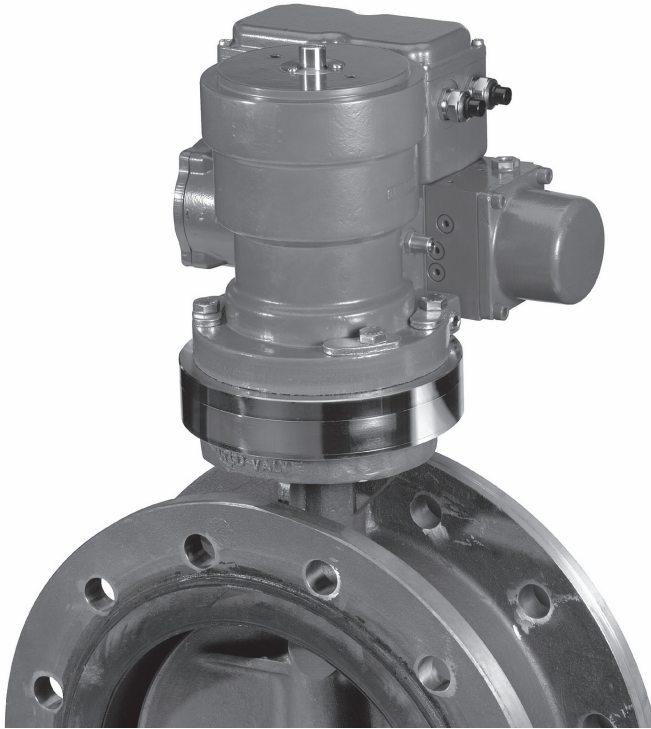


Damcos™ LPU-S

for single-acting spring operated actuator



LPU-S

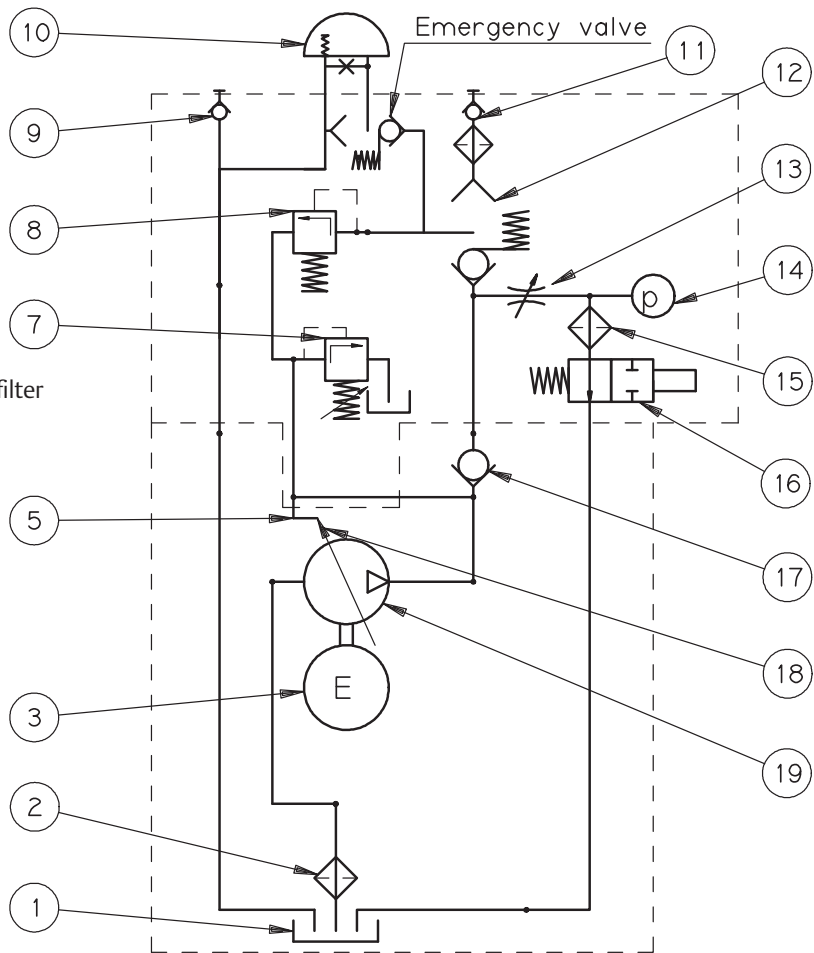
LPU-S is designed for controlling spring closing and opening actuators. Oil pressure is used for opening the actuator by pressing the springs together. Closing actuator by means of mechanical springs.

