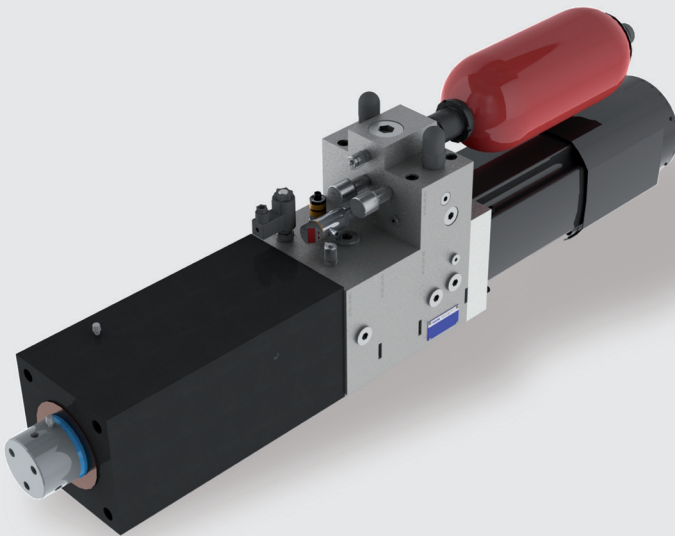


Servo Drive CLDP



Design and Function

CLDP (Closed Loop Differential Pump) is a hydraulic linear axis suitable for all applications with high density and high dynamics. Consisting of a servo motor, internal gear pump and a directly linked hydraulic cylinder, CLDP is a compact and closed system.

The integrated servo pump is matched to the surface area ratio of the cylinder. Speed and direction of movement is controlled without any directional or proportional valves. Because of the closed loop system, CLDP does not need a tank or external power pack. The necessary volume compensator is integrated.

Position control and pressure/force control is possible. The pressure transducer is integrated into the system (option). An integrated position feedback sensor is available. Key features of CLDP are very high energy efficiency and virtually wearless operation. Hydraulic's intrinsically good overload protection is combined with long life time.

Technical Data

ambient temperature	-5°C to +40°C
mounting position	any
working force	up to 500 kN
stroke length	50, 100, 200, 300, 400 mm
linear feedback system (option)	absolute encoder
position accuracy	0.01 mm
pressure accuracy	0.5% FS
repeatability	0.01 mm
IP rating	IP54 / IP64
control	position and/or pressure control
Service interval	3 years or 20,000 operating hours

Scope of Delivery

Basic version:

- complete drive unit:
 - motor, pump, cylinder, compensation tank, valves, pressure switch
 - oil filling with high performance fluid
 - drift protection (not a safety component)

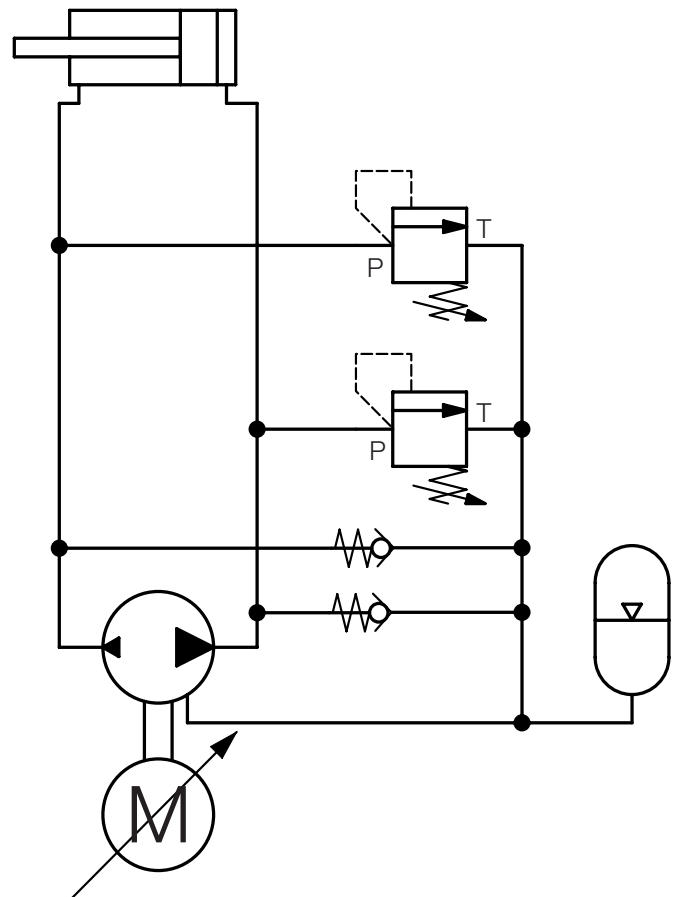
Options:

- pressure transducer
- servo converter with safety relay and interface cards (e.g. analog, CANopen, Ethernet, ...)
- line filter, mains line choke, brake resistor
- motor cable, encoder cable
- parameterization software
- start-up on-site
- integrated position feedback sensor (absolute)

Applications

- bending machines
- cutting machines
- forming machines
- presses
- special machines
- general replacement of spindle drives with servo motor
- material handling
- testing machines (laboratory)
- applications in the food industry

System Drawing

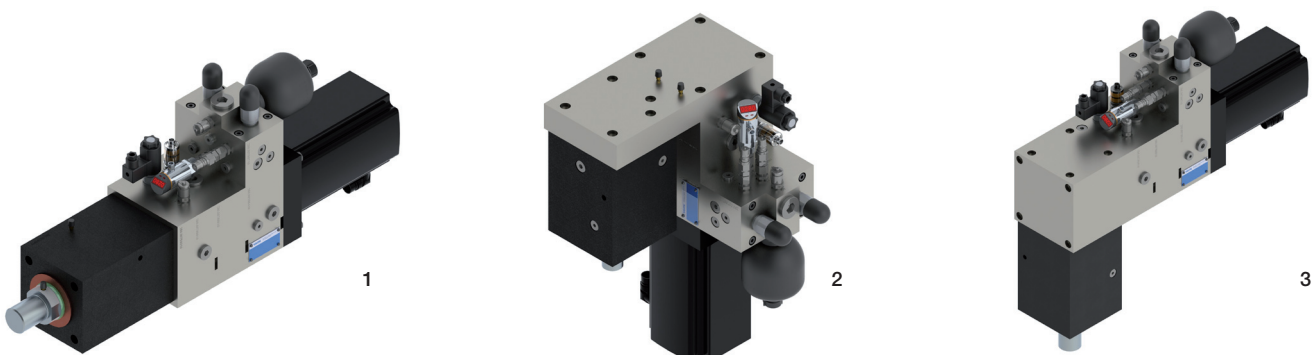


Data Standard Sizes

force [kN]	CLDP 10 speed [mm/s]	CLDP 20 speed [mm/s]	CLDP 40 speed [mm/s]
25	430	550	640
50	275	550	640
75	175	350	640
100	105	215	400
125	105	215	400
150	70	140	255
175	70	140	255
200	70	140	255
225	-	95	175
250	-	95	175
275	-	95	175
300	-	95	175
350	-	-	130
400	-	-	130
450	-	-	100
500	-	-	100

