

ARO

Pro Series Diaphragm and Piston Pumps

Non-Metallic and Metallic Diaphragm Pumps

Low-Ratio Piston Pumps

Specialty Pumps



IR 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

Chemical Processing

Formulation of :

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

Pharmaceuticals

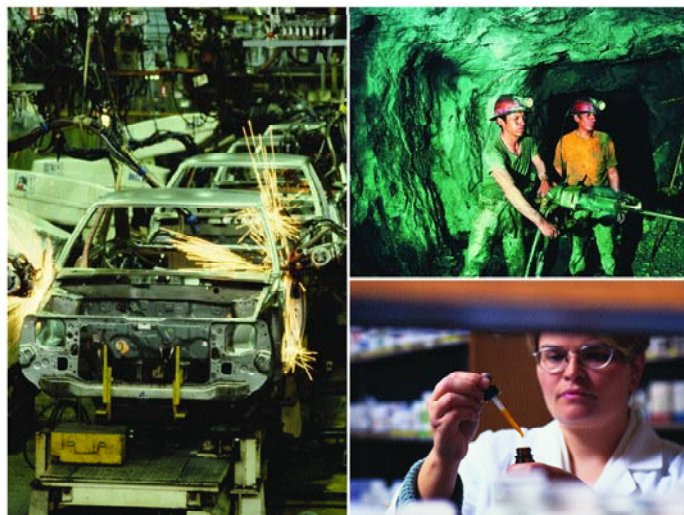
Supply and Transfer of:

- FDA Materials

Coal Mining

Transfer of

- Waste Water
- Slurry



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



DET NORSKE VERITAS		Form No.: 000003	
SURVEY REPORT			
Name of Ship Blackford Dolphin	Client Fred. Olsen Energy ASA		
In relation to a delivery of 15 diaphragm pumps from Ingersoll Rand South East Asia (Pte) Ltd(hereafter called vendor) to Jerni, Oslo, ANN, DNV has witnessed pressure and performance tests as described in the following.			
The delivery contains two models with serial numbers:			
Model PQ208-ACP-GGG	Serial Numbers 18086-747, 18086-748, 18086-750, 18086-751, 18086-752, 18086-753, 18086-754, 18086-755, 18086-756, 18086-757, 18086-758, 18086-759, 18086-760, 18086-761, 18086-762, 18086-763, 18086-764, 18086-765, 18086-766, 18086-767, 18086-768, 18086-769, 18086-770, 18086-771, 18086-772, 18086-773, 18086-774, 18086-775, 18086-776, 18086-777, 18086-778, 18086-779, 18086-780, 18086-781, 18086-782, 18086-783, 18086-784, 18086-785, 18086-786, 18086-787, 18086-788, 18086-789, 18086-790, 18086-791, 18086-792, 18086-793, 18086-794, 18086-795, 18086-796, 18086-797, 18086-798, 18086-799, 18086-800, 18086-801, 18086-802, 18086-803, 18086-804, 18086-805, 18086-806, 18086-807, 18086-808, 18086-809, 18086-810, 18086-811, 18086-812, 18086-813, 18086-814, 18086-815, 18086-816, 18086-817, 18086-818, 18086-819, 18086-820, 18086-821, 18086-822, 18086-823, 18086-824, 18086-825, 18086-826, 18086-827, 18086-828, 18086-829, 18086-830, 18086-831, 18086-832, 18086-833, 18086-834, 18086-835, 18086-836, 18086-837, 18086-838, 18086-839, 18086-840, 18086-841, 18086-842, 18086-843, 18086-844, 18086-845, 18086-846, 18086-847, 18086-848, 18086-849, 18086-850, 18086-851, 18086-852, 18086-853, 18086-854, 18086-855, 18086-856, 18086-857, 18086-858, 18086-859, 18086-860, 18086-861, 18086-862, 18086-863, 18086-864, 18086-865, 18086-866, 18086-867, 18086-868, 18086-869, 18086-870, 18086-871, 18086-872, 18086-873, 18086-874, 18086-875, 18086-876, 18086-877, 18086-878, 18086-879, 18086-880, 18086-881, 18086-882, 18086-883, 18086-884, 18086-885, 18086-886, 18086-887, 18086-888, 18086-889, 18086-890, 18086-891, 18086-892, 18086-893, 18086-894, 18086-895, 18086-896, 18086-897, 18086-898, 18086-899, 18086-900, 18086-901, 18086-902, 18086-903, 18086-904, 18086-905, 18086-906, 18086-907, 18086-908, 18086-909, 18086-910, 18086-911, 18086-912, 18086-913, 18086-914, 18086-915, 18086-916, 18086-917, 18086-918, 18086-919, 18086-920, 18086-921, 18086-922, 18086-923, 18086-924, 18086-925, 18086-926, 18086-927, 18086-928, 18086-929, 18086-930, 18086-931, 18086-932, 18086-933, 18086-934, 18086-935, 18086-936, 18086-937, 18086-938, 18086-939, 18086-940, 18086-941, 18086-942, 18086-943, 18086-944, 18086-945, 18086-946, 18086-947, 18086-948, 18086-949, 18086-950, 18086-951, 18086-952, 18086-953, 18086-954, 18086-955, 18086-956, 18086-957, 18086-958, 18086-959, 18086-960, 18086-961, 18086-962, 18086-963, 18086-964, 18086-965, 18086-966, 18086-967, 18086-968, 18086-969, 18086-970, 18086-971, 18086-972, 18086-973, 18086-974, 18086-975, 18086-976, 18086-977, 18086-978, 18086-979, 18086-980, 18086-981, 18086-982, 18086-983, 18086-984, 18086-985, 18086-986, 18086-987, 18086-988, 18086-989, 18086-990, 18086-991, 18086-992, 18086-993, 18086-994, 18086-995, 18086-996, 18086-997, 18086-998, 18086-999		
Model PQ208-ACP-GGG	Serial Numbers 18086-401, 18086-402, 18086-403, 18086-404, 18086-405, 18086-406, 18086-407, 18086-408, 18086-409		
Pressure Test The pressure test was performed on two pumps, one from each model, randomly selected by the vendor. The diaphragm assembly was removed and the test was performed on the pump casing. The test for one pump consisted of two assemblies. The upper and lower casing was tested as one assembly, while the two side casings were connected and tested at a top and bottom to constitute the second assembly. The casing was pressurized to 10 bar and pressure was maintained for a minimum of 10 minutes. The two pumps PQ208-ACP-GGG (18086-401) and PQ208-ACP-GGG (18086-402) were tested without sign of any leaks.			
Performance Test The performance test was performed on two pumps, one from each model, randomly selected by the vendor. The test was performed at a test setup supplied by the vendor with fresh water as test medium. The medium was supplied from a watermeter (flowmeter) mounted through a flowmeter and fed back to the test table elevation (100mm). The pumps PQ208-ACP-GGG (18086-751) and PQ208-ACP-GGG (18086-403) were tested with the results given in the table below.			
The air pressure supplied to the pump was read from a pressure gauge connected to the air supply. The values given in the results table are approximate means, due to fluctuations from the air compression.			
Test Number	Serial number	Air pressure(bar)	Volume (l)
1	18086-751	9	97
2	18086-403	4	516
3	18086-403	9	254
4	18086-403	6	614
No other aspects are considered in this report.			
Original to DNV	Signed: _____ Date: _____		
Copy to client	SINGAPORE PER A. HOLTHROBERT WILLIAMS Surveyor's Name (Capital letters)		
Copy to ship	SINGAPORE PER A. HOLTHROBERT WILLIAMS Surveyor's Name (Capital letters)		
DET NORSKE VERITAS, VERITASVEIEN 1, NO-1322 NORSK, NORWAY. TEL. INT. +47 87 87 88 00. TELEFAX: +47 87 87 88 11. E-mail: dnv@dnv.no			



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.

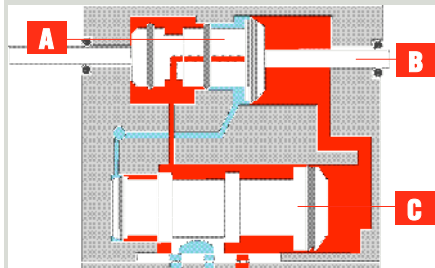
“D” Valve

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

“SimulShift™” Valve

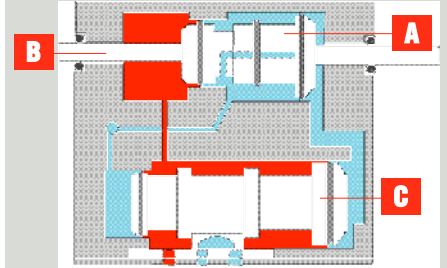
- ▷ Provides an ultra-positive, reliable shift signal that avoids stall-out.
- ▷ Provides faster pump trip-over with more flow.
- ▷ Faster trip-over with less pulsation and superior laminar material flow.

Diaphragm Moving Right to Left



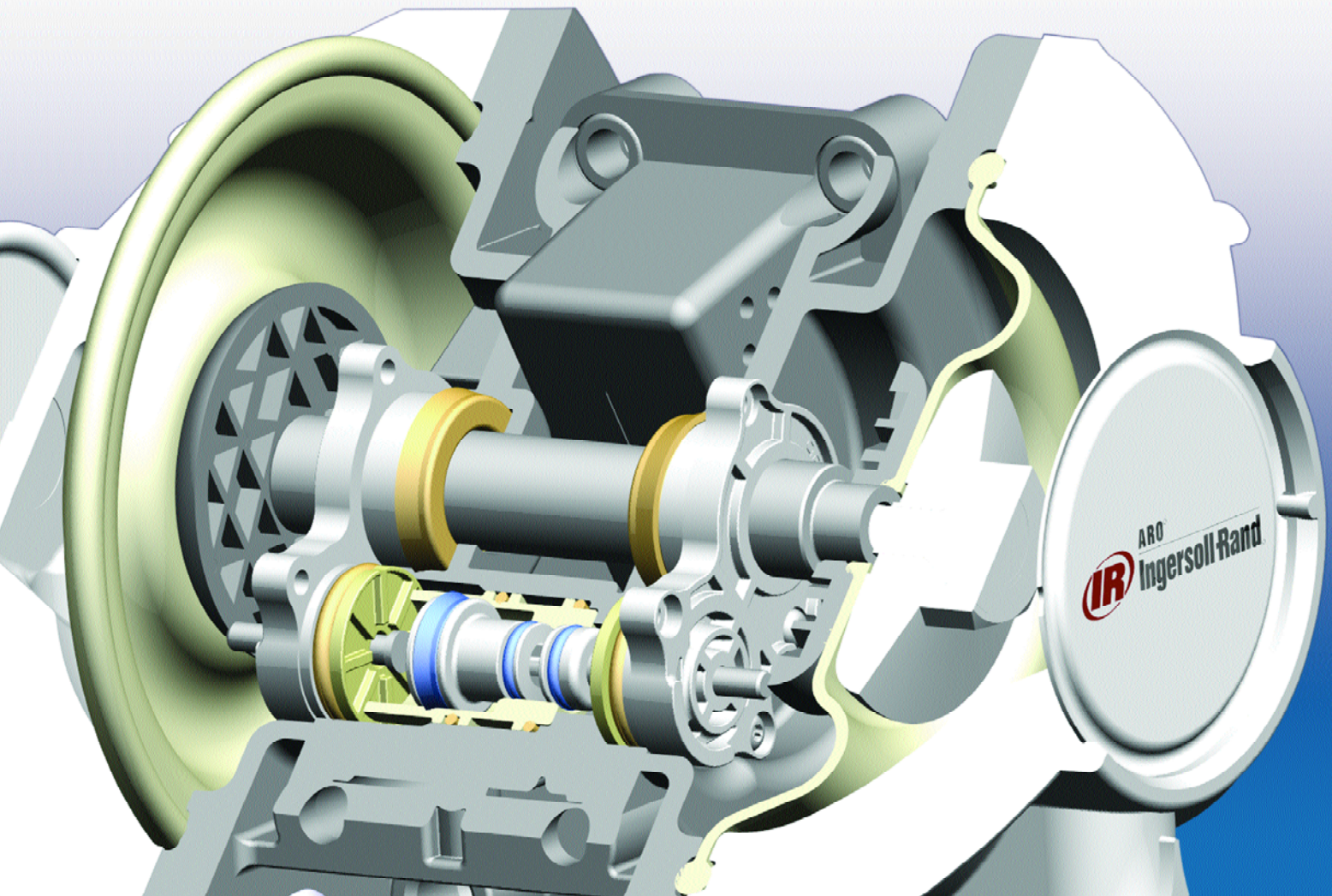
- 1.) The diaphragm pushes the right Actuator Pin (B) mechanically moving the Simul-Shift Valve (A) to the left.
- 2.) Compressed air flows to the large side of the Simul-Shift Valve, pneumatically moving the valve to the position shown.
- 3.) Compressed air also flows to the large end of the Major Air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



