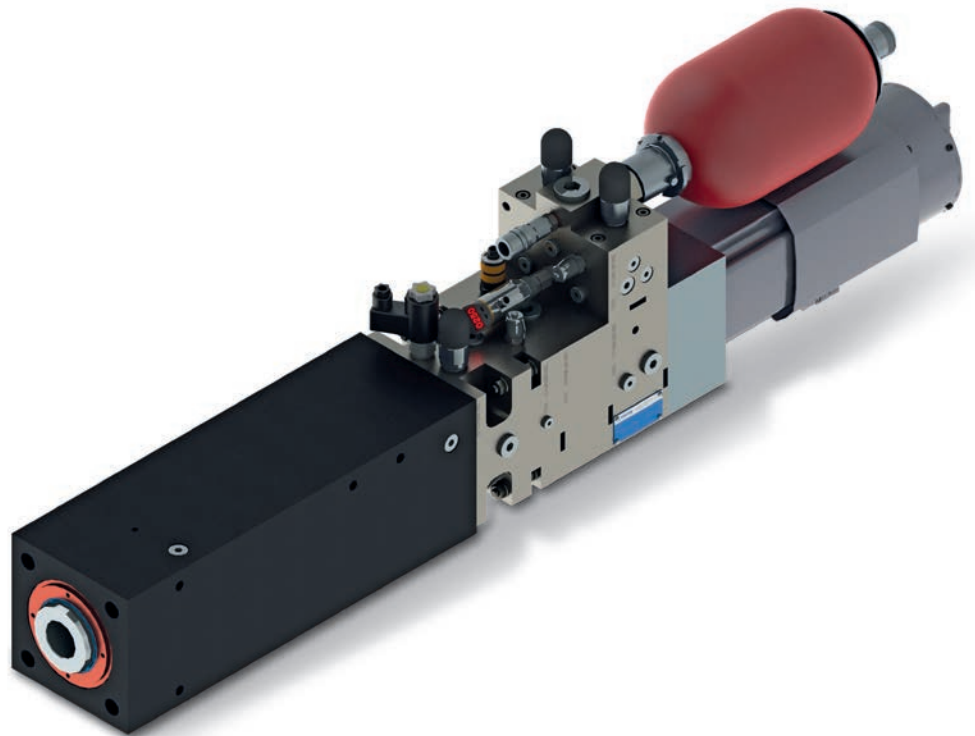


Self contained servo drive CLDP

Technical data sheet



Advantages

- + High energy efficiency
- + High dynamics
- + Oil free – power pack and piping are not necessary
- + Sensors used provide the basis for a complete integration in automated production plants
- + Overload safety

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	0°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 SSI
Position accuracy	0.01 mm
Pressure accuracy	0.5 % FS (full scale)
Repeatability	0.01 mm
IP rating	IP54 / IP64
Control	position and / or pressure control
Service interval	3 years or 20,000 operating hours

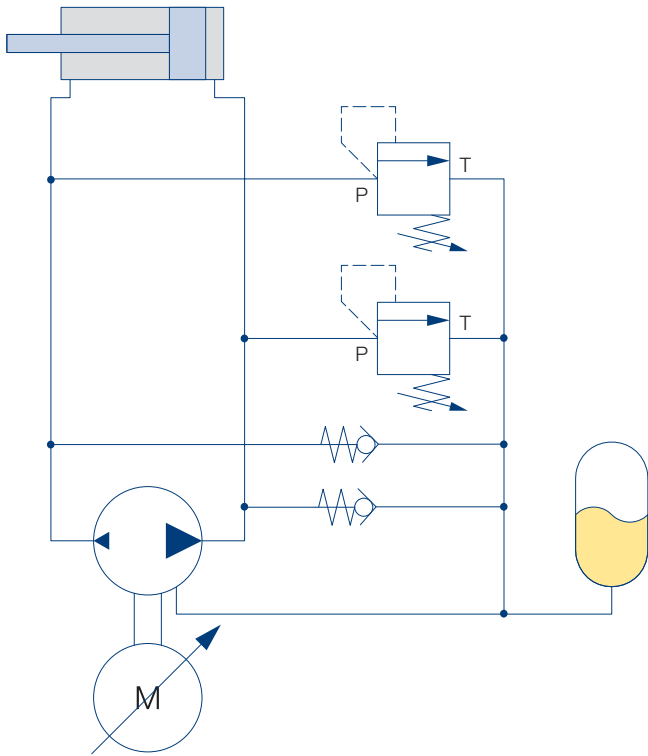
Scope of delivery

- Basic version:
 - Complete drive unit
 - Motor, pump, cylinder, compensation tank, valves, pressure switch
 - Oil filling with high performance fluid PF-700
 - 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)
- Food industry

