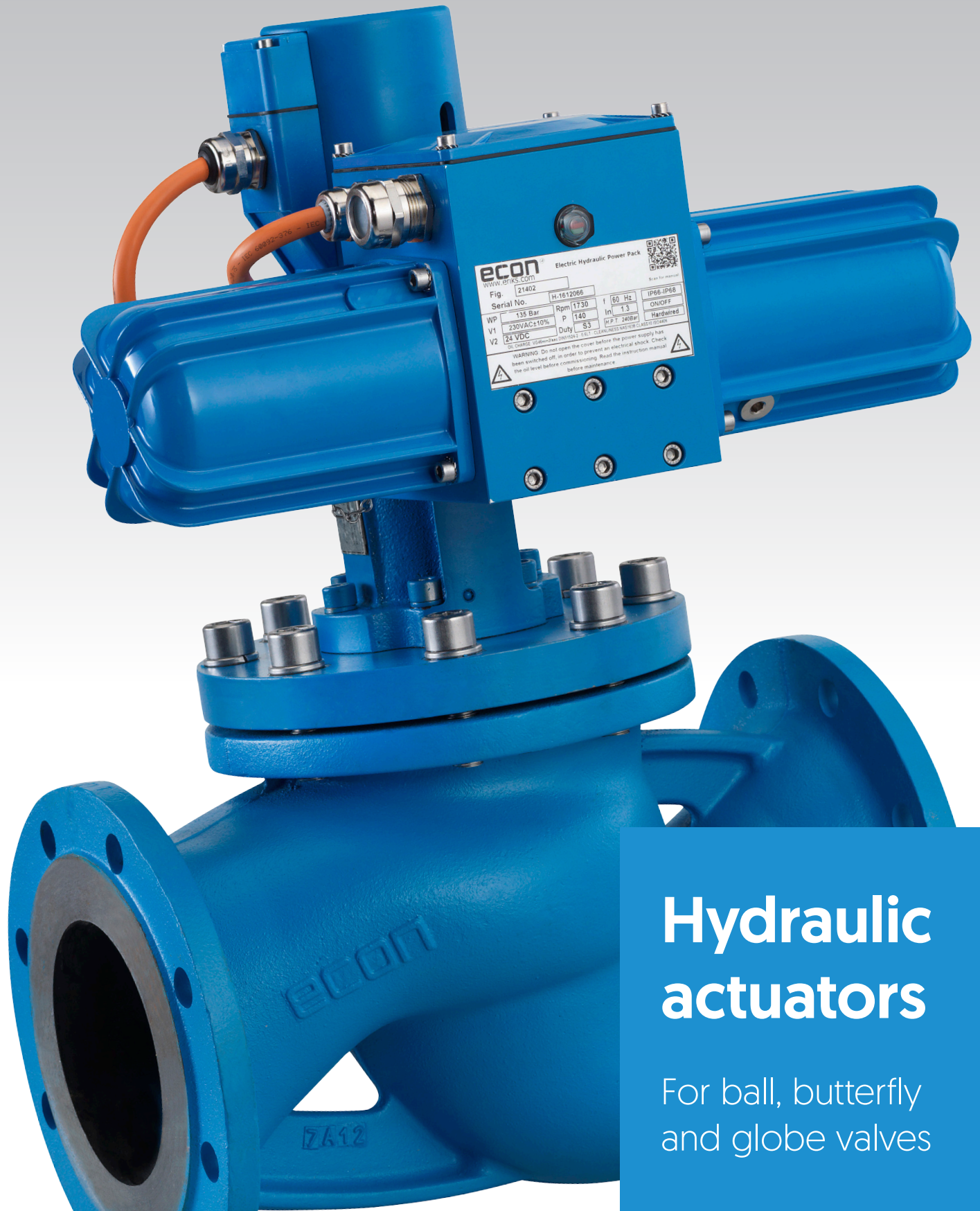




Hydraulic actuators

For ball, butterfly and globe valves



Econ® actuators have a rugged and reliable design and are therefore widely used in demanding offshore and ship building applications. These quarter-turn & linear actuators are made to operate ball valves, butterfly valves, globe valves and valve chests in the below mentioned markets:

- Shipbuilding / Maritime
- Offshore
- Oil & Gas
- Water & Waste water treatment
- Basic industry
- Mining industry

Rack & Pinion design Quarter Turn Actuators

Fig. 21501 | ESR

Modular single acting actuator easy to combine with hydraulic accessories, maximum torque of 2.315 Nm [135 bar]



Specification

Hydraulic control pressure | 100 – 160 bar [135 design pressure]
 Hydraulic test pressure | 240 bar
 Models | ESR-1 up to ESR-6
 Valve connection | According to ISO 5211
 Ambient temperature | -20° up to +80°C
 Operation type | Spring closed & Spring open
 Spring type | Gas spring (Nitrogen gas)

Fig. 21502 | EDR

Modular double acting actuator easy to combine with hydraulic accessories, maximum torque of 4.725 Nm [135 bar]



Specification

Hydraulic control pressure | 100 – 160 bar [135 design pressure]
 Hydraulic test pressure | 240 bar
 Models | EDR-1 up to EDR-6
 Valve connection | According to ISO 5211
 Ambient temperature | -20° up to +80°C



Technical Information

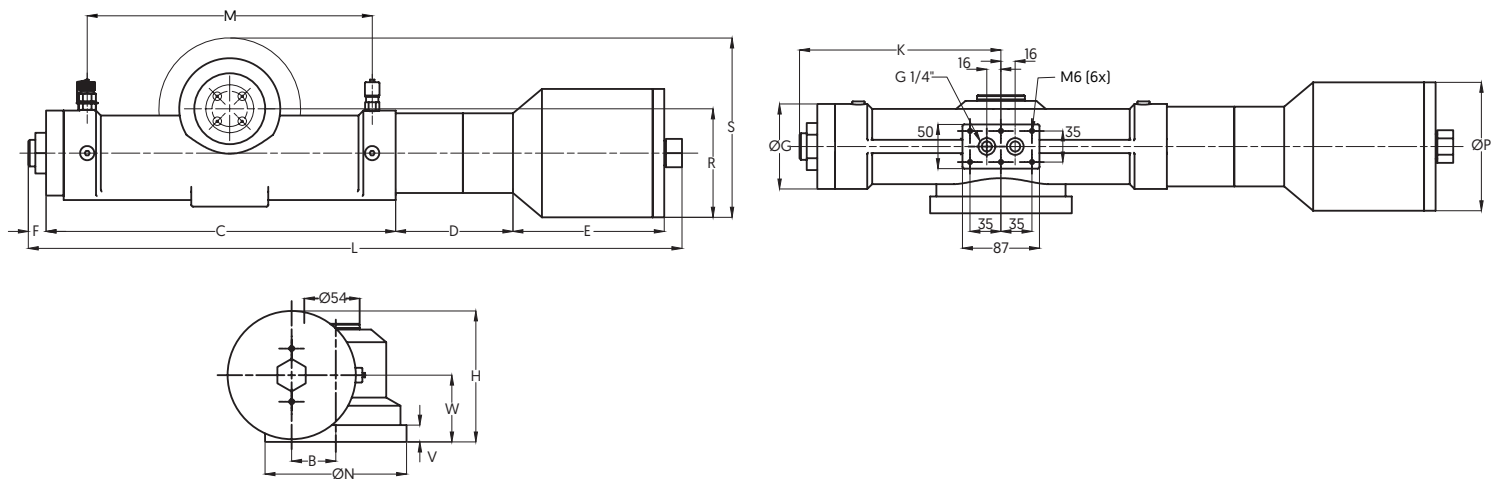
Actuator type	Torque output in Nm		Displacement volume	Weight in kg	
	ESR*	EDR	liter	ESR	EDR
ESR-1 / EDR-1	86	180	0.027	10	7
ESR-2 / EDR-2	193	398	0.060	17	12
ESR-3 / EDR-3	428	872	0.131	27	19
ESR-4 / EDR-4	718	1.444	0.189	46	28
ESR-5 / EDR-5	1.120	2.254	0.338	59	39
ESR-6 / EDR-6	2.315	4.725	0.707	116	80

