A DIVISION OF FINISH THOMPSON INC.



CHANGE IS IN THE AIR

CHANGE IS IN THE AIR

FTI AIR is the latest invention from the talents and ambitions of Finish Thompson, Inc.

Finish Thompson, started in 1951 in Erie, Pennsylvania, is a USA leading designer and manufacturer of chemical transfer pumps sold around the world to a variety of industries. FTI AIR expands the reach of the company's expertise from centrifugal and barrel pumps to the markets of the versatile, portable air-operated double-diaphragm pumps.

The FTI Air product line was carefully designed by Finish Thompson engineers from the ground up, using all of the state-of-the-art computer-aided design resources available today. Each pump and material component was run-tested for thousands of hours at Finish Thompson and in the field during development. And every pump is tested prior to packaging and shipping. The result is one of the most reliable, rugged and affordable air-operated double diaphragm pumps on the market today.

Besides excellent products, what makes Finish Thompson stand apart is its unrivaled reputation for world-class customer service. FTI AIR will enjoy this same level of service, so that you can rest assured that with every FTI AIR pump, Finish Thompson's global sales force, in-house application engineers and after-sales technical support will be standing behind it.

5 YEAR WARRANTY

TYPICAL INDUSTRIES:

- MINING
- PAINTS & COATINGS
- CERAMICS
- PULP & PAPER
- ELECTROPLATING & ANODIZING
- WASTEWATER
- MARINE
- OEM'S
- CHEMICAL MANUFACTURING & DISTRIBUTION

Why use an air-operated double diaphragm pump?



BENEFITS

Air-operated double diaphragm (AODD) pumps have many benefits over other pump technologies:

- Easy to install
- Simple to operate
- Portable
- Self-priming
- Submersible
- Dry running
- Solids handling
- Abrasive handling
- Viscosity fluid handling
- Shear sensitive
- Economical compared to other positive displacement technologies
- Various applications
- Maintenance cost

FTI AIR has its own additional unique features. It features a lube-free, non-stalling air valve, ideal for various applications and environments. The air valve contains very few parts compared to other air valves in the market, reducing maintenance time, costs and downtime. And FTI AIR is backed by a strong 5 year warranty.

PUMP DESIGN

RUGGED, DURABLE PARTS: Our engineers are experts at designing robust and reliable pumping solutions for industrial environments. This ensures all parts are capable of reliable operation in the harshest applications and installation locations.

SIMPLICITY OF DESIGN: Fewer number of parts for easy maintenance and improved reliability.

MODULAR DESIGN: Modular design simplifies maintenance with individually replaceable, lower cost wear parts and requires no special tools.

QUALITY BUILT: Single piece flow assembly procedures utilizing assembly fixtures and automated calibrated torque tools to validate every pump is built to quality specifications.

100% FACTORY TESTED: Every pump is factory tested with an automated three point test for vacuum, leakage and run ability. Only air is used during testing to ensure no residual water is present when received.

FIVE YEAR WARRANTY: Backed by a five year warranty on materials and workmanship and outstanding after sales support.

1 BOLTED CONSTRUCTION
Leak-free fluid handling, bolt holes provide superior part alignment during maintenance

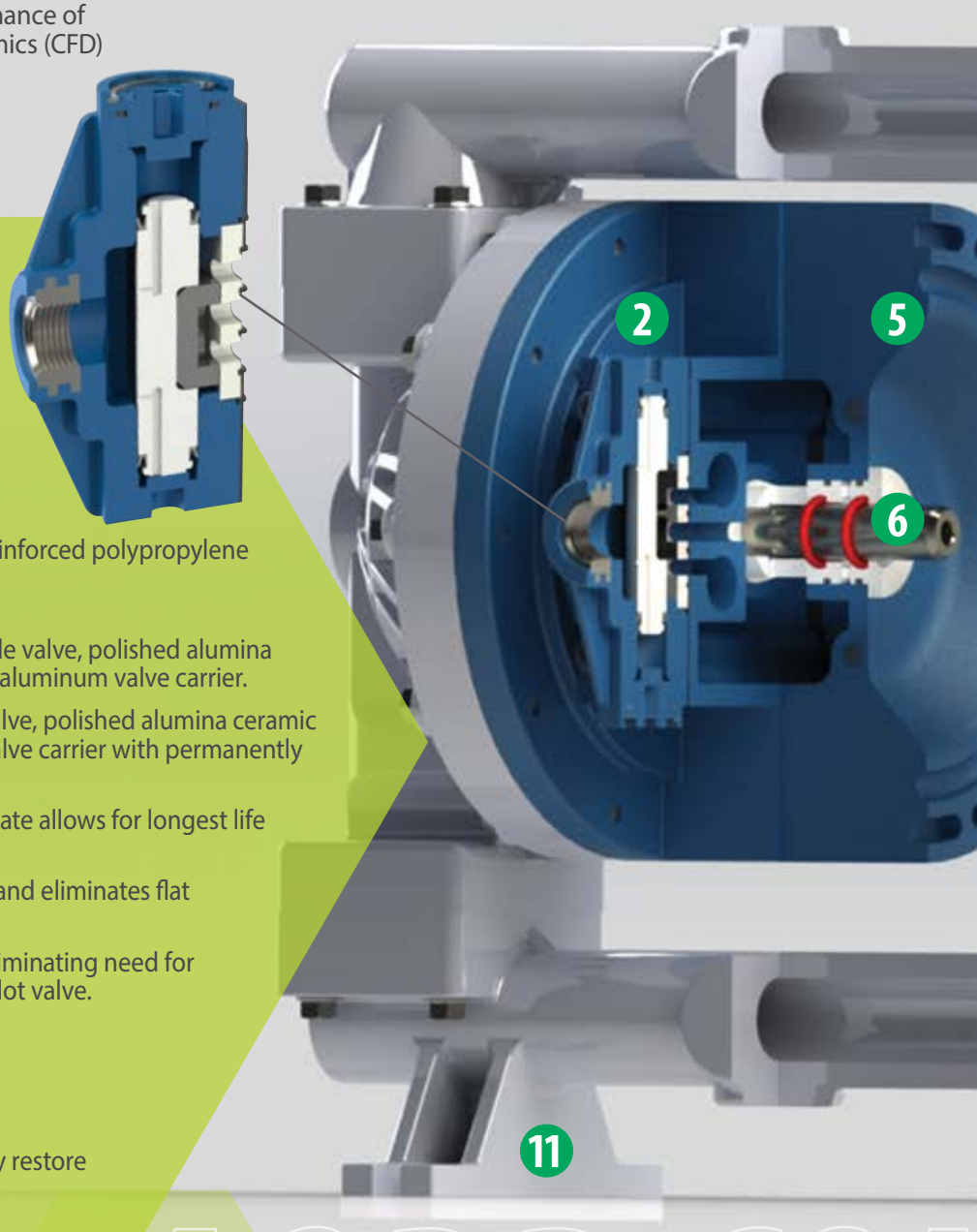
2 UNIQUE STALL FREE AIR VALVE DESIGN
Simple, rugged and reliable lube free design