System drawing



Data standard sizes

	CLDP 10	CLDP 20	CLDP 40
Force F [kN]	v [mm/s]	v [mm/s]	v [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

Performance fluid PF-700 for servo drive CLDP

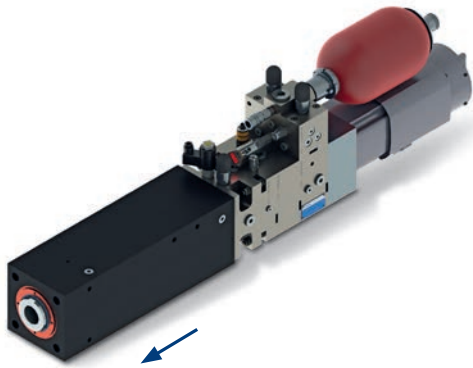
Performance Fluid PF-700 was developed especially for all power transmission systems with special requirements on tribology, temperature, oxidation and shearing stability. The result is a very high application period at minimum degradation.

- 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

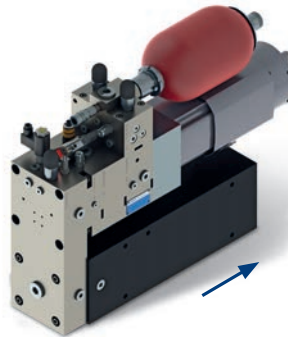
For the servo drive CLDP, exclusive use of PF-700 is mandatory.

Designs

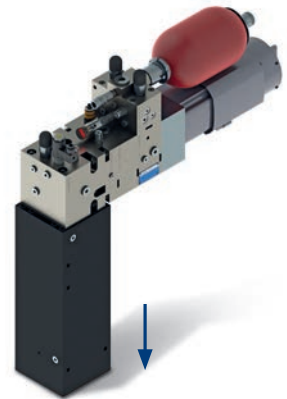
Linear



Parallel (option)

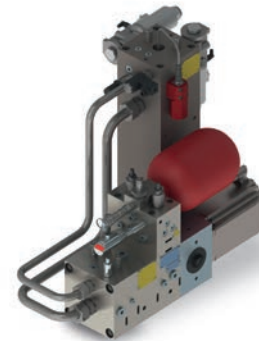
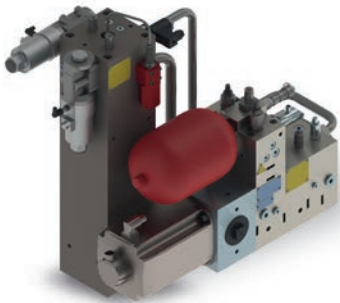


Orthogonal (option)



→ Movement direction of the piston rod

Designs, special designs



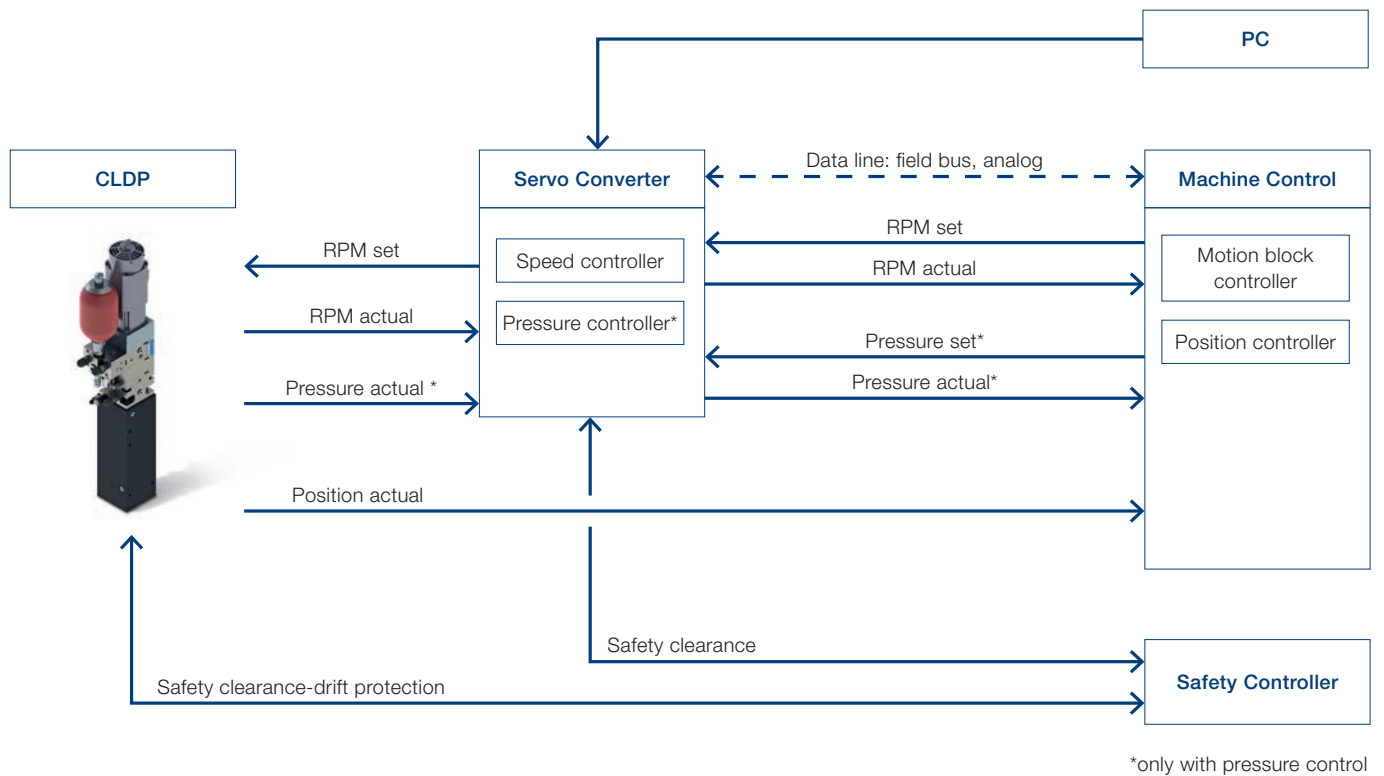
The special split design has been developed for use in very cramped installation situations. The pump group and the servomotor form a unit and the cylinder forms its own unit.