* Minimal [spring] torque



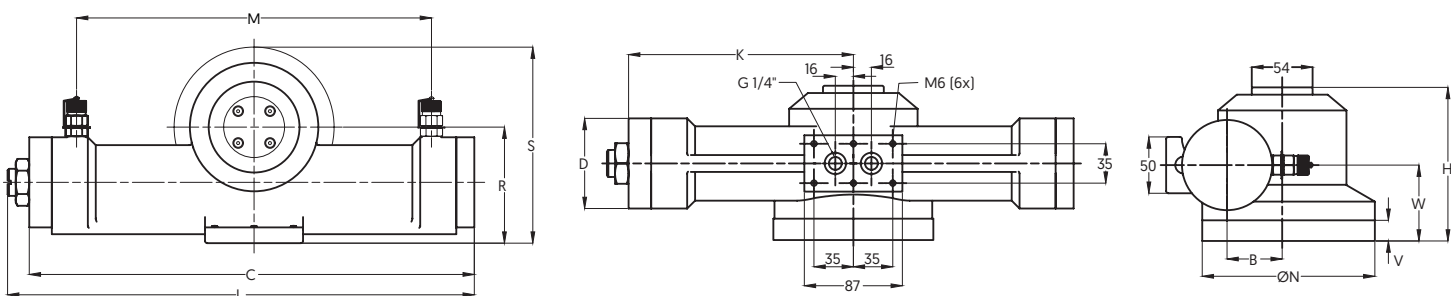
Dimensions Fig.21501 ESR actuator

Actuator	B	C	D	E	F	ØG	H1	H2	K	L	M	ØP	R	S	V	W
Type	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
ESR 1	30	247,5	105,5	21	16	57	82	90,5	130,5	390	200	54,5	72	116	10	53,5
ESR 2	35	295	145,5	21	12	68	97,5	105,5	155	474	240	64,5	82,5	145	13	63,5
ESR 3	49	379	195	21	19	80	108	137	199,5	614	315	74,5	103	174	19	68
ESR 4	50	395	76	227,5	20	96	148	133,5	207,5	738,5	322	145	122,5	202,5	19	75,5
ESR 5	57	463,5	73	255,5	25	113	172	158	243,5	837	380	165	139,5	239,5	18,2	89,5
ESR 6	82	602	247	211	18	130	225,2	208	316	1103	500	198	181	297	35,2	126,2



Dimensions Fig.21502 EDR actuator

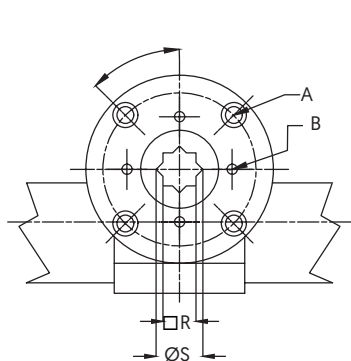
Actuator	B	C	D	H	K	L	M	ØN	R	S	V	W
Type	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
EDR 1	30	259	57	90	130	275	200	88	72	116	10	53
EDR 2	35	308	68	105	155	328	240	125	82	145	13	63
EDR 3	49	395	80	137	199	414	315	142	103	174	19	68
EDR 4	50	412	96	133	207	432	322	160	110	190	19	75
EDR 5	57	484	113	157	243	505	380	200	135	235	18	89
EDR 6	82	627	130	207	316	645	500	232	168	284	35	126



ISO 5211 details ESR/EDR actuator

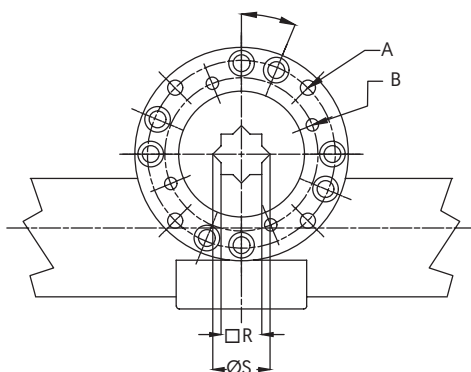
Actuator type	Actuator ISO 5211 details in mm					
	#R*	INSERTS	A	M-A	B	M-B
ESR-1 / EDR-1	17	#11 #14	F10	M10	F07	M8
ESR-2 / EDR-2	22	#14 #17	F10	M10	F07	M8
ESR-3 / EDR-3	27	#17 #22	F12	M12	F10	M10
ESR-4 / EDR-4	36	#22 #27	F14	M16	F12	M12
ESR-5 / EDR-5	46	#27 #36	F16	M20	F14	M16
ESR-6 / EDR-6	55	#27 #36 #46	F16	M20	F14	M16

