

# ARO

## *Pro Series Diaphragm and Piston Pumps*

*Non-Metallic and Metallic Diaphragm Pumps*

*Low-Ratio Piston Pumps*

*Specialty Pumps*



 **Ingersoll Rand®**

# Pro Series Pumps

## Where's Your PRO Opportunity?

- ▷ Tanker / Truck / Train Unloading
- ▷ Bulk Tank / Tank Farm Transfer
- ▷ Waste Water Treatment / Fluid Filtration
- ▷ Formulation
- ▷ Basic Transfer / Supply
- ▷ Packaging / Filling
- ▷ Batching / Blending
- ▷ System Flush
- ▷ Recirculation/Reclamation

## General Industrial and OEM Installation Applications

### Marine

#### Transfer of

- Waste Water
- Sea Water
- Diesel Oil

### Electronic

#### Transfer of

- Waste Water
- Acid
- Alkali

### Auto

#### Supply and Transfer of

- Sealant
- Adhesive
- E-Coat
- Solvent
- Paint

### Coal Mining

#### Transfer of

- Waste Water
- Slurry

### Chemical Processing

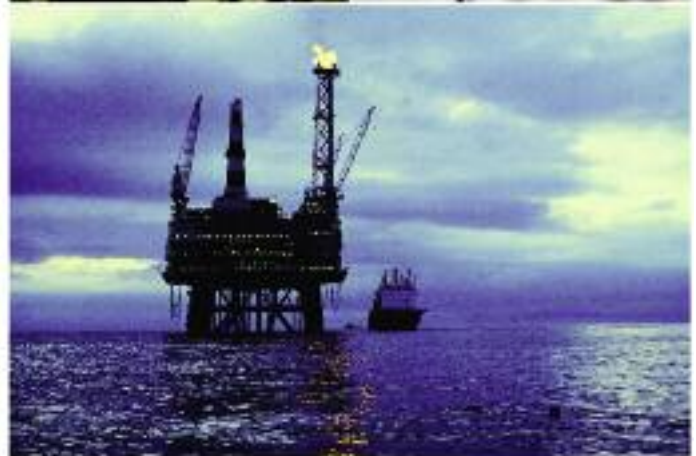
#### Formulation of :

- Soaps
- Detergents
- Cleansing/Polishing Agents
- Paints/Dyes
- Adhesives
- Ink
- Shear Sensitive Materials

### Pharmaceuticals

#### Supply and Transfer of:

- FDA Materials



## Why Diaphragm Pumps?

- Sealless Design
- Explosion-Proof
- Low Material Shear
- Ease of Maintenance
- Can be run Dry Without Damage
- Portable
- Self Priming
- Easy-To-Apply

## Why ARO Diaphragm Pumps?

- Efficient: The Best "Total cost of Ownership" in the Industry
- Worldwide Distribution Network for Sales and Service



# DNV Certificate



DNV(DET NORSKE VERITAS) headquarter in Norway, is one of the world's leading classification societies. It helps the maritime industry manage risk in all phases of the ships life, through ship classification, statutory certification, fuel testing and a range of technical, business risk, financial and competency related services.

Ship Classification is a system for safeguarding life, property and the environment at sea. It entails verification against a set of requirements during design, construction, operation and facilities of ships and offshore units. These requirements are based on the accumulated experience from DNV's large classed fleet, research and development and almost 140 years of experience. Ship facilities and offshore units having DNV certificate have all gone through rigorous tests and inspections. DNV certificate symbolizes the acceptance of safety and quality.

## Ingersoll Rand ARO Diaphragm Pump Applications In Marine Industry:

### Marine

#### Transfer of

- Sea Water
- Oil

### Oil & Offshore

#### Transfer of

- Waste Water
- Chemistry Medicament
- Diesel Oil



Ingersoll Rand ARO diaphragm pump has gotten through DNV testing in Singapore. We also offer additional service of applying for DNV certificate.

# High Performance

Unbalanced valve design eliminates valve centering and pump stall-out-even under low air inlet pressures.

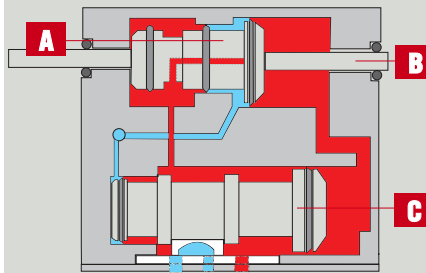
## “D” Valve

- ▷ Provides a positive seal.
- ▷ Helps insure optimum energy efficiency while avoiding costly air “blow-by.”
- ▷ Ceramic construction insures long service life.

## “SimulShift™” Valve

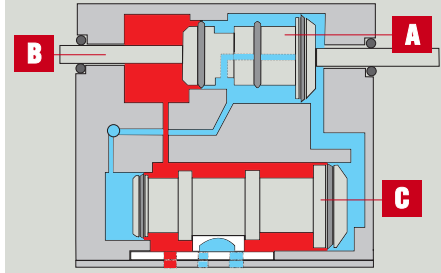
- ▷ Provides an ultra-positive, reliable shift signal that avoids stall-out.
- ▷ Provides faster pump trip-over with more flow.
- ▷ Faster trip-over with less pulsation and superior laminar material flow.

**Diaphragm Moving Right to Left**



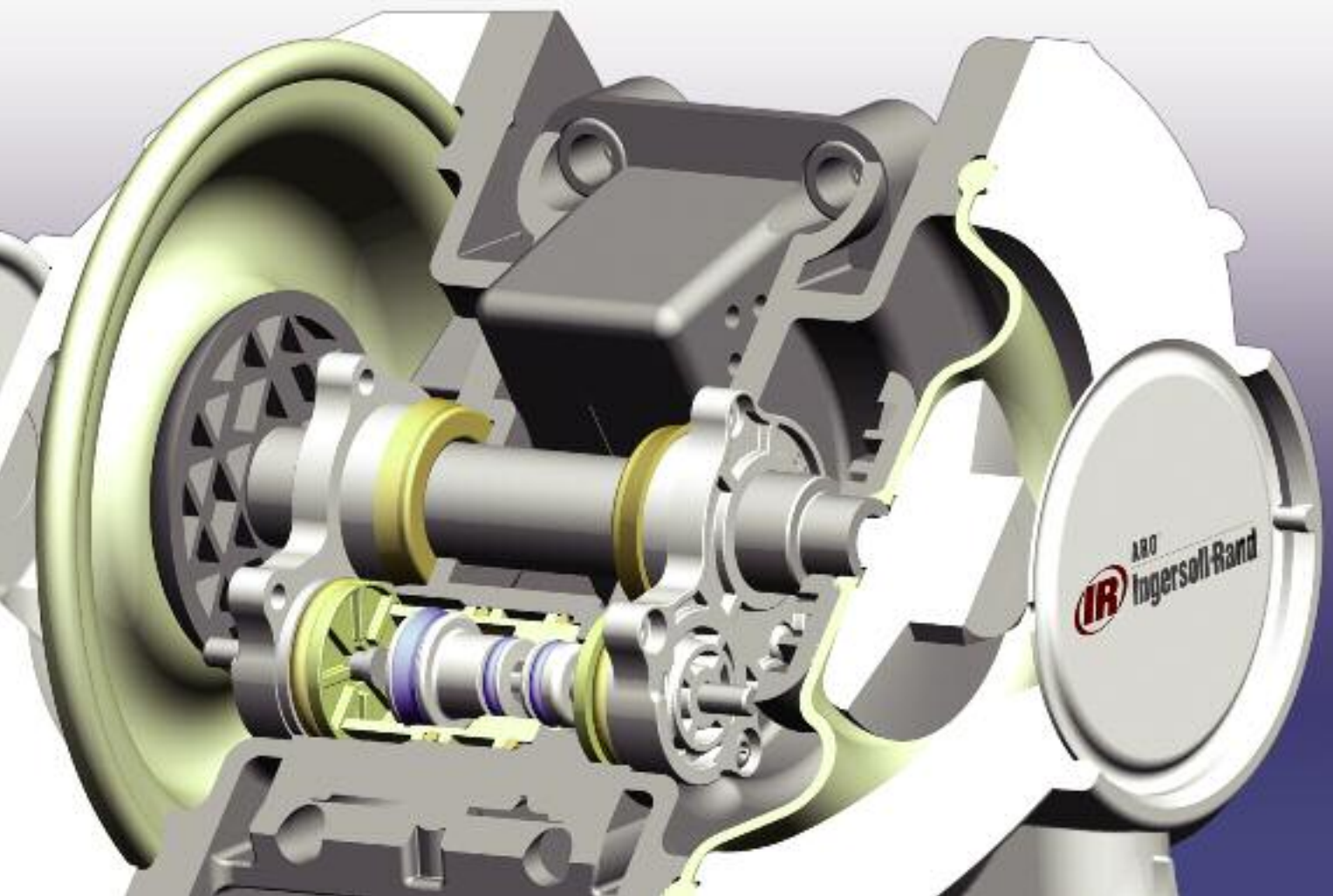
- 1.) The diaphragm pushes the right Actuator Pin (B) mechanically moving the Simul-Shift Valve (A) to the left.
- 2.) Compressed air flows to the large side of the Simul-Shift Valve, pneumatically moving the valve to the position shown.
- 3.) Compressed air also flows to the large end of the Major Air Valve (C), pneumatically shifting it to the left.

**Diaphragm Moving from Left to Right**



At end of stroke:

- 1.) Diaphragm pushes Pin (B) and Simul-Shift Valve (A) to the right.
- 2.) Large ends of Simul-Shift Valve (A) and Major Valve (C) are vented to exhaust pilot signal.
- 3.) Constant compressed air supply acting on the smaller areas of the Simul-Shift Valve and Major Valve shifts both valves to the right and hold them in position until the next cycle begins



# ***Big Delivery. High-Performance.***



## ***Productivity***

Maximized flow rates + Minimized pulsation and air consumption = Maximum Performance



## ***Versatility***

Multiple porting options available along with interface options allow you to customize this pump specifically to your OEM application.



## ***Reliability***

Lube Free Patented Differential Valve both on Major air valve and Simulshift (Pilot Valve) provides reliable Worry Free Operation – Fluid On demand every time



## ***Environmentally Sound***

Bolted Construction in conjunction with a wide range of material options provides maximum chemical and leak resistance



## ***Serviceability***

Modular Construction, reduced parts count and simple to use repair kits will minimize repair time and cost

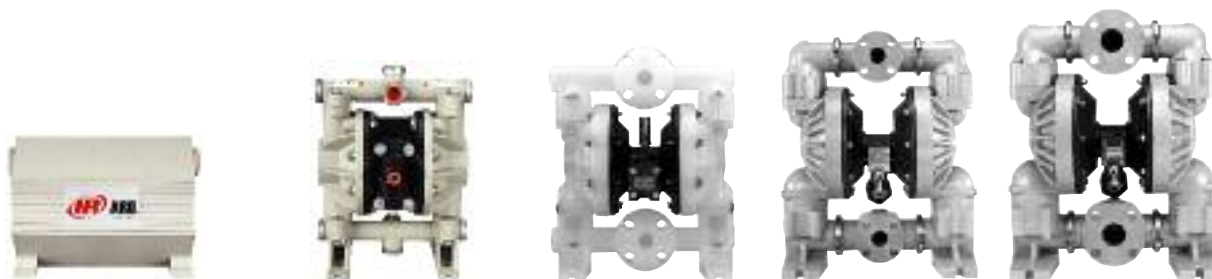
Don't forget the other compelling reasons to use Aro Diaphragm Pumps: ARO Diaphragm pumps are simple to apply to your application because they are self priming and can be run at variable flows controlled by air pressure or fluid back pressure. They can handle materials that are abrasive and/or shear sensitive. They can also be run dry without damage to the pump.

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## Model Overview: Non-Metallic Models Pro-Series Pumps



Model	1/4"	1/2"	1"	1-1/2"	2"
Maximum Flow GPM (LPM)	4.6 (17.4)	13 (49)	47 (178)	100 (378.5)	145 (548.8)
Maximum Discharge Pressure PSI (BAR)	100 (6.8)	100 (6.8)	120 (8.3)	120 (8.3)	120 (8.3)
Fluid Ports Inlet/Outlet (BSP Available)	3/8" (F) – In 1/4" (F) – Out (No BSP)	1/2" (F) – In/Out (No BSP)	1" ANSI/DIN Flange 1" (F) Threaded	1-1/2" ANSI/DIN Flange	2" ANSI/DIN Flange
Materials of Construction	Polypropylene Groundable Acetal Kynar®	Polypropylene Groundable Acetal Kynar®	Polypropylene PVDF	Polypropylene PVDF	Polypropylene PVDF
Pump Weight lbs. (kg.)	4.1 (1.85) Poly 4.6 (2.10) Acetal 4.91 (2.22) Kynar	8.8 (4.0) Acetal 7.2 (3.3) Poly 9.5 (4.3) Kynar	20.3 (9.2) Poly 28.5 (12.9) PVDF 28.8 (13.1) Poly w/ Cast Iron Center 37 (16.8) PVDF w/ Cast Iron Center	62 (28.1) Poly 92 (41.7) PVDF 85 (38.5) Poly w/ Cast Iron Center 115 (52.1) PVDF w/ Cast Iron Center	62 (28.1) Poly 92 (41.7) PVDF 85 (38.5) Poly w/ Cast Iron Center 115 (52.1) PVDFw/ Cast Iron Center
Maximum Solids Inches (mm)	Clean Fluids	3/32 (2.4)	1/8 (3.2)	1/4 (6.4)	1/4 (6.4)
Best Selling Models (BSP Available)	PD02P-APS-PTA PD02P-APS-PTT PD02P-ADS-DTT PD02P-AKS-KTT (No BSP)	66605J-388 66605J-3EB 66605J-344 66605H-244 66605K-444 66605H-2A4 (No BSP)	6661A3-3EB-C 6661A3-344-C 6661B3-344-C 6661A4-444-C 6661B4-444-C	6661T3-3EB-C 6661T3-344-C 6661U3-344-C 6661U4-444-C	6662A3-3EB-C 6662A3-344-C 6662B3-344-C 6662B4-444-C
Recommended Filter/ Regulator	P29122-600	P29122-600	P29221-610	P29241-610	P29241-610
Air Line Kit One Piece Diaphragm Service Kit	66073-1	66073-1	66073-2 48495964	66084-1 48496806	66084-1 48496806

# 1/4" Non-Metallic Models Pro-Series Pumps

## 1/4" Non-Metallic Performance Specifications

Ratio:	1:1
Maximum Flow GPM (LPM):	4.6 (17.4)
Displacement per cycle:	0.014 (0.053)
Gallons (Liters)	
Air Inlet:	1/4" (F)
Fluid Inlet:	3/8" (F)
Fluid Outlet:	1/4" (F)
Max. operating pressure psi (bar):	100 (6.8)
Suspended solids max. dia.:	Clean Fluid Only
in. (mm)	
Weight lbs (kg):	PD02P-XDS-XXX 4.6 (2.10)
	PD02P-XPS-XXX 4.1 (1.85)
	PD02P-XKS-XXX 4.9 (2.22)
Maximum dry suction lift ft (m):	20 (6.1)



## Ordering Menu

PD02	P	-	X	X	X	-	X	X	X
<b>Model Series</b>	<b>Center Section Material</b>		<b>Fluid Connection</b>	<b>Fluid Caps/ Manifold Material</b>	<b>Hardware Material</b>		<b>Seat Material</b>	<b>Disk Check</b>	<b>Diaphragm Material</b>
1/4" Pump	P Polypropylene	A NPT Single Inlet /Single Outlet	D Acetal P Polypropylene K Kynar (PVDF)	S Stain. Steel	D Acetal P Polypropylene K Kynar(PVDF)		T Teflon	A Santoprene G Nitrile T Teflon	
		D NPT Single Inlet /Dual Outlet							
		E NPT Dual Inlet /Single Outlet							
		H NPT Dual Inlet /Dual Outlet							

## Accessories

**Air Line Connection Kit\* | Kit No. 66073-1**

Service Repair Kits | *Kit No. 637276 (air section)*  
*Kit No. 637313-XX (fluid section)*

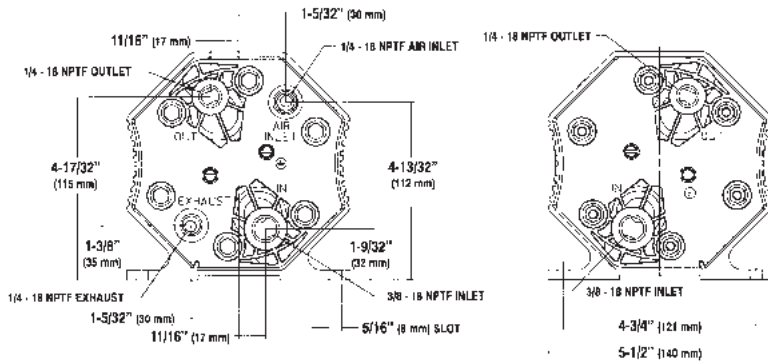
*\*Please note pumps are not included with these kits.*



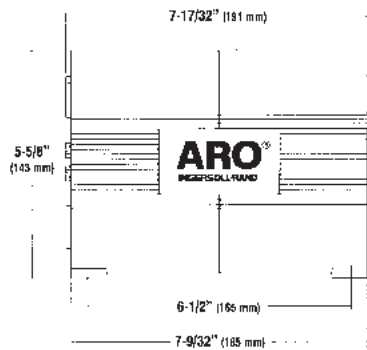
# 1/4" Non-Metallic Dimensions and Flow Curves Pro-Series Pumps

## 1/4" Non-Metallic Dimensions and Flow Charts

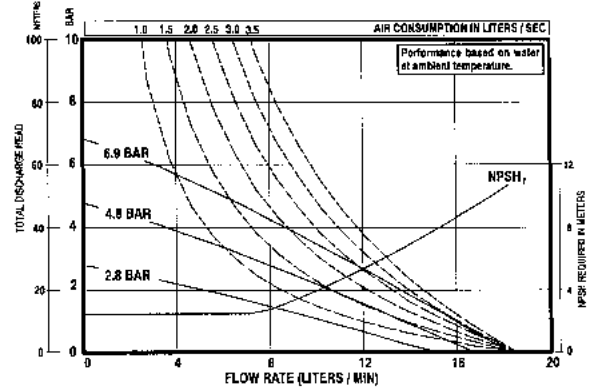
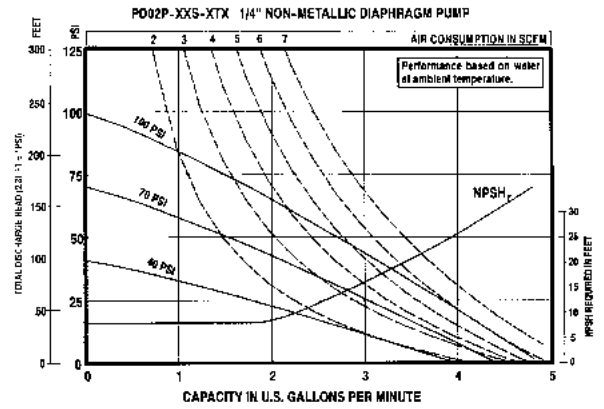
END VIEWS



SIDE VIEW



PERFORMANCE CURVES



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

**Model**  
PD02P-X-X

NOTE: Dimensions are shown in inches and (mm), supplied for reference only and are typically rounded up to the nearest 1/16 inch.

NON-METALLIC

# 1/2" Non-Metallic Models Pro-Series Pumps

## 1/2" Non-Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow GPM (LPM):	13 (49) Ball, 10 (37.9) Duckbill Check		
Displacement per cycle Gallons (Liters):	0.04 (0.15) Ball, 0.032 (0.12) Duckbill Check		
Air Inlet:	1/4" NPT (F)		
Fluid Inlet:	1/2" NPT (F)		
Fluid Outlet:	1/2" NPT (F)		
Max. operating pressure psi (bar):	100 (6.9)		
Suspended solids max. dia.:	3/32 (2.4)		
in. (mm)			
Weight lbs (kg):	66605J-XXX	7.2 (3.3)	
	66605K-XXX	9.5 (4.3)	
Maximum dry suction lift ft (m):	10 (3)		
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	71.1



## Ordering Menu

6660	5	X	-	X	X	X
Model Series	Center Section Material	Fluid Caps/ Manifold Material	Seat Material	Ball Material	Diaphragm Material	
1/2" PUMP	Polypropylene	3* Polypropylene 6* Groundable Acetal 7* Pure Kynar H* Groundable Acetal J* Polypropylene K* Pure Kynar	0 (Duckbill) 2 Stainless Steel 3 Polypropylene 4 Kynar PVDF 6 Acetal	1 Neoprene 2 Nitrile 3 Viton 4 Teflon PTFE 8 Polyurethane A Stainless Steel C* Neoprene D* Nitrile E Santoprene®	1 Neoprene 2 Nitrile 3 Viton 4 Teflon PTFE / Santoprene 8 Polyurethane 9 Hytrel B Santoprene®	
		* three-Piece Manifold * one-Piece Manifold		* Duckbill models		

## Accessories

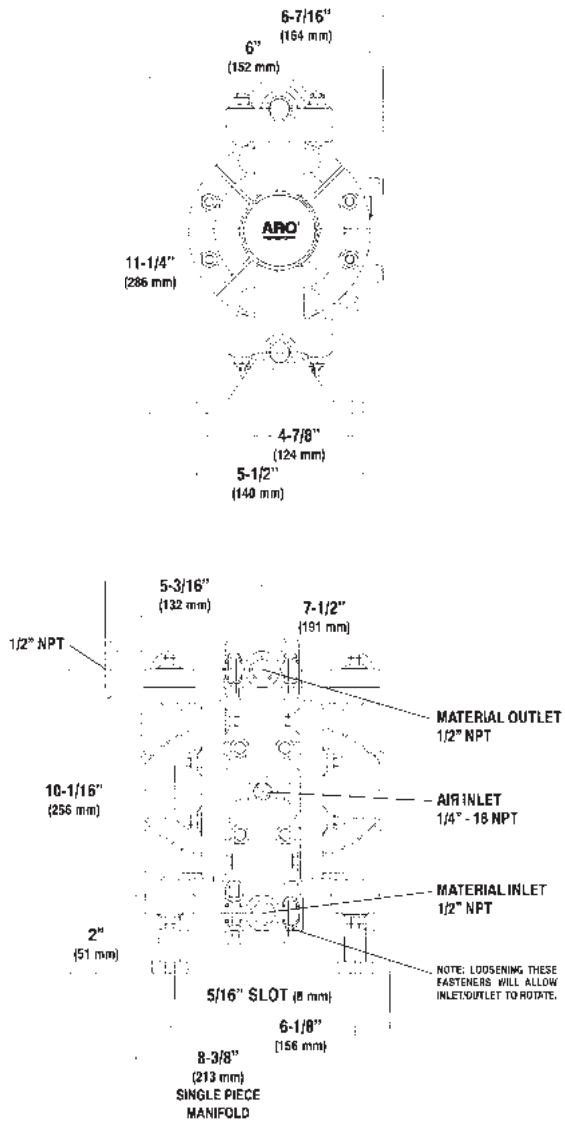
Air Line Connection Kit\* | Kit No. 66073-1  
66073-2

Service Repair Kits | Kit No. 637141 (air section)  
Kit No. 637140-XX (fluid section)

\*Please note pumps are not included with these kits.

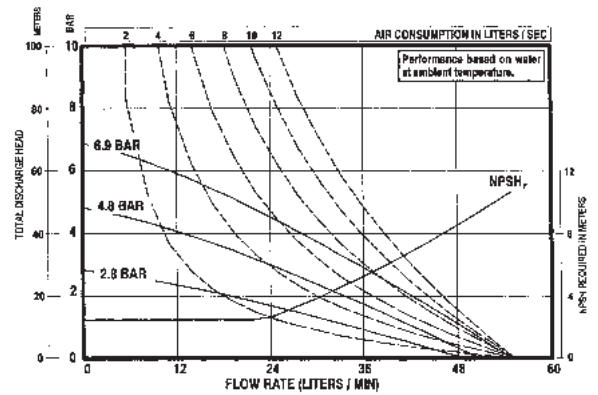
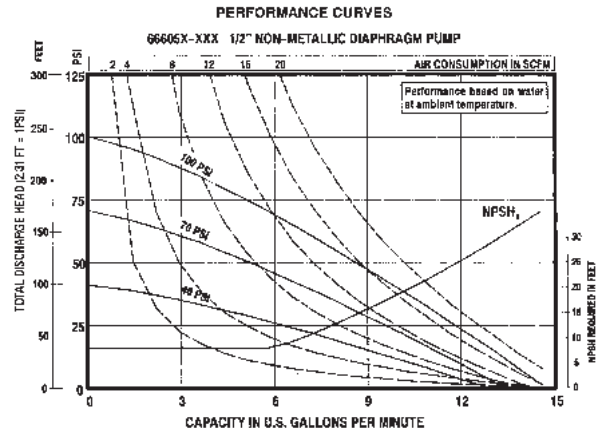
# 1/2" Non-Metallic Dimensions and Flow Curves Pro-Series Pumps

## 1/2" Non-Metallic Dimensions and Flow Charts



**Model**  
66605X-X

NOTE: Dimensions are shown in inches and (mm), supplied for reference only and are typically rounded up to the nearest 1/16 inch.



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

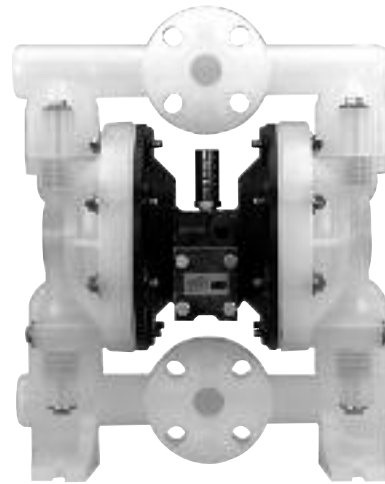
NON-METALLIC



# 1" Non-Metallic Models Pro-Series Pumps

## 1" Non-Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow GPM (LPM):	47 (177.9)		
Displacement per cycle:	0.17 (0.64)		
Gallons (Liters)			
Air Inlet: (Female)	1/4 - 18 N.P.T.		
Fluid Inlet:	1 - 11-1/2 N.P.T.F. - 1 Rp 1 (1 - 11 BSP, parallel) 1" ANSI/DIN Flange		
Fluid Outlet:	1 - 11-1/2 N.P.T.F. - 1 Rp 1 (1 - 11 BSP, parallel) 1" ANSI/DIN Flange		
Max. operating pressure psi (bar):	120 (8.3)		
Suspended solids max. dia.:	1/8 (3.2)		
in. (mm)			
Weight lbs (kg):	6661A3-, 1AF-, 1AJ-, 1AL-	20.3 (9.2)	
	6661A4-, 1AG-, 1AK-, 1AN-	28.5 (12.9)	
	6661B3-, 1BF-, 1BJ-, 1BL-	28.8 (13.1)	
	6661B4-, 1BG-, 1BK-, 1BN-	37.0 (16.8)	
Maximum dry suction lift ft (m):	15 (4.6) Rubber fitted		
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	64.5



## Ordering Menu

<b>6661X</b>	<b>X</b>	-	<b>X</b>	<b>X</b>	<b>X</b>	-	<b>C</b>
<b>Center Body</b>	<b>Fluid Caps/ Manifold Material</b>		<b>Seat Material</b>	<b>Ball Check Material</b>	<b>Diaphragm Material</b>		
A Aluminum	3 <sup>#</sup> Colorless Polypropylene Flange		2 316 Stainless Steel	1 Neoprene	1 Neoprene		
B Cast Iron	4 <sup>#</sup> PVDF (Kynar®) Flange		3 Polypropylene	2 Nitrile	2 Nitrile		
	F* Colorless Polypropylene Flange		4 PVDF (Kynar®)	3 Viton®	3 Viton		
	G* PVDF (Kynar®) Flange		8 Hard 400 Stainless Steel	4 T.F.E. (Teflon®)	4 T.F.E. (Teflon) / Santoprene		
	J* Colorless Polypropylene N.P.T.			8 Polyurethane	9 Hytrel®		
	K* PVDF (Kynar®), N.P.T.			A 316 Stainless Steel	6 Santoprene		
	L* Colorless Polypropylene, B.S.P.			E Santoprene®	M Medical Grade Santoprene		
	N* PVDF (Kynar®), B.S.P.			M Medical Grade Santoprene			
	P <sup>#</sup> Gray Polypropylene Flange						
	R* Gray Polypropylene Flange						
	S* Gray Polypropylene, N.P.T.						
	T* Gray Polypropylene, B.S.P.						

## Accessories

### Air Line Connection Kit\* | Kit No. 66073-2

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637118-C (air section)*  
*Kit No. 637161-XX-C (fluid section)*

### One Piece Diaphragm Service Kit | Kit No. 48495964

Kit includes Diaphragms, connecting rod, o-ring, shim pack and grease package.

### Flange Connection Kit | Kit No. 67078 (for 1" Non-Metallic Pumps)

For pumps with inlet/outlet flange manifolds. Kit meets ANSI specifications. Flange constructed of glass-filled polypropylene. Bolts, washers and nuts are stainless steel. Gasket is 4401 Klinger synthetic fiber nitrile binder.

\*Please note pumps are not included with these kits.

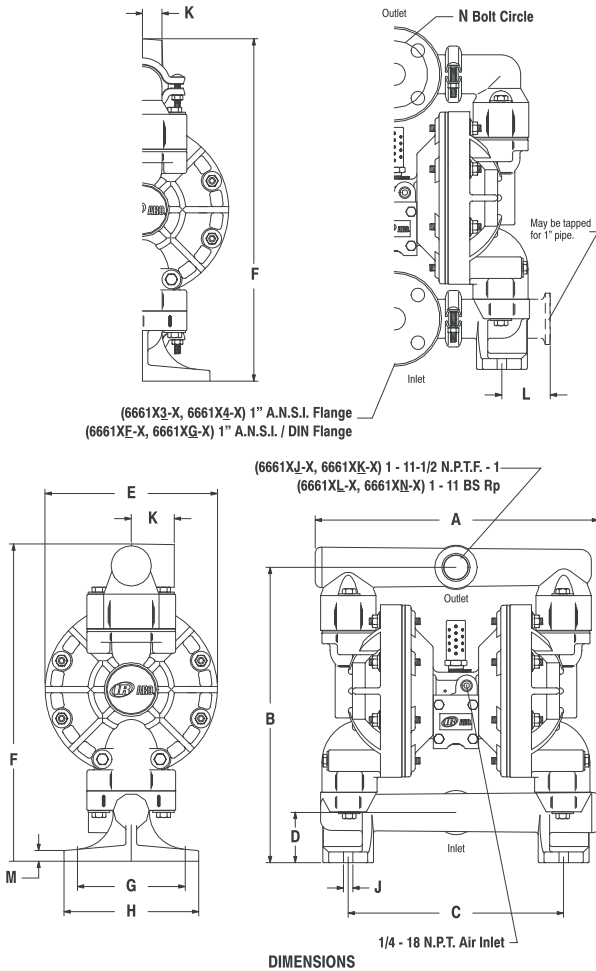


Flange Connection Kit  
67078

# 1" Non-Metallic Dimensions and Flow Curves Pro-Series Pumps

## DIMENSIONAL DATA

Dimensions shown are for reference only, they are shown in inches and millimeters (mm).



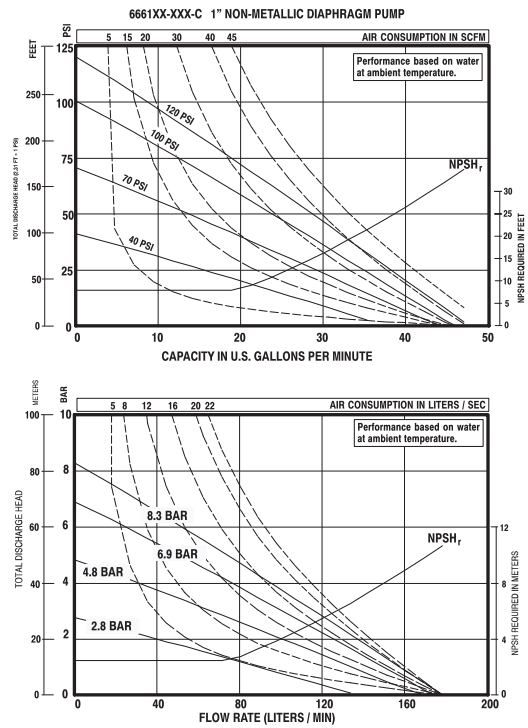
DIMENSIONS

	6661X3-X	6661X4-X	6661XJ-X 6661XL-X
A	12-21/32" (321 mm)	12-15/32" (316 mm)	13-5/32" (334 mm)
B	13-25/32" (349 mm)	13-19/32" (345 mm)	13-25/32" (350 mm)
C	10-1/16" (255 mm)	9-15/16" (252 mm)	10-1/16" (255 mm)
D	2-3/8" (60 mm)	2-11/32" (59 mm)	2-11/32" (59 mm)
E	8-1/16" (204 mm)	7-15/16" (201 mm)	8-1/16" (204 mm)
F	16" (406 mm)	15-25/32" (400 mm)	14-13/16" (376 mm)
G	5-1/32" (128 mm)	4-31/32" (126 mm)	5-1/32" (128 mm)
H	6-9/32" (160 mm)	6-7/32" (157 mm)	6-9/32" (160 mm)
J	7/16" (11 mm)	7/16" (11 mm)	7/16" (11 mm)
K	15/16" (23 mm)	29/32" (23 mm)	2" (51 mm)
L	2-9/32" (57 mm)	2-1/4" (56 mm)	
M	1/2" (13 mm)	1/2" (13 mm)	1/2" (13 mm)
N	3.140" (80 mm)	3.097" (79 mm)	

	6661XK-X 6661XN-X	6661XF-X	6661XG-X
A	13-1/32" (331 mm)	13-5/32" (334 mm)	13-1/32" (331 mm)
B	13-19/32" (345 mm)	13-25/32" (350 mm)	13-19/32" (345 mm)
C	9-15/16" (252 mm)	10-1/16" (255 mm)	9-15/16" (252 mm)
D	2-5/16" (59 mm)	2-11/32" (59 mm)	2-5/16" (59 mm)
E	7-15/16" (201 mm)	8-1/16" (204 mm)	7-15/16" (201 mm)
F	14-5/8" (371 mm)	16" (406 mm)	15-25/32" (401 mm)
G	4-31/32" (126 mm)	5-1/32" (128 mm)	4-31/32" (126 mm)
H	6-7/32" (157 mm)	6-9/32" (160 mm)	6-7/32" (157 mm)
J	7/16" (11 mm)	7/16" (11 mm)	7/16" (11 mm)
K	1-25/32" (50 mm)	1-1/32" (26 mm)	1" (25 mm)
L			
M	1/2" (13 mm)	1/2" (13 mm)	1/2" (13 mm)
N		3.140" (80 mm)	3.097" (79 mm)

## PERFORMANCE CURVES



Refer to [www.irttools.com/aro/](http://www.irttools.com/aro/) for full size flow curves.

NON-METALLIC

# 1-1/2" Non-Metallic Models Pro-Series Pumps

## 1-1/2" Non-Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow <small>GPM (LPM):</small>	100 (378.5)		
Displacement per cycle:	0.67 (2.54)		
<small>Gallons (Liters)</small>			
Air Inlet: (Female)	1/2 - 14 N.P.T.F. - 1		
Fluid Inlet:	1-1/2" A.N.S.I./DIN Flange		
Fluid Outlet:	1-1/2" A.N.S.I./DIN Flange		
Max. operating pressure <small>psi (bar):</small>	120 (8.3)		
Suspended solids max. dia.:	1/4 (6.4)		
<small>in. (mm)</small>			
Weight <small>lbs (kg):</small>	6661T3-X-C	62 (28.1)	
	6661T4-X-C	92 (41.7)	
<b>Note:</b> Add 23-lbs (10.4-kg) for cast iron air motor section			
Maximum dry suction lift <small>ft (m):</small>	14 (4.27) Rubber fitted		
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	77.7



## Ordering Menu

6661X	X	-	X	X	X	-	C
<b>Center Body</b>	<b>Fluid Caps/ Manifold Material</b>		<b>Seat Material</b>	<b>Ball Check Material</b>	<b>Diaphragm Material</b>		
T Aluminum	3 Polypropylene		2 316 Stainless Steel	1 Neoprene	1 Neoprene		
U Cast Iron	4 P.V.D.F. (Kynar®)		3 Polypropylene	2 Nitrile	2 Nitrile		
			4 P.V.D.F. (Kynar®)	3 Viton	3 Viton		
			8 400 Stainless Steel	4 Teflon	4 T.F.E. (Teflon) / Santoprene		
				8 Polyurethane	9 Hytrel		
				E Santoprene	B Santoprene		

## Accessories

### Air Line Connection Kit\* | Kit No. 66084-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637118-C (air section)*  
*Kit No. 637165-XX (fluid section)*

### One Piece Diaphragm Service Kit | Kit No. 48496806

Kit includes Diaphragms, connecting rod, o-ring, shim pack and grease package.

### Flange Connection Kit | Kit No. 67079 (for 1-1/2" Non-Metallic Pumps)

For pumps with inlet/outlet flange manifolds. Kit meets ANSI specifications. Flange constructed of glass-filled polypropylene. Bolts, washers and nuts are stainless steel. Gasket is 4401 klinger synthetic fiber nitrile binder.

\*Please note pumps are not included with these kits.



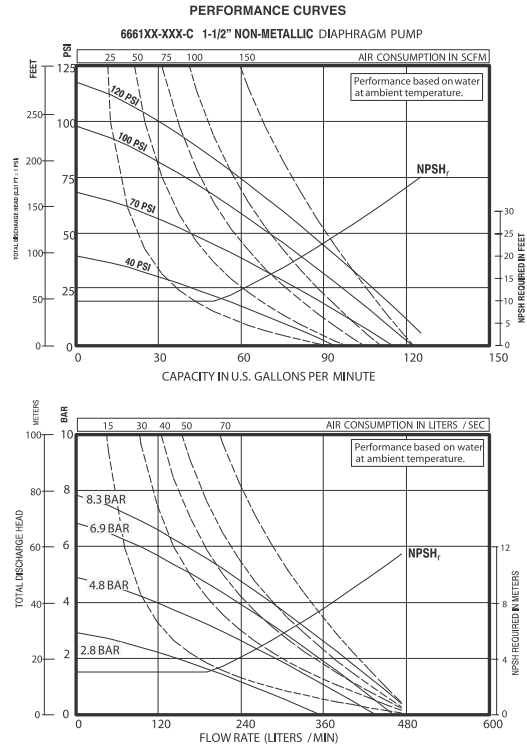
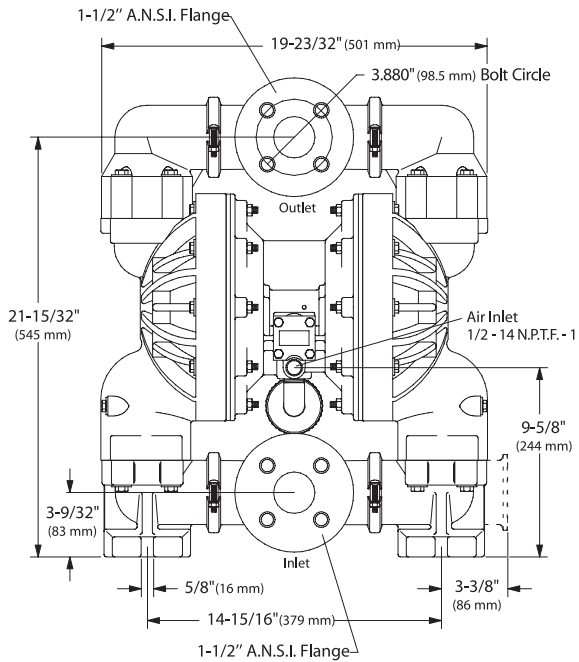
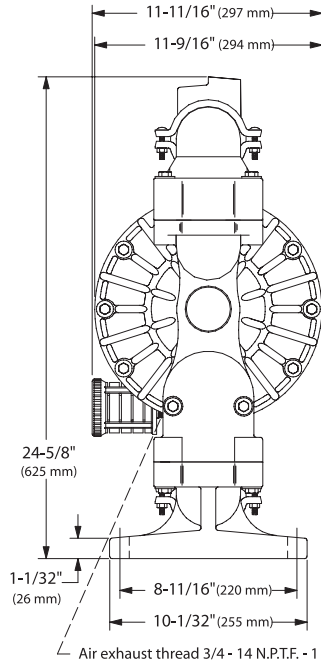
Flange Connection Kit  
67079



# 1-1/2" Non-Metallic Dimensions and Flow Curves Pro-Series Pumps

## 1-1/2" Non-Metallic Dimensions and Flow Charts

All dimensions are given in inches and millimeters (mm).



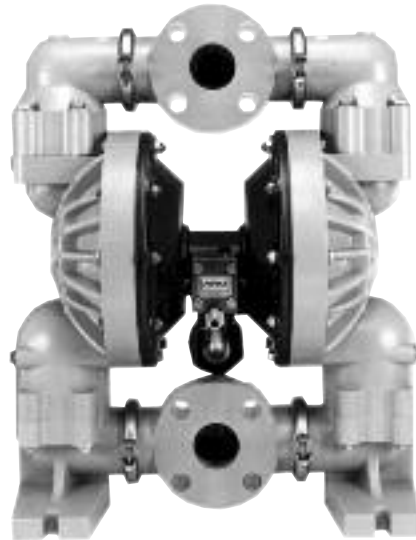
Refer to [www.irttools.com/aro/](http://www.irttools.com/aro/) for full size flow curves.

NON-METALLIC

# 2" Non-Metallic Models Pro-Series Pumps

## 2" Non-Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow <small>GPM (LPM):</small>	145 (548.8)		
Displacement per cycle:	0.72 (2.7)		
<small>Gallons (Liters)</small>			
Air Inlet: (Female)	1/2 - 14 N.P.T.F. - 1		
Fluid Inlet:	2" A.N.S.I./DIN Flange		
Fluid Outlet:	2" A.N.S.I./DIN Flange		
Max. operating pressure <small>psi (bar):</small>	120 (8.3)		
Suspended solids max. dia.:	1/4 (6.4)		
<small>in. (mm)</small>			
Weight <small>lbs (kg):</small>	6662A3-X-C	62 (28.1)	
	6662A4-X-C	92 (41.7)	
<b>Note:</b> Add 23-lbs (10.4-kg) for cast iron air motor section			
Maximum dry suction lift <small>ft (m):</small>	14 (4.27) Rubber fitted		
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	77.7



## Ordering Menu

6662X	X	-	X	X	X	-	C
<b>Center Body</b>	<b>Fluid Caps/ Manifold Material</b>		<b>Seat Material</b>	<b>Ball Check Material</b>	<b>Diaphragm Material</b>		
A Aluminum	3 Polypropylene		2 316 Stainless Steel	1 Neoprene	1 Neoprene		
B Cast Iron	4 P.V.D.F. (Kynar®)		3 Polypropylene	2 Nitrile	2 Nitrile		
			4 P.V.D.F. (Kynar®)	3 Viton	3 Viton		
			8 400 Stainless Steel	4 Teflon	4 T.F.E. (Teflon) / Santoprene		
				8 Polyurethane	9 Hytrel		
				E Santoprene	B Santoprene		

## Accessories

### Air Line Connection Kit\* | Kit No. 66084-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637118-C (air section)*  
*Kit No. 637165-XX (fluid section)*

### One Piece Diaphragm Service Kit | Kit No. 48496806

Kit includes Diaphragms, connecting rod, o-ring, shim pack and grease package.

### Flange Connection Kit | Kit No. 67080 (for 2" Non-Metallic Pumps)

For pumps with inlet/outlet flange manifolds. Kit meets ANSI specifications. Flange constructed of glass-filled polypropylene. Bolts, washers and nuts are stainless steel. Gasket is 4401 Klinger synthetic fiber nitrile binder.



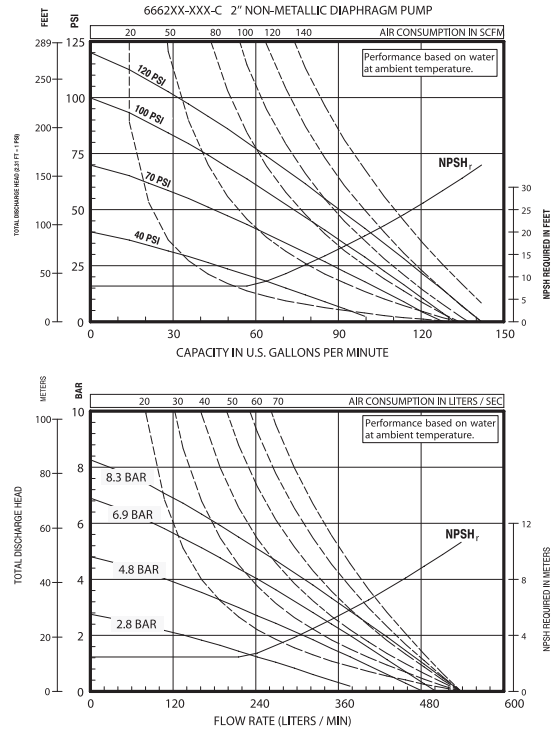
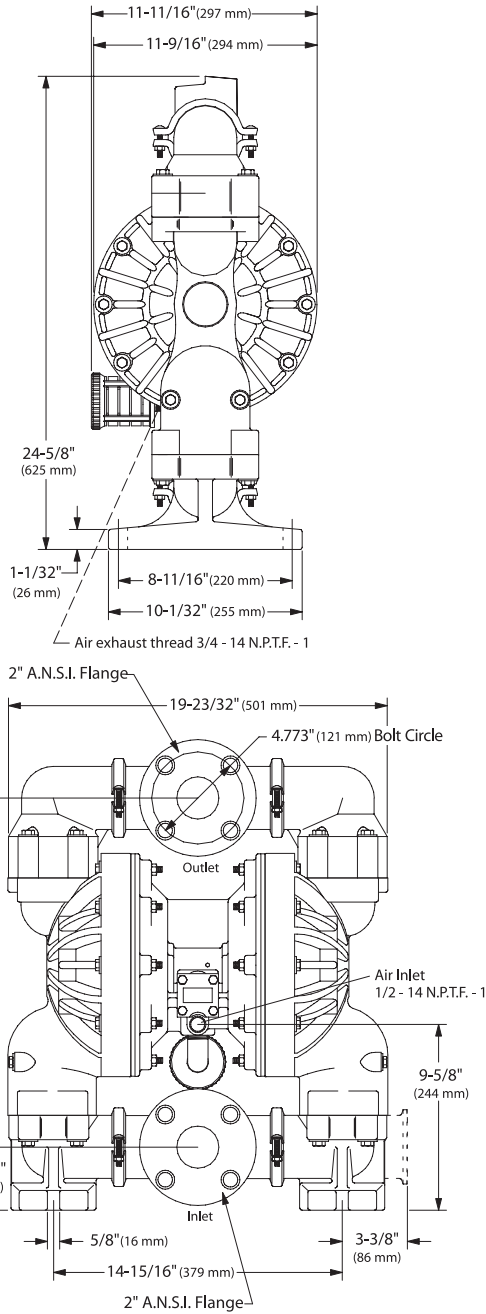
Flange Connection Kit  
67080

\*Please note pumps are not included with these kits.

# 2" Non-Metallic Dimensions and Flow Curves Pro-Series Pumps

## 2" Non-Metallic Dimensions and Flow Charts

All dimensions are given in inches and millimeters (mm).



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

NON-METALLIC



# Value Proposition Pro-Series Pumps

From its simple beginnings as a utility / dewatering / trash pump, through its various phases of design evolution, the diaphragm pump has been a favorite with process professionals everywhere. Why? Simplicity. The ARO PRO design team has taken this fundamental feature and engineered efficiency, compatibility and

economy into every aspect of the new PRO Diaphragm Pump. Economy in fewer repair parts and labor. Economy in saved energy. Economy in superior performance. Do you want to reduce pump downtime while boosting production? Here it is.

## Inlet/Outlet Port Options

NPT and BSP threaded versions available on Stainless Steel, Aluminum and Cast Iron models. Center flanges are available in some sizes.

## Body Material

Choose from aluminum, cast iron, Hastelloy or stainless steel for overall durability and corrosion-resistance in the nastiest of process applications and environments.

## Bolted Construction

PRO utilizes a bolted construction that is not only leak-tight but also makes disassembly and reassembly much faster and easier. Bolted construction also insures a safer work environment by avoiding messy and dangerous material leaks on the floor.

## Hardware Options

Air motor and end cap fasteners are available in stainless steel for complete corrosion resistance.

## Long-Lasting Convoluted Diaphragms

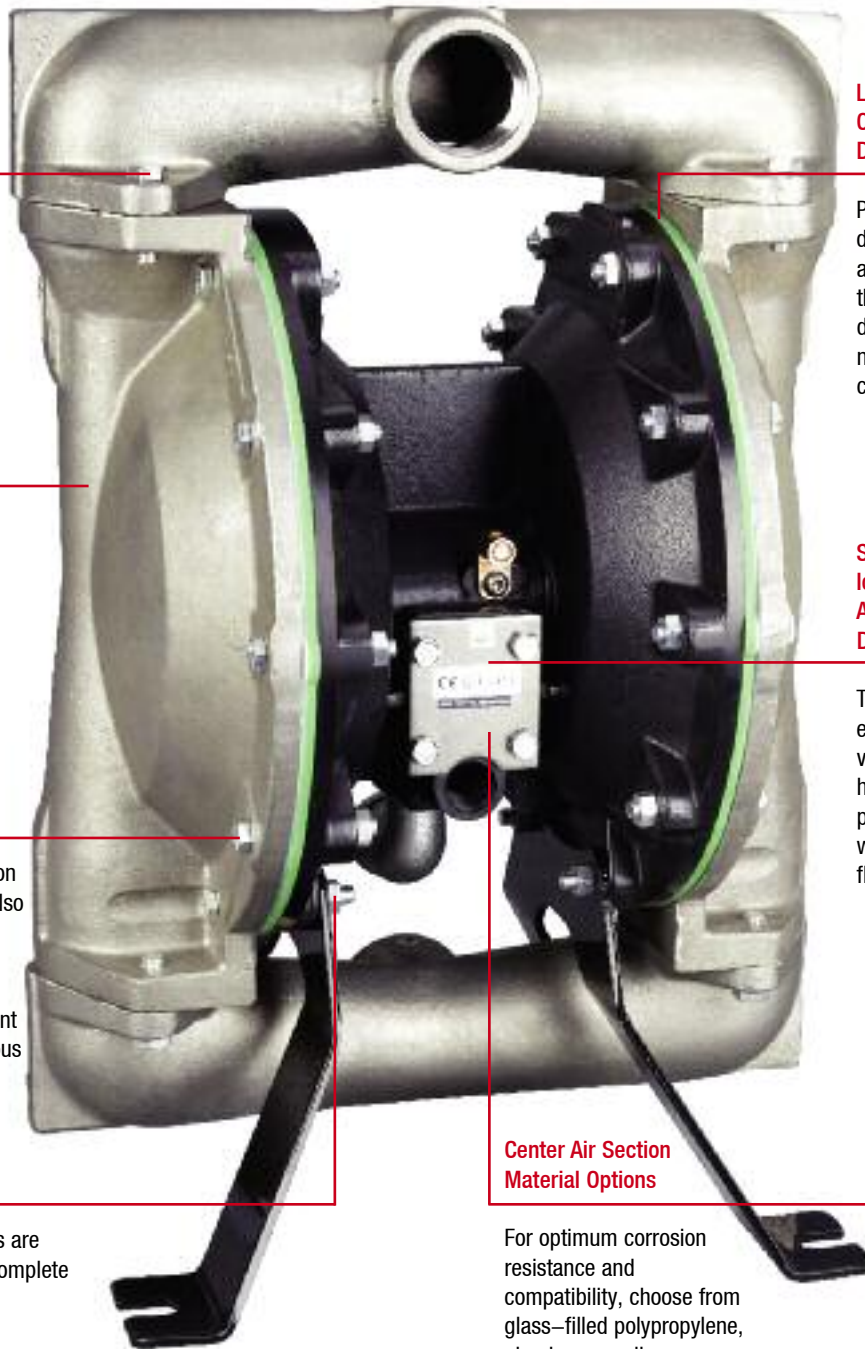
PRO convoluted diaphragms can last as long as four times that of traditional diaphragms under normal operating conditions.

## Stall-Free, Ice-Free Air Motor Design

The air motor has exclusive SimulShift™ valve technology to help insure faster pump trip-over with smoother flow.

## Center Air Section Material Options

For optimum corrosion resistance and compatibility, choose from glass-filled polypropylene, aluminum or all stainless steel center sections.



## Model Overview: Metallic Models Pro-Series Pumps



MODEL	1/2"	1"	1-1/2"	2"	3"
Maximum Flow GPM (LPM)	12 (45.4)	35 (133)	90 (340.7)	172 (651)	237 (897)
Maximum Discharge Pressure PSI (BAR)	100 (6.9)	120 (8.3)	120 (8.3)	120 (8.3)	120 (8.3)
Fluid Ports Inlet/Outlet (BSP Available)	1/2" (F) – In/Out	1" (F) – In/Out	1-1/2" (F) In/Out	2" (F) In/ Out	3" (F) In/ Out
Materials of Construction	Aluminum Stainless Steel	Aluminum Stainless Steel Cast Iron	Aluminum Stainless Steel Cast Iron	Aluminum Stainless Steel Cast Iron	Aluminum Stainless Steel Cast Iron
Pump Weight Lbs. (Kg.)	10.4 (4.7) PD05P–AAS–X 16.6 (7.5) PD05P–ASS–X 8.0 (3.7) PD05P–AAS–X 14.3 (6.5) PD05P–ASS–X	19 (8.6) Aluminum* 36 (16.3) SS 31 (14.1) Cast Iron*	51.5 (23.4) Aluminum* 84.5 (38.3) SS 79.5 (36.1) Cast Iron*	65.2 (29.6) Aluminum 129.9 (58.9) SS 124.3 (56.4) Cast Iron	109.8 (49.8) Aluminum 222.2 (100.8) SS 213.1 (96.7) Cast Iron
		*add 8–lb(3.63–kg) for cast iron center section	*add 23–lb(10.4–kg) for cast iron center section		
Maximum Solids Inches (mm)	3/32 (2.4)	1/8 (3.2)	1/4 (6.4)	1/4 (6.4)	3/8 (9.5)
Best Selling Models (BSP Available)	PD05P–AAS–STT PD05P–ASS–STT PD05P–AAS–PCC PD05P–AAS–FTT PD05P–AAS–FAA PD05P–AAS–PTT	666100–3C9–C 666100–344–C 666101–344–C 666101–3EB–C 666111–244–C 666112–3EB–C	666150–3EB–C 666150–3C9–C 666150–344–C 666151–3EB–C 666151–344–C 666152–3EB–C	666250–9C9–C 666250–EEB–C 666252–EEB–C 666270–EEB–C 666271–K44–C 66627B–2EB–C	666300–9C9–C 666300–EEB–C 666320–144–C 666321–244–C 666322–G22–C 66632B–244–C
Recommended Filter/ Regulator	P29122–600	P29221–610	P29241–610	P29241–610	P29241–610
Air Line Kit One Piece Diaphragm Service Kit	66073–1	66073–2 48495964	66084–1 48496806	66312 48497374	66312

# 1/2" Metallic Models Pro-Series Pumps

## 1/2" Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow <small>GPM (LPM):</small>	13.0 (49.2)		
Displacement per cycle:	0.040 (0.15)		
<small>Gallons (Liters)</small>			
Air Inlet:	1/4" N.P.T.F.		
Fluid Inlet:	1/2" N.P.T.F.		
Fluid Outlet:	1/2" N.P.T.F.		
Max. operating pressure <small>psi (bar):</small>	100 (6.9)		
Suspended solids max. dia:	3/32 (2.4)		
<small>in. (mm)</small>			
Weight <small>lbs (kg):</small>	PD05P-ASS-STT	8.36(3.8)	
	PD05P-AAS-STT	14.6(6.6)	
Maximum dry suction lift <small>ft (m):</small>	10 (3)		
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	71.1



## Ordering Menu

PD05	X	-	X	X	S	-	X	X	X
<b>Model Series</b>	<b>Center Section Material</b>		<b>Fluid Connection</b>	<b>Fluid Caps/ Manifold Material</b>	<b>Hardware Material</b>		<b>Seat Material</b>	<b>Ball Material</b>	<b>Diaphragm Material</b>
D Standard	P Polypropylene		A N.P.T.	A Aluminum S Stainless Steel	S Stainless Steel		F Aluminum P Polypropylene S 316 Stainless Steel	A Santoprene G Nitrile S Stainless Steel T Teflon V Viton	A Santoprene G Nitrile T Teflon V Viton

## Accessories

### Air Line Connection Kit\* | Kit No. P29122-600

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

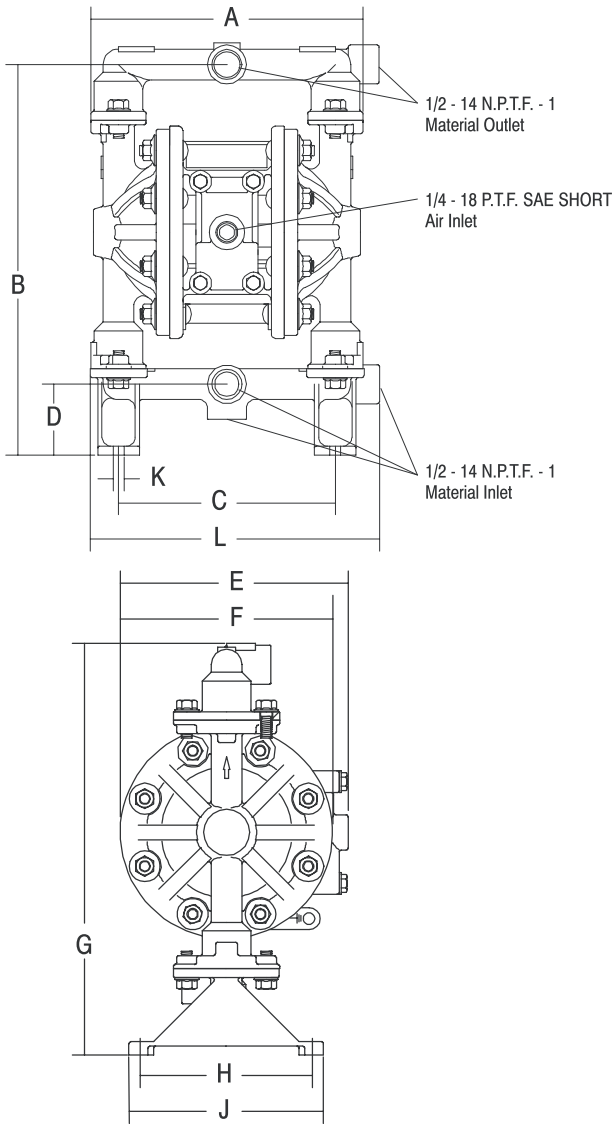
Service Repair Kits | *Kit No. 637141 (Air Section)*  
*Kit No. 637140- XX\* (Fluid Section)*

(\*) XX: Ball and Diaphragm material code number

*\*Please note pumps are not included with these kits.*

# 1/2" Metallic Dimensions and Flow Curves Pro-Series Pumps

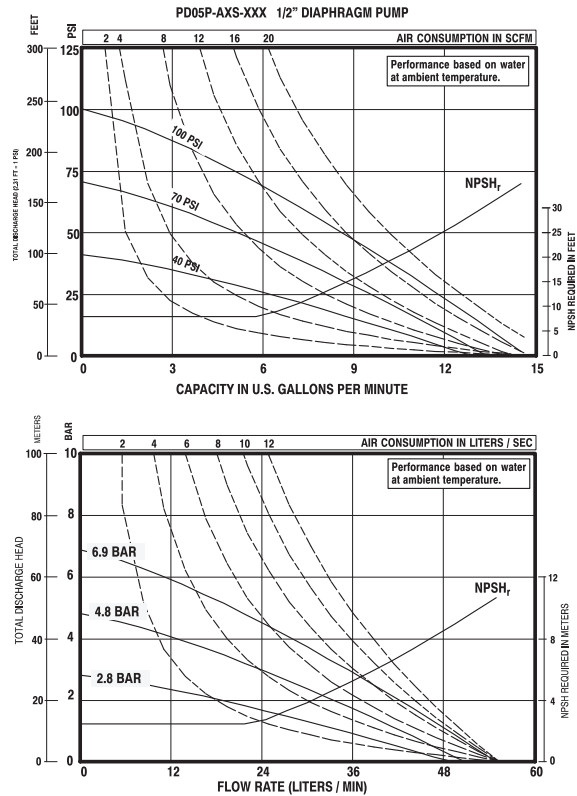
## 1/2" Metallic Dimensions and Flow Charts



### DIMENSIONS

A	7-11/16" (195 mm)	E	6-7/16" (164 mm)	J	5-1/2" (140 mm)
B	11-1/16" (280 mm)	F	6" (152 mm)	K	5/16" (8 mm)
C	6-1/8" (156 mm)	G	11-5/8" (295 mm)	L	8-1/4" (209 mm)
D	2" (51 mm)	H	4-7/8" (124 mm)		

NOTE: Dimensions are shown in inches and (mm), supplied for reference only and are typically rounded up to the nearest 1/16 inch.



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

METALLIC

# 1" Metallic Models Pro-Series Pumps

## 1" Metallic Performance Specifications

Ratio:	1:1
Maximum Flow GPM (LPM):	35 (133)
Displacement per cycle:	0.16 (0.60)
Gallons (Liters)	
Air Inlet: (Female)	1/4 - 18 N.P.T.F. - 1
Fluid Inlet:	1 - 11-1/2 N.P.T.F. - 1 Rp 1 (1-11 BSP parallel)
Fluid Outlet:	1 - 11-1/2 N.P.T.F. - 1 Rp 1 (1-11 BSP parallel)
Max. operating pressure psi (bar):	120 (8.3)
Suspended solids max. dia.:	1/8 (3.2)
in. (mm)	
Weight lbs (kg):	666100-X-C (aluminum) 19 (8.6)
	666101-X-C (stainless) 36 (16.3)
	666102-X-C (cast iron) 31 (14.1)

**Note:** Add 8-lbs (3.63-kg) for cast iron air motor section

Maximum dry suction lift ft (m):	20 (6.1)	Rubber fitted	
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	64.5



## Ordering Menu

6661X	X	-	X	X	X	-	C
<b>Center Body/ Threads</b>	<b>Fluid Caps/ Manifold Material</b>		<b>Seat Material</b>	<b>Ball Check Material</b>	<b>Diaphragm Material</b>		
0 Aluminum, N.P.T.F.	0 <sup>#</sup> Aluminum, Single	1 Aluminum	1 Neoprene	1 Neoprene			
1 Cast Iron, N.P.T.F.	1 <sup>#</sup> Stainless Steel, Single	2 316 Stainless,Steel	2 Nitrile	2 Nitrile			
2 Aluminum, BSP	2 <sup>#</sup> Cast Iron, Single	3 Polypropylene	3 Viton	3 Viton			
3 Cast Iron, BSP	9 <sup>#</sup> Stainless Steel, Dual	4 Kynar PVDF	4 Teflon PTFE	4 T.F.E. (Teflon) / Santoprene			
	A* Aluminum, Single	5 Carbon Steel	6 Acetal	9 Hytrel			
	B* Stainless Steel, Single	8 Hard 400 Stainless Steel	8 Polyurethane	B Santoprene			
	C* Cast Iron, Single		A Stainless Steel				
	D* Stainless Steel, Dual		C Hytrel				
			E Santoprene				

<sup>#</sup> steel hardware  
\* stainless steel hardware

## Accessories

### Air Line Connection Kit\* | Kit No. 66073-2

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637118-C (air section)*  
*Kit No. 637119-XX-C (fluid section)*

### One Piece Diaphragm Service Kit | Kit No. 48495964

Kit includes Diaphragms, connecting rod, o-ring, shim pack and grease package.

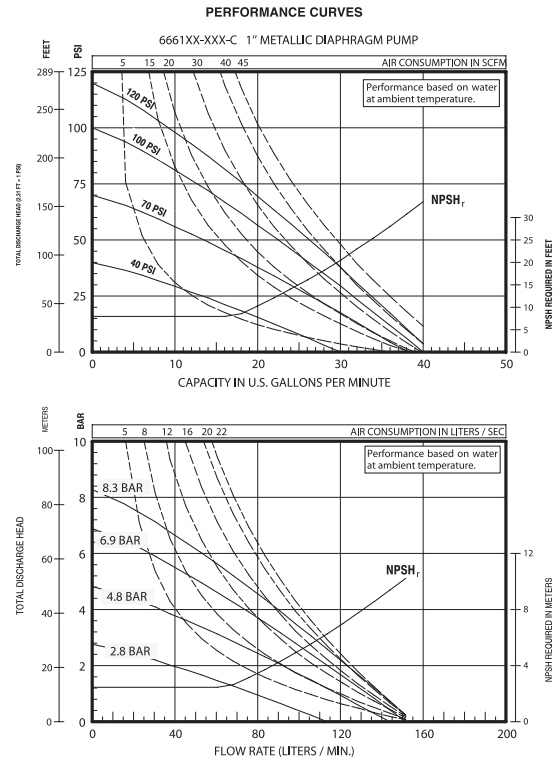
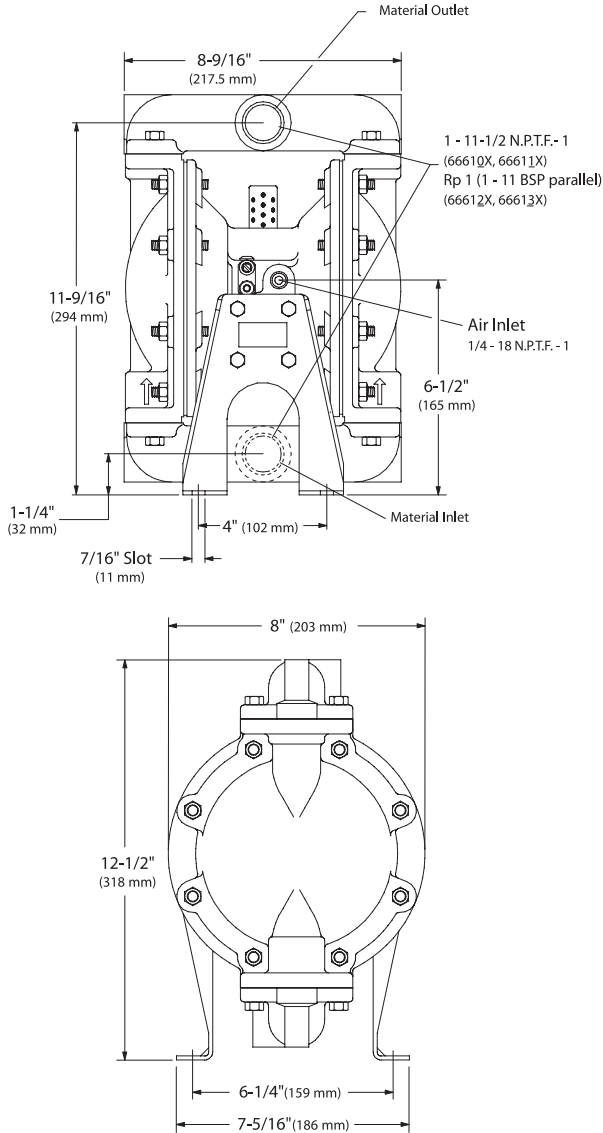
*\*Please note pumps are not included with these kits.*



# 1" Metallic Dimensions and Flow Curves Pro-Series Pumps

## 1" Metallic Dimensions and Flow Charts

(Dimensions shown are for reference only, they are displayed in inches and millimeters (mm).)



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

METALLIC

# 1-1/2" Metallic Models Pro-Series Pumps

## 1-1/2" Metallic Performance Specifications

Ratio:	1:1	
Maximum Flow <small>GPM (LPM):</small>	90 (340.7)	
Displacement per cycle:	0.64 (2.42)	
<small>Gallons (Liters)</small>		
Air Inlet: (Female)	1/2 - 14 N.P.T.F. - 1	
Fluid Inlet:	1-1/2 11-1/2 N.P.T.F. - 1	
	Rp 1-1/2 (1-1/2 - 11 BSP parallel)	
Fluid Outlet:	1-1/2 11-1/2 N.P.T.F. - 1	
	Rp 1-1/2 (1-1/2 - 11 BSP parallel)	
Max. operating pressure <small>psi (bar):</small>	120 (8.3)	
Suspended solids max. dia.:	1/4 (6.4)	
<small>in. (mm)</small>		
Weight <small>lbs (kg):</small>	666150-X-C (aluminum)	51.5 (23.4)
	666151-X-C (stainless)	84.5 (38.3)
	666152-X-C (cast iron)	79.5 (36.1)

**Note:** Add 23-lbs (10.4-kg) for cast iron air motor section

Maximum dry suction lift <small>ft (m):</small>	19 (5.8) Rubber fitted		
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	77.7



## Ordering Menu

6661X	X	-	X	X	X	-	C
<b>Center Body/ Threads</b>	<b>Fluid Caps/ Manifold Material</b>		<b>Seat Material</b>	<b>Ball Check Material</b>	<b>Diaphragm Material</b>		
5 Aluminum, N.P.T.F.	0* Aluminum		1 Aluminum	1 Neoprene	1 Neoprene		
6 Cast Iron, N.P.T.F.	1* Stainless Steel		2 316 Stainless Steel	2 Nitrile	2 Nitrile		
7 Aluminum, BSP	2* Cast Iron		3 Polypropylene	3 Viton	3 Viton		
8 Cast Iron, BSP	A* Aluminum		4 Kynar PVDF	4 Teflon PTFE	4 Teflon PTFE / Santoprene		
	B* Stainless Steel		5 Carbon Steel	6 Acetal	9 Hytrel		
	C* Cast Iron		8 400 Stainless Steel	8 Polyurethane	B Santoprene		
	* steel hardware			A Stainless Steel			
	* stainless steel hardware			C Hytrel			
				E Santoprene			

## Accessories

### Air Line Connection Kit\* | Kit No. 66084-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637118-C (air section)*  
*Kit No. 637124-XX (fluid section)*

### One Piece Diaphragm Service Kit | Kit No. 48496806

Kit includes Diaphragms, connecting rod, o-ring, shim pack and grease package.

### Screened Inlet Kits | Kit No. 67174-15 (for 1-1/2" Metallic Pumps)

Prevents unwanted material and debris from entering pump. Kit includes screen and installation hardware.

\*Please note pumps are not included with these kits.

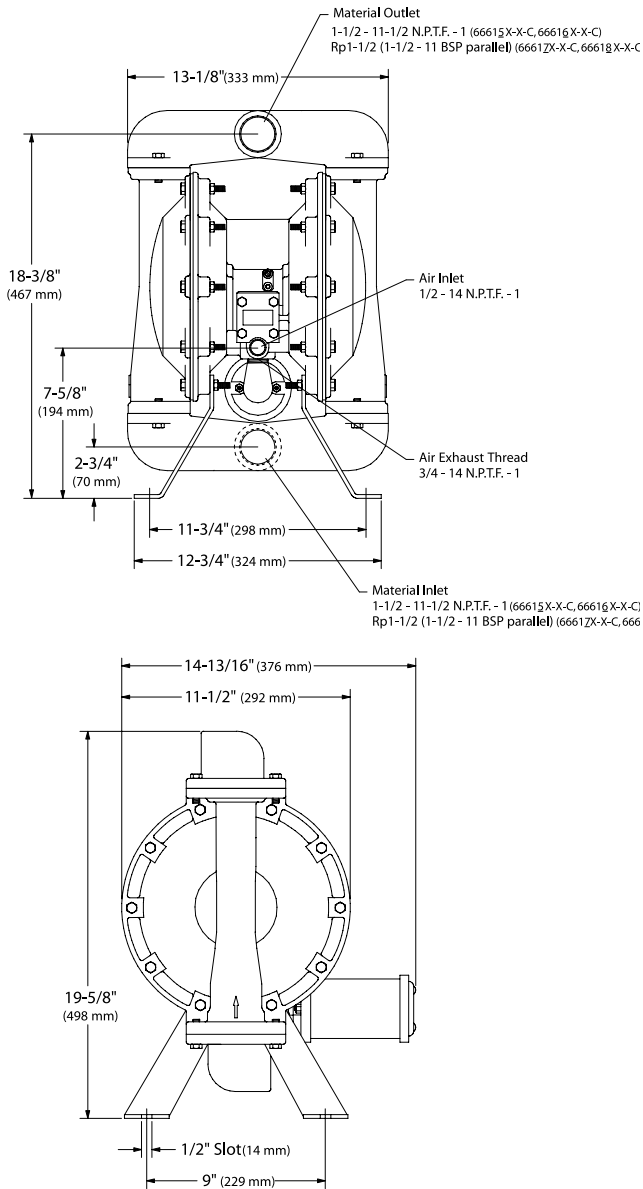


Screened Inlet Kit  
67174-15

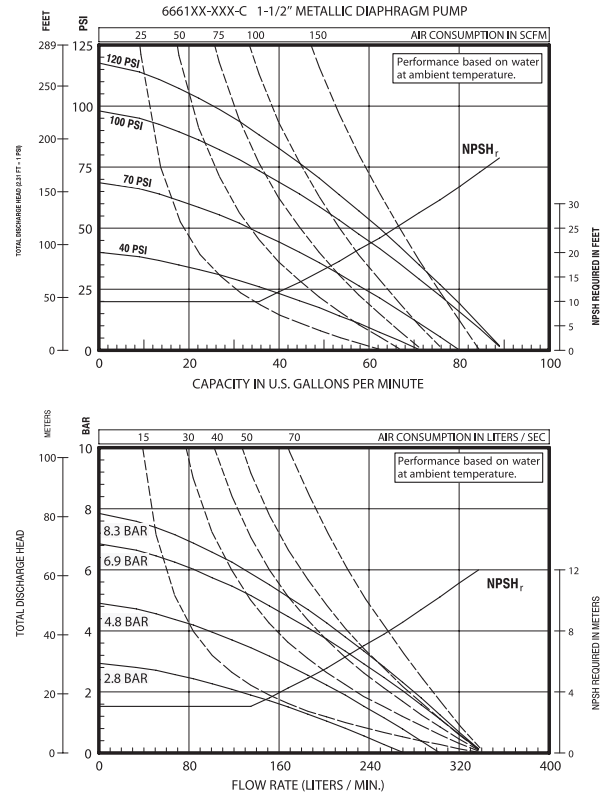
# 1-1/2" Metallic Dimensions and Flow Curves Pro-Series Pumps

## 1-1/2" Metallic Dimensions and Flow Charts

(Dimensions shown are for reference only, they are displayed in inches and millimeters (mm)).



### PERFORMANCE CURVES



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

METALLIC

# 2" Metallic Models Pro-Series Pumps

## 2" Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow GPM (LPM):	172 (651)		
Displacement per cycle:	1.4 (5.3)		
<small>Gallons (Liters)</small>			
Air Inlet: (Female)	3/4 - 14 N.P.T.F. - 1		
Fluid Inlet:	2 - 11-1/2 N.P.T.F. - 1		
	Rp 2 (2 - 11 BSP, parallel)		
Fluid Outlet:	2 - 11-1/2 N.P.T.F. - 1		
	Rp 2 (2 - 11 BSP, parallel)		
Max. operating pressure psi (bar):	120 (8.3)		
Suspended solids max. dia.:	1/4 (6.4)		
<small>in. (mm)</small>			
Weight lbs (kg):	6662X0-XXX-C	65.2 (29.6)	
	6662X1-XXX-C	129.9 (58.9)	
	6662X2-XXX-C	124.3 (56.4)	
	6662XB-XXX-C	129.9 (58.9)	
	6662XC-XXX-C	124.3 (56.4)	
Maximum dry suction lift ft (m):	27.2 (8.3)	Elastomer fitted	
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	85.3



67389 Muffler Kit (not shown)  
included with pump

## Ordering Menu

6662X	X	-	X	X	X	-	C
<b>Center Body/ Threads</b>	<b>Fluid Caps/ Manifold Material Hardware</b>		<b>Seat Material</b>	<b>Ball Check Material</b>	<b>Diaphragm Material</b>		
5 Aluminum, 2 -11-1/2 N.P.T.F.	0 Aluminum, Carbon Steel		1 Aluminum 2 316 Stainless Steel	2 Nitrile 4 Teflon P.T.F.E.	2 Nitrile 4 Teflon P.T.F.E. / Santoprene		
7 Aluminum, Rp 2 (2-11 BSP, parallel)	1 Stainless Steel, Carbon Steel		4 Kynar PVDF 5 Carbon Steel	C Hytrel E Santoprene	9 Hytrel B Santoprene		
	2 Cast Iron, Carbon Steel		9 Hytrel E Santoprene				
	B Stainless Steel, Stainless Steel		G Nitrile				
	C Cast Iron, Stainless Steel						

## Accessories

### Air Line Connection Kit\* | Kit No. 66312

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637434 (air section)*  
*Kit No. 637432-XX (fluid section)*

### One Piece Diaphragm Service Kit | Kit No. 48497374

Kit includes Diaphragms, connecting rod, o-ring, shim pack and grease package.

### Screened Inlet Kits | *Kit No. 67174-20 (for 2" Metallic Pumps)*

Prevents unwanted material and debris from entering pump. Kit includes screen and installation hardware.

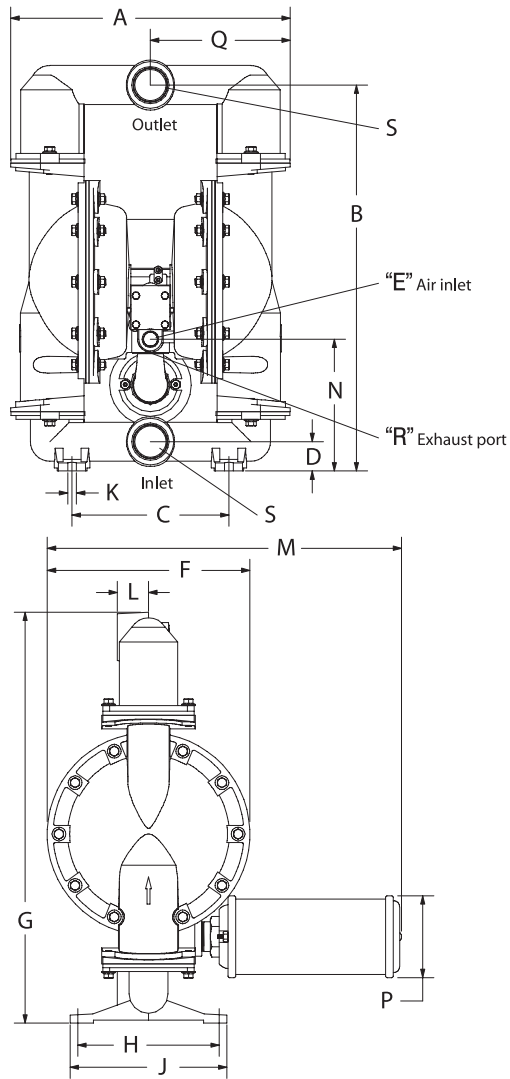
*\*Please note pumps are not included with these kits.*



Screened Inlet Kit  
67174-20

# 2" Metallic Dimensions and Flow Curves Pro-Series Pumps

## 2" Metallic Dimensions and Flow Charts

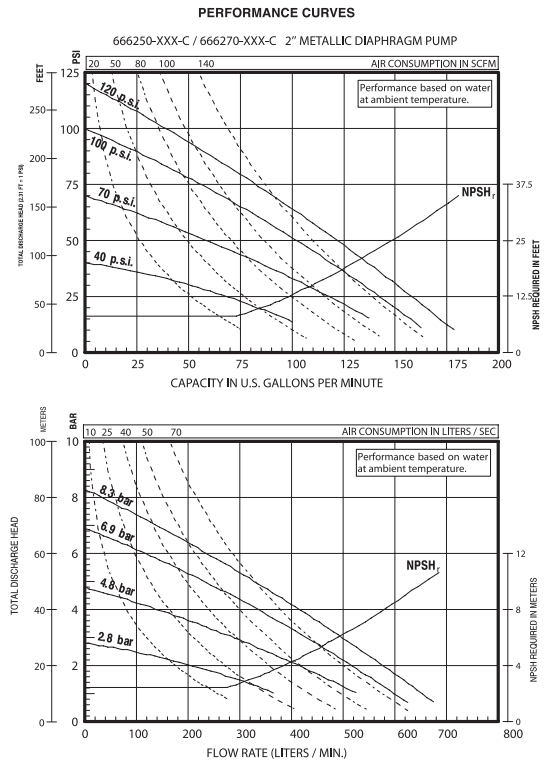


### DIMENSIONS

A 17-15/16" (455.1 mm)	G 26-3/8" (669.5 mm)	N 8-15/32" (214.6 mm)
B 24-3/4" (628.7 mm)	H 9-1/16" (230.2 mm)	P 5-1/4" (133.4 mm)
C 10-1/16" (255.6 mm)	J 10-1/16" (255.6 mm)	Q 8-13/32" (227.6 mm)
D 1-7/8" (47.6 mm)	K 9/16" (14.3 mm)	R 1-1/4 - 11-1/2 N.P.T.F.-1
E 3/4 - 14 N.P.T.F. - 1	L 2" (50.8 mm)	S (see below)
F 13" (330.2 mm)	M 22-3/4" (577.3 mm)	

"S" Inlet / Outlet  
 666250-XXX-C 2 - 11-1/2 N.P.T.F. - 1  
 666270-XXX-C Rp 2 (2 - 11 BSP parallel)

NOTE: Dimensions are shown in inches and (mm), supplied for reference only and are typically rounded up to the nearest 1/16 inch.



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

METALLIC



# 3" Metallic Models Pro-Series Pumps

## 3" Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow GPM (LPM):	237 (897)		
Displacement per cycle:	2.65 (10.03) Gallons (Liters)		
Air Inlet: (Female)	3/4 - 14 N.P.T.F. - 1		
Fluid Inlet:	3 - 8 N.P.T.F. - 1 Rp 3 (3 - 11 BSP parallel)		
Fluid Outlet:	3 - 8 N.P.T.F. - 1 Rp 3 (3 - 11 BSP, parallel)		
Max. operating pressure psi (bar):	120 (8.3)		
Suspended solids max. dia.:	3/8 (9.5) in. (mm)		
Weight lbs (kg):	6663X0-XXX-C	109.8	(49.8)
	6663X1-XXX-C	222.2	(100.8)
	6663X2-XXX-C	213.1	(96.7)
	6663XB-XXX-C	222.2	(100.8)
	6663XC-XXX-C	213.1	(96.7)
Maximum dry suction lift ft (m):	17.6 (5.4)	Elastomer fitted	
Sound Level:	PSI	Cycles / Min	db (A)
	70	60	86.3



67389 Muffler Kit (not shown)  
included with pump

## Ordering Menu

6663X	X	-	X	X	X	-	C
<b>Center Body/ Threads</b>	<b>Fluid Caps/ Manifold Material Hardware</b>		<b>Seat Material</b>	<b>Ball Check Material</b>	<b>Diaphragm Material</b>		
0 Aluminum, 3-8 N.P.T.F.	0 Aluminum, Carbon Steel		1 Aluminum	2 Nitrile	2 Nitrile		
2 Aluminum, Rp 3 (3-11 BSP, parallel)	1 Stainless Steel, Carbon Steel		2 316 Stainless Steel	4 Teflon P.T.F.E.	4 Teflon P.T.F.E./ Santoprene		
	2 Cast Iron, Carbon Steel		4 Kynar PVDF	C Hytrel	9 Hytrel		
	B Stainless Steel, Stainless Steel		5 Carbon Steel	E Santoprene	B Santoprene		
	C Cast Iron, Stainless Steel		9 Hytrel				
			E Santoprene				
			G Nitrile				

## Accessories

### Air Line Connection Kit\* | Kit No. 66312

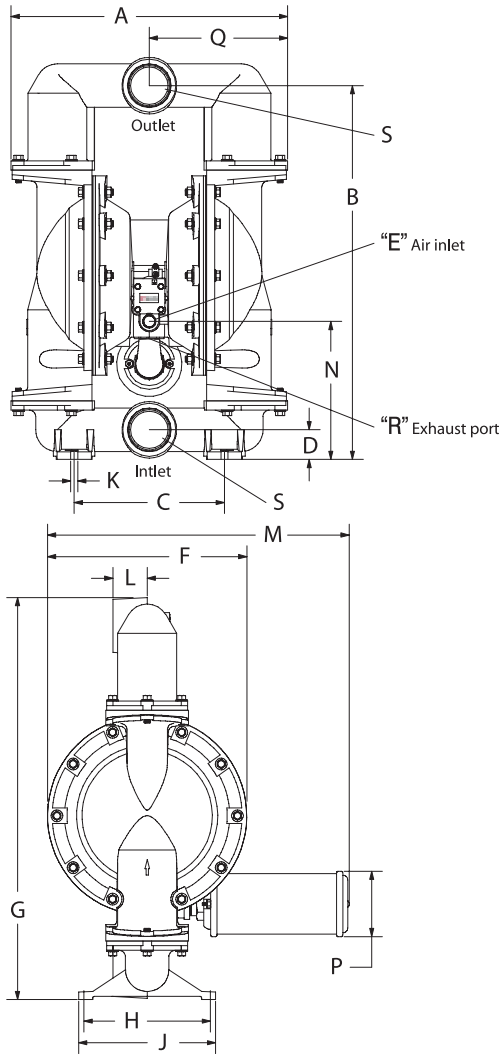
Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637434 (air section)*  
*Kit No. 637433-XX (fluid section)*

\*Please note pumps are not included with these kits.

# 3" Metallic Dimensions and Flow Curves Pro-Series Pumps

## 3" Metallic Dimensions and Flow Charts



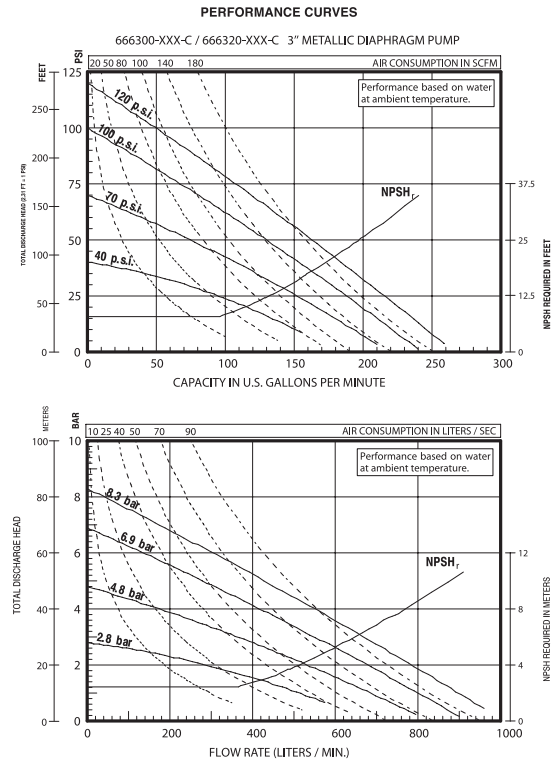
### DIMENSIONS

A 22-7/32" (563.9 mm)	G 32-9/32" (819.8 mm)	N 11-3/32" (281.4 mm)
B 30" (762.0 mm)	H 10-5/32" (258.0 mm)	P 5-1/4" (133.4 mm)
C 12-1/16" (306.4 mm)	J 11" (279.4 mm)	Q 11-1/8" (281.9 mm)
D 2-3/8" (60.3 mm)	K 9/16" (14.3 mm)	R 1-1/4 - 11-1/2N.P.T.F.-1
E 3/4 - 14 N.P.T.F. - 1	L 2-3/4" (69.9 mm)	S (see below)
F 16" (406.4 mm)	M 24-7/16" (620.7 mm)	

### "S" Inlet / Outlet

666300-XXX-C	3 - 8 N.P.T.F. - 1
666320-XXX-C	Rp 3 (3 - 11 BSP parallel)

NOTE: Dimensions are shown in inches and (mm), supplied for reference only and are typically rounded up to the nearest 1/16 inch.



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

METALLIC

# Material Service Guideline Reference

## Material Service Guideline

This chart is a quick reference guide. Always check material compatibility with a trusted chemical guide.

	Maximum Operating Temp Limit F (C)	Scale 1 - 5 (5 is best)		
		Chemical Resistance	Abrasion Resistance	Flex Life*
<b>Acetal</b>	180 (82)	3	3	-
<b>Aluminum</b>	-	1	3	-
<b>Buna N (Nitrile)</b>	180 (82)	2	2	3
<b>Cast Iron</b>	-	3	4	-
<b>Geolast (Nitrile Based)</b>	180 (82)	2	2	3
<b>Hastalloy C</b>	-	5	-	-
<b>Hytre</b>	150 (66)	2	4	4
<b>Kynar (PVDF)</b>	200 (93)	5	2	-
<b>Neoprene</b>	200 (93)	2	2	3
<b>Polypropylene</b>	150 (66)	4	2	-
<b>Polyurethane</b>	150 (66)	1	4	4
<b>Santoprene</b>	225 (107)	4	4	5
<b>Stainless Steel (300 Series)</b>	-	4	4	-
<b>Stainless Steel (400 Series)</b>	-	3	5	-
<b>PTFE Teflon</b>	225 (107)	5	2	4**
<b>Viton</b>	350 (177)	4	2	1

\* Applies to diaphragms only.

\*\* Increased flex life with use of santoprene diaphragm backer.

NOTE: Temperatures are reference for materials only. Refer to operator's manual for maximum pump operating temperature.

## One Piece Diaphragm Service Kit

The new One Piece Diaphragm Service Kit for PRO Series Diaphragm Pump perfectly replaces the traditional two pieces with its unique design, and closely meets customers' requirements in various applications.

Size	Kit	Diaphragm	Connecting Rod	End Plate	O-Ring	Shim Pack	Grease Package
<b>1"</b>	48495964	48490056	48489660	--	Y330-113	48499222	93706-1
<b>1.5"</b>	48496806	48490064	48489819	48496673	Y330-117	48499339	93706-1
<b>2"</b>	48497374	48490072	48497382	48497390	Y330-117	48499339	93706-1

\* Available for Ingersoll Rand/ARO PRO series diaphragm pumps

- One Piece Diaphragm Kit includes: diaphragm, connecting rod, end plate, o-ring, shim pack and grease package
- Material/Construction: PTFE-PA FABRIC-EPDM (wetted side to air side)
- Temperature Range: 14° F to 194° F (-10 °C to 90°C)



# 1:1-to-4:1 Ratio Piston and Diaphragm Pumps Pro-Series Pumps



MODEL	1:1 Ratio Piston Pump	2:1 Ratio Piston Pump	4:1 Ratio Piston Pump	1:1 Ratio Diaphragm Pump
Maximum Flow GPM (LPM)	18 (68.1)	4.3 (16.3)	4.4 (16.8)	11 (41.6)
Maximum Inlet Pressure PSI (BAR)	150 (10.3)	150 (10.3)	150 (10.3)	100 (6.8)
Fluid Ports Inlet/Outlet (BSP Available)	Immersed Inlet 3/4" (F) Out (No BSP)	1-1/2" (F) In – CS 1-1/4" (F) In – SS Immersed 3/4" (F) Out	1-1/2" (F) In – CS 1-1/4" (F) In – SS Immersed 3/4" (F) Out	1/2" Suction Tube In 1/2" (F), or Hose Accessory Out
Materials of Construction	Carbon Steel	Carbon Steel Stainless Steel	Carbon Steel Stainless Steel	Polypropylene Stainless Steel Aluminum
Pump Weight Lbs. (Kg.)	13 (5.9)	17.5 (7.9) CS–Stub 19.6 (8.9) CS–55–gallon 17.2 (7.8) SS–Stub 22.5 (10.2) SS–55–Gallon	32 (14.5) CS–Stub 46 (20.9) CS–55–gallon 32 (14.5) SS–Stub 46 (20.9) SS–55–Gallon	22 (10) Polypropylene* 26 (11.8) Aluminum* 36 (16.3) Stainless* *basic package shipping weight
Maximum Solids Inches (mm)	Clean Fluids	Clean Fluids	Clean Fluids	3/32 (2.4)
Best Selling Models (BSP Available)	612041–1 612041–3	NM2202A–11–731 NM2202A–41–731 NM2202B–11–731 NM2202B–41–731	NM2304A–11–311 NM2304A–41–311 NM2304B–11–311 NM2304B–41–311	DAB05–PPAA–2–A DAB05–PPTT–2–A DAB05–SSTT–2–A
Recommended Filter/ Regulator	C28123–600 (Filter/Regulator/Lubricator)	P29122–600	P29122–600	P29122–600
Air Line Kit	66073–1	66073–1	66073–1	66073–1

# Specialty Pumps 1:1 Ratio Piston Models Pro-Series Pumps

## 1:1 Ratio Piston Pump Performance Specifications

Ratio:	1:1	
Maximum Flow <small>GPM (LPM)</small> :	18 (68.1)	
Max. Working Flow <small>GPM (LPM)</small> :	9 (34.1)	
Maximum Rec'd Cycles:	75 per minute	
Displacement per Cycle <small>in<sup>3</sup> (cm<sup>3</sup>)</small> :	18.8 (308.0)	
Air Inlet: (Female)	1/4 - 18 N.P.T.F. - 1	
Fluid Inlet:	Immersed	
Fluid Outlet:	3/4 - 14 N.P.T.F. - 1	
Max. operating pressure <small>psi (bar)</small> :	150 (10.3)	
Fluid Pressure Range <small>psi (bar)</small> :	0-150 (0-10.3)	
Material of Construction:	Carbon Steel	
Weight <small>lbs (kg)</small> :	612041-X	13 (5.9)
	612042-1	14 (6.4)



## Ordering Menus

<b>61204X</b>	-	<b>X</b>
<b>Model Series</b>		<b>Packing Option</b>
1 For use with 55-gallon drums		1 Nitrile
2 For use with 275-gallon drums		3 PTFE (Teflon)

## Accessories

### Air Line Treatment Combination Unit | C28121-600

Unit contains Piggyback Filter/Regulator and Lubricator.  
Filter/Regulator features a 20 micron filter, poly bowl with guard and 5-125-psi gauge.  
Lubricator features a poly bowl with guard.  
Plumb directly to pump's air inlet.

Service Repair Kits! *Kit No. 637084 (air section)*  
*Kit No. 637081 (Nitrile lower pump end repair)*  
*Kit No. 637083 (Teflon lower pump end repair)*

### Muffler | 61879

Muffler reduces operating noise level of pump.

### Wall Mount | 61113

Wall-Mount Bracket Permits pump to be wall-mounted near fluid container.  
Bracket can also be attached to side of open 55-gallon drum.



Muffler  
61879



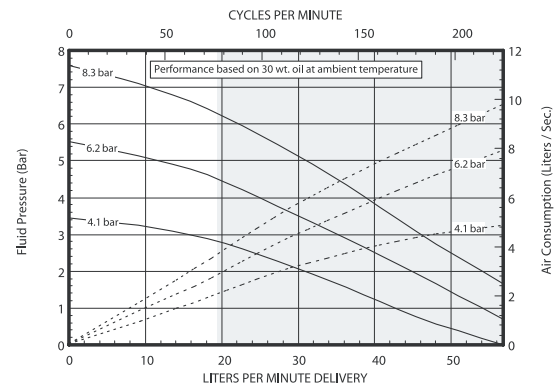
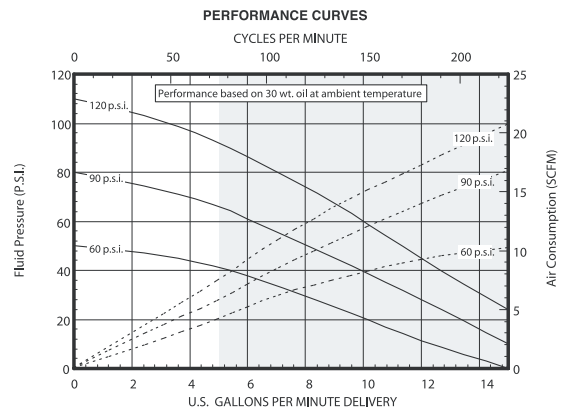
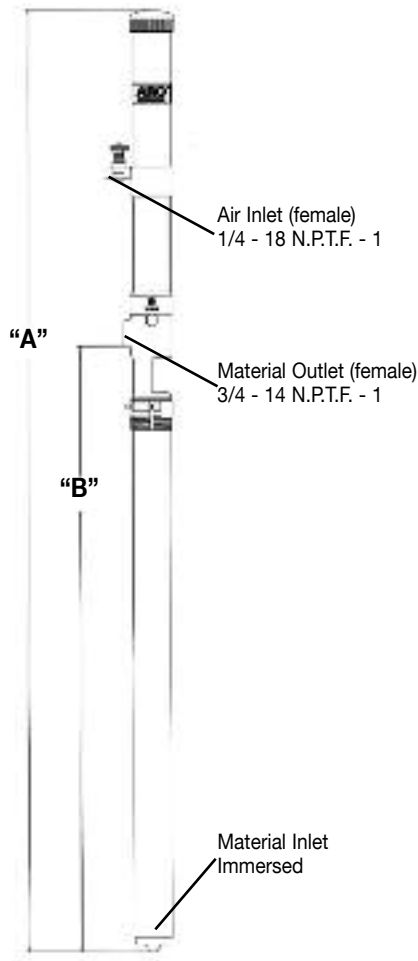
Wall Mount  
61113



# Specialty Pumps 1:1 Ratio Piston Model Dimensions and Flow Curves

## Pro-Series Pumps

### 1:1 Ratio Piston Pump Dimensions and Flow Charts



Refer to [www.irttools.com/aro/](http://www.irttools.com/aro/) for full size flow curves.

Model	"A"	"B"
612041-X	54" (1371.6-mm)	34-5/8" (879.5-mm)
612042-1	64-1/4" (1631.9-mm)	44-7/8" (1139.8-mm)

# Specialty Pumps 2:1 Ratio Piston Models Pro-Series Pumps

## 2:1 Ratio Piston Pump Performance Specifications

Ratio:	2:1	
Maximum Flow GPM (LPM):	4.3 (16.3)	
Flow @ 60-Cycles/min.GPM (LPM):	2.15 (8.14)	
Maximum Rec'd Cycles:	120 per minute	
Displacement per Cycle in <sup>3</sup> (cm <sup>3</sup> ):	8.3 (136)	
Air Inlet: (Female)	1/4 - 18 N.P.T.F. - 1	
Fluid Inlet:	1-1/2 - 11-1/2 N.P.T.F. - 1 (NM2202A-X) 1-1/4 - 11-1/2 N.P.T.F. - 1 (NM2202B-X)	
Fluid Outlet:	3/4 - 14 N.P.T.F. - 1	
Max. operating pressure psi (bar):	150 (10.3)	
Fluid Pressure Range psi (bar):	0-351 (0-24.2)	
Weight lbs (kg):		
	NM2202A-11-X31	17.5 (7.9)
	NM2202A-41-X31	19.6 (8.9)
	NM2202B-11-X31	17.2 (7.8)
	NM2202B-41-X31	22.5 (10.2)
Materials of Construction:	Carbon Steel Stainless Steel	



## Ordering Menu

NM2202X		-	X		1	-	X		3	1
<b>Model Series</b>			<b>Container Type</b>				<b>Packing Material</b>		<b>Spring Arrangement</b>	<b>Plunger Type</b>
A Carbon Steel	1 Universal (Stub)		7 PTFE (Teflon) upper and lower	3 No Spring	1 Standard Carbon Steel on NM2202A-X models					
B Stainless Steel	4 55-Gallon Drum		B UHMW-PE upper/PTFE (Teflon) lower		Stainless Steel on NM2202B-X models					
			C UHMW-PE upper and lower							
			J Polyurethane upper/UHMW-PE lower							

## Accessories

### Air Line Connection Kit\* | Kit No. 66073-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | *Kit No. 637377 (air section)*  
*Kit No. 637378-X31 (NM2202A-X fluid section)*  
*Kit No. 637379-X31 (NM2202B-X fluid section)*

### Wall Mount | 61113

For use with stub style pumps. Siphon tube then used to connect pump to fluid supply.

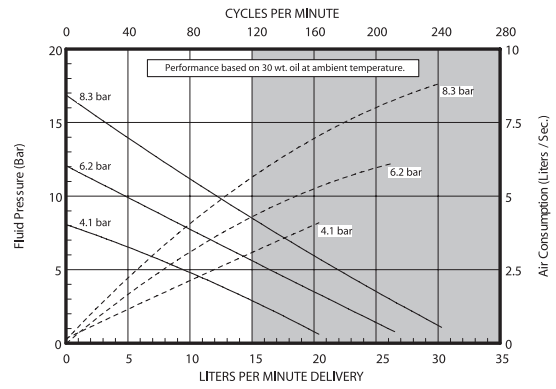
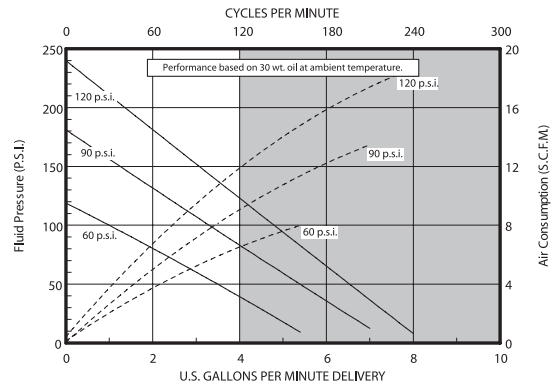
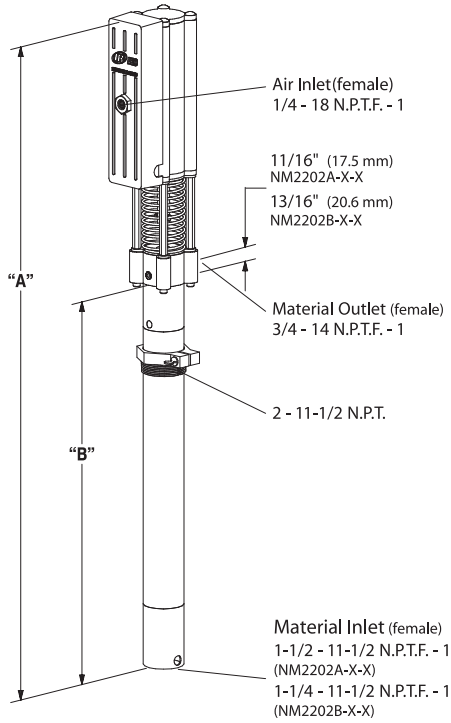
\*Please note pumps are not included with these kits.



Wall Mount  
61113

# Specialty Pumps 2:1 Ratio Piston Model Dimensions and Flow Curves Pro-Series Pumps

## 2:1 Ratio Piston Pump Dimensions and Flow Charts



### Dimensions: Inches (mm)

Model Number:	"A"	"B"
NM2202A-11-X31	34-3/16 (868.0)	20-1/16 (508.8)
NM2202A-41-X31	47-7/8 (1214.8)	33-11/16 (855.6)
NM2202B-11-X31	33-7/8 (859.9)	19-7/8 (503.7)
NM2202B-41-X31	47-3/4 (1211.8)	33-11/16 (855.6)

Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

# Specialty Pumps 4:1 Ratio Piston Models Pro-Series Pumps

## 4:1 Ratio Piston Pump Performance Specifications

Ratio:	4:1																				
Maximum Flow GPM (LPM):	4.44 (16.79) NM2304A-X 4.26 (16.12) NM2304B-X																				
Flow @ 60-Cycles/min.GPM (LPM):	2.12 (8.02) NM2304A-X 2.13 (8.06) NM2304B-X																				
Maximum Rec'd Cycles:	125 per minute NM2304A-X 120 per minute NM2304B-X																				
Displacement per Cycle in <sup>3</sup> (cm <sup>3</sup> ):	8.2 (134.3)																				
Air Inlet: (Female)	1/4 - 18 N.P.T.F. - 1																				
Fluid Inlet:	Immersed Inlet (NM2304A-41, -91, -A1) 1-1/2 - 11-1/2 N.P.T.F. - 1 (NM2304A-11, -81, -B1) 1-1/4 - 11-1/2 N.P.S.M. (NM2304B-X)																				
Fluid Outlet:	3/4 - 14 N.P.T.F. - 1																				
Max. operating pressure psi (bar):	150 (10.3)																				
Fluid Pressure Range psi (bar):	0-600 (0-41.4)																				
Weight lbs (kg):	<table border="0"> <tr> <td>NM2304A-11-X11</td> <td>32 (14.5)</td> <td>NM2304B-11-X1X</td> </tr> <tr> <td>NM2304A-41-X11</td> <td>46 (20.9)</td> <td>NM2304B-41-X1X</td> </tr> <tr> <td>NM2304A-81-X11</td> <td>31.4 (14.3)</td> <td></td> </tr> <tr> <td>NM2304A-91-X11</td> <td>45.4 (20.6)</td> <td></td> </tr> <tr> <td>NM2304A-A1-X11</td> <td>31.0 (14.1)</td> <td></td> </tr> <tr> <td>NM2304A-B1-X11</td> <td>32 (14.5)</td> <td></td> </tr> </table>			NM2304A-11-X11	32 (14.5)	NM2304B-11-X1X	NM2304A-41-X11	46 (20.9)	NM2304B-41-X1X	NM2304A-81-X11	31.4 (14.3)		NM2304A-91-X11	45.4 (20.6)		NM2304A-A1-X11	31.0 (14.1)		NM2304A-B1-X11	32 (14.5)	
NM2304A-11-X11	32 (14.5)	NM2304B-11-X1X																			
NM2304A-41-X11	46 (20.9)	NM2304B-41-X1X																			
NM2304A-81-X11	31.4 (14.3)																				
NM2304A-91-X11	45.4 (20.6)																				
NM2304A-A1-X11	31.0 (14.1)																				
NM2304A-B1-X11	32 (14.5)																				
Lower Pump End Series:	<table border="0"> <tr> <td>NM2304A-X1-X11</td> <td>67151-X-X11</td> </tr> <tr> <td>NM2304B-X1-X1X</td> <td>6510X-X</td> </tr> </table>			NM2304A-X1-X11	67151-X-X11	NM2304B-X1-X1X	6510X-X														
NM2304A-X1-X11	67151-X-X11																				
NM2304B-X1-X1X	6510X-X																				



## Ordering Menus

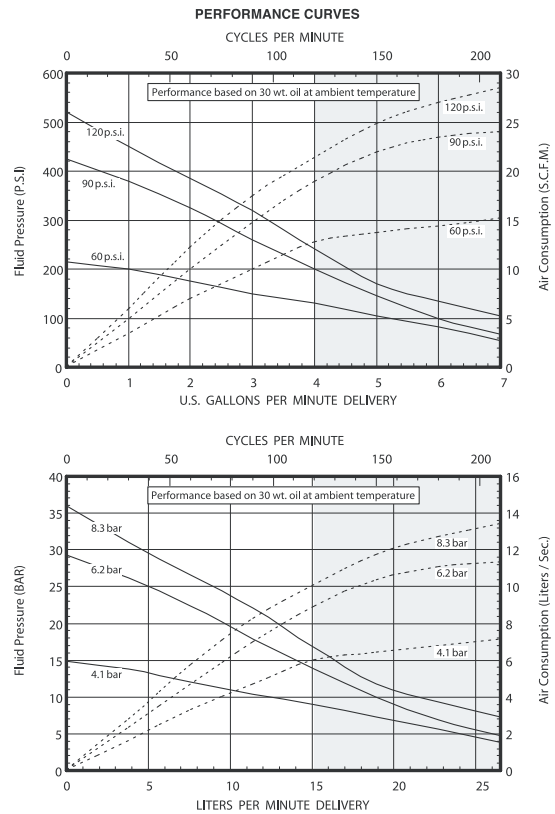
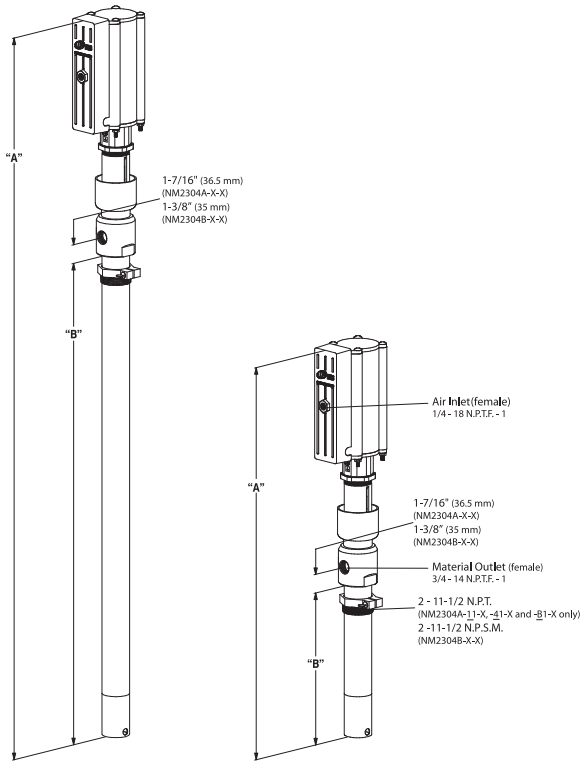
<b>NM2304A</b>	-	<b>X</b>	<b>1</b>	-	<b>X</b>	<b>1</b>	<b>1</b>
Model Series		Container Type		Packing Material		Spring Arrangement	Plunger Type
Carbon Steel		<ul style="list-style-type: none"> <li>1 Universal (Stub)</li> <li>4 55-Gallon Drum</li> <li>8 Universal (Stub) without bung</li> <li>9 55-Gallon without bung</li> <li>A Stub Follower Plate</li> <li>B Universal (Stub) with alternate bung</li> </ul>		<ul style="list-style-type: none"> <li>C UHMW-PE upper and lower</li> <li>3 Glass-filled Teflon upper Virgin Teflon lower</li> <li>5 Glass-filled Teflon/Leather staggered upper Virgin Teflon lower</li> </ul>		1 Coil Spring	1 Standard Carbon Steel

<b>NM2304B</b>	-	<b>X</b>	<b>1</b>	-	<b>X</b>	<b>1</b>	<b>X</b>
Model Series		Container Type		Packing Material		Spring Arrangement	Plunger Type
Stainless Steel		<ul style="list-style-type: none"> <li>1 Universal (Stub)</li> <li>4 55-Gallon Drum</li> </ul>		<ul style="list-style-type: none"> <li>C UHMW-PE upper and lower</li> <li>3 PTFE (Teflon) upper and lower</li> <li>W Viton upper/ PTFE (Teflon) lower</li> </ul>		1 Coil Spring	<ul style="list-style-type: none"> <li>1 Standard 300-Series Stainless Steel</li> <li>B Ceramic</li> </ul>

# Specialty Pumps 4:1 Ratio Piston Model Dimensions and Flow Curves

## Pro-Series Pumps

### 4:1 Ratio Piston Pump Dimensions and Flow Charts



### Dimensions: Inches (mm)

Model Number:	"A"	"B"
NM2304A-11-X11	30-1/4 (768.5)	11-3/4 (297.7)
NM2304A-41-X11	55-5/8 (1413.0)	37-1/8 (942.2)
NM2304A-81-X11	30-1/4 (768.5)	11-3/4 (297.7)
NM2304A-91-X11	55-5/8 (1413.0)	37-1/8 (942.2)
NM2304A-A1-X11	29-9/16 (751.0)	11-1/16 (280.2)
NM2304A-B1-X11	30-1/4 (768.5)	11-3/4 (297.7)
NM2304B-11-X1X	28-1/8 (714.4)	9-23/32 (246.8)
NM2304B-41-X1X	51-21/32 (1312.1)	33-1/4 (844.6)

Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.

### Accessories

#### Air Line Connection Kit\* | Kit No. 66073-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

#### Service Repair Kits | Kit No. 637316 (air section)

Kit No. 637176 (NM2304A-X: 67151-X-311, -X-511 fluid section)

Kit No. 637228 (NM2304A-X: 67151-X-C11 fluid section)

Kit No. 637010 (NM2304B-X: 65106, 65108, 65108-5 fluid section)

Kit No. 637010-4 (NM2304B-X: 65106-4, 65108-4, 65108-6 fluid section)

Kit No. 637010-6 (NM2304B-X: 65108-8 fluid section)

#### Wall Mount | 61113

For use with stub style pumps. Siphon tube then used to connect pump to fluid supply.

\*Please note pumps are not included with these kits.



Wall Mount  
61113



# Specialty Pumps – Drum Pumps

## Pro-Series Pumps

### 1:1 Ratio Drum Pump Performance Specifications

Ratio:	1:1
Maximum Flow <small>GPM (LPM):</small>	11 (41.6)
Displacement per cycle <small>GPM (LPM):</small>	0.039 (0.15)
Air Inlet: (Female)	1/4 -18 N.P.T.
Fluid Inlet:	Siphon Tube for 55-Gallon Drum
Fluid Outlet:	1/2 -14 N.P.T.F. - 1
Max. operating pressure <small>psi (bar):</small>	100 (6.8)
Suspended solids max. dia.:	3/32 (2.4)
	<small>in. (mm)</small>
Shipping Weight <small>lbs (kg):</small>	22 (10) Polypropylene, basic package
	26 (11.8) Aluminum, basic package
	36 (16.3) Stainless, basic package



### Drum Pumps

- Choose from Aluminum, Stainless Steel or Polypropylene body construction - ARO Drum Pumps are available in three body materials for optimum fluid compatibility.

### Drum Pump Packages

- Package Components Factory-Matched - ARO Drum Pump package components contain pre-specified, matching materials of construction for complete fluid compatibility.
- Choose from Basic to Complete - Drum Pump Packages can be ordered in 3 styles:
- Basic: Pump, Bung Adapter, Air Safety Shut-Off, Siphon Tube, Weather Seal and base
- Complete/Transfer: Basic Pump plus Fluid Hose or Fluid Hose with Non-Drip Nozzle
- Complete/Dispensing: Basic Pump plus Foot Valve, Hose and Dispensing Nozzle

### Pump Features

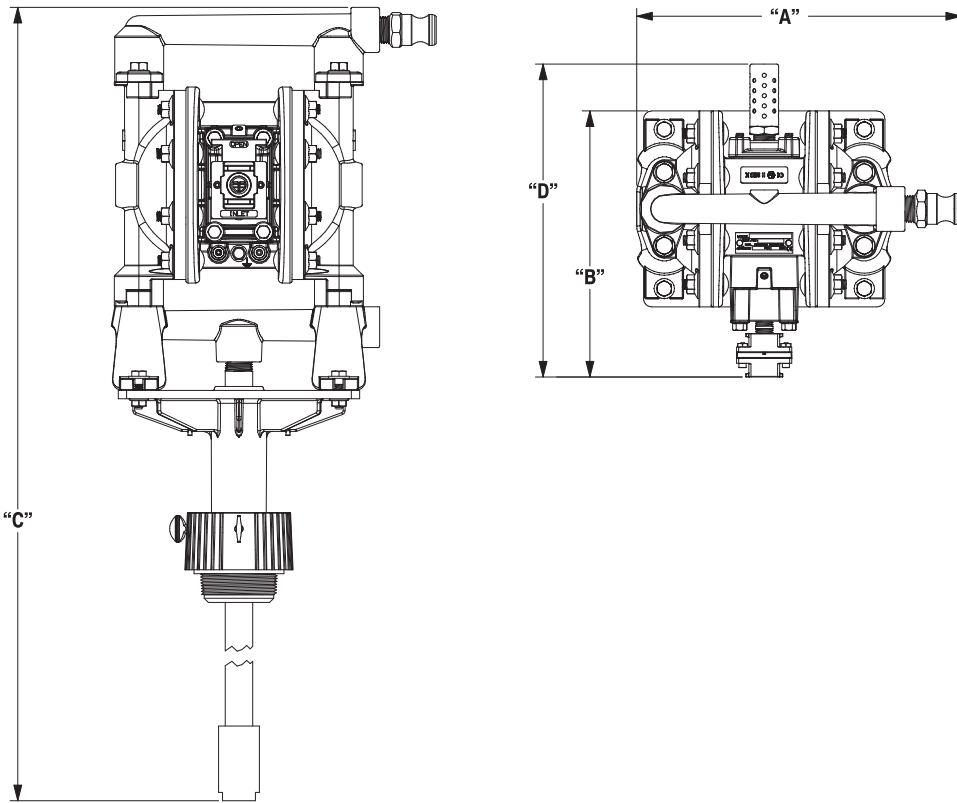
- 11-g.p.m. Flow Capability - Drum Pumps offer plenty of capacity to satisfy a broad range of transfer application volume demands.
- Stall-Free Operation - ARO Diaphragm Drum Pumps feature a patented “unbalanced” air valve design that avoids stall-out, even under low air-inlet pressures.
- Bolted Construction - ARO Diaphragm Drum Pumps utilize bolted fasteners for leak-tight integrity.
- 5-Year Warranty

### Ordering Menu

MODEL NO.	PUMP HOUSING and SEATS	PUMP DIA. and BALLS	LOCK OUT VALVE (P/N 104253-2)	FOOT VALVE	10' HOSE ASM	DISPENSE VALVE	FLUID SERVICE
DAB05-PPTT-2-A	POLYPROPYLENE	PTFE (Teflon)	X	-	-	-	ACIDS & CAUSTICS
DAB05-PPCC-2-A	POLYPROPYLENE	HYTREL	X	-	-	-	OIL
DAB05-PPUU-2-A	POLYPROPYLENE	POLYURETHANE	X	-	-	-	WATER/OIL
DAB05-PPAA-2-A	POLYPROPYLENE	SANTOPRENE	X	-	-	-	MILD ACIDS/MILD CAUSTICS
DAB05-PPCC-2-N	POLYPROPYLENE	HYTREL	X	-	NITRILE	-	OIL
DAB05-PPCC-B-M	POLYPROPYLENE	HYTREL	X	X	NITRILE	NO-DRIP	OIL
DAB05-PPAA-2-B	POLYPROPYLENE	SANTOPRENE	X	-	EPDM	-	MILD ACIDS/MILD CAUSTICS
DAB05-PPUU-2-C	POLYPROPYLENE	POLYURETHANE	X	-	VINYL	-	WATER/OIL
DAB05-PPCC-B-J	POLYPROPYLENE	HYTREL	X	X	REINFORCED NITRILE	X	OIL
DAB05-PPAA-B-K	POLYPROPYLENE	SANTOPRENE	X	X	EPDM	X	MILD ACIDS/MILD CAUSTICS
DAB05-SSTT-2-A	STAINLESS STEEL	PTFE (Teflon)	X	-	-	-	SOLVENT
DAB05-ASTT-2-A	ALUM./SS.	PTFE (Teflon)	X	-	-	-	SOLVENT
DAB05-APCC-2-A	ALUM./POLY.	HYTREL	X	-	-	-	OIL/SOME SOLVENTS
DAB05-APCC-2-O	ALUM./POLY.	HYTREL	X	-	NITRILE	-	OIL/SOME SOLVENTS
DAB05-APCC-B-P	ALUM./POLY.	HYTREL	X	X	NITRILE	NO-DRIP	OIL/SOME SOLVENTS
DAB05-APCC-B-D	ALUM./POLY.	HYTREL	X	X	-	X	OIL/SOME SOLVENTS
DAB05-APCC-B-L	ALUM./POLY.	HYTREL	X	X	REINFORCED NITRILE	X	OIL/SOME SOLVENTS
DAB05-ASAA-2-A	ALUM./S.S.	SANTOPRENE	X	-	-	-	WATER

# Specialty Pumps - Drum Pump Dimensional Data Pro-Series Pumps

## 1:1 Ratio Drum Pump Dimensional Data



Model Number:	" A "	" B "	" C "	" D "
DAB05-A <del>XXX</del> -X-X	9-31/32" ( 253 mm )	8-5/32" ( 207 mm )	51-5/32" ( 1299 mm )	9-19/32" ( 243 mm )
DAB05-P <del>XXX</del> -X-X	12-1/32" ( 306 mm )	8-3/32" ( 206 mm )	50-5/32" ( 1274 mm )	--
DAB05-S <del>XXX</del> -X-X	7-3/4" ( 197 mm )	8-3/32" ( 206 mm )	49-25/32" ( 1264 mm )	--

For additional information contact technical support at (800)495-0276

### Accessories

#### Air Line Connection Kit\* | Kit No. 66073-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

- Service Repair Kits | *Kit No. 637428 (air section)*  
*Kit No. 637427-XX (fluid section)*  
*Kit No. 104255 (for repair of P29122-600 piggyback filter/regulator)*  
*Kit No. 637334 (for repair of 95199 dispensing nozzle)*  
*Kit No. 637335 (for repair of 95183 oil spigot)*

\*Please note pumps are not included with these kits.



# Specialty Diaphragm, Lubrication and Centrifugal Pumps Pro-Series Pumps



Model	3:1 Ratio Power Pump	Oil Packages	Grease Packages	Centrifugal Pumps
Maximum Flow GPM (LPM)	24 (90.7)	9 (34.1)	7.5-lbs/min (3.4-kg/min)	P237AX-EU=200 (757) P35AX-EU=230(870.5)
Maximum Discharge Pressure PSI (BAR)	300 (20.7)	750 (51.7)	7500 (517)	90 (6.1)
Fluid Ports Inlet/Outlet (BSP Available)	1" (F) – In/Out	Immersed Inlet Control Handle Outlet	Immersed Inlet Control Handle Outlet	Screened Inlet 2" Outlet 2-1/2" Outlet
Materials of Construction	Stainless Steel	Carbon Steel	Carbon Steel	Cast Iron
Pump Weight Lbs. (Kg.)	94.7 (42.9)	44.7 (20.3)	LP3001-1=30.7 (12) LP3003-1=42.1 (19.1)	P237AX=48 (21.8) P35AX=79 (36)
Maximum Solids Inches (mm)	1/8 (3.2)	Clean Fluids	Clean Fluids	1/4 (6.4)
Best Selling Models (BSP Available)	PH10A-ASS-SST PH10A-BSS-SST	LP3100-1-B LP3101-1-B	LP3001-1 LP3003-1	P237A1-EU P237A3-EU P35A1-EU
Recommended Filter/ Regulator	P29231-610	P29221-610	P29221-610	C284X3-810 (Filter-Regulator-Lubricator)
Air Line Kit	66073-1	66073-1	66073-1	66084-1

# Specialty Pumps 3:1 Ratio High Pressure Diaphragm Pump Pro-Series Pumps

## High Pressure Diaphragm Pump Performance Specifications

Ratio:	3:1
Maximum Flow GPM (LPM):	24 (90.7) Free Flow 12 (45.6) at 125-psi back pressure
Displacement per cycle GPM (LPM):	0.06 (.23)
Air Inlet: (Female)	3/8 - 18 N.P.T.F. - 1
Fluid Inlet:	1 - 11-1/2 N.P.T.F. - 1 Rp 1 (1- 11 BSP parallel)
Fluid Outlet:	1 - 11-1/2 N.P.T.F. - 1 Rp 1 (1- 11 BSP parallel)
Max. operating pressure psi (bar):	100 (6.9)
Suspended solids max. dia.:	1/8 (3.2)
in. (mm)	
Weight lbs (kg):	94.73 (42.97)
Maximum dry suction lift ft (m):	5 - 6 (1.5 - 1.8)



## Ordering Menu

<b>PH10</b>	<b>A</b>	<b>-</b>	<b>X</b>	<b>S</b>	<b>S</b>	<b>-</b>	<b>XX</b>	<b>T</b>
—	—		—	—	—		—	—
<b>Base Model</b>	<b>Center Section</b>		<b>Port Size</b>	<b>Wetted Parts</b>	<b>Hardware</b>		<b>Seat/Ball Check Material</b>	<b>Diaphragm Material</b>
1" Pump	A Aluminum		A N.P.T.F. Threads B BSP Threads	S Stainless Steel	S Stainless Steel		HH 440 SS/ 440 SS SS 316 SS / 316 SS	T PTFE (Teflon)

## Accessories

### Air Line Filter-Regulator | P29231-610

Piggyback unit features a 40 micron filter, metal bowl with sight glass and 0-125-psi gauge. Plumb directly to pump's air inlet.

Service Repair Kits | *Kit No. 637338 (air section)*  
*Kit No. 637339 (PH10X-XXX-XSX fluid section)*  
*Kit No. 637339-1 (PH10X-XXX-XHX fluid section)*

### Wall Mount Bracket | 67142

Siphon tube then used to connect pump to fluid supply.

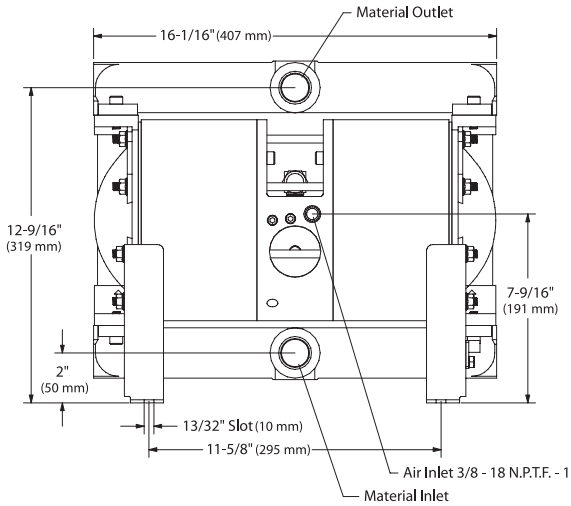
*\*Please note pumps are not included with these kits.*



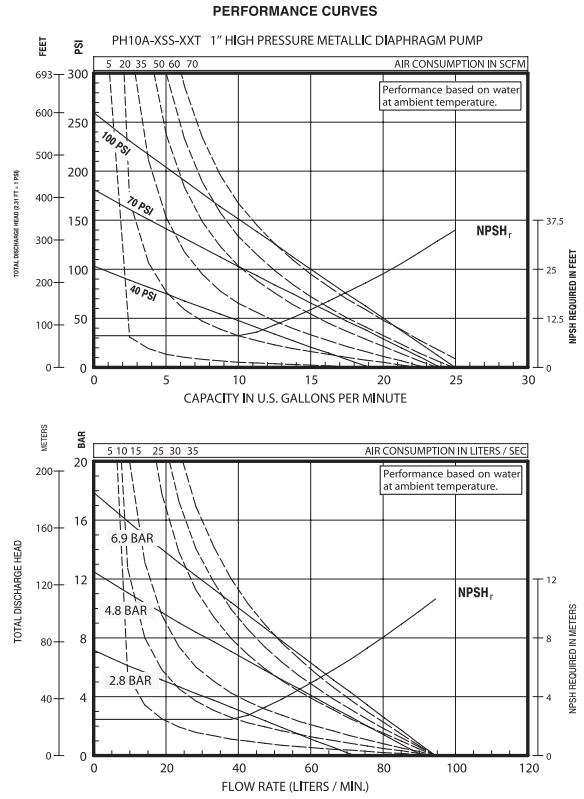
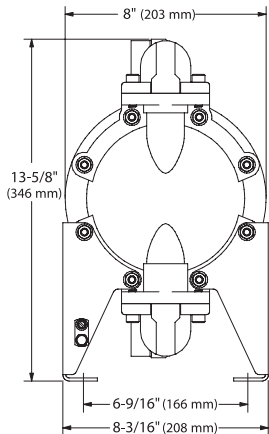
Wall Mount Bracket  
67142

# Specialty Pumps 3:1 Ratio High Pressure Diaphragm Pump Dimensions and Flow Curves Pro-Series Pumps

## High Pressure Diaphragm Pump Dimensions and Flow Charts



	Material Inlet	Material Outlet
PH10A-A-SS-XXX	1 - 11-1/2 N.P.T.F. - 1	1 - 11-1/2 N.P.T.F. - 1
PH10A-B-SS-XXX	Rp 1 (1 - 11 BSP parallel)	Rp 1 (1 - 11 BSP parallel)



Refer to [www.irtools.com/aro/](http://www.irtools.com/aro/) for full size flow curves.



# Specialty Pumps – Oil Packages Pro-Series Pumps

## Oil Package Performance Specifications

Ratio:	5:1
Maximum Flow GPM (LPM):	9 (34.1)
Max. Working Flow GPM (LPM):	6 (22.7)
Maximum Rec'd Cycles:	170 per minute LM2305A-31-B
Displacement per Cycle:	8.3-In <sup>3</sup> (136-cm <sup>3</sup> )
Air Inlet: (Female)	1/4 - 18 N.P.T.F. - 1
Fluid Inlet:	1-1/2 - 11-1/2 N.P.T.F. - 1
Fluid Outlet:	1/2 - 14 N.P.T.F. - 1
Max. operating pressure psi (bar):	150 (10.3)
Fluid Pressure Range psi (bar):	0-750 (0-51.7)
Weight lbs (kg):	44.7 (20.3)



LP3100-1-B Oil Package  
(Package does not include container)

## Ordering Menu

LP310	X - 1 - B
<b>Model Series</b>	<b>Meter Type</b>
16-Gallon Portable Gear Oil Package	0 Pint 1 Liter

## Major Components

Item:	Description:
Basic 5:1 Oil Pump:	LM2305A-31-B
Digital Meter:	635190-1 (Pint--LP3100-1-B) 635190-3 (Liter--LP3101-1-B)
Drum Cover:	94421
Material Hose:	623501-6
Fluid Control Handle:	635391-1
Dolly Assembly:	640058-2

## Accessories

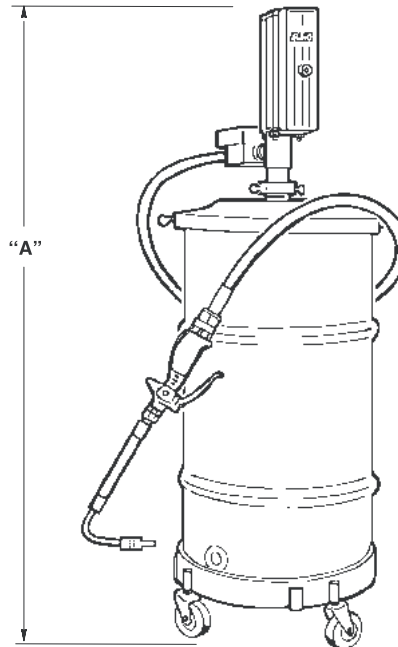
### Air Line Connection Kit\* | Kit No. 66073-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

Service Repair Kits | Kit No. 637226 (Pump Rebuild Kit: Contains necessary soft parts to rebuild entire pump.)

\*Please note pumps are not included with these kits.

## LP310X-1-B Dimensions



(Drum not included)

**Dimensions: Inches (mm)**  
**Model Number:** "A"  
 LP310X-1-B 45 (1143)

For additional information contact  
 technical support at (800)495-0276

# Specialty Pumps – Grease Packages Pro-Series Pumps

## Grease Package Performance Specifications

Ratio:	50:1
Maximum Delivery/Min. lbs (kg):	7.5 (3.4)
Maximum Rec'd Cycles:	135 per minute (LM2350E-X1-B)
Displacement per Cycle in <sup>3</sup> (cm <sup>3</sup> ):	0.875 (14.33)
Air Inlet: (Female)	1/4 - 18 N.P.T.F. - 1
Material Inlet:	Immersed
Material Outlet:	3/8 -18 N.P.T.F. - 1
Max. operating pressure psi (bar):	150 (10.3)
Max. fluid pressure psi (bar):	7500 (517.2)
Weight lbs (kg):	30.7 (12)

## Ordering Menu

LP300X - 1

### Model Series

1 35-pound Grease Package

## LP3001-1 Major Components

Item:	Description:
Basic 50:1 Grease Pump:	LM2350E-21-B
Handle:	94334
Drum Cover:	94420
Follower Plate:	640095-2-B
Material Hose:	624201-10
Booster Grease Gun:	636103
Z-Swivel:	636077

## Accessories

### Air Line Connection Kit\* | Kit No. 66073-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

### Service Repair Kits | Kit No. 637227-B

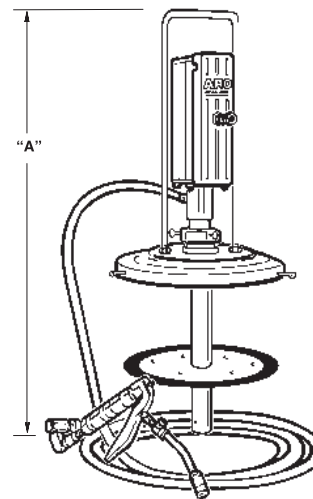
(Pump Rebuild Kit: Contains necessary soft parts to rebuild entire pump.)

\*Please note pumps are not included with these kits.



LP3001-1 Grease Packages  
(Packages do not include containers)

## LP3001-1 Dimensions



Dimensions: Inches (mm)

Model Number: "A"

LP3001-1 29 (737)

For additional information contact technical support at (800)495-0276

# Specialty Pumps – Grease Packages Pro-Series Pumps

## Grease Package Performance Specifications

Ratio:	50:1
Maximum Delivery/Min. lbs (kg):	7.5 (3.4)
Maximum Rec'd Cycles:	135 per minute (LM2350E-X1-B)
Displacement per Cycle in <sup>3</sup> (cm <sup>3</sup> ):	0.875 (14.33)
Air Inlet: (Female)	1/4 - 18 N.P.T.F. - 1
Material Inlet:	Immersed
Material Outlet:	3/8 -18 N.P.T.F. - 1
Max. operating pressure psi (bar):	150 (10.3)
Max. fluid pressure psi (bar):	7500 (517.2)
Weight lbs (kg):	42.1 (19.1)

## Ordering Menu

LP300X - 1

### Model Series

3 20-pound Grease Package

## LP3003-1 Major Components

Item:	Description:
Basic 50:1 Grease Pump:	LM2350E-31-B
Drum Cover:	94421
Follower Plate:	640165
Material Hose:	624201-10
Booster Grease Gun:	636103
Z-Swivel:	636077
Dolly Assembly:	640057

## Accessories

### Air Line Connection Kit\* | Kit No. 66073-1

Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

### Service Repair Kits | Kit No. 637227-B

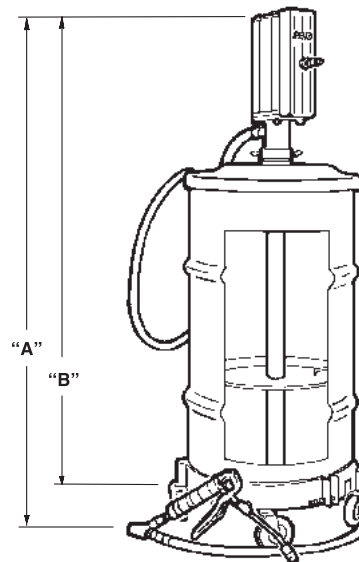
(Pump Rebuild Kit: Contains necessary soft parts to rebuild entire pump.)

\*Please note pumps are not included with these kits.



LP3003-1 Grease Packages  
(Packages do not include containers)

## LP3003-1 Dimensions



### Dimensions: Inches (mm)

Model Number:	"A"	"B"
LP3003-1	43 (1092)	40-1/8 (1019)

For additional information contact technical support at (800)495-0276

# Specialty Pumps – Centrifugal Pump Models Pro-Series Pumps

## Centrifugal Pump Performance Specifications

Maximum Flow GPM (LPM):	200 (757) P237AX-EU 230 (870.5) P35AX-EU
Air Inlet: (Female)	3/4 -14 N.P.T. (P237AX-EU) 1 - 11-1/2 N.P.T. (P35A1-EU)
Fluid Inlet:	Screened Inlet
Fluid Outlet:	2" N.P.T.F. P35A1-EU 2-1/2" N.P.T.F. P237A1-EU 2-1/2" BSP P237A3-EU
Max. operating pressure psi (bar):	90 (6.2)
Air Consumption in CFM:	P237AX-EU 100 P35A1-EU 160
Suspended solids max. dia. in. (mm)	1/4 (6.4)
Pump Housing Material:	P237AX-EU Cast Iron P35A1-EU Cast Iron
Weight lbs (kg):	P237AX-EU 48 (21.8) P35A1-EU 79 (36)



## Ordering Menus

P237A	-	X	-	EU
<b>Model Series</b>		<b>Discharge Thread</b>		
200-GPM (757-LPM)		1 2-1/2" N.P.T. 3 2-1/2" BSP		

P35A	-	1	-	EU
<b>Model Series</b>		<b>Discharge Thread</b>		
230-GPM (870-LPM)		1 2" N.P.T.		

## Accessories

**Air Line Unit |** C28453-810 for P237AX-EU  
C28463-810 for P35A1-EU

C284X3-810 models contain Filter, Regulator and Lubricator units.

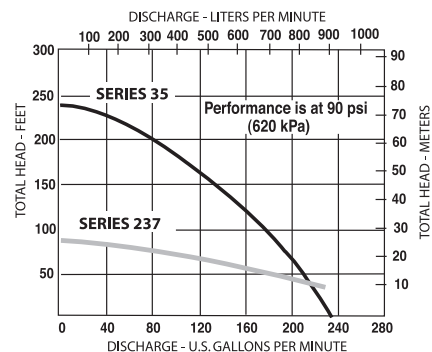
**Service Repair Kits|** Repair parts are ordered individually.

Refer to Operator's Manuals:  
P237AX-EU Pumps: Form P6856  
P35A1-EU Pumps: Form P7263

## Centrifugal Pump Dimensional Data and Flow Charts

Height: inches (mm)	P237AX-EU 17-5/8 (448) P35A1-EU 22-1/2 (570)
Size of opening pump will pass through: inches (mm)	P237AX-EU 8-3/4 (222) x 8-3/4 (222) P35A1-EU 8-7/16 (214) x 14-1/16 (357)
Discharge Pipe Tap:	P237A1-EU 2-1/2" N.P.T.F. P237A3-EU 2-1/2" BSP P35A1-EU 2" N.P.T.F.
Air Inlet Pipe Tap:	P237AX-EU 3/4" N.P.T.F. P35A1-EU 1" N.P.T.F.
Air Inlet Recommended Hose Size: inches (mm)	P237AX-EU 3/4 (19) P35A1-EU 1 (25.4)
Exhaust Pipe Tap:	P237AX-EU 1-1/4" N.P.T.F. P35A1-EU 1-1/4" N.P.T.F.
Exhaust Recommended Hose Size: inches (mm)	P237AX-EU 1-1/4 (31.7) P35A1-EU 1-1/4 (31.7)

For additional information contact technical support at (800)495-0276



# Accessories / Pulsation Dampeners Pro-Series Pumps

## Pulsation Dampeners

Diaphragm and piston pumps of any type have at least two points in their cycle where they provide no pressure or flow to a process. The unwanted result of this pressure fluctuation can often be material foaming, material pulsation, hydraulic shock or material splashing. While traditional pulsation dampeners can help reduce unwanted pulsation and other problems, they also require operator intervention and adjustments.

## Automatic Shock Blockers®

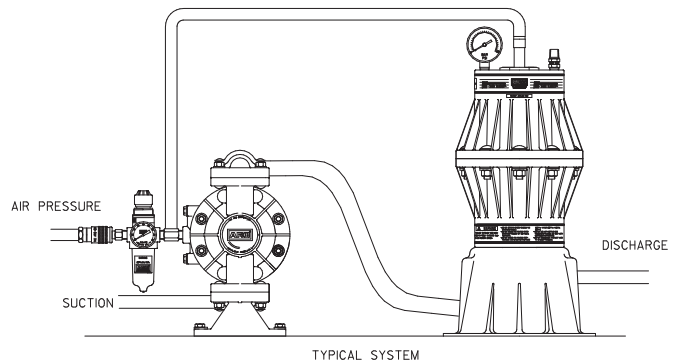
- Automatic Air Adjustment – compensates for fluctuations in fluid pressure without operator intervention.
- Significant Pulsation Reduction – the new Shock Blockers deliver an average 60% – 80% pulsation reduction in high back pressure applications.
- Built for High-Flow/Aggressive Fluid Applications – the 2" models can handle up to 159 in.<sup>3</sup> maximum fluid volume, and 3" models up to 509 in.<sup>2</sup> maximum fluid volume.
- Broad Material Range for Compatibility – choose from PVDF, polypropylene, groundable acetal (1" models) or aluminum, cast iron or stainless steel (2" & 3" models) body materials for optimum pump-to-pulsation dampener compatibility.



- Broad Diaphragm/Bladder Fluid Compatibility – choose from Santoprene, Nitrile, Teflon, Hytrel, Viton or Urethane for optimum fluid-to-diaphragm compatibility.
- Perfect for Process Applications – pulsation reduction in long piping runs helps prevent costly fluid pipe and downstream valve damage.
- Bolted Construction – for leak-free vessel integrity and a safer work-site.
- Ultra-Rugged Construction for Long Service Life – both inside and out, the new Shock Blockers are built tough to deliver worry-free, near pulse-free fluid handling.

## 1" Port Models

<b>Pulsation Dampener Type</b>	Non-Metallic / Automatic		
<b>Material</b>	See model description chart		
<b>Weight</b>	Polypropylene	8.4 lbs	(3.8 kgs)
	Conductive Acetal	8.6 lbs	(3.9 kgs)
	PVDF	9.0 lbs	(4.1 kgs)
<b>Material Inlet/Outlet (female)</b>	SB10X-AXX-X 1 - 11-1/2 N.P.T. SB10X-BXX-X Rp 1 (1-11 BSP parallel)		
<b>Air Inlet (male)</b>	Air Tamer is 3/8 - 18 N.P.T.		
<b>Maximum Air Inlet Pressure</b>	100-psi (6.9 bar)		
<b>Maximum Material Inlet Pressure</b>	100-psi (6.9 bar)		
<b>Maximum Temperature Limits</b>	Polypropylene	35° - 150° F (+1.6° - 66° C)	
	Conductive Acetal	10° - 180° F (-12° - 82° C)	
	PVDF	10° - 200° F (-12° - 93° C)	
<b>Maximum Fluid Volume</b>	57 in. <sup>3</sup> (934 cm <sup>3</sup> )		



## Ordering Menu

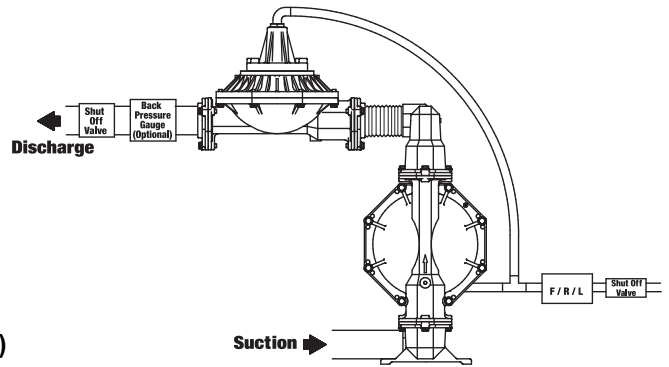
SB	10	X	-	X	X	X	-	X
<b>Model Series</b>	<b>Blocker Size</b>	<b>Air Body</b>		<b>Thread</b>	<b>Fluid Construction</b>	<b>Hardware</b>		<b>Diaphragm</b>
	1-inch	P Polypropylene (Glass Filled)	K PVDF	A N.P.T. B BSP	P Polypropylene (Glass Filled)	S Stainless Steel (304)		A Santoprene C Hytrel T PTFE U Urethane
		D Conductive Acetal			K PVDF			
					D Conductive Acetal			

**Notice:** All possible options are shown in the chart above, however, certain combinations may not be recommended. Consult a representative or the factory if you have questions concerning availability.

# Accessories / Pulsation Dampeners Pro-Series Pumps

## 2" Port Models

<b>Pulsation Dampener Type</b>	Metallic / Automatic
<b>Material</b>	See model description chart
<b>Weight</b>	Aluminum (fluid cap) 29 lbs (13.2 kgs) Cast Iron (fluid cap) 70 lbs (31.8 kgs) Stainless St. (fluid cap) 71 lbs (32.2 kgs)
<b>Material Inlet/Outlet</b>	SB20X-AXX-X 2 - 11-1/2 N.P.T. SB20X-BXX-X Rp 2 (2-11 BSP parallel)
<b>Air Inlet</b>	3/4 - 14 N.P.T.
<b>Maximum Air Inlet Pressure</b>	120-psi (8.3 bar)
<b>Maximum Material Inlet Pressure</b>	120-psi (8.3 bar)
<b>Maximum Temperature Limits</b>	EPR -60° - 280° F (-51° - 138° C) Nitrile 10° - 180° F (-12° - 82° C) Santoprene -40° - 225° F (-40° - 107° C) Teflon 40° - 225° F (4° - 107° C) Viton -40° - 350° F (-40° - 177° C)
<b>Maximum Fluid Volume</b>	159-in <sup>3</sup> (2.61 lit)



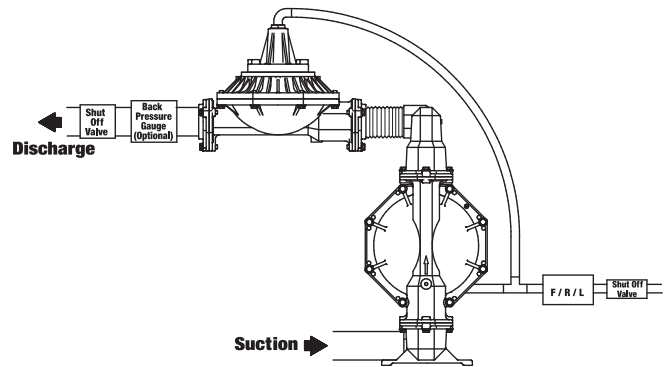
Proper support of piping and pulsation dampener is required. Illustration for reference purposes only.

## Ordering Menu

SB	20	X	-	X	X	X	-	X
<b>Model Series</b>	<b>Blocker Size</b>	<b>Air Body</b>		<b>Thread</b>	<b>Fluid Construction</b>	<b>Hardware</b>		<b>Diaphragm</b>
	2-inch	A Aluminum	C Cast Iron	A N.P.T.	A Aluminum	S Stainless Steel		A Santoprene
		S Stainless Steel		B BSP	C Cast Iron	(304)		G Nitrile
					S Stainless Steel	P Plated Steel		T PTFE (Teflon) / Santoprene
								V Viton

## 3" Port Models

<b>Pulsation Dampener Type</b>	Metallic / Automatic
<b>Material</b>	See model description chart
<b>Weight</b>	Aluminum (fluid cap) 41 lbs (18.6 kgs) Cast Iron (fluid cap) 94 lbs (42.6 kgs) Stain. Steel (fluid cap) 96 lbs (43.5 kgs)
<b>Material Inlet/Outlet</b>	SB30X-AXX-X 3 - 8 N.P.T. SB30X-BXX-X Rp 3 (3-11 BSP parallel)
<b>Air Inlet</b>	3/4 - 14 N.P.T.
<b>Maximum Air Inlet Pressure</b>	120-psi (8.3 bar)
<b>Maximum Material Inlet Pressure</b>	120-psi (8.3 bar)
<b>Maximum Temperature Limits</b>	EPR -60° - 280° F (-51° - 138° C) Nitrile 10° - 180° F (-12° - 82° C) Santoprene -40° - 225° F (-40° - 107° C) Teflon 40° - 225° F (4° - 107° C) Viton -40° - 350° F (-40° - 177° C)
<b>Maximum Fluid Volume</b>	509 in. <sup>3</sup> (8.34 lit)



Proper support of piping and pulsation dampener is required. Illustration for reference purposes only.

## Ordering Menu

SB	30	X	-	X	X	X	-	X
<b>Model Series</b>	<b>Blocker Size</b>	<b>Air Body</b>		<b>Thread</b>	<b>Fluid Construction</b>	<b>Hardware</b>		<b>Diaphragm</b>
	3-inch	A Aluminum	S Stainless Steel	A N.P.T.	A Aluminum	S Stainless Steel		A Santoprene
				B BSP	C Cast Iron	(304)		G Nitrile
					S Stainless Steel	P Plated Steel		T PTFE (Teflon) / Santoprene
								V Viton

**Notice:** All possible options are shown in the chart above, however, certain combinations may not be recommended. Consult a representative or the factory if you have questions concerning availability.



# Accessories / Pulsation Dampeners Pro-Series Pumps

## Pulsation Damper Performance Charts



		1/2" Pump w/SB1		% Reduction In Pulsation				
Fluid Pressure PSI Back Pressure	20	94	.81	.70	.65			
	40	92	.83		.70			
	60	91	.85					
		1	2	3	4	5	10	12
		Flow (GPM)						

		1" Pump w/SB1		% Reduction In Pulsation				
Fluid Pressure PSI Back Pressure	20	90	.80	.70	.60			
	40	90	.75		.70			
	60	85	.80	.75				
	80	85	.80					
		1	5	10	15	20	25	30
		Flow (GPM)						



		1-1/2" Pump w/SB2		% Reduction In Pulsation		
Fluid Pressure PSI Back Pressure	40	80	.70			
	60	80	.70			
	80	80	.65			
	100	80	.70			
		1	20	40	60	80
		Flow (GPM)				

		2" Pump w/SB2		% Reduction In Pulsation		
Fluid Pressure PSI Back Pressure	40	65	.55			
	60	70	.60			
	80	70	.55			
	100	60	.55			
		3	30	70	100	130
		Flow (GPM)				



		3" Pump w/SB3		% Reduction In Pulsation		
Fluid Pressure PSI Back Pressure	40	60	.50			
	60	65	.55			
	80	60	.50			
	100	60	.50			
		5	75	125	150	200
		Flow (GPM)				

# Diaphragm Pump Accessories Pro-Series Pumps

## WALL MOUNT

### Description

Conveniently mount pump above container. Made of heavy gage coated steel.  
(pump not included)

- Order No.** 67388\* 3/8" Pumps  
 76763\* 1/2" Pumps  
 66100\* 1" Metallic Pumps  
 62133 1-1/2" Metallic Pumps  
 67142 1" 3:1 High Pressure Pumps

\* (does not include mounting hardware)



76763 Wall Mount

## PNEUMATIC MATERIAL AGITATORS

### Description

Prevents fluid from separating. Mounts in opening on 5-gallon or 55-gallon drum covers.

- Order No.** 651100 5-Gallon containers, use with 651851 and 66971 drum covers

651103 55-Gallon drums, use with 66087 drum side-mount adapter. Use with 66197 or 67141 drum covers requires 75704 mount (3), Y8-58-C screws and (3) Y12-5-C nuts



651100 Agitator

## SIPHON TUBE

### Description

Used to draw fluid from 55-gallon drums. Straight tube when pump is mounted on drum; angle tube when pump is wall mounted above container. Plastic (PVC, PP, PTFE), Carbon Steel (CS) or 316 Stainless (SS)

- Order No.** 61412 Straight N.P.T. (male) PVD for 1/2" Pumps  
 65109 CS N.P.T. (female) for 1" Pumps  
 66779 PVC 36" N.P.T. (female) for 1" Pumps  
 66779-1 PVC, N.P.T. (female) 14.875" L for 1" pumps used with 275-gallon bulk tank  
 66779-2 PVC, N.P.T. (female) 49" L for 1" pumps used with 275-gallon bulk tank  
 66779-3 PVC, N.P.T. (female) 61" L for 1" pumps used with large bulk tanks



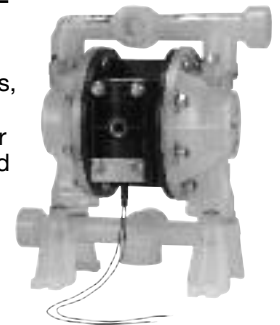
65109 Siphon Tube

## CYCLE SENSOR

### Description

Provides a closed contact output for monitoring pump operation. Can be used to monitor cycle rates, preventative maintenance and rough flow rate indication. Power supply and other devices required to gather, store or manipulate data. (pump not included)

- Order No.** 67386 3/8" and 1/2" Non-Metallic Pumps (PD03-X & PD05-X)  
 67168 3/8" and 1/2" Non-Metallic Pumps (66605X-X)  
 67169 1", 1-1/2" and 2" Non-Metallic Pumps. 1" and 1-1/2" Metallic Pumps



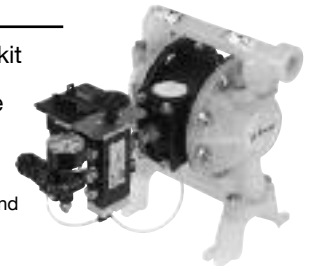
67386 on PD05P-X-X-B

## COUNTDOWN BATCHER

### Description

Manual start batch counter kit controls the volume of fluid dispensed by controlling the number of pump cycles. (pump not included)

- Order No.** 67072 For 3/8", 1/2" and 1" ported pumps



## DRUM COVERS

### Description

Keeps debris from entering fluid supply. Accommodates diaphragm pump. Fits 5-gallon and 55-gallon containers.

- Order No.** 67055-B Stainless Steel, for 1/4" Pumps on 5-gal. containers  
 66971 Stainless Steel, for 1/2" Pumps on 5-gal. containers

## CYCLE COUNTER KIT

### Description

Easy to install counter records up to 999,999 cycles. Kit includes necessary installation hardware. For fluid inventory, preventative maintenance and fluid metering.

- Order No.** 66975 for 3/8", 1/2", 1", 1-1/2", 2" and 3" ported pumps



# Diaphragm Pump Accessories Pro-Series Pumps

## SOLENOID ACTUATION KIT

### Description

Control pump cycle rate with on/off signal from PLC or other device. Kit includes connector w/36" cable plus components and instructions to install on standard pump. For dosing and batching applications.

**Order No.** 67165-1 (24VDC) for 3/8" and 1/2" ported pumps

67165-2 (120VAC) for 3/8" and 1/2" ported pumps

67166-1 (24VDC) for 1", 1-1/2" and 2" non-metallic and 1", 1-1/2" metallic pumps (less 3:1 models)

67166-2 (120VAC) for 1", 1-1/2" and 2" non-metallic and 1", 1-1/2" metallic pumps (less 3:1 models)



## AIR CONTROL ACTUATION VALVES

### Description

3-way valve controls air supply to pump. Activation starts pump, deactivation cuts off air supply to pump and exhausts air from motor, which prevents stalling.

120 VAC

**Order No.** MQ3728-120-A for 1/2" and 1" pumps

H254SS-120-A for 1-1/2" pumps

MQ3729-120-A for 2" and 3" pumps

24 VDC

**Order No.** MQ3728-024-D for 1/2" and 1" pumps

H254SS-024-D for 1-1/2" pumps

MQ3729-024-D for 2" and 3" pumps



MQ3728-120-A used on 1/2" and 1" pumps

Solenoid valve requires use of connector. See below for connector information.

## CONNECTORS

### Description

Connects valve solenoid to PLC or other control device. Female connector to male DIN of valve solenoid.

Straight connector with 36" horizontal cable located on back.

**Order No.** CBW

Straight connector with 36" vertical cable located on back.

**Order No.** CHW



CBW



CHW

## DIAPHRAGM PUMP SPEED CONTROLS

### Description

Controls air volume supplied to pump, thus permitting operator to control speed of pump. Can be panel mounted. Composite body.

**Order No.** 104104-N02 1/4" port size

104104-N04 1/2" port size

104104-N06 3/4" port size



## MINI BATCH COUNTER

### Description

For simple batching applications. Used with cycle counter or flow meter to control fluid output from pump.

**Order No.** 67161-2



67161-2 Mini Batch Counter with 1" pump

## PNEUMATIC LIQUID LEVEL SENSORS

### Description

Used to control pump.

**Order No** 59916-1 to sense when fluid exceeds a desired level

59916-2 to sense when fluid falls below a desired level



## SCREENED INLET KITS

### Description

Converts standard pump for use in a sump. Prevents unwanted debris from entering pump's fluid inlet.

**Order No** 67174-15 for use with 1-1/2" metallic pumps

67174-20 for use with 2" metallic pumps



# Piston Pump Accessories Pro-Series Pumps

## WALL MOUNTS

### Description

Permits pump to be mounted near fluid containers. For use with stub style 2:1 and 4:1 ratio pumps.

**Order No.** 61113 for N-Series air motor stub pumps fitted with bung adapters.



## WET-SOL "PLUS"

### Description

Designed to prolong packing life by keeping piston rod and packings wetted.

**Order No.** 66333-B Quart for NM2202X-X and NM2304X-X pumps

66334-B Gallon for NM2202X-X and NM2304X-X pumps



## MUFFLER

### Description

Reduces noise level of air exhaust to acceptable OSHA standards.

**Order No.** 61879 for use with 612041-X models.



## AIR LINE LUBRICANT

### Description

Used in air line lubricator to air motor. High quality "EP" extreme pressure gear oil. Non-detergent, rust or oxidation inhibited. Viscosity of 700 to 1000 S.U.S. at 100° F.

**Order No.** 62274 one quart bottle

## OVER-RUN CONTROL

### Description

Shuts off pump when excessive cycling occurs due to empty fluid supply container.

**Order No.** 635040 for 1/2" and 1" ported diaphragm pumps for 1:1, 2:1 and 4:1 ratio piston pumps

23644-400 for 1-1/2" and 2" ported diaphragm pumps

635043 for 3" ported diaphragm pumps



## DRUM COVERS

### Description

Keeps debris from entering fluid supply. Accommodates siphon hose and agitator. Fits 5-gallon containers.

**Order No.** 651851 Carbon Steel, for 2" and 3" air motor pumps

94422 Carbon Steel, 2" bung opening for 55-gal. containers



651851 Drum Cover



94422 Drum Cover

# Viscosity Conversion Chart Pro-Series Pumps

## Viscosity Conversion Chart

Centi Poise	Poise	Saybolt Universal (SSU)	Saybolt Furol	Ford No. 3	Ford No. 4	Zahn No. 1	Zahn No. 2	Zahn No. 3
1	.01	31						
2	.02	34						
4	.04	38						
7	.07	47		8				
10	.10	60		9	5	30	16	
15	.15	80	13	10	8	34	17	
20	.20	100	15	12	10	37	18	
25	.24	130	17	15	12	41	19	
30	.30	160	19	19	14	44	20	
40	.40	210	24	25	18	52	22	
50	.50	260	29	29	22	60	24	
60	.60	320	34	33	25	68	27	
70	.70	370	39	36	28	72	30	
80	.80	430	42	41	31	81	34	
90	.90	480	49	45	32	88	37	10
100	1.0	530	54	50	34		41	12
120	1.2	580	59	58	41		49	14
140	1.4	690	70	66	45		58	16
160	1.6	790	79	72	50		66	18
180	1.8	900	91	81	54		74	20
200	2.0	1000	100	90	58		82	23
220	2.2	1100	110	98	62		88	25
240	2.4	1200	120	106	65			27
260	2.6	1280	128	115	68			30
280	2.8	1380	138	122	70			32
300	3.0	1475	148	130	74			34
320	3.2	1530	153	136	89			36
340	3.4	1630	163	142	95			39
360	3.6	1730	173	150	100			41
380	3.8	1850	185	160	106			43
400	4.0	1950	195	170	112			46
420	4.2	2050	205	180	118			48
440	4.4	2160	216	188	124			50
460	4.6	2270	227	200	130			52
480	4.8	2380	238	210	137			54
500	5.0	2480	248	218	143			58
550	5.5	2660	266	230	153			64
600	6.0	2900	290	250	170			68
700	7.0	3380	338	295	194			76
800	8.0	3880	388	340	223			
900	9.0	4300	430	365	247			
1000	10.0	4600	460	390	264			
1100	11	5200	520	445	299			
1200	12	5620	562	480	323			
1300	13	6100	610	520	350			
1400	14	6480	648	550	372			
1500	15	7000	700	595	400			
1600	16	7500	750	635	430			
1700	17	8000	800	680	460			
1800	18	8500	850	720	490			
1900	19	9000	900	760	520			
2000	20	9400	940	800	540			
2100	21	9850	985	835	565			
2200	22	10300	1030	875	592			
2300	23	10750	1075	910	617			
2400	24	11200	1120	950	645			
2500	25	11600	1160	985	676			
3000	30	14500	1450	1230	833			
3500	35	16500	1650	1400	950			
4000	40	18500	1850	1570	1060			
4500	45	21000	2100	1780	1175			
5000	50	23500	2350		1350			
5500	55	26000	2600		1495			
6000	60	28000	2800		1605			
6500	65	30000	3000		1720			
7000	70	32500	3250		1870			
7500	75	35000	3500		2010			
8000	80	37000	3700		2120			
8500	85	39500	3950		2270			
9000	90	41000	4100		2360			
9500	95	43000	4350		2470			
10000	100	46500	4650		2670			
15000	150	69400	6940					
20000	200	92500	9250					
30000	300	138600	13860					
40000	400	185000	18500					
50000	500	231000	23100					
60000	600	277500	27750					
70000	700	323500	32350					
80000	800	370000	37000					
90000	900	415500	41550					
100000	1000	462000	46200					
125000	1250	578000	57800					
150000	1500	694000	69400					
175000	1750	810000	81000					
200000	2000	925000	92500					

# Pump Airborne Noise Emissions Pro-Series Pumps

## Pump Airborne Noise Emissions

The pump sound pressure levels published below have been updated to an Equivalent Continuous Sound Level ( $L_{Aeq}$ ) to meet the intent of ANSI S1.13-1971. CAGI-PNEUROP S5.1 using four microphone locations.

	Pump Port Size (Inches)	Air Operating Pressure (PSI)	Cycles/Minute	Sound Pressure ( $L_{Aeq}$ )
<b>Diaphragm Pumps</b>				
	1/2	70	60	75.0 db(A)
	1	70	60	79.7 db(A) 80.6 db(A)
	1-1/2	70	60	81.0 db(A) 82.8 db(A)
	2	70	60	*85.0 db(A)
	3	70	50	*83.0 db(A)





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