

## Tech Insights

### Metering Pumps

Metering pumps move precise volumes of liquid in a specified time period to provide accurate flow rates. This class of pumps moves liquids in two stages: the suction stroke and the discharge stroke. During the suction stroke, liquid is pulled into the pump cavity past the inlet check valve. During the discharge stroke, the inlet valve closes; the outlet valve opens, and the liquid is pushed out. Vary the flow either by changing the stroke length or by adjusting the cycle frequency.

Described are a few types of metering pumps listed in this catalog—bellows, cylinder, diaphragm, peristaltic, piston, and syringe.

**Bellows Pumps** move a bellows back and forth to displace liquid. These pumps do not require seals. Special nonclogging valves are available for abrasive or particulate applications. Bellows pumps produce a maximum pressure of 50 psi (3.4 bar).

**Diaphragm Pumps** pulse a flexible membrane to displace liquid with each stroke. These pumps require no seals, so you can pump abrasives and slurries if the valves are kept clean. Diaphragm pumps produce pressures to 5000 psi (344.7 bar).

**Peristaltic Pumps** are designed so that the only material in contact with the fluid being pumped is the tubing. This allows the fluid to not contaminate the pump and the pump to not contaminate the fluid. These pumps provide flexibility through the wide variety of tubing materials available.

**Piston Pumps** use a reciprocating plunger to move liquid through the pump. These pumps require a seal to prevent leaks and are not recommended for use with abrasive fluids. Piston pumps produce pressures to 18,000 psi (1241 bar).

**Syringe Pumps** either draw in or push out liquid through a syringe to obtain a known volume as determined by the size of the syringe. Up to ten syringes may be used on one pump. With the programmable pumps, up to eight commands may be programmed to perform a variety of functions. Syringe pumps are great for low flow, low pressure applications. With the addition of the high pressure version, much higher back pressure can be overcome.

### MORE online!

For the newest products, stock status, complete technical data, and more, go to . . .

[ColeParmer.com/MeteringPump](http://ColeParmer.com/MeteringPump)

## Application/Selection Guide

### Guide to Metering Pumps

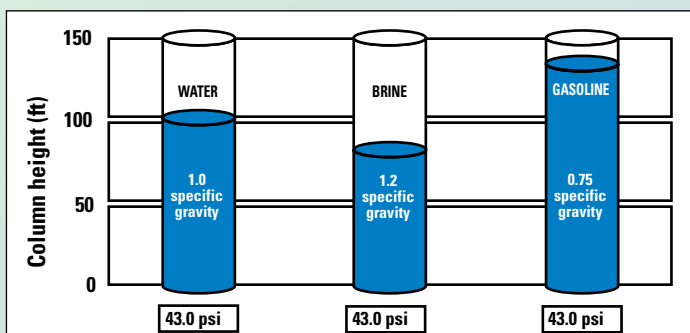
Use the following guide to help you select the best type of metering pump for your application. The information given is intended as a general guideline and will not hold true for all pumps within a classification; check individual pump specifications for complete details. Pumps that have all PTFE/PFA wetted parts are recommended for applications involving aggressive liquids.

Pump type	Page(s)	Flow rating	Maximum pressure		Self-priming	Pulseless flow	Viscous fluids	Particulate matter	Run dry	Advantages
			psi	bar						
Bellows	1422	6 to 2475 mL/min	50	3.4	Good	Poor	Fair	Yes	No	Can pump liquids or gases.
Diaphragm	1412–1423	0.08 to 4167 mL/min	5000	344.7	Good	Poor	Good	No	Yes	Ideal for high-accuracy applications, such as pH/ORP control.
Peristaltic (tubing)	1407–1412	0.9 to 3400 mL/min	125	8.6	Excellent	Good at high rpm	Good	Yes	Yes	Noncontaminating; tubing is available in a wide variety of materials.
Piston	1401–1406	0.02 to 2901 mL/min	18,000	1241	Good	Poor	Fair	No	No	Highest pressure and accuracy; ideal for HPLC applications.
Syringe	1393–1400	0.001 µL/min to 147 mL/min	100	6.9	N/A	Excellent	Poor	No	Yes	Handle very low flow rates.

### Effects of Specific Gravity

Specific gravity is an important factor to consider when sizing a pump. The specific gravity of your liquid can affect the output pressure of a pump—a heavier liquid requires greater force than water (or a lighter liquid) to be lifted an identical vertical height.

The graph below compares the column heights needed to exert an equal pressure for liquids having different specific gravities. A 100-ft column of water (specific gravity of 1.0) exerts a pressure of 43.0 psi, while an 83-ft column of brine (a heavier liquid) and a 133-ft column of gasoline (a lighter liquid) are needed to exert the same pressure.



### Find MORE!

Go to our Pump Systems section on pages 1439–1445 to select a complete and pre-assembled skid system—all you have to do is provide power and fluid connections. Select from a variety of standard systems or call our Application Specialists to configure a system to meet your exact needs. Systems can include any type of pump as well as any other components needed.



ULTRALOW	LOW	MEDIUM	HIGH
5 pL/min to 221 mL/min			

## Cole-Parmer Touch-Screen Syringe Pumps

Control flow rates from 5 pL/min to 220 mL/min via the user-friendly touch-screen display

- Full touch-screen enables you to quickly create configurations and recall them later
- Pump can be placed on its side to provide a smaller footprint with the touch-screen display automatically rotating
- Accuracy of ±0.355% and reproducibility of ±0.05%
- Daisy chain up to 99 pumps together with the built-in RS-485 connectivity
- LED indicator on the front panel provides visual confirmation that the pump is operating
- Accepts any type of syringe—glass, plastic, or stainless steel from 0.5 µL to 140 mL
- Full metal chassis provides noise isolation and antivibration features for increased reliability

**Model 74905-50** is an infuse-only syringe pump. It accommodates up to two syringes. Flow rates are defined by the user and operation is based on a selectable target volume or time values to control the total infusion volume.

**Model 74905-52** is an infuse/withdraw syringe pump. The pump accommodates up to two syringes. The unit will operate in the following modes: infuse only, withdraw only, infuse then withdraw, withdraw then infuse, and continuous. One program can be stored.

**Model 74905-54** is a programmable version of the 74905-52 pump. It is programmed to accept up to 800 user-defined steps—up to 40 programs with 20 steps each can be stored in memory.

74905-50



**Model 74905-56** is a push/pull syringe pump. The pump accommodates up to two syringes for infusion and two syringes for withdrawal. This pump is designed to support infusion and withdrawal simultaneously at the user-defined flow rates. The unit operates in the following modes: infuse only, withdraw only, infuse then withdraw, withdraw then infuse, and continuous.

**Model 74905-58** is a programmable version of the 74905-56 pump. It is programmed to accept up to 800 user-defined steps—up to 40 programs with 20 steps each can be stored in memory.

**What's included:** 6-ft (1.8 m) US power cord.

### Specifications

**Accuracy:** ±0.355%

**Reproducibility:** ±0.05%

**Syringe sizes accepted:** 0.5 µL to 140 mL

**Syringe travel rate:** from 0.36 µm/min to 190.8 mm/min

**Linear force:** 75 lb (34 kg)

**Output:** RS-232, RS-485, USB, 15 pin D-sub connector

**Dimensions:** 3.5" x 10" x 11" (8.9 x 25.4 x 27.9 cm)



Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
<a href="#">TW-74905-50</a>	Infusion	5 pL/min to 220.97 mL/min	100 to 240, 50/60	
<a href="#">TW-74905-52</a>	Infusion/withdrawal			
<a href="#">TW-74905-54</a>	Infusion/withdrawal programmable			
<a href="#">TW-74905-56</a>	Push/pull			
<a href="#">TW-74905-58</a>	Push/pull programmable			

### Interchangeable Racks for touch-screen syringe pumps above



**TW-74905-60** Small syringe multi-rack, holds six 30- to 60-mL plastic syringes or ten 0.5-µL to 20-mL syringe



**TW-74905-61** Large syringe multi-rack, holds four 60- to 140-mL syringes

**NEW**  
Accessories



**TW-74905-62** Microliter syringe multi-rack, holds four 0.5-µL to 10-mL syringes

### Software Upgrades

**TW-74905-87 Software**, upgrade your infusion only pump to an infusion/withdrawal pump

**TW-74905-89 Software**, upgrade from infuse/withdrawal pump to an infusion/withdrawal programmable pump

Distributed by: Fiedler Scientific Instruments, s.r.o.  
info@lab-eu.com info@pristroje.cz



**Pumps**  
Metering, Syringe



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
1.26 pL/min to 215 mL/min			

**Cole-Parmer Touch-Screen Continuous-Cycle Four-Syringe Pumps**

**Continuously cycle up to four syringes in a push-pull action**

- Accuracy of ±0.35% and reproducibility of ±0.05%
- Hold two or four syringes from 0.5 µL to 140 mL
- LED light on front panel easily indicates status from across the room
- Easily accommodate high back-pressure applications with up to 75 pounds of linear force
- Built-in syringe table for easy setup

**NEW**

Hold up to four syringes to cycle continuously back and forth in a push-pull action. As two syringes are infusing, two syringes are simultaneously withdrawing at the same rate. At the end of the set volume the direction is automatically reversed and the next cycle begins. With the use of three-way valves (sold separately in starter kit 74901-90 at right), the pump can empty and refill syringes for a continuous dispense.

Intuitive touch screen allows you to quickly create and recall configurations. You can daisy chain up to 99 pumps together using the built in RS-485. Front-panel LED provides quick visual confirmation that the pump is operating from across the room. Programmable/multi-step version provides even greater flexibility in automating your process.

**What's included:** 6-ft (1.8-m) US power cord.

**Specifications**



**Accuracy:** ±0.35%  
**Reproducibility:** ±0.05%  
**Syringe sizes accepted:** 0.5 µL to 140 mL  
**Syringe travel rate:** from 27.5 sec/µstep to 26 µsec/µstep  
**Linear force:** 75 lb (34 kg)

**Output:** RS-232 9-pin D-sub connector, RS-485 IEEE-1394 6 pos, USB-Type B, I/O & TTL - 15 pin D-sub connector  
**Dimensions:** 3.5" x 10" x 11" (8.89 x 25.4 x 27.94 cm)

Catalog number	Description	Flow rate per syringe	Power	Price
<a href="#">TW-74905-19</a>	Simultaneous, continuous infusion / withdrawal	5.0 pL/min to 215.8 mL/min	110 to 240 VAC, 50/60 Hz	
<a href="#">TW-74905-39</a>	Programmable simultaneous, continuous infusion / withdrawal	5.0 pL/min to 215.8 mL/min	110 to 240 VAC, 50/60 Hz	



74905-19

**Accessories**

- [TW-74901-90](#) Continuous flow starter kit includes two check valves, two 10 mL plastic syringes, and a short length of tubing
- [TW-74901-91](#) Continuous low pressure PPS pinch valve box, max pressure 75 psi
- [TW-74901-93](#) Continuous medium pressure PTFE pinch valve box, max pressure 75 psi
- [TW-74901-95](#) Continuous high pressure stainless steel pinch valve box, greater than 200 psi
- [TW-74901-92](#) Autofill low pressure PPS pinch valve box, max pressure 75 psi
- [TW-74901-94](#) Autofill medium pressure PTFE pinch valve box, max pressure 75 psi
- [TW-74901-96](#) Autofill high pressure stainless steel pinch valve box, greater than 200 psi

**Cole-Parmer Touch-Screen Entry-Level Syringe Pumps**

**Accommodate up to two syringes in a cost-effective touch-screen syringe pump**

- Accuracy of ±0.5% and reproducibility of ±0.05%
- Full-color touch screen
- High-precision fluid dosing
- Use with any manufacturer syringe—glass, stainless steel, or plastic—from 0.5 µL to 60 mL
- Up to 30 lbs of linear force
- Daisy chain multiple pumps using the integrated RS-485

**NEW**

These entry-level pumps offer features normally found in more expensive models. An intuitive touch-screen display lets you see all operating parameters and easily create and recall configurations. Front-panel LED light indicates when pump is operating—viewable from across the room.

Models offered include one- and two-syringe infuse-only pumps as well as one- and two-syringe infuse/withdrawal pumps. Applications include microfluidics, drug discovery, nanofluidics, flow cytometry, mass spec calibrant, organic synthesis, surface plasma resonance, and electrospinning.

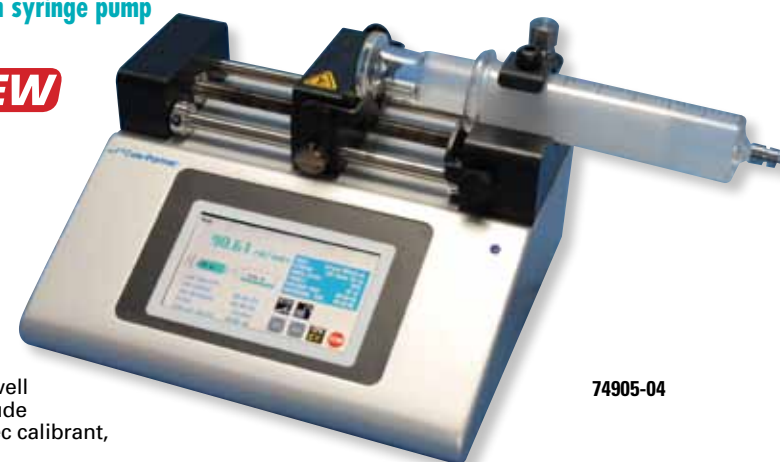
**What's included:** 6-ft (1.8-m) US power cord.

**Specifications**



**Accuracy:** ±0.5%  
**Reproducibility:** ±0.05%  
**Syringe travel rate:** 27.5 sec/µstep to 26 µsec/µstep  
**Linear force:** 30 lb (13.6 kg)  
**Dimensions:** 9" x 7½" x 5" (22.6 x 19.1 x 15 cm)

**Output**  
 Model 74905-02: RS-485 - IEEE-1394 6 pos, USB-Type B  
 Models 74905-04, -06, -08: RS-232 9-pin D-sub connector, RS-485 IEEE-1394 6 pos, USB-Type B



74905-04

Catalog number	No. of syringes	Description	Syringe sizes	Flow rate	Power	Price
<a href="#">TW-74905-02</a>	1	Infusion	0.5 µL to 60 mL	1.26 pL/m to 88.32 mL/m	110 to 240 VAC, 50/60 Hz	
<a href="#">TW-74905-06</a>	2	Infusion	0.5 µL to 10 mL	1.26 pL/m to 25.99 mL/m	110 to 240 VAC, 50/60 Hz	
<a href="#">TW-74905-04</a>	1	Infusion/withdrawal programmable	0.5 µL to 60 mL	1.26 pL/m to 88.28 mL/m	110 to 240 VAC, 50/60 Hz	
<a href="#">TW-74905-08</a>	2	Infusion/withdrawal programmable	0.5 µL to 10 mL	1.26 pL/m to 25.99 mL/m	110 to 240 VAC, 50/60 Hz	



ULTRALOW	LOW	MEDIUM	HIGH
0.54 pL/min to 11.7 mL/min			

## Cole-Parmer Touch-Screen Nanoliter Infusion Syringe Pump

Accurate, pulse-free flow from 3.66 pL/min to 3.818 mL/m

**NEW**

- Intuitive touch screen lets you create and recall configurations
- Remote injector helps eliminate dead volume in long tubing runs
- Accepts syringes from 0.5 µL to 1000 µL
- Preset rate and volume control
- Smooth and accurate flow delivery

Use this pump to dispense/infuse samples. A syringe can be easily loaded using the fast forward or reverse mode. The remote syringe drive is ideal for stereotaxic, micro manipulator, and other clamping devices. Use the remote injector pump up to six feet away from the controller. The front-panel LED indicator light provides visual confirmation when pump is operating. You can daisy chain multiple pumps together via a built-in RS-485 connection.

**What's included:** 6-ft (1.8-m) US power cord.

### Specifications



**Accuracy:** ±0.5%

**Reproducibility:** ±0.5%

**Syringe sizes accepted:** 0.5 µL to 1000 µL

**Syringe travel rate:** from 27.5 sec/µstep to 52 µsec/µstep

**Linear force:** 11 lb (5 kg)

**Output:** RS-232 9-pin D-sub connector, RS-485 IEEE-1394 6 pos, USB-Type B

**Dimensions:** 9" x 7.5" x 5" (9 x 19.1 x 7.6 cm)



74905-34

Catalog number	Description	Flow rate per syringe	Power	Price
<a href="#">TW-74905-34</a>	Infusion only	3.66 pL/min to 3.818 mL/min	110 to 240 VAC, 50/60 Hz	

## Cole-Parmer Touch-Screen Picoliter Syringe Pump

Flow rates as low as 0.54 pL/min with a 0.5 µL syringe

**NEW**

- Provides smooth flow with ±0.5% accuracy and ±0.5% reproducibility
- Touch screen enables you to quickly create and recall configurations
- Use same pump for both 110 VAC, 60 Hz and 230 VAC, 50 Hz operation
- Applications include cellular injection (i.e. oocytes), micro flow for FIA or capillary LC, and micro reaction delivery

Infuse or withdraw fluid—via reversing switch on the back of the pump—down to the milliliter, microliter, nanoliter, or picoliter of fluid using the user-friendly keyboard. Control injection by initiating it manually, with a computer via an RS-232 connection, or the included foot switch. Injection rate can be set from 0.54 pL/min to 11.7 mL/min. You can also daisy chain multiple pumps using the built-in RS-485 connection. The front-panel LED light indicates when pump is operating—viewable from across the room.

**What's included:** 6-ft (1.8-m) US power cord.

### Specifications



**Accuracy:** ±0.5%

**Reproducibility:** ±0.5%

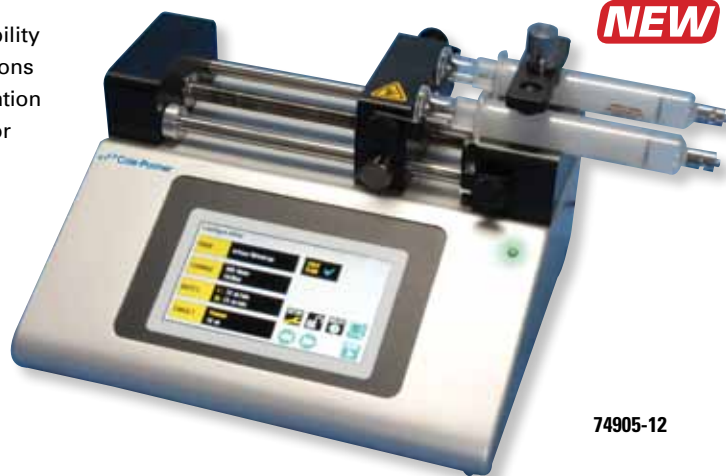
**Syringe sizes accepted:** 0.5 µL to 10 mL

**Syringe travel rate:** from 27.5 sec/µstep to 26 µsec/µstep

**Linear force:** 30 lb (13.6 kg)

**Output:** RS-232 9-pin D-sub connector, RS-485 IEEE-1394 6 pos, USB-Type B

**Dimensions:** 9" x 7.5" x 5" (9 x 19.1 x 7.6 cm)



74905-12

Catalog number	Description	Flow rate per syringe	Power	Price
<a href="#">TW-74905-12</a>	Infusion/withdrawal	0.54 pL/min to 11.7 mL/min	110 to 240 VAC, 50/60 Hz	

Distributed by: Fiedler Scientific Instruments, s.r.o.  
info@lab-eu.com info@pristroje.cz



**Pumps**  
Metering, Syringe



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
0.01 µL/min to 147 mL/min			

**Cole-Parmer Syringe Pumps**

Ideal for low-flow, low-pressure applications where precision is needed

- Backlit alphanumeric LCD guides you through setup and operating procedures
- Nonvolatile memory retains settings even after your pump is turned off
- Accurate to ±0.5%

**What's included:** a 6-ft (1.8-m) cord with grounded plug (US standard plug on 115 VAC models, European plug on 230 VAC models). Syringes are available on pages 1641–1646.



Easily program 74901-series pumps through keypad; LCD provides readout for setup and operation.

**A Single-Syringe Infusion Pump** features microprocessor motor control and precision gearing. Microprocessor automatically selects display units based on syringe used. Obtain precise flow rates down to 0.2 µL/hr. A wide dynamic range (6000:1) provides excellent flexibility. All commands can be programmed via the front-panel keypad. Settings can be changed while the pump is running.

**A**  
74900-00

Pump continuously and automatically delivers exact quantities of liquid.



**C**  
74901-10

Specifications



**Accuracy:** ±<1%      **Syringe travel rate:** 9.5 x 10<sup>-6</sup> mm/min  
**Reproducibility:** ±0.1%  
**Syringe sizes accepted:** 10 µL to 60 mL      **Linear force:** 20 lb (9.1 kg)

Cat. no.	Flow rate	Dimensions (W x H x D)	Power (VAC, Hz)	Price
<b>A Single-syringe pump</b>				
TW-74900-00	0.2 µL/hr	9" x 4" x 6"	115, 50/60	
TW-74900-05 <sup>†</sup>	to 500 mL/hr	(23 x 10.2 x 15.2 cm)	230, 50/60	

<sup>†</sup>CE marked.

**B Multi-Syringe Pumps** achieve flow rates down to 0.001 µL/hr. A wide dynamic range (100,000:1) allows flow rates to vary from a slow trickle to a steady stream.

Program infusion/withdrawal pumps to sequence operations: either withdrawal followed by infusion or infusion followed by withdrawal. Simple keypad allows you to easily setup and sequence operation of the pump.

Pumps can be controlled from a computer with RS-232 interface<sup>‡</sup>. Pumps feature two TTL inputs and two TTL outputs. The TTL inputs allow for a foot switch or a process timer to control pump operation. Use TTL outputs for 5 V signal and run indicator.

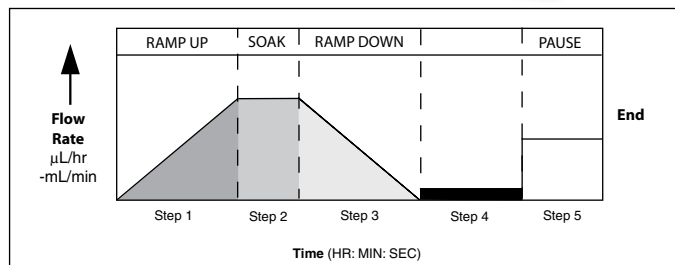
Specifications



**Accuracy:** ±<1%      **Syringe travel rate:** 9.5 x 10<sup>-6</sup> mm/min  
**Reproducibility:** ±0.1%      **Linear force:** 40 lb (18.1 kg)  
**Syringe sizes accepted:** 10 µL to 140 mL      **Output:** RS-232

Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
<b>B Dual-syringe pumps</b> measure 11"W x 5"H x 9 1/4"D (28 x 12.7 x 23.5 cm).				
TW-74900-10	Infusion	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74900-15 <sup>†</sup>			230, 50/60	
TW-74900-20	Infusion/withdrawal	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74900-25 <sup>†</sup>			230, 50/60	
<b>B Ten-syringe pumps</b> measure 11"W x 6"H x 12"D (28 x 15.2 x 30.5 cm).				
TW-74900-30	Infusion	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74900-35 <sup>†</sup>			230, 50/60	
TW-74900-40	Infusion/withdrawal	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74900-45 <sup>†</sup>			230, 50/60	

<sup>†</sup>CE marked    <sup>‡</sup>Order RS-232 cables separately online or through your local dealer.



**C Multi-Step Multi-Syringe Pumps** also have a wide dynamic range (100,000:1) which allows flow rates to vary from a slow trickle to a steady stream. A built-in program allows you to enter up to eight commands—you can even repeat commands up to ten times. Pumps allow you to program flow rate hold, pause, and change of direction; each program can be run up to 12 hours. Pumps can also sequence operations: either withdrawal followed by infusion or infusion followed by withdrawal. Select from dual-syringe or ten-syringe models—ideal for pumping exact proportions. (See chart above for sample program.)

