

### Pressure Comparison Pump Series LSP

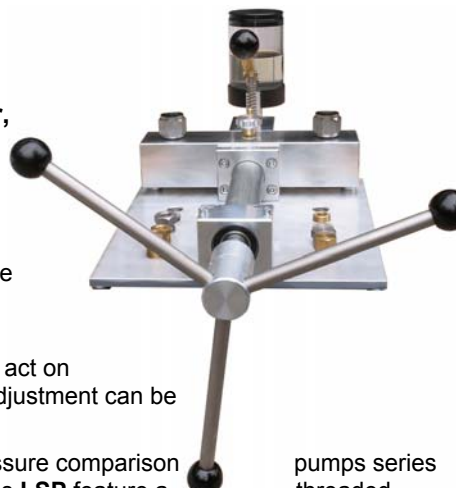
#### Pressure source for calibration purposes

Operating fluid: mineral oil based hydraulic fluid or clean water, free of calcium-carbonate / scale)




Pressure comparison pumps are used for generating pressure for the testing, adjusting and calibrating of mechanical and electronic pressure measuring instruments by means of comparison measurements. These pressure tests can be carried out in laboratories, workshops or on site at the set measuring point.

When the device under test and a reference measuring instrument with an adequate accuracy are connected to the test pump, the same pressure will act on both measuring instruments after actuating the pump. A calibration or an adjustment can be carried out by comparing the two measured values at any pressure value.

In order to enable an accurate generation of the measuring points, the pressure comparison **LSP** are provided with a fine adjustable spindle pump. In addition, the series **LSP** feature a spindle which only runs within the pump body. Thus there is no adverse bending moment acting on an outstanding spindle, and particularly for field use this has the advantage that the dimension of these pressure comparison pumps will not change when the spindle is turned during operation. The series **LSP** needs only little force to generate also high pressures.



pumps series threaded acting on an

| Type           | Execution  | Pressure generation   |
|----------------|--|-----------------------|
| LSP 1000-EB    |  <p>basic execution<br/>cost effective<br/><i>(the optional priming pump LSP-VP can be mounted, see back side of this sheet)</i></p> | 1000 bar<br>14500 psi |
| LSP 1000-EB-VP |  <p>basic execution but with already mounted priming pump LSP-VP (more easy handling because no venting necessary)</p>              | 1000 bar<br>14500 psi |
| LSP 1200-DL-VP |  <p>execution with base plate and with priming pump LSP-VP (more easy handling because no venting necessary)</p>                    | 1200 bar<br>17400 psi |
| LSP 1600-DL-VP | ditto  | 1600 bar<br>23200 psi |

Versions for aggressive media like SKYDROL® or brake fluids also available (Type ..."-S")



| Technical Data      |                            | LSP-1000-EB  | LSP-1000-EB-VP | LSP-1200-DL-VP             | LSP-1600-DL-VP            |     |
|---------------------|----------------------------|--|----------------|----------------------------|---------------------------|-----|
| Pressure generation | [bar]<br>[psi]             | 0 ... 1000<br>0 ... 14500  |                | 0 ... 1200<br>0 ... 17400  | 0 ... 1600<br>0 ... 23200 |     |
| Medium              |                            | mineral oil based hydraulic fluids or clean water, free of calcium-carbonate / scale |                |                            |                           |     |
| Pressure ports      |                            | 2 x 1/2" BSP female rotating, incl. O-ring seal                                      |                |                            |                           |     |
| Fluid reservoir     | [cm <sup>2</sup> ]         | 400  |                |                            |                           |     |
| Piston diameter     | [mm]                       | 8  |                |                            |                           |     |
| Spindle stroke      | [cm <sup>3</sup> ]         | appr. 3.9 (per turnaround: appr. 0.1)  |                |                            |                           |     |
| Needed force        | [Nm]                       | at 250 bar: 2.0 • at 500 bar: 4.0 • at 1000 bar: 8.0                                 |                |                            |                           |     |
| Materials:          |                            | stainless steel, aluminium, brass, Viton and NBR                                     |                |                            |                           |     |
| Dimensions          | distance of pressure ports | [mm]   | 200            | 200                        | 200                       | 200 |
|                     | length                     | [mm]   | 520            | 600                        | 600                       | 600 |
|                     | width                      | [mm]   | 280            | 280                        | 300                       | 300 |
|                     | height                     | [mm]   | 220            | 220                        | 240                       | 240 |
| Weight              | [kg]                       | 7.3  | 8.5            | 9.9                        | 9.9                       |     |
| stationary fixing   |                            | 2 drillings in front flange (dia. 6.4 mm)  |                | rigid aluminium base plate |                           |     |

NOT suitable for distilled water or water based hydraulic fluids!

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#### Optional Accessories:

##### LSP-VP

Priming pump to be mounted between back flange and fluid reservoir, incl. mounting parts. Only for type LSP 1000-EB, because the LSP-VP is included in scope of supply of all other types.



##### BLINDSTOPFEN-G12-MS

Blind plugs for both pressure ports (1/2" BSP)

##### LSP-ADAPTER-SET

Set of stainless steel adapters for pressure ports 1/4" BSP, M20x1.5, 1/4" NPT, 1/2" NPT, and set of gaskets

##### LSP-DOV

Spare O-rings for pressure ports (1/2" BSP), bag with 10 pcs.

##### VA-M16X2-G12A

Minimesse® coupling M16x2 male x 1/2" BSP male

##### MMS-M16X2-1-0

Minimesse® hose M16x2, length: 1.0 m

##### MMS-M16X2-2-0

Minimesse® hose M16x2, length: 2.0 m

##### MMS-M16X2-3-2

Minimesse® hose M16x2, length: 3.2 m

##### MMS-M16X2-4-0

Minimesse® hose M16x2, length 4.0 m

##### MSV-G12-M16X2

Minimesse® adapter 1/2 BSP female x M16x2 male

#### Recommended pressure reference instruments:

|                               |                  |   |
|-------------------------------|------------------|---|
| • Electr. Process Calibrator  | <b>LPC 300</b>   | Accuracy: ±0.025% of full scale value                 |
| • Electr. Pressure Calibrator | <b>LPC 200</b>   | Accuracy: ±0.025% of f.s.v. / ±0.1% of measured value |
| • Digital Reference Gauge     | <b>TLDMM</b>     | Accuracy: ±0.05% of full scale value                  |
| • Digital Test Pressure Gauge | <b>TLDMM-A01</b> | Accuracy: ±0.1 of full scale value                    |
| • Digital Test Pressure Gauge | <b>TLDMM-A02</b> | Accuracy: ±0.2% of full scale value                   |
| • Digital Test Pressure Gauge | <b>LDM 70</b>    | Accuracy: ±0.25 or 0,5% of full scale value           |



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