

HDS11 Series

Sectional Directional Control Valve



Sectional directional control valves

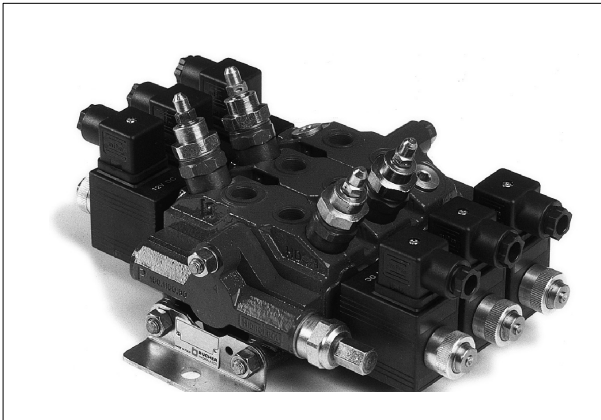
Standard valves



Contents

- General Specification
- Dimensional data
- Performance curves
- Inlet and outlet covers
- Adjustable direct acting Relief Valve RV
- End cover
- Sectional body
- Spool chart
- Hydraulic circuits
- Spool positioners
- Lever styles
- Port relief and anticavitation valves

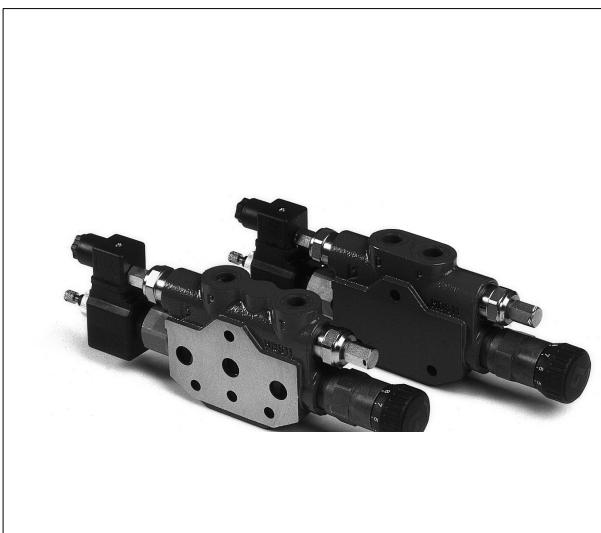
Electromagnetic control EMC - (ON-OFF)



Contents

- General Specification
- Dimensional data
- Performance curves
- Operating limits
- Sectional body
- Spool chart
- Spool action

Elements with pressure and flow control PQ



Contents

- General Specification
- Sectional body K100
- Inlet cover T100
- Sectional body K88
- Inlet cover T88
- Sectional body K90
- Inlet cover T90
- Inlet cover T89
- Proportional flow control PFCR11
- Special sectional bodies
- By-pass solenoid valve -BP3-
- End cover for K100 and T100

HDS11 Series

Sectional Directional Control Valve



Standard valves

General Specifications

Technical specification	Metering unit system	
Max flow rate	l/min U.S.G.P.M.	45 12
Max operating pressure	bar PSI	320 4600
Max back pressure	bar PSI	30 420
Oil temperature	° C ° F	-10 to +80 14 to 180
Oil viscosity	° E cSt	2.4 to 10 16 to 75
Oil filtration	μ	≤30

Spool leakage at 100 bar (1450 PSI), Temp. 50° C (120° F), viscosity 27 cSt:

Maximum	cm ³ /min Cu. In./min	12 0.854
Average	cm ³ /min Cu. In./min	6 0.427

Number of spools	1 to 10
Adjustable direct operated relief valve (tamper-proof seal available on request)	RV
Load hold check valve in each section	LC
Cartridge anti-shock, anticavitation and service relief valve	OA-UC-C
Mechanical release check valve	RSM1

Weight

Technical specification	Metering unit systems	
Inlet with RV and P	kg LBS	1 2.21
1 spool section	kg LBS	1.30 2.86
End cover standard	kg LBS	0.65 1.43
End cover with T and H.P.C.O.	kg LBS	0.75 1.65

Material specification:

Body: High strength cast-iron.
Spool: Hardened steel - Chrome plated.
Seals: Buna "N".

Standard features:

- 1) Internal load holding check valves (prevent reverse flow through valve when shifting)
- 2) Parallel circuit.
- 3) Balanced interchangeable spools (provides minimum leakage, smooth operation)
- 4) Wide selections inlets, work ports, and outlets threaded ports.
- 5) Negative overlapping of the spool.

Optional features available:

- 1) Open or closed centre positions, 3 or 4 way operations, 3 or 4 position (float position), full open centre (motoring spool) and other spool options.
- 2) Carry over.
- 3) Series connection and priority pressure.
- 4) Pressure compensated flow control.
- 5) Complete lever assembly.

Symbols:

P: inlet port
T: outlet port
A/B: work ports
H.P.C.O.: carry-over
RV: relief valve
P₁T₁: top inlet and outlet
 3.1.0.2: spool position
P: pressure line
T: exhaust line
E: centre line (by pass).

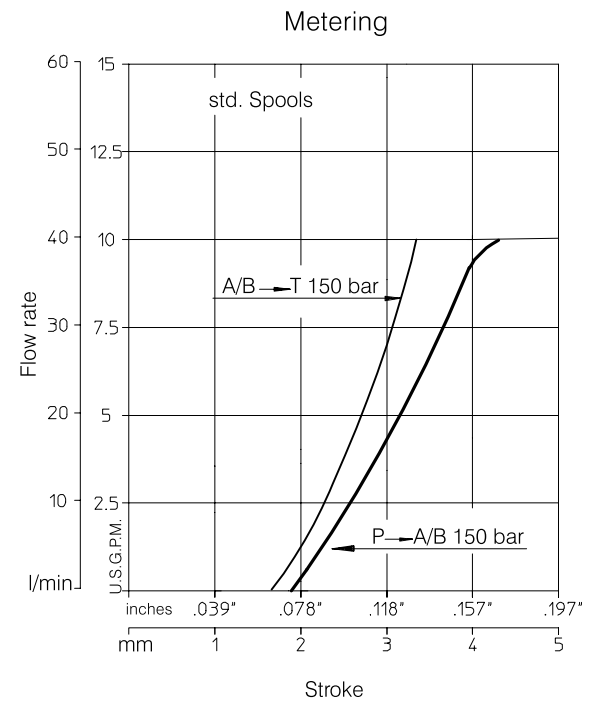
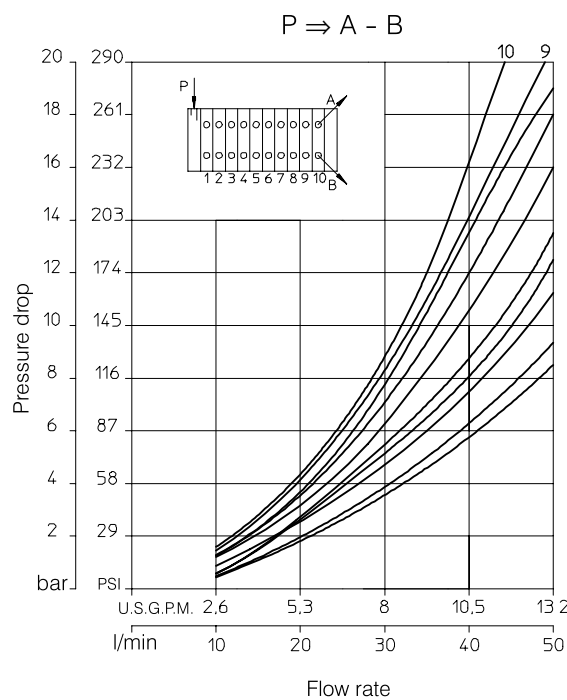
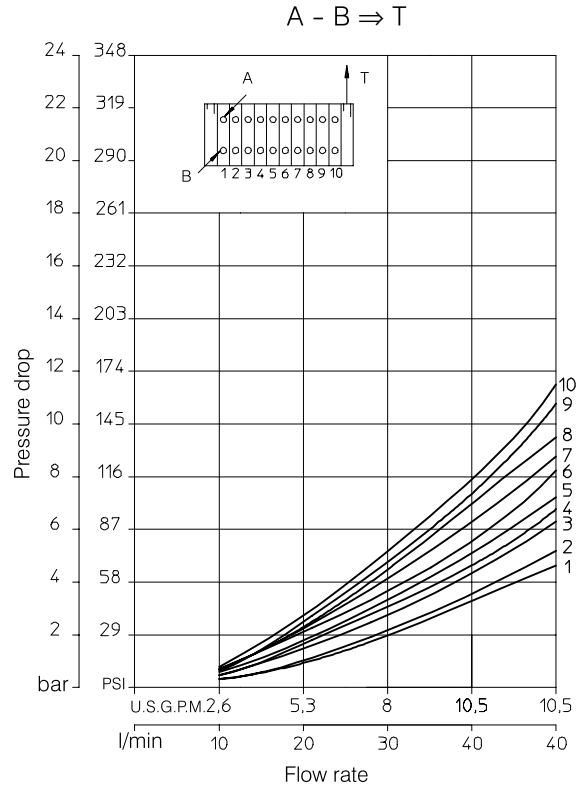
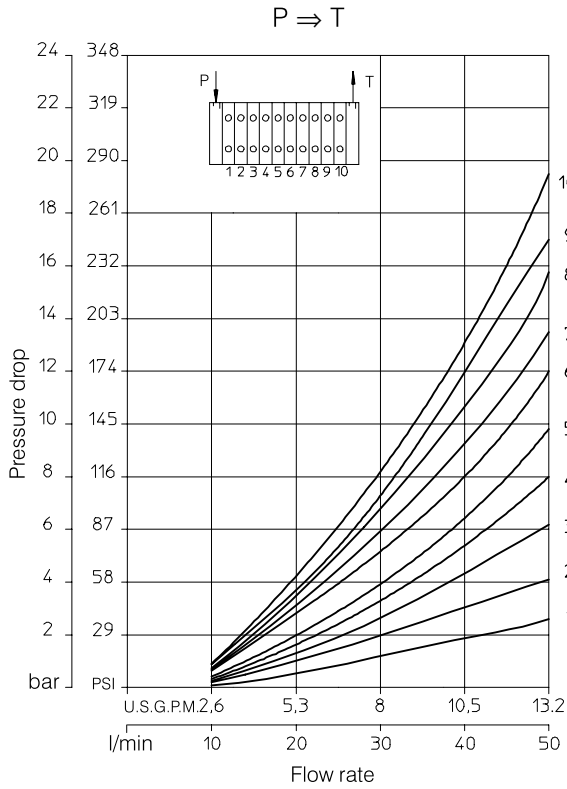
HDS11 Series

Sectional Directional Control Valve



Performance curves

Oil: Shell Tellus T37
 Temperature: 50° C (120° F)
 Viscosity: 27 cSt



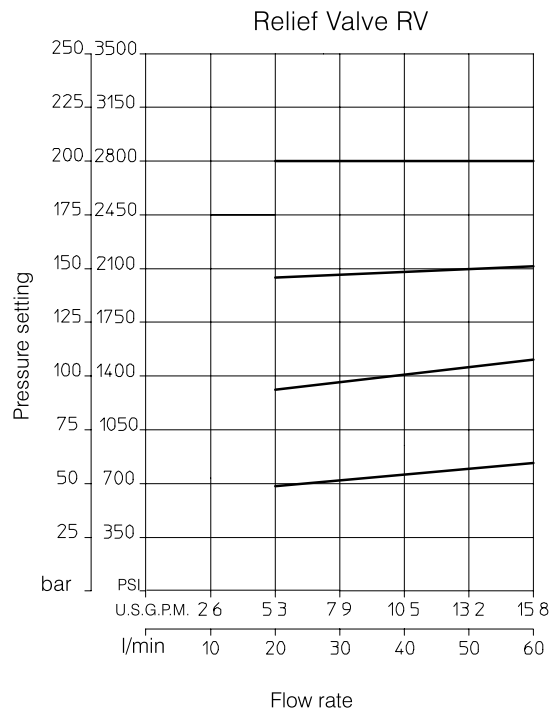
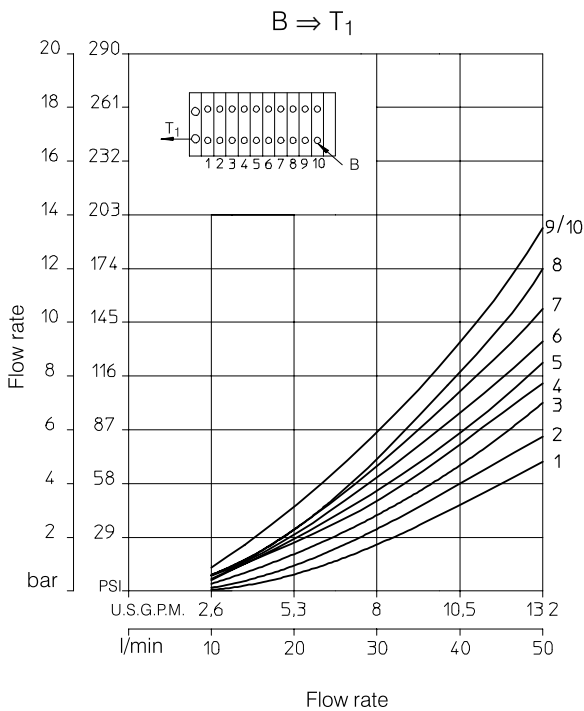
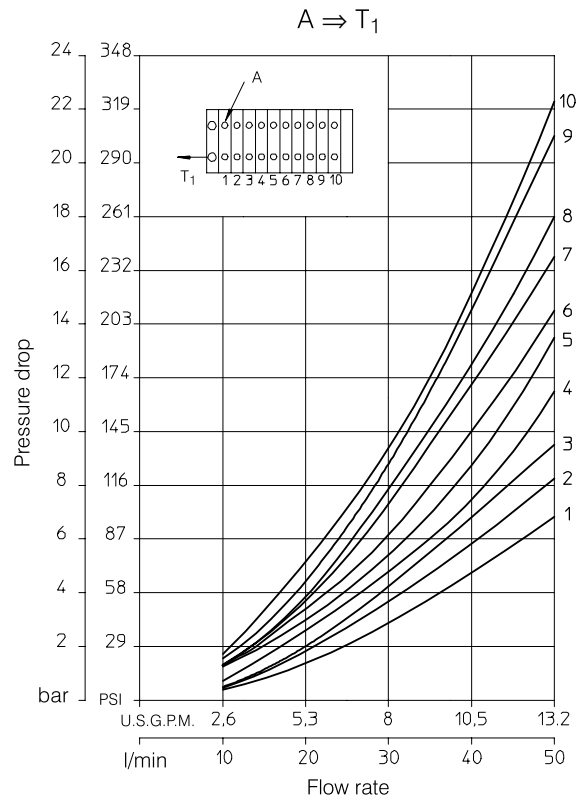
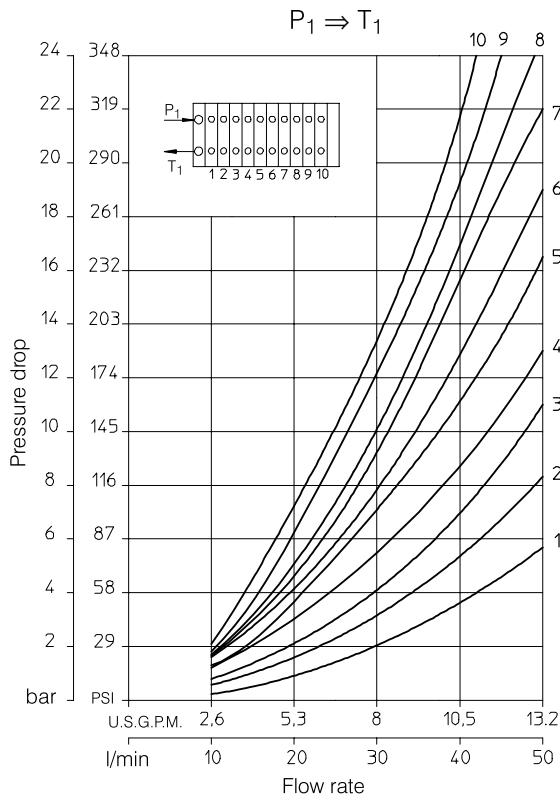
HDS11 Series