additional data on request

Design

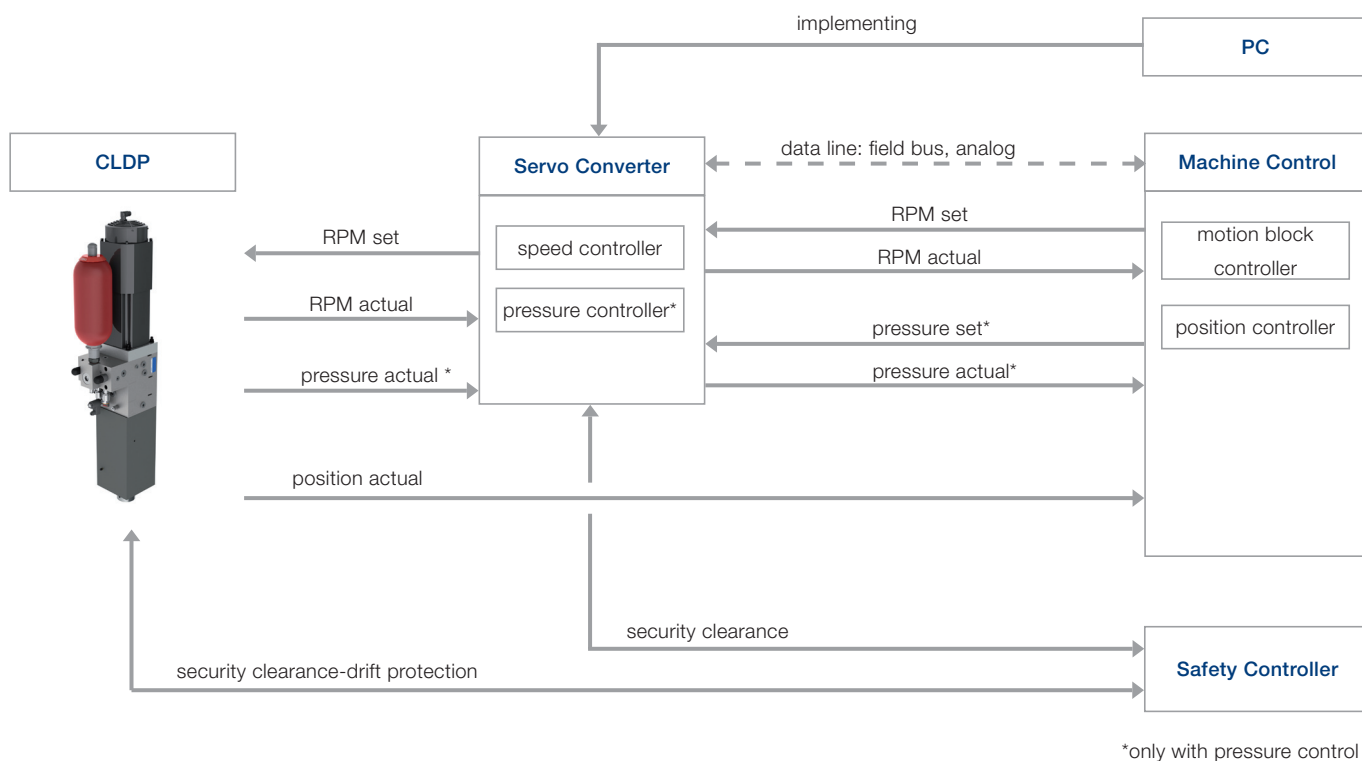


- 1 linear
- 2 parallel (option)
- 3 orthogonal (option)

