

EVO 6 Syringe Pump

- Programmable, maintenance free, precision liquid metering device
- 60 mm stroke driven via stepper motor and precision lead screw
- Available in three mechanical resolutions: 6K, 48K
- Powerful lift force and valve torque
- Exceptional precision, accuracy and lifetime performance
- Suitable for use in analytical, biotechnology, medical device, and diagnostic applications



Technical features

Environmental

Operating Temperature:
15°C ... 40°C

Operating Humidity:
20% ... 80% Relative Humidity
at 5°C ... 30°C
and <50% at 31°C ... 50°C

Storage Temperature:
–33°C ... 71°C

Noise:
< 75dBA

Lifetime:
> 2 Million cycles
[1 cycle = 1 full dispense and aspirate move]

Mechanical

Operation:
Any orientation

Mounting Holes:
Bottom and Front

Resolutions:
6K, 48K steps

Performance Speed:
2.4s ... 40min per stroke

Precision:
0.50% CV at 1/10th dispense
0.05% CV at full stroke dispense

Accuracy:
< 1% at full stroke dispense

Electrical Connection:
15 pin DSUB "Power/COMM"

Communication Options:
RS-232, RS485

Power Requirements:
24VDC (± 5% allowance)

Power Consumption:
48 watts max

Rotary Valve Options:
Up to 12-way

Syringe Options:
10µl to 50mL

Compliance:
RoHS Compliant



EVO 6 Pump

All pumps are offered with a pre-assembled valve. Replacement valves and syringes (not included) may be purchased separately.

| Valve Description | 6K Resolution | 48K Resolution |
|-----------------------------|---------------|----------------|
| None (rotary valve feature) | 600030 | 600240 |

See below for additional valve options.

Other combinations not shown in the table above are available upon request.

| Face Seal Valves - Ceramic | | |
|----------------------------|-------------------|------------------------|
| P/N | Orifice Size (in) | Valve Type |
| 23550 | 0.059 | 3-Way Distribution |
| 23551 | 0.078 | 3-Way Distribution |
| 24898 | 0.059 | 4-Way Distribution |
| 23604 | 0.059 | 5-Way Distribution |
| 23370 | 0.059 | 8-Way Distribution |
| 24090* | 0.076 | 8-Way Distribution |
| 24105** | 0.040 | 12-Way Distribution |
| 23548 | 0.059 | 3-Way Non-Distribution |
| 23549 | 0.078 | 3-Way Non-Distribution |

Wetted materials: alumina ceramic, FFKM (seals)

* Overall length: 2.50"

** Overall length: 2.70"

| Optional Accessories | |
|----------------------|--|
| P/N | Description |
| 18659 | Port Plug Screw, use with seal p/n 18781 |

| Seal Washers | |
|--------------|---|
| P/N | Description |
| 14271 | Teflon, 0.070 ID Hole, for 0.059" orifice |
| 18031 | Teflon, 0.095 ID Hole, for 0.076" orifice |
| 18033 | Teflon, 0.125 ID Hole, for 0.089" orifice |
| 18781 | Teflon, no hole, for port plug |

| Plug Valves | | | | | |
|-------------|-------------------|--------------------|-------|-------------------|------------------------|
| P/N | Orifice Size (in) | Valve Type | P/N | Orifice Size (in) | Valve Type |
| 19218 | 0.059 | 1-Way Distribution | 19194 | 0.031 | 3-Way Non-Distribution |
| 18247 | 0.059 | 1-Way Distribution | 17615 | 0.059 | 3-Way Non-Distribution |
| 18248 | 0.076 | 1-Way Distribution | 18192 | 0.076 | 3-Way Non-Distribution |
| 99884 | 0.031 | 3-Way Distribution | 18680 | 0.089 | 3-Way Non-Distribution |
| 17616 | 0.059 | 3-Way Distribution | 24699 | 0.090 | 3-Way Non-Distribution |
| 18189 | 0.076 | 3-Way Distribution | 17712 | 0.059 | 4-Way Non-Distribution |
| 17617 | 0.059 | 4-Way Distribution | 24697 | 0.059 | 4-Way Loop |
| 18190 | 0.076 | 4-Way Distribution | 29621 | 0.059 | 6-Way Loop |
| 17618 | 0.059 | 5-Way Distribution | | | |
| 18188 | 0.076 | 5-Way Distribution | | | |
| 24701 | 0.031 | 6-Way Distribution | | | |
| 17619 | 0.059 | 6-Way Distribution | | | |
| 18193 | 0.076 | 6-Way Distribution | | | |
| 19323 | 0.031 | 8-Way Distribution | | | |
| 17620 | 0.059 | 8-Way Distribution | | | |
| 17877 | 0.076 | 8-Way Distribution | | | |

| Optional Accessories | |
|----------------------|--|
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UHMW Syringes (individually boxed)

| Size | Orifice Size (in) | Standard Lubricated Syringe | Zero Dead Volume (Lubricated) |
|--------|-------------------|-----------------------------|-------------------------------|
| 25µL* | 0.016 | 103177 | - |
| 50µL | 0.024 | 103178 | - |
| 100µL | 0.032 | 24518 | - |
| 250µL | 0.039 | 19513 | - |
| 500µL | 0.076 | 24694 | 25427 |
| 1.0mL | 0.076 | 24690 | 25413 |
| 1.25mL | 0.076 | - | 25438 |
| 2.5mL | 0.076 | 24685 | 25388 |
| 5.0mL | 0.076 | 18857 | 24691 |
| 10.0mL | 0.076 | 19110 | 24139 |
| 25.0mL | 0.076 | 24688 | 25380 |

Wetted materials: Borosilicate glass, PCTFE, UHMW-PE, PTFE
 * Contains stainless steel in wetted path

PTFE Syringe Assembly (individually boxed)

| Size | Orifice Size (in) | Standard Lubricated Syringe | Zero Dead Volume (Lubricated) |
|--------|-------------------|-----------------------------|-------------------------------|
| 10µL* | 0.016 | 103179 | - |
| 25µL* | 0.016 | 103180 | - |
| 50µL | 0.024 | 103185 | - |
| 100µL | 0.032 | 17593 | - |
| 250µL | 0.039 | 17594 | 19509 |
| 500µL | 0.076 | 17595 | 19537 |
| 1.0mL | 0.076 | 17596 | 25429 |
| 1.25mL | 0.076 | 17597 | 25431 |
| 2.5mL | 0.076 | 17598 | 19539 |
| 5.0mL | 0.076 | 17599 | 18463 |
| 10.0mL | 0.076 | 17600 | 18469 |
| 25.0mL | 0.076 | 17601 | 23734 |
| 50.0mL | 0.076 | 17602 | - |

Wetted materials: Borosilicate glass, PCTFE, PTFE
 * Contains stainless steel in wetted path

PTFE Syringes

| Size | Standard Assy | ZDV Assy | Orifice Size (in) |
|-------|---------------|----------|-------------------|
| 50µL | 23164 | 27960 | 0.023 |
| 100µL | 23165 | 27961 | 0.023 |
| 250µL | 23166 | 28006 | 0.031 |
| 500µL | 23167 | 28007 | 0.031 |
| 1.0mL | 23168 | 28008 | 0.073 |
| 2.5mL | 23169 | 28009 | 0.073 |
| 5.0mL | 23170 | 28010 | 0.073 |

Wetted materials: Borosilicate glass, PCTFE, PTFE

UHMW Syringes

| Size | Standard Assy | ZDV Assy | Orifice Size (in) |
|-------|---------------|----------|-------------------|
| 50µL | 24411 | 27958 | 0.023 |
| 100µL | 24412 | 27959 | 0.023 |
| 250µL | 24413 | 28011 | 0.031 |
| 500µL | 24414 | 28012 | 0.031 |
| 1.0mL | 24415 | 28013 | 0.073 |
| 2.5mL | 24416 | 28014 | 0.073 |
| 5.0mL | 24417 | 28015 | 0.073 |

Wetted materials: Borosilicate glass, PCTFE, PTFE

Zero Dead Volume (ZDV) syringes have a pointed plunger tip to minimize carryover. All syringes are lubricated with Silicone oil. For more information on syringes please consult PSD-0006 or visit our website.

Option selector

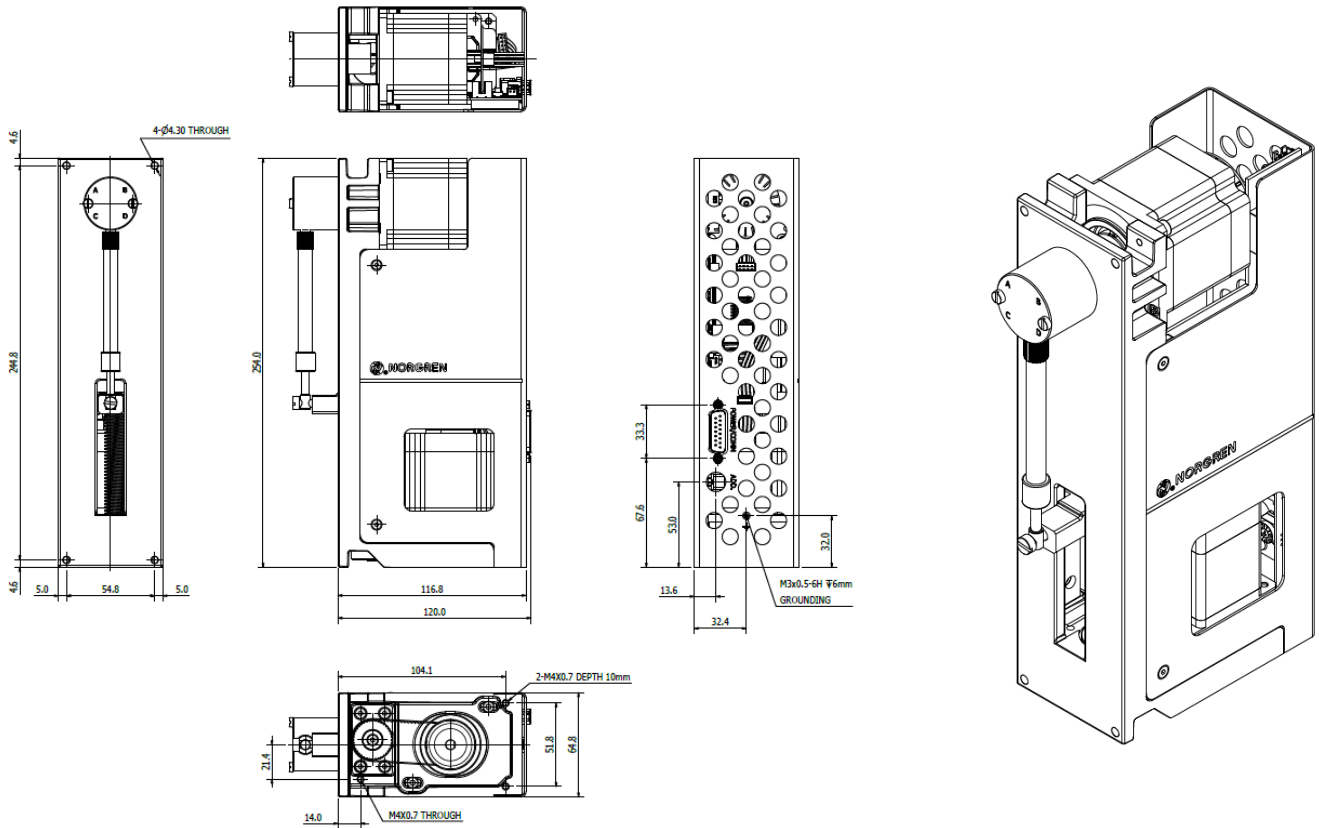
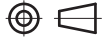
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| Resolution | Substitute |
|------------|------------|
| 6K | 06 |
| 48K | 48 |

| P/N | Substitute |
|-------------------|---------------|
| Rotary Valves P/N | see P/N table |

Valve Notes:

Port connection is 1/4-28 UNF. For more information on valves, consult PSD-0031 or visit our website. All valve ports are accessible when using syringes listed and spring-loaded fittings (recommended). Valve weep hole port connection is #6-40 UNF-2A. For use with 1/16" OD tubing.



Warning

Improper selection, misuse, age or malfunction of components used in systems can cause failure in various modes. The system designer is warned to consider the failure modes of all component parts and to provide adequate safeguards to prevent personal injury or damage to equipment or property in the event of such failure modes.

System designers and end-users are cautioned to consult instruction sheets and specifications available from the factory. The system designer/end-user is responsible for verifying that all requirements for the application are met.

Due to unlimited application, system conditions and chemistries, it is the buyers responsibility to validate the product within their specific application.