Graymills

INKING SYSTEMS

# WHY GRAYMILLS?

## BECAUSE YOU DON'T MAKE MONEY WHEN YOUR PRESS ISN'T RUNNING...

## THOUSANDS OF PRINTERS AND HUNDREDS OF OEMs CHOOSE GRAYMILLS.

Confusion-Free

### What's the right pump? Can I decrease downtime? How do I clean this? How do I get my pressroom running more efficiently?

Picking the best inking system or parts washer for your pressroom can be a confusing process. There are dozens of basic types of each and hundreds of options available. With its unmatched selection of products, Graymills offers you a "Total Inking Perspective" and "Total Cleaning Perspective" that others can't rival. Unlike companies with limited selection, who will simply steer you toward what they have to offer, we can actually help you select the proper equipment. With our decades of experience in the pressroom, we speak your language and understand your needs.

**10,000 choices in our catalog ➡ 1 solution for you**

Risk-Free

### How do I know I'm buying the right thing?

Would you buy a car without a test drive or at least kicking the tires a bit? If not, then why would you invest a large sum of money in equipment for your pressroom based on promises in a catalog? With Graymills, there is no need to risk it. Our demo pumps and complimentary cleaning tests allow you to try before you buy. Why risk something unproven when you can be sure that what you ordered will work as you hope?

**Big unknown ➡ Proven to your satisfaction**

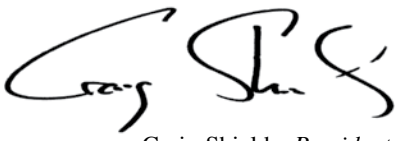
Worry-Free

### So that's it?

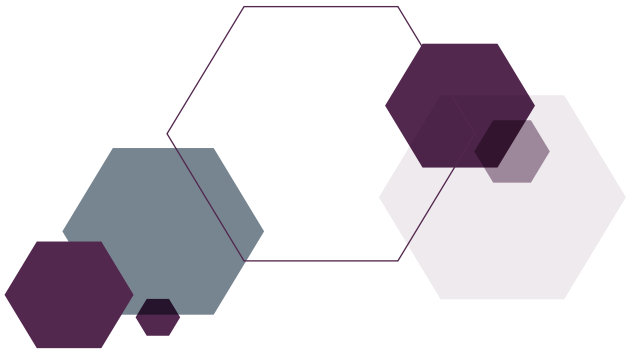
"Confusion Free" and "Risk Free" means that you can relax. By working together and talking through your needs, wants, and budget, you've picked the right equipment and tested it out. We will stand behind it with a generous warranty. Our products are built to last, and we're proud of that fact. Now you can get back to what you do best.

**You + Us ➡ You, Productive**

**At Graymills, we love talking to our customers.**
**If you have questions, call us at 877-Ink-Pump**
**or 773-248-6825. Get what you need. Call Graymills.**



Craig Shields, *President*



**Since 1939, Graymills has worked with press builders, converters and ink makers developing ink circulating and conditioning systems to meet their unique requirements. Because presses vary in web width, speed, run length, and ink, Graymills has developed a variety of systems to match press requirements. We're eager to help you with your ink pumping, circulating or conditioning needs. Graymills' factory-trained representatives and distributors are located throughout North America and in major cities worldwide.**

NEED HELP CHOOSING A PUMP?

SEE PAGES 4-5

## A Pumps and Motors

The pump and motor are the heart of the system. The correct combination is determined by the press, plumbing and operating demands. Graymills has a pump and motor for virtually every press requirement. Also see Dial-A-Flow™ below.


**Pages 8-11** **Quality Features –** Centrifugal and peristaltic pumps

**Page 13** **Motor Options –** Standard and explosion-proof electric, air, CE, ATEX

**Pages 14-18** **H/M Series Pumps-** H2000/H2000H/H3000/M3/H4000 – Agitor® centrifugal pumps for specialty, narrow and wide web applications

**Page 19** **G4 Series Pumps –** Agitor® centrifugal pump for wide web applications

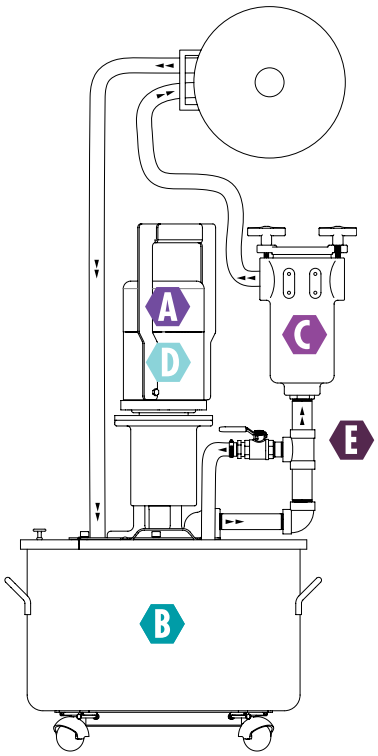
**Page 20** **HV/HR Series Pumps –** Narrow web, low flow applications

**Page 21** **Diaphragm Pumps –** Corrugated presses and high viscosity applications

**Pages 22-25** **Peristaltic Pumps and Accessories –** Tube pumps for quick change

**Page 26** **Drum Length Pumps/Transfer Pumps –** Drum pumps adjustable for 30 and 55 gallon drums

**Pages 26-27** **Ink Mixers and Pumps –** For tanks, drums and totes of all sizes


## B Tanks and Lids

Round tanks are essential for ink conditioning and proper blending. Graymills offers round tanks in seven sizes as well as pump and tank combinations for every system.


**Page 12** **Tanks –** Capacities from 1 to 30 gallons


## C Filters and megaMAG

Proper filtration is key to protecting anilox rolls, cylinders, and doctor blades from damage while maintaining print quality. Graymills Superflo® filters feature reusable stainless steel mesh cartridges and a standard permanent magnet to trap ferrous metal particles. Optional megaMag for greater removal of ferrous particles.


**Page 28** **Surge Suppressors/Filters –** For diaphragm and peristaltic pumps

**Page 29** **Superflo® Ink Filters –** For specialty, narrow and wide web presses

**Page 29** **megaMAG –** 10x power rare earth magnet for extra protection


## D Dial-A-Flow

Variable-Speed Pump Drive


**Page 9**


## E Accessories

Graymills pressroom accessories include all of the essential components you need for the typical ink circulating and conditioning system.


**Pages 30-31** **Accessories**

# SELECTION GUIDE

## GETTING THE MOST OUT OF YOUR INK DELIVERY SYSTEM

### ABOUT INK PUMP TYPES

#### Centrifugal

This industry workhorse is low maintenance, takes a lot of abuse, and delivers ink in a non-pulsating flow. Graymills centrifugal models provide in-tank circulation to keep the material in the tank blended. Available with electric or air motors, with a Quick Demountable motor option. Flow is easily controlled by the use of valves, or in the case of air motor models, by the flow of air to the motor. See pages 13-20 for complete specifications.

#### Peristaltic

Also know as a "tube" pump, the peristaltic pump utilizes a flexible tube which passes through a head and is squeezed by two rollers that push the ink to the print deck. These pumps are excellent for fast color changes for low to high viscosities, UV and EB ink. A variable speed motor controls the flow (no valves or by-passes required). Graymills peristaltic ink pumps are reversible so that ink can be drawn back from the print deck at the end of a run, reducing turnaround time. Additionally, they are easy to clean: pump cleaning fluid through the whole ink system, wipe the outside of the hose that was in the bucket, and the system is clean - or use the "Quick Change" Removable Head option and change over the entire system in seconds. See pages 10-11 and 22-25 for complete specifications.

#### Double Diaphragm

These air driven pumps operate by the movement of two flexible diaphragms that move back-and-forth, alternately filling and emptying two chambers. As each chamber is emptied, the ink is pushed toward the print deck. A variety of applications are possible, because the inlets and outlets can be configured in different ways. Good for corrugated bottom printers. Pump function produces a pulsating flow, so Graymills surge suppressor filters are strongly recommended. See page 21 for specifications on our models ranging from 1/4 to 1 inch.

### ABOUT OTHER SYSTEM COMPONENTS

#### Ink Containers

Round containers are preferred because they help promote circulation and blending of the ink or coating when used with Agitor® ink pumps or separate air motor mixers. Sloped bottoms and sumps in Graymills 10, 20, 30 gallon tanks allow low-pump down, minimizing waste ink. See page 12 for more information.

#### Filters

It is amazing how much contamination finds its way into the ink supply. This can lead to quality issues and if the material is metallic or hard (dried water-based ink, blade material, ceramic chips), roll scoring can result. Graymills filters, designed specifically for ink applications, mount inline to prevent contamination from reaching the print deck. A magnet at the inlet of the filter pulls metallic material out of the ink. A 10x-power rare earth magnet is optional for filters and is also available on an adjustable bracket that hangs in the ink container or pan. Surge suppressor models are available for diaphragm and peristaltic pumps. See pages 28-29 for complete specifications.

#### Mixers

Unlike centrifugal pumps, diaphragm and peristaltic ink pumps do not promote circulation and ink blending in the container. Inks and coatings are prone to separation and stagnation if not circulated in their container. Providing circulation maintains the ink the way it was blended to achieve the required color. Graymills air and electric motor mixers are the answer, with sizes to fit containers from 2 to 55 gallons. See page 26-27 for more information.

## QUICK PRESS TURNAROUND

**Looking for quicker turn-around at the end of a press run? Graymills understands.**

### Quick Demountable Motor Option

QD and QC Quick Demountable motor options on the H, M, and G Series centrifugal ink pumps speed up press turnaround. When you use the demountable motor system, you have one motor and multiple pump bodies for each deck. The motor mounts quickly to a Graymills pump body without tools. At the end of a run, pop the motor off the dirty pump body and put it on one that is ready to go in the new ink. Send the dirty pump to the clean-up area to take care of off-press. Besides reducing initial motor cost, it is less likely to be damaged during moving, handling and cleaning, and cleaning will be easier without the motor attached.

### Quick Change Peristaltic Pump Heads

PQS and PQL series peristaltic pump heads offer the minimum downtime for pump changeover. Used heads disconnect from the pump body - without tools - in seconds, allowing the printer to pop on a new, pre-loaded head.

### Quick Fittings

Try using cam-lock quick couplers instead of barbed fittings wherever you need to disconnect hoses.

# OPTIMIZING YOUR SYSTEM

Before considering buying new ink pumps or high-speed motors because of inadequate flow, take a look at your system. With increased deck heights, heavier ink viscosities, and chamber systems, there is a greater need to examine the entire plumbing system that gets ink from the container to the print deck.

### Fittings

Many fittings cause restrictions, and 90º elbows are among the worst. Are all your valves and fittings "full port", or is the internal diameter smaller than the connection size? Do your quick- connect fittings have valves that reduce flow during operation? Can you reduce the number of fittings?

### Hoses

Better flow can usually be obtained by using the next largest practical diameter hose. If your centrifugal pumps have reducer fittings in the discharge, remove them and use a larger diameter hose. Excessive hose lengths can reduce flow, and unnecessary hose is expensive and increases cleaning. Avoid a lot of hose lying on the floor.

### Chambers

Many older chambers had 1/2" openings for the supply. This could be a major restriction, especially with higher decks and heavier viscosities. If you are not getting adequate flow on a deck, and the chamber has a 1/2" inlet port, ask your chamber supplier if it is possible to increase the opening.

### Motor Speed

Graymills centrifugal pumps typically have motors that run at 1725 RPM (@ 60Hz). This is usually sufficient for most ink pump applications. However, with today's higher, wider presses and heavier viscosity liquids, a 3450 RPM motor may be needed. The increased motor speed, coupled with a properly sized impeller, greatly enhances pump performance.

### Viscosity and Deck Height

There are two important points to remember when working with any given centrifugal pump.

