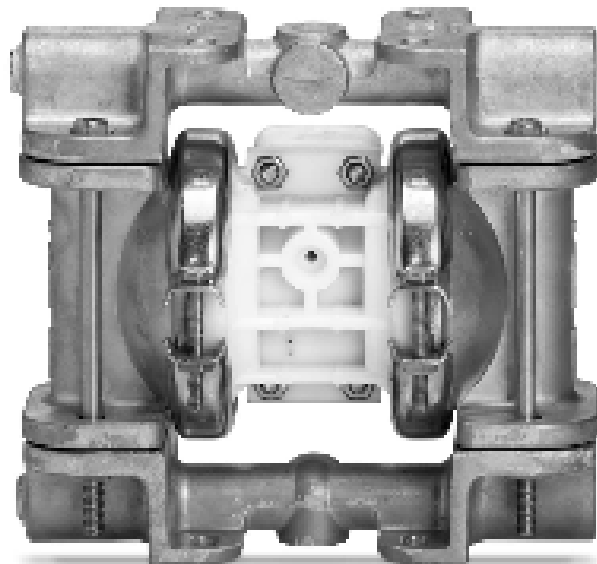


EOM

ENGINEERING OPERATION
& MAINTENANCE

A.025 Accu-Flo Clamped Metal Pump



Where Innovation Flows

WILDEN®



WIL-10030-E-03

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Warranty

Each and every product manufactured by Wilden is built to meet the highest standards of quality. Every pump is functionally tested to insure integrity of operation. Wilden warrants that pumps, accessories and parts manufactured or supplied by it to be free from defects in material and workmanship for a period of five (5) years from date of installation or six (6) years from date of manufacture, whichever comes first.

For more information, and to register your Wilden pump for warranty, please visit <https://www.psgdover.com/wilden/support/warranty-registration>.

Certifications


Section 1


Precautions - Read First!


 **TEMPERATURE LIMITS:**


PTFE Encap. FKM	4.4°C to 148.9°C	40°F to 300°F
Buna-N	-12.2°C to 82.2°C	10°F to 180°F
Wil-Flex™	-40°C to 107.2°C	-40°F to 225°F
PTFE	4.4°C to 148.9°C	40°F to 300°F


NOTE: Not all materials are available for all models. See "Wilden Pump Designation System on page 5 for material options for your pump.


 **CAUTION:** When choosing pump materials, be sure to check the temperature limits for all wetted components.


 **CAUTION:** Maximum temperature limits are based upon mechanical stress only. Certain chemicals will significantly reduce maximum safe operating temperatures. Consult engineering guide for chemical compatibility and temperature limits.

 **CAUTION:** Always wear safety glasses when operating pump. If diaphragm rupture occurs, material being pumped may be forced out air exhaust.


 **WARNING:** Prevention of static sparking — If static sparking occurs, fire or explosion could result. Pump, valves, and containers must be properly grounded when handling flammable fluids and whenever discharge of static electricity is a hazard.


 **CAUTION:** Do not exceed 8.6 bar (125 psig) air supply pressure.


 **CAUTION:** Before any maintenance or repair is attempted, the compressed air line to the pump should be disconnected and all air pressure allowed to bleed from pump. Disconnect all intake, discharge and air lines. Drain the pump by turning it upside down and allowing any fluid to flow into a suitable container.


 **CAUTION:** Blow out air line for 10 to 20 seconds before attaching to pump to make sure all pipe line debris is clear. Use an in-line air filter. A 5µ (micron) air filter is recommended.


 **NOTE:** Tighten clamp bands prior to installation. Fittings may loosen during transportation.

 **NOTE:** Before starting disassembly, mark a line from each liquid chamber to its corresponding air chamber. This line will assist in proper alignment during reassembly.

 **CAUTION:** Verify the chemical compatibility of the process and cleaning fluid to the pump's component materials in the Chemical Resistance Guide (see E4).

 **CAUTION:** Only explosion proof (NEMA 7) solenoid valves should be used in areas where explosion proof equipment is required.

