

Electronic Metering Pumps

Configuration Data

Model **C92** **1** - **363SI**

Control & Output Code

Manual Control

Speed (stroking frequency) and stroke length manually adjustable.

- C10 --- 1.3 GPH (4.9 l/h) ... 300 psi (20.7 Bar)
- C11 --- 2.5 GPH (9.5 l/h) ... 150 psi (10.3 Bar)
- C12 --- 4.0 GPH (15.1 l/h) ... 100 psi (6.9 Bar)
- C13 --- 8.0 GPH (30 l/h) 60psi (4.1 Bar)
- C14 ---- 20 GPH (76 l/h) 25 psi (1.7 Bar)

Instrument Responsive/Manual Control

Manual adjustment features of C1 Series plus switch conversion to external control for automatic systems.

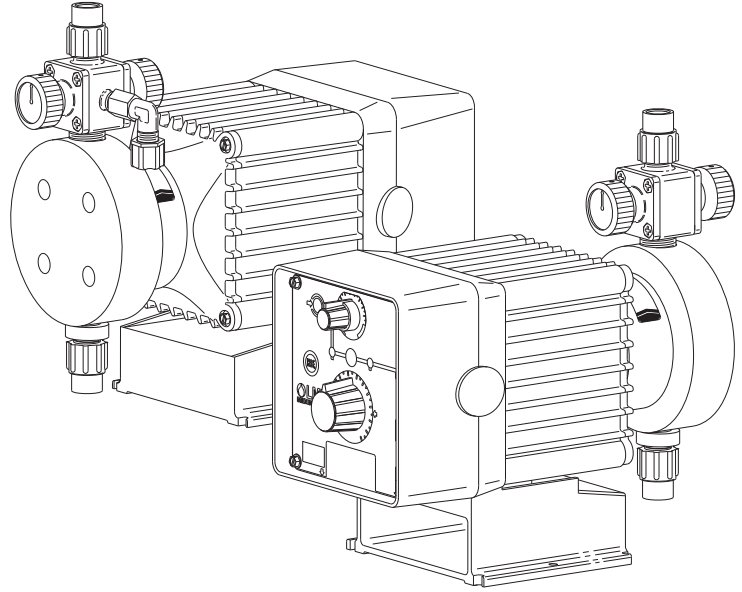
- C70 --- 1.3 GPH (4.9 l/h) ... 300 psi (20.7 Bar)
- C71 --- 2.5 GPH (9.5 l/h) ... 150 psi (10.3 Bar)
- C72 --- 4.0 GPH (15.1 l/h) ... 100 psi (6.9 Bar)
- C73 --- 8.0 GPH (30 l/h) 60 psi (4.1 Bar)
- C74 ---- 20 GPH (76 l/h) 25 psi (1.7 Bar)
- C76* -- 4.0 GPH (15.1 l/h) ... 175 psi (12.1 Bar)
- C77* --- 10 GPH (38 l/h) 80 psi (5.5 Bar)
- C78* --- 25 GPH (95 l/h) 30 psi (2.07 Bar)
- C90 --- 1.3 GPH (4.9 l/h) ... 300 psi (20.7 Bar)
- C91 --- 2.5 GPH (9.5 l/h) ... 150 psi (10.3 Bar)
- C92 --- 4.0 GPH (15.1 l/h) ... 100 psi (6.9 Bar)
- C93 --- 8.0 GPH (30 l/h) 60 psi (4.1 Bar)
- C94 --- 20 GPH (76 l/h) 25 psi (1.7 Bar)

Voltage Code

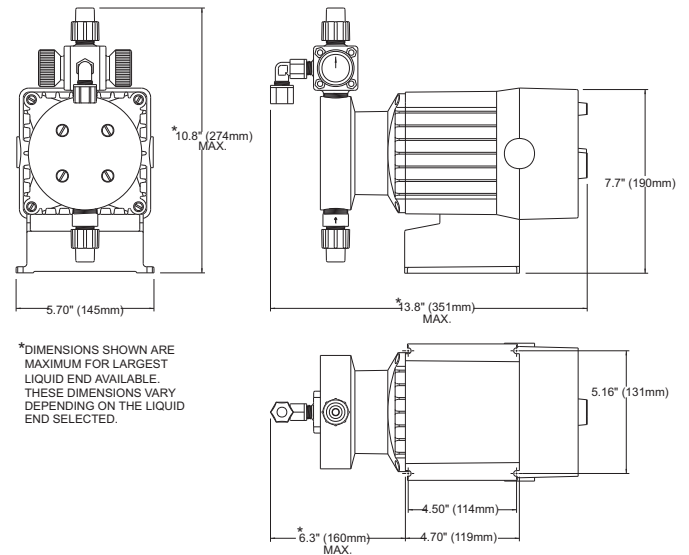
- 1 ----- 120 VAC US Plug
- 2 ----- 240 VAC US Plug
- 3 ----- 220-240 VAC DIN Plug
- 5 ----- 240-250 VAC, UK Plug
- 6 ----- 240-250 VAC, AUST/NZ Plug
- 7 ----- 220-240 VAC, SWISS Plug

Liquid End

See next page for complete liquid end specifications and selection.



Dimensions



Specifications

| Series | Strokes Per Minute (Adjustable) | | Stroke Length (Adjustable) Recommended Minimum | Average Input Power @Max Speed | Shipping Weight |
|---|---------------------------------|-----|--|--------------------------------|------------------|
| | Min | Max | | | |
| C10, C70, C90 C11, C71, C91 C12, C72, C92 C13, C73, C93 C14, C74, C94 | 1 | 100 | 10% | 44 watts | 20 lbs (9.1 kg) |
| C76 C77 C78 | 1 | 100 | 10% | 87 watts | 28 lbs (12.7 kg) |



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Standard Liquid End Configuration Data & Materials of Construction

| Drive Assembly | Liquid End No. | Size Code | Materials of Construction | | | | Accessory | Tubing & Connections | |
|--|--------------------------|-----------|---------------------------|-------------|-------------|------------------|-----------------|------------------------------|----------------------------|
| | | | Head & Fittings | Balls | Liquifram™ | Check Valve | | Discharge | Suction |
| C90, C70 C10 | 498SP | 0.9 | PVC | Ceramic | Fluorofilm™ | PVDF / PTFE | 4FV | Pipe 1/2" NPT M | |
| | 297 | 0.9 | 316 S.S. | 316 S.S. | Fluorofilm™ | 316 S.S. | | Pipe 1/4" NPT M | |
| C92 C91 C72 C71 C12 C11 | 468SI | 1.8 | PVC / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .375" O.D. | |
| | 460SI | 1.8 | Acrylic / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .375" O.D. | |
| | 469SI | 1.8 | Acrylic / PVDF | PTFE | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .375" O.D. | |
| | 368SI† | 1.8 | PVC / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .375" O.D. | |
| | 362SI† | 1.8 | PVDF / PVDF | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .375" O.D. | |
| | 363SI† | 1.8 | PVDF / PVDF | Ceramic | Fluorofilm™ | PVDF / PTFE | 4FV | PE .375" O.D. | |
| | 465SI | 1.8 | Polypropylene | Ceramic | Fluorofilm™ | PVDF / PTFE | 4FV | PE .375" O.D. | |
| | 75HV | 1.8 | Polypropylene | 316 S.S. | Fluorofilm™ | PTFE | | PE .5" O.D. Vinyl .938" O.D. | |
| | 76HV | 1.8 | Acrylic/PP | 316 S.S. | Fluorofilm™ | Hypalon® | | PE .5" O.D. Vinyl .938" O.D. | |
| | 277 | 1.8 | 316 S.S. | 316 S.S. | Fluorofilm™ | 316 S.S. | | Pipe 1/4" NPT M | |
| C93 C73 C13 | 312SI# | 3.0 | PVDF / PVDF | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .5" O.D. | |
| | 313SI# | 3.0 | PVDF / PVDF | Ceramic | Fluorofilm™ | PVDF / PTFE | 4FV | PE .5" O.D. | |
| | 318SI# | 3.0 | PVC / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .5" O.D. | |
| | 410SI# | 3.0 | Acrylic / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .5" O.D. | |
| | 415SI# | 3.0 | Polypropylene | Ceramic | Fluorofilm™ | PVDF / PTFE | 4FV | PE .5" O.D. | |
| | 418SI# | 3.0 | PVC / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .5" O.D. | |
| | 419SI# | 3.0 | Acrylic / PVDF | PTFE | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .5" O.D. | |
| | 20 | 3.0 | Acrylic / PVC | Ceramic | Fluorofilm™ | Hypalon® | | PE .5" O.D. | |
| | 20HV | 3.0 | Acrylic/PP | 316 S.S. | Fluorofilm™ | Hypalon® | | PE .5" O.D. Vinyl .938" O.D. | |
| | 20S | 3.0 | Acrylic/PVC | Ceramic | Fluorofilm™ | Hypalon® | 4FV | PE .5" O.D. Vinyl .5" O.D. | |
| | 24 | 3.0 | PVC | Ceramic | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | |
| | 25HV | 3.0 | Polypropylene | 316 S.S. | Fluorofilm™ | PTFE | | PE .5" O.D. Vinyl .938" O.D. | |
| | 26 | 3.0 | PVC | Ceramic | Fluorofilm™ | Viton® | | PE .5" O.D. | |
| | 26S | 3.0 | PVC | Ceramic | Fluorofilm™ | Viton® | 4FV | PE .5" O.D. | |
| | 27 | 3.0 | 316 S.S. | 316 S.S. | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | |
| | 29 | 3.0 | UHMW PE | Ceramic | Fluorofilm™ | Hypalon® | | PE .5" O.D. | |
| | C94 C78 C74 C14 | 30 | 6.0 | Acrylic/PVC | Ceramic | Fluorofilm™ | PTFE | | PE .5" O.D. Vinyl .5" O.D. |
| 34 | | 6.0 | PVC | Ceramic | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | |
| 35P | | 6.0 | Polypropylene | Ceramic | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | |
| 35T | | 6.0 | Polypropylene | Ceramic | Fluorofilm™ | PTFE | | PE .5" O.D. | |
| 36 | | 6.0 | PVC | Ceramic | Fluorofilm™ | PTFE | | PE .5" O.D. | |
| C76 | 37 | 6.0 | 316 S.S. | 316 S.S. | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | |
| | 468SP | 1.8 | PVC/PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | Pipe 1/2" NPT M | |
| | 74S | 1.8 | PVC | Ceramic | Fluorofilm™ | PTFE | 4FV | Pipe 1/4" NPT M | |
| C77 | 277 | 1.8 | 316 S.S. | 316 S.S. | Fluorofilm™ | 316 S.S. | | Pipe 1/4" NPT M | |
| | 20HV | 3.0 | Acrylic/PP | 316 S.S. | Fluorofilm™ | Hypalon® | | PE .5" O.D. Vinyl .938" O.D. | |
| | 20S** | 3.0 | Acrylic/PVC | Ceramic | Fluorofilm™ | Hypalon® | 4FV | PE .5" O.D. Vinyl .5" O.D. | |
| | 24 | 3.0 | PVC | Ceramic | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | |
| | 25HV | 3.0 | Polypropylene | 316 S.S. | Fluorofilm™ | PTFE | | PE .5" O.D. Vinyl .938" O.D. | |
| | 25P | 3.0 | Polypropylene | Ceramic | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | |
| | 25T | 3.0 | Polypropylene | Ceramic | Fluorofilm™ | PTFE | | PE .5" O.D. | |
| | 26S** | 3.0 | PVC | Ceramic | Fluorofilm™ | Viton® | 4FV | PE .5" O.D. | |
| 27 | 3.0 | 316 S.S. | 316 S.S. | Fluorofilm™ | PTFE | | Pipe 1/2" NPT M | | |
| C78* | 29 | 3.0 | UHMW PE | Ceramic | Fluorofilm™ | Hypalon® | | PE .5" O.D. | |

Output Information

| Series | Gallons per Hour | | Liters per Hour | | mL/cc per Minute | | mL/cc per Stroke | | Maximum Injection Pressure | |
|-----------------|------------------|------|-----------------|------|------------------|------|------------------|-------|----------------------------|------------|
| | Min | Max | Min | Max | Min | Max | Min | Max | | |
| C10, C70*, C90* | 0.001 | 1.3 | 0.005 | 4.9 | 0.08 | 82 | 0.08 | 0.82 | 300 psi | (20.7 Bar) |
| C11, C71*, C91* | 0.003 | 2.5 | 0.010 | 9.5 | 0.16 | 158 | 0.16 | 1.58 | 150 psi | (10.3 Bar) |
| C12, C72*, C92* | 0.004 | 4.0 | 0.015 | 15.1 | 0.25 | 252 | 0.25 | 2.52 | 100 psi | (6.9 Bar) |
| C13, C73*, C93* | 0.008 | 8.0 | 0.030 | 30.0 | 0.51 | 505 | 0.51 | 5.05 | 60 psi | (4.1 Bar) |
| C14, C74*, C94* | 0.020 | 20.0 | 0.076 | 76.0 | 1.26 | 1262 | 1.26 | 12.62 | 25 psi | (1.7 Bar) |
| C76* | 0.004 | 4.0 | 0.015 | 15.1 | 0.25 | 252 | 0.25 | 2.52 | 175 psi | (12.1 Bar) |
| C77* | 0.010 | 10.0 | 0.038 | 38.0 | 0.63 | 631 | 0.63 | 6.31 | 80 psi | (5.5 Bar) |
| C78* | 0.025 | 25.0 | 0.095 | 95.0 | 1.58 | 1577 | 1.58 | 15.77 | 30 psi | (2.07 Bar) |

* Minimum output is based on 1 stroke per minute and 10% stroke setting, minimum output can be reduced further in external mode. Series C9 pumps may be programmed for strokes per hour for lower outputs.

AutoPrime Liquid End Configuration Data & Materials of Construction

| Drive Assembly | Liquid End No. | Size Code | Head & Fittings | Balls | Liquifram™ | Check Valve | Accessory | Tubing & Connections |
|----------------|----------------|-----------|-----------------|---------|-------------|------------------|-----------|----------------------|
| C11 C71 C91 | D60HI | 1.8 | Acrylic / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .375" O.D. |
| C12 C72 C92 | D68HI | 1.8 | PVC / PVC | Ceramic | Fluorofilm™ | PVDF / Polyprel® | 4FV | PE .375" O.D. |

Output Information - AutoPrime Liquid Ends (Liquid end models beginning with "D")

| Series | Maximum Output | | | Maximum Pressure | | |
|---------------|----------------|-----------|------------------|------------------|---------|------|
| | GPH | Liters/hr | mL/cc per minute | mL/cc per stroke | PSI | Bar |
| C11, C71, C91 | 2 | 7.5 | 125.0 | 1.25 | 150 psi | 10.3 |
| C12, C72, C92 | 2.5 | 9.5 | 158.3 | 1.58 | 100 psi | 6.9 |

Auto prime liquid ends have 3 check valves: Suction on the bottom; Discharge on the front; AutoPrime bleed on the top. By design, a repeatable portion of the process fluid continuously bleeds through the top check valve to be returned to the chemical supply. The result is the assurance that any gas in the head is automatically relieved thus eliminating air-binding. The maximum output per the tables above is reduced to account for the continuous bleed.

See front page for voltage code specifications.

Plastic Heads with tubing connection include 1/2" NPT and 1/2" BSP.

**These Liquid Ends are available without a 4FV, simply drop the 'S' at the end of the Liquid End number to order the model without a 4FV.

#These liquid ends use 3/8" diameter balls. Pump output may be reduced in some applications.

*To specify 1/4" NPT male, change 'I' to 'P'.

To specify black, UV resistant tubing, change "I" to "U".

To specify 3FV, change "S" to "T".

3FV indicates that the pump is equipped with an LMI Three Function Valve (pressure relief, priming aid, line drain).

4FV indicates that the pump is equipped with an LMI Four Function Valve. This diaphragm type, anti-syphon/pressure relief valve is installed on the pump head. It provides anti-syphon protection and aids priming, even under pressure.

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