DCV 40	62.5	2.46	67.5	2.66	51.5	2.03

(1) **CSA.** = Aluminium version (only DCV40)

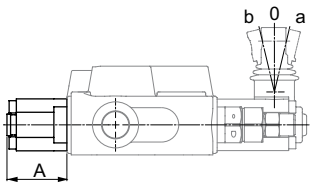
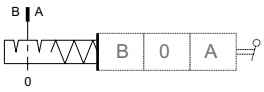
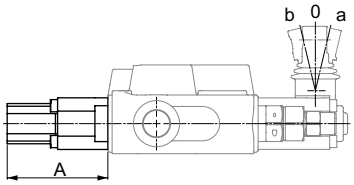
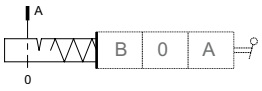
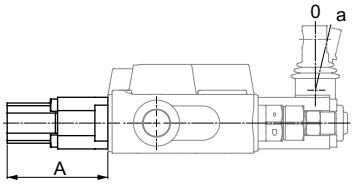
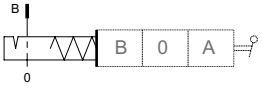
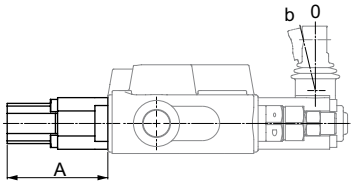
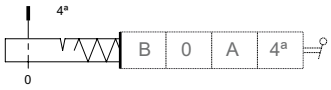
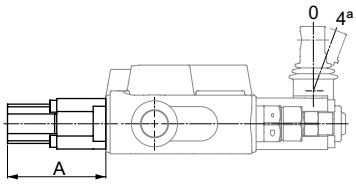
Working sections

Spool control cap side

DCV**/*	IS *	***	(***)	ST**	CS**	**D****	V**	W*	Xn	U*	F*

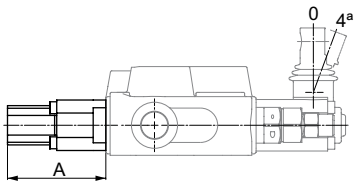
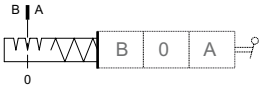
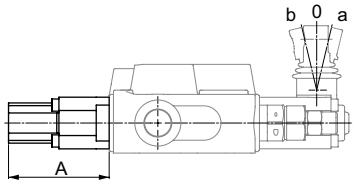
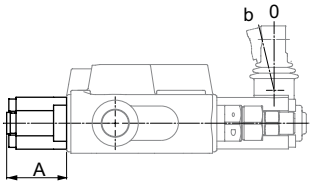
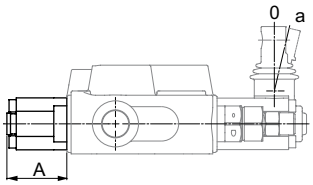
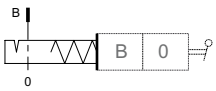
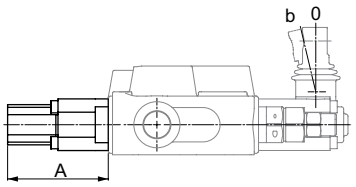
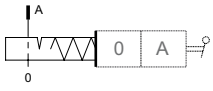
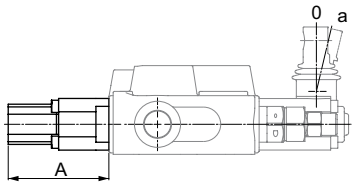
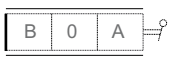
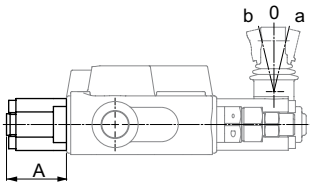