The units are hydraulically connected by pipes or hoses. The split version offers extended design options compared to the standard series. All advantages of the CLDP are preserved.

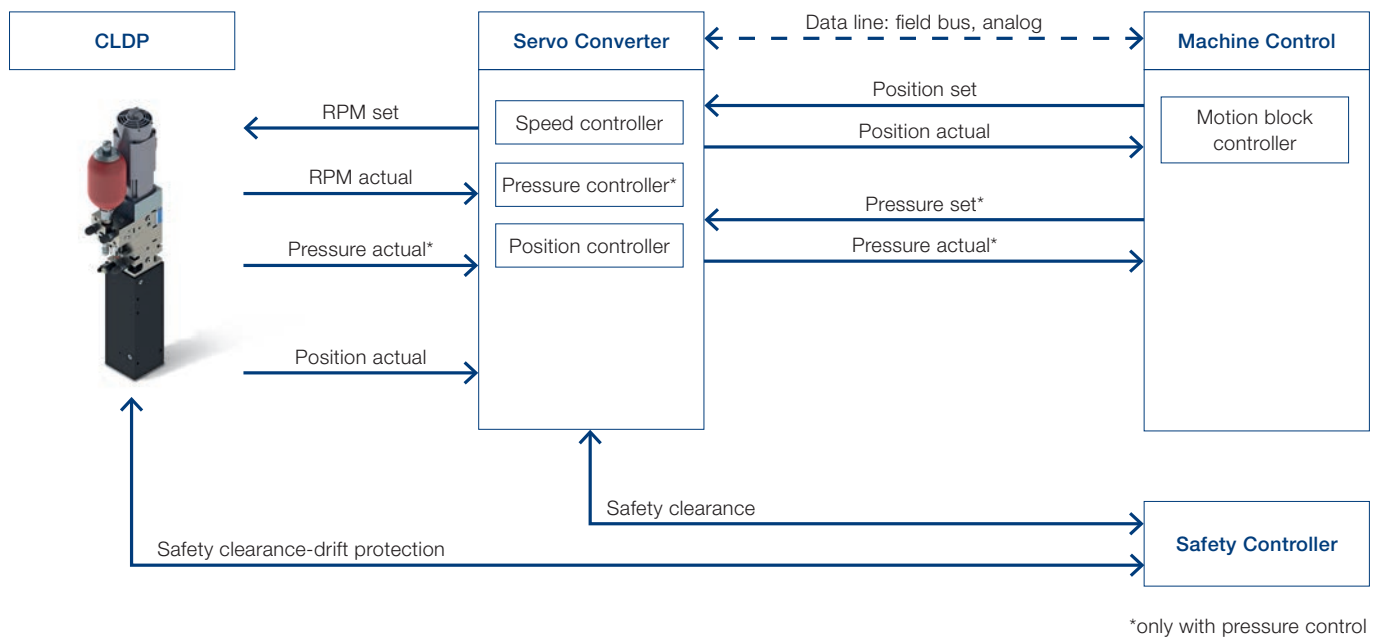
Product characteristics

Characteristics	Advantages	Benefits
Servo drive with hydraulic power transmission	The drive is wear-resistant and absolutely overload-safe	<ul style="list-style-type: none"> + Your drive components and moving parts have a long lifetime + After an overload occurs, your machine or equipment can be quickly and easily restarted
	The drive has only a few electrical interfaces	<ul style="list-style-type: none"> + This keeps your startup effort and costs low + No staff with knowledge of hydraulics is required
Closed-loop hydraulic system with no directional control valves or servo valves	The integrated hydraulic system is a stand-alone system (self-contained)	<ul style="list-style-type: none"> + You save the procurement and maintenance costs required for an external hydraulic power pack with all of its piping and tubing + The linear drive is easy and cost-effective to install in machines and equipment