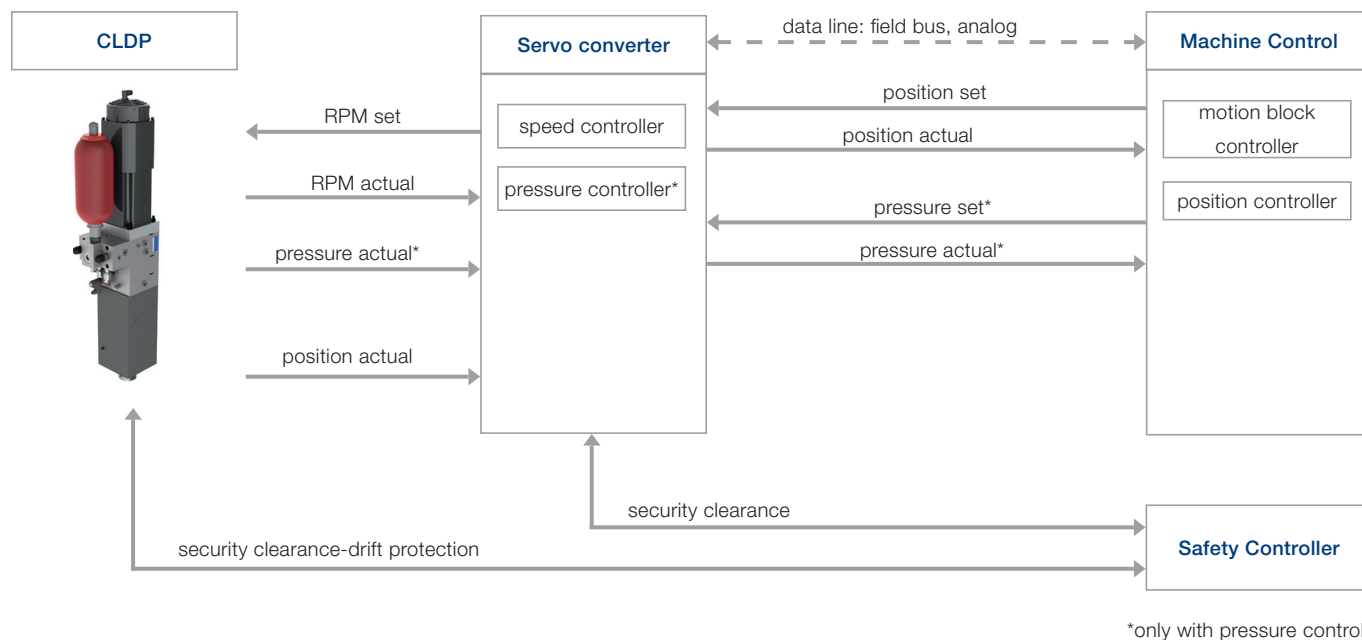
Characteristics

Characteristics CLDP	Advantages	Benefits
<ul style="list-style-type: none"> • closed oil loop 	<ul style="list-style-type: none"> • decentralized unit • minimized throttle losses 	<ul style="list-style-type: none"> + dynamic processes realizable + Stand-alone operation (no additional pipe work or hoses required) + energy efficient + optimized thermal properties
<ul style="list-style-type: none"> • servo pump, matched to cylinder surface area ratio 	<ul style="list-style-type: none"> • small compensation volume • minimum throttle losses • valve technique not required • very good overload protection 	<ul style="list-style-type: none"> + small space requirement + smaller construction units, small weight + optimized for maximum energy efficiency + simple design, simple start-up
<ul style="list-style-type: none"> • no directional / proportional valves • active control of the servo pump 	<ul style="list-style-type: none"> • high energy efficiency with high hydraulic efficiency 	<ul style="list-style-type: none"> + reduction of energy costs up to 50% + less CO2 emissions
<ul style="list-style-type: none"> • modular design • reduced parts • compact drive 	<ul style="list-style-type: none"> • simple yet versatile drive system • small size • simple design • no power unit necessary • no filter system necessary 	<ul style="list-style-type: none"> + simple system integration + reduced costs for start-up, training and maintenance + high application flexibility + reduced weight + reduced space requirement + low noise level
<ul style="list-style-type: none"> • force / speed / position control by the servo pump 	<ul style="list-style-type: none"> • valve technique not required • optimal adjustment of force and speed to the process 	<ul style="list-style-type: none"> + high flexibility

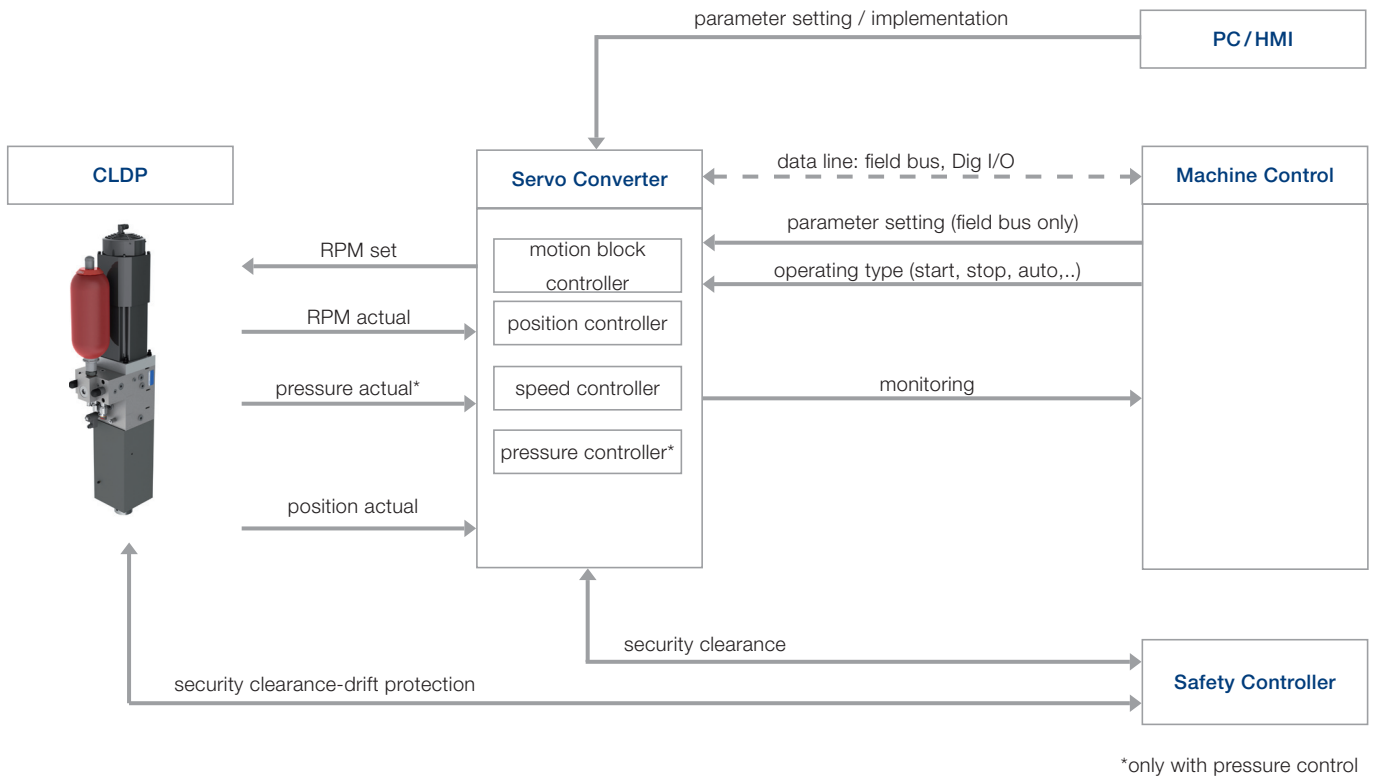
Control Principle: speed and pressure control integrated in the servo converter