An RS-232 interface<sup>‡</sup> allows you to operate your pump from a computer—great for daisy-chaining pumps! Pumps also feature two TTL inputs and two TTL outputs. The TTL inputs allow for a footswitch or a process timer to control pump operation. Use TTL outputs for 5 V signal and run indicator.

Specifications



**Accuracy:** ±<1%      **Baud rate:** four settings up to 9600 (VAC, Hz)  
**Reproducibility:** ±0.1%      **Syringe travel rate:** 9.5 x 10<sup>-6</sup> mm/min  
**Syringe sizes accepted:** 10 µL to 140 mL      **Linear force:** 40 lb (18.1 kg)  
**Output:** RS-232

Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
<b>C Multi-step dual-syringe pumps</b> measure 11"W x 5"H x 9 1/4"D (28 x 12.7 x 23.5 cm).				
TW-74900-60	Infusion	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74900-65 <sup>†</sup>			230, 50/60	
TW-74901-00	Infusion/withdrawal	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74901-05 <sup>†</sup>			230, 50/60	
<b>C Multi-step ten-syringe pumps</b> measure 11"W x 6"H x 12"D (28 x 12.7 x 30.5 cm).				
TW-74900-80	Infusion	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74900-85 <sup>†</sup>			230, 50/60	
TW-74901-10	Infusion/withdrawal	0.001 µL/hr to 147 mL/min	115, 50/60	
TW-74901-15 <sup>†</sup>			230, 50/60	

<sup>†</sup>CE marked.    <sup>‡</sup>Order RS-232 cables separately online or through your local dealer.

ULTRALOW	LOW	MEDIUM	HIGH
0.01 µL/min to 145.5 mL/min			



## Cole-Parmer High-Pressure Syringe Pumps

Ideal for low-flow, higher pressure applications where precision is critical

- Greater than 100 lb (45 kg) of linear force
- Higher pressure syringe clamps
- RS-232 connectivity for interface to a remote computer
- Typical accuracy of 1% or better

These Cole-Parmer syringe pumps more than double the linear force available on other versions. This extra force makes the pump ideal for fluid delivery to reactors in chemical applications or for working with viscous fluids. The robust design of the syringe holder ensures the syringe is kept level during delivery of the fluid. It features two different types of clamping mechanisms to accommodate both smaller and larger syringes. The pumps will work with all types of syringes, however due to the higher force on the syringe we recommend the stainless steel syringes listed below.

Both the standard and programmable pumps can operate in either an infusion or withdrawal mode. The programmable model can be set to a specific sequence of operations. The simple keypad interface allows for quick setup of the syringe pump.

These versatile pumps can be triggered remotely by a foot pedal or a switch—great for “hands-free” operation. Pumps also come standard with a RS-232 interface to link to a computer for remote control.

**What's included:** 6-ft (1.8-m) cord (115 VAC models have US standard plug; 230 VAC models have European plug).

### APPLICATIONS

- Dispensing viscous fluids
- Continuous delivery of fluid
- Pilot plant reactor dosing



74903-00

### Specifications

<b>Accuracy:</b> ±<1%	<b>Linear force:</b> >100 lb (>45 kg)
<b>Reproducibility:</b> ±0.1%	<b>Output:</b> RS-232
<b>Syringe sizes accepted:</b> 10 µL to 140 mL	<b>Dimensions (W x H x D):</b> 11" x 6" x 9 1/2" (28 x 15.2 x 24 cm)
<b>Syringe travel rate:</b> 9.5 x 10 <sup>-6</sup> mm/min	



Models 74903-06, -16

### Find MORE!

You'll find syringes below or refer to our "Syringes" section on pages 1641–1646 for our complete selection.

Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
<b>Syringe pump</b>				
TW-74903-00	Infusion/withdrawal	0.001 µL/hr to 145.5 mL/min	115, 50/60	
TW-74903-05			230, 50/60	
TW-74903-06†			230, 50/60†	
<b>Multi-step syringe pump</b>				
TW-74903-10	Infusion/withdrawal	0.001 µL/hr to 145.5 mL/min	115, 50/60	
TW-74903-15			230, 50/60	
TW-74903-16†			230, 50/60†	

†CE marked.

Distributed by: Fiedler Scientific Instruments, s.r.o.  
info@lab-eu.com info@pristroje.cz

## Cole-Parmer Stainless Steel Syringes

Ideal for use in Cole-Parmer® syringe pumps

- Syringes fit most syringe pumps
- Made from top quality 316 stainless steel—provides superior chemical resistance
- Designed to handle demanding applications with pressures

Stainless steel offers good resistance to most aggressive liquids. Wetted parts are 316 stainless steel and Viton®. Genuine Swagelock® and luer lock end fittings are available. All tips are interchangeable with all syringes (20 to 200 mL) in the series.



Capacity	Syringes with 1/16" Swagelock tip		Syringes with 1/8" Swagelock tip		Syringes with 1/4" Swagelock tip		Syringes with luer lock tip	
	Catalog number	Price	Catalog number	Price	Catalog number	Price	Catalog number	Price
2.5 mL	TW-74044-00	—	—	—	—	—	—	—
8 mL	TW-74044-10	—	TW-74044-12	—	—	—	—	—
20 mL	TW-74044-20	—	TW-74044-22	—	TW-74044-24	—	TW-74044-26	—
50 mL	TW-74044-30	—	TW-74044-32	—	TW-74044-34	—	TW-74044-36	—
100 mL	TW-74044-40	—	TW-74044-42	—	TW-74044-44	—	TW-74044-46	—
200 mL	TW-74044-50	—	TW-74044-52	—	TW-74044-54	—	TW-74044-56	—





**Pumps**  
Metering, Syringe



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
6.67 pL/min to 106.6 mL/min			

**Cole-Parmer Dual-Drive Syringe Pump**

Two independent syringes operate simultaneously—like getting two pumps in one!

- Program to infuse each rack at different flow rates or to infuse and withdraw at the same time
- Achieve a wide flow range from 0.0004 microliter/hr to 06.6 mL/min
- Accuracy of ±0.35% and reproducibility of ±0.1%
- Drive mechanism is capable of 57 lb (25.8 kg) of linear force
- Four operational modes: reciprocal/parallel, proportional, autostop, and continuous
- Use optional valve box to operate pump 24 hours a day, 365 days a year
- Daisy chain up to 100 pumps



74901-80

Specifications

**Accuracy:** ±0.35%      **Linear force:** 57 lb (25.8 kg)  
**Reproducibility:** ±0.1%      **Output:** RS-232, TTL  
**Syringe sizes accepted:** 0.5 µL to 140 mL      **Dimensions (W x H x D):** 12½" x 6" x 11¼"  
**Syringe travel rate:** 0.7267 nm/min to 95.25 mm/min      (31.1 x 15.2 x 28.6 cm)



Accessories

- TW-74901-82<sup>†</sup>** Continuous-delivery inch valve box, 20 psi
- TW-74901-83<sup>†</sup>** Continuous-delivery selenoid 3-way valve box, (stainless steel and Viton® construction) 200 psi
- TW-74901-86** Foot switch
- TW-74901-87** Daisy chain cable
- TW-74901-88** RS-232 connector cable

<sup>†</sup>For valve box schematics, contact your local dealer.

Catalog number	Description	Flow rate per syringe	Power	Price
<a href="#">TW-74901-80</a>	Dual-rack infusion/withdrawal	0.0004 µL/hr to 106.6 mL/min	95 to 130 VAC, 60 Hz or 220 to 260 VAC, 50 Hz	

**Cole-Parmer Compact Low-Profile Syringe Pumps**

Control your syringe pump via PC or application on your Apple® iOS or Android™ device

- High chemical resistance achieved with PTFE/quartz or PTFE/PFA wetted parts
- Accommodates syringe sizes from 0.3 to 10 mL
- No O-ring, eliminating a potential chemical compatibility issue

Our syringe pumps feature an innovative drive mechanism for precise control of liquid sampling across a wide flow range. The Pump Network Control™ software allows for greater flexibility while working around your lab. With a Wi-Fi enabled device (and computer on same Wi-Fi network), you can keep tabs on what is transpiring with the Cole-Parmer syringe pump—allowing for greater productivity. For syringe replacements, two materials are available; order separately below. Quartz syringes offer low sample consumption and low detection limits, while PFA syringes are HF resistant.

Specifications

**Accuracy:** ±0.2% for 3 mL; ±0.5% for 300 µL      **Linear force:** >100 lb (>45 kg)  
**Reproducibility:** ±0.25% for 3 mL; ±0.85% for 300 µL      **Control:** via PC and iOS device  
**Syringe sizes accepted:** 0.3 to 10 mL

Catalog number	Description	Flow rate	Power (VAC, Hz)	Price
<a href="#">TW-74905-20</a>	Programmable pump with one quartz syringe barrel	3.75 to 60,000 µL/min for 3 mL; 0.45 to 6000 µL/min for 300 µL	90 to 240, 50/60	
<a href="#">TW-74905-21</a>	Programmable pump with 3-port control valve and one quartz syringe barrel		90 to 240, 50/60	
<a href="#">TW-74905-22</a>	Programmable pump with 3-port control valve and two quartz syringe barrels		90 to 240, 50/60	

<sup>†</sup>The provided Pump Network Control software must be installed and running for RDP apps to run.

**TW-74905-29** PTFE adapter. Required to mount 0.3-mL and 3-mL syringe barrels

Syringes

Capacity	Quartz syringes		PFA syringes	
	Catalog number	Price	Catalog number	Price
0.3 mL	<a href="#">TW-74905-23</a>		<a href="#">TW-74905-26</a>	
3 mL	<a href="#">TW-74905-24</a>		<a href="#">TW-74905-27</a>	
10 mL	<a href="#">TW-74905-25</a>		<a href="#">TW-74905-28</a>	

74905-20

74905-21



View and manipulate the pumps via your iOS device.

APPLICATIONS

- Micro liquid handling—precision sample loading, and carrier delivery
- Remote sampling—automated process monitoring
- Chromatography—effluent delivery and column conditioning
- Dilution—continuous on-line dilution, off-line sample preparation, and internal standard addition

ULTRALOW	LOW	MEDIUM	HIGH
12.1 nL/min to 35 mL/min			

## Cole-Parmer Programmable Compact Single-Syringe Pump

### Economical OEM-style pump

- Programmable via computer by downloading the sequence of operation
- Accessories allow networking of up to 100 pumps

Pre-program the pump with a dispensing program, then operate the pump via an attached foot switch (sold separately below), button on the pump, or I/O controller (not included). Dispensing software allows you to infuse and withdraw in  $\mu\text{L/hr}$ ,  $\mu\text{L/min}$ ,  $\text{mL/hr}$ , and  $\text{mL/min}$ . Design a program to change direction while pumping, dispense a pre-specified volume, purge and refill, or trigger an alarm under pre-specified conditions. Pump holds one syringe up to 60 mL. Store programs on a computer and download to pump for operation.

**What's included:** power supply, pump-to-PC network cable.



75900-00

### Specifications

**Accuracy:**  $\pm 1\%$

**Reproducibility:**  $\pm 1\%$

**Syringe sizes accepted:** up to 60 mL

**Syringe travel time:** 5.1 cm/hr max

**Linear force:** 30 lb (13.6 kg) total at minimum speed

**Dimensions (L x W x H):** 9½" x 4½" x 4¼"  
(24 x 11.4 x 10.8 cm)



Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
TW-75900-00	Infusion/withdrawal	0.73 $\mu\text{L/hr}$ to 2100 $\text{mL/hr}$	120, 60	
TW-75900-05			240, 50	

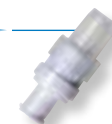
**TW-75900-90** Foot switch

**TW-75900-91** Computer cable, 7-ft (2.1-m) L

**TW-75900-92** Computer cable, 25-ft (7.6-m) L

### Find MORE!

For a complete listing of the luer check valves and other luer fittings, see pages 509–575.



## Cole-Parmer Six-Channel Syringe Pump

### Six-channel pump can both withdraw and infuse

- Capable of holding 41 commands, do unlimited repetitions with unlimited run time
- Optional lockout prevents accidental or unauthorized changes to programmed settings

Programming commands allow dispensing of a specified amount, automatic rates changes, direction changes, programmed pauses, external or user input, and sending or receiving signals from other equipment. Nonvolatile memory restores all setup parameters and pumping program when pump is turned on. Syringe purge mode will infuse or refill syringe at top speed to purge air from the line or to fill the syringe. Versatile pumping features allow infusion or withdrawal in  $\mu\text{L/hr}$ ,  $\mu\text{L/min}$ ,  $\text{mL/hr}$ , and  $\text{mL/min}$ . An audible buzzer can be programmed to alert you when an alarm condition occurs or the pumping program completes.

Easily network up to 100 pumps from a single communications port on your computer. Network communication protocols allow the ability to send a network burst transmission simultaneously to 10 pumps in the network with no lag, resulting in consistent laboratory setups.

Optional communications protocol utilizes error checking to ensure completely reliable signal transmissions by eliminating errors caused by disconnections or electromagnetic interference.

**What's included:** power supply.

### Specifications

**Accuracy:**  $\pm 1\%$

**Reproducibility:**  $\pm 1\%$

**Syringe sizes accepted:** up to 60 mL

**Syringe travel rate:** 3.49 cm/min

**Linear force:** 100 lb (45.4 kg) total at minimum speed

**Dimensions (L x W x H):** 15¼" x 10½" x 4¾"  
(38.7 x 26.7 x 12 cm)



75900-50

Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
TW-75900-50	Infusion/withdrawal	Up to 1337 $\text{mL/hr}$ for a 60-mL syringe	120, 60	
TW-75900-55			240, 50	

**TW-75900-90** Foot switch

**TW-75900-91** Computer cable, 7-ft (2.1-m) L

**TW-75900-92** Computer cable, 25-ft (7.6-m) L



### Find MORE!

You'll find syringes in our "Syringes" section. See pages 1641–1646 for our complete selection.







**Pumps**  
Metering, Syringe / Peristaltic

ULTRALOW	LOW	MEDIUM	HIGH
1.6 µL/min to 5 mL/min			

**Pro-Spense® LED Display Syringe Pump**

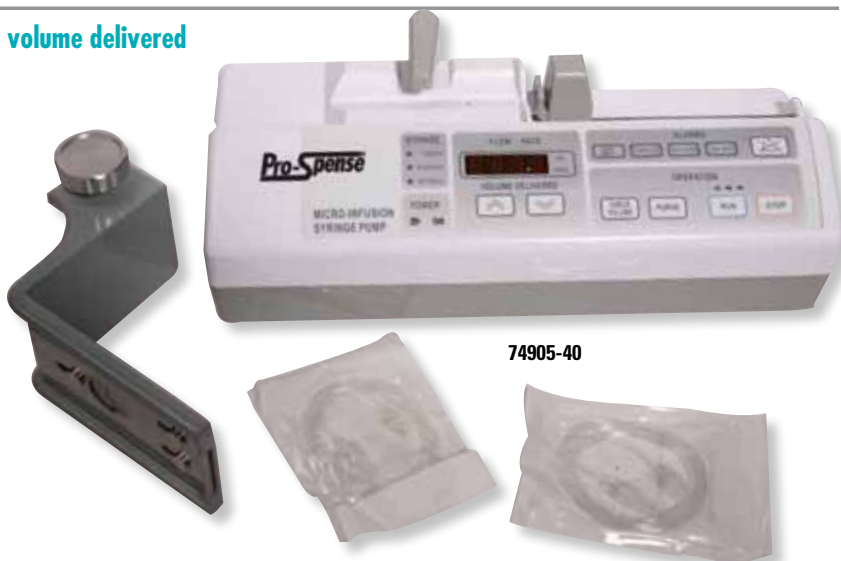
Large, easy-to-read LED display indicates flow rate or volume delivered

- Simple setup and operation
- User-selectable variable flow rates
- Quick total volume dispense display
- Automatic syringe size selection

This cost-effective, durable syringe pump can be used for infusions from 0.1 to 300 mL/hr with ±2.5% accuracy. The easy-to-read LED display is visible from many angles and will continuously show the flow rate in mL/hr. The display can be toggled to show the total volume delivered in mL. Ergonomic, horizontal design protects the syringe barrel and allows easy single-handed loading. There are four visual and audible alarms: occlusion detection, low battery, near end of dispense, and complete.

A wide range of syringes can be used with the unit including 20/30 mL, 50/60 mL, and 100 mL. The pump will automatically detect the syringe size and adjust the selected flow rate correspondingly. Specific manufacturer's syringes can be calibrated with the unit including Terumo, Monoject and Ranfac.

**What's included:** 6-ft (1.8-m) cord with grounded plug (US standard plug on 110 VAC model; European plug on 220 VAC model) and mounting bracket.



74905-40

**Specifications**

**Accuracy:** ±2.5%  
**Syringe sizes accepted:** 20/30 mL, 50/60 mL, 100 mL  
**Syringe travel rate**  
 20/30 mL syringe: 0.1 to 150 mL/hr; in 0.1 mL/hr increments  
 50/60 mL syringe: 0.1 to 300 mL/hr; in 0.1 mL/hr increments  
 100 mL syringe: 0.1 to 300 mL/hr; in 0.1 mL/hr increments

**Dimensions (W x H x D):** 4<sup>23</sup>/<sub>32</sub>" x 13<sup>7</sup>/<sub>32</sub>" x 5<sup>19</sup>/<sub>32</sub>" (120 x 335 x 142 mm)



Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
TW-74905-40	Infusion	0.1 to 300 mL/hr	110, 60	
TW-74905-41			220, 50	

**Pro-Spense® Disposable Infusion Pumps**

Sterilized single-use reservoir and infusion pump combination offers flows from 1 to 10 mL/hr

- Accuracy of ±5%
- Audible and visual alarms
- Convenient carrying belt
- Ergonomic touch buttons

These disposable infusion pumps offer a convenient alternative for reliable micro infusions. Simply dial to set infusion rate, with flow rates ranging from 1 to 10 mL/hr. Choose from a 100- or 260-mL sterilized reservoir box. Although the reservoir needs to be disposed of after each use, the pump can be used multiple times with replacement reservoirs. Pump is completely portable—weighs less than 100 g (3.5 oz) and comes with a handy carrying belt. Unit operates on two AA batteries which last up to 400 hours at 1 mL/hr.

**What's included:** two AA batteries, reservoir, and disposable tubing assembly.



74905-46

**Specifications**

**Reservoir:** 100 mL or 260 mL, sterilized      **Accuracy:** ±5%      **Dimensions (W x H x D):** 5<sup>1</sup>/<sub>8</sub>" x 3<sup>3</sup>/<sub>4</sub>" x 1<sup>3</sup>/<sub>8</sub>" (140 x 95 x 35 mm)



Catalog number	Description	Reservoir size	Flow rate	Power	Price	Replacement reservoir	
						Catalog number	Price
TW-74905-46	Infusion	100 mL	1, 2, 3, 4, 6, 8, 10 mL/hr	3.0 VDC (two AA batteries)		TW-74905-48	
TW-74905-47		260 mL				TW-74905-49	

TW-09376-01 Replacement batteries, AA. Pack of 4

ULTRALOW	LOW	MEDIUM	HIGH
0.04 to 1,300 mL/min			

**ISMATEC® High-Pressure Programmable Piston Pumps**

Get high pressures, accurate dispensing, and great repeatability—all with one pump

- Drives feature six dispensing modes—volume within a preset time, volume in steps, time, intermittent in time or volume, drip-free, or valve operation
- Control speed, start/stop flow, or change fluid direction manually or remotely via an analog input signal or RS-232 interface
- Series Q piston pump heads (included) have no valves to clog or wear out

Up to four sets of operating parameters can be stored in the pump (for pumps with Series Q pump heads only). RS-232 interface allows for control of pump via a PC or for cascading up to eight pumps. Housing is IP65 rated for Series Q pumps and IP30 rated for Series R pumps.

**Pumps include:** a Series Q or Series R piston pump head with mounting hardware and a 6-ft (1.8-m) power cord with three-prong US plug. 230 VAC models include an IEC 320/CEE 22 European plug. These models are shipped with country specific plug/cord; please specify ultimate destination when ordering.

**Find MORE!**

For a pulse dampener and other pump head accessories see pages 1402.



**B** High-pressure piston pump 78021-52 with Series R pump head



**A** High-pressure piston pump 78021-12 with Series Q 316 SS pump head



Series Q PVDF pump head included with high-pressure piston pump 78021-20

**Specifications**

**Accuracy:** ±0.1%

**Suction lift:** 15 ft (4.6 m) H<sub>2</sub>O

**Remote control inputs:** 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, or 4 to 20 mA via DB15 female port; RS-232 via DB9 female port; start/stop and reverse direction via contact closure; footswitch via three-pin DIN port

**Connections**

Series Q pump heads with 316 SS cylinder bodies: ¼" NPT(F) ports with ⅜" hose barb fittings (model 78021-00 includes ¼" hose barb fittings)  
Series Q pump heads with PVDF cylinder bodies: ¼" OD compression fittings  
Series R pump heads: ¼" OD compression fittings

**Power:** 115/230 VAC, 50/60 Hz

**Viscosity:** 500 cp

Catalog number	Flow range (mL/min)	Piston dia	Max pressure psi (bar)	Max temp °F (°C)	Pump head materials of construction			Autoclavable pump head	Dimensions (W x H x D)	Price
					Piston	Cylinder body	Cylinder liner			
<b>A High-pressure piston pumps with Series Q pump head</b>										
TW-78021-00 TW-78021-02	0.04 to 144	⅛"	100 (6.8) 60 (4.1)	140 (60)	316 SS	316 SS PVDF	Carbon	Yes No	6 1/16" x 10 1/4" x 8 3/8" (15.5 x 26 x 22 cm)	
TW-78021-04 TW-78021-06 TW-78021-08	0.13 to 576	¼"	60 (4.1) 100 (6.8) 60 (4.1)	140 (60) 140 (60) 212 (100)	316 SS 316 SS Ceramic	PVDF 316 SS PVDF	Carbon Carbon Ceramic	No Yes No	6 1/16" x 10 1/4" x 8 3/8" (15.5 x 26 x 22 cm)	
TW-78021-10 TW-78021-12 TW-78021-14	0.13 to 576	¼"	60 (4.1) 100 (6.8) 100 (6.8)	212 (100) 350 (177) 350 (177)	Ceramic	PVDF 316 SS 316 SS	Carbon Ceramic Carbon	No Yes Yes	6 1/16" x 10 1/4" x 8 3/8" (15.5 x 26 x 22 cm)	
TW-78021-16 TW-78021-18 TW-78021-20	0.29 to 1300	⅜"	60 (4.1) 100 (6.8) 60 (4.1)	140 (60) 140 (60) 212 (100)	316 SS 316 SS Ceramic	PVDF 316 SS PVDF	Carbon Carbon Ceramic	No Yes No	6 1/16" x 10 1/4" x 8 3/8" (15.5 x 26 x 22 cm)	
TW-78021-22 TW-78021-24 TW-78021-26	0.29 to 1300	⅜"	60 (4.1) 100 (6.8) 100 (6.8)	212 (100) 350 (177) 350 (177)	Ceramic	PVDF 316 SS 316 SS	Carbon Ceramic Carbon	No Yes Yes	6 1/16" x 10 1/4" x 8 3/8" (15.5 x 26 x 22 cm)	
<b>A High-pressure piston pumps with Series Q pump head, meet 3A Sanitary Standard 02-08A1 for use with foods</b>										
TW-78021-28 TW-78021-30	0.04 to 144 0.13 to 576	¼" ⅜"	100 (6.8)	350 (177)	Ceramic	316 SS	Ceramic	Yes	6 1/16" x 10 1/4" x 8 3/8" (15.5 x 26 x 22 cm)	
<b>B High-pressure piston pump with Series R pump head</b>										
TW-78021-52	0.4 to 180	¼"	100 (6.8)	212 (100)	Ceramic	PVDF	Ceramic	No	4" x 5 3/4" x 9 3/4" (10.2 x 14.6 x 24.8 cm)	





**Pumps**  
Metering, Piston

Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
1 to 1,296 mL/min			

**Series Q Valveless Piston Pump Heads**

**No valves to clog or wear out**

- Build your own pump systems using interchangeable heads, drives, and accessories
- Pump fluids with viscosities up to 500 cp
- Low dead volume

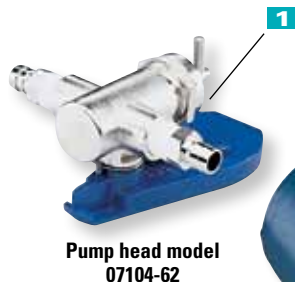
**1 Series Q Pump Heads**

Choose stainless steel (SS) materials for added thermal and physical strength characteristics; choose ceramic materials for use with common abrasives. Sanitary high-flow models are ideal for pumping food products. Pump heads with ceramic piston and carbon cylinder liner are great for gas and liquid transfer.