D** *Spool control cap side*

**	Description	Drawing	A			
			D1		DA1	
			mm	inch	mm	inch
D1 DA1 *(1)*	3 positions, spring centred spool		**DCV 20**	36.5	1.03	—	—
			**DCV 40**	41.5	1.63	42	1.65
D2 DA2 *(1)*	3 positions, spring centred spool, detent in “a” and “b”			A			
				D2		DA2	
				mm	inch	mm	inch
			DCV 20	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85
D3 DA3 *(1)*	3 positions, spring centred spool, detent in “a”			A			
				D3		DA3	
				mm	inch	mm	inch
			DCV 20	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85
D4 DA4 *(1)*	3 positions, spring centred spool, detent in “b”			A			
				D4		DA4	
				mm	inch	mm	inch
			DCV 20	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85
D5 DA5 *(1)*	4 positions, spring centred spool, detent in 4th position			A			
				D5		DA5	
				mm	inch	mm	inch
			DCV 20	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85

(1) **DA.** = Aluminium version (only DCV40)

D** ***Spool control cap side***

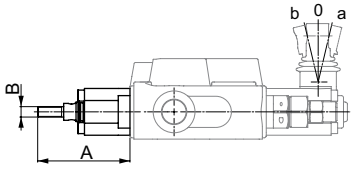
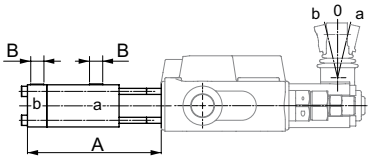
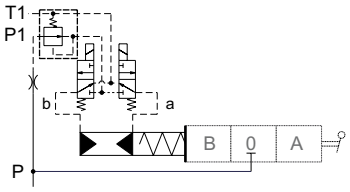
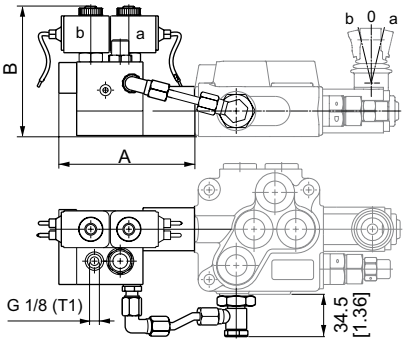
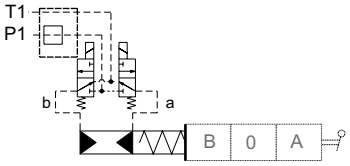
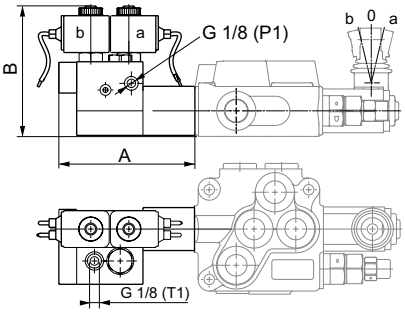
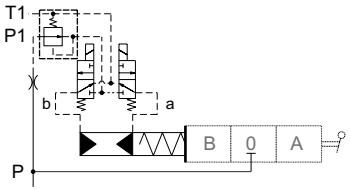
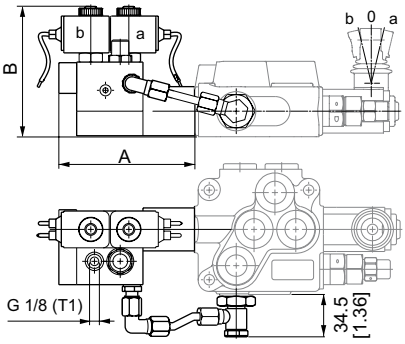
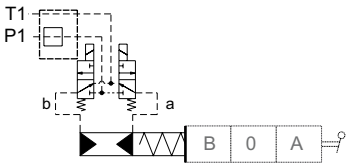
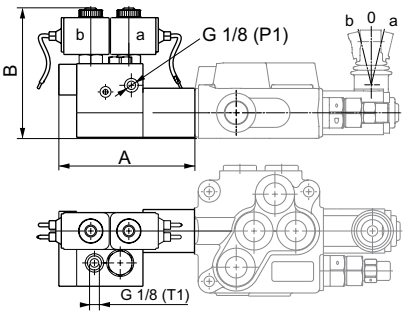
**	Description	Drawing	A			
			D6		DA6	
			mm	inch	mm	inch
D6 DA6 *(1)*	4 positions, spring centred spool, sensitive 4th position, without detent 		**DCV 20**	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85
D7 DA7 *(1)*	3 positions, spring centred spool, detent in “a” - “0” - “b” 		**DCV 20**	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85
D8 DA8 *(1)*	2 positions (“0” - “b”), spring centred spool 		**DCV 20**	36.5	1.03	—	—
			DCV 40	41.5	1.63	42	1.65
D9 DA9 *(1)*	2 positions (“0” - “a”), spring centred spool 		**DCV 20**	36.5	1.03	—	—
			DCV 40	41.5	1.63	42	1.65
D10 DA10 *(1)*	2 positions (“0” - “b”), spring centred spool, detent in “b” 		**DCV 20**	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85
D11 DA11 *(1)*	2 positions (“0” - “a”), spring centred spool, detent in “a” 		**DCV 20**	60	2.36	—	—
			DCV 40	72.5	2.85	72.5	2.85
D12 DA12 *(1)*	3 positions free (without spring) 		**DCV 20**	36.5	1.03	—	—
			DCV 40	41.5	1.63	42	1.65

