

ARO®

PISTON PUMPS

EVERYTHING YOU NEED, NOTHING YOU DON'T



At the heart of your process

In Many Markets



Printing



Marine



Paint



Automotive



Door &
Window



Wind
Power



Aeronautics



Machine
Builders



Textile

In Many Applications



Transfer



Lubrication



Spray &
Coating



Extrusion



Dispense



Flexoprinting



Offset Printing

With Different Products

- Adhesives
- Grease
- Heavy ink
- Liquik ink
- Paint
- Water
- Sealants
- Oil
- Resins

Why Choose an ARO® Piston Pump



Reliability. Robust, field proven carbon steel and stainless steel construction, designed for heavy-duty environment, long stroke allows pump to provide high flow at lower cycle rate.



Productivity. Double effect, continuous flow and ready to use (no special electric connections required), can be provided with integrated air control.



ATEX. ARO® pumps are suitable for use in gas and dust environments, including ATEX Group II 2GD applications. This pump is ideal to pump potentially flammable products in hazardous environment.



Viscous Fluids. According to the model ARO® Piston Pumps are designed to transfer and dispense medium to high viscous fluids.



AFX Motors. It integrates the field proven EXP pneumatic air motor technologies. The simple design makes the maintenance quick and simple. In addition, our **unique repair kit** contains all parts needed for a regular maintenance of all motor sizes.



A Worldwide Leader Brand. ARO® a leader brand in pneumatic pumps can rely on a worldwide network of expert and loyal distributors.



Fluid Package and Accessories. ARO® can either provide a full package or single component to meet all vertical and application needs.

Pumping Technologies

1

2-Ball Piston Pumps

- Low to high viscosity



2

4-Ball Piston Pumps

- High flow rate

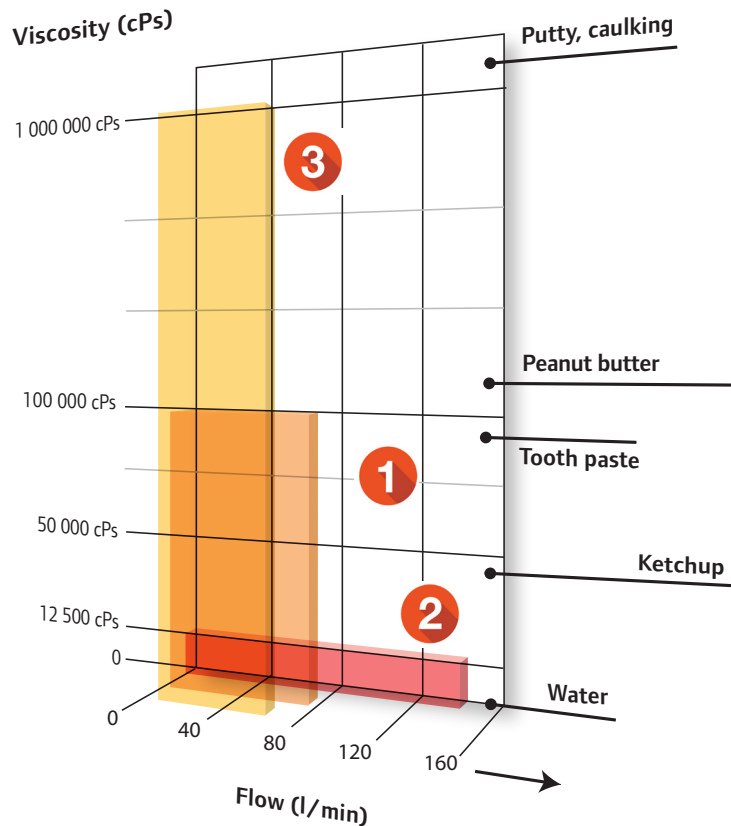
- Low to medium viscosity



3

Chop Check Piston Pumps

- Medium to very high viscosity



Construction Technologies

Divorced Pump

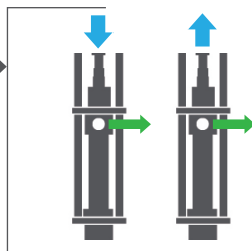
Motor and lower end can be combined in different ways.