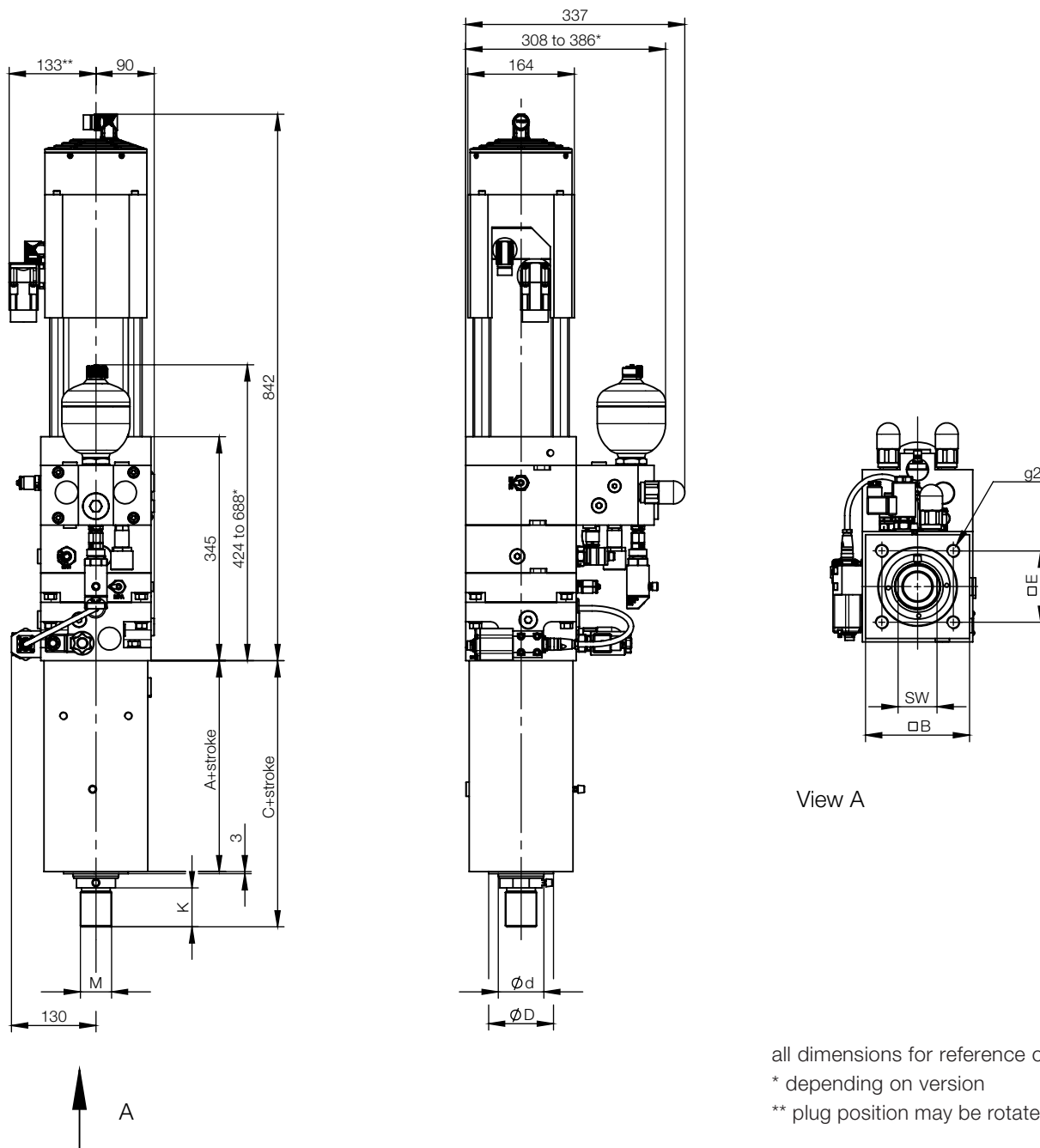


Control Principle: speed, position and pressure controller in the servo converter



