LMI PD Series
Product Introduction

Agenda

- PD Product Introduction
  - Features and Benefits
  - Precision Capacity Performance
  - Proven Fluid Handling
  - Enhanced Functionality
- PD Product Overview
  - Model Nomenclature (Codification)
  - Drive End Configuration
  - Liquid End Configuration
- Q&A

Product Introduction

LMI

Introducing LMI PD Series

The pump you've been waiting for

Introducing the PD Series chemical metering pump, the new standard in water treatment. This upgrade to LMI's most popular series includes an improved drive design, all new electronics, and proven FASTPRIME TM liquid ends. Available in Manual or Enhanced Control models, the PD Series pump fits seamlessly into your process control application. The Manual model offers straightforward control without the need for tedious calculations. Its split-scale dial ensures precision, even at lower flow rates. The Enhanced model offers external control and a large graphical display to provide intuitive access to advanced features such as calibration assist, system and user totalizers, the new StayPrime™ Degassing Technology, and more.

We are a proud member of Accudyne Industries, a leading global provider of precision-engineered, process-critical and technologically advanced flow control systems and industrial compressors. Delivering consistently high levels of performance, we enable customers in the most important industries and harshest environments around the world to accomplish their missions.

Two Models: Manual and Enhanced

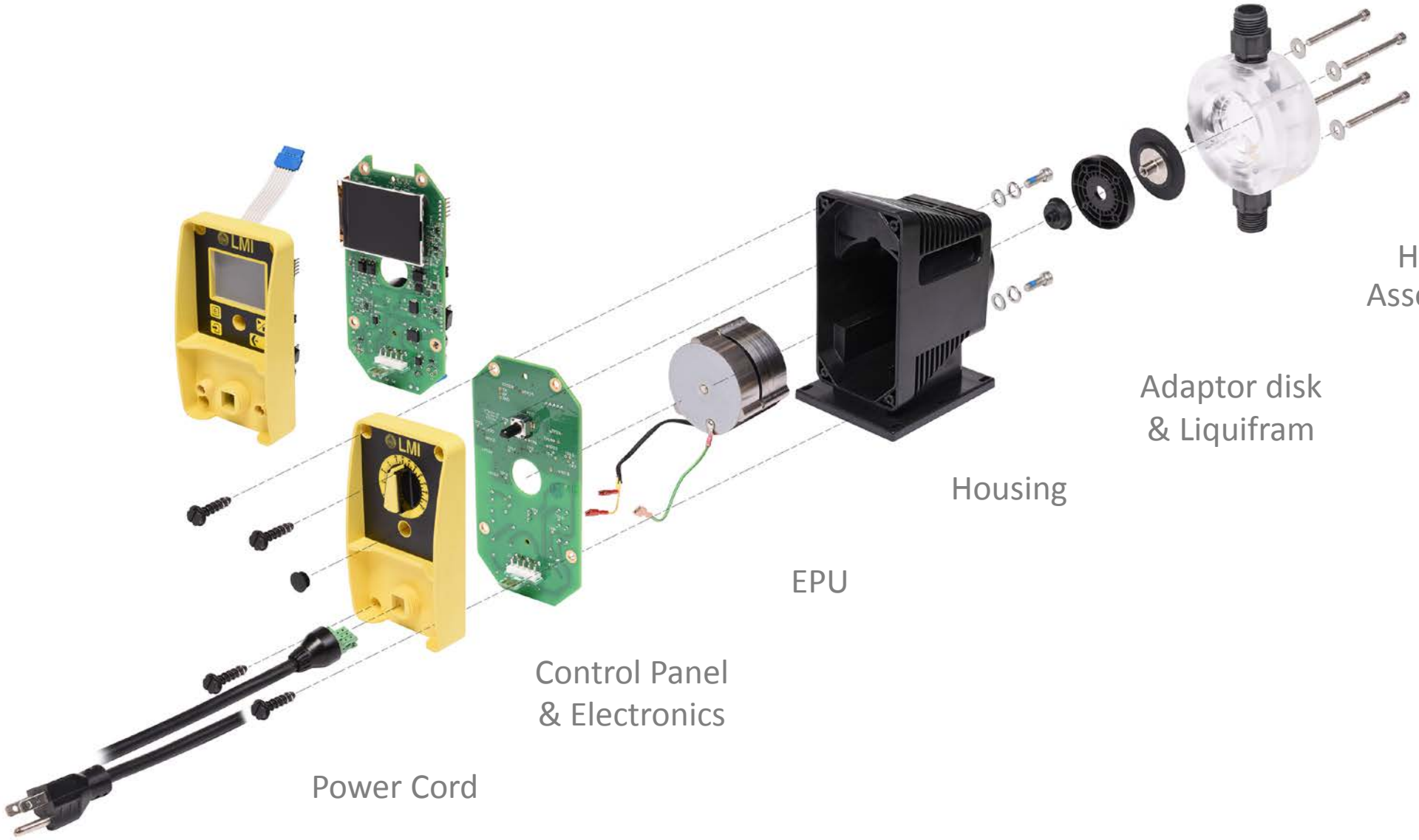
Manual Model

PD0

Enhanced Model

PD7

PD Series – Exploded View

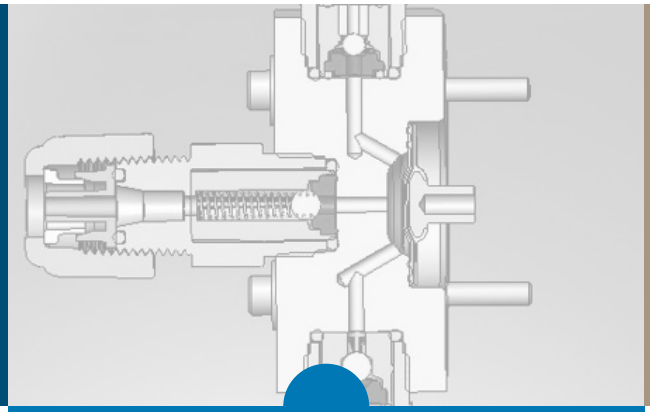


Product Highlights

PD Platform features

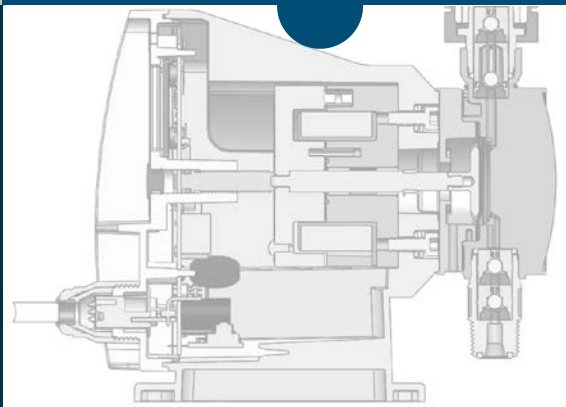
PD7 Only

Precision Performance & Reliable Operation



Enhanced Functionality through Software

All-New Platform with Simplified Selection and Operation



Proven Fluid Handling Technologies

LMI

All-New Platform Features

Feature	PD0	PD7
Improved Drive Mechanism Upgraded materials for stronger magnetic field	✔	✔
Advanced Electronics Dynamic compensation for temp & voltage Low in-rush current for frequent power cycling	✔	✔
Simplified Capacity Control Dual-scale dial or 5 Button Keypad	✔	✔
Proven Liquid Ends FastPrime™ or AutoPrime™ (Degassing Option)	✔	✔
Digital Display & Graphical User Interface 2.4” Color LCD & easy to use software		✔
Control Inputs • External Pulse • Remote Start/Stop • Tank Level Indication		✔
Enhanced Functionality • Calibration Assist • System and User Totalizer • StayPrime™ Degassing Technology		✔

Common drive platform with universal power supply and common components result in a truly global product

Constant stroke length simplifies operation and keeps pump calibrated across full adjustable range

Graphical interface makes pump functionality visually intuitive and easy ensure safe operation