Sectional Directional Control Valve



Performance curves

Oil: Shell Tellus T37
 Temperature: 50° C (120° F)
 Viscosity: 27 cSt



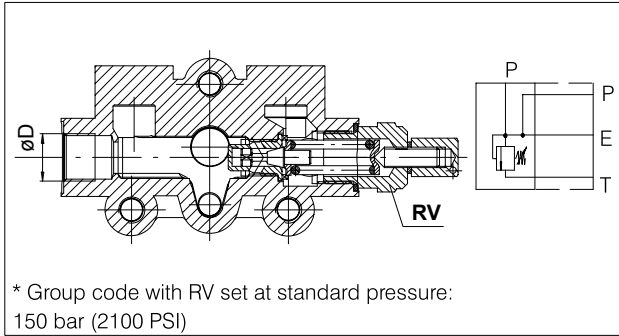
HDS11 Series

Sectional Directional Control Valve



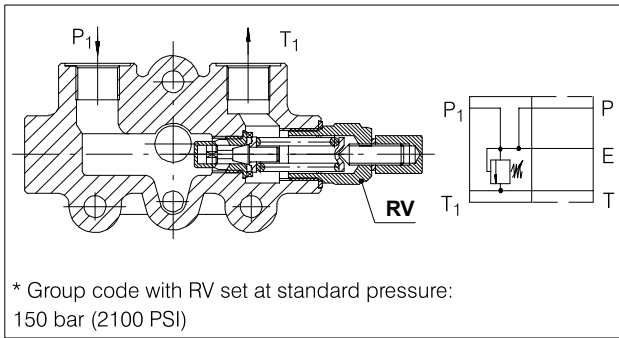
Inlet and outlet Covers

Inlet manifold (standard) with P and RV



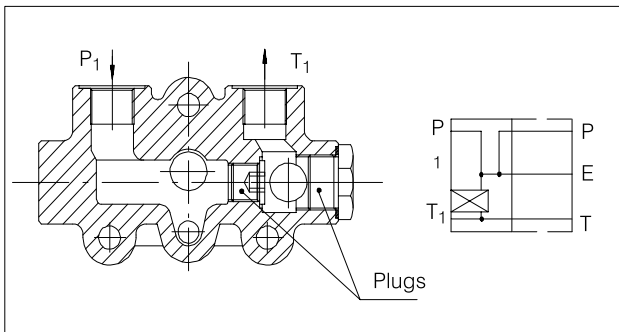
Ø D (diameter)	Code
SAE6	T06 * 200.9310.6002.0
SAE8	T07 * 200.9310.7003.0
3/8" BSP	T09 * 200.9310.2002.0
M18X1.5	T10 * 200.9310.1003.0

Inlet manifold with P₁ – T₁ – RV



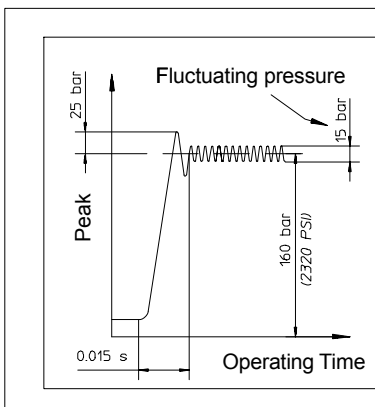
Ø D (diameter)	Code
SAE6	T11 * 200.9310.6003.0
SAE8	T12 * 200.9310.7002.0
3/8" BSP	T14 * 200.9310.2003.0
M18X1.5	T15 * 200.9310.1002.0

Inlet manifold with P₁ – T₁



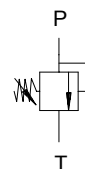
Ø D (diameter)	Code
SAE6	T16 200.9310.6004.0
SAE8	T17 200.9310.7005.0
3/8" BSP	T19 200.9310.2004.0
M18X1.5	T20 200.9310.1004.0

Adjustable direct acting Relief Valve RV



Relief valve setted at 30 l/min (8 U.S.G.P.M.)

Range of Adjustment bar (PSI)	Spring colour	Std. setting bar (PSI)	Setting Code
30 - 95 (400 - 1300)	Yellow (YE)	60 (860)	06
96 - 210 (1300 - 3000)	Green (GR)	150 (2100)	15
211 - 320 (3000 - 4600)	Blue (BL)	260 (3700)	26



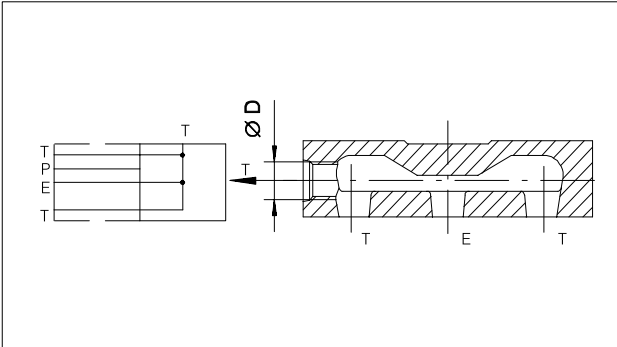
HDS11 Series

Sectional Directional Control Valve



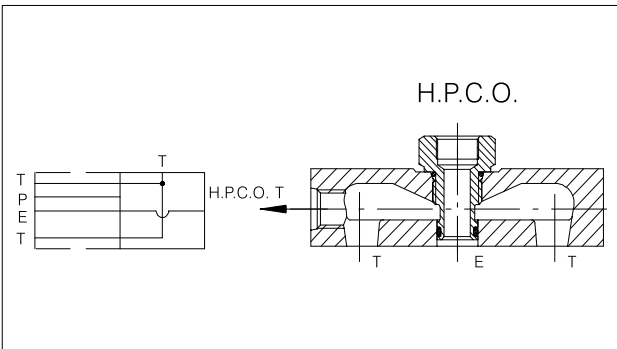
End Cover

Outlet manifold (std) with T and open center



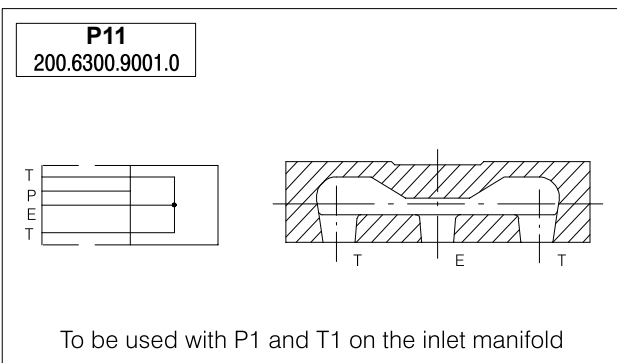
Ø D (diameter)	Code
SAE6	P01 200.6300.6001.1
SAE8	P02 200.6300.7001.0
3/8" BSP	P04 200.6300.2001.1
M18X1.5	P05 200.6300.1001.0

Outlet manifold with T and H.P.C.O.
(power beyond)

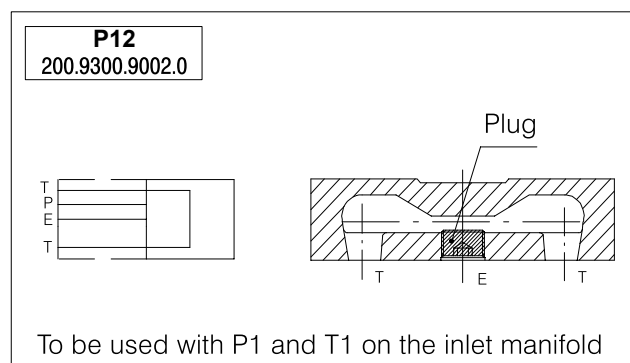


Ø D (diameter)	Code
SAE6	P06 200.9300.6002.0
SAE8	P07 200.9300.7002.0
3/8" BSP	P09 200.9300.2002.0
M18X1.5	P10 200.9300.1002.0

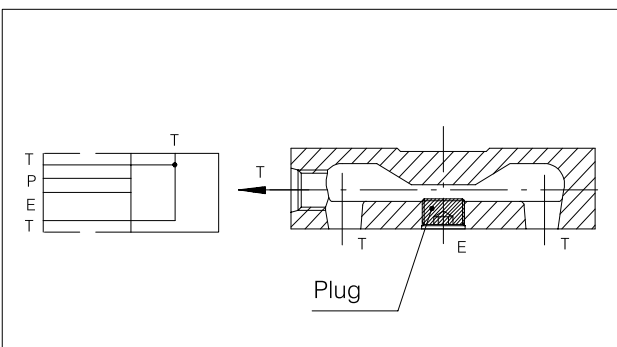
Outlet manifold with open center



Outlet manifold with closed center



Outlet manifold with T and closed center



Ø D (diameter)	Code
SAE6	P13 200.9300.6003.0
SAE8	P14 200.9300.7003.0
3/8" BSP	P16 200.9300.2003.0
M18X1.5	P17 200.9300.1003.0

HDS11 Series



Sectional Directional Control Valve

Sectional body

Standard circuit: parallel

Ø D	Code	
	Standard	Section with valve UC - OA - C
SAE6	K01 200.9413.6051.0	K06 200.9413.6053.0
SAE8	K02 200.9413.7027.0	K07
3/8" BSP	K04 200.9413.2624.0	K09 200.9413.2625.0
M18X1.5	K05 200.9413.1272.0	K10 200.9413.1273.0

cyl. A
cyl. B

Optional circuit: series and tandem

Ø D	Code	
	Standard	Section with valve UC - OA - C
SAE6	K47 200.9413.6052.0	K52 200.9413.6054.0
SAE8	K48 200.9413.7029.0	K53 200.9413.7030.0
3/8" BSP	K50 200.9413.2626.0	K55 200.9413.2627.0
M18X1.5	K51	K56

cyl. A
cyl. B

Note: for availability of -K- bodies without ordering code please contact our Sales Department.

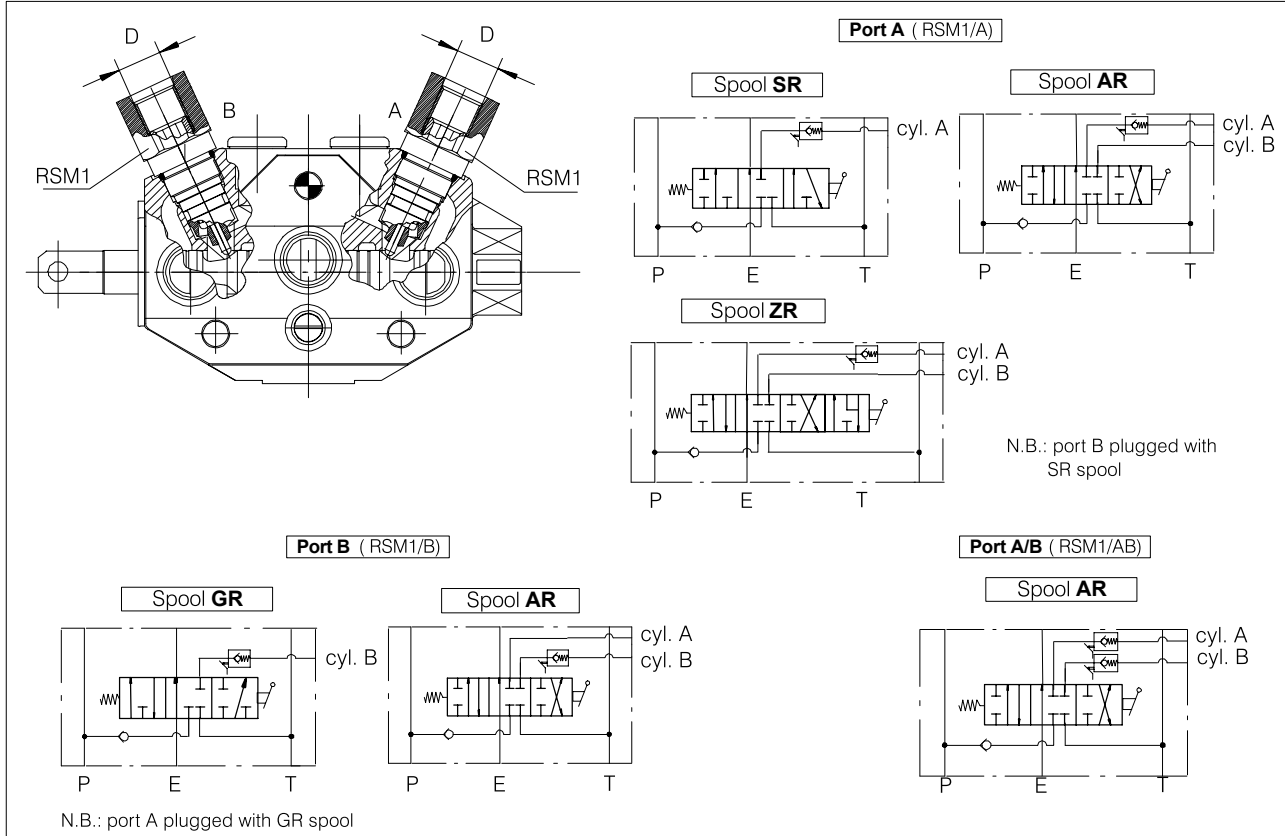
HDS11 Series

Sectional Directional Control Valve



Check valves with mechanical release RSM1

The check valve taper seal is released by means of a taper on the spool and by a push rod.



