

# LEWA ecoflow

## Variable eccentric pump drive

### Type LDC

- Drive units
- Metering pumps

#### Performance

|                    |                                 |
|--------------------|---------------------------------|
| <b>Pressure</b>    | up to 500 bar                   |
| <b>Flow rate</b>   | up to 1100 l/h<br>per pump head |
| <b>Temperature</b> | up to 400°C                     |



#### Customer advantages

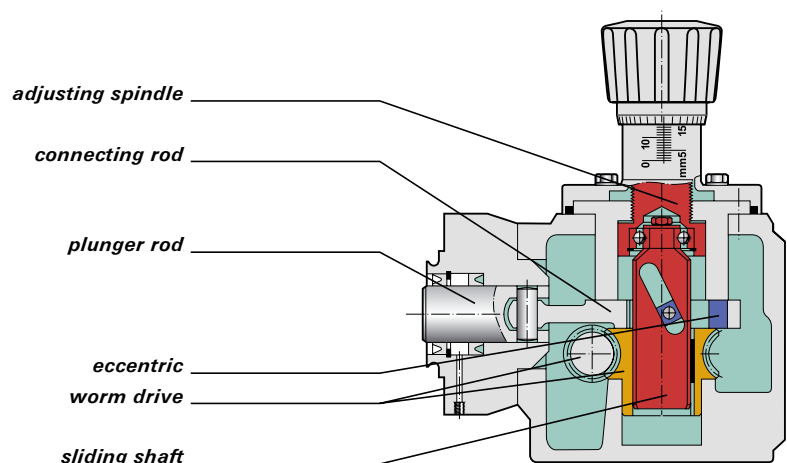
- **Rod thrust:** 5 kN
- **Stroke length:** 15 mm
- **Stroke adjustment:** available with fixed stroke length or with stroke length adjustment. Setting of stroke length is carried out manually or electrically
- **Linear stroke adjustment** in steps of 0,05 mm via hand wheel while pump is stopped or in operation. Proven variable eccentric drive principle, that means stroke length is adjusted where it arises: at the eccentric
- **Multiplex drive units** also in different frame sizes with motor mounted horizontally. Common oil bath without radial shaft seal ring between the drive units (thus less wear parts)
- **Harmonic plunger motion** also at partial stroke
- **API 675 specification** is met
- **Differing stroke rates** make it possible to meet requirements for different fluids and process conditions
- **Long life** due to solid construction, best materials, oil bath lubrication, weather- and splash protection

#### ■ Simple operation, easy maintenance

- **Pump head types:** plunger- and diaphragm pump heads can be mounted
- **Drive:** AC and DC motors, frequency inverter possible
- **Attachable instruments:** contactor

#### Method of operation

The drive shaft directly turns the **eccentric** via the **worm gear** and the **sliding shaft**. The **connecting rod** converts the rotary motion of the eccentric into a reciprocating motion of the **plunger rod**. The stroke length for the displacer movement is set (with the pump stopped or in operation) through radial shifting of the **eccentric**. For this the **sliding shaft** is axially shifted via the **adjusting spindle**. The axial movement of the sliding shaft is converted into a radial movement of the **eccentric** via the skew-slotted groove in the **sliding shaft**.