The hydraulic cylinder is controlled with a servo pump whose flow rate is matched to the cylinder surfaces	Simple and compact design with no classic valve and control technology	<ul style="list-style-type: none"> + The linear drive requires up to 50 % less energy, reducing your operational costs + The costs for commissioning, training, and maintenance are low
	Hydraulic system throttle losses are kept to a minimum	+ The drive is energy-efficient and has low cooling requirements
Standardized linear drive with very few components and modular design	<ul style="list-style-type: none"> • This keeps planning costs associated with system integration low • A large number of designs and sizes are available 	+ This reduces development times and development costs associated with your machinery or equipment

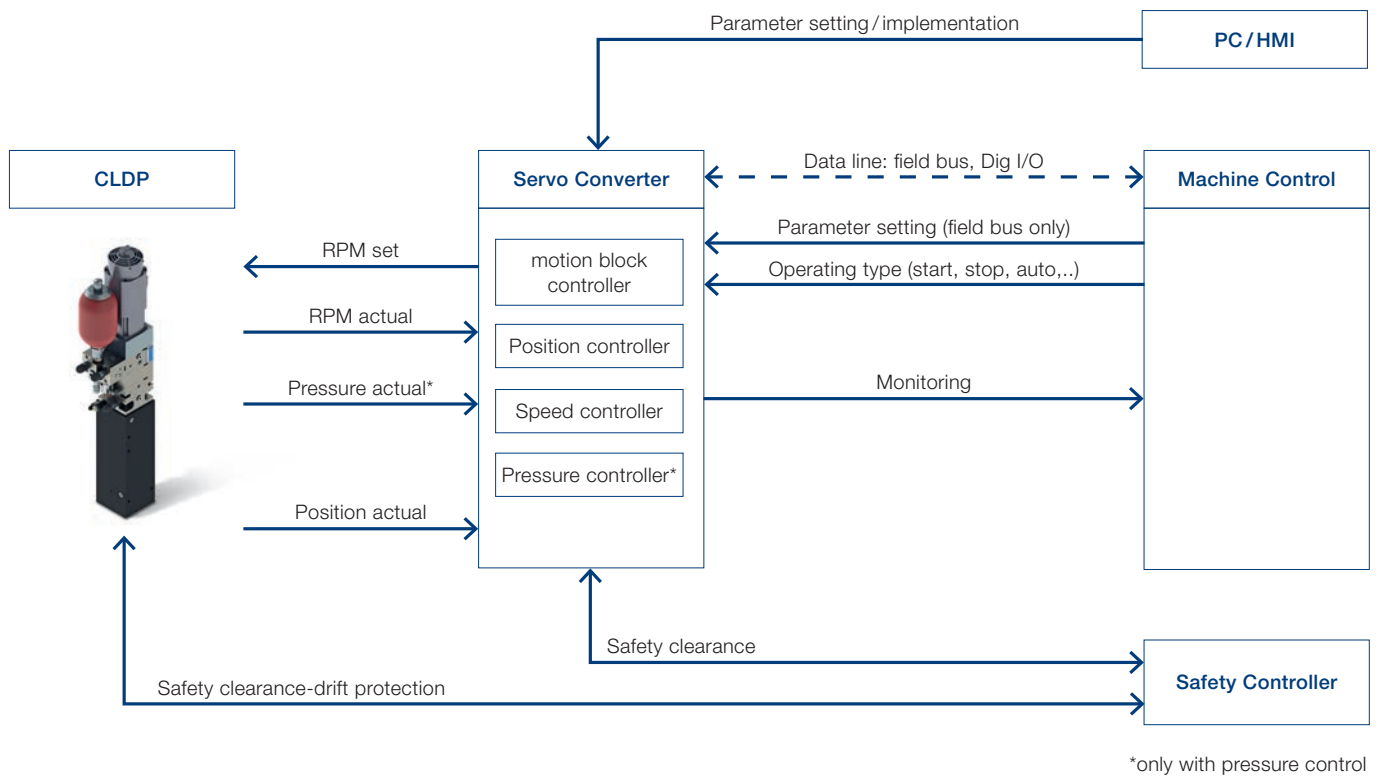
Control principle: speed and pressure control integrated in the servo converter



