



HYDRAULIC SINGLE ACTING LINEAR ACTUATOR

series HC

SERVOVALVE spa

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HYDRAULIC LINEAR ACTUATOR SPRING CLOSE - OIL OPEN

SINGLE ACTING

SERIES HC

TECHNICAL DESCRIPTION

Servo valve actuator type HC consists of one hydraulic single acting cylinder designed to operate linear valves as globe or gate valves which require a fail safe action to close by means of spring return.

HC actuator is designed and manufactured so as to operate in the heaviest work condition in every environment according to the international specification.

Typical features are the particularly simple and reliable construction, the special care in components material selection in order to reduce corrosion phenomenon.

HC actuators can be supplied with helicoidal springs (serie HC) or belleville springs (serie HCT).

For long strokes and low thrusts (gate valve) helicoidal springs are preferred, for valves which require a higher thrust and a short stroke (globe valve) belleville springs might be preferred.

All selected springs are manufactured with special-purpose materials and complete of surface coating for corrosion protection.

They can be subjected to static or rarely alternating load, as well as continuous dynamic load; satisfying the most strict requirements against setting loss and for fatigue strength.

All HC actuator have a totally enclosed cartridge that provides complete protection for springs and all moving parts, minimizing the possibility of internal misalignment and reducing the chance of injury to operating personnel.

Special safety stay-bolts allow to open the cartridge and take out the springs only after the spring preload is totally released.

The weather proof springs cartridge is designed to allow the replacement of the springs in field with the utmost security.

After having replaced the springs the same safety stay-bolts pre-load the new springs and close the cartridge without special tools.

A PTFE charged slide guarantees a perfect drive and alignment of the piston under all load conditions allowing gasket seals long life.

Chromium plated carbon steel shaft and PTFE charged bushing allow to reduce the sliding friction of the actuator moving components.



HC actuator is supplied with a standard epoxy painting surface protection, applied on shot blasted surfaces. Different coating procedures can be provided on request.

The inner parts of HC are lifetime lubricated, therefore only replacement of the rubber gaskets may become necessary after a long working time.

HC can be equipped with bracket, mechanical or hydraulic manual emergency device on request.

SERVOVALVE is certified by DNV and actuators are designed, manufactured and tested according to ISO EN 9001 – 2000 and, if requested, according to 97/23/CE directive (PED) and 94/9/CE directive (ATEX).

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TECHNICAL STANDARD PERFORMANCE

- ◆ oil working pressure: 40 ÷ 220 bar
- ◆ standard design pressure: 250 bar
- ◆ oil test pressure: 1,5 working pressure
- ◆ standard temperature range: -20 ÷ +80 °C

MEDIUM

- ◆ mineral oil
- ◆ special medium type on request
- ◆ different medium pressure on request

EXECUTION ON REQUEST

- * on-off or modulating execution
- * equipped with adapter or bracket and hub for coupling to the valve
- * equipped with adjustable mechanical stop-screws
- * subsea or waterproof execution for marine service
- * execution for special environmental condition
- * execution for low temperature environmental or high temperature
- * suitable for explosion-proof area

OPTIONAL EQUIPMENT

- hydraulic and electric equipment (limit switches – solenoid valve – etc.)
- electro-hydraulic circuit or hydraulic power unit for remote and local control of valve
- oil accumulator and equipment for fail safe action



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SPRING CLOSE - OIL OPEN

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SERIES **HC**

LINEAR ACTUATOR CODE MODE

MODEL **P** **C** **V** **4** **2** **0** / **2** / **1** **0** **2** / **1** **1** **0** **N** **5** **5** **B** **P**

MEDIUM _____
 - **P** air or gas
 - **H** oil or other liquid

SPRING ACTION _____
 - **C** close
 - **A** open
 - **D** double acting

OPTIONAL DEVICE _____
 - **V** handwheel
 - **R** reductor
 - **H** hydraulic pump
 - **A** damper
 - **Z** hydraulic pump and damper
 - **X** special execution

BELLEVILLE SPRING _____
 - **T** belleville springs
 (missing for double acting or helicoidal springs)