This gives two main advantages:

- **Flexibility**, same lower end can fit different motors and vice versa
- **Ease of maintenance**, the two parts can be serviced separately

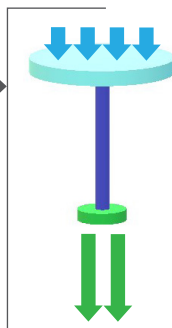
Double Effect

Pump is delivering product both in downstroke end in upstroke.



Pressure Ratio

Different combinations of air motor and lower cylinder sizes create a geometrical ratio, therefore a pressure ratio.



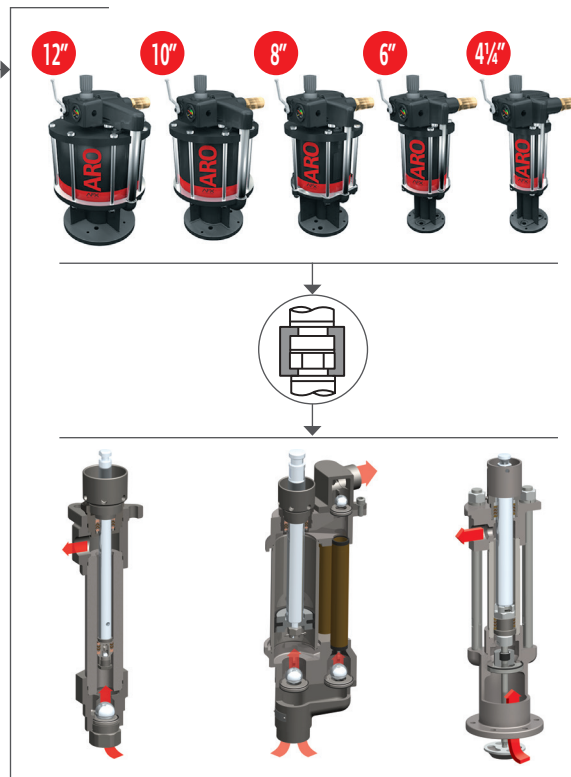
4:1 Ratio Example

Air Motor side

- Big Surface: 4
- Air pressure: 2 bar

Lower End Fluid Side

- Small Surface: 1
- Fluid pressure: 8 bar



2 Ball Piston Pumps

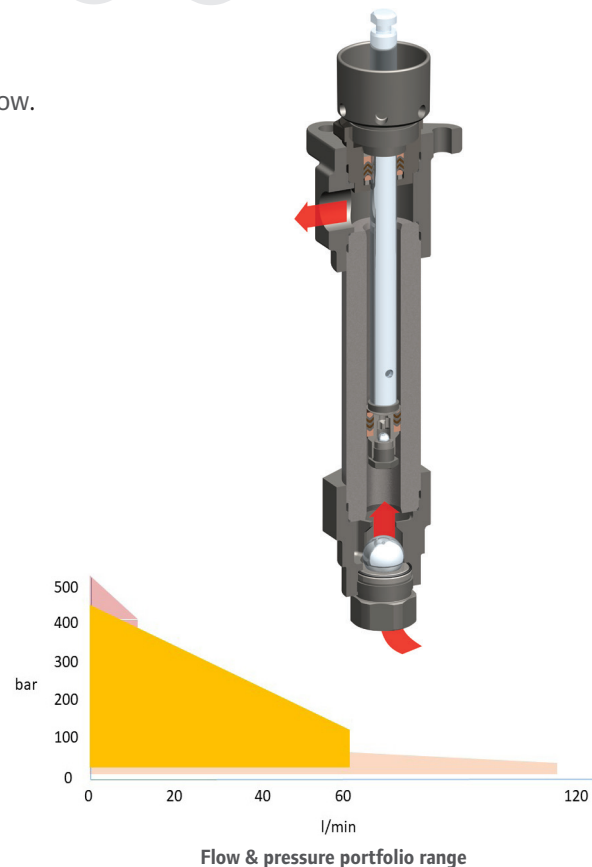
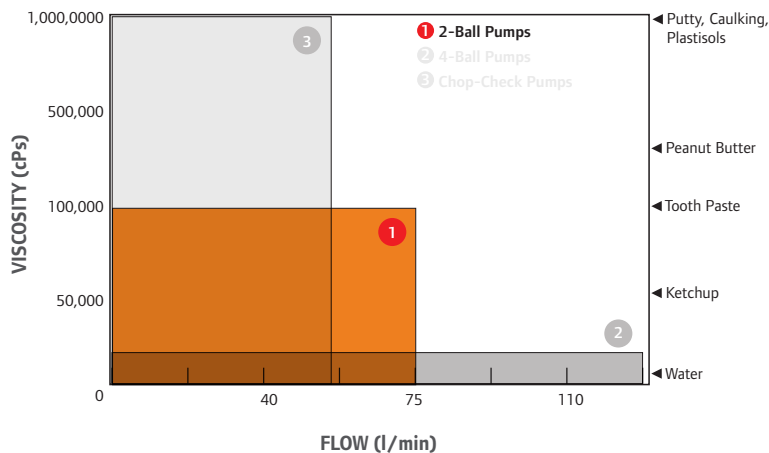


