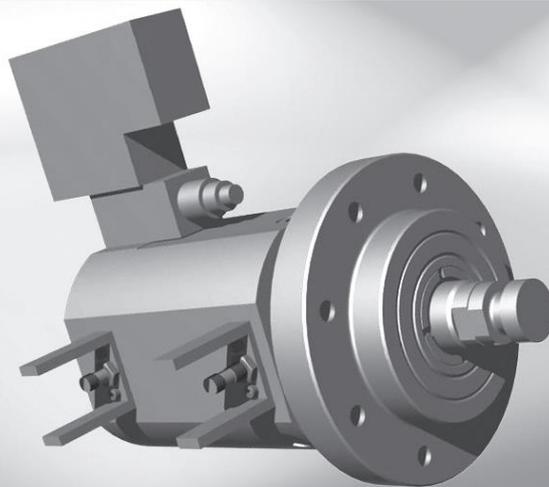


Hydraulic Cylinder with Hydraulic Interlock



Function:

The connection on that side of the hydraulic cylinder, where the external load to be held must be counteracted, is closed with a pilot operated check valve. For this reason, the liquid cannot drain off while under load, and the piston cannot move inside the cylinder. The cylinder is interlocked.

When the opposite side of the cylinder is hydraulically charged with pressure, the check valve is actuated via a control pipe and the piston rod can be moved.

The interlock is stiff within the limits of the compressibility of the liquid.

The enclosed oil volume is minimized and the sealing package is adapted to the special requirements of the load-holding function to optimize the rigidity.

The stiffness of the **reinforced cylinder type** is more than doubled through a pretension with higher pressure. The lock is stiff as long as the force that is directed through the piston rod into the cylinder does not generate a higher pressure than the pressure already existing.

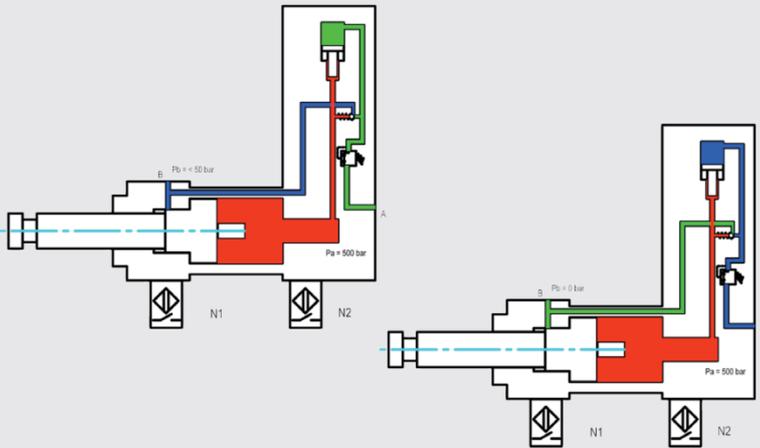
Very large retention forces can be put into effect with this hydraulic cylinder.

A major advantage of the hydraulic interlock compared to a mechanical interlock is that no complicated manual readjustment has to take place to react to setting characteristics. This is done automatically at every stroke.



Precision in Motion

Hydraulic Cylinder with Hydraulic Interlock



References:

- ▶ Daimler AG
- ▶ ae group

Fields of Duties and Requirements:

Interlock is needed in many areas of hydraulics. In the area of die casting, devices such as gate valves and core puller are regularly interlocked, in order that the mold or the core can't be moved by the pressure of the liquid metal and a correct casting result is achieved.

Furthermore, interlock is used in areas where loads only need to be moved infrequently. In these cases, the interlock ensures that the pressure supply to the cylinder does not have to run permanently.

The fact that the hydraulic interlock locks automatically when pressure drops, makes it also interesting for many security-relevant areas.

The reinforced hydraulic interlocking unit can be integrated into hydraulic cylinders of any design and dimension.

The hydraulic interlock allows locking of the piston rod in the front end position by default. For pushing operation, the interlock is also available in the rear end position on request.

		Cylinder Sizes									
Piston Ø		32	40	50	63	80	100	125	160	200	
Piston Rod Ø (mm)		28	28	36	45	56	70	90	110	140	
Technical Data	Piston Area A_1 (cm ²)	8.04	12.56	19.63	31.17	50.26	78.53	122.71	201.06	314.15	
	Annulus Area A_2 (cm ²)	1.88	6.40	10.17	15.26	25.63	40.05	59.10	106.02	160.22	
	Locking Force, extended (kN)	500 bar	40	62	98	155	251	392	613	1005	1570
	Locking Force, retracted (kN)	500 bar	9	32	47	76	128	200	295	530	801
	Pushing Force (kN)	160 bar	12.8	20.1	31	49.8	80.4	125.6	196.3	321.6	502.6
	Pulling Force (kN)	160 bar	3.0	10.2	15	24.4	41.0	64.0	94.5	169.6	256.3

