

Hydraulic Diaphragm Metering Pump Orlita® Evolution 1

Maximum process reliability and flexibility

ProMinent®



Capacity range of single pump: 3 – 355 l/h, 400 – 12 bar

The Orlita® Evolution 1 meets the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control. Its modular construction offers extremely good flexibility in terms of applications.

The Orlita® Evolution hydraulic diaphragm metering pumps form an integrated product range with stroke

lengths of 0 to 40 mm. This covers the capacity range of 3 to 7,400 l/h at 400 – 10 bar. A wide range of drive versions is available, including some with ATEX certification for use in Zone 1 or Zone 2 areas at risk from explosion.

The Orlita® Evolution product range is designed to comply with API 675.

Your benefits

Maximum process reliability

- PTFE multi-layer diaphragm with integral diaphragm rupture warning system
- Integral hydraulic relief valve
- The new diaphragm position control protects against operating faults (e.g no damage in the event of a blockage on the suction or discharge side)
- Metering reproducibility is better than ± 1 % within the 10 – 100 % stroke length range under defined conditions and with correct installation
- Continuous bleeding of the hydraulic oil chamber ensures reliable operation

Excellent flexibility

- The modular compact construction with single and multiple pump versions allows for a wide range of applications, even for multiple pump systems, whereas up to 5 metering units, even with different pump capacities, can be combined



شرکت مهارفن ابزار
Mahar Fan Abzar Co.

Hydraulic Diaphragm Metering Pump Orlita® Evolution 1



Area of application

- Oil and gas industry
- Metering of reactants and catalysts in the chemical industry
- Volume-proportional metering of chemicals/additives in the treatment of boiler feed water
- Level-dependent metering of auxiliary agents in industrial production engineering, for instance hot wax metering in the production of adhesive strips

Technical data for EF1a single pump 50 Hz

Stroke length: 0 to 15 mm. Rod force: 2.300 N

| Plunger Ø mm | Stroke volume ml/stroke | Theoretical pump capacity in l/h at strokes/min (50 Hz) | | | | | | | Max. pressure bar |
|-----------------|-------------------------------|---|--------|---------|---------|---------|---------|---------|-------------------------|
| | | 73 [2] | 97 [3] | 116 [4] | 145 [5] | 165 [6] | 181 [7] | 201 [8] | |
| 10 | 1.18 | 5.2 | 6.9 | 8.2 | 10.2 | 11.7 | 12.8 | 14.2 | 293 |
| 12 | 1.70 | 7.4 | 9.9 | 11.8 | 14.8 | 16.8 | 18.4 | 20.5 | 203 |
| 14 | 2.31 | 10.1 | 13.4 | 16.1 | 20.1 | 22.9 | 25.1 | 27.8 | 149 |
| 16 | 3.02 | 13.2 | 17.6 | 21.0 | 26.2 | 29.9 | 32.8 | 36.4 | 114 |
| 19 | 4.25 | 18.6 | 24.8 | 29.6 | 37.0 | 42.1 | 46.2 | 51.3 | 81 |
| 23 | 6.23 | 27.3 | 36.3 | 43.4 | 54.2 | 61.7 | 67.7 | 75.2 | 55 |
| 27 | 8.59 | 37.6 | 50.0 | 59.8 | 74.7 | 85.0 | 93.3 | 103.6 | 40 |
| 34 | 13.62 | 59.7 | 79.3 | 94.8 | 118.5 | 134.8 | 147.9 | 164.2 | 25 |
| 40 | 18.85 | 82.6 | 109.7 | 131.2 | 164.0 | 186.6 | 204.7 | 227.3 | 18 |

Important note: Abridged presentation of our complete product range. Other types on request.

Materials in contact with the medium

Dosing head complete

| Dosing head | Diaphragm retaining screw | Diaphragm |
|------------------------|---------------------------|----------------------------|
| Stainless steel 1.4404 | Stainless steel 1.4462 | PTFE multi-layer diaphragm |

Ball valve DN 3 – DN 10

| | Suction/pres- sure connector | Valve/head seal | Valve ball | Valve seat | Valve housing | Clamp ring |
|---------------------|---------------------------------|------------------------|--|------------------------|------------------------|--------------|
| DN 3 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | Al ₂ O ₃ ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |
| DN 6 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | SiN ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |
| DN 10 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | Al ₂ O ₃ ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |

Plate valve DN 15 – DN 20

| | Suction/pressure connector | Valve/head seal | Valve plate | Valve seat | Valve housing |
|-------------|-------------------------------|------------------------|------------------------|------------------------|------------------------|
| DN 15/DN 20 | Stainless steel 1.4404 | Stainless steel 1.4571 | Stainless steel 1.4462 | Stainless steel 1.4404 | Stainless steel 1.4404 |

Further material versions and details available on request.