3 LIQUID CHAMBERS
Finite Element Analysis (FEA) was used as part of the design process for maximum strength and mechanical integrity. Available in unfilled polypropylene, unfilled PVDF, 316 stainless steel and powder coated aluminum to handle the widest variety of applications.

4 MANIFOLDS
Single piece construction reduces chance of leakage. Computational Fluid Dynamics (CFD) optimized fluid velocities.

5 CENTER SECTION
Plastic pumps feature glass-fiber reinforced polypropylene (GFRPP) center section construction. Metal pumps offer either powder coated aluminum or GFRPP center sections.

6 SHAFT BUSHINGS & DIAPHRAGM SHAFT
Bushing utilizes internal seals manufactured from a proprietary TPE material with low friction and high resiliency to provide incredibly long wear life. The stainless steel diaphragm shaft shifts in the bushing over these special seals. Slots in the shaft pilot the air valve.



FTI AIR VALVE DESIGN

Simple, rugged and reliable design

FTI AIR VALVE DESIGN FEATURES

- Painted die cast aluminum or glass fiber reinforced polypropylene plastic valve body.
- **Internal Components:**
  Aluminum valve: Carbon filled PTFE slide valve, polished alumina ceramic valve plate and hard anodized aluminum valve carrier.

  Plastic valve: Carbon filled PTFE slide valve, polished alumina ceramic valve plate and UHMW polyethylene valve carrier with permanently lubricated seals for long wear life.
- Low friction slide valve on ceramic valve plate allows for longest life and superior sealing.
- Molded Buna gasket ensures total sealing and eliminates flat gasket tearing.
- Slotted diaphragm shaft shifts the valve eliminating need for separate pilot or mechanically operated pilot valve.
- Non-stalling design
- Outside mounting
- Lube free design
- Individually replaceable components easily restore valve to brand new condition.

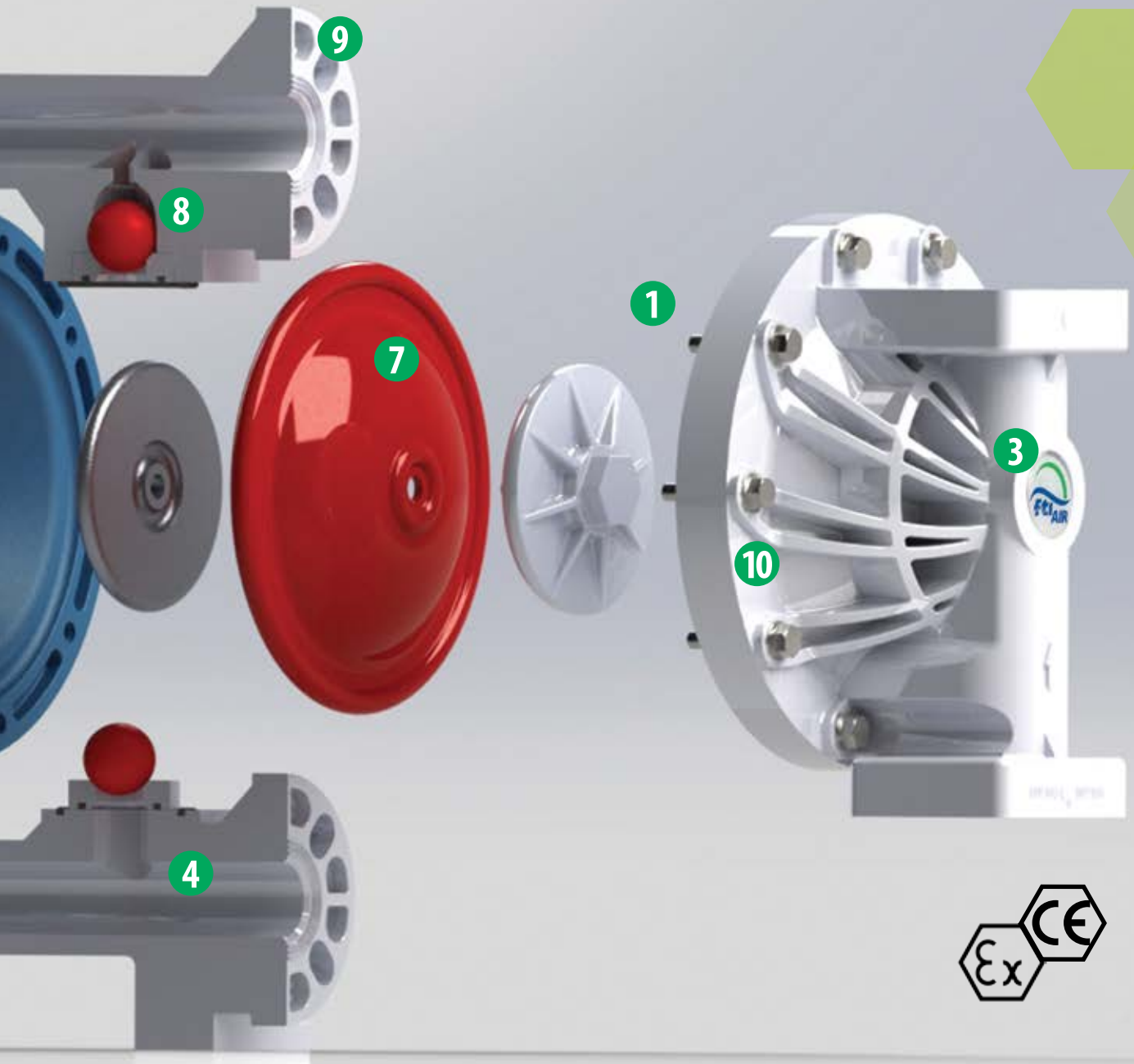
7 DIAPHRAGMS
Precision manufactured diaphragms available in a variety of materials including neoprene, Buna-N, EPDM, FKM, Santoprene ™, Hytrel®, polyurethane and PTFE.

