

## L/S® PTFE-DIAPHRAGM PUMP HEADS

### FEATURES/BENEFITS

- ▶ Designed for demanding chemical feed/metering applications
- ▶ Deliver flow rates from 10 to 800 mL/min
- ▶ Run dry without damage
- ▶ Maintain ±2% repeatability across varying system pressures and fluid viscosities
- ▶ Self-priming under wet and dry conditions
- ▶ Compact design minimizes fluid churning and dead volume
- ▶ Handles wide variety of fluids at temperatures up to 66°C (150°F)
- ▶ Pump through filter or into pressurized chamber
- ▶ Easy to clean, inspect, and service
- ▶ Adapts easily to OEM applications

### SELECTION CRITERIA

1. Flow rate/pressure required.
2. Materials of construction.
3. Compatibility with drives.

Tang adapters and mounting hardware are supplied with each head.

See specifications for more information.

**Order fittings and drives separately.**

### COMPATIBILITY WITH DRIVES

- ▶ Mount on most Masterflex L/S drives that accept two or more pump heads
- ▶ Drive requirements: minimum 1/10 hp

**PTFE-diaphragm pump heads include check valves.**



**PTFE-diaphragm pump head 07090-42**

### PUMP HEAD MATERIALS

- ▶ PTFE diaphragm and pump body
- ▶ PTFE valve seat and springs
- ▶ PTFE or borosilicate glass ball checks
- ▶ Cast aluminum housing
- ▶ Tang adapters provide positive connection of pump head to drive for better torque control and quieter operation
- ▶ To determine chemical compatibility of your fluids, see pages 198–206

**ISO9001:2008**  
CERTIFIED SUPPLIER

**2** year  
warranty

### ORDERING INFORMATION

Catalog number	Flow capacity
HL-07090-42	80 to 800 mL/min (1.3 to 13 GPH)
HL-07090-62	10 to 100 mL/min (0.16 to 1.6 GPH)

### COMPLETE L/S® PTFE-DIAPHRAGM PUMP SYSTEM

#### Applications

- ▶ Chemical feed and metering ▶ Chemical injection ▶ High-purity fluid transfer
- ▶ Pumping aggressive chemicals ▶ High-pressure pumping

#### Benefits

- ▶ Continuous pressure up to 50 psi
- ▶ Excellent chemical compatibility ▶ High metering accuracy
- ▶ Self-priming ▶ PTFE fluid path maintains fluid purity

#### Features

- ▶ 1/10-hp, 6 to 600 rpm continuous-duty drive ▶ ±0.25% speed control accuracy
- ▶ ABS plastic housing ▶ DB9 female connection on back for remote control



**77915-10**



### SPECIFICATIONS & ORDERING INFORMATION

Catalog number	Flow range (mL/min)	Pump head included	Tubing included <sup>†</sup>	Tubing sizes accepted	Drive included	Drive speed range (rpm)	Drive IP rating	Power (50/60 Hz)
HL-77915-10	80 to 800	L/S PTFE diaphragm 07090-42	1/4" ID x 3/8" OD PTFE tubing 06605-15; 3.6 m (12 ft)	—	07528-10	40 to 400 <sup>‡</sup>	IP33	90 to 260 VAC

<sup>†</sup>Also includes pipe adapters and check valve. <sup>‡</sup>Recommended drive speed operating range for included pump head.



## SPECIFICATIONS for L/S PTFE-Diaphragm Pump Heads

Catalog number	HL-07090-42	HL-07090-62
<b>Performance Specifications</b>		
Flow capacity	80 to 800 mL/min (1.3 to 13 GPH)	10 to 100 mL/min (0.16 to 1.6 GPH)
Max rpm	400	400
Max pressure	3.4 bar (50 psi) <sup>†</sup>	5.0 bar (75 psi) <sup>†</sup>
Max suction lift (of H <sub>2</sub> O)	61 cm (24") dry, 4.9 m (16 ft) wet	25.4 cm (10") dry, 3 m (10 ft) wet
Max dead volume	16 mL	2 mL
Intake/discharge ports	¼" NPT(M)	⅜" NPT(M)
Max fluid temperature	65°C (149°F)	
Liquid viscosity range	1 to 500 cp (6 to 2900 SSU)	
Reversible	Yes (does not affect flow direction)	
Self-priming, wet or dry	Yes	
Cracking pressure	68 m bar (<1 psi)	
Run dry	Yes	
<b>Torque Specifications [pumping water at 0 psi, 21°C (70°F)]</b>		
Starting torque	5.8 kg-cm (80 oz-in)	3.6 kg-cm (50 oz-in)
Running torque	1.6 kg-cm (22 oz-in)	1.3 kg-cm (18 oz-in)
<b>Physical Specifications</b>		
Housing, diaphragm, spring, and valve seat material	PTFE	
Ball check material	PTFE	Borosilicate glass
Operating temperature	0 to 40°C (32 to 104°F)	
Shipping weight	1.5 kg (4 lb)	1.4 kg (3 lb)

<sup>†</sup>Use a pressure relief valve to prevent higher pressures.

