engineering beyond imagination

Proportional pre/post compensated load sensing valve

ECX08A

Rev. 00 • February, 2026

TECHNICAL CATALOGUE

Controls

HISTORY OF REVISIONS

DATE	PAGE	CHANGED	REV.
February, 2026	-	First edition	00

ABOUT THE MANUAL

This manual contains the technical instructions for the control ECX08A.
All information given in this manual is current and valid according to the information available at the time of publication.
The data specified only serve to describe the product. EBI Motion controls reserves the right to modify or revise the instructions without prior notice.

EBI Motion controls is not responsible for any damage caused by an incorrect use of the product.
Please visit www.ebimc.com for the most recent version of this manual.

CONTENTS

INTRODUCTION

ECX08A Load Sensing Sectional Control Valve is a pre and post compensated mobile valve with a highly versatile design and with this flexibility you can design your valve to meet the requirements of your machine.
ECX08A allows you to prioritize work functions to accelerate productivity, improve machine efficiency, and enhance the safety characteristics of the machine.
EBI proportional pre/post compensated load sensing valves are suited for specialized applications for a variety of mobile equipment such as:

ECX08A

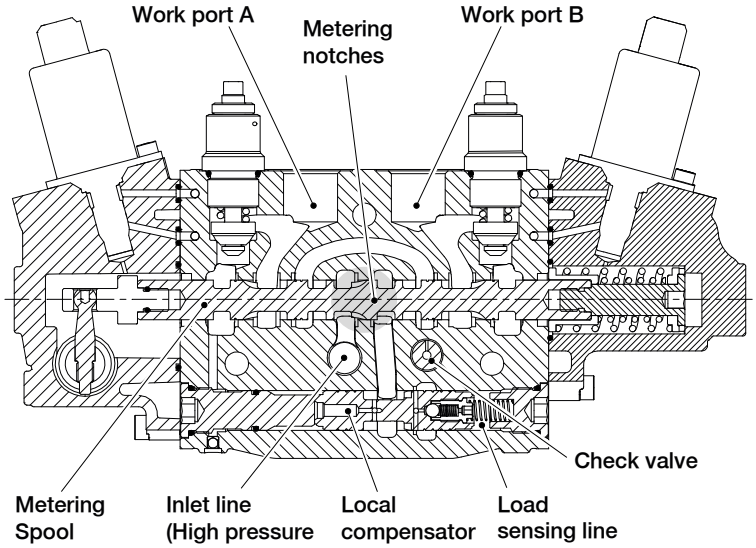
PROPORTIONAL PRE/POST COMPENSATED LOAD SENSING VALVE

Post & pre compensated L.S..
Pre-arranged for close & open circuit.
Compact directional valve with low pressure losses.
Interchangeable spools.
Wide range of auxiliary valves on working ports.
Availability of manual, hydraulic and EHP proportional actuations.

GENERAL INFORMATION - POST COMPENSATED SECTION

HYDRAULIC OPERATING PRINCIPLE

Directional control valve ECX08A, completely pressure compensated, guarantees great controllability to all actuations, making work port flow dependent only on metering area (spool position). When flow saturation occurs the system reacts by implementing an equal reduction of pressure margin across all spools, generating a proportional reduction of work port flow.



SINGLE SECTION

Referencing the picture reveals some aspects of system functionality. From the inlet line, the high pressure flow passes across the metering area and down to the local compensator. The metering area, according to the pressure margin, controls the total amount of flow to the work-port selected by the main spool. The load sensing signal, picked up downstream of the local compensator, feeds the common load-sensing line. When a single section is actuated, the local compensator fully opens to the right side, reaching its complete balanced position. The control of the LS system is achieved by the inlet compensator for fixed displacement pumps or the pump compensator for variable displacement pumps.

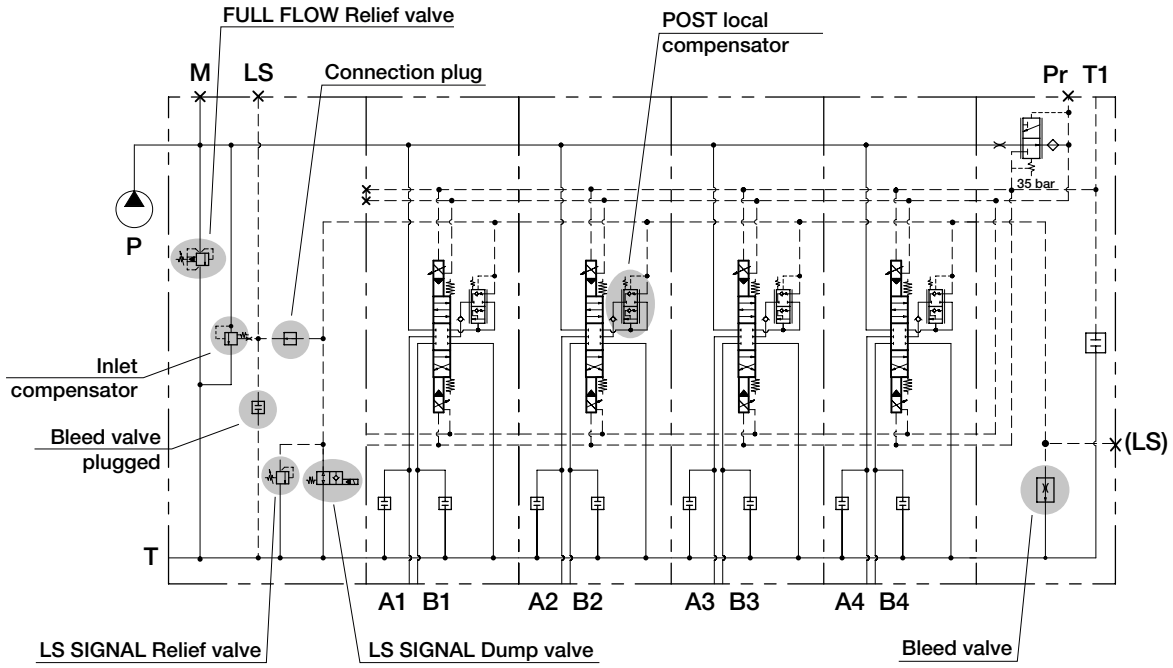
MULTI-SECTION

When two or more sections are actuated, only the function characterized by the highest pressure (dominant) is involved in the LS signal transmission. The other functions become directly dependent on it (slaves). The common LS line transfers the signal from the dominant local compensator to all dependent compensators. Driven by the LS signal, the unbalanced slave compensators activate the pressure compensation creating an artificial pressure drop able to keep pressure margin nominally the same on all the spools. Work-port flow becomes only a function of metering area making the system totally load independent.

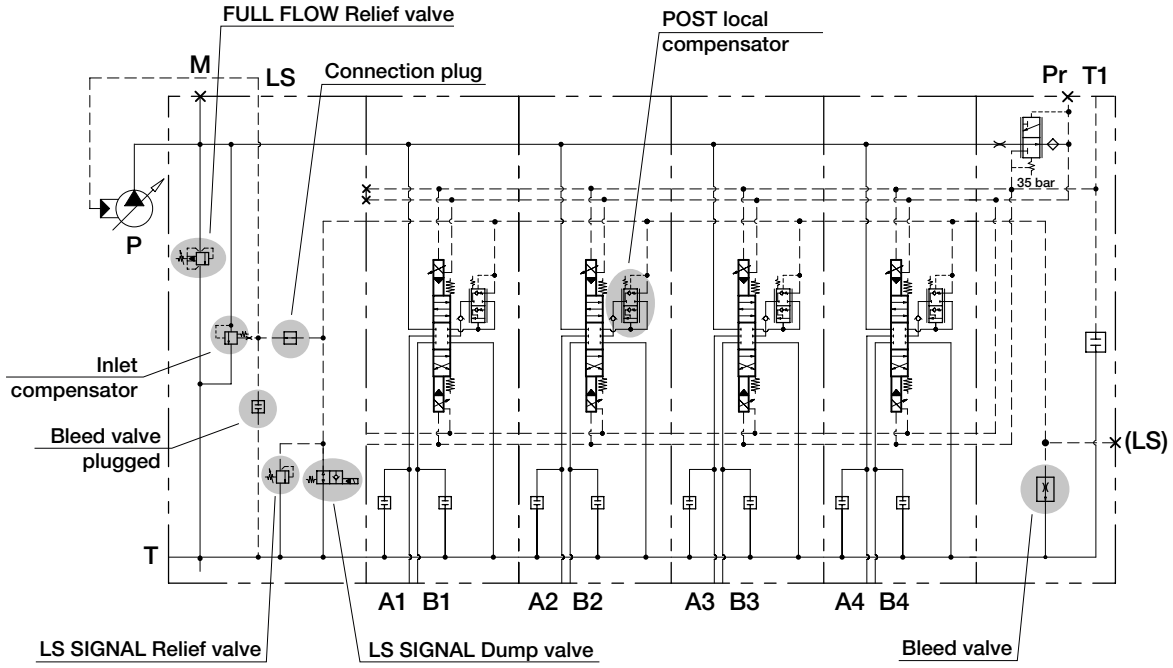
FLOW SHARING SECTION

Saturation occurs when the total amount of flow required by the valve bank is greater than the maximum pump flow rate. In this condition the system is not able to maintain the nominal pressure margin, reducing the margin according to real flow demand. As a result all the local section compensators experience the same LS signal and the same pressure drop is applied to different metering areas, reducing work-port flows proportionally in order to keep all actuations completely under control.

POST COMPENSATED HYDRAULIC SCHEMA
CONFIGURATION FOR FIXED PUMP (CA)



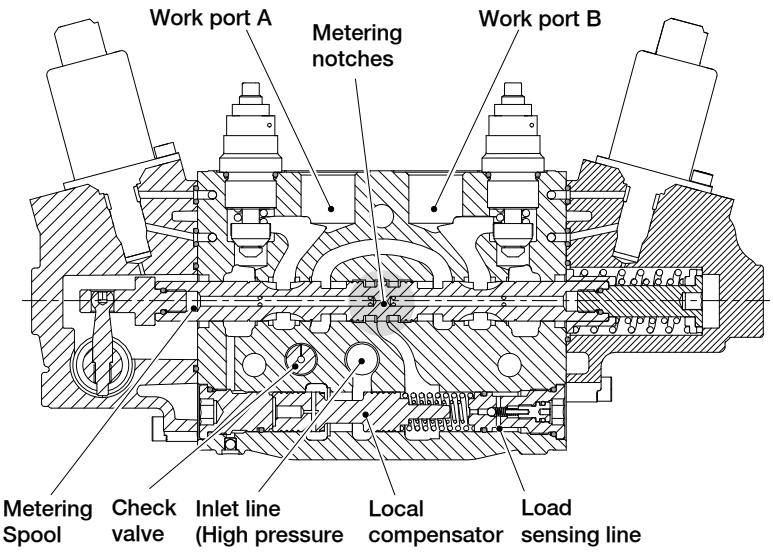
POST COMPENSATED HYDRAULIC SCHEMA
CONFIGURATION FOR VARIABLE PUMP (CC)



GENERAL INFORMATION - PRE COMPENSATED SECTION

HYDRAULIC OPERATING PRINCIPLE (PRE COMPENSATED SECTION)

Directional control valve ECX08A, the unique valve design allows one or more pre-compensated sections to be designed into a normally configured valve. The advantage of having a pre-compensated section available within a post-compensated system (a rather unique configuration among flow sharing systems) lies in the fact that a priority flow function can be guaranteed.
In a saturation condition, all post-compensated sections will proportionally reduce their delivered flows, while the pre-compensated section will keep a constant delivered flow in order to guarantee the priority of the function.



SINGLE SECTION

Referencing the picture reveals some aspects of system functionality. From the inlet line, the high pressure flow passes across section compensator where the spring provides sectional margin pressure which is in addition to the inlet compensator spring pressure. The metering area comes into picture after the sectional compensator, being pre-compensated. The metering area, according to the pressure margin, controls the total amount of flow to the work-port selected by the main spool.
Pressure differential acting on the compensator spool is picked from either side of the main metering orifice. Compensator spools reference the load sense signal picked up before the load sense shuttle.
Pump to load sense pressure differential is controlled by compensator springs.

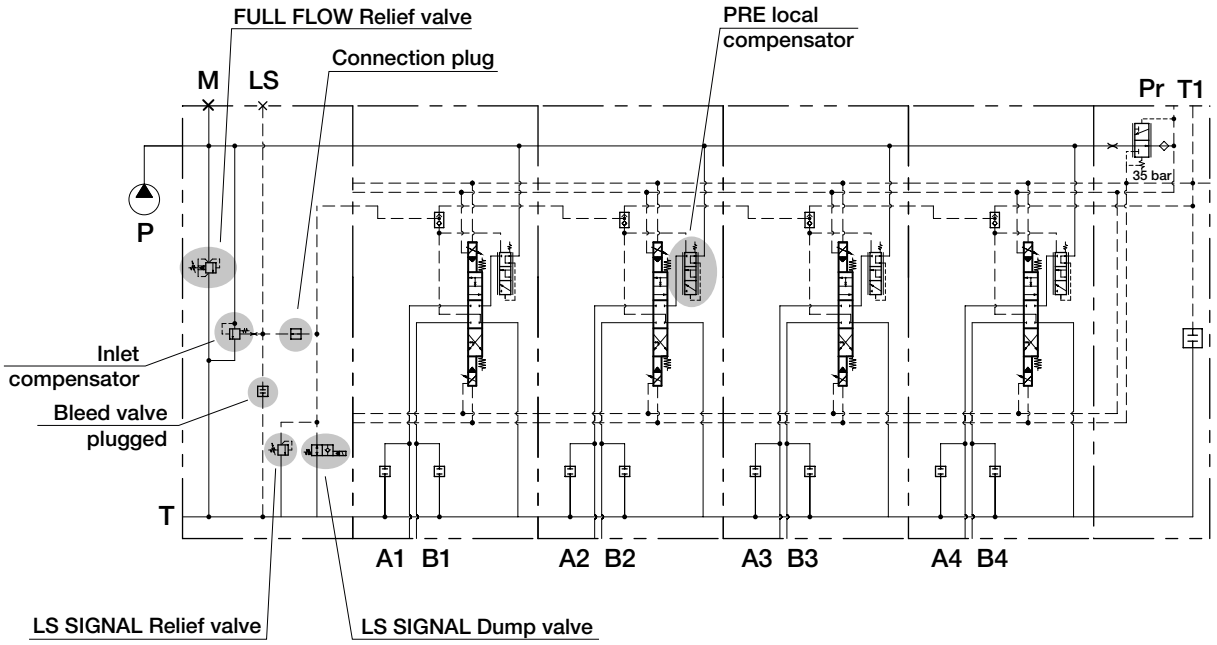
MULTI-SECTION

When flow demand exceeds flow supply the lowest loaded section takes priority over the highest loaded section.

