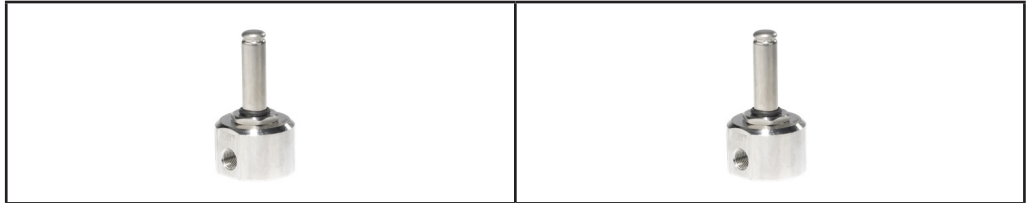


Solenoid valve VDHT standard BSP (British Standard Pipe)



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	31. Diagrams	Pressure losses P Inlet to Outlet

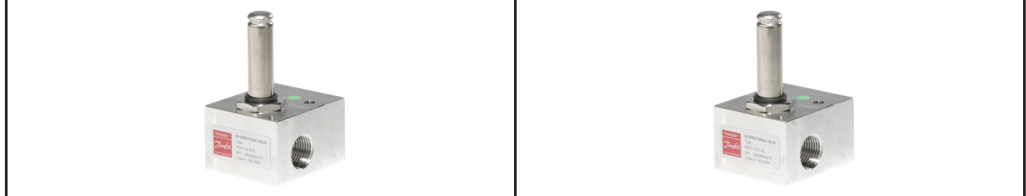
VDHT for small flows



VDH 2E 1/4

VDHT 1/4 E

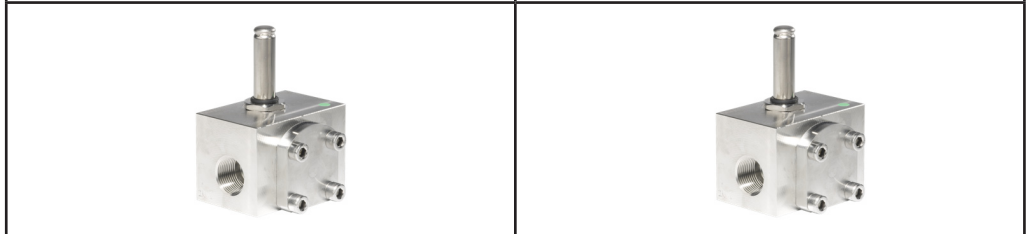
VDHT for small and medium flows



VDHT 3/8 E
VDHT 1/2 E

VDHT 3/8 EA
VDHT 1/2 EA

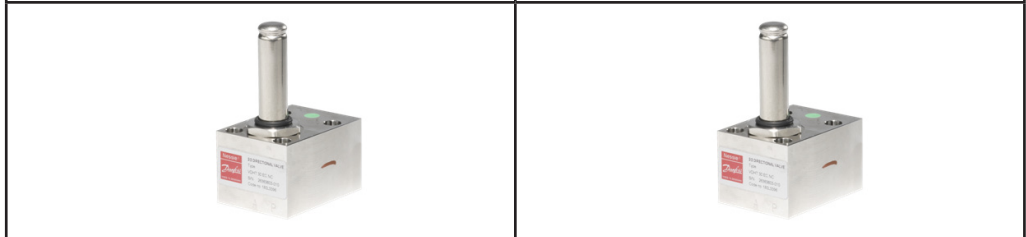
VDHT for big flows



VDHT 3/4 ED
VDHT 1 ED

VDHT 3/4 EA
VDHT 1 EA

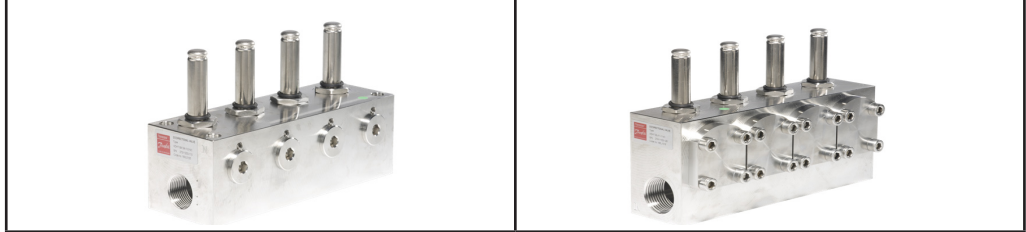
VDHT manifold mounted valves



VDHT 30 C3
G 3/8 / Cetop 3 manifold

VDHT 60 C5
G 1/2 / Cetop 5 manifold

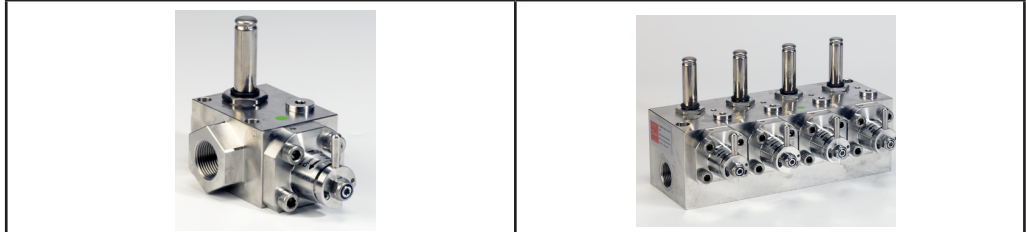
VDHT integrated valve blocks



VDHT B 2-5 stations
Input G 1/2 / G 3/4
Output G 1/2

VDHT BL 2-4 stations
Input G 3/4 / G 1
Output G 3/4 / G 1

VDHT manual bypass



VDHT EAM

VDHT BLM 2-4 stations

Introduction

The VDHT valve series are designed for applications in neutral media compatible with the sealing and O-ring materials used. Typical media are water, cleaning fluids and light heating oil.

The valves are used in applications like car wash systems, stationary high pressure cleaning, mobile cleaning vehicles and dust bindings systems.

Function

The directional valves are pilot operated ON/OFF – seat valves electrically activated by a coil.

Features

- Corrosion-proof
- Easy-to-clean surface
- Reliability
- Dirt tolerant, max. sieve (strainer) width 200 µm or better
- High temperature-resistant
- The seat valve design prevents leakage
- High coil density NEMA 4X / IP67
- Possible to get a compact and simple block solution (Integrated valve block)

Versions

The valve housing, blocks and manifolds are made of stainless steel AISI 304 (W.No. 1.4301), and the piston of stainless steel AISI 316 (W.No. 1.4401). As standard the valves are delivered with PTFE piston sealing and insert and FPM O-Rings.

VDHT inline valves are available with a number of mounting possibilities, flow direction, port size threads: ¼, 3/8, ½, ¾ and 1" BSPP and more - defining the following designation.

VDHT integrated valve blocks provide a space and cost-saving solution in applications where valves are placed next to each other. Furthermore, integrated valves blocks provide a pressure loss reduction.

VDHT valve designation overview

E	Straight flow direction	N	New version slimline
EA	Angular flow direction	BL N	Block version large / New version stroke
ED	Displaced flow direction	DF	2-Stage dampening system opening stroke
EC3	Cetop 3 manifold	F	Flange port input
EC5	Cetop 5 manifold	NC	Normally closed
HP	High pressure variant	NO	Normally opened
B	Block version small	BSP	British Standard Pipe
BL	Block version large	NPT	National Pipe Thread
BLM	Block version manual bypass	SAE	Unified national fine thread

Temperature

- Medium temperature: 2°C to 90°C
- Ambient temperature: 2°C to 80°C depending on the coil specification
- Storage temperature: -40°C to 80°C
Provided that the valve is drained from fluid and stored "plugged".

General

P_{in} > P_{out}	For correct functioning of the VDHT valves, always ensure the inlet pressure to be higher than the outlet pressure
Pilot flow	The VDHT pilot operated poppet type (armature + poppet) always needs min. 1 l/min. flow to ensure correct functioning
Viscosity	Max viscosity of fluid: 45mm ² /s. Remark fluid viscosity has influence on pressure drop and opening/closing time of the VDHT valves.

Technical data overview

Note: All mentioned data in this data sheet are typical values with dim water as fluid.

VDHT 1/4"

Valve description		VDHT 2E 1,4 1/4	VDH 2E 3,5 1/4	VDHT 1/4E 1/4
P max (inlet)	bar	100	30	100
Q nominal	l/min	2	5	15
Operating pressure	bar	0	0	0.3
Opening time NC (at Q _{nom})	ms	100-200	100-200	100-200
Closing time NC (at Q _{nom})	ms	100-200	100-200	100-200
Weight (incl. of coil)	kg	0.8	0.8	0.8

VDHT 3/8" and 1/2"

Valve description		VDHT 3/8		VDHT 1/2	
		E	EA	E	EA
P max (inlet)	bar	160	160	160	160
HP version		210	210	210	210
Q nominal	l/min	30	30	60	60
Operating pressure	bar	3.5	3.5	3.5	3.5
Opening time NC (at Q _{nom})	ms	100-125	100-125	120-140	120-140
Closing time NC (at Q _{nom})	ms	200-300	200-300	200-300	200-300
Weight (incl. of coil)	kg	1.2	1.2	1.2	1.2

VDHT 3/4" and 1"

Valve description		VDHT 3/4		VDHT 1	
		E	EA	E	EA
P max (inlet)	bar	140	140	140	140
HP version		210	210	210	210
Q nominal	l/min	120	120	150	150
Operating pressure	bar	3.5	3.5	3.5	3.5
Opening time NC (at Q _{nom})	ms	500-700	500-700	500-900	500-900
Closing time NC (at Q _{nom})	ms	900-1200	900-1200	1200-2000	1200-2000
Weight (incl. of coil)	kg	2.3	2.3	2.3	2.3

VDHT EC manifolds

Valve description		VDHT 30EC 3	VDHT 60EC 5
P max (inlet)	bar	160	160
HP version		210	210
Q nominal (each outlet)	l/min	30	60
Operating pressure	bar	3.5	3.5
Opening time NC (at Q _{nom})	ms	100-125	100-140
Closing time NC (at Q _{nom})	ms	200-300	200-300
Flange connection		Cetop 3	Cetop 5

VDHT B and BL integrated valve blocks

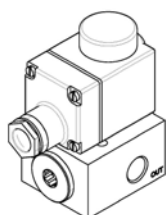
Valve description		VDHT B	VDHT BL
Possible block sizes or no. of stations		2 to 5	2 to 4
P max (inlet) HP version	bar	160 210	140 210
Q nominal (each outlet)	l/min	60	120-150
Operating pressure	bar	3.5	3.5
Inlet port sizes	BSP	1/2 or 3/4	3/4 or 1
Outlet port sizes	BSP	1/2	3/4 or 1

Overview single valves

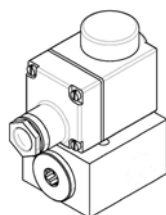
Red codes are phased out



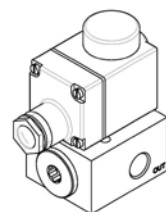
Description	Code no	Q nom m ³ /h	Q nom ltr/min	p max bar	T max °C	Connec- tion	Operating pressure/ bar	Weight coll kg	Piston Ø	Orifice kit
VDH 2E 1/4 NC 1,4 BSP	180L0018	0,1	2	100	90	G 1/4	0,0	0,8	-	4
VDH 2E 1/4 NO 1,4 BSP	180L0019	0,1	2	90	90	G 1/4	0,0	0,8	-	4
VDH 2E 1/4 NC 3,5 BSP	180L1018	0,3	5	30	90	G 1/4	0,0	0,8	-	5
VDHT 1/4 E NC BSP	180L0241	0,5	15	100	90	G 1/4	0,3	0,8	Ø 11,9	-
VDHT 1/4 E NO BSP	180L0242	0,5	15	100	90	G 1/4	0,3	0,8	Ø 11,9	-



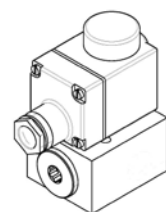
VDHT 3/8 E NC BSP	180L0086	1,0	30	160	90	G 3/8	3,5	1,2	Ø 18,1	1
VDHT 3/8 E NC BSP	180L0092	1,0	30	160	90	G 3/8	3,5	1,2	Ø 18,1	1
VDHT 3/8 E HP NC BSP	180L0125	1,0	30	210	90	G 3/8	3,5	1,2	Ø 18,1	1
VDHT 3/8 E HP NC BSP	180L0178	1,0	30	210	90	G 3/8	3,5	1,2	Ø 18,1	1
VDHT 3/8 E NO BSP	180L0295	1,0	30	160	90	G 3/8	3,5	1,2	Ø 18,1	1
VDHT 3/8 E NO BSP	180L0093	1,0	30	160	90	G 3/8	3,5	1,2	Ø 18,1	1



VDHT 3/8 EA NC BSP	180L0249	1,8	30	160	90	G 3/8	3,5	1,2	Ø 18,1	1
VDHT 3/8 EA NC BSP	180L0100	1,8	30	160	90	G 3/8	3,5	1,2	Ø 18,1	1
VDHT 3/8 EA NO BSP	180L0101	1,8	30	160	90	G 3/8	3,5	1,2	Ø 18,1	1



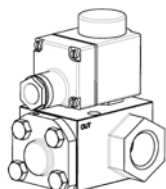
VDHT 3/4-1/2 E NC BSP	180L0171	1,4	60	160	90	G 3/4-G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 E NC BSP	180L0087	1,4	60	160	90	G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 E NC BSP	180L0094	1,4	60	160	90	G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 E HP NC BSP	180L0126	1,4	60	210	90	G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 E HP NC BSP	180L0179	1,4	60	210	90	G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 E NO BSP	180L0095	1,4	60	160	90	G 1/2	3,5	1,2	Ø 18,1	1



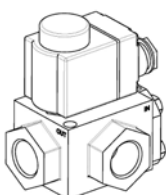
VDHT 1/2 EA NC BSP	180L0188	3,0	60	160	90	G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 EA NC BSP	180L0102	3,0	60	160	90	G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 EA HP NC BSP	180L0234	1,4	60	210	90	G 1/2	3,5	1,2	Ø 18,1	1
VDHT 1/2 EA NO BSP	180L0103	3,0	60	160	90	G 1/2	3,5	1,2	Ø 18,1	1

Overview single valves

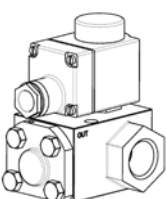
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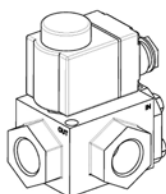
Description	Code no	Q nom m3/h	Q nom ltr/min	p max bar	T max °C	Conne- ction	Operating pressure/ bar	Weight coll kg	Piston Ø	Orifice kit
VDH 3/4 ED NC BSP	180L0120	5,4	120	140	90	G 3/4	3,5	2,3	Ø 35,1	6
VDH 3/4 ED NC BSP	180L0116	5,4	120	140	90	G 3/4	3,5	2,3	Ø 35,1	6
VDH 3/4 ED NC BSP N	180L1012	5,4	120	140	90	G 3/4	3,5	2,3	Ø 35,1 N	1
VDH 3/4 ED HP NC BSP	180L0282	5,4	120	210	90	G 3/4	3,5	2,3	Ø 35,1	6
VDH 3/4 ED HP NC BSP N	180L1030	5,4	120	210	90	G 3/4	3,5	2,3	Ø 35,1 N	1



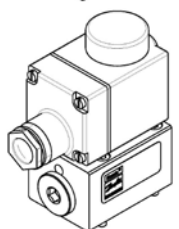
VDHT 3/4-1/2 EA NC BSP	180L0090	3,0	60	140	90	G 3/4 - G 1/2	3,5	2,3	Ø 18,1	1
VDHT 3/4 EA NC BSP	180L0118	6,6	120	140	90	G 3/4	3,5	2,3	Ø 35,1	6
VDHT 3/4 EA NC BSP N	180L1015	6,6	120	140	90	G 3/4	3,5	2,3	Ø 35,1 N	1
VDHT 3/4 EA NC BSP	180L0121	6,6	120	140	90	G 3/4	3,5	2,3	Ø 35,1	6
VDHT 3/4 EA NO BSP	180L0198	6,6	120	140	90	G 3/4	3,5	2,3	Ø 35,1	6