1. An increase in viscosity will decrease flow.
2. An increase in deck height will decrease flow.

# SELECTING A PUMP

## TYPICAL PUMP RECOMMENDATIONS BY PRESS TYPE

| Press Type or Application | Pump Model/Type Recommendations* | | Catalog Page No. | Notes |
|---|---|---|---|---|
| **Narrow Web Flexo Tag and Label (up to 24")** | | | | |
| | HV | Centrifugal | 20 | For low flow applications. 1, 2 gallon containers are typical. Envelope presses, although narrow web, run faster and usually require more ink. See envelope below. |
| | HR | Centrifugal | 20 | |
| | H2000 | Centrifugal | 14 | |
| | PPS | Peristaltic | 22 | |
| | DDP-1/4", 3/8" | Diaphragm | 21 | |
| **Mid-Web Flexo (24" to 44")** | | | | |
| | H2000 | Centrifugal | 14 | The H2000 Series/PPL are typical. Consider H3000 Series/PPL for higher decks or viscosities. |
| | H2000H | Centrifugal | 15 | |
| | H3000 | Centrifugal | 16 | |
| | PPL, PQLM | Peristaltic | 22, 23 | |
| | DDP-1/2", 3/8" | Diaphragm | 21 | |
| **Wide-Web Flexo (larger than 44")** | | | | |
| | H2000H | Centrifugal | 15 | High decks and/or heavy ink consumption will likely require the use of M3 or H4000 Series centrifugal pumps. Larger sizes/high capacity available. Consult factory. |
| | H3000 | Centrifugal | 16 | |
| | M3 | Centrifugal | 17 | |
| | H4000 | Centrifugal | 18 | |
| | G4 | Centrifugal | 19 | |
| | PPL, PQLM | Peristaltic | 22, 23 | |
| | DDP-1/2", 1" | Diaphragm | 21 | |
| **Envelope** | | | | |
| | HR | Centrifugal | 20 | Higher speed envelope presses use more ink, requiring more pump than typical narrow web, tag and label presses. |
| | H2000 | Centrifugal | 14 | |
| | PPS, PPL, PQLM | Peristaltic | 22, 23 | |
| | DDP-3/8", 1/2" | Diaphragm | 21 | |
| **Corrugated** | | | | |
| | H2000 | Centrifugal | 14 | The Dual Head Peristaltic and 2-inlet/2-outlet diaphragm pump configurations are well suited for bottom printing presses. One pump side delivers ink, the other side draws it back to the container. See pages 18-20 for more information. |
| | H3000 | Centrifugal | 16 | |
| | M3 | Centrifugal | 17 | |
| | G4 | Centrifugal | 19 | |
| | PPL, PQLM | Peristaltic | 22, 23 | |
| | Dual Head | Peristaltic | 25 | |
| | DDP-1/2", 1" | Diaphragm | 21 | |
| **Gravure** | | | | |
| | H3000 | Centrifugal | 16 | High capacity, high performance delivery. Larger sizes/higher capacity available. Consult factory. |
| | M3 | Centrifugal | 17 | |
| | H4000 | Centrifugal | 18 | |
| | G4 | Centrifugal | 19 | |
| | PPL, PQLM | Peristaltic | 22, 23 | |
| **Rotary Screen** | | | | |
| | PPL | Peristaltic | 22 | Easily handles the heavy viscosities for this process. |
| | PPS | Peristaltic | 22 | |
| | PQLM | Peristaltic | 23 | |

* See charts on pump pages for specific flow rate data that meet your requirements.

**Things to Know When Selecting a Pump Or Discussing Your Ink System with a Graymills Representative:**

**Fluid Pumped**

Ink, coating, varnish or adhesive: (Solvent, Water-based, UV, EB)

Viscosity of fluid

**Application**

Type of press or deck: CI, In-Line, Stack, Corrugated, Envelope, Rotary Screen, Adhesive, Coating

Process: Flexo, Gravure, Digital

Required flow rate

Substrate: Film, Paper, Foil, Specialized

Height of top print deck

Type of Ink Application: Open Pan, Applicator or Chamber

Run length

**Ratings**

UL

CSA

CE

ATEX

# WHY USE FILTERS?

**One common question is why Flexo and Gravure printers need to use filters. After all, they are viewed as "just something else to clean."**

Filters do two major jobs. First they improve print quality. Circulating along with the ink are contaminants from three major sources: the air (dust, fiber), doctor blades (metallic particles), and ink (dried ink and pigments). Good filters eliminate all three through a series of mechanical and magnetic means. Eliminating these contaminants helps ensure good anilox roll or gravure cylinder filling and metering. And better inking means higher print quality.

Second, filters protect the system from damage. Metallic particles and dry ink, especially waterbased ink, can be highly abrasive to anilox rolls and gravure cylinders. Caught under a doctor blade, contaminants can score expensive cylinders, requiring repair or replacement.

Graymills filters are easy to clean. Simply remove the cartridge and let the filter body drain out the bottom with the rest of the inking system. Place a clean cartridge in the filter, and you're off and running again. (See pages 28-29 for detailed Filter information.)

Graymills offers Parts Washers that can make cleaning cartridges and other ink equipment easier and more efficient. We recommend a Graymills Ultrasonic Benchtop cleaning system for filter cartridges. Contact the Factory to discuss your needs and special conditions.

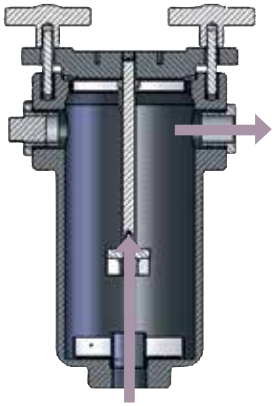
# INDUSTRIAL VS. INK FILTERS

Many printers who use filters buy them from industrial "MRO" (Maintenance, Repair, and Operations) catalogs. While these filters may do an adequate job of filtration, they lack key features that differentiate filters made for the Flexo and Gravure markets.

The most important difference is that ink filters have the flow enter from the bottom and exit from the top (see pictures). Industrial filters have both the inlet and the outlet at the top. During operation, these might be effectively the same, but cleanup is a different story.

**Ink filters allow easy draining of the filter and hoses.** In the case of centrifugal pumps, when the pump is switched off, the ink in the filter and hoses will drain back into the ink tank. In the case of peristaltic pumps, the pump can be reversed to suck the ink back.

**Because of the configuration of their inlets and outlets, industrial filters trap ink in the housing.** Beyond the wasted ink, this means more cleaning time between jobs and slower turnarounds. Wasted ink and slower turnarounds add up to real money.



GRAYMILLS INK FILTER

TYPICAL INDUSTRIAL FILTER

# CENTRIFUGAL

## H/M/G SERIES CENTRIFUGAL PUMPS

### H/M/G Series Pump Standard Features

- **A** AGITOR® – Many inks, adhesives, and coatings need to be kept blended in order to ensure peak performance. This feature keeps solids in suspension and helps to maintain proper viscosity. (Not Shown)
- **B** TRI-ROD CONSTRUCTION – Tri-Rod constructed pumps weigh less than solid column designs making them easier to handle. Open column design, developed by Graymills, eliminates hard-to-clean ink build-up prevalent in solid column pumps. Ensures quick, easy and thorough cleaning for quick turnaround.
- **C** TEFLON® NON-STICK COATING – Less labor, quick clean-up and longer operating life result from the DuPont Teflon®-coated volute, discharge pipe and mounting flange (H Series only). Will not peel or flake like other coatings, such as nylon.
- **D** STAINLESS STEEL – Corrosion resistant stainless steel is standard for the shaft, coupling and Tri-Rods.
- **E** CELCON® IMPELLER – Graymills impellers are molded, lightweight, glass-filled Celcon® thermoplastic. They're exceptionally durable, abrasion resistant and chemically inert to printing solvents. Because they're molded to set specifications, replacements are quick and easy – no balancing required. Light weight means less pump wear and longer service life.
- **F** LOW PUMP DOWN – Leave minimal ink in a standard Graymills tank to reduce waste and speed cleanup; designed to fit 10, 20, 30 gallon tanks with built-in sumps and other sizes without sumps. See page 12 for pump/tank combinations. Custom/OEM tanks available.
- **G** PIPE CONNECTIONS – Designed to easily connect with reducer fittings to allow multiple pipe and tubing sizes. Fittings can be added if smaller hose diameter is needed, but flow will be reduced. Use fittings to customize your connection, add filtration, customize flow. (Not shown)
- **H** MOTORS – Wide variety of standard and explosion-proof motor options let you configure to your specific press requirements. All electric motors are from recognized manufacturers, have sealed bearings and are UL and CSA approved with NEMA faces. CE or ATEX motors are available for European use. Variable speed air and electric motors also available for some models. See pg 13 for motor options. May be purchased with a Quick Demountable motor (QD, QC Models).

Graymills advanced centrifugal pumps are engineered to meet the delivery requirements of both solvent and water-based inks and coatings (for UV and other higher viscosity inks, see Peristaltic Pumps). Graymills combination of quality features is evident inside and out and is unmatched by any other ink pump manufacturer in the world. Built in the USA for reliability, quick delivery, low maintenance and long life, Graymills centrifugal pumps are fully warranted for one year. For complete flow and dimensional information, see pages 14-19.

***See our diaphragm pumps on page 21.***

## H Series Additional Features

- **I** ROUND VOLUTE – Designed to fit most common ink tank sump sizes. Round design minimizes sump size, allowing max pump down of ink.
- **J** HANDLE – All have a handle (not shown) for ease of movement around the pressroom.
- **K** INTEGRAL MOUNTING FLANGE/DISCHARGE & VAPOR DIFFUSER – An integral part of the pump, not only providing motor mounting support but also isolating the motor from vapors. Flange design permits airflow from the shaft rotation to diffuse vapors that shorten motor bearing life. Discharge is above the lid and an integral part of this flange. Simplifies plumbing and provides for a smaller single tank opening.

## M Series Additional Features

- **L** HIGH PERFORMANCE VOLUTE – Designed by an aerospace engineer, the M-Series volute delivers the powerful lift performance and flow rates ideal for higher print decks and wider webs.
- **M** ERGONOMIC DESIGN – Twin handle design, integral to the molded mounting flange, provides safer, balanced, and easy lifting of unit. Mounting flange isolates the motor from vapors. Airflow from the shaft rotation diffuses vapors.
  Note: Not standard on European ATEX models.
- **N** LIGHTER WEIGHT – Weighing in at 15% less than conventional ink pumps, Graymills M3 is still a heavyweight performer.

# DIAL-A-FLOW™

### Take Control Of Ink Delivery On Your Press

Dial-A-Flow™ Variable Speed Ink Pump Control is Graymills latest innovation in making press operation easier and improving print quality. Dial-A-Flow™ replaces unpredictable and time consuming valve settings in ink delivery systems. Using one simple dial on a small control box, it's quick and easy to set the ink flow rate you need, freeing up operators for other tasks, and achieving better and more consistent results.

- Available for most new/existing centrifugal ink pumps
- Save energy and money running pump at slowest speed needed for desired ink flow
- Right flow can reduce pressure on chamber end-seals, reducing leakage
- Operates on 50/60 Hz., UL U.S./Canada listed

Not for use in solvent atmospheres or hazardous environments

## Variable-Speed Pump Drive

Save money by running your pumps slower

Minimize foam

Lessen shear-sensitive ink issues

Reduce wear on your ends seals

Rugged metal housing

Optional reversing

Requires inverter duty 3-phase pump motor

Voltages: 115V or 230V in, 208-230V out

Models available include:

- DAF-A or DAF-B: One direction variable speed, on/off switch
- DAFR-A or DAFR-B: Reversible variable speed on/off switch, requires inverter-duty motor

# PERISTALTIC

## WHY USE PERISTALTIC PUMPS?

In the last decade, peristaltic pumps have evolved from a novelty to an integral part of many pressrooms. They have been especially popular for two segments: **heavy viscosities and short runs.**

Peristaltic pumps are a natural choice for heavy viscosities. Their low-shear rolling action can pump inks, coatings, and adhesives that are too thick for centrifugal pumps without the sharp pulsations associated with double diaphragm pumps. And with the ability to control the pump's speed, you can deliver only as much as you need.

Peristaltic pumps are great for short runs and quick turn-arounds. Since the ink is contained within a tube, cleaning the pump consists solely of replacing the tube. That's it; there are no internal crevices and hiding places that the ink can contaminate the next job. This is especially crucial for hard-to-clean UV inks. **Add the "Quick Change" head feature for even faster turnarounds.**

## WHY GRAYMILLS?

Unlike competitive models from the chemical and food industries, Graymills' peristaltic pumps were designed specifically for the pressroom. Our "Straight-Thru" head design keeps tube destroying kinks from forming. And by using two rollers in an oversized head with thick-walled tube, the tubing life - and the chance of tube failure - is minimized.

Our peristaltic pumps are also designed with press turnaround in mind. This shows in features like reversing. Conventional pumps run one direction and can't pull the ink back into the bucket. Graymills is leading the way with its Quick-Change heads that allow almost instant change-overs to reduce ink waste and system clean-up time.

Why use a design optimized for a different industry when there is a pressroom proven peristaltic from Graymills?

## UNIQUE GRAYMILLS PERISTALTIC PUMP FEATURES

### QUICK TUBE CHANGE

Swivel lock fasteners permit quick cover removal with no tools or loose parts – for fast turn arounds.

### STRAIGHT-THRU™ DESIGN

Graymills' Patented Head Design allows the tube to run direct from the ink container to the print deck – eliminates tube-destroying kinks, flow stoppages, the snaking or tube creep common in other peristaltic pump designs.

### DUAL ROLLER TECHNOLOGY

Twin rollers made from nylon impregnated with a high-tech lubricant deliver full flow with fewer compressions and less tube wear. Aluminum head has stainless steel rollers.

### STANDARD FEATURES

Includes all peristaltic quality features listed on page 11.

Variable speed for flow control.

Reversible for easy draining and flushing.

Straight-Thru patented head design eliminates flow stoppage from tube kinks.

Recommended maximum viscosity 500 cps.

### OPTIONAL FEATURES & ACCESSORIES

Quick Change Removable Heads (see page 24).

Dual heads (see page 25).

Stand to mount pump over ink tank.

Mounting bracket for direct attachment to press.

Mixer to keep contents blended.

Remote mounting of controls.

CE compliant.

Contact Factory for information on ATEX compliant models.

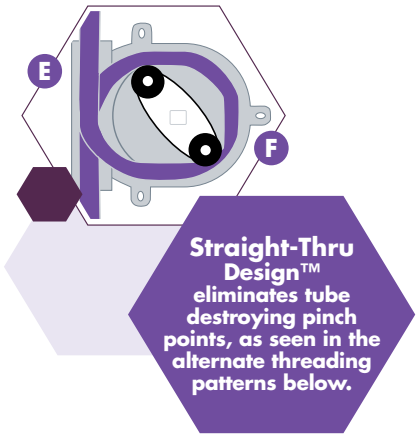
### SO UNIQUE IT IS PATENTED

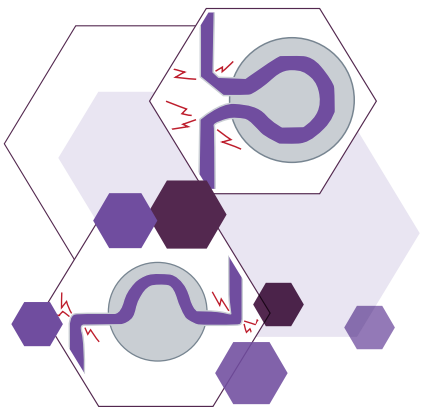
Graymills holds U.S. patent 5,630,711.

### TANK OPTIONS

1, 2, 5, gal pails (accessory pump stand or mounting bracket recommended).

10, 20, 30 gallon mild steel tanks. Stainless steel optional.



# PERISTALTIC PUMPS

Unlike conventional peristaltic pumps re-purposed from other industries, Graymills peristaltic or " tube" pumps are engineered specifically for flexo and gravure printing applications and have received U.S. Patent number 5,630,711. As a result, Graymills peristaltic pumps easily accommodate a wide variety of fluids from inks and coatings to adhesives – water, solvent, and UV/EB. The innovative design features are especially valuable in the pressroom when short runs require frequent changeover and quick turnaround. Built in the U.S. for reliability, low maintenance and long life, Graymills peristaltic pumps are fully warranted for one year. For complete flow and dimensional information, see pages 22-25.

## Peristaltic Series Pump Features

**A** HIGH OUTPUT GEAR MOTOR – Gear driven, the motor delivers the torque needed for uniform flow at all speeds, regardless of viscosity. Surface-mounted advanced electronic motor controls assure reliable operation and long motor life. Variable speed control allows accurate flow management without valves and by-passes. Air motor models provide the same accurate flow management and speed control. Motor and flow are reversible on both electric and air models for easy draining or flushing of the system. Toggle-type forward/reverse switch stops electric motor before reversing direction to prevent damage to electronics.

**B** QUICK CHANGE AND DUAL HEAD MODELS — Downtime is money, and short runs are common. Graymills understands. That is why Graymills' Peristaltic Pumps come in many configurations. Designs include "Quick Change" heads, which allow the pump to be up and running with a new color in seconds, and "Dual Head" models with two heads connected to one motor – great for feeding two decks with one pump or for situations where gravity return is not possible. See pages 24-25.

**C** RUGGED HYBRID POWDER COATED STEEL HOUSING – Graymills' housing design protects the pump against splashing and damage. Baked-on hybrid powder coating provides a long lasting durable finish.

**D** SWIVEL LOCK FASTENERS – Exclusive to Graymills, three swivel lock fasteners quickly release the pump head cover, without tools or loose parts, facilitating a quick change of tubing.

**E** STRAIGHT-THRU™ HEAD DESIGN – So unique it's patented. Graymills head design allows the tube to run "straight-thru" from the bucket to the print deck, eliminating "pinch points" where kinks form that slow the flow and weaken the tube. The head design also locks the tube in place, eliminating the snaking or creeping movement common in other peristaltics.

**F** DUAL ROLLER TECHNOLOGY – Graymills peristaltic pump design combines just two rollers with longer compression cycles to provide greater flow with fewer rotations. This results in lower friction, reduced tube fatigue and less flow pulsation.

# TANKS/LIDS

## Tanks/Lids

Standard Graymills ink tanks are round to promote circulation and eliminate "dead spots" in corners where heavier materials can drop out and stagnate, causing viscosity and color issues. Round tanks of 10, 20 or 30 gallon capacity feature a built-in sump for low pump-down to reduce ink waste. A rolled rim at the top of each tank provides reinforcement while eliminating sharp edges. Removable spark-less casters are also featured for added safety. Tanks are available in either 14 gauge epoxy coated mild steel or stainless steel. Lids are available in nickel plated or stainless steel.

Lids have overlapping rims to reduce evaporation and add strength. A hinged portion allows easy refilling or taking of manual viscosity readings. Holes are provided for return hose and/or bypass. Large handles make lifting easy.

Optional reusable or throw-away tank liners are another way to speed up changeovers. See page 30.

In specifying a tank size, select a capacity which will eliminate the need to pay constant attention to your ink level. Consider the amount of ink consumed on the press, the length of press run, the chamber or pan capacity, and the amount of ink which will drain back into the tank from the print deck, hoses, and filter when pump is stopped.

***Don't see what you need? Customized and OEM tanks and lids can be quoted on request.***

## Press Room Ready Pump and Tank Combinations

Graymills ships pump and tank combinations, with your choice of motor options (see page 13) and materials (see below), ready to roll up to the press and plumb. Tank lids are nickel plated steel (stainless optional) and hinged for easy access (except for 1 and 2-gallon sizes). Additional system accessories are available on pages 30-31.

| **TANK SIZE** Gallons (Liters) | **1** (3.8) | **2** (7.6) | **5** (18.9) | **10** (37.9) | **20** (75.7) | **30** (123.6) |
|---|---|---|---|---|---|---|
| **PUMP SERIES** | | | | | | |
| HR | | ✓ | | | | |
| HV | ✓ | ✓ | | | | |
| H2000 | | ✓ | ✓ | | | |
| H2000H | | | ✓ | | | |
| H3000 | | | ✓ | ✓ | ✓ | ✓ |
| H4000 | | | | ✓ | ✓ | ✓ |
| M3 | | | ✓ | ✓ | ✓ | ✓ |
| G4 | | | | ✓ | ✓ | ✓ |
| PPS | ★ | ★ | ★ | ✓ | ✓ | ✓ |
| PPL | | ★ | ★ | ✓ | ✓ | ✓ |
| DDP | | | ✓ | ✓ | ✓ | ✓ |
| **TANK SIZE** Gallons (Liters) | **1** (3.8) | **2** (7.6) | **5** (18.9) | **10** (37.9) | **20** (75.7) | **30** (123.6) |
| Mild Steel | | | ✖ | ✖ | ✖ | ✖ |
| Stainless Steel | ✖ | ✖ | | ✖ | ✖ | ✖ |
| Plastic | ✖ | ✖ | ✖ | | | |

✓ MOUNTS ON LID ★ USES PUMP STAND ✖ STANDARD TANK MATERIAL

# MOTOR OPTIONS



These motor options are available with Graymills pumps and ink circulating systems. This variety of choices lets you configure your system to meet specific printing and press requirements, whether water, solvent-based or UV.

## Air

Properly installed and maintained air motors are inherently explosion-proof, making them ideal for use with solvent-based inks. Ink flow is easily controlled by varying pump speed. With water-based materials, this eliminates the need for valves and bypasses that can contribute to foaming. Standard features include needle valve to permit infinitely variable motor speed, muffler and quick coupler for air line connection. Recommended air supply 80-100 PSI.

CE- and ATEX-compliant air motors available

Use of Filter-Regulator-Lubricator (FRL) recommended (See Accessories, page 31)

## Electric Totally Enclosed

For use with water-based liquids only.

Motors are UL and CSA listed, NEMA C face with lifetime lubricated sealed bearings.

Single or three phase for 50 and 60Hz operation.

CE-compliant motors available.

Motors up to 3/4 HP available in either non-vent or fan cooled versions. 3/4 HP and up are fan cooled.

## UL/CSA Electric Explosion-Proof

For use with solvent-based liquids or other applications where explosion-proof equipment is required.

Includes explosion-proof junction box.

Class 1, Division 1, Group D NEMA C face with lifetime lubricated sealed ball bearings. (UL/CSA)

Single or three phase for 50 and 60Hz operation.

Motors up to 3/4 HP available in either non-vent or fan cooled versions. 3/4 HP and up are fan cooled.

## ATEX Explosion-Proof

For use with solvent based liquids or other applications where ATEX-compliant explosion-proof equipment is required. Fan cooled and ribbed.

0,25 kW (1/3 HP), 2850 RPM, 230/380-415 V, 50Hz, 3 Ph.

0,37 kW (1/2 HP), 2850 RPM, 230/380-415 V, 50Hz, 3 Ph.

## Dial-A-Flow™ Ink Delivery Control

Flow rate is varied by motor speed instead of valves or by-passes. Helps eliminate foaming and shear problems. For more information, see pg 9.

**MOTOR VOLTAGE CHART**

| Suffix | A, KA, VA | B, KB, VB | E, KE | F, KF | FF, KFF | FX, KFX | Z, KZ | GAM |
|---|---|---|---|---|---|---|---|---|
| Voltage | 115 | 230 | 115/230 | 230/460 | 380 | 415 | 575 | Air Motor |
| Hertz | 50/60 | 50/60 | 50/60 | 50/60 | 50 | 50 | 60 | |
| Phase | 1 | 1 | 1 | 3 | 3 | 3 | 3 | |

**K prefix motors are explosion-proof** **V prefix motors are variable speed**
Air motors are inherently explosion-proof

## Quick Demountable Motor Option (QD/QC)

Graymills pumps may be purchased with a QD/QC motor option to create a Quick Demountable Motor System. No tools required. No loose parts. For quick turn-around, buy one pump with a motor, one without. Keep the motor at the press (electric connections remain intact), and swap the dirty pump for a clean one. Reduces the chance of motor damage during cleaning. For use with any electric or air motor shown above.

## QD/QC Motor Options

QD (Fixed Bearing Cartridge) available on H2000 Series Pumps

QC (Removable Bearing Cartridge) available on H3000, M3, H4000 & G4 Series Pumps

# AGITOR®

Optional

# H2000 Series

## TYPICAL APPLICATIONS

Narrow web, tape, tag, label, envelope and smaller specialty presses.

## Features

### STANDARD FEATURES

Includes all standard and H-Series benefits listed on pages 8-9

3/4" NPT discharge

Round volute fits most ink tank sumps

Mounting plate on round hole tank lids

Adjustable Agitor® plate for in-tank circulation

### OPTIONAL FEATURES & ACCESSORIES

CE or ATEX compliance

Mounting plate to permit pump to be used with keyhole-style tank lids

Quick Demountable motor (not available in ATEX-complaint models)

Metric lengths and threads available

### MOTOR OPTIONS

1/8 HP, 1725 RPM@60Hz (1450 RPM@50Hz) electric totally enclosed.

Variable speed air motor

Dial-A-Flow™ variable speed electric

Quick Demountable motor (not available in ATEX-compliant models)

CE/ATEX Motors

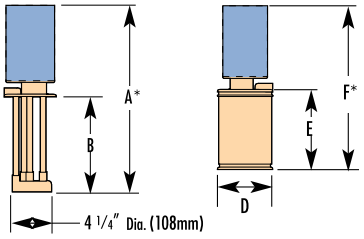
### TANK OPTIONS

2 gallon stainless steel (H2002 only)

5 gallon mild steel or plastic (H2005 only)

10, 20, 30 gallon mild or stainless steel (H2005 only)

## PUMPS




| | ELECTRIC | | AIR | |
|---|---|---|---|---|
| MODEL | 2002 | 2005 | 2002 | 2005 |
| A* | 20 1/4" (527mm) | 25 1/8 (638) | 14 5/16 (364) | 18 13/32 (468) |
| B | 8 1/8 (206) | 12 1/2 (318) | 8 1/8 (206) | 12 1/2 (318) |

3/4" NPT discharge, 6" Dia. (152mm) mounting flange, with four 9/32" (7mm) motor mounting holes on 5 1/4" (133mm) B.C.

## PUMP & TANK COMBINATIONS

| | ELECTRIC | | | | | AIR | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TANK SIZE Gals (liters) | 2(7.75) | 5(19.4) | 10(37.8) | 20(77.5) | 30(113.5) | 2(7.75) | 5(19.4) | 10(37.8) | 20(77.5) | 30(113.5) |
| D | 9 3/32" (231mm) | 12 1/4 (311mm) | 19 1/32 (483) | 27 3/32 (688) | 30 5/16 (770) | 9 3/32 (231mm) | 12 1/4 (311) | 19 1/32 (483) | 27 3/32 (688) | 30 5/16 (770) |
| E | 8 9/16 (217) | 13 13/16 (351) | 14 1/4 (362) | 15 7/8 (403) | | 8 9/16 (217) | 13 13/16 (351) | 14 1/4 (362) | 15 7/8 (403) | |
| F* | 21 3/16 (538) | 26 7/16 (672) | 26 7/8 (683) | 28 1/2 (724) | | 14 3/4 (375) | 20 (508) | 20 7/16 (519) | 22 1/16 (560) | |

Note: Dimensions may vary because of variations between motor manufacturers. If dimensions are critical, consult factory.

Dimensions do not include pump handle.

* For Quick Demountable (QC) motor option, add 7 5/32" (182mm) to overall height.

Optional

# HIGH SPEED H2000H SERIES

## TYPICAL APPLICATIONS

Lifting heavier viscosity liquids to higher print decks and into chambered doctor blade systems requires more pressure. The H2000H Series delivers the higher flow for top performance. Use for mid webs. See also H3000 series for higher flow, page 16.

## FLOW RATES

**H2000 SERIES**
1725 RPM @ 60Hz

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 2 (0.6) | 12 (54.4) |
| 4 (1.2) | 9 (34.1) |
| 6 (1.8) | 4 (15.1)* |

1/8 HP MOTOR • 3" IMPELLER

**H2000H SERIES**
2850 RPM @ 50Hz

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 2 (0.6) | 17 (64.4) |
| 6 (1.8) | 15 (56.8) |
| 8 (2.4) | 12 (45.4) |
| 10 (3.1) | 9 (34.1) |
| 12 (3.7) | 6 (22.7)* |

0,25 kW MOTOR • 2½" IMPELLER

**HA2000H SERIES**
3450 RPM @ 60Hz

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 4 (1.2) | 17 (64.4) |
| 6 (1.8) | 16 (60.0) |
| 8 (2.4) | 14 (53.0) |
| 10 (3.1) | 11 (41.6) |
| 12 (3.7) | 8 (30.3) |
| 14 (4.3) | 4 (15.1)* |

1/4 HP MOTOR • 2¼" IMPELLER

**HB2000H SERIES**
3450 RPM @ 60Hz

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 4 (1.2) | 20 (75.7) |
| 6 (1.8) | 19 (71.9) |
| 8 (2.4) | 18 (68.1) |
| 10 (3.1) | 16 (60.6) |
| 12 (3.7) | 13 (49.2) |
| 14 (4.3) | 11 (41.6) |
| 16 (4.9) | 8 (30.3)* |

1/3 HP MOTOR • 2½" IMPELLER

Flow test performed using water with horsepower, impeller, discharge, return as shown.
Flow rates measured in gallons (and liters) per minute.
***Need more flow? Contact factory for assistance.**

## Features

### STANDARD FEATURES

Includes all standard and H-Series features listed on pages 8-9

3/4" NPT discharge

Round volute fits most tank sumps

Mounting plate on round hole tank lids

Adjustable Agitor® plate for in-tank circulation

### OPTIONAL FEATURES & ACCESSORIES

CE or ATEX compliance

Mounting plate to permit pump to be used with key-hole-style tank lids.

Quick Demountable motor (not available in ATEX-compliant models)

Metric lengths and threads available

### MOTOR OPTIONS

1/4 HP (HA) and 1/3 HP (HB), 3450 RPM@60Hz (2850 RPM@50Hz) electric non-explosion proof or explosion-proof electric

0,25 kW ATEX European explosion-proof electric, 2850 RPM@50Hz

Dial-A-Flow™ variable speed electric

Quick Demountable motor (not available in ATEX-complaint models)

CE/ATEX Motors

### TANK OPTIONS

5, 10, 20, 30 gallon mild steel standard. Stainless steel optional on 10, 20, 30 gallon.

# AGITOR®

Optional

# H3000 Series

## TYPICAL APPLICATIONS

For mid- and wide-web flexo and gravure applications, especially those requiring more flow and/or higher print decks.

## Features

### STANDARD FEATURES

Includes all standard and H-Series benefits listed on pages 8-9

1" NPT discharge

Round volute fits most ink tank sumps

Mounting plate on round hole tank lids

Adjustable Agitor® plate for in-tank circulation

### OPTIONAL FEATURES & ACCESSORIES

CE or ATEX compliance

Mounting plate to permit pump to be used with keyhole-style tank lids

Quick Demountable motor (consult factory)

Metric lengths and threads available

### MOTOR OPTIONS

1/2 HP, 1725 RPM@60Hz (1450 RPM@50Hz) totally enclosed electric or explosion-proof electric

0,37 kW ATEX explosion-proof electric, 2850 RPM@50Hz

High speed (2850/3450 RPM), 50/60Hz motor. Consult factory.

Variable speed air motor

Dial-A-Flow™ variable speed electric

Quick Demountable motor

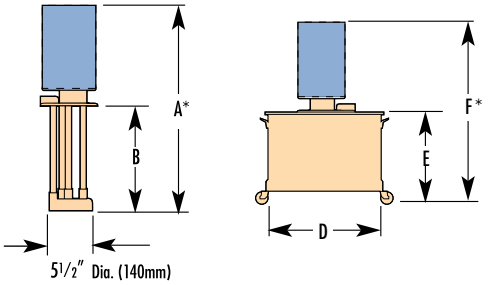
CE/ATEX Motors

### TANK OPTIONS

5, 10, 20, 30 gallon mild steel standard. Stainless steel optional on 10, 20, 30 gallon.

For drum length ink pumps, see page 26

## PUMPS




| | ELECTRIC | AIR |
|---|---|---|
| A* | 25⅛" (635mm) | 19⁵⁄₁₆" (491) |
| B | 12½ (318) | |

1" NPT discharge, 7" Dia. (178mm) mounting flange, with four ¹³⁄₃₂" (10mm) motor mounting holes on 6½" (165mm) B.C.

## PUMP & TANK COMBINATIONS

| | ELECTRIC | | | | AIR | | | |
|---|---|---|---|---|---|---|---|---|
| TANK SIZE Gals (liters) | 5(19.4) | 10(37.8) | 20(77.5) | 30(113.5) | 5(19.4) | 10(37.8) | 20(77.5) | 20(113.5) |
| D | 12¼" (311mm) | 19³⁄₃₂ (483) | 27³⁄₃₂ (688) | 30⁵⁄₁₆ (770) | 12¼ (311mm) | 19³⁄₃₂ (483) | 27³⁄₃₂ (688) | 30⁵⁄₁₆ (770) |
| E | 13¹³⁄₁₆ (351) | 14¼ (362) | 15⅞ (403) | | 13¹³⁄₁₆ (351) | 14¼ (362) | 15⅞ (403) | |
| F* | 26¼ (672) | 26⅞ (683) | 28½ (724) | | 20 (508) | 20¼ (519) | 22¼ (560) | |

Note: Dimensions may vary because of variations between motor manufacturers. If dimensions are critical, consult factory.

Dimensions do not include pump handle.

* For Quick Demountable (QC) motor option, add 7¹⁵⁄₃₂"(190mm) to overall height.

## FLOW RATES

**H3000 SERIES 1725 RPM @ 60Hz**

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 4 (1.2) | 22 (83.3) |
| 6 (1.8) | 17 (64.3) |
| 8 (2.4) | 13 (49.2) |
| 10 (3.0) | 8 (30.3) |
| 12 (3.7) | 3 (11.4)* |

1/2 MOTOR • 4" IMPELLER

**H3000H SERIES 2850 RPM @ 50Hz**

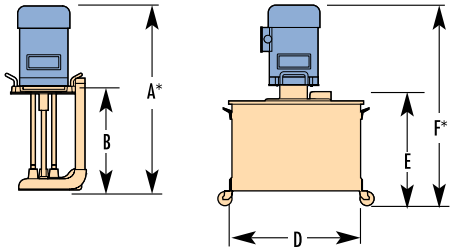
| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 4 (1.2) | 32 (121.1) |
| 6 (1.8) | 30 (113.6) |
| 8 (2.4) | 28 (106) |
| 10 (3.0) | 26 (98.4) |
| 12 (3.7) | 23 (87) |
| 14 (4.3) | 20(75.7) |
| 16 (4.9) | 17 (64.4) |
| 18 (5.5) | 3 (11.4)* |

0,37 kW MOTOR • 3" IMPELLER

Flow test performed using water with horsepower, impeller, discharge, return as shown.
Flow rates measured in gallons (and liters) per minute.
***Need more flow? Contact factory for assistance.**

Optional

## PUMPS




| | ELECTRIC | AIR |
|---|---|---|
| A* | 24 19/32" (625mm) | 17 11/32" (441) |
| B | 12½ (318) | |

1" NPT discharge, 7" Dia. (178mm) mounting flange, with four 13/32" (10mm) motor mounting holes on 6½" (165mm) B.C.

# M3 SERIES

### TYPICAL APPLICATIONS

For mid- and wide-web flexo and gravure applications, especially those requiring more flow and/or higher print decks.

## Features

### STANDARD FEATURES

Includes all standard features listed on pages 8-9

1" NPT discharge

Mounting plate for use with keyhole-style lids

Adjustable Agitor® plate for in-tank circulation

### OPTIONAL FEATURES & ACCESSORIES

CE or ATEX compliance

Quick Demountable motor

Metric lengths and threads available

### MOTOR OPTIONS

1/2 HP, 1725 RPM@60Hz (1450 RPM@50Hz) totally enclosed electric or explosion-proof electric

0,37 kW ATEX explosion-proof electric, 2850 RPM@50Hz

High speed (2850/3450 RPM), 50/60Hz motor. Consult factory.

Variable speed air motor

Dial-A-Flow™ variable speed electric

Quick Demountable motor

CE/ATEX Motors

### TANK OPTIONS

5, 10, 20, 30 gallon mild steel standard. Stainless steel optional on 10, 20, 30 gallon.

## PUMP & TANK COMBINATIONS

| | ELECTRIC | | | | AIR | | | |
|---|---|---|---|---|---|---|---|---|
| TANK SIZE Gals (liters) | 5(19.4) | 10(37.8) | 20(77.5) | 30(113.5) | 5(19.4) | 10(37.8) | 20(77.5) | 20(113.5) |
| D | 12¼" (311mm) | 19 1/32 (483) | 27 3/32 (688) | 30 5/16 (770) | 12¼ (311mm) | 19 1/32 (483) | 27 3/32 (688) | 30 5/16 (770) |
| E | 13 13/16 (351) | 14¼ (362) | 15⅞ (403) | | 13 13/16 (351) | 14¼ (362) | 15⅞ (403) | |
| F* | 26¼ (672) | 26⅞ (683) | 28½ (724) | | 20 (508) | 20¼ (519) | 22¼ (560) | |

Note: Dimensions may vary because of variations between motor manufacturers. If dimensions are critical, consult factory.

Dimensions do not include pump handle.

* For Quick Demountable (QC) motor option, add 7 15/32"(190mm) to overall height.