From 1:1 to 65:1 and from 0 to 60 l/min

Like in a double effect syringe, ball-check valves are preventing back flow.

Applications

- Spray (Paint and coating)
- High Pressure cleaning
- Test (put pressure vessels under pressure for test)
- Transfer (low to very high pressure)
- Liquid ink (heliography, flexography)
- Lubrication (oil)



4 Ball Piston Pumps



From 2:1 to 7:1 and from 0 to 110 l/min

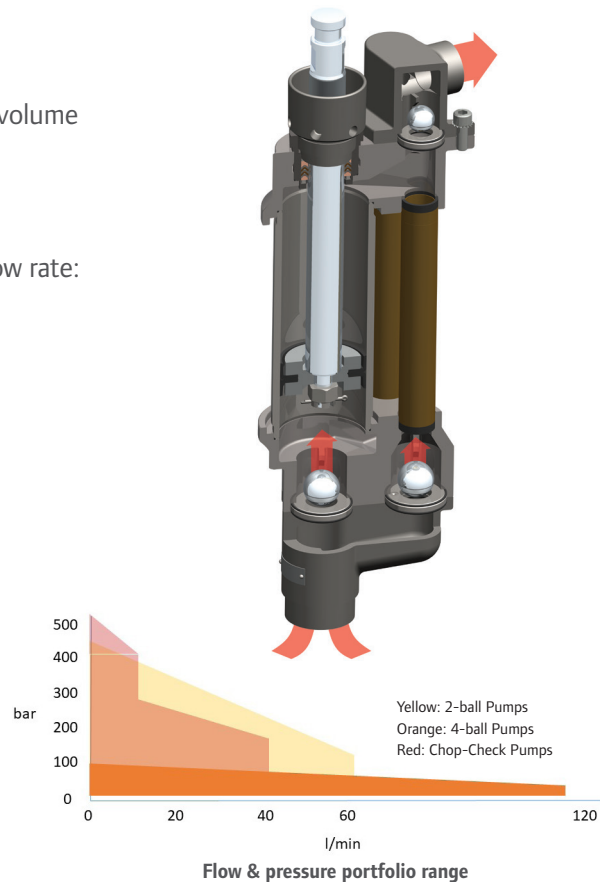
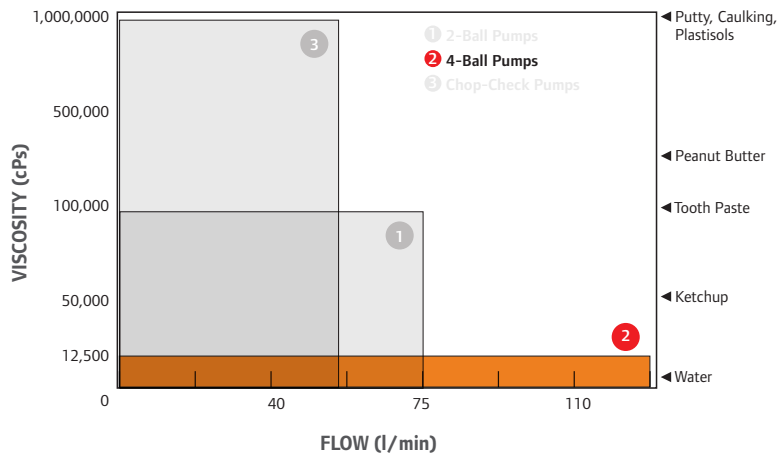
The advantage of four balls is that pump can dispense a full cylinder's volume at each stroke allowing much higher flow rate.