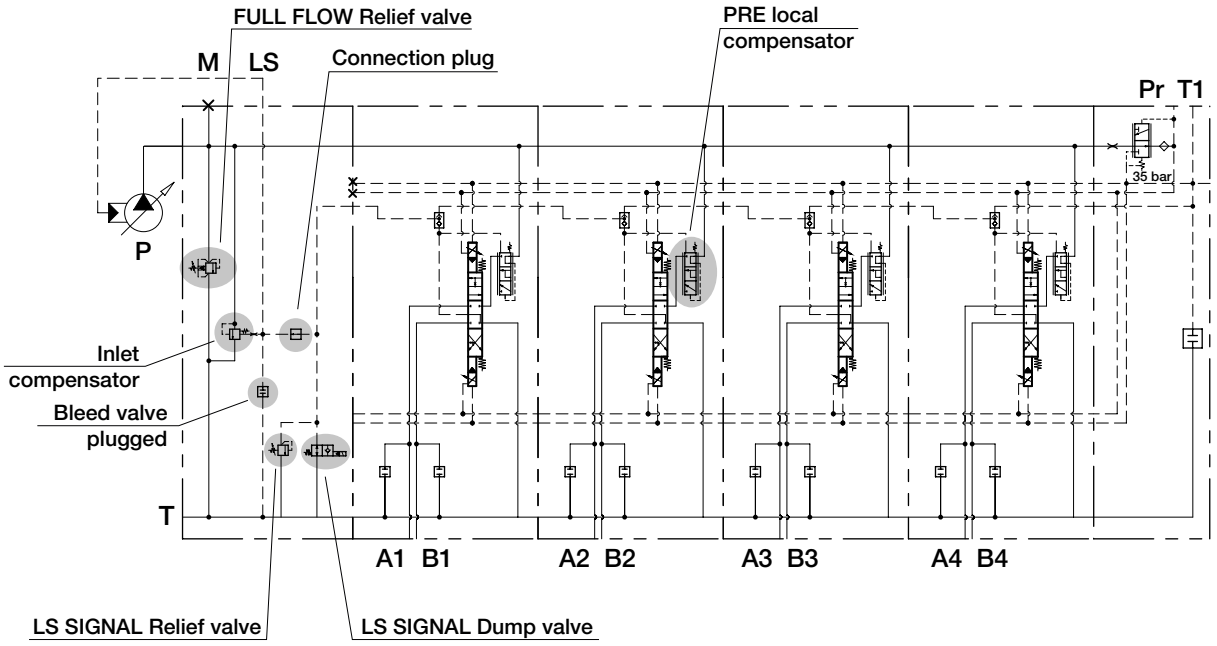
FLOW PRIORITY

ECX08A offers a valuable additional feature: the possibility to mix pre and post compensated technologies in single bank, to improve the control capabilities and manage flows with different priorities.

PRE COMPENSATED HYDRAULIC SCHEMA
CONFIGURATION FOR FIXED PUMP (CA)



PRE COMPENSATED HYDRAULIC SCHEMA
CONFIGURATION FOR VARIABLE PUMP (CC)



QUICK REFERENCE GUIDE

TECHNICAL DATA	ECX08A
Number of sections	1-12
Inlet working pressure (bar) - *[psi]*	350 *[5075]*
Section peak pressure (bar) - *[psi]*	380 *[5510]*
Stand-by pressure (bar) - *[psi]*	16 *[232]*
Nominal inlet flow (l/min) - *[GPM]*	130 *[34]*
Work port flow (l/min) - *[GPM]*	80 *[21]*
OPTION CHART	**ECX08A**
LS Signal pressure relief valve	•
Full Flow pressure relief valve	•
LS Signal dump valve (electric 12/24 VDC)	•
Full Flow dump valve (electric 12/24 VDC)	•
SPOOL ACTUATION	**ECX08A**
Manual actuation	•
Hydraulic actuation	•
Electrohydraulic actuation (12/24 VDC)	•
SPOOL RETURN ACTION	**ECX08A**
3 positions spring centered	•
Pneumatic control	•
Mechanical detent	•
Electrohydraulic return action (12/24 VDC)	•
AUXILIARY VALVES (DIRECT ACTUATED)	**ECX08A**
Fixed setting valve	•
Adjustable valve	•
Anticavitation valve	•

APPLICATION AND SAFETY GUIDELINES

INTENDED USE

Directional control valve ECX08A is designed for mobile applications.

WARRANTY

Check the package and the product for transport damage when receiving goods. The package is not meant for long term storage; protect the product appropriately. Do not dismantle the product. The warranty is void if the product has been disassembled. The manufacturer is not responsible for damages resulting from misinterpreted, non compliance, incorrect or improper use of the product that goes against the instructions given in this document.

GENERAL SAFETY INSTRUCTIONS

The following instructions apply to all procedures associated with the product. Read these instructions carefully and follow them closely.

- Use necessary personal protective equipment when working with the product.
- Support the product properly; make sure the product cannot fall over or turn around by accident.
- Use only appropriate equipment and attachments for lifting and transferring the product.
- Prevent unintended use of the product during installation and maintenance procedures.
- Never use the Control Valve at a pressure exceeding the rated pressure.
- Use the Control Valve within the rated flow; if not there might be malfunction or a deterioration.
- Using low-cleanliness hydraulic fluid might cause seal failure or damage to the seal part, resulting in operation failure or operation mistake of the machine; the customer is requested to check the cleanliness of the hydraulic fluid.

WARNING SYMBOL

The following symbols are used in this manual:

Note:
Useful information

Danger:
Danger of death or injury

Attention:
May cause damage to the product

STORAGE OF NEW PRODUCT

Encapsulated by a protective wrapping, the control valve ECX08A shall not be exposed to direct sunlight nor to source of heat or ozone and kept in a dry place at a temperature between -20°C +50°C [-4°F +122°F].
Do not store the product in:

- Places where it might be damaged;
- Very hot/humid areas;
- Where it could get wet;
- Where it could come into contact with organic solvents, acids, alkalis and/or dangerous gases;
- In places subject to sudden, significant changes in temperature.

EBI motion controls is not responsible for any damages due to a storage not in compliance with our prescriptions; For any doubts, please contact our aftersales office.

SAFETY GUIDELINES

During any operation on product ECX08A, it is recommended to pay attention to components surfaces temperature. The circuit functions are to be so designed that uncontrolled machine movements, caused by the application, are prevented. Take into account all of the application limits, particularly those application limits stated within this technical catalogue.

It is recommended to follow these steps and only trained and competent personnel may carry out any work on ECX08A Control Valve:

- Do not direct the jet of a pressure washing unit directly to the product
- Ensure that all matching surfaces are clean, without contamination.

- Ensure that all seals and back-up rings for the matching surfaces are flawless and correctly placed.
- Do not put any sealing material other than the standard seals.
- During the assembly of the complete Control Valve, refer to the hydraulic scheme and to the name assigned to each port.
- Use gloves in order to avoid accidental injuries during installation or maintenance.
- Do not grab / handle product from moving parts (i.e. cables, levers,...etc.)
- All Control Valves are attributable to pressure containers. It's always recommended to place the components in a closed but ventilated compartment, able to protect the environment and users in case of accidental ejection of material under pressure (fittings, pipes, plugs, expander,...etc.)
- Before removing or disassembling the complete Control Valve or allowed parts (as pressure gauge ports, plugs) it is strongly recommended to vent all hydraulic pressure from the system.

HANDLING PRECAUTIONS

If the Control Valve doesn't work properly, we advise you to contact our aftersales Office.
However if the disassembly and assembly operations are strictly unavoidable, you must observe the following prescriptions and charge the carrying out of the operations to technicians highly qualified in hydraulic field.

- The Control Valve reaches high temperature after operating the machine; start the work only after checking that the temperature is low;
- The valve can hold high internal pressure; release the inside pressure and ensure all machine actuators are in a rest position before removing the piping. In any case safely and carefully unscrew connections and fittings.
- Since hydraulic devices are all machined precisely with very accurate clearances, carry out the disassembly and assembly work at a clean place;
- Before disassembly work, get the assembly instructions by requiring to our aftersales office and prepare all the material needed for the task;
- To disassemble and assemble the valve observe strictly our mounting instructions;
- Since there is the possibility of rust when the disassembled parts are left, apply anticorrosive oil to the parts and seal them;
- Before remounting the Control Valve on the operating machine, ensure that the Control Valve has not been af fected by carrying out various hydraulic tests (e.g. Relief Valve setting, Leak test..).

Attention:

Always bear in mind that "all workers must act responsibly to ensure their own health and safety"; use of personal protection equipment is therefore essential. All the disassembly and assembly operations must observe strictly the procedures listed in the EBI procedures. EBI motion controls is not responsible for any damages due to disassembly and assembly procedures not in compliance with our prescriptions. For any doubts, please contact our aftersales department.

INSTALLATION PROCEDURES

On receiving the Control Valve make sure you:

- Check if there are some sign of damage of the packaging;
- Check that the dimensions of the product seat are compatible with those of the product itself;
- Remove the plastic caps that protect the service ports and be careful not to introduce any dirt or foreign material inside the control valve as this could damage it;
- Mount the control valve securely to a flat surface (recommended 3 point fixing); any distortion in assembly can result in spool sticking and poor control;
- Clean/flush piping materials adequately before use;
- Prevent the port openings from being entered with dust or foreign matters;
- Tighten the port connectors surely with the recommended fastening torque;
- If possible, install the valve in a protected environment, avoiding direct exposure to weathering, water, salt or any other corrosion substances.

FITTINGS TIGHTENING TORQUE (Nm)

Do not tighten fittings with torque higher than the recommended value; otherwise there might be strains or damage to Control Valve so as to cause a serious accident.
If the pipings are not connected to the correspondent ports, unintentional movements might cause a serious accident; EBI motion controls is not responsible for any damages due to an installation procedure not in compliance with our procedures.

SPECIFICATIONS	PORT (P)		PORT (A-B)	PORT (T)
BSP THREADS ISO 1179-1	**G 1/2**	**G 3/4**	**G 1/2**	**G 3/4**
with rubber gasket (DIN 3869)	90 Nm	120 Nm	90 Nm	120 Nm
with copper or steel and rubber washer	90 Nm	120 Nm	90 Nm	120 Nm
UN/UNF THREADS ISO 11926-1	**7/8" 14 UNF**	**1"1/16 12 UNF**	**7/8" 14 UNF**	**1"1/16 12 UNF**
with o-ring	90 Nm	120 Nm	90 Nm	120 Nm

UNITS OF MEASURE - CONVERSION FACTORS

LENGTH	FLOW RATE	MASS	FORCE WEIGHT	PRESSURE
1 mm = 0,0394 in	1 l = 0,2200 gal UK	1 kg = 2,205 lb	1 Nm = 0,1020 Kgf	1 bar = 100000 Pa
1 in = 25,4 mm	1 l = 0,2642 gal US	1 lb = 0,4536 kg	1 Kgf = 9,8067 Nm	1 bar = 14,5 psi
	1 gal UK = 4,546 l			1 Pa = 0,0001 bar
	1 gal UK = 1,2010 gal US			1 Pa = 0,00014 psi
	1 gal US = 3,785 l			1 psi = 0,0689 bar
	1 gal US = 0,8327 gal UK			1 psi = 6890 Pa

PRODUCT IDENTIFICATION

The product identification data can be found on the identification plate attached to the EBI product.

SERIAL NUMBER

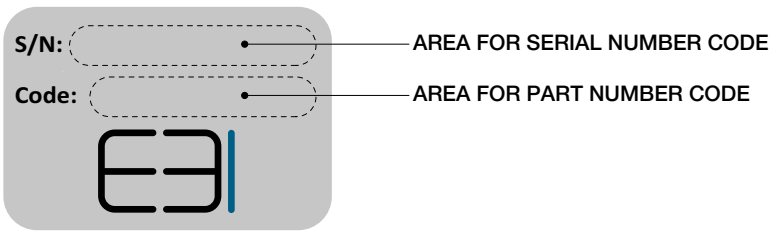
All manufacturing data and all sales data can be found with the serial number

PART NUMBER CODE

It is a number univocally identifying the configuration and pressure setting of a valve

Note:

Serial number and part number code have 9 characters (letters and numbers).



Attention:

These guidelines are not intended to be considered as complete

HYDRAULIC FLUID

Mineral oil based hydraulic fluids suitable for hydraulic systems can be used; they should have physical lubricating and chemical properties as specified by:
MINERAL OIL BASED HYDRAULIC FLUIDS HL (DIN 51524 part 1)
MINERAL OIL BASED HYDRAULIC FLUIDS HLP (DIN 51524 part 2)
For use of environmentally friendly fluids (vegetable or polyglycol base), or other fluids, please contact EBI.

OIL AND SOLUTIONS - ISO 6743/4	(°C) MIN	(°C) MAX
Mineral Oil HL, HM or HLP	-25	+80
Oil in water emulsion HFA	+5	+55
Oil in water emulsion HFB	+5	+55
Polyglycol-based aqueous solution HFC	-10	+60

Hydraulic fluids are available in different viscosity classes identified by the ISO VG number, which corresponds to the kinematic viscosity at 40°C. Here is a table showing typical viscosity changes between 0°C and 100°C for mineral oil based fluids having various viscosity classes. The fluid should be selected with the aim to achieve an appropriate operating viscosity at the expected working temperature.

VISCOSITY CLASS AND FILTRATION DATA			
Viscosity class	*kinematic viscosity (cSt)*		
	maximum (0° C)	*medium (40° C)*	*minimum (100° C)*
ISO VG 10	90	10	2.4
ISO VG 22	300	22	4.1
ISO VG 32	420	32	5.0
ISO VG 46	780	46	6.1
ISO VG 68	1400	68	7.8
ISO VG 100	2560	100	9.9

FLUID CLEANLINESS REQUIREMENTS

The cause of malfunctions in hydraulics is often found to be excessive fluid contamination. The hard contaminant particles in the fluid wear the hydraulic components and prevent the poppets from re-seating, with consequent internal leakage and system inefficiency. For the correct operation it is necessary to adopt filtration methods which guarantee for life the specified fluid cleanliness level. It is important to ensure that hydraulic fluids are brought to the appropriate cleanliness level prior filling up the systems, and, when in doubt, also to flush the hydraulic components prior to installation.

FILTRATION RATIO $BETA_x$:

It is the ratio between the number of particles before and after the filter with diameter larger than X micron.

ABSOLUTE FILTRATION RATIO ISO 4572:

It is the diameter X of the largest particle with $BETA_x \geq 75$.

CONTAMINATION CLASS ISO 4406:

It is expressed by 3 scale numbers representing respectively: the number of particles equal to or larger than 4µm, the number of particles equal to or larger than 6µm, the number of particles equal to or larger than 14µm contained in 1 ml of fluid.

CONTAMINATION CLASS NAS 1638:

It is expressed by one scale numbers representing the number of particles of different size ranges contained in 1 ml of fluid.

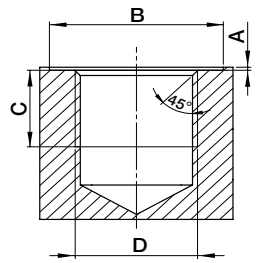
FILTRATION RECOMMENDATION				
Type	Nominal filtration *(micron)*	Absolute filtration rating *ISO 4572 ($BETA_x$≥75)*	Contamination class	
			ISO 4406	*NAS 1638*
System/components operating at *MEDIUM HIGH PRESSURE HIGH DUTY CYCLE APPLICATIONS* **Systems/components with** *MODERATELY* **dirt tolerance**	**15**	**X = 12... 15**	**20/18/15**	**9**

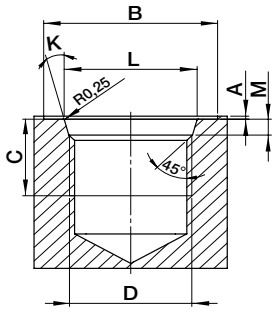
Attention:

If the filtration demands are not met, the valve poppets can jam in the open position, with the result that the valve remains actuated. It is not possible to force back jammed poppets mechanically.