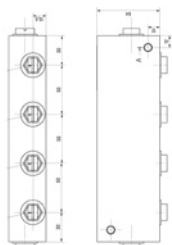
VDHT 1 ED NC BSP	180L0104	7,2	150	140	90	G1	3,5	2,3	Ø 35,1	6
VDHT 1 ED NC BSP N	180L1022	7,2	150	140	90	G1	3,5	2,3	Ø 35,1 N	1
VDHT 1 ED NC BSP	180L0108	7,2	150	140	90	G1	3,5	2,3	Ø 35,1	6
VDHT 1 ED NC BSP	180L0115	7,2	150	140	90	G 1	3,5	2,3	Ø 35,1	6
VDHT 1 ED NO BSP N	180L1014	7,2	150	140	90	G 1	3,5	2,3	Ø 35,1 N	1



VDHT 1 EA NC BSP	180L0106	9,0	150	140	90	G 1	3,5	2,3	Ø 35,1	6
VDHT 1 EA NC BSP N	180L1023	9,0	150	140	90	G 1	3,5	2,3	Ø 35,1 N	1
VDHT 1 EA NC BSP	180L0109	9,0	150	140	90	G 1	3,5	2,3	Ø 35,1	6



VDH 30 EC3 NC BSP	180L0096	0,6	30	160	90	CETOP 3	3,5	1,4	Ø 18,1	1
VDH 30 EC3 NO BSP	180L0097	0,6	30	160	90	CETOP 3	3,5	1,4	Ø 18,1	1
VDH 60 EC5 NC BSP	180L0098	1,3	60	160	90	CETOP 5	3,5	1,4	Ø 18,1	1
VDH 60 EC5 NO BSP	180L0099	1,3	60	160	90	CETOP 5	3,5	1,4	Ø 18,1	1



Block for 1 Pe CETOP 3 valve	180L0061	1,8	30	160	90	G 3/8	3,5	1,0	-	-
Block for 2 Pe CETOP 3 valve	180L0062	1,8	30	160	90	G 3/8	3,5	1,8	-	-
Block for 3 Pe CETOP 3 valve	180L0063	1,8	30	160	90	G 3/8	3,5	2,6	-	-
Block for 4 Pe CETOP 3 valve	180L0064	1,8	30	160	90	G 3/8	3,5	3,4	-	-
Block for 1 Pe CETOP 5 valve	On request									
Block for 2 Pe CETOP 5 valve	On request									
Block for 3 Pe CETOP 5 valve	On request									
Block for 4 Pe CETOP 5 valve	On request									

Overview block valves

Red codes are phased out



Description	Code no	Q nom m ³ /h	Q nom ltr/min	p max bar	T max °C	Connec- tion	Operat- ing pres- sure/bar	Weight coll kg	Piston Ø	Orifice kit
VDHT 3/4-1/2 EA NC BSP	180L0090	3,6	60	140	90	G 3/4-G 1/2	3,5	2,3	Ø 18,1	1
VDHT B2 1/2 NC BSP	180L0270	3,6	60	160	90	G 1/2-G 1/2	3,5	3,7	Ø 18,1	1
VDHT B2 1/2 NC-NO BSP	180L0258	3,6	60	160	90	G 1/2-G 1/2	3,5	3,7	Ø 18,1	1
VDHT B2 3/4-1/2 NC BSP	180L0124	3,6	60	160	90	G 3/4-G 1/2	3,5	3,7	Ø 18,1	1
VDHT B3 3/4-1/2 NC BSP	180L0088	3,6	60	160	90	G 3/4-G 1/2	3,5	5,5	Ø 18,1	1
VDHT B4 3/4-1/2 NC BSP	180L0123	3,6	60	160	90	G 3/4-G 1/2		7,4	Ø 18,1	1
VDHT B5 3/4-1/2 NC BSP	180L0091	3,6	60	160	90	G 3/4-G 1/2		9,3	Ø 18,1	1

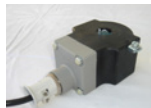


VDHT BL1 1-3/4 NC BSP FPM	180L0265	7,2	120	140	90	G3/4 - G3/4	3,5	3,5	Ø 35,1	1
VDHT BL1S 28-3/4 NC BSP FPM	180L0290	7,2	120	140	90	28 - G3/4	3,5	3,5	Ø 35,1	1
VDHT BL2 3/4 NC BSP FPM	180L0202	7,2	120	140	90	G3/4 - G3/4	3,5	7	Ø 35,1	2
VDHT BL2 HP 3/4 NC BSP N	180L1003	7,2	120	140	90	G3/4 - G3/4	3,5	7	Ø 35,1 N	1
VDHT BL2 HP 3/4 NC BSP FPM	180L0285	7,2	120	210	90	G3/4 - G3/4	3,5	7	Ø 35,1	1
VDHT BL2 HP 3/4 NC BSP N	180L1027	7,2	120	210	90	G3/4 - G3/4	3,5	7	Ø 35,1 N	1
VDHT BL2 3/4NC-NO BSP FPM	180L0273	7,2	120	140	90	G3/4 - G3/4	3,5	7	Ø 35,1	1
VDHT BL2 3/4NC-NO BSP N	180L1024	7,2	120	140	90	G3/4 - G3/4	3,5	7	Ø 35,1 N	1
VDHT BL2 1 NC BSP FPM	180L0275	9,0	150	140	90	G1 - G1	3,5	7	Ø 35,1	1
VDHT BL2 1 NC BSP N	180L1002	9,0	150	140	90	G1 - G1	3,5	7	Ø 35,1 N	1
VDHT BL2 1 NC-NO BSP FPM	180L0274	9,0	150	140	90	G1 - G1	3,5	7	Ø 35,1	1
VDHT BL2S 3/4 NC BSP FPM	180L0267	7,2	120	140	90	G3/4 - G3/4	3,5	7	Ø 35,1	1
VDHT BL2S 3/4 NC BSP N	180L1000	7,2	120	140	90	G3/4 - G3/4	3,5	7	Ø 35,1 N	1
VDHT BL2S 3/4 NC-NO BSP FPM	180L0238	7,2	120	140	90	G3/4 - G3/4	3,5	7	Ø 35,1	1
VDHT BL3 3/4 NC BSP FPM	180L0089	7,2	120	140	90	G3/4 - G3/4	3,5	10,5	Ø 35,1	2
VDHT BL3 3/4 NC BSP N	180L1025	7,2	120	140	90	G3/4 - G3/4	3,5	10,5	Ø 35,1 N	1
VDHT BL3 HP 3/4 NC BSP FPM	180L0286	7,2	120	210	90	G3/4 - G3/4	3,5	10,5	Ø 35,1	1
VDHT BL3 HP 3/4 NC BSP N	180L1028	7,2	120	210	90	G3/4 - G3/4	3,5	10,5	Ø 35,1 N	1
VDHT BL3 NC BSP FPM	180L0189	9,0	150	140	90	G1 - G1	3,5	10,5	Ø 35,1	2
VDHT BL3 1 NC BSP N	180L1011	9,0	150	140	90	G1 - G1	3,5	10,5	Ø 35,1 N	1
VDHT BL4 1 NC BSP FPM	180L0172	9,0	150	140	90	G1 - G1	3,5	14	Ø 35,1	2
VDHT BL4 1 NC BSP N	180L1016	9,0	150	140	90	G1 - G1	3,5	14	Ø 35,1 N	1
VDHT BL4 HP 1 NC BSP FPM	180L0287	9,0	150	210	90	G1 - G1	3,5	14	Ø 35,1	1
VDHT BL4 HP 1 NC BSP N	180L1029	9,0	150	210	90	G1 - G1	3,5	14	Ø 35,1 N	1



VDHT / 2/2 way solenoid blockvalves manual bypass										
VDHT 3/4 EAM NC BSP NBR	180L0122	7,2	120	140	90	G3/4	3,5	2,3	Ø 35,1	2
VDHT 1 EAM NC BSP NBR	180L0110	9,0	150	140	90	G1	3,5	2,5	Ø 35,1	2
VDHT BLM1 3/4-3/4 NC BSP NBR	180L0196	7,2	120	140	90	G3/4 - G3/4	3,5	4,0	Ø 35,1	2
VDHT BLM2 3/4-3/4 NC BSP NBR	180L0167	7,2	120	140	90	G3/4 - G3/4	3,5	7,4	Ø 35,1	2
VDHT BLM2 1-1 NC BSP NBR	180L0199	9,0	150	140	90	G1 - G1	3,5	5,3	Ø 35,1	2
VDHT BLM3 3/4-3/4 NC BSP NBR	180L0168	7,2	120	140	90	G3/4 - G3/4	3,5	11,7	Ø 35,1	2
VDHT BLM3 1-3/4 NC BSP NBR	180L0187	7,2	120	140	90	G1 - G3/4	3,5	10,9	Ø 35,1	2
VDHT BLM4 3/4-3/4 NC BSP NBR	180L0169	7,2	120	140	90	G3/4 - G3/4	3,5	15,0	Ø 35,1	2

Overview coils and accessories



Description	Code no	Voltage	Power	Voltage tolerance	T max Ambiente °C	Connec-tion	Enclosure	Weight coil kg
Type BB / Without LED / for Hirschmann plug / excl. plug								
Coil 240V-50Hz-10W-IP65	018F7906	240 V 50 Hz	10 W	+/- 10-15%	80°C	DIN 43650-A	IP65	0,24
Coil 24V-50Hz-10W-IP65	018F7905	24 V 50 Hz	10 W		80°C	DIN 43650-A	IP65	0,24
Coil 240V-50Hz-10W-IP65	018F7928	24 V DC	18 W	+/- 10%	50°C	DIN 43650-A	IP65	0,24

Type BE / Without LED / incl. Terminal box								
Coil 240V-60Hz-10W-IP67	018F7926	240 V 60 Hz	10 W	+/- 10-15%	80°C	Terminal box	IP67	0,3
Coil 240V-50Hz-10W-IP67	018F7924	240 V 50 Hz	10 W		80°C	Terminal box	IP67	0,3
Coil 220-230V-50Hz-10W-IP67	018F7921	220-230 V 50 Hz	10 W		80°C	Terminal box	IP67	0,3
Coil 220-230V-50-60Hz-10W-IP67	018F7919	220-230 V 50-60 Hz	10 W		50°C	Terminal box	IP67	0,3
Coil 220V-60Hz-10W-IP67	018F7925	220 V 60 Hz	10 W		80°C	Terminal box	IP67	0,3
Coil 220V-50-60Hz-10W-IP67	018F7929	220 V 50/60 Hz	10 W		80°C	Terminal box	IP67	0,3
Coil 110V-50Hz-10W-IP67	018F7923	110 V 50 Hz	10 W		50°C	Terminal box	IP67	0,3
Coil 24V-60Hz-10W-IP67	018F7922	24 V 60 Hz	10 W		80°C	Terminal box	IP67	0,3
Coil 24V-50Hz-10W-IP67	018F7920	24 V 50 Hz	10 W		80°C	Terminal box	IP67	0,3
Coil 42V-50Hz-10W-IP67	018F7927	42 V 50 Hz	10 W		80°C	Terminal box	IP67	0,3
Coil 24V-DC-18W-IP67	018F7914	24 V DC	18 W	+/- 10%	50°C	Terminal box	IP67	0,3
Coil 12V-DC-18W-IP67	018F7913	12 V DC	18 W	+/- 10%	50°C	Terminal box	IP67	0,3

Type BE / Without LED / for Hirschmann plug / prepare for terminal box								
Coil 200V-50-60Hz-10W-IP67	018F7918	200 V 50/60 Hz	10 W	+/- 10-15%	50°C	Terminal box	IP67	0,24
Coil 240V-50Hz-10W-IP67	018F7917	240 V 50 Hz	10 W		80°C	Terminal box	IP67	0,24
Coil 12V-DC-18W-IP67	018F7912	12 V DC	18 W	+/- 10%	50°C	Terminal box	IP67	0,3

Type BY / Without LED / for Hirschmann plug / excl. plug / UL Recognised								
Coil 208-240V-50-60Hz-14W-IP65-UL	018F7908	208-240 V 50/60 Hz	14 W	+/- 10-15%	50°C	DIN43650-A	IP65	0,24
Coil 110V-50-60Hz-14W-IP65-UL	018F7909	110 V 50-60 Hz	14 W		50°C	DIN43650-A	IP65	0,24
Coil 24V-50-60Hz-14W-IP65-UL	018F7907	24 V 50-60 Hz	14 W		50°C	DIN43650-A	IP65	0,24

Type BE / excl. LED / Incl. cable								
Coil 48V-50-60Hz-10W-IP67-4m cable	018F7915	48 V 50 Hz	10 W	+/- 10-15%	80°C	4 mtr. cable	IP67	0,3

Type BO / Eex m II Ta 94/9/EC (ATEX 100A) EN5001 & EN 50014 & EN50028								
Coil Eex m II TA 230V-50-60Hz-10W-IP67	018Z7992	230 V 50-60 Hz	10 W	+/- 10%	40°C	5 mtr. cable	IP67	0,6
Coil Eex m II TA 24V-DC-10W-IP67	180Z7993	24V DC	10 W	+/- 10%	40°C	5 mtr. cable	IP67	0,6

Connecting plug / Typ BY / excl. LED / for Hirschmann connection (DIN 43650-A) UL Recognised								
Plug DIN 43650-A PG11	018Z0183		Excl LED		125°C	BE-BB-BY	IP65	0,1

Connecting plug / Typ BY / incl. LED / for Hirschmann connection (DIN 43650-A) UL Recognised								
Plug EN175301-803 A 230V AC/DC LED	042N0265	230V AC	Incl LED		60°C	BE-BB-BY	IP65	0,1
Plug EN175301-803 A 24V AC/DC LED + PACK	042N0263	24V AC/DC	Incl LED		60°C	BE-BB-BY	IP65	0,1

Connection terminal box / Permanent magnet								
Terminal box excl. LED pack unit 100 Pe	018Z0279		Excl LED 100 PE		80°C	BE	IP67	0,1
Terminal box incl. LED 48-220 V DC 24-250V-50Hz / only BE	018Z0089	48-220V DC24 -250V 50/60 Hz	Incl. LED		80°C	BE	IP67	0,1
Permanent magnet	180Z0212	for testing						0,3

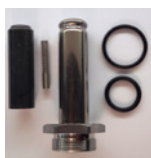
Overview spare parts



Valve typ	Code no	Other	Pos. no. explosion drawing	T max °C	Weight kg	Piston diameter	Orifice kit
Piston kit Ø 11,9 VDHT 1/4 E	180Z0251		3	80°C	0,1	Ø 11,9	-
Piston kit Ø 18,1 VDHT 3/8 to 1/2 VDHT B VDHT EC	180Z0024		10/11	90°C	0,1	Ø 18,1	-
Piston kit Ø 35,1 VDHT 3/4 to 1 VDHT BL VDHT BLM	180Z0026		10/11	90°C	0,2	Ø 35,1	-
Piston kit Ø 35,1 N VDHT 3/4 to 1 N VDHT BL N	180Z0138	Slimline	10/11	90°C	0,2	Ø 35,1 N	-



Orifice kit 1 VDHT 1,0	180Z0098	standard	6/7	90°C	0,1	-	1
Orifice kit 2 VDHT 1,0	180L4015	BLM	6/7	90°C	0,1	-	2
Orifice kit 3 VDHT DF 1,4	180L4003	DF/F	6/7	90°C	0,1	-	3
Orifice kit 4 VDHT 2E 1,4	180Z0097	1,4	6/7	90°C	0,1	-	4
Orifice kit 5 VDHT 2E 3,5	180L4014	3,5	6/7	90°C	0,1	-	5
Orifice kit 6 VDHT 1,0	180L4016	formerly	6/7	90°C	0,1	-	6

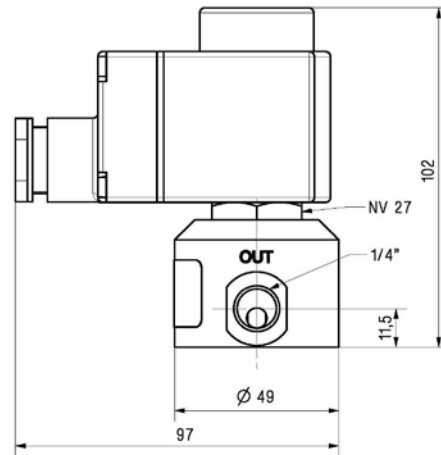
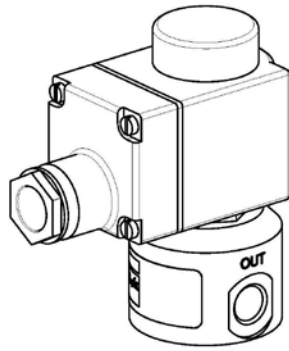