(1) **DA.** = Aluminium version (only DCV40)

MONOBLOCK

Working sections

D** *Spool control cap side*

**	Description	Drawing
D13 **DA13** *(1)*	Prearranged for double control 	
D14	ON-OFF pneumatic control - Pilot pressure 5-10 bar 72.5-145 psi 	
D15 *(2)*	Electroidraulic ON-OFF control. Voltage 12Vdc with pressure reducing valve - Pilot pressure 20 bar 290 psi 	
D16 *(2)*	Electroidraulic ON-OFF control. Voltage 12Vdc without pressure reducing valve - Pilot pressure 20 bar 290 psi 	
D17 *(2)*	Electroidraulic ON-OFF control. Voltage 24Vdc with pressure reducing valve - Pilot pressure 20 bar 290 psi 	
D18 *(2)*	Electroidraulic ON-OFF control. Voltage 24Vdc without pressure reducing valve - Pilot pressure 20 bar 290 psi 	

	A mm	A inch	B
DCV 20	58	2.28	M6
DCV 40	71	2.80	M8

	A mm	A inch	B
DCV 20	111	4.37	1/8" BSP
DCV 40	119.5	4.70	1/8" BSP

	A mm	A inch	B mm	B inch
DCV 20	91	3.58	104.5	4.11
DCV 40	96	3.78	106.5	4.19

Connector	wires 30 cm
Protection degree	IP65
Ambient temperature	-30 +60 °C
Power	7 W
Resistance at 20 °C	14 ohm

	A mm	A inch	B mm	B inch
DCV 20	91	3.58	104.5	4.11
DCV 40	96	3.78	106.5	4.19

Connector	wires 30 cm
Protection degree	IP65
Ambient temperature	-30 +60 °C
Power	7 W
Resistance at 20 °C	14 ohm

	A mm	A inch	B mm	B inch
DCV 20	91	3.58	104.5	4.11
DCV 40	96	3.78	106.5	4.19

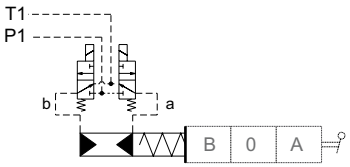
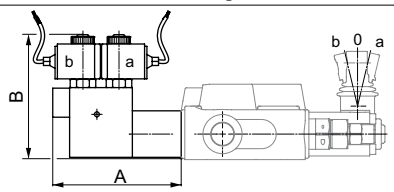
Connector	wires 30 cm
Protection degree	IP65
Ambient temperature	-30 +60 °C
Power	7 W
Resistance at 20 °C	30 ohm

	A mm	A inch	B mm	B inch
DCV 20	91	3.58	104.5	4.11
DCV 40	96	3.78	106.5	4.19

Connector	wires 30 cm
Protection degree	IP65
Ambient temperature	-30 +60 °C
Power	7 W
Resistance at 20 °C	30 ohm