PORT DETAILS

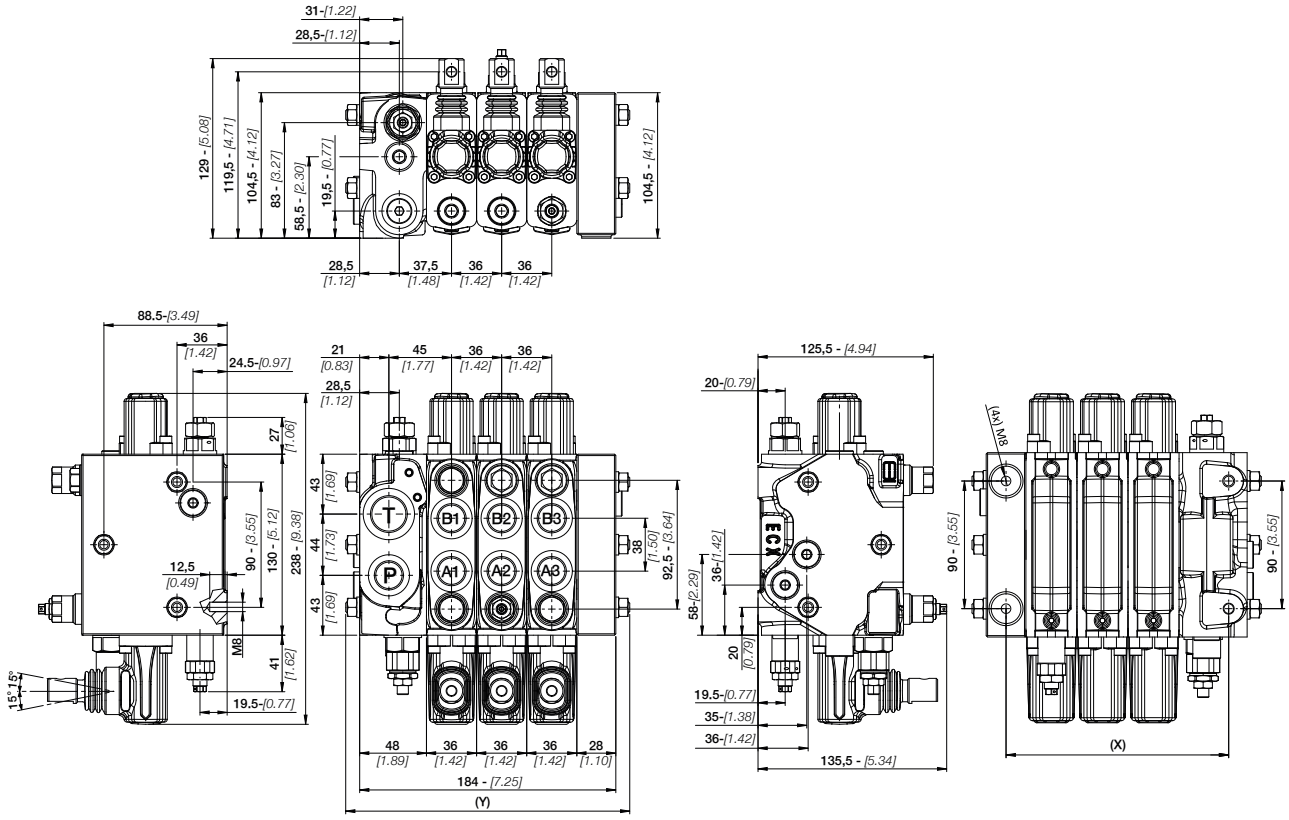
The connection port size is indicated by an ordering code common for all EBI products.
Following tables show all available connections.

BSP THREADS ISO 1179-1	D	C		B		A		CODE
	UNI-ISO 228	mm	*in*	mm	*in*	mm	*in*	
	G 1/4	13	*0.51*	19	*0.75*	1	*0.094*	1B
	G 3/8	13	*0.51*	25	*0.98*	1	*0.04*	2B
	G 1/2	15	*0.59*	29	*1.14*	1.5	*0.06*	3B
	G 3/4	17	*0.67*	36	*1.42*	1.5	*0.06*	4B
	G 1	19	*0.75*	45	*1.77*	2	*0.08*	5B

UN/UNF THREADS ISO 11926-1	D	C		B		L		M		K	A		CODE
	ASA-B1-1	mm	*in*	mm	*in*	mm	*in*	mm	*in*		mm	*in*	
	9/16-18 UNF (SAE6)	13	*0.51*	26	*1.02*	15.6	*0.61*	2.5	*0.098*	12°	1	*0.04*	1S
	3/4-16 UNF (SAE8)	15	*0.59*	30	*1.18*	20.6	*0.81*	2.6	*0.102*	15°	1.5	*0.06*	2S
	7/8-14 UNF (SAE10)	17	*0.67*	34	*1.34*	23.9	*0.94*	2.6	*0.102*	15°	1.5	*0.06*	3S
	1”1/16-12 UNF (SAE12)	20	*0.79*	41	*1.61*	29.2	*1.15*	3.3	*0.13*	15°	1.5	*0.06*	4S
	1”5/16-12 UNF (SAE16)	20	*0.79*	50	*1.97*	35.5	*1.40*	3.3	*0.13*	15°	2	*0.08*	5S

DIMENSIONS

ECX08A MECHANICAL ACTUATION



STANDARD CONNECTIONS

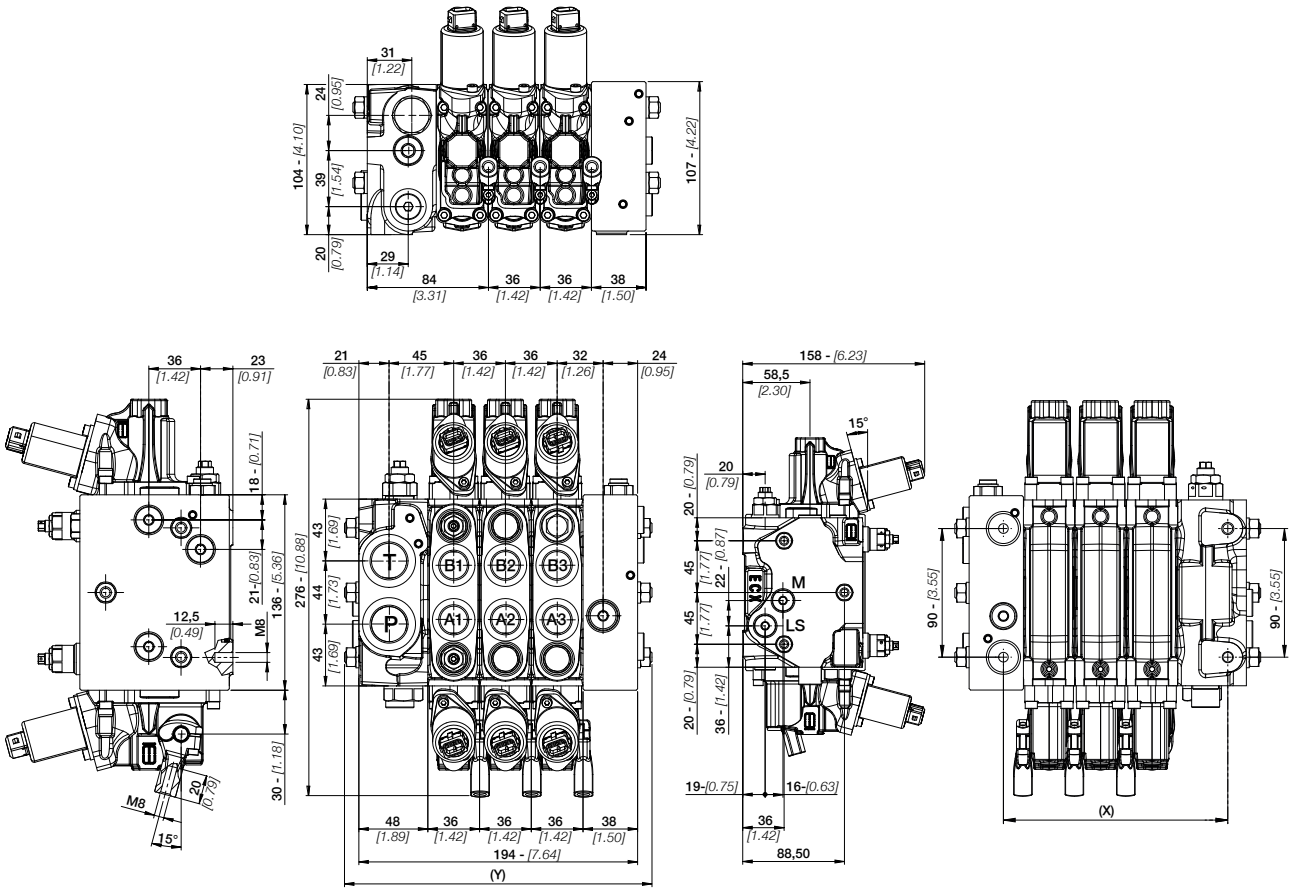
TYPE	BSP (ISO 1179-1)	UN-UNF (ISO 11926-1)
INLET - P	G 1/2	7/8” - 14 UNF (SAE10)
Gauge connection	G 1/4	9/16” - 18 UNF (SAE6)
PORTS - A/B	G 1/2	7/8” - 14 UNF (SAE10)
OUTLET - T	G 3/4	1”1/16 - 12 UNF (SAE12)

TECHNICAL SPECIFICATIONS

TYPE	X mm	X [in]	Y mm	Y [in]	WEIGHT kg	WEIGHT [lb]
ECX08A/1	85	[3.35]	132	[5.20]	9	[19.8]
ECX08A/2	121	[4.77]	168	[6.62]	11,8	[25.6]
ECX08A/3	157	[6.19]	204	[8.04]	15,6	[34.3]
ECX08A/4	193	[7.61]	240	[9.46]	19,4	[42.7]
ECX08A/5	229	[9.03]	276	[10.88]	23,2	[51]
ECX08A/6	265	[10.45]	312	[12.30]	27	[59.4]
ECX08A/7	301	[11.87]	348	[13.72]	30,8	[67.8]
ECX08A/8	337	[13.29]	384	[15.14]	34,6	[76.1]
ECX08A/9	373	[14.71]	420	[16.56]	38,4	[84.5]
ECX08A/10	409	[16.13]	456	[17.98]	42,2	[92.8]
ECX08A/11	445	[17.55]	492	[19.40]	46	[101.2]
ECX08A/12	481	[18.97]	528	[20.82]	49,6	[109.1]

DIMENSIONS

ECX08A ELECTROHYDRAULIC ACTUATION



STANDARD CONNECTIONS

TYPE	BSP (ISO 1179-1)	UN-UNF (ISO 11926-1)
INLET - P	G 1/2	7/8” - 14 UNF (SAE10)
Gauge connection	G 1/4	9/16” - 18 UNF (SAE6)
PORTS - A/B	G 1/2	7/8” - 14 UNF (SAE10)
OUTLET - T	G 3/4	1”1/16 - 12 UNF (SAE12)

TECHNICAL SPECIFICATIONS

TYPE	X		Y		WEIGHT	
	mm	[in]	mm	[in]	kg	[lb]
ECX08A/1	85	[3.35]	142	[5.60]	9,4	[20.7]
ECX08A/2	121	[4.77]	178	[7.02]	13,3	[29.3]
ECX08A/3	157	[6.19]	214	[8.44]	17,2	[37.8]
ECX08A/4	193	[7.61]	250	[9.86]	21,1	[46.4]
ECX08A/5	229	[9.03]	286	[11.28]	25	[55]
ECX08A/6	265	[10.45]	322	[12.70]	28,9	[63.6]
ECX08A/7	301	[11.87]	358	[14.12]	32,8	[72.2]
ECX08A/8	337	[13.29]	394	[15.54]	36,7	[80.7]
ECX08A/9	373	[14.71]	430	[16.96]	40,6	[89.3]
ECX08A/10	409	[16.13]	466	[18.38]	44,5	[97.9]
ECX08A/11	445	[17.55]	502	[19.80]	48,4	[106.5]
ECX08A/12	481	[18.97]	538	[21.22]	52,3	[115.1]

TECHNICAL DATA

All performances in this catalogue are obtained using mineral based hydraulic oil 46 cSt viscosity at 40°C (ISO VG 46 viscosity class). All ECX08A go through functional testing at these conditions before shipment.

HYDRAULIC STANDARD SPECIFICATIONS

Nominal Inlet Flow ..... **130 l/min - [34 GPM]**
Work port Flow ..... **80 l/min - [21 GPM]**
Working pressure ..... **350 bar - [5075 psi]**
Max back pressure (T line) ..... **20 bar - [290 psi]**
Hysteresis ..... **< 1 bar - [14,5 psi]**
Hydraulic fluid ..... **Mineral Oil HL, HLP (DIN 51524); phosphate ester (HFD-R)**
Fluid temperature range ..... **-20°C +80°C [-4°F +176°F]**
Fluid viscosity range ..... **10 ÷ 380 cSt**
Max contamination level ..... **9 (NAS 1638) - 20/18/15 (ISO 4406:1999)**
Recommended filtration ..... **ß10 > 75 (ISO 16889:20008)**

MECHANICAL STANDARD SPECIFICATIONS

Spool return force (without detent) ..... **90 ÷ 125 N (std spring)**

MATERIAL STANDARD SPECIFICATIONS SEALS

O-Rings: **Buna N** (acrylonitrile butadiene), also named **NBR** (according to ASTM), compatible with fluids having mineral oil base, water in oil emulsions, and water glycol fluids.
These seals are standard for temperatures within the range -20°C and +80°C

Back-up rings and Slide rings: **strengthened PTFE** (Politetrafluoroetilene like Teflon®, Lubriflon®, Ecoflon®, or similar). Special FPM (Viton®) seals are available on request.

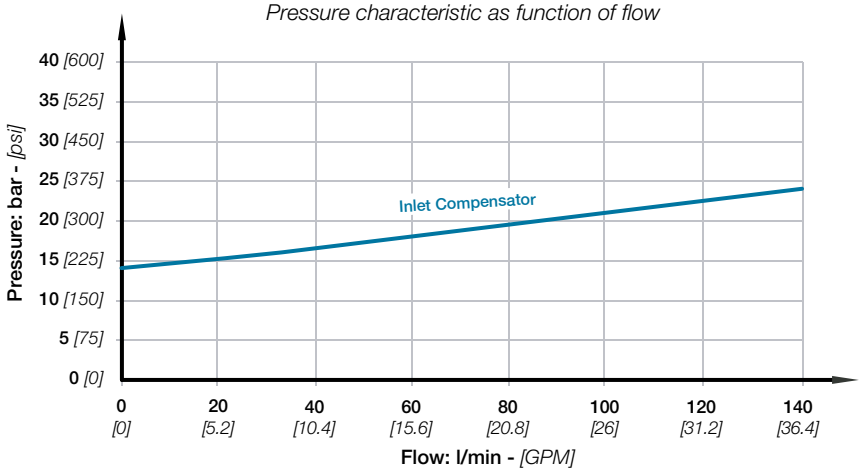
Note: the seal materials are compatible with the fluids normally used in hydraulic systems; in case of special fluids, if you suspect incompatibility between the fluid used and the standard seals, contact the EBI motion controls service network.

TYPICAL CURVES

All performances are obtained using mineral based hydraulic oil 46 cSt viscosity at 40°C (ISO VG46 viscosity class).