Armature kit NC VDHT 1/4 to 1	180L5002		1/5	90°C	0,2	-	
Armature kit NC HP VDHT 3/8 to 1	180L5011		1/5	90°C	0,2	-	--



Armature kit NO VDHT 3/8 to 1	180L5010		4/5	90°C	0,2	-	
Armature kit NO HP VDHT 1/4	180L5013		4/5	90°C	0,2	-	--

VDH 2E 1/4
Drawings
Spare parts



Code no. valves

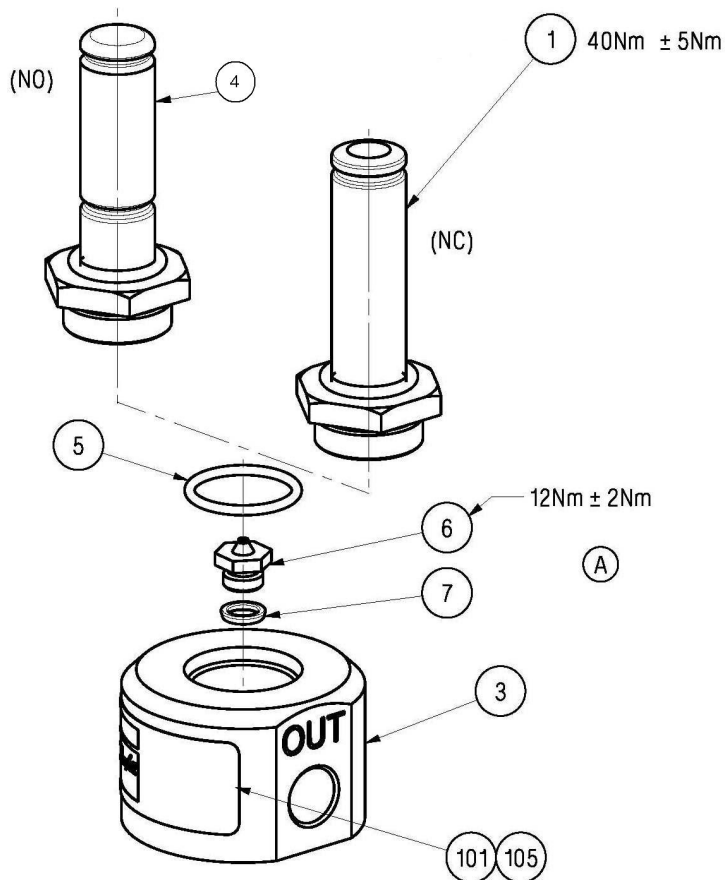
180L0018 / VDH 2E 1/4 NC 1,4 BSP
180L0019 / VDH 2E 1/4 NO 1,4 BSP

Spare parts

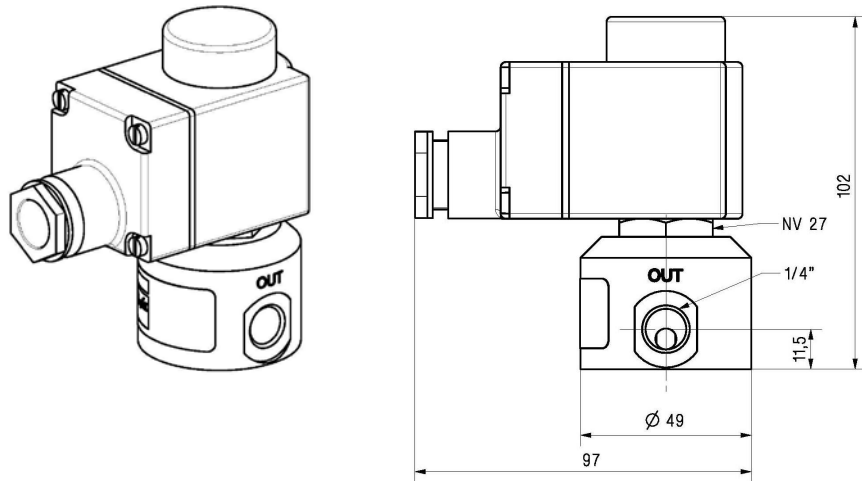
Armature kit NC 180L5002 / Pos.: 1, 5
Armature kit NO 180L5010 / Pos.: 4, 5
Orifice kit 4 180Z0097 / Pos.: 6, 7

180L1018 / VDH 2E 1/4 NC 3,5 BSP

Armature kit NC 180L5002 / Pos.: 1, 5
Armature kit NO 180L5010 / Pos.: 4, 5
Orifice kit 5 180L4014 / Pos.: 6, 7



VDHT 1/4 E
Drawings
Spare parts

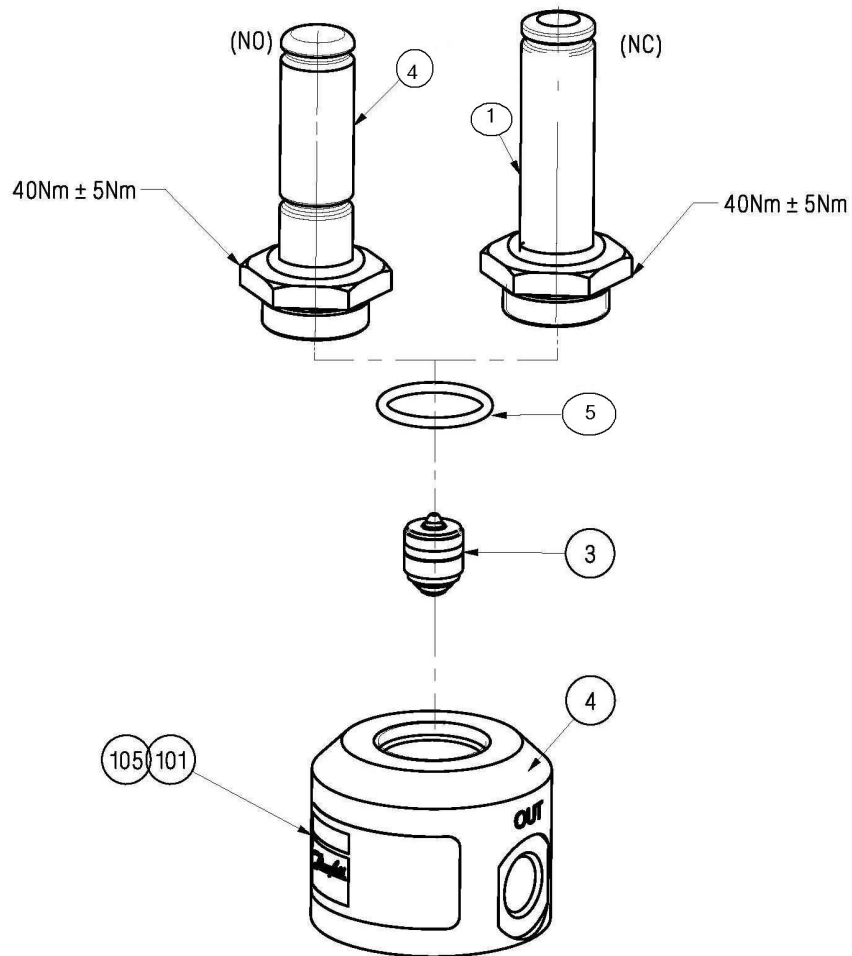


Code no. valves

- 180L0241 / VDHT 1/4 E NC BSP
- 180L0243 / VDHT 1/4 E NC NPT
- 180L0242 / VDHT 1/4 E NO BSP
- 180L0244 / VDHT 1/4 E NO NPT

Spare parts

- Armature kit NC 180L5002 / Pos.: 1, 2
- Armature kit NO VDHT 1/4 180L5013 / Pos.: 1, 2
- Orifice kit 4 180Z0097 / Pos.: 6, 7
- Piston kit Ø 11,9 180Z0251 / Pos.: 3



VDHT 3/8 E
VDHT 1/2 E
Drawings
Spare parts

Code no. valves:

- 180L0086 VDHT 3/8 E NC BSP FPM
- 180L0092 VDHT 3/8 E NC BSP

- 180L0125 VDHT 3/8 E HP NC BSP FPM
- 180L0178 VDHT 3/8 E HP NC BSP

- 180L0295 VDHT 3/8 E NO BSP FPM
- 180L0093 VDHT 3/8 E NO BSP

- 180L0127 VDHT 3/8 E HP NC NPT
- 180L0205 VDHT 3/8 E NO NPT

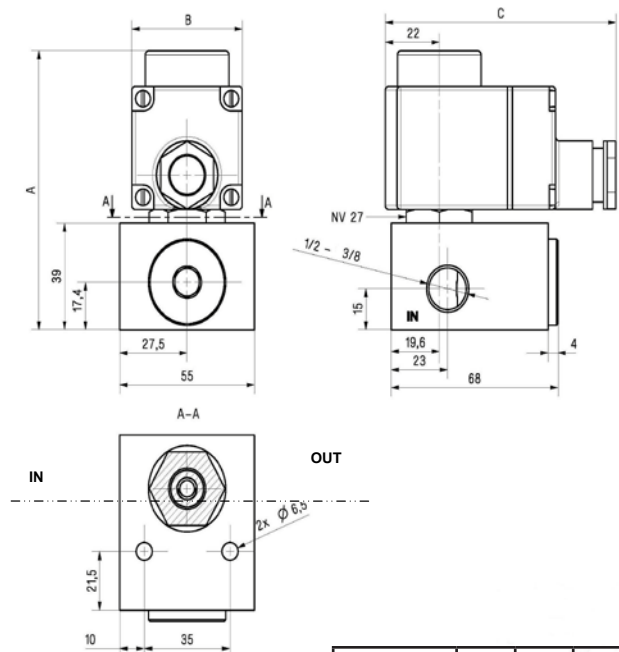
- 180L0087 VDHT 1/2 E NC BSP FPM
- 180L0094 VDHT 1/2 E NC BSP

- 180L0179 VDHT 1/2 E HP NC BSP NBR
- 180L0126 VDHT 1/2 E HP NC BSP

- 180L0095 VDHT 1/2 E NO BSP

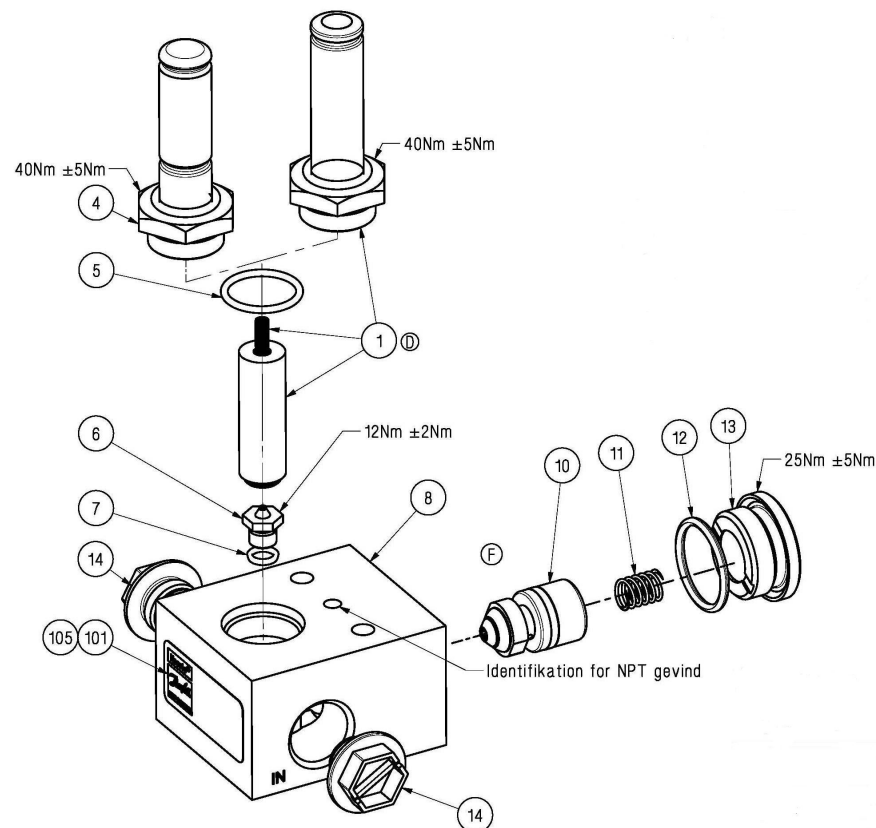
- 180L0209 VDHT 1/2 E NO NPT
- 180L0128 VDHT 1/2 E HP NC NPT

- 180L0171 VDHT 3/4 - 1/2 E NC BSP
(slightly different installation dimensions)



Valve type	A	B	C
NO / NC	102	45	94
EEX	112	68	125

(red part numbers are being phased out)



Spare parts

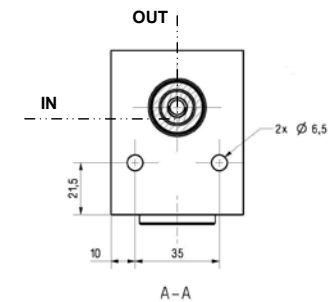
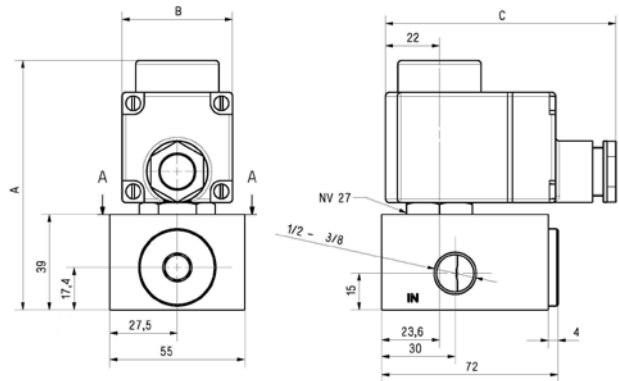
- Armature kit NC 180L5002 / Pos.: 1, 5
- Armature kit NC HP 180L5011 / Pos.: 1, 5
- Armature kit NO 180L5010 / Pos.: 4, 5
- Orifice kit 1 180Z0098 / Pos.: 6, 7
- Piston kit Ø 18,1 180Z0024 / Pos.: 10, 11

VDHT 3/8 EA
VDHT 1/2 EA
Drawings
Spare parts

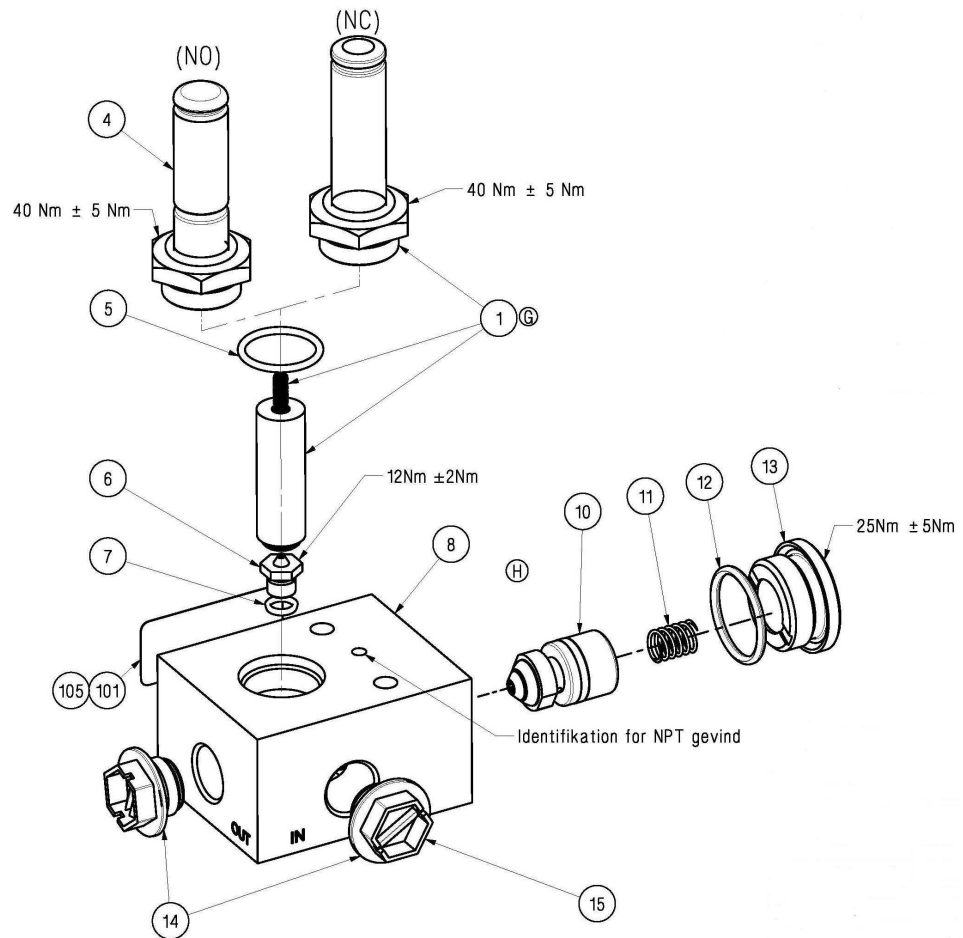
Code no. valves:

- 180L0249 **VDHT 3/8 EA NC BSP FPM**
- 180L0100 VDHT 3/8 EA NC BSP
- 180L0101 VDHT 3/8 EA NO BSP
- 180L0102 **VDHT 1/2 EA NC BSP NBR**
- 180L0188 VDHT 1/2 EA NC BSP
- 180L0234 VDHT 1/2 EA HP NC BSP
- 180L0103 VDHT 1/2 EA NO BSP

(red part numbers are being phased out)



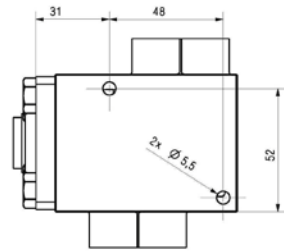
Ventiltype	A	B	C
NO/NC	102	45	94
EEX	112	68	125



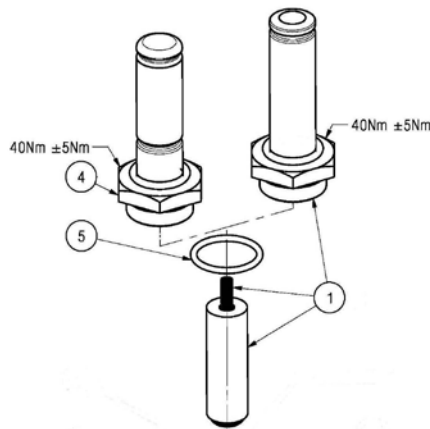
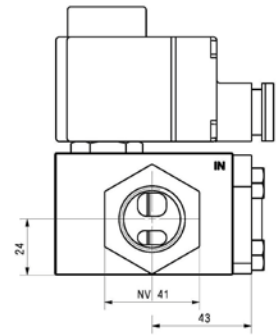
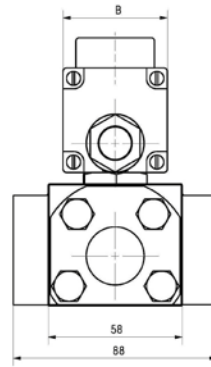
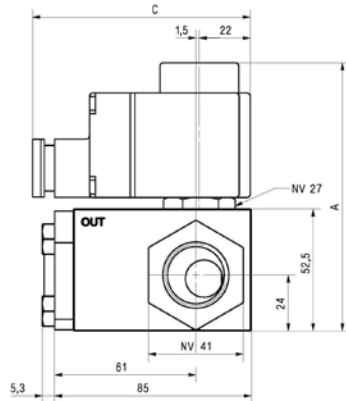
Spare parts

- Armature kit NC 180L5002 / Pos.: 1, 5
- Armature kit NC HP 180L5011 / Pos.: 1, 5
- Armature kit NO 180L5010 / Pos.: 4, 5
- Orifice kit 1 180Z0098 / Pos.: 6, 7
- Piston kit Ø 18,1 180Z0024 / Pos.: 10, 11

VDHT 3/4 ED and
VDHT 1 ED
Drawings
Spare parts



Ventiltype	A	B	C
NC/NO	115,5	45	94
EEX	125,5	68	125

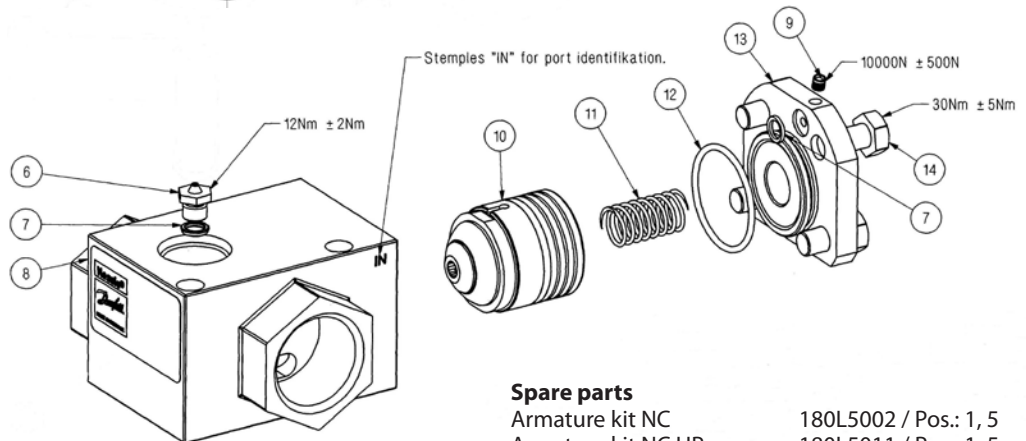


Code no. valves:

- 180L0120 VDHT 3/4 ED NC BSP NBR
- 180L0116 VDHT 3/4 ED NC BSP FPM
- 180L0117 VDHT 3/4 ED NC NPT NBR
- 180L0282 VDHT 3/4 ED HP NC BSP FPM

- 180L0104 VDHT 1 ED NC BSP FPM
- 180L0105 VDHT 1 ED NC NPT FPM
- 180L0108 VDHT 1 ED NC BSP NBR
- 180L0115 VDHT 1 ED NO BSP FPM
- 180L0176 VDHT 1 ED NO NPT FPM

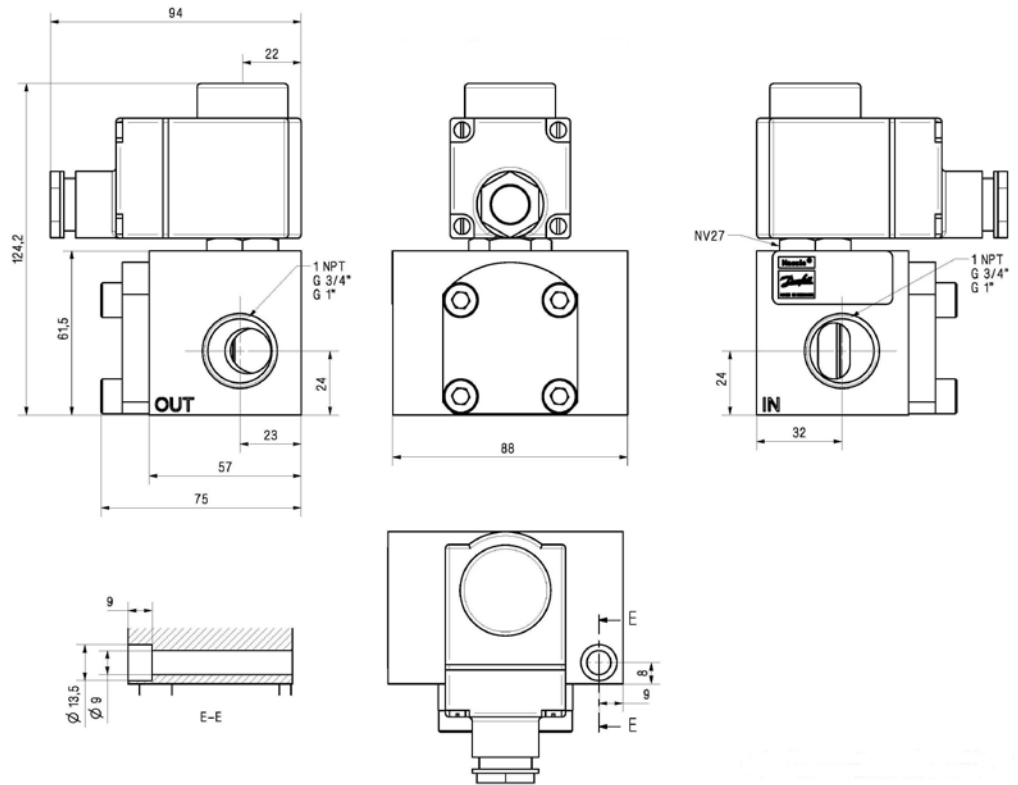
(red part numbers are being phased out)



Spare parts

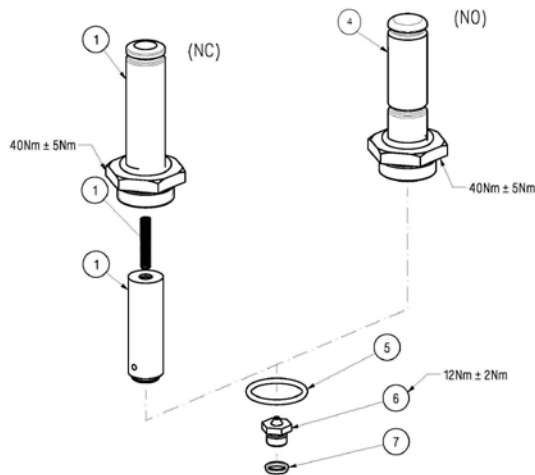
- Armature kit NC 180L5002 / Pos.: 1, 5
- Armature kit NC HP 180L5011 / Pos.: 1, 5
- Armature kit NO 180L5010 / Pos.: 4, 5
- Orifice kit 1 (see page 8) 180Z0098 / Pos.: 6, 7
- Orifice kit 6 (see page 8) 180L4016 / Pos.: 6, 7
- Piston kit Ø 35,1 180Z0026 / Pos.: 10, 11

**VDHT 3/4 ED N and
VDHT 1 ED N
Drawings
Spare parts**



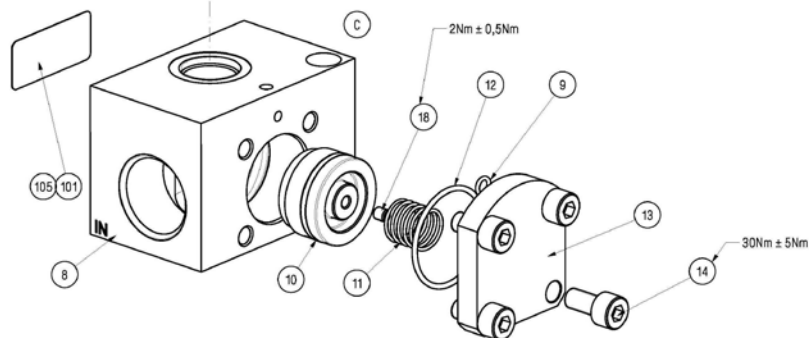
Code no. valves:

- 180L1012 VDHT 3/4 ED NC BSP N
- 180L1030 VDHT 3/4 ED HP NC BSP N
- 180L1022 VDHT 1 ED NC BSP N
- 180L1014 VDHT 1 ED NO BSP N
- 180L1013 VDHT 1 ED NC NPT N

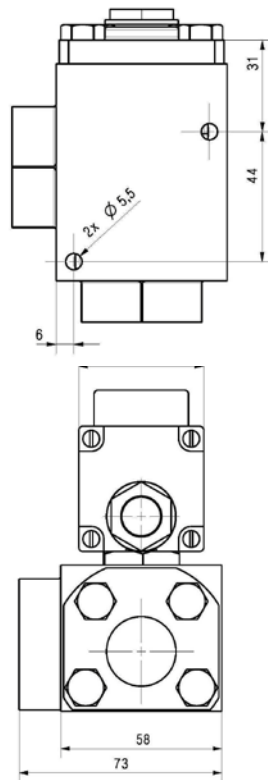


Spare parts

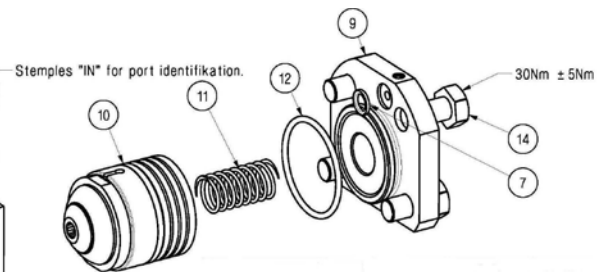
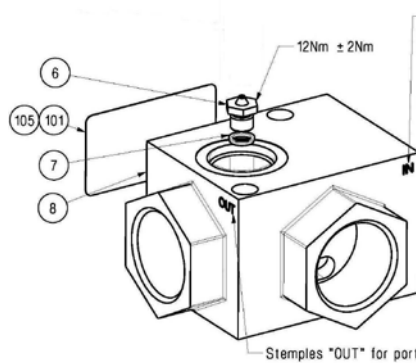
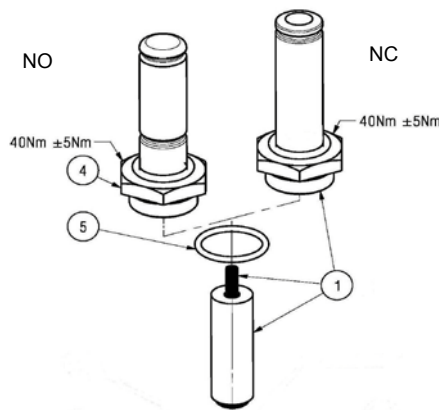
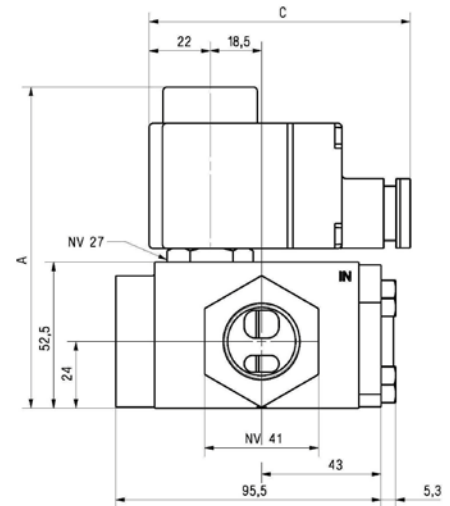
- Armature kit NC 180L5002 / Pos.: 1, 5
- Armature kit NC HP 180L5011 / Pos.: 1, 5
- Armature kit NO 180L5010 / Pos.: 4, 5
- Orifice kit 1 180Z0098 / Pos.: 6, 7
- Piston kit Ø 35,1 N 180Z0138 / Pos.: 10, 11, 18



**VDHT 3/4 EA and
VDHT 1 EA
Drawings
Spare parts**



Ventiltype	A	B	C
NC/NO	115,5	45	94
EEX	125,5	68	125



Code no. valves:

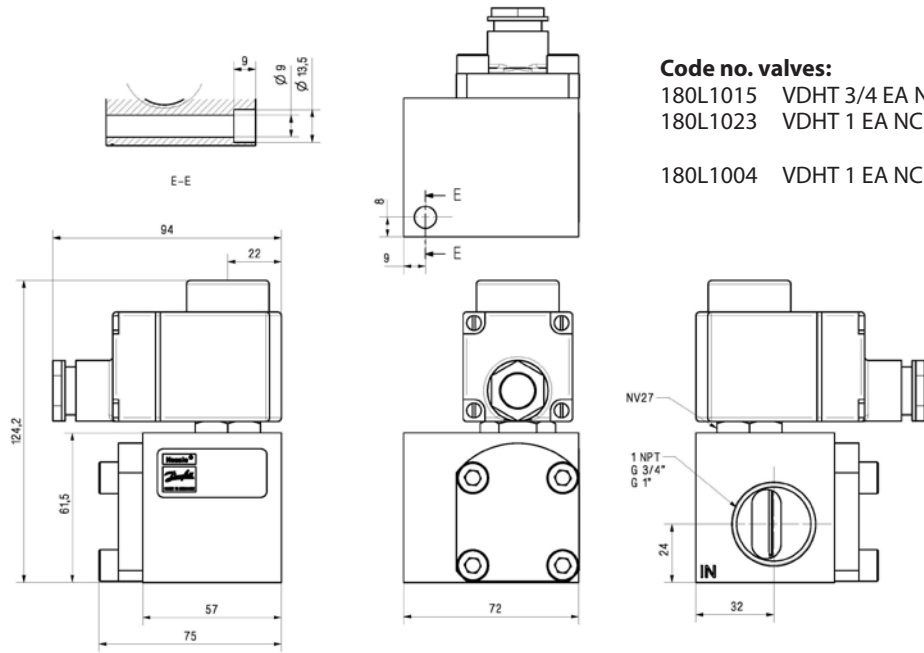
- 180L0118 VDHT 3/4 EA NC BSP FPM
- 180L0119 VDHT 3/4 EA NC NPT
- 180L0121 VDHT 3/4 EA NC BSP NBR
- 180L0198 VDHT 3/4 EA NO BSP FPM
- 180L0106 VDHT 1 EA NC BSP FPM
- 180L0107 VDHT 1 EA NC NPT FPM
- 180L0109 VDHT 1 EA NC BSP NBR
- 180L0223 VDHT SAE-16 EA NC FPM