8 BALLS & SEATS
Check valve balls and seats are available in a wide range of materials to provide reliable operation in a wide variety of applications.

9 CONNECTIONS
Depending upon the model, features NPT or BSP threads or universal/Vanstone ANSI 150/ISO-DIN PN40 flanges. Connection locations include end, center horizontal and center vertical.

10 EXTERNAL FLANGED HARDWARE
Eliminates washers simplifying maintenance and reduces the total number of parts.

11 MOUNTING FEET
Slotted feet with flat bottom surfaces allow for secure installation bolting.



MPONENTS

How It Works

OVERVIEW

Air operated double diaphragm pumps are positive displacement pumps that use a combination of the reciprocating action of two flexible diaphragms, two inlet and two outlet ball check valves to pump a fluid. There are two pump chambers which are divided by the diaphragms into air and fluid regions. The two diaphragms are connected to a common shaft located in the center section. This creates the effect that during a cycle one side is pumping fluid while the other side is filling.

Suction Sequence

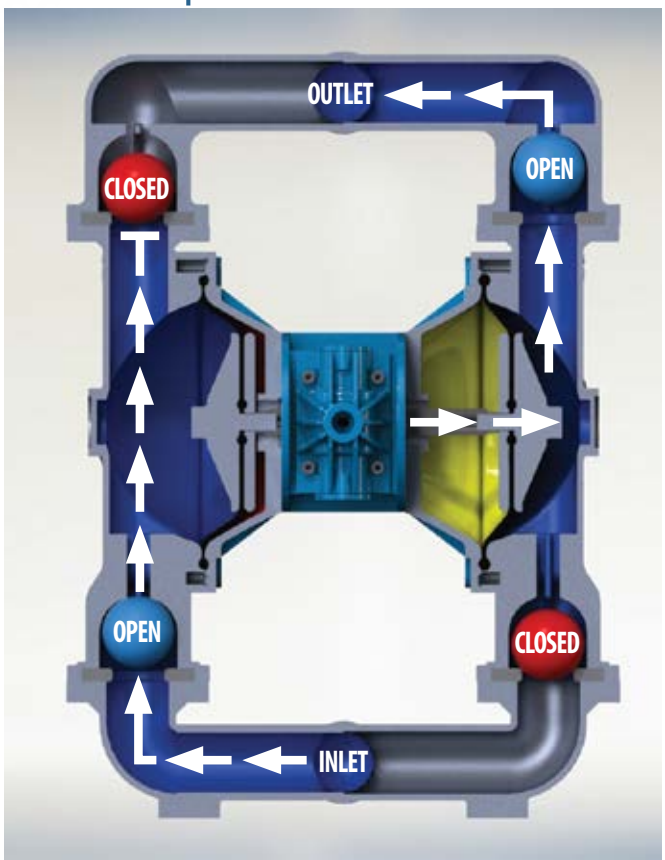


FIGURE 1

As the common shaft located in the center section moves to the right, the diaphragm in the left chamber moves towards the center section. This movement creates a vacuum on the liquid side of the left diaphragm, lifting the lower ball check valve, allowing liquid to flow through the suction manifold into the liquid chamber. At the same time, any fluid in the right chamber is discharged.

