



Feed units and accessories

- 2 Way series with or without unloader valve (AVN020)
- Range from 1 to 4 stages with and without accumulator
- Diverter valve for pilot hydraulic control system

AVN020 working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm²/s - 46 cSt viscosity at 40°C - 104°F temperature.

Max. pressure on inlet	on inlet, P port	350 bar - 5075 psi
Nominal secondary pressure		30 bar - 435 psi
Flow rating range		from 5 to 20 l/min - from 1.32 to 5.28 USgpm
Max. backpressure	to outlet, T port	3 bar - 43.5 psi
Fluid		mineral oil
Fluid temperature	with NBR (BUNA-N) seals	from -20°C to 80°C - from -4°F to 176°F
Viscosity	operating range	from 15 to 75 mm ² /s - from 15 to 75 cSt
	min.	12 mm ² /s - 12 cSt
	max.	400 mm ² /s - 400 cSt
Max. contamination level		-/19/16 - ISO 4406 - NAS1638 class 10
Ambient temperature	without electric devices	from -40°C to 60°C - from 40°F to 140°F
	with electric devices	from -20°C to 50°C - from -4°F to 122°F

NOTE - for different conditions please contact Sales Dpt

FU series working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm²/s - 46 cSt viscosity at 40°C - 104°F temperature.

		FU/1	FU/2	FU/3	FU/4
Max. pressure on inlet	on inlet P port	350 bar - 5075 psi	210 bar - 3045 psi	350 bar - 5075 psi	350 bar - 5075 psi
Flow rating range		60 l/min - 15.85 USgpm	12 l/min - 3.17 USgpm	10 l/min - 2.64 USgpm	8 l/min - 2.11 USgpm
Fluid		mineral oil			
Fluid temperature	with NBR (BUNA-N) seals	from -20°C to 90°C - from -4°F to 194°F			
Viscosity	operating range	from 15 to 75 mm ² /s - from 15 to 75 cSt			
	min.	20 mm ² /s - 20 cSt			
	max.	200 mm ² /s - 200 cSt			
Max. contamination level		18/16/13 - ISO 4406 - NAS1638 class 6			
Ambient temperature	without electric devices	from -40°C to 60°C - from 40°F to 140°F			
	with electric devices	from -20°C to 50°C - from -4°F to 122°F			

NOTE - for different conditions, please contact our Sales Dpt

DHV080 working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm²/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating	10 l/min - 2.64 Usrpm
Nominal pressure	100 bar - 1450 psi
Internal leakage (100 bar - 1450 psi)	10 cm ³ /min - 0.61 in ³ /min
Fluid	mineral oil
Viscosity (operating range)	from 12 to 400 mm ² /s - from 12 to 400 cSt
Max. contamination range	-/19/16 - ISO 4406 - NAS1638 class 10
Fluid temperature	from -20° C to 80° C - from -4° F to 176° F
Ambient temperature	from -40° C to 60° C - from 40° F to 140° F
Salt spray (fog) testing	(ISO9227) 70 h

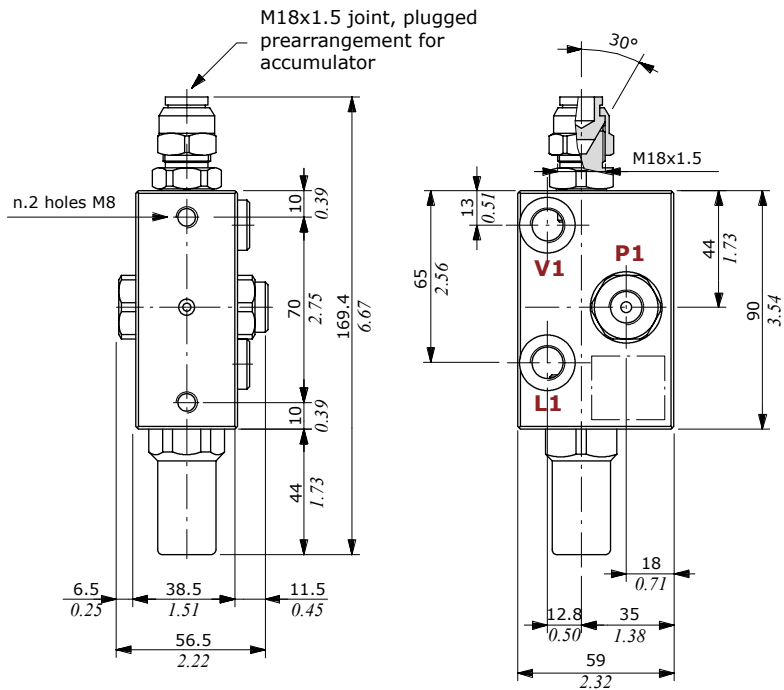
NOTE - for different conditions please contact Sales Dpt

REFERENCE STANDARD

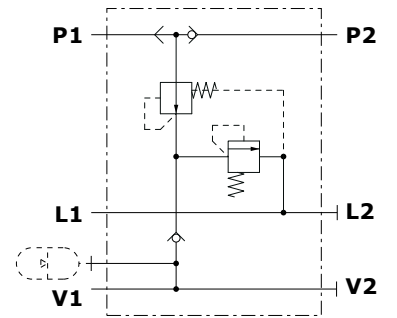
		BSP	UN-UNF
THREAD ACCORDING TO		ISO 228/1	ISO 263
		BS 2779	ANSI B1.1 unified
CAVITY DIMENSION ACCORDING TO	ISO	1179	11926
	SAE		J11926
	DIN	3852-2 X or Y shape	