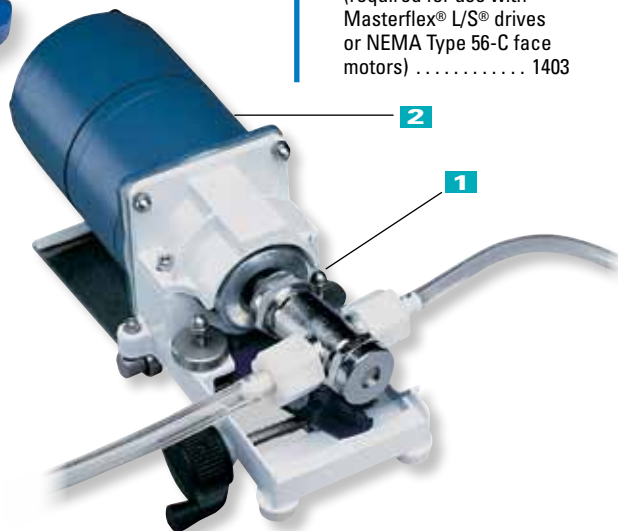
To order a complete pump assembly, first select a pump head with your desired flow rate and piston diameter. Next, select a drive that meets your flow rate and power requirements. For smaller or alternate tubing sizes, order a tubing adapter below right.

**MORE info!**

Pump heads with a 316 SS cylinder body are autoclavable



Pump head model 07104-62



Pump head 07104-50 with AC drive 07104-10

**REQUIRED SYSTEM Components**

- 1 Series Q head . . . . . 1402
- 2 Series Q drive . . . . . 1403
- 3 Pump head adapters (required for use with Masterflex® L/S® drives or NEMA Type 56-C face motors) . . . . . 1403

**Specifications**

**Accuracy:** ±1%

**Suction lift:** 15 ft H<sub>2</sub>O

**Max viscosity:** 500 cp

**Connections**

316 SS cylinder body models: ¼" NPT(F) ports with ⅜" ID tubing hose barb fittings (model 07104-50 accepts ¼" ID tubing)  
PVDF cylinder body models: ¼" OD tubing compression fittings  
Sanitary models: ¼" hose barb

Catalog number	Volume/rev	Flow range (mL/min)	Piston dia	Max pressure psi (bar)	Max temperature		Wetted parts			Price
					°F	°C	Piston	Cylinder body	Cylinder liner	
<b>1 Standard high-flow pump heads</b>										
TW-07104-50	0.08 mL	0 to 144	⅛"	100 (6.8)	140	60	316 SS	316 SS	Carbon	
TW-07104-52				60 (4.1)				PVDF		
TW-07117-26	0.32 mL	0 to 576	¼"	100 (6.8)	140	60	316 SS	PVDF	Carbon	
TW-07104-62				100 (6.8)				316 SS		
TW-07104-54	0.32 mL	0 to 576	¼"	100 (6.8)	212	100	Ceramic	PVDF	Ceramic	
TW-07104-58								Ceramic		
TW-07104-56	0.32 mL	0 to 576	¼"	100 (6.8)	350	177	Ceramic	316 SS	Ceramic	
TW-07104-60								Carbon		
TW-07117-28	0.72 mL	0 to 1296	⅜"	100 (6.8)	140	60	316 SS	PVDF	Carbon	
TW-07104-72				100 (6.8)				316 SS		
TW-07104-64	0.72 mL	0 to 1296	⅜"	100 (6.8)	212	100	Ceramic	PVDF	Ceramic	
TW-07104-68								Carbon		
TW-07104-66	0.72 mL	0 to 1296	⅜"	100 (6.8)	350	177	Ceramic	316 SS	Ceramic	
TW-07104-70								Carbon		
<b>1 Sanitary high-flow pump heads, meet 3A Sanitary Standard 02-08A1 for use with foods</b>										
TW-07117-20	0.32 mL	0 to 576	¼"	100 (6.8)	350	177	Ceramic	316 SS	Ceramic	
TW-07117-22	0.72 mL	0 to 1296	⅜"							

**Accessories for All Valveless Piston Metering Pumps on pages 1401-1403**

**TW-07042-70 Air lubricator:** ¼" NPT(F) for 07104-42 and 07104-44 air drives

**TW-07115-50 Pulse dampener.** Use to suppress 90% of pulse magnitude. Use with either low-flow adapter kit 07117-87 or ¼-28(M) fittings 01939-32 and -42 (sold separately below) to attach dampener directly to your pump head. Max flow rate is 50 mL/min. Max pressure is 65 psi. Has ¼-28(F) ports and PTFE and 316 SS wetted parts. Dead volume is 2 mL

**TW-07104-96 High-flow in-line pulse dampener** reduces tubing vibrations and cavitation problems. For flow rates greater than 50 mL/min. Max pressure is 65 psi

**TW-07104-98 Dial indicator kit.** For continuous readings of flow rate settings

**TW-07117-87 Low-flow adapter kit** decreases dead volume and fluid transit time. Includes four ferrules, two ¼" NPT(M) x ¼-28 adapters, and assembly tool

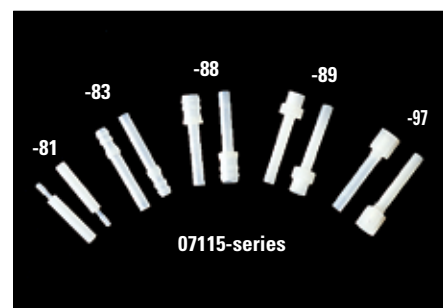
**TW-01939-32 Fittings,** ferrule ⅛" x ¼-28. Order with model 01939-42 below to attach dampener 07115-50 to your pump head. Made of ETFE. Pack of 10

**TW-01939-42 Fittings,** male nut; ⅛" x ¼-28. Order with model 01939-32 above to attach dampener 07115-50 to your pump head. Made of ETFE. Pack of 10



07115-50

**PVDF Tubing Adapters for ¼" OD Compression Fittings**



Cat. no.	Description	Price/pk of 2
TW-07115-81	For ⅛" ID tubing	
TW-07115-83	For ¼" ID tubing	
TW-07115-88	For ⅜" ID tubing	
TW-07115-89	For ¼-28 thread	
TW-07115-97	For ⅛" OD tubing	



Distributed by: Fiedler Scientific Instruments, s.r.o.  
 info@lab-eu.com info@pristroje.cz



**Series Q Pump Drives**



Shown system above consists of pump head 07104-56 and fixed speed drive 07108-12.

**2 Series Q Drives**

Series Q drives are interchangeable with all pump heads on facing page. Set flow anywhere from 0 to 100% of maximum flow rate—drives offer better than ±1% accuracy. For additional speed control, choose drives that have a separate speed controller for precise and repeatable setting of stroke rates from 0.1 to 99.9%.

Controllers accept 4 to 20 mA input for remote control or a digital potentiometer for manual control. Pedestal drive model 07104-40 is for chain-, belt-, or shaft-coupling to rotating machine elements or to your motor. Drives with explosion proof motors are designed for applications in Class I, Group D, Division 1 hazardous areas.

**3 Pump Head Adapters**

Operate the Series Q pump heads (sold on the opposite page) with Masterflex® L/S® drives (sold on pages 1260–1287) and NEMA Type 56-C face motors (sold on pages 975–978) using these adapter kits.

**TW-07104-48 Masterflex® adapter kit.** Includes all necessary screws and fittings

**TW-07117-85 NEMA Type 56 C-face adapter kit.** Includes all necessary screws and fittings

**3 07104-48**



**Specifications**

Temperature: 39 to 104°F (4 to 40°C) Accuracy: ±1% Continuous duty: yes



Catalog number	Rev per minute	Motor specifications					Max psi (bar) for given piston dia			Connections	Dimensions (L x W x H) in (cm)	Price
		hp	Type†	Voltage	Hz	Amps	1/8"	1/4"	3/8"			
<b>2 Single head, fixed-speed Masterflex® L/S® AC drives</b> (includes 07104-45 Masterflex adapter kit)												
<a href="#">TW-07108-08</a>	2	<1/25	AC shaded pole, IP 22	115 VAC	60	0.3	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-12</a>	6	<1/25	AC shaded pole, IP 22	115 VAC	60	0.5	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-14</a>	12	<1/25	AC shaded pole, IP 22	115 VAC	60	0.5	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-16</a>	20	<1/25	AC shaded pole, IP 22	115 VAC	60	0.6	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-18</a>	60	<1/25	AC shaded pole, IP 22	115 VAC	60	0.9	75 (5.1)	75 (5.1)	75 (5.1)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-28</a>	2	<1/25	AC shaded pole, IP 22	230 VAC	50	0.3	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-32</a>	5	<1/25	AC shaded pole, IP 22	230 VAC	50	0.5	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-34</a>	10	<1/25	AC shaded pole, IP 22	230 VAC	50	0.5	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-36</a>	17	<1/25	AC shaded pole, IP 22	230 VAC	50	0.6	20 (1.3)	50 (3.4)	40 (2.7)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<a href="#">TW-07108-38</a>	50	<1/25	AC shaded pole, IP 22	230 VAC	50	0.9	75 (5.1)	75 (5.1)	75 (5.1)	Cord and plug	6" x 4 7/8" x 4 1/2" (15.2 x 12.5 x 11.5)	
<b>2 Single head, fixed-speed AC drives</b>												
<a href="#">TW-07104-08</a>	72	1/25	XPRF	240 VAC	50/60	0.6	100 (6.8)	100 (6.8)	100 (6.8)	Pigtail leads	10 1/4" x 6" x 6 3/4" (26.0 x 15.2 x 17.1)	
<a href="#">TW-07104-10</a>	1725	1/25	TEFC	110 VAC	60	1.25	100 (6.8)	100 (6.8)	50 (3.4)	Cord and plug	9 13/16" x 5 1/2" x 4 13/16" (24.9 x 13.7 x 12.2)	
<a href="#">TW-07104-15</a>	1725	1/25	TEFC	220 VAC	50/60	1.25	100 (6.8)	100 (6.8)	50 (3.4)	Cord only	9 13/16" x 5 5/8" x 4 13/16" (24.9 x 13.7 x 12.2)	
<a href="#">TW-07104-40</a>	1800	N/A†	Pedestal	—	—	—	—	—	—	—	6 1/2" x 5 7/8" x 4 1/2" (16.7 x 13.1 x 11.2)	
<b>2 Single head, air and DC drives††</b>												
<a href="#">TW-07104-42</a>	400	N/A	Air	—	—	—	100 (6.8)	100 (6.8)	—	—	11 1/2" x 5 1/8" x 6 5/8" (29.2 x 13.0 x 16.8)	
<a href="#">TW-07104-44</a>	1800	N/A	Air	—	—	—	100 (6.8)	70 (4.8)	30 (2.0)	—	8 3/8" x 5 1/8" x 6 5/8" (22.2 x 13.0 x 16.8)	
<a href="#">TW-07104-20</a>	1800	1/70	Enclosed	12 VDC	—	4	—	70 (4.8)	30 (2.0)	Pigtail leads	10 1/2" x 4 1/2" x 5" (26.7 x 11.4 x 12.7)	
<a href="#">TW-07104-25</a>	1800	1/70	Enclosed	24 VDC	—	3.3	—	70 (4.8)	30 (2.0)	Pigtail leads	10 1/2" x 4 1/2" x 5" (26.7 x 11.4 x 12.7)	
<b>2 Single head, variable-speed AC drives with separate speed controller</b>												
<a href="#">TW-07104-32</a>	1800	1/27	TENV with 4 to 20 mA or stepless control from 0.1 to 99.9%	100–240 VAC	50/60	0.75	100 (6.8)	100 (6.8)	50 (3.4)	Cord and plug	Motor: 10" x 4 7/8" x 4 5/8" (25.4 x 12.3 x 11.7) Controller: 7 1/2" x 4 3/4" x 2 1/4" (19.1 x 12.1 x 5.7)	
<b>2 Dual head, DC drives†</b>												
<a href="#">TW-07104-92</a>	1800	1/27	TENV	12 VDC	—	4	100 (6.8)	70 (4.8)	30 (2.0)	Pigtail leads	15" x 5 1/8" x 4 7/8" (38.1 x 13.0 x 12.3)	
<a href="#">TW-07104-94</a>				24 VDC	—	3.3						
<b>2 Dual head, variable-speed AC drives with separate speed controller</b>												
<a href="#">TW-07104-91</a>	1800	1/27	TENV with 4 to 20 mA or stepless control from 0.1 to 99.9%	110 VAC	50/60	0.75	100 (6.8)	100 (6.8)	50 (3.4)	Cord and plug	Motor: 15" x 5 1/8" x 4 7/8" (38.1 x 13.0 x 12.3) Controller: 7 1/2" x 4 3/4" x 2 1/4" (19.1 x 12.1 x 5.7)	

†TEFC = totally enclosed, fan-cooled; TENV = totally enclosed, nonvented; XPRF = explosion proof.  
 †Requires motor with 20 oz-in of torque. Shaft extension measures 1 3/16" L x 5/16" dia x 2 3/4" (2.1 x 0.8 x 7.0 cm) center line.

††Control speed on DC drives with a variable DC power supply (order from page 976); control speed on air drives with an air filter/regulator (order on page 1431). Air drives require an air lubricator 07042-70, order under accessories on page 1402.



**Pumps**  
Metering, Piston

Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
0.01 to 100 mL/min			

**High-Precision, High-Pressure Piston Pumps**

**Deliver precise volumes at pressures up to 6000 psi**

- Ideal for use in HPLC applications
- Pulse dampener significantly reduces pulsation with low dead volume

**A Economical Digital Pumps**

Digital pumps provide precise, reproducible flow in an economical package. Single-piston pump significantly reduces pulsation through the use of an advanced electronic rapid-refill design. Microprocessor-controlled pump provides control signals to the motor drive circuits, interfaces with the keypad and digital LED display, receives signals to refill based on flow rate, and provides RS-232 communication. Other features include run/stop inputs, dual-voltage capabilities, self-flushing pump heads, and a motor stall detector. Both include a 6-ft (1.8-m) power cord with plug.



**A** 74930-00

**B Constant-Flow HPLC Pump**

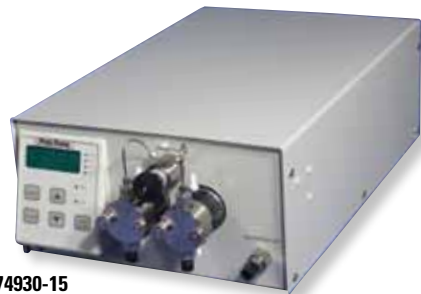
Use this dual head pump for analytical to small-scale chromatography applications. Constant-flow pump can be used with columns from 2 to 22 mm ID. Drive features a linear cam and pressure compensation to provide accurate gradients in high- or low-pressure modes. Chemical-resistant keypad and digital LED display allow flow adjustments in 0.01-mL increments. Other features include RS-232 serial communication port, run/stop inputs, remote frequency and voltage controls, dual voltage capabilities, and real-time pressure monitoring. Includes a 6-ft (1.8-m) power cord with plug.



**B** 74930-10

**C Isocratic Dispensing Pump**

Use this single-head pump for isocratic, metering, research and development and quality assurance applications. The low dead volume pulse damper and rapid refill in the pump make the flow virtually pulse-free. Easy solvent changes are accomplished via the one-button purging/priming feature.



**C** 74930-15

Linear cam and pressure compensation provide accurate gradients in high- or low-pressure modes. Chemical-resistant keypad and digital LED display allow flow adjustments in 0.01-mL increments. Other features include RS-232 serial communication port, run/stop inputs, remote frequency and voltage controls, dual-voltage capabilities, and real-time pressure monitoring.

**D Preparative High-Flow Pump**

Preparative digital pump provides high flow rates and high pressure capabilities with consistent performance. Dual ball and seat check valves in each head reduce pulsation.



**D** 74930-20

Microprocessor controls motor drive circuits, interfaces with the chemical-resistant keypad and digital LED display, receives signals to refill based on flow rate, and provides RS-232 communication. Pressure control feature provides real-time pressure monitoring with upper and lower pressure limits. Other features include prime/purge valves for easy solvent change and priming capabilities, auto-flush piston wash, run/stop inputs, and dual-voltage capabilities. Includes a 6-ft (1.8-m) power cord with plug.

**Specifications**

**Accuracy:** ±2%

**Maximum temperature (fluid):** 212°F (100°C)

**Operating ambient:** 32 to 176°F (0 to 80°C) with max 98% humidity

**Duty cycle:** continuous

**Self-priming:** no

**Power:** 110 to 220 VAC, 50/60 Hz



Key	Catalog number	Flow range (mL/min)	Max psi (bar)	Pump head	Repeatability	Wetted parts	Dimensions (W x H x D) in (cm)	Price
<b>A</b>	<a href="#">TW-74930-00</a>	0.01 to 10	3000 (206.8)	PEEK	±0.5%	PEEK check valve body and outlet tubing; synthetic ruby and sapphire check valve internals; sapphire piston; PTFE inlet tubing and pulse dampener diaphragm.	7¼ x 6¼ x 12¼ (19.7 x 15.9 x 32.4)	
<b>A</b>	<a href="#">TW-74930-05</a>	0.01 to 10	3000 (206.8)	316 Stainless steel	±0.5%	316 SS check valve body and tubing; synthetic ruby and sapphire check valve internals and piston; fluorocarbon pulse dampener diaphragm.	7¼ x 6¼ x 12¼ (19.7 x 15.9 x 32.4)	
<b>B</b>	<a href="#">TW-74930-10</a>	0.01 to 12	6000 (413.7)		±0.2%		11 x 6 x 18 (27.9 x 15.2 x 45.7)	
<b>C</b>	<a href="#">TW-74930-15</a>	0.1 to 10	6000 (413.7)		±0.2%		5½ x 10¾ x 17½ (14.0 x 26.4 x 44.5)	
<b>D</b>	<a href="#">TW-74930-20</a>	0.1 to 100	4000 (275.8)		±0.5%		11 x 6 x 18 (27.9 x 15.2 x 45.7)	

**316 Stainless Steel Capillary Tubing**



**Applications:** Great for high-pressure applications such as HPLC.

**Characteristics:** Offers great chemical resistance.

**Certification:** None.

**Temperature range:** -65 to 550°F (-53 to 289°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

Dimensions (in.)			Hydrostatic pressure ratings	1-ft length		3-ft length	
ID	OD	Wall		Catalog number	Price	Catalog number	Price
0.005	0.0625	0.0287	11,442 psi	<a href="#">LZ-95220-00</a>		<a href="#">LZ-95220-10</a>	
0.01	0.0625	0.0262	11,155 psi	<a href="#">LZ-95220-02</a>		<a href="#">LZ-95220-12</a>	
0.015	0.0625	0.02375	10,684 psi	<a href="#">LZ-95220-04</a>		<a href="#">LZ-95220-14</a>	
0.02	0.0625	0.0212	10,041 psi	<a href="#">LZ-95220-06</a>		<a href="#">LZ-95220-16</a>	
0.03	0.0625	0.0162	8292 psi	<a href="#">LZ-95220-08</a>		<a href="#">LZ-95220-18</a>	

ULTRALOW	LOW	MEDIUM	HIGH
0.001 to 250 mL/min			

## High-Precision Ultra-High Pressure Pumps

### Achieve 18,000 psi (1241 bar) pressure across the entire flow range

- Two versions available—constant flow and constant pressure
- Flow accuracy to ±1% with precision being 0.5% RSD on >30 sec average flows
- Allow fine adjustment of flow in microliter increments

These ultra-high pressure positive displacement pumps have been specifically designed for analytical to high-speed, high-resolution liquid chromatography (LC) applications and ultra-high pressure metering.

The constant flow pump provides flow rates from 0.001 to 5.000 mL/min, with flow settings in 1 µL increments and upper pressure of 18,000 psi across the flow range. This pump provides very low pulsation using advanced solvent recompression algorithms and automatic pressure compensation for accurate flow rates.

The constant pressure version has been developed for LC column packing (1 to 10 micron particles) or for holding reactors at high pressure. Standard features include prime-purge valve, pressure transducer, LCD, and RS-232 interface. This pump has a flow range of 0.001 to 12.000 mL/min with the flow rate automatically adjusted to maintain the pressure set point, up to 18,000 psi.

**What's included:** 6-ft (1.8-m) electrical cord with plug.



74930-60



Inside view

### Specifications

**Wetted parts:** 316 stainless steel, sapphire pistons, ruby/sapphire check valves, PTFE inlet tubing, and UHMWV polyethylene seals

**Accuracy:** ±2% of full-scale pressure, ±1% at 1mL/min 10,000 psi with methanol

**Maximum temperature:** 212°F (100°C)

**Operating ambient:** 32 to 176°F (0 to 80°C) with max 98% humidity

**Duty cycle:** continuous

**Self-priming:** no

**Power:** 110 to 220 VAC, 50/60 Hz



Catalog number	Type	Flow range (mL/min)	Max pressure psi (bar)	Repeatability	Dimensions (W x H x D)	Price
<a href="#">TW-74930-60</a>	Constant flow	0.001 to 5.000	18,000 (1241)	±0.5% RSD	10 3/8" x 5 1/2" x 17 1/2" (140 x 264 x 445 mm)	
<a href="#">TW-74930-65</a>	Constant pressure	0.001 to 12.000				

### Find MORE!

See our Chromatography section for suitable fittings and valves, on pages 257–268.

## High-Performance Dual-Piston Pumps

### Dual-head design for precise flow rates and low pulsation

- Flow rates from 0.001 to 250.0 mL/min
- Pressure is 9000 psi (612 bar) from 0 to 210 mL/min or 6500 psi from 211 to 250 mL/min
- Flow precision of 0.5% RSD and an accuracy of ≤2% of set point

Thoughtful design is shown through the whole pump—from the dual pump heads allowing for very accurate flow rates and low pulsation to the readily accessible check valves, pistons and seals making for fast and easy maintenance. Pump features a servo motor, LCD keypad, and RS-232 interface.

Standard configuration is with an all stainless steel fluid path; however, a titanium fluid path is readily available by contacting your local dealer.



74930-01

**3** year warranty

### Specifications

**Wetted parts:** stainless steel

**Accuracy:** ≤2% set point

**Precision:** 0.5% RSD

**Maximum temperature:** 212°F (100°C)

**Duty cycle:** continuous

**Self-priming:** no

**Power:** 110 to 220 VAC, 50/60 Hz

Catalog number	Type	Flow range (mL/min)	Max psi (bar)	Repeatability	Pump head	Dimensions (W x H x D)	Price
<a href="#">TW-74930-01</a>	Constant flow	0.001 to 250.0	9000 (612)	0.5% RSD	316 SS	14" x 9" x 22" (35.6 x 22.8 x 55.9 cm)	
<a href="#">TW-74930-02</a>	Constant pressure						

### MORE online!

For our full selection of metering pumps products, go to . . .

