Premium Syringe Pumps

Precision Technology
From a Name You Trust
What Sets Masterflex® Brand Syringe Pumps Apart?

They make work easy—
- Preprogrammed syringe library provides automated settings for most popular brands of syringes
- Remote control interface allows convenient, hands-free operation
- Networkable up to 99 pumps

They maximize the precision and efficiency of your work—
- High-precision fluid delivery means maximum reproducibility
- Microprocessor control provides extremely smooth, low-pulse flow, from 1 nL/hr to 2451 mL/hr

They are among the best-made instruments in the industry—
- Fully welded seams prevent ingress of liquids
- CE approval available throughout the product family

Infusion Pumps
Ideal when accurate, precise amounts of fluids are required

- Set up in three simple steps:
  1. Select syringe brand and type
  2. Set flow rate
  3. Press “Run”

- Dispense preset volumes with automatic shutoff

Select brand/type of syringe
Set flow rate and press “run”
Infusion/Withdrawal Pumps

Multipurpose instruments for the programmed infusion or withdrawal of solution

- Automated performance enables unattended filling of syringes at very low flow rates
- Power Failure indication provides long-term testing confidence

Push-Pull Pumps

Opposing syringes operating off the same drive allow simultaneous infusion and withdrawal

- Linear encoder eliminates motor overdrive
- Program using easy-to-operate keypad

Specialty Pumps

Our precision syringe pumps perform operations less sophisticated units cannot

- Continuous-cycle syringe pump utilizes push-pull technology with three-way valves to dispense a set amount over extended periods.
- Emulsifier pump emulsifies viscous fluid by cycling fluid back and forth through a micro-emulsifying needle. Ensures accuracy, eliminates operator fatigue, and saves time in preparation.
Specifications

- ±<1% accuracy
- ±0.1% reproducibility

Programmable models let you program the pump to control from seconds to days, change flow rates, pause, ramp rates up or down, control outputs, and respond to external TTL signals—all from the keypad.

### Infusion syringe pumps

<table>
<thead>
<tr>
<th>Standard models</th>
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<tbody>
<tr>
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- **Syringe capacity (number)**
  - 10 µL to 60 mL (one)
  - 10 µL to 10 mL (two)
  - 10 µL to 140 mL (two)
  - 10 µL to 10 mL (ten), 20 mL to 60 mL (six), or 100 mL to 140 mL (four)
  - 10 µL to 10 mL (four)
  - 10 µL to 140 mL (one)

- **Min flow rate**
  - 10-µL syringe: 0.1 µL/hr
  - 50-µL syringe: 0.001 µL/hr
  - 100 µL syringe: 0.001 µL/hr
  - 0.001 µL/hr
  - 0.001 µL/hr
  - 0.001 µL/hr

- **Max flow rate**
  - 10-µL syringe: 127 mL/hr
  - 21 mL/min
  - 21 mL/min
  - 21 mL/min
  - 21 mL/min
  - 21 mL/min
  - 21 mL/min
  - 21 mL/min

- **Linear force**
  - 20 lb (9 kg)
  - 40 lb (18 kg)
  - 40 lb (18 kg)
  - 40 lb (18 kg)
  - 40 lb (18 kg)
  - >100 lb (45 kg)

- **Advance per microstep**
  - 0.529 micron
  - 0.088 micron
  - 0.165 micron
  - 0.165 micron
  - 0.165 micron
  - 0.165 micron
  - 0.165 micron

- **Max step rate**
  - 400 / sec
  - 400 / sec
  - 1600 / sec
  - 1600 / sec
  - 1600 / sec
  - 1600 / sec

- **Min step rate**
  - 1/30 sec
  - 1/30 sec
  - 1/100 sec
  - 1/100 sec
  - 1/100 sec
  - 1 µstep / 120 sec

### Infusion/withdrawal syringe pumps

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- **Syringe capacity (number)**
  - 10 µL to 140 mL (two)
  - 10 µL to 10 mL (ten), 20 mL to 60 mL (six), or 100 mL to 140 mL (four)
  - 1 µL to 100 µL (one)

- **Min flow rate**
  - 10-µL syringe: 0.001 µL/hr
  - 0.001 µL/hr

- **Max flow rate**
  - 10-µL syringe: 127 µL/min
  - 21 mL/min
  - 86 mL/min
  - 83 mL/min
  - 145 mL/min
  - 145 mL/min
  - 145 mL/min
  - 146 mL/min

- **Linear force**
  - 40 lb (18 kg)
  - 40 lb (18 kg)
  - 40 lb (18 kg)
  - 40 lb (18 kg)
  - 40 lb (18 kg)
  - >100 lb (45 kg)

- **Advance per microstep**
  - 0.165 micron
  - 0.165 micron
  - 1.58 micron
  - 1.58 micron
  - 1.58 micron

- **Max step rate**
  - 1600 / sec
  - 916 / sec
  - 1/100 sec
  - 1/100 sec
  - 1/100 sec

- **Min step rate**
  - 1/30 sec
  - 1/30 sec
  - 1/100 sec
  - 1/100 sec
  - 1/100 sec

- **†Using a 1-µL syringe**

### Continuous syringe pumps

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- **Syringe capacity (number)**
  - 10 µL to 60 mL (four)

- **Min flow rate**
  - 10-µL syringe: 0.001 µL/hr

- **Max flow rate**
  - 10-µL syringe: 21 mL/min
  - 40-µL syringe: 86 mL/min

- **Linear force**
  - 40 lb (18 kg)

- **Advance per microstep**
  - 0.165 micron

- **Max step rate**
  - 1600 / sec

- **Min step rate**
  - 1/100 sec