Note!

For fast closing of LPU-S, see separate product data sheet with product name Damcos QC-Block.

Hydraulic diagram for LPU-S

- 1. Tank for hydraulic oil
- 2. Suction filter
- 3. Electrical motor
- 5. Pressure controlled flow adjustment
- 7. Pump safety valve
- 8. Actuator relief valve
- 9. Quick connection for hand pump suction
- 10. Fail safe actuator, single-acting
- 11. Quick connection for hand pump opening w/filter
- 12. Shuttle valve for hand pump opening
- 13. Throttle for closing speed adjustment
- 14. Pressure switch
- 15. Pressure filter
- 16. Solenoid valve
- 17. Non-return valve
- 18. Opening speed adjustment
- 19. Variable displacement pump



Operation LPU-S

To move the valve towards open, the motor (3) is activated. The oil is led from tank through the pump and through the non-return valve (17), directly to the actuator B port. To prevent the oil from flowing back to tank, the solenoid valve (16) must be energized. When the valve is fully open, the pressure rises to 150 bar which causes the pump safety valve (7) to open and the oil flows back to tank. The motor is de-energized. The actuator is now hydraulically locked in position by the solenoid valve.

In case of a major increase of temperature, the pressure may rise. This will not cause any problems because of the safety valve (8) which will open at approximately 225 bar.

The valve can be stopped (and hydraulically locked) in any intermediate position simply by de-energizing the motor.

If the pressure drops while valve is fully open - due to a minor leakage in the solenoid valve or due to temperature variations -, the pressure switch (14) will detect this. The motor may then be activated for some seconds in order to keep up the pressure, and prevent the valve from leaving the open position. - This may take place automatically.

To move the valve towards closed, the solenoid valve is de-energized. The springs then move the actuator, pressing the oil back from the actuator B port, through the throttle valve (13) and the solenoid valve (16) to the LPU tank.

Emergency operation LPU-S

... with portable hand pump (BRCF)