[ColeParmer.com/MeteringPump](http://ColeParmer.com/MeteringPump)





**Pumps**  
Metering, Piston



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
0.002 to 80 mL/min			

**Economical High-Pressure Piston Pumps**

**Feature micrometer flow adjustment—deliver exact quantities of liquid with minimal pulsation**

- Withstand up to 5000 psi (340 bar) outlet pressure
- Dual-piston models have independent piston control—pump a single liquid, or pump two different liquids at a proportional rate
- Brushless synchronous motors

Inlet accepts 1/8" OD tubing; outlet accepts 1/16" OD high-pressure SS tubing (order below). Decrease pulsation with pulse dampener model 07115-55. Motor is TENV.

**What's included:** All models come with a sturdy aluminum housing and a 7-ft (2.1-m), three-wire cord (115 VAC models have a plug; 230 VAC models have a European plug).

**Specifications**

**Wetted parts:** Fluoroloy G® (PE) standard piston seal, sapphire pistons and seats, ruby ball checks, PCTFE valve seals, gold-plated stainless steel springs, and 316 stainless steel compression-type fittings

**Repeatability:** ±0.3% full-scale  
**Maximum fluid temperature:** 248°F (120°C)  
**Duty cycle:** continuous



07143-70

CE  
Models  
07143-73, -78, -93 only



Pulse dampener  
07115-55

Catalog number	Pump type	Max volume per stroke	Motor speed	Flow rates (mL/min)		Max pressure psi (bar)	Power†			Dimensions (L x W x H)	Price
				Minimum	Maximum		VAC	Hz	Amps		
TW-07143-96 TW-07143-97	Single-piston	0.05 mL	30 rpm	0.05	1.5	5000 (345)	115 230	60 50	0.125	7 3/4" x 4 1/2" x 4 3/4" (19.7 x 11.4 x 12.1 cm)	
TW-07143-70 TW-07143-73	Single-piston	0.05 mL	60 rpm	0.1	3.0	2500 (172)	115 230	60 50	0.125	7 3/4" x 4 1/2" x 4 3/4" (19.7 x 11.4 x 12.1 cm)	
TW-07143-75 TW-07143-78	Single-piston	0.08 mL	100 rpm	0.2	8.0	5000 (345)	115 230	60 50	1	7 3/4" x 7 1/2" x 6" (19.7 x 19.1 x 15.2 cm)	
TW-07143-86 TW-07143-88	Single-piston	0.05 mL	120 rpm	0.5	6.0	1000 (69)	115 220	60 50	0.125	7 3/4" x 4 1/2" x 4 3/4" (19.7 x 11.4 x 12.1 cm)	
TW-07143-90 TW-07143-93	Dual-piston	0.10 mL	100 rpm	0.2	10.0	5000 (345)	115 230	60 50	1	7" x 10 1/2" x 6 1/4" (17.8 x 26.7 x 16.9 cm)	

†Motor is TENV (Totally Enclosed, Non-Ventilated)

**TW-07115-55 Pulse dampener,** high-pressure; 316 SS, 3" (7.6 cm) dia eliminates flow pulsations in diaphragm or piston pumps to a maximum pressure of 3000 psi. Less than 5 mL internal volume. Accepts 1/4" OD fittings

**TW-03300-02 Tubing,** high-pressure; 316 SS, 1/16" OD. Pack contains two 3-ft (0.9-m) sections; 6 ft (1.8-m) total

**Low-Flow Piston Pump Systems**

**Remote flow rate control via analog signal or RS-232 interface**

- Flow down to 0.002 mL/min; pressure up to 6000 psi (414 bar)
- Smooth fluid delivery from intra RPM stepper motor control
- Integrated piston wash

Software control of refill rates and compressibility compensation add to the versatility of the pumps and enhance pump performance. Precise metering is attained by a positive-displacement reciprocating piston assembly. The high-resolution stepper motor is used to maximize flow output and minimize pulsation. A fully integrated piston wash system dramatically extends the life of the piston by rinsing away crystallized chemicals which lead to abrasion of the piston seal.

Choose pumps with an integrated pulse damper to further reduce pulsation. They also feature the ability to monitor pressure and set high and low limits.



73150-00



73150-00 display



73150-00 back view

**Specifications**

**Viscosity:** 500 cp max

**Repeatability:** typically ±0.3%

**Duty cycle:** continuous

**Maximum fluid temperature:** 248°F (120°C)

**Dimensions (W x H x D):** 4" x 9" x 9 1/2" (10 x 23 x 24 cm)

**Power:** 110 to 220 VAC, 50/60 Hz



**TECHNICAL info!**

Extended flow ranges are possible by using up to three interchangeable liquid assemblies. For higher flows or alternate materials contact your local dealer.

Flow rate (mL/min)		Max pressure psi (bar)	Wetted parts		Connection		Standard		Integrated pulse damper	
Min	Max		Body	Piston	Inlet	Outlet	Catalog number	Price	Catalog number	Price
0.002	2.5	6000 (413)	316 SS	PE	1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	TW-73150-00		TW-73150-02	
0.003	5	6000 (413)			1/8" Swagelok®	1/8" Swagelok	TW-73150-10		TW-73150-12	
0.01	20	3000 (206)			1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	TW-73150-20		—	—
0.003	5	6000 (413)	316 SS	PE	1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	TW-73150-30		TW-73150-32	
0.01	10	6000 (413)			1/8" Swagelok	1/8" Swagelok	TW-73150-40		TW-73150-42	
0.02	40	1500 (103)			1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	TW-73150-50		—	—
0.01	10	3000 (206)	316 SS	PE	1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	TW-73150-60		—	—
0.01	20	1500 (103)			1/8" Swagelok	1/8" Swagelok	TW-73150-70		—	—
0.04	80	750 (52)			1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	TW-73150-80		—	—

ULTRALOW	LOW	MEDIUM	HIGH
0.6 µL/min to 10.3 mL/min			



**Cole-Parmer® Micro Peristaltic Pumps**

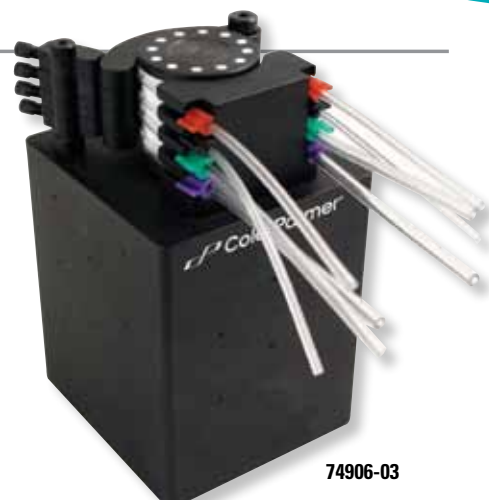
**Operate by computer or on your iOS or Android™ device**

- Easily achieve flow ranges down to 125 nL/min with a 1.26% reproducibility
- 12-roller head minimizes the pulsation
- Select pump based upon number of channels needed—from one to six
- Wide choice of peristaltic tube sets

Control these Cole-Parmer micro pumps through your computer using an available USB port and Pump Network Control™ software. Software† can be used remotely on the same Wi-Fi network using an Apple® iOS or Android device. The Pump Network Control software controls direction, speed, and multiple pumps. This wireless control lets you monitor what is going on in your experiment/analysis without having to hover around the connected equipment, making more efficient use of your time.

Although the pumps are optimized for use in low-flow applications, they offer a wide dynamic range of usability—from tenths of one mL/min up to 10 mL/min. With the ability to daisy chain the pumps together, you can run up to four Cole-Parmer micro peristaltic pumps on the same COM port, resulting in greater flexibility and control in your application.

These precise micro pumps offer fast analysis, low-sample consumption, low-detection limits, high throughput, high precision/isotope ratio, preconcentration, and speciation. Various applications include clinical, environmental, geochemistry, online process monitoring, soil monitoring, and wear metals in oil.



74906-03



iPod® not included. Screen shows peristaltic and syringe pump being controlled over Wi-Fi network.

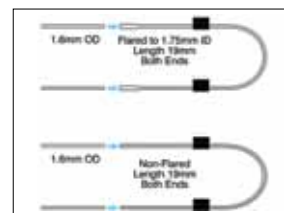
**Specifications**

**Wetted parts:** PVC or Solva™ hydrocarbon tubing (order separately below)

**Max fluid temperature:** 125°F (52°C)

**Duty cycle:** continuous

Catalog number	No. of channels	rpm	Reproducibility	Dimensions (L x W x H)	Reversible motor	Power (VAC, Hz)	Price
TW-74906-00	1	0 to 150	1.26%	3¾" x 3¾" x 5½" (9.5 x 9.5 x 14 cm)	Yes	90 to 240, 50/60	
TW-74906-01	2						
TW-74906-02	3						
TW-74906-03	4						
TW-74906-04	6						



**Micro Peristaltic Pump 2-Stop Tube Sets (12 per pack)**

ID (mm)	Color-coded stops	µL per rpm	Nonflared PVC		Nonflared Solva hydrocarbon		Flared PVC		Flared Solva hydrocarbon		
			Catalog number	Price/pk	Catalog number	Price/pk	Catalog number	Price/pk	Catalog number	Price/pk	
0.13	Org/blk	0.6	TW-74906-09	—	—	—	—	TW-74908-09	—	TW-74909-09	—
0.19	Org/red	1.3	TW-74906-10	—	—	—	—	TW-74908-10	—	TW-74909-10	—
0.38	Org/grn	4.7	TW-74906-14	—	—	—	—	TW-74908-14	—	TW-74909-14	—
0.51	Org/ylw	9.5	TW-74906-18	—	—	—	—	TW-74908-18	—	TW-74909-18	—
0.64	Org/wht	14	TW-74906-22	—	—	—	—	TW-74908-22	—	TW-74909-22	—
0.76	Blk/blk	19	TW-74906-24	—	TW-74907-24	—	—	TW-74908-24	—	TW-74909-24	—
0.89	Org/org	24	TW-74906-26	—	TW-74907-26	—	—	TW-74908-26	—	TW-74909-26	—
1.02	Wht/wht	31	TW-74906-28	—	TW-74907-28	—	—	TW-74908-28	—	TW-74909-28	—
1.30	Gray/gray	47	TW-74906-32	—	TW-74907-32	—	—	—	—	—	—
1.52	Ylw/blue	51	TW-74906-36	—	TW-74907-36	—	—	—	—	—	—
1.85	Grn/grn	61	TW-74906-40	—	TW-74907-40	—	—	—	—	—	—
2.79	Purp/wht	69	TW-74906-48	—	TW-74907-48	—	—	—	—	—	—

†Pump Network Control™ software must be installed and running for RDP apps to run.

**MORE info!**

**Pump Network Control Software**

- Run up to 4 of the peristaltic pumps on the same COM port or multiple ports
- Control the speed, direction, and power of the peripumps
- User selects type of peripump tubing being used; flow rate will update based on the user's rpm selection.
- Run up to two syringe pumps (page 1398) on the same COM port or multiple ports
- Control the direction of the syringe—either dispense or fill
- Control the rate and amount of product to dispense or fill

**To control the pump remotely on the same Wi-Fi network:**

- Download the application from iTunes® or Google Play (link is found on the pumps/sku web page at www.coleparmer.com)
- Two software versions available—Lite version, which is free and can be used for monitoring of the pump(s) only, and a full version (for a fee) which allows full control of the pump(s)
- After syncing your device, launch the RDP program
- Set up connection by entering the IP address of the computer running the Pump Network Control Software
- Enter computer login

Note: Compatible with Windows XP Professional, Vista or Windows 7.



**Pumps**  
Metering, Peristaltic

ULTRALOW	LOW	MEDIUM	HIGH
0.05 to 10,000 mL/min			

**Cole-Parmer High-Pressure Peristaltic Pumps**

**Pump at flow rates up to 158.5 GPH and pressures up to 125 psi—output volume is not affected by changes in back pressure**

- Three versions now available to better fit your application requirements
- Low-range models have flow up to 16 GPH (60.6 LPH) and pressures to 125 psi (8.6 bar)
- Mid-range models have flow up to 33.3 GPH (126 LPH) and pressures to 125 psi (8.6 bar)
- High-range models have flow up to 158.5 GPH (600 LPH) and pressures to 125 psi (8.6 bar)
- Tube Failure Detection is included on all models—the system senses tube failure by detecting chemical in the pump head. No false triggering.
- NEMA 4X (IP66) washdown enclosure
- Self priming even against maximum line pressure—suction lift up to 30 feet (9 meters) H<sub>2</sub>O

Choose a pump to achieve flow rates up to 158.5 GPH (600 LPH) and pressures up to 125 psi (8.6 bar) depending on your particular application. The pump performance allows for 30 feet (9 meters) of suction lift using water. Keeping chemical compatibility as simple as possible, the tubing is the only material in contact with the fluid. These pumps can achieve maximum pressure via a clockwise or counterclockwise rotation, giving great flexibility to your installation situation.

Operator-friendly digital touch pad with menu-driven software makes these pumps very easy to operate. The VGA graphic multicolor, backlit LCD displays remote/local control status, motor speed, output rate, input signal values, and service and alarm status. Multilingual display can present the information in English, Spanish, French, or German. A Tube Failure Detection (TFD) system senses tube failure by detecting the presence of the pumped chemical in the head. Built-in error correction prevents false triggering.

Pumps come standard with Norprene® tube sets. Norprene tubing meets FDA criteria for food and offers excellent chemical resistance. Replacement tubing formulations such as Norprene Chemical (for superior chemical resistance) and Tygothane® (for use with oils, greases, and fuels) are available on page 1409.

**What's included:** Norprene tube set and 6-ft (1.8-m) US power cord.

**A Low-Flow Range Pumps**

Variable-speed DC motors can be adjusted from 1.0 to 100% of motor speed (100:1 turndown ratio) to meet your needs. The user-friendly interface includes a UV-resistant, backlit LCD and an eight-button, positive action tactile switch keypad.

These pumps offer extensive input/output connectivity options. Inputs include: SCADA with 4-to-20 mA and pulse inputs for remote external speed control and either powered 6 to 24 VDC or non-powered dry contact closure for remote start/stop. The outputs include: one 250 VAC/3 A relay to monitor TFD (Tube Failure System) and FVS (Flow Verification System). If your application needs a 4-to-20 mA analog output signal scaled to the motor speed, please call your local dealer for details.

**Specifications**

**Wetted parts:** Norprene tubing (Norprene Chemical and Tygothane tube sets—available on page 1409)  
**Accuracy:** ±0.5% full scale  
**Repeatability:** ±0.5%  
**Speed control:** 100:1 turndown ratio  
**Suction lift:** 30 ft water, 0 psig (4.5 m, 0 bar)  
**Max fluid viscosity:** 12,000 cp  
**Duty cycle:** continuous  
**Operating voltage:** 115 VAC / 60 Hz (1.5 amp) or 220 VAC / 50 Hz (1.0 amp)

**Input signals:** SCADA inputs include: 4-to-20 mA, pulse, and one dry contact closure 6 to 24 VDC powered loop for remote start/stop  
**Output signals:** one, 3 amp alarm relay; optional analog 4-to-20 mA input scaled to motor speed (call our Application Specialists for more details)  
**Enclosure:** NEMA 4X (IP66), polyester powder-coated aluminum  
**Connections:** ½" NPT(M), natural PVDF  
**Dimensions (W x H x D):** 7½" x 10¼" x 14" (19 x 26 x 35.6 cm)



**B**  
74203-06

**NEW**  
Models



**C**  
74203-48

**B Mid-Flow Range Pumps**

These mid-range models maintain a volume output that is not affected by changes in back pressure. The system was designed to automate dosing down to the precision level of parts per million. The user-friendly interface includes a multi-color LCD with a ten-button positive action tactile switch keypad. Protect your pump using the programmable, 4-digit password built into the software.

Pumps feature low-maintenance brushless DC motors that allow the pump speed to be adjusted from 0.05 to 125 rpm. Integrated sensor protects the operator and aides in tube replacement when the access door is open by limiting the pump speed to 6 rpm. A tube life timer is also integrated into the system to help determine when it's time to replace your tubing.

Operate the pump remotely or locally using the many input and output connections that are offered. Inputs include: one contact closure (remote start/stop), remote speed control via 4 to 20 mA, 0 to 10 VDC, high speed digital pulse, or contact closure pulse. The outputs include: three, dry contact or maximum 30 VDC / 115 VAC 1 amp contact closures, programmable 4-to-20 mA or high speed pulse, or proportional-to-pump output. Standard electrical features include three contact closures and one 6 amp relay.

**Specifications**

**Wetted parts:** Norprene tubing (Norprene Chemical and Tygothane tube sets—available on page 1409)  
**Accuracy:** ±0.5% full scale  
**Repeatability:** ±0.5%  
**Speed control:** 2500:1 turndown ratio  
**Suction lift:** 30 ft water, 0 psig (4.5 m, 0 bar)  
**Max fluid viscosity:** 20,000 cp  
**Duty cycle:** continuous  
**Operating voltage:** 96 to 264 VAC, 50/60 Hz

**Input signals:** SCADA inputs include: 4 to 20 mA, 0 to 10 VDC, pulse, and one dry contact closure 6 to 24 VDC powered loop for remote start / stop  
**Output signals:** One, 250 VAC/6 amp and three 115 VAC/1 amp relay; optional 4 to 20 mA scaled to motor speed (call our Application Specialists for more details)  
**Enclosure:** NEMA 4X (IP66), polyester powder-coated aluminum  
**Connections:** ½" NPT(M), natural PVDF  
**Dimensions (W x H x D):** 8½" x 10¼" x 15¼" (20.6x 27.3 x 38.9 cm)





Distributed by: Fiedler Scientific Instruments, s.r.o.  
info@lab-eu.com info@pristroje.cz

**C High-Flow Range Pumps**

This system was designed to automate dosing to the precision level of parts per million. The user-friendly interface includes a multi-color LCD with a ten-button positive action tactile switch keypad. These pumps can be password protected through a programmable, 4-digit password built into the software.

Low-maintenance brushless DC motor allows the pump speed to be adjusted from 0.05 to 125 rpm. There is also an integrated sensor that protects the operator and aides in tube replacement when the access door is open by limiting the pump speed to 6 rpm. A tube life timer is also integrated into the system to help determine when it's time to replace your tubing.

You can operate the pump remotely or locally using the many input and output connections that are offered. Inputs include: one contact closure (remote start/stop), remote speed control via 4-to-20 mA, 0 to 10 VDC, high speed digital pulse, or contact closure pulse. The outputs include: three, dry contact or maximum 30 VDC / 115 VAC 1 amp contact closures, programmable 4 to 20 mA or high speed pulse, or proportional-to-pump output. Standard electrical features include three contact closures and one 6 amp relay.

**Specifications**

**Wetted parts:** Norprene tubing (Norprene Chemical and Tygothane replacement tube sets—available at right)

**Accuracy:** ±0.5% full scale

**Repeatability:** ±0.5%

**Speed control:** 2500:1 turndown ratio

**Suction lift:** 30 ft water, 0 psig (4.5 m, 0 bar)

**Max fluid viscosity:** 20,000 cp

**Duty cycle:** continuous

**Operating voltage:** 96 to 264 VAC, 50/60 Hz, 350 watts

**Input signals:** SCADA inputs include: 4 to 20 mA, pulse, and one dry contact closure 6 to 24 VDC powered loop for remote start/stop

**Output signals:** One, 250 VAC/6 amp and three 115 VAC/1 amp relay; optional 4 to 20 mA scaled to motor speed (call our Applications Specialists for more details)

**Enclosure:** NEMA 4X (IP66), polyester powder-coated aluminum

**Connections:** ½" NPT(M), natural PVDF

**Dimensions (W x H x D):** 12½" x 14¼" x 18½" (30.8 x 36.1 x 47.3 cm)

**Replacement Tube Sets**

Catalog number	Flow range			Tubing material	Tube ID	Price
	GPH	LPH	mL/min			
<b>A For low-flow range pumps</b>						
TW-74204-71	0.02 to 1.8	0.07 to 6.8	1 to 114	Norprene	0.078	
TW-74204-72	0.06 to 6.2	0.23 to 23.5	4 to 392	Norprene	0.156	
TW-74204-73	0.15 to 15	0.57 to 56.8	9 to 947	Norprene	0.25	
TW-74204-74	0.16 to 16	0.61 to 60.6	10 to 1010	Norprene Chemical	0.25	
TW-74204-75	0.04 to 4.5	0.17 to 17	3 to 284	Tygothane	0.125	
TW-74204-76	0.09 to 9.3	0.35 to 35.2	6 to 587	Tygothane	0.187	
<b>B For mid-flow range pumps</b>						
TW-74204-01	0.001 to 2.1	0.003 to 7.8	0.05 to 132	Norprene	0.075	
TW-74204-02	0.007 to 17.4	0.26 to 65.8	0.4 to 1097	Norprene	0.155	
TW-74204-03	0.1 to 25.3	0.038 to 96	0.06 to 1596	Norprene	0.25	
TW-74204-04	0.013 to 33.3	0.05 to 126	0.8 to 2100	Norprene	0.312	
TW-74204-06	0.013 to 33.3	0.05 to 126	0.8 to 2100	Norprene	0.375	
TW-74204-07	0.006 to 14.5	0.022 to 55.1	0.4 to 920	Norprene Chemical	0.25	
TW-74204-08	0.01 to 28.5	0.043 to 108	0.7 to 1800	Norprene Chemical	0.375	
TW-74204-10	0.002 to 4.6	0.007 to 17.4	0.1 to 290	Tygothane	0.125	
TW-74204-13	0.004 to 10.1	0.015 to 38.4	0.3 to 637	Tygothane	0.187	
TW-74204-14	0.01 to 24.9	0.038 to 94.2	0.6 to 1570	Tygothane	0.312	
TW-74204-15	0.011 to 28.5	0.043 to 108	0.7 to 1800	Tygothane	0.375	
<b>C For high-flow range pumps</b>						
TW-74204-41	0.01 to 28.5	0.04 to 108	0.7 to 1800	Norprene	0.25	
TW-74204-42	0.02 to 44.4	0.07 to 168	1.1 to 2800	Norprene	0.312	
TW-74204-43	0.02 to 50.7	0.08 to 192	1.5 to 3200	Norprene	0.375	
TW-74204-46	0.04 to 100	0.15 to 378	2.5 to 6300	Norprene	0.5	
TW-74204-47	0.06 to 158.5	0.24 to 600	4.0 to 10000	Norprene	0.75	
TW-74204-48	0.02 to 50.7	0.08 to 192	1.5 to 3200	Norprene	0.375	
TW-74204-54	0.01 to 20.6	0.03 to 78	0.5 to 1300	Norprene Chemical	0.25	
TW-74204-55	0.02 to 42.8	0.06 to 162	1.1 to 2700	Norprene Chemical	0.375	
TW-74204-56	0.01 to 34.8	0.05 to 132	0.9 to 2200	Tygothane	0.312	
TW-74204-57	0.02 to 58.6	0.09 to 222	1.5 to 3700	Tygothane	0.375	

**A Low-Flow Range Pumps**

Flow range			Max rpm	Max pressure		Max temp	115 VAC, 60 Hz		220 VAC, 50 Hz		Replacement Norprene tube sets	
GPH	LPH	mL/min		psi	bar		Catalog number	Price	Catalog number	Price	Catalog number	Price
0.02 to 1.8	0.07 to 6.8	1 to 114	140	125	8.6	185°F (85°C)	TW-74204-16		TW-74204-26		TW-74204-71	
0.06 to 6.2	0.23 to 23.5	4 to 392	140	125	8.6	185°F (85°C)	TW-74204-17		TW-74204-27		TW-74204-72	
0.15 to 15	0.57 to 56.8	9 to 947	140	125	8.6	185°F (85°C)	TW-74204-18		TW-74204-28		TW-74204-73	

**B Mid-Flow Range Pumps**

Flow range			Max rpm	Max pressure		Max temp	115 VAC, 60 Hz		220 VAC, 50 Hz		Replacement Norprene tube sets	
GPH	LPH	mL/min		psi	bar		Catalog number	Price	Catalog number	Price	Catalog number	Price
<b>Norprene tube models for CIP, SIP</b>												
0.001 to 2.10	0.003 to 7.8	0.05 to 132	125	125	8.6	185°F (85°C)	TW-74203-01		TW-74203-21		TW-74204-01	
0.007 to 17.4	0.026 to 66.0	0.4 to 1097	125	125	8.6	185°F (85°C)	TW-74203-02		TW-74203-22		TW-74204-02	
0.010 to 25.3	0.038 to 96.0	0.6 to 1596	125	125	8.6	185°F (85°C)	TW-74203-03		TW-74203-23		TW-74204-03	
0.013 to 33.3	0.050 to 126	0.8 to 2100	125	125	8.6	185°F (85°C)	TW-74203-04		TW-74203-24		TW-74204-04	
<b>Norprene tube model for extra-long life at low pressures</b>												
0.013 to 33.3	0.050 to 126	0.8 to 2100	125	30	2.1	185°F (85°C)	TW-74203-06		TW-74203-26		TW-74204-06	

**C High-Flow Range Pumps**

Flow range			Max rpm	Max pressure		Max temp	115 VAC, 60 Hz		220 VAC, 50 Hz		Replacement Norprene tube sets	
GPH	LPH	mL/min		psi	bar		Catalog number	Price	Catalog number	Price	Catalog number	Price
<b>Norprene tube models for CIP, SIP</b>												
0.01 to 28.5	0.04 to 108	0.7 to 1800	125	125	8.6	185°F (85°C)	TW-74203-41		TW-74203-61		TW-74204-41	
0.2 to 44.4	0.07 to 168	1.1 to 2800	125	125	8.6	185°F (85°C)	TW-74203-42		TW-74203-62		TW-74204-42	
0.02 to 50.7	0.08 to 192	1.3 to 3200	125	125	8.6	185°F (85°C)	TW-74203-43		TW-74203-63		TW-74204-43	
0.02 to 54.0	0.9 to 204	1.4 to 3400	125	125	8.6	185°F (85°C)	TW-74203-44		TW-74203-64		TW-74204-44	
0.04 to 100.0	0.15 to 378	2.5 to 6300	125	125	8.6	185°F (85°C)	TW-74203-46		TW-74203-66		TW-74204-46	
0.06 to 158.5	0.24 to 600	4.0 to 10000	125	125	8.6	185°F (85°C)	TW-74203-47		TW-74203-67		TW-74204-47	
<b>Norprene tube models for extra-long life at low pressures</b>												
0.02 to 50.7	0.07 to 192	1.3 to 3200	125	30	2.1	185°F (85°C)	TW-74203-48		TW-74203-68		TW-74204-48	
0.04 to 111	0.17 to 420	2.8 to 7000	125	30	2.1	185°F (85°C)	TW-74203-49		TW-74203-69		TW-74204-49	





**Pumps**  
Metering, Peristaltic

ULTRALOW	LOW	MEDIUM	HIGH
12 to 223.5 mL/min			

**Mechanical and Digital Peristaltic Pumps**

Exceptional reliability and ease of service reduce maintenance and cost

- Polycarbonate corrosion-resistant housing
- 24/7 continuous duty cycle
- Mount pumps vertically or horizontally

**A Single-Head, Adjustable Mechanical Feed Rate Pumps** run reliably and consistently against 100 psi of pressure. These adjustable models feature a 20:1 turndown ratio with an adjustable rate in 2.5% increments from 5 to 100%.