(red part numbers are being phased put)

Spare parts

- Armature kit NC 180L5002 / Pos.: 1, 5
- Armature kit NC HP 180L5011 / Pos.: 1, 5
- Armature kit NO 180L5010 / Pos.: 4, 5
- Orifice kit 1 (see page 8) 180Z0098 / Pos.: 6, 7
- Orifice kit 6 (see page 8) 180L4016 / Pos.: 6, 7
- Piston kit Ø 35,1 180Z0026 / Pos.: 10, 11

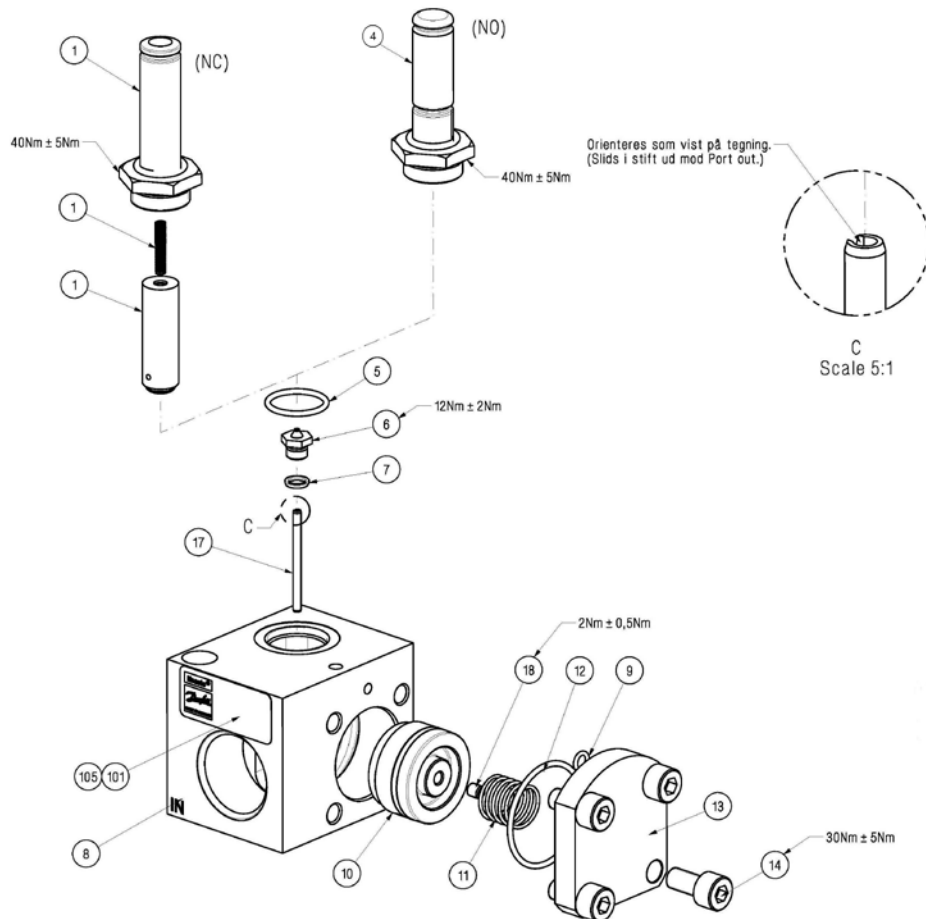
**VDHT 3/4 EA N and
VDHT 1 EA N
Drawings
Spare parts**



Code no. valves:

180L1015 VDHT 3/4 EA NC BSP N
180L1023 VDHT 1 EA NC BSP N

180L1004 VDHT 1 EA NC NPT N

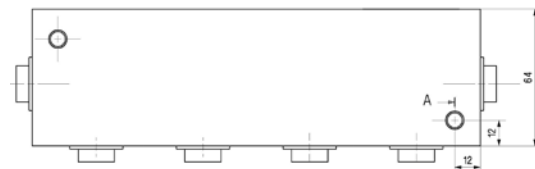
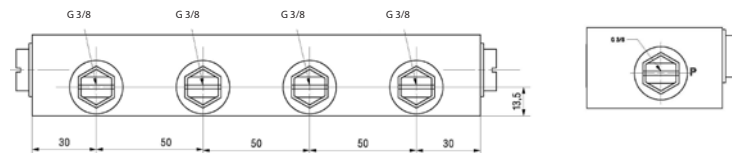
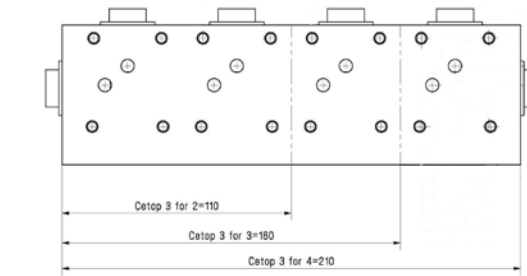
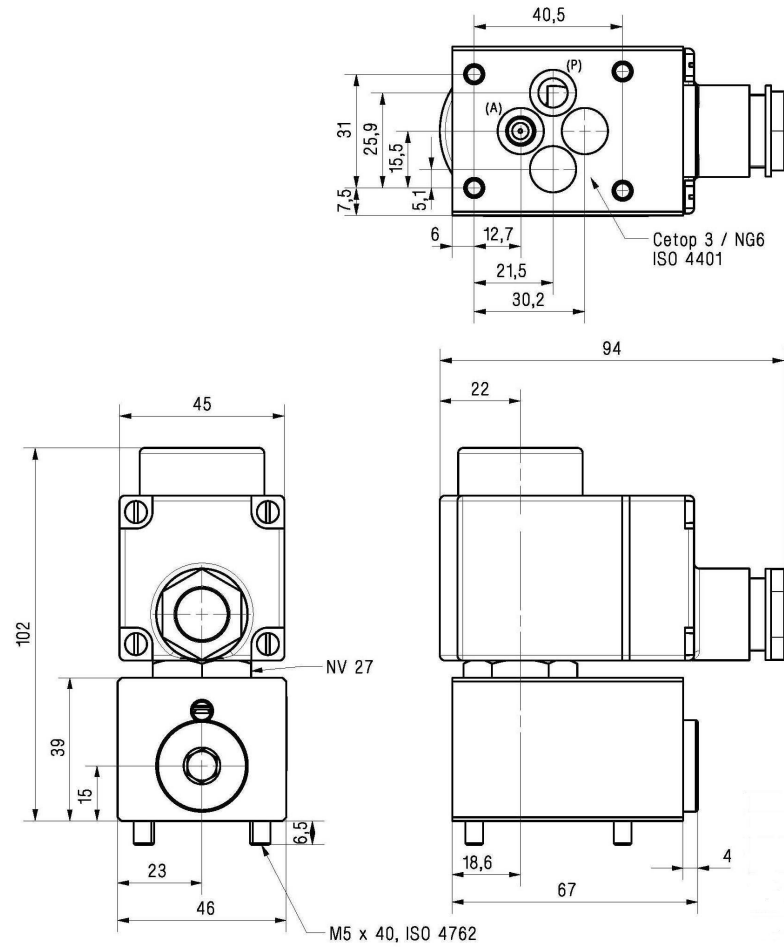


Spare parts

Armature kit NC
Armature kit NC HP
Armature kit NO
Orifice kit 1
Piston kit Ø 35,1 N

180L5002 / Pos.: 1, 5
180L5011 / Pos.: 1, 5
180L5010 / Pos.: 4, 5
180Z0098 / Pos.: 6, 7
180Z0138 / Pos.: 10, 11, 18

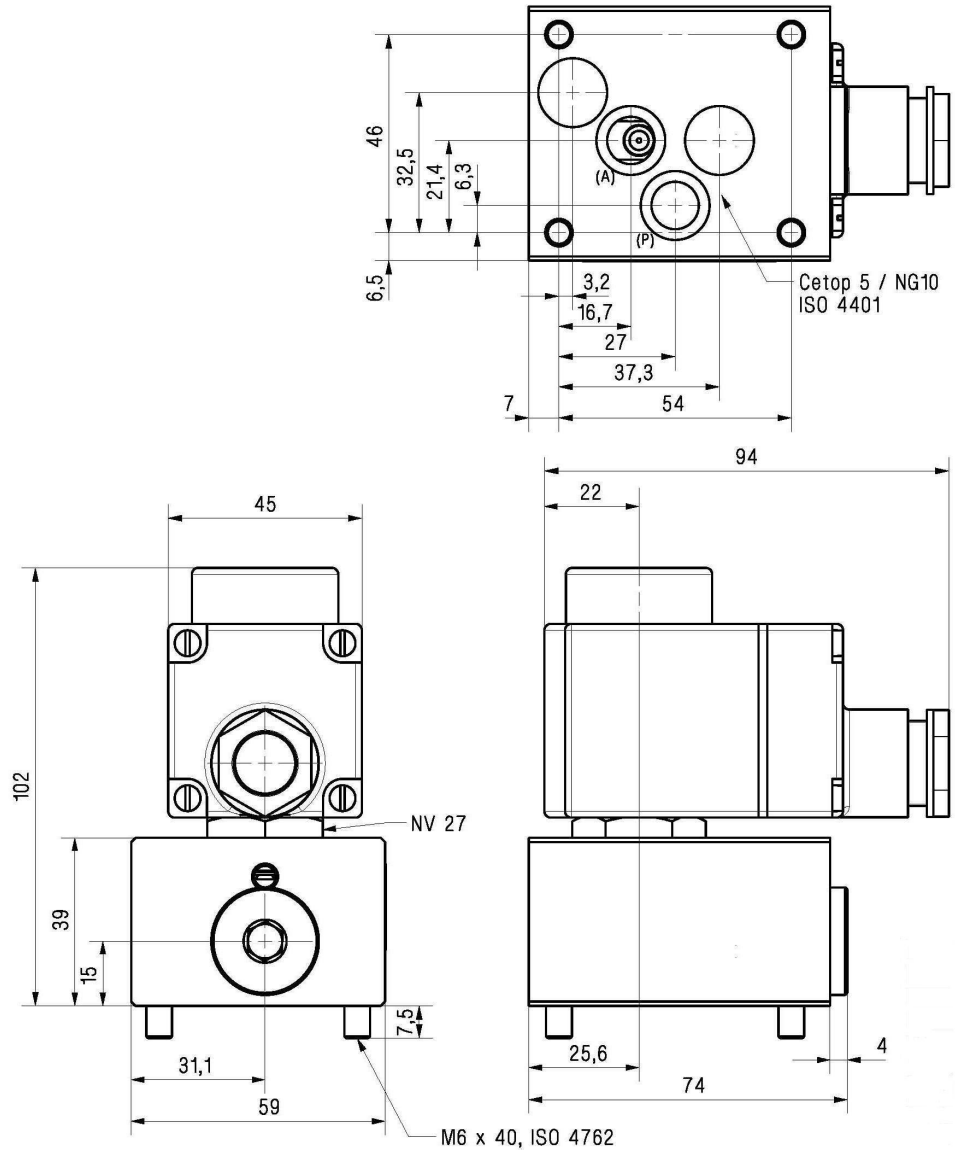
VDHT 30 EC3
Drawings



Cetop 3 block for VDH / VDHT 30 EC3

- 1 Manifold 180L0061
- 2 Manifold 180L0062
- 3 Manifold 180L0063
- 4 Manifold 180L0064

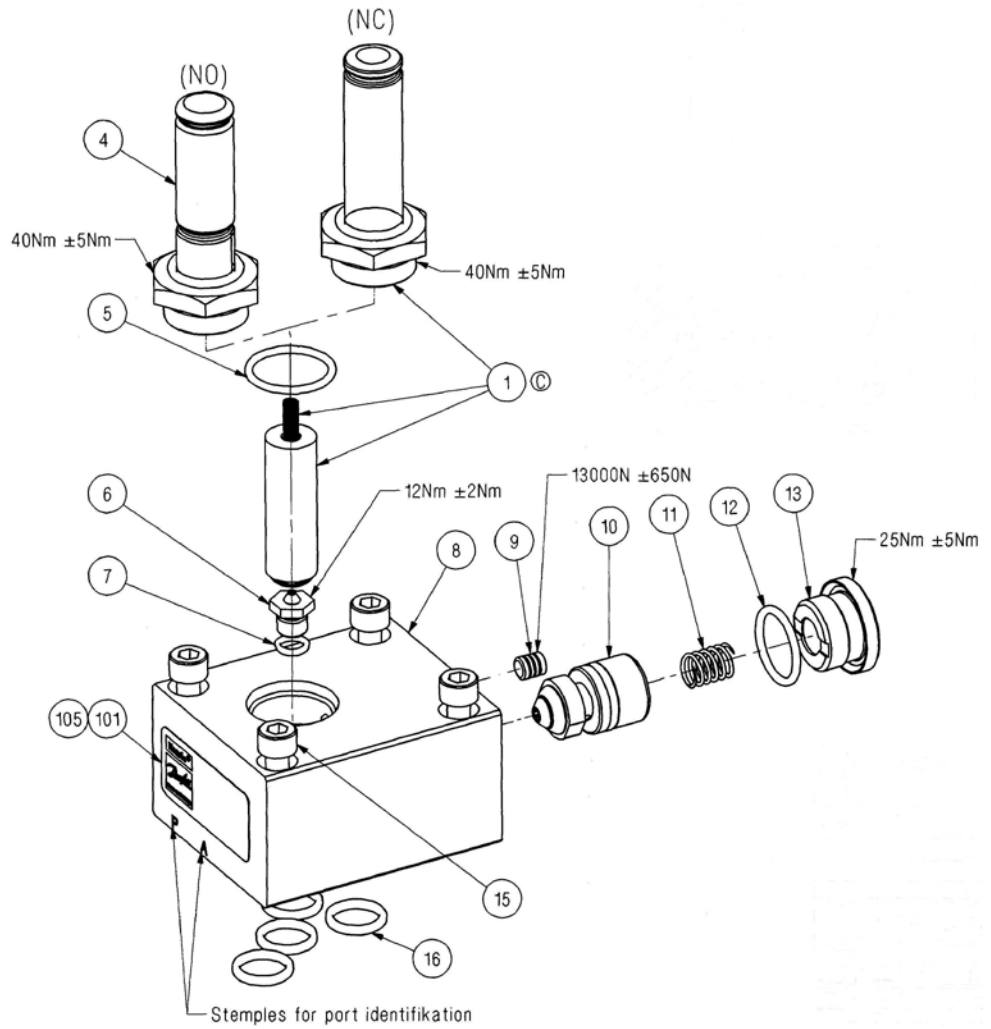
VDHT 60 EC5
Drawings



Cetop 5 block for VDHT 60 EC5

- 1 Manifold On request
- 2 Manifold On request
- 3 Manifold On request
- 4 Manifold On request

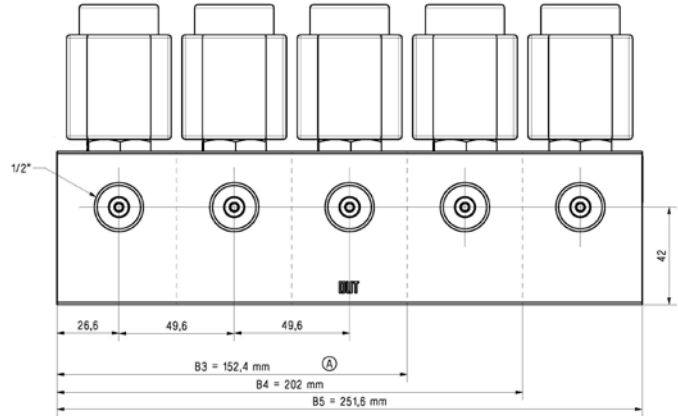
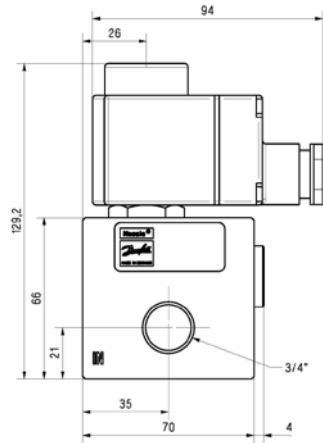
VDHT 30 EC3 / VDHT 60 EC5
Spare parts



Spare parts

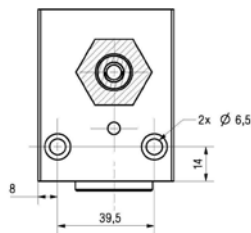
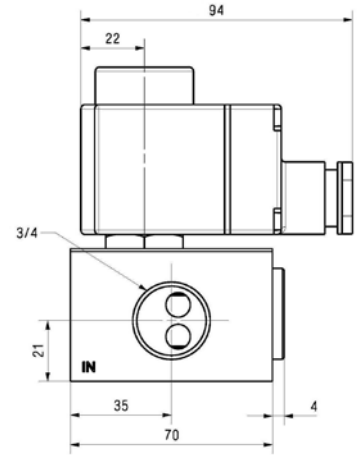
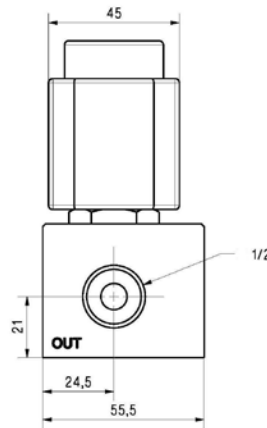
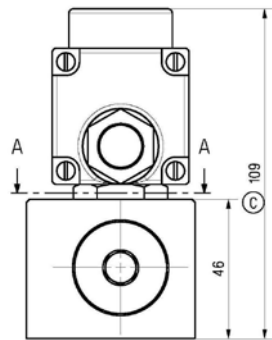
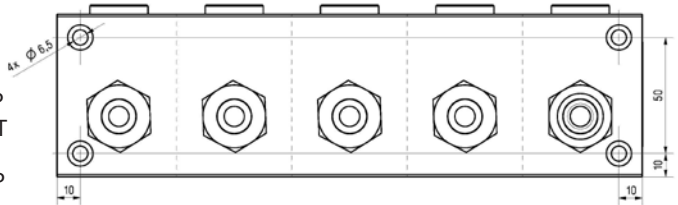
Armature kit NC	180L5002 / Pos.: 1, 5
Armature kit NC HP	180L5011 / Pos.: 1, 5
Armature kit NO	180L5010 / Pos.: 4, 5
Orifice kit 1	180Z0098 / Pos.: 6, 7
Piston kit Ø 18,1	180Z0024 / Pos.: 10, 11

VDHT B Drawings



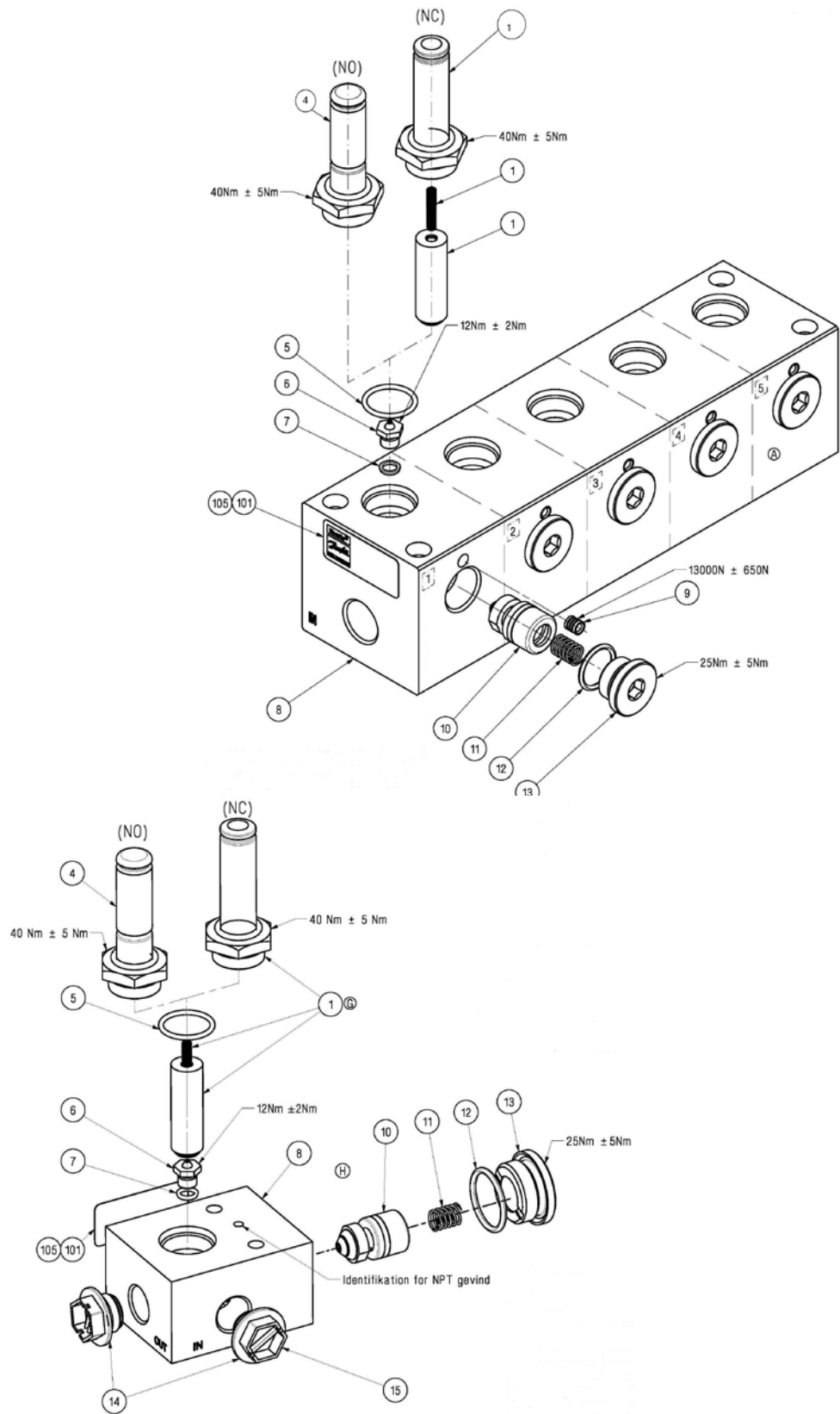
Code no. valves:

- 180L0270 VDHT B2 1/2 NC BSP
- 180L0269 VDHT B2 1/2 NC NPT
- 180L0258 VDHT B2 1/2 NC-NO BSP
- 180L0177 VDHT B2 1/2 NC-NO NPT
- 180L0210 VDHT B2 1/2 NO NPT
- 180L0124 VDHT B2 3/4 - 1/2 NC BSP
- 180L0088 VDHT 3/4 - 1/2 NC BSP
- 180L0255 VDHT B3 3/4 - 1/2 NC NPT
- 180L0123 VDHT B4 3/4 - 1/2 BSP
- 180L0207 VDHT B4 3/4 - 1/2 NC NPT
- 180L0091 VDHT B5 3/4 - 1/2 NC BSP



Extension module:
180L0090 VDHT 3/4 - 1/2 EA NC BSP

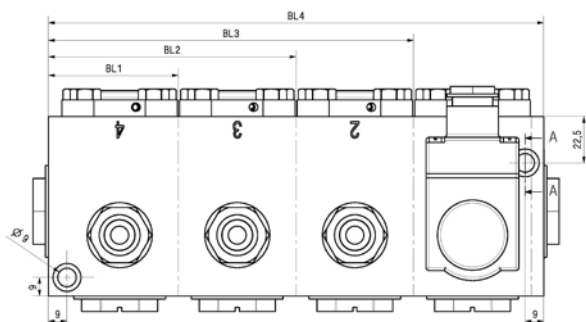
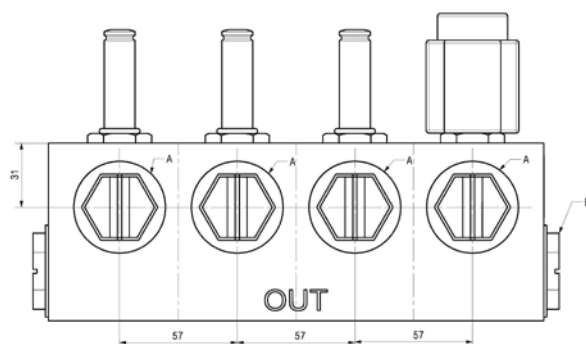
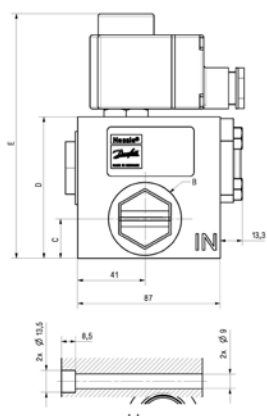
VDHT B
Spare parts



Spare parts

Armature kit NC	180L5002 / Pos.: 1, 5
Armature kit NC HP	180L5011 / Pos.: 1, 5
Armature kit NO	180L5010 / Pos.: 4, 5
Orifice kit 1	180Z0098 / Pos.: 6, 7
Piston kit Ø 18,1	180Z0024 / Pos.: 10, 11

VDHT BL Drawings

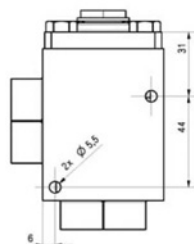


Code no. valves:

- 180L0265 VDHT BL 1 1-3/4 NC BSP
- 180L0290 VDHT BL 1S 28-3/4 NC BSP
- 180L0202 VDHT BL2 3/4 NC BSP
- 180L0285 VDHT BL2 HP 3/4 NC BSP
- 180L0206 VDHT BL2 3/4 NC NPT
- 180L0273 VDHT BL2 3/4 NC-NO BSP
- 180L0180 VDHT BL2 3/4 NC-NO NPT
- 180L0275 VDHT BL2 1 NC BSP
- 180L0224 VDHT BL2 1 NC SAE-16
- 180L0220 VDHT BL2S 1 NC SAE-16
- 180L0274 VDHT BL2 NC-NO BSP
- 180L0231 VDHT BL2S 1-3/4 NC NPT
- 180L0267 VDHT BL2S 3/4 NC BSP
- 180L0238 VDHT BL2S 3/4 NC NO BSP
- 180L0089 VDHT BL3 3/4 NC BSP
- 180L0286 VDHT BL3 HP 3/4 NC BSP
- 180L0204 VDHT BL3 3/4 NC NPT
- 180L0189 VDHT BL3 1 NC BSP
- 180L0268 VDHT BL3 1 NC NPT
- 180L0266 VDHT BL3S 1 NC SAE-16
- 180L0232 VDHT BL3S 1-3/4 NC NPT
- 180L0172 VDHT BL4 1 NC BSP
- 180L0287 VDHT BL4 HP 1 NC BSP
- 180L0225 VDHT BL4S 1 NC SAE-16
- 180L0272 VDHT BL4S NC

	A	B	C	D	E	BL1	BL2	BL3	BL4
180L0089	3/4"	3/4"	23 mm	81 mm	143 mm			183 mm	
180L0204	3/4 NPT	3/4 NPT	23 mm	81 mm	143 mm			183 mm	
180L0172	1"	1"	24 mm	86 mm	148 mm				240 mm
180L0287	1"	1"	24 mm	86 mm	148 mm				240 mm
180L0180	3/4"	3/4"	23 mm	81 mm	143 mm		126 mm		
180L0189	1"	1"	24 mm	86 mm	148 mm			183 mm	
180L0268	1"	1"	24 mm	86 mm	148 mm			183 mm	
180L0265	3/4"	1"	24 mm	86 mm	148 mm	69 mm			
180L0267	3/4"	3/4"	24 mm	82 mm	144 mm		126 mm		
180L0202	3/4"	3/4"	24 mm	82 mm	144 mm		126 mm		
180L0285	3/4"	3/4"	24 mm	82 mm	144 mm		126 mm		
180L0274	1"	1"	24 mm	86 mm	144 mm		126 mm		
180L0275	1"	1"	24 mm	86 mm	144 mm		126 mm		
180L0289	1"	3/4"	24 mm	86 mm	144 mm		126 mm		

(red part numbers are being phased out)

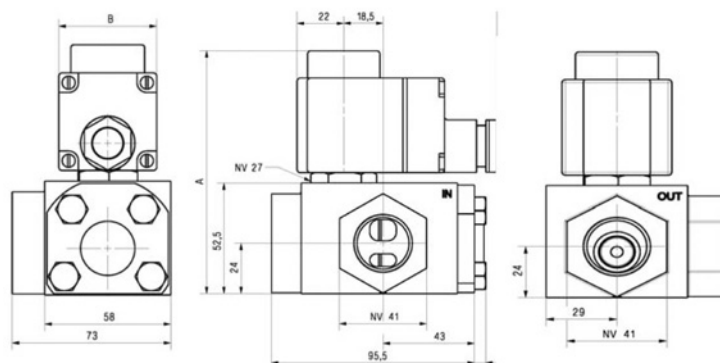


Ventiltipe	A	B	C
NC/NO	115,5	45	94
EEX	125,5	68	125

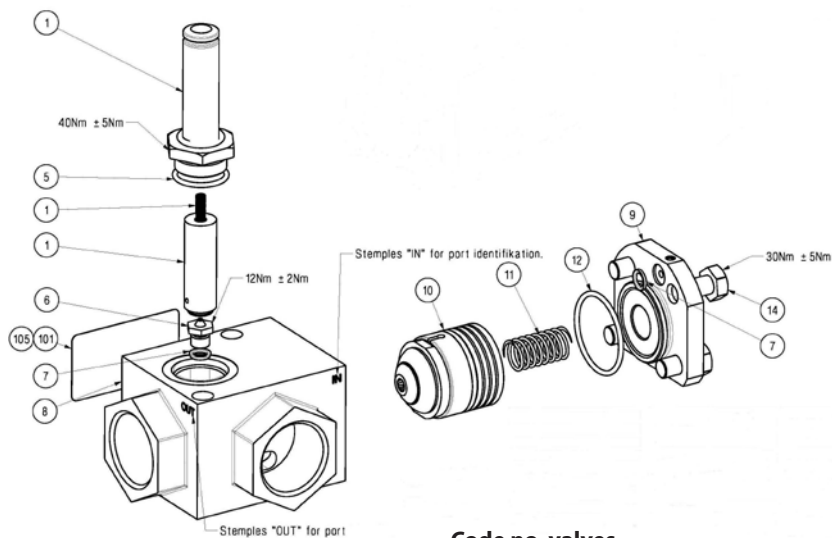
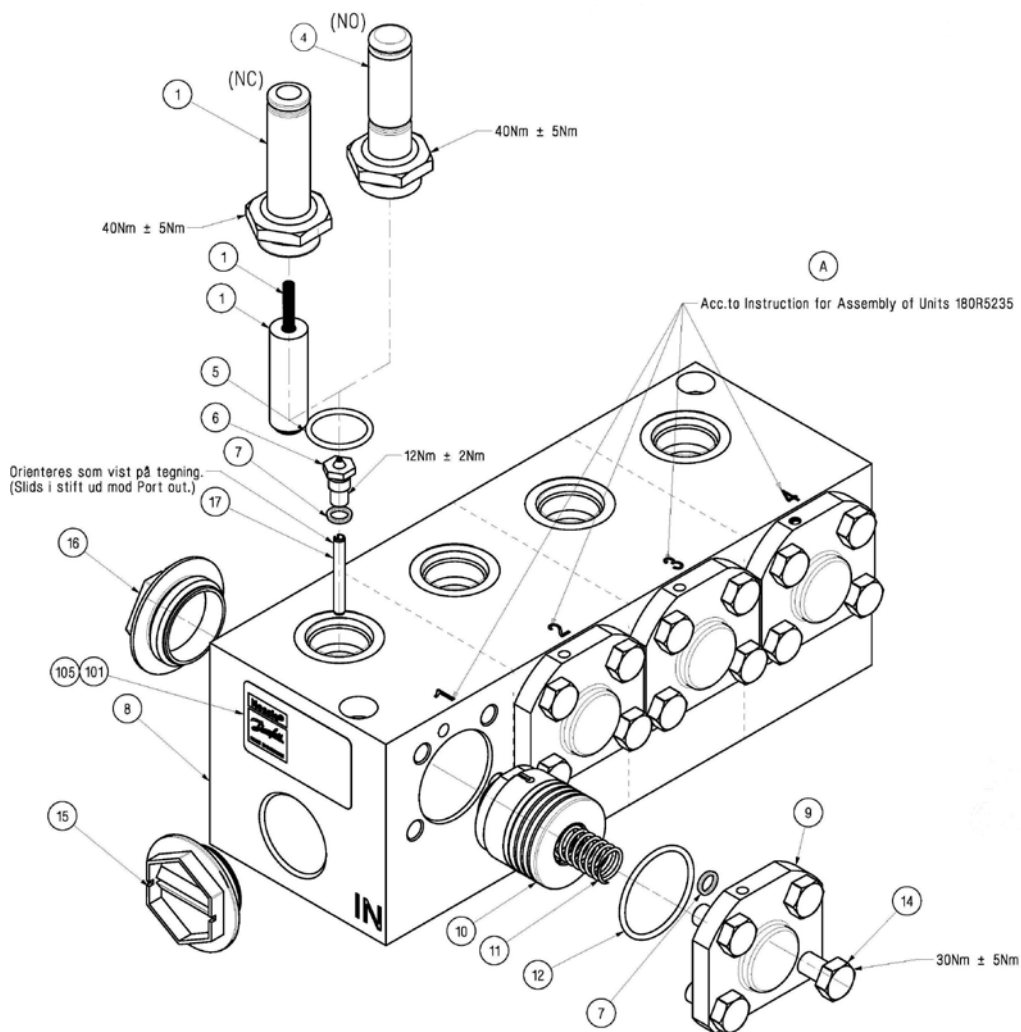
Extension module:

- 180L0118 VDHT 3/4 EA NC BSP
- 180L0119 VDHT 3/4 EA NC NPT
- 180L0106 VDHT 1 EA NC BSP
- 180L0107 VDHT 1 EA NC NPT

(red part numbers are being phased out)



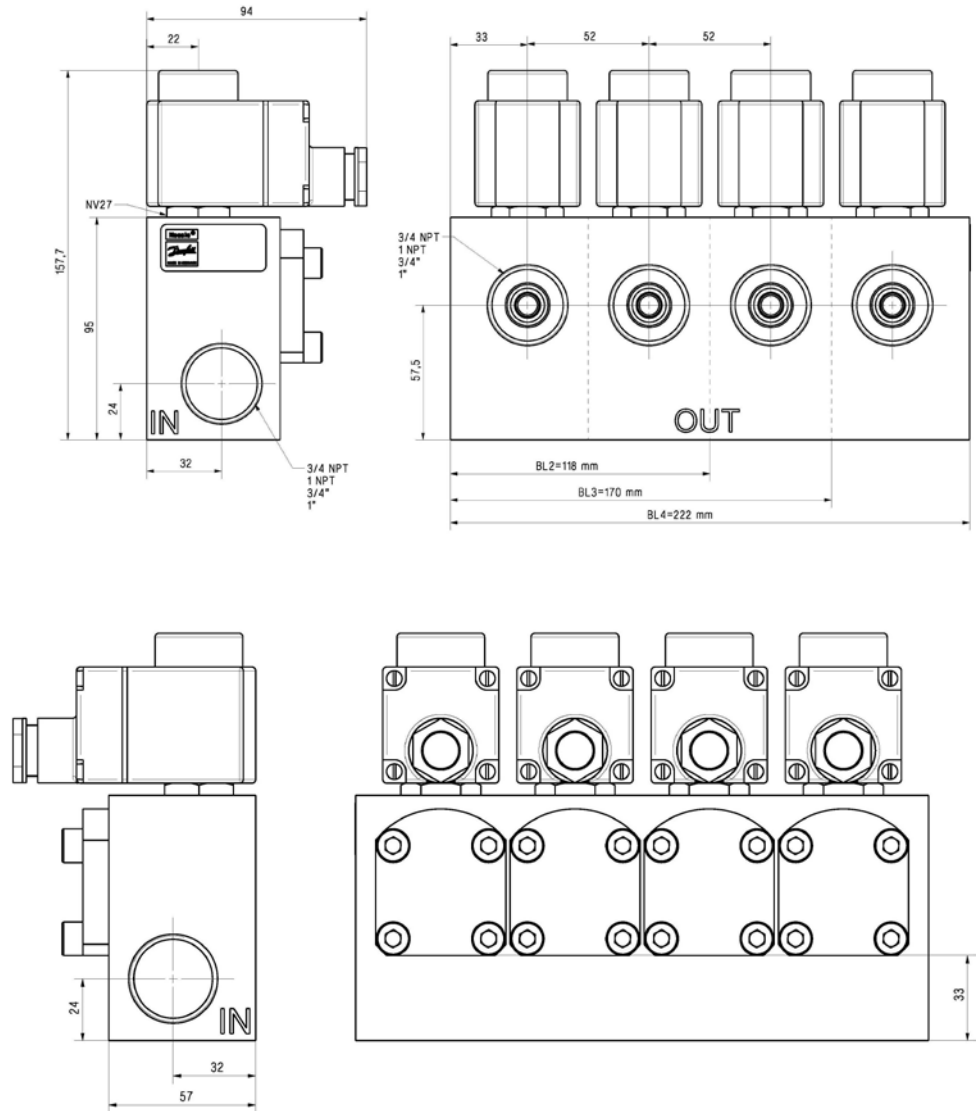
VDHT BL
Spare parts



Code no. valves

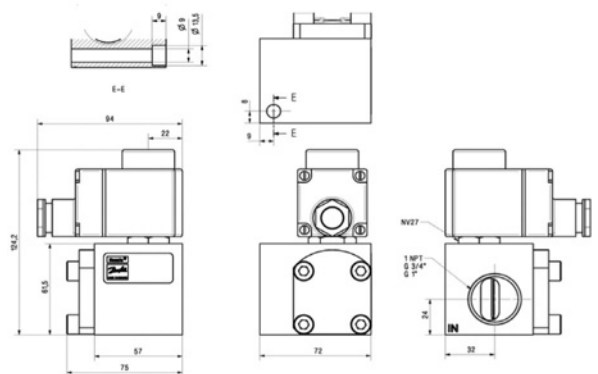
Armature kit NC	180L5002 / Pos.: 1, 5
Armature kit NC HP	180L5011 / Pos.: 1, 5
Armature kit NO	180L5010 / Pos.: 4, 5
Orifice kit 1 (see page 8/9)	180Z0098 / Pos.: 6, 7
Orifice kit 2 (see page 8/9)	180L4015 / Pos.: 6, 7
Orifice kit 6 (see page 8/9)	180L4015 / Pos.: 6, 7
Piston kit Ø 35,1	180Z0026 / Pos.: 10, 11

VDHT BL N
Drawings



Code no. valves:

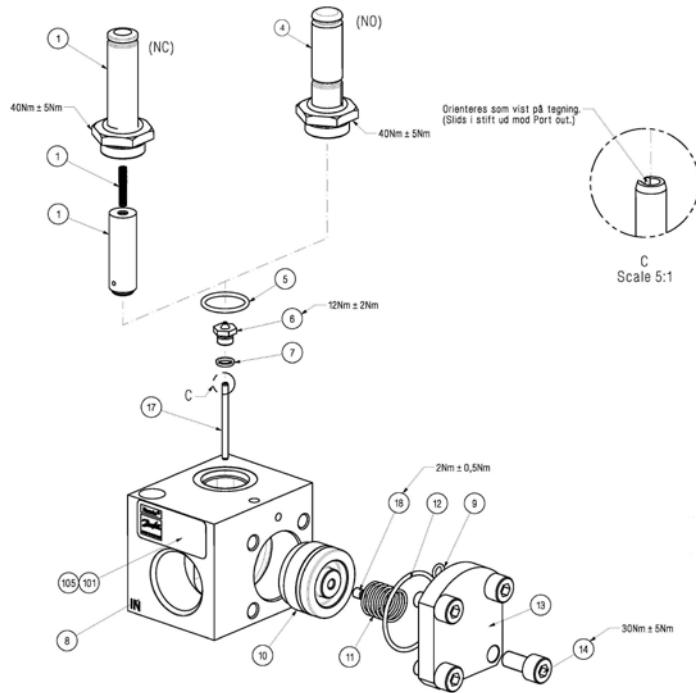
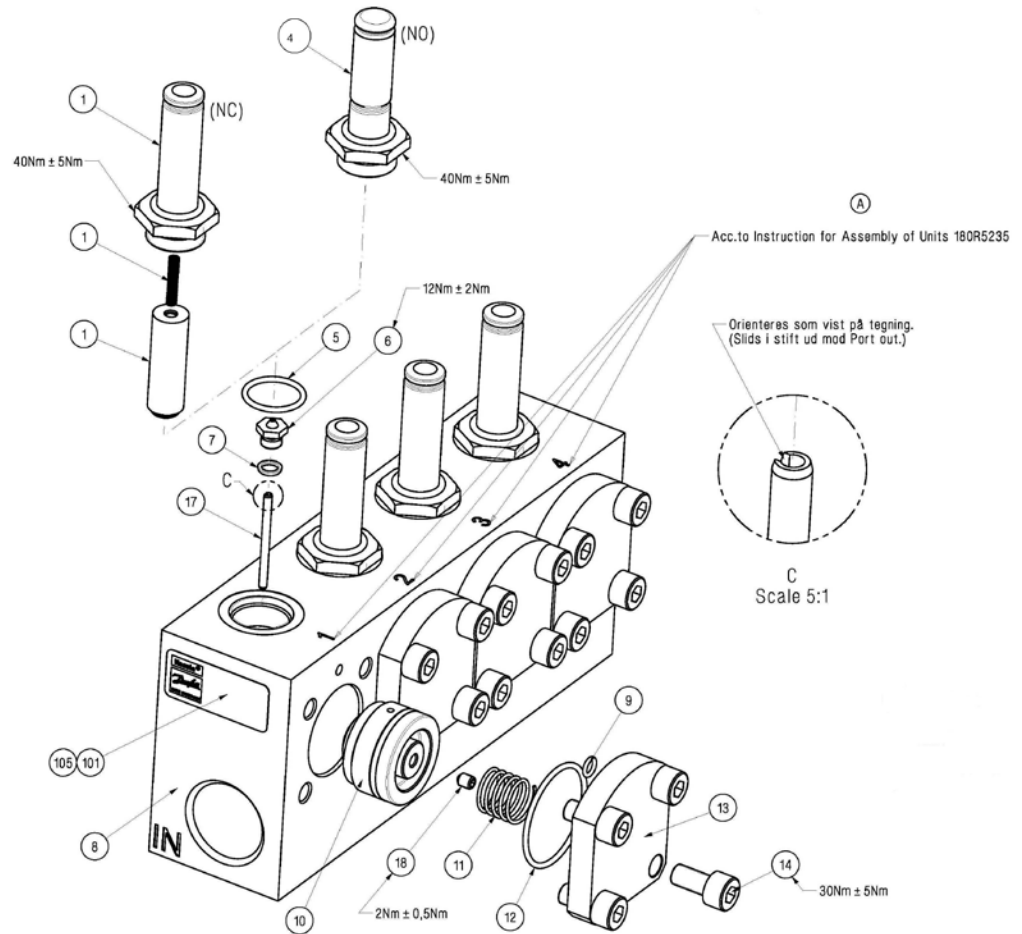
- 180L1003 VDHT BL2 3/4 NC BSP N
- 180L1027 VDHT BL2 HP 3/4 NC BSP N
- 180L1007 VDHT BL2 3/4 NC NPT N
- 180L1024 VDHT BL2 3/4 NC-NO BSP N
- 180L1002 VDHT BL 1 NC BSP N
- 180L1026 VDHT BL2 1 NC SAE-16 N
- 180L1000 VDHT BL2S 3/4 NC BSP N
- 180L1025 VDHT BL3 3/4 NC BSP N
- 180L1028 VDHT BL3 HP 3/4 NC BSP N
- 180L1010 VDHT BL3 3/4 NC NPT N
- 180L1011 VDHT BL3 1 NC BSP N
- 180L1016 VDHT BL4 1 NC BSP N
- 180L1029 VDHT BL4 HP 1 NC BSP N



Extension module:

- 180L1015 VDHT 3/4 - EA NC BSP N
- 180L1023 VDHT 1 EA NC BSP N
- 180L1004 VDHT1 EA NC NPT N

VDHT BL N
Spare parts

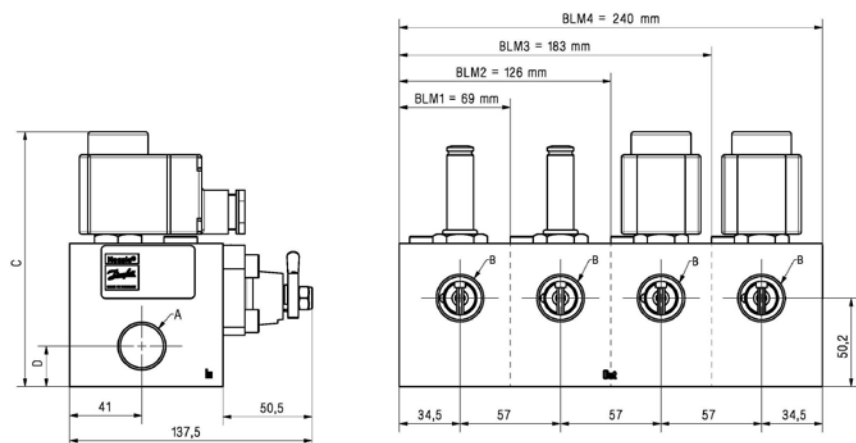


Spare parts

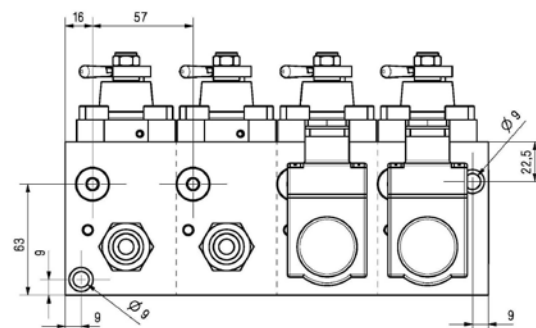
- Armature kit NC
- Armature kit NC HP
- Armature kit NO
- Orifice kit 1
- Piston kit Ø 35,1 N

- 180L5002 / Pos.: 1, 5
- 180L5011 / Pos.: 1, 5
- 180L5010 / Pos.: 4, 5
- 180Z0098 / Pos.: 6, 7
- 180Z0138 / Pos.: 10, 11, 18