 **CAUTION:** The A.025 Pump is not submersible.

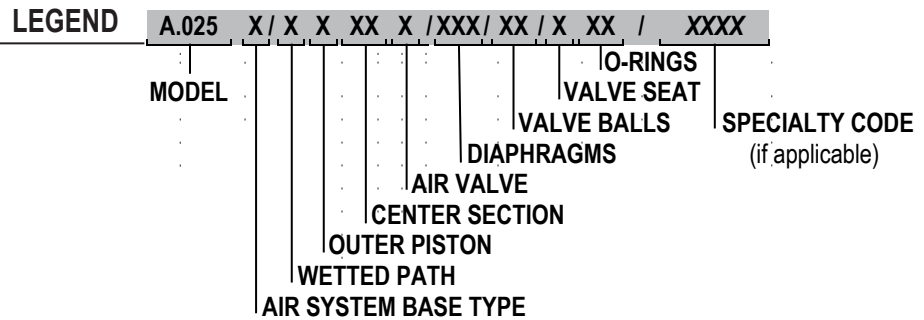
 **CAUTION:** Pump performance will be seriously hampered if pump is installed upside down.

Section 2

WILDEN PUMP DESIGNATION SYSTEM

**A.025 ORIGINAL™
METAL**

**6 mm (1/4") Pump
Maximum Flow Rate:
13.3 lpm (3.5 gpm)**



MATERIAL CODES

<p>MODEL A.025 =METAL ACCU-FLO™</p> <p>AIR SYSTEM BASE TYPE B = ADAPTER BLOCK P = PRO-FLO® T = TURBO-FLO™</p> <p>WETTED PATH A = ALUMINUM H = ALLOY C S = STAINLESS STEEL</p> <p>OUTER PISTON A = ALUMINUM H = ALLOY C S = STAINLESS STEEL Z = NO PISTON</p>	<p>CENTER SECTION PP = POLYPROPYLENE LL = ACETAL</p> <p>AIR VALVE A = ALUMINUM (Available on A.025T only) L = ACETAL (Available for A.025B and A.025P only) P = POLYPROPYLENE (Available for A.025B and A.025P only) U = UHMW PE (Available for A.025B only)</p> <p>DIAPHRAGMS BNS = BUNA-N (Red Dot) TNL = PTFE W/NEOPRENE BACKUP O-RING, IPD (White) WFS = WIL-FLEX™ [Santoprene® (Orange Dot)]</p>	<p>VALVE BALLS TF = PTFE (White)</p> <p>VALVE SEATS A = ALUMINUM H = ALLOY C S = STAINLESS STEEL</p> <p>VALVE SEAT O-RINGS BN = BUNA-N TF = PTFE (White) TV = PTFE ENCAP. FKM WF = WIL-FLEX™ (Santoprene®)</p> <p>MANIFOLD O-RINGS BN = BUNA-N TF = PTFE (White)</p>
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SPECIALTY CODES

0150 Accu-Flo™, 24V DC coil	0169 Accu-Flo™, 110V AC coil, PFA coated hardware	0184 Accu-Flo™, 24V DC coil, PFA coated hardware
0151 Accu-Flo™, 24V AC / 12V DC coil	0170 Accu-Flo™, 110V AC x-proof coil, PFA coated hardware	0185 Accu-Flo™, 24V DC x-proof coil, PFA coated hardware
0153 Accu-Flo™, 24V AC / 12V DC x-proof coil	0180 Accu-Flo™, 24V AC / 12V DC coil, PFA coated hardware	0675 Accu-Flo™, 24V DC, inlet manifold, dual ported, NPT
0154 Accu-Flo™, 24V DC x-proof coil	0181 Accu-Flo™, 24V AC / 12V DC x-proof coil, PFA coated hardware	0676 Accu-Flo™, 24V DC, inlet manifold, dual ported, BSPT
0155 Accu-Flo™, 110V coil		
0156 Accu-Flo™, 110V AC x-proof coil		
0157 Accu-Flo™, 24V DC x-proof coil, Intl., PTB approved		