## FLOW RATES

**M3 SERIES 1725 RPM @ 60Hz**

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 4 (1.2) | 30 (113.6) |
| 6 (1.8) | 26 (98.4) |
| 8 (2.4) | 22 (83.3) |
| 10 (3.1) | 18 (68.1) |
| 12 (3.7) | 14 (53) |
| 14 (4.3) | 5 (18.9)* |

1/2 MOTOR • 4" IMPELLER

**M3H SERIES 2850 RPM @ 50Hz**

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 4 (1.2) | 38 (143.8) |
| 6 (1.8) | 36 (136.3) |
| 8 (2.4) | 34 (128.7) |
| 10 (3.1) | 32 (121.1) |
| 12 (3.7) | 30 (113.6) |
| 14 (4.3) | 27 (102.2) |
| 16 (4.9) | 23 (87.1) |
| 18 (5.5) | 19 (71.9)* |

0,37 kW MOTOR • 3" IMPELLER

Flow test performed using water with horsepower, impeller, discharge, return as shown.
Flow rates measured in gallons (and liters) per minute.
***Need more flow? Contact factory for assistance.**

# AGITOR®

Optional

# H4000 Series

## TYPICAL APPLICATIONS

For high flow, high decks, on flexo and gravure webs over 60 inches wide. For viscosities exceeding 40 sec. use either the 3/4 HP electric or #4 air motor.

## Features

### STANDARD FEATURES

Includes all standard and H-Series benefits listed on pages 8-9

1 1/4" NPT discharge

Round volute fits most ink tank sumps

Adjustable Agitor® plate for in-tank circulation

Mounting plate on round hole tank lids

### OPTIONAL FEATURES & ACCESSORIES

CE or ATEX compliance

Mounting plate to permit pump to be used with keyhole-style tank lids

Quick Demountable motor

Metric lengths and threads available

### MOTOR OPTIONS

1/2 or 3/4 HP, 1725 RPM@60Hz (1450 RPM@50Hz) totally enclosed electric or explosion-proof electric

0,37 kW ATEX explosion-proof electric, 2850 RPM@50Hz

High speed (2850/3450 RPM), 50/60Hz motor - consult factory

Variable speed air motor

Dial-A-Flow™ variable speed electric

Quick Demountable motor

CE/ATEX Motors

### MOTOR VOLTAGE/AIR OPTIONS

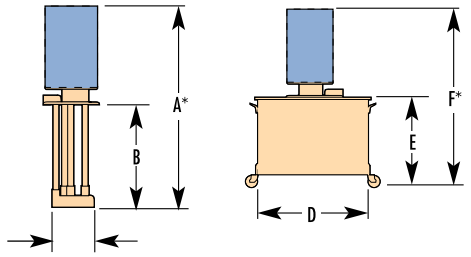
E, F, KE, KF, KFF, KFX, GAMC (#2 or #4)
See page 13 for voltage chart

### TANK OPTIONS

10, 20, 30 gallon mild steel standard
Stainless steel optional

For drum length ink pumps, see page 26

## PUMPS




| | ELECTRIC | AIR |
|---|---|---|
| A* | 25⅛" (635mm) | 19⁵⁄₁₆" (491) |
| B | 12½ (318) | |

1" NPT discharge, 7" Dia. (178mm) mounting flange, with four ¹³⁄₃₂" (10mm) motor mounting holes on 6½" (165mm) B.C.

## PUMP & TANK COMBINATIONS

| | ELECTRIC | | | AIR | | |
|---|---|---|---|---|---|---|
| TANK SIZE Gals (liters) | 10(37.8) | 20(77.5) | 30(113.5) | 10(37.8) | 20(77.5) | 30(113.5) |
| D | 19⅓₂ (483) | 27³⁄₃₂ (688) | 30⁵⁄₁₆ (311mm) | 19⅓₂ (483) | 27³⁄₃₂ (688) | 30⁵⁄₁₆ (770) |
| E | 14¼ (362) | 15⅞ (403) | | 14¼ (362) | 15⅞ (403) | |
| F* | 26⅞ (683) | 28½ (724) | | 20⁷⁄₁₆ (519) | 22⅛ (560) | |

Note: There is no 5 gal/19.4 liter version because the flow rate of the H4000 requires minimum 10 gal/37.8 liter tank.

Dimensions may vary because of variations between motor manufacturers. If dimensions are critical, consult factory.

Dimensions do not include pump handle.

* For Quick Demountable (QC) motor option, add 7¹⁵⁄₃₂"(190mm) to overall height.

## FLOW RATES

**H4000 SERIES 1725 RPM @ 60Hz**

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 6 (1.8) | 45 (170.3) |
| 8 (2.4) | 40 (151.4) |
| 10 (3.0) | 35 (132.5) |
| 12 (3.7) | 28 (106.0) |
| 14 (4.3) | 20 (75.7) |
| 16 (4.9) | 12 (45.4)* |

1/2 HP MOTOR • 4 5/8" IMPELLER

**H4000H SERIES 2850 RPM @ 50Hz**

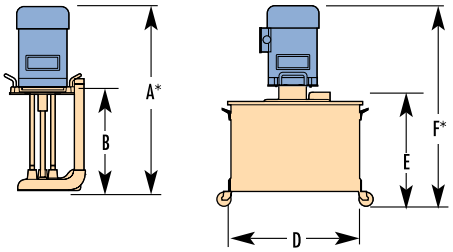
| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 10 (3.0) | 62 (237.4) |
| 12 (3.7) | 58 (219.5) |
| 14 (4.3) | 54 (204.4) |
| 16 (4.9) | 51 (193.0) |
| 18 (5.5) | 46 (74.1) |
| 20 (6.1) | 41 (155.2) |
| 22 (6.7) | 37 (40.0)* |

1/2 HP MOTOR • 4" IMPELLER

Flow test performed using water with horsepower, impeller, discharge, return as shown.
Flow rates measured in gallons (and liters) per minute.
***Need more flow? Contact factory for assistance.**

Optional

## PUMPS




| | ELECTRIC | AIR |
|---|---|---|
| A* | 24 19/32" (625mm) | 17 11/32" (441) |
| B | 12½ (318) | |

1¼" NPT discharge, 7" Dia. (178mm) mounting flange, with four 13/32" (10mm) motor mounting holes on 6½" (165mm) B.C.

# G4 SERIES

### TYPICAL APPLICATIONS

For mid- and wide-web flexo and gravure applications, especially those requiring more flow and/or higher print decks.

Larger sizes available – consult factory.

## PUMP & TANK COMBINATIONS

| | ELECTRIC | | | AIR | | |
|---|---|---|---|---|---|---|
| TANK SIZE Gals (liters) | 10(37.8) | 20(77.5) | 30(113.5) | 10(37.8) | 20(77.5) | 30(113.5) |
| D | 19 1/32 (483mm) | 27 3/32 (688) | 30 5/16 (770) | 19 1/32 (483) | 27 3/32 (688) | 30 5/16 (770) |
| E | 14¼ (362) | 15⅞ (403) | | 14¼ (362) | 15⅞ (403) | |
| F* | 26⅞ (683) | 27½ (724) | | 20 7/16 (519) | 22 1/16 (560) | |

Note: There is no 5 gal/19.4 liter version because the flow rate of the G4 requires minimum 10 gal/37.8 liter tank.

Dimensions may vary because of variations between motor manufacturers. If dimensions are critical, consult factory.

Dimensions do not include pump handle.

* For Quick Demountable (QC) motor option, add 7 15/32"(190mm) to overall height.

## FLOW RATES

**G4 SERIES 1725 RPM @ 60Hz**

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 8 (2.4) | 53 (200.6) |
| 10 (3.0) | 48 (181.7) |
| 12 (3.7) | 41 (155.2) |
| 14 (4.3) | 35 (132.5) |
| 16 (4.9) | 29 (109.8) |
| 18 (5.5) | 21 (79.5) |
| 20 (6.1) | 6 (22.7)* |

1/2 HP MOTOR • 4 5/8" IMPELLER

**G4H SERIES 2850 RPM @ 50Hz**

| LIFT FEET (METERS) | FLOW GPM (LPM) |
|---|---|
| 12 (3.7) | 68 (257.4) |
| 14 (4.3) | 65 (246.0) |
| 16 (4.9) | 62 (234.7) |
| 18 (5.5) | 58 (219.5) |
| 20 (6.1) | 54 (204.4) |
| 22 (6.7) | 50 (189.3) |
| 24 (7.3) | 45 (170.3 |
| 26 (7.9) | 39 (147.6)* |

1/2 HP MOTOR • 4" IMPELLER

Flow test performed using water with horsepower, impeller, discharge, return as shown.
Flow rates measured in gallons (and liters) per minute.
***Need more flow? Contact factory for assistance.**

## Features

### STANDARD FEATURES

Includes all standard features listed on pages 8-9

11/4" NPT discharge

Mounting plate for use with keyhole-style lids

Adjustable Agitor® plate for in-tank circulation

### OPTIONAL FEATURES & ACCESSORIES

CE or ATEX compliance

Quick Demountable motor

Metric lengths and threads available

### MOTOR OPTIONS

1/2 or 3/4 HP, 1725 RPM@60Hz (1450 RPM@50Hz) totally enclosed electric or explosion-proof electric

0,37 kW ATEX explosion-proof electric, 2850 RPM@50Hz

High speed (2850/3450 RPM), 50/60Hz motor. Consult factory.

Variable speed air motor

Dial-A-Flow™ variable speed electric

Quick Demountable motor

CE/ATEX Motors

### MOTOR VOLTAGE/AIR OPTIONS

E, F, KE, KF, KFF, KFX, VA, VB, GAMC (#2 or #4)
See page 13 for voltage chart

### TANK OPTIONS

10, 20, 30 gallon mild steel standard.
Stainless steel optional on 10, 20, 30 gallon.

# AGITOR®

## HV Series

### TYPICAL APPLICATIONS

For small presses requiring flow rates 1 GPM or less. Viscosities up to 30 sec., No. 2 Zahn.

## HR Series

### TYPICAL APPLICATIONS

For larger narrow web and envelope presses. requiring flow rates up to 2 GPM. Viscosities up to 30 sec., No. 2 Zahn.

## Features

### STANDARD FEATURES

High strength thermoplastic pump body

Stainless steel shaft

Ball valve and 1/2" NPT slip-on barb on discharge tube

Agitor jet for in-tank circulation. (Agitor port may be plugged if circulation is not desired)

1 or 2 gallon container with flanged lid with 3/4" (19mm) hole for return hose

### MOTOR OPTIONS

1/15 HP, 3000 RPM@60Hz (2500 RPM@50Hz) electric

Variable speed air motor, 0-3000 RPM.

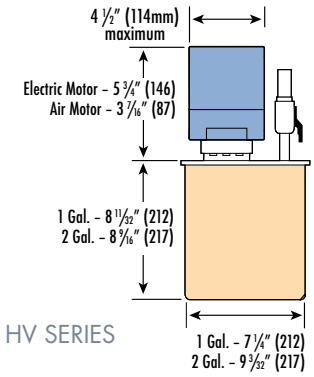
See page 13 for voltage chart

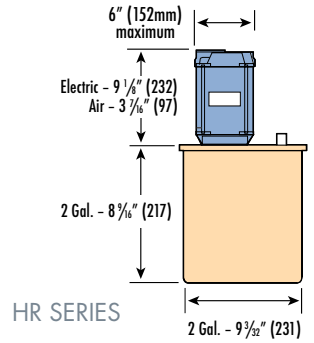
### TANK OPTIONS

1 gallon (HV1), 2 gallon (HV2)

Plastic tank with nickel-plated lid or stainless steel tank with stainless steel lid.

## PUMPS




## Features

### STANDARD FEATURES

Teflon® coated cast iron body

Stainless steel shaft

Agitor jet for in-tank circulation

1/2" NPT discharge

2 gallon stainless steel tank with nickel lid

### MOTOR OPTIONS

1/8 HP, 1725 RPM@60Hz (1450 RPM@50Hz) electric

Variable speed air motor, 0-3000 RPM.

See page 13 for voltage chart

Note: Dimensions may vary because of variations between motor manufacturers. If dimensions are critical, consult factory.