Ø D	Body code			
	RSM1/A		RSM1/B	RSM1/A-B
	Spool SR-AR	Spool ZR	Spool GR-AR	Spool AR
SAE6	K65 200.9413.6061.0	—	K66* 200.9413.6062.0	K62* 200.9413.9014.0
3/8" BSP	K63 200.9413.2034.0	K40** 200.9413.2033.0	K64* 200.9413.2035.0	
M18X1.5	K60 200.9413.1279.0	K70** 200.9413.1046.0	K61* 200.9413.1280.0	

Ø D	RSM1 Code
SAE6	200.7876.0192.0
3/8" BSP	200.7876.0191.0
M18X1.5	200.7876.0190.0

* : K61 - K62 - K64 - K66 need special lever L153 - L353

** : K40 - K70 need special lever L175-L375

HDS11 Series

Sectional Directional Control Valve



Spool chart

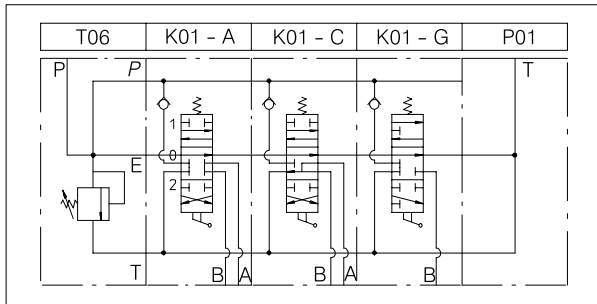
Type	Spool scheme	Spool features
A AR**		4 way - 3 position A/B: blocked E: open by pass
AS		High metering spool (max flow suggested 15 l/min.)
B		4 way - 3 position A/B: blocked E: closed
C		4 way - 3 position A/B to tank in neutral E: open by pass
G GR**		3 way - 3 position B: blocked E: open by pass

S SR**		3 way - 3 position A: blocked E: open by pass
X		4 way - 3 position series connection
Z ZR**		4 way - 4 position 4 th floating position
WW *		4 way - 4 position 4 th floating position

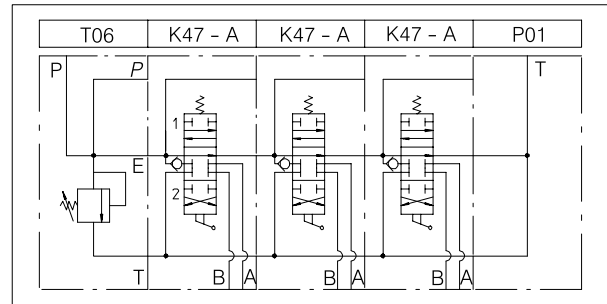
* : "WW" spool require special body (K...), positioner (240) and lever (L192)
** : special body required

Hydraulic circuits

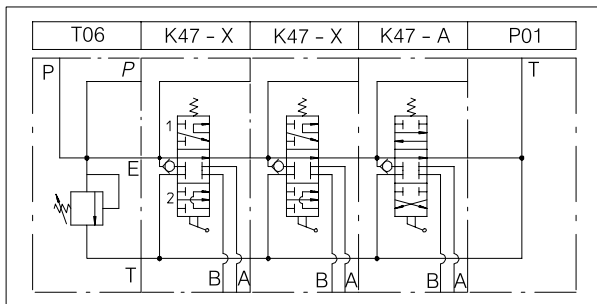
Standard parallel circuit



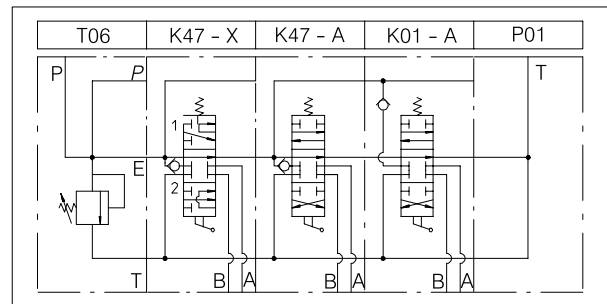
Optional tandem circuit



Optional series circuit



Combined parallel/series circuit



Spool positioners

Type	F (N)	Code*
01 STD	200	200.7685.1001.0
79	140	200.7685.1092.0

3 position spring return to neutral

Type	Code*
02	200.7685.3001.0

2 position detent - spring centre

HDS11 Series

Sectional Directional Control Valve



Spool positioners

Type 03	Code* 200.7685.2001.0
-------------------	--------------------------

3 position detent

Type 04	Code 200.7685.4003.0
-------------------	-------------------------

4 position float

Plastic plug code: 200.6780.0009.0

Type 05	Code* 200.7685.2005.0
-------------------	--------------------------

2 position detent

Type 06	Code* 200.7685.1005.0
-------------------	--------------------------

2 position spring return

Type 07	Code* 200.7685.2027.0
-------------------	--------------------------

2 position detent

Type 12	Code* 200.7685.1021.0
-------------------	--------------------------

2 position spring return

Type 15	Code* 200.7685.1109.0
-------------------	--------------------------

2 position spring return

Type 16	Code* 200.7685.1110.0
-------------------	--------------------------

2 position spring return to neutral

* : code without plastic plug; plastic plug code: 200.6780.0008.0

HDS11 Series

Sectional Directional Control Valve



Spool positioners

Type 17	Code* 200.7685.1040.0
-------------------	--------------------------

2 position spring return

Type 20	Code* 200.7685.3010.0
-------------------	--------------------------

2 position detent + spring centre

Type 38	Code* 200.7685.2029.0
-------------------	--------------------------

4 position detent

Type 84	Code 200.9686.1097.0
-------------------	-------------------------

3 position spring return to neutral

Type 88	Code 200.9686.1010.0
-------------------	-------------------------

3 position spring return to neutral

Type 106	Code* 200.7685.2028.0
--------------------	--------------------------

2 position detent - spring return to pos.1

Type 240	Code 200.7685.4031.0	Plastic plug code: 200.6780.0009.0
--------------------	-------------------------	---------------------------------------

4 position float
only for "WW" float spool

* : code without plastic plug; plastic plug code: 200.6780.0008.0

HDS11 Series

Sectional Directional Control Valve



Microswitch control on each single element

Type 30	Code 200.9686.1050.0	Micro operated with spool in pos. 1		
Type 32	Code 200.9686.1060.0	Micro operated with spool in pos. 2		
Type 34	Code 200.9686.1064.0	Micro operated with spool in pos. 1 and 2		

* The microswitch code 200.9625.0006.0 is supplied only on customer's request

Single microswitch control for multi – sectional valves (1st element).

Type 40 (MFL)	Code 200.9686.1140.0	Micro operated with spool in pos. 1 and 2			
Positioner 40 must be assembled only on the last element near T port.					

* The microswitch code 200.9625.0006.0 is supplied only on customer's request

Single microswitch control for multi – sectional valves (2nd and following el.).

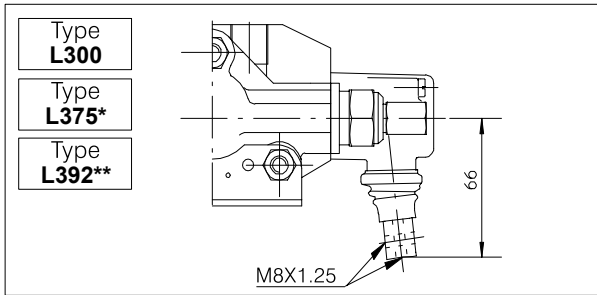
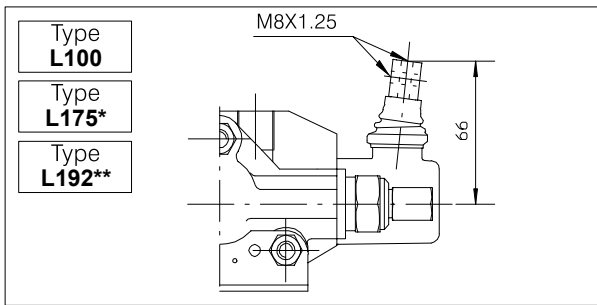
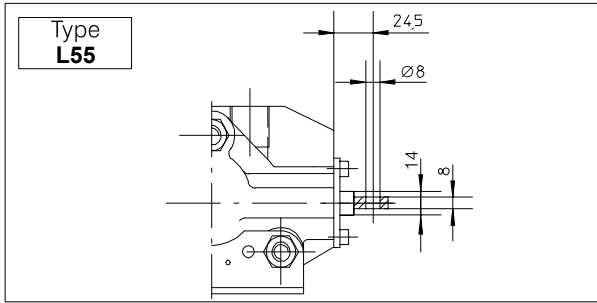
Type 39 (MSF)	Code 200.9686.1139.0	Micro operated with spool in pos. 1 and 2		

HDS11 Series

Sectional Directional Control Valve

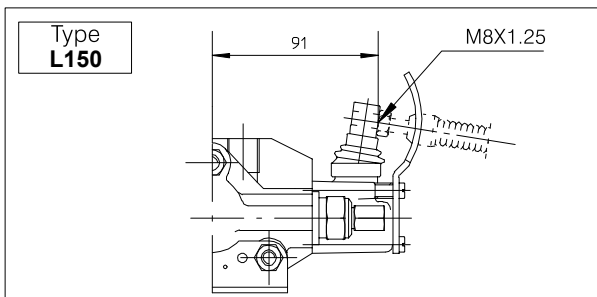
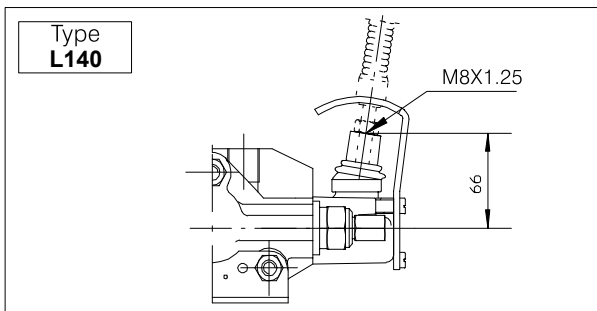


Lever styles



*: L175 - L375 only for "Z" spool application
 **: L192 - L392 only for "WW" spool application

Safety levers



Type	Lo		Code
	mm	inches	
AL001	150	5.90	200.7022.1019.0
AL002	200	7.87	200.7022.1003.0
AL003	250	9.84	200.7022.1005.0
AL004	300	11.81	200.7022.1006.0

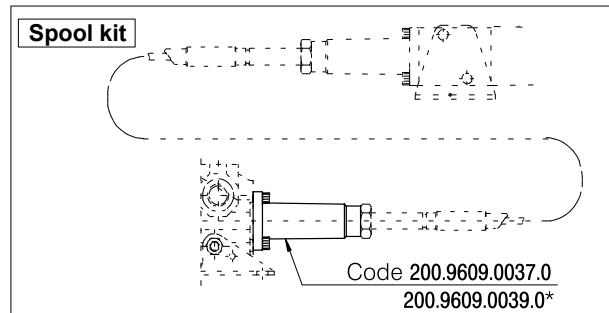
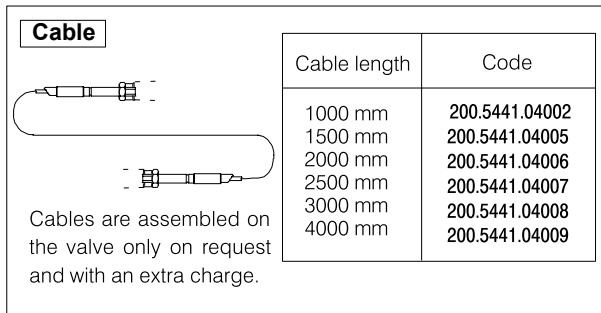
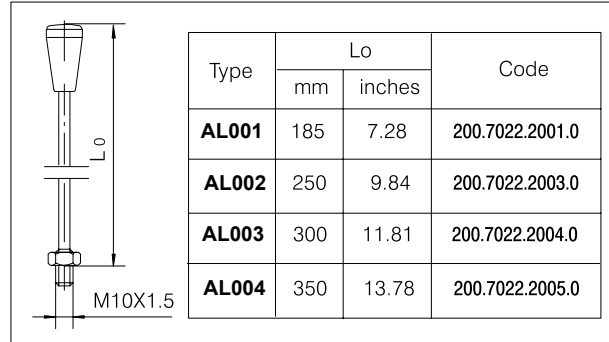
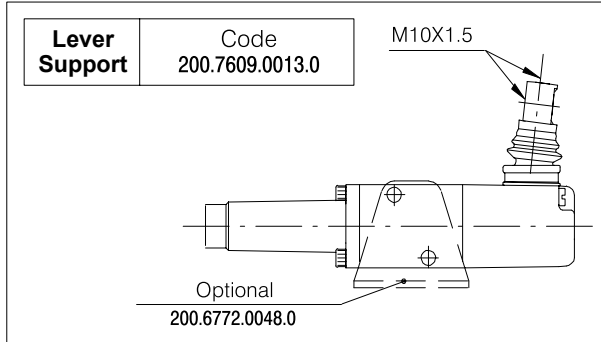
Type	Lo		Code
	mm	inches	
AL014	160	6.30	200.7022.1009.0
AL018	180	7.08	200.7022.1011.0

