

ENGINEERING  
TOMORROW



Service and Parts Manual

# Directional Valve Group

## ECO 80



**Revision history**

*Table of revisions*

<b>Date</b>	<b>Changed</b>	<b>Rev</b>
December 2019	First edition	0101

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## **Function**

### **Safety**

It is the customer's responsibility to decide on the required degree of safety for the system. All marks and all types of directional control and proportional valves can fail and cause serious damage. It is therefore important to analyze all aspects of the application. Proportional valves are used in many different operating conditions and applications; therefore the manufacturer of the application is responsible for making the final selection of the products and assuring that all performance, safety and warning requirements of the application are met.

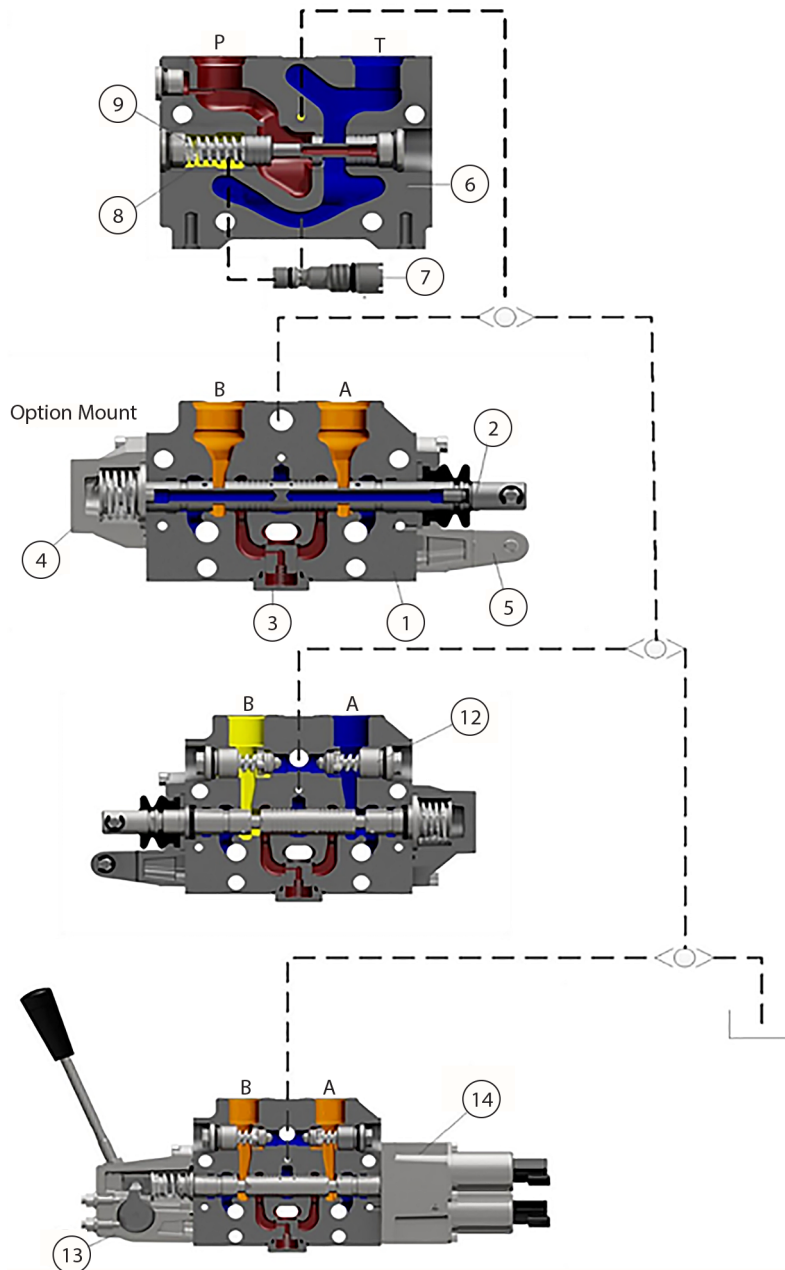
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Cost-free repairs, as mentioned in Danfoss General Conditions of Sale, are carried out only at Danfoss or at service shops authorized by Danfoss.

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**Function**

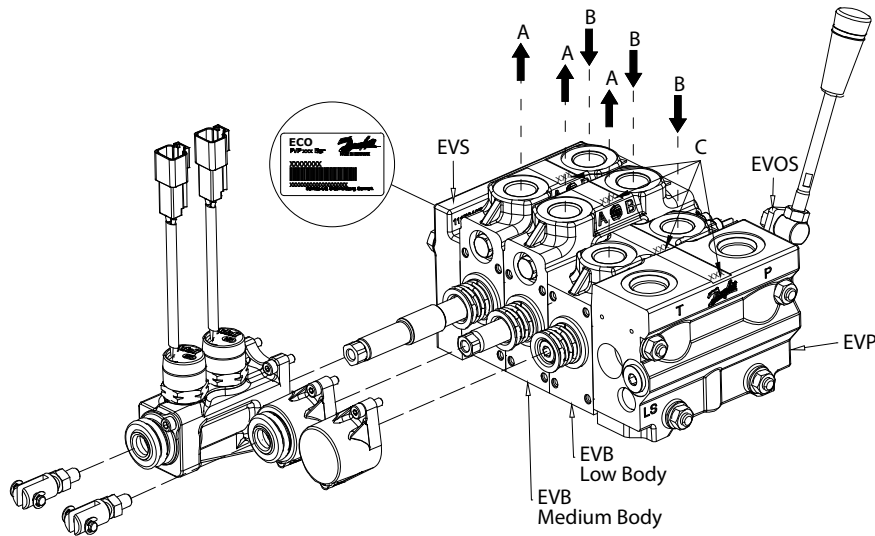
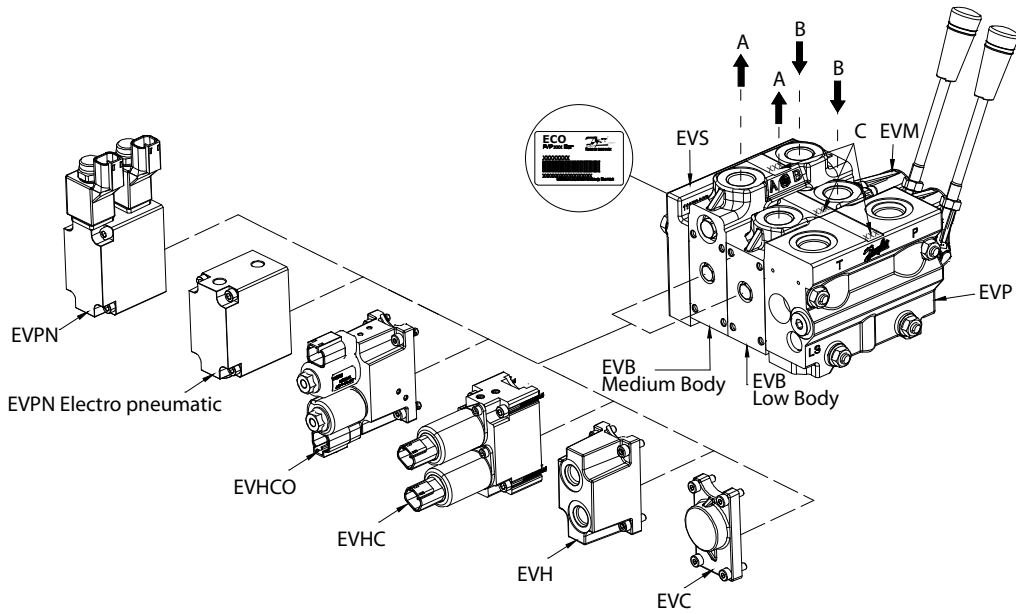
**ECO 80 LS sectional view**



<b>1</b>	Workstation EVB	<b>8</b>	Unloader spool
<b>2</b>	Spool EVBS	<b>9</b>	Unloader spool spring
<b>3</b>	Check valve	<b>10</b>	LS Shuttle
<b>4</b>	Spring center EVME	<b>11</b>	Load sensing
<b>5</b>	Actuator EVOS	<b>12</b>	Shock valve
<b>6</b>	Pump Inlet EVP	<b>13</b>	Spring center (EH) EVM
<b>7</b>	Load sense relief	<b>14</b>	Electric Actuator

## Installation

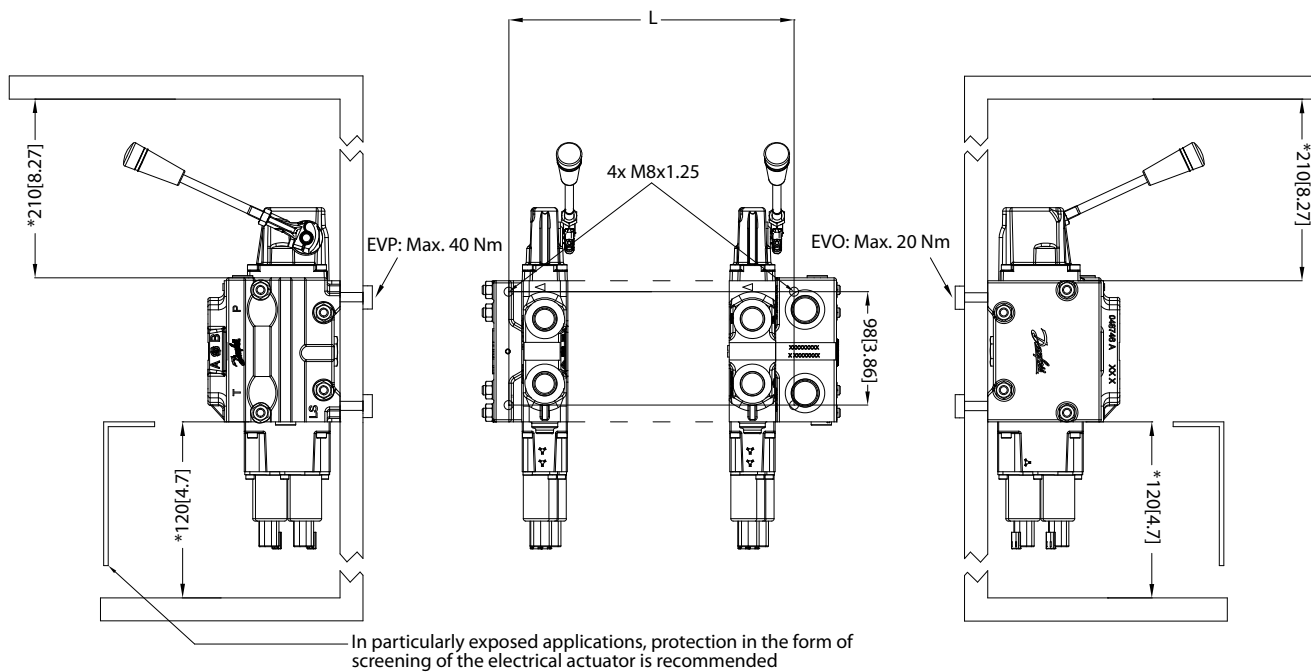
### Identification and oil flow direction for standard assembled ECO 80 LS



C: Label with ECO 80 number, week and year of installation and series number.

## Installation

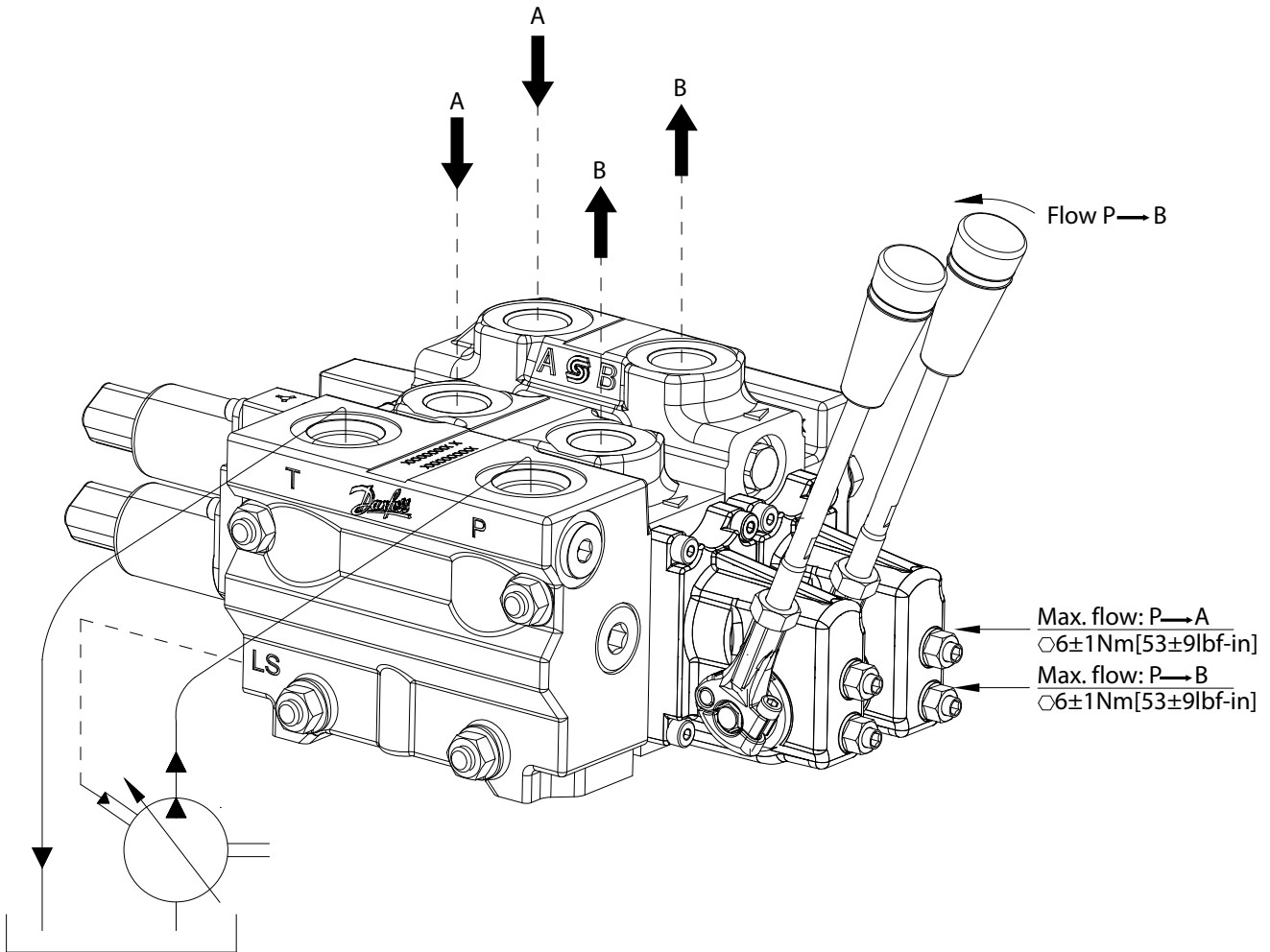
### ECO 80 installation and plug orientation



No. of EVB		1	2	3	4	5	6	7	8	9	10	11	12
L	mm	65	105	145	185	225	265	305	345	385	425	465	505
	[in]	2.56	4.13	5.71	7.28	8.86	10.43	12.01	13.58	15.16	16.73	18.31	19.88

### Installation

#### ECO 80 connections pump side and max flow setting

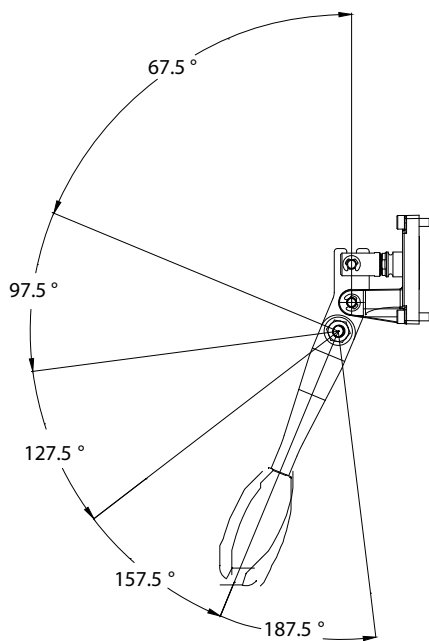
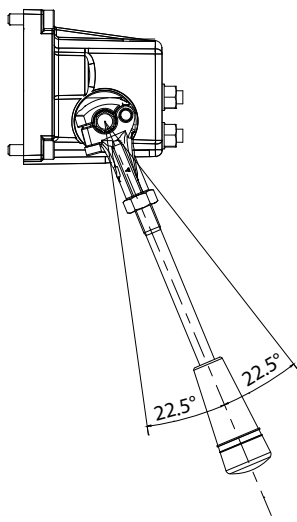
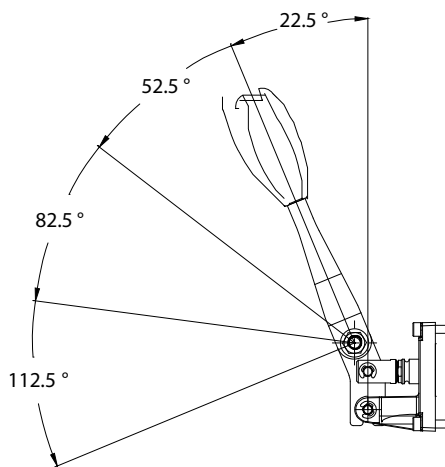
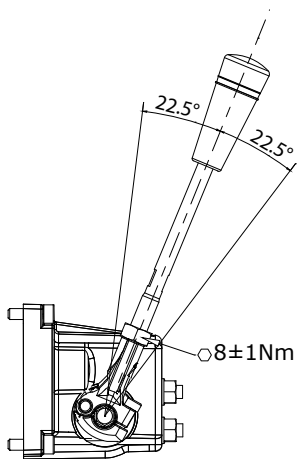