AVN020 dimensions and hydraulic circuit

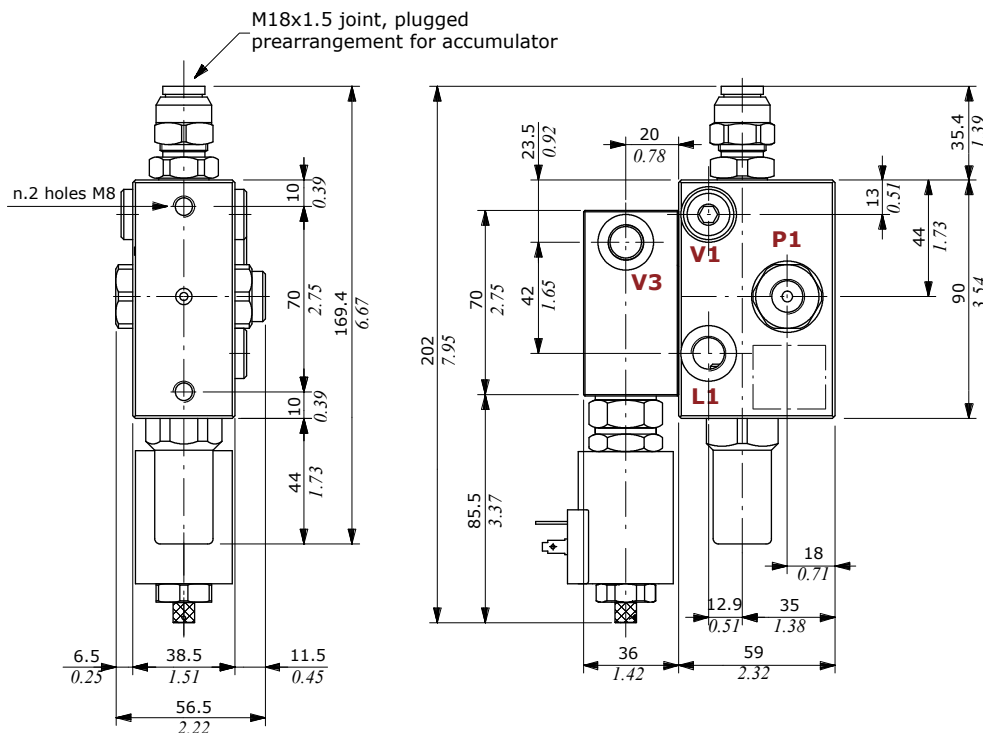
Configuration without unloader valve



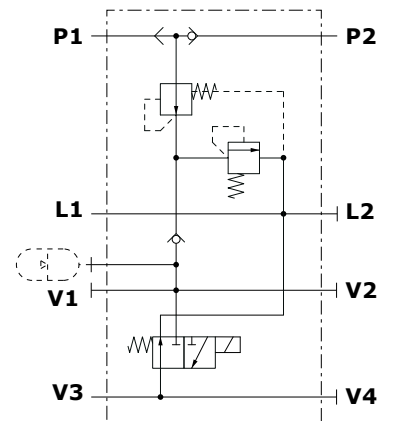
Hydraulic circuit



Configuration with unloader valve



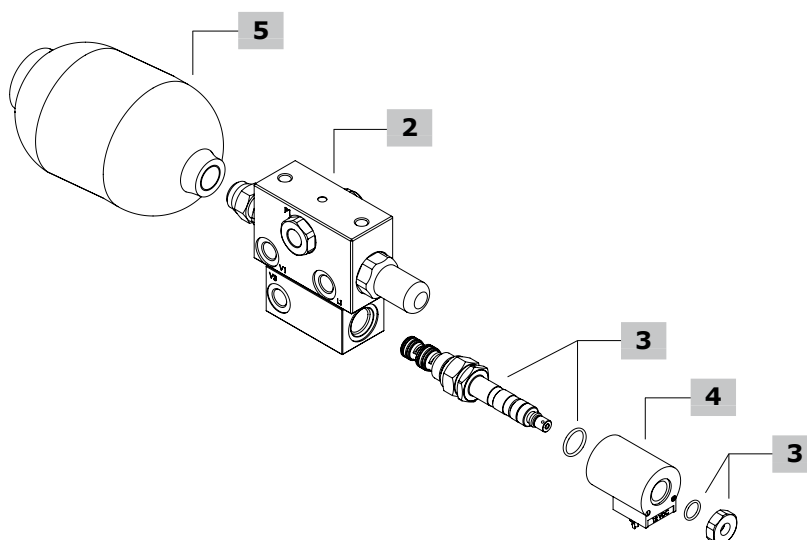
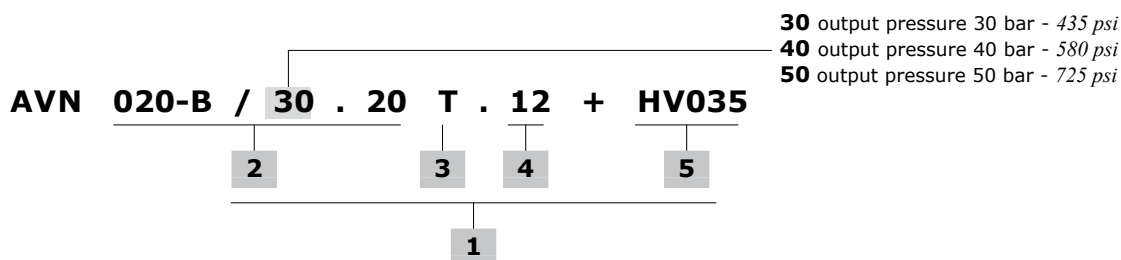
Hydraulic circuit