HDS11 Series

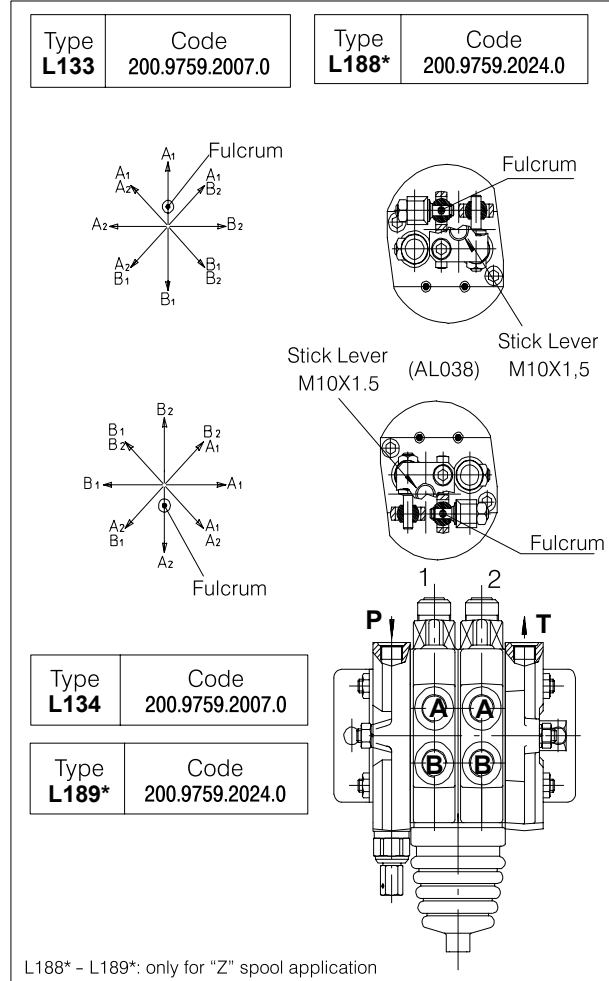
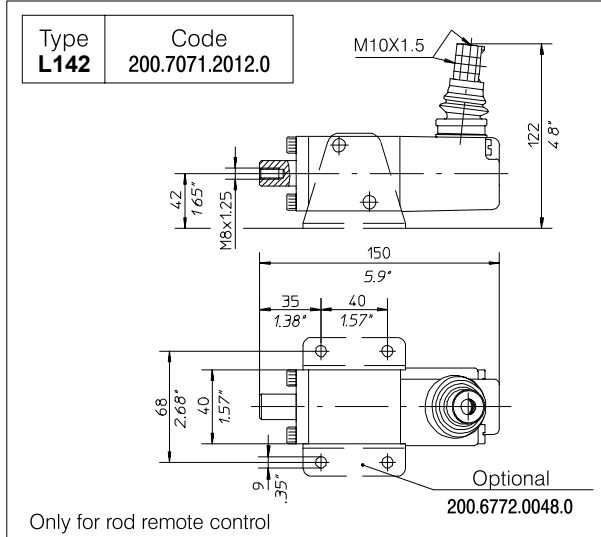
Sectional Directional Control Valve



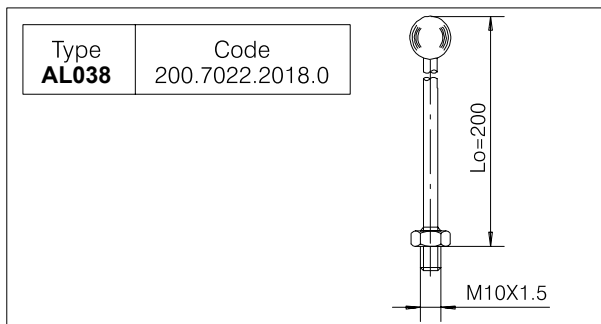
Remote cable control



* only for "Z" spool application



Cross joystick for dual axis control



HDS11 Series

Sectional Directional Control Valve



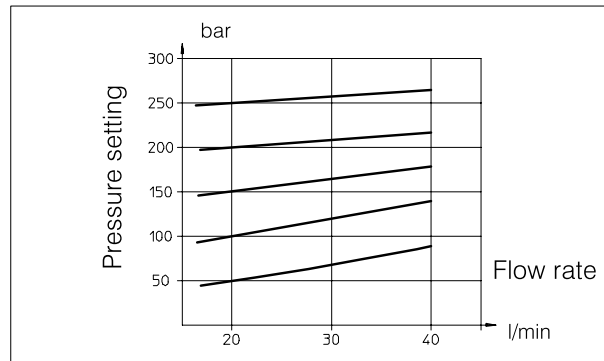
Port relief and anticavitation valves

Port relief valve settings

Range of Adjustment bar (PSI)	Spring colour	Std. Setting bar (PSI)	Setting Code
30 - 130 (400 - 1850)	Yellow (YE)	60 (860)	06
131 - 320 (1850 - 4600)	Green (GR)	150 (2100)	15

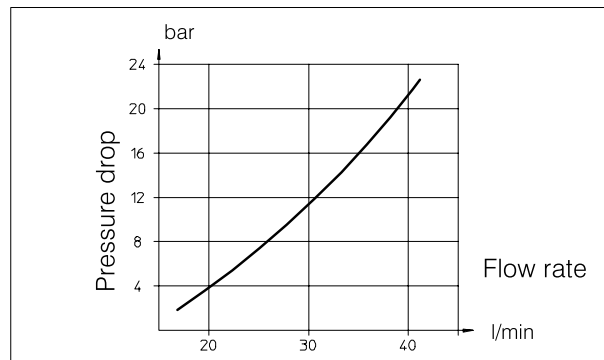
Port relief valve

Type
OA



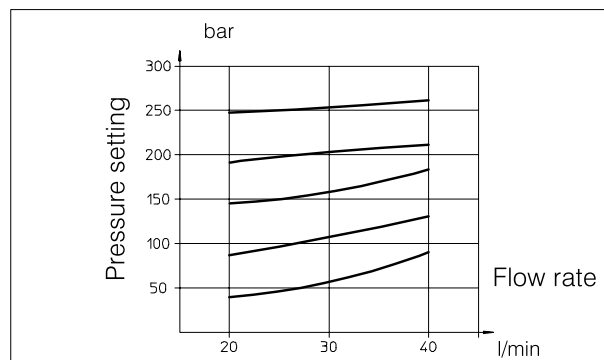
Anticavitation valve

Type
C



Combined port relief and anticavitation valve

Type
UC



HDS11 Series

Sectional Directional Control Valve



Electromagnetic control EMC (ON-OFF)

General Specifications

Technical specification	Metering unit system	
Max flow rate	l/min U.S.G.P.M.	40 11
Max operating pressure	bar PSI	300 4260
Max back pressure on the channel "T"	bar PSI	20 285
Oil temperature	° C ° F	-10 to +80 14 to 180
Oil viscosity	° E cSt	6 to 6.6 20 to 50
Oil filtration	μ	≤25

Spool leakage at 100 bar (1450 PSI), Temp. 50° C (120° F), viscosity 27 cSt:		
Maximum	cm ³ /min Cu. In./min	16 1.138
Average	cm ³ /min Cu. In./min	12 0.854

Number of spools	1 to 10
Adjustable direct operated relief valve (tamper-proof seal available on request)	RV
Load hold check valve in each section	LC
Cartridge anti-shock, anticavitation and service relief valve	OA-UC-C

Material specification:

Body: High strength cast-iron.
Spool: Hardened steel.
Seals: Buna "N".

Optional features available

Series circuit;
Load sensing circuit;
Spool 3-way or 4-way at 2-3 positions;
Port relief and anti-cavitation valves -OA-UC-C-
Cross port relief valve - AA-
Pilot - Actuated Check Valve - RP-

Ports

P-T-P₁-T₁-A-B-HPCO(M18X1.5 - 3/8" BSP .
-SAE6 - SAE8)

Input voltages

VDC 12V - 24V - *

Solenoid specification

Technical specification	Metering unit system	
Voltage	V. D.C.	12 (24) ± 10%
Power consumption	Watt (W)	29
Intensity of current	Ampere (A)	2.4 (1.4)
Resistance	Ohm (Ω)	5 (19.5)
Duty cycle (continuous)	ED	100%
Stabilized temperature at nominal voltage	° C	110
Ambient temperature	° C	-20 to +40

Protection class IP65 (DIN 40050)
Coil insulation class H (VDEO 0580)
STD. connection (DIN 43650)
Manual override.
Explosion-proof version on demand.

Mechanical specification

Spool diameter 10 mm
Spool stroke 2.50 mm
Overlapping 1.25 mm
Internal passage 10 mm
Dimensional section (width) 40 mm

Weight

Technical specification	Metering unit system	
Inlet with RV and P	kg LBS	1.0 2.23
1 spool section with 2 solenoid	kg LBS	2.50 5.50
1 spool with 1 solenoid	kg LBS	2.10 4.62
End cover with T and HPCO	kg LBS	0.75 1.65

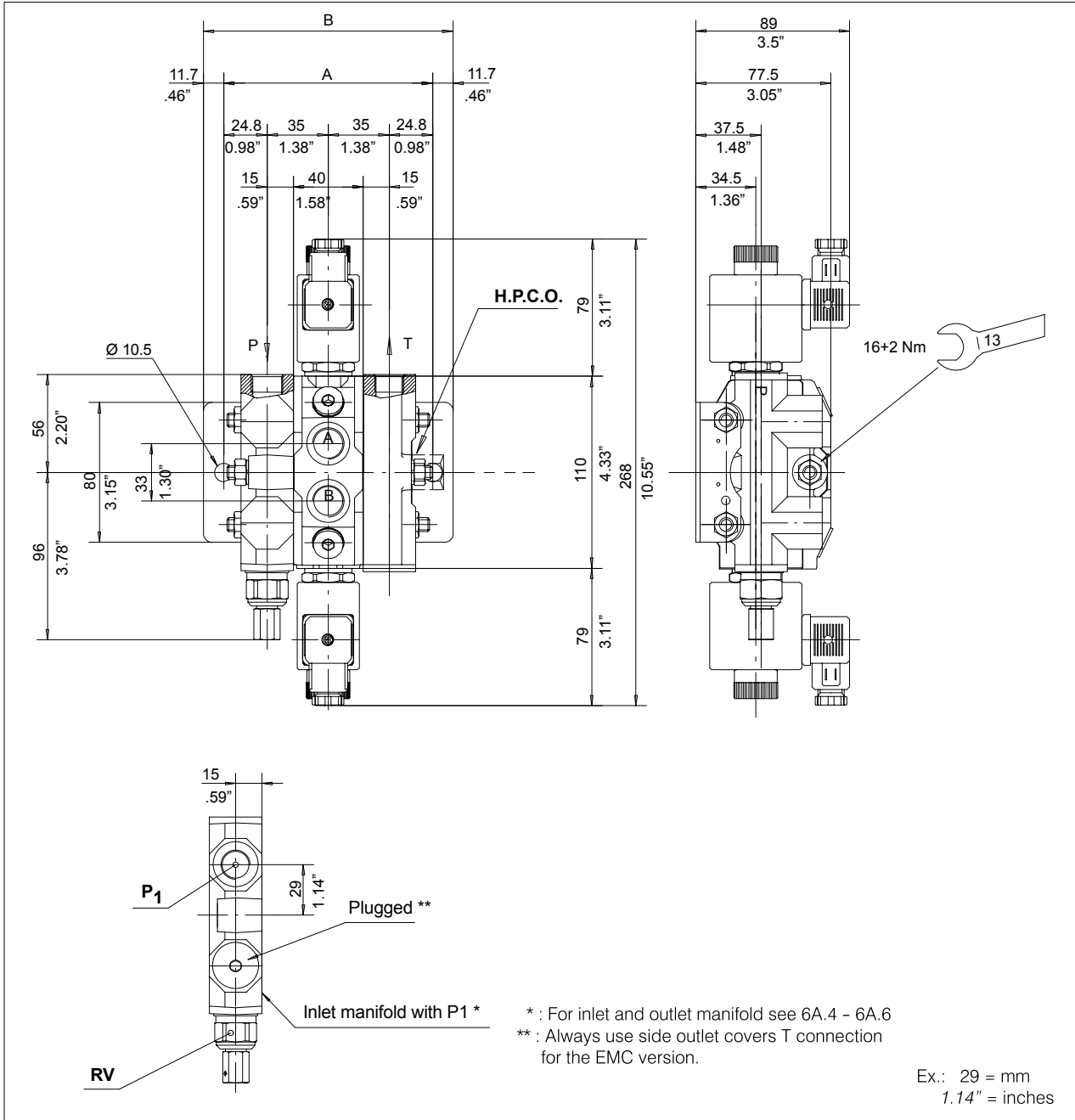
* for non indicated tension valves, please contact our Sales Department

HDS11 Series

Sectional Directional Control Valve



Dimensional data



N. of sections	1	2	3	4	5	6	7	8	9	10
Dimension A	119.6	159.6	199.6	239.6	279.6	319.6	359.6	399.6	439.6	479.6
	4.71"	6.28"	7.86"	9.43"	11.01"	12.58"	14.16"	15.73"	17.31"	18.88"
Dimension B	143	183	223	263	303	343	383	423	463	503
	5.63"	7.20"	8.78"	10.35"	11.93"	13.50"	15.08"	16.65"	18.23"	19.80"