## Performance data

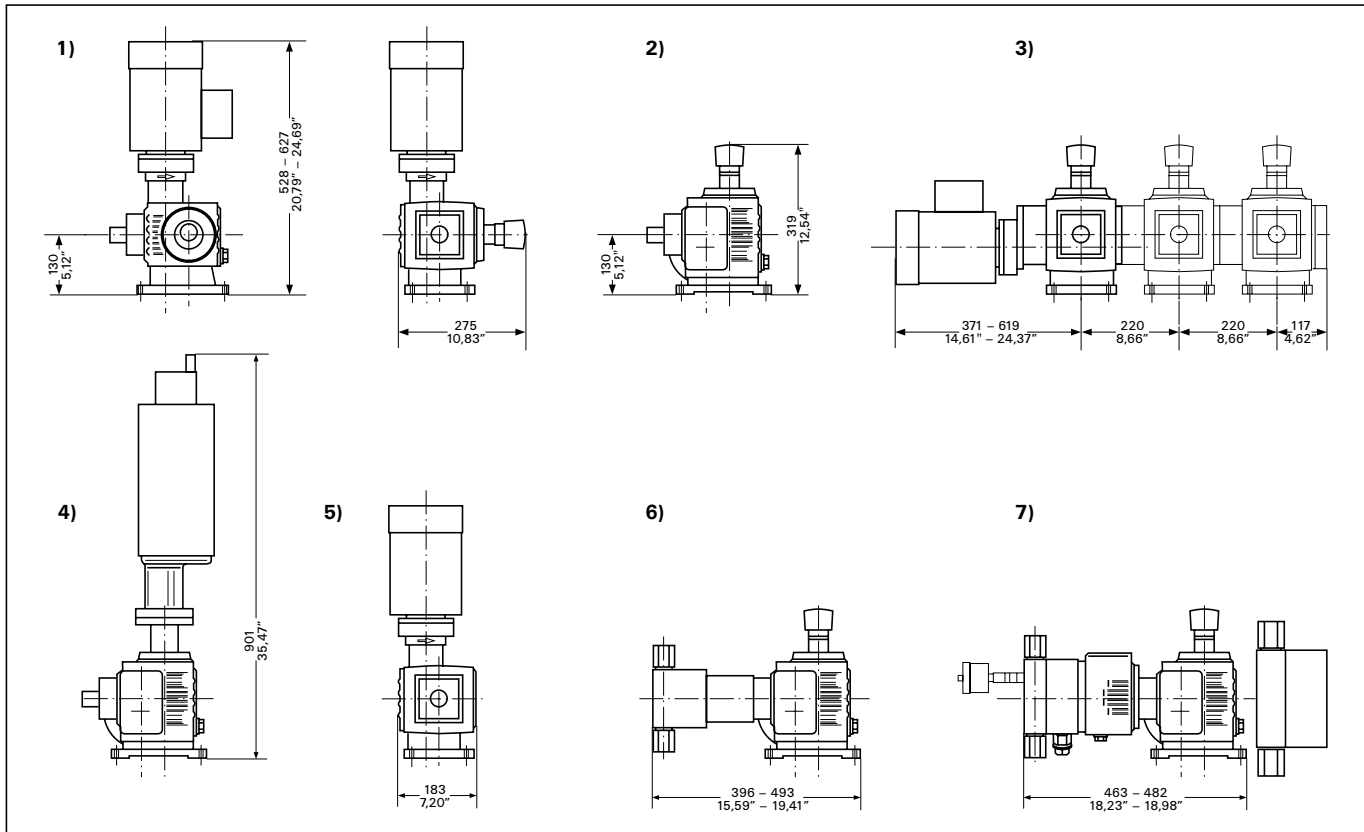
| Standard plunger<br>ø [mm] | Q <sub>theor.</sub> [l/h] <sup>1)</sup><br>Calc. flow rate per pump head at max. stroke length<br>and stroke frequency n [min <sup>-1</sup> ] |       |       |       |       |                        | Permissible operating pressure of standard pump heads [barg] |       |       |                    |      |  |  |
|----------------------------|---|-------|-------|-------|-------|------------------------|--|-------|-------|--------------------|------|--|--|
|                            |   |       |       |       |       |                        | Diaphragm pump heads   |       |       | Plunger pump heads |      |  |  |
|                            | 72  | 80    | 110   | 140   | 170   | 225                    | Type   | M 900 | M 200 |                    | K    |  |  |
|                            |   |       |       |       |       |                        | Model <sup>3)</sup>  | 3     | 2, 3  |                    | 2, 3 |  |  |
|                            |   |       |       |       |       | Material <sup>2)</sup> |  |       |       |                    |      |  |  |
| 8                          | 3,257   | 3,619 | 4,976 | 6,333 | 7,491 | 10,18                  |  | ---   | 400   |                    | 500  |  |  |
| 10                         | 5,089   | 5,655 | 7,775 | 9,90  | 12,02 | 15,90                  |  | 400   | 255   |                    | 500  |  |  |
| 12                         | 7,329   | 8,14  | 11,20 | 14,25 | 17,30 | 22,90                  |  | 400   | 255   |                    | 442  |  |  |
| 14                         | 9,98  | 11,08 | 15,24 | 19,40 | 23,55 | 31,17                  |  | 322   | ---   |                    | ---  |  |  |
| 16                         | 13,03   | 14,48 | 19,91 | 25,33 | 30,76 | 40,72                  |  | ---   | 100   |                    | 160  |  |  |
| 17                         | 14,71   | 16,34 | 22,47 | 28,60 | 34,73 | 45,96                  |  | 218   | ---   |                    | ---  |  |  |
| 20                         | 20,36   | 22,62 | 31,10 | 39,58 | 48,07 | 63,62                  |  | ---   | 100   |                    | 159  |  |  |
| 21                         | 22,44   | 24,94 | 34,29 | 43,64 | 52,99 | 70,1                   |  | 142   | ---   |                    | ---  |  |  |
| 25                         | 31,81   | 35,34 | 48,60 | 61,85 | 75,10 | 99,4                   |  | 99,4  | 41,0  |                    | 102  |  |  |
| 30                         | 45,80   | 50,89 | 69,98 | 89,1  | 108,1 | 143,1                  |  | 68,2  | 41,0  |                    | 70,7 |  |  |
| 34                         | 58,83   | 65,37 | 89,9  | 114,4 | 138,9 | 183,9                  |  | 52,6  | ---   |                    | ---  |  |  |