THREAD AND FITTING TIGHTENING TORQUES

Ports	Threads		Fitting tightening torque	
	BSP	UN-UNF	Nm	lbf ^t
P1 inlet	G 1/4	9/16-18 (SAE 6)	30	22.13
L1, L2, V1, V2, V3, V4 Ports	G 1/4	9/16-18 (SAE 6)	30	22.13

AVN020 ordering codes



1 Complete unit *

Without unloader valve

TYPE: **AVN020-B/30.00** CODE: 180010001

DESCRIPTION: with 2 pressure ports, outlet pressure 30 bar - 435 psi

TYPE: **AVN020-B/40.00** CODE: 180010002

DESCRIPTION: with 2 pressure ports, outlet pressure 40 bar - 580 psi

TYPE: **AVN020-B/50.00** CODE: 180010003

DESCRIPTION: with 2 pressure ports, outlet pressure 50 bar - 725 psi

TYPE: **AVN020-B/30.20T.12** CODE: 180010011

DESCRIPTION: with 2 pressure ports, outlet pressure 30 bar - 435 psi, with unloader valve

2 Body kit *

TYPE	CODE	DESCRIPTION
020-B/00.20	5CO2902201	with 2 pressure ports

NOTE: outlet pressure 30, 40 and 50 bar - 435, 580, 725 psi

3 Unloader valve

TYPE	CODE	DESCRIPTION
T	0EJ08002043	With screw type emergency

4 Coil

TYPE	CODE	DESCRIPTION
12	4SL3000120	12VDC, ISO4400 connector
24	4SL3000240	As previous one 24VDC
12(JPT)	4SL3000122	12VDC, AMP/JPT connector
24(JPT)	4SL3000248	As previous one, 24VDC
12(JPT+DIODO)	4SL3001200	12VDC, AMP/JPT connector with diode
12(DT04)	4SL3000130	12VDC, DEUTSCH/DT04 connector
24(DT04)	4SL3000249	As previous one, 24VDC
12(DT04+DIODO)	4SL3000132	12VDC, DEUTSCH/DT04 connector, with diode
24(DT04+DIODO)	4SL3000247	As previous one, 24VDC

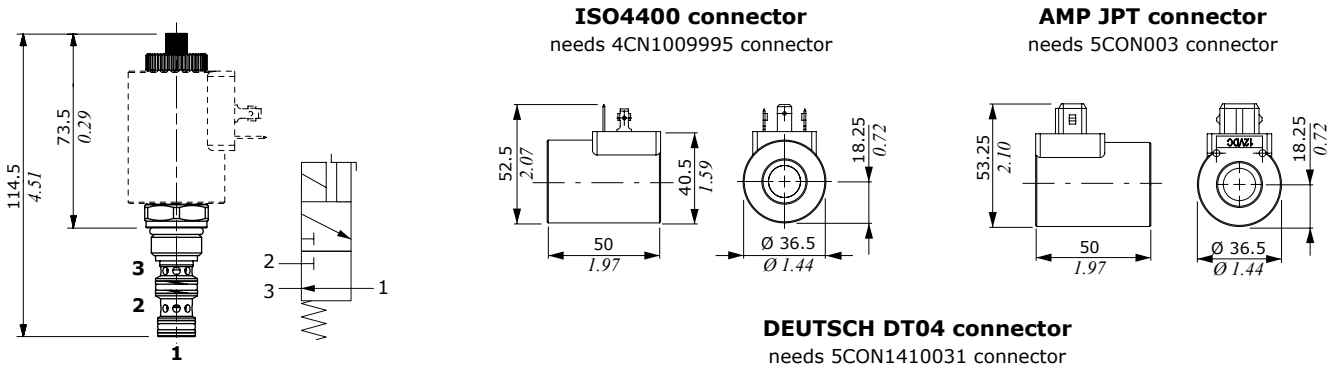
5 Optional accumulator

TYPE	CODE	DESCRIPTION
HV035	2X280020340S	Capacity 350 cm ³ - 21.36 in ³
HV050	2X280020500S	Capacity 500 cm ³ - 30.51 in ³
HV075	4AC7742000	Capacity 750 cm ³ - 45.77 in ³
HV090	2X280020700S	Capacity 900 cm ³ - 54.92 in ³
HV150	2X280021400S	Capacity 1500 cm ³ - 91.53 in ³

NOTE (*) - Codes are referred to **BSP** thread.

AVN020 Configuration options

Solenoid unloader valve



Features

SOLENOID VALVE

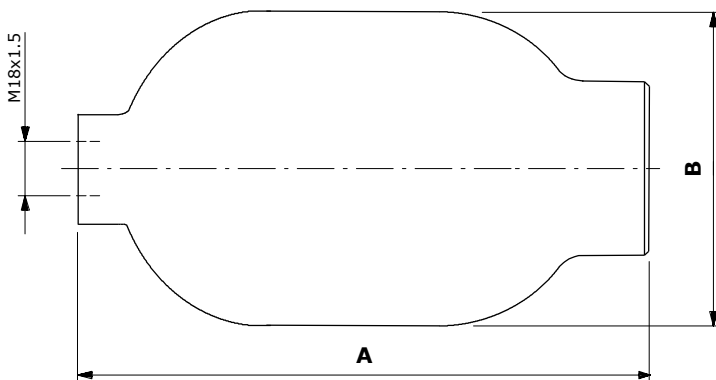
- Nominal flow : 12 l/min - 3.17 US gpm
- Max. pressure : 50 bar - 725 psi
- internal leakage: : 4 cm³/min - 0.24 in³/min