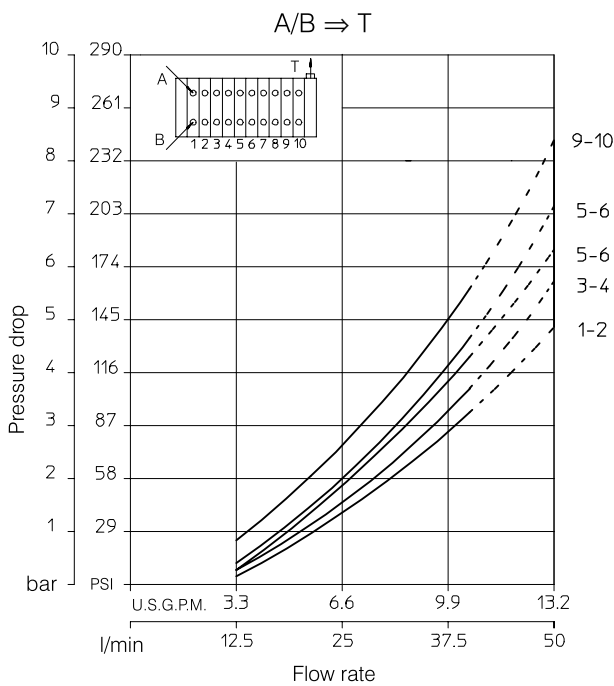
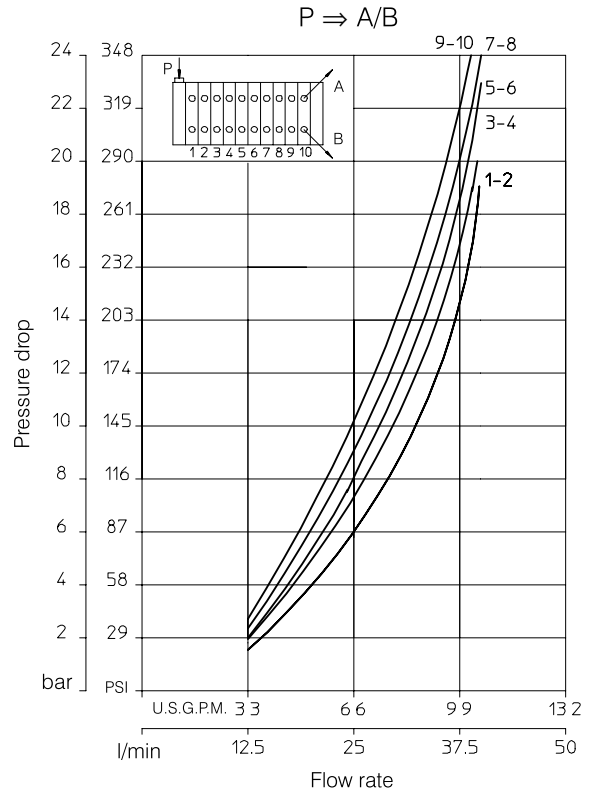
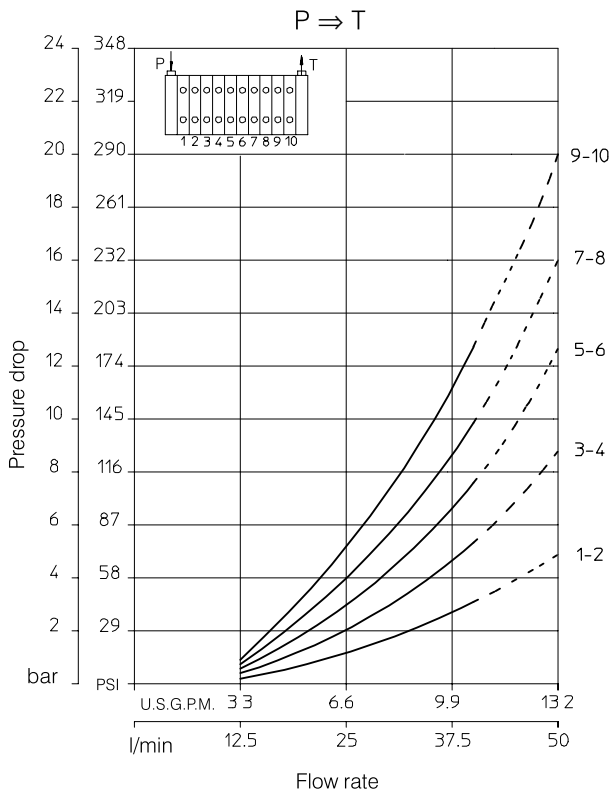
HDS11 Series

Sectional Directional Control Valve



Performance curves

Oil: Shell Tellus T37
 Temperature: 50°C (120°F)
 Viscosity: 27 cSt



HDS11 Series

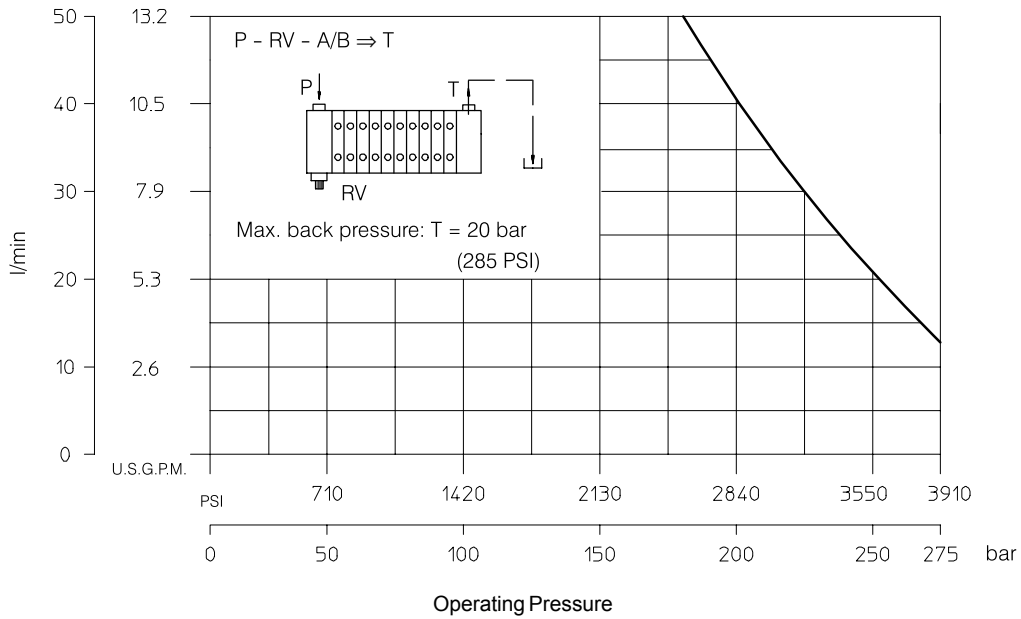
Sectional Directional Control Valve



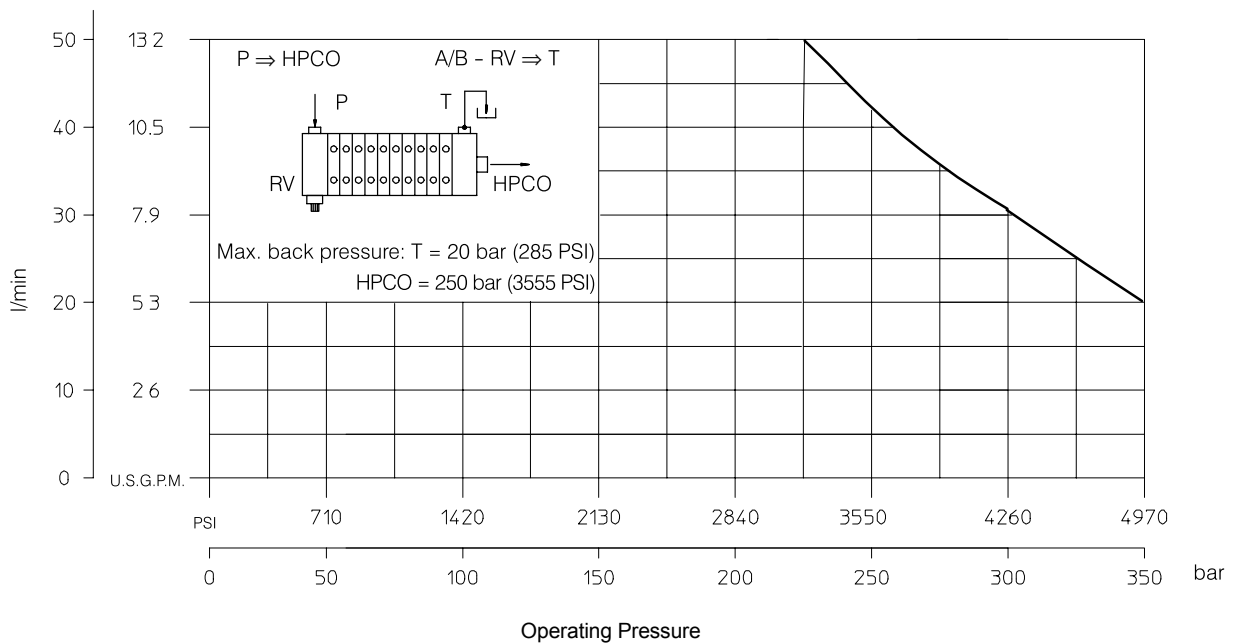
Operating limit

Oil: Shell Tellus T37
 Temperature: 50°C (120°F)
 Viscosity: 27 cSt
 Tested with voltage V = -10%

Standard Circuit



Carry-over Circuit



HDS11 Series

Sectional Directional Control Valve



Sectional body

Standard circuit: parallel

Ø D	Code	
	Standard	Section with valve UC- OA- C
SAE6	K201 200.9413.6055.0	K211 200.9413.6060.0
SAE8	K202 200.9413.7031.0	K212 200.9413.7032.0
3/8" BSP	K204 200.9413.2628.0	K214 200.9413.2629.0
M18X1.5	K205 200.9413.1276.0	K215 200.9413.1277.0

cyl. A
cyl. B

Optional circuit: series and tandem

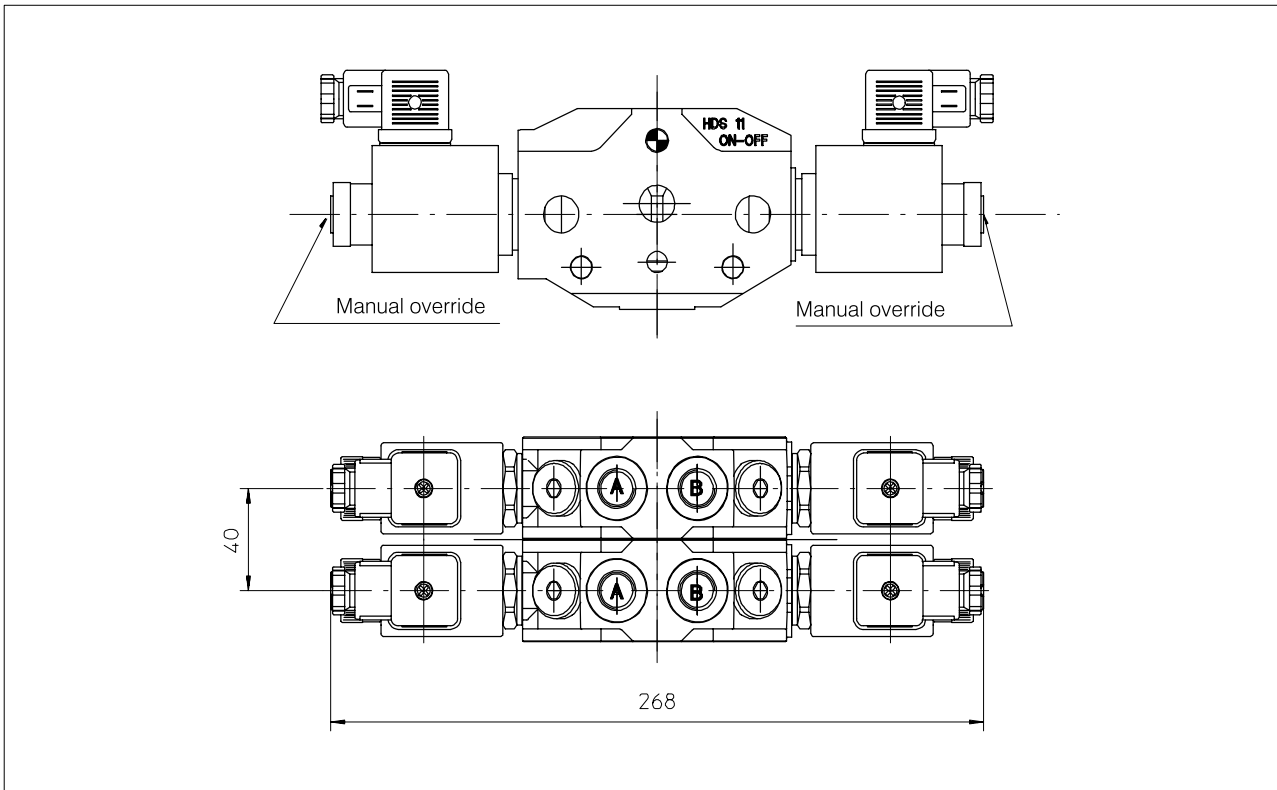
Ø D	Code	
	Standard	Section with valve UC- OA- C
SAE6	K247 200.9413.6066.0	K252
SAE8	K248 200.9413.7039.0	K253
3/8" BSP	K250 200.9413.2042.0	K255 200.9413.2036.0
M18X1.5	K251 200.9413.1034.0	K256 200.9413.1037.0

cyl. A
cyl. B

Note: for availability of -K- bodies without ordering code please contact our Sales Department.

HDS11 Series

Sectional Directional Control Valve



Spool chart

Type	Spool scheme	Spool features
AE		4 way - 3 position A/B blocked E: open by pass
BE		4 way - 3 position A/B blocked E: closed
CE		4 way - 3 position A/B to tank in neutral E: open by pass
DE		4 way - 3 position A: blocked B: to tank in neutral
GE		3 way - 3 position B: blocked E: open by pass
LE		4 way - 3 position B: blocked A: to tank in neutral
SE		3 way - 3 position A: blocked E: open by pass
XE*		4 way - 3 position A: blocked E: open by pass
XCE*		4 way - 3 position A: to tank in neutral
LAE**		4 way - 3 position A: blocked Load Sensing
LCE**		4 way - 3 position A/B to tank in neutral - Load Sensing
LGE**		3 way - 3 position B: blocked Load Sensing
LSE**		3 way - 3 position A: blocked Load Sensing