THE THREE ACCU-FLO™ OPTIONS AVAILABLE:

- AxT:** This is the same Accu-Flo™ configuration that has been available from Wilden since March 1994. An aluminum solenoid valve is attached directly to a T-series center section and the shaft/inner piston configuration is altered.
- AxP:** This option uses a plastic (polypropylene or acetal) spacer that is assembled between the Pro-Flo® air valve and the Pro-Flo® center section. The same solenoid operator – coil assembly that is found on AxT pumps is assembled on the plastic spacer discussed above for electronic interface. This spacer together with the Pro-Flo® air valve replaces the aluminum air valve used in the AxT with a more chemically resistant option. Spacers will be available in the 1/4", 1/2", and 1" sizes.

The use of the Pro-Flo® ADS provides additional flow in most applications (refer to EOM for details). The AxP provides the Pro-Flo® benefits of lower start-up pressure, reduced blow-by, and increased life.

- AxB:** This option uses an Adapter Block in place of an air valve. A user supplied, 4-way pneumatic valve must be used in conjunction with this technology. This configuration enables the solenoid valve to be remotely installed, preventing chemical attack in very aggressive environments. Adapter Blocks are available for both the T and P series center sections in all pump sizes. (See EOM AxB for details.)

NOTE: The "x" in the above Accu-Flo™ descriptions are used in place of a pump model size. See Pump Designation System chart above.

NOTE: Most elastomeric materials use colored dots for identification.

NOTE: Not all models are available with all material options.

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Section 3

HOW IT WORKS — PUMP

The Wilden diaphragm pump is an air-operated, positive displacement, self-priming pump. These drawings show the flow pattern through the pump upon its initial stroke. It is assumed the pump has no fluid in it prior to its initial stroke.