COIL

- Nominal voltage tolerance : ±10%
- Power rating : 21 W
- Max. operating current : 1.77 A - 12 VDC
- : 0.89 A - 24VDC
- Coil insulation : Class F (155°C - 311°F)
- Weather protection : IP65 - ISO4400
- : IP69K - Deutsch DT
- : IP65 - AMP JPT
- Insertion. : 100%

Optional accumulators

With synthetic rubber membrane and steel body; Nitrogen accumulator precharged at 13 bar - 188 psi



Type	Volume		A		B		Mass	
	cm ³	in ³	mm	in	mm	in	kg	lb
035	350	21.35	153	6.02	99	3.90	3.7	8.16
050	500	30.51	199	7.83	118	4.64	4.35	9.59
075	750	45.77	199	7.83	118	4.64	4.8	10.58
090	900	54.92	215	8.46	118	4.64	4.8	10.58
150	1500	91.54	297	11.69	118	4.64	6.8	14.99

Installation

In order to ensure the correct working pressure at 10 bar - 145 psi, is required minimum pressure when starting. The feed unit can be assembled in any position; keep it away from heat sources when accumulator is working.

FU series configuration examples

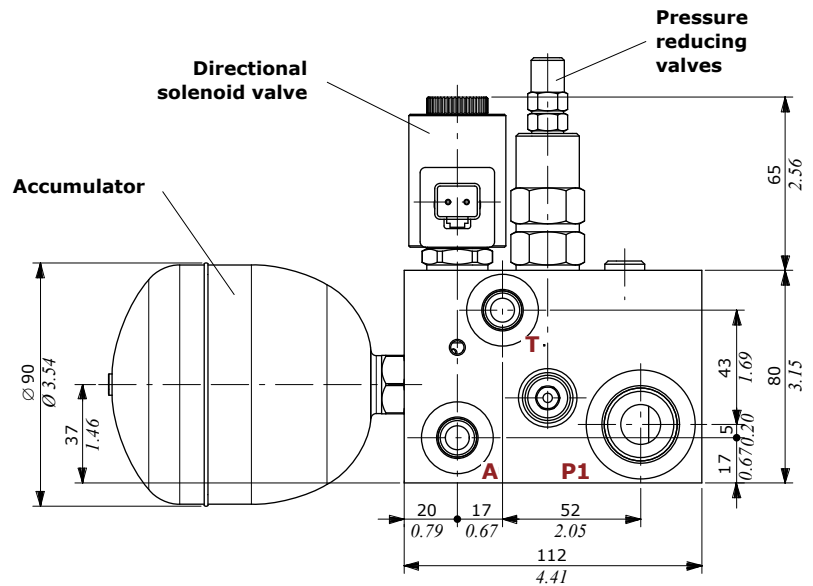
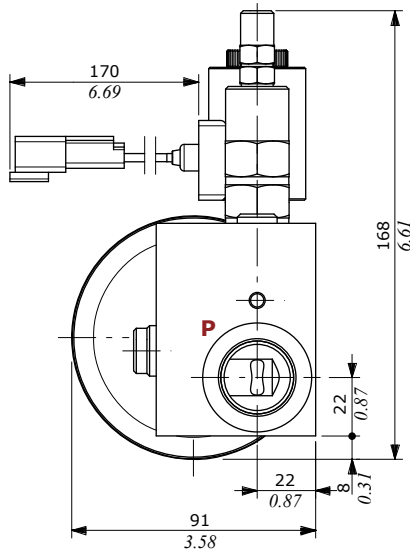
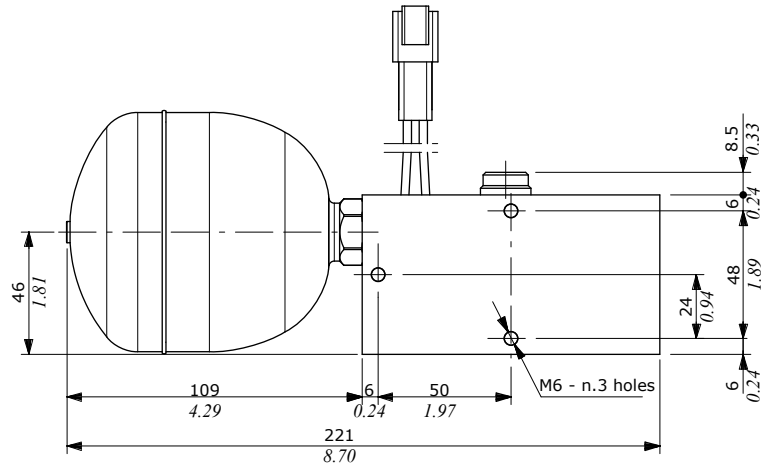
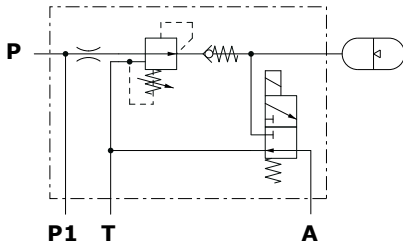
Type FU/1 - one stage

CODE: 1992752200

TYPE: FU-AC(SAE6-11)-RB08A(35)-F-NV/1EJ08F4(L=170)/NPM-SAE6(AT)12(PP1)-12VDC

DESCRIPTION: one stage, with pressure reducing valve on inlet, 0.35 l accumulator and 1 directional solenoid valve for the supply and control of the pressure line.