* series body required
** special body required

Note: For availability of L/S versions please contact our Sales Department

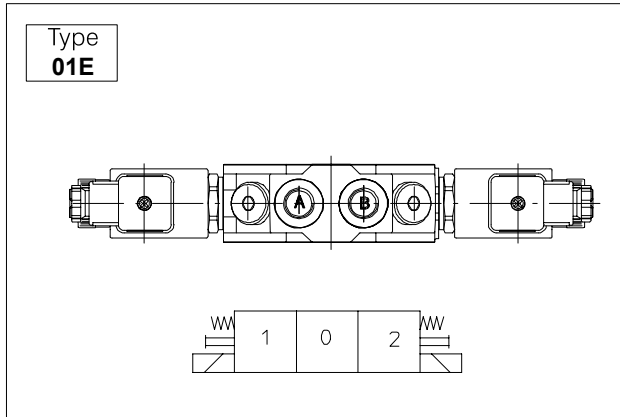
HDS11 Series

Sectional Directional Control Valve

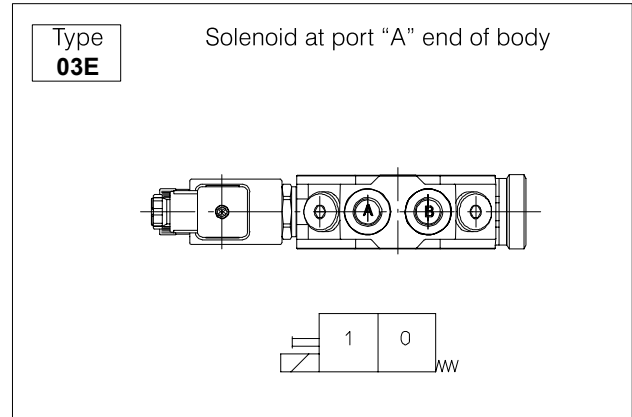


Spool Action

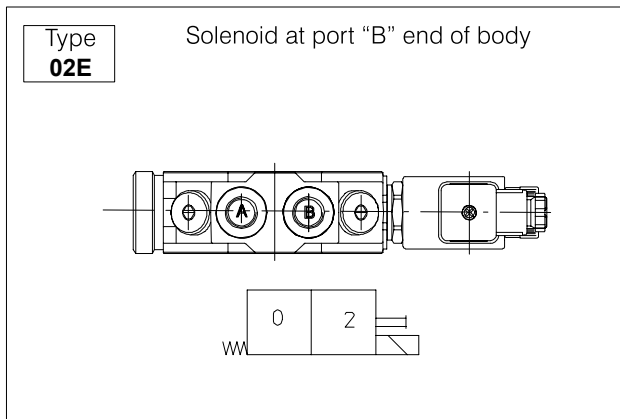
Double-Solenoid spring-centered valves



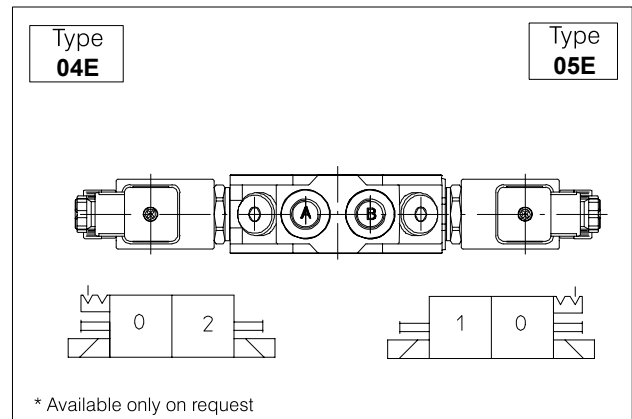
Single Solenoid spring offset valves



Single Solenoid spring offset valves



Double Solenoid, two detent position valves*



Elements with pressure and flow control PQ

General Specifications

Operating pressure 320 bar
Nominal flow max. 50 l/min

Adjustable setting flow range on 350° turning-knob:
Min flow 0 l/min
Max flow (input) 40 l/min

Fixed priority flow VDPF = 0 to 40 l/min
Adjustable priority flow VDP 06 = 0 to 6 l/min
..... VDP 12 = 0 to 12 l/min
..... VDP 25 = 0 to 25 l/min
..... VDP 40 = 0 to 40 l/min
Control accuracy ±5 %

Pressure difference Δp max. 6 bar
Oil temperature range -10° to +80° C
Viscosity range 16 to 75 cSt
Recommended filtration ≤25 micron

Adjustable direct acting:
Relief valve on the lines General flow: RV1
..... Priority flow: RV2
..... Residual flow: RV3

By-pass solenoid valve BP3/AE
..... BP3/CE

HDS11 Series

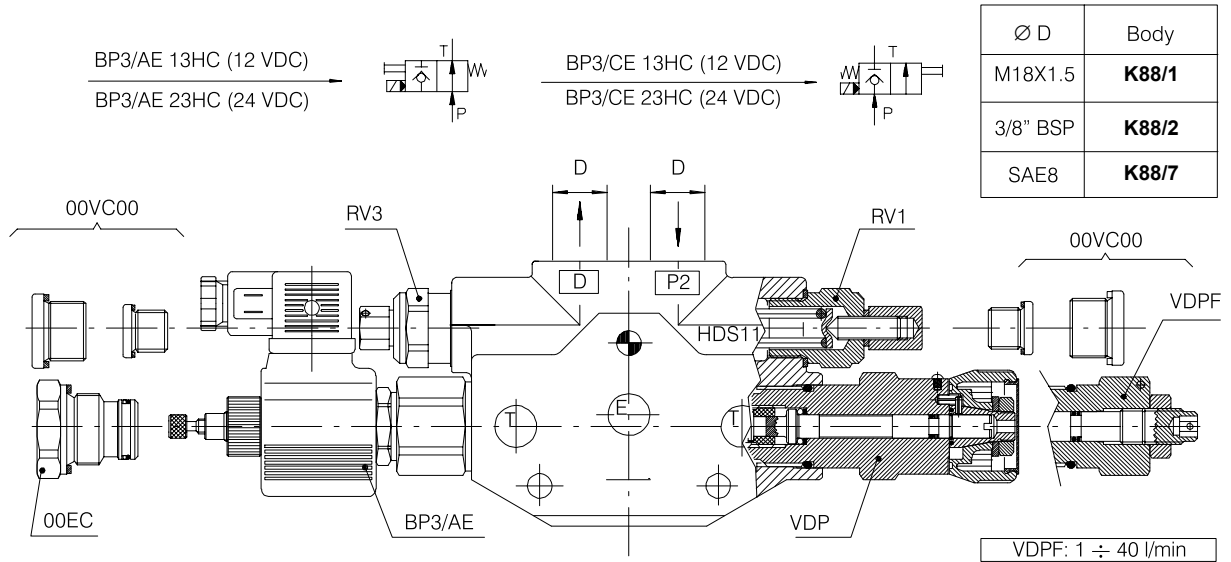
Sectional Directional Control Valve



Sectional body K88

Application variation

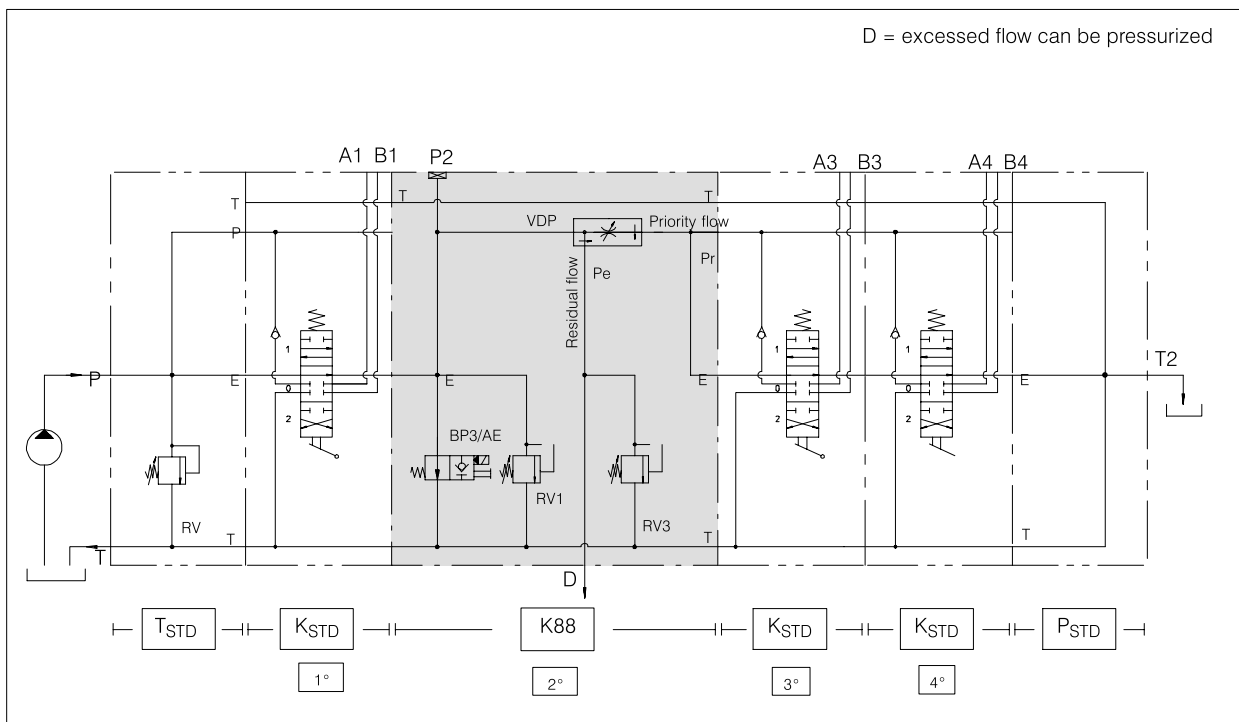
Intermediate section with priority flow divider pressure compensated valve, pressure relief valves and by-pass valve.



Relief valves Type	code	Range of adjustment (bar)
RV1 - RV3	06	30 ÷ 95
RV1 - RV3	15	96 ÷ 210
RV1 - RV3	26	211 ÷ 320

Flow regulator Type	code	Range of adjustment (l/min)
VDP 06	06	0 ÷ 6
VDP 12	12	0 ÷ 12
VDP 25	25	0 ÷ 25
VDP 40	40	0 ÷ 40

Scheme



HDS11 Series

Sectional Directional Control Valve



Inlet cover T88

Application variation

Inlet cover with priority flow divider pressure compensated valve, pressure relief valves and by-pass valve.

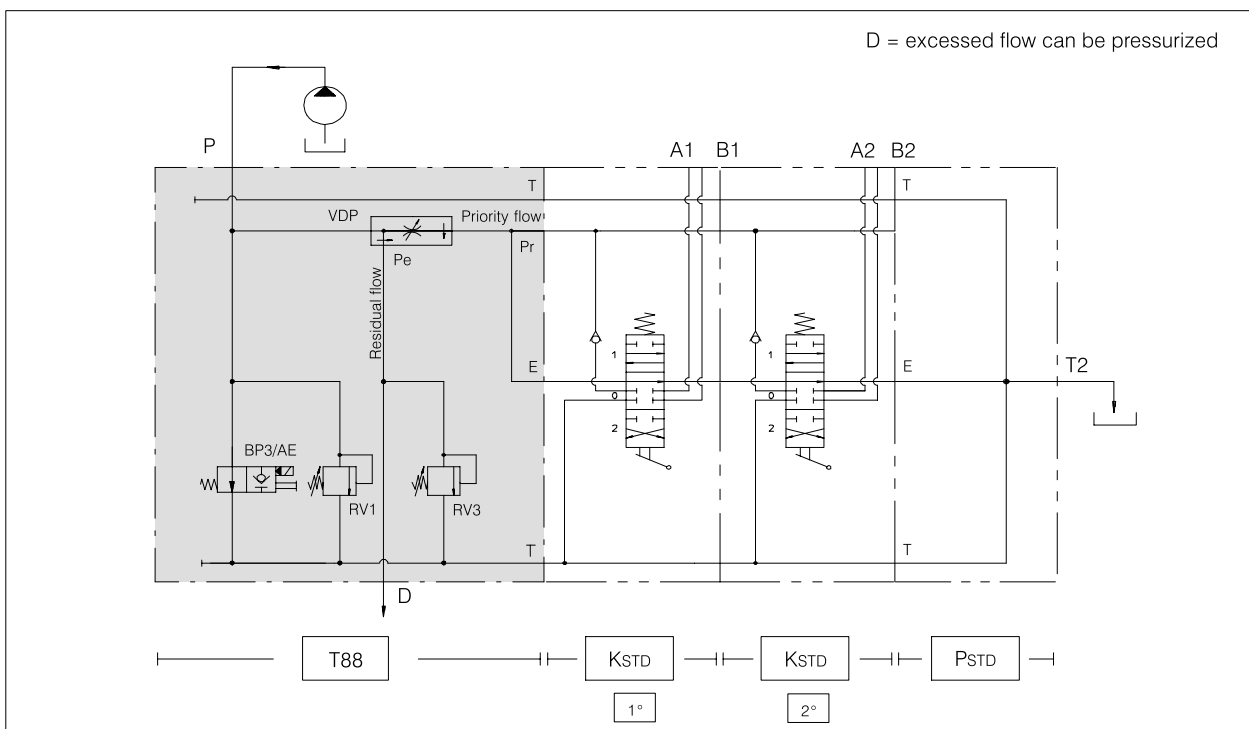
Ø D	Inlet cover
M18X1.5	T88/1
3/8" BSP	T88/2
SAE8	T88/7

Relief valves Type	code	Range of adjustment (bar)
RV1 - RV3	06	30 ÷ 95
RV1 - RV3	15	96 ÷ 210
RV1 - RV3	26	211 ÷ 320

Flow regulator Type	code	Range of adjustment (l/min)
VDP 06	06	0 ÷ 6
VDP 12	12	0 ÷ 12
VDP 25	25	0 ÷ 25
VDP 40	40	0 ÷ 40

VDPF: 1 ÷ 40 l/min

Scheme



HDS11 Series

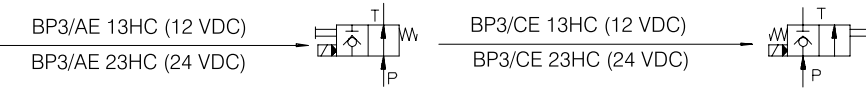
Sectional Directional Control Valve



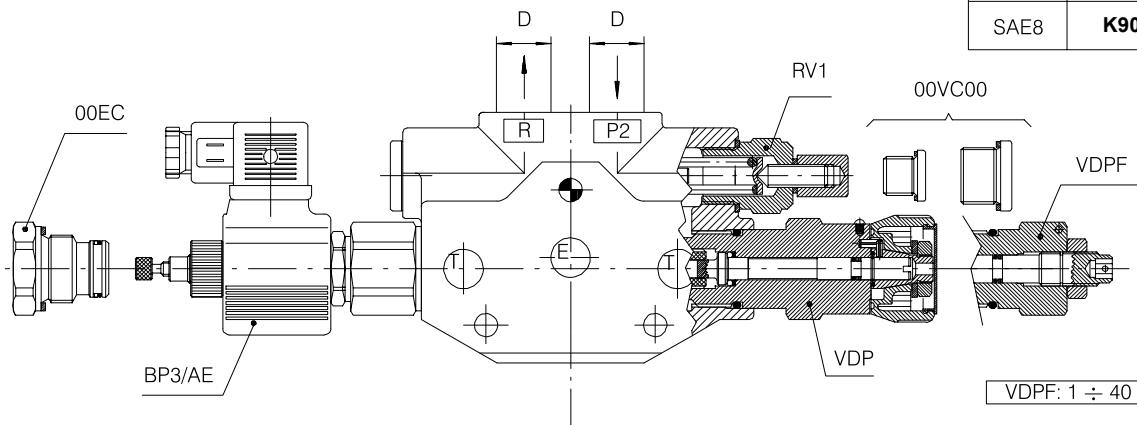
Sectional body K90

Application variation

Intermediate section with priority flow divider pressure compensated valve, pressure relief valves and by-pass valve. Excess flow to tank.