VDHT BLM Drawings



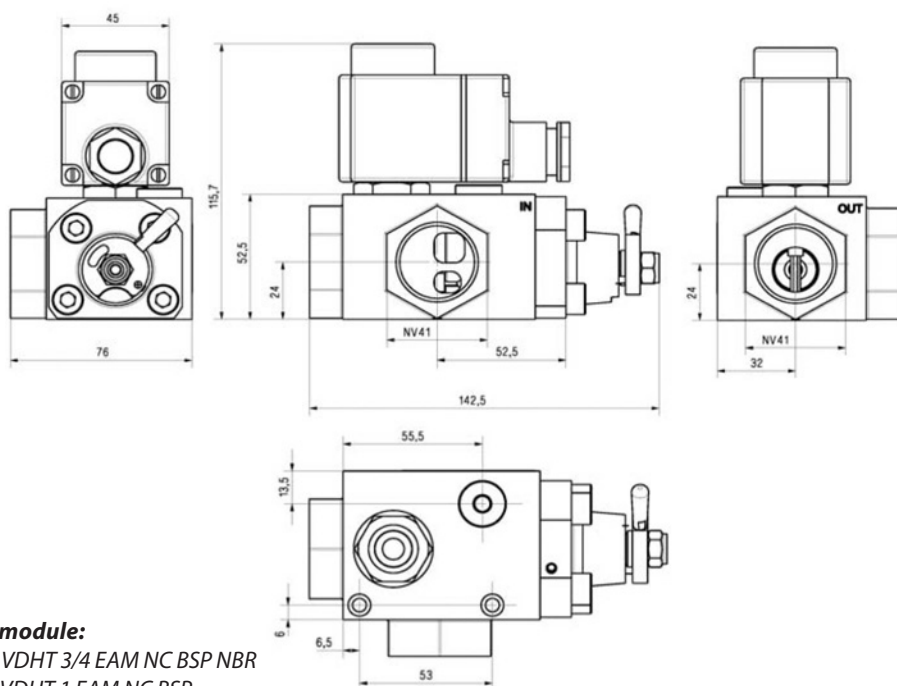
	A	B	C	D
180L0167	G3/4	G3/4	145	23
180L0168	G3/4	G3/4	145	23
180L0169	G3/4	G3/4	145	23
180L0187	G1	G3/4	150	24
180L0196	G3/4	G3/4	145	23
180L0199	G1	G1	150	24
180L0226	Rc3/4-14	Rc3/4-14	145	23
180L0227	Rc3/4-14	Rc3/4-14	145	23
180L0228	Rc3/4-14	Rc3/4-14	145	23
180L0229	Rc3/4-14	Rc3/4-14	145	23



Code no. valves:

- 180L0196 VDHT BLM 1-3/4 NC BSP NBR
- 180L0167 VDHT BLM2 3/4 NC BSP NBR
- 180L0199 VDHT BLM2 1 NC BSP NBR
- 180L0168 VDHT BLM3 3/4 NC BSP NBR
- 180L0187 **VDHT BLM3 1-3/4 NC BSP NBR**
- 180L0169 VDHT BLM 4 3/4 NC BSP NBR

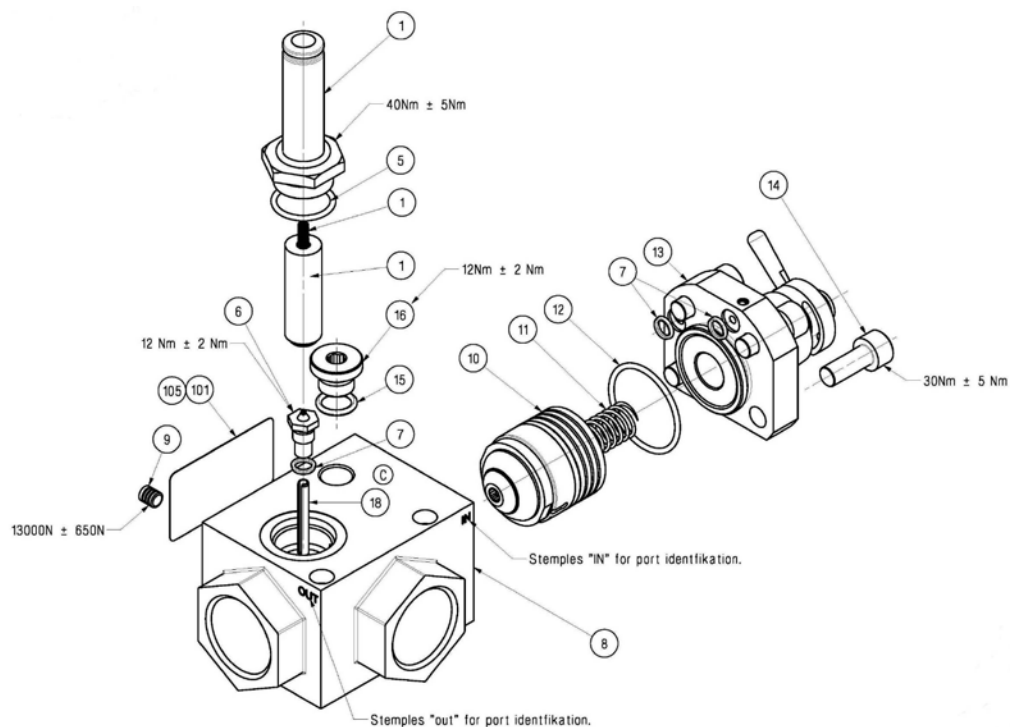
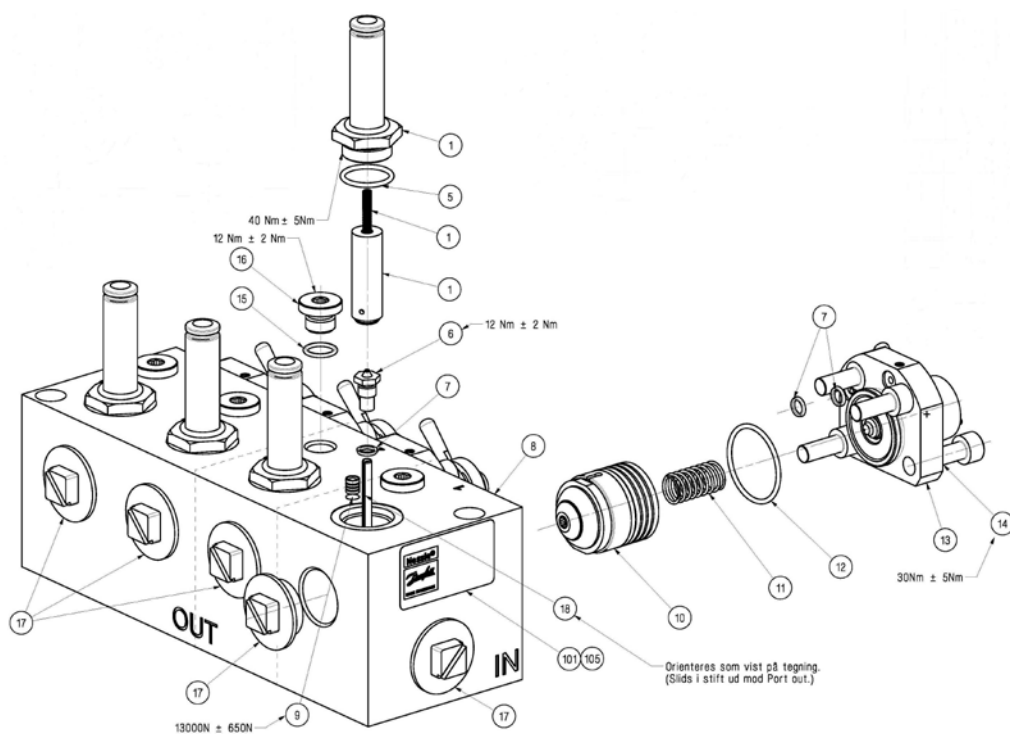
(red part numbers are being phased out)



Extension module:

- 180L0122 VDHT 3/4 EAM NC BSP NBR
- 180L0110 VDHT 1 EAM NC BSP

VDHT BLM
Spare parts

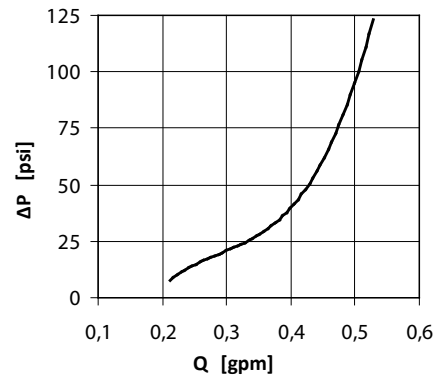
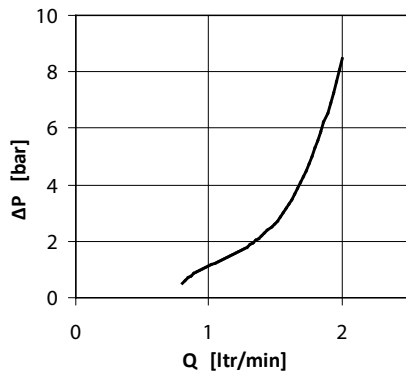


Spare parts

- | | |
|----------------------------|-------------------------|
| Armature kit NC | 180L5002 / Pos.: 1, 5 |
| Orifice kit 1 (see page 9) | 180Z0098 / Pos.: 6, 7 |
| Orifice kit 2 (see page 9) | 180L4015 / Pos.: 6, 7 |
| Piston kit Ø 35,1 | 180Z0026 / Pos.: 10, 11 |

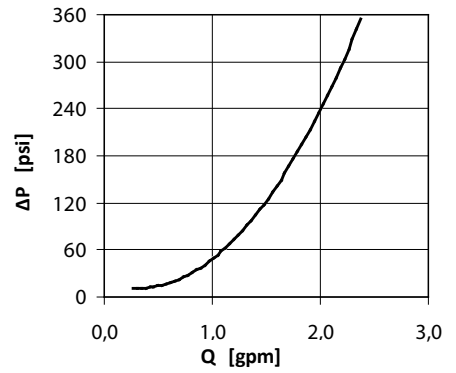
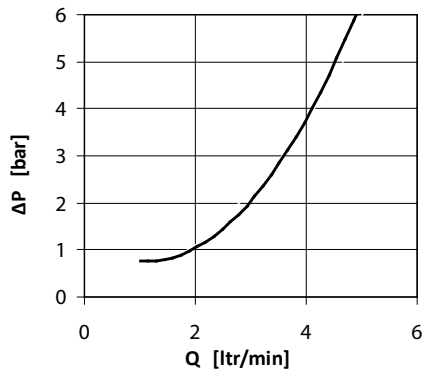
**Pressure losses p
INLET to OUTLET**

VDH 2E ¼ 1,4



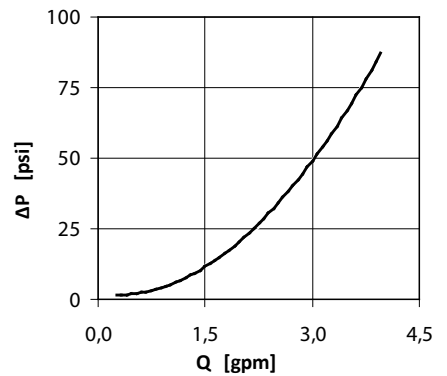
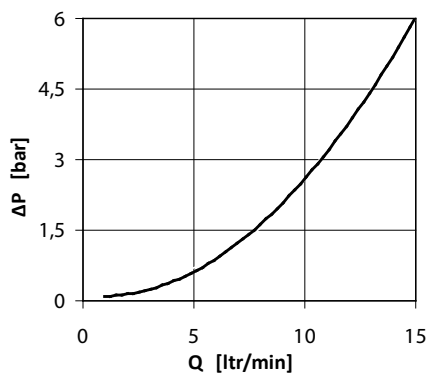
**Pressure losses p
INLET to OUTLET**

VDH 2E ¼ 3,5



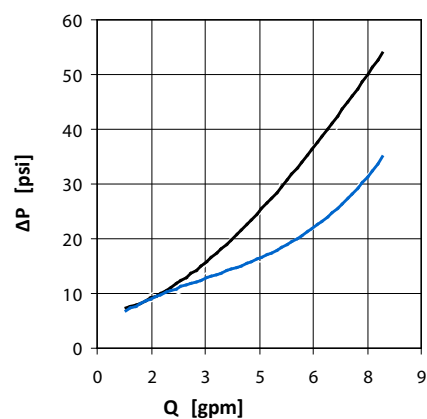
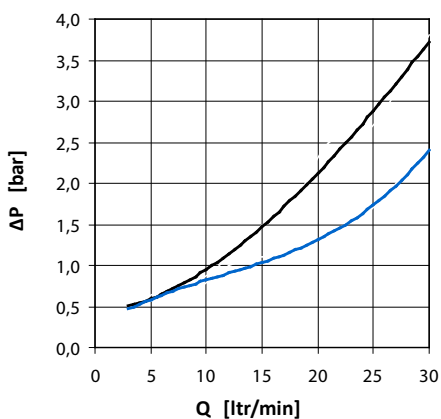
**Pressure losses p
INLET to OUTLET**

VDHT ¼ E



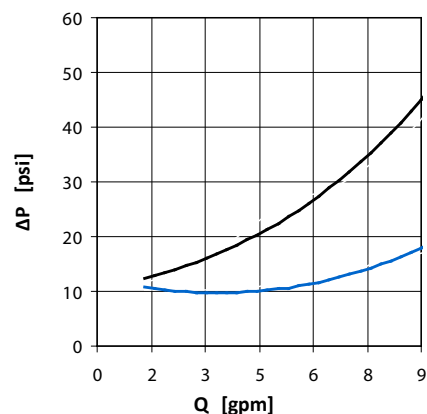
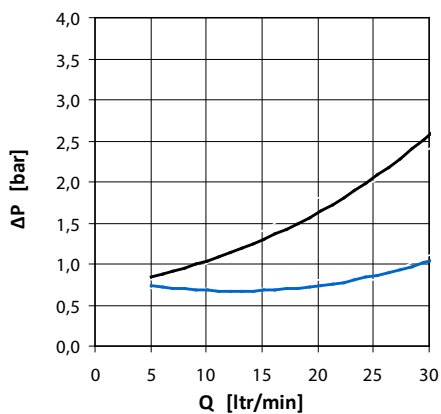
Pressure losses p
INLET to OUTLET

VDHT 3/8 E
VDHT 3/8 EA



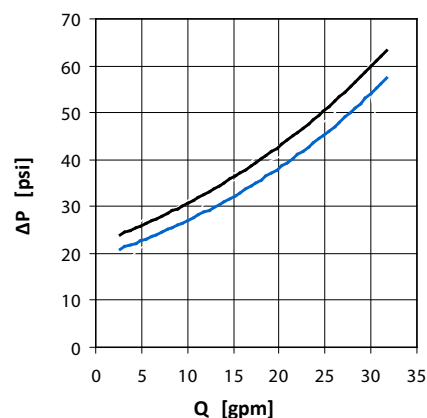
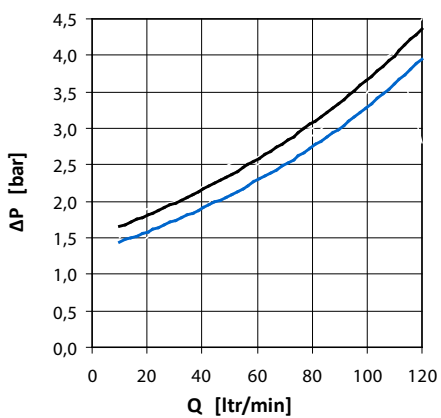
Pressure losses p
INLET to OUTLET

VDHT 1/2 E
VDHT 1/2 EA
VDHT B



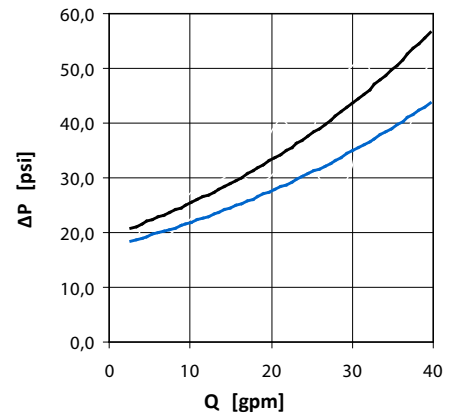
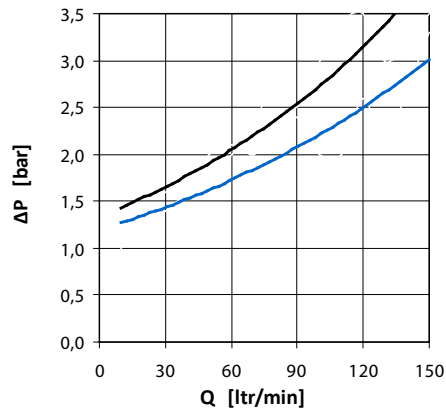
Pressure losses p
INLET to OUTLET

VDHT 3/4 ED
VDHT 3/4 ED N
VDHT 3/4 EA
VDHT 3/4 EA N
VDHT 3/4 EAM
VDHT BL
VDHT BL N
VDHT BLM



Pressure losses p
INLET to OUTLET

- VDHT 1 ED
- VDHT 1 ED N
- VDHT 1 EA
- VDHT 1 EA N
- VDHT 1 EAM
- VDHT BL
- VDHT BL N
- VDHT BLM



Pressure losses p
INLET to OUTLET

- VDHT 30 EC3
- VDHT 60 EC5