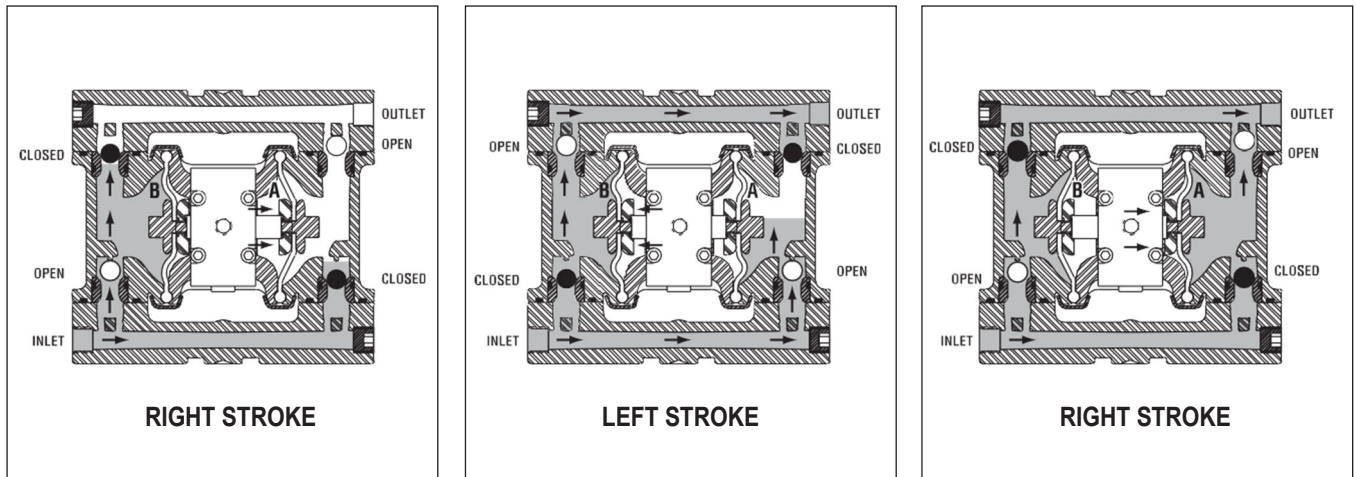


FIGURE 1 When the solenoid is energized, the air valve directs pressure to the back side of diaphragm A. The compressed air is applied directly to the liquid column separated by elastomeric diaphragms. The diaphragm acts as a membrane between the compressed air and the liquid, balancing the load and removing mechanical stress from the diaphragm. The compressed air moves the diaphragm away from the center section of the pump. The opposite diaphragm is pulled in by the shaft connected to the pressurized diaphragm. Diaphragm B is on its suction stroke; air behind the diaphragm has been forced out to the atmosphere through the exhaust port. The movement of diaphragm B toward the center section of the pump creates a vacuum within chamber B. Atmospheric pressure forces fluid into the inlet manifold forcing the inlet valve ball off of its seat. Liquid is free to move past the inlet valve ball and fill the liquid chamber (see shaded area).

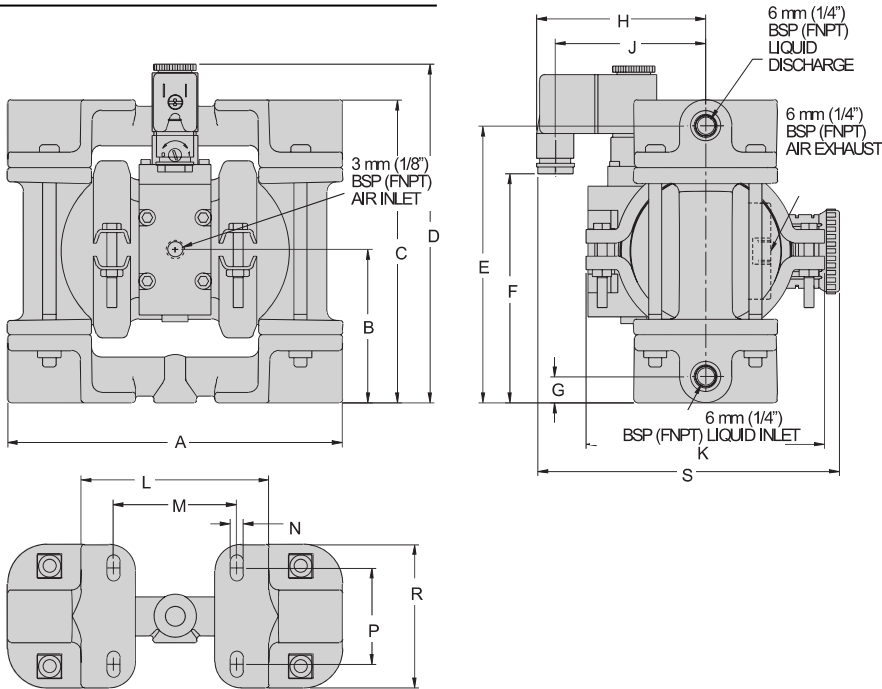
FIGURE 2 When the solenoid valve is deenergized, the air valve redirects pressurized air to the back side of diaphragm B. The pressurized air forces diaphragm B away from the center section while pulling diaphragm A to the center section. Diaphragm B is now on its discharge stroke. Diaphragm B forces the inlet valve ball onto its seat due to the hydraulic forces developed in the liquid chamber and manifold of the pump. These same hydraulic forces lift the discharge valve ball off of its seat, while the opposite discharge valve ball is forced onto its seat, forcing fluid to flow through the pump discharge. The movement of diaphragm A toward the center section of the pump creates a vacuum within liquid chamber A. Atmospheric pressure forces fluid into the inlet manifold of the pump. The inlet valve ball is forced off of its seat allowing the fluid being pumped to fill the liquid chamber.

FIGURE 3 Once the solenoid valve is reenergized the air is directed to the back side of diaphragm A, which starts diaphragm B on its exhaust stroke. As the pump reaches its original starting point, each diaphragm has gone through one intake and one discharge stroke. This constitutes one complete pumping cycle. The pump may take several cycles to completely prime depending on the conditions of the application.

