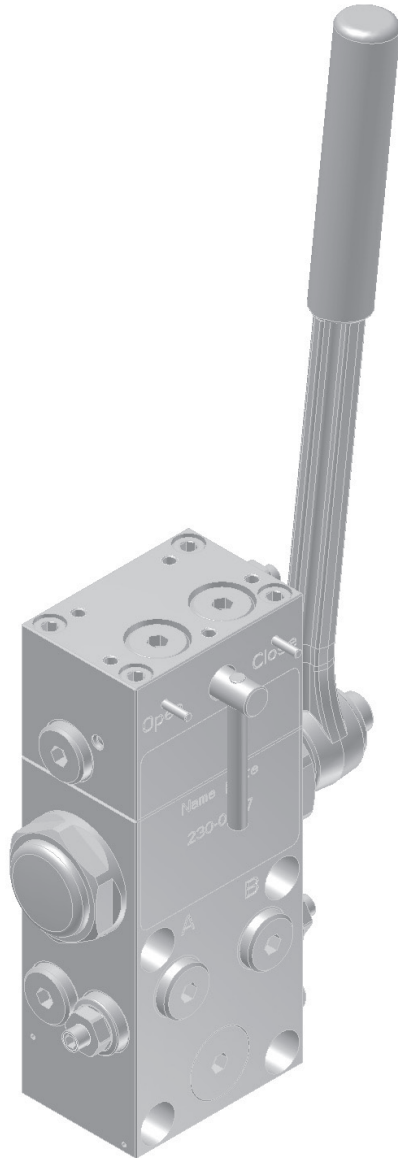


# Damcos™ Hand Pump - General



## General Description

The Damcos hand pump can be used together with all standard actuators such as BRC, BRCF, KC and KF. Overall there exists a hand pump for single line actuators and for double line actuators. Depending on actuator size, control type and valve location these two hand pump types can be applied in different

variants for hydraulic and electro-hydraulic emergency operation without other remote facilities. Further information can be found in the data sheet for the direct mounted hand pump, bulkhead mounted hand pump and electro-hydraulic hand pump.

## Hand Pump Program

### Hand pump:

HP: Hand pump

HP-LPU: Electro-hydraulic hand pump BRC/F/KF and KC type\*

HP-LPUM: Electrohydraulic BRC/F/KF and KC type\*

Portable HP\*

\*) See separate product data sheet.

### Actuator type:

S: For single line actuator

D: For double line actuator

### Application:

-: Direct mounted

B: Bulkhead mounted

### Bulkhead type:

B-VPI: Bulkhead mounted with VPI-V

### Tank size:

-: No tank

50: 50 ml closed tank

1: 1 L open tank

4: 4 L open tank

## Examples

### Submerged valves - HP-S-B-VPI-V-4

- Hand pump

- For single line actuator

- Bulkhead mounted with VPI-V

- 4 L open tank

### Bulkhead LPU w/submerged valve - HP-LPU-VP-B

- Hand pump LPU BRC/F/KF

- For double/single line actuator

- Bulkhead mounted LPU + VP

- Tank size depends on pipe length and actuator size

### Shipside valves - HP-D-1

- Hand pump

- For double line actuator

- Direct mounted

- 1 L open tank

## Main Data

Other additional	Quick connection
Mounting	Prepared for actuator and bulkhead block interface
A and B connection	1/4" BSPP
Maximum operation pressure	135 bar
Test pressure	210 bar
Maximum hand pump pressure	135 bar
Weight without oil	0 L tank: 5,3 kg, 50 ml tank: 6 kg 1 L tank: 9 kg and 4 L tank: 15 kg
Oil displacement per double stroke	6 cm <sup>3</sup>
Oil viscosity range	From 15 to 200 cSt
Temperature range	From -25° to 80° C
Recommended oil filtration	ISO Solid contaminant code 18/15 or NAS 160/10

## Material

Housing / Cover	Brass
Spindle / Piston	Aluminium bronze
Valves	Brass
Screws / Sign plate / Rivet	Stainless steel
Sealings	NBR (Acrylonitrile butadiene)

## General Installation Requirement

General installation requirements:

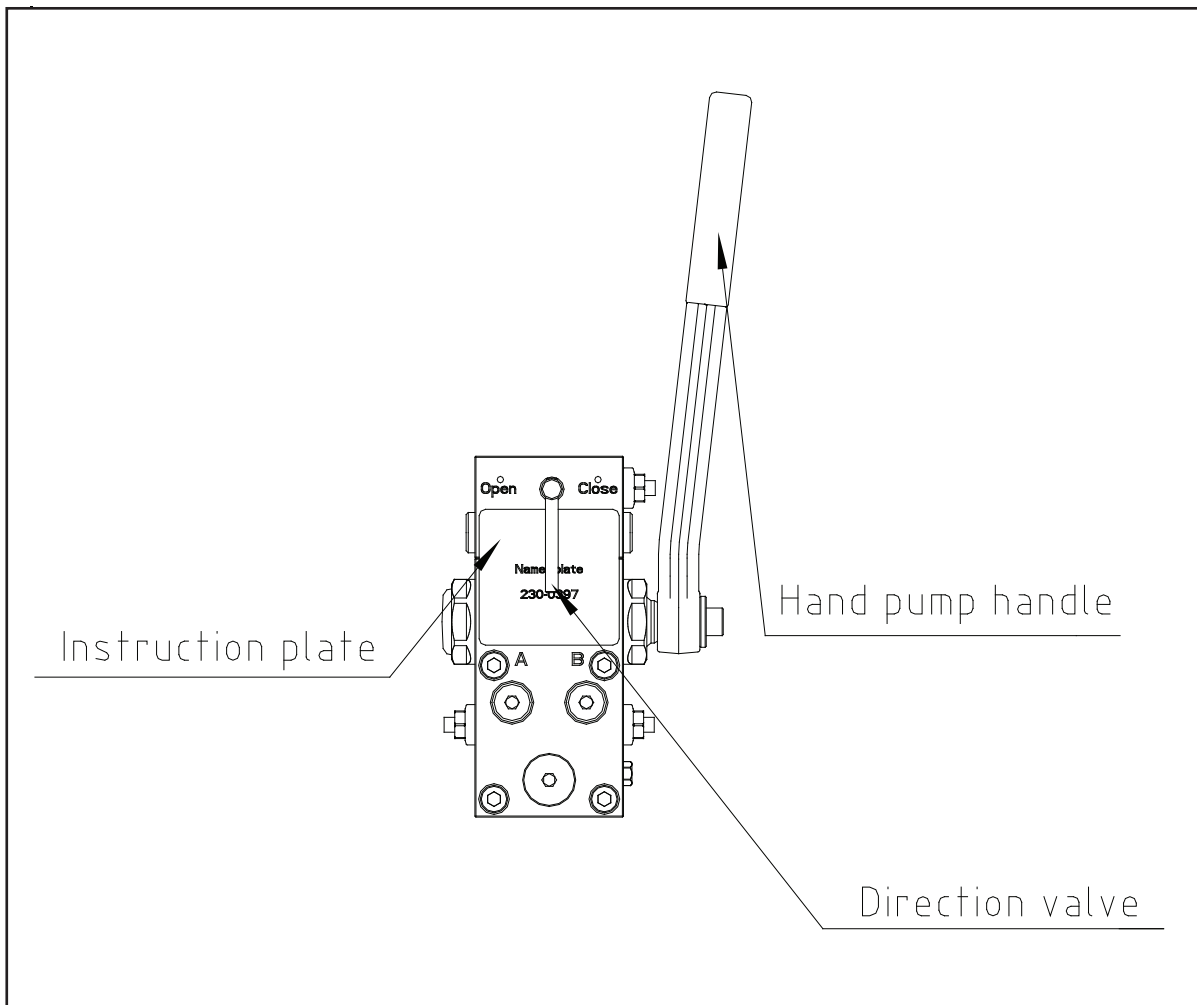
- To gain maximum hand pump performance it is of significant importance that the pipes between hand pump and actuator are well de-aired.
- Distance between hand pump and actuator must not exceed 50 m.

Specific rules related to hand pump applications can be found in the direct mounted, bulkhead mounted handpump and Electro hydraulic handpump datasheet.

In case of solenoid valve is needed for remote indirect indication:

- 4/3 ways SC solenoid throttle valve for double line actuators.
- 4/2 ways SR (FC / FO) solenoid valve on/off for single line actuators.

## Emergency Operation for Double Line Actuator



Description of the hand pump emergency operation can be found on the instruction plate mounted on the hand pump. The emergency description for the double line actuators is as follows:

### Emergency opening:

- Turn directional valve to "OPEN".
- Operate hand pump.

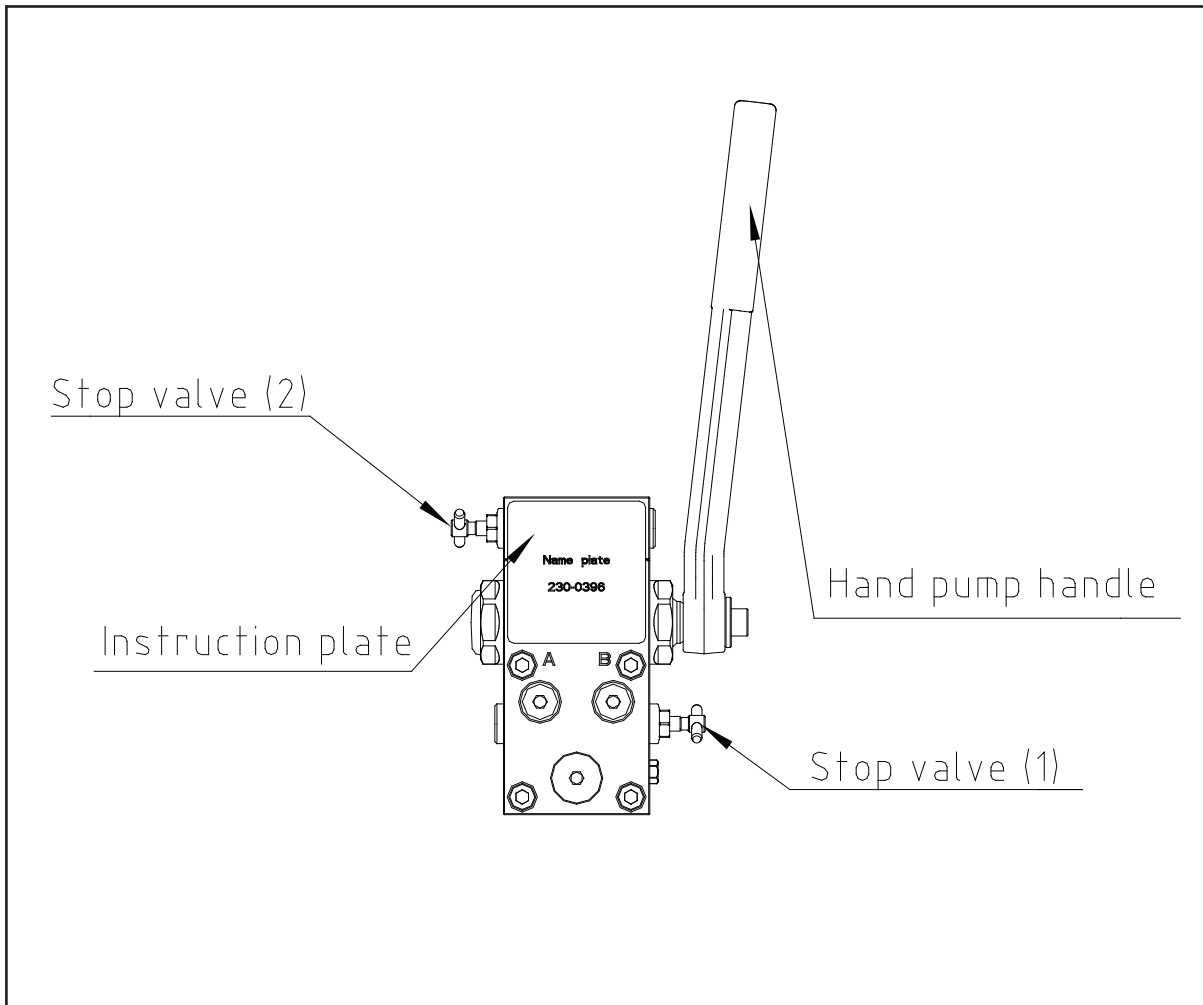
The valve will now stay in position until operated with hand pump again or by remote control.

### Emergency closing:

- Turn directional valve to "CLOSE".
- Operate hand pump.

The valve will now stay in position until operated with hand pump again or by remote control.

## Emergency Operation for Single Line Actuator



Description of the hand pump emergency operation can be found on the instruction plate mounted on the hand pump. The emergency description for the single actuators is as follows:

### Emergency opening:

- Close stop valve (1).
- Operate hand pump to open actuator.

### Notice:

Remote operation will not reset opening; if emergency opened the actuator has to be emergency closed again.

### Emergency closing:

- Open stop valve (2).
- When actuator is closed,
  - Close stop valve (2)
  - Open stop valve (1)

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