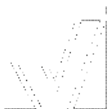
Productivity

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



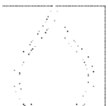
Versatility

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



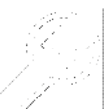
Reliability

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

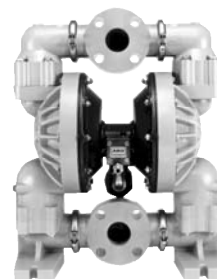
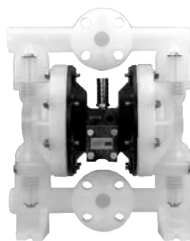
Don't forget the other compelling reasons to use Aro Diaphragm Pumps: ARO Diaphragm pumps are simple to apply to your application because they are self priming and can be run at variable flows controlled by air pressure or fluid back pressure. They can handle materials that are abrasive and/or shear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

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637427-XX	Fluid Section Service Kit	16	MQ3729-024-D	Air Control Actuation Valve	48
637432-XX	Fluid Section Service Kit	22	MQ3729-120-A	Air Control Actuation Valve	48
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651103	Pneumatic Material Agitator	47	PD02P-X-X	1/4" Non-Metallic Pump	4
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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	66073-1	66073-1	66073-2	66084-1	66084-1

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

Accessories

Air Line Connection Kit* I Kit No. 66073-1

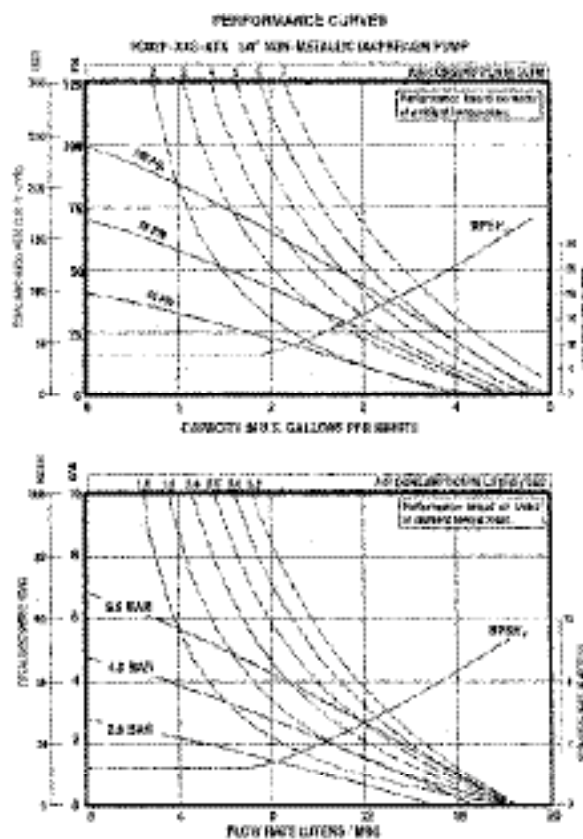
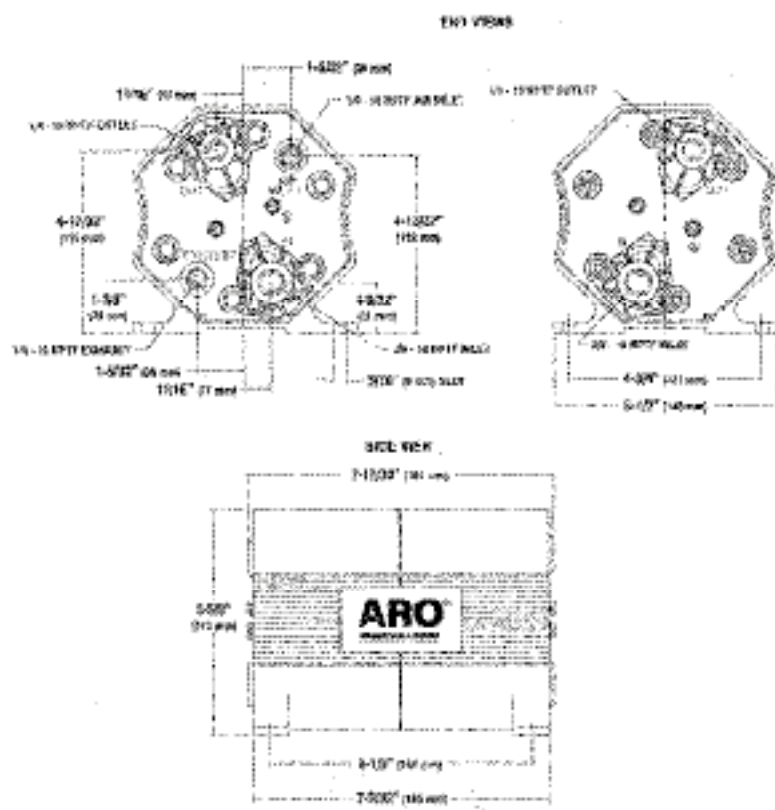
Service Repair Kits | Kit No. 637276 (air section)

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



Refer to www.itools.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.: in. (mm)	3/32 (2.4)
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

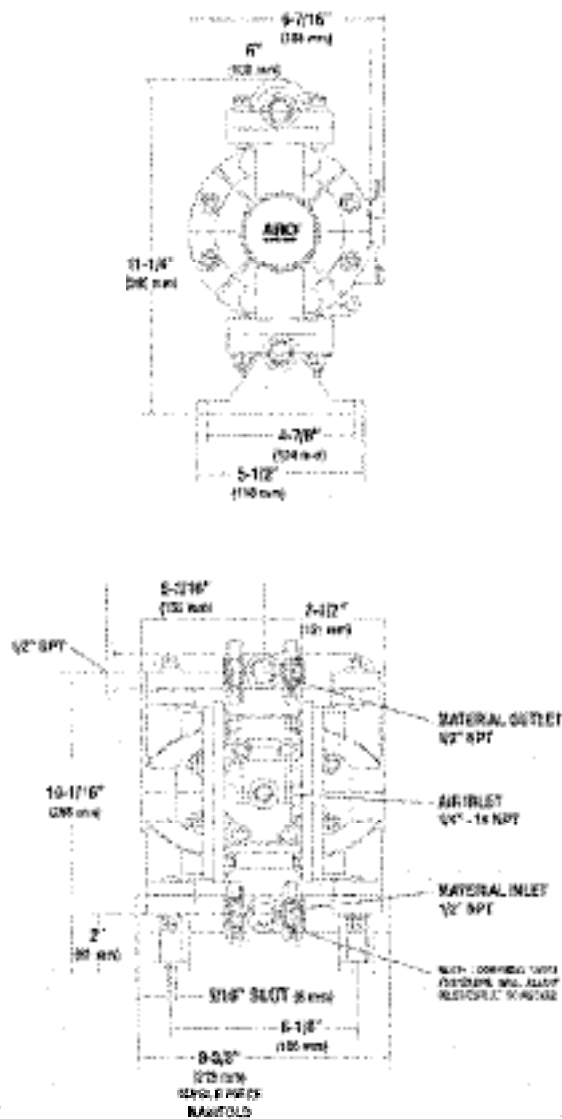
Air Line Connection Kit* I Kit No. 66073-1
66073-2

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

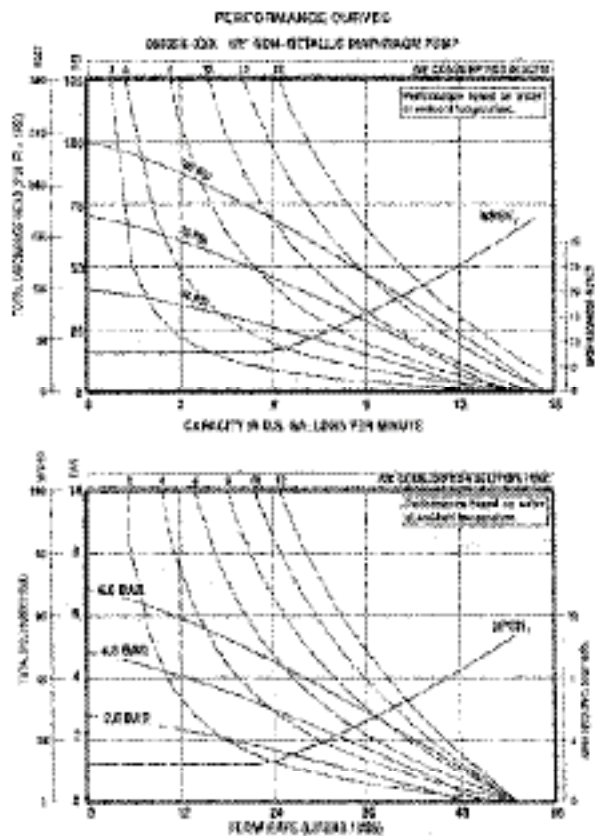
*Please note pumps are not included with these kits.

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

1/2" Non-Metallic Dimensions and Flow Charts



Model
66605X-X



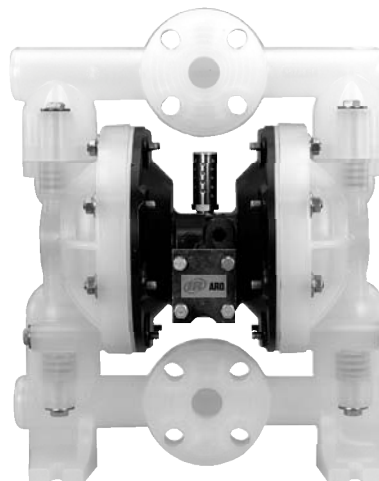
Refer to www.itools.com/aro/ for full size flow curves.

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

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-, 1AE-, 1AJ-, 1AL- 20.3 (9.2) 6661A4-, 1AG-, 1AK-, 1AN- 28.5 (12.9) 6661B3-, 1BE-, 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

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

[#] three-piece manifold
* one-piece manifold

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)

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.

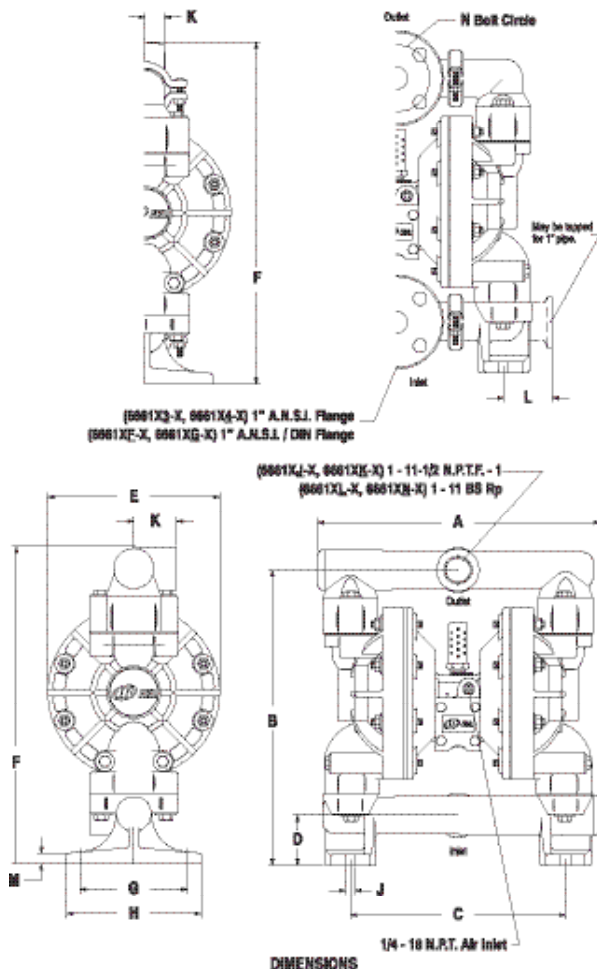


Flange Connection Kit
67078

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

DIMENSIONAL DATA

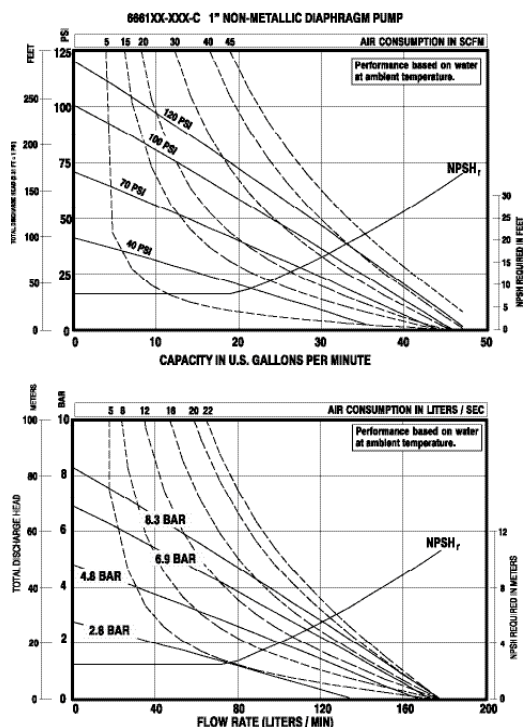
Dimensions shown are for reference only, they are shown in inches and millimeters (mm).



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" (59 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 6661XM-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)
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/ 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 GPM (LPM):	100 (378.5)		
Displacement per cycle:	0.67 (2.54)		
Gallons (Liters)			
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 psi (bar):	120 (8.3)		
Suspended solids max. dia.:	1/4 (6.4)		
in. (mm)			
Weight lbs (kg):	6661T3-X-C 62 (28.1)		
	6661T4-X-C 92 (41.7)		
Note: Add 23-lbs (10.4-kg) for cast iron air motor section			
Maximum dry suction lift ft (m):	14 (4.27)	Rubber fitted	
Sound Level:	PSI Cycles / Min	db (A)	
	70 60	77.7	



Ordering Menu

6661X	X	-	X	X	X	-	C
Center Body	Fluid Caps/ Manifold Material		Seat Material	Ball Check Material	Diaphragm Material		
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)

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.

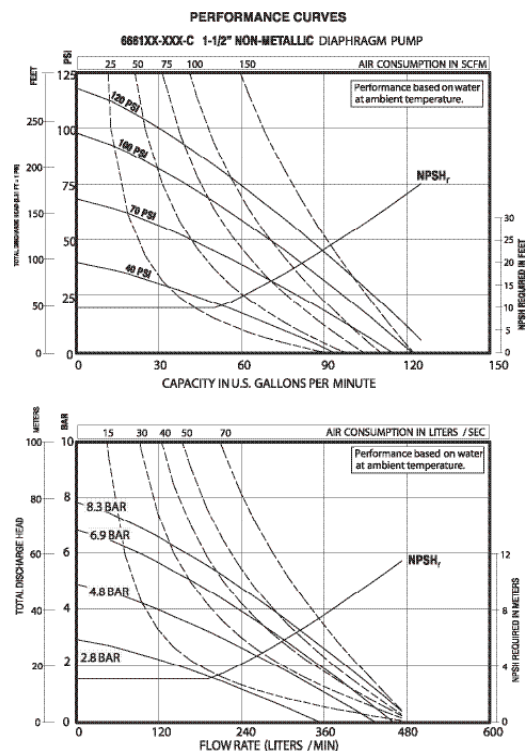
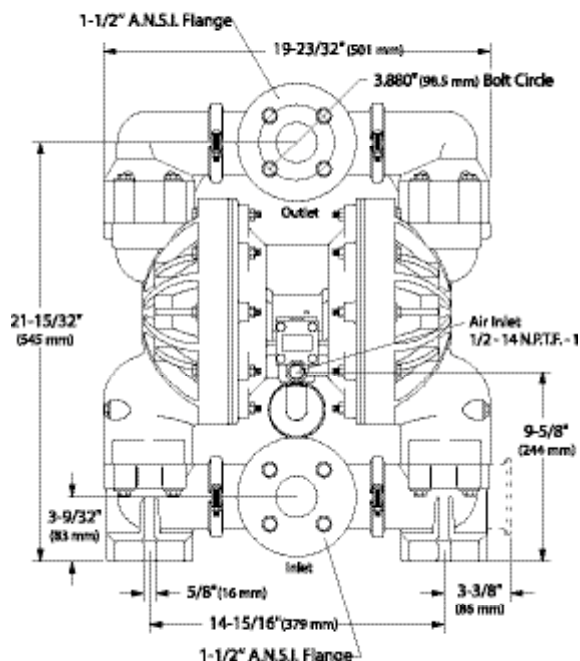
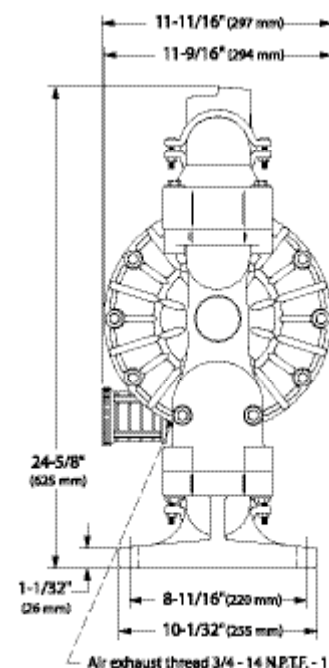


Flange Connection Kit
67079

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).



2" Non-Metallic Models Pro-Series Pumps

2" Non-Metallic Performance Specifications

Ratio:	1:1		
Maximum Flow GPM (LPM):	145 (548.8)		
Displacement per cycle:	0.72 (2.7)		
Gallons (Liters)			
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 psi (bar):	120 (8.3)		
Suspended solids max. dia.:	1/4 (6.4)		
in. (mm)			
Weight lbs (kg):	6662A3-X-C 62 (28.1)		
	6662A4-X-C 92 (41.7)		
Note: Add 23-lbs (10.4-kg) for cast iron air motor section			
Maximum dry suction lift ft (m):	14 (4.27)	Rubber fitted	
Sound Level:	PSI Cycles / Min	db (A)	
	70 60	77.7	



Ordering Menu

6662X	X	-	X	X	X	-	C
Center Body	Fluid Caps/ Manifold Material		Seat Material	Ball Check Material	Diaphragm Material		
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)

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.



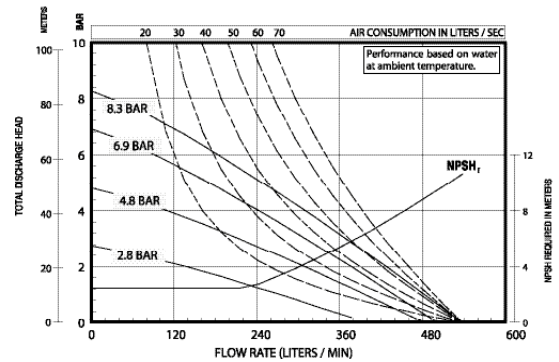
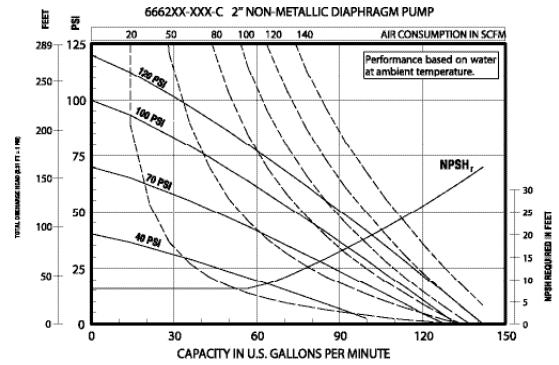
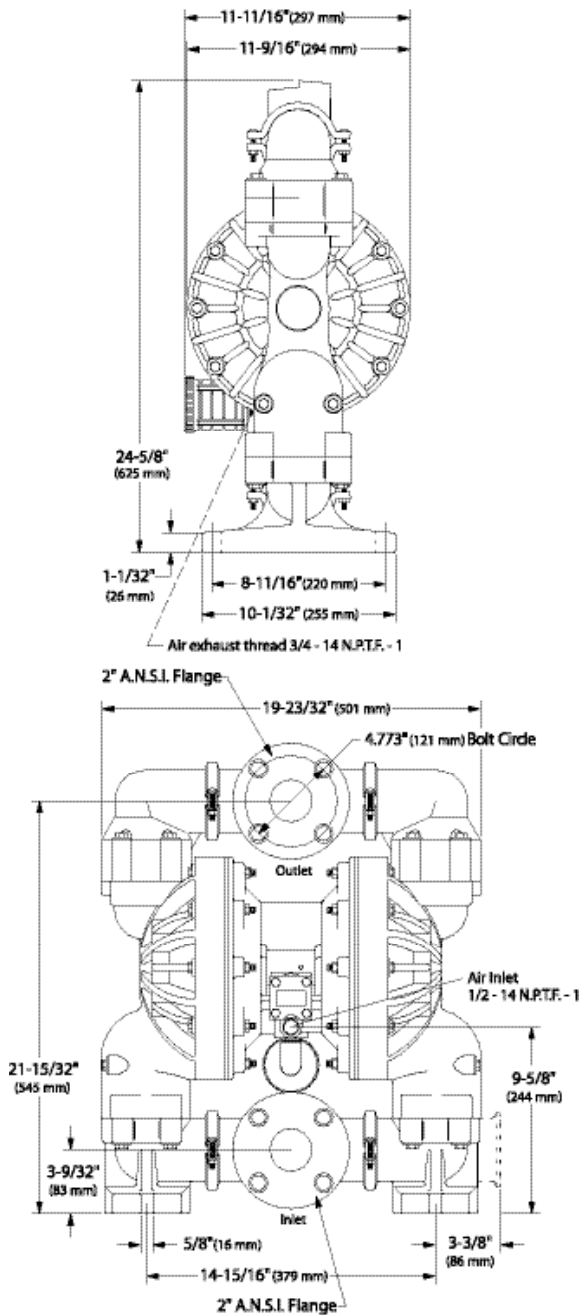
Flange Connection Kit
67080

*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/ for full size flow curves.

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 Convuluted Diaphragms

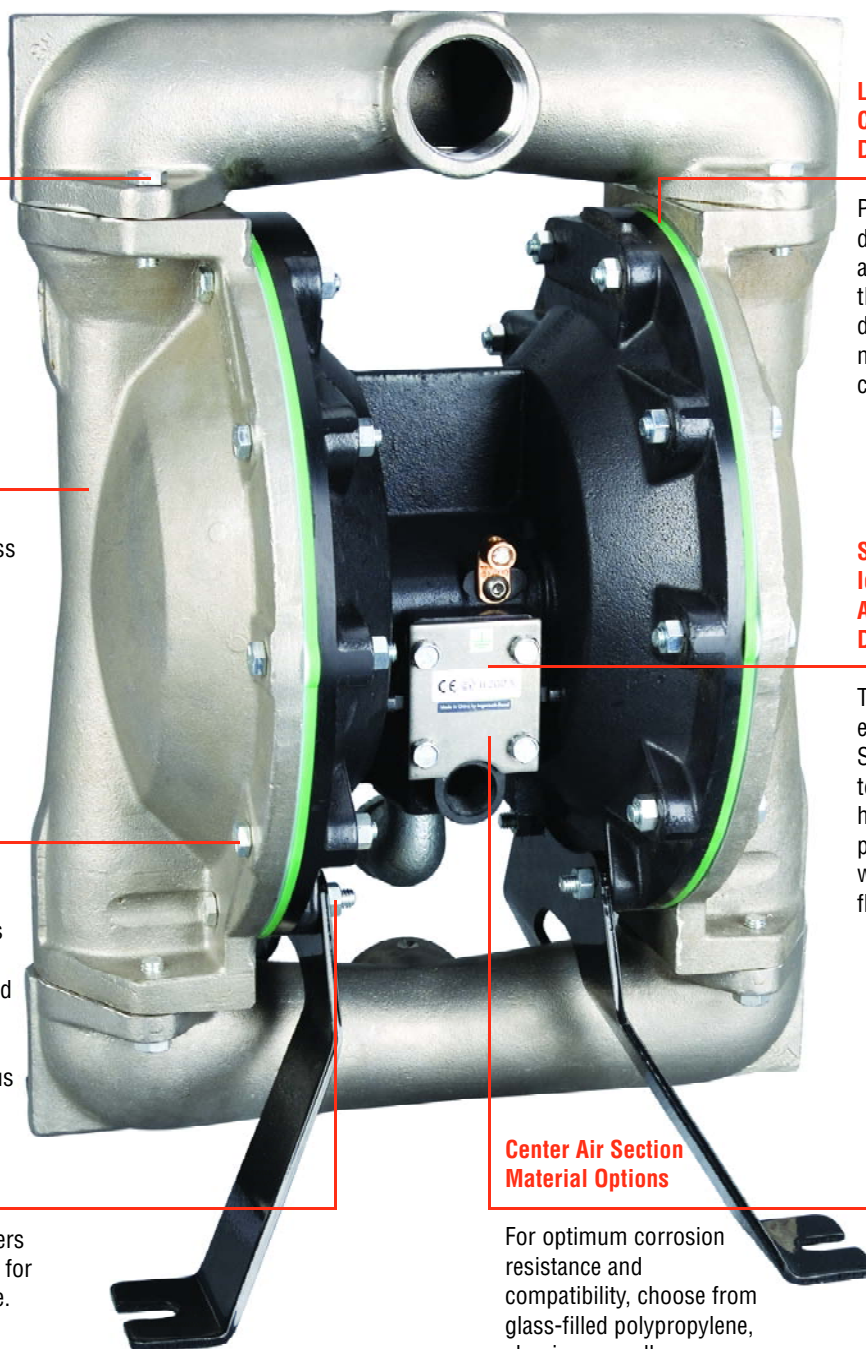
PRO convuluted diaphragms can last as long as four times that of traditional diaphragms under normal operating conditions.

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* *add 8-lb(3.63-kg) for cast iron center section	51.5 (23.4) Aluminum* 84.5 (38.3) SS 79.5 (36.1) Cast Iron* *add 23-lb(10.4-kg) for cast iron center section	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
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	66073-1	66073-2	66084-1	66312	66312

1/2" Metallic Models Pro-Series Pumps

1/2" Metallic Performance Specifications

Ratio:	1:1
Maximum Flow GPM (LPM):	13.0 (49.2)
Displacement per cycle:	0.040 (0.15)
Gallons (Liters)	
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 psi (bar):	100 (6.9)
Suspended solids max. dia:	3/32 (2.4)
in. (mm)	
Weight lbs (kg):	PD05P-ASS-STT 8.36(3.8) PD05P-AAS-STT 14.6(6.6)
Maximum dry suction lift ft (m):	10 (3)
Sound Level:	PSI Cycles / Min db (A)
	70 60 71.1



Ordering Menu

PD05	X	-	X	X	S	-	X	X	X
Model Series	Center Section Material	Fluid Connection	Fluid Caps/ Manifold Material	Hardware Material	Seat Material	Ball Material	Diaphragm Material		
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.

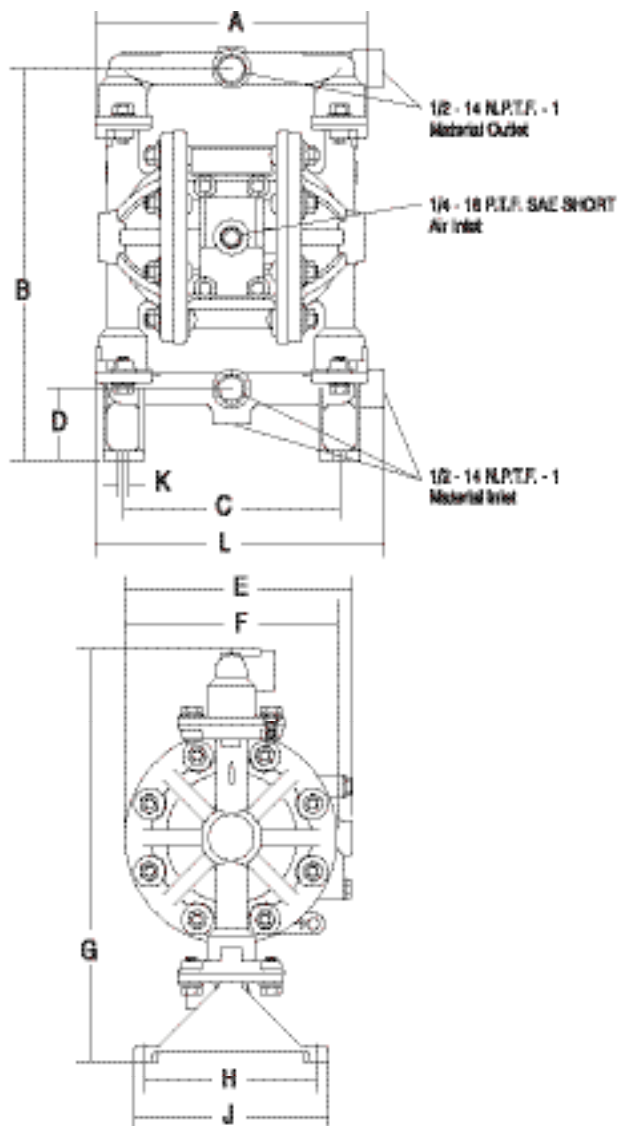
Service Repair Kits | Kit No. 637141 (Air Section)
Kit No. 637140- XX* (Fluid Section)

(*) 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

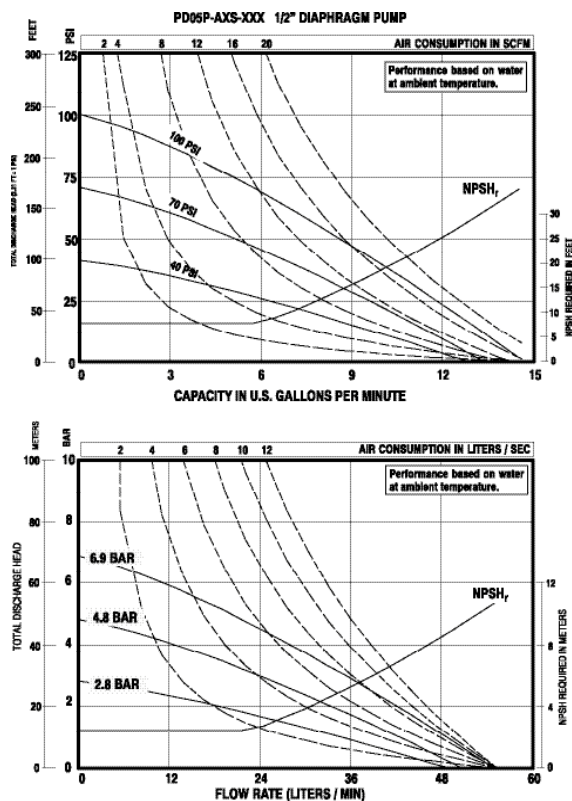
1/2" Metallic Dimensions and Flow Charts



DIMENSIONS

A 7-11/16" (195 mm)	E 6-7/18" (164 mm)	J 6-1/2" (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" (208 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/ 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
	70	60
		db (A)
		64.5



Ordering Menu

6661X	X	-	X	X	X	-	C
Center Body/ Threads	Fluid Caps/ Manifold Material		Seat Material	Ball Check Material	Diaphragm Material		
0 Aluminum, N.P.T.F.	0 [#] Aluminum, Single	1	Aluminum	1 Neoprene	1 Neoprene		
1 Cast Iron, N.P.T.F.	1 [#] Stainless Steel, Single	2	316 Stainless, Steel	2 Nitrile	2 Nitrile		
2 Aluminum, BSP	2 [#] Cast Iron, Single	3	Polypropylene	3 Viton	3 Viton		
3 Cast Iron, BSP	9 [#] 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			
	[#] steel hardware						
	* stainless steel hardware						

Accessories

Air Line Connection Kit* I 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)

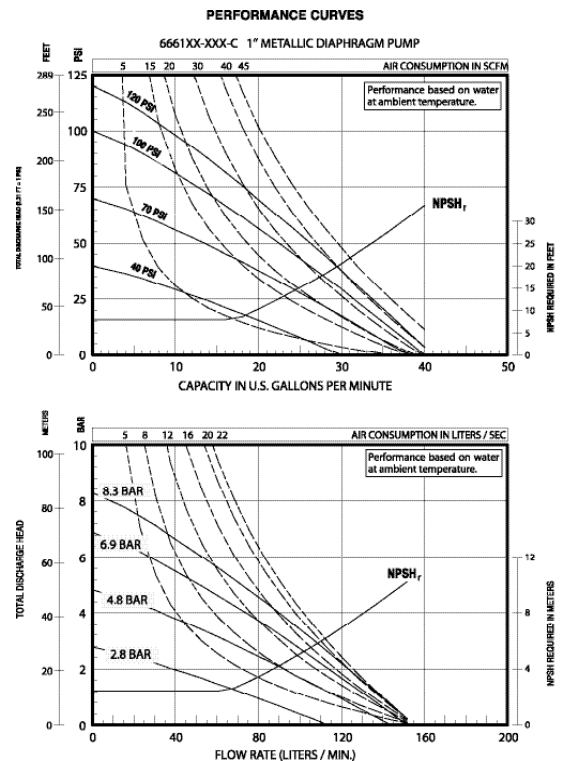
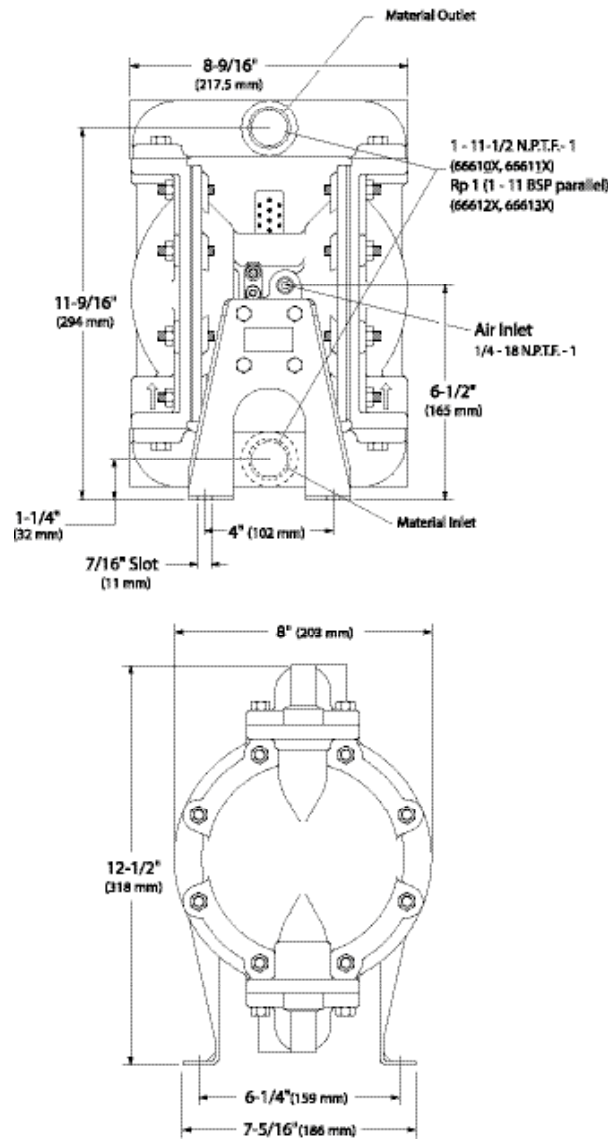
*Please note pumps are not included with these kits.

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/ 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 GPM (LPM):	90 (340.7)
Displacement per cycle:	0.64 (2.42)
Gallons (Liters)	
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 psi (bar):	120 (8.3)
Suspended solids max. dia.:	1/4 (6.4)
in. (mm)	
Weight lbs (kg):	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 ft (m):	19 (5.8)	Rubber fitted
Sound Level:	PSI	Cycles / Min
	70	60
		db (A)
		77.7



Ordering Menu

6661X	X	-	X	X	X	-	C
Center Body/ Threads	Fluid Caps/ Manifold Material		Seat Material	Ball Check Material	Diaphragm Material		
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 /		
	B* Stainless Steel		5 Carbon Steel	6 Acetal	Santoprene		
	C* Cast Iron		8 400 Stainless Steel	8 Polyurethane	9 Hytrel		
				A Stainless Steel	B Santoprene		
				C Hytrel			
				E Santoprene			

steel hardware

* stainless steel hardware

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)

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.

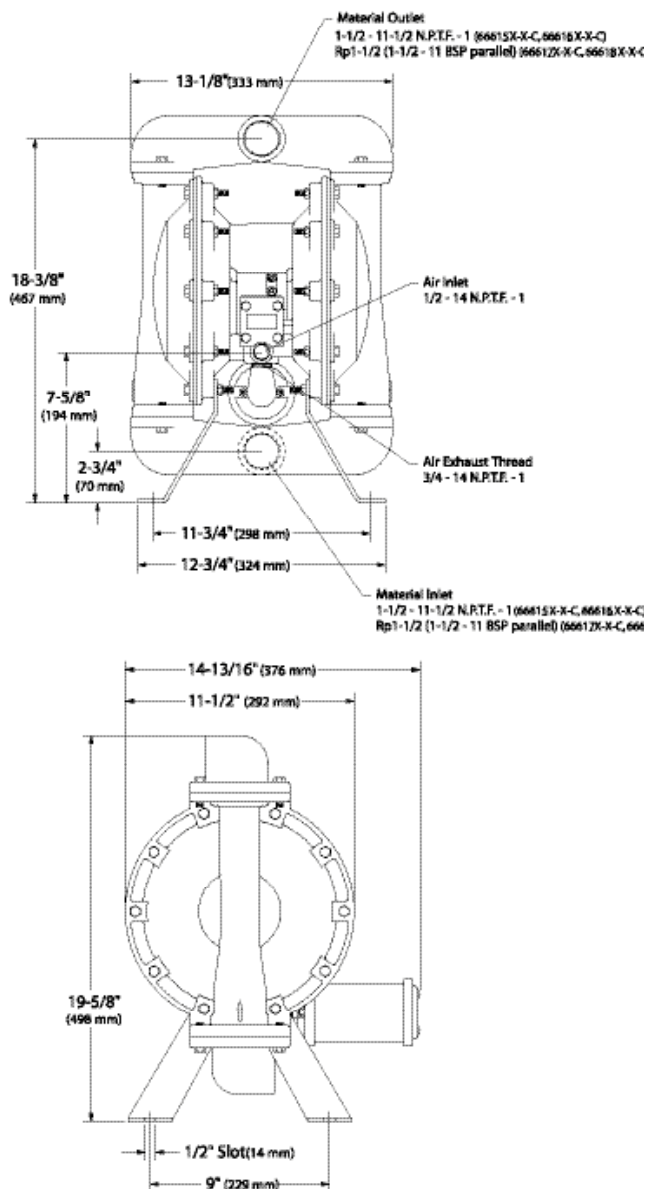


Screened Inlet Kit
67174-15

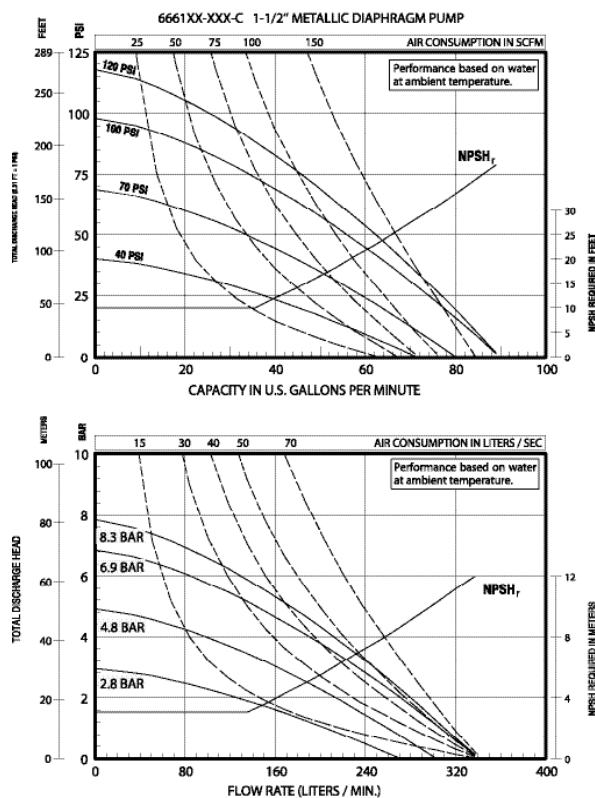
1-1/2" Metallic Dimensions and Flow Curves Pro-Series Pumps

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.irttools.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)
Gallons (Liters)	
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)
in. (mm)	
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
Center Body/ Threads	Fluid Caps/ Manifold Material Hardware		Seat Material	Ball Check Material	Diaphragm Material		
5 Aluminum, 2 - 11-1/2 N.P.T.F.	0 Aluminum, Carbon Steel		1 Aluminum	2 Nitrile	2 Nitrile		
7 Aluminum, Rp 2 (2-11 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. 637432-XX (fluid section)

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.

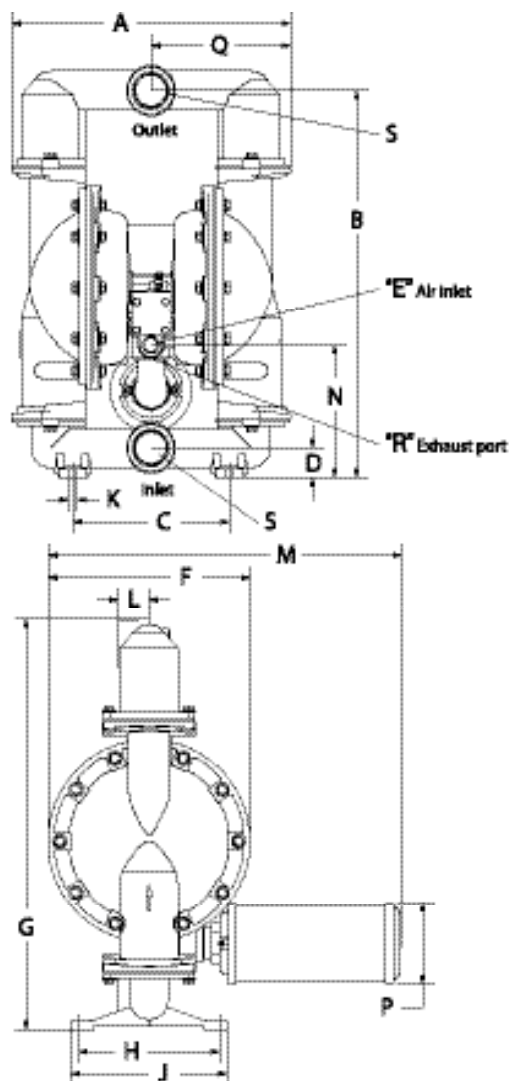
*Please note pumps are not included with these kits.



Screened Inlet Kit
67174-20

2" Metallic Dimensions and Flow Curves Pro-Series Pumps

2" Metallic Dimensions and Flow Charts



DIMENSIONS

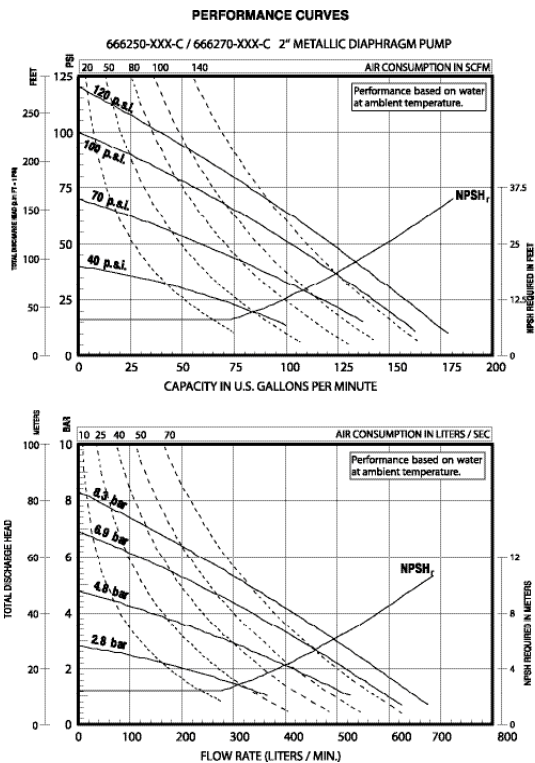
A 17-15/16" (455.1 mm)	G 26-3/8" (669.5 mm)	N 8-15/32" (214.6 mm)
B 24-3/4" (628.7 mm)	H 9-1/16" (230.2 mm)	P 5-1/4" (133.4 mm)
C 10-1/16" (255.6 mm)	J 10-1/16" (255.6 mm)	Q 8-13/32" (227.6 mm)
D 1-7/8" (47.6 mm)	K 9/16" (14.3 mm)	R 1-1/4" - 11-1/2 N.P.T.F. - 1
E 3/4 - 14 N.P.T.F. - 1	L 2" (50.8 mm)	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.irttools.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
Center Body/ Threads	Fluid Caps/ Manifold Material Hardware		Seat Material	Ball Check Material	Diaphragm Material		
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

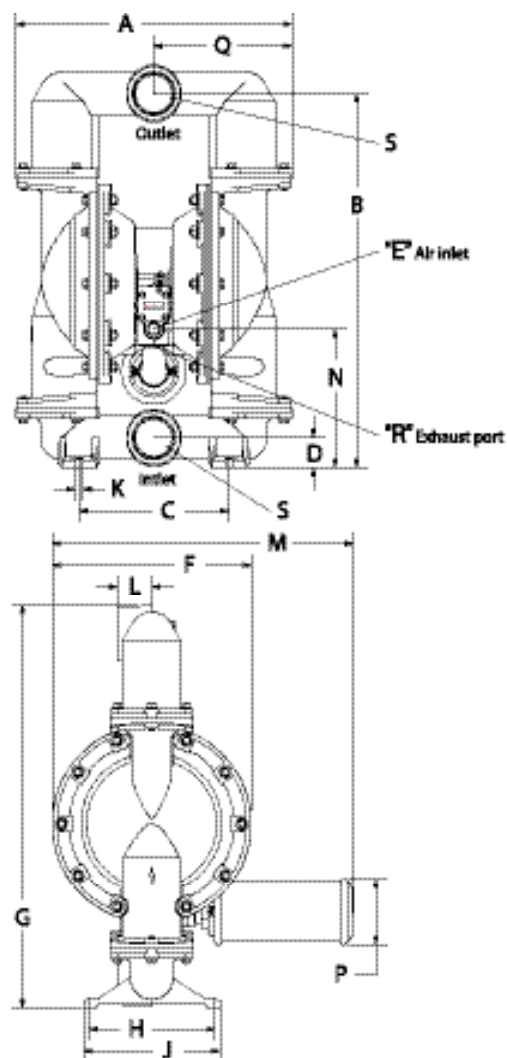
Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

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

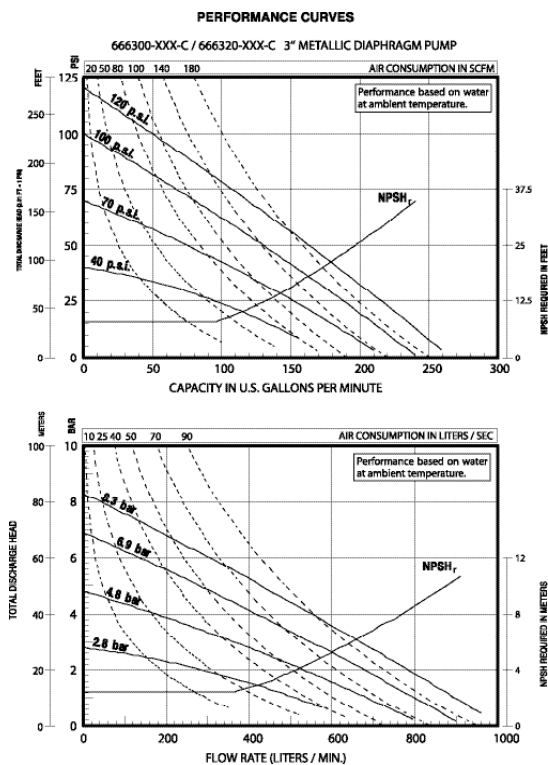
A 22-7/32" (563.9 mm)	G 32-9/32" (819.8 mm)	N 11-3/32" (281.4 mm)
B 30" (762.0 mm)	H 10-5/32" (258.0 mm)	P 5-1/4" (133.4 mm)
C 12-1/16" (306.4 mm)	J 11" (279.4 mm)	Q 11-1/8" (281.9 mm)
D 2-3/8" (60.3 mm)	K 9/16" (14.3 mm)	R 1-1/4 - 1-1/2 N.P.T.F. - 1
E 3/4 - 14 N.P.T.F. - 1	L 2-3/4" (69.9 mm)	S (see 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.irttools.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*
Acetal	180 (82)	3	3	-
Aluminum	-	1	3	-
Buna N (Nitrile)	180 (82)	2	2	3
Cast Iron	-	3	4	-
Geolast (Nitrile Based)	180 (82)	2	2	3
Hastalloy C	-	5	-	-
Hytre	150 (66)	2	4	4
Kynar (PVDF)	200 (93)	5	2	-
Neoprene	200 (93)	2	2	3
Polypropylene	150 (66)	4	2	-
Polyurethane	150 (66)	1	4	4
Santoprene	225 (107)	4	4	5
Stainless Steel (300 Series)	-	4	4	-
Stainless Steel (400 Series)	-	3	5	-
PTFE Teflon	225 (107)	5	2	4**
Viton	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.

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 GPM (LPM):	18 (68.1)
Max. Working Flow GPM (LPM):	9 (34.1)
Maximum Rec'd Cycles:	75 per minute
Displacement per Cycle in ³ (cm ³):	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 psi (bar):	150 (10.3)
Fluid Pressure Range psi (bar):	0-150 (0-10.3)
Material of Construction:	Carbon Steel
Weight lbs (kg):	612041-X 13 (5.9)
	612042-1 14 (6.4)



Ordering Menus

61204X	-	X
Model Series		Packing Option
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.



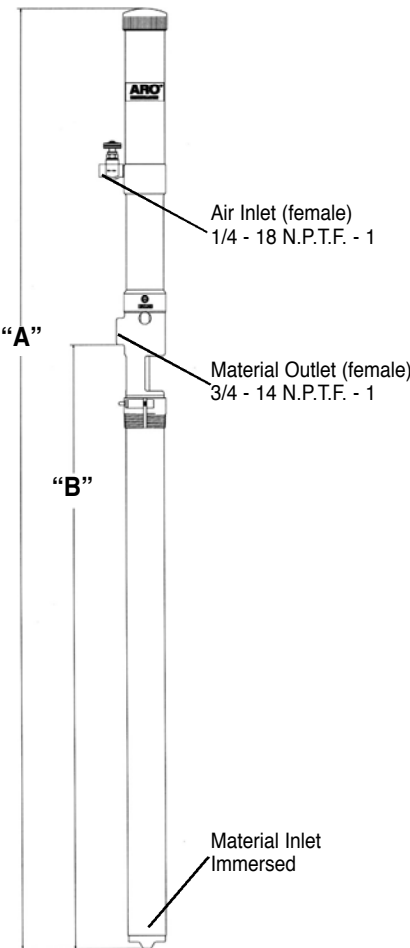
Muffler
61879



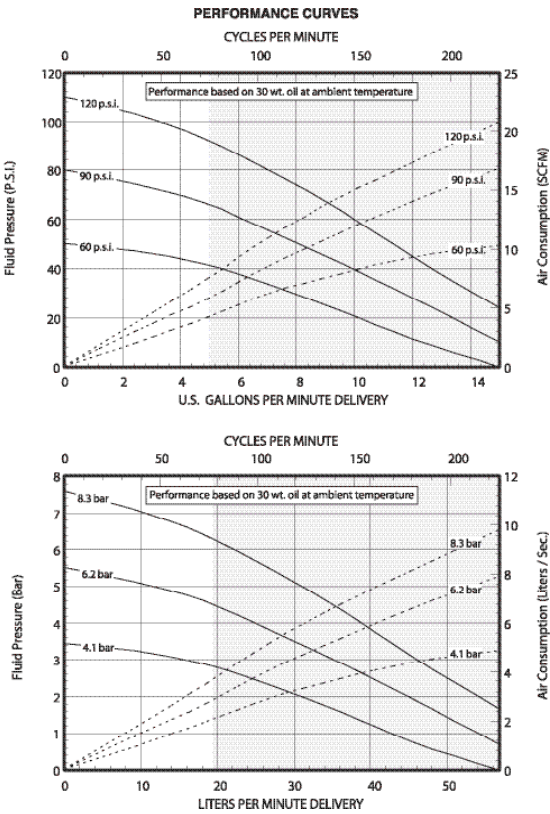
Wall Mount
61113

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

1:1 Ratio Piston Pump Dimensions and Flow Charts



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)



Refer to www.irtools.com/aro/ for full size flow curves.

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

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.

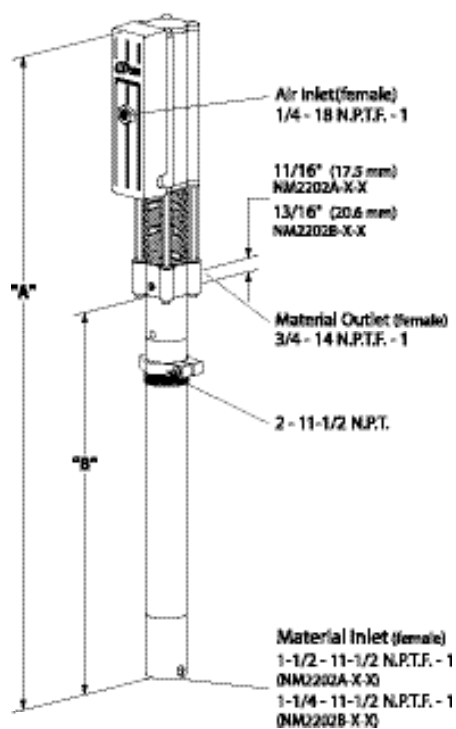


Wall Mount
61113

Specialty Pumps 2:1 Ratio Piston Model Dimensions and Flow Curves

Pro-Series Pumps

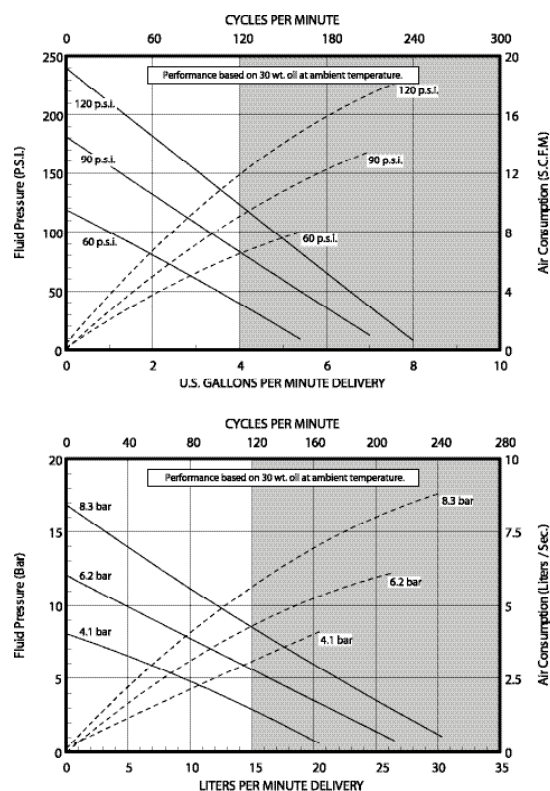
2:1 Ratio Piston Pump Dimensions and Flow Charts



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.irttools.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 ³ (cm ³):	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):	

NM2304A-11-X11	32 (14.5)	NM2304B-11-X1X	32 (14.5)
NM2304A-41-X11	46 (20.9)	NM2304B-41-X1X	46 (20.9)
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:

NM2304A-X1-X11	67151-X-X11
NM2304B-X1-X1X	6510X-X



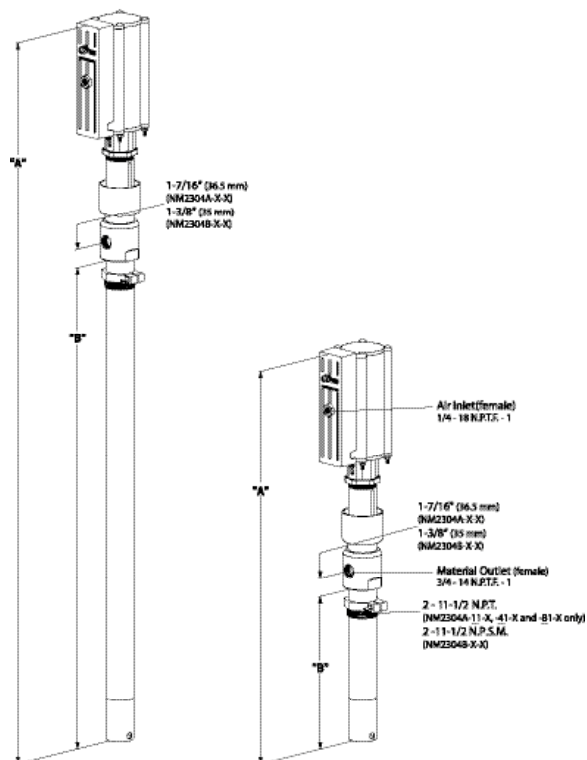
Ordering Menus

NM2304A	-	X	1	-	X	1	1
Model Series		Container Type			Packing Material	Spring Arrangement	Plunger Type
Carbon Steel		1 Universal (Stub)		C UHMW-PE upper and lower	1 Coil Spring	1 Standard Carbon Steel	
		4 55-Gallon Drum		3 Glass-filled Teflon upper Virgin Teflon lower			
		8 Universal (Stub) without bung		5 Glass-filled Teflon/Leather staggered upper Virgin Teflon lower			
		9 55-Gallon without bung					
		A Stub Follower Plate					
		B Universal (Stub) with alternate bung					
NM2304B	-	X	1	-	X	1	X
Model Series		Container Type			Packing Material	Spring Arrangement	Plunger Type
Stainless Steel		1 Universal (Stub)		C UHMW-PE upper and lower	1 Coil Spring	1 Standard 300-Series Stainless Steel	
		4 55-Gallon Drum		3 PTFE (Teflon) upper and lower		B Ceramic	
				W Viton upper/ PTFE (Teflon) lower			

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

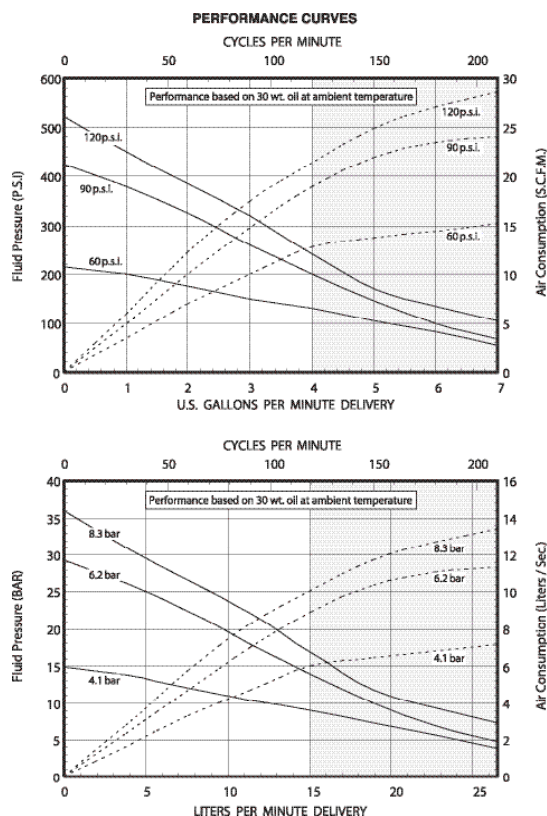
Pro-Series Pumps

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.irttools.com/aro/ for full size flow curves.

Accessories

Air Line Connection Kit* I 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 I 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 GPM (LPM):	11 (41.6)
Displacement per cycle GPM (LPM):	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 psi (bar):	100 (6.8)
Suspended solids max. dia.:	3/32 (2.4)
in. (mm)	
Shipping Weight lbs (kg):	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

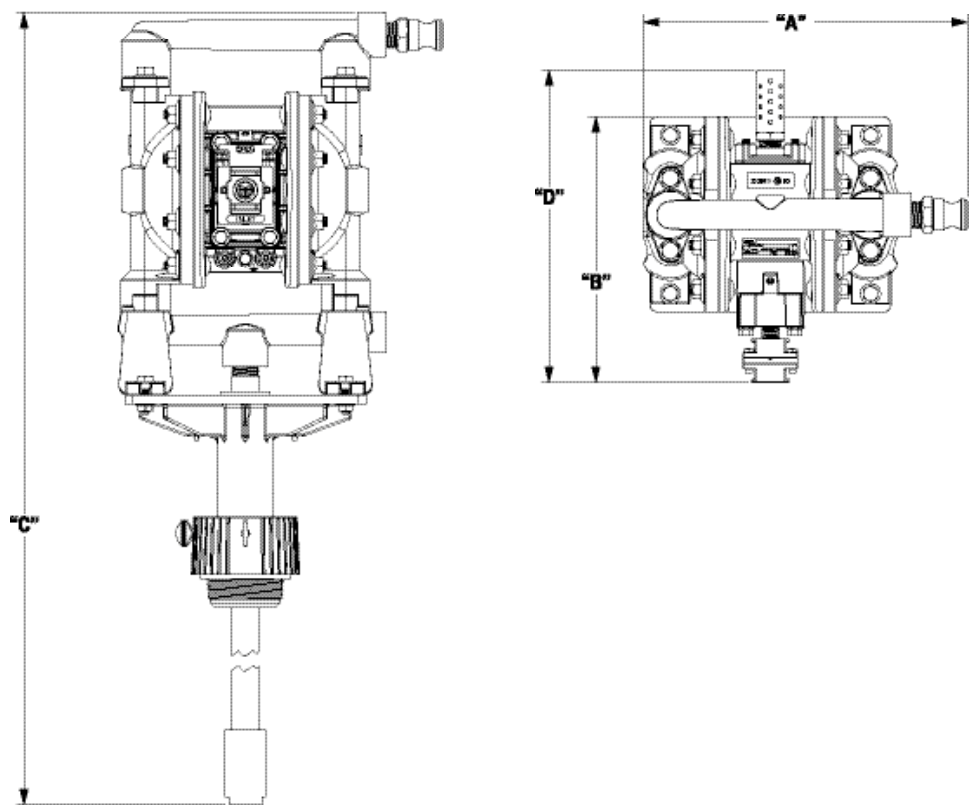
Ordering Menu

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- <u>A</u> XXX-X-X	9-31/32" (253 mm)	8-5/32" (207 mm)	51-5/32" (1299 mm)	9-19/32" (243 mm)
DAB05- <u>P</u> XXX-X-X	12-1/32" (306 mm)	8-3/32" (206 mm)	50-5/32" (1274 mm)	--
DAB05- <u>S</u> XXX-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.

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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

PH10	A	-	X	S	S	-	XX	T
Base Model	Center Section		Port Size	Wetted Parts	Hardware		Seat/Ball Check Material	Diaphragm Material
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.*

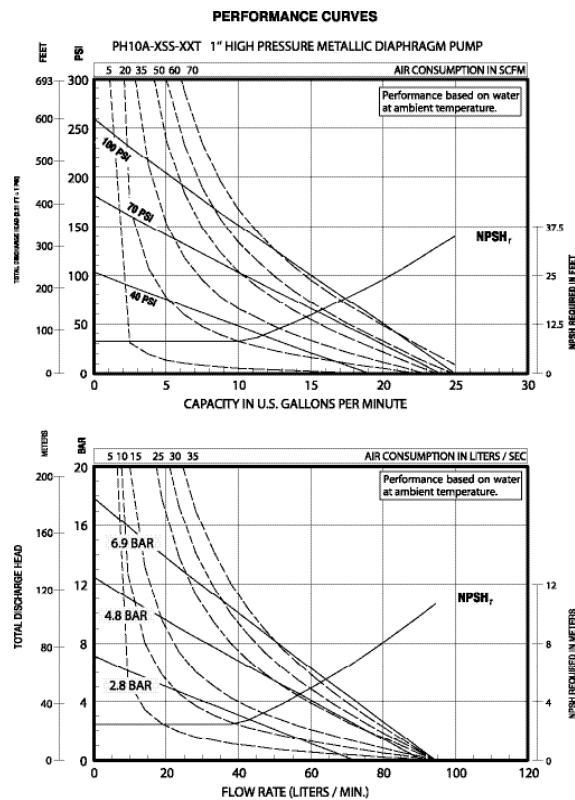
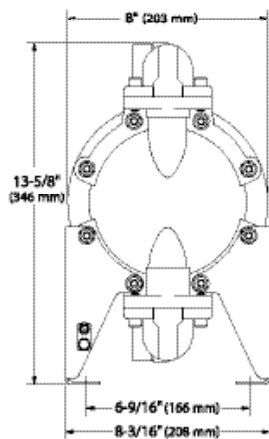
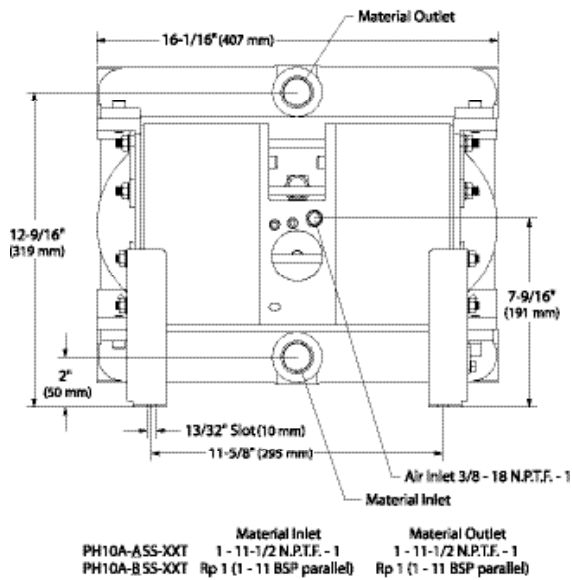


