

# PSD/6 Full-Height Syringe Pump Specification Sheet

## A Compact, Full-Height Pump, for Precision Dispensing of Small to Large Volumes

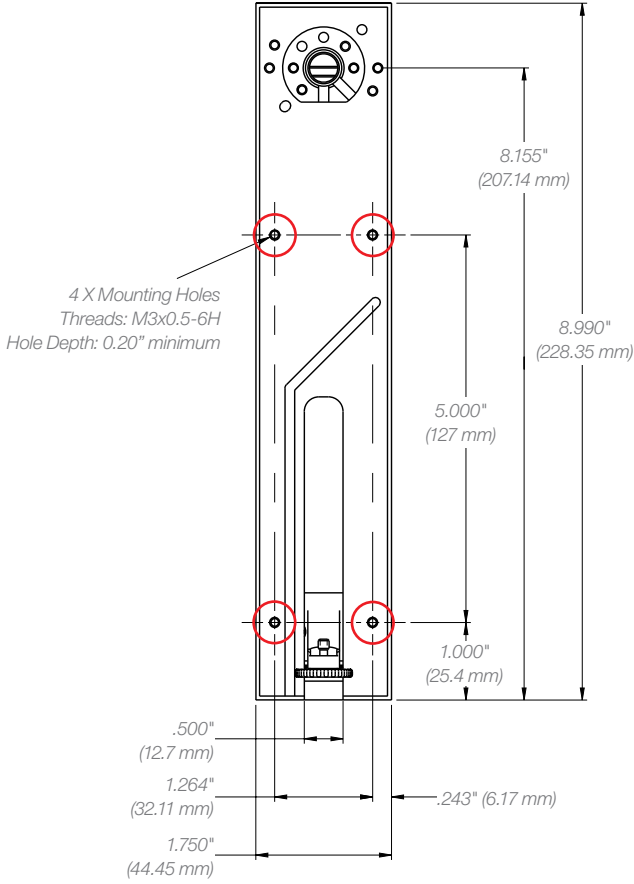
The PSD/6 is the newest full-height syringe pump to join the Hamilton Precision Syringe Drive (PSD) family. The PSD/6 can be fitted with a variety of valve and syringe combinations and performs all standard liquid handling functions, including dispensing, serial dispensing, and diluting. These full-height pumps are easy to integrate, self-contained syringe drive modules. They can be used as single units or in a daisy chain of up to 16 pumps.

The PSD/6 is a reliable turnkey system to meet the requirements of the most demanding applications. Ensure that your development projects stay on time and on budget with proven technology that is engineered to exceed expectations.