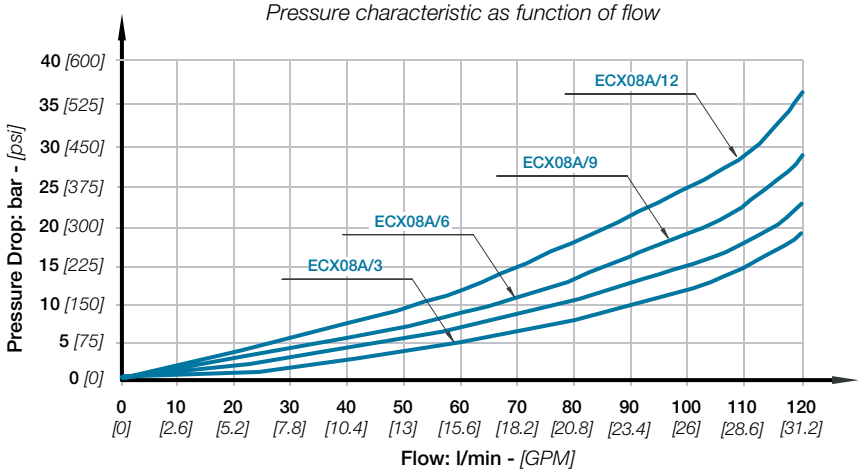
Inlet compensator - Pressure (P-T)

Pressure characteristic as function of flow



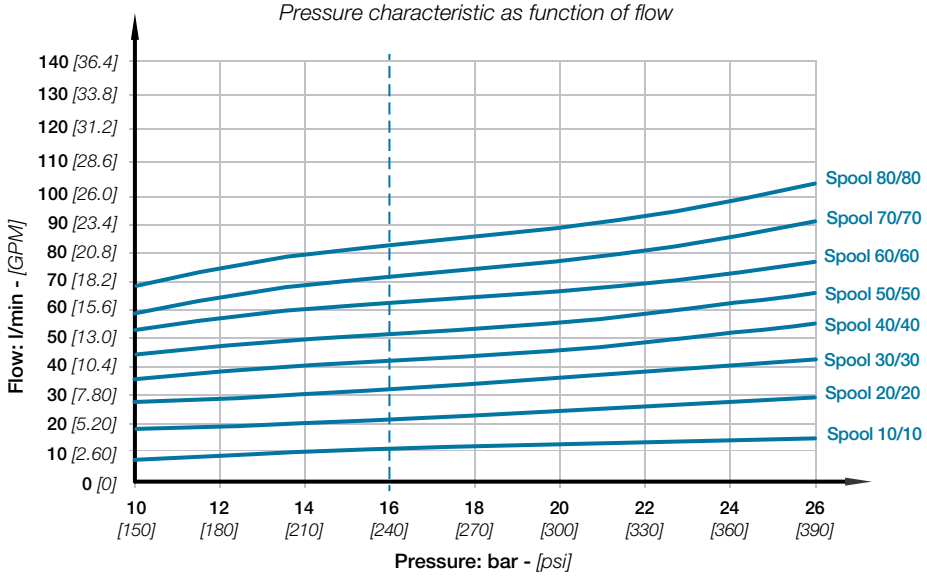
Performance data - Pressure (A/B-T)

Pressure characteristic as function of flow



Post Compensated spool flow with variable displacement pump

Pressure characteristic as function of flow



ORDERING CODES

The order code below provides an example of control ECX08A with standard configuration.
This example represents a ECX08A valve in left configuration with electrohydraulic actuation.
You can configure a ECX08A up to 12 work sections; ordering code in position 8, 9, 10, 11, 12, 13, 14, 16 and 16 must be repeated for every work section.

info	product	1
	ECX08A	N1E

inlet section	2	3	4	5	6	7
	L	PF1S1	V01150	V09	V10200	V13

Work section	8	9	10	11	12	13	14	15	16
	L	SK1E3S	V15	V59100	V59100	S015050E	AE01	RE01	K12D

outlet section	17	18
	L	TE1S

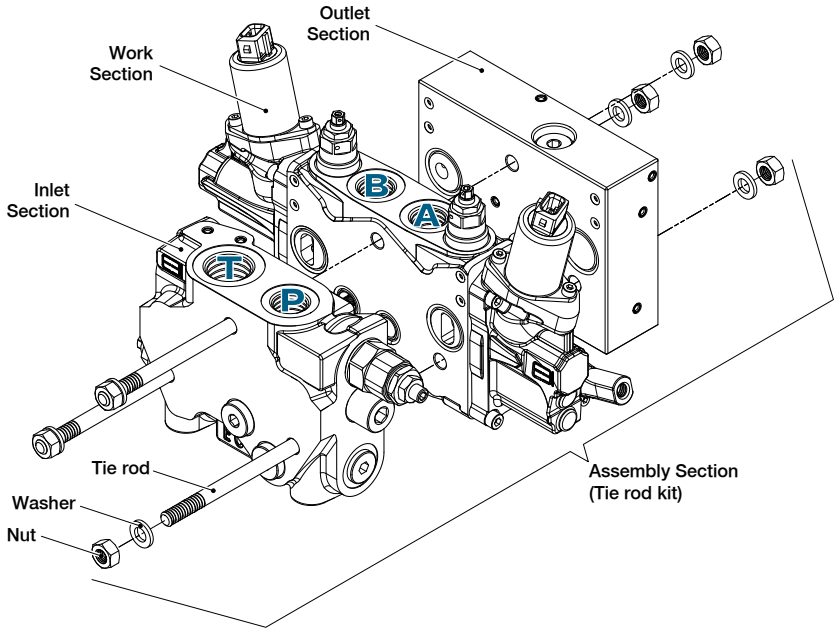
options	19
	X1

Note:
Ordering codes in position 2, 8 and 17 are always the same, indicating the mounting side of the valve.

POSITION		CODE	DESCRIPTION	PAGE
info		ECX08A	Product	
	1	N1E	Assembly section	21
Inlet section	2	L	Inlet side	22
	3	PF1S1	Arrangement body inlet	23
	4	V01150	Inlet valve on port 1	24
	5	V09	Inlet valve on port 2	
	6	V10200	Inlet valve on port 1	
	7	V13	Inlet valve on port 1	
Work section	8	L	Section side	26
	9	SKE13S	Arrangement body section	28
	10	V15	LS A/B valve blanking plug	30
	11	V59100	Valve on port A	31
	12	V59100	Valve on port B	
	13	S015050E	Spool	32
	14	AE01	Actuation kit	34
	15	RE01	Return action kit	38
	16	K12D	Solenoid kit	40
Outlet section	17	L	Outlet side	41
	18	TE1S	Arrangement body outlet	42
Options	19	X1	Painted option	44

All sectional ECX08A valves have symmetric bodies; thanks to this characteristic, it is possible to change the control side, by simply reversing the spool 180°.
All valves can easily be changed from Right inlet (R) to Left inlet (L) and vice versa.

COMPLETE SECTIONAL VALVE ECX08A



Note:

This example represents ECX08A with one single work section; tie rod kit **N1E**.
Each ECX08A assembly has n.3 tie rod kit.

ASSEMBLY SECTION

product						1		
E	C	X	0	8	A	N	1	E

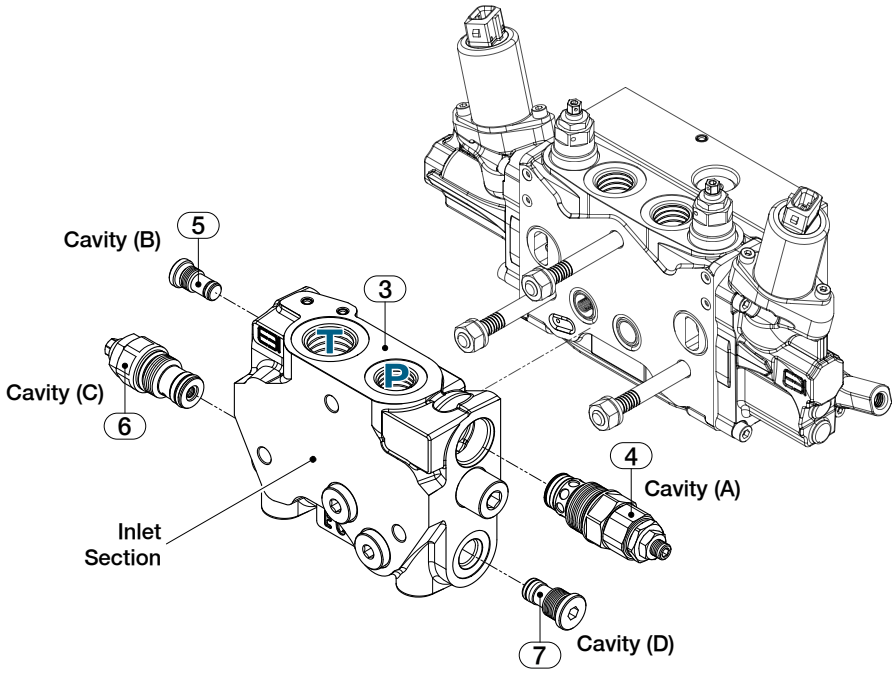
Tie rod kit allows the correct assembly of directional sectional valves ECX08A. Tie rod's length depends on the number of sections; each valve is assembled with tie rod kits including a tie rod, two nuts and two washer.
Two types of tie-rod kits are available:

- Assembly tie-rod for control valve with manual actuation
- Assembly tie-rod for control valve with electrohydraulic actuation

DESCRIPTION	Manual actuation		Electrohydraulic actuation		CLAMPING TORQUE
	CODE	LENGTH	CODE	LENGTH	
Tie rod kit for single work section	N1M	132 mm - *5.20 in*	N1E	142 mm - *5.59 in*	35 Nm
Tie rod kit for 2 work sections	N2M	168 mm - *6.62 in*	N2E	178 mm - *7.01 in*	
Tie rod kit for 3 work sections	N3M	204 mm - *8.04 in*	N3E	214 mm - *8.43 in*	
Tie rod kit for 4 work sections	N4M	240 mm - *9.46 in*	N4E	250 mm - *9.85 in*	
Tie rod kit for 5 work sections	N5M	276 mm - *10.88 in*	N5E	286 mm - *11.27 in*	
Tie rod kit for 6 work sections	N6M	312 mm - *12.30 in*	N6E	322 mm - *12.69 in*	
Tie rod kit for 7 work sections	N7M	348 mm - *13.72 in*	N7E	358 mm - *14.11 in*	
Tie rod kit for 8 work sections	N8M	384 mm - *15.14 in*	N8E	394 mm - *15.53 in*	
Tie rod kit for 9 work sections	N9M	420 mm - *16.56 in*	N9E	430 mm - *16.95 in*	
Tie rod kit for 10 work sections	N10M	456 mm - *17.98 in*	N10E	466 mm - *18.37 in*	
Tie rod kit for 11 work sections	N11M	492 mm - *19.40 in*	N11E	502 mm - *19.79 in*	
Tie rod kit for 12 work sections	N12M	528 mm - *20.82 in*	N12E	538 mm - *21.21 in*	

INLET SECTION

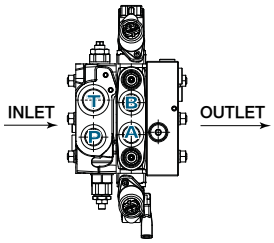
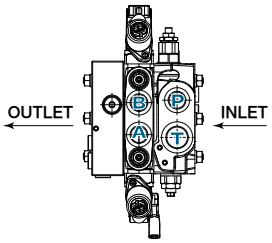
2	3	4	5	6	7
L	PF1S1	V01150	V09	V10200	V13



This example represents inlet section ECX08A with left configuration.

INLET SIDE

On all sectional ECX08A valves it is possible to choose a RIGHT or LEFT inlet.

CODE	DESCRIPTION	DRAWING	CODE	DESCRIPTION	DRAWING
L	Inlet side LEFT		R	Inlet side RIGHT	

Convention for all ECX08A valves with inlet right (R) or left inlet (L):

- side A = spool actuation side
- side B = spool return action side.

INLET SECTION

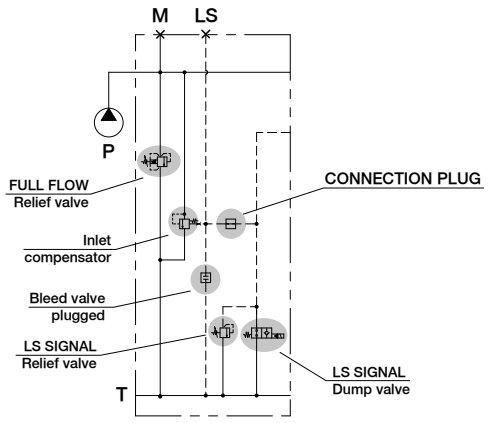
2	3	4	5	6	7
L	PF1S1	V01150	V09	V102000	V13

ARRANGEMENT INLET BODY

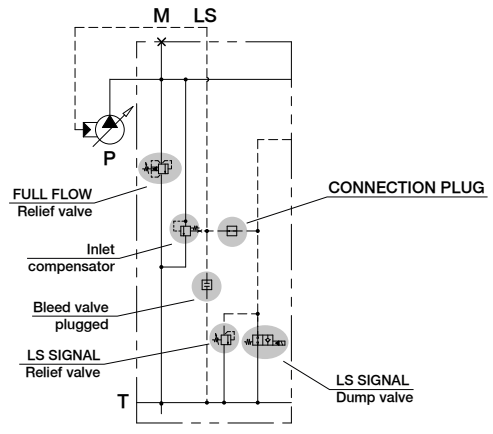
ECX08A arrangement body inlet is available in two configurations: SAE thread or BSP thread.
Two inlet classifications are available:

PF = INLET FOR FIXED PUMP (CA)
PV = INLET FOR VARIABLE PUMP (CC)

INLET FOR FIXED PUMP (CA)

CODE	DESCRIPTION	THREAD	CONFIGURATION
PF1S1	*INLET (P) / OUTLET (T) with connection plug*	(P) = 3/4-16 UNF (SAE8) (T) = 7/8-14 UNF (SAE10)	
PF1S2		(P) = 7/8-14 UNF (SAE10) (T) = 1”1/16-12 UNF (SAE12)	
PF1S3		(P) = 1”1/16-12 UNF (SAE12) (T) = 1”1/16-12 UNF (SAE12)	
PF1B1		(P) = G 3/8 (T) = G 1/2	
PF1B2		(P) = G 1/2 (T) = G 3/4	
PF1B3		(P) = G 3/4 (T) = G 3/4	

INLET FOR VARIABLE PUMP (CC)

CODE	DESCRIPTION	THREAD	CONFIGURATION
PV1S1	*INLET (P) / OUTLET (T) with connection plug*	(P) = 3/4-16 UNF (SAE8) (T) = 7/8-14 UNF (SAE10)	
PV1S2		(P) = 7/8-14 UNF (SAE10) (T) = 1”1/16-12 UNF (SAE12)	
PV1S3		(P) = 1”1/16-12 UNF (SAE12) (T) = 1”1/16-12 UNF (SAE12)	
PV1B1		(P) = G 3/8 (T) = G 1/2	
PV1B2		(P) = G 1/2 (T) = G 3/4	
PV1B3		(P) = G 3/4 (T) = G 3/4	

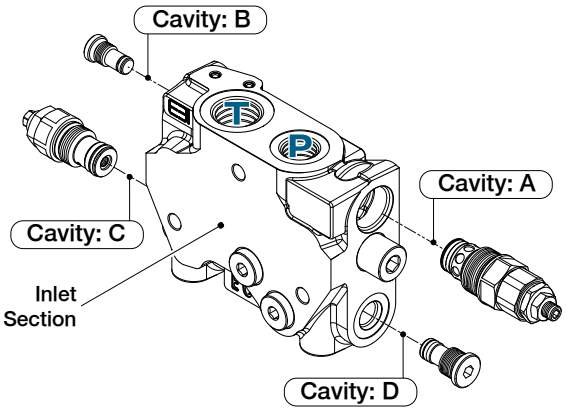
INLET SECTION

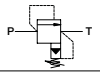
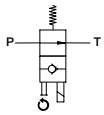
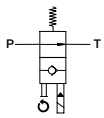
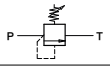
2	3	4	5	6	7
L	PF1S1	V01150	V09	V10200	V13
		Cavity A	Cavity B	Cavity C	Cavity D

INLET VALVE CLASSIFICATION

All inlet sections require 4 choices on cavity A, B, C and D; in the following table the available valves are shown.