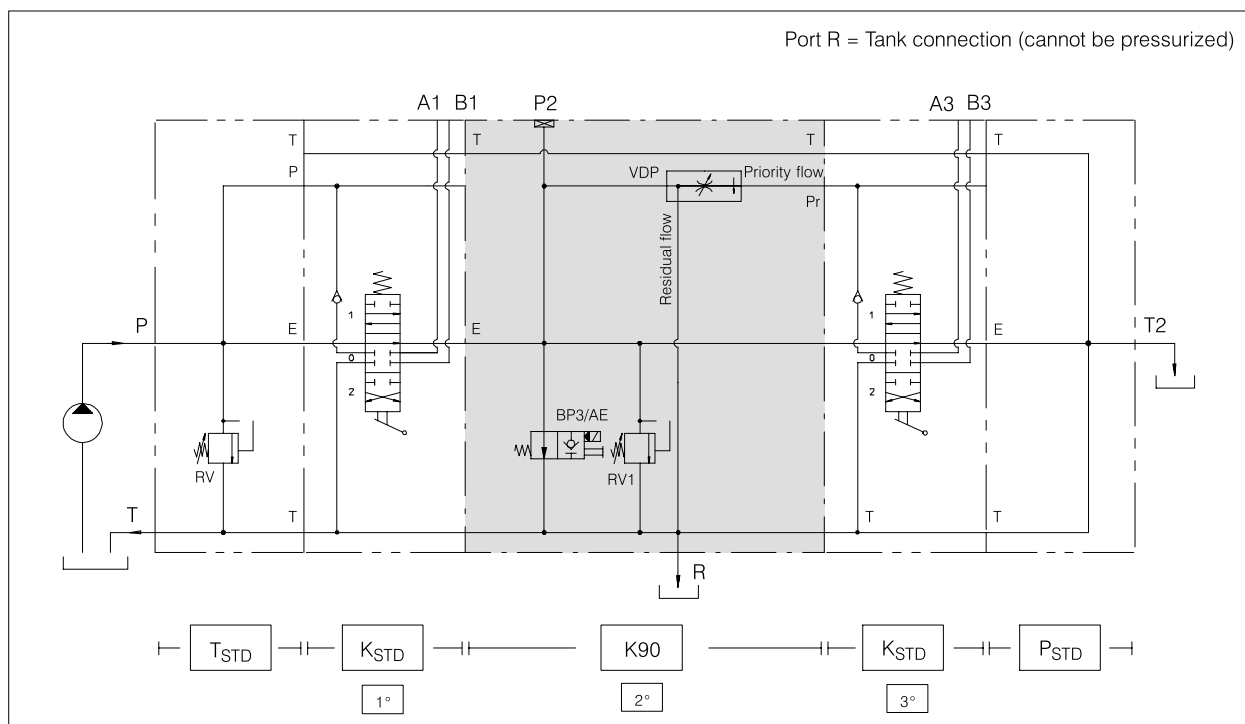
Ø D	Body
M18X1.5	K90/1
3/8" BSP	K90/2
SAE8	K90/7



Relief valves Type	code	Range of adjustment (bar)
RV1	06	30 ÷ 95
RV1	15	96 ÷ 210
RV1	26	211 ÷ 320

Flow regulator Type	code	Range of adjustment (l/min)
VDP 06	06	0 ÷ 6
VDP 12	12	0 ÷ 12
VDP 25	25	0 ÷ 25
VDP 40	40	0 ÷ 40

Scheme



HDS11 Series

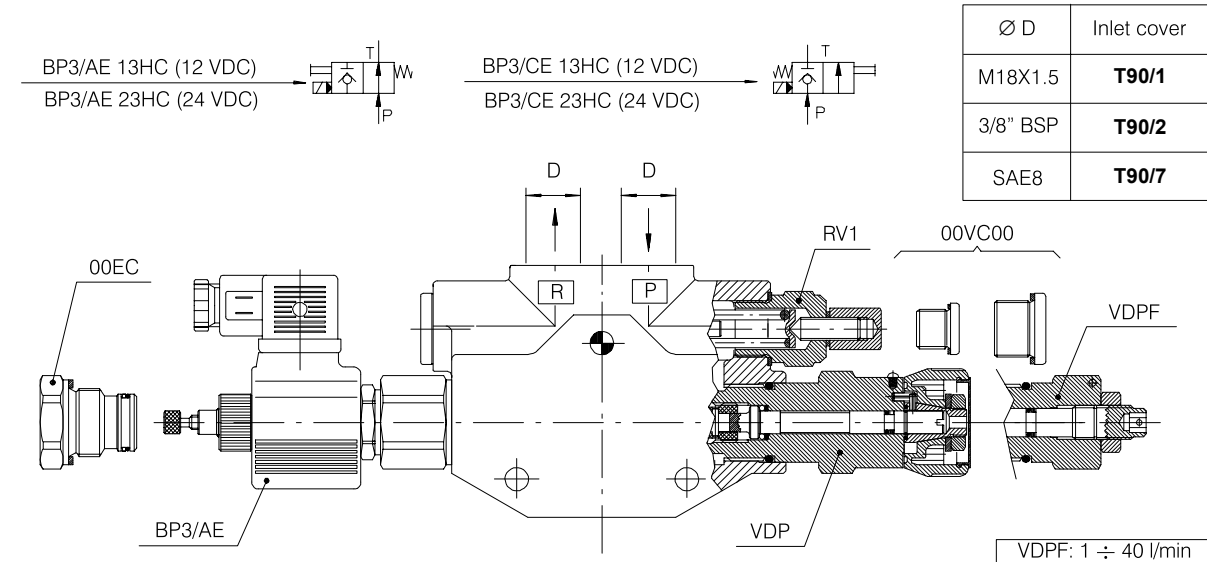
Sectional Directional Control Valve



Inlet cover T90

Application variation

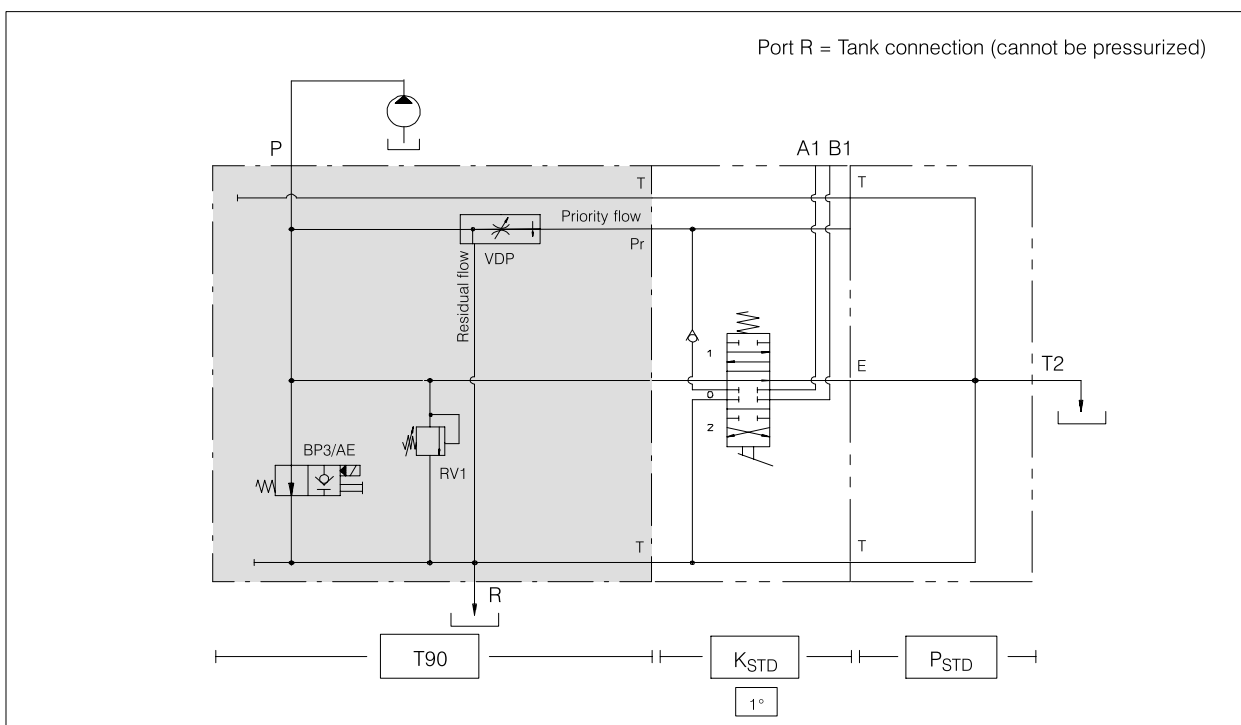
Inlet cover with priority flow divider pressure compensated valve, pressure relief valves and by-pass valve. Excess flow to tank.



Relief valves Type	code	Range of adjustment (bar)
RV1	06	30 ÷ 95
RV1	15	96 ÷ 210
RV1	26	211 ÷ 320

Flow regulator Type	code	Range of adjustment (l/min)
VDP 06	06	0 ÷ 6
VDP 12	12	0 ÷ 12
VDP 25	25	0 ÷ 25
VDP 40	40	0 ÷ 40

Scheme



HDS11 Series

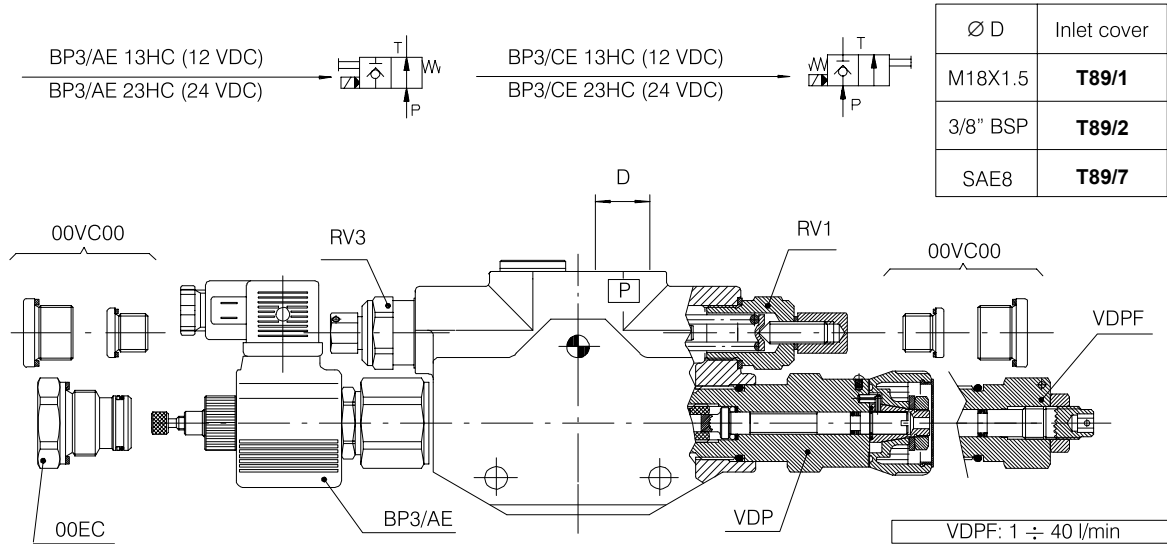
Sectional Directional Control Valve



Inlet cover T89*

Application variation

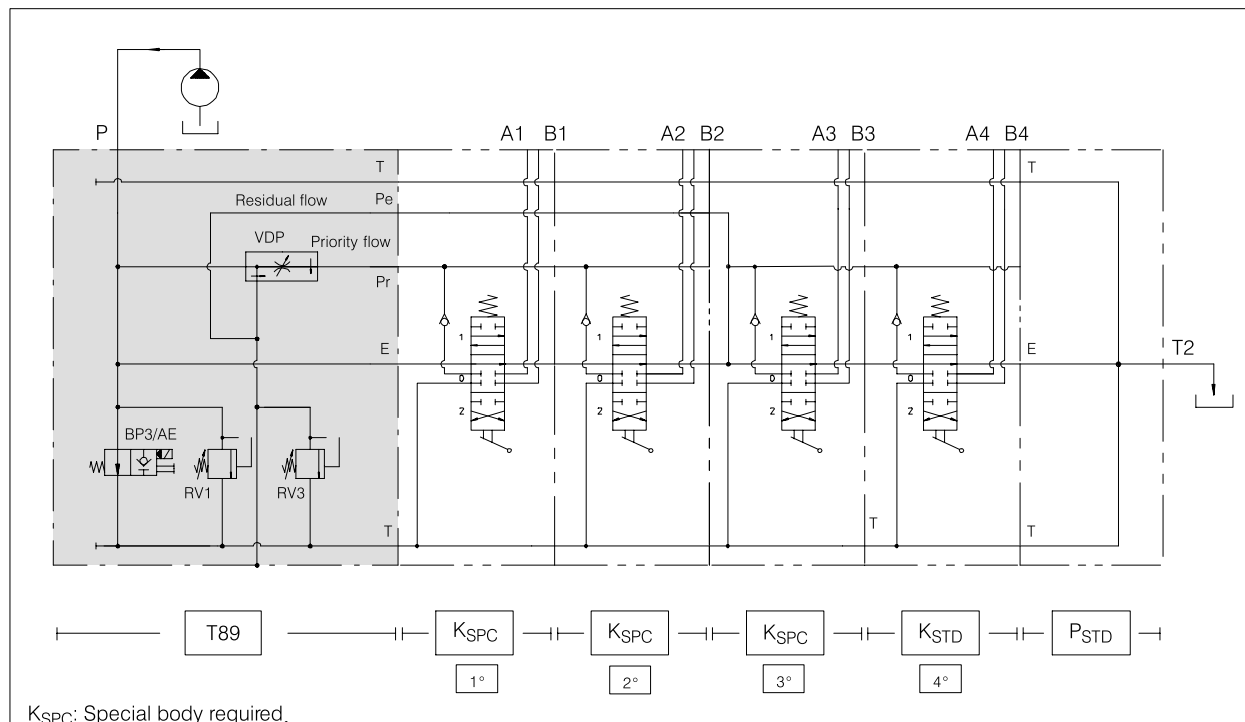
Inlet cover with priority flow divider pressure compensated valve, pressure relief valves and by-pass valve.