Section 4

DIMENSIONAL DRAWING

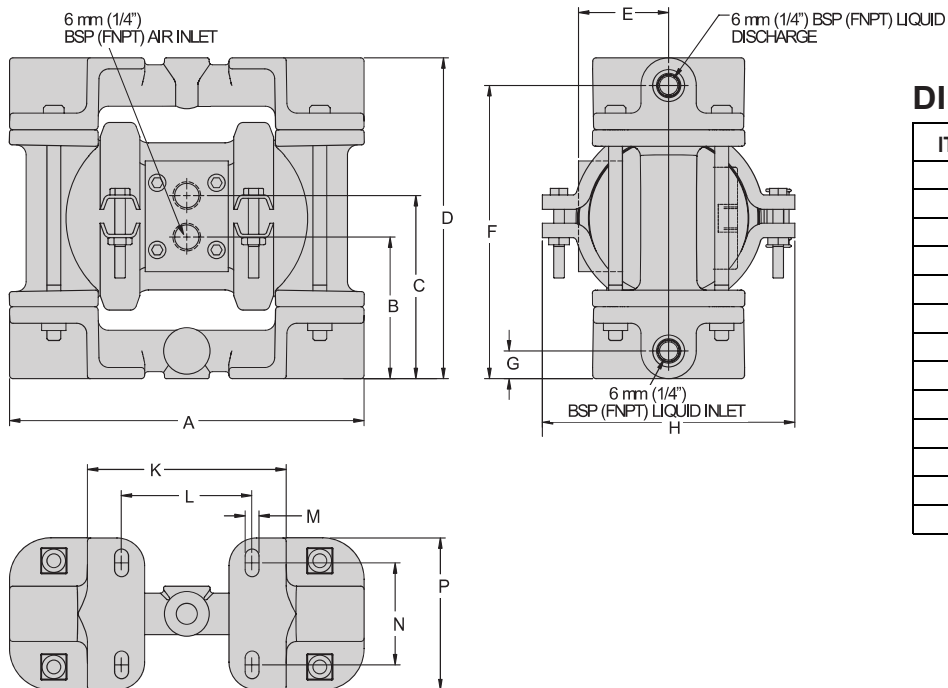
A.025T Metal Accu-Flo™



DIMENSIONS

ITEM	METRIC (mm)	STANDARD (inch)
A	165	6.5
B	74	2.9
C	147	5.8
D	140	5.5
E	135	5.3
F	107	4.2
G	13	0.5
H	97	3.8
J	74	2.9
K	114	4.5
L	91	3.6
M	61	2.4
N	8	0.3
P	46	1.8
R	71	2.8
S	147	5.8

A.025B Metal (P-Series Center Section)