- Valve type V01 and V10 require factory setting (V01150 - V10150); 150 is a value expressed in bar.
- Valve type V04 includes coil kit.
- 3 coil types are available in 12 and 24 Volt versions: DIN, DEUTSCH DT04 and AMP JUNIOR.
- All solenoid dump valves are fitted with push and twist override.



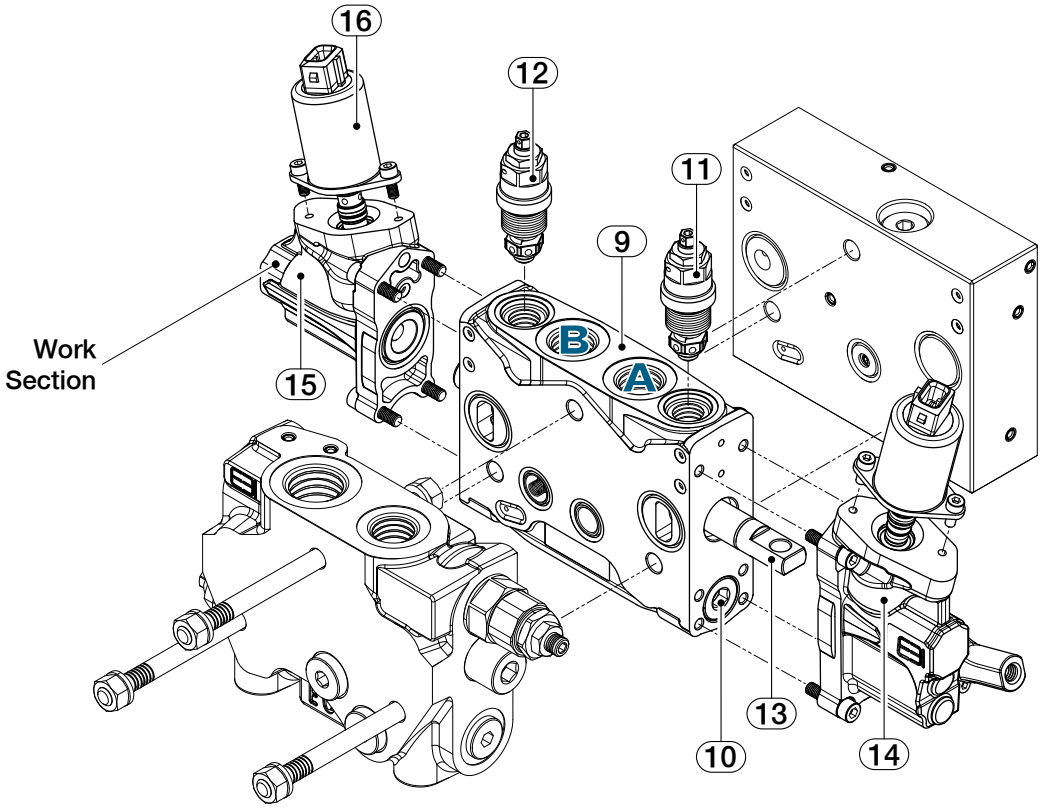
CAVITY	CODE	DESCRIPTION	SYMBOL	SETTING RANGE
A FULL FLOW relief valve	V01	Pilot operated pressure relief valve		50 - 350 bar
	V02	Relief valve plugged		
	V1612A	Full Flow dump valve 12 VDC - AMP Junior		
	V1624A	Full Flow dump valve 24 VDC - AMP Junior		
	V1612D	Full Flow dump valve 12 VDC - DT04 Deutsch		
	V1624D	Full Flow dump valve 24 VDC - DT04 Deutsch		
	V1612H	Full Flow dump valve 12 VDC - DIN 43650		
	V1624H	Full Flow dump valve 24 VDC - DIN 43650		
B LS SIGNAL dump valve	V0412A	Solenoid dump valve 12 VDC - AMP Junior		
	V0424A	Solenoid dump valve 24 VDC - AMP Junior		
	V0412D	Solenoid dump valve 12 VDC - DT04 Deutsch		
	V0424D	Solenoid dump valve 24 VDC - DT04 Deutsch		
	V0412H	Solenoid dump valve 12 VDC - DIN 43650		
	V0424H	Solenoid dump valve 24 VDC - DIN 43650		
	V09	Dump valve blanking plug		
C LS SIGNAL relief valve	V10	LS signal pressure relief valve		50 - 350 bar
	V11	LS signal valve plugged		
D BLEED VALVE	V13	Bleed valve plugged		

WORK SECTION

8	9	10	11	12	13	14	15	16
L	SK1E3S	V15	V59100	V59100	S015050E	AE01	RE01	K12D

This code indicates the complete working section set up; arrangement body, auxiliary valves, spool, actuation type and return action type.

- Should you order the working section only, you must specify the entry side: right (R) or left (L)
- Leave out the spool return action code when choosing hydraulic actuation “AH”
- Sections designed to house auxiliary valve option require double choice on work ports A and B
- Valves type V51 and V59 require factory setting (V51100 - V59100); 100 is a value expressed in bar
- Connector kit must be ordered separately with all electrohydraulic actuations; 2 coil kit each work section.

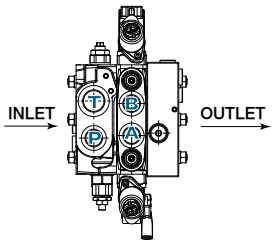


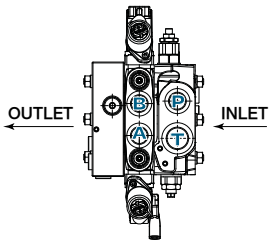
This example represents work section ECX08A with left configuration:

L . . . . . .Work section side
SKE13S . . . . . .Arrangement section body - Body with auxiliary valve, ports (SAE8)
V15 . . . . . .LS A/B blanking plug
V59100 . . . . . .Fixed setting combined valve (100 bar) - port A
V59100 . . . . . .Fixed setting combined valve (100 bar) - port B
S015050E . . . . . .Spool 3 positions double-acting (50 l/min spool flow)
AE01 . . . . . .Electrohydraulic actuation with lever control - side A
RE01 . . . . . .Electrohydraulic control return action - side B
K12D . . . . . .Connector coil kit - 12 VDC Deutsch DT04

WORK SECTION

WORK SECTION SIDE

CODE	DESCRIPTION	DRAWING
L	Inlet side LEFT	

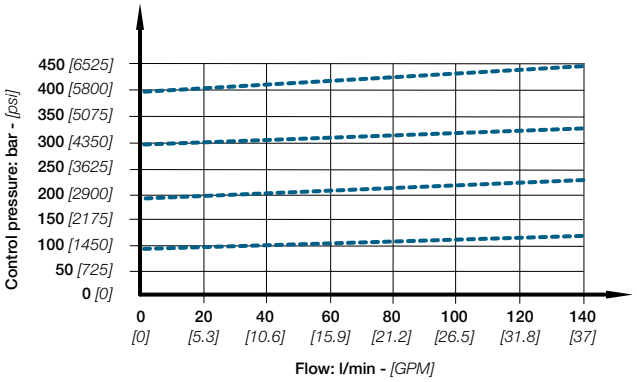
CODE	DESCRIPTION	DRAWING
R	Inlet side RIGHT	

Convention for all ECX08A valves with inlet right (R) or left inlet (L):

- **side A = spool actuation side**
- **side B = spool return action side.**

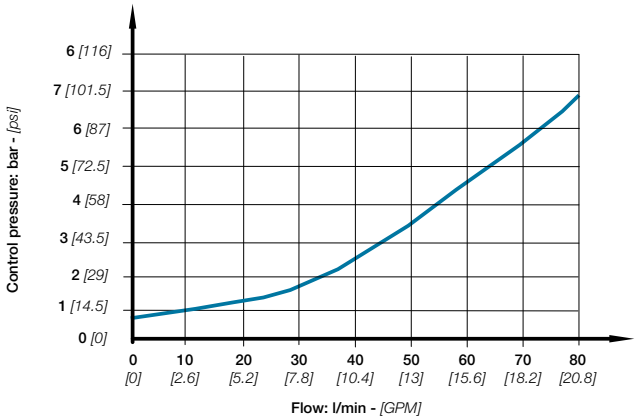
PERFORMANCE DATA
PILOT OPERATED PRESSURE RELIEF VALVE (V01)

Pressure characteristic as function of flow



PERFORMANCE DATA
FULL FLOW DUMP VALVE

Pressure Drop across open electric dump valve as function of pump flow



WORK SECTION

8	9					10			11						12						13							14				15				16			
L	S	K	1	E	3	S	V	1	5	V	5	9	1	0	0	V	5	9	1	0	0	S	0	1	5	0	5	0	E	A	E	0	1	R	E	0	1	K	1	2	D

ARRANGEMENT SECTION BODY

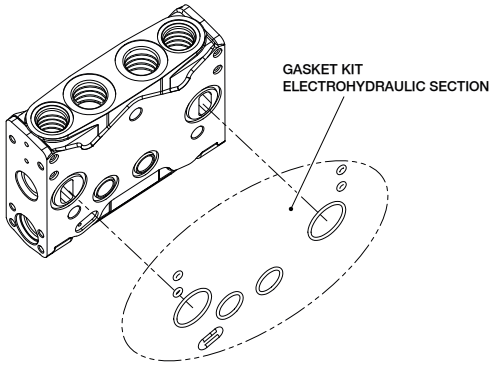
ECX08A arrangement section is available in two configurations: POST-COMPENSATED and PRE-COMPENSATED with SAE thread or BSP thread.
There are two types of arrangement section body:

- Body for electrohydraulic actuation
- Body for mechanical or hydraulic actuation

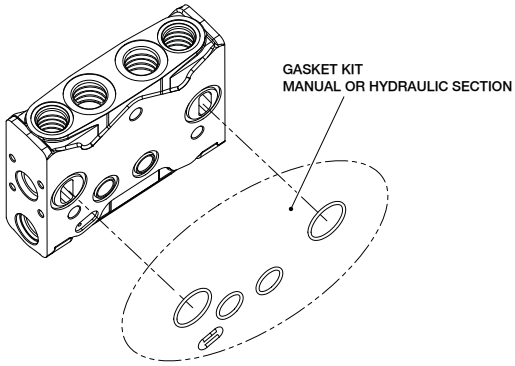
Each arrangement section contains: body, check valve and gasket kit.

The Gasket kit allows the correct coupling between the surfaces of the working sections. The gasket kit changes according to the type of the working section; the number and type of gaskets is different between a mechanically operated section and a section with an electrohydraulic control (see the following table).

GASKET KIT FOR ELECTROHYDRAULIC SECTION

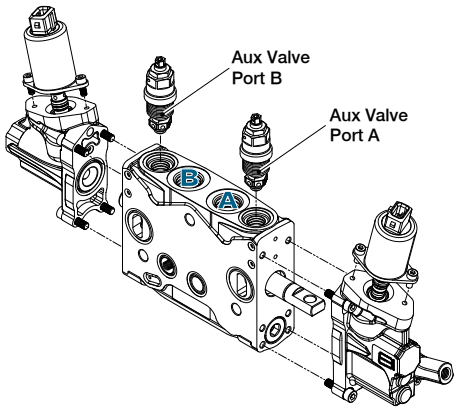


GASKET KIT FOR MANUAL OR HYDRAULIC SECTION

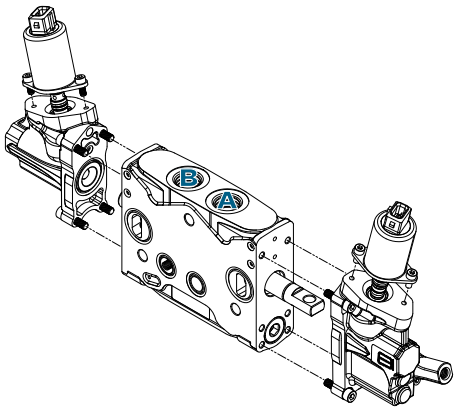


Each work section can be ordered with or without auxiliary valves; in the following table the two different sections are shown.

ARRANGEMENT SECTION BODY WITH AUXILIARY VALVES

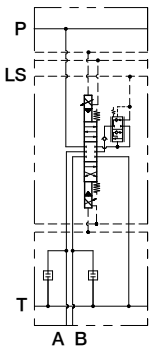
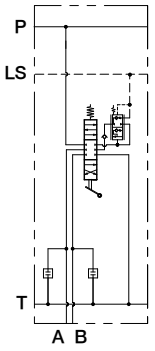


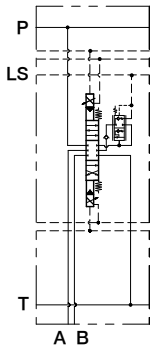
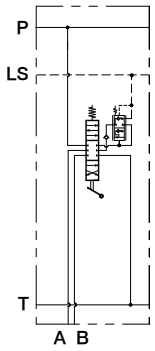
ARRANGEMENT SECTION BODY WITHOUT AUXILIARY VALVES



WORK SECTION

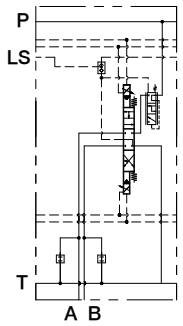
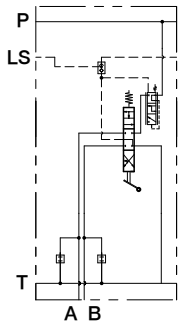
ARRANGEMENT BODY FOR SECTION POST-COMPENSATED

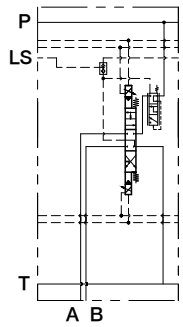
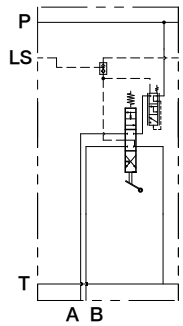
CODE	DESCRIPTION	THREAD PORTS	CONFIGURATION
SK1E2S	Section WITH auxiliary valves POST COMPENSATED SECTION *for electrohydraulic actuation*	3/4-16 UNF (SAE8)	
SK1E3S		7/8-14 UNF (SAE10)	
SK1E2B		G 3/8	
SK1E3B		G 1/2	
SK1M2S	Section WITH auxiliary valves POST COMPENSATED SECTION *for manual or hydraulic actuation*	3/4-16 UNF (SAE8)	
SK1M3S		7/8-14 UNF (SAE10)	
SK1M2B		G 3/8	
SK1M3B		G 1/2	

CODE	DESCRIPTION	THREAD PORTS	CONFIGURATION
SK2E2S	Section WITHOUT auxiliary valves POST COMPENSATED SECTION *for electrohydraulic actuation*	3/4-16 UNF (SAE8)	
SK2E3S		7/8-14 UNF (SAE10)	
SK2E2B		G 3/8	
SK2E3B		G 1/2	
SK2M2S	Section WITHOUT auxiliary valves POST COMPENSATED SECTION *for manual or hydraulic actuation*	3/4-16 UNF (SAE8)	
SK2M3S		7/8-14 UNF (SAE10)	
SK2M2B		G 3/8	
SK2M3B		G 1/2	