Relief valves Type	code	Range of adjustment (bar)
RV1 - RV3	06	30 ÷ 95
RV1 - RV3	15	96 ÷ 210
RV1 - RV3	26	211 ÷ 320

Flow regulator Type	code	Range of adjustment (l/min)
VDP 06	06	0 ÷ 6
VDP 12	12	0 ÷ 12
VDP 25	25	0 ÷ 25
VDP 40	40	0 ÷ 40

Scheme



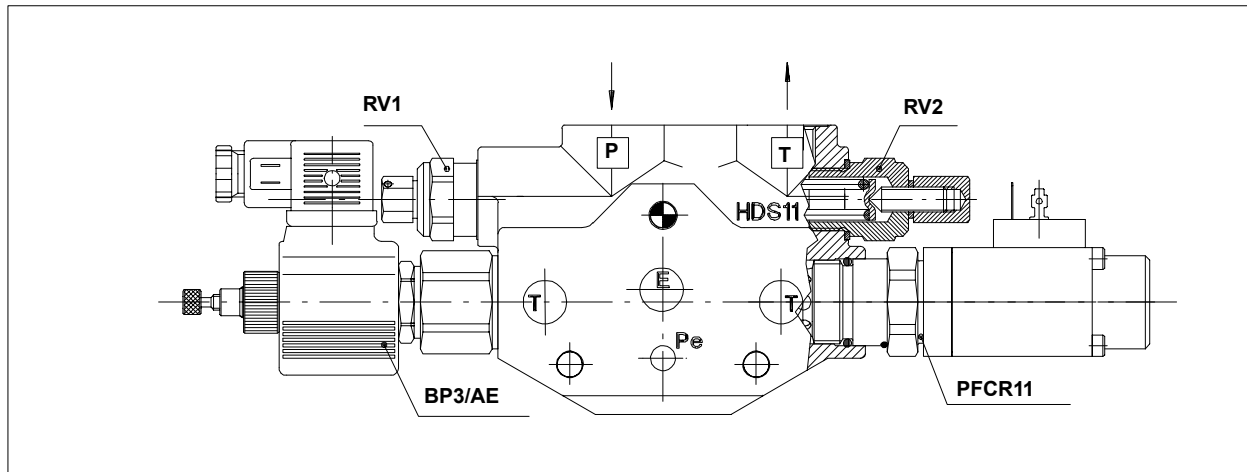
HDS11 Series

Sectional Directional Control Valve

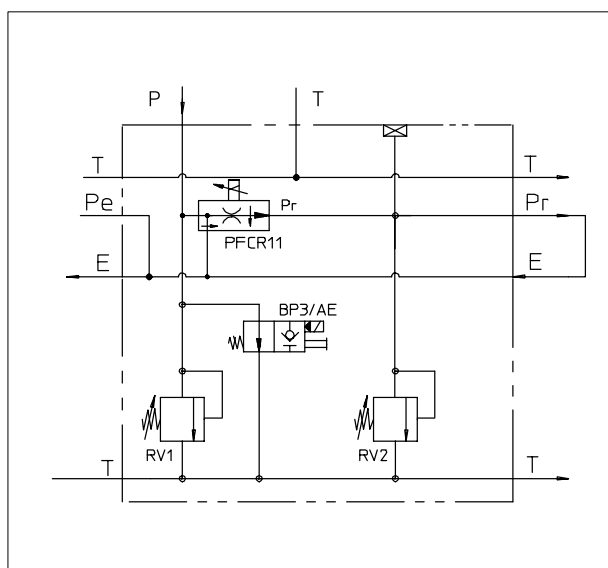


Proportional flow control PFCR11

Example of application on K100 body



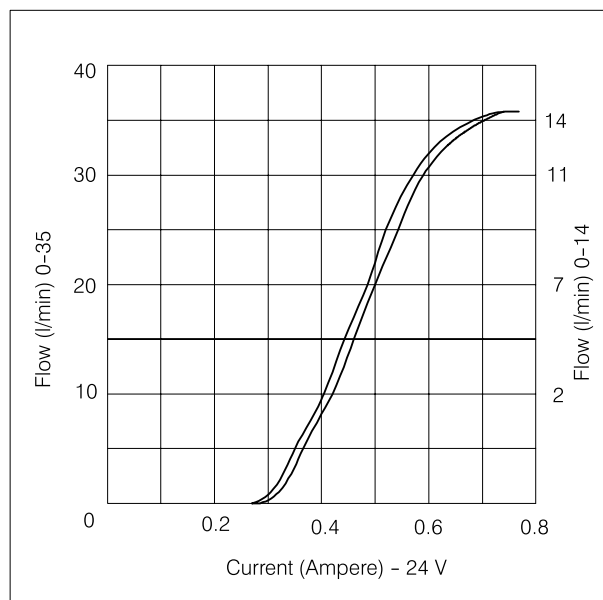
Example of hydraulic scheme K100



Hydraulic performances

Max. pressure	270 bar
Max. recommended pressure	230 bar
Regulated flow range	0 – 14 l/min
	0 – 35 l/min
Temperature range	-5/+70 ° C

Current/flow regulated diagram



Electric performances

Coil according to	VDE 0580		
Connector type	DIN 43650		
Max. current	0.75 A (24 V. DC)		
Duty rating	ED= 100%		
Suggested dither	110 Hz		
Insulation class with std. plug	IP54 (DIN 40050)		

Voltage $\pm 5\%$	12	24	V (DC)
Nominal current	1.25	0.68	Ampere
Resistance at 20°C	7.2	24.6	Ohm
Nominal power	17.2	17.4	Watt

Code

PFCR11/V2 - 14 - P2 - 13 Code: **200.7880.0011.0** (12 V)
 PFCR11/V2 - 14 - P2 - 23 Code: **200.7880.0012.0** (24 V)
 PFCR11/V8 - 35 - P2 - 13 Code: **200.7880.0007.0** (12 V)
 PFCR11/V8 - 35 - P2 - 23 Code: **200.7880.0008.0** (24 V)
 (without connector)

HDS11 Series



Sectional Directional Control Valve

Special sectional bodies

Special element (priority flow): to be used only with T89 (*) inlet cover

Ø D	Code	
	Standard	Section with valve UC - OA - C
SAE6	K111 200.9413.6064.0	K27 200.9413.6056.0
SAE8	K112 200.9413.7038.0	K24 200.9413.7037.0
3/8" BSP	K113 200.9413.2041.0	K58 200.9413.2040.0
M18X1.5	K114 200.9413.1033.0	K59 200.9413.1032.0

Special element (residual flow): to be used only with T89 (**) inlet cover

Ø D	Code	
	Standard	Section with valve UC - OA - C
SAE6	K116 200.9413.6063.0	K81 200.9413.6059.0
SAE8	K117 200.9413.7036.0	K82 200.9413.7035.0
3/8" BSP	K118 200.9413.2039.0	K83 200.9413.2038.0
M18X1.5	K119 200.9413.1031.0	K86 200.9413.1030.0

Note: for availability of -K- bodies without ordering code please contact our Sales Department.

HDS11 Series

Sectional Directional Control Valve



By-Pass solenoid valve - BP3 -

Normally closed with manual override

Open manually

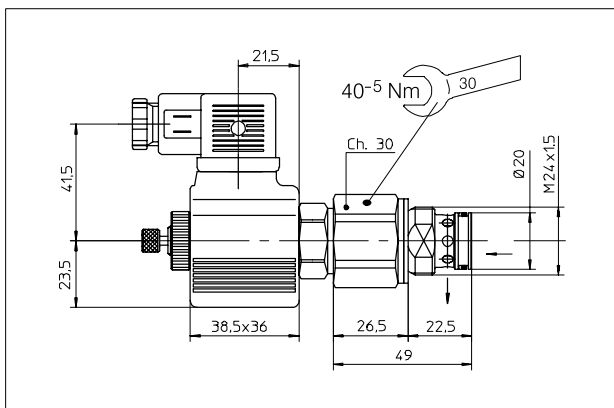
BP3/CE HDS15PQ p.m.	200.7572.0048.0	without coil
BP3/CE 13HC HDS15PQ	200.9570.1003.5	12 V. D.C.
BP3/CE 23HC HDS15PQ	200.9570.2003.6	24 V. D.C.

Normally open with manual override

Close manually

BP3/AE HDS15PQ p.m.	200.7572.0049.0	without coil
BP3/AE 13HC HDS15PQ	200.9570.1003.6	12 V. D.C.
BP3/AE 23HC HDS15PQ	200.9570.2003.7	24 V. D.C.

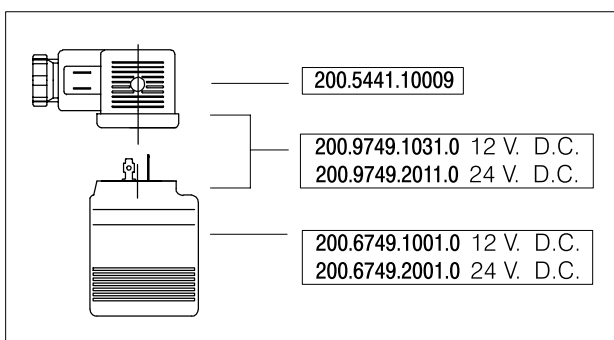
Dimension



BP3 Solenoid valve performances

Max. pressure	315 bar
Max. flow	60 l/min
Power	22 Watt
Intermittence	ED 100%
Voltage tolerance	± 10%
Temperature range	-20/+80 °C
Oil filtration	≤ 25 micron
Pressure drop Q= 30 l/min	7.5 bar
Pressure drop Q= 50 l/min	12.7 bar

Spare parts



Coil specifications

Voltage	12	24	V. D.C.
Power	22.8	22.5	Watt
Resistance (Ambient Temp.)	6.3	25.6	Ohm
Resistance (Stabilized Temp.)	8.9	36.4	Ohm
Current (Ambient Temp.)	1.9	0.94	Ampere
Current (Stabilized Temp.)	1.35	0.66	Ampere

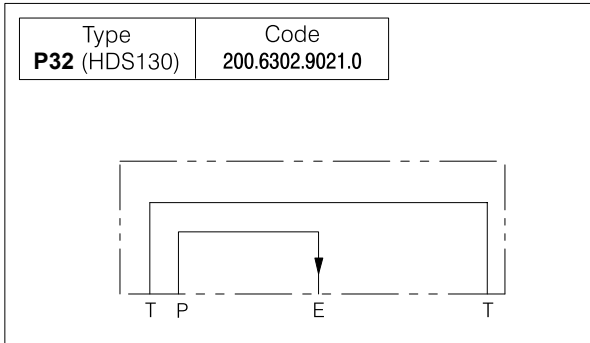
HDS11 Series



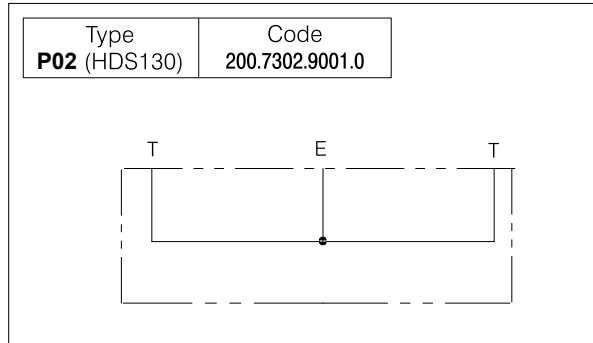
Sectional Directional Control Valve

End cover for K100 and T100

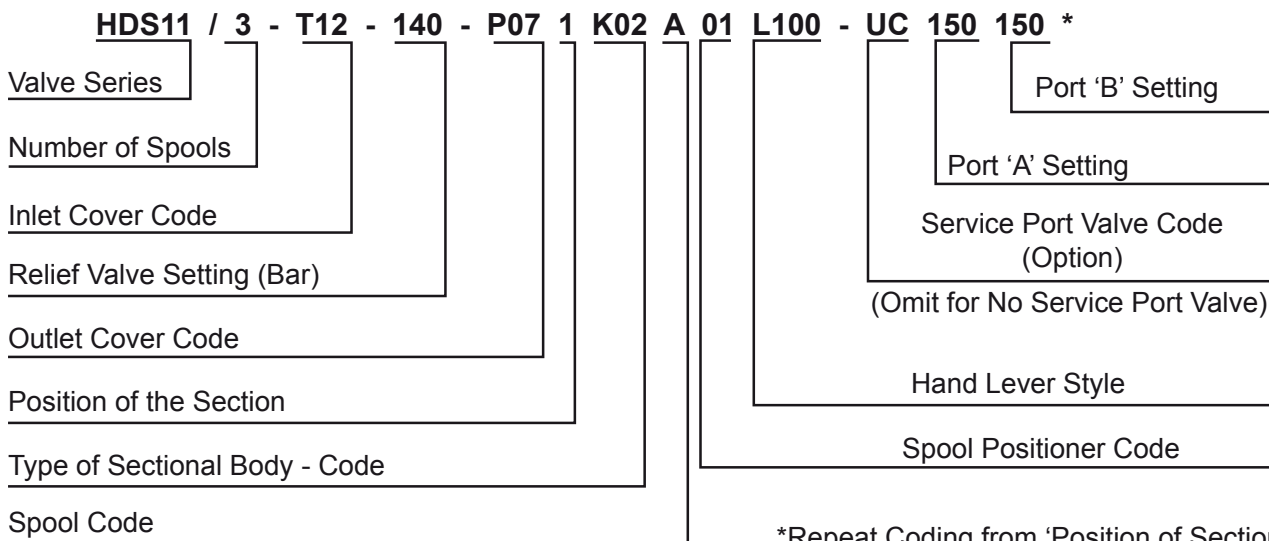
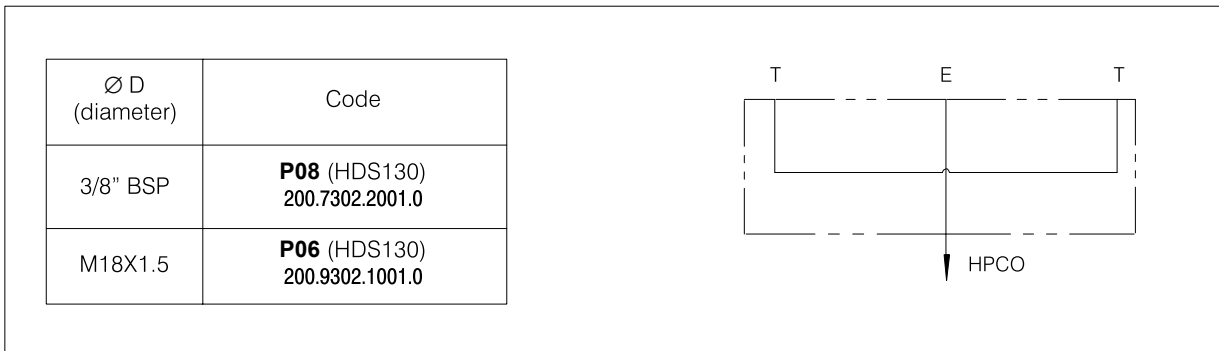
Right cover



Standard left cover



Carry-over left cover



*Repeat Coding from 'Position of Section' for Subsequent Valve Sections