CYLINDER NOMINAL SIZE _____

NUMBER OF CYLINDER _____
 - **2** n°2 cylinders
 - **3** n°3 cylinders
 (missing for n°1 cylinder)

TYPE OF SPRING _____
 - spring code
 (missing for double acting or belleville springs)

MAX SPRING BENCH _____

TEMPERATURE RANGE _____
 - **N** -20°/+80°
 - **B** -40°/+80°
 - **A** -50°/+60°
 - **G** -60°/+60°
 - **H** -20°/+150°
 - **S** special temperature

CYLINDER STROKE _____

COUPLING _____
 - **B** bracket
 - **C** columns
 - **U** columns with flange
 - **F** flange

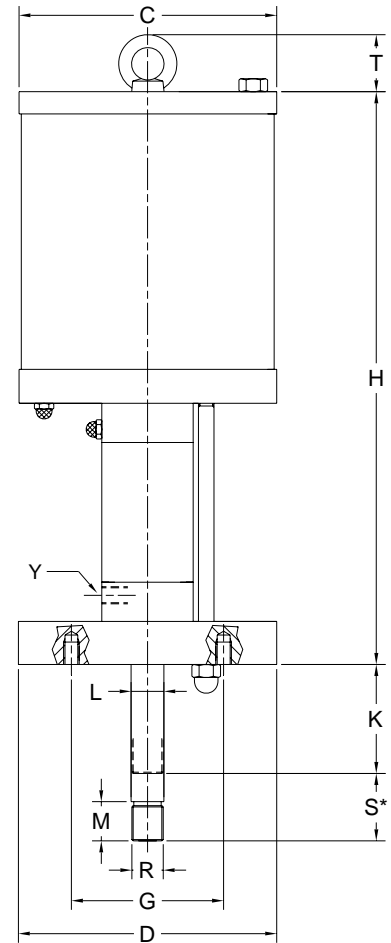
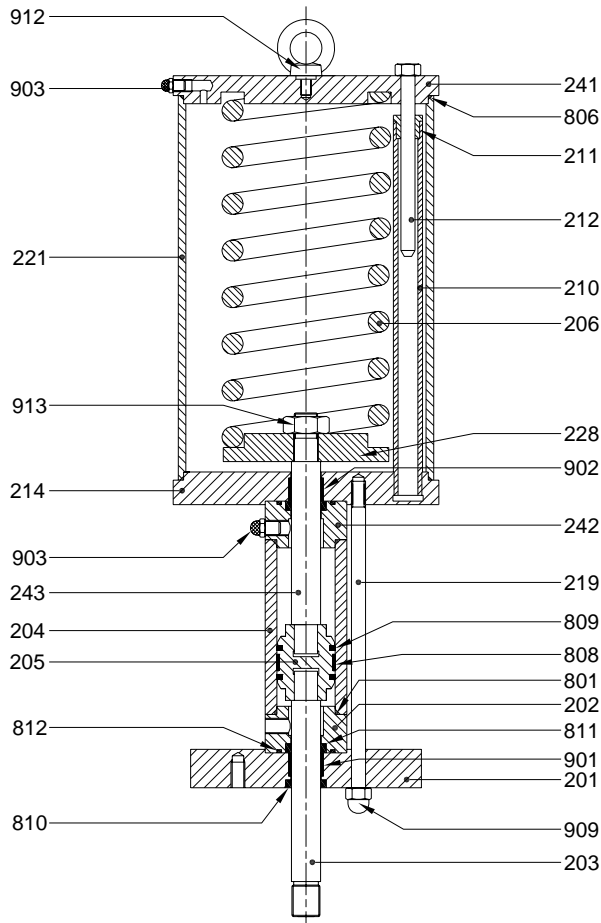
CONTROL CIRCUIT _____
 - **P** included
 - **N** not included

MECHANICAL END TRAVEL STOP _____
 - **O** open position
 - **C** closed position
 - **D** open and closed position
 (missing for standard execution without mechanical end travel stop)

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TYPE HC



OVERALL DIMENSIONS (mm)