WORK SECTION

ARRANGEMENT BODY FOR SECTION PRE-COMPENSATED

CODE	DESCRIPTION	THREAD PORTS	CONFIGURATION
SJ1E2S	Section WITH auxiliary valves PRE COMPENSATED SECTION *for electrohydraulic actuation*	3/4-16 UNF (SAE8)	
SJ1E3S		7/8-14 UNF (SAE10)	
SJ1E2B		G 3/8	
SJ1E3B		G 1/2	
SJ1M2S	Section WITH auxiliary valves PRE COMPENSATED SECTION *for manual or hydraulic actuation*	3/4-16 UNF (SAE8)	
SJ1M3S		7/8-14 UNF (SAE10)	
SJ1M2B		G 3/8	
SJ1M3B		G 1/2	

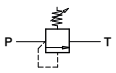
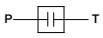
CODE	DESCRIPTION	THREAD PORTS	CONFIGURATION
SJ2E2S	Section WITHOUT auxiliary valves PRE COMPENSATED SECTION *for electrohydraulic actuation*	3/4-16 UNF (SAE8)	
SJ2E3S		7/8-14 UNF (SAE10)	
SJ2E2B		G 3/8	
SJ2E3B		G 1/2	
SJ2M2S	Section WITHOUT auxiliary valves PRE COMPENSATED SECTION *for manual or hydraulic actuation*	3/4-16 UNF (SAE8)	
SJ2M3S		7/8-14 UNF (SAE10)	
SJ2M2B		G 3/8	
SJ2M3B		G 1/2	

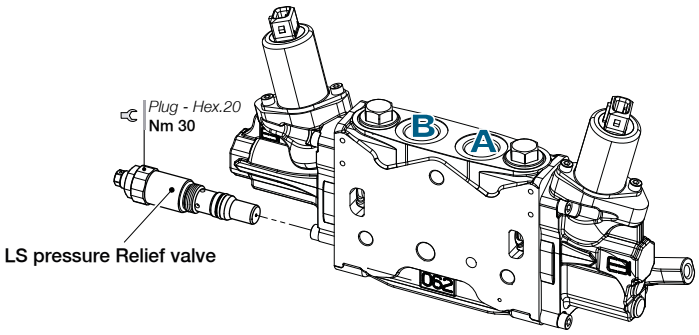
WORK SECTION

8	9	10	11	12	13	14	15	16
L	SK1E3S	V15	V59100	V59100	S01505 0E	AE01	RE01	K12D

LS PRESSURE RELIEF VALVE

ECX08A working sections can house the relief valve on the LS signal.
LS pressure relief valve require factory setting (V14100); 100 is a value expressed in bar.

CODE	DESCRIPTION	SYMBOL	SETTING
V14	LS pressure relief valve		50 - 350 bar
V15	LS valve blanking plug		



Note:

LS pressure relief valve is available with directional control valve with right inlet only.

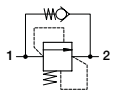
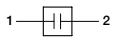
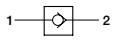
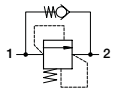
WORK SECTION

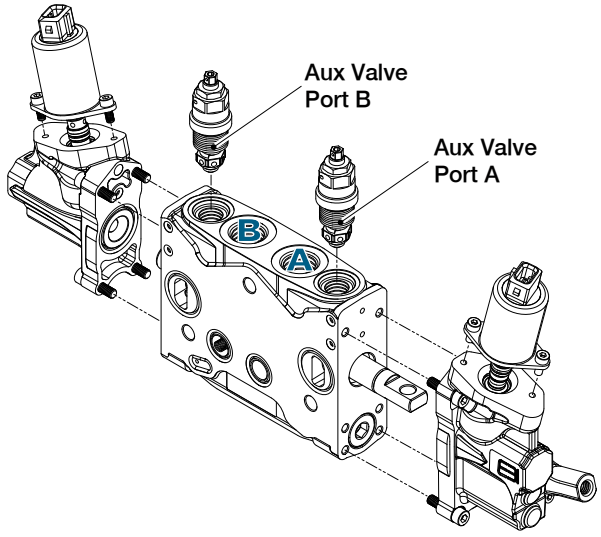
8	9	10	11	12	13	14	15	16
L	SK1E3S	V15	V59100	V59100	S01505 0E	AE01	RE01	K12D

AUXILIARY VALVES

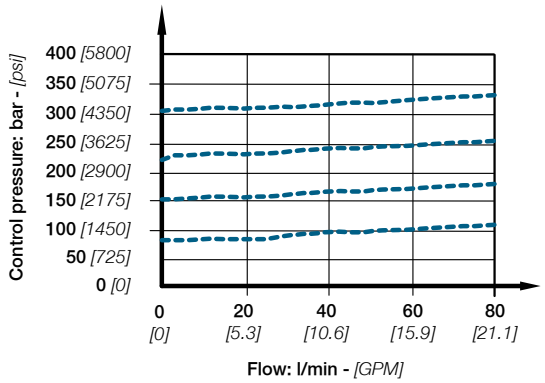
ECX08A sections with auxiliary valves require double choice on work side A and side B.
Valves type V51 and V59 require factory setting:

V51100: **100** = value expressed in bar (factory setting is available from 50 to 350 bar with 10 bar steps).
V59100: **100** = value expressed in bar (factory setting is available from 50 to 350 bar with 10 bar steps).

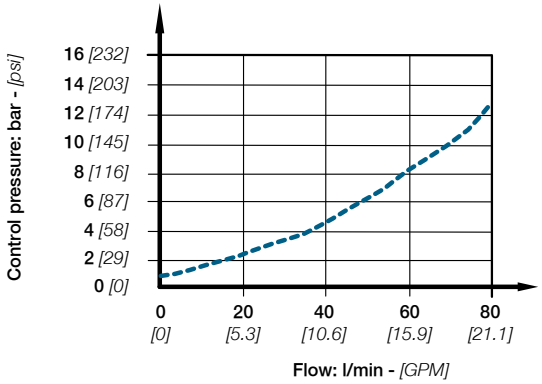
CODE	DESCRIPTION	SYMBOL	SETTING
V51	Fixed setting combined valve		50 - 350 bar
V52	Fixed setting valve plugged		
V53	Anticavitation valve		
V59	Adjustable valve *(fits into fixed valve cavity)*		50 - 350 bar



Fixed setting valve (V51-V59)
Pressure characteristic vs of flow



Fixed setting anticavitation valve (V53)
Pressure characteristic vs of flow



Fixed setting valve (V59)
AVAILABLE RANGE

Range (A) = 20 - 90 bar
Range (B) = 91 - 170 bar
Range (C) = 171 - 250 bar
Range (D) = 251 - 330 bar
Range (E) = 331 - 410 bar

WORK SECTION

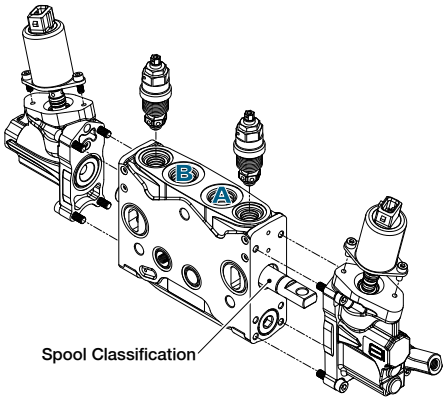
8	9	10	11	12	13	14	15	16
L	SK1E3S	V15	V59100	V59100	S015050E	AE01	RE01	K12D

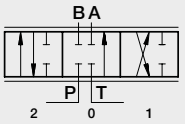
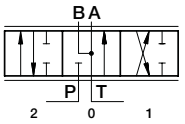
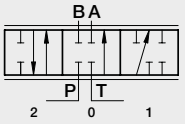
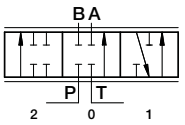
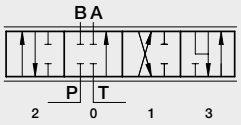
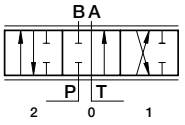
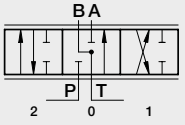
SPOOL CLASSIFICATION

ECX08A spools are available in two configurations: POST-COMPENSATED and PRE-COMPENSATED
Each ECX08A section contains a spool; each spool is compatible with all actuations.

Example of spool classification: **S015050E**

S01 ..... Spool type
5050 ..... Spool flow
E ..... Spool configuration



CODE	DESCRIPTION	SYMBOL
S01	Spool 3 positions double acting	
S02	Spool 3 positions double acting A/B to tank	
S03	Spool 3 positions single acting on A	
S04	Spool 3 positions single acting on B	
S05	Spool 4 positions double acting with float in 4th position	
S11	Spool 3 positions double acting A to tank - B blocked	
S12	Spool 3 positions double acting A blocked - B to tank	

Note:

S05 spool needs a special machining on the body and a special detent kit. The spools shown correspond to standard configuration, for different applications, please contact our Sales Office.

SPOOL FLOW CONFIGURATION

Flow rates delivered to the A and B port are identified in following table. Rated flow refer to symmetrical spools; for questions regarding asymmetrical spools or special spool please contact your commercial office.

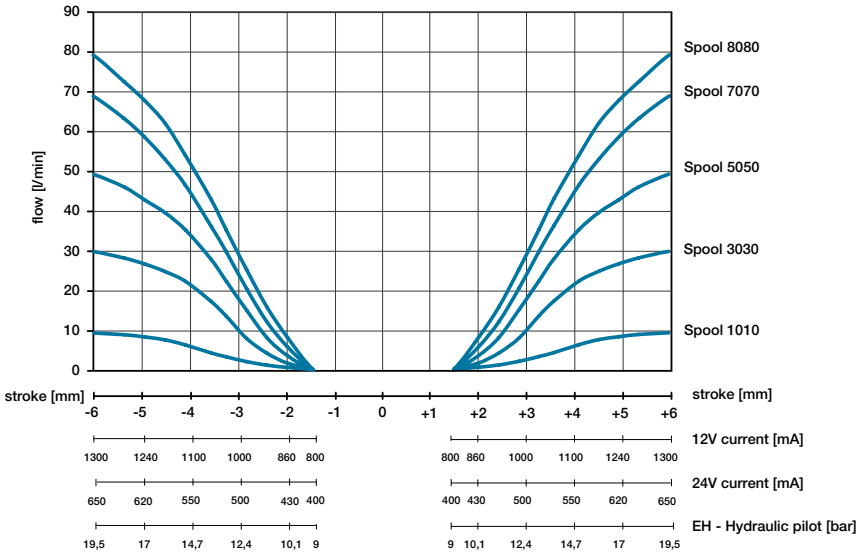
POST AND PRE COMPENSATED SECTION - FLOW RATES L/MIN)								
SPOOL TYPE	1010	2020	3030	4040	5050	6060	7070	8080
S01	•	•	•	•	•	•	•	•
S02	•	•	•	•	•	•	•	•

Spool is different between POST-compensated and PRE-compensated section.
Spool changes depending on the actuation of the work section.

SPOOL IDENTIFICATION	SPOOL TYPE CONFIGURATION
E	POST compensated *electrohydraulic section*
M	POST compensated *manual section*
EJ	PRE compensated *electrohydraulic section*
MJ	PRE compensated *manual section*

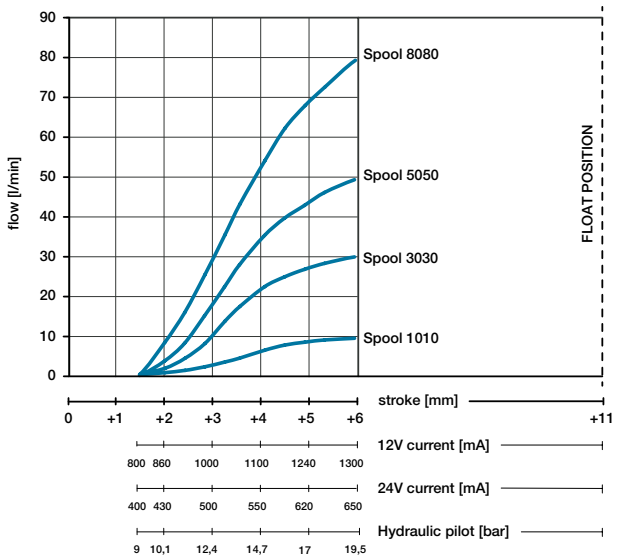
POST COMPENSATED SPOOL FLOW CHARACTERISTIC

Fixed Pump (CA) - flow on ports A and B as function of spool stroke, pilot pressure, control current



POST COMPENSATED SPOOL FLOW CHARACTERISTIC

Fixed Pump (CA) - flow on ports A and B as function of spool stroke, pilot pressure, control current



WORK SECTION

8	9	10	11	12	13	14	15	16
L	SK1E3S	V15	V59100	V59100	S01505 0E	AE01	RE01	K12D

SPOOL ACTUATION

Spool actuations are classified in three categories:

MECHANICAL ACTUATION

- Requires the choice of spool return action (side B).

HYDRAULIC ACTUATION

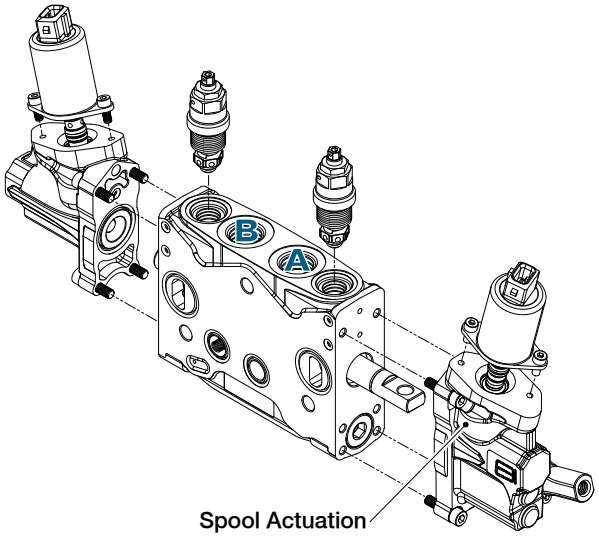
- Leave out the spool return action code when choosing hydraulic actuation AH01B, AH01S, AH02B, AH02S, AH04B and AH04S.

ELECTROHYDRAULIC ACTUATION

- Requires a dedicated body.