Applications

50,000

Transfer of medium viscosity products - medium pressure - high flow rate:

- Resin
- Glue
- Paint



Extrusion Piston Pumps

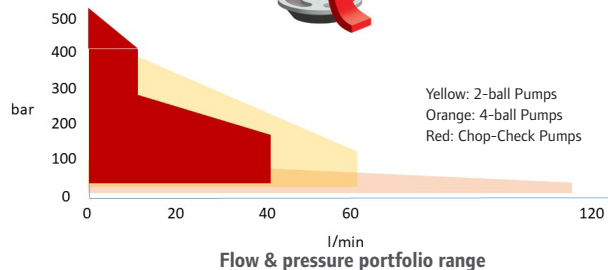
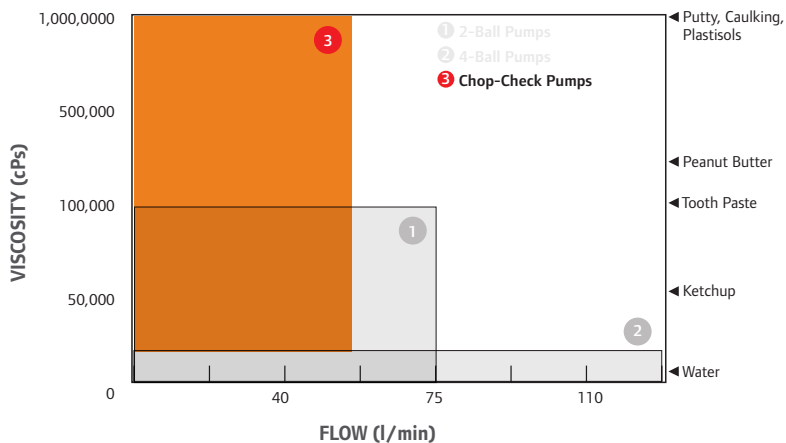


From 12:1 to 65:1 and from 0 to 40 l/min





The lower part of the pump is working like a spoon. The chop check valve is pushing product into the pump body instead of siphoning it like 2 or 4 balls pump.

Applications

- Pasty product (mastic, silicone, adhesives...)
 - Bonding • Sealing • Coating
- Heavy Ink (offset printing, serigraphy)
- Lubrication (grease)



Material and Compatibility

Parts	Image	Material	Chemical Resistance	Abrasion Resistance	Durability
Motor		Aluminum Fiberglass	N/A	N/A	N/A
Packings		UHMW-PE	●●●●	●●●●●●	●●●●
		Filled PTFE	●●●●●	●●●●	●●●●
		Virgin PTFE	●●●●●	●●●	●●●●
		Leather	●●	●●●●	●●●●●●
Lower End		Carbon Steel	●●●	●●●●	N/A
		Stainless Steel	●●●●●	●●●●	N/A

Package and Recommended Accessories for 2 Ball Pumps



Mounting Accessories

- Cart
- Wall Mount
- Floor Mount
- Drum Cover
- Lift and Ram

Air Accessories

- Air filter, regulator and lubricator
- Over-run control - ARO®-stop

Fluid Accessories

- Material Filter
- Fluid pressure regulator
- Product heater
- Suction hose and rod
- Manual and automatic spray guns