Discharge Sequence

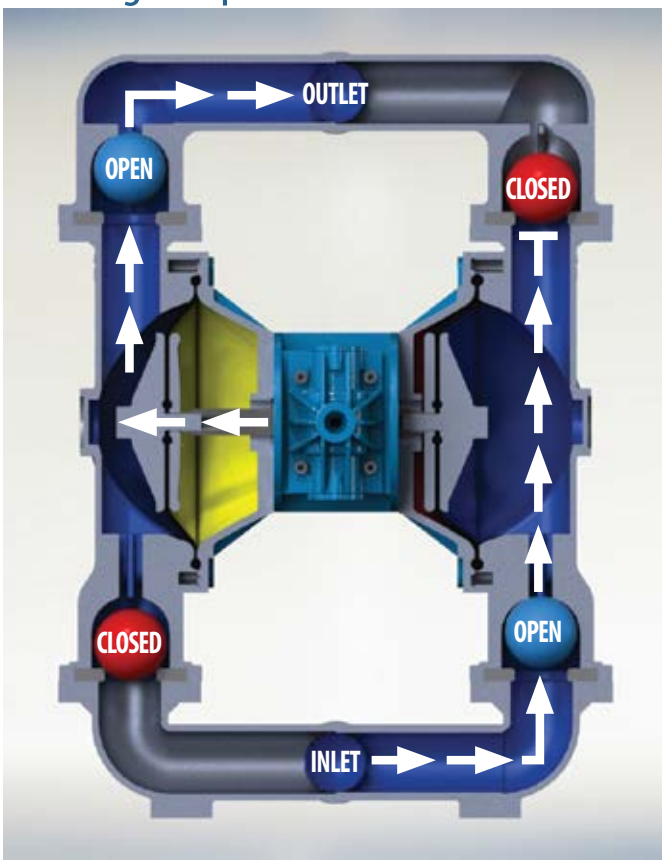


FIGURE 2

The air distribution system senses that the diaphragm in the right chamber reaches the end of its discharge stroke and causes the common shaft to shift. This moves the diaphragm to the left pressurizing the liquid, lifting the upper ball check valve, allowing fluid to flow though the discharge manifold and out of the pump.

INSTALLATION

INSTALLATION VERSATILITY

FTI Air pumps have outstanding installation flexibility. While flooded suction is the most common installation, they can also be used in suction lift applications where the pump is installed above the liquid or even submerged in the liquid.



1 FLOODED SUCTION

- Most common installation
- Best for higher viscosity applications

2 SUCTION LIFT

- Self priming (dry and wet)
- Run dry capable
- Installed above liquid
- High vacuum capable

3 SUBMERGED

- Capable of full submersion
- Materials of construction must be compatible with liquid
- Muffler must be installed above liquid level

FOR MORE INFORMATION, PLEASE VISIT **FTIAIR.COM**

MODEL FT05

Specifications

Suction & Discharge Size:	1/2″ x 1/2″
Porting Location:	End
Connection Types:	NPT, BSP
Air Inlet &Air Exhaust Size:	1/4″ FNPT x 1/2″ FNPT

Optional NPT or BSP threaded center port location in either horizontal or vertical position.

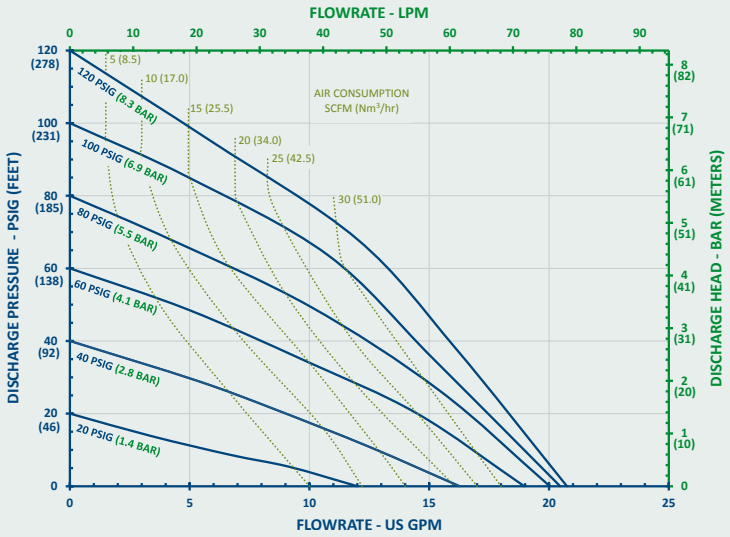


Shown in polypropylene.

Construction

Wetted Materials:	Polypropylene, PVDF, Aluminum, Stainless Steel
Diaphragm Materials:	Neoprene, Santoprene™, FKM, EPDM, PTFE, Buna, Hytrel®, Polyurethane
Air Valve:	GFRPP, Aluminum
Ball Materials:	Neoprene, Buna, EPDM, FKM, Santoprene™, PTFE
Seat Materials:	Aluminum, 316SS, Polypropylene, PVDF, PTFE
O-ring Materials:	Neoprene, Buna, EPDM, FKM, PTFE, Polyurethane, FEP/FKM, Santoprene™

FT05 PERFORMANCE



Full stroke diaphragm allows performance to be equal for all diaphragm materials

Capabilities

Maximum Flow Rate:	20 gpm (77 lpm)
Maximum Air Supply Pressure:	120 psi (8.3 bar)
Displacement Per Stroke:	0.02 gal (0.08 liters)
Minimum Air Inlet Pressure:	10 psig (0.7 bar)
Maximum Particle Size:	0.19 in (4.7 mm)
Sound Pressure:	72.1 dB(A)

Weight

Polypropylene	8.3 lb (3.8 kg)
PVDF	11.9 lb (5.4 kg)
Aluminum	11.7 lb (5.3 kg)
Stainless Steel	15.5 lb (7.0 kg)

Dimensions

	PLASTIC	METAL
Max Height:	10-27/32 in (276 mm)	9-27/32 in (250 mm)
Max Width:	10-3/16 in (259 mm)	9-5/8 in (246 mm)
Max Depth:	8-1/16 in (204 mm)	8-1/16 in (204 mm)

For Maximum Operating Temperature, see Temperature Chart pg. 13.