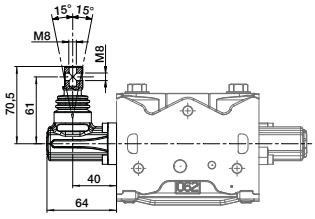
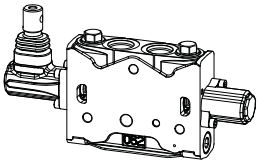
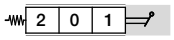
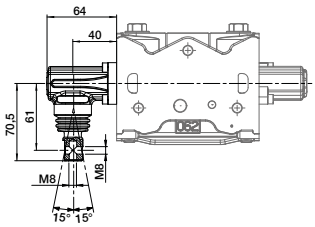
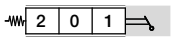
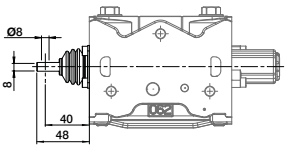
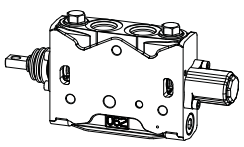
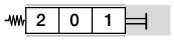
Note:

Manual and hydraulic actuation are equipped with the same body



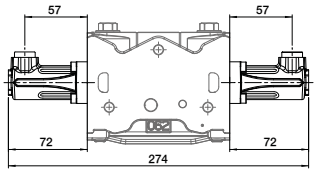
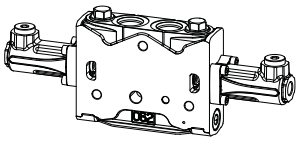
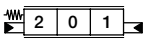
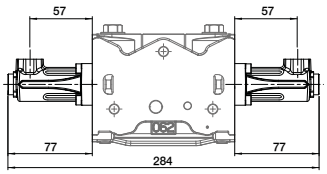
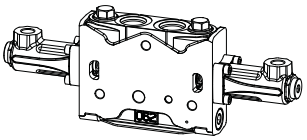
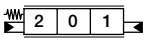
Spool Actuation

SPOOL ACTUATION - SIDE A (MECHANICAL ACTUATION)

CODE	DESCRIPTION	DIMENSIONS	CONFIGURATION	SYMBOL
AM01	Control lever			
AM02	Control lever rotated 180°			
AM05	Control tang spool end Spool end thickness **8 MM** Spool end hole **Ø8 MM**			

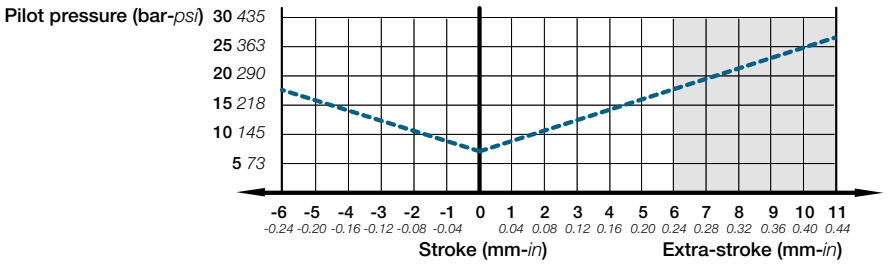
WORK SECTION

SPOOL ACTUATION - SIDE A (HYDRAULIC ACTUATION)

CODE	DESCRIPTION	DIMENSIONS	CONFIGURATION	SYMBOL
AH01B	Hydraulic actuation side ports (G 1/4)			
AH01S	Hydraulic actuation side ports (SAE6)			
AH02B	Hydraulic actuation upper ports (G 1/4)			
AH02S	Hydraulic actuation upper ports (SAE6)			

SPRING CHARACTERISTIC CURVES HYDRAULIC ACTUATION

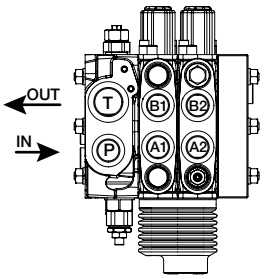
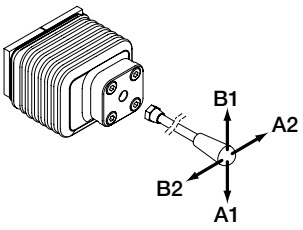
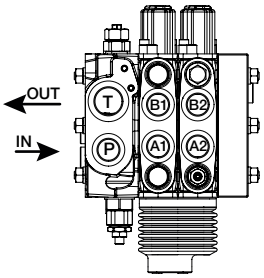
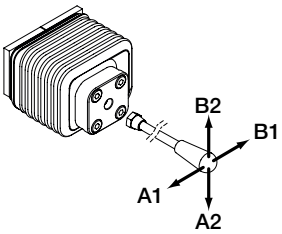
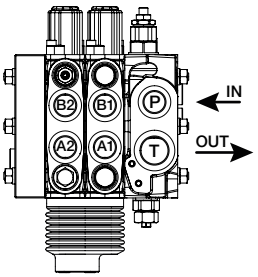
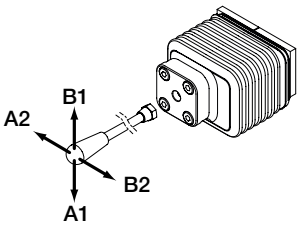
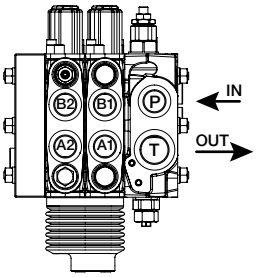
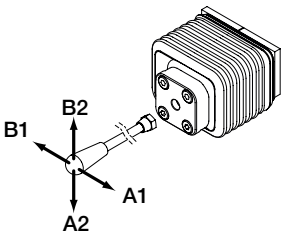
The graph shows the spool stroke as a function of the pressure operating.



WORK SECTION

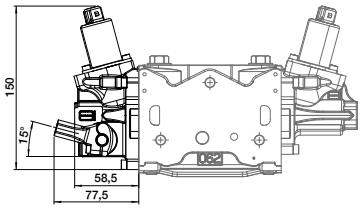
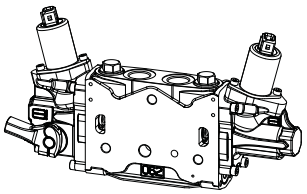
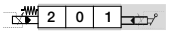
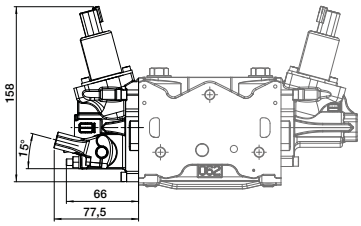
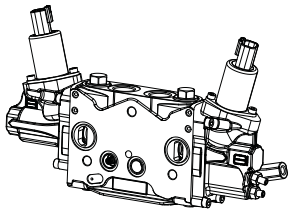
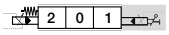
JOYSTICK CONTROL ACTUATION

The Joystick option is made to control 2 spools at the same time with one hand. The way it can manage the flow is based on the fulcrum position so the code.
In the following table you can refer lever actuation against flow on valve ports (A/B).
Actuation code for spool without fulcrum is always **AJ00**
Note: Lever for joystick control (M10) has to be ordered separately.

CODE	DESCRIPTION	FULCRUM POSITIONS	DRAWING	ACTUATIONS
AJ1L	Joystick control LEFT SIDE INLET Fulcrum on 1st section	First section Second section **AJ00**		
AJ2L	Joystick control LEFT SIDE INLET Fulcrum on 2nd section	Second section First section **AJ00**		
AJ1R	Joystick control RIGHT SIDE INLET Fulcrum on 1st section	First section Second section **AJ00**		
AJ2R	Joystick control RIGHT SIDE INLET Fulcrum on 2nd section	Second section First section **AJ00**		

WORK SECTION

SPOOL ACTUATION - SIDE A (ELECTROHYDRAULIC ACTUATION)

CODE	DESCRIPTION	DIMENSIONS	CONFIGURATION	SYMBOL
AE01	Electrohydraulic actuation with lever control			
AE02	Electrohydraulic actuation with lever control and stroke limiter			

WORK SECTION

8	9	10	11	12	13	14	15	16
L	SK1E3S	V15	V59100	V59100	S01505OE	AE01	RE01	K12D

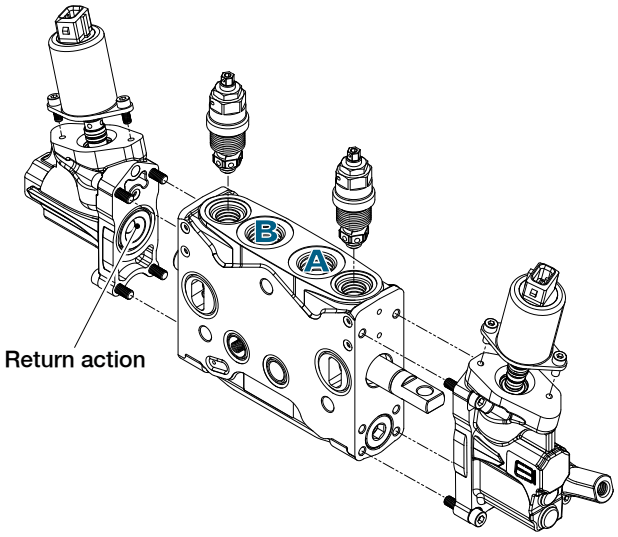
SPOOL RETURN ACTION

ECX08A spool return actions are classified in two categories:

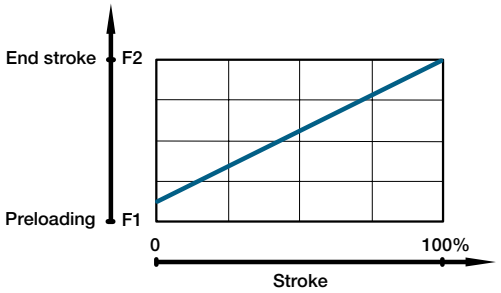
- Mechanical return action spool
- Electrohydraulic return action spool

Spool return action for mechanical actuation have three different spring types:

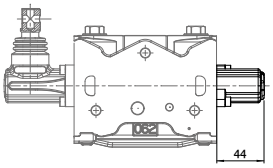
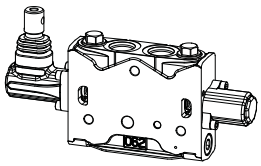
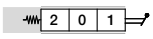
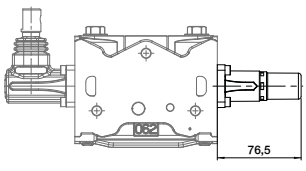
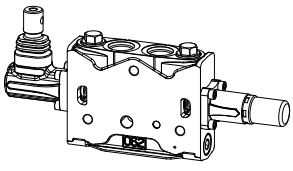
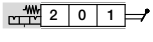
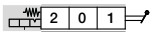
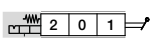
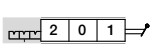
- **M** (medium spring)
- **S** (soft spring)
- **H** (heavy spring)



SPRING	F1 PRELOADING (N)	F2 END STROKE (N)
M (medium)	100	120
S (soft)	80	100
H (heavy)	130	170

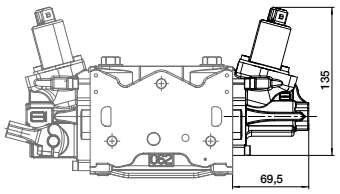
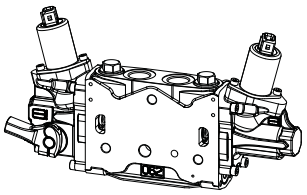
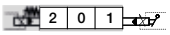


SPOOL RETURN ACTION - SIDE B (MECHANICAL ACTUATION)

CODE	DESCRIPTION	DIMENSIONS	CONFIGURATION	SYMBOL
RM01M	3 position spring centered spool (MEDIUM spring)			
RM01S	3 position spring centered spool (SOFT spring)			
RM01H	3 position spring centered spool (HEARY spring)			
RM04M	Detent in position 1/2			
RM05M	Detent in position 1			
RM06M	Detent in position 2			
RM12	Detent in position 1/0/2 (without spring)			

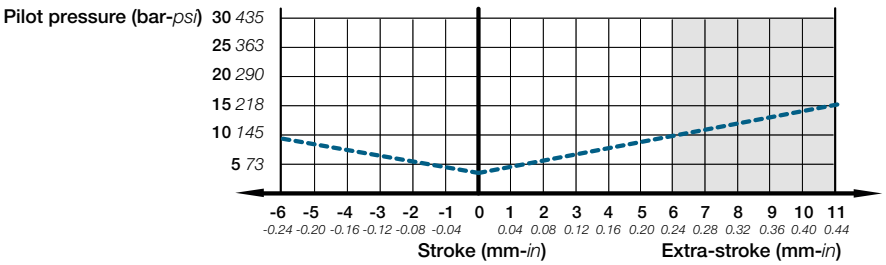
WORK SECTION

SPOOL RETURN ACTION - SIDE B (ELECTROHYDRAULIC ACTUATION)

CODE	DESCRIPTION	DIMENSIONS	CONFIGURATION	SYMBOL
RE01	Spool return kit for Electrohydraulic actuation *only for:* **AE01-AE02**			

SPRING CHARACTERISTIC CURVES EH ACTUATION

The graph shows the spool stroke as a function of the pressure operating.



WORK SECTION

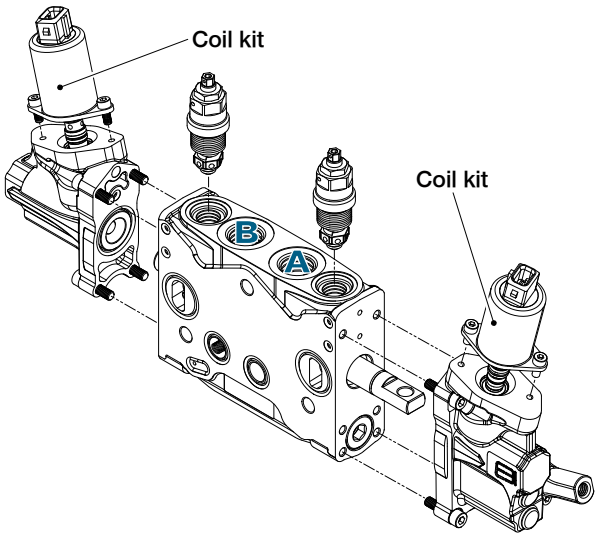
8	9	10	11	12	13	14	15	16
L	SK1E3S	V15	V59100	V59100	S01505 0E	AE01	RE01	K12D

COIL KIT

Coil kit must be ordered separately with all electrohydraulic actuations.
Each work section requires 2 coil kit.