## Installation

### ECO 80 installation of lever

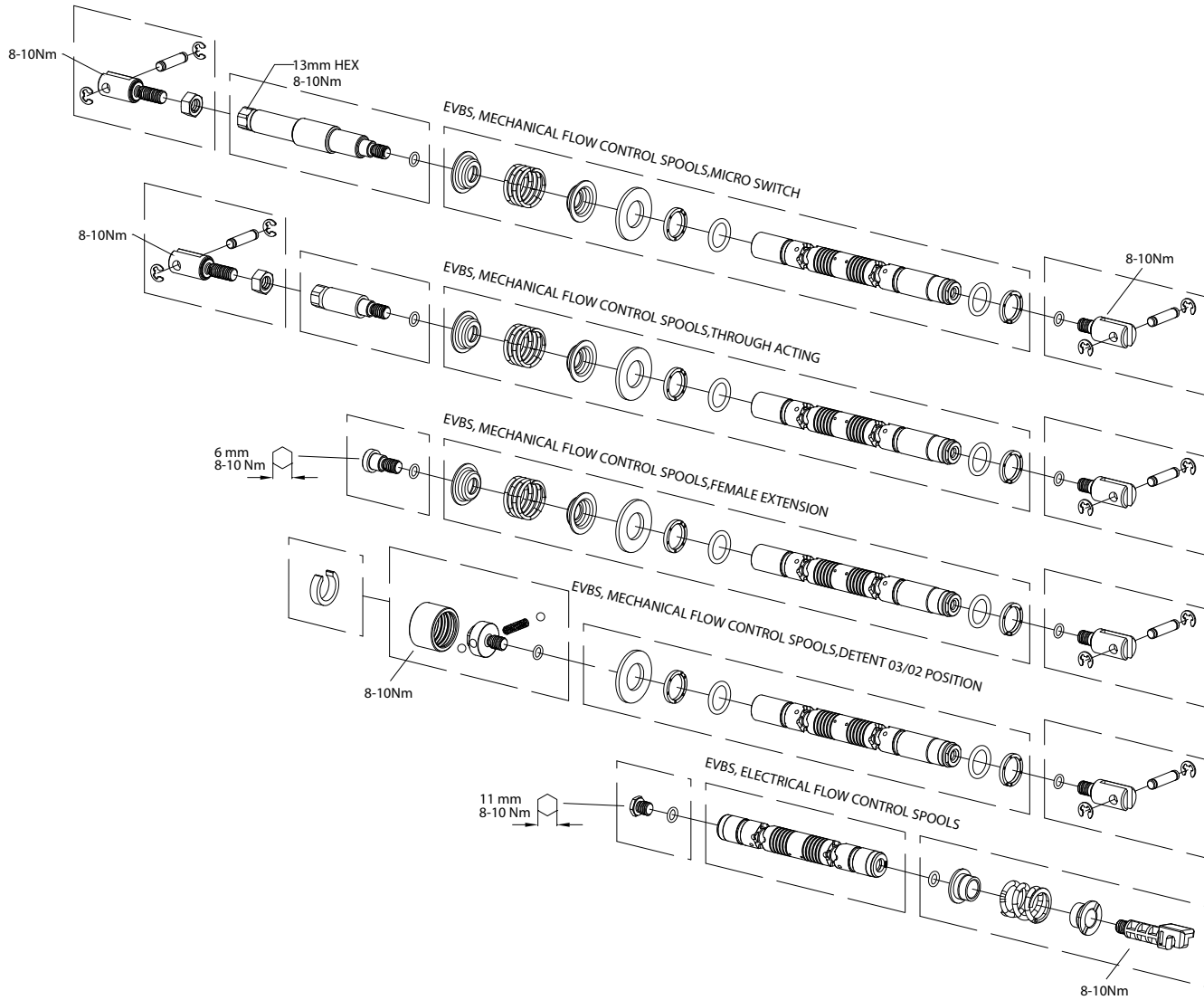
Remember to screw the lever all the way in.



## Installation

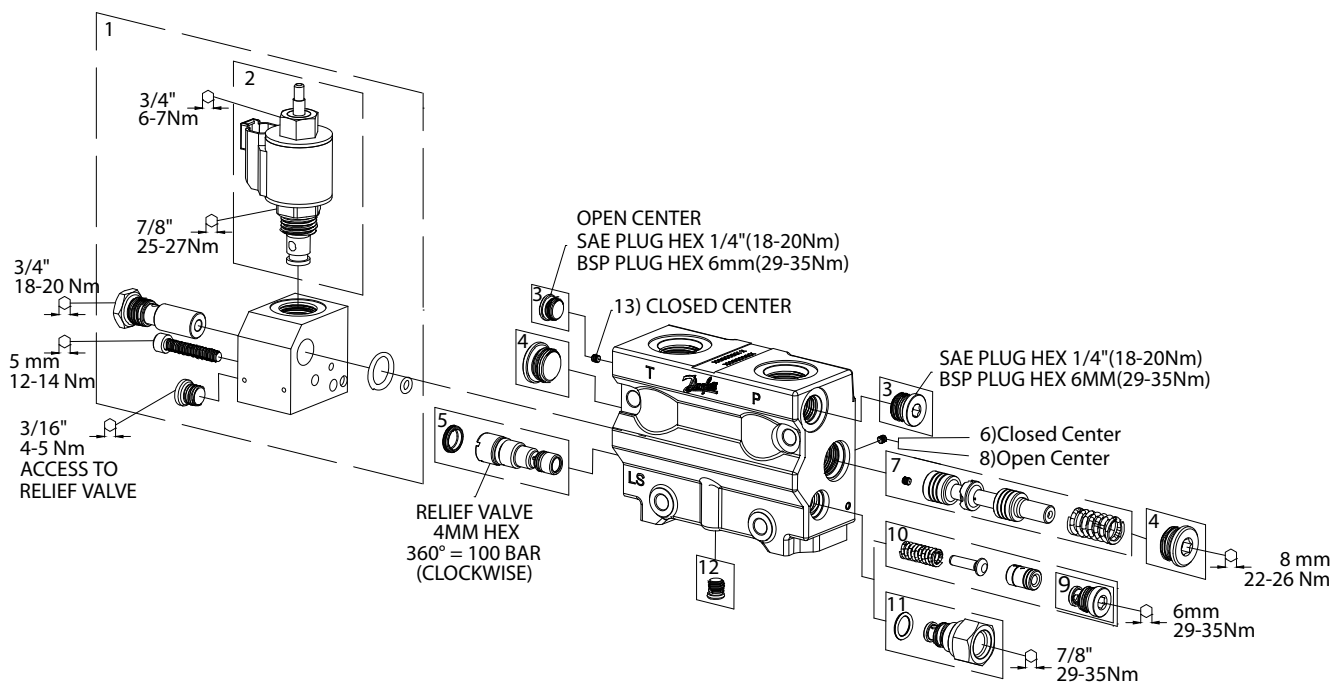
### ECO 80 main spool assembly installation

Standard main spool assembly



**Service parts**

**ECO 80 EVP, pump side module**



Type	Description	Code number	P-port	T-port*	Letter
EVP	Open center	11173005	G1/2"	G1/2"	A
		11172981	7/18-14	7/18-14	
	Closed center	11173006	G1/2"	G1/2"	B
		11173002	7/18-14	7/18-14	
	Open center with pilot supply	11172996	G1/2"	G1/2"	C
		11173010	7/18-14	7/18-14	
	Closed center with pilot supply	11172997	G1/2"	G1/2"	D
		11173011	7/18-14	7/18-14	
Open center with pilot supply and facilities for EVPX	11173023	G1/2"	G1/2"	E	
	11173000	7/18-14	7/18-14		

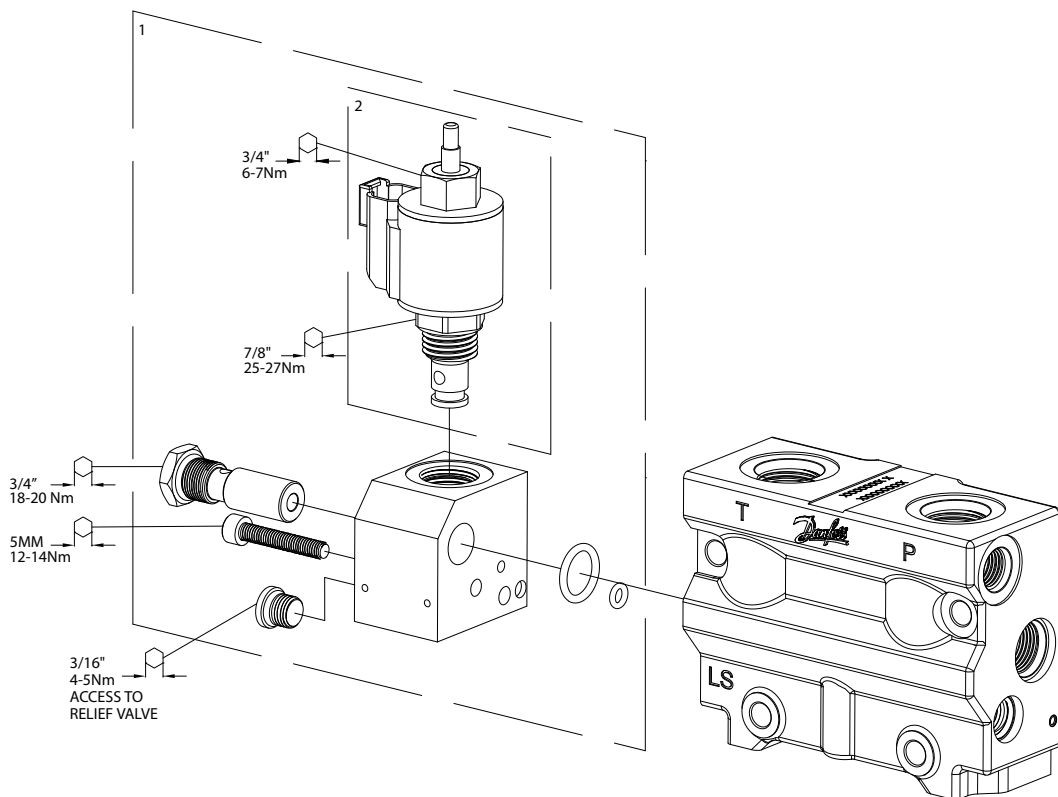
Item	Description	Code number	Letter				
			A	B	C	D	E
1	EVPX housing incl. EVPX	See section EVPX	-	-	-	-	-
2	EVPX coil	See section EVPX	-	-	-	-	-
3	Plug	-	2	2	2	2	2
4	Plug	-	2	2	2	2	2
5	Relief valve incl. sealed plastic adjusting screw	-	1	1	1	1	1
6	Orifice for closed center EVP (Ø0,8 x M6)	-	-	1	-	1	-
7	Inlet compensator assembly	-	1	1	1	1	1
8	Plug for open center EVP (Pipe M6 x 1)	-	1	-	1	-	1
9	Plug	-	-	-	1	1	1
10	Pilot supply	-	-	-	1	1	1
11	Plug for external pilot oil supply	-	1	1	-	-	-