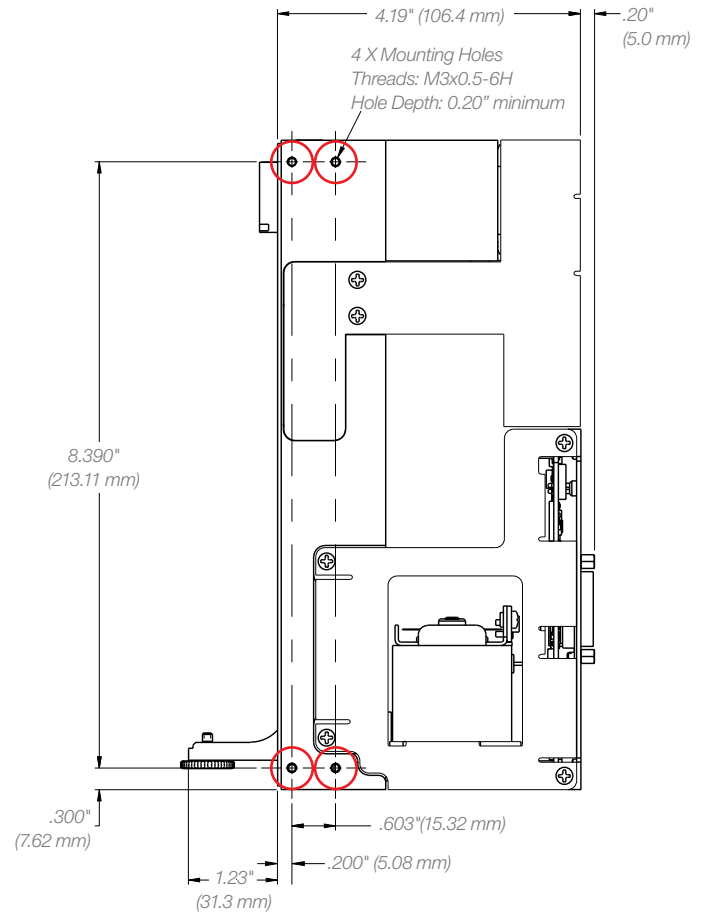


# PSD/6 Product Drawings and Dimensions

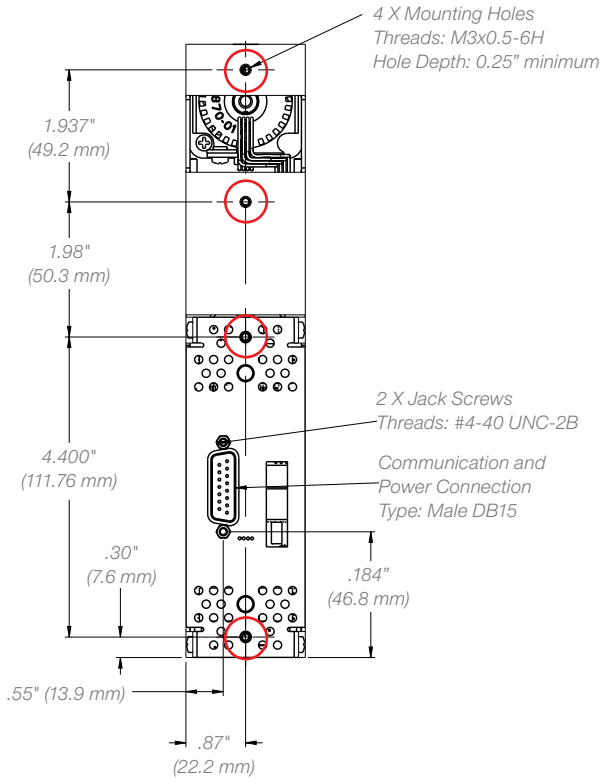
## Front



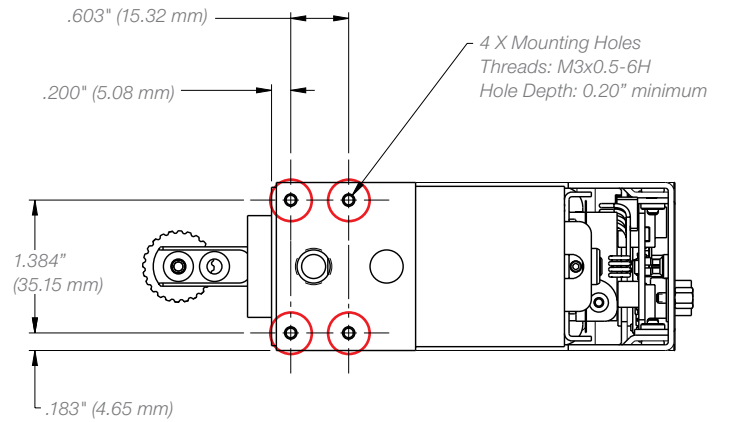
## Side



## Back



## Bottom



## PSD/6 Precision Syringe Pump

Description	Part Number
PSD/6 Precision Syringes Pump	63133-01
PSD Starter Kit Containing Software CD, Demo Communication Cable, Serial-to-USB Adapter, and Power Supply	64316-04
Demo Communication Cable	57025-01
Power Supply	4833-01

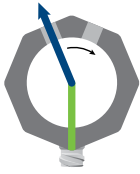


## Syringes for PSD/6

Volume	60 mm Long-Life Syringes P/N	Standard PTFE Tip Syringes P/N	Pressure Rating
25 µL	N/A	80222	
50 µL	8300-15	80922	1000 psig (68.9 bar)
100 µL	8300-20	81022	
250 µL	8300-25	81122	
500 µL	8300-30	81222	500 psig (34.5 bar)
1 mL	8300-35	81320	
2.5 mL	8300-40	81420	
5 mL	8300-45	81520	200 psig (13.8 bar)
10 mL	8300-50	81620*	
25 mL	N/A	82521**	
50 mL	N/A	85021**	100 psig (6.9 bar)

\* Directly compatible with valve 7992-01, 7993-01, 9998-01, and 59943-01. Use adapter (P/N 209651) for compatibility with all remaining valves listed below.  
 \*\* Directly compatible with valve 9998-01 and 59943-01. Use adapter (P/N 209651) for compatibility with all remaining valves except 7992-01 and 7993-01.