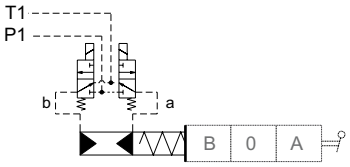
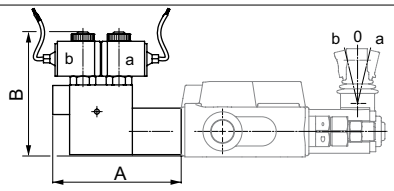
(1) **DA.** = Aluminium version (only DCV40)
(2) Valid only for the first section

D** *Spool control cap side*

**	Description	Drawing	
D19 *(3)*	Electroidraulic ON-OFF control. Voltage 12Vdc - Pilot pressure 20 bar 290 psi		

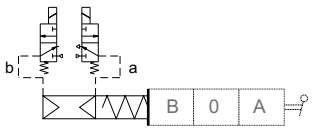
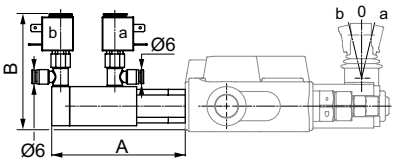
	A		B	
	mm	inch	mm	inch
DCV 20	91	3.58	104.5	4.11
DCV 40	96	3.78	106.5	4.19

Connector	wires 30 cm
Protection degree	IP65
Ambient temperature	-30 +60 °C
Power	7 W
Resistance at 20 °C	14 ohm

**	Description	Drawing	
D20 *(3)*	Electroidraulic ON-OFF control. Voltage 24Vdc - Pilot pressure 20 bar 290 psi		

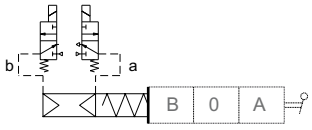
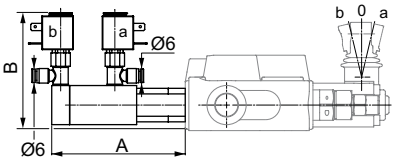
	A		B	
	mm	inch	mm	inch
DCV 20	91	3.58	104.5	4.11
DCV 40	96	3.78	106.5	4.19

Connector	wires 30 cm
Protection degree	IP65
Ambient temperature	-30 +60 °C
Power	7 W
Resistance at 20 °C	30 ohm

**	Description	Drawing	
D21	ON-OFF electro pneumatic control. Voltage 12Vdc - Pilot pressure 5-10 bar 72.5-145 psi		

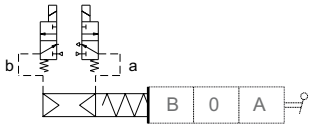
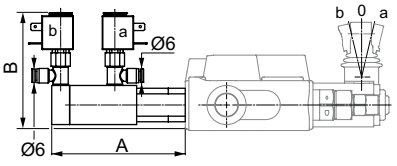
	A		B	
	mm	inch	mm	inch
DCV 20	111	4.37	101.5	4.00
DCV 40	119.5	4.70	103.5	4.07

Connector	DIN 43650-B ISO6952
Protection degree	IP65
Ambient temperature	-20 +40 °C
Power	6 W

**	Description	Drawing	
D22	ON-OFF electro pneumatic control. Voltage 24Vdc - Pilot pressure 5-10 bar 72.5-145 psi		

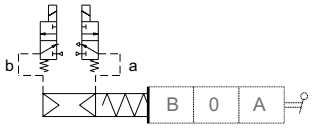
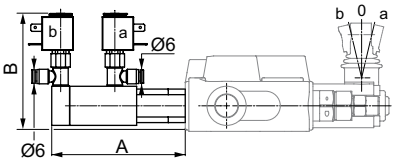
	A		B	
	mm	inch	mm	inch
DCV 20	111	4.37	101.5	4.00
DCV 40	119.5	4.70	103.5	4.07

Connector	DIN 43650-B ISO6952
Protection degree	IP65
Ambient temperature	-20 +40 °C
Power	6 W