**Service parts**

Item	Description	Code number	Letter				
			A	B	C	D	E
12	Plug	-	1	1	1	1	1
13	Plug for closed center EVP (Pipe M6 x 1)	-	-	1	-	1	-
*	Conversion kit open to closed – and closed to open – center (Including item 3, 6, 8 and 13)	11177668	-	-	-	-	-

**Service parts**

**ECO 80 EVPX, electrical LS unloading valve**



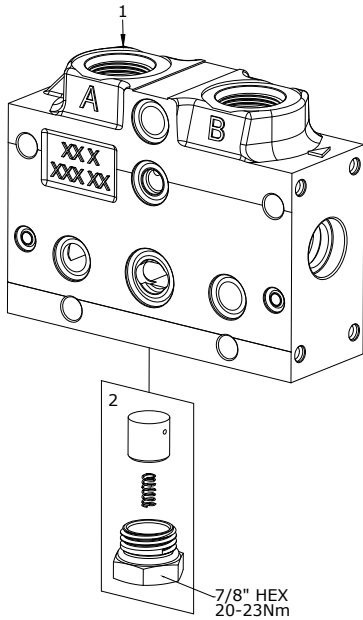
**EVPX**

Description	Code number
Normally open: LS pressure relieved with no signal to EVPX - 12 V	11172430
Normally open: LS pressure relieved with no signal to EVPX - 24 V	11172429

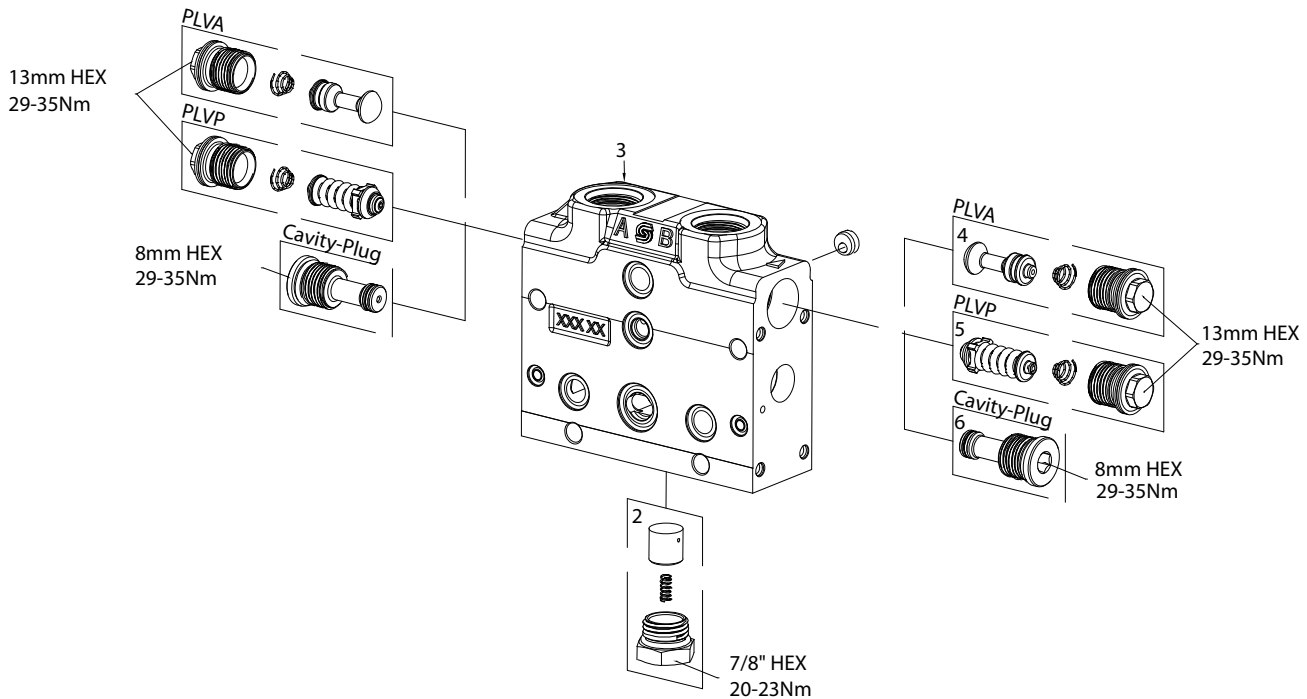
**Service parts**

**ECO 80 EVB, basic module**

*Low body, no facilities for PVLV/PVLA*



*Medium body, with facilities for PVLV/PVLA*



## Service parts

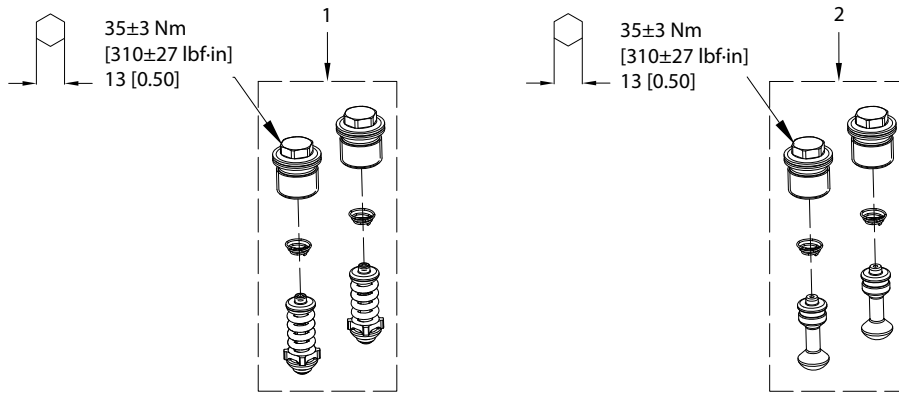
### Mechanical and electrical EVB

Type	Description	Code number	P-port	T-port*	Letter
EVB Mechanical	Low body without facilities for PVLP/PVLA	11168505	G1/2"	G1/2"	A
		11168504	7/18-14	7/18-14	
	Medium body with facilities for PVLP/PVLA	11168503	G1/2"	G1/2"	B
		11168502	7/18-14	7/18-14	
EVB Electrical	Low body without facilities for PVLP/PVLA	11168506	G1/2"	G1/2"	C
		11168507	7/18-14	7/18-14	
	Medium body with facilities for PVLP/PVLA	11168509	G1/2"	G1/2"	D
		11168508	7/18-14	7/18-14	

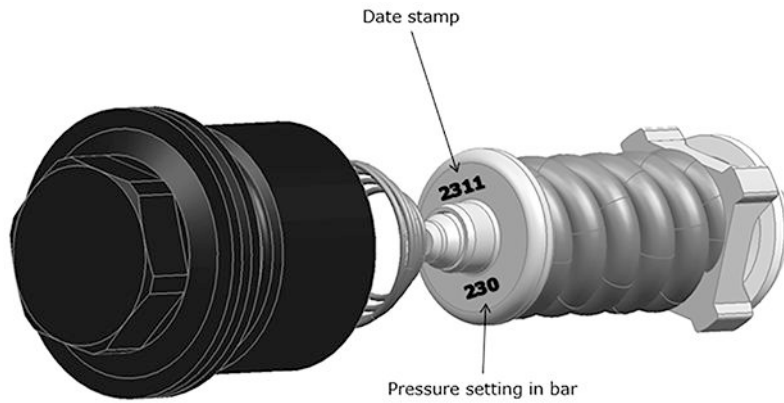
Item	Description	Code number	Letter			
			A	B	C	D
1	Low body EVB	See above	1	-	1	-
2	Check valve assembly	-	1	1	1	1
3	High body EVB	See above	-	1	-	1
4	PVLA valve assembly	See page (PVLP/PVLA)	-	-	-	-
5	PVLP, shock and suction valve assembly	See page (PVLP/PVLA)	-	-	-	-
6	Anti-cavitation plug	See page (PVLP/PVLA)	-	-	-	-

**Service parts**

**ECO 80 PVLP shock and PVLA suction valves**



PVLP/PVLA



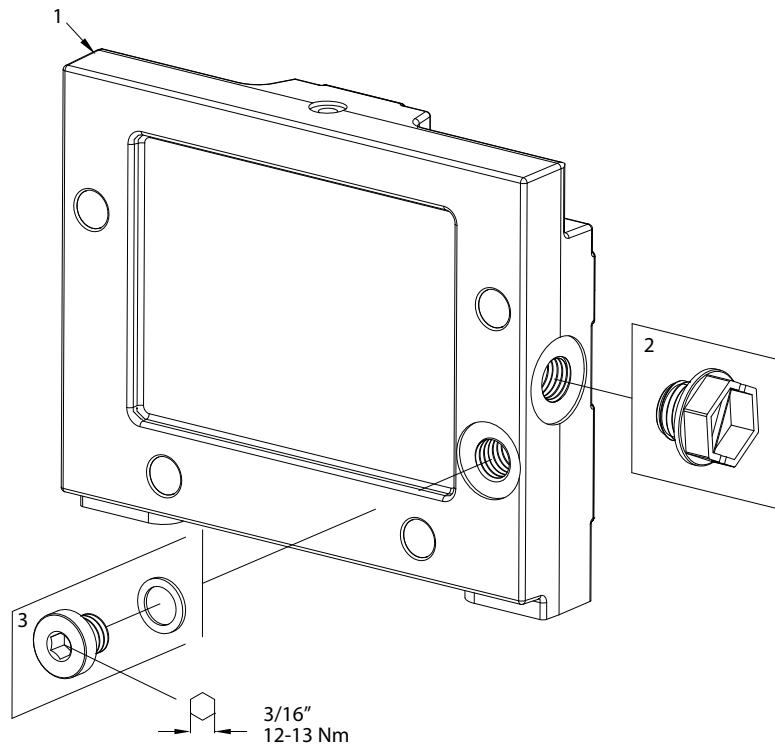


### Service parts

Type	Part number
PVLA	157B2001
PVLP	157B2032
	157B2050
	157B2063
	157B2080
	157B2100
	157B2125
	157B2140
	157B2150
	157B2160
	157B2175
	157B2190
	157B2210
	157B2230
	157B2240
	157B2250
	157B2265
	157B2280
	157B2300
157B2320	
Adjustable PVLP	11006594 (121-250 bar [1755-3626 psi])
	11006596 (251-285 bar [3640-4134 psi])
Cavity plug	11177714