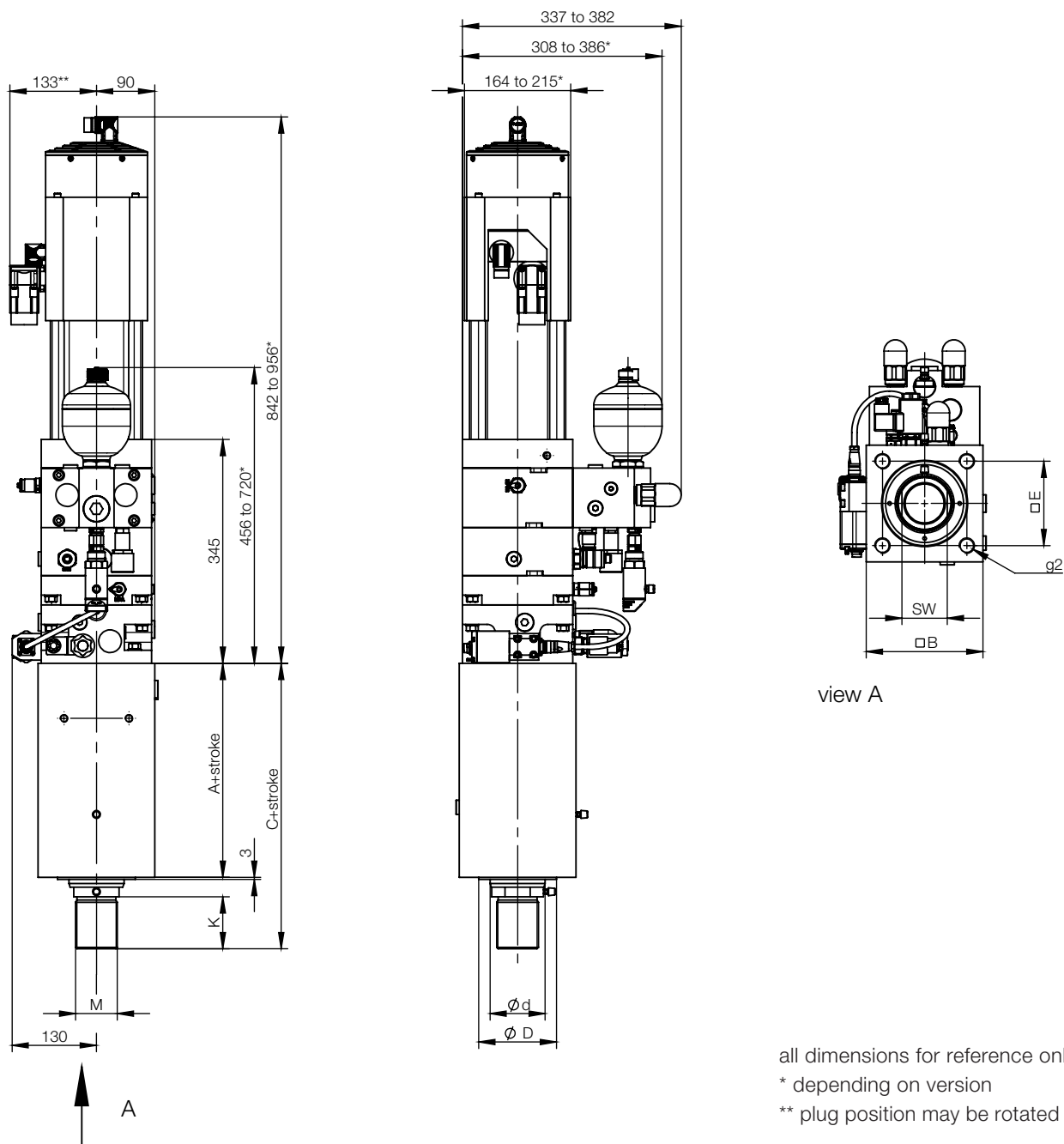
Control Principle: motion block control in the servo converter