TYPE	ØC	ØD	n° x F	Ø G	H	K	Ø L	M	R	T	Y
HC 40	140	130	4 x M 12	105	210+4S*	60	25	30	M 24	-	¼" G
HC 60	220	150	4 x M 12	125	210+4S*	60	25	30	M 24	-	¼" G
HC 80	270	200	4 x M 16	170	210+4S*	60	30	35	M 27	45	¼" G
HC 100	270	260	8 x M 16	220	220+4S*	80	35	40	M 33	45	¼" G
HC 110	270	260	8 x M 16	220	220+4S*	80	35	40	M 33	45	¼" G

S* = CYLINDER STROKE

SINCE THE ACTUATOR ARE SPECIAL EX. DIMENSIONS ARE INDICATIVE AND THRUST CAN BE DEFINED DURING QUOTATION STAGE.

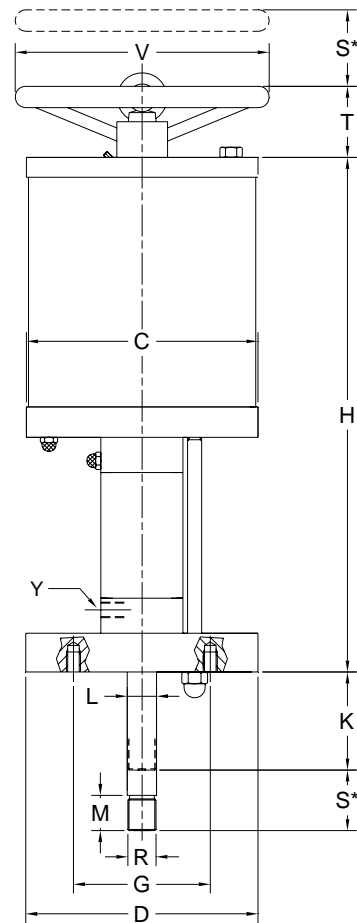
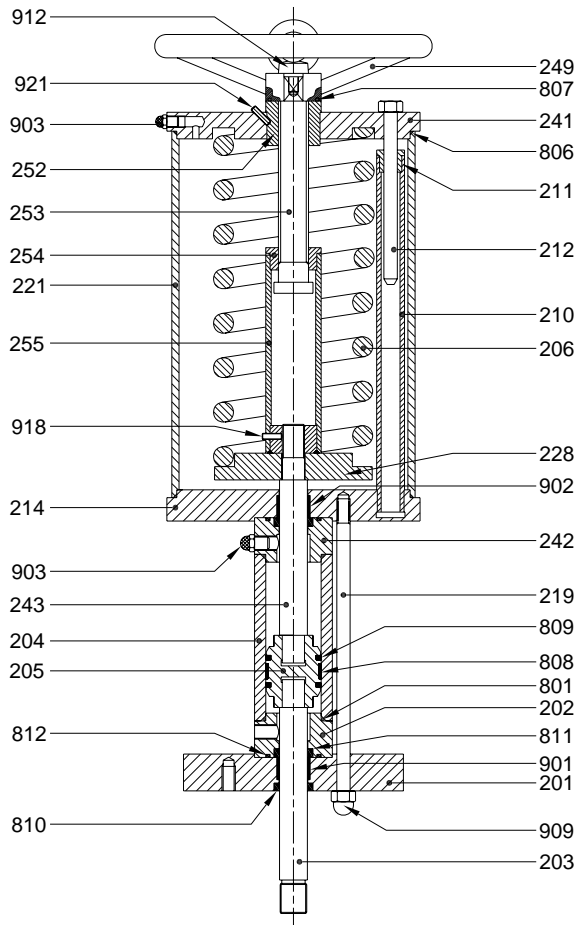
PART LIST

POS	DESCRIPTION	MATERIAL	POS	DESCRIPTION	MATERIAL
242	FLANGE	C 40 EN 10083	913	NUT	6 EN 20898
241	SUPERIOR HEAD	S275 JR EN 10025	912	EYE BOLT	CARBON STEEL
228	DISC	S275 JR EN 10025	909	CAP NUT	6 EN 20898
221	CYLINDER	S 235 JR EN 10025	903	AIR SILENCER	BRASS
219	STAY BOLT	42CrMo4 EN 10269	902	BUSHING	SINTERIZED BRONZE
214	INTERMEDIATE HEAD	S275 JR EN 10025	901	BUSHING	SINTERIZED BRONZE
212	SAFETY BOLT	42CrMo4 EN 10269	812	O-RING	* N. B. R.
211	SAFETY NUT	CuAlFe3 EN 1982	811	LIP GASKET	* POLYURETHANE
210	SAFETY TUBE	E 235 SR EN 10305	810	WIPER RING	* N. B. R.
206	SPRING	SPRING st. EN 10269	809	PISTON GASKET	* POLYURETHANE
205	HYDRAULIC PISTON	S275 JR EN 10025	808	PISTON SLIDE	* PTFE+GRAPHITE
204	HYDRAULIC CYLINDER	E 355 EN 10297	806	O-RING	* N. B. R.
203	INF. SHAFT (chrom. pl. steel)	42CrMo4 EN 10083	801	O-RING	* N. B. R.
202	INFERIOR HEAD	S275 JR EN 10025	243	SUP. SHAFT (chrom. pl. steel)	42CrMo4 EN 10083
201	FLANGE	S275 JR EN 10025		SPARE PARTS	*

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TYPE HCV



OVERALL DIMENSIONS (mm)

TYPE	ØC	ØD	n° x F	Ø G	H	K	Ø L	M	R	T	ØV	Y
HCV 40	140	130	4 x M 12	105	210+4S*	60	25	30	M 24	70	250	¼" G
HCV 60	220	150	4 x M 12	125	210+4S*	60	25	30	M 24	70	350	¼" G
HCV 80	270	200	4 x M 16	170	210+4S*	60	30	35	M 27	70	350	¼" G
HCV 100	270	260	8 x M 16	220	220+4S*	80	35	40	M 33	90	500	¼" G
HCV 110	270	260	8 x M 16	220	220+4S*	80	35	40	M 33	90	500	¼" G

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PART LIST

POS	DESCRIPTION	MATERIAL	POS	DESCRIPTION	MATERIAL
253	STEM	X20Cr13 EN 10088	921	DOWEL	8.8 EN 20898
252	SCREW THREAD	BSZN5 EN 1982	918	DOWEL	8.8 EN 20898
243	SUP. SHAFT (chrom. pl. steel)	42CrMo4 EN 10083	912	EYE BOLT	CARBON STEEL
242	FLANGE	C 40 EN 10083	909	CAP NUT	6 EN 20898
241	SUPERIOR HEAD	S275 JR EN 10025	903	AIR SILENCER	BRASS
228	DISC	S 275 JR EN 10025	902	BUSHING	SINTERIZED BRONZE
221	CYLINDER	S 235 JR EN 10025	901	BUSHING	SINTERIZED BRONZE
219	STAY BOLT	42CrMo4 EN 10269	812	O-RING	* N. B. R.
214	INTERMEDIATE HEAD	S275 JR EN 10025	811	LIP GASKET	* POLYURETHANE
212	SAFETY BOLT	42CrMo4 EN 10269	810	WIPER RING	* N. B. R.
211	SAFETY NUT	CuAlFe3 EN 1982	809	PISTON GASKET	* POLYURETHANE
210	SAFETY NUT	E 235 SR EN 10305	808	PISTON SLIDE	* PTFE+GRAPHITE
206	SPRING	SPRING st. EN 10297	807	O-RING	* N. B. R.
205	HYDRAULIC PISTON	S275 JR EN 10025	806	O-RING	* N. B. R.
204	HYDRAULIC CYLINDER	E 355 EN 10297	801	O-RING	* N. B. R.
203	INF. SHAFT (chrom. pl. steel)	42CrMo4 EN 10083	249	HANDWHEEL	CARBON STEEL
202	INFERIOR HEAD	S275 JR EN 10025	255	TUBE SLEEVE	E 235 SR EN 10305
201	FLANGE	S275 JR EN 10025	254	RING NUT	BSZN5 EN 1982
				SPARE PARTS	*