



# ARO<sup>®</sup>

## PROCESS SOLUTIONS

Products Overview & Applications



 **Ingersoll Rand<sup>®</sup>**

## The Pump Professionals

The ARO pumps benefit from 80 years experience, making them highly reliable and rugged for use in the chemical, process industries and any other difficult environment (explosive, dusty, wetted and heated atmosphere).

### Engineering

We consistently deliver best-in class technologies designed by highly skilled engineers who know how you work. We consult with you to identify your needs and customise solutions to best fit them.

### Technical Support

No matter what your application or location happens to be, if you have questions or need assistance, our professional, experienced technical support personnel are merely a phone call or e-mail away.

### Logistics

With our global manufacturing and distribution network, you're guaranteed to have quick access to the equipment, parts or accessories you need to keep your operation running smoothly.



## The heart of your Process

Ingersoll Rand /ARO offers a wide range of Fluid Technologies for today's demanding industries and applications.

- Bulk material transfer and circulation
- Dispensing
- Finishing
- High-pressure cleaning
- Packaging
- Filling
- Formulation
- Lubrication
- Printing flexo/offset

## Industries

Aerospace  
Automotive  
Ceramic  
Chemical Processing  
Machine Builders – Formulation  
Mining and Construction  
Oil/Gas Petrochemical  
Paint and Finishing  
Pharmaceutical & Cosmetics  
Print Shop & Ink Manufacture  
Shipbuilding and Marine



# ARO® Diaphragm Pumps

ARO Air operated Diaphragm Pumps are designed for industrial use. They can easily pump from clean, light viscosity fluids to corrosive, abrasive medium viscosity fluids and can transfer large particles without damage. Due to their pneumatic motor, they can be used in potentially explosive areas. Most of the ARO Diaphragm Pumps are ATEX certified (CE ExII 2GD X).

## Highly flexible

ARO diaphragm pumps offer the ability to vary the flow outlet and discharge pressure as slow as one litre per minute upto 1040 litres per minute for our larger sizes and adjust fluid pressure upto 8.5 bars, with just using an air filter/regulator and a needle valve.

## Self-priming

These pumps are self-priming upto an elevation of 8.3 m (with water) and can operate dry without any damage. If the fluid outlet is closed, the pump stops; it restarts with the reopening of the fluid circuit; no pressure relief valve or bypass is necessary.

## Wide range of material configurations

The ARO range of diaphragm pumps offers many material of construction compatible for the chemical industry: our metallic offering consists of aluminium, cast iron, stainless steel and hastelloy. Our non-metallic offering consists of polypropylene, acetal and PVDF.



## ARO® Diaphragm Pumps Range and Applications



### Compact Pumps, 1/4" to 3/4" ports

Ideal for OEM and general industrial applications, these pumps feature big performance in a small package. Flow rates upto 56 l/min with a large range of material configurations.

### Process Pumps, 1" to 3" ports

ARO's PROCESS Pumps feature the best total cost of ownership of any diaphragm pump on the market. A favourite among process professionals with flow rates upto 1041 l/min and a large range of material configurations.

### Specialty Application Pumps

Pumps providing the same high level of performance and satisfaction but in a design tailored for your specific application.



**Productivity:** Maximised flow rates + Minimised pulsation and air consumption = Maximum Performance.



**Versatility:** Multiple porting options available along with interface options allow you to customise this pump specifically to your OEM application.



**Reliability:** Lube free patented differential valve both on major air valve and SimulShift™ (pilot valve) provides reliable worry free operation – fluid on demand every time.



**Environmentally Sound:** Bolted construction in conjunction with a wide range of material options provides maximum chemical and leak resistance.



**Serviceability:** Modular construction, reduced parts count and simple to use repair kits minimise repair time and cost.

# ARO® Diaphragm Pumps



## Non-Metallic Models - Range and Performance



	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"
Max. (liter/min)	20	40.1	54.5	56	200	465	696
Max. bar	6.9	6.9	6.9	6.9	8.3	8.3	8.3
Inlet/Outlet	1/4" (F)	3/8" (F)	1/2" (F)	3/4" (F)	1" (F) 1" ANSI/DIN	1 1/2" ANSI/DIN	2" ANSI/DIN
<b>Material</b>	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene
	PVDF	PVDF	PVDF		PVDF	PVDF	PVDF
	Groundable Acetal	Groundable Acetal	Groundable Acetal		Conductive Polypropylene	Conductive Polypropylene	Conductive Polypropylene



## Metallic Models - Range and Performance



	1/2"	3/4"	1"	1 1/2"	2"	3"
Max. (liter/min)	49	51.5	197	465	651	1041
Max. bar	6.9	6.9	8.3	8.3	8.3	8.3
Inlet/Outlet	1/2" (F)	3/4" (F)	1" (F)	1 1/2" (F) 1 1/2" ANSI/DIN	2" (F) 2" ANSI/DIN	3" (F) 3" ANSI/DIN
<b>Material</b>	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
	Stainless Steel		Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
			Cast Iron	Cast Iron	Cast Iron	Cast Iron
			Hastelloy	Hastelloy	Hastelloy	

## ARO® Specialty Pumps

### Flap Valve and Pit-Boss Pumps

ARO offers Specialty Pumps to transfer Liquids with High Solids Content. Our Flap Valve Pumps can pass Semi-solids upto 2" size with its unique Flap Valve design.

The Pit-Boss Pumps offer unmatched performance in Dewatering applications in Construction & other Industries.