Purpose built for every stakeholder in the Value Chain

- Supply Chain
- Manufacturing
- Channel Partners
- End Users

LMI

Precision Capacity Performance

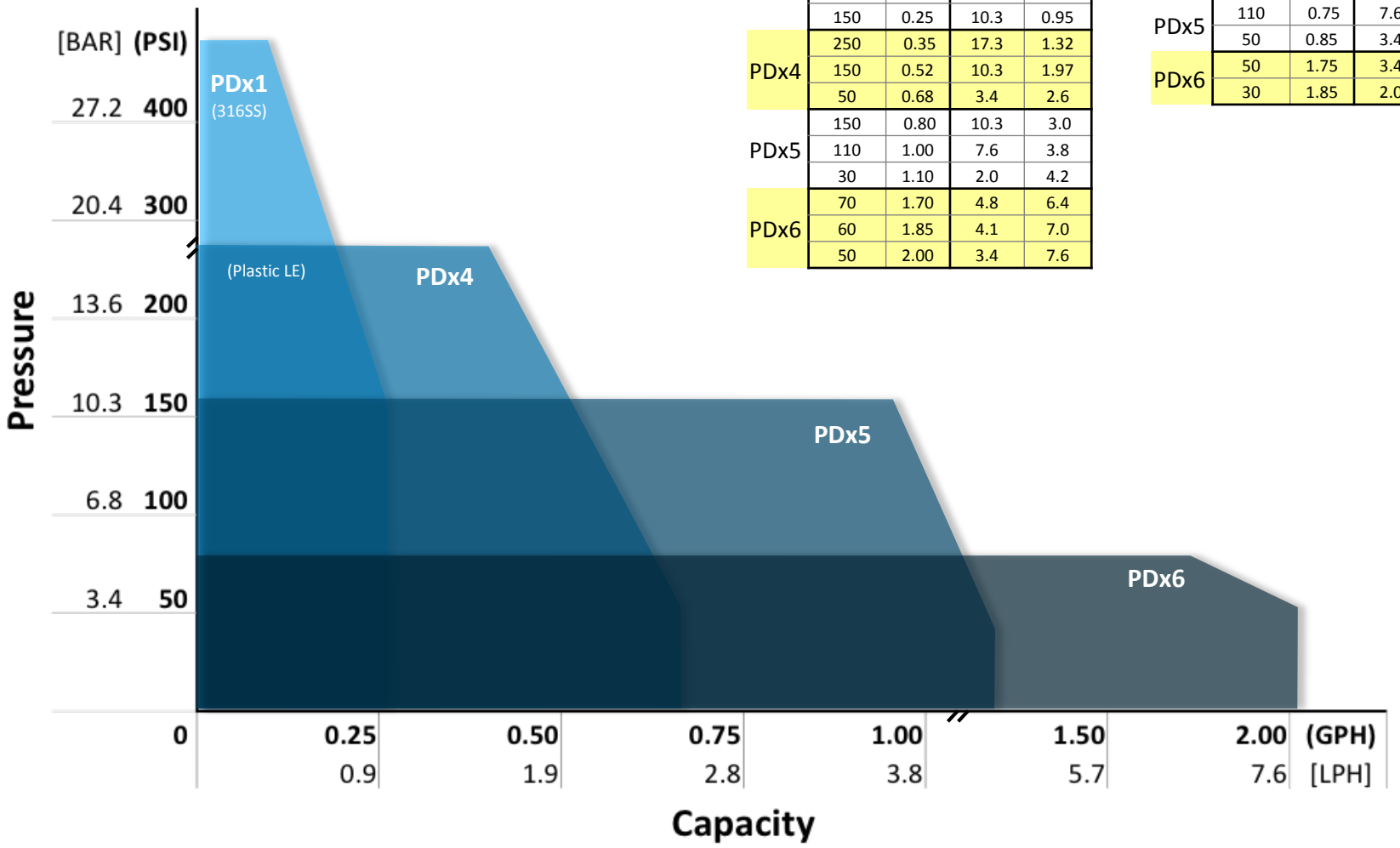
Max Stroke Rate
160 Strokes Per Minute

Max Flow
2.0 GPH (7.8 LPH)

Max Pressure
250 PSI (17.3 BAR) – Plastic LEs
450 PSI (30.6 BAR) – 316 SS

Accuracy
+/- 3% Steady State
+/- 3% Repeatable

Other
- Indoor/Outdoor Use
  NEMA 4X; IP65
- Universal Power Supply
  115-230V, 50/60 Hz
- Agency Certified
  NSF 61 (50 Pending), ETL, CE



FastPrime™ Liquid Ends

Output	PSI	GPH	BAR	LPH
PDx1	450	0.10	30.6	0.38
	300	0.20	20.4	0.76
	150	0.25	10.3	0.95
PDx4	250	0.35	17.3	1.32
	150	0.52	10.3	1.97
	50	0.68	3.4	2.6
PDx5	150	0.80	10.3	3.0
	110	1.00	7.6	3.8
	30	1.10	2.0	4.2
PDx6	70	1.70	4.8	6.4
	60	1.85	4.1	7.0
	50	2.00	3.4	7.6

AutoPrime™ Liquid Ends

Output	PSI	GPH	BAR	LPH
PDx4	250	0.20	17.3	0.76
	150	0.30	10.3	1.14
PDx5	110	0.75	7.6	2.8
	50	0.85	3.4	3.22
PDx6	50	1.75	3.4	6.6
	30	1.85	2.0	7.0

Proven Fluid Handling

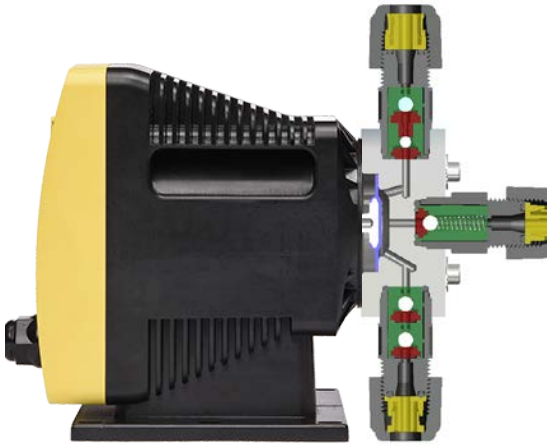
Liquid End Options

FastPrime™ (Standard)

An **integrated priming port** allows for quick and easy priming

AutoPrime™ (Degassing)

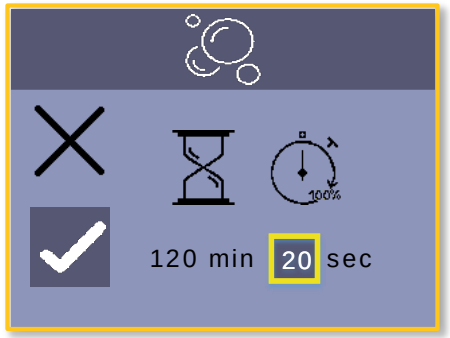
An **integrated degassing valve** provides self-priming operation



Software enabled feature

StayPrime™ Degassing Technology

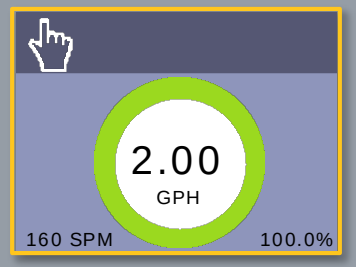
Onboard software monitors pump idle time and initiates a priming cycle to help maintain prime

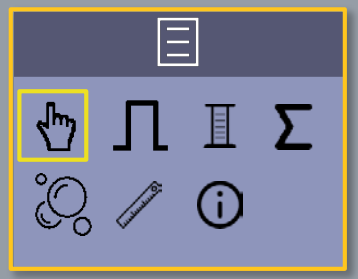


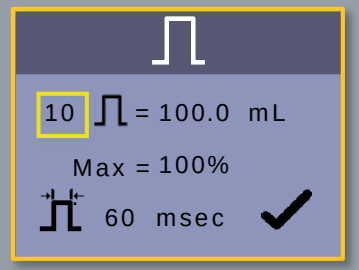
FastPrime and AutoPrime LEs augmented by StayPrime Degassing Technology

Enhanced Functionality

Navigation | Calibration | StayPrime™ | Inputs







Advanced Software

- Calibration Assist
- System & User Totalizer
- StayPrime™ Degassing Technology

CALIBRATION
Simply draw from a calibration column and adjust on-screen

TOTALIZER
An “odometer” that logs system and user resettable data

STAYPRIME™
Mitigate the risk of losing prime during idle periods between operation

Intuitive Configuration

- External Control
- Remote Start/Stop
- Tank Level Indication

PULSE INPUT
Control flow rate with an incoming digital pulse signal

REMOTE SWITCH
Remotely start and stop with an external switch

LEVEL SWITCH
Highly visible indication of low and empty tank levels

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LMI PD Series

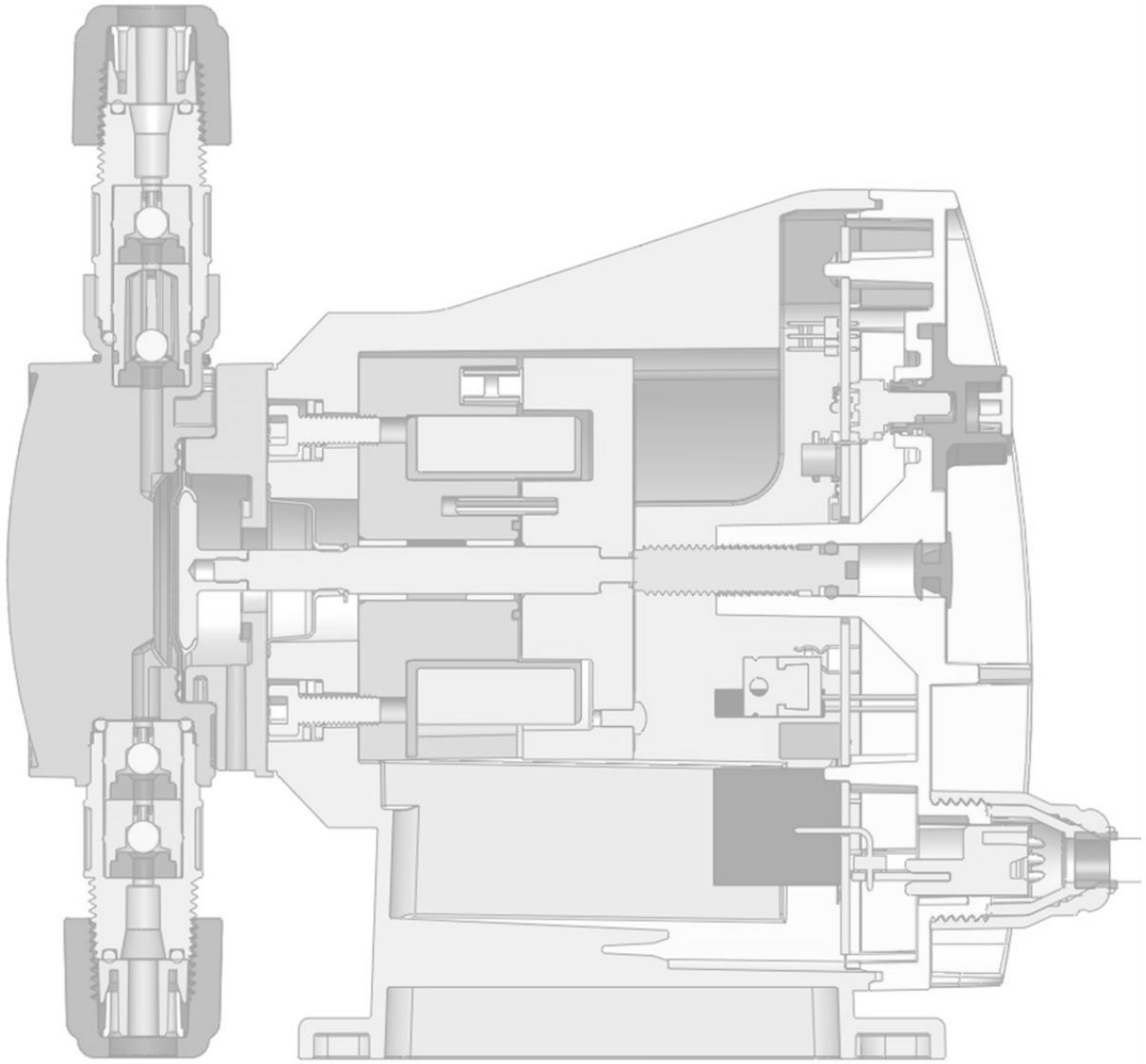
The New Standard in Water Treatment

Key Value Driver	
Durable Construction	NEMA 4X / IP65; F1 rated UV resistance and UV protected display; Glass-filled polypropylene housing with integrated handle
Reliable Operation	Built on decades of expertise; proven liquid ends; detailed flow curves; extensive development testing with rigorous lab testing and global field test validation; NSF, CE, ETL agency certifications
Easy to Use	Straightforward operation; linear calibration across the full adjustable range; highly visual graphical interface on PD7; simply scan QR code for support documentation and training videos
Easy of Maintain	RPM kits simplify routine preventative maintenance; no special tools required, modular architecture simplifies repair; maintenance reminder on PD7
Trusted Partner	Supported globally by world-class distribution partners that help tackle any application; backed by LMI's full 2 year warranty
Widely Available	Global stocking distributors provide best-in-class lead time around the world; supported by three (3) final assembly locations with flexible configuration afforded by platform design
Deliver Value	**All-new design improves performance while remaining an affordable solution to a broad range of application challenges**

LMI

LMI PD Series
Product Overview

Product Overview



- Model Nomenclature (Codification)
- Drive End Configuration
  - Control Codes
  - PD7 Inputs and Interface
- Liquid End Configuration
  - FastPrime and AutoPrime
  - Check Valves
  - 4 Function Valve
  - Tubing Connection System
- Certifications
- Selling Points
- Q&A

PD Series - Nomenclature

PD 7 5 1 – 8 3 2 S I

Series designation is “PD”:

- “P” = Next generation P pump
- “D” = Digital electronics

Control Code designation is “0” or “7”:

- PD0 – Single Manual Control Knob
- PD7 – Pulse Input/Single Manual Control

PD0

PD7

Model numbering in line with conventional LMI coding

LMI Model Numbering

Drive End

PD 7 5 1

- Model Code
- Control Code
- Output Code
- Voltage Code

Liquid End

8 3 8 N I

- Liquid end Code
- Liquifram Size Code
- Material Code
- Head / Valve Code
- Tubing Code

Drive + Liquid End = Pump

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Drive End

Series PD – Drive End Model Code

PD 7 5 1 – 8 3 2 S I

Control Code

0 – Single Manual Control

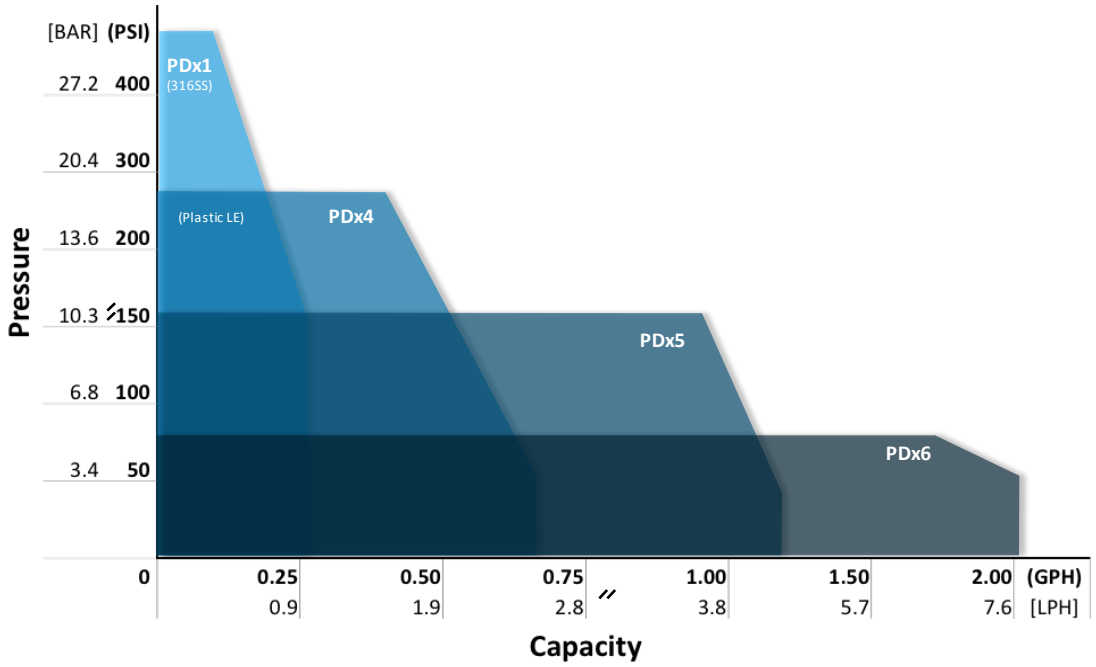
7 – Pulse Input/
Advanced Features
Single Manual Control

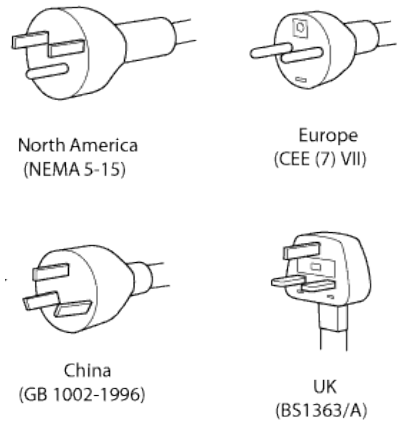
Output Code

1 – .30 GPH (0.95 l/h) – 450 PSI (30.6 Bar) – Liquifram Code=0, 160 SPM
4 – .68 GPH (2.57 l/h) – 250 PSI (17.2 Bar) – Liquifram Code=2, 160 SPM
5 – 1.1 GPH (4.2 l/h) – 150 PSI (10.2 Bar) – Liquifram Code=3, 160 SPM
6 – 2.0 GPH (7.6 l/h) – 70 PSI (4.8 Bar) – Liquifram Code=4, 160 SPM

Power Code

1 – 110-120V US Plug, UL
2 – 220-240V US Plug, UL
3 – 220-240V DIN Plug, CE
5 – 220-240V UK Plug, CE
6 – 220-240V Aust/NZ Plug





Series PD – Control Codes

PD0

- Fixed Stroke Length at 100%
- Manual Speed Control
- Improved drive mechanism
- Universal voltage (95 to 240 VAC)

PD7

- Universal voltage (95 VAC to 240 VAC)
- On/Off pushbutton
- Speed up/down pushbutton
- Menu selection Mode pushbutton
- Enter/Confirm pushbutton
- Digital LCD indicating :
  - Theoretical flow
  - Stroking frequency
  - Percent capacity
  - Operating Mode
  - Status Alerts

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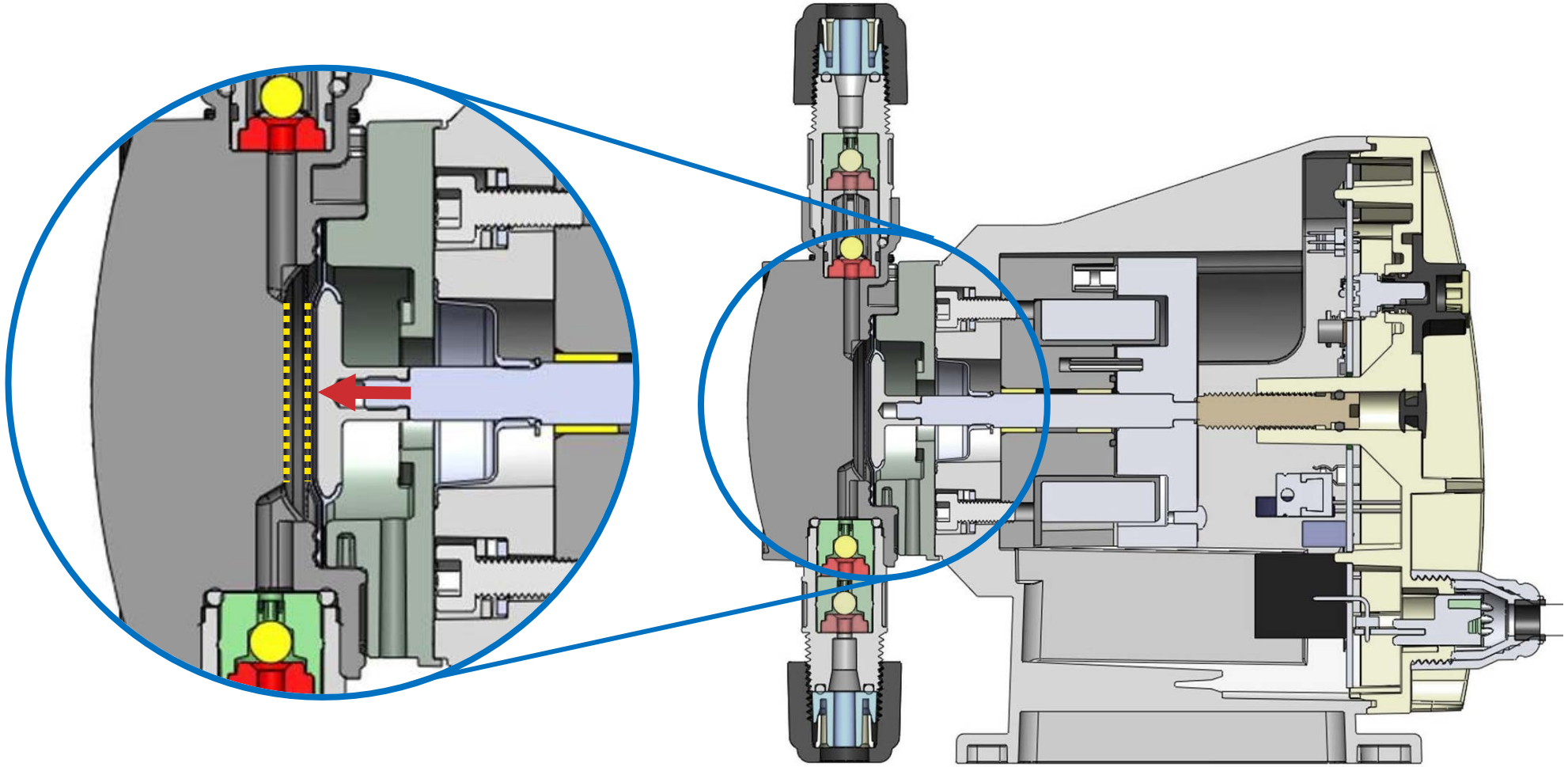
Full Stroke Length



Maximum displacement optimizes flow performance and ensures linearity

LMI

Series PD – PD7 Inputs

External Pulse Control & Remote Start Stop

Tank Level Control

PIN	Wire	Signal
1	Brown	Remote on/off
2	White	Ground-return
3	Blue	External pulse input
4	Black	Power supply. 24V, 75 ma
5	Green-Yellow	No connection

PIN	Signal
1	Tank empty
3	Tank low
4	Ground -return

LMI

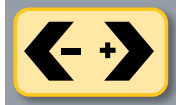
Series PD – PD7 Navigation

Keypad


Menu / Back


Enter / Confirm


Start / Stop


Left / Decrease

Right / Increase

Menu


Manual


Ext. Control


Calibration


Totalizers


StayPrime™

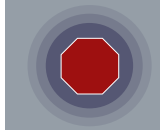

Units


System Info

Alerts


Empty Tank


Low Tank

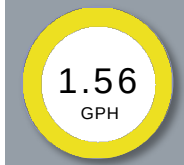

Remote Stop


Service Notification

Status Indication

Stopped

Started



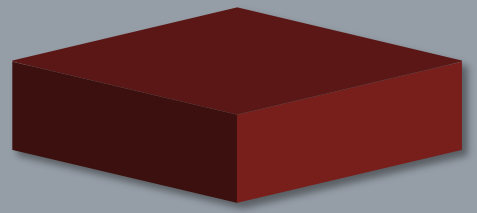
Low Tank Warning

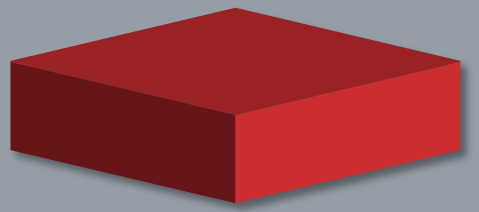
Empty Tank (Stopped)

LMI

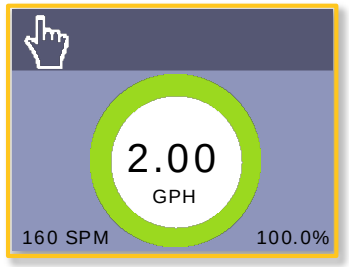
Series PD – PD7 User Interface

Three layer interface





Home



Home (operation)

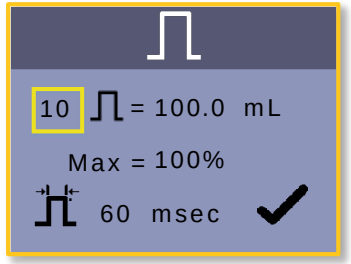
- Flow Rate
- Stroke Rate
- % Capacity
- Status Indicator Ring
- Operating Mode(s)
- Status Alerts

Menu

Menu (modes)

- Manual
- External Control
- Calibration
- Totalizer
- StayPrime™ Degassing Technology
- Units
- System Info

Settings



Settings (configuration)

- Setting Configuration
- Setting Engage/Confirm

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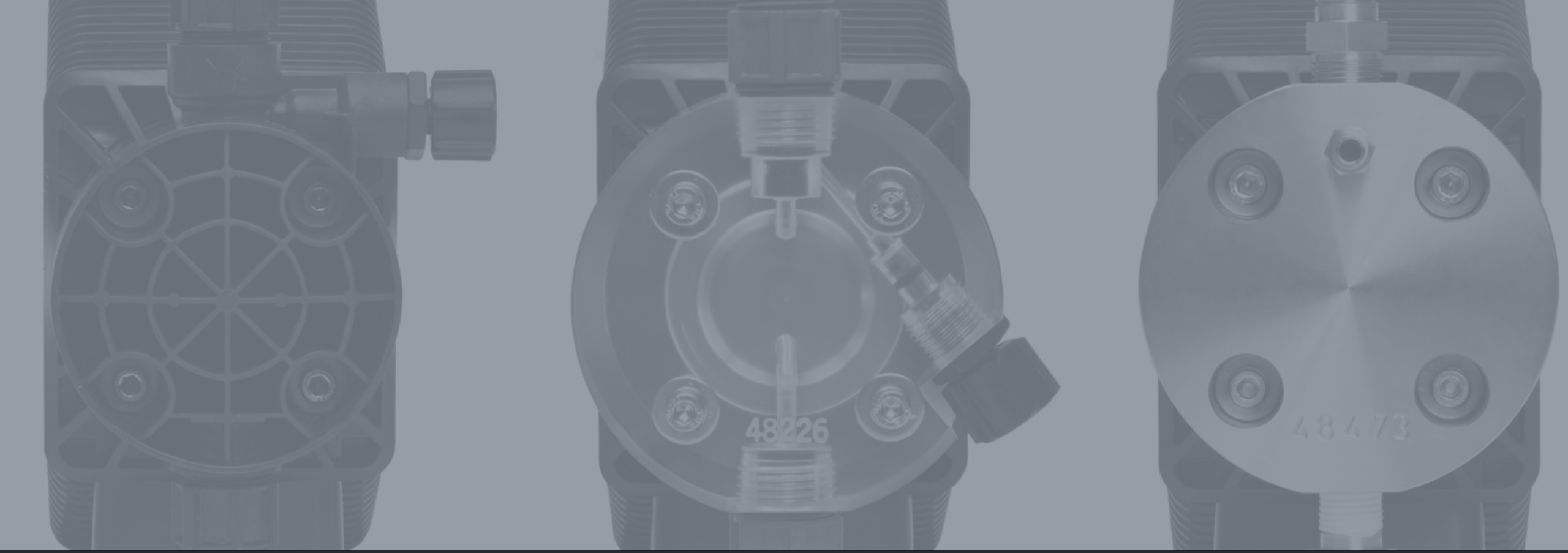
PD7 Training Videos

LMI



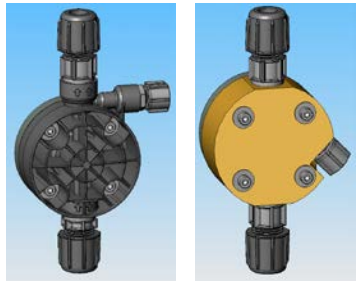
Liquid End

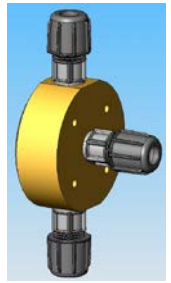
LMI

Series PD – Liquid End Model Code

PD 7 5 1 – 8 3 2 S I

Liquid End Type Code	Liquifram Size Code	L.E. Material (Head/Fitting/Ball/Seat/O-ring)	Head / Valve Code	Connection Code
7 – FastPrime, Single Ball (China)	0 – 0.2 in^2	0 – Acrylic PVC Ceramic, Polyprel®, Polyprel®	S – FastPrime Head + 4FV	I – Inch Tubing
8 – Molded FastPrime, Dbl Ball	2 – 0.4 in^2	2 – PVDF PVDF Ceramic, Polyprel®, Polyprel®	N – FastPrime Head	M – Metric
9 – Machined FastPrime, Dbl Ball	3 – 0.8 in^2	3 – PVDF PVDF Ceramic, PTFE, PTFE	A – Auto Prime Head	P – 1/4" NPT 316ss Heads
A – Machined AutoPrime, Dbl Ball	4 – 1.6 in^2	5 – PP, PP Ceramic, PTFE, PTFE	H – Auto Prime Head + 4FV	
		8 – PVC PVC Ceramic, Polyprel®, Polyprel®		
		9 – Acrylic PVDF. PTFE, Polyprel®, Polyprel®		
		7 – SS SS SS, PTFE, PTFE		

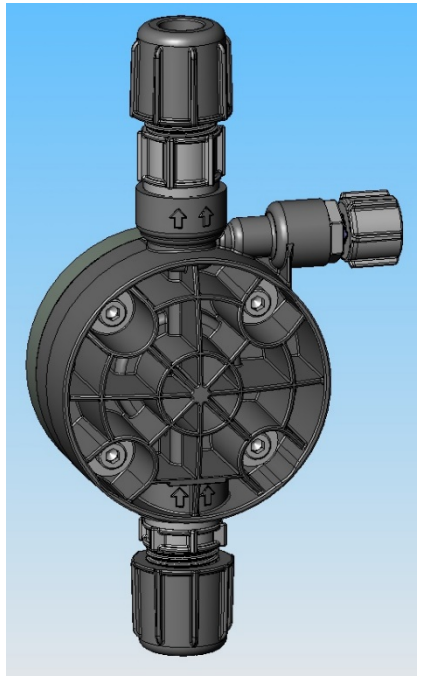




Series PD – Liquid End Types

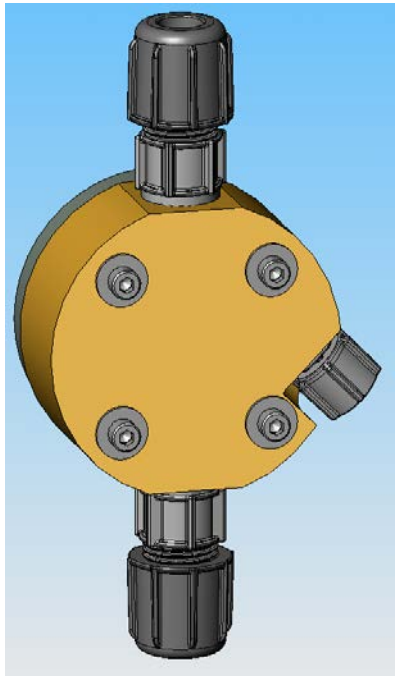
FASTPRIME™

Molded FASTPRIME™ Head



8X2
8X3
8X8

Mach FASTPRIME™ Head

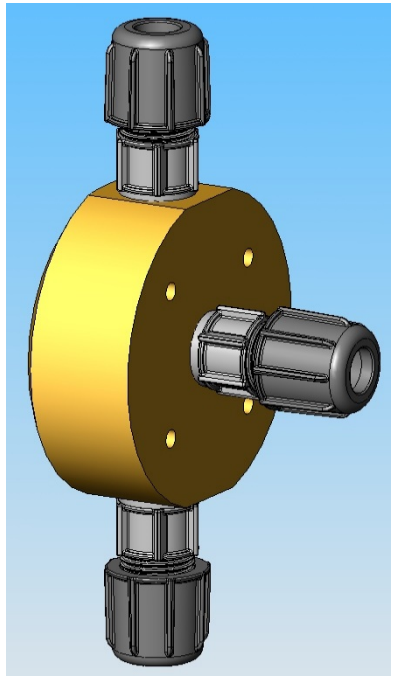


9X5
9X7
9X8
9X9
9X0

(7x8)

AUTOPRIME™

Mach AUTOPRIME™ Head



AX8
AX0

Molded FastPrime; Machined FastPrime; Machined AutoPrime

Series PD – FastPrime™ Liquid End Types

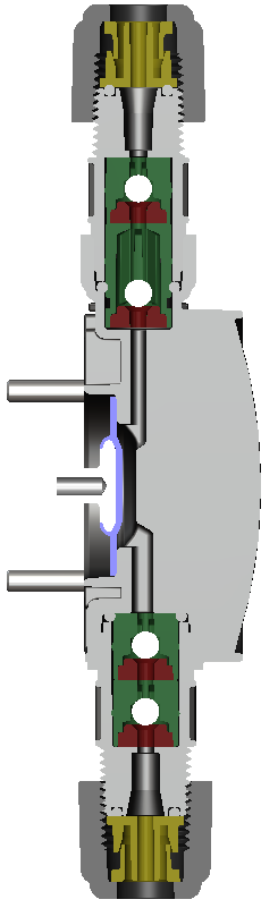
Machined FASTPRIME™ LE
with 4FV

Molded FASTPRIME™ LE
with 4FV

SS FASTPRIME™ LE

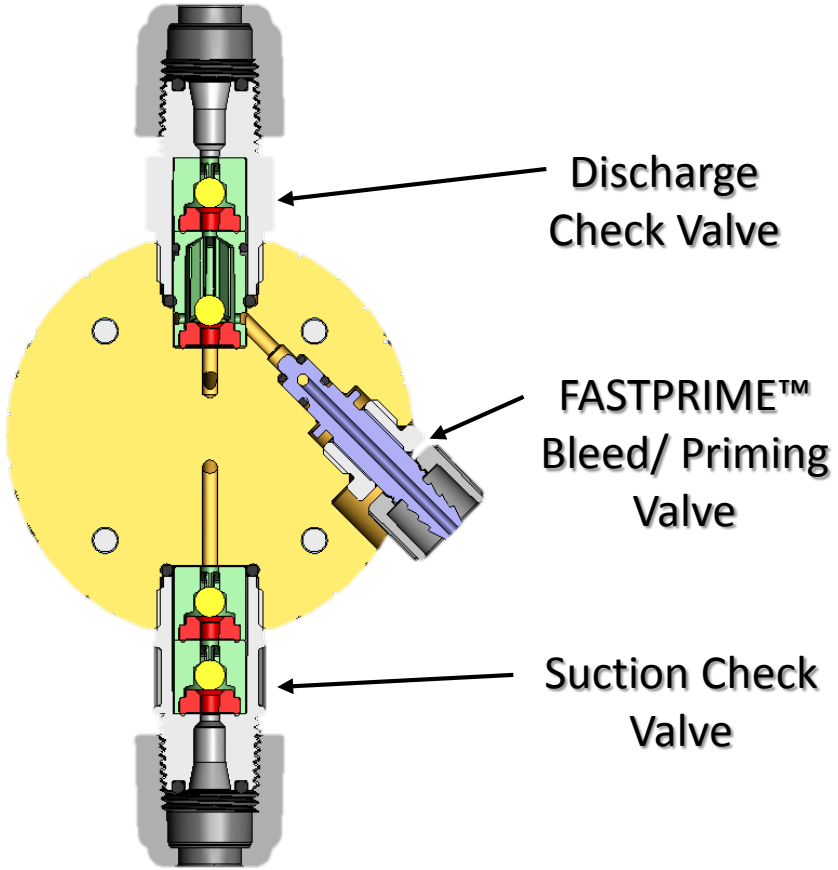
FastPrime™ Liquid Ends

Series PD – FastPrime™ Liquid End Design



Primes the pump without having to depressurize discharge tubing

- Double ball checks
- Molded PVDF and PVC
- Machined PP, PVC or Acrylic

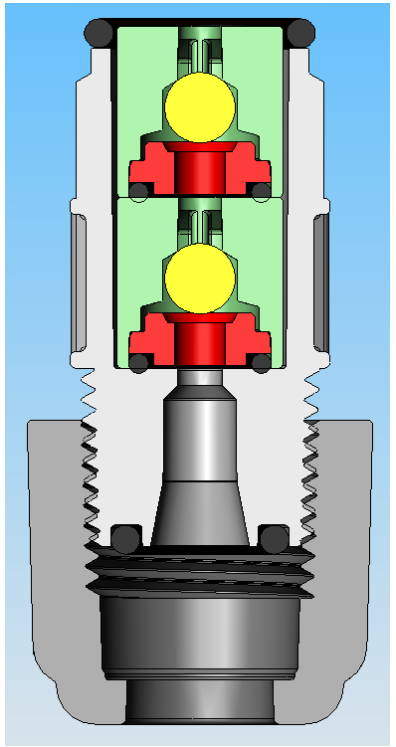


FastPrime Liquid Ends

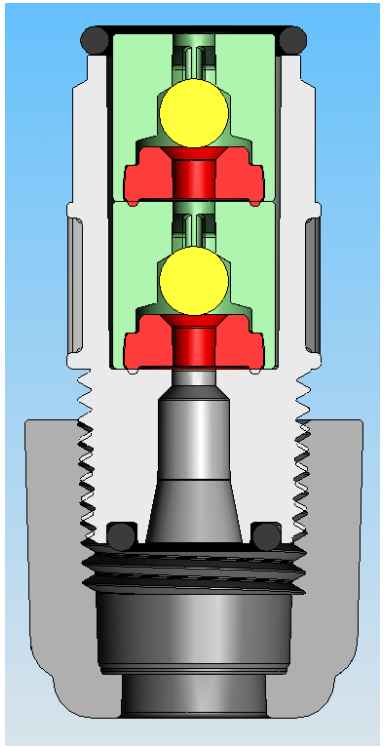
Series PD – Check Valve Design

Double ball check valves

- Ball sizes .250” and .188” (reduced from .375” and .281” due to smaller displacements at higher speeds)
- Universal tubing connections eliminate need for metal clamp rings (see next slide)
- Design accommodates machined seats (PTFE) or molded seats (AFLAS)
- Multiple O-ring materials are included (AFLAS, PTFE)

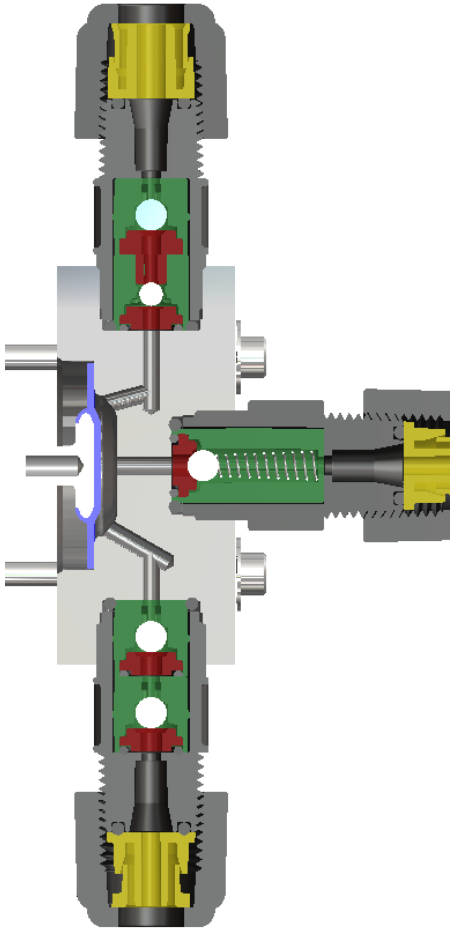


Machined Seat



Molded Seat

Series PD – AutoPrime™ Liquid End

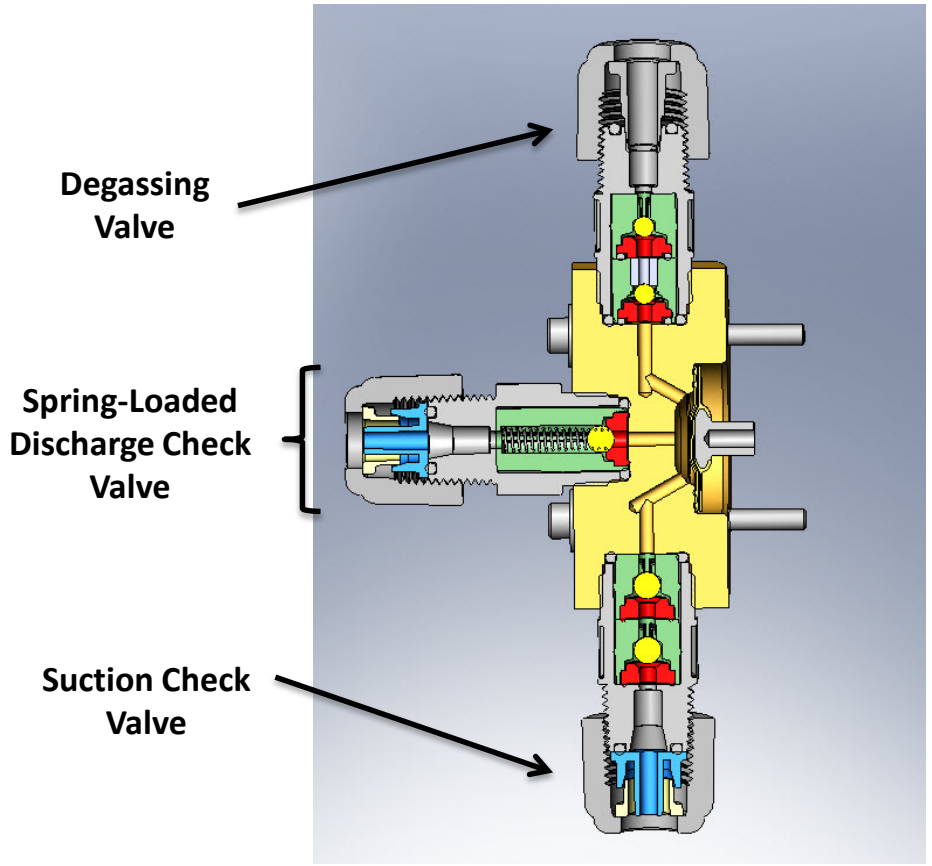


Machined AUTOPRIME™ LE

Machined AUTOPRIME™ LE
with 4FV

AUTOPRIME™ Liquid End

Series PD – AutoPrime™ Liquid End Design



- Improved Compact design
- Addition of second ball in the de-gassing valve to prevent back-flow
- Does not have Anti-Siphon
- 4FV can be added onto Discharge C.V. for additional features
- Machined Head Only (No molded version) Acrylic and PVC Only
- Max. Pressure Rating 250 PSI

AUTOPRIME™ Head

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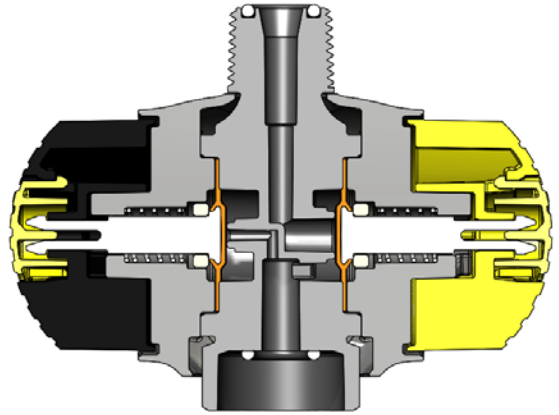
Series PD – Four Function Valve (4FV)

The Four Functions:

- Anti-Siphon
- Back Pressure
- Pressure Relief
- Pressure Release

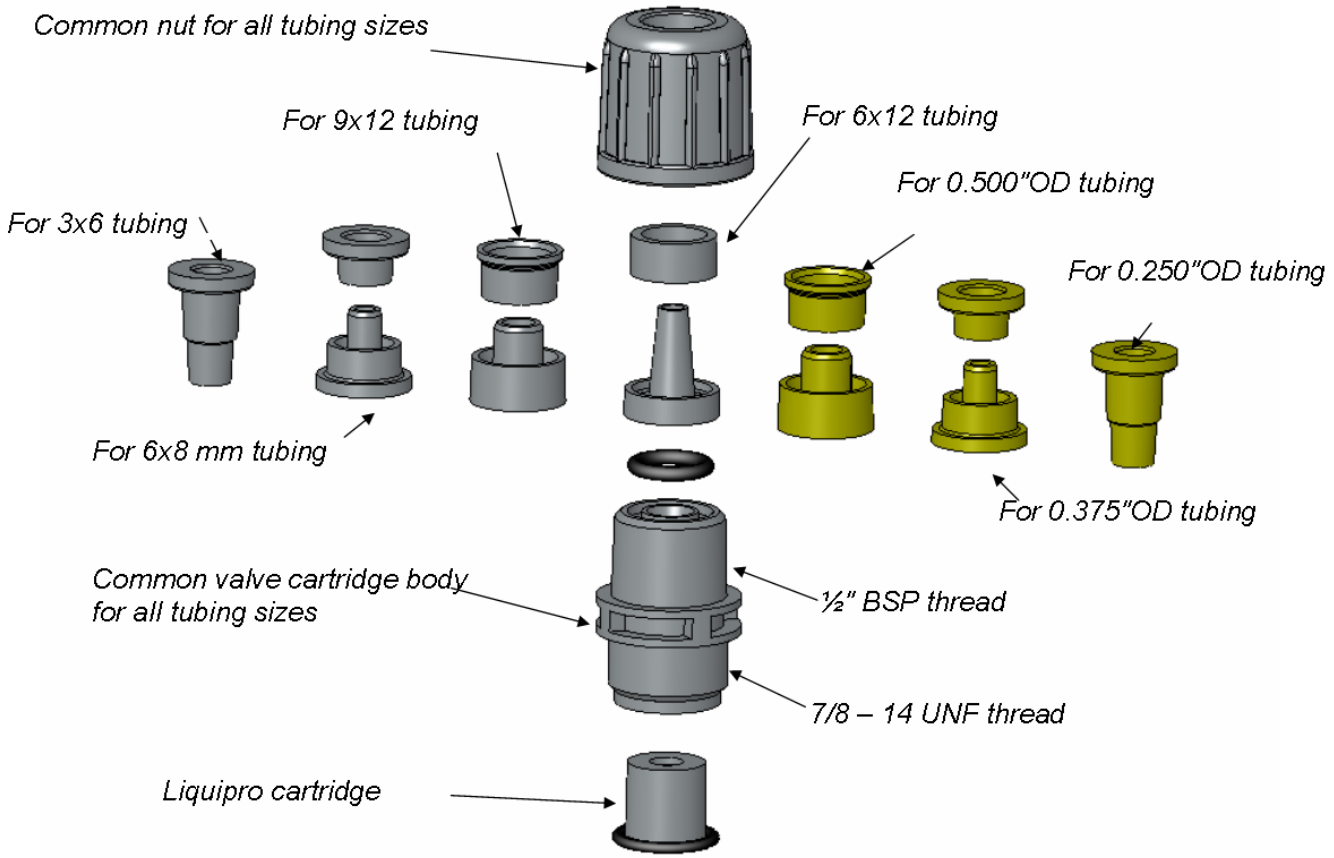


Features:

- Improved diaphragm sealing arrangement
- Mounts onto discharge C.V. fitting allowing customer control of rotational alignment
- Incorporates double ball design

Valve operation

Series PD – Tubing Connection System



Always use LMI supplied tubing

Agency Approvals and Certifications

ETL, CETL Certification on relevant models

CE-EMC Certification on relevant models

NSF Certification include

NSF 50 (Pool and Spa) - Pending

NSF 61 (Drinking Water System Components)

NSF 372 (Meets NSF "Lead-Free" Requirements)

LMI PD Series

The New Standard in Water Treatment

Key Value Driver	
Durable Construction	NEMA 4X / IP65; F1 rated UV resistance and UV protected display; Glass-filled polypropylene housing with integrated handle
Reliable Operation	Built on decades of expertise; proven liquid ends; detailed flow curves; extensive development testing with rigorous lab testing and global field test validation; NSF, CE, ETL agency certifications
Easy to Use	Straightforward operation; linear calibration across the full adjustable range; highly visual graphical interface on PD7; simply scan QR code for support documentation and training videos
Easy of Maintain	RPM kits simplify routine preventative maintenance; no special tools required, modular architecture simplifies repair; maintenance reminder on PD7
Trusted Partner	Supported globally by world-class distribution partners that help tackle any application; backed by LMI's full 2 year warranty
Widely Available	Global stocking distributors provide best-in-class lead time around the world; supported by three (3) final assembly locations with flexible configuration afforded by platform design
Deliver Value	**All-new design improves performance while remaining an affordable solution to a broad range of application challenges**

LMI

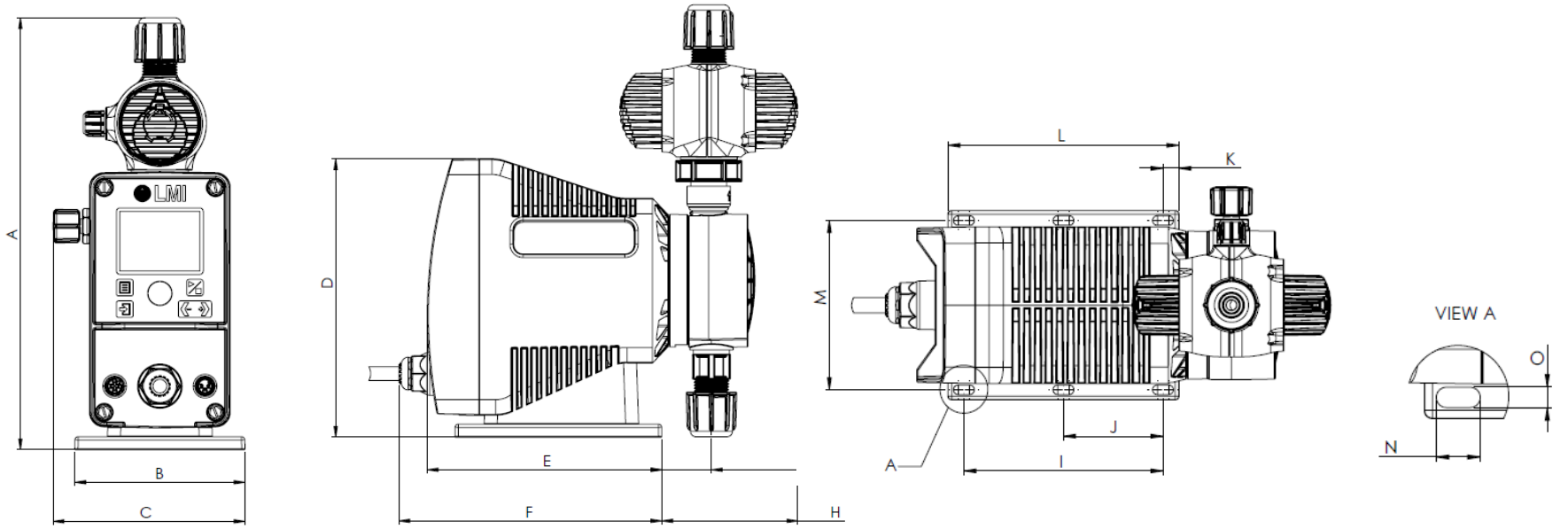
Questions?

Series PD – NEW Size Code Zero (SC0) Liquifram

New
Size Code 0

Current
Size Code 1

Dimensional Comparison



Series | Dim	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
PD	**10.44** [265]	4.09 [104]	**4.6** [117]	**6.72** [171]	**5.67** [144]	**3.29** [84]	**1.2** [31]	**3.29** [84]	**4.31** [109]	**2.15** [55]	**0.35** [9]	**5.00** [127]	**3.66** [93]	**0.45** [11]	**0.20** [5]
P	**9.98** [254]	**4.10** [104]	**4.10** [104]	**6.30** [160]	**5.62** [143]	-	-	**3.73** [95]	**4.07** [103]	-	**0.19** [5]	**4.45** [113]	**3.66** [93]		
A/P+	**10.70** [272]	**4.72** [120]	**4.93** [125]	**6.23** [158]	**5.17** [131]	**5.50** [140]	**1.2** [31]	**3.86** [98]	-	-	**1.54** [39]	**4.58** [116]	**4.28** [109]	**0.37** [9]	**0.21** [5]
AA	**13.14** [334]	**4.00** [102]	**4.00** [102]	**7.86** [200]	**7.37** [187]	-	-	**3.13** [79]	**4.24** [108]	**2.12** [54]	**0.40** [10]	**5.03** [128]	**3.52** [89]	**0.45** [11]	**0.20** [5]
AD	**11.23** [285]	**4.06** [103]	**4.60** [117]	**7.76** [197]	**7.68** [195]	**7.98** [202.]	**1.22** [31]	**3.12** [79]	**4.24** [108]	**2.12** [54]	**0.34** [86]	**6.50** [165]	**3.52** [90]	**0.45** [11]	**0.20** [5]
B/C	**12.26** [311]	**5.70** [145]		**7.56** [192]				**6.81** [173]	**4.50** [114]			**4.70** [119]	**5.16** [131]		

THANK YOU

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