Hydraulic circuit



PORTS THREADING AND FITTINGS TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbf·ft
P, P1 inlet	1 1/16-12 UN (SAE 12)	65	48
A port	9/16-18 UNF (SAE 6)	30	22
T outlet	9/16-18 UNF (SAE 6)	30	22
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE – These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.

FU series configuration examples

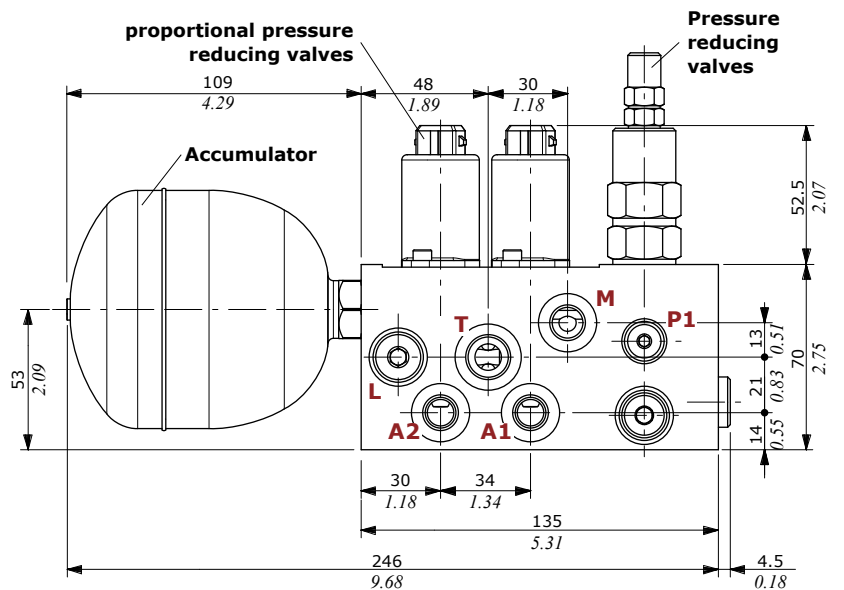
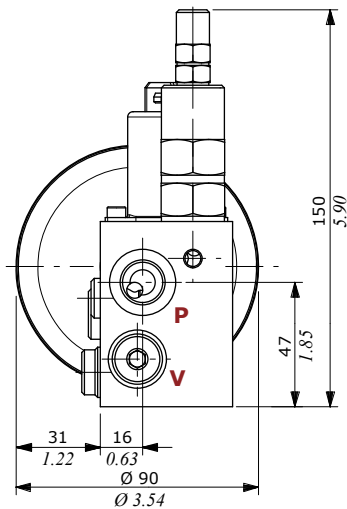
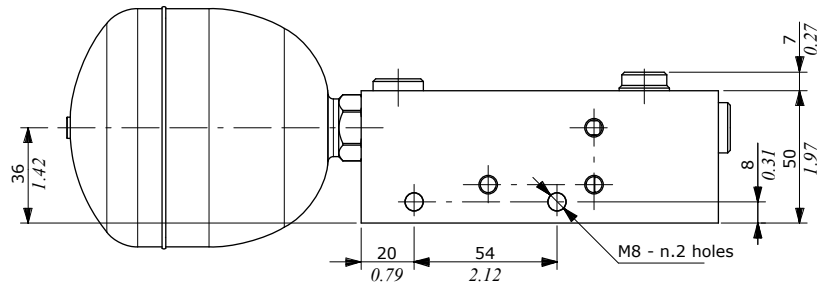
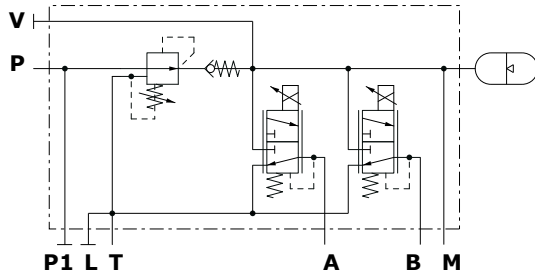
Type FU/2 - two stages

CODE: 1992820001

TYPE: FU-AC(SAE6-11)-RB08A(35)-F-NV/2RPT2/PMA-P1-L-V-BSP-24VDC-<TAP(P1LV)>

DESCRIPTION: two stages, with pressure reducing valve on inlet, 0.35 l accumulator and 2 proportional pressure reducing valves for the supply and control of the pressure lines.

Hydraulic circuit



PORTS THREADING AND FITTINGS TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbf ^t
P Inlet	BSP G 3/8	42	31
P1 Inlet	BSP G 1/8	24	17.7
A, B, M, L, V Ports	BSP G 1/4	30	22
Outlet T	BSP G 3/8	42	31
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.