## Valves for PSD/6



**Fluid Logic:** Y-Valve

**Valve Description:**

"Y" Flow Path  
Two ports, plus syringe port

**Ceramic Part Number:**

8778-01

**PTFE/CTFE Part Number:**

57252-01\*



**Fluid Logic:** Y-Block

**Valve Description:**

Static non-switching  
Y-block

**PTFE/CTFE Part Number:**

9537-01



**Fluid Logic:** 3-3

**Valve Description:**

"T" Flow Path  
Two ports, plus syringe port

**Ceramic Part Number:**

8063-01

**PTFE/CTFE Part Number:**

58889-01



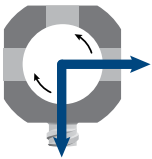
**Fluid Logic:** 3-5

**Valve Description:**

Distribution Flow Path  
Three ports, plus syringe port

**Ceramic Part Number:**

7991-01



**Fluid Logic:** 4-2

**Valve Description:**

90° Flow Path  
Three ports, plus syringe port

**Ceramic Part Number:**

9234-01



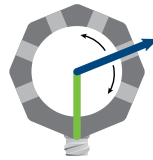
**Fluid Logic:** 4-5

**Valve Description:**

Distribution Flow Path  
Four ports, plus syringe port

**Ceramic Part Number:**

7992-01



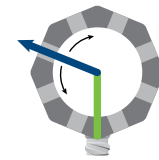
**Fluid Logic:** 6-5

**Valve Description:**

Distribution Flow Path  
Six ports, plus syringe port

**Ceramic Part Number:**

9998-01



**Fluid Logic:** 8-5

**Valve Description:**

Distribution Flow Path  
Eight ports, plus syringe port

**Ceramic Part Number:**

7993-01, 59943-01

\* Valve 57252-01 has a 0.059" (1.499 mm) fluid path diameter.

All tubing connections are compatible with 1/4" x 28 flanged or flangeless fittings.

All valves have a pressure rating of 100 psi. Higher pressure ratings are available upon request.

All valve housings are aluminum. Stainless steel, CTFE, and PEEK housings are available as a custom option.

## PSD/6 Specifications

General Specifications	
Accuracy	± 1% at 100% stroke
Precision	≤ 0.05% at 100% stroke
Fluid Path	Borosilicate glass, PTFE, PFA, CTFE, UHMW-PE, or ceramic
Weight	3.65 lbs (1.65 kg)
RoHS Compliant	Yes
Linear Force Capability	20 lbf (9.07 kgf)
Power Requirements	
Supply Voltage	24 VDC
Average Current	850 mA maximum
Syringe and Syringe Drive	
Syringe Volumes	25 µL to 50 mL
Syringe Materials	Glass barrel, PTFE, PCTFE, or PFA insert, stainless steel or aluminum plunger with PTFE coating, PTFE or UHMW-PE plunger tip
Resolution	Selectable 6,000 steps (standard) / 48,000 steps (high)
Syringe Drive Mechanism	Stepper Motor driven lead screw and optical encoder
Stroke Length	60 mm
Syringe Speeds	2 seconds to 100 minutes per stroke
Valve and Valve Drive	
Valve Drive Speed	250 ms per 120° rotation
Valve Drive Mechanism	Stepper motor with optical encoder feedback
Valve Fittings	¼" - 28
Valve Materials	CTFE, PTFE, ETFE, or ceramic
Nominal Fluid Path Diameter	All valves: 0.060" (1.524 mm) unless otherwise noted
Communication	
Type	RS-232, RS-485, or CAN
Protocols	Terminal or Standard
Baud Rate	9,600 or 38,400 (RS-232 or RS-485); 100,000 or 125,000 (CAN)
Data Bits	8
Parity	None
Stop Bit	1, Half Duplex
Daisy Chain Length	Up to 16 individual pumps
Programmable Capabilities	Ramps, cutoff velocity, backlash compensation, syringe speeds, loops, on-the-fly speed changes, terminate moves and delays, error detection, valve rotation selection, enhanced "h" Factor capabilities including valve rotation clockwise and counter-clockwise, 15 location method storage
Environmental Operating and Storage Range	
Operating Temperature	59 °F (15 °C) to 104 °F (40°C)
Operating Humidity	20% to 95% relative humidity, non-condensing
Storage Temperatures	-4 °F (-20 °C) to 149 °F (65 °C)
Storage Humidity	20% to 95% relative humidity, non-condensing

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