**Service parts**

**ECO 80 EVO, end plate**



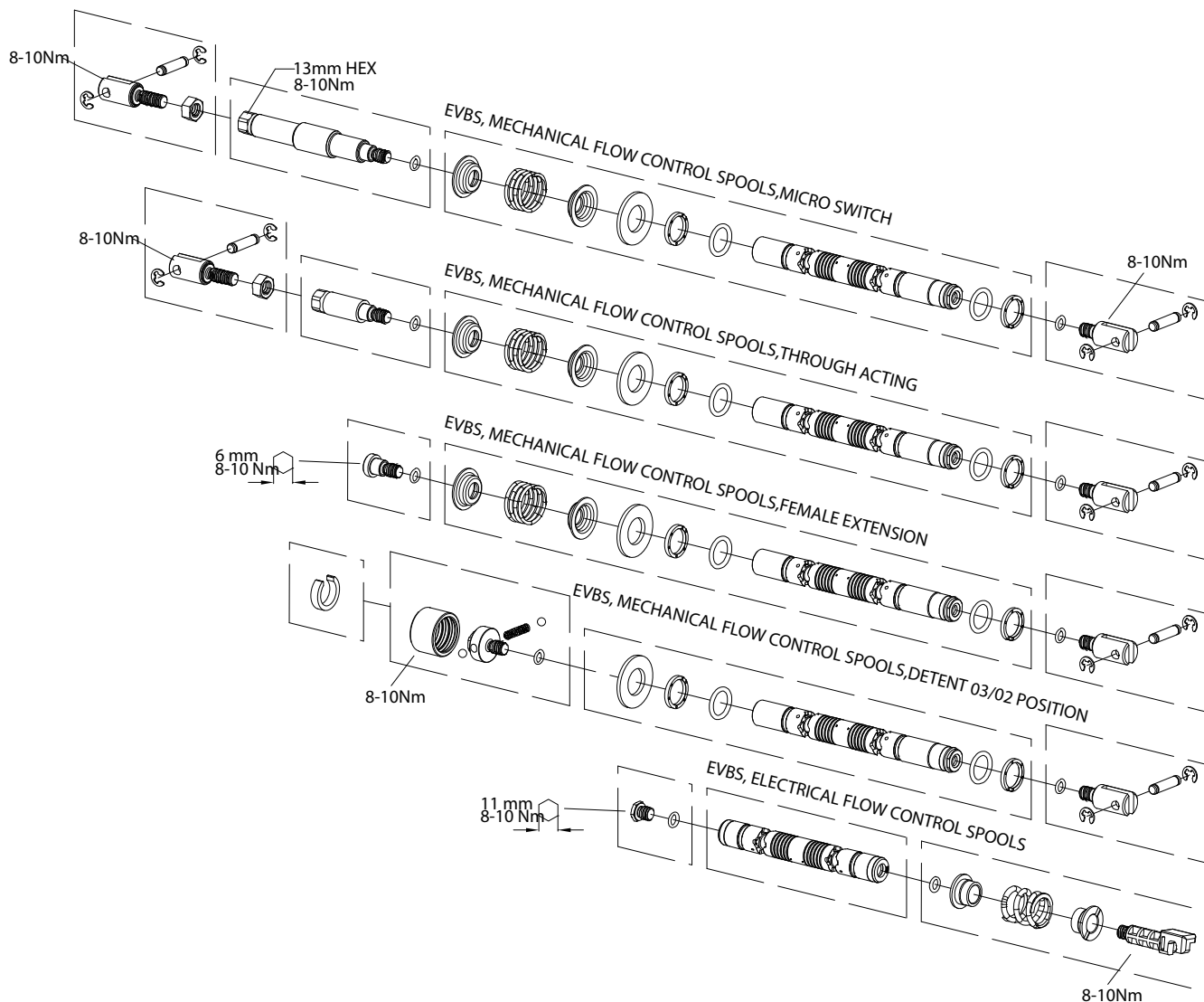
Type	Description	Code number	LX-port	Letter
EVO	End plate without LX-connection	11191585	-	A
	End plate with LX-connection	11191583	1/8 BSP	B
		11191582	7/16-20	
	End plate with Pneumatic port	11191584	1/8 BSP	C

Item	Description	Code number	Letter		
			A	B	C
1	EVO End Plate	See above	1	1	1
2	Plug for LX port	-	-	1	-
3	Plug for pneumatic port	-	-	1	1

[New EVO end plates released October 2018. See PIB \(link\) for details.](#)

**Service parts**

**ECO 80 EVBS spools**



Type	Description	Letter
EVBS	Mechanical flow control spool, female extension and micro switch	A
	Mechanical flow control spool, female extension and through acting	B
	Mechanical flow control spool, female extension and detent 03/02 position	C
	Mechanical flow control spool, female extension	D
	Electrical flow control spool	E

Item	Description	Code number	Letter				
			A	B	C	D	E
1	Female extension	050548	1	1	-	-	-
2	Screw including O-ring Ø 6.0 x 1.5	-	1	-	-	-	-
3	Main spool assembly	-	1	1	1	-	-
4	Female extension	11169581	1	1	1	1	-
5	Screw incl. O-ring Ø 6.0 x 1.5	-	-	1	-	-	-

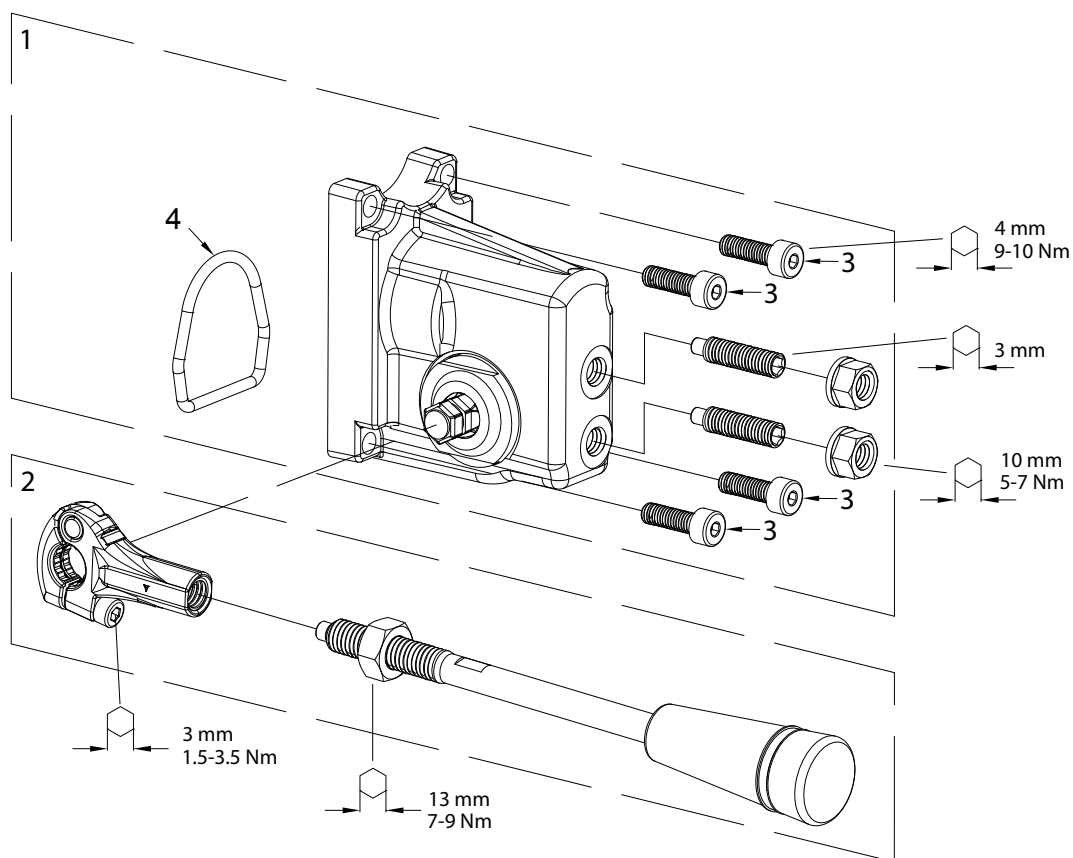
**Service parts**

Item	Description	Code number	Letter				
			A	B	C	D	E
6	Screw incl. O-ring Ø 6.0 x 1.5	-	-	-	1	-	-
7	Main spool assembly without spring and spring stop	-	-	-	1	-	-
8	Detent kit	11177713	-	-	-	1	-
9	Plug incl. O-ring Ø 6.0 x 1.5	-	-	-	-	-	1
10	Main spool	-	-	-	-	-	1
11	Tension rod incl. spring, spring stop and O-ring Ø 6.0 x 1.5	-	-	-	-	-	1