* double square size without insert



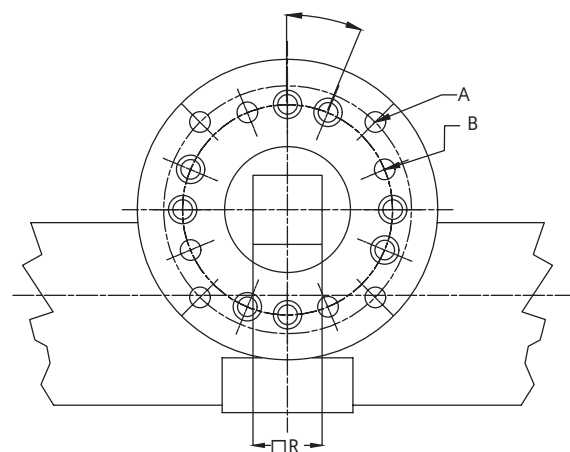
ESR 1 & 2, EDR 1 & 2

Remove bolts and rotate flange 45° CCW in order convert ISO-flange from A to B



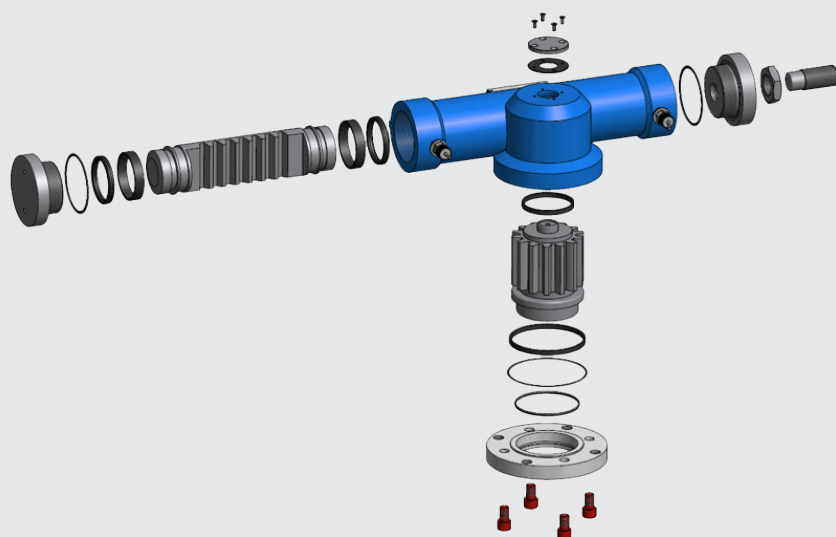
ESR 3 & 4, EDR 3 & 4

Remove bolts and rotate flange 22,5° CCW in order convert ISO-flange from A to B



ESR 5 & 6, EDR 5 & 6

Remove bolts and rotate flange 22,5° in order convert ISO-flange from A to B



ESR/EDR Material specifications

Body:	Cast Iron
Rack:	Stainless Steel
Pinion:	Carbon Steel
End caps:	Carbon Steel
Bottom flange:	Cast Iron
Adjustment screw:	Stainless Steel
Adjustment nut:	Brass
Indicator lens:	Polycarbonate
Internal seals:	NBR
Quick connectors:	Steel, Nickel-plated

Coating

2 component Epoxy coating system, high corrosion resistance. Thickness: 200 µm, Colour: RAL 5015



Helical design Quarter turn Actuators

Fig. 21201 | ESH

Robust & compact single acting actuator with a maximum torque of 1.090 Nm (135 bar)



Specification

Hydraulic control pressure | 100 – 160 bar (135 design pressure)

Hydraulic test pressure | 240 bar

Models | ESH-1 up to ESH-4 (larger sizes upon request)

Valve connection | According to ISO 5211

Ambient temperature | -20° up to +80°C

Operation type | Spring closed

Spring type | Disc springs

Fig. 21204 | EDH

Robust & compact double acting actuator with a maximum torque of 16.200 Nm (135 bar)



Specification

Hydraulic control pressure | 100 – 160 bar (135 design pressure)

Hydraulic test pressure | 240 bar

Models | EDH-1 up to EDH-8

Valve connection | According to ISO 5211

Ambient temperature | -20° up to +80°C

Submersible version available

Technical Information

Actuator type	Torque output in Nm		Displacement volume in liter		Weight in kg	
	ESH*	EDH	ESH	EDH	ESH	EDH
ESH-1 / EDH-1	125	125	0.150	0.032	22	10
ESH-2 / EDH-2	280	280	0.260	0.069	42	13
ESH-3 / EDH-3	525	525	0.470	0.127	73	21
ESH-4 / EDH-4	1.090	1.090	0.900	0.263	134	32
ESH-5 / EDH-5	1.980	1.980	-	0.470	-	55
ESH-6 / EDH-6	4.050	4.050	-	1.042	-	115
ESH-7 / EDH-7	8.100	8.100	-	2.032	-	156
ESH-8 / EDH-8	16.200	16.200	-	3.824	-	300

* Minimal (spring) torque

ESH-5 up to ESH-8 actuators available upon request

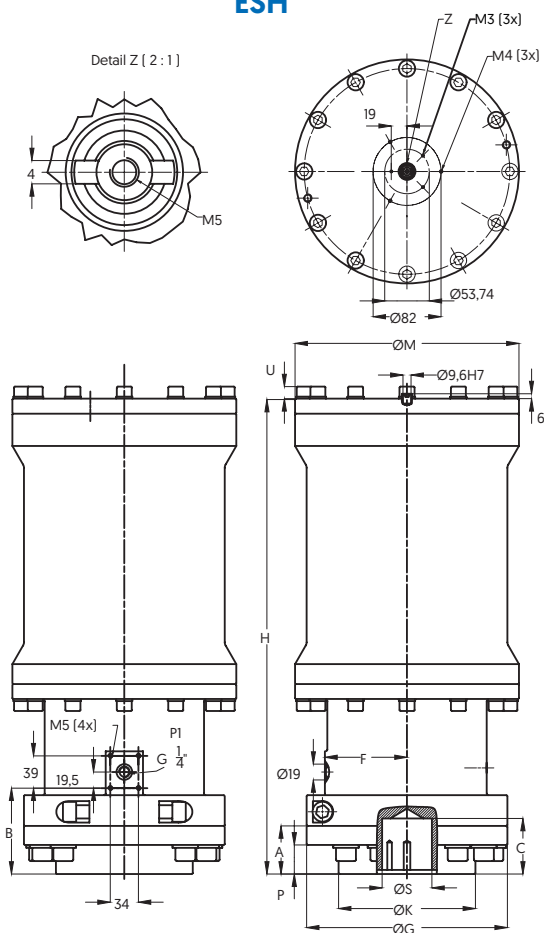
Dimensions Fig. 21201 ESH actuator

Actuator	A	B	C	F	ØG	H	ØK	ØM	P	ØS	U
Type	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
ESH 1	53	81,5	30	58	145	327	84	140	37	30	8
ESH 2	58	89,5	40	71	167	435	120	172	40	40	11
ESH 3	58	93,5	45	82	198	492	146	217	39	50	13
ESH 4	58	103,5	67	99	242	573	165	270	35	60	15