**	Description	Drawing	
D23	ON-OFF electro pneumatic control. Voltage 26Vdc - Pilot pressure 5-10 bar 72.5-145 psi		

	A		B	
	mm	inch	mm	inch
DCV 20	111	4.37	101.5	4.00
DCV 40	119.5	4.70	103.5	4.07

Connector	DIN 43650-B ISO6952
Protection degree	IP65
Ambient temperature	-20 +40 °C
Power	6 W

**	Description	Drawing	
D24	ON-OFF electro pneumatic control. Voltage 28Vdc - Pilot pressure 5-10 bar 72.5-145 psi		

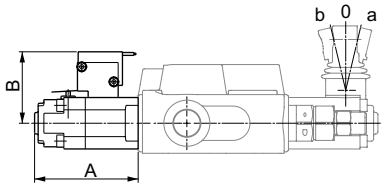
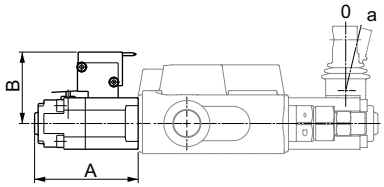
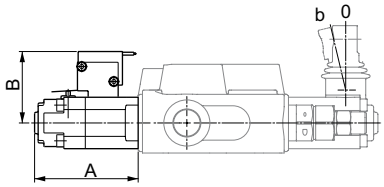
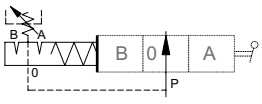
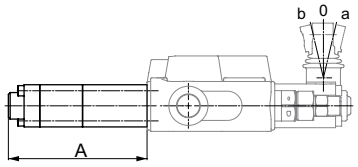
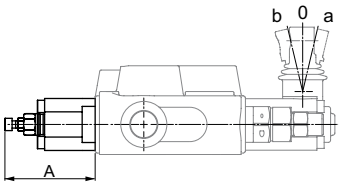
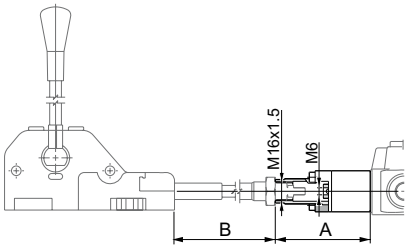
	A		B	
	mm	inch	mm	inch
DCV 20	111	4.37	101.5	4.00
DCV 40	119.5	4.70	103.5	4.07

Connector	DIN 43650-B ISO6952
Protection degree	IP65
Ambient temperature	-20 +40 °C
Power	6 W

(3) Valid only for the section following the first one

Working sections

D** ***Spool control cap side***

**	Description	Drawing
D25 **DA25** *(1)*	Micro-switch in “a” and “b” Protection degree: IP67 Nominal power: 0.1 ÷ 10 A / 250VAC Minimum power: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 **DCV 40**: A 72.5 mm / 2.85 inch; B 50 mm / 1.97 inch
D26 **DA26** *(1)*	Micro-switch in “a” Protection degree: IP67 Nominal power: 0.1 ÷ 10 A / 250VAC Minimum power: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 **DCV 40**: A 72.5 mm / 2.85 inch; B 50 mm / 1.97 inch
D27 **DA27** *(1)*	Micro-switch in “b” Protection degree: IP67 Nominal power: 0.1 ÷ 10 A / 250VAC Minimum power: 1 mA / 4 VDC Operating temperature: -20 ÷ +85°C 	 **DCV 40**: A 72.5 mm / 2.85 inch; B 50 mm / 1.97 inch
D29	Detent with adjustable automatic hydraulic release in “a” and “b” 	 **DCV 40**: A 70 mm / 2.76 inch; B 50 mm / 1.97 inch
D30 **DA30** *(1)*	Spool stroke adjustment in “a” 	 **DCV 20**: A 57 mm / 2.24 inch **DCV 40**: A 62 mm / 2.44 inch
D40	Flexible cable control 	 **DCV 20**: A 81 mm / 3.19 inch; B *(2)* *(2)* **DCV 40**: A 93 mm / 3.66 inch; B *(2)* *(2)*