Dimensions do not include pump handle

## FLOW RATES

| HV SERIES ELECTRIC 3000 RPM @ 60Hz | | HV SERIES AIR 3000 RPM | | HR SERIES 1725 RPM @ 60Hz | |
|---|---|---|---|---|---|
| LIFT FEET (METERS) | FLOW GPM (LPM) | LIFT FEET (METERS) | FLOW GPM (LPM) | LIFT FEET (METERS) | FLOW GPM (LPM) |
| 2 (0.6) | 8 (30.3) | 2 (0.6) | 10 (37.9) | 2 (0.6) | 14 (53.0) |
| 4 (1.2) | 6 (22.7) | 4 (1.2) | 8 (30.3) | 4 (1.2) | 11 (41.6) |
| 6 (1.8) | 5 (18.9)* | 6 (1.8) | 7 (26.5)* | 6 (1.8) | 8 (30.3)* |
| 1/15 HP MOTOR • 1 13/16" IMPELLER | | AIR MOTOR • 2 1/16" IMPELLER | | 1/8 HP MOTOR • 3 5/16" IMPELLER | |

Flow test performed using water with horsepower, impeller, discharge, return as shown.
Flow rates measured in gallons (and liters) per minute.
***Need more flow? Contact factory for assistance.**

# DIAPHRAGM

Optional

## SPECIFICALLY DEVELOPED TO HANDLE FLEXO AND GRAVURE INKS, COATINGS, VARNISHES, AND ADHESIVES

1. Diaphragm pump inlets and outlets can be configured to meet the pumping requirements from bottom-printing corrugated lines to flexo and gravure presses. A variety of corrosion resistant materials permits use with water, alcohol, and solvent-based (compatible with polypropylene) inks and coatings.
2. The unique "slide valve" design helps prevent stalling even when running at low speeds
3. Pump is designed for easy maintenance with a minimal amount of parts. The air valve assembly is externally serviceable, no need to remove pump from press.
4. For applications requiring controlled flow rates up to 40 gallons per minute.
5. Properly installed and maintained air-powered diaphragm pumps are inherently explosion proof.
6. No air line lubrication is necessary.
7. Self-priming with the ability to pump liquids containing small solids. Optional duckbill valves on 1/2" pumps allow fibrous materials to pass.
8. Optional air-powered mixer is recommended for in-tank agitation. See pages 26-27.

**Quick-Change Air Valve Service Kits Have Over 50% Fewer Parts than Competitors... And the Pump is Externally Serviceable.**

Pumps are externally serviceable

**50% FEWER PARTS**

**FLOW RATE Control**

Polypropylene pumps
1/4" , 3/8", 1/2", 1" 1 inlet /1 outlet,
3/8", 1/2" 2 inlets / 2 outlets
(See chart for additional configurations)

| PUMP MODELS | 1/4" | 3/8" | 1/2" | 1" |
|---|---|---|---|---|
| **Body Construction** | | | | |
| Polypropylene | ✓ | ✓ | ✓ | ✓ |
| Aluminum | | | | ✓ |
| **Diaphragm Construction** | | | | |
| Hytrell® Ball | | ✓ | ✓ | ✓ |
| Teflon® Ball | ✓ | ✓ | ✓ | ✓ |
| **Check Construction/Type** | | | | |
| Hytrell® Ball | | ✓ | ✓ | ✓ |
| Teflon® Ball | | ✓ | ✓ | ✓ |
| Polypropylene Ball | ✓ | | | |
| Buna Duckbill | | | ✓ | |
| **Inlet/Outlet Options** | | | | |
| 1 in/1 out | ✓ | ✓ | ✓ | ✓ |
| 2 in/2 out | ✓ | ✓ | ✓ | |
| **Maximum Viscosity** (Centipoise) | 500 | 1,000 | 5,000 | 10,000 |
| **Maximum Flow Rate** | 5 GPM | 7 GPM | 15 GPM | 40 GPM |
| **Total Developed Head** | 150 ft. | 231 ft. | 150 ft. | 150 ft. |
| **Dry Lift Capacity** | 10 ft. | 12 ft. | 15 ft. | 18 ft. |
| **Air Inlet** | 1/4" NPT | 1/4" NPT | 1/4" NPT | 1/2" NPT |
| **Maximum Inlet Pressure** | 100 PSI | 100 PSI | 100 PSI | 100 PSI |
| **CE Certification** | ✓ | ✓ | ✓ | ✓ |
| **ATEX Option Available** | | | ✓ | ✓ |

# Double Diaphragm

## Typical Applications

For applications requiring controlled flow rates from a trickle to 40 gallons per minute. Specially suited to the requirements of bottom printing corrugated lines, where a single pump provides both supply and suction return. Requires 2 in/2 out configuration.)

These pumps operate by the movement of two flexible diaphragms which move back and forth, alternately filling and emptying two chambers. Flow is controlled with the air inlet valve, which then determines pump speed. A variety of applications are possible because the pump's inlets and outlets can be configured in different ways, such as – "one-in, one-out" or "1-to-1" – or "two-in, two-out" or "2-to-2". In the 1-to-1, one color is sent to the deck. In the 2-to-2 configuration, you can deliver one material and also draw it back (ideal for corrugated bottom printing), or deliver two inks to two different decks.

**Diaphragm pumps have a pulsating flow and are best used with a Graymills surge suppressor/filter.**

# PERISTALTIC

## PPS

### TYPICAL APPLICATIONS

For narrow web flexo and rotary screen applications and light to heavy viscosity inks, coatings and adhesives (including UV/EB) requiring flow rates of 1.5 GPM or less. If flow requirements are above 1 GPM, consider model PPL for slower running speed and longer tube life.

### Features

Includes all standard features listed on pages 10-11

#### MOTOR OPTIONS

Electric gearmotor with electronic variable speed control (115 or 230 VAC) 50/60Hz.

Variable speed air gearmotor
(28 CFM @ 80 psig/792.9 LPM @ 5.4 bar)

## PPL

### TYPICAL APPLICATIONS

For mid to wide web flexo, gravure and rotary screen applications and light to heavy viscosity inks, coatings and adhesives (including UV/EB), requiring flow rates of 4.5 GPM or less. (See model PPS for lower flow rates)

### Features

Includes all standard features listed on pages 10-11

#### MOTOR OPTIONS

Electric gearmotor with electronic variable speed control (115 or 230 VAC) 50/60Hz

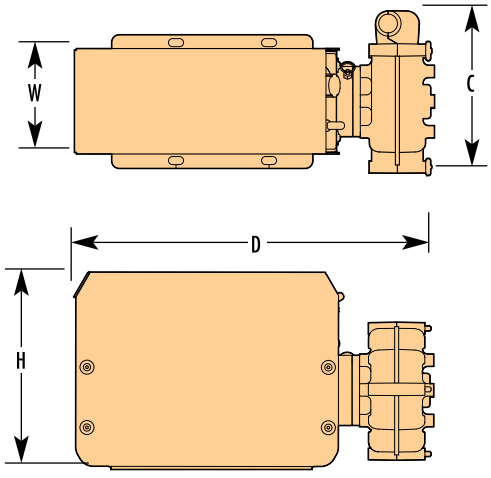
ATEX compliant models available
(consult factory)

## PUMP DIMENSIONS

### SINGLE HEAD PERISTALTIC PUMP DIMENSIONS

| SERIES | C | W | H | D |
|---|---|---|---|---|
| PPS | 5.9" (149mm) | 5.3 (133) | 9.9 (249) | 14.1 (358) |
| PPL | 8.0 (204) | 5.3 (133) | 9.9 (249) | 16.6 (421) |
| PQLM | 8.6 (219) | 5.3 (133) | 9.9 (249) | 18.7 (475) |
| PPS-GAM | 5.9 (149) | 3.7 (93) | 6.5 (165) | 11.8 (298) |

PPS-GAM* Model not shown.



Optional

# METAL HEAD MODELS OF RUGGED CONSTRUCTION

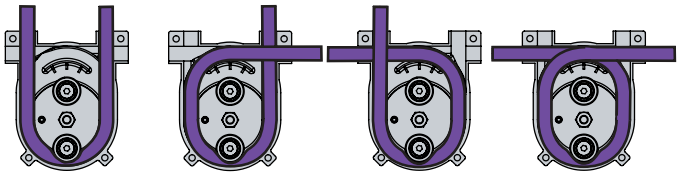
**Graymills' latest innovation for your special environment.**
We have developed this pump with your clean-up, your changeovers, your needs in mind.

### ADVANTAGES:

Graymills' patented Straight-Thru™ head design offers multiple hose paths, without kinks, stoppages, or tube creeping

Hinged cover design for easier changeovers, hand-operable knobs for quick, tool-free access.

Choose the path that fits your needs. Plumb "Thru," "U" or "P" paths for 32 possible configurations.




Variable speed control offers adjustable flow rate which can exceed 4 GPM.

Extended tube life when used with Graymills clear premium tubing.

Stainless steel rollers provide long life with slick surface cleanability.

PTFE-based low friction coating to maximize tube life and cleanability.

### STANDARD FEATURES

Includes all peristaltic quality features listed on pages 10-11.

Variable speed for flow control.

Reversibility optional or inherent, depending on model.

Straight-Thru patented head design eliminates flow stoppage from tube kinks.

Recommended maximum viscosity 500 cps.

### SO UNIQUE IT IS PATENTED

Graymills holds U.S. patent 5,630,711.

### OPTIONAL FEATURES & ACCESSORIES

Stand to mount pump over ink tank.

Mounting bracket for direct attachment to press.

Mixer to keep contents blended.

Available with a variety of drive options—CE, ATEX,

Washdown-capable unit for harsh and wet environments available, contact the factory.

# PQLM

### TYPICAL APPLICATIONS

Ideal for tough environments. For mid to wide web flexo, gravure and rotary screen applications. The metal head lasts through long runs, numerous changeovers, demanding applications. Variable speed control offers adjustable flows which can exceed 4 GPM.

## Features

Includes all standard features listed on pages 10-11

### MOTOR OPTIONS

Standard Large Peristaltic Drive package

CE version of standard model

Inverter-duty model with reversibility and variable speed

ATEX motor

Dial-A-Flow™ variable frequency drive

# PERISTALTIC

## "QUICK CHANGE" REMOVABLE HEAD PQS & PQL

### TYPICAL APPLICATIONS

Sometimes fast is not fast enough. Time is money, and you'll get quick returns from fast color changes and press turnaround using Graymills "Quick Change" peristaltic ink pumps. Pump head/tube changes are accomplished in seconds - without tools. Simply pull the lock-pin, remove the used head and replace with another head already loaded with clean tube. Done! Change the tube and perform maintenance while the pump and press are back running with the new head.

## Features

### STANDARD FEATURES

Includes all peristaltic quality features on page 10.

Pump head/tube changes accomplished in seconds without tools.

Eight-position adjustable head orientation.

"Quick Change" head can be retrofit to Graymills peristaltic pumps made since January 2005.

### OPTIONAL FEATURES & ACCESSORIES

Extra "Quick Change" Heads

Bracket to hold extra pre-loaded heads until needed.

Stand to mount pump over ink container.

Mounting bracket for direct attachment to press.

Mixer to keep contents blended.

CE compliant.

Remote mounting of controls.

*For Quick Change Heads and Accessories, see page 31.*

# Dual Head PQS & PQL

Two peristaltic pump heads powered by a single motor allow the pump's heads to be individually set to supply or return. This ability, coupled with the pump's variable speed capability and ability to reverse direction for several pumping configurations.

- Supply one ink to two separate decks.
- Supply two separate inks to two separate decks.
- Supply and return one ink to one deck.

### STANDARD FEATURES

Includes all peristaltic features listed on pages 10-11.

Variable speed for flow control.

Reversible flow for easy draining and flushing.

Straight-Thru patented design eliminates flow stoppage from tube kinks.

"Quick Change" Removable Heads.

Eight-position adjustable head orientation.

Remote mounting of controls with 16'4" (5m) foot cord (other cords available) consult factory.

### OPTIONAL FEATURES & ACCESSORIES

Hard coat anodized aluminum head with stainless steel rotors.

Stand to mount pump over ink container.

Dual stand to mount pump over two ink containers.

Filter mounting bracket.

Mixer to keep contents blended.

CE compliant.

### MOTOR OPTIONS

Electric gear motor with electronic variable speed control (115 or 230 VAC) 50/60Hz.

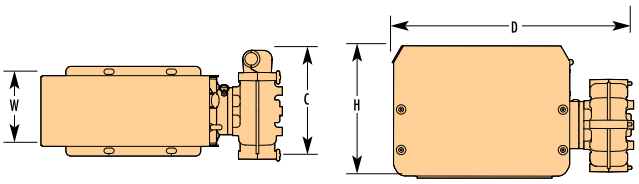
### TANK OPTIONS

1, 2, 5, gallon pails (accessory pump stand recommended).

10, 20, 30 gallon mild steel tanks. Stainless optional.