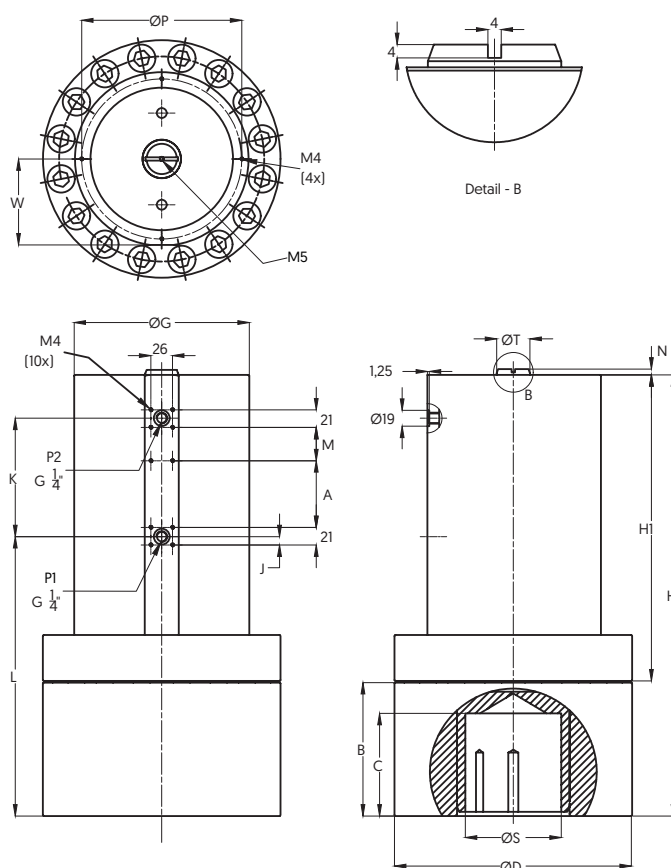
Dimensions Fig. 21204 EDH actuator

Actuator	A	B	C	ØD	ØG	H1	H	J	K	L	M	N	ØP	ØS	ØT	W
Type	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
EDH 1	22	49	30	115	80	137	188	10	44	110	20	6	57	30	16	37
EDH 2	28	57	40	130	90	149	208	10	54	124	15	6	82	40	18	42,5
EDH 3	42	65	45	145	105	198	265	10	75	155	35	6	82	50	25	50
EDH 4	40	92	67	165	122	216	310	10	82	191	40	6	108	60	32	59
EDH 5	77	95	67	210	147	255	352	10	99	213	19	6	128	80	32	71
EDH 6	93	151	113	285	187	292	445	10	115	282	19	6	170	95	40	92
EDH 7	80	160	123	285	210	367	529	10	142	335	40	6	192	115	40	103
EDH 8	83	215	163	365	250	427	644	10	165	420	60	6	232	153	40	124

ESH



EDH

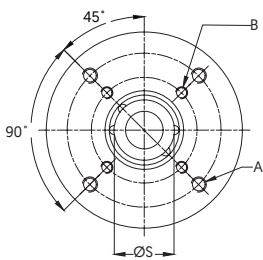




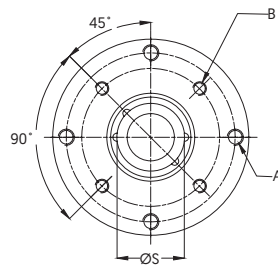
ISO 5211 details ESH/EDH actuator

Actuator	Actuator ISO 5211 details in mm				
	ØS	A	M-A	B	M-B
ESH-1 / EDH-1	30	F07	M8	F05	M6
ESH-2 / EDH-2	40	F10	M10	F07	M8
ESH-3 / EDH-3	50	F12	M12	F10	M10
ESH-4 / EDH-4	60	F14	M16	F12	M12
EDH-5	80	F16	M20	F14	M16
EDH-6	95	F25	M16	F16	M20
EDH-7	115	F25	M16	F16	M20
EDH-8	153	F30	M20	F25	M16

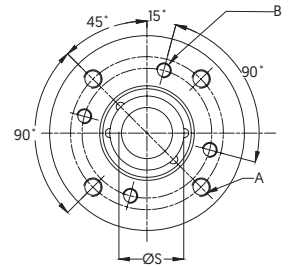
ESH 1 & 2, EDH 1 & 2



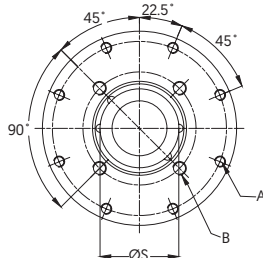
ESH 3 & 4, EDH 3 & 4



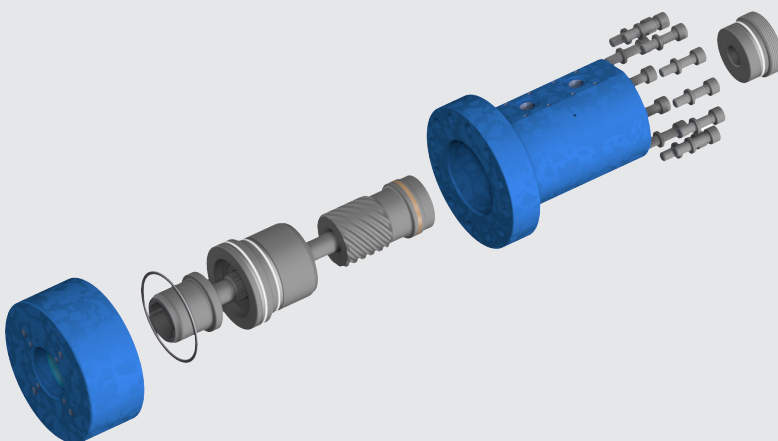
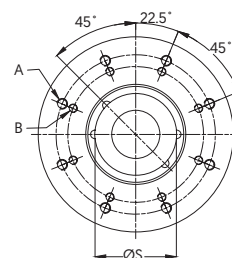
EDH 5



EDH 6 & 7



EDH 8



ESH/EDH Material specifications

Body:	Carbon Steel
Base ring:	Carbon Steel
Drive shaft:	Carbon Steel
Piston:	Ductile Iron
Annular gear:	Ductile Iron
Top flange:	Steel
Bolts:	Galvanised Steel
Washers:	Galvanised Steel
Internal seals:	NBR

Coating

2 component Epoxy coating system, high corrosion resistance. Thickness: 200 µm, Colour: RAL 5015

Linear design Actuators

Fig. 21401 | ESL

Modular single acting actuator, maximum force of 9.100 N (135 bar)



Specification

Hydraulic control pressure | 100 – 160 bar (135 design pressure)

Hydraulic test pressure | 240 bar

Models | ESL-1 – ESL-2 (larger sizes upon request)

Valve connection | Econ Standard

Ambient temperature | -20° up to +80°C

Operation type | Spring closed

Spring type | Mechanical disc springs

Fig. 21402 | EDL

Modular double acting actuator, maximum force of 17.550 N (135 bar)



Specification

Hydraulic control pressure | 100 – 160 bar (135 design pressure)

Hydraulic test pressure | 240 bar

Models | EDL-1 – EDL-2 (larger sizes up on request)

Valve connection | Econ Standard

Ambient temperature | -20° up to +80°C



Technical Information

Actuator type	Operating force in Newton		Displacement volume in liter		Maximum Stroke in mm		Weight in kg	
	ESL*	EDL	ESL	EDL	ESL	EDL	ESL	EDL
ESL-1 / EDL-1	3.150	6.075	0.020	0.023	35	40	10	7
ESL-2 / EDL-2	9.100	17.550	0.088	0.138	53	80	40	15