MODEL FT10

Specifications

Suction & Discharge Size:	1″ x 1″
Porting Location:	End
Connection Types:	NPT, BSP, ANSI/DIN/ISO flange
Air Inlet x Air Exhaust Size:	1/2″ FNPT x 1/2″ FNPT

Optional NPT or BSP threaded center port location in either horizontal or vertical position

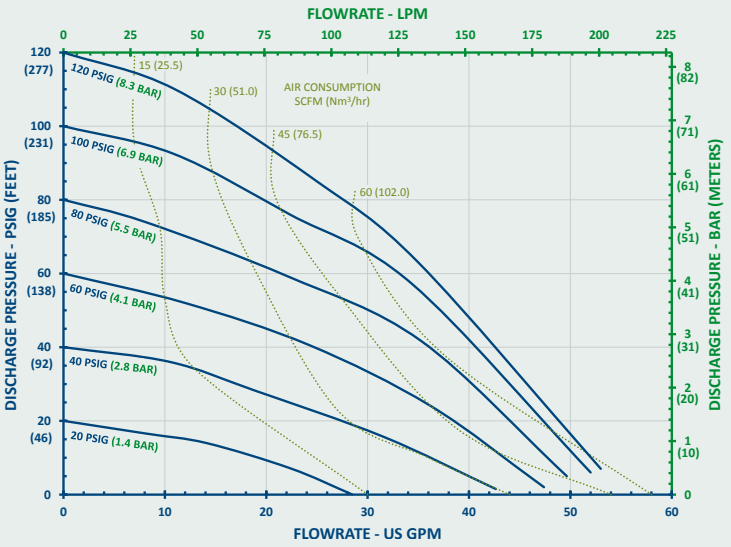


Shown in aluminum.

Construction

Wetted Materials:	Polypropylene, PVDF, Aluminum, Stainless Steel
Diaphragm Materials:	Neoprene, Santoprene™, FKM, EPDM, PTFE, Buna, Hytrel®, Polyurethane
Air Valve:	GFRPP, Aluminum
Ball Materials:	Neoprene, Buna, EPDM, FKM, Santoprene™, PTFE
Seat Materials:	Aluminum, 316SS, Polypropylene, PVDF, PTFE
O-ring Materials:	Neoprene, Buna, EPDM, FKM, PTFE, Polyurethane, FEP/FKM, Santoprene™

FT10 PERFORMANCE



Full stroke diaphragm allows performance to be equal for all diaphragm materials

Capabilities

Maximum Flow Rate:	56 gpm (212 lpm)
Maximum Air Supply Pressure:	120 psi (8.3 bar)
Displacement Per Stroke:	0.05 gal (0.19 lit)
Minimum Air Inlet Pressure:	10 psig (0.7 bar)
Max Particle Size:	0.25 in (6.4 mm)
Sound Pressure:	73.6 dB(A)

Weight

Polypropylene	24.0 lb (10.9 kg)
PVDF	34.1 lb (15.5 kg)
Aluminum	34.2 lb (15.5 kg)
Stainless Steel	48.7 lb (22.1 kg)

Dimensions

	PLASTIC	METAL
Max Height:	17-7/8 in (454 mm)	14-13/32 in (366 mm)
Max Width:	16-13/16 in (427 mm)	14-3/4 in (375 mm)
Max Depth:	10-11/16 in (271 mm)	10-11/16 in (271 mm)

For Maximum Operating Temperature, see Temperature Chart pg. 13.

MODEL FT15



Shown in stainless steel.

Specifications

Suction & Discharge Size:	1-1/2" x 1-1/2"
Porting Location:	End, Center
Connection Types:	NPT, BSP, ANSI/DIN/ISO flange
Air Inlet & Air Exhaust Size:	3/4" FNPT x 3/4" FNPT

Plastic pumps feature end ports, metal pumps feature center ports. Optional ANSI/DIN/ISO Vanstone flange option for center port location (available on stainless steel pumps only).

Construction

Wetted Materials:	Polypropylene, PVDF, Aluminum, Stainless Steel
Diaphragm Materials:	Neoprene, Santoprene™, FKM, EPDM, PTFE, Buna, Hytrel®, Polyurethane
Air Valve:	GFRPP, Aluminum
Ball Materials:	Neoprene, Buna, EPDM, FKM, Santoprene™, PTFE
Seat Materials:	Aluminum, 316SS, Polypropylene, PVDF, PTFE, Neoprene, Buna, EPDM, FKM, Santoprene™, Hytrel®, Polyurethane
O-ring Materials:	Neoprene, Buna, EPDM, FKM, PTFE, Polyurethane, FEP/FKM, Santoprene™

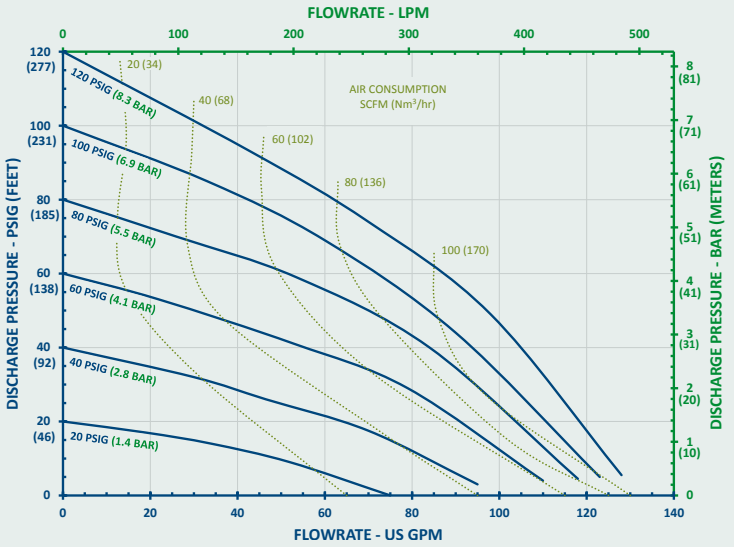
Capabilities

Maximum Flow Rate:	132 gpm (500 lpm)
Maximum Air Supply Pressure:	120 psi (8.3 bar)
Displacement Per Stroke:	0.31 gal (1.2 lit)
Minimum Air Inlet Pressure:	10 psig (0.7 bar)
Maximum Particle Size:	0.35 in (8.9 mm)
Sound Pressure :	77 dB(A)