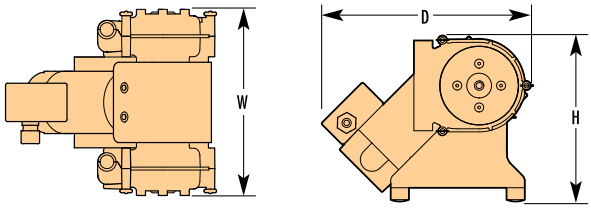
## PUMP DIMENSIONS

### SINGLE HEAD PERISTALTIC PUMP DIMENSIONS




| SERIES | C | W | H | D |
|---|---|---|---|---|
| PQS | 5.9 (149) | 5.3 (133) | 9.9 (249) | 15.3 (390) |
| PQL | 8.0 (204) | 5.3 (133) | 9.9 (249) | 17.8 (452) |

### DUAL HEAD PERISTALTIC PUMP DIMENSIONS




| SERIES | W | H | D |
|---|---|---|---|
| PQS-DH | 11.1" (283mm) | 11.4 (289) | 14.1 (357) |
| PQL-DH | 12.8" (324) | 11.4 (289) | 15.12 (387) |

# MIXERS

## GRAYMILLS INK MIXERS

### SMALL TANK MIXERS

Take variables out of your printing process. Keep your color and viscosity more consistent with a full line of mixers from Graymills. These in-tank mixers keep inks properly blended, which is especially important for users of diaphragm or peristaltic pumps.

### FOR 2 GALLON PAILS

**Mixer depth* of 7.75" (197mm)**

MX1-GAM-2G — Without lid. 0.45 hp (0.33 kW) rotary vane variable speed air motor.

MX12-GAM — Includes nickel plated mild steel lid. 0.45 hp (0.33 kW) rotary vane variable speed air motor.

### FOR 5 GALLON PAILS

**Mixer depth* of 12" (305mm)**

MX1-GAM-5G — Without lid. 0.45 hp (0.33 kW) rotary vane variable speed air motor.

MX15-GAM — Mounted on flanged lid for general use with 0.45 hp (0.33 kW) rotary vane variable speed air motor

### FOR 10, 20, 30 GALLON TANKS

MX2-GAM — Without lid. More powerful 0.93 hp (0.68 kW) rotary vane variable speed air motor. Mixer depth* 9.5" (241mm).

* Mixer depth is the distance from the mounting surface of the mixer to the bottom of the propeller.

MX2-GAM

**Pictured with 10 gal tank and liner (above, sold separately) and mounting plate.**

## DRUM PUMPS

**2 STYLES**

**CENTRIFUGAL OR DOUBLE DIAPHRAGM OPTIONS AVAILABLE**

Shown with electric motor

### DRUM LENGTH CENTRIFUGAL PUMPS

Ideal for high ink consumption applications where it is more convenient or economical to pump from a drum. Mounting flange (not shown) permits easy adjustment of immersion depth. For use on open head 30 and 55 gallon drums. Includes all H Series features listed on pages 8-9.

### H3155 Series Centrifugal Pump

Available with a variety of motor options. See H3000 Series, page 16 for further technical data. NPT discharge connects to either 1" or 3/4" plumbing.

### H4155 Series Centrifugal Pump

Similar to Pump Model H3155, but offers a higher flow rate. Also available in 3/4 HP for higher viscosities. See H4000 Series, page 18 for further technical data. NPT discharge connects to either 1" or 1-1/4" plumbing.

### Nickel Plated Flanged Lids

For use with H3155 and H4155 drum length pumps

C-34005 — 30 gallon drum lid

C-33917-81 — 55 gallon drum lid

## AIR OPERATED DOUBLE DIAPHRAGM TRANSFER DRUM PUMP

Features 1-in/1-out pump with Teflon or Hytrel® diaphragms and bottom suction manifold.

Quick priming and immediate flow.

Handles fluid viscosities up to 5,000 cps and solids up to 0.09".

Runs dry without damage.

Pump slides in and out of drums through bung adapter without the need to disconnect hoses.

Pump is never immersed inside the drum – only the polyethylene tube is immersed. Quick cleanup.

DDPLTG-50-DRUM

# GRAYMILLS FULL LINE OF 55 GALLON INK MIXERS AND TRANSFER PUMPS

### FOR 55 GALLON DRUMS

Side mounted mixers. Mounting clamp included. Mixer depth* of 34.5" (876mm)

| | |
|---|---|
| MX55-GAMP | Side mounted mixer high torque piston powered air motor. |
| MX55-GAM2 | Side mounted mixer with rotary vane air motor |

Lid mounted mixers with handles. Mixer depth* of 34.5" (876mm)

| | |
|---|---|
| MX55LH-GAMP | Stainless steel lid, mixer with vertical stainless steel shaft, two large 6" mixer blades. High torque piston powered air motor. |
| MX55LH-GAM2 | Stainless steel lid, mixer with vertical stainless steel shaft, two large 6" mixer blades. Rotary vane air motor. |

Our diaphragm pumps are for applications requiring controlled flow rates up to 40 GPM, need no air line lubrication.

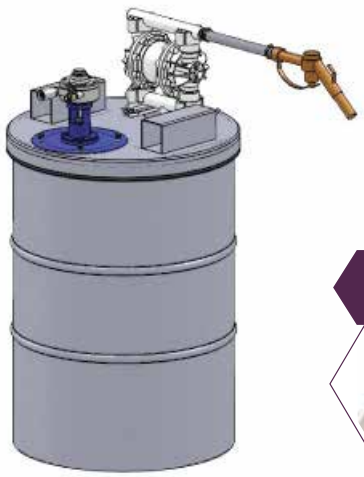
| | |
|---|---|
| DDPMX55L-GAMP | Lid mounted mixer/dispenser with high torque piston powered air motor mixer. |
| DDPMX55L-GAM2 | Lid mounted mixer/dispenser with rotary vane air motor mixer. |

Mixer and dispensing pump, includes double diaphragm transfer pump on lid. The same diaphragm pumps are used for these combinations as above. Mixer depth* of 34.5" (876mm)

| | |
|---|---|
| DDPMX55LH-GAMP | Lid mounted mixer/dispenser with high torque piston powered air motor mixer. |
| DDPMX55LH-GAM2 | Lid mounted mixer/dispenser with rotary vane air motor mixer. |

Lid mounting dispensing pump, stainless steel bung adaptor, and double diaphragm transfer pump with Teflon® diaphragms.

| | |
|---|---|
| DDPLTG-50-DRUM | Lid mounting dispensing pump. |



DDPMX55L-GAMP

MX55-GAMP

# LARGE DRUM MIXERS & PUMPS

With our extended line of mixers, replenishment systems, and pumps for larger size tanks, we can help make your ink, coating, adhesive and primer consistent and repeatable. At Graymills, we can build custom systems to suit any need. Feel free to contact us for more information.

Our line of piston-powered air motors run steadily at low RPM for gentler mixing, using less air and reducing noise. These mixers are designed to assure mixing throughout the container, even into corners, eliminating dead spots and changes in viscosity or color density. Most units are available with traditional vane-style motors, which provide higher mixing speeds.

**The Lid Mount Mixer** (MX55LH-GAMP) is designed to fit a standard 55 gallon drum. Precision-built with handles for easy changeovers, the lid holds a high torque, piston powered air motor mixer with two large 6" mixer blades on a stainless steel shaft. Low air consumption and steady wide speed range makes this a dependable cost-saving tool in the pressroom. This model is also available with a standard vane air motor (MX55LHGAM2). The Side Mounted Mixers (MX55-GAMP and MX55-GAM2) are similar to the lid mount models, but mount to the side of a drum, rather than a lid.

**Ink Replenishment Systems** (DDPMX55L-GAMP) include specially-designed drum lid cover and double diaphragm drum transfer pump with a discharge hose and nozzle to easily replenish your ink throughout a long press run. The lid fits a standard 55 gallon container and has brackets to facilitate lifting with a fork lift or hoist. A unit is also available with hinged lid (DDPMX55LH-GAM2) without hose and nozzle, and no lifting brackets, allowing easier access to the ink drum during operation.

# SUPERFLO® INK FILTERS

DDPSFNT

HFST

Double Length HFLT

Narrow Web Inline "Y" Filter

## FILTER CARTRIDGES

Stainless steel filter cartridges are available in five different mesh screens recommended for the following applications.
Corrugated printing: 30 mesh (590 micron)

Solid printing: 60 mesh (250 micron) or 100 mesh (149 micron)

Process printing: 60 mesh (250 micron) or 100 mesh (149 micron)

Varnishes, coatings, adhesives: 150 mesh (99 micron) or 250 mesh (58 micron)

# SUPERFLO® INK FILTERS AND SURGE SUPPRESSORS

**Graymills Superflo® filters are specially designed for flexographic and gravure ink systems, providing effective filtration to eliminate quality problems from contaminants that can also damage costly anilox rolls. Convenient sizes for all printing applications. Filters are available standard (Models HFLT/HFST/HFNT) or as surge suppressors (Models DDPSFST/DDPSFNT).**

Graymills Superflo® ink filters are designed to overcome the typical pressure drop and reduced ink flow due to clogging that occurs with ordinary filters. A permanent magnet (optional rare earth megaMAG available, see page 29) suspended over the intake port traps ferrous particles which find their way into the ink, and diffuses the flow outward into the filter screen flutes. Filtered material is trapped on the inside of the removable/reusable stainless steel filter cartridge. To clean, just remove the cartridge. All the contaminants come out with it. Graymills Superflo® filters are self-draining—no wasted ink or messy leftovers to deal with.

### Model HFNT/DDPSFNT*

For use with narrow web centrifugal pumps, diaphragm pumps 3/4" or smaller, or peristaltic pumps.

8" high x 3-3/4" wide. High performance non-stick Teflon® coating.

3/4" NPT inlet port.

1/2" NPT outlet ports.

Rugged vellumoid gaskets standard.

### Model HFST/DDPSFST*

For use with mid to wide web centrifugal pumps or 1/2" or larger diaphragm pumps.

11" high x 5-3/4" wide. High performance non-stick Teflon® coating.

1" NPT inlet/outlet ports.

Rugged vellumoid gaskets standard (Teflon® and EPDM available for difficult ink chemistries).

### Model HFLT Double Length Filter

For use in mid to wide web applications where heavy contamination of ink is an issue.

19-3/4" (502mm) high x 5-3/4" (146mm) wide.

1" NPT inlet/outlet ports.

Rugged vellumoid gaskets standard (Teflon® and EPDM available for difficult ink chemistries).

Available in dual filter configuration to allow for filter change during pump operation. Consult factory for more details.

### Model C-28750 Narrow Web Inline "Y" Filter

For use in narrow web and envelope applications.
3-3/4" (95mm) in-line length.

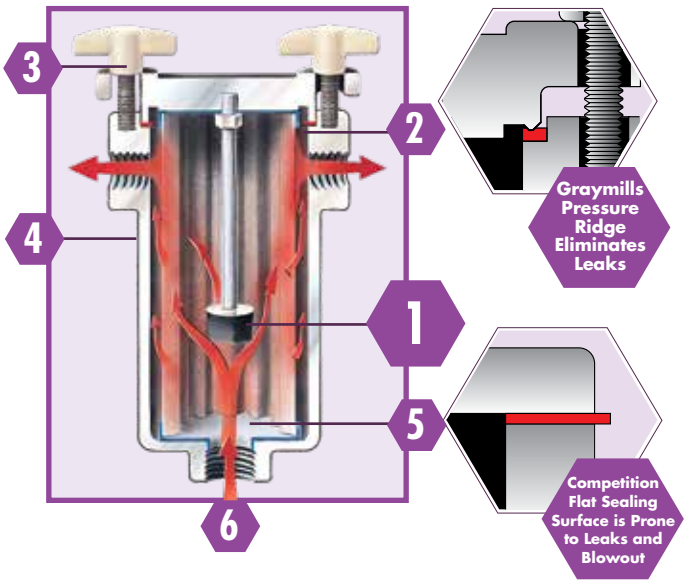
Molded poly body.

1/2" NPT female inlet and outlet.

40 mesh (400 micron) stainless steel filter element standard, 80 (177 micron) mesh available.