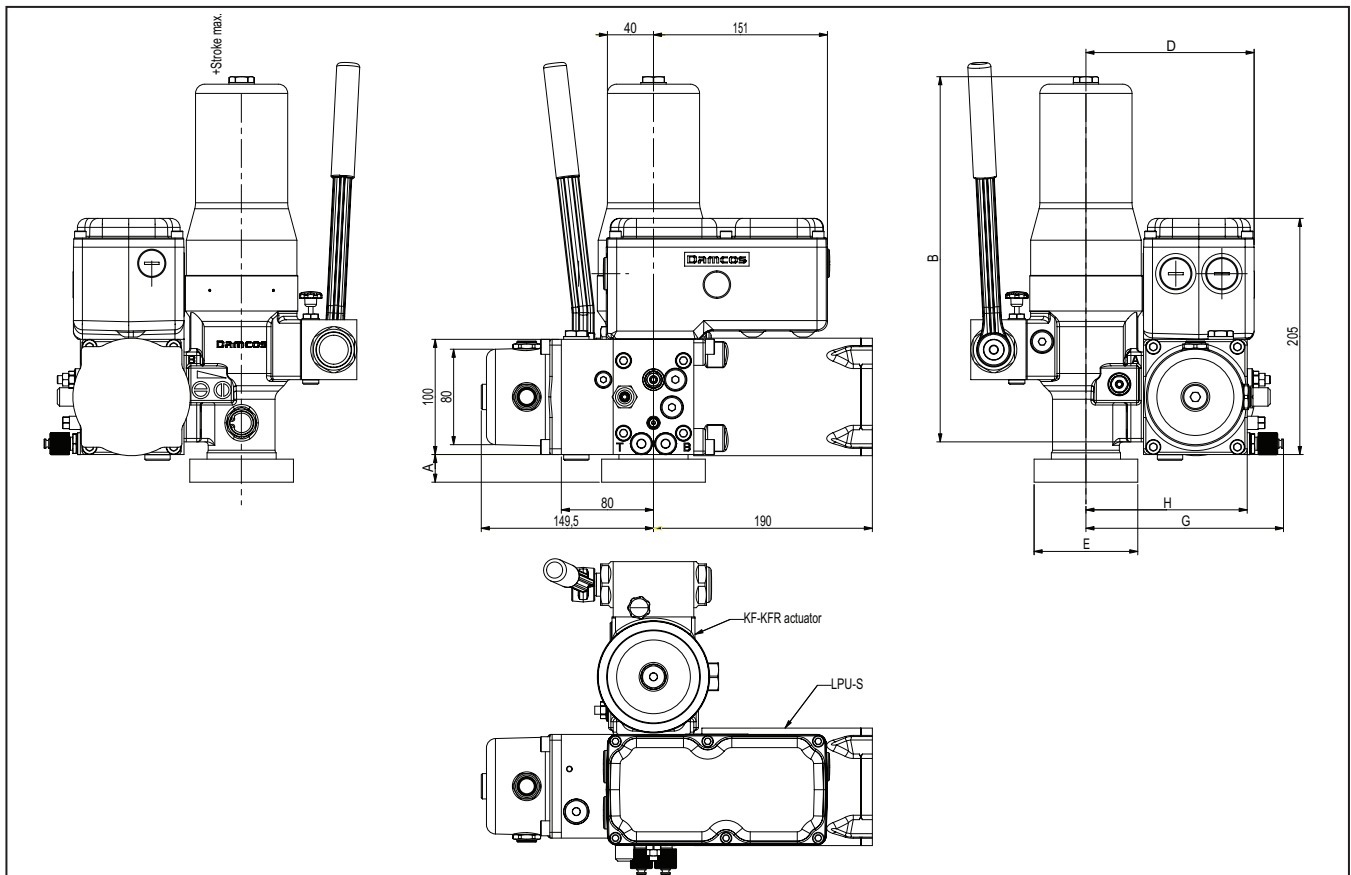
A portable hand pump is connected to the two quick connections (9) and (11). With suction to T and pressure to B which causes the shuttle valve (12) to change over and prevents the oil from flowing to tank. When reaching the required position, the hand pump can be disconnected. If the valve must be emergency operated towards closed, the cross-over valve on the actuator is open until the required position is reached. When the valve is fully closed, the shuttle valve will reset.

...with permanently connected (bulkhead-mounted) hand pump

Opening: Hand pump is activated until the required valve position is reached.

Closing: The valve moves towards closed by opening the bypass valve in the hand pump block. When the remote control has to take over, the valve can be closed by energizing the solenoid valve and the motor for a few seconds. This will reset the shuttle valve. After emergency operation, remote control is automatically in charge.