FU series configuration examples

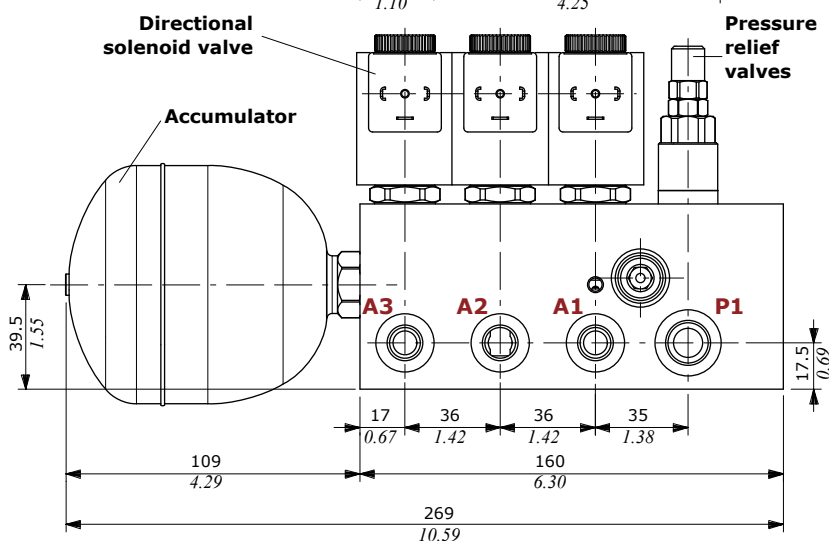
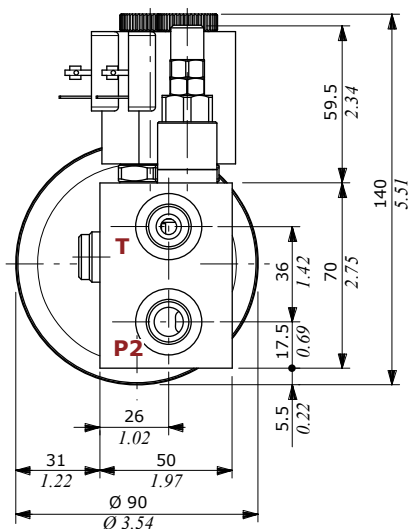
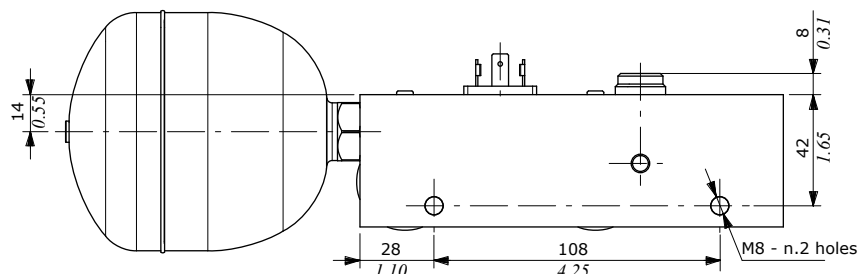
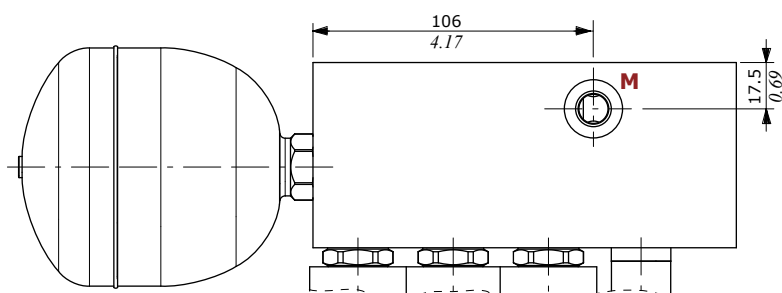
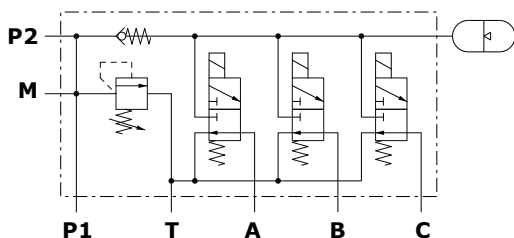
Type FU/3 - three stages

CODE: 1992830000

TYPE: FU-AC(SAE6-11)-NR-A-VMP5JN(TB.S-35)/3-EJ08F/PMI-P2-BSP-12VDC

DESCRIPTION: three stages, with pressure relief valve on inlet, 0.35 l accumulator and 3 directional solenoid valves for the supply and control of the pressure lines.

Hydraulic circuit



PORTS THREADING AND FITTINGS TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbft
P inlet	BSP G 3/8	42	31
P1 inlet	BSP G 3/8	42	31
A, B, M, L, V ports	BSP G 1/4	30	22
T outlet	BSP G 3/8	42	31
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE – These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.