* Minimal (spring) force

larger sizes ESL & EDL actuators up to 100.000 Newton and DN400 upon request



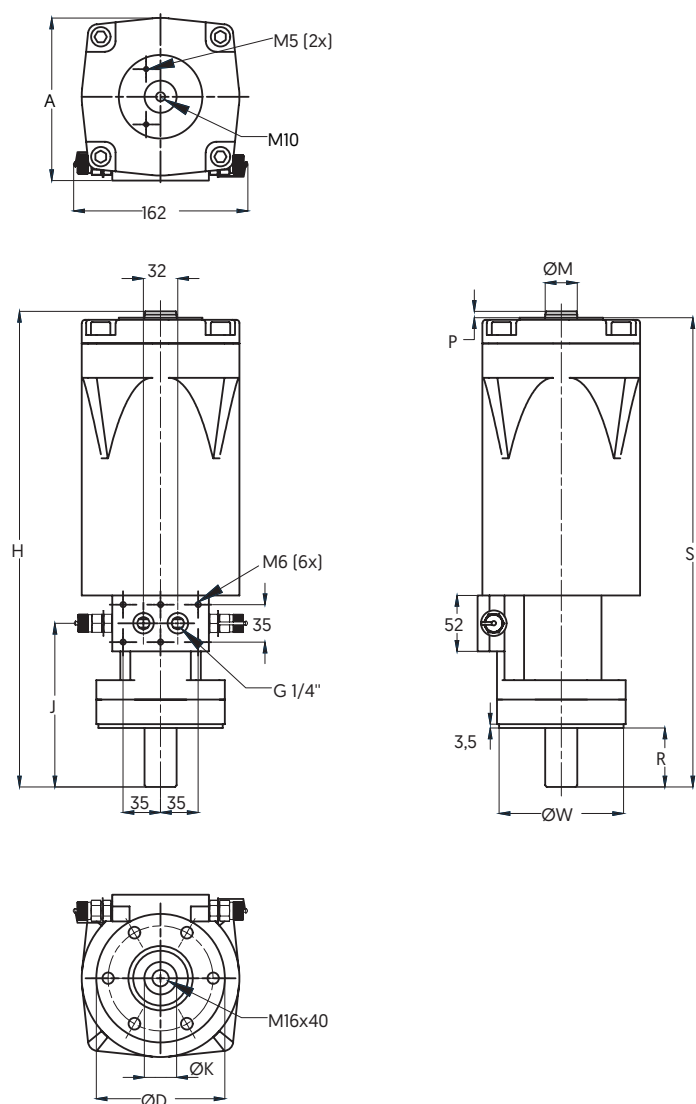
Dimensions Fig. 21401 ESL actuator

Actuator	A	ØD	H	J	ØK	ØM	P	R	S	ØW
Type	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
ESL 1	109	80	300	114,5	22	22	4	37	292,5	76
ESL 2	151,5	120	443,5	152,5	30	30	6	55	437,5	116

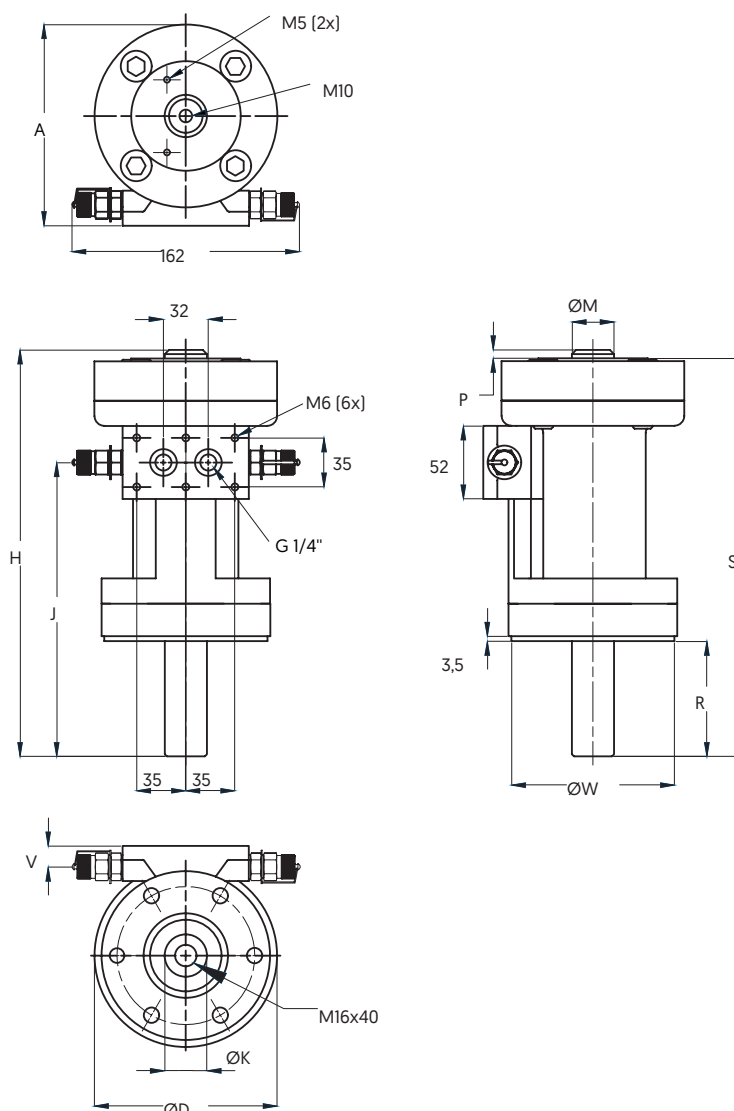
Dimensions Fig. 21402 EDL actuator

Actuator	A	ØD	H	J	ØK	ØM	P	R	S	V	ØW
Type	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
EDL 1	105	90	192,5	125	22	22	4,5	42	188	17	76
EDL 2	143	130	289	209	30	30	6	82	283	15	116

ESL

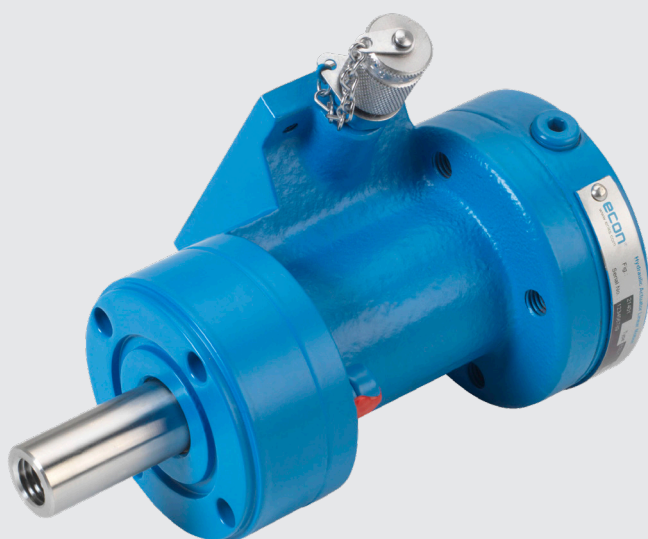


EDL



Mounting details ESL/EDL actuator

The Econ® ESL & EDL actuators have their own standardized bottom flange and spindle. Since there is no ISO standard for actuator mounting on globe valves, ERIKS has designed a series of mounting sets that fit all Econ® globe valves in (ductile) cast iron and bronze from DN40 up to DN150. The Mounting set contains a flange and valve stem which will replace the regular Bonnet and Spindle of the globe valve.