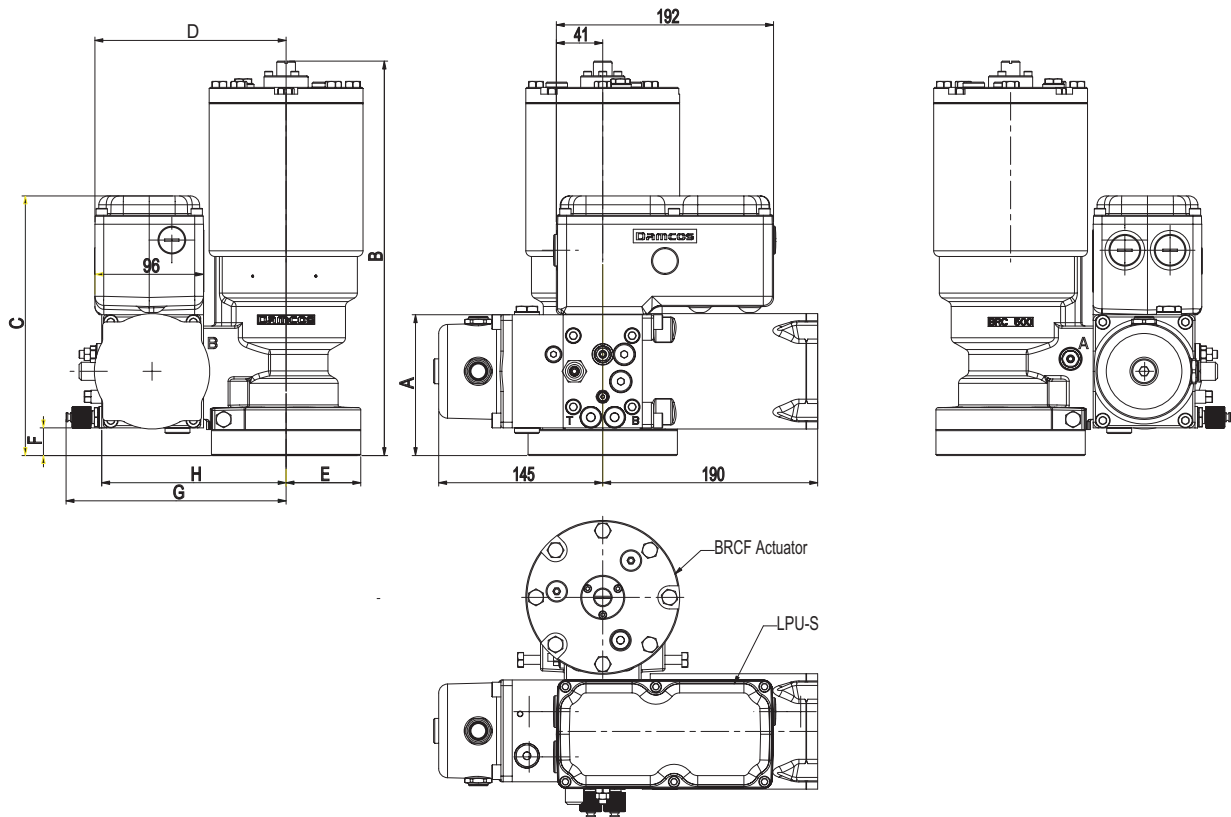
Dimensions LPU-S on KFR actuator



	A	B	D	E	G	H	Stroke max.
KF 65	16	213	143,5	76	169	137,5	16,25
KF 125	24	317	146	90	171,5	140	31,25
KF 250	52,5	580,3	172,5	140	198	166,5	62,5
KFR 125	24	317	146	90	171,5	140	31,25
KFR 250	52,5	580,3	172,5	140	198	166,5	62,5
KF 250/150	52,5	419,5	172,5	140	198	166,5	37,5
KFR 250/150	52,5	419,5	172,5	140	198	166,5	37,5

All dimensions in mm.

Dimensions LPU-S on BRCF actuator



Damcos recommend support of the Actuator/LPU when mounted on small valves ($\leq 100\text{mm}$).

	A	B	C	D	E	F	G	H
BRCF 125*	116.5	239,2	222,5	149	48	16.5	174.5	143
BRCF 250	121	279	227	156	59	21	181.5	150
BRCF 500	124.5	348	230.5	169	66	24.5	194.5	163
BRCF 1000	133	408	239	181	80	33	206.5	175
BRCF 2000	144	485	250	193	96	44	218.5	187
BRCF 4000	153	613	259	221	150	53	246.5	215
BRCF 8000	172,5	760	278,5	253	157	72,5	278,5	247
BRCF 16000	203	1007	309	276	175	103	301,5	270

All dimensions in mm. *BRCF 125/LPU has to be bulkhead mounted.

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