FU series configuration examples

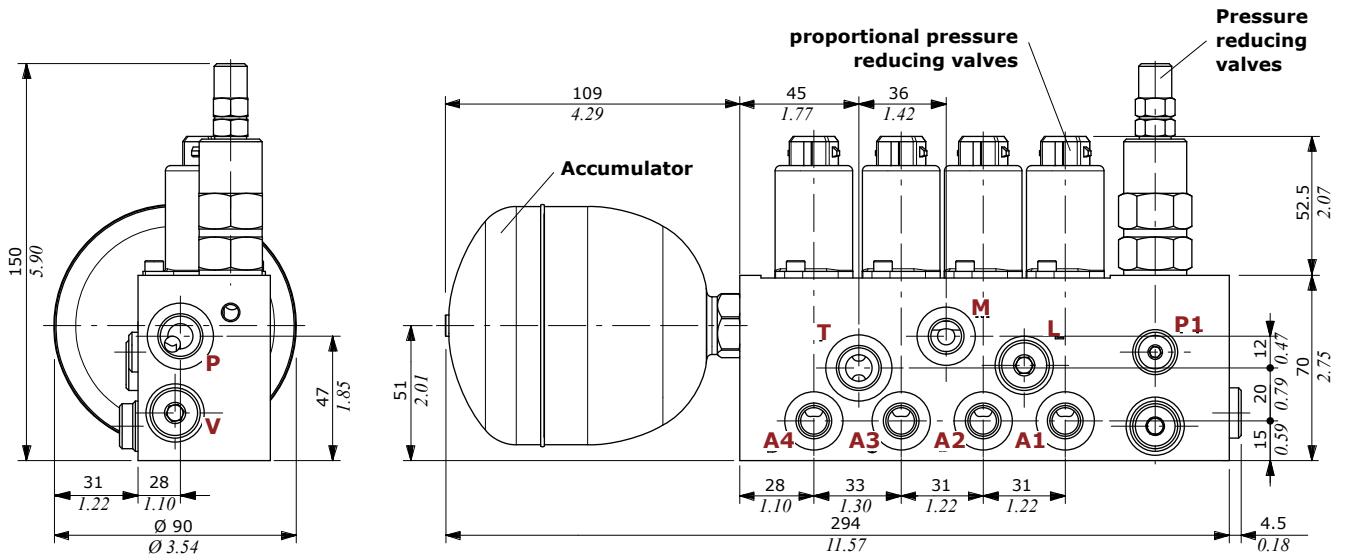
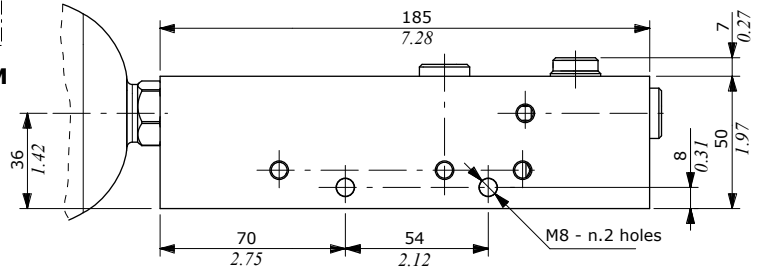
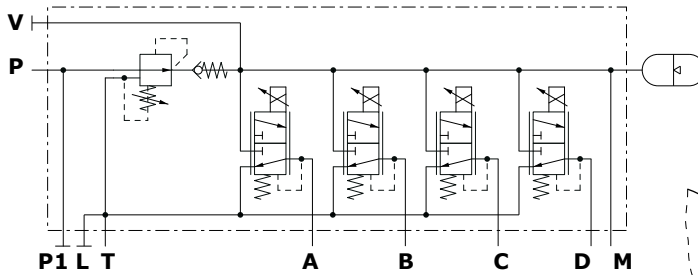
Type FU/4 - four stages

CODE: 1992840000

TYPE: FU-AC(SAE6-11)-RB08A(35)-F-NV/4RPT2/PMA-P1-L-V-BSP-24VDC-<TAP(P1LV)>

DESCRIPTION: four stages, with pressure reducing valve on inlet, 0.35 l accumulator and 4 proportional pressure reducing valves for the supply and control of the pressure lines.

Hydraulic circuit



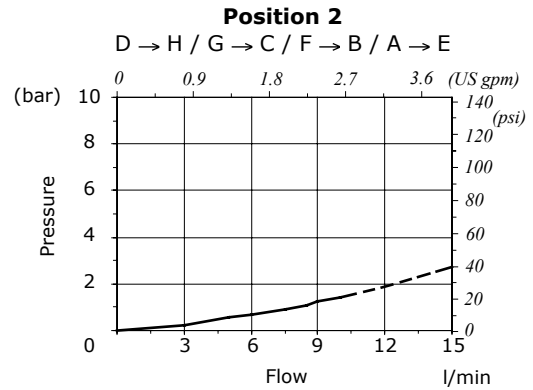
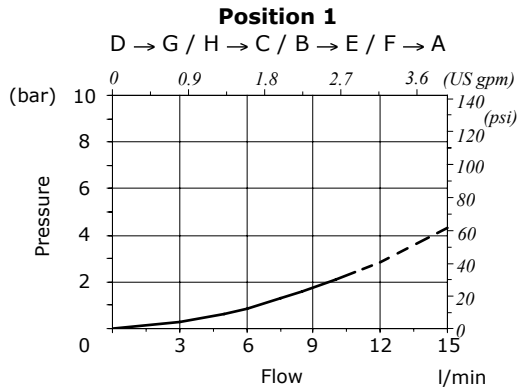
PORTS THREADINGS AND FITTING TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbft
P inlet	BSP G 3/8	42	31
P1 inlet	BSP G 1/8	24	17.7
A, B, C, D, M, L, V ports	BSP G 1/4	30	22
T outlet	BSP G 3/8	42	31
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.