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



Control principle: motion block control integrated in the servo converter



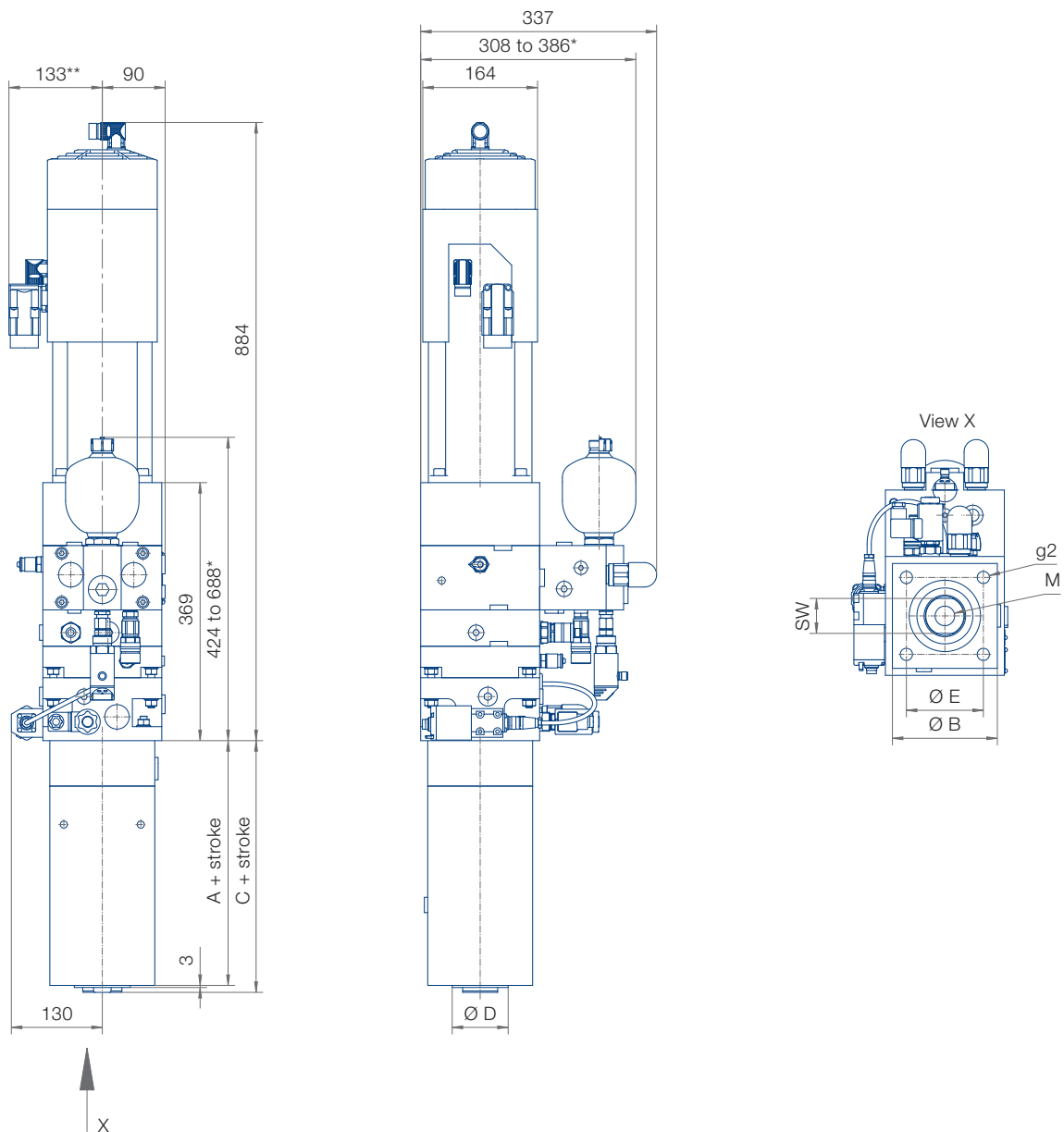
Dimensional drawing basic design CLDP 10