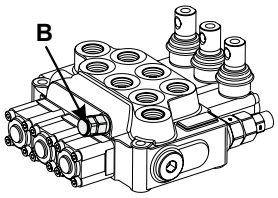
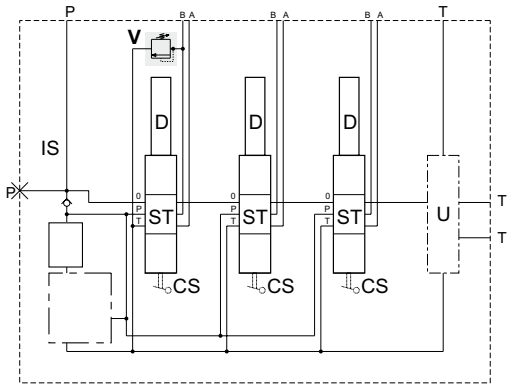
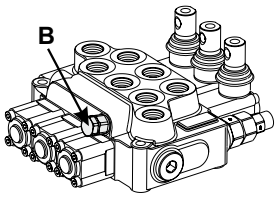
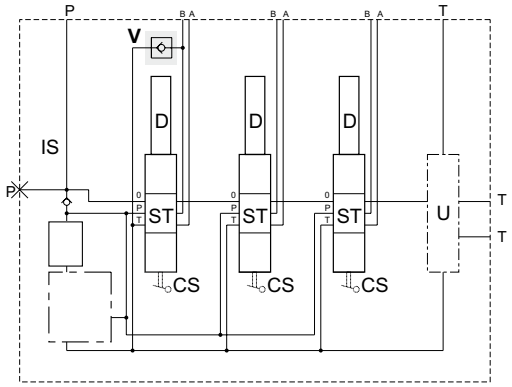
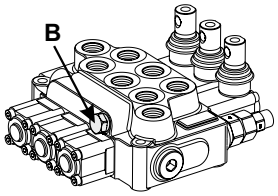
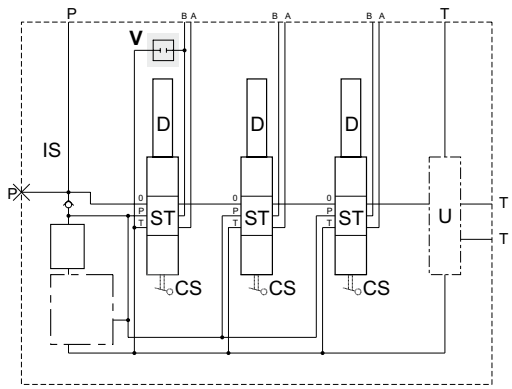
(1) **DA.** = Aluminium version (only DCV40)
(2) Lenght cable and control, contact our commercial dept

Service port valves (optional field)

DCV**/*	IS *	***	(***)	ST**	CS**	D**	**V**(***)**	W*	Xn	U*	F*

Service port valves optional, is required a special monoblock body.
Omit for standard version (without valves, without prearranged for valve)

V** *Service port valves*

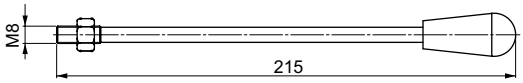
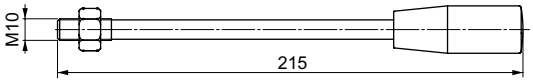
**	Description	Drawing
VB1 (***) *(1) (2)*	Overload valve in position "B"	 
VB2 *(2) (3)*	Anti-cavitation valve in "B"	 
VB4 *(2)*	Prearranged for ausiliary valve in "B" with plug	 

(1) Specify the relief valve setting (from 20 to 350 bar)
(2) For service port valves or prearranged for port valve with plug in "A" and/or "B" port please contact our commercial department.
(3) Only for DCV20

Handle lever
Working section repeated for n. times (optional filed)