DHV080 diverter valve

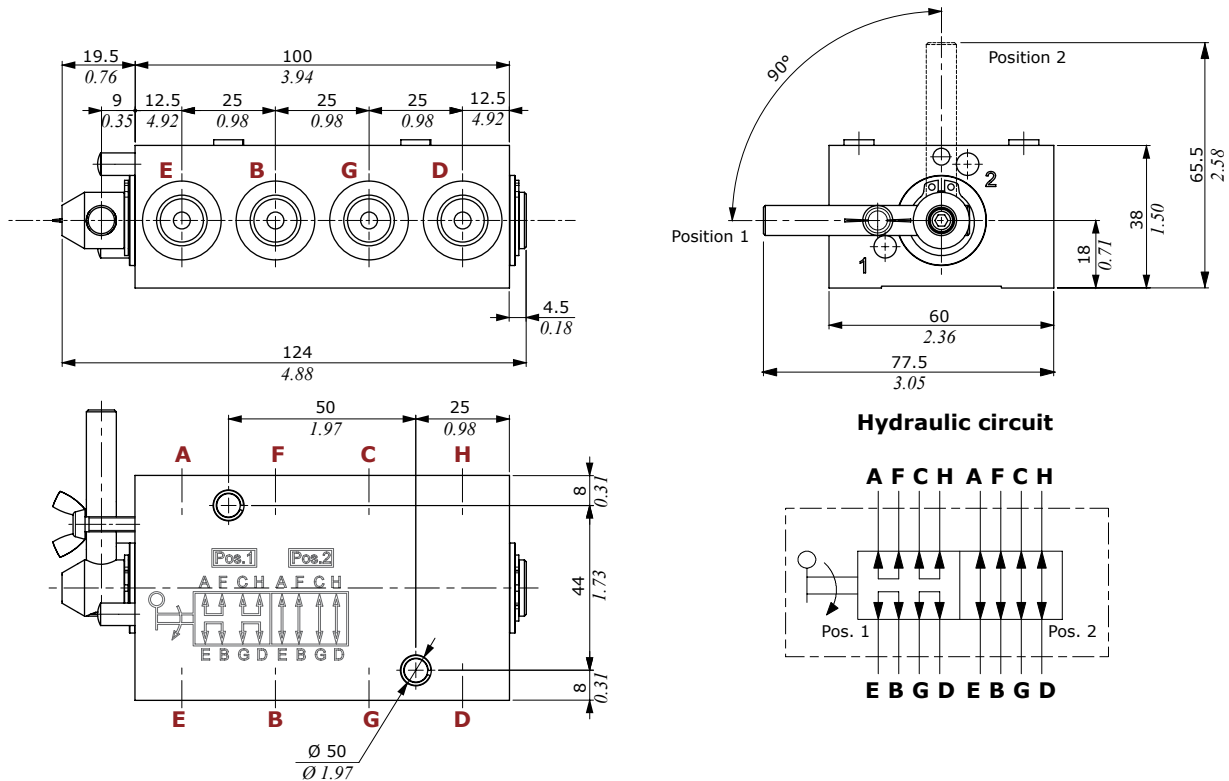
Pressure drop



Dimensions and hydraulic circuit

The diverter valve is available in this configuration: **DHV080/8LN-BSP-<CVN>** code **140080000**

Supplied as standard, with one coat of primer black antirust.



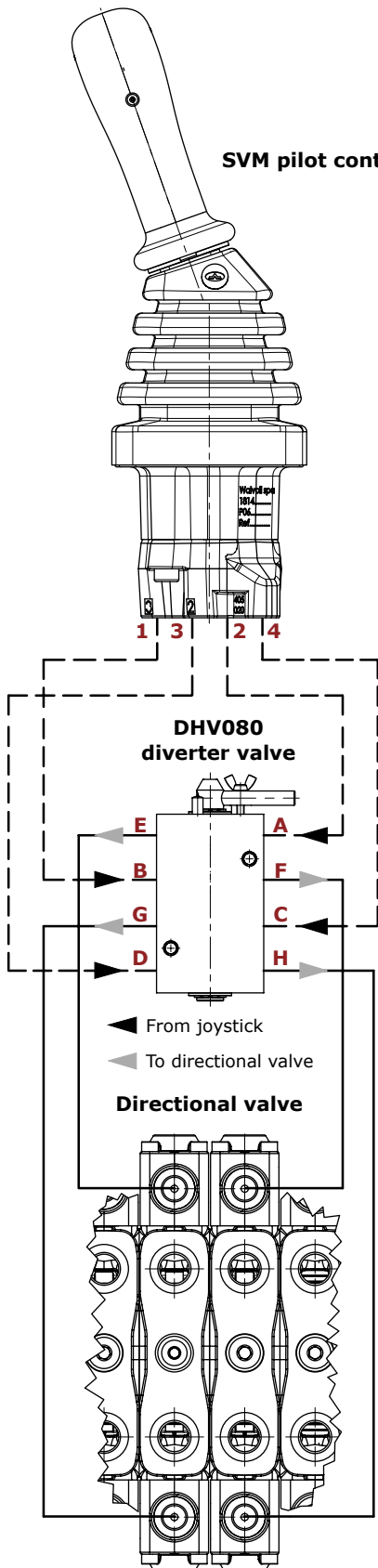
PORT THREADING AND FITTING TIGHTENING TORQUE

PORTS	Threads		Fitting tightening torque	
	BSP	UN-UNF	Nm	lbf _t
A, B, C, D, E, F, G, H ports	G 1/4	7/16-20 UNF-2B (SAE4)	30	22

NOTE – These torque are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer shall be consulted.

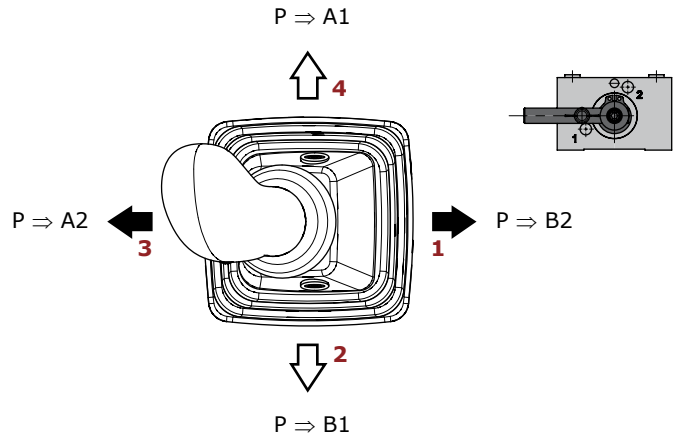
DHV080 diverter valve

Typical application



Joystick movement

Diverter valve in position 1
Backhoe configuration



Diverter valve in position 2
Mini-excavator configuration