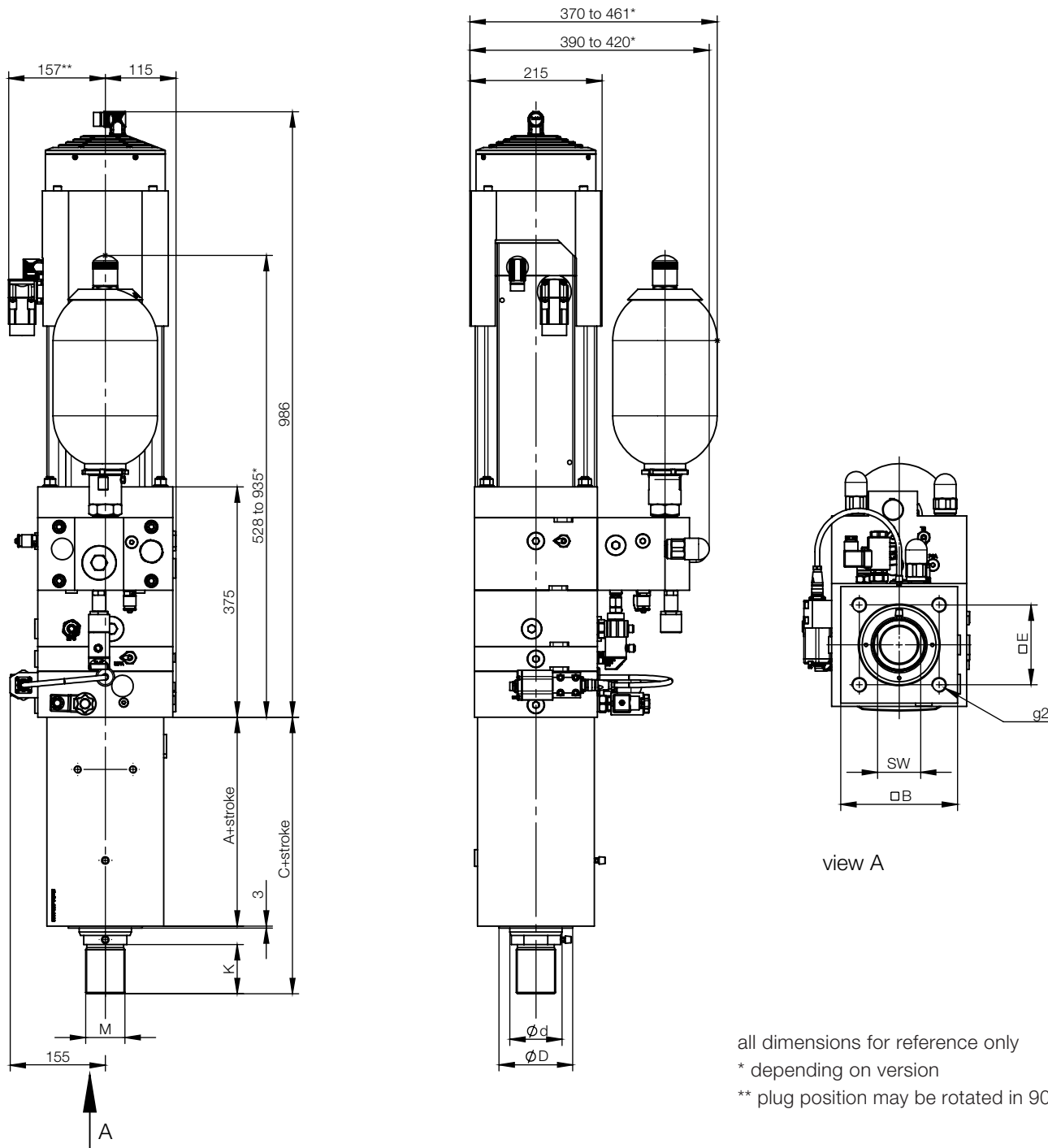
all dimensions for reference only
 * depending on version
 ** plug position may be rotated in 90° steps

force [kN]	Ø rod	Ø d	Ø D	A	C	K	M	g2	B	E	SW
25	40	28	80f7	135	190	35	M20x1,5	4x M20	150	110	27
50	50	35	80f7	135	190	35	M27x2	4x M20	150	110	27
75	63	45	80f7	155	217	42	M30x2	4x M20	150	110	36
125	80	56	100f7	170	245	50	M42x2	4x M20	150	110	46
200	100	70	100f7	205	295	60	M48x2	4x M20	150	110	60



all dimensions for reference only
 * depending on version
 ** plug position may be rotated in 90° steps

force [kN]	Ø rod	Ø d	Ø D	A	C	K	M	g2	B	E	SW
50	50	35	80f7	135	190	35	M27x2	4x M20	150	110	27
75	63	45	80f7	155	217	42	M30x2	4x M20	150	110	36
125	80	56	100f7	170	245	50	M42x2	4x M20	150	110	46
200	100	70	100f7	205	295	60	M48x2	4x M20	150	110	60
300	120	85	100f7	230	340	80	M64x3	4x M24	180	130	70



all dimensions for reference only
 * depending on version
 ** plug position may be rotated in 90° steps

force [kN]	Ø piston	Ø d	Ø D	A	C	K	M	g2	B	E	SW
75	63	45	80f7	165	227	42	M30x2	4x M20	150	110	36
125	80	56	100f7	180	255	50	M42x2	4x M20	150	110	46
200	100	70	100f7	215	305	60	M48x2	4x M20	160	110	60
300	120	85	120f7	240	350	80	M64x3	4x M24	190	130	70
400	140	100	140f7	245	375	90	M80x3	4x M30	220	160	85
500	160	115	160f7	265	415	100	M90x3	4x M30	250	180	95

Performance Fluid PF-700 for Servodrive CLDP

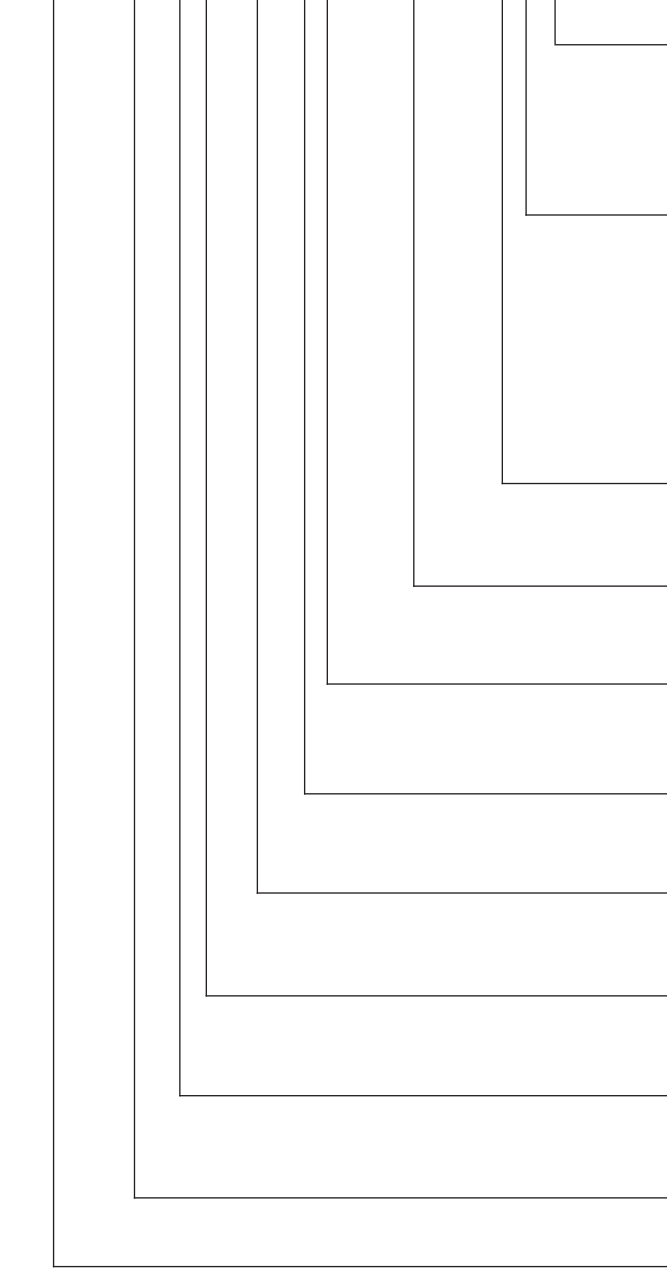
Performance Fluid PF-700 was developed especially for all power transmission systems with special requirements on tribology, temperature, oxidation and shearing stability. The result is a very high application period at minimum degradation.

- very low frictional losses, therefore significantly enhanced efficiency of power transmission
- energy saving
- high viscosity index
- outstanding wear protection characteristics
- compatible with commonly used sealing materials

further data: 25000864510-TED-ENX- and
25000864610-DSH-ENX-

Type Code

CLDP L 20 100M U 2-100/070-010 B U 10



00 = without drift protection, without pressure transducer
 01 = without drift protection, with pressure transducer
 11 = with drift protection, with pressure transducer
 10 = with drift protection, without pressure transducer

position of electrical connection

(as seen viewing motor front, tank on top)

R = right; L = left; U = down

outlet motor connection box

L = left *; R = right *; P = pump side *;

M = motor side *

*only with motor connection box

electrical connection

A = motor connection box; B = connector

cylinder

piston diameter; rod diameter; stroke

motor rotation speed

2 = 2000 min⁻¹; 3 = 3000 min⁻¹

motor cooling

O = surface forced cooling; U = without forced cooling

motor

070M; 070L; 100M; 100L

size

10; 20; 40

design

L = linear; P = parallel; O = orthogonal (right angle)

servo drive CLDP

material number

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