ESL/EDL Material specifications

Body:	Cast Iron
Top flange:	Cast Iron
Spindle:	Stainless Steel
Bottom flange:	Cast Iron
Internal seals:	NBR
Quick connectors:	Steel, Nickel-plated

Mounting set Material specifications

Mounting Flange:	Steel or Bronze
Valve Spindle:	Bronze
O-Ring seal:	NBR

Coating

2 component Epoxy coating system, high corrosion resistance. Thickness: 200 µm, Colour: RAL 5015

Accessories for hydraulic actuators:

- Electric hydraulic power pack | [Fig. 21301 & 21302](#)
- Switchbox with double set of open/closed Reed contacts | [Fig. 21440, 21540 & 21542](#)
- Switchbox with Reed contacts & Potentiometer unit (0~1kΩ) | Quarter turn actuators | [Fig. 21541 & 21543](#)
- Hydraulic Positive Position Indication (HPPI) | EDH Actuators
- Volumetric position indicator (VPI)
- Adapter block with bypass valve | EDH Actuators
- Control block with; hand pump connectors, throttle/stop valves
- Control block with; hand pump connectors, pilot control valves, throttle/stop valves and pressure relief
- Control block with; hand pump connectors, throttle/stop valves and NG6 connection for local control valve
- Direct mounted hydraulic handpump



Electric Hydraulic Power pack

For applications in which no (suitable) Hydraulic Power supply is available or in which installation of hydraulic piping is difficult or expensive, Econ® Electric Hydraulic Actuators can be the right solution. With the Econ® EHP power pack all Econ® Hydraulic actuators can be controlled as a direct mounted unit or controlled through hydraulic piping. The powerpack is available for hardwired “Star network” with maximum redundancy or for a “CAN-Open fieldbus network” for maximal flexibility.

Fig. 21301 | EPH-SA

Single acting (fail safe) Electric Hydraulic Power pack

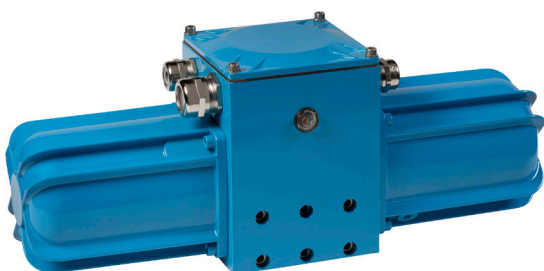


Specification

Power supply | 1 Phase 50/60Hz: 230VAC, ±10%
IP Class | IP68; 50 meters for 48 hours
Output/working pressure | 135 bar
Pump capacity | 4-pole electric motor 0,35/0,40 l/min – 50/60 Hz
2-pole electric motor 0,70/0,80 l/min – 50/60 Hz
Oil tank capacity | 0,6 liter
Ambient temperature | -15°C [5°F] up to +60°C [140°F]
Duty cycle | S3 – 15% according to IEC 60034-1
Weight | 10 Kg

Fig. 21302 | EPH-DA

Double acting Electric Hydraulic Power pack

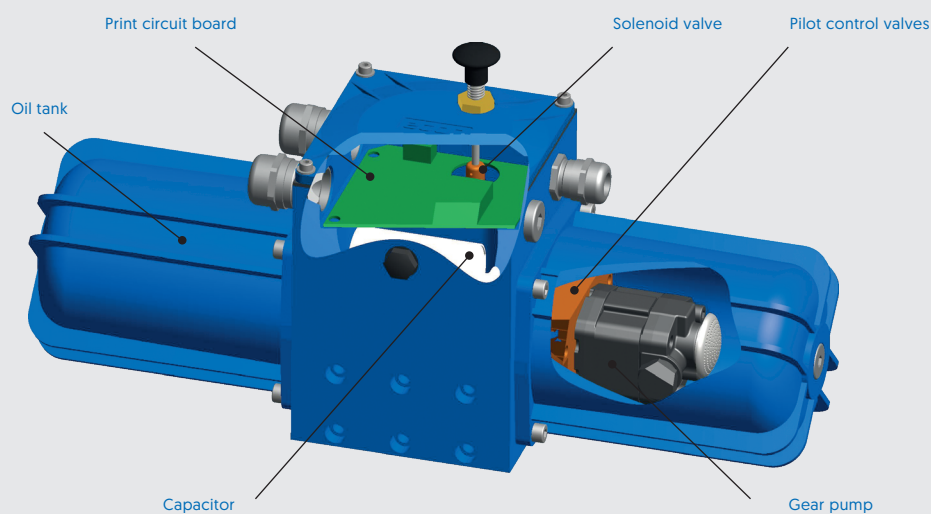
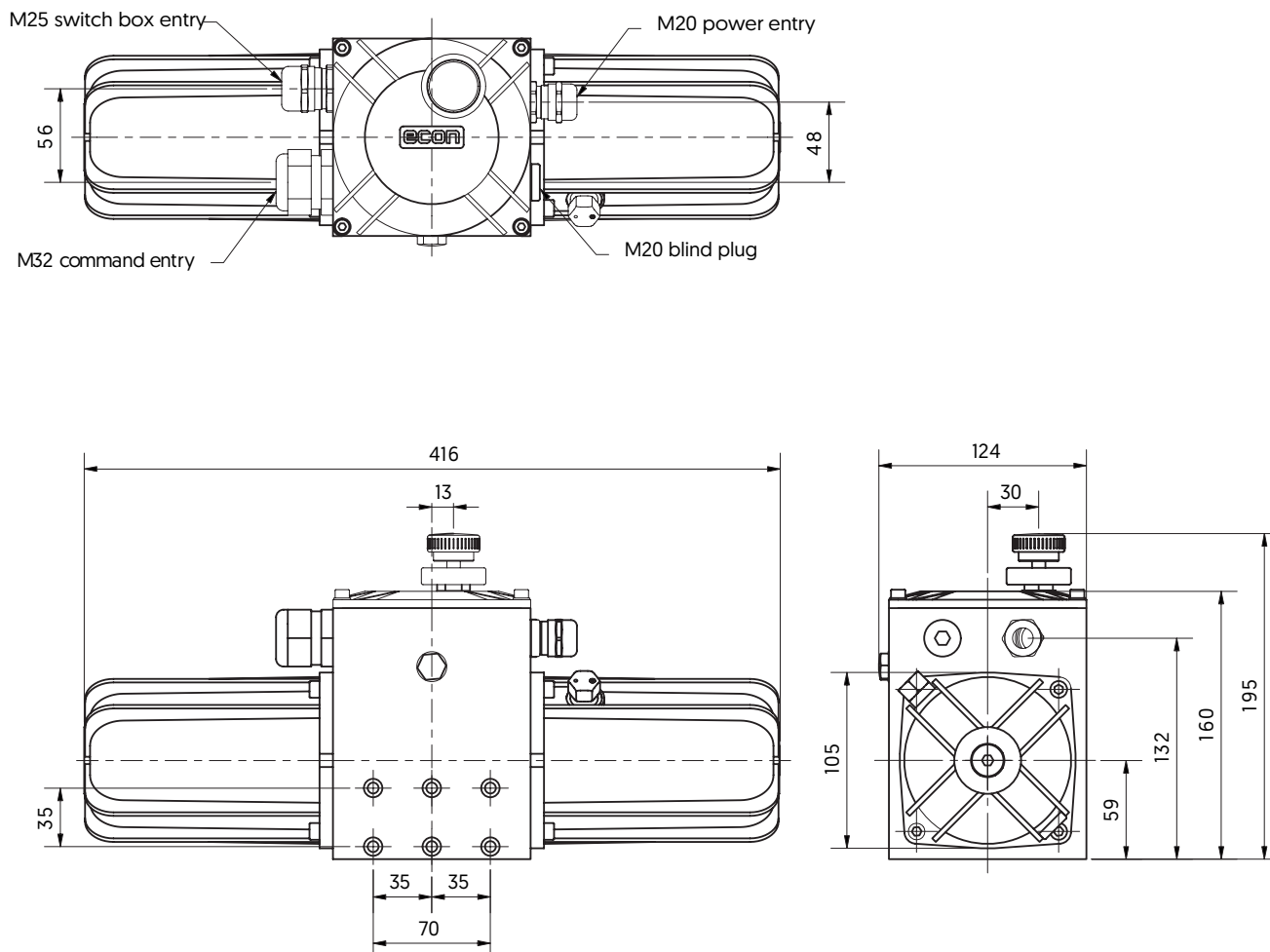


Specification

Power supply | 1 Phase 50/60Hz: 230VAC, ±10%
IP Class | IP68; 50 meters for 48 hours
Output/working pressure | 135 bar
Pump capacity | 4-pole electric motor 0,35/0,40 l/min – 50/60 Hz
2-pole electric motor 0,70/0,80 l/min – 50/60 Hz
Oil tank capacity | 0,6 liter
Ambient temperature | -15°C [5°F] up to +60°C [140°F]
Duty cycle | S3 – 15% according to IEC 60034-1
Weight | 10 Kg



Dimensions Fig. 21301 & Fig. 21302 Power pack



Material specifications

Body:	Aluminium
Pump housing:	Aluminium
Pump gear & shaft:	Carbon Steel
Filler, breather plug:	Brass, Nickel plated
Assembly Bolts:	Stainless Steel
Cable Gland:	Brass, Nickel plated
Internal seals:	NBR

Coating

Polyester powder coating system
Thickness: 80 µmm, Colour: RAL 5015



Features

- Compact design, one size fits all
- Available in 2 pump speeds and different connection possibilities
- Power pack can be mounted directly on the actuator
- Equipped with visual position indicator
- Equipped with internal local control switch
- Fail safe operation: Closed is the standard position, however a fail safe Open position is also available.
- Suitable for manual operation by hydraulic handpump
- Weather proof IP68, 50 meters for 48 hours
- Light weight aluminium enclosure
- Corrosion proof by a aluminium anodised and Epoxy coated enclosure
- Can be installed in any position by adjusting the filler and breather plugs
- Any type of mineral oil can be used, however HLP types (DIN 51524-2) is recommended
- Lloyd's Register Type Approval



Electric Hydraulic controlled globe valve

Bypass button for emergency operation of single acting actuators



Options

- Proportional control PCB for modulating applications
- CAN-Open control PCB for Fieldbus applications
- Enhanced connection box for CAN-Open Fieldbus connection
- 1.5 liter oil tank for control of large single acting actuators
- Throttle connection block for closing speed adjustment (single acting actuators)

Enhanced connection box for CAN-Open Fieldbus connection



Accessories for Hydraulic actuators

Fig. 21540 - 21542

Switch box for quarter turn actuators



Fig. 21440

Switch box for linear actuators



These switch boxes are light weight made of durable "VALOX" plastic which is mechanically strong and fire retarded. Suitable for IP68 applications and with Reed contacts they can be used in ATEX environments as "simple apparatus"

Fig. 21260 - 21265

Control blocks for EDH actuators



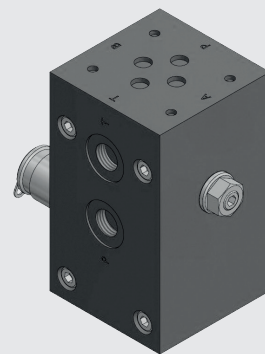
Adapter block EDH
Fig. 21260



Control block MBC-A
Fig. 21261

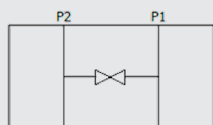


Control block MBC-B
Fig. 21262



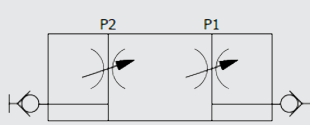
Control block MBC-NG6
Fig. 21263

Pilot lines



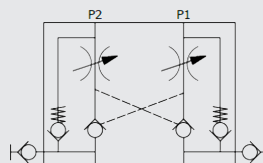
Actuator side

Pilot lines



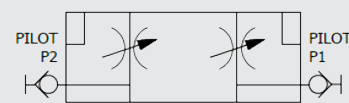
Actuator side

Pilot lines



Actuator side

NG6 Connection



Actuator side

Our EDH control blocks are made of C45 steel and are, nitrocarburized & oxidized for rust protection. Adapter blocks are typical for each actuator size and control blocks are identical for all actuator sizes.

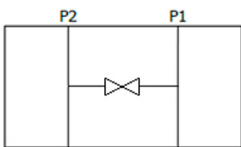


Control blocks for ESR & EDR actuators



Connection block BV1

Pilot lines

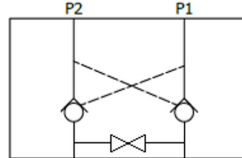


Actuator side



Control block CVB1

Pilot lines

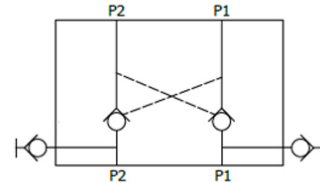


Actuator side



Bulkhead block ASEB1

Pilot lines

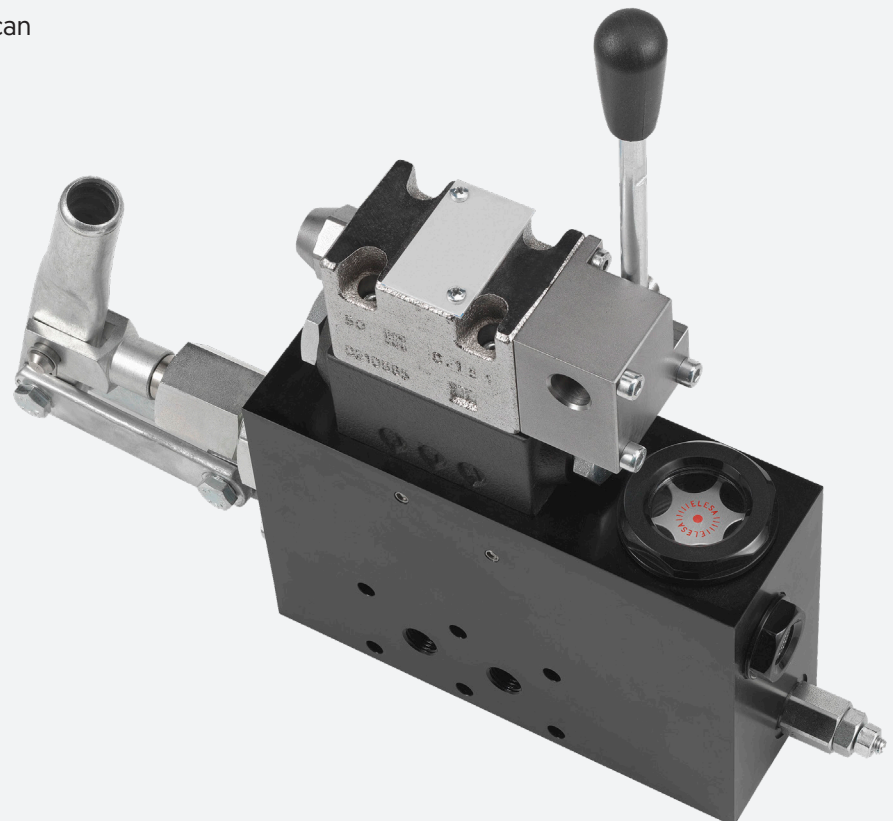


Actuator side

Control blocks for ESR & EDR actuators are made of steel and are coated for wet (salt water) application. All control blocks are identical for all actuator sizes because of the standardised connection flange.

Direct mounted hand pump for ESR & EDR actuators

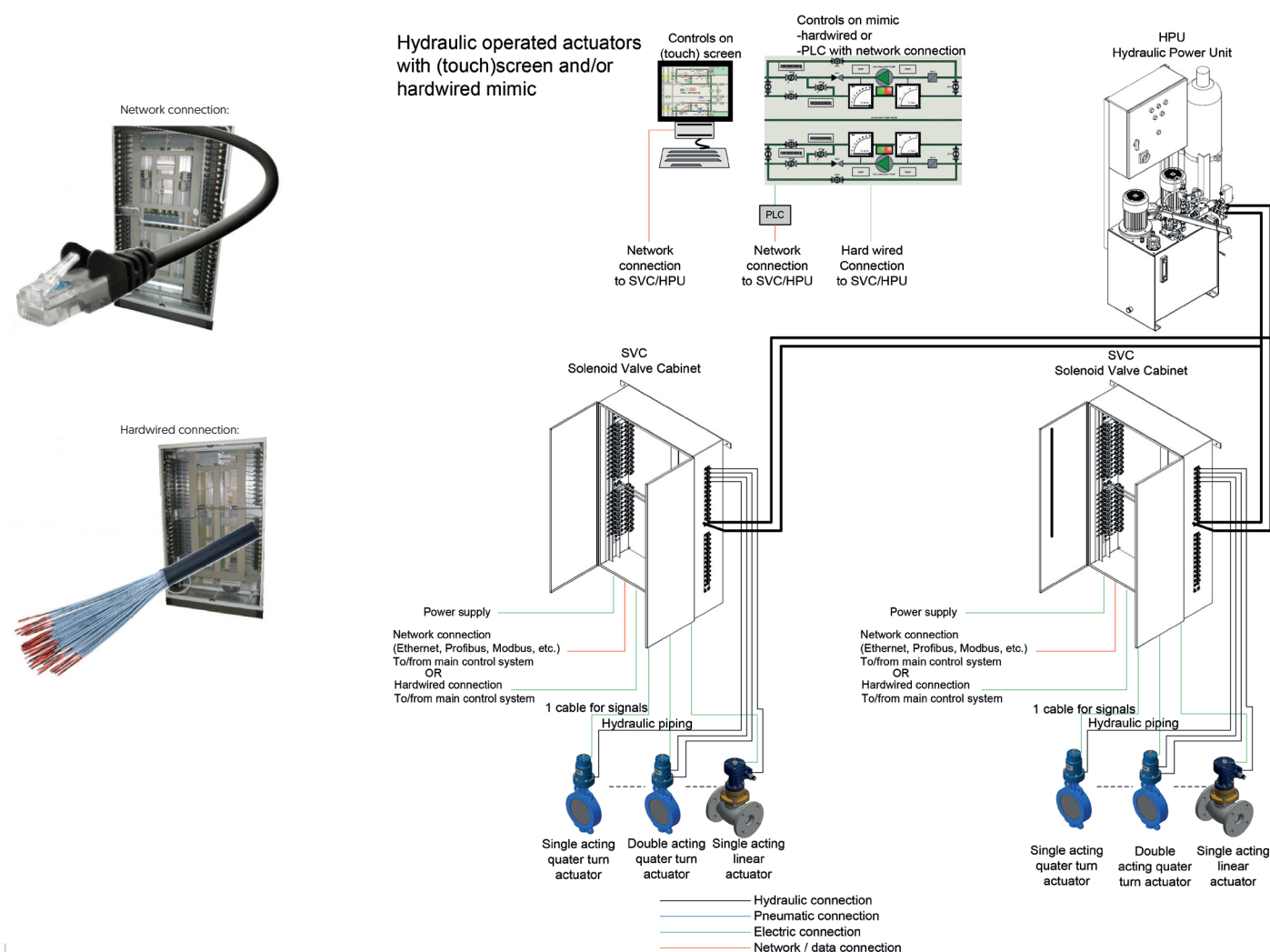
Double acting HPD or single acting HPD-S can be mounted directly on the actuator and provides a manual (emergency) operation for all sizes (electric) hydraulic actuators.



Remote Valve Control Solutions

Our company has 20 years of experience in building, delivering and commissioning of complete Remote Valve Control systems. We are specialists in engineering efficient Hydraulic, Pneumatic and Electric control systems around our proven Econ® Valves and Actuators.

For Hydraulic systems we can build your requested Hydraulic Power unit, Solenoid Valve cabinet and control panel as a (semi) standard product or a tailor made unit for your specific requirements. The used technology for your control system can be “simple” hardwired; controlled through switches and indicators or “advanced”; with PLC technology, HMI operation and Fieldbus control.





**We take pride in
finding the best
technical solution,**

let us know if we can
help with your project!



ERIKS

ERIKS

Flow Control

Visiting address

Cypresbaan 63
2908 LT Capelle aan den IJssel
The Netherlands

The Netherlands

T +31 88 855 81 00
E info.capelle@eriks.nl

Belgium

T +32 (0)3 829 28 20
E valves@eriks.be

France

T +33 (0)1 34 82 10 00
E eriks.valves@eriks.fr

Germany

T +49 2236 8916 301
E armaturen@eriks.de

United Kingdom

T +44 (0)116 272 7300
E efcleicester@eriks.co.uk

Follow ERIKS online:



www.eriks.nl/socialmedia



www.eriks.nl



shop.eriks.nl

Let's make industry work better

ERIKS