Wall Mount Bracket
67142

Specialty Pumps 3:1 Ratio High Pressure Diaphragm Pump Dimensions and Flow Curves

Pro-Series Pumps

High Pressure Diaphragm Pump Dimensions and Flow Charts



Refer to www.irttools.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 ³ (136-cm ³)
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
Model Series	Meter Type
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

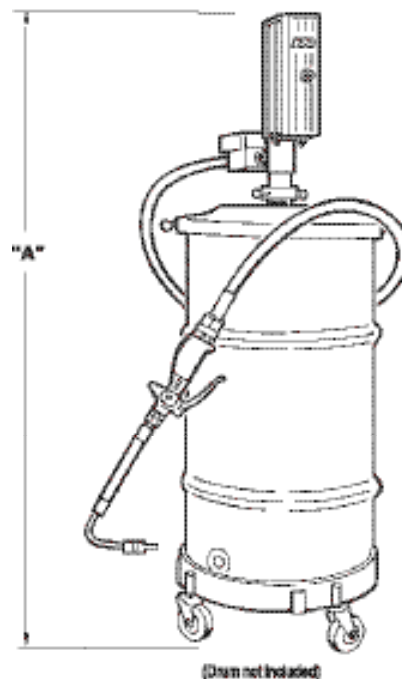
Air Line Connection Kit* | Kit No. 66073-1

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



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 ³ (cm ³):	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* I 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

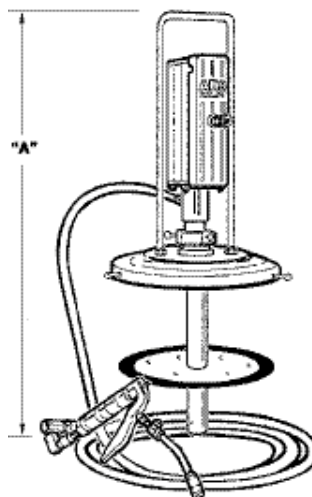
(Pump Rebuild Kit: Contains necessary soft parts to rebuild entire pump.)

**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 ³ (cm ³):	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 Grease Packages
(Packages do not include containers)

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

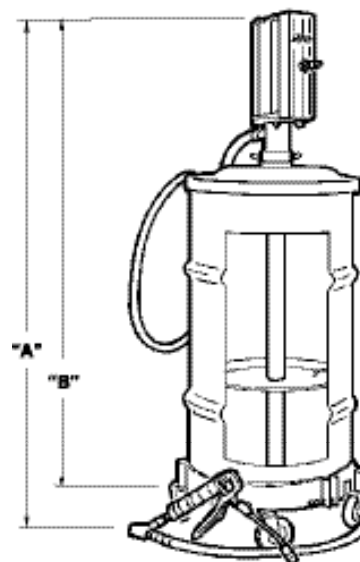
Kit includes Piggyback Filter/Regulator with gauge, pipe nipple and a 5-foot section of air hose.

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 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.:	1/4 (6.4)	
in. (mm)		
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
Model Series		Discharge Thread		
200-GPM (757-LPM)	1	2-1/2" N.P.T.		
	3	2-1/2" BSP		

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

Accessories

Air Line Unit I 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:

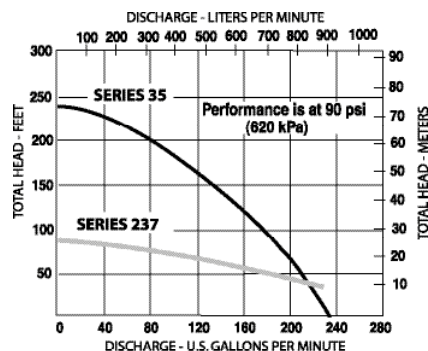
P237AX-EU Pumps: Form P6856

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.

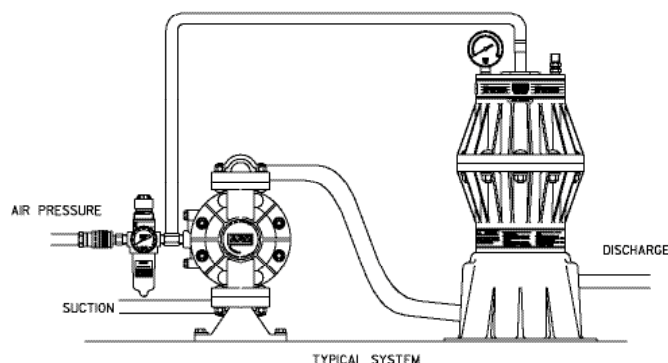
Automatic Shock Blockers®

- 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.³ maximum fluid volume, and 3" models up to 509 in.² 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

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



Ordering Menu

SB	10	X	-	X	X	X	-	X
Model Series	Blocker Size	Air Body		Thread	Fluid Construction	Hardware		Diaphragm
	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

Pulsation Dampener Type

Material

Weight

Material Inlet/Outlet

Air Inlet

Maximum Air Inlet Pressure

Maximum Material Inlet Pressure

Maximum Temperature Limits

Metallic / Automatic

See model description chart

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)

SB20X-AXX-X

2 - 11-1/2 N.P.T.

SB20X-BXX-X

Rp 2 (2-11 BSP parallel)

3/4 - 14 N.P.T.

120-psi (8.3 bar)

120-psi (8.3 bar)

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)

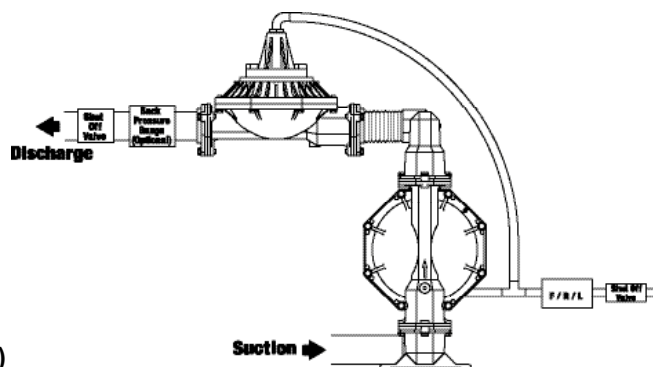
Viton -40° - 350° F (-40° - 177° C)

159-in³ (2.61 lit.)

Maximum Fluid Volume

Ordering Menu

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



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

3" Port Models

Pulsation Dampener Type

Material

Weight

Material Inlet/Outlet

Air Inlet

Maximum Air Inlet Pressure

Maximum Material Inlet Pressure

Maximum Temperature Limits

Metallic / Automatic

See model description chart

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)

SB30X-AXX-X 3 - 8 N.P.T.

SB30X-BXX-X Rp 3 (3-11 BSP parallel)

3/4 - 14 N.P.T.

120-psi (8.3 bar)

120-psi (8.3 bar)

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)

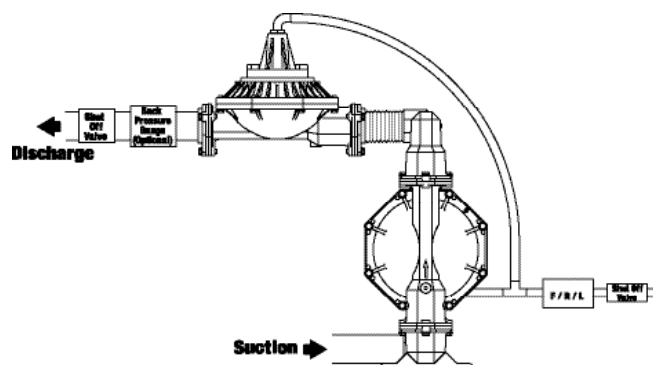
Viton -40° - 350° F (-40° - 177° C)

509 in.³ (8.34 lit.)

Maximum Fluid Volume

Ordering Menu

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



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

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



Fluid Pressure PSI Back Pressure	1/2" Pump w/SB1		% Reduction In Pulsation	
	20	40	60	80
1	94	92	91	85
2				
3				
4				
5				
10				
12				

Fluid Pressure PSI Back Pressure	1" Pump w/SB1		% Reduction In Pulsation	
	20	40	60	80
1	90	90	85	85
5				
10				
15				
20				
25				
30				



Fluid Pressure PSI Back Pressure	1-1/2" Pump w/SB2		% Reduction In Pulsation	
	40	60	80	100
1	80	80	80	80
20				
40				
60				
80				

Fluid Pressure PSI Back Pressure	2" Pump w/SB2		% Reduction In Pulsation	
	40	60	80	100
3	65	70	70	60
30				
70				
100				
130				



Fluid Pressure PSI Back Pressure	3" Pump w/SB3		% Reduction In Pulsation	
	40	60	80	100
5	60	65	60	60
75				
125				
150				
200				

Diaphragm Pump Accessories Pro-Series Pumps

WALL MOUNT

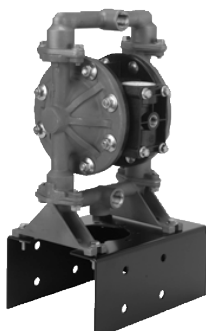
Description

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



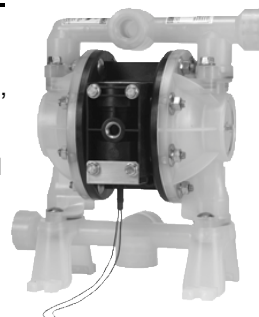
65109 Siphon Tube

CYCLE SENSOR

Description

Provides a closed contact output for monitoring pump operation. Can be used to monitor cycle rates, preventive 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



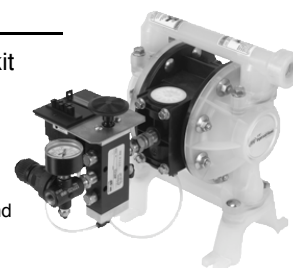
67386 on PD05P-X-X-B

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



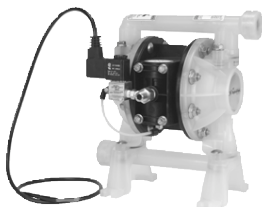
Diaphragm Pump Accessories Pro-Series Pumps

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



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

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



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 Furoil	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})
Diaphragm Pumps	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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ARO's Pump design and manufacturing operations have demonstrated compliance with the quality process, health and safety, technical file and multi-lingual standards set forth by the FEM (Federation Europeene de la Manutention) for the European Union (Communitie Economique).



Ingersoll Rand Industrial Technologies provides products, services, and solutions to enhance the efficiency and productivity of our commercial, industrial, and process customers. Our innovative products include air compressors, air systems components, tools, pumps, material and fluid handling systems and microturbines.

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