Force F [kN]	Ø Piston	Ø D	A	C	M	g2	B	E	SW
25	40	40f7	235	255	M16x1	4xM20	150	110	25
50	50	50f7	235	255	M20x1,5	4xM20	150	110	30
75	63	63f7	235	255	M30x2	4xM20	150	110	41
125	80	80f7	250	270	M36x2	4xM20	150	110	50
200	100	100f7	255	280	M42x2	4xM20	160	110	65
300	120	120f7	265	290	M48x2	4xM24	180	130	75

All dimensions in mm, all dimensions for reference only

* depending on version

** plug position may be rotated in 90° steps



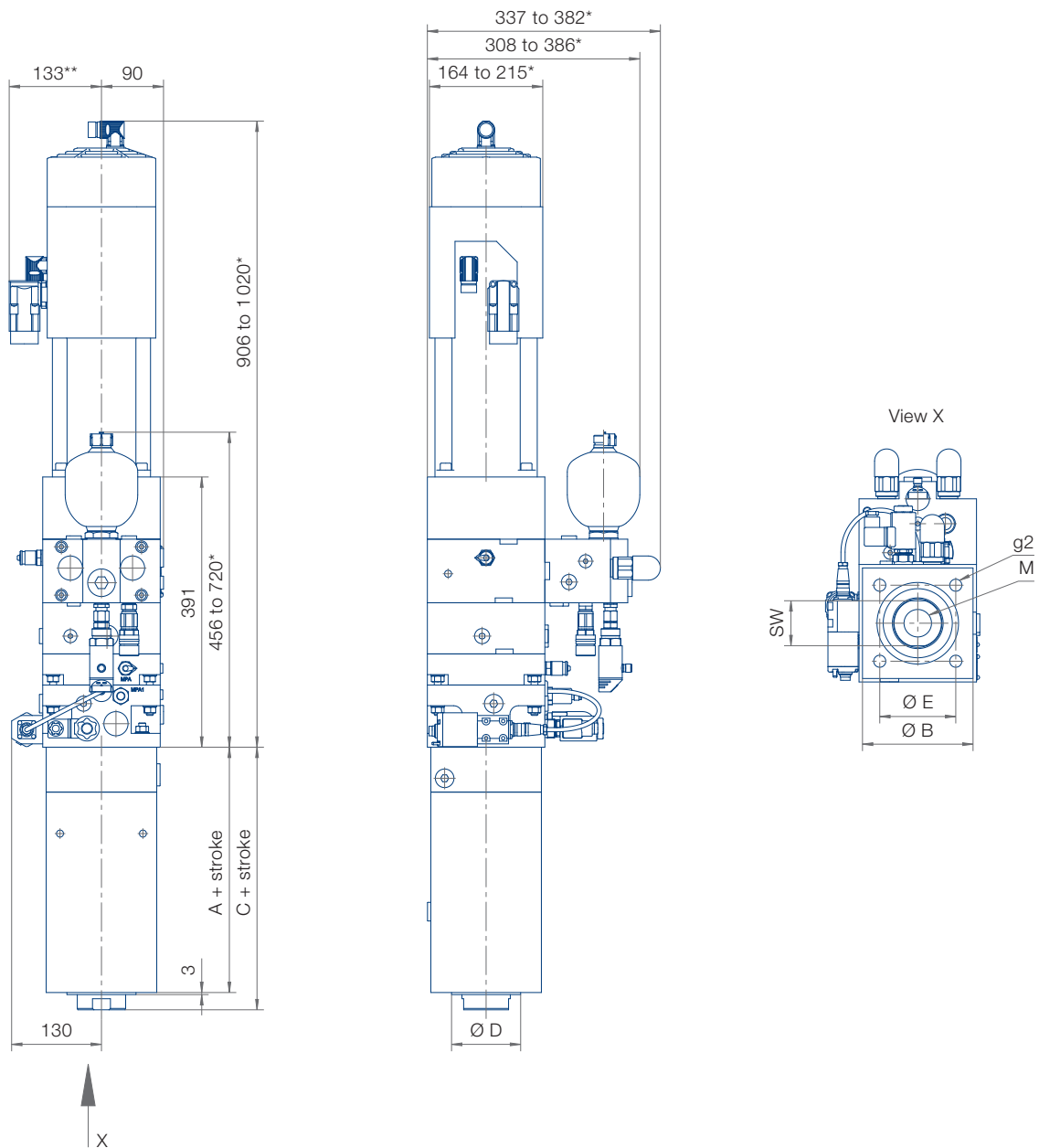
Dimensional drawing basic design CLDP 20