[For EVBS spool part numbers, see ECO 80 Technical Information.](#)

**Service parts**

**ECO 80 EVM, mechanical actuation**

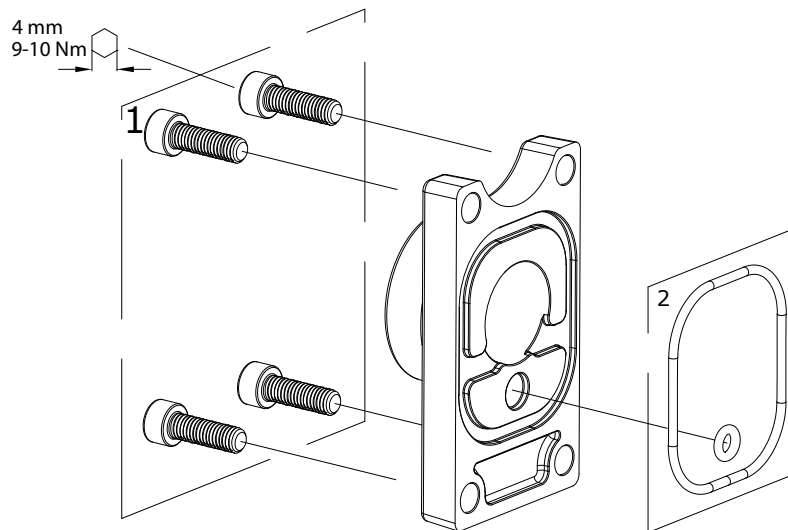


Type	Description	Code number	Letter
EVM	EVM actuator	11119157	A
	EVM actuator with lever	11167001	B
	EVM actuator with adjustment screws	11145204	C
	EVM actuator with adjustment screws and lever	11167002	D

Item	Description	Code number	Letter			
			A	B	C	D
1	EVM	-	1	1	1	1
2	Lever with handle and base	11107587	-	1	-	1
3	Screw M5 x 16 (12.9)	-	4	4	4	4
4	Profile O-ring	-	1	1	1	1

**Service parts**

**ECO 80 EVC, cover for mechanical actuation**

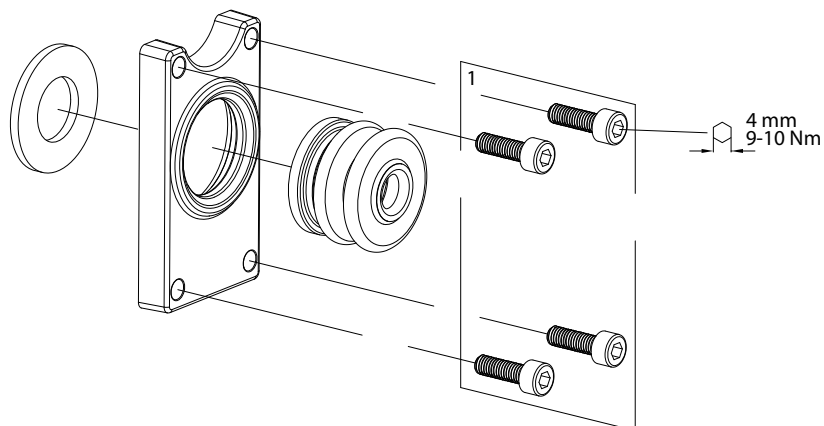


Type	Description	Code number
EVC	Cover for mechanical activation	11171318

Item	Description
1	Screw M5 x 16 (12.9)
2	O-ring Ø 20.35 x 1.78

**Service parts**

**ECO 80 EVOS, open spool through action**

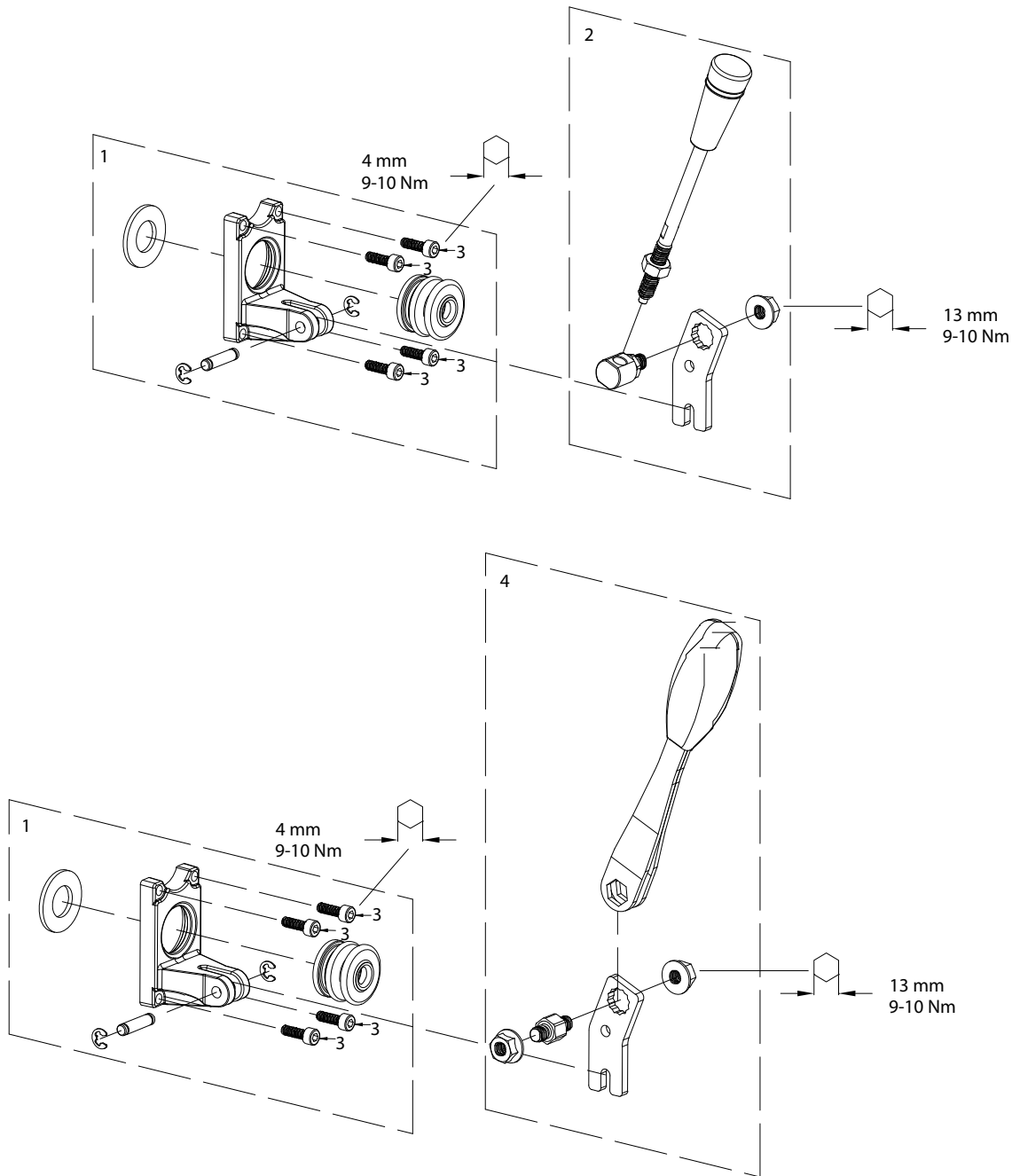


Type	Description	Code number
EVOS	EVOS80LS-Actuator-Thru	11175233

Item	Description
1	Screw M5 x 16 (12.9)

**Service parts**

**ECO 80 EVOS, open pool mechanical actuation**



Type	Description	Code number
EVOS	EVOS80LS-Actuator-Mech	047768
	EVOS80LS-Actuator-Mech with lever	11175314
	EVOS80LS-Actuator-Mech with robust lever	11227308

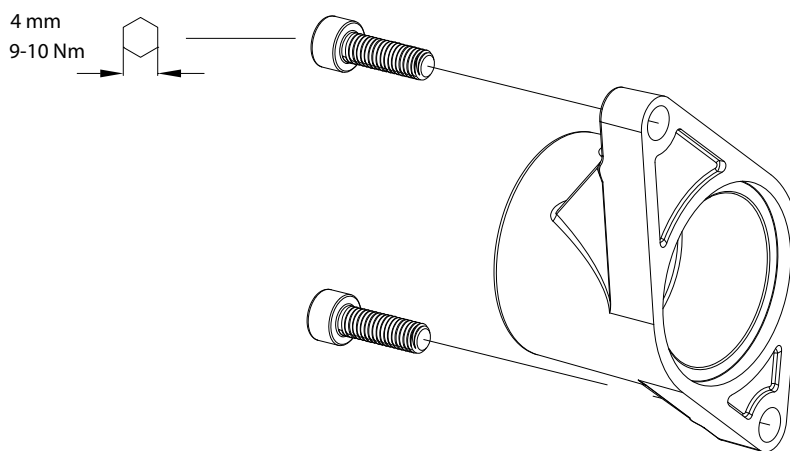
Item	Description	Code number
1	Housing incl. screws	-
2	Lever with handle and base	11170923



**Service parts**

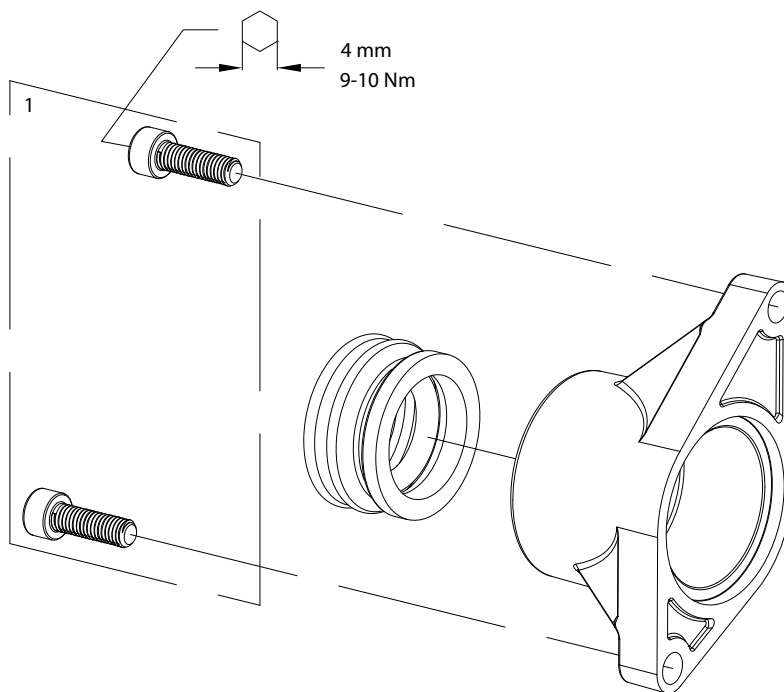
Item	Description	Code number
3	Screw M5 x 16 (12.9)	-
4	Robust lever with handle and base	11194826

**ECO 80 EVME, spring center/detent**



Type	Description	Code number
EVME	Spring centering, detent 03/02 position	11169579

**ECO 80 EVME, through action**

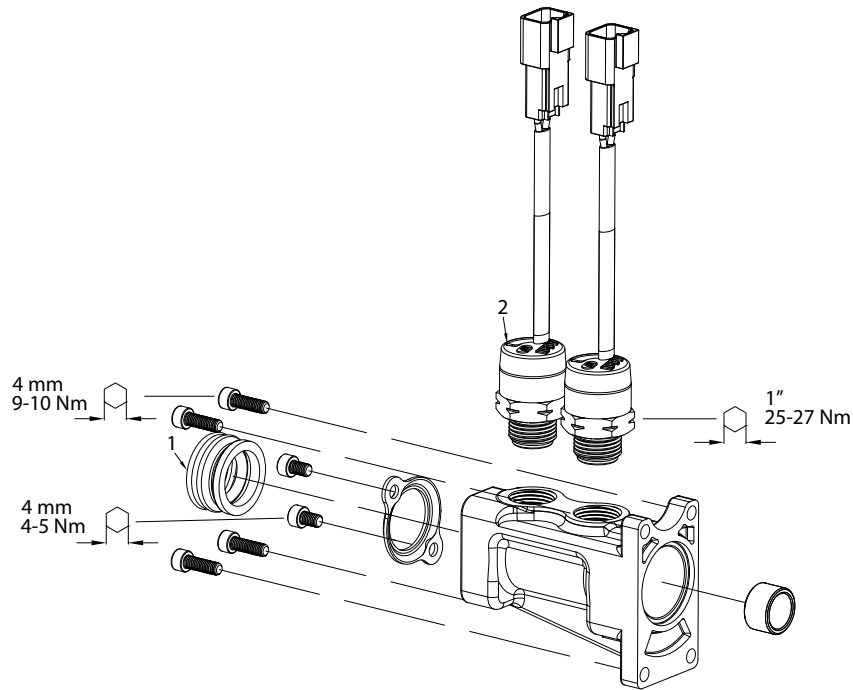


Type	Description	Code number
EVME	Through action	11169580

**Service parts**

Item	Description
1	Screw M5 x 16 (12.9)

**ECO 80 EVME, micro switch NO**

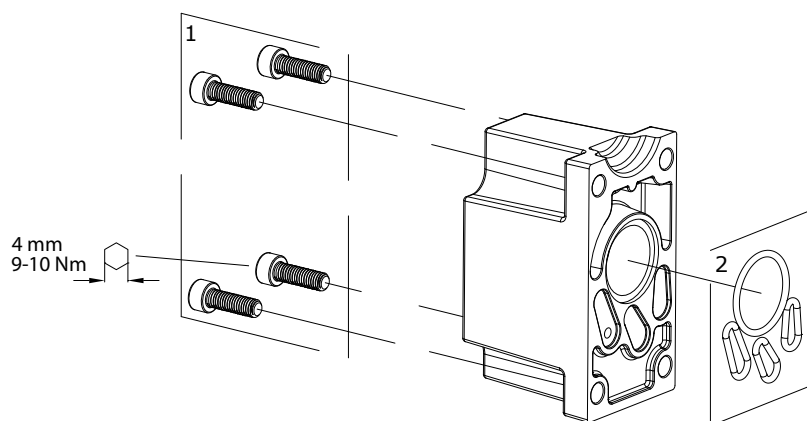


Type	Description	Code number
EVME	Micro switch NO	11170841

Item	Description	Code number
1	Rubber boot	11177717
2	Micro switch	11178486

**Service parts**

**ECO 80 EVH, hydraulic actuation**

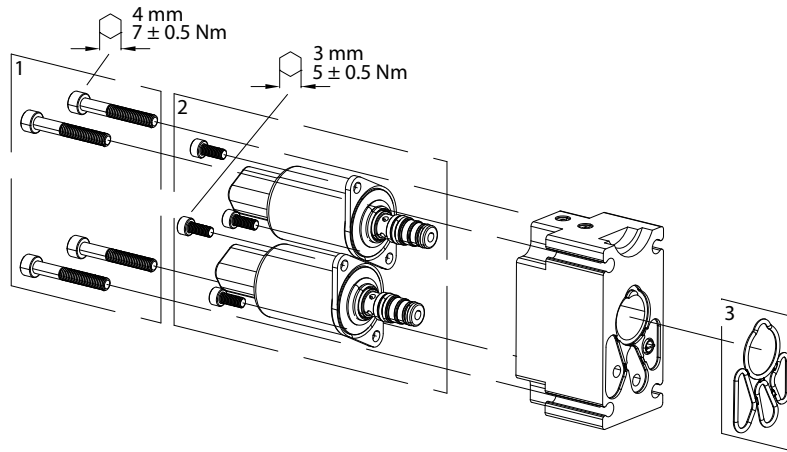


Type	Description	Code number	Letter
EVH	Cover for hydraulic actuation – 9/16-18 UNF	11169487	A
	Cover for hydraulic actuation – G1/4	11169486	B

Item	Description	Code number	Letter	
			A	B
1	Screw M5 x 16 (12.9)	-	4	4
2	Set of seals	-	1	1

**Service parts**

**ECO 80 EVHC, proportional electrical control**

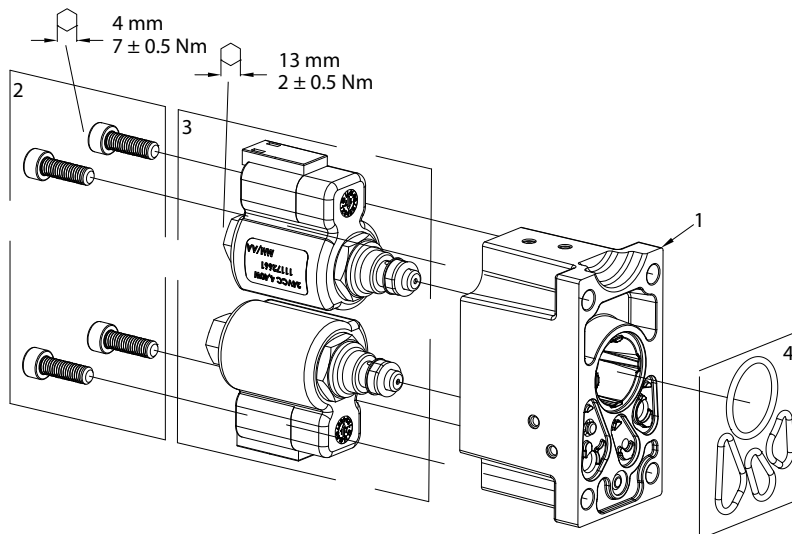


Type	Description	Code number	Letter
EVHC	DEUTSCH connector 12 V	11162297	A
	DEUTSCH connector 24 V	11162298	B

Item	Description	Code number	Letter			
			A	B	C	D
1	Screw M5 x 16 (12.9)	-	4	4	4	4
2	Proportional Coil 12 V, DEUTSCH connector incl. 4 screws	11061233	2	-	2	-
	Proportional Coil 24 V, DEUTSCH connector incl. 4 screws	11061234	-	2	-	2
3	Set of seals	-	1	1	1	1