DCV**/*	IS *	***	(***)	ST**	CS**	D**	V**	**W***	**Xn**	U*	F*

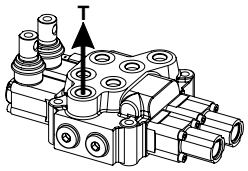
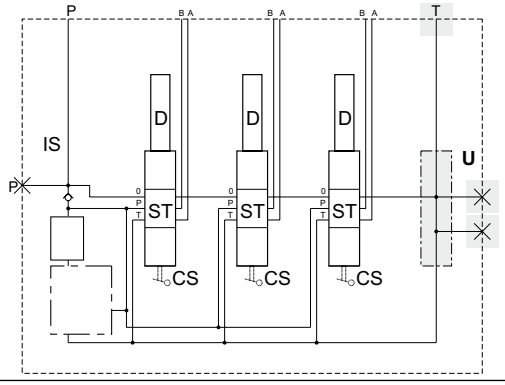
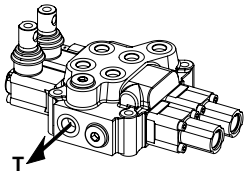
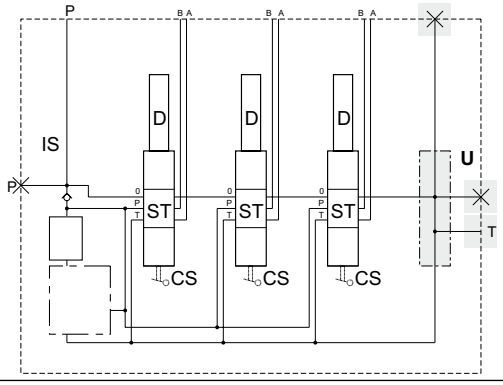
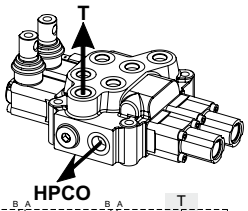
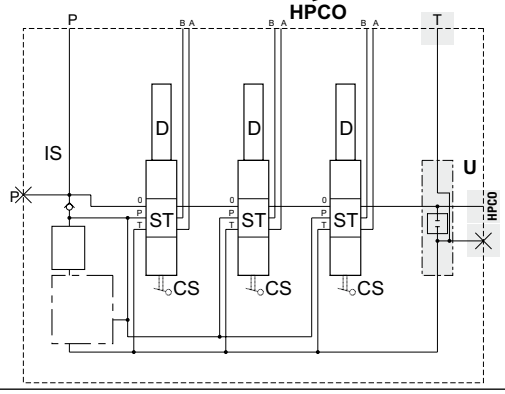
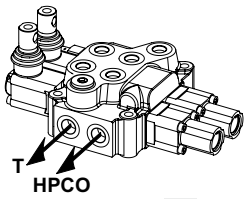
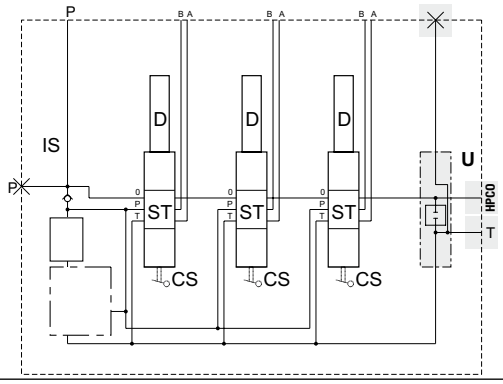
W* *Handle lever*

**	Description	Drawing
W1	Standard DCV 20 For cloche control use W2	
W2	Standard DCV 40	

Outlet

DCV**/*	IS *	***	(***)	ST**	CS**	D**	V**	W*	Xn	**U***	F*

U* *Outlet*

**	
US	Top outlet  
UL	Side outlet  
US2	HPCO and top outlet  
UL2	HPCO and side outlet  

Threads

DCV**/*	IS *	***	(***)	ST**	CS**	D**	V**	W*	Xn	U*	**F***

F* *Threads*

**	Description	DCV20	DCV40
F3	3/8" BSP	•	• *(1)*
F31	9/16" - 18 (SAE6)	•	
F4	1/2" BSP		•
F32	3/4" - 16 (SAE8)		•
F33	7/8" 14 (SAE10)		• *(1)*

(1) Threads availables on request