Force F [kN]	Ø Piston	Ø D	A	C	M	g2	B	E	SW
50	50	50f7	235	255	M20x1,5	4xM20	150	110	30
75	63	63f7	235	255	M30x2	4xM20	150	110	41
125	80	80f7	250	270	M36x2	4xM20	150	110	50
200	100	100f7	255	280	M42x2	4xM20	160	110	65
300	120	120f7	265	290	M48x2	4xM24	180	130	75
400	140	140f7	285	310	M64x2	4xM30	210	160	90

All dimensions in mm, all dimensions for reference only

* depending on version

** plug position may be rotated in 90° steps



Dimensional drawing basic design CLDP 40

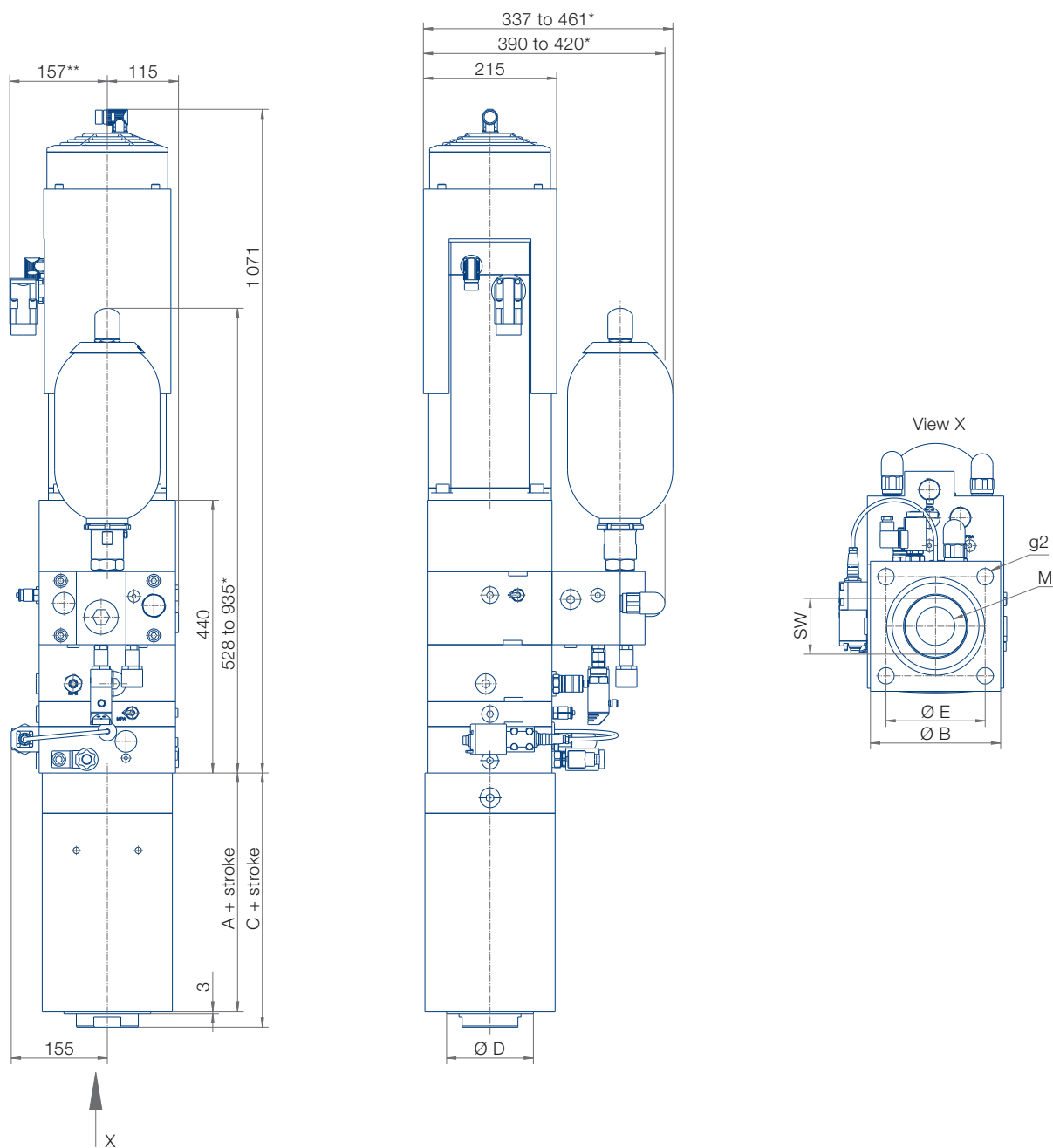
Force F [kN]	Ø Piston	Ø D	A	C	M	g2	B	E	SW
75	63	63f7	235	255	M30x2	4xM20	150	110	41
125	80	80f7	250	270	M36x2	4xM20	150	110	50
200	100	100f7	255	280	M42x2	4xM20	160	110	65
300	120	120f7	265	290	M48x2	4xM24	180	130	75
400	140	140f7	285	310	M64x2	4xM30	210	160	90
500	160	160f7	305	330	M64x2	4xM30	240	180	100