### FDA Approved Pumps

Constructed of FDA Accepted Materials these pumps are used in Food & Beverage Industry. These pumps offer class leading Flow rates & the ARO Air valve reliability to provide unmatched performance.

Available in Bolted as well as with Quick Knock Down clamps for easy dis-assembly.



### High Pressure Pumps

These are single acting pumps which generate High Pressures upto 13.8 bar. These are used to transfer light to medium viscosity fluids where high head pressures are needed due to long piping lengths or due to their viscosity.

Applications are found in Waste Water Treatment, Filter Press Application & Paint re-circulation.



### Powder Transfer Pumps

Powder Transfer Pumps can transfer Dry Powders upto 800 kg/m<sup>3</sup> density. A economical alternative to Pneumatic Conveying systems these are easy to install & offers all the benefits of a Conventional Air operated Double Diaphragm Pump.






### Electronic Interface Pumps

ARO Electronic Interface Pumps convert a Conventional AOD pump into one suitable for Batching & metering application.

Pair it with the ARO Controller & you have an Out of the Box solution for all your Batching applications.

# ARO® Piston Pumps




ARO piston pumps provide industry proven dependability, economy and precision control for the delivery of a wide range of flowable materials. Whether you are moving a small amount of low viscosity fluid a few feet or a large amount of high viscosity material a longer distance, ARO has a pump to meet your application needs.

 <p><b>2-Ball Pumps</b> The most versatile pumps in the ARO line. They are capable of handling applications from simple transfer to the extrusion of low to medium viscosity materials upto 100,000 centipoise (cPs) with fluid delivery upto 68.6 l/min.</p>	 <p><b>4-Ball Pumps</b> Designed to transfer high volumes of low and medium viscosity fluids upto 12,500 cPs with fluid delivery upto 124 l/min. A common use involves circulating fluid from the original container, to the point of use, and then back.</p>	 <p><b>Chop-Check Pumps</b> The heavy-hitters of the line, ARO chop-check pumps are designed to move medium to high viscosity fluids ranging from 15,000 to more than 1,000,000 cPs, and at delivery rates up to 46.3 l/min.</p>
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## ARO® Piston Pumps – Application Packages

**FINISHING, COATINGS, SEALANTS, INKS, AND ADHESIVES**

 <p><b>TPX Package</b> Features a two-post ram, pump, follower plate and controls designed for high-viscosity applications when maximum down force is required. Available in 5- and 55-gal containers.</p>	 <p><b>SPX Package</b> Ideal for medium- to heavy-viscosity extrusion, ARO Fluid Product's single-post ram with pump, follower plate, and controls allows for easy container changeover while providing industry-leading down force during operation.</p>	 <p><b>CMX Package</b> Popular in airless spray applications, these packages feature a high-pressure pump, air control, material filter, and suction hose - all mounted on a heavy-duty cart.</p>	 <p><b>CLX Package</b> When portability is required for light- to medium-viscosity (less than 50K cPs) extrusion, our cart-mounted lift with follower plate allows for easy container changeover.</p>	 <p><b>ALX Package</b> Ideal for finishing and adhesive applications where you need to keep fluid mixed. Includes lift, drum cover, agitator, and air controls.</p>
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<p><b>LUBRICATION</b></p>  <p><b>Oil Dispensing Packages</b> Standard packages with 3:1 ratio oil pump. Digital preset/non-preset flow meters available.</p> <p><b>Grease Dispensing Packages</b> Grease Packages with 50:1 ratio grease pump. 10, 20, 50 &amp; 200 kg Standard Grease packages available.</p>	<p><b>BULK MATERIAL TRANSFER / CIRCULATION</b></p>  <p><b>FMX Package</b> Ideal for fluid transfer from tanks and piping systems, pumps come with a floor-mountable stand to connect to inlet piping.</p> <p><b>WMX Package</b> The compact design of our piston pumps make them ideal for mounting on walls or appropriate structures. This package includes the pump and bracket for vertical mounting on structures.</p>	<p><b>HIGH-PRESSURE CLEANING</b></p>  <p><b>WPX</b> When it is time to clean up, our wash pump is a great high-power cleaning solution. Includes pump, wall mount bracket, suction tube assembly, and spray wand.</p>
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## ARO® Diaphragm Pumps Applications



1 1/2" diaphragm pump installed in a chemical process to transfer chloride methylene



3" diaphragm pumps mounted on a skid to transfer clay in a ceramic manufacture



1 1/2" aluminium diaphragm pumps installed to feed a chemical reactor



2" stainless steel diaphragm pumps assembled with PVDF pulsation dampeners used to download hydrofluoric acid



3" sanitary pump used to transfer cosmetic basis for shampoos



1/2" diaphragm pumps installed in a colouring process



UL approved fuel pump 1" size, used assembled on skid dedicated in the aviation to fill and unload kerosene



1/2" diaphragm pumps assembled in an ink formulation system



3" stainless steel diaphragm pumps installed on a bulk transfer process

## ARO® Piston Pumps Applications



2-ball piston pumps 4:1 ratio, used in a painting process manufacturing



Extrusion pumps 23:1 ratio, used in multi component skids to transfer silicon



Large extrusion piston pumps, 13:1 ratio, installed on an offset ink formulation system process



2-ball piston pumps 9:1 ratio, used in a customised lubrication process



2-ball piston pumps 11:1 ratio, used in a painting circulating system



4-ball piston pumps 4:1 ratio, installed on a paint formulation process

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# ARO®

ARO® is a brand of Ingersoll Rand. Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands – including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a \$12 billion global business committed to a world of sustainable progress and enduring results.

We are committed to using environmentally conscious print practices

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