Dimensions

	PLASTIC	METAL
Max Height:	29-31/32 in (762 mm)	29-11/32 in (746 mm)
Max Width:	23-19/32 in (600 mm)	20-7/8 in (530 mm)
Max Depth:	12-27/32 in (326 mm)	12-27/32 in (326 mm)

FT15 PERFORMANCE



Full stroke diaphragm allows performance to be equal for all diaphragm materials

Weight

Polypropylene	66.0 lb (29.9 kg)
PVDF	95.0 lb (43.1 kg)
Aluminum	80.3 lb (36.4 kg)
Stainless Steel	127 lb (57.6 kg)

For Maximum Operating Temperature, see Temperature Chart pg. 13.

MODEL FT20

Specifications

Suction & Discharge Size:	2" x 2"
Porting Location:	End, Center
Connection Types:	NPT, BSP, ANSI/DIN/ISO flange
Air Inlet & Exhaust Size:	3/4" FNPT x 3/4" FNPT

Plastic pumps feature end ports, metal pumps feature center ports. Optional ANSI/DIN/ISO Vanstone flange option for center port location (available on stainless steel pumps only).

Construction

Wetted Materials:	Polypropylene, PVDF, Aluminum, Stainless Steel
Diaphragm Materials:	Neoprene, Santoprene™, FKM, EPDM, PTFE, Buna, Hytrel®, Polyurethane
Air Valve:	GFRPP, Aluminum
Ball Materials:	Neoprene, Buna, EPDM, FKM, Santoprene™, PTFE
Seat Materials:	Aluminum, 316SS, Polypropylene, PVDF, PTFE, Neoprene, Buna, EPDM, FKM, Santoprene™, Hytrel®, Polyurethane
O-ring Materials:	Neoprene, Buna, EPDM, FKM, PTFE, Polyurethane, FEP/FKM, Santoprene™

Capabilities

Maximum Flow Rate:	156 gpm (590 lpm)
Maximum Air Supply Pressure:	120 psi (8.3 bar)
Displacement Per Stroke:	0.31 gal (1.2 lit)
Minimum Air Inlet Pressure:	10 psig (0.7 bar)
Maximum Particle Size :	0.35 in (8.9 mm)
Sound Pressure:	77 dB(A)

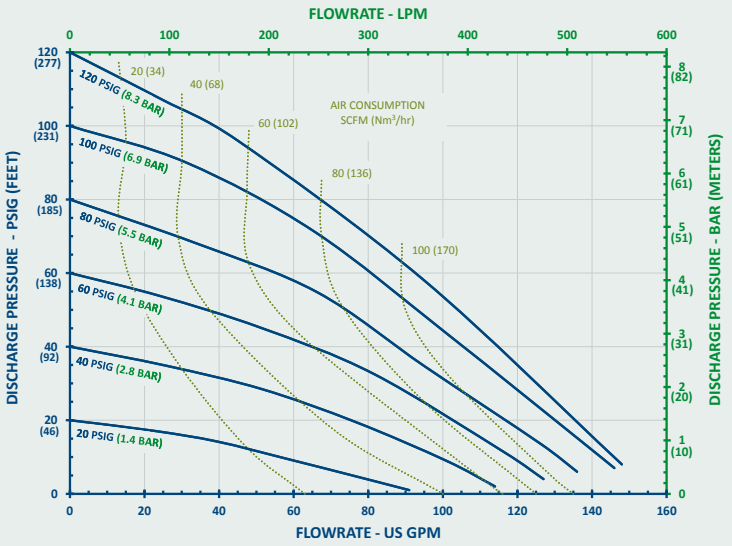
Dimensions

	PLASTIC	METAL
Max Height:	31-11/16 in (805 mm)	30-3/32 in (733 mm)
Max Width:	23-19/32 in (600 mm)	20-7/8 in (530 mm)
Max Depth:	12-27/32 in (326 mm)	12-27/32 in (326 mm)



Shown in polypropylene.

FT20 PERFORMANCE



Full stroke diaphragm allows performance to be equal for all diaphragm materials

Weight

Polypropylene	67.0 lb (30.4 kg)
PVDF	97.5 lb (44.2 kg)
Aluminum	87.0 lb (39.5 kg)
Stainless Steel	130.0 lb (59.9 kg)

For Maximum Operating Temperature, see Temperature Chart pg. 13.

MODEL FT30



Shown in aluminum.

Specifications

Suction & Discharge Size:	3" x 3"
Porting Location:	Center
Connection Types:	NPT, BSP, ANSI/DIN/ISO flange
Air Inlet & Air Exhaust Size:	3/4" FNPT x 3/4" FNPT

Optional ANSI/DIN/ISO Vanstone flange option for center port location (available on stainless steel pumps only).

Construction

Wetted Materials:	Polypropylene, PVDF, Aluminum, Stainless Steel
Diaphragm Materials:	Neoprene, Santoprene™, FKM, EPDM, PTFE, Buna, Hytrel®, Polyurethane
Air Valve:	GFRPP, Aluminum
Ball Materials:	Neoprene, Buna, EPDM, FKM, Santoprene™, PTFE
Seat Materials:	Aluminum, 316SS, Polypropylene, PVDF, PTFE, Neoprene, Buna, EPDM, FKM, Santoprene™, Hytrel®, Polyurethane
O-ring Materials:	Neoprene, Buna, EPDM, FKM, PTFE, Polyurethane, FEP/FKM, Santoprene™

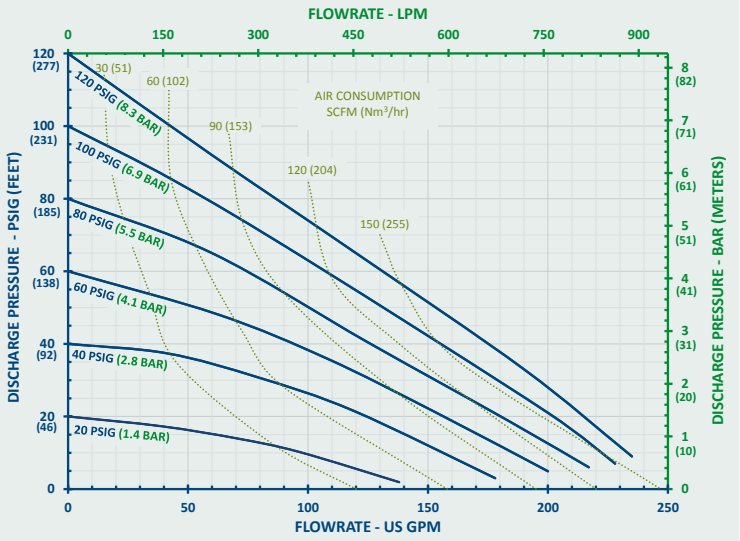
Capabilities

Maximum Flow Rate:	240 gpm (908 lpm)
Maximum Air Supply Pressure:	120 psi (8.3 bar)
Displacement Per Stroke:	0.98 gal (3.7 lit)
Minimum Air Inlet Pressure:	10 psig (0.7 bar)
Maximum Particle Size:	0.50 in (12.7 mm)
Sound Pressure :	n/a

Dimensions

Max Height:	36-3/8 in (924 mm)
Max Width:	24-9/32 in (617 mm)
Max Depth:	16-3/8 in (416 mm)

FT30 PERFORMANCE



Full stroke diaphragm allows performance to be equal for all diaphragm materials

Weight

Aluminum	155 lb (70.3 kg)
Stainless Steel	235 lb (107 kg)

For Maximum Operating Temperature, see Temperature Chart pg. 13.

Pump Matrix

XX	XX	X	-	X	X	-	X	X	X	X	-	X	X	-	X
Series	Pump Size	Wetted Material		Non-wetted Material	Air Valve Material		Diamphram Material	Check Valve Ball	Check Valve Seat	Seat O-ring		Connection	Porting Location		Specials

Series
FT - Pump End
FW - Wet End

Pump Size
05 - 1/2″
10 - 1″
15 - 1.5″
20 - 2″
30 - 3″

Wetted Materials
P - Polypropylene
V - PVDF
A - Aluminum
S - 316SS

Non-wetted Materials
P - Polypropylene
A - Aluminum

Air Valve Materials
A - Aluminum
P - GFRPP

Diaphragm Materials
N - Neoprene
B - Buna-N
E - EPDM
F - FKM
R - Santoprene
H - Hytrel
U - Polyurethane
1 - PTFE/Neoprene
2 - PTFE/Santoprene

Check Valve Ball Materials
N - Neoprene
B - Buna-N
E - EPDM
F - FKM
R - Santoprene
T - PTFE

Check Valve Seat Materials
A - Aluminum
S - 316SS
P - Polypropylene
V - PVDF
T - PTFE
N - Neoprene
B - Buna-N
E - EPDM
F - FKM
R - Santoprene
H - Hytrel
U - Polyurethane

Check Valve Seat O-Ring Materials
N - Neoprene
B - Buna-N
E - EPDM
F - FKM
T - PTFE
U - Polyurethane
C - FEP/FKM
0 - None

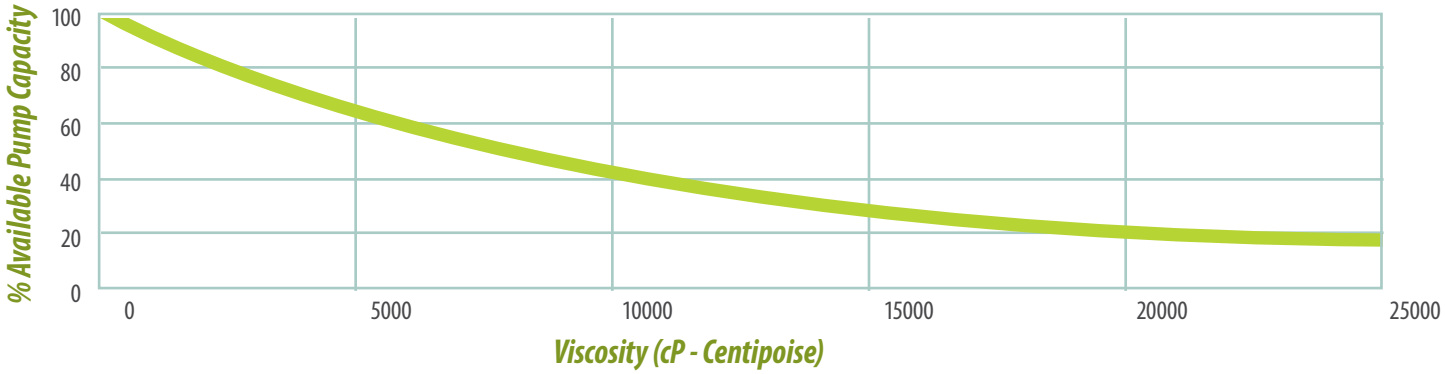
Connection
N - FNPT
B - FBSP
F - ANSI/DIN/ISO flange

Porting location
1 - End (standard)
2 - Center horizontal
3 - Center vertical

Specials
A - ATEX
M1 - Metal muffler

Viscosity Curve

All capacity curves are based on viscosity of water (1 cP). An adjustment must be made when pumping viscous media. Viscous media reduces capacity and increases pipe friction. Use the chart below to adjust the pumping capacity.



TYPICAL APPLICATIONS:

ACIDS & BASES
PLATING SOLUTIONS
LUBRICANTS & OILS
PAINTS, INKS, SOLVENTS
CERAMIC SLIP & GLAZE
WASTEWATER

Temperature Chart

MATERIAL	CHEMICAL COMPOSITION	DESCRIPTION	OPERATING TEMP °F (°C) MIN.	MAX
Polypropylene	Pure Polypropylene	Thermoplastic that is resistant to alkali and strong acids.	32°F (0°C)	158°F (70°C)
PVDF	Pure Polyvinylidene Fluoride	Strong fluoropolymer with excellent chemical resistance.	10°F (-12°C)	220°F (104°C)
Stainless Steel	316 Stainless Steel	Excellent chemical resistance, high tensile and impact strength, abrasion resistant.	Limited by other materials used	
Aluminum	ADC 12, LM24, LM25	Moderate chemical resistance with good impact strength and abrasion resistance.	Limited by other materials used	
Buna	Acrylonitrile-butadiene Rubber	General purpose elastomer. Resistant to oil, water, solvent and hydraulic fluid.	10°F (-12°C)	190°F (88°C)
EPDM	Ethylene Propylene Diene Rubber	Good resistance to mild acids, detergents, alkalis, ketones and alcohols.	-40°F (-40°C)	250°F (121°C)
FKM	Fluorocarbon Rubber	Good chemical resistance and high temperature properties. Resistant to most acids, aliphatic, aromatic and halogenated hydrocarbons, oils, grease and fuels.	-40°F (-40°C)	350°F (177°C)
Neoprene	Chloroprene Rubber	General purpose elastomer with good resistance to moderate chemicals, oils, grease, solvents and some refrigerants.	0°F (-18°C)	212°F (100°C)
Santoprene™	Fully cured EPDM rubber particles encapsulated in a polypropylene (PP) matrix	Thermoplastic elastomer with good abrasion resistance with chemical resistance to a wide range of solvents and chemicals. Injection molded with no fabric layer.	-40°F (-40°C)	225°F (107°C)
Hytrel®	Thermoplastic polyester elastomer	Combines resistance and flexibility of elastomers with the strength of plastics. Resistant to acids, bases, amines, and glycols. Injection molded with no fabric layer.	-20°F (-29°C)	220°F (104°C)
Polyurethane	Polyester Urethane	Thermoplastic that exhibits excellent abrasion resistance. Injection molded with no fabric layer.	32°F (0°C)	150°F (66°C)
PTFE	Polytetrafluoroethylene	Chemically inert. Resistant to a wide range of chemicals.	40°F (4°C)	225°F (107°C)
FEP	Fluorinated Ethylene Propylene	Similar to PTFE in composition and chemical resistance. Used to encapsulate FKM o-rings for superior chemical resistance.	40°F (4°C)	225°F (107°C)

Santoprene™ is a registered tradename of Exxon Mobil Corp. • Hytrel® is a registered tradename of DuPont™.

Accessories

A variety of accessories are available to complement your FTI Air AODD pump installation.

Pulsation Dampeners

Removes virtually all hydraulic shock while producing a near steady flow of fluid. Recommended to protect piping, valves and fittings from destructive pulsations and surges. Available in a wide range of materials of construction.





AODDampener

AODDampener is unique pulsation dampener manufactured from 316L stainless steel with PTFE backed diaphragm, has fully automatic air control and handles a wide variety of applications.



SPILLSTOP

Fully pneumatic system safely captures leaked product due to diaphragm failure and automatically shuts down failed pumps to eliminate costly product loss and prevent hazardous spills.



Filter/Regulator

Compact, integrated design saves space and reduces piping, includes dual scale psi/Bar gage. Filters incoming air to five microns. Regulator adjusts air pressure from 7.3 to 120 psi (.5 to 8.3 bar).

Finish Thompson Products

DB SERIES



Premium magnetic drive
sealless centrifugal pumps

SP SERIES



Self-priming magnetic drive
sealless centrifugal pumps

UC SERIES



ANSI dimensional
ETFE-lined magnetic drive pumps

AP SERIES



Stainless steel mechanically
sealed centrifugal pumps

GP SERIES



Mechanically sealed plastic
centrifugal pumps

VKC SERIES



Vertical magnetic drive
sealless centrifugal pumps

DRUMS PUMPS



Portable fluid transfer solutions
for drums and barrels

Pump-Fit Products

Pump-Fit aftermarket replacement parts and products are designed for drop-in compatibility for many premium brand AODD pumps. Offering all common replacement parts for plastic & metal pumps size ranges from 1/2" to 3".



Diaphragms



Manifolds & Chambers



Seats & Balls



Kits



Plates

FTIAIR.COM

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email europecenter@finishthompson.com

USA Designed, Engineered & Assembled