



**Gorman-Rupp RAMPARTS®
Integrated Pneumatic Control System
A. D. D. pumps provide**

- Patents pending Integrated Pneumatic Control System
- Run-dry capabilities without damage
- An infinitely variable flow control
- Self-priming and solids-handling capabilities
- The ability to handle corrosive, abrasive, viscous and shear-sensitive media
- Protection from damage due to operation against closed valves
- Durable operation and maintenance-friendly components



Patents Pending

The Gorman-Rupp RAMPARTS® Integrated Pneumatic Control System

The air control system of an air driven diaphragm pump is an essential factor in pump performance. The patent pending Gorman-Rupp Integrated Pneumatic Control System is constructed with durable, time-proven RAMPARTS® components for use in real-world applications. With its modular construction, it is both operator and maintenance friendly, allowing in-place service and/or field retrofit of either RAMPARTS® or competitors' pumps.

The Gorman-Rupp Integrated Pneumatic Control System is designed for trouble-free operation at intermittent or continuous duties, as well as variations in temperature, air pressure or pump speed. The Integrated Pneumatic Control System design ensures a full displacement stroke every time, with no guesswork or special operator skills required. It also offers independent control of the suction and discharge strokes, allowing the pump to be 'tuned' to the application. These features make Gorman-Rupp Integrated Pneumatic Control Air Driven Diaphragm pumps easier to apply and install, and more efficient to operate and maintain than conventional diaphragm pumps.





1 Air Cylinder – Diaphragm-Assist

RAMPARTS Integrated Pneumatic Control pumps incorporate the proprietary diaphragm-assist air cylinder design that conventional RAMPARTS Air Driven Diaphragm pumps have been known for.

As with competitive air driven diaphragm pumps, the air cylinder pulls the pump diaphragm through its suction stroke. However, unlike 'spring-assist' competitive designs, the cylinder-assist presents virtually no resistance as the pump moves through its discharge stroke. With less energy required for operation, the pump is more efficient, utilizing lower air pressure by comparison than competitive pumps. Lower air pressure also means less differential pressure across the diaphragm, resulting in less stress and longer life.

The RAMPARTS Integrated Pneumatic Control design takes further advantage of the cylinder-assist by providing an integrated speed control for the suction stroke. Adjusting the suction stroke speed allows the pump operation to be matched with the characteristics of the liquid being pumped, as well as the individual suction characteristics of the application.

2 Air Inlet Port

A single supply air connection is all that's required to operate the RAMPARTS Integrated Pneumatic Control pump. A large diameter, free-flowing port is provided for the most efficient use of the compressed air supply. No other power source is required.

3 Gorman-Rupp 'No-Stall' Shifter Design

The shifting mechanism, or shifter, creates the reciprocating action that allows the pump to function.

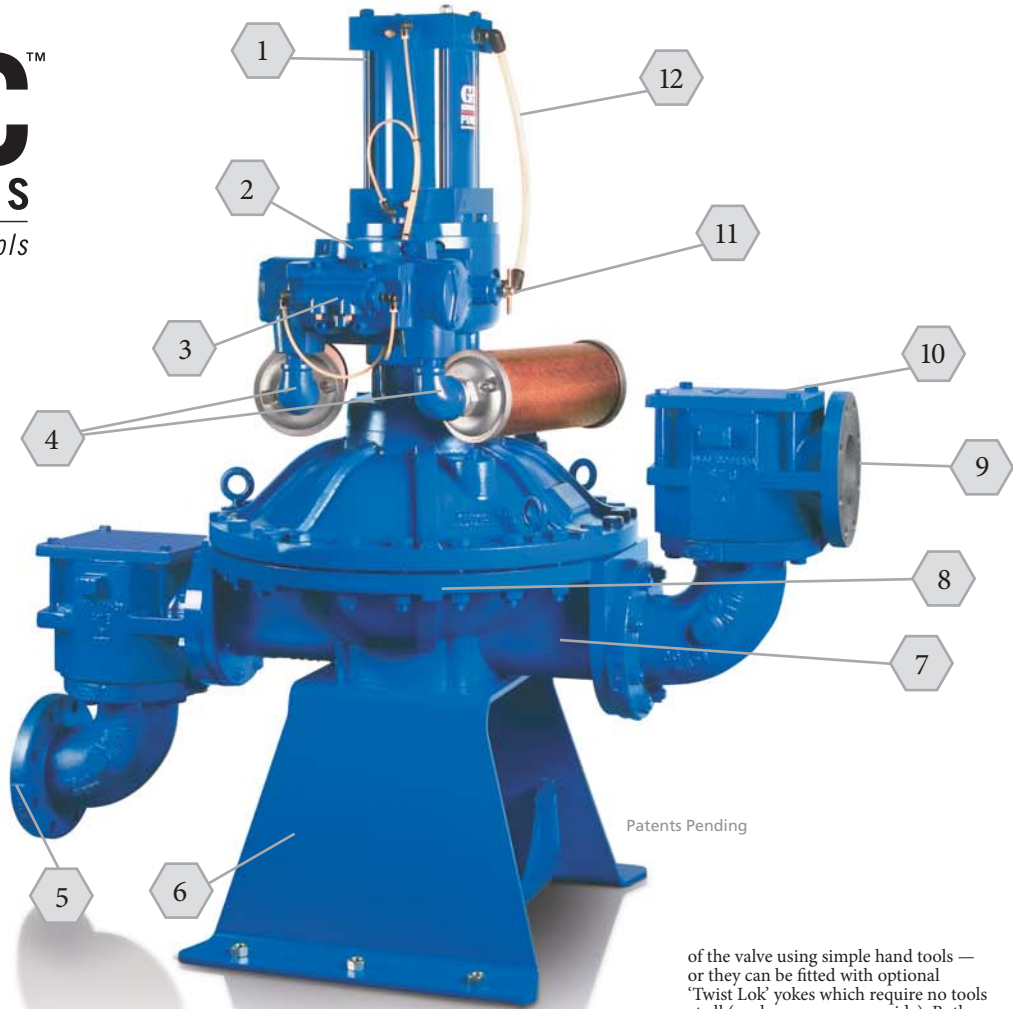
The proprietary Gorman-Rupp 'no-stall' shifting mechanism is an essential component of the RAMPARTS Integrated Pneumatic Control design, providing extended service life and consistent operation of the unit. When service is required, the design allows external access to the distribution valve assemblies for quick and easy maintenance.

4 Dual Air Exhaust

Dual exhaust means less resistance exhausting the air from the pump, producing less differential pressure, providing the most efficient pump operation possible.

5 Suction Port (Liquid Inlet)

An ANSI 125/150-pound flange is provided for connection to the suction piping. By utilizing a 90° elbow, the flange face can be positioned perpendicular to the ground plane, or rotated in 90° increments through a full 360° rotation.



Patents Pending

This allows for the most direct connection to the liquid source. For applications requiring the pump to be located above the liquid source, the perpendicular flange can also be replaced with a horizontal threaded connection. Either form provides the flexibility required for the most efficient installation.

6 Freestanding Base

The RAMPARTS Integrated Pneumatic Control pump utilizes a freestanding base, which provides for solid anchoring and stable operation of the unit, appropriate clearance for suction and discharge connections, and in-line service of the pump.

7 One-Piece Lower Pump Body

The RAMPARTS Integrated Pneumatic Control pump introduces a one-piece 'wetted' pump body, which provides an unobstructed flow path of liquid through the pump, plus a lower center of gravity and enhanced stability for the unit. It also eliminates a number of gasketed joints and hardware commonly used in competitive pumps.

8 Bolted Design

All gasketed or sealed joints in RAMPARTS Integrated Pneumatic Control pumps include a bolt configuration that provides a leak-proof pump assembly. This design also provides a self-alignment feature unique to bolted configurations, making pump maintenance easier.

9 Discharge Port (Liquid Outlet)

An ANSI 125/150-pound flange is provided for connection to the discharge piping. By utilizing a 90° elbow, the flange face can be positioned perpendicular to the ground plane, or rotated as required by design conditions.

10 Check Valve Assemblies

The RAMPARTS Integrated Pneumatic Control design employs 90° ball check valves on both the suction and discharge ports to control the flow of liquid through the pump. These check valves allow unrestricted flow and the passage of larger diameter solids, by comparison, than competitive diaphragm pump designs. Each check valve includes an access cover for external inspection or service

of the valve using simple hand tools — or they can be fitted with optional "Twist Lok" yokes which require no tools at all (as shown on reverse side). Both designs allow the check valve balls and seats to be replaced with the pump in-line. The suction and discharge check valve assemblies are identical, reducing repair parts inventory costs.

11 Integrated Speed Control

An additional unique feature of the RAMPARTS Integrated Pneumatic Control design allows manual speed control of both the suction and discharge strokes. Independent speed control of the pump strokes provides the most efficient configuration of the pump to the job at hand.

An optional pilot-operated feature is available to allow remote adjustment of the pump speed.

12 Air Equalizer Tube

Another unique feature of the RAMPARTS Integrated Pneumatic Control design is the air equalizer tube. This feature provides the most energy possible to the diaphragm while utilizing the least amount of compressed air, resulting in increased efficiency during operation and extended service life of the unit. In addition it prevents environmental contaminants from entering the cylinder.

Product information is subject to change; consult factory for details.



The Gorman-Rupp Company
P.O. Box 1217
Mansfield, Ohio 44901-1217
Tel: 419-755-1011
Fax: 419-755-1251
E-mail: grsales@gormanrupp.com

The Gorman-Rupp International Company
P.O. Box 1217
Mansfield, Ohio 44901-1217
Tel: 419-755-1011
Fax: 419-755-1266
E-mail: intsales@gormanrupp.com

Gorman-Rupp of Canada, Ltd.
70 Burwell Road
St. Thomas, Ontario N5P 3R7, Canada
Tel: 519-631-2870
Fax: 519-631-4624
E-mail: grcanada@grcanada.com