# SURGE SUPPRESSORS

## SUPERFLO® FILTER




1. A stronger, smooth, easy to clean magnet suspended over inlet port to remove ferrous particles from the ink before they can reach anilox rolls or print surface.
2. Lid designed with recessed seat and pressure ridge for positive gasket seal. Other manufacturers cut corners and use flat sealing surfaces that are prone to leaks and blowouts.
3. Large, easy-to-grasp metal wing nuts threaded on stainless studs hold up to the rigors of daily pressroom use, unlike plastic components on competitive units. Blind threads eliminate dried ink build-up which can interfere with easy operation.
4. Teflon® coated inside and out. Repels ink for easy cleaning. Will not peel, unlike nylon coatings on competitors' filters.
5. Stainless steel filter cartridge fits into inlet to assure all ink passes through filter screen without any blow-by. Fluted filter screen increases filtration capacity.
6. Can mount directly or in-line with ink pump discharge. Self draining.

## RARE EARTH megaMAG™

### For superior protection against anilox scoring/damage.

A rare earth magnet in a smooth stainless steel casing, with 10x the pulling power of a standard magnet, megaMAG™ is able to attract metal particles from within the filter body or ink tank. megaMAG™ provides a level of protection never before available. megaMAG™ can save the time required to pull a damaged anilox roll out of service and replace it, as well as the high cost of repair. Unlike other rare earth magnets, megaMAG's domed end design with no crevices releases particles easily when cleaning.

megaMAG™ is available for use in Graymills Superflo® filters HFST or HFNT or on an adjustable bracket C-37327 or mini-megaMAG™ bracket C-38745 for placing inside a tank or pail. Also available for use in DDPSFST and DDPSFNT surge suppressor filters. Retrofits to all existing Superflo® filters and surge suppressor filters.

## SURGE SUPPRESSOR/FILTER

### Smooth Out Diaphragm Pulsations,Eliminate Contaminants and Filter Out Damaging Metallic Particles

Graymills surge suppressor/filters smooth out diaphragm pump pulsation. Provides the same filtration action of standard Superflo® filters. Available with 30, 60, 100, 150 or 250 mesh (590, 250, 149, 99 or 58 micron) filter screen cartridge. Mounts directly onto most diaphragm pumps. Teflon® coated aluminum and stainless steel construction. Pinch valve included. Available in two sizes. See page 28 for more information.

Available with megaMag 10x power rare earth magnet for grabbing and holding those damaging metal particles.

# ACCESSORIES

## Basket Strainer – **Removes Heavy Contamination**

Developed for use in corrugated and tissue plants, 10 mesh (2000 micron) stainless steel basket fits inside standard U.S. 5 gallon pails. Return hose from fountain drains into strainer where heavy contaminants are trapped.

749-27341 Basket Strainer

## Tank Liners – **To Speed Clean-up**

High density polyethylene reusable tank liners feature built-in sumps to conform to Graymills standard 10, 20 and 30 gallon round tanks. Disposable liners are available for 2 and 5 gallon tanks.

C-29128 2 gal. disposable, case of 250
607-07344 5 gal. disposable, case of 100
607-04850 10 gal. reusable
607-04851 20 gal. reusable
607-04852 30 gal. reusable

## Flow Controls – **For Proper Ink Delivery**

Bypass flow controls, valves and nozzles permit easily adjusted control of the amount of ink delivered to the printing deck. Bypasses are not recommended with water-based inks as they can contribute to foaming.

### Valves

738-02535-41 1/2"Gate valve 738-05095-41 1/2" Ball valve
738-02536-41 3/4"Gate valve 738-04280-41 3/4" Ball valve
PV14001 Pinch valve

### Bypasses

B2GV For H3000, H4000, and M3 Series Pumps (includes gate valve)
B2 For H2000 Series Pumps with 5 gal tanks (includes pinch valve)
BP2002 For H2000 Series Pumps with 2 gal tanks (includes pinch valve)
BPVP For HV Series Pumps

## Hose Support Spring – **Prevents Hose Kinking**

765-14070-13 For 1/2" and 3/4" ID hose (8" long)

## Fountain Supply Nozzles

The convenient way to secure ink supply line to the fountain. Block mount permits easy adjustment of nozzle height.

C-21689 1/2" nozzle and mounting block
C-25988 3/4" nozzle and mounting block

## Hoses

### Clear Flexible Vincon Hose

Suitable for use with either normal alcohol or water based liquids. Can be used for discharge as well as return lines.

729-04379 1/2"
729-04369 3/4"

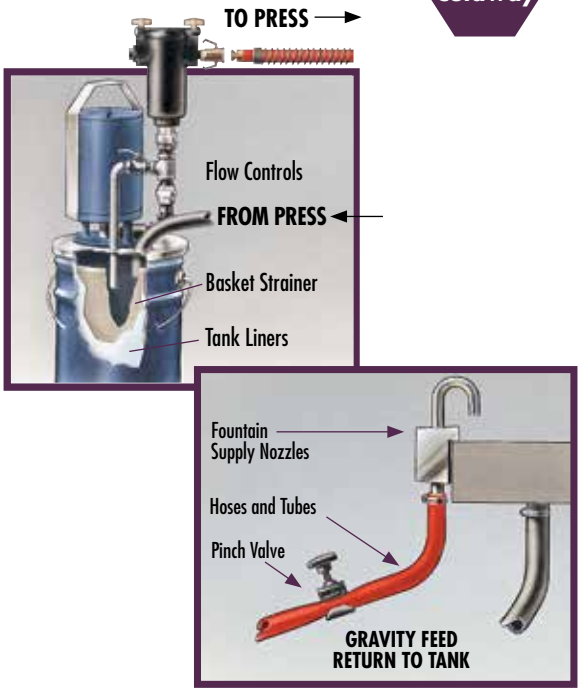
### Neoprene Hose

Excellent for use as a return hose from fountain to ink container, or other applications without line pressure.

729-03636 1"
729-03415-30 1-1/4"

### Hoses for Solvent Applications

Flexible Buna-N Neoprene Hose Braided Neoprene Nylon-Lined Hose
729-06052 3/4"
729-06238 1"




## Metric Conversion

Inches x 2.54 = Centimeters
Feet x .3048 = Meters
Gallons x 3.785 = Liters

## Peristaltic Tubing

Graymills has spent considerable time researching peristaltic tubing. The tubing we offer represents the best combination of material, correct diameter, and optimum durometer for use with peristaltic pumps. Using tubing with different dimensions or durometer can affect performance and potentially damage the pump. (See page 31)

### Air Filter/Regulator/Lubricator (FRL)
**Keep Air Motors Running**
Filters and removes moisture from compressed air while adding oil mist lubrication. 0-160 PSI gauge, 1/4"and 1/8" outlet. Mounting brackets included.

| | |
|---|---|
| FRL-1 | 1/4" ports |
| FRL-2 | 1/8" ports |

### Zahn Cups
**For Accurate Viscosity Control**
The standard of viscosity measurement in Flexographic and Rotogravure printing operations worldwide. Individually tested and calibrated. Polished stainless steel.

| | |
|---|---|
| 746-04568 | #2 Zahn signature |
| 746-08785 | #2 E Z (equivalent Zahn, meets ASTM D4212) |
| 746-07728 | #3 Zahn signature |

### Ink Funnel
**Makes Filling Ink Containers Easy**
Large mouth prevents spills, keeps work area clean. Ten inch spout has "speed bumps" which keep ink from free-falling into tank to reduce splashing and foaming. High density polyethylene.

| | |
|---|---|
| IF-5 | Ink Funnel |

# PERISTALTIC ACCESSORIES

### GENERAL ACCESSORIES

| | |
|---|---|
| 2GS | 1 or 2 gallon stand. Pump bolts to top. |
| 5GS | 3 or 5 gallon stand. Pump bolts to top. |
| 5GS-DH | 1, 2, 3 or 5 gallon dual-pail stand for DH. Pump bolts to top. |
| LBK | "L"-shaped mounting bracket for direct mounting to press. |
| 682-36240 | Bracket for mounting DDPSFNT surge suppressor/filter to 5GS. See page 22 for surge suppressors. |
| 729-90598-50 | 3/8" replacement tubing for PPS/PQS models, 50' per box. |
| 729-90597-50 | 5/8"replacement tubing for PPL/PQL models, 50' per box. |
| 729-90588-50 | 5/8"extended life tubing for PPL/PQL models, milky white color, use for solvent inks, 50' per box. |

### Mixers
Keep material blended and at uniform viscosity.

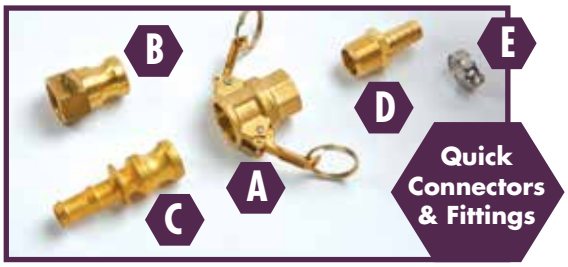
| | |
|---|---|
| MX12-GAM | #1 air motor, for 2 gal tank, with lid, 7.75" depth. |
| MX15-GAM | #1 air motor, for 5 gal tank, with lid, 12"depth. |

### Replacement Rotors

| | |
|---|---|
| PPS-ROTOR | For PPS/PQS Series |
| PPL-ROTOR | For PPL/PQL Series |

### Replacement/Spare Heads (Complete Assembly)

| | |
|---|---|
| PPS | For PPS Series, Standard Head |
| PPL | For PPL Series, Standard Head |
| C-41374 | For PQL Series, Aluminum Head |
| C-39597 | For PQS Series, Removable Head |
| C-39600 | For PQL Series, Removable Head |
| PPS-DHA | For PQS Dual Head Series, Removable Head |
| PPL-DHA | For PQL Dual Head Series, Removable Head |




These solid brass couplers provide a positive seal, straight flow and rapid connect/disconnect without tools. Used in sets. From the Hose, order A, D & E, then either (B) Pipe Thread Adapter for connection to rigid pipe/threaded fittings, or (C) Hose Barb for connection to hose. Buna-N "O" Ring is standard. TEFLON® is optional.

### A. Quick Connect Coupler
Female Quick Coupler x Female NPT

**BRASS**

| | |
|---|---|
| 741-03577-41 | 1/2"NPT |
| 741-03406-41 | 3/4"NPT |
| 741-03592-41 | 1" NPT |
| 741-03439-41 | 1-1/4" NPT |

**POLYPROPYLENE**

| | |
|---|---|
| 730-09893 | 1/2"NPT |
| 730-09894 | 3/4" NPT |
| 730-09895 | 1" NPT |
| 730-91923 | 1-1/4" NPT |

### B. Quick Connect Pipe Thread Adapter
Male Quick Coupler x Female NPT

**BRASS**

| | |
|---|---|
| 741-91927-41 | 1/2" NPT |
| 741-91928-41 | 3/4" NPT |
| 741-91929-41 | 1" NPT |
| 741-91930-41 | 1-1/4" NPT |

**POLYPROPYLENE**

| | |
|---|---|
| 730-09890 | 1/2" NPT |
| 730-09891 | 3/4" NPT |
| 730-09892 | 1" NPT |
| 730-91924 | 1-1/4" NPT |

### C. Quick Connect Hose Barb
Male Quick Coupler x Hose Barb

**BRASS**

| | |
|---|---|
| 741-03411-41 | For 1/2" ID Hose |
| 741-91926-41 | For 3/4" ID Hose |
| 741-03590-41 | For 1" ID Hose |
| 741-03446-41 | For 1-1/4" ID Hose |

**POLYPROPYLENE**

| | |
|---|---|
| 730-91931 | For 1/2" ID Hose |
| 730-91932 | For 3/4" ID Hose |
| 730-91933 | For 1" ID Hose |
| 730-91934 | For 1-1/4" ID |

### D. Slip-on Hose Barb (not shown)
Male NPT x Hose Barb

**BRASS**

| | |
|---|---|
| 730-04843-41 | 1/2"NPT x 1/2" ID |
| 730-03841-41 | 3/4" NPT x 3/4" ID |
| 730-04895-41 | 1" NPT x 1" ID |

**POLYPROPYLENE**

| | |
|---|---|
| 730-09896 | 1/2"NPT x 3/8" ID |
| 730-09897 | 1/2"NPT x 1/2" ID |
| 730-09898 | 3/4"NPT x 5/8" ID |
| 730-09899 | 3/4"NPT x 3/4" ID |
| 730-09900 | 1" NPT x 1" ID |
| 730-91925 | 1-1/4"NPT x 1-1/4"ID |

### E. Hose Clamps

| | |
|---|---|
| 733-04912-81 | For 1/2" ID Hose |
| 733-04696-81 | For 3/4" ID Hose |
| 733-03410-81 | For 1" ID Hose |
| 733-04698-81 | For 1-1/4" ID Hose |

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