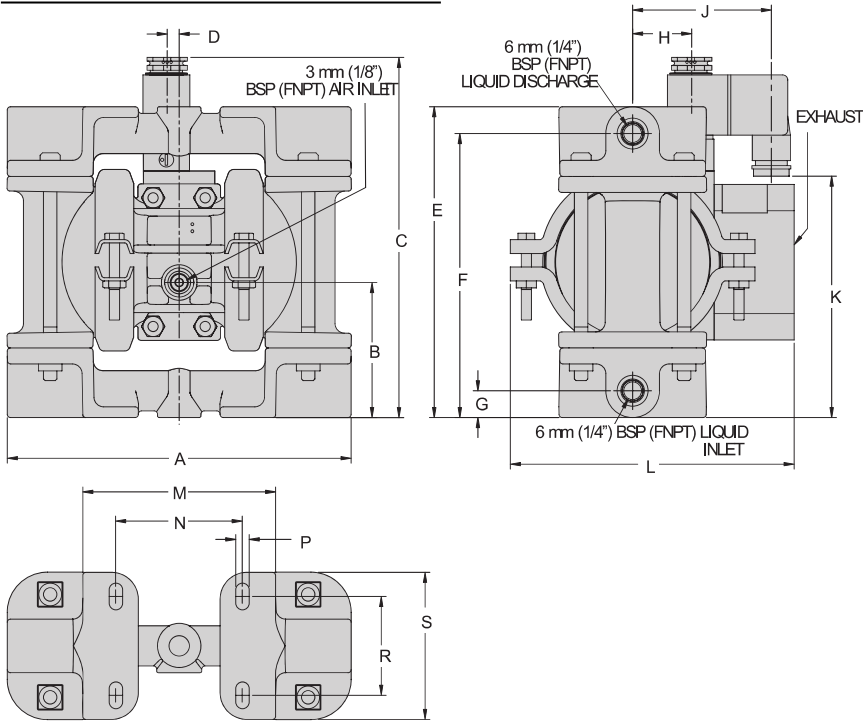


DIMENSIONS

ITEM	METRIC (mm)	STANDARD (inch)
A	165	6.5
B	66	2.6
C	84	3.3
D	147	5.8
E	41	1.6
F	135	5.3
G	13	0.5
H	114	4.5
K	91	3.6
L	61	2.4
M	8	0.3
N	46	1.8
P	71	2.8

DIMENSIONAL DRAWING

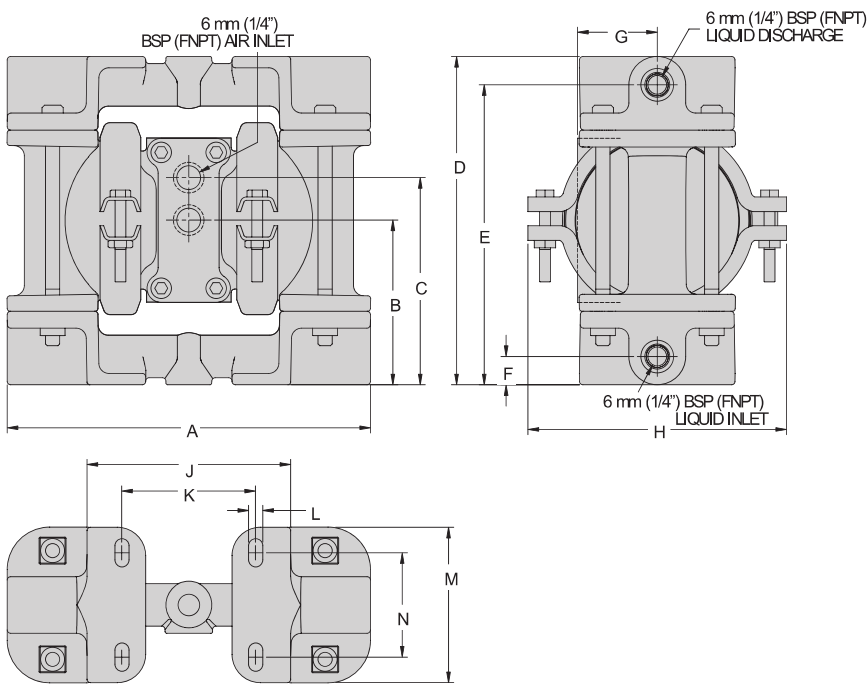
A.025P Metal Accu-Flo™



DIMENSIONS

ITEM	METRIC (mm)	STANDARD (inch)
A	165	6.5
B	64	2.5
C	170	6.7
D	8	0.3
E	147	5.8
F	135	5.3
G	13	0.5
H	28	1.1
J	66	2.6
K	114	4.5
L	135	5.3
M	91	3.6
N	61	2.4
P	8	0.3
R	46	1.8
S	71	2.8

A.025B Metal (P-Series Center Section)



DIMENSIONS

ITEM	METRIC (mm)	STANDARD (inch)
A	165	6.5
B	74	2.9
C	94	3.7
D	147	5.8
E	135	5.3
F	13	0.5
G	36	1.4
H	114	4.5
J	91	3.6
K	61	2.4
L	8	0.3
M	71	2.8
N	46	1.8

PSG
22069 Van Buren Street
Grand Terrace, CA 92313-5651 USA
P: +1 (909) 422-1730 • F: +1 (909) 783-3440
psgdover.com



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