2 coil types are available in 12 and 24 Volt versions:

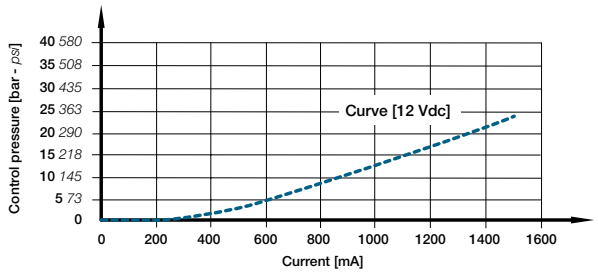
- **DEUTSCH DT04**
- **AMP JUNIOR**

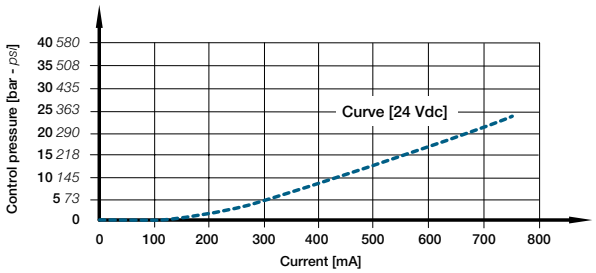


COIL AND CONNECTOR DATA

SPECIFICATIONS	K12D	K24D	K12A	K24A
Connector type	DEUTSCH DT04-2P		AMP Junior timer (AMP84-9419)	
Supply voltage	12 VDC	24 VDC	12 VDC	24 VDC
Coil resistance	4.7 Ohm ±5%	20.8 Ohm ±5%	4.7 Ohm ±5%	20.8 Ohm ±5%
Maximal current	1500±10 mA	750±10 mA	1500±10 mA	750±10 mA
PWM Frequency recommended	PWM 100 Hz			
Filter screen	125 µm			
Response time	< 50 ms			
Duty cicle	ED 100%			
Degree of protection	Deutsch IP69K		AMP IP65	
Connector color	Black		Mossy-grey	
Feeding reducing pressure	40 bar			
Max pressure on pilot tank line	5 bar			

CHARACTERISTIC CURVE CURRENT VS. PRESSURE (Less than 2% Hysteresis)





Note:

Mating connector for Deutsch DT04 is:
DT06-2S

OUTLET SECTION

17	18			
L	T	E	1	S

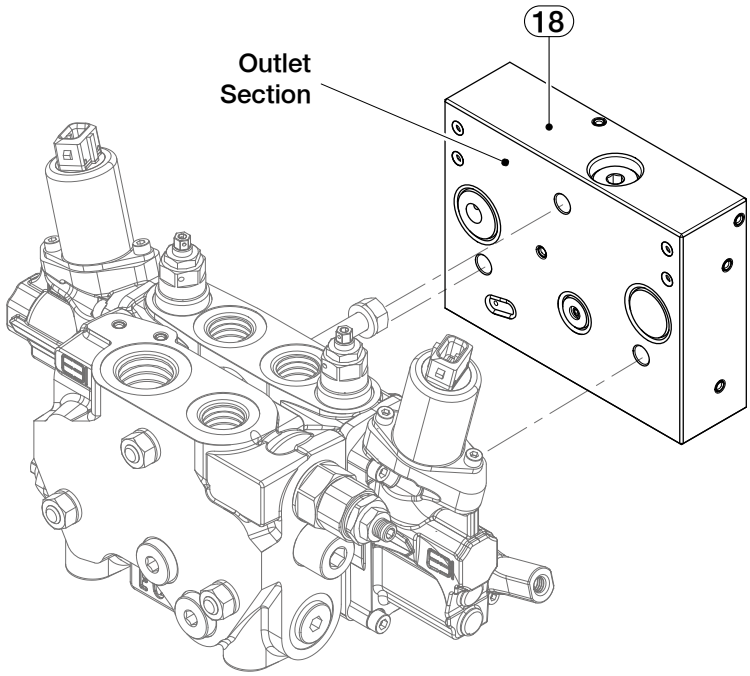
There are two main types of arrangement outlet section:

- **Outlet Electrohydraulic version**

to be used when the directional valve work sections have electrohydraulic actuation

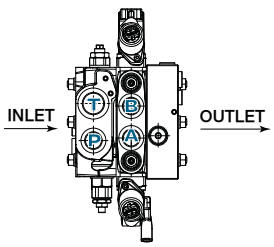
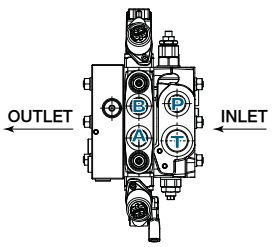
- **Outlet Manual version**

to be used when no electrohydraulic actuations are present in the directional valve



This example represents outlet section ECX08A with left configuration

L . . . . . .Outlet side LEFT
TE1S. . . . . .Outlet for electrohydraulic version - with Bleed Valve (SAE port)

CODE	DESCRIPTION	DRAWING	CODE	DESCRIPTION	DRAWING
L	Outlet side LEFT		R	Outlet side RIGHT	

Convention for all ECX08A valves with outlet right (R) or outlet left (L):

- side A = spool actuation side
- side B = spool return action side.

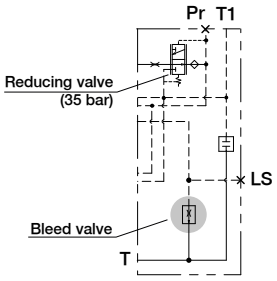
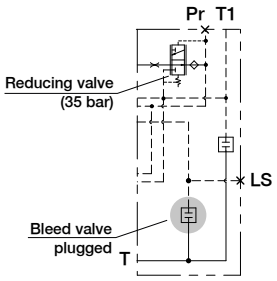
OUTLET SECTION

17	18			
L	T	E	1	S

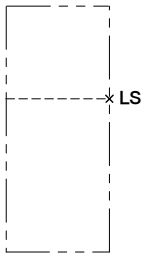
ARRANGEMENT OUTLET BODY

ECX08A arrangement outlet body is available in two configurations: SAE thread or BSP thread.
It is possible to set up the outlet section with a bleed valve

OUTLET FOR ELECTROHYDRAULIC SECTIONS

CODE	DESCRIPTION	THREAD PORTS	CONFIGURATION
TE1S	OUTLET SECTION WITH BLEED VALVE *for electrohydraulic actuation*	SAE ports	
TE1B		BSP ports	
TE2S	OUTLET SECTION WITHOUT BLEED VALVE *for electrohydraulic actuation*	SAE ports	
TE2B		BSP ports	

OUTLET FOR MANUAL OR HYDRAULIC SECTIONS

CODE	DESCRIPTION	THREAD PORTS	CONFIGURATION
TMS	OUTLET SECTION *for manual or hydraulic actuation*	SAE ports	
TMB		BSP ports	

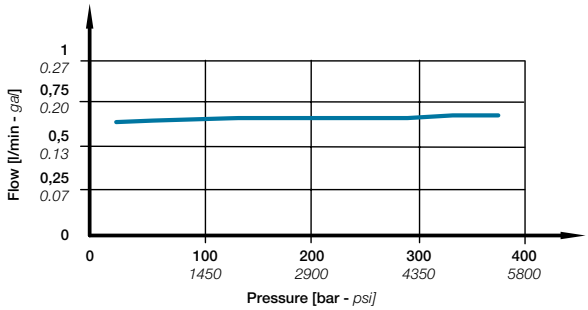
Note:
All outlet sections ECX08A for electrohydraulic configuration contain a pressure reducing valve (PRV). We recommend to connect drain port directly to tank, in order to avoid control system damages and inaccurate control.

BLEED VALVE DIAGRAM

Flow vs. Pressure

BLEED VALVE FEATURES

Max. inlet pressure: 380 bar *(5510 psi)*
Max. backpressure: 25 bar *(365 psi)*

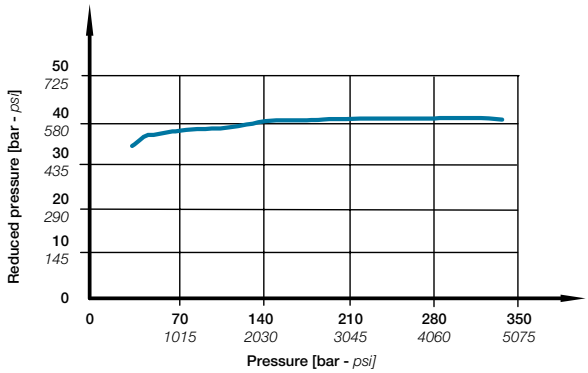


PRESSURE REDUCING VALVE DIAGRAM

Reduced pressure vs. Inlet pressure

PRESSURE REDUCING VALVE FEATURES

Max. inlet pressure: 380 bar *(5550 psi)*
Reduced pressure range: 30-45 bar *(435-650 psi)*
Max. backpressure: 25 bar *(365 psi)*



OPTIONS

PAINTING

On request all ECX08A directional control valves by EBI can be delivered painted (RAL 9005 black primer).

ORDER EXAMPLE OF ECX08A/1 PAINTED:

info	ECX08A	N1E								
inlet	L	PF1S1	V01150	V09	V10200	V13				
section	L	SK1E3S	V15	V59100	V59100	S015050E	AE01	RE01	K12D	
outlet	L	TE1S								
option	X1									

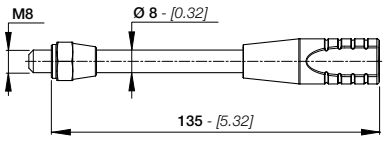
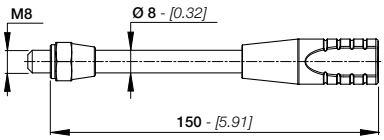
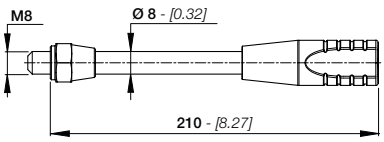
X1 .... Painted color black

CODE	DESCRIPTION
X1	ECX08A with 1 work section painted
X2	ECX08A with 2 work sections painted
X3	ECX08A with 3 work sections painted
X4	ECX08A with 4 work sections painted
X5	ECX08A with 5 work sections painted
X6	ECX08A with 6 work sections painted
X7	ECX08A with 7 work sections painted
X8	ECX08A with 8 work sections painted
X9	ECX08A with 9 work sections painted
X10	ECX08A with 10 work sections painted
X11	ECX08A with 11 work sections painted
X12	ECX08A with 12 work sections painted

ACCESSORIES

LEVER ROD

The following table lists the lever available for the ECX08A control Valve.

CODE	DESCRIPTION	LENGTH	DRAWING	ORDER CODE
W08A	Lever rod for electrohydraulic actuation	135 mm		A01170011
W08B	Lever rod for mechanical actuation	150 mm		A01170010
W08C		210 mm		A01170008

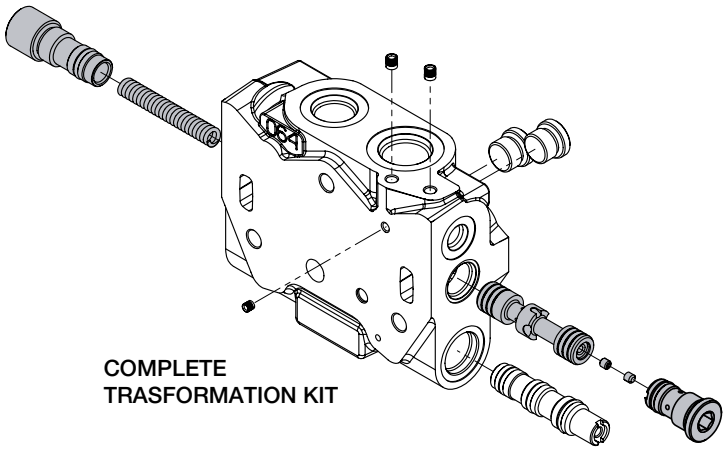
Note:

The lever rod must be ordered separately.

TRASFORMATION KITS

Transformation on the inlet section from open center to closed center and viceversa is possible by ordering the complete kit code indicated in the following table:

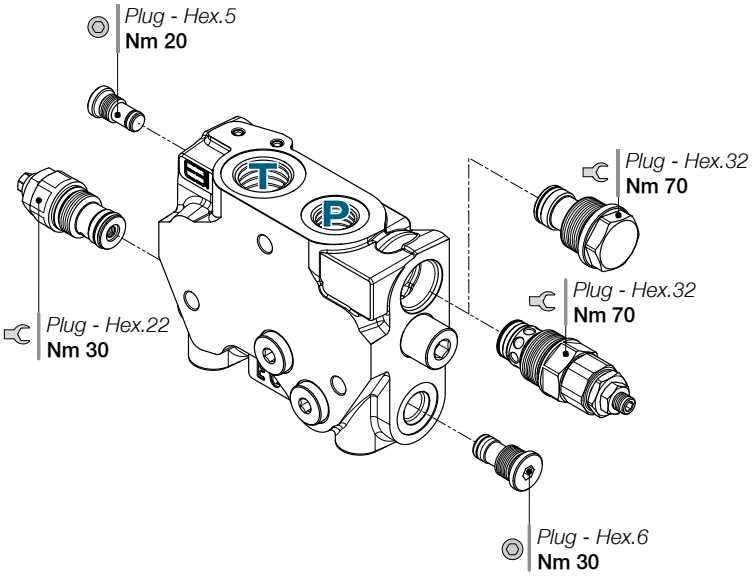
CODE	TRASFORMATION KITS	INLET TYPE
A01150119	Assembly spool compensator for Fixed Pump (CA)	**PF**
A01150143	Assembly spool compensator for Variable Pump (CC)	**PV**



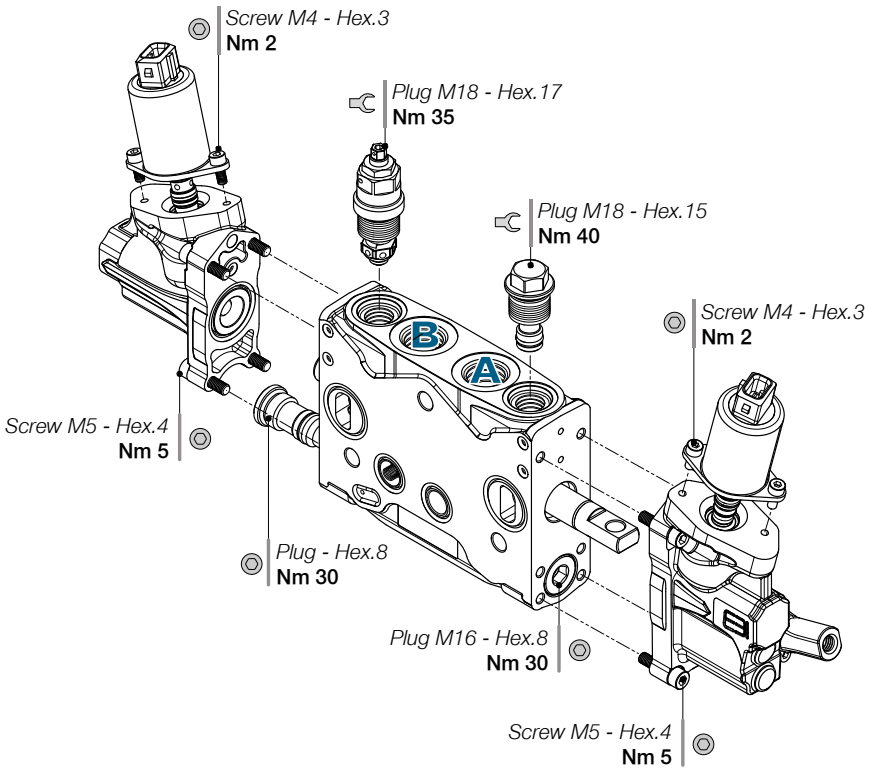
COMPLETE
TRASFORMATION KIT

GENERAL CLAMPING TORQUE

The following design provides the main tightening torques of the **INLET SECTION**

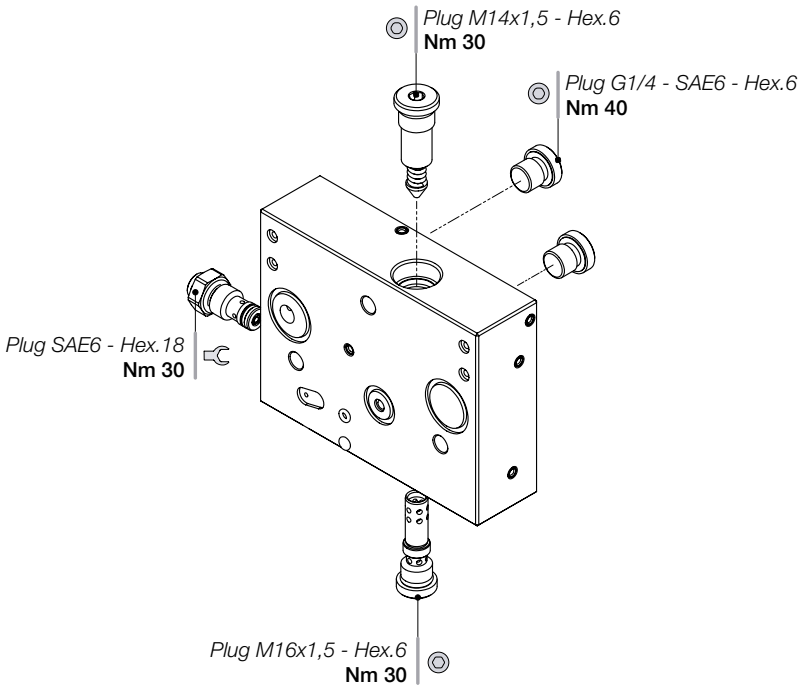


The following design provides the main tightening torques of the **WORK SECTION**



GENERAL CLAMPING TORQUE

The following design provides the main tightening torques of the **OUTLET SECTION**



engineering beyond imagination

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