**B Double-Head, Adjustable Mechanical Feed Rate Pumps** increase the flow rate for your application by using a double head with flow outputs up to 170 GPD. Double head pumps contain all of the same features as the single head pumps, only with dual pump heads.

**C Digital Variable-Speed Peristaltic Pumps With and Without 4 to 20 mA Input** feature a four button keypad with LED display for easy operation. Turndown ratios are 20:1 and are adjustable from 5 to 100% in 1% increments. Operate either manually or via automatic control with a 4 to 20 mA input.

**What's included:** 20 ft (6 m) of suction/discharge tubing, two Santoprene® tube assemblies (one is already loaded), ceramic weight, injection check valve (on 100 psi models), connecting nuts, ferrules, and mounting bracket.



Model 74206-00 shown on tank 74208-90

**A** Single-head adjustable mechanical feed rate peristaltic pump 74206-00



**B** Double-head adjustable mechanical feed rate peristaltic pump 74207-00



**C** Digital variable-speed peristaltic pump 74208-00



Specifications



For "A" and "B" pumps only

**Wetted parts:** Santoprene peristaltic tubing/ duckbill check, PVC fittings, LDPE suction/discharge tubing and ferrules

**Max viscosity:** 1500 cp  
**Suction lift:** up to 25 ft (7.6 m)  
**Duty cycle:** continuous

**Turndown ratio:** 20:1  
**Input signal:** 4 to 20 mA (select models only)

**Maximum fluid temperature:** 125°F (52°C)

Max flow		Max psi (bar)	Inlet/outlet <sup>†</sup> tubing OD	Dimensions (L x W x H)	115 VAC, 60 Hz			230 VAC, 50 Hz <sup>†</sup>			Repl. tubing assemblies	
GPD	L/hr				Cat. no.	Amps	Price	Cat. no.	Amps	Price	Cat. no.	Price
<b>A Single-head, adjustable mechanical feed rate peristaltic pumps</b>												
5	0.78	100 (6.9)	1/4"	10 1/2" x 5 1/8" x 6" (26.7 x 13.5 x 15.2 cm)	TW-74206-00	1.7		TW-74206-05	0.9		TW-74203-80	
17	2.68	100 (6.9)			TW-74206-10			TW-74206-15			TW-74203-81	
40	6.31	100 (6.9)			TW-74206-20			TW-74206-25			TW-74203-83	
50	7.89	25 (1.7)			TW-74206-30			TW-74206-35			TW-74203-82	
85	13.41	25 (1.7)			TW-74206-40			TW-74206-45			TW-74203-82	
<b>B Double-head, adjustable mechanical feed rate peristaltic pumps</b>												
170	26.81	25 (1.7)	1/4"	12 3/4" x 5 1/8" x 6" (32.4 x 13.5 x 15.2 cm)	TW-74207-00	1.7		TW-74207-05	0.9		TW-74203-82	
<b>C Digital variable-speed peristaltic pumps</b>												
5	0.78	100 (6.9)	1/4"	10 1/4" x 7" x 6 1/4" (26.0 x 17.8 x 15.9 cm)	TW-74208-00	1.5		TW-74208-05	0.75		TW-74203-80	
17	2.68	100 (6.9)			TW-74208-10			TW-74208-15			TW-74203-81	
40	6.31	100 (6.9)			TW-74208-20			TW-74208-25			TW-74203-83	
50	7.89	25 (1.7)			TW-74208-30			TW-74208-35			TW-74203-82	
85	13.41	25 (1.7)										
<b>C Digital variable-speed with 4 to 20 mA input peristaltic pumps</b>												
5	0.78	100 (6.9)	1/4"	10 1/4" x 7" x 6 1/4" (26.0 x 17.8 x 15.9 cm)	TW-74208-40	1.5		TW-74208-45	0.75		TW-74203-80	
17	2.68	100 (6.9)			TW-74208-50			TW-74208-55			TW-74203-81	
40	6.31	100 (6.9)			TW-74208-60			TW-74208-65			TW-74203-83	
50	7.89	25 (1.7)			TW-74208-70			TW-74208-75			TW-74203-82	
85	13.41	25 (1.7)										

<sup>†</sup>230 VAC models come with 6-mm OD suction/discharge tubing.

Tanks

**TW-74208-90 Tank** for mechanical pumps **A** and **B**, 15 gallon

**TW-74208-92 Tank** for mechanical pumps **A** and **B**, 30 gallon

**TW-74208-94 Tank** for digital pumps **C**, 15 gallon

**TW-74208-96 Tank** for digital pumps **C**, 30 gallon

ULTRALOW	LOW	MEDIUM	HIGH
10 to 261 mL/min			



## Economical Peristaltic Pumps

- Easy maintenance and no contamination—tubing is the only wetted part
- Easy tube change-out minimizes downtime between tubing set changes
- Inherent degassing function and rugged gear train offer many years of reliable service
- Variable-speed models offer 4 to 20 mA input, Hall effect input, flow totalizer and verification

These simple-to-use, self-priming peristaltic pumps deliver worry-free dosing. The fixed-speed models are ideal for your straightforward pumping applications. Adjustable-speed models feature a control knob that adjusts the pump on/off cycle time from 0 to 100%.

The variable-speed models feature a microprocessor that allows a variety of input signal types and controls different timer programs to customize the pump to any application. The electronics system matches the variable-speed motor to the real-time dosing requirements as directed by either a 4 to 20 mA signal, Hall Effect or dry contact pulse input, external stop or manual operation in fixed-speed mode. These pumps can even be programmed with a cycle timer to run automatically at set intervals, or with a daily timer to add chemical based on days of the week. The large LCD allows for intuitive program selections and clearly displays operating parameters. The flow totalization menu accurately reports the volume pumped at the touch of a button.

**What's included:** pump head, two Norprene® tubing assemblies, and a 6-ft (1.8-m) US power cord.

**NEW**  
Models



74130-21 LCD display

74130-01



## Specifications



**Wetted parts:** Norprene® tubing, PVC connectors, and customer-supplied 1/4" OD rigid tubing

**Max temperature:** 125°F (51°C)  
**Accuracy:** ±2%

**Max viscosity:** 300 cp  
**Enclosure:** NEMA 3R / IP31 (in horizontal position)

Flow range	Max pressure	Dimensions	Pumps (115 VAC, 60 Hz)		Pumps (230 VAC, 50 Hz)		Service kits		Replacement tubing assemblies			
			GPD	L/hr	psi	bar	W x H x D	Catalog number	Price	Catalog number	Price	Catalog number
<b>Fixed-speed models</b>												
4	0.6	100	6.8	8 1/4" x 9 13/16" x 10 15/16" (209 x 249 x 277 mm)	<a href="#">TW-74130-11</a>		<a href="#">TW-74130-81</a>		<a href="#">TW-74130-52</a>		<a href="#">TW-74130-42</a>	
7	1.1	100	6.8		<a href="#">TW-74130-12</a>		<a href="#">TW-74130-82</a>		<a href="#">TW-74130-52</a>		<a href="#">TW-74130-42</a>	
9	1.4	100	6.8		<a href="#">TW-74130-13</a>		<a href="#">TW-74130-83</a>		<a href="#">TW-74130-53</a>		<a href="#">TW-74130-43</a>	
15	2.4	100	6.8		<a href="#">TW-74130-14</a>		<a href="#">TW-74130-84</a>		<a href="#">TW-74130-53</a>		<a href="#">TW-74130-43</a>	
23	3.6	100	6.8	8 1/4" x 9 13/16" x 10 15/16" (209 x 249 x 277 mm)	<a href="#">TW-74130-16</a>		<a href="#">TW-74130-86</a>		<a href="#">TW-74130-54</a>		<a href="#">TW-74130-44</a>	
30	4.7	80	5.4		<a href="#">TW-74130-17</a>		<a href="#">TW-74130-87</a>		<a href="#">TW-74130-55</a>		<a href="#">TW-74130-45</a>	
50	7.9	80	5.4		<a href="#">TW-74130-18</a>		<a href="#">TW-74130-88</a>		<a href="#">TW-74130-55</a>		<a href="#">TW-74130-45</a>	
80	12.6	25	1.7		<a href="#">TW-74130-19</a>		<a href="#">TW-74130-89</a>		<a href="#">TW-74130-56</a>		<a href="#">TW-74130-46</a>	
<b>Adjustable-speed models</b>												
4	0.6	100	6.8	8 1/4" x 9 13/16" x 10 15/16" (209 x 249 x 277 mm)	<a href="#">TW-74130-01</a>		<a href="#">TW-74130-71</a>		<a href="#">TW-74130-52</a>		<a href="#">TW-74130-42</a>	
7	1.1	100	6.8		<a href="#">TW-74130-02</a>		<a href="#">TW-74130-72</a>		<a href="#">TW-74130-52</a>		<a href="#">TW-74130-42</a>	
9	1.4	100	6.8		<a href="#">TW-74130-03</a>		<a href="#">TW-74130-73</a>		<a href="#">TW-74130-53</a>		<a href="#">TW-74130-43</a>	
15	2.4	100	6.8		<a href="#">TW-74130-04</a>		<a href="#">TW-74130-74</a>		<a href="#">TW-74130-53</a>		<a href="#">TW-74130-43</a>	
23	3.6	100	6.8	8 1/4" x 9 13/16" x 10 15/16" (209 x 249 x 277 mm)	<a href="#">TW-74130-06</a>		<a href="#">TW-74130-76</a>		<a href="#">TW-74130-54</a>		<a href="#">TW-74130-44</a>	
30	4.7	80	5.4		<a href="#">TW-74130-07</a>		<a href="#">TW-74130-77</a>		<a href="#">TW-74130-55</a>		<a href="#">TW-74130-45</a>	
50	7.9	80	5.4		<a href="#">TW-74130-08</a>		<a href="#">TW-74130-78</a>		<a href="#">TW-74130-55</a>		<a href="#">TW-74130-45</a>	
80	12.6	25	1.7		<a href="#">TW-74130-09</a>		<a href="#">TW-74130-79</a>		<a href="#">TW-74130-56</a>		<a href="#">TW-74130-46</a>	
<b>Variable-speed models</b>												
8	1.2	100	6.8	8 1/4" x 9 13/16" x 10 15/16" (209 x 249 x 277 mm)	<a href="#">TW-74130-21</a>		<a href="#">TW-74130-91</a>		<a href="#">TW-74130-52</a>		<a href="#">TW-74130-42</a>	
17	2.6	100	6.8		<a href="#">TW-74130-22</a>		<a href="#">TW-74130-92</a>		<a href="#">TW-74130-53</a>		<a href="#">TW-74130-43</a>	
33	5.2	100	6.8		<a href="#">TW-74130-23</a>		<a href="#">TW-74130-93</a>		<a href="#">TW-74130-54</a>		<a href="#">TW-74130-44</a>	
55	8.6	80	5.4		<a href="#">TW-74130-24</a>		<a href="#">TW-74130-94</a>		<a href="#">TW-74130-55</a>		<a href="#">TW-74130-45</a>	
100	15.7	25	1.7		<a href="#">TW-74130-26</a>		<a href="#">TW-74130-96</a>		<a href="#">TW-74130-56</a>		<a href="#">TW-74130-46</a>	





**Pumps**  
Metering, Peristaltic / Diaphragm



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
0.055 to 250 mL/min			

**Cole-Parmer Peristaltic Metering/Injector Pumps**

A cost-effective pump for pressure injection and chemical feed applications

- High-pressure pumps are self-priming
- Built-in indicator alerts you to change tubing
- Variable-speed models let you control flow via a remote signal

With no internal check valves, these peristaltic pumps are not prone to clogging or fouling—ideal in applications with tough-to-handle solutions. Pump tubing assemblies last up to 1000 hours and take only minutes to change. Pumps also feature a rugged, chemical-resistant Valox® housing and tamper-resistant control cover.

Variable-speed models ensure uninterrupted metered output with no ON/OFF cycle and no injector downtime. Adjust settings from keypad, or use a remote signal for true proportional flow control.

**What's included:** two Norprene® tubing assemblies, suction and discharge tubing, intake strainer with weight, and injector fitting with check valve.



74201-40



Specifications

**Wetted parts:** Norprene pump tubing and PVDF fittings

**Max fluid viscosity:** 5000 cp

**Input signal:** (variable-speed models) 4 to 20 mA, 0 to 10 VDC, pulsed signal

**Max fluid temp:** 130°F (54°C)

**Duty cycle:** continuous

**Dimensions (W x H x D):** 10 1/8" x 6 1/8" x 9" (25.7 x 15.6 x 22.9 cm)

**Suction lift:** 30 ft (water at 0 psig)

**Turndown ratio:** 20:1

Max flow		Max pressure	Pump tubing OD	Inlet/outlet tubing OD	Fixed-speed		Variable-speed with 4 to 20 mA		Repl. tubing assemblies		Repl. roller assemblies	
GPD	LPH	psi (bar)			Catalog number	Price	Catalog number	Price	Catalog number	Price	Catalog number	Price
<b>Peristaltic metering/injector pumps; 115 VAC, 60 Hz</b>												
2.3	0.36	100 (6.8)	1/4"		<a href="#">TW-74200-00</a>		<a href="#">TW-74201-00</a>		<a href="#">TW-74200-80</a>		<a href="#">TW-74200-84</a>	
9.5	1.5	75 (5.1)	1/4"		<a href="#">TW-74200-10</a>		<a href="#">TW-74201-10</a>		<a href="#">TW-74200-80</a>		<a href="#">TW-74200-84</a>	
24.0	3.78	100 (6.8)	3/8"	3/8"	<a href="#">TW-74200-20</a>		<a href="#">TW-74201-20</a>		<a href="#">TW-74200-82</a>		<a href="#">TW-74200-84</a>	
52.5	8.28	50 (3.4)	7/16"		<a href="#">TW-74200-30</a>		<a href="#">TW-74201-30</a>		<a href="#">TW-74200-83</a>		<a href="#">TW-74200-86</a>	
95.1	15.0	50 (3.4)	7/16"		<a href="#">TW-74200-40</a>		<a href="#">TW-74201-40</a>		<a href="#">TW-74200-83</a>		<a href="#">TW-74200-86</a>	
<b>Peristaltic metering/injector pumps; 220 VAC, 50 Hz</b>												
1.8	0.29	100 (6.8)	1/4"		<a href="#">TW-74200-05</a>		<a href="#">TW-74201-05</a>		<a href="#">TW-74200-80</a>		<a href="#">TW-74200-84</a>	
7.6	1.2	75 (5.1)	1/4"		<a href="#">TW-74200-15</a>		<a href="#">TW-74201-15</a>		<a href="#">TW-74200-80</a>		<a href="#">TW-74200-84</a>	
19.2	3.0	100 (6.8)	3/8"	3/8"	<a href="#">TW-74200-25</a>		<a href="#">TW-74201-25</a>		<a href="#">TW-74200-82</a>		<a href="#">TW-74200-84</a>	
42.0	6.6	50 (3.4)	7/16"		<a href="#">TW-74200-35</a>		<a href="#">TW-74201-35</a>		<a href="#">TW-74200-83</a>		<a href="#">TW-74200-86</a>	
76.1	12.0	50 (3.4)	7/16"		<a href="#">TW-74200-45</a>		<a href="#">TW-74201-45</a>		<a href="#">TW-74200-83</a>		<a href="#">TW-74200-86</a>	

**Pulse-Control Diaphragm Pumps**

DC-powered pumps with PVDF pump head

- High resolution with a flow range between 0.055 to 38 mL/min
- 12 VDC and 24 VDC models available
- 0 to 720 strokes per minute control capability
- Choose a pump with one of the following control methods:
  - Pulse—1 stroke per pulse
  - 4 to 20 mA—proportional control based on mA signal
  - 1 to 5 VDC—proportional control based upon a 1 to 5 VDC input signal
  - Start/stop—pump stops during contact input



74201-11

Specifications

**Wetted parts:** PVDF pump head, ceramic balls and valve, FKM O-ring and valve seat, PTFE gasket

**Max temperature:** 104°F (40°C)

**Max viscosity:** 50 cps

**Accuracy:** ±3%

**Duty cycle:** intermittent

Flow range		Max pressure	Strokes/min	Tubing connection	Control type	Power		Dimensions (L x W x H)		Catalog number	Price
mL/min	GPH	psi bar		ID x OD compression		VDC	Amps	in.	cm		
0.055 to 38	0.001 to 0.6	29	2	0 to 720	1/8" x 1/4"	Pulse	12	1.5	4 x 2 1/16 x 2 1/2	10.1 x 6.2 x 7.3 cm	<a href="#">TW-74201-01</a>
							24	1			<a href="#">TW-74201-03</a>
						4 to 20 mA	12	1.5			<a href="#">TW-74201-11</a>
							24	1			<a href="#">TW-74201-13</a>
						1 to 5 VDC	12	1.5			<a href="#">TW-74201-21</a>
							24	1			<a href="#">TW-74201-23</a>
						Start/stop	12	1.5			<a href="#">TW-74201-31</a>
							24	1			<a href="#">TW-74201-33</a>

ULTRALOW	LOW	MEDIUM	HIGH
20 to 6000 µL/min			



## Cole-Parmer Controller for Micro Diaphragm Pumps and Solenoid Valves

Identifies Cole-Parmer part numbers so you can spend more time designing your application and less time programming

- Controls any combination of eight micro diaphragm pumps and solenoid valves using graphical PC program (included)
- Symbolic user interface allows for multilingual usage and rapid integration of programming sequences
- Easily updated part number database ensures that the controller will operate both current and future valve and pump models
- Four interrupt request ports handle a variety of feedback devices

Cole-Parmer offers a wide variety of fluid control devices (FCDs), ranging from micro diaphragm pumps to pinch, isolation, pivot, mixing and gradient valves, each using either a 12 VDC or 24 VDC solenoid. This versatile controller can power any combination of eight FCDs to perform a variety of user-defined operations. Each FCD can be independently programmed to perform separate functions. The controller will not only recognize the function of the manually inputted FCD (pump, isolation valve, mixing valve) but will also limit the inputs to those which apply to the safe operating specifications of the FCD.



73120-90

The controller accepts a multitude of parameters, including on/off time, dispense volume per shot, and total run time. An easy-to-use, symbol-based interface allows for intuitive, multilingual usage.

**What's included:** two power cables (US and CEE) and one USB drive that includes software to be loaded onto a PC.

### Specifications

**Works with:** micro diaphragm pumps and 2-way/3-way solenoid valves

**Output voltages:** 8 devices each being 12 VDC to 24 VDC (max power rating of 8 W for each device)

**Connected product specifications known**

**Internal memory:** store up to ten programs with 999 steps each

**(Cole-Parmer versions):** voltage, max frequency, duty cycle and dispense volume

**Display:** 240 x 64 resolution LCD

**Controller voltage:** accepts 115 VAC or 230 VAC

**Controller updates:** USB connection allows for updating of internal part number catalog

**Controlled device connection:** 8-terminal block has spring-loading feature, provides rapid insertion and removal; LED light indicates presence or absence of connected device

Catalog number	Description	Price
TW-73120-90	Controller for micro diaphragm pumps and solenoid valves	

## Cole-Parmer Self-Priming Micro Diaphragm Pumps

Accurate volumetric dispensing of 20 to 250 µL

- High cycle life—up to 20 million dispense cycles
- Low power consumption
- Positive shut-off with pressures less than 1 psi

These pumps are factory set for discrete outputs ranging from 20 to 250 µL. The pumps can be cycled at up to 2.0 Hz for the 73120-10 through -24 models; up to 1.6 Hz for the 73120-30 through -10 models. Based upon the pump and cycle rate, flow rates can reach up to 25 mL/min while maintaining a high level of accuracy with a deviation from set point being less than ±1% (for 50 mL and larger). Long life (3000 hours) is built into each pump with a guarantee for up to 20 million actuations.

The fixed displacement diaphragm pumps are solenoid operated and self priming. Initially, the suction created by the larger pumps is sufficient to pull liquids from an unpressurized container located up to four feet below the pump. Once primed, pumps will maintain up to 5 psi pressure.

### Specifications

**Self-priming:** yes

**Particulates:** no

**Port:** ¼"–28

**Suction lift:** 4 ft (1.2 m)

**Run dry:** yes



73120-10

73120-30

Catalog number	Dispense setting	Minimum "on" time	Minimum "off" time	Max cycle rate	Max fluid pressure	Max fluid temperature	Wetted parts			Dimensions (L x W x H)	Power	Price
							Body	Diaphragm	Check valve			
TW-73120-10 TW-73120-12	20 µL	150 msec	350 msec	2.0 Hz	5 psi (0.35 bar)	158°F (70°C)	PPS	EPDM	EPDM	2½" x 1½" x 1" (64 x 36 x 25 mm)	12 VDC	
TW-73120-14 TW-73120-16	30 µL										24 VDC	
TW-73120-18 TW-73120-20	40 µL										12 VDC	
TW-73120-22 TW-73120-24	50 µL										24 VDC	
TW-73120-30 TW-73120-32	20 µL										12 VDC	
TW-73120-34 TW-73120-36	30 µL	150 msec	350 msec	1.6 Hz	5 psi (0.35 bar)	158°F (70°C)	PTFE	PTFE	Perfluorelastomer	2⅜" x 1½" x 1" (69 x 38 x 25 mm)	12 VDC	
TW-73120-38 TW-73120-40	40 µL										24 VDC	
											12 VDC	



**Pumps**  
Metering, Diaphragm



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
0.08 to 3000 mL/min			

**Cole-Parmer® Mechanical PTFE-Diaphragm Pump Heads**

**Compatible with most Masterflex® L/S® drives**

- PTFE and glass wetted parts help maintain fluid purity
- Ideal for pumping through filters or into pressurized systems
- Check valve on inlet side of pump holds prime for up to two hours when pump is off
- All moving parts are enclosed in a rugged cast aluminum housing

**Pump heads include:** mounting tools and coupling hardware.

**Service kits include:** one diaphragm, two check valve assemblies, two drive-tang boots, an installation wrench, and instructions. Order external PTFE foot valves separately below to maintain prime.

**Specifications**

Model number	07090-42	07090-62
Max suction lift	24" (61 cm) dry, 16 ft (4.8 m) wet	10" (25.4 cm) dry, 10 ft (3.0 m) wet
Max dead volume	16 mL	2 mL

**Repeatability:** ±2%      **Max drive speed:** 400 rpm\*      **Dimensions (L x W x H):** 7" x 3" x 6" (17.8 x 7.6 x 15.2 cm)  
**Max fluid temperature:** 149°F (65°C)      **Viscosity range:** 1 to 500 cp (6 to 2900 SSU)

Catalog number	Flow range†		Max psi (bar)	Connections	Wetted materials				Price	Service kits		Foot valves	
	GPH	mL/min			Body	Diaphragm	Valve seat	Check ball		Cat. no.	Price	Cat. no.	Price
TW-07090-62	0.16 to 1.6	10 to 100	75 (5.7)	1/8" NPT(M)	PTFE	PTFE	PTFE	Glass PTFE		TW-07090-63		TW-07090-65	
TW-07090-42	1.3 to 12.7	80 to 800	50 (3.4)	1/4" NPT(M)						TW-07090-43		TW-07090-45	

†Operation above 400 rpm will increase flow but may decrease pump head accuracy and life. \*Rated at 40 to 400 rpm motor speed.

TW-07090-65 Foot valve for head 07090-62

TW-07090-45 Foot valve for head 07090-42

Pump heads maintain consistent flow performance even with varying system pressures and liquid viscosities.

Foot valves increase metering accuracy while maintaining pump prime—just turn on pump and go!



07090-42

**Reduced Pulsation Diaphragm Metering Pumps**

**Stepper motor modifies pump stroke to minimize pulsing normally associated with diaphragm pumps**

- Quiet, reliable, accurate, and virtually pulse-free
- Pumps can run dry continuously without damage
- Built-in overpressure protection prevents damage to pump

**A Digital Control**

The digital control pumps feature two program modes: choose run mode for continuous pumping, or timer mode to set the number of strokes, time per stroke, or pause duration. Red LED indicates % flow, % rpm, operating mode, system status and fault condition.

**B Manual Control**

A convenient way to transfer liquids in the laboratory. Compact and resistant to chemical attack, they prevent contamination of your pumped medium. Larger pump head geometry and wetted materials provide the longest possible lifetime when pumping corrosive liquids, gases and vapors. Pumps can have either local or external contact capabilities—external protocols include: 0 to 10 VDC, start/via TTL contact, and output fault alarm.

**What's included:** 6-ft (1.8-m) power cord with three-prong US plug.

**Specifications**

**Wetted parts:** PP or PVDF or PTFE head, FFPM valves and gaskets, PTFE-coated diaphragm

**Maximum temperature:** 176°F (80°C)

**Maximum pressure:** Models 78166-00, -10: 30 psi (2.1 bar); all other models: 90 psi (6.2 bar)

**Suction lift:** 13 ft H<sub>2</sub>O

**Timer modes** (for models 78166-00 and -10)

Number of strokes: 1 to 30,000

Time/stroke: 0.34 sec to 5 min, 43 sec

Pause duration: 1 sec to 100 min

**Run dry:** yes

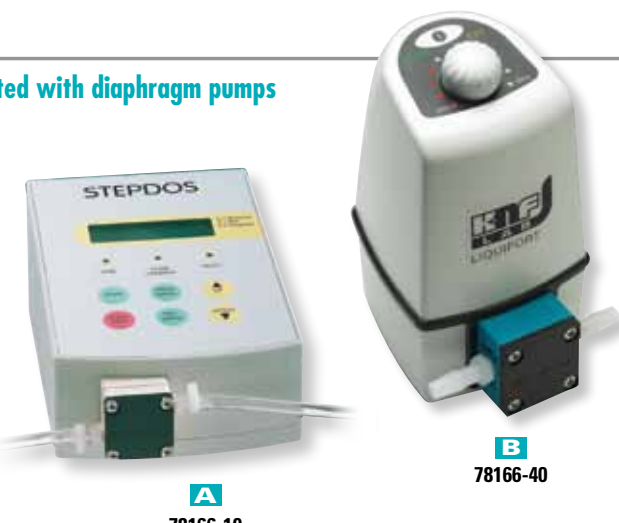
**Dimensions**

Models 78166-00, -10: 7" x 5" x 3" (17.8 x 12.7 x 7.6 cm)

All other models: 6 1/4" x 4 1/4" x 7 1/2"

(15.9 x 10.8 x 19.1 cm)

Flow range		Strokes/min	Port size	Power			PP head		PVDF head		PTFE head	
GPH	mL/min			VAC	Hz	Amps	Cat no.	Price	Cat no.	Price	Cat no.	Price
<b>A Digital models</b>												
0.0013 to 1.28	0.08 to 80	0.175 to 175	1/4-28 UNF(F)	100 to 230	50/60	0.14 to 0.06	TW-78166-00		TW-78166-10		—	—
<b>B Analog models</b>												
0.05 to 0.343	200 to 1300	0.175 to 175	5/16" hose connector	100 to 230	50/60	0.54 to 0.32	TW-78166-40		TW-78166-42		TW-78166-44	
0.13 to 0.79	500 to 3000	0.175 to 175	1/2" hose connector	100 to 230	50/60	0.84 to 0.6	TW-78166-41		TW-78166-43		TW-78166-45	



A  
78166-10

B  
78166-40



ULTRALOW	LOW	MEDIUM	HIGH
0.1 to 2081 mL/min			



**Cole-Parmer® Chemical-Feed Diaphragm Pumps**

**Economical, chemically-compatible diaphragm metering pumps**

- Overload-protected, fan-cooled, shaded-pole gear motor (1/35 hp) is permanently lubricated



**A Single-Head Pumps**

- Sealed housing makes these pumps weather resistant

These pumps easily prime over long distances. Low strokes/minute rate increases diaphragm life. Sealed Valox® housing resists harsh weather conditions.

**What's included:** foot valve/strainer, polypropylene injection valve, vinyl inlet and polyethylene outlet tubing, and mounting hardware. The 115 VAC models include a 6-ft (1.8-m), three-wire cord and plug.

**Specifications**



**Wetted parts:** polypropylene pump head, PVDF cartridge fittings, ceramic ball valves, Hastelloy C® springs, Viton® O-rings, and an ethylene propylene (EP) diaphragm coated with TFE

**Maximum temperature:** 140°F (60°C)

**Suction lift:** 5 ft H<sub>2</sub>O

**Duty cycle:** intermittent

**B Dual-Head Pumps**

- Handle two liquids independently or one at twice the flow

Pumps feature two separate head assemblies—obtain proportional flow rates for two different materials or twice the maximum flow rate when you are pumping just one material. Change flow rates independently even while unit is operating.

**What's included:** foot valve/strainer, polypropylene injection valve, vinyl inlet and polyethylene outlet tubing, and mounting hardware. The 115 VAC models include a 6-ft (1.8-m), three-wire cord and plug.

**Specifications**



**Wetted parts:** polypropylene pump head, ceramic balls with Viton O-rings, and an EP diaphragm coated with TFE—also available in silicone or Hypalon; call your local dealer for details

**Maximum temperature:** 140°F (60°C)

**Suction lift:** 5 ft H<sub>2</sub>O

**Duty cycle:** intermittent

**C High-Volume, Single-Head Pumps**

- High-volume transfer at low pressure

Greater flow rates are pumped at lower pressures. Feature an easily operated cam-type adjustment with an infinite number of settings between zero and 100% of maximum pump capacity.

**What's included:** foot valve/strainer, polypropylene injection valve, vinyl inlet and outlet tubing, and mounting hardware. The 115 VAC models include a 6-ft (1.8-m), three-wire cord and plug.

**Specifications**



**Wetted parts:** nonvented polypropylene pump head, poppet valves and Viton O-rings, and a Viton diaphragm

**Maximum temperature:** 140°F (60°C)

**Suction lift:** 5 ft H<sub>2</sub>O

**Duty cycle:** intermittent

Max flow		Max psi (bar)	Strokes/min	Tubing OD	Diaphragm material	Dimensions (W x H x D)	115 VAC, 60 Hz			220 VAC, 50 Hz				
GPH	mL/min						Cat. no.	Amps	Price	Cat. no.	Amps	Price		
<b>A Single-head pumps</b>														
0.35	22	125 (8.6)	14	3/8"	Ethylene propylene (EP) coated with TFE	5" x 9" x 6" (12.7 x 22.9 x 15.2 cm)	<a href="#">TW-76302-00</a>	0.25		<a href="#">TW-76302-05</a>	0.13'			
0.75	46		30				<a href="#">TW-76302-10</a>			<a href="#">TW-76302-15</a>				
1.46	92	125 (8.6)	60	3/8"			<a href="#">TW-76302-20</a>	0.25		<a href="#">TW-76302-25</a>	0.13'			
2.85	180	125 (8.6)	125				<a href="#">TW-76302-30</a>			<a href="#">TW-76302-35</a>				
10.5	662	10 (0.6)	125				<a href="#">TW-76302-40</a>			<a href="#">TW-76302-45</a>				
<b>B Dual-head pumps</b> (maximum flow rate is for two heads; divide in half for one pump head)														
0.6	37.9	120 (8.2)	14	1/4"	EP coated with TFE	7 1/2" x 9 1/2" x 4" (19.1 x 24.1 x 10.2 cm)	<a href="#">TW-76302-51</a>	0.25		<a href="#">TW-76302-55</a>	0.13'			
2.7	170	100 (6.8)	30	3/8"			<a href="#">TW-76302-60</a>			<a href="#">TW-76302-65</a>				
5.4	340	50 (3.4)	60	3/8"			<a href="#">TW-76302-70</a>	0.25		<a href="#">TW-76302-75</a>	0.13'			
10.6	669	20 (1.3)	125				<a href="#">TW-76302-80</a>			<a href="#">TW-76302-85</a>				
<b>C High-volume, single-head pumps</b>														
16.5	1047	10 (0.6)	125	5/8"			Viton	7" x 8" x 6 1/2" (17.8 x 20.3 x 16.5 cm)	<a href="#">TW-07135-50</a>	0.25		<a href="#">TW-07135-52</a>	0.13'	
32.5	2081	5 (0.3)	250		<a href="#">TW-07135-55</a>	<a href="#">TW-07135-57</a>								

\*50 Hz models have a 20% decrease in flow.

**Accessories**

Service kits 07135-38 and -48 include PP inlet and outlet fittings, an EP diaphragm coated with TFE, and two U-pins. Service kit 07135-58 includes an EP diaphragm coated with TFE, poppet valve, Hastelloy C® spring, and Viton O-rings.

**TW-07135-38 Service kit** for models with 1/4" tubing OD

**TW-07135-48 Service kit** for models with 3/8" tubing OD

**TW-07135-58 Service kit** for models 07135-50 through -57

**TW-07135-49 Foot valve**, PP and Viton seal. For models with 3/8" tubing OD



**Pumps**  
Metering, Solenoid Diaphragm

ULTRALOW	LOW	MEDIUM	HIGH
0.4 to 757 mL/min			

**Feed Verification Diaphragm Pumps**

Flow delivery rate is constant at any voltage from 94 to 264 VAC—not affected by voltage fluctuations

- High strokes per minute ensure a more uniform distribution of fluid at low flow rates
- Excellent for outdoor use water and UV resistant (shield from direct sunlight to protect the internals circuits from heat build-up)
- Verify flow rates with optional flow checker

**A Manual Control Pumps** feature an analog speed control that is adjustable from 15 to 300 strokes per minute. Simple design allows for basic flow injection of chemicals into boiler and cooling tower, drinking water disinfection, and landscape irrigation applications.

**B Automatic Control Pumps** feature digital speed control that is adjustable from 1 to 300 strokes per minute as well as 50 to 100% manual stroke length adjustments. The LCD displays either speed of the pump or operational status. Select either an analog signal input (4 to 20 mA) or a pulse signal input to control the pump speed.

**C Programmable Large-Volume Pumps** feature flow capacities typically requiring motor-driven pumps. Onboard controls allow proportional flow rate, pH and residual chlorine control by direct analog connection, eliminating the PID controller and inverter.

Wetted materials of construction for pumps include a PPS body, a ceramic ball check, a PVC ball guide/joint, and an EPDM valve seat/O-ring.

The optional flow checker can be mounted directly onto the discharge end of the pumps. The checker is a simple oval gear meter that measures the pump output and then transmits one pulse for every one mL of flow. It requires 4.5 to 25 VDC at a 20 mA maximum.

**What's included:** foot valve strainer, back pressure/check valve, injector with quill, suction/discharge and air release tubing, power cord with three-prong plug, signal cable with multi-pin connectors (73804-series only).

**A**  
PVC manual control pump  
73803-00



**B**  
PVDF automatic control pump  
73804-30



**C**  
PVC programmable large-volume pump  
73804-70



**Specifications**

**Max temperature:** 104°F (40°C)

**Duty cycle:** continuous

**Max viscosity:** 50 cp

**Inputs<sup>†</sup>:** pulse contact, 4 to 20 mA

Catalog number	Max flow rate		Max psi (bar)	Strokes/min	Wetted materials <sup>‡</sup>					Connections		Dimensions (W x H x D)	Power		Price	
	GPD	L/hr			Pump head	Diaphragm	Valve seat	Check ball	Foot valve/strainer	Suction	Discharge		VAC	Hz		
<b>A Manual control pumps</b>																
TW-73803-00	12	1.89	140 (9.6)	15 to 300	PVC	PTFE	Viton®	Ceramic	PVC	3/8" OD PVC tubing	3/8" OD PE tubing	11.7 x 20.6 x 18.4 cm	94 to 264	50/60		
TW-73803-10	24	3.78	115 (7.9)		PVC	PTFE	Viton		PVC	3/8" OD PVC tubing						11.7 x 20.6 x 18.4 cm
TW-73803-20	38.0	6.00	60 (4.1)		PVDF	PTFE	EPDM		PVDF	1/4" OD PE <sup>†</sup> tubing						11.7 x 22.9 x 15.2 cm
TW-73803-30	10.5	1.66	220 (15.1)		PVDF	PTFE	Viton		PVDF	3/8" OD PE tubing						11.7 x 22.9 x 15.2 cm
TW-73803-40	12	1.89	140 (9.6)													
TW-73803-50	24	3.78	115 (7.9)													
TW-73803-60	38.0	6.00	60 (4.1)													
<b>B Automatic control pumps</b>																
TW-73804-00	12	1.89	140 (9.6)	1 to 300	PVC	PTFE	Viton	Ceramic	PVC	3/8" OD PVC tubing	3/8" OD PE tubing	11.7 x 20.6 x 18.4 cm	94 to 264	50/60		
TW-73804-10	24	3.78	115 (7.9)		PVDF	PTFE	EPDM		PVDF	1/4" OD PE tubing						11.7 x 22.9 x 15.2 cm
TW-73804-20	38.0	6.00	60 (4.1)		PVDF	PTFE	Viton		PVDF	3/8" OD PE tubing						11.7 x 22.9 x 15.2 cm
TW-73804-30	10.5	1.66	220 (15.1)													
TW-73804-40	12	1.89	140 (9.6)													
TW-73804-50	24	3.78	115 (7.9)													
TW-73804-60	38.0	6.00	60 (4.1)													
<b>C Programmable large volume pumps</b>																
TW-73804-70	130	20.4	140 (9.6)	1 to 300	PVC	EPDM	PVC	PVC	PVC	1/2" FNPT	1/2" FNPT	14.9 x 26.9 x 24.8 cm	94 to 264	50/60		
TW-73804-75	130	20.4	140 (9.6)		PVDF	PTFE	PVDF	PVDF	PVDF							14.9 x 26.9 x 24.8 cm
TW-73804-80	200	31.8	100 (6.8)		PVC	EPDM	PVC	PVC	PVC							14.9 x 26.9 x 24.8 cm
TW-73804-85	200	31.8	100 (6.8)		PVDF	PTFE	PVDF	PVDF	PVDF							14.9 x 26.9 x 24.8 cm
TW-73804-90	288	45.6	60 (4.1)		PVC	EPDM	PVC	PVC	PVC							14.9 x 26.9 x 24.8 cm
TW-73804-95	288	45.6	60 (4.1)		PVDF	PTFE	PVDF	PVDF	PVDF							14.9 x 26.9 x 24.8 cm

<sup>†</sup>On 73804-series models only <sup>‡</sup>PE = Polyethylene EPDM = Ethylene propylene terpolymer PVC = Polyvinyl chloride

**Flow Checkers**

**TW-73805-00** Flow checker for models with flow rate of 12 GPD and lower

**TW-73805-10** Flow checker for models with flow rate of 22.8 GPD and higher

ULTRALOW	LOW	MEDIUM	HIGH
0.19 to 1250 mL/min			



## High Stroke-Frequency Diaphragm Metering Pumps

Small pump cavity, two check valves, and high stroke frequency combine for superb self-priming and degassing properties

- Pumps provide up to 360 strokes per minute for smooth, efficient operation
- Pumps prime within seconds of being turned on; prime is maintained by two check valves (one on each side)
- Pump housing is IP65 rated

### A Manual Control Pumps

These low-cost metering pumps are ideal for general applications. They feature manual adjustment of stroke frequency and fixed stroke length via a digital keypad (360:1 turndown). For easy access, control modules are detachable.



**A**  
Manual control pump  
74126-00

### B Remote Control Pumps

Pumps feature digitally adjustable speed control and manual adjustable stroke length (1800:1 turndown). Input and output signals include external pulse input control, stop and pre-stop inputs, and stop and pulse outputs.



**B**  
Remote control pump  
74127-10

### C Programmable Remote Control Pumps

These programmable pumps allow you to program the pump speed and input settings using the alphanumeric display and four-button keypad. Control modules are detachable for easy access and remote capabilities. Pumps have digitally adjustable speed control and manual adjustable stroke length (1800:1 turndown). External input control is offered via a pulse input or analog signal. The analog signal is fully programmable. The digital mode allows you to multiply or divide external pulse by a factor of 1 to 999.



**C**  
Programmable remote control pump  
74125-00

**What's included:** 20-ft (6.1-m) of tubing and a 6-ft (1.8-m) power cord (115 VAC models include a three-prong plug).

**Service kits include:** diaphragm and retainer, valve guides, valve seats, valve balls, valve gaskets, O-rings, and instructions.

## Specifications

### Wetted parts

Pump head and fittings: polyvinyl chloride (PVC) or glass fiber reinforced polypropylene (GFRPP)  
Diaphragm: PTFE bonded to EPDM  
Ball check valves: alumina ceramic  
Seals: fluoroelastomer  
O-rings: PTFE

**Max temperature:** 122°F (50°C)

**Repeatability:** ±1% full-scale

**Suction lift (dry):** 5 ft (1.5 m)

**Max viscosity:** 100 cp

### Input signal

74126-series: no input signal accepted

74127-series: contact closure input

74125-series: contact closure input, 4 to 20 mA or 0 to 20 mA



2 year warranty

Flow range		Max psi (bar)	Port size	Dimensions (L x W x H)	115 VAC, 50/60 Hz			220 VAC, 50 Hz			Service kits	
GPH	mL/min				Cat. no.	Amps	Price	Cat. no.	Amps	Price	Cat. no.	Price
<b>A Manual control pumps</b> (stroke frequency adjustment—GFRPP head)												
0.002 to 0.6	0.30 to 38	150 (10.3)	3/8" OD	7 1/2" x 4" x 7 1/4" (19.1 x 10.2 x 18.4 cm)	<a href="#">TW-74126-00</a>	0.9		<a href="#">TW-74126-05</a>	0.3		<a href="#">TW-74126-08</a>	
0.003 to 1	0.52 to 65	105 (7.2)	3/8" OD	7 1/2" x 4" x 7 1/4" (19.1 x 10.2 x 18.4 cm)	<a href="#">TW-74126-10</a>			<a href="#">TW-74126-15</a>			<a href="#">TW-74126-18</a>	
0.005 to 1.5	0.76 to 95	60 (4.1)	3/8" OD	7 1/2" x 4" x 7 1/4" (19.1 x 10.2 x 18.4 cm)	<a href="#">TW-74126-20</a>			<a href="#">TW-74126-25</a>			<a href="#">TW-74126-28</a>	
0.01 to 3.2	1.6 to 200	30 (2.0)	1/2" OD	7" x 4" x 8" (17.8 x 10.2 x 20.3 cm)	<a href="#">TW-74126-30</a>			<a href="#">TW-74126-35</a>			<a href="#">TW-74126-38</a>	
<b>B Remote control pumps</b> (manual control of stroke length and internal/external adjustment of stroke frequency—GFRPP head)												
0.01 to 1.3	0.64 to 80	150 (10.3)	3/8" OD	10 1/4" x 5 3/4" x 10 1/2" (26.0 x 14.6 x 26.7 cm)	<a href="#">TW-74127-10</a>	1.4		<a href="#">TW-74127-15</a>	0.5		<a href="#">TW-74126-18</a>	
0.16 to 2.3	1.04 to 30	105 (7.2)	3/8" OD		<a href="#">TW-74127-20</a>	1.4		<a href="#">TW-74127-25</a>	0.5		<a href="#">TW-74126-28</a>	
0.35 to 4.3	2.16 to 270	50 (3.4)	1/2" OD		<a href="#">TW-74127-30</a>	1.4		<a href="#">TW-74127-35</a>	0.5		<a href="#">TW-74126-38</a>	
<b>B Remote control pumps</b> (manual control of stroke length and internal/external adjustment of stroke frequency—PVC head)												
0.005 to 0.6	0.30 to 38	150 (10.3)	3/8" OD	7 3/8" x 4" x 7 1/4" (18.7 x 10.2 x 18.4 cm)	—	—		<a href="#">TW-74127-07</a>	0.3		<a href="#">TW-74126-08</a>	
0.01 to 1.3	0.64 to 80	150 (10.3)	3/8" OD	10 1/4" x 5 3/4" x 10 1/2" (26.0 x 14.6 x 26.7 cm)	<a href="#">TW-74127-12</a>	1.4		<a href="#">TW-74127-17</a>	0.5		<a href="#">TW-74126-18</a>	
0.16 to 2.3	1.04 to 30	105 (7.2)	3/8" OD	10 1/4" x 5 3/4" x 10 1/2" (26.0 x 14.6 x 26.7 cm)	<a href="#">TW-74127-22</a>	1.4		<a href="#">TW-74127-27</a>	0.5		<a href="#">TW-74126-28</a>	
0.35 to 4.3	2.16 to 270	50 (3.4)	1/2" OD	10 1/4" x 5 3/4" x 10 1/2" (26.0 x 14.6 x 26.7 cm)	<a href="#">TW-74127-32</a>	1.4		<a href="#">TW-74127-37</a>	0.5		<a href="#">TW-74126-38</a>	
<b>C Programmable remote control pumps</b> (manual control of stroke length and internal/external adjustment of stroke adjustment—GFRPP head)												
0.003 to 5.5	0.19 to 340	150 (10.3)	1/2" OD	10 1/4" x 5 3/4" x 10 1/2" (26.0 x 14.6 x 26.7 cm)	<a href="#">TW-74125-00</a>	1.8		<a href="#">TW-74125-05</a>	0.8		<a href="#">TW-74125-08</a>	
0.004 to 8.5	0.29 to 520	105 (7.2)			<a href="#">TW-74125-10</a>			<a href="#">TW-74125-15</a>			<a href="#">TW-74125-18</a>	
0.006 to 12	0.42 to 750	60 (4.1)			<a href="#">TW-74125-20</a>			<a href="#">TW-74125-25</a>			<a href="#">TW-74125-28</a>	
0.01 to 20	0.70 to 1250	30 (2.0)			<a href="#">TW-74125-30</a>			<a href="#">TW-74125-35</a>			<a href="#">TW-74125-38</a>	





**Pumps**  
Metering, Solenoid Diaphragm



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
15 to 1314 mL/min			

**Solenoid Metering Pumps**

Reliable metering performance—guided dual check valves provide precise seating and excellent priming and suction lift

- PVC and PTFE construction with external control
- Ideal for water treatment and chemical feed applications
- Water resistant for outdoor installation

**What's included:** injection/back pressure valve assembly, foot valve/strainer assembly, three-function valve, 4-ft clear PVC tubing, and 8-ft rigid polyethylene discharge tubing. All 115 VAC pumps include a 6-ft power cord with US plug; 230 VAC pumps include a 6-ft (1.8-m) power cord (plug not included).

**Service kits** (sold separately and listed in each table) include valve cartridges with O-rings, head, diaphragm, secondary O-ring, head screws, and washers.

**Manual Control Pumps**

Manual control pumps feature adjustable stroke rate and length, reliable timing circuits, and circuit protection from voltage and current upsets. Leak-free bleed valves provide safe and easy priming. Pumps are water resistant and can be installed outdoors.

78118-00



**Specifications**

**Wetted materials:** PVC/PTFE/ceramic      **Suction lift:** 4 ft (1.2 m), priming wet  
**Repeatability:** ±2%      **Max viscosity:** 1000 cp      **Duty cycle:** continuous



Max flow rate		Max psi (bar)	Strokes/min	Tubing OD	Dimensions (W x H x D)	115 VAC, 50/60 Hz, 1.0 A		230 VAC, 50/60 Hz, 0.5 A		Service kits	
GPD	L/hr					Catalog number	Price	Catalog number	Price	Catalog number	Price
6	0.95	80 (5.5)	125	3/8"	5" x 9 1/2" x 9 1/2" (12.7 x 24.1 x 24.1 cm)	TW-78118-00		TW-78118-05		TW-78118-80	
12	1.89					TW-78118-10		TW-78118-15		TW-78118-81	
22	3.47					TW-78118-20		TW-78118-25		TW-78118-82	
30	4.73					TW-78118-30		TW-78118-35		TW-78118-82	
44	6.94	100 (6.8)	125	3/8"	5 1/2" x 10 1/2" x 11" (14.0 x 26.7 x 27.9 cm)	TW-74142-00		TW-74142-05		TW-78118-82	
94	14.82	100 (6.8)		1/2"	5 1/2" x 10 1/2" x 11" (14.0 x 26.7 x 27.9 cm)	TW-74142-10		TW-74142-15		TW-78118-83	
240	37.85	35 (2.4)		1/2"	6" x 11" x 11" (15.2 x 27.9 x 27.9 cm)	TW-74142-20		TW-74142-25		TW-78118-84	
500	78.85	20 (1.3)		3/4"	6" x 11" x 11" (15.2 x 27.9 x 27.9 cm)	TW-74142-30		TW-74142-35		TW-78118-85	

**External Pace Pumps**

These digital pumps feature easy set-up with scrolling menus, 16-digit backlit LCD, four-button touchpad control, guided ball check valve system to reduce backflow and enhance priming,

and leak-free bleed valve assembly. Pumps now accept HALL effect flow sensors. Install pumps indoors or outdoors.

**Specifications**

**Wetted materials:** PVC/PTFE/ceramic      **Suction lift:** 4 ft (1.2 m), priming wet      **Duty cycle:** continuous  
**Repeatability:** ±3%      **Max viscosity:** 1000 cp



Max flow rate		Max psi (bar)	Strokes/min	Tubing OD	Dimensions (W x H x D)	115 VAC, 50/60 Hz, 1.0 A		230 VAC, 50/60 Hz, 0.5 A		Service kits	
GPD	L/hr					Catalog number	Price	Catalog number	Price	Catalog number	Price
6	0.95	150 (10.3)	125	3/8"	5" x 9 1/2" x 9 1/2" (12.7 x 24.1 x 24.1 cm)	TW-74143-00		TW-74143-05		TW-78118-80	
12	1.89	150 (10.3)				TW-74143-10		TW-74143-15		TW-78118-81	
22	3.47	100 (6.8)				TW-74143-20		TW-74143-25		TW-78118-82	
48	7.57	50 (3.4)				TW-74143-30		TW-74143-35		TW-78118-82	

**4-to-20 mA Pace Pumps for High-Viscosity Applications**

High-viscosity 4 to 20 mA pumps handle viscous fluids up to 20,000 cp. Pumps feature automatic control with 4 to 20 mA DC direct or external pacing, reliable timing circuits, stop function, and manually adjustable stroke rate and length. Operate pump in automatic or

manual mode by selecting the proper setting on the "Auto-Off-Manual" switch. Circuit protection guards against voltage and current upsets. Install pumps indoors or outdoors.

**Specifications**

**Wetted materials:** PVC/PTFE/316 SS      **Suction lift:** 4 ft (1.2 m), priming wet      **Duty cycle:** continuous  
**Repeatability:** ±2%      **Max viscosity:** 20,000 cp



Max flow rate		Max psi (bar)	Strokes/min	Connections		Dimensions (W x H x D) in. (cm)	115 VAC, 50/60 Hz, 1.0 A		230 VAC, 50/60 Hz, 0.5 A		Service kits	
GPD	L/hr			Suction	Discharge		Catalog number	Price	Catalog number	Price	Catalog number	Price
12	1.89	150 (10.3)	125	3/4" OD	1/2" OD	5 1/2" x 9 1/2" x 9 1/2" (14.0 x 23.7 x 24.1)	TW-74147-00		TW-74147-05		TW-74147-80	
24	3.76	150 (10.3)			1/2" OD	5 1/2" x 10 7/8" x 7 1/2" (14.0 x 27.6 x 19.1)	TW-74147-10		TW-74147-15		TW-74147-81	
48	7.57	110 (7.5)			3/4" OD	5 1/2" x 10 7/8" x 7 1/2" (14.0 x 27.1 x 19.1)	TW-74147-20		TW-74147-25		TW-74147-82	
96	15.14	110 (7.5)			3/4" OD	5 1/2" x 10 7/8" x 7 1/2" (14.0 x 27.6 x 19.1)	TW-74147-30		TW-74147-35		TW-74147-83	
240	37.85	80 (5.5)		3/4" OD	6 1/4" x 11 1/2" x 8 1/4" (15.9 x 29.2 x 21.0)	TW-74147-40		TW-74147-45		TW-74147-84		

Distributed by: Fiedler Scientific Instruments, s.r.o.  
info@lab-eu.com info@pristroje.cz

## Solenoid Metering Pumps (continued)

### 4-to-20 mA Pace Pumps

The 4-to-20 mA pumps feature automatic control with 4-to-20 mA DC direct pacing, reliable timing circuits, stop function, and manually adjustable stroke rate and length. Operate pump in

automatic or manual mode by selecting the proper setting on the "Auto-Off-Manual" switch. Circuit protection guards against voltage and current upsets. Install pumps indoors or outdoors.

#### Specifications

**Wetted materials:** PVC/PTFE/ceramic    **Repeatability:** ±2%    **Suction lift:** 4 ft (1.2 m), priming wet    **Max viscosity:** 1000 cp    **Duty cycle:** continuous

Max flow rate		Max psi (bar)	Strokes/min	Tubing OD	Dimensions (W x H x D)	115 VAC, 50/60 Hz, 1.0 A		230 VAC, 50/60 Hz, 0.5 A		Service kits	
GPD	L/hr					Catalog number	Price	Catalog number	Price	Catalog number	Price
6	0.95	150 (10.3)	125	3/8"	5 1/2" x 10 1/4" x 10 3/4"	TW-74141-00		TW-74141-05		TW-78118-80	
12	1.89					TW-74141-10		TW-74141-15		TW-78118-81	
21	3.31					TW-74141-20		TW-74141-25		TW-78118-82	
42	6.62					TW-74141-30		TW-74141-35		TW-78118-82	
94	14.82	100 (6.8)	125	1/2"	5 1/2" x 11" x 11 3/4"	TW-74141-40		TW-74141-45		TW-78118-83	
240	37.85					TW-74141-50		TW-74141-55		TW-78118-84	
500	78.85					TW-74141-60		TW-74141-65		TW-78118-85	

### Seven-Day Timer Pumps

Seven-day timer pumps provide a simple and cost effective metering system for timed applications. Pumps offer eight on/eight off programs per week for maximum adjustability. These pumps

feed chemical products on a timed schedule and are commonly used in biocide feed applications. Feed cycle is initiated and controlled by programmable timer.

#### Specifications

**Wetted materials:** PVC/PTFE/ceramic    **Repeatability:** ±3%    **Suction lift:** 4 ft (1.2 m), priming wet    **Max viscosity:** 1000 cp    **Duty cycle:** continuous

Max flow rate		Max psi bar	Strokes/min	Tubing OD	Dimensions (W x H x D)	115 VAC, 50/60 Hz, 1.0 A		230 VAC, 50/60 Hz, 0.5 A		Service kits	
GPD	L/hr					Catalog number	Price	Catalog number	Price	Catalog number	Price
12	1.89	100 (6.8)	125	3/8"	5" x 10" x 9 1/2" (12.7 x 26.7 x 24.1 cm)	TW-74145-00		TW-74145-05		TW-78118-81	
22	3.47					TW-74145-10		TW-74145-15		TW-78118-82	
30	4.73					TW-74145-20		TW-74145-25		TW-78118-82	

**TW-74114-90 Pump mounting shelf.** Weight limit 22 lb

**TW-74114-91 Pump mounting shelf.** Weight limit 50 lb

**TW-74113-93 Tank;** PE, 15 gallons. Includes 1/2" PVC bulkhead fitting. Use with 1/2" tubing connection OD pumps

**TW-74113-95 Tank;** PE, 15 gallons. Includes 3/8" PVC bulkhead fitting. Use with 3/8" tubing connection OD pumps

**TW-74113-85 Valve;** five function, compression fitting. PVDF, max 250 psi, 3/8" tubing connectors

**TW-74113-86 Valve;** five function, compression fitting. PVDF, max 150 psi, 3/8" tubing connectors

**TW-74113-88 Valve;** five function, compression fitting. PVDF, max 100 psi, 1/2" tubing connectors

**TW-74113-89 Valve;** five function degassing, compression fitting. PVDF, max 250 psi, 3/8" tubing connectors

**TW-74113-91 Valve;** five function degassing, compression fitting. PVDF, max 250 psi, 1/2" tubing connectors

## Solar-Powered Feed Verification Systems

### Solar power source is ideal for remote locations

- Inverter allows for economical adaptation of 120 volt pump to 12 volt solar power
- Solar controller balances running the pump and recharging the battery
- As a safety measure, the system will automatically shut down when the battery hits the built-in "low" threshold and remains off until the panels detect sunlight

Manual control pumps feature an analog speed control—adjustable from 15 to 300 strokes per minute. Simple design allows for basic flow injection of chemicals into boiler and cooling tower, drinking water disinfection, and landscape irrigation applications.

**What's included:** pump, solar panel, inverter, battery, foot valve strainer, back pressure/check valve injector with quill, suction/discharge and air release tubing, power cord with three-prong plug.

**Pump system 73803-03 includes 11.4 GPD (1.8 L/hr) diaphragm pump.**



#### Specifications

**Max temperature:** 104°F (40°C)    **Max viscosity:** 50 cp    **Duty cycle:** continuous

Catalog number	Max flow rate		Max psi (bar)	Strokes/min	Wetted materials				Connections			Dimensions (W x H x D)	Power		Price
	GPD	L/hr			Pump head	Diaphragm	Valve seat	Check ball	Foot valve/size	Suction	Discharge		VAC	Hz	
TW-73803-03	11.4	1.80	140 (9.6)	15	PVC	PVC	Viton®		PVC	3/8" OD PVC tubing	3/8" OD PE tubing	4 5/8" x 8 1/8" x 7 1/4"	94		
TW-73803-33	10.5	1.66	220 (15.1)	to	PVDF	PVDF	EPDM	Ceramic	PVDF	1/4" OD PE tubing	3/8" OD PE tubing	4 5/8" x 9" x 6"	to	50/60	
TW-73803-43	11.4	1.80	140 (9.6)	300	PVDF	PVDF	Viton		PVDF	3/8" OD PE tubing	3/8" OD PE tubing	4 5/8" x 9" x 6"	264		

**TW-73805-00 Flow checker** for models 73803-03, -33, -43



**Pumps**  
Metering, Solenoid Diaphragm



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
0.4 to 1262 mL/min			

**Solenoid Diaphragm Metering Pumps**

Manually adjustable stroke length and stroke frequency provide precise control of flow rates

- Clear face cover protects pump controls on low flow models (1 GPH and lower)
- Chemical-resistant housing provides protection in harsh environments

**A Manual Control Pumps**

These pumps include a four-function valve—an anti-siphon, back pressure, priming, and pressure relief valve all in one.

**B Remote Control Pumps**

An external pulse trigger can be accepted for remote stroke frequency control. Low-flow pump models (1 GPH and lower) include easy access to 4-pin connections.

**C Digital Remote Control Pumps**

Microprocessor control and an LCD display provides precise accuracy. Programmable controller features three external control modes—pulse multiply, pulse divide, or 4-to-20 mA response. Pumps allow you to multiply or divide incoming pulse signal by 1 to 999.

**What's included:** a four-function valve (except high-flow remote control pumps, models 74514-50 and -55), 16-ft (4.9-m) polyethylene tubing, foot valve/strainer, and 8-ft (2.4-m) power cord with molded plug.

**Service kits include:** a replacement diaphragm, seal, four pump head screws, and check valves.



**A**  
74517-01

**B**  
74514-20

**C**  
74521-00

**Specifications**

**Wetted parts**

Models 74514-50 and -55: PVC head and fittings, ceramic balls, Fluorofilm® diaphragm, PTFE seal ring  
All other models: PVC head and fittings, ceramic balls, Fluorofilm diaphragm, PVDF/Polyprel seal ring

**External trigger**

(remote control and digital remote control pumps only): contact closure, transistor, or opto-isolator rated for 15 VDC, 2 mA

**Input signal** (digital remote control pumps only): 4 to 20 mA, 0 to 20 mA

**Maximum temperature:** 140°F (60°C)

**Repeatability:** ±2% full-scale

**Suction lift:** 5 ft (1.5 m) dry



**2** year warranty

Flow range		Max psi (bar)	Port size	Dimensions (L x W x H)	115 VAC, 50/60 Hz			230 VAC, 50 Hz			Service kits	
GPH	mL/min				Cat. no.	Amps	Price	Cat. no.	Amps	Price	Cat. no.	Price
<b>A Manual control pumps</b>												
0.006 to 0.42	0.4 to 26.7	140 (9.6)	1/4" OD	10 1/2" x 4 1/8" x 9 3/8" (26.7 x 10.5 x 23.8 cm)	<a href="#">TW-74517-01</a>	1.4		<a href="#">TW-74517-06</a>	0.7		<a href="#">TW-74513-08</a>	
0.01 to 1.0	0.63 to 63.3	110 (7.5)	3/8" OD		<a href="#">TW-74517-11</a>			<a href="#">TW-74517-16</a>			<a href="#">TW-74513-18</a>	
0.013 to 2.5	0.79 to 158.3	100 (6.8)	3/8" OD	13 7/8" x 5 3/4" x 10 7/8" (35.2 x 14.6 x 27.6 cm)	<a href="#">TW-74513-20</a>	3.5		<a href="#">TW-74513-25</a>	1.75		<a href="#">TW-74513-18</a>	
0.02 to 4.0	1.26 to 251.7	100 (6.8)	3/8" OD		<a href="#">TW-74513-30</a>			<a href="#">TW-74513-35</a>			<a href="#">TW-74513-38</a>	
0.45 to 8.0	2.52 to 500.0	60 (4.1)	3/8" OD	14 1/4" x 5 3/4" x 10 7/8" (36.2 x 14.6 x 27.6 cm)	<a href="#">TW-74513-40</a>			<a href="#">TW-74513-45</a>			<a href="#">TW-74513-48</a>	
<b>B Remote control pumps</b>												
0.006 to 0.42	0.4 to 26.7	140 (9.6)	1/4" OD	10 1/2" x 4 1/8" x 9 3/8" (26.7 x 10.5 x 23.8 cm)	<a href="#">TW-74519-02</a>	1.4		<a href="#">TW-74519-07</a>	0.7		<a href="#">TW-74513-08</a>	
0.01 to 1.0	0.63 to 63.3	110 (7.5)	3/8" OD		<a href="#">TW-74519-12</a>			<a href="#">TW-74519-17</a>			<a href="#">TW-74513-18</a>	
0.013 to 2.5	0.79 to 158.3	100 (6.8)	3/8" OD	13 7/8" x 5 3/4" x 10 7/8" (35.2 x 14.6 x 27.6 cm)	<a href="#">TW-74514-20</a>	3.5		<a href="#">TW-74514-25</a>	1.75		<a href="#">TW-74513-18</a>	
0.02 to 4.0	1.26 to 251.7	100 (6.8)	3/8" OD		<a href="#">TW-74514-30</a>			<a href="#">TW-74514-35</a>			<a href="#">TW-74513-38</a>	
0.45 to 8.0	2.52 to 500.0	60 (4.1)	3/8" OD	14 1/4" x 5 3/4" x 10 7/8" (36.2 x 14.6 x 27.6 cm)	<a href="#">TW-74514-40</a>			<a href="#">TW-74514-45</a>			<a href="#">TW-74513-48</a>	
0.1 to 20.0	6.33 to 1262.0	25 (1.7)	1/2" OD	14 1/4" x 5 3/4" x 10 7/8" (36.2 x 14.6 x 27.6 cm)	<a href="#">TW-74514-50</a>			<a href="#">TW-74514-55</a>			<a href="#">TW-74514-58</a>	
<b>C Digital remote control pumps</b>												
0.006 to 0.42	0.4 to 26.7	140 (9.6)	1/4" OD	10 1/2" x 4 1/8" x 9 3/8" (26.7 x 10.5 x 23.8 cm)	<a href="#">TW-74521-00</a>	1.4		<a href="#">TW-74521-05</a>	0.7		<a href="#">TW-74513-08</a>	
0.01 to 1.0	0.63 to 63.3	110 (7.5)	3/8" OD		<a href="#">TW-74521-10</a>			<a href="#">TW-74521-15</a>			<a href="#">TW-74513-18</a>	
0.013 to 2.5	0.79 to 158.3	100 (6.8)	3/8" OD	13 7/8" x 5 3/4" x 10 7/8" (35.2 x 14.6 x 27.6 cm)	<a href="#">TW-74516-20</a>	3.5		<a href="#">TW-74516-25</a>	1.75		<a href="#">TW-74513-18</a>	
0.02 to 4.0	1.26 to 251.7	100 (6.8)	3/8" OD		<a href="#">TW-74516-30</a>			<a href="#">TW-74516-35</a>			<a href="#">TW-74513-38</a>	
0.45 to 8.0	2.52 to 500.0	60 (4.1)	3/8" OD	14 1/4" x 5 3/4" x 10 7/8" (36.2 x 14.6 x 27.6 cm)	<a href="#">TW-74516-40</a>			<a href="#">TW-74516-45</a>			<a href="#">TW-74513-48</a>	



ULTRALOW	LOW	MEDIUM	HIGH
0.19 to 126 mL/min			



## Microprocessor-Controlled Solenoid Diaphragm Metering Pumps

### Robust processor-based control offers improved electromagnetics

- Easy-to-use push button controls with LCD user interface
- Manual stroke length knob
- Low level float switch connection
- Lockable clear cover
- NEMA 4X / IP65 enclosure

#### A Manual Control Pumps

These pumps feature manual stroke length and frequency adjustment. Low level indication is possible via the remote input. LCD provides quick user feedback of pump status and theoretical pump flow.

#### B Remote Control Pumps

Pumps accept a pulse or 4 to 20 mA input control signal. Use the keypad to manually adjust the stroke length and frequency (when in local mode). Pump has a dual low-level float switch input and a 24 V output. LCD provides quick user feedback of pump status and theoretical pump flow.

#### C Digital Remote Control Pumps

Offers all the features listed in "B" above as well as remote on/off and remote internal/external inputs; plus, 4 to 20 mA, pulse, and alarm outputs. An upgraded LCD offers a graphical display of pump status and theoretical pump flow.

**NEW**



**A**  
74522-02

### Specifications

**Wetted parts:** PVC head and fittings, ceramic balls, Fluorofilm™ Liquifram™, Polyprel® seat and O-ring  
**Max temperature:** 140°F (60°C)

**Repeatability:** ±2%  
**Suction lift:** 5 ft (1.5 m) dry  
**Max viscosity:** 400 cps

**Duty cycle:** continuous  
**Input signal:** low level switch (all models)  
4 to 20 mA ("B" and "C" models)



Flow range		Max pressure		Port size	Dimensions (L x W x H)		115 VAC, 50/60 Hz			230 VAC, 50 Hz			Service kits	
GPH	LPH	psi	bar		inches	cm	Cat. no.	Amps	Price	Cat. no.	Amps	Price	Cat. no.	Price
<b>A Manual control pumps</b>														
0.002 to 0.21	0.01 to 0.8	250	17.2	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-02</a>	1.4		<a href="#">TW-74522-12</a>	0.7		<a href="#">TW-74522-62</a>	
0.005 to 0.5	0.02 to 1.9	250	17.2	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-04</a>	1.4		<a href="#">TW-74522-14</a>	0.7		<a href="#">TW-74522-64</a>	
0.01 to 1.0	0.04 to 3.8	110	7.6	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-06</a>	1.4		<a href="#">TW-74522-16</a>	0.7		<a href="#">TW-74522-66</a>	
0.02 to 2.0	0.08 to 7.6	50	3.4	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-08</a>	3		<a href="#">TW-74522-18</a>	1.5		<a href="#">TW-74522-68</a>	
<b>B Remote control pumps</b>														
0.002 to 0.21	0.01 to 0.8	250	17.2	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-22</a>	1.4		<a href="#">TW-74522-32</a>	0.7		<a href="#">TW-74522-62</a>	
0.005 to 0.5	0.02 to 1.9	250	17.2	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-24</a>	1.4		<a href="#">TW-74522-34</a>	0.7		<a href="#">TW-74522-64</a>	
0.01 to 1.0	0.04 to 3.8	110	7.6	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-26</a>	1.4		<a href="#">TW-74522-36</a>	0.7		<a href="#">TW-74522-66</a>	
0.02 to 2.0	0.08 to 7.6	50	3.4	¼" OD	11½" x 4¾" x 11¼"	28.1 x 11.7 x 28.5	<a href="#">TW-74522-28</a>	3		<a href="#">TW-74522-38</a>	1.5		<a href="#">TW-74522-68</a>	
<b>C Digital remote control pumps</b>														
0.002 to 0.21	0.01 to 0.8	250	17.2	¾" OD	11½" x 4¾" x 11¼"	29.2 x 11.7 x 28.5	<a href="#">TW-74522-42</a>	1.4		<a href="#">TW-74522-52</a>	0.7		<a href="#">TW-74522-62</a>	
0.005 to 0.5	0.02 to 1.9	250	17.2	¾" OD	11½" x 4¾" x 11¼"	29.2 x 11.7 x 28.5	<a href="#">TW-74522-44</a>	1.4		<a href="#">TW-74522-54</a>	0.7		<a href="#">TW-74522-64</a>	
0.01 to 1.0	0.04 to 3.8	110	7.6	¾" OD	11½" x 4¾" x 11¼"	29.2 x 11.7 x 28.5	<a href="#">TW-74522-46</a>	1.4		<a href="#">TW-74522-56</a>	0.7		<a href="#">TW-74522-66</a>	
0.02 to 2.0	0.08 to 7.6	50	3.4	¾" OD	11½" x 4¾" x 11¼"	29.2 x 11.7 x 28.5	<a href="#">TW-74522-48</a>	3		<a href="#">TW-74522-58</a>	1.5		<a href="#">TW-74522-68</a>	

## Hydraulic Piston Pumps

### Adjust output from 0 to 100% of flow—even while pump is in operation

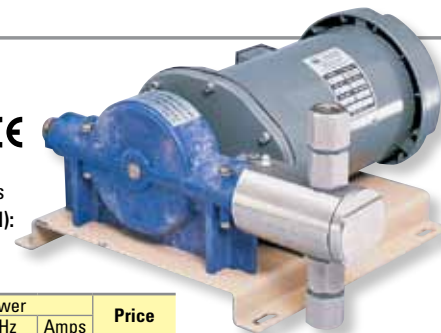
- Precise metering accuracy is maintained over the full range of output and pressure
- Durable pumps require little maintenance
- ¼-hp open drip-proof motor

Use piston pumps for conducting research and pilot plant studies, dispensing additives for food processing, and injecting pesticides and herbicides into spraying apparatus. Cord and plug not included.

### Specifications

**Wetted parts:** 303 SS pump head and piston, PTFE seals, and ceramic ball check valves  
**Max fluid temperature:** 120°F (48°C)  
**Accuracy:** ±5%  
**Suction lift:** 10 ft H<sub>2</sub>O

**Max viscosity:** 250 cp  
**Duty cycle:** continuous  
**Dimensions (L x W x H):**  
13" x 13¾" x 8"  
(33.0 x 34.9 x 20.3 cm)



**07128-35**  
Ideal for continuous duty applications

Catalog number	Max flow rate		Strokes/min	Max psi (bar)	Port connection	Power			Price
	GPH	mL/min				VAC	Hz	Amps	
<a href="#">TW-07128-10</a>	0.5	31	30	800 (55)	¼" NPT(F)	115/230	50/60	2.4/4.8	
<a href="#">TW-07128-15</a>	1.65	104	30	800 (55)	¼" NPT(F)	115/230	50/60	2.4/4.8	
<a href="#">TW-07128-20</a>	3.1	195	30	800 (55)	¼" NPT(F)	115/230	50/60	2.4/4.8	
<a href="#">TW-07128-25</a>	6.2	390	30	800 (55)	¼" NPT(F)	115/230	50/60	2.4/4.8	
<a href="#">TW-07128-35</a>	17.0	1071	60	300 (20)	½" NPT(F)	115/230	50/60	2.4/4.8	



**Pumps**  
Metering, Bellows



Flow Range

ULTRALOW	LOW	MEDIUM	HIGH
6 to 4200 mL/min			

**Polypropylene Bellows Metering Pumps**

**Dependable metering with a ±1% repeatability**

- Polypropylene bellows with EPDM O-ring wetted parts
- Flow ranges up to 2100 mL/min
- Self-priming to 5¼ feet dry
- Designed for continuous-duty applications
- Simple liquid end construction assures trouble-free pumping

For applications requiring the chemical resistance of FKM elastomers, contact your local dealer for assistance.

**NEW**



07193-21

**Specifications**

**Wetted parts:** polypropylene bellows and EPDM valve, gaskets, and O-ring

**Maximum temperature:** 120° F (48.9° C)

**Accuracy:** ± 1%

**Duty cycle:** continuous

Max flow mL/min	GPH	Max psi (bar)	Strokes/ min	Suction lift ft (m) dry	Tubing ID in. (mm)	Dimensions (L x W x H)	115 VAC, 50/60 Hz models			230 VAC, 50/60 Hz models		
							Catalog number	Amps	Price	Catalog number	Amps	Price
110	1.7	10 (0.69)	33	5 (1.5)	3/8" (9)	8 9/16" x 4 3/4" x 6 15/16" (21.8 x 12.1 x 17.5 cm)	<a href="#">TW-07193-21</a>	1.1		<a href="#">TW-07193-61</a>	0.4	
255	4	5 (0.34)	33	4 (1.2)	3/8" (9)		<a href="#">TW-07193-23</a>	1.1		<a href="#">TW-07193-63</a>	0.4	
380	6	10 (0.69)	135	5 (1.5)	3/8" (9)		<a href="#">TW-07193-27</a>	1.1		<a href="#">TW-07193-67</a>	0.4	
2100	33.3	5 (0.34)	135	5 1/4 (1.6)	3/8" (9)	8 9/16" x 4 3/4" x 6 15/16" (21.8 x 12.1 x 17.5 cm)	<a href="#">TW-07193-29</a>	1.1		<a href="#">TW-07193-69</a>	0.4	
220†	3.4	10 (0.69)	33	5 (1.5)	3/8" (12)		<a href="#">TW-07193-41</a>	1.1		<a href="#">TW-07193-81</a>	0.4	
4200†	66.6	5 (0.34)	135	5 1/4 (1.6)	1/2" (12)		<a href="#">TW-07193-49</a>	1.1		<a href="#">TW-07193-89</a>	0.4	

† Max flow rate is based on two bellows.

**Bellows Metering Pumps**

**Excellent chemical resistance—great for use with corrosive fluids**

- Adjust flow rate by modifying stroke length—even while pump is operating
- Self-priming to 7 feet dry and 20 feet wet; can run dry without damage
- Open shaded-pole motors are thermally protected in a 304 stainless steel housing

**Pumps include:** poppet valves to prevent backflow and a 6-ft, three-wire cord (115 VAC models have a plug; 230 VAC models have stripped ends). Order service kits and connector kits below.

Pumps handle fine slurries to 800 cp.



07192-10

**Specifications**

**Wetted parts:**

polypropylene, Viton® fluoroelastomer, or Hypalon®

**Maximum temperature:**

140°F (60°C)

**Suction lift:** 7 ft dry; 20 ft H<sub>2</sub>O

**Duty cycle:** intermittent

**Accuracy:** ±0.5% full-scale

Flow mL/min	Valve, O-ring	Max psi (bar)	Output per rpm	Connections	Dimensions (L x W x H)	115 VAC, 50/60 Hz models			230 VAC, 50/60 Hz models			
						Cat. no.	Amps	Price	Cat. no.	Amps	Price	
6 to 30	Viton	50 (3.4)	0.5 mL	1/4" compression	8" x 4" x 7 1/4" (20.3 x 10.2 x 18.4 cm)	<a href="#">TW-07192-10</a>	1.2					
30 to 300		40 (2.7)	5.0 mL	3/8" barbed elbow	8 1/4" x 4" x 7 3/4" (21.0 x 10.2 x 19.7 cm)	<a href="#">TW-07192-30</a>	1.3		<a href="#">TW-07192-35</a>	0.7		
63 to 630		20 (1.3)	10.5 mL	3/8" barbed elbow	8 1/4" x 4" x 7 3/4" (21.0 x 10.2 x 19.7 cm)	<a href="#">TW-07192-50</a>	1.3		<a href="#">TW-07192-55</a>	0.7		
173 to 1730	Viton	10 (0.6)	10.5 mL	3/8" barbed elbow	8 1/4" x 4" x 7 3/4" (21.0 x 10.2 x 19.7 cm)	<a href="#">TW-07192-70</a>	2.7		<a href="#">TW-07192-75</a>	1.4		
173 to 1730	Hypalon	10 (0.6)	10.5 mL	3/8" barbed elbow	8 1/4" x 4" x 7 3/4" (21.0 x 10.2 x 19.7 cm)	<a href="#">TW-07192-80</a>					<a href="#">TW-07192-85</a>	
247 to 2475	Viton	5 (0.3)	55.0 mL	1/2" barbed elbow	8 1/4" x 4" x 8 1/16" (21.0 x 10.2 x 20.4 cm)	<a href="#">TW-07192-90</a>					<a href="#">TW-07192-95</a>	

**Service Kits**

**Bellows Module Service Kits** include connecting rod and bellows module assemblies, O-ring, displacement cup, and two screws.

**Valve Service Kits** include two valve assemblies and two O-rings.

**Replacement Tubing Connector Kits** include two connectors.

For pump models	Bellows module service kits		Valve service kits		Replacement tubing connector kits	
	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
07192-10	<a href="#">TW-07192-11</a>		<a href="#">TW-07192-12</a>		<a href="#">TW-07192-13</a>	
07192-30, -35	<a href="#">TW-07192-31</a>		<a href="#">TW-07192-32</a>		<a href="#">TW-07192-33</a>	
07192-50, -55	<a href="#">TW-07192-51</a>		<a href="#">TW-07192-32</a>		<a href="#">TW-07192-33</a>	
07192-70, -75	<a href="#">TW-07192-51</a>		<a href="#">TW-07192-32</a>		<a href="#">TW-07192-33</a>	
07192-80, -85	<a href="#">TW-07192-81</a>		—		<a href="#">TW-07192-33</a>	
07192-90, -95	<a href="#">TW-07192-91</a>		<a href="#">TW-07192-32</a>		<a href="#">TW-07192-97</a>	

**TW-07192-96 Adapter kit**, 1/8" NPT(F). For all pumps except model 07192-10. Kit includes two adapters

ULTRALOW	LOW	MEDIUM	HIGH
6 to 6813 mL/min			



## Mechanical Diaphragm Pumps

### Heavy duty—get up to 150 psi with maximum flow rates up to 140 GPH

- Mechanical diaphragm design eliminates leakage and contamination of fluid
- Stroke lock maintains ±2% accuracy of the stroke setting
- Lubricated for life—sealed cast-iron housing reduces wear and is rated NEMA 4, IP55

Manual control and automatic control both utilize a 1/2-hp, TEFC motor which provides for a quiet and cool operation. This lightweight metering pump allows a 1000:1 turn down capability by using the MPC automatic controller. The MPC controls the pump speed and flow through a digital display. The MPC uses digital (4 to 20 mA) inputs and outputs to monitor and control elements of the process.

PVDF and 316 stainless steel (SS) wetted materials offer chemical resistance to a wide range of water treatment chemicals, dilute acids, dilute alkalis, oils and greases, hydrocarbons, and alcohols.

**What's included:** conduit box for hardwiring. Optional service kits (order separately in table) include a diaphragm assembly, suction valve cartridge, and discharge valve cartridge.



**Pump 74148-05 with MPC controller**

### Specifications

<b>Repeatability:</b> ±2% full-scale	<b>Max temperature</b> PVDF models: 104°F (40°C) SS models: 158°F (70°C)	<b>Duty cycle:</b> continuous <b>Motor:</b> 1/2 hp, single phase <b>Power:</b> 115/230 VAC, 50/60 Hz
--------------------------------------	--	--



Max flow rate GPH	Max L/hr	Max psi (bar)	Port size	Manual control			Automatic MPC controller			Service kits	
				Cat. no.	Dimensions (L x W x H)	Price	Cat. no.	Dimensions (L x W x H)	Price	Cat. no.	Price
<b>Pumps with PVDF liquid end; PTFE diaphragm and O-rings</b>											
14	53	150 (10.3)	1/4" NPT(F)	<a href="#">TW-74148-00</a>	6 7/8" x 13 1/8" x 14 5/8"		<a href="#">TW-74148-05</a>	8 1/2" x 13 3/8" x 21 1/8"		<a href="#">TW-74148-90</a>	
30	113.5	75 (5.1)	1/2" NPT(F)	<a href="#">TW-74148-10</a>	6 7/8" x 13 1/8" x 14 5/8"		<a href="#">TW-74148-15</a>	8 1/2" x 14 3/4" x 21 1/8"		<a href="#">TW-74148-92</a>	
65	246	150 (10.3)	1/2" NPT(F)	<a href="#">TW-74148-20</a>	7 5/8" x 15" x 14 7/8"		<a href="#">TW-74148-25</a>	9 1/8" x 15" x 21 7/16"		<a href="#">TW-74148-92</a>	
108	408.8	100 (6.8)	1" NPT(F)	<a href="#">TW-74148-30</a>	7 5/8" x 15 5/8" x 14 7/8"		<a href="#">TW-74148-35</a>	9 1/8" x 15 5/8" x 21 7/16"		<a href="#">TW-74148-94</a>	
<b>Pumps with 316 SS liquid end; PTFE diaphragm and O-rings</b>											
14	53	150 (10.3)	1/4" NPT(F)	<a href="#">TW-74148-50</a>	6 7/8" x 13 1/8" x 14 5/8"		<a href="#">TW-74148-55</a>	8 1/2" x 13 3/8" x 21 1/8"		<a href="#">TW-74148-91</a>	
30	113.5	75 (5.1)	1/2" NPT(F)	<a href="#">TW-74148-60</a>	6 7/8" x 13 1/8" x 14 5/8"		<a href="#">TW-74148-65</a>	8 1/2" x 14 3/4" x 21 1/8"		<a href="#">TW-74148-93</a>	
65	246	150 (10.3)	1/2" NPT(F)	<a href="#">TW-74148-70</a>	7 5/8" x 15" x 14 7/8"		<a href="#">TW-74148-75</a>	9 1/8" x 15" x 21 7/16"		<a href="#">TW-74148-93</a>	
108	408.8	100 (6.8)	1" NPT(F)	<a href="#">TW-74148-80</a>	7 5/8" x 15 5/8" x 14 7/8"		<a href="#">TW-74148-85</a>	9 1/8" x 15 5/8" x 21 7/16"		<a href="#">TW-74148-95</a>	

## Hydraulically Actuated Diaphragm Pumps

### High suction lift and high viscosity combine in the stainless steel pump

- Achieve up to 65 GPH or 1100 psi
- Internal bypass allows for improved valve performance
- Pump capacity is adjustable through 100% of range using a manual micrometer dial/automatic electric positioner with manual override

Pump drive components are fully enclosed and operate in an oil bath to minimize friction and wear, as well as to protect from harsh environments. Pump provides metering accuracy of ±1%. A micrometer knob enables capacity adjustment between 0 to 100% whether the pump is operating or stopped.

**What's included:** conduit box for hardwiring.



**74151-00**

### Specifications

<b>Wetted parts:</b> 316 stainless steel (SS) or PVC pump head, check valve body seat, and check; and PTFE diaphragm	<b>Max temperature</b> 316 SS models: 200°F (93°C) PVC models: 125°F (51°C)	<b>Suction lift:</b> 5 ft (1.5 m) H <sub>2</sub> O <b>Max viscosity:</b> 1000 cp <b>Duty cycle:</b> continuous <b>Accuracy:</b> ±1%
--	---	--

Catalog number	Max flow rate		Max psi (bar)	Strokes/min	Plunger dia	Head material of construction	Connections		Motor				Dimensions (W x H x D)	Price
	GPH	L/hr					Inlet	Outlet	Type	hp	VAC	Hz		
<a href="#">TW-74151-00</a>	3	11.3	1100 (75.5)	117	0.5"	316 SS	3/8" NPT(M)	3/8" NPT(M)	TEFC	1/2	115	60	1	7" x 20" x 15" (17.8 x 50.8 x 38.1 cm)
<a href="#">TW-74151-02</a>			150 (10.3)			PVC	1/2" NPT(M)	1/2" NPT(M)						
<a href="#">TW-74151-10</a>	7	26.5	900 (62.0)	117	0.687"	316 SS	3/8" NPT(M)	3/8" NPT(M)	TEFC	1/2	115	60	1	7" x 20" x 15" (17.8 x 50.8 x 38.1 cm)
<a href="#">TW-74151-12</a>			150 (10.3)			PVC	1/2" NPT(M)	1/2" NPT(M)						
<a href="#">TW-74151-20</a>	11	41.6	350 (24.1)	72	0.062"	316 SS	1/2" NPT(M)	3/8" NPT(M)	TEFC	1/2	115	60	1	7" x 20" x 15" (17.8 x 50.8 x 38.1 cm)
<a href="#">TW-74151-22</a>			150 (10.3)			PVC	1/2" NPT(M)	1/2" NPT(M)						
<a href="#">TW-74151-30</a>	18	68.1	350 (13.7)	117	0.062"	316 SS	3/8" NPT(M)	3/8" NPT(M)	TEFC	1/2	115	60	1	7" x 20" x 15" (17.8 x 50.8 x 38.1 cm)
<a href="#">TW-74151-32</a>			150 (10.3)			PVC	1/2" NPT(M)	1/2" NPT(M)						
<a href="#">TW-74151-40</a>	30	11.3	200 (13.7)	144	1.187"	316 SS	1/2" NPT(F)	1/2" NPT(F)	TEFC	1/2	115	60	1	7" x 20" x 15" (17.8 x 50.8 x 38.1 cm)
<a href="#">TW-74151-42</a>			300 (20.6)			PVC	1/2" NPT(F)	1/2" NPT(F)						
<a href="#">TW-74151-50</a>	65	24.6	175 (12.0)	117	2"	316 SS	1/4" NPT(F)	1/2" NPT(F)	TEFC	1/2	115	60	1	7" x 20" x 15" (17.8 x 50.8 x 38.1 cm)
<a href="#">TW-74151-52</a>			150 (10.3)			PVC	1/2" NPT(F)	1/2" NPT(F)						





**Pumps**  
Metering, Accessories

Distributed by: Fiedler Scientific Instruments, s.r.o.  
info@lab-eu.com info@pistroje.cz

**Cole-Parmer® Injection Quills**

**Inject chemicals safely and easily into center of pipe**

This chemical-injection quill injects corrosive chemicals into your pipeline without damaging the port or pipe. Injection quill ensures even distribution of chemical in the center of the pipe—prevents damage to the pipe wall.

Flow direction is indicated on the body to ensure proper positioning. Standard 3/4" quill length fits most pipes, but can be shortened for small diameter pipes; call your local dealer for details.

**Specifications**

**Wetted parts**

Body and quill: Hastelloy C®  
Ball check valve: ceramic

**Connections**

Inlet: 1/2" NPT(F)  
Pipe: 1/2" NPT(M)

**Overall dimensions:** 5 3/8" L x 1 3/8" dia  
(13.7 x 3.5 cm) dia

Catalog number	Material of construction	Price
<a href="#">TW-74601-00</a>	Hastelloy C	
<a href="#">TW-74601-02</a>	316 Stainless Steel	
<a href="#">TW-74601-04</a>	PVDF	
<a href="#">TW-74601-06</a>	PVC	



74601-00

**Cole-Parmer® Calibration Columns**

**Simple, economical method for checking pump flow rates**

Columns are graduated in both mL/min and GPH to help improve system accuracy. For maximum convenience and accuracy, choose small capacity columns to check low flow rates; select larger capacity columns for higher flow rates.

To check your flow rate, install column on the suction end of your pump. Turn the pump on, and fill the column to zero (at the top). Using a ball valve, shut off supply from the storage tank and monitor time as fluid is pulled out of the column. At one minute, the fluid level in the column indicates the pump flow rate in mL/min and GPH.

Columns are made of schedule 40 PVC with a double Mylar® polyester-film lamination to protect the scale from chemical attack. Permanently attached cap features a threaded vent opening (same size as the inlet port) for venting fluid back into the supply tank.



74600-01

Catalog number	Max flow rate mL/min (GPH)	Port size NPT(F)	Column length	Price
<a href="#">TW-74600-01</a>	100 (1.5)	1/2"	12 1/2" (31.8 cm)	
<a href="#">TW-74600-00</a>	250 (4.0)	1/2"	16 1/4" (41.3 cm)	
<a href="#">TW-74600-02</a>	500 (8.0)	3/4"	16" (40.6 cm)	
<a href="#">TW-74600-04</a>	1000 (16.0)	3/4"	25" (63.5 cm)	
<a href="#">TW-74600-05</a>	2000 (32.0)	1"	24" (61 cm)	
<a href="#">TW-74600-06</a>	4000 (64.0)	1"	34" (86.4 cm)	
<a href="#">TW-74600-07</a>	10,000 (158.8)	2"	27" (68.6 cm)	
<a href="#">TW-74600-08</a>	20,000 (317.0)	2"	46" (116.8 cm)	

**Air-Operated Pulse Dampeners**

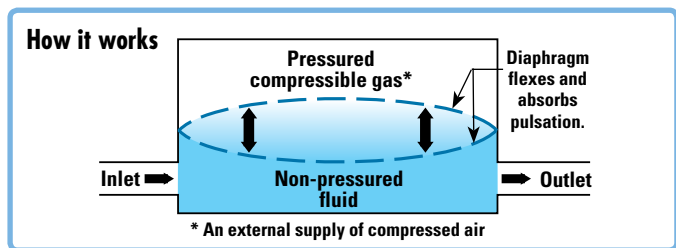
**Create a pulse-free flow out of your positive displacement pump**

Dampeners work by prefilling the chamber with compressed air or other gas. As fluid pressure increases, it compresses the air/gas in the chamber. When the air/gas pressure exceeds the fluid pressure, the fluid is forced back out of the dampener in between pulse cycles, resulting in a near pulseless flow. Air connections are all 1/4" NPT(F).



Polypropylene pulse dampener  
74021-04

PTFE pulse dampener  
74021-00



Catalog number	Fluid connections	Price
<b>Polypropylene pulse dampeners with Santoprene® diaphragm</b>		
<a href="#">TW-74021-04</a>	3/8" NPT (F)	
<a href="#">TW-74021-14</a>	1" NPT (F)	
<a href="#">TW-74021-34</a>	1 1/2" NPT (F)	
<a href="#">TW-74021-44</a>	2" NPT (F)	
<b>PTFE pulse dampeners with PTFE diaphragm</b>		
<a href="#">TW-74021-00</a>	3/8" NPT (F)	
<a href="#">TW-74021-10</a>	3/4" NPT (F)	
<a href="#">TW-74021-20</a>	1" NPT (F)	

**Suction Line Strainers**

**Protect pump from sediment and debris**

- Easily remove for cleaning or replacing
- PVC (polyvinyl chloride) and 304 stainless steel construction



74604-10

Catalog number	Port size†	Mesh size†	Price
<a href="#">TW-74604-02</a>	1/4" FFF	40	
<a href="#">TW-74604-04</a>		80	
<a href="#">TW-74604-10</a>		20	
<a href="#">TW-74604-12</a>	3/8" FFF	40	
<a href="#">TW-74604-14</a>		80	
<a href="#">TW-74604-20</a>		20	
<a href="#">TW-74604-22</a>	1/2" FFF	40	
<a href="#">TW-74604-23</a>		50	
<a href="#">TW-74604-24</a>		80	
<a href="#">TW-74604-30</a>	3/4" FFF	20	
<a href="#">TW-74604-32</a>		40	
<a href="#">TW-74604-33</a>		50	
<a href="#">TW-74604-34</a>	1"	80	
<a href="#">TW-74604-40</a>		20	
<a href="#">TW-74604-42</a>		40	
<a href="#">TW-74604-43</a>	1 1/2" FFF	50	
<a href="#">TW-74604-44</a>		80	
<a href="#">TW-74604-50</a>		20	
<a href="#">TW-74604-52</a>	1 1/2" FFF	40	
<a href="#">TW-74604-53</a>		50	
<a href="#">TW-74604-54</a>		80	

†For finer filtration, use higher mesh size. See our guide to particle and mesh sizes on page R-4 in the back of this catalog. †FFF = Female friction fit.