Hydraulic Diaphragm Metering Pump Orlita® Evolution 2

Maximum process reliability and flexibility

ProMinent®



Capacity range of single pump: 6 – 900 l/h, 400 – 10 bar

The Orlita® Evolution 2 meets the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control. Its modular construction offers extremely good flexibility in terms of applications.

The Orlita® Evolution hydraulic diaphragm metering pumps form an integrated product range with stroke

lengths of 0 to 40 mm. This covers the capacity range of 3 to 7,400 l/h at 400 – 10 bar. A wide range of drive versions is available, including some with ATEX certification for use in Zone 1 or Zone 2 areas at risk from explosion.

The Orlita® Evolution product range is designed to comply with API 675.

Your benefits

Maximum process reliability

- PTFE multi-layer diaphragm with integral diaphragm rupture warning system
- Integral hydraulic relief valve
- The new diaphragm position control protects against operating faults (e.g no damage in the event of a blockage on the suction or discharge side)
- Metering reproducibility is better than ± 1 % within the 10 – 100 % stroke length range under defined conditions and with correct installation
- Continuous bleeding of the hydraulic oil chamber ensures reliable operation

Excellent flexibility

- The modular compact construction with single and multiple pump versions allows for a wide range of applications, even for multiple pump systems, whereas up to 5 metering units, even with different pump capacities, can be combined



Hydraulic Diaphragm Metering Pump Orlita® Evolution 2



Area of application

- Oil and gas industry
- Volume-proportional metering of chemicals/additives in the treatment of boiler feed water
- Metering of reactants and catalysts in the chemical industry
- Level-dependent metering of auxiliary agents in industrial production engineering, for instance hot wax metering in the production of adhesive strips

Technical data for EF2a single pump 50 Hz

Stroke length: 0 to 15 mm. Rod force: 5.400 N

| Plunger Ø | Stroke volume | Theoretical pump capacity in l/h at strokes/min (50 Hz) | | | | | | | Max. pressure |
|-----------|---------------|---|--------|---------|---------|---------|---------|---------|---------------|
| | | 73 [2] | 97 [3] | 116 [4] | 145 [5] | 165 [6] | 181 [7] | 201 [8] | |
| mm | ml/stroke | l/h | l/h | l/h | l/h | l/h | l/h | l/h | bar |
| 13 | 1.99 | 8 | 11 | 13 | 17 | 19 | 21 | 24 | 400 |
| 14 | 2.31 | 10 | 13 | 16 | 20 | 22 | 25 | 27 | 362 |
| 18 | 3.82 | 16 | 22 | 26 | 33 | 37 | 41 | 46 | 203 |
| 22 | 5.70 | 25 | 33 | 39 | 49 | 56 | 61 | 68 | 149 |
| 25 | 7.36 | 32 | 42 | 51 | 64 | 72 | 80 | 88 | 114 |
| 29 | 9.91 | 43 | 57 | 69 | 86 | 98 | 107 | 119 | 81 |
| 35 | 14.43 | 63 | 84 | 100 | 125 | 142 | 156 | 174 | 55 |
| 41 | 19.80 | 86 | 115 | 137 | 172 | 196 | 215 | 238 | 40 |
| 52 | 31.86 | 139 | 185 | 221 | 277 | 315 | 346 | 384 | 25 |
| 65 | 49.77 | 218 | 289 | 346 | 433 | 492 | 540 | 600 | 16 |
| 80 | 75.40 | 330 | 438 | 524 | 655 | 746 | 818 | 909 | 10 |

Important note: Abridged presentation of our complete product range. Other types on request.

Materials in contact with the medium

Dosing head complete

| Dosing head | Diaphragm retaining screw | Diaphragm |
|------------------------|---------------------------|----------------------------|
| Stainless steel 1.4404 | Stainless steel 1.4462 | PTFE multi-layer diaphragm |

Ball valve DN 3 – DN 10

| | Suction/pressure connector | Valve/head seal | Valve ball | Valve seat | Valve housing | Clamp ring |
|---------------------|----------------------------|------------------------|--|------------------------|------------------------|--------------|
| DN 3 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | Al ₂ O ₃ ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |
| DN 6 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | SiN ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |
| DN 10 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | Al ₂ O ₃ ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |

Plate valve DN 15 – DN 20

| | Suction/pressure connector | Valve/head seal | Valve plate | Valve seat | Valve housing |
|-------------|----------------------------|------------------------|------------------------|------------------------|------------------------|
| DN 15/DN 20 | Stainless steel 1.4404 | Stainless steel 1.4571 | Stainless steel 1.4462 | Stainless steel 1.4404 | Stainless steel 1.4404 |

Further material versions and details available on request.