all dimensions in mm, all dimensions for reference only

* depending on version

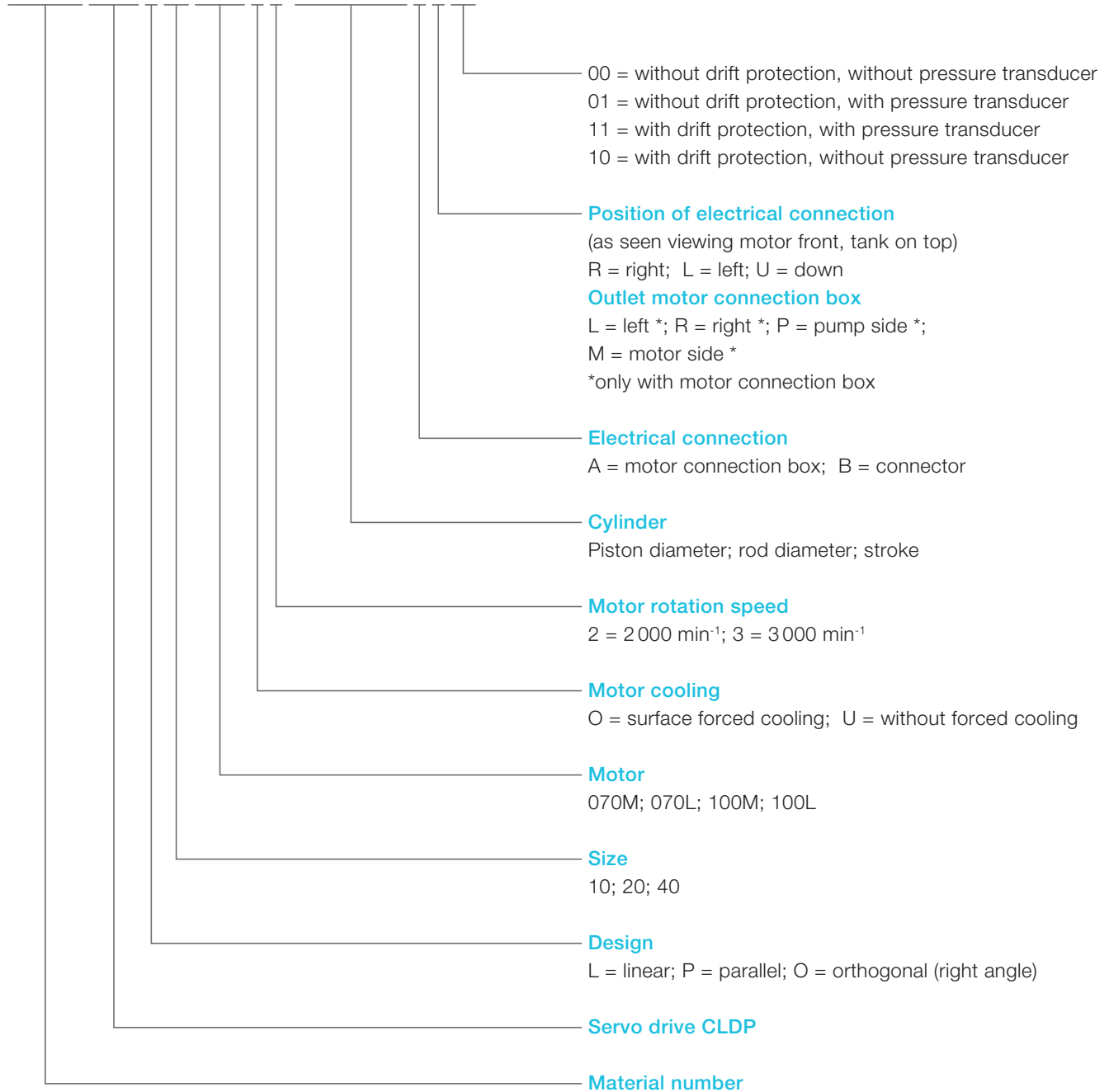
** plug position may be rotated in 90° steps

*** Piston



Type code

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



Voith GmbH & Co. KGaA
St. Poeltener Str. 43
89522 Heidenheim, Germany

Contact:
Phone +49 7152 992 3
sales-rut@voith.com
www.voith.com/hydraulic-systems



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