| 36                         | 65,96   | 73,3  | 100,8 | 128,3 | 155,7 | 206,1                  |  | ---   | 20,0  |                    | 49,1 |  |  |
| 38                         | 73,49   | 81,7  | 112,3 | 142,9 | 173,5 | 229,7                  |  | 41,6  | ---   |                    | ---  |  |  |
| 42                         | 89,78   | 99,8  | 137,2 | 174,6 | 212,0 | 280,6                  |  | 33,6  | ---   |                    | ---  |  |  |
| 44                         | 98,5  | 109,5 | 150,5 | 191,6 | 232,6 | 307,9                  |  | ---   | 20,0  |                    | 32,9 |  |  |
| 46                         | 107,7   | 119,7 | 164,5 | 209,4 | 254,3 | 336,5                  |  | 27,6  | ---   |                    | ---  |  |  |
| 52                         | 137,6   | 152,9 | 210,2 | 267,6 | 324,9 | 430,1                  |  | 21,0  | ---   |                    | 23,5 |  |  |
| 58                         | 171,2   | 190,2 | 261,6 | 332,9 | 404,2 | 535,0                  |  | 16,4  | ---   |                    | ---  |  |  |
| 60                         | 183,2   | 203,6 | 279,9 | 356,3 | 432,6 | 572,6                  |  | ---   | ---   |                    | 17,7 |  |  |
| 66                         | 221,7   | 246,3 | 338,7 | 431,1 | 523,4 | 692,8                  |  | 12,1  | ---   |                    | ---  |  |  |
| 70                         | 249,4   | 277,1 | 381,0 | 484,9 | 588,8 | 779,3                  |  | ---   | ---   |                    | 13,0 |  |  |
| 74                         | 278,7   | 309,7 | 425,8 | 541,9 | 658,0 | 870,9                  |  | 9,1   | ---   |                    | ---  |  |  |
| 82                         | 342,2   | 380,2 | 522,8 | 665,4 | 808,0 | 1069                   |  | 7,0   | ---   |                    | ---  |  |  |

1) Q<sub>theor.</sub> from stroke volume x stroke frequency. Q<sub>eff.</sub> (= Q<sub>theor.</sub> x η<sub>p</sub>) is stated in technical data sheet. For multiplex pumps, determine total metered flow by multiplying by the number of pump heads

2) 2 = 13 % Cr steel; 3 = stainless steel CrNiMo 18/10/2; other materials, e.g. Hastelloy to special order

3) Standard pump head connections depending on pump head size: internal thread to DIN or NPT resp. flanges to DIN or ANSI

## Dimensions



### Drive units

- 1) Simplex drive unit with manual stroke adjustment / motor mounted vertically
- 2) Simplex drive unit with manual stroke adjustment / motor mounted horizontally
- 3) Multiplex drive unit with manual stroke adjustment / motor mounted horizontally
- 4) Simplex drive unit with electric stroke adjustment / motor mounted horizontally
- 5) Simplex drive unit without stroke adjustment / motor mounted vertically

### Pumps

- 6) Plunger pump
- 7) Diaphragm pump

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