Hydraulic Diaphragm Metering Pump Orlita® Evolution 3

Maximum process reliability and flexibility

ProMinent®



Capacity range of single pump: 21 – 1,330 l/h, 400 – 18 bar

The Orlita® Evolution 3 meets the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control. Its modular construction offers extremely good flexibility in terms of applications.

The Orlita® Evolution hydraulic diaphragm metering pumps form an integrated product range with stroke

lengths of 0 to 40 mm. This covers the capacity range of 3 to 7,400 l/h at 400 – 10 bar. A wide range of drive versions is available, including some with ATEX certification for use in Zone 1 or Zone 2 areas at risk from explosion.

The Orlita® Evolution product range is designed to comply with API 675.

Your benefits

Maximum process reliability

- PTFE multi-layer diaphragm with integral diaphragm rupture warning system
- Integral hydraulic relief valve
- The new diaphragm position control protects against operating faults (e.g no damage in the event of a blockage on the suction or discharge side)
- Metering reproducibility is better than ± 1 % within the 10 – 100 % stroke length range under defined conditions and with correct installation
- Continuous bleeding of the hydraulic oil chamber ensures reliable operation

Excellent flexibility

- The modular compact construction with single and multiple pump versions allows for a wide range of applications, even for multiple pump systems, whereas up to 5 metering units, even with different pump capacities, can be combined



Hydraulic Diaphragm Metering Pump Orlita® Evolution 3

Area of application

- Oil and gas industry
- Volume-proportional metering of chemicals/additives in the treatment of boiler feed water
- Metering of reactants and catalysts in the chemical industry
- Level-dependent metering of auxiliary agents in industrial production engineering, for instance hot wax metering in the production of adhesive strips

Technical data for EF3a single pump 50 Hz

Stroke length: 0 to 25 mm. Rod force: 8.000 N

| Plunger Ø | Stroke volume | Theoretical pump capacity in l/h at strokes/min (50 Hz) | | | | | | | Max. pressure |
|-----------|---------------|---|--------|---------|---------|---------|---------|---------|---------------|
| | | 73 [2] | 97 [3] | 116 [4] | 145 [5] | 165 [6] | 181 [7] | 201 [8] | |
| mm | ml/stroke | l/h | l/h | l/h | l/h | l/h | l/h | l/h | bar |
| 17 | 5.67 | 24 | 32 | 39 | 49 | 56 | 61 | 68 | 352 |
| 18 | 6.36 | 27 | 36 | 44 | 55 | 62 | 69 | 76 | 314 |
| 22 | 9.50 | 41 | 55 | 66 | 82 | 93 | 103 | 114 | 210 |
| 25 | 12.27 | 53 | 71 | 85 | 106 | 121 | 133 | 148 | 163 |
| 30 | 17.67 | 76 | 102 | 122 | 153 | 174 | 192 | 213 | 113 |
| 36 | 25.45 | 110 | 147 | 177 | 221 | 251 | 276 | 307 | 78 |
| 42 | 34.64 | 150 | 200 | 241 | 301 | 342 | 376 | 418 | 57 |
| 50 | 49.09 | 213 | 284 | 341 | 427 | 485 | 533 | 593 | 41 |
| 60 | 70.69 | 307 | 409 | 491 | 614 | 698 | 768 | 854 | 27 |
| 70 | 96.21 | 418 | 558 | 669 | 837 | 951 | 1,046 | 1,162 | 21 |
| 75 | 110.45 | 480 | 640 | 768 | 960 | 1,091 | 1,201 | 1,334 | 17 |

Important note: Abridged presentation of our complete product range. Other types on request.

Materials in contact with the medium

Dosing head complete

| Dosing head | Diaphragm retaining screw | Diaphragm |
|------------------------|---------------------------|----------------------------|
| Stainless steel 1.4404 | Stainless steel 1.4462 | PTFE multi-layer diaphragm |

Ball valve DN 3 – DN 10

| | Suction/pressure connector | Valve/head seal | Valve ball | Valve seat | Valve housing | Clamp ring |
|---------------------|----------------------------|------------------------|--|------------------------|------------------------|--------------|
| DN 6 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | SiN ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |
| DN 10 (double ball) | Stainless steel 1.4404 | Stainless steel 1.4404 | Al ₂ O ₃ ceramic | Stainless steel 1.4404 | Stainless steel 1.4404 | Hastelloy C4 |

Plate valve DN 15 – DN 25

| | Suction/pressure connector | Valve/head seal | Valve plate | Valve seat | Valve housing |
|-------------|----------------------------|------------------------|------------------------|------------------------|------------------------|
| DN 15/DN 25 | Stainless steel 1.4404 | Stainless steel 1.4571 | Stainless steel 1.4462 | Stainless steel 1.4404 | Stainless steel 1.4404 |

Further material versions and details available on request.