**Service parts**

**ECO 80 EVHCO, ON/OFF**



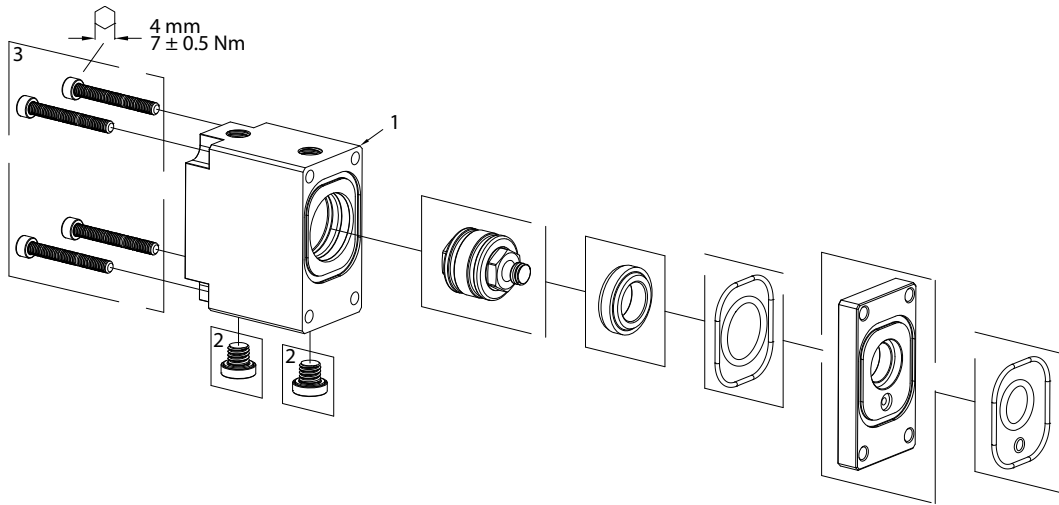
Type	Description	Code number	Letter
EVHCO	DEUTSCH connector 12 V	11186922	A
	DEUTSCH connector 24 V	11186911	B

Item	Description	Code number	Letter	
			A	B
1	Housing	-	1	1
2	Screw M5 x 16	-	4	4
3	Coil DEUTSCH connector 12 V	11198786	2	-
	Coil DEUTSCH connector 24 V	11198787	-	2
4	Set of seals	11198712	1	1

[This is a new version of the EVHCO ON/OFF actuator released June 2019. See PIB PV2019-419 for details.](#)

**Service parts**

**ECO 80 EVPN, pneumatic actuator**

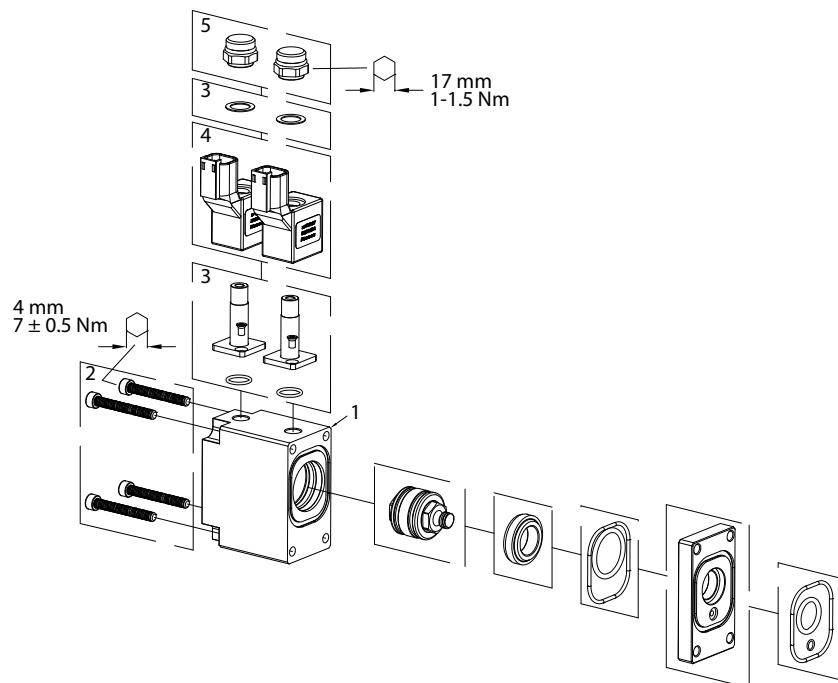


Type	Description	Code number	Letter
EVPN	Pneumatic actuator module	11198492	A

Item	Description	Code number	Letter
			A
1	EVPN	-	1
2	Plug for Air Inlet supply 1/8 BSP – ISO1179 N-NBR90	-	2
3	Screw M5 x 65	-	4
*	Set of seals	11230331	1

**Service parts**

**ECO 80 EVPN, electrical pneumatic actuator**

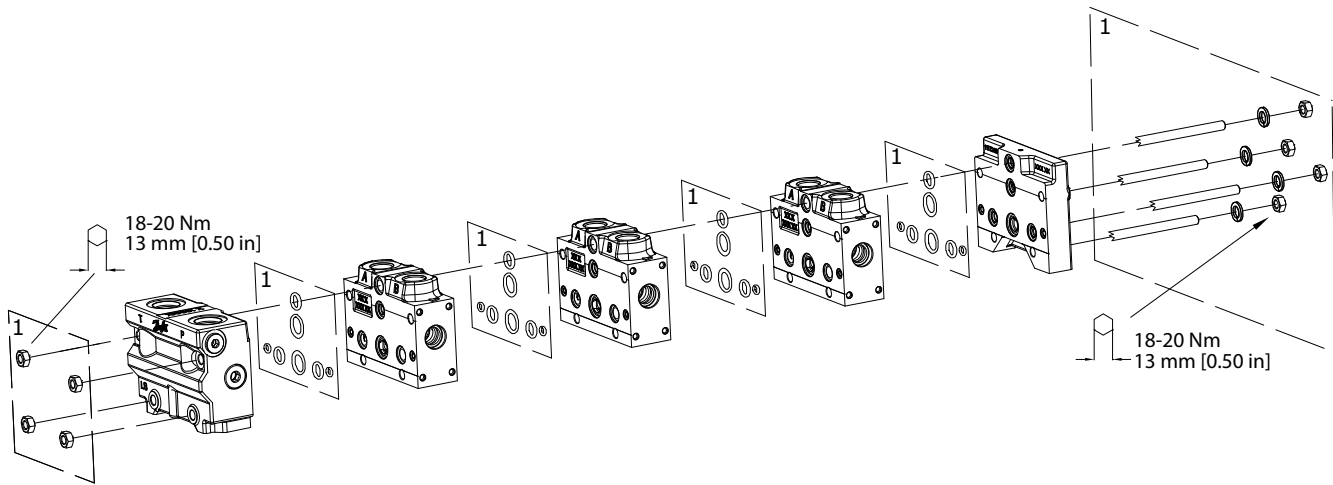


Type	Description	Code number	Letter
EVPN	Electric pneumatic actuator module – DEUTSCH connector 12 V	11193722	A
	Electric pneumatic actuator module – DEUTSCH connector 24 V	11193723	B
	Electric pneumatic actuator module – AMP connector 24 V	11194345	C

Item	Description	Code number	Letter		
			A	B	C
1	EVPN	-	1	1	1
2	Screw M5 x 65	-	4	4	4
3+4+5	Coil DEUTSCH connector 12 V	11234123	2	-	-
	Coil DEUTSCH connector 24 V	11234124	-	2	-
	Coil AMP connector 24 V	11142988	-	-	2
*	Set of seals	11230331	1	1	1

**Service parts**

**ECO 80 EVT, assembly kit**



Item	Description	Code number
1	Set of seals for ECO 80 wit 7 work sections: EVB 80	11178489



## Service parts

### ECO 80 set of seals

Type		Code number	Letter
EVP	Module	11177669	A
EVP with facilities for EVPX	Module	11177670	B
EVB, Low & High body	Module	11177712	C
EVT	For ECO 80 wit 7 work sections: EVB 80	11178489	D
EVBS, Mechanical spools	Module	11177715	E
EVM	Module	11177716	F
EVHC/O and EVH	Module	11177718	G
EVC	Module	11187093	H

Description	Letter							
	A	B	C	D	E	F	G	H
O-ring Ø 11.0 x 2.0	1	1	-	-	-	-	-	-
O-ring Ø 15.3 x 2.4 (NBR D-90)	2	2	-	-	-	-	-	-
O-ring Ø 11.89 x 1.98 (NBR D-90)	2	1	-	-	-	-	-	-
O-ring Ø 1.98 x 11.89 (NBR D-90)	-	1	-	-	-	-	-	-
Plug 7/16-20 UNF-2A	-	1	-	-	-	-	-	-
O-ring Ø 16.36 x 2.21 (NBR D-90)	-	-	1	-	-	-	-	-
O-ring Ø 15.6 x 1.78	-	-	2	-	-	-	-	-
O-ring Ø 7.65 x 1.78 (NBR D-90)	-	-	2	-	-	-	-	-
O-ring Ø 2.5 x 11 (NBR D-90)	-	-	-	24	-	-	-	-
O-ring Ø 2 x 5 (NBR D-70)	-	1	-	16	-	-	-	-
O-ring Ø 2.62 x 15.54 (Viton)	-	1	-	16	-	-	-	-
O-ring Ø 2.62 x 15.54 (NBR D-70)	-	-	-	-	2	-	-	-
Backup	-	-	-	-	2	-	-	-
Seal nut	-	-	-	-	-	2	-	-
Screw M5 x 16 (12.9)	-	-	-	-	-	4	4	4
Profile O-ring	-	-	-	-	-	1	-	-
Profile ring	-	-	-	-	-	-	2	-
Profile ring	-	-	-	-	-	-	2	-
O-ring Ø 20.35 x 1.78 (NBR D-70)	-	-	-	-	-	-	1	-
O-ring Ø 41 x 1.78 (NBR D-70)	-	-	-	-	-	-	-	1
O-ring Ø 3.68 x 1.78 (NBR D-70)	-	-	-	-	-	-	-	1

**Products we offer:**

- DCV directional control valves
- Electric converters
- Electric machines
- Electric motors
- Gear motors
- Gear pumps
- Hydrostatic motors
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