## ACCESSORIES

### For high-flow pump head (07090-42)

**HL-31320-54 Female pipe adapter** with ¼" NPT(F). Use with ⅜" OD tubing.

**HL-06605-35 PTFE tubing**, ⅜" OD x ¼" ID. Pack of 7.6 m (25 ft).

**HL-07090-45 External check valve** with PTFE ball. Inlet and discharge ports are ¼" NPT(M).

**HL-07090-43 Service kit**. Contains one PTFE diaphragm, two PTFE check valve assemblies, two drive-tang boots, installation wrench.

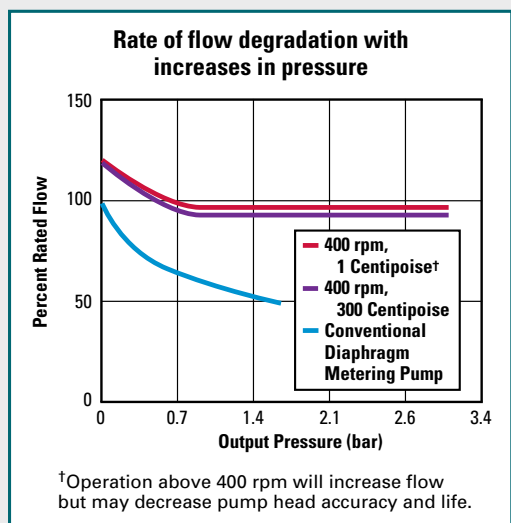
### For low-flow pump head (07090-62)

**HL-31320-52 Female pipe adapter** with ⅜" NPT(F). Use with ¼" OD tubing.

**HL-06605-31 PTFE tubing**, ¼" OD x ⅜" ID. Pack of 7.6 m (25 ft).

**HL-07090-65 External check valve** with borosilicate glass ball. Inlet and discharge ports are ⅜" NPT(M).

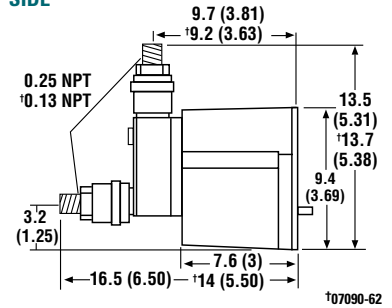
**HL-07090-63 Service kit**. Contains one PTFE diaphragm, two PTFE check valve assemblies, two drive-tang boots, installation wrench.



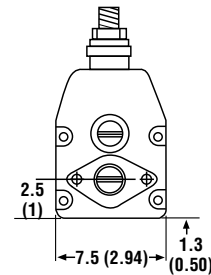
Service kit 07090-63 for PTFE-diaphragm pump head 07090-62

## Dimensional Drawings cm (in.) PTFE-Diaphragm Pump Head

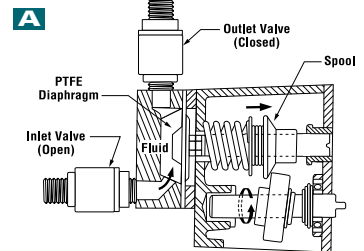
### SIDE



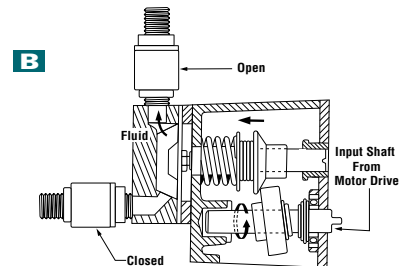
### BACK



## Pump Head Operation:



Drive coupling converts rotary to reciprocating motion. On the intake stroke, the PTFE diaphragm is fully retracted, creating a vacuum to open the inlet valve and draw in fluid.



On the discharge stroke, the PTFE diaphragm is driven forward, forcing fluid out through the outlet valve.

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