Hydraulic Diaphragm Metering Pump Orlita® Evolution 4

Maximum process reliability and flexibility

ProMinent®



Capacity range of single pump: 55 – 7,400 l/h, 400 – 10 bar

The Orlita® Evolution 4 meets the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control. Its modular construction offers extremely good flexibility in terms of applications.

The Orlita® Evolution hydraulic diaphragm metering pumps form an integrated product range with stroke

lengths of 0 to 40 mm. This covers the capacity range of 3 to 7,400 l/h at 400 – 10 bar. A wide range of drive versions is available, including some with ATEX certification for use in Zone 1 or Zone 2 areas at risk from explosion.

The Orlita® Evolution product range is designed to comply with API 675.

Your benefits

Maximum process reliability

- PTFE multi-layer diaphragm with integral diaphragm rupture warning system
- Integral hydraulic relief valve
- The new diaphragm position control protects against operating faults (e.g no damage in the event of a blockage on the suction or discharge side)
- Metering reproducibility is better than $\pm 1\%$ within the 10 – 100 % stroke length range under defined conditions and with correct installation
- Continuous bleeding of the hydraulic oil chamber ensures reliable operation

Excellent flexibility

- The modular compact construction with single and multiple pump versions allows for a wide range of applications, even for multiple pump systems, whereas up to 5 metering units, even with different pump capacities, can be combined

Hydraulic Diaphragm Metering Pump Orlita® Evolution 4

Area of application

- Oil and gas industry
- Volume-proportional metering of chemicals/additives in the treatment of boiler feed water
- Metering of reactants and catalysts in the chemical industry
- Level-dependent metering of auxiliary agents in industrial production engineering, for instance hot wax metering in the production of adhesive strips

Technical data for EF4a single pump 50 Hz

Stroke length: 0 to 40 mm. Rod force: 15.700 N

| Plunger Ø | Stroke volume | Theoretical pump capacity in l/h at strokes/min (50 Hz) | | | | | | | Max. pressure |
|-----------|---------------|---|--------|---------|---------|---------|---------|---------|---------------|
| | | 73 [2] | 97 [3] | 116 [4] | 145 [5] | 165 [6] | 181 [7] | 201 [8] | |
| mm | ml/stroke | l/h | l/h | l/h | l/h | l/h | l/h | l/h | bar |
| 20 | 12.57 | 55 | 73 | 87 | 109 | 124 | 136 | 151 | 400 |
| 25 | 19.63 | 85 | 114 | 136 | 170 | 194 | 213 | 236 | 320 |
| 28 | 24.63 | 107 | 143 | 171 | 214 | 243 | 267 | 297 | 275 |
| 30 | 28.27 | 123 | 164 | 196 | 245 | 279 | 307 | 340 | 222 |
| 40 | 50.27 | 220 | 292 | 349 | 437 | 497 | 545 | 606 | 125 |
| 50 | 78.54 | 344 | 457 | 546 | 683 | 777 | 852 | 947 | 80 |
| 60 | 113.10 | 495 | 658 | 787 | 983 | 1,119 | 1,228 | 1,363 | 56 |
| 70 | 153.94 | 674 | 895 | 1,071 | 1,339 | 1,524 | 1,671 | 1,856 | 41 |
| 90 | 254.47 | 1,114 | 1,481 | 1,771 | 2,213 | 2,519 | 2,763 | 3,068 | 25 |
| 110 | 380.13 | 1,664 | 2,212 | 2,645 | 3,307 | 3,763 | 4,128 | 4,584 | 17 |
| 140 | 615.75 | 2,696 | 3,583 | 4,285 | 5,357 | 6,095 | 6,687 | 7,425 | 10 |

Important note: Abridged presentation of our complete product range. Other types on request.

Materials in contact with the medium

Dosing head complete

| Dosing head | Diaphragm retaining screw | Diaphragm |
|------------------------|---------------------------|----------------------------|
| Stainless steel 1.4404 | Stainless steel 1.4462 | PTFE multi-layer diaphragm |

Plate valve

| | Suction/pressure connector | Valve/head seal | Valve plate | Valve seat | Valve housing |
|---------------|----------------------------|------------------------|------------------------|------------------------|------------------------|
| DN 15 – DN 65 | Stainless steel 1.4404 | Stainless steel 1.4571 | Stainless steel 1.4462 | Stainless steel 1.4404 | Stainless steel 1.4404 |

Further material versions and details available on request.