Piston pump unit



Material filter



Fluid pressure regulator



Handheld or automatic gun/nozzle

2-Ball
Piston
Pumps
➤



Package and Recommended Accessories for 4 Ball Pumps



Mounting Accessories

- Cart
- Wall Mount
- Floor Mount

Air Accessories

- Air filter, regulator and lubricator
- Over-run control - ARO-stop

Fluid Accessories

- Material filter
- Product heater
- Fluid pressure regulator



Wall mount bracket



Mounting post

4-Ball
Piston
Pumps



Package and Recommended Accessories for Chop-Check Pumps



Mounting Accessories

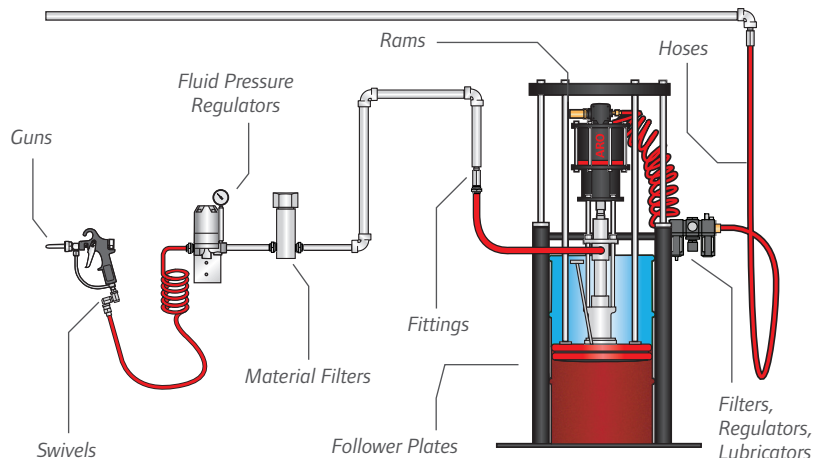
- Cart
- Wall Mount
- Floor Mount
- Drum Mover
- Lift and Ram

Air Accessories

- Air filter, regulator and lubricator
- Over-run control - ARO®-stop

Fluid Accessories

- Fluid pressure regulator
- Product heater
- Suction hose and rod
- Manual and automatic guns



28:1 ratio pump package



Floor mount



Cart lift

Operations: Good Practices

Wet-Sol

Lower pump packing lubricant is necessary. Always check and fill solvent cup with Wet-Sol or equivalent tricresyl phosphate or other known rubber plasticizer.

Soft Start-Up

Always start pump gently in order to allow it to prime.

Avoid Dry Running

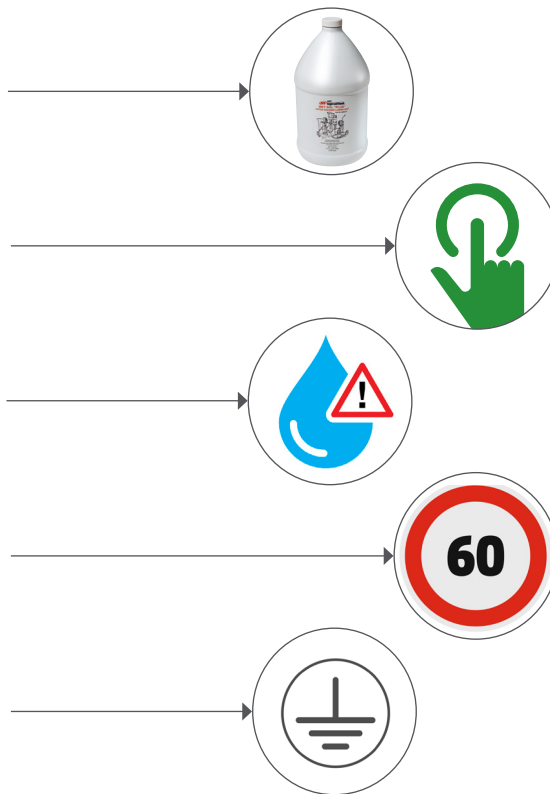
Pump could be damaged running dry for more than a few seconds.

60 Cycle/Min.

To improve reliability and reduce maintenance, Do not exceed speed of max 60 cycle/min.

ATEX

Connect to ground for ATEX applications.



Other ARO® Products

ARO® has the right product to meet your specific needs. We offer air-operated diaphragm pumps, piston pumps and packages, filters, regulators, and lubricators (FRLs), lubrication equipment, pneumatic valves and cylinders.

- Air Operated Diaphragm Pumps (EXP and PRO Series)
- Filters/Regulators/Lubricators
- Lubrication Equipment
- Fluid Power (Valve and Cylinders)
- Controller
- Pulsation Dampeners
- Agitators and Mixers
- Spare Parts





Notes

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 \$14 billion global business committed to a world of sustainable progress and enduring results. For more information, visit www.ingersollrand.com.

We are committed to using environmentally conscious print practices.

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