

Aro Diaphragm Pump Manual

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OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

66610X-X-C

RELEASED: 8-24-89
REVISED: 10-15-10
(REV. AB)

1" DIAPHRAGM PUMP

1:1 RATIO (METALLIC)



READ THIS MANUAL CAREFULLY BEFORE INSTALLING,
OPERATING OR SERVICING THIS EQUIPMENT.

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

SERVICE KITS

Refer to "Model Description Chart" to match the pump material options.
637118-C for air section repair (see page 6).
637119-XX-C for fluid section repair (see page 4).
637167 abrasion resistant conversion kit is available for use in heavy
and abrasive material applications (see page 4).

PUMP DATA

Models	see "Model Description Chart" for "XXX".
Pump Type	Metallic Air Operated Double Diaphragm.
Material	see "Model Description Chart".
Weight	Aluminum 19 lbs (8.62 kg) Cast Iron 31 lbs (14.06 kg) Stainless Steel 36 lbs (16.33 kg) [add 8 lbs (3.63 kg) for cast iron air motor section]
Maximum Air Inlet Pressure	120 p.s.i. (8.3 bar)
Maximum Material Inlet Pressure	10 p.s.i. (0.69 bar)
Maximum Outlet Pressure	120 p.s.i. (8.3 bar)
Maximum Flow Rate (flooded inlet)	35 g.p.m. (133 l.p.m.)
Maximum Particle Size	1/8" dia. (3.2 mm)
Maximum Temperature Limits (diaphragm / ball / seal material)	
Acetal	10° to 180° F (-12° to 82° C)
E.P.R. / EPDM	-60° to 280° F (-51° to 138° C)
Hydrel®	-20° to 150° F (-29° to 66° C)
Neoprene	0° to 200° F (-18° to 93° C)
Nitrile	10° to 180° F (-12° to 82° C)
Polypropylene	35° to 175° F (2° to 79° C)
Polyurethane	10° to 150° F (-12° to 66° C)
Kynar® PVDF	10° to 200° F (-12° to 93° C)
Santoprene®	-40° to 225° F (-40° to 107° C)
PTFE	40° to 225° F (4° to 107° C)
Viton®	-40° to 350° F (-40° to 177° C)
Dimensional Data	see page 8.
Noise Level @ 70 p.s.i., 60 c.p.m.	64.5 db(A)*

* The pump sound pressure levels published here have been updated to an Equivalent Continuous Sound Level (L_{eq}) to meet the intent of ANSI S1.13-1971, C63.1 PNEUROP 55.1 using four microphone locations.

NOTICE: All possible options are shown in the chart. However, certain combinations may not be recommended, consult a representative or the factory if you have questions concerning availability.

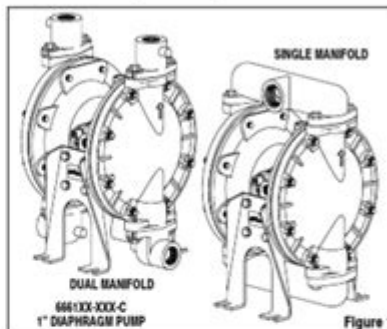


Figure 1

MODEL DESCRIPTION CHART

6661 XX - XXX - C	
Center Body Material, Threads	
0 - Aluminum, N.P.T.F.	2 - Aluminum, BSP
1 - Cast Iron, N.P.T.F.	3 - Cast Iron, BSP
Fluid Cap / Manifold Material, Inlet / Outlet	
(Steel Hardware)	
0 - Aluminum, Single	A - Aluminum, Single
1 - Stainless Steel, Single	B - Stainless Steel, Single
2 - Cast Iron, Single	C - Cast Iron, Single
8 - Stainless Steel, Dual	D - Stainless Steel, Dual
Seat Material	
1 - Aluminum	4 - Kynar PVDF
2 - 316 Stainless Steel	5 - Carbon Steel
3 - Polypropylene	8 - Hard 440 Stainless Steel
Ball Material	
1 - Neoprene	8 - Acetal
2 - Nitrile	8 - Polyurethane
3 - Viton	A - Stainless Steel
4 - PTFE	C - Hydrel
5 - E.P.R.	E - Santoprene
Diaphragm Material	
1 - Neoprene	3 - Viton
2 - Nitrile	5 - E.P.R.
4 - PTFE / Santoprene	8 - Hydrel
	B - Santoprene
FLUID SECTION SERVICE KIT SELECTION	
66610X - X X X - C	
EXAMPLE: Model # 666100-361-C	637119 - [XXX] - C
Fluid Section Service Kit # 637119-61-C	Ball <input type="checkbox"/> Diaphragm <input type="checkbox"/>

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ARO **IR** Ingersoll Rand
Industrial Technology

Aro diaphragm pump manual is an essential resource for anyone who operates or maintains Aro diaphragm pumps. These pumps are widely used in various industries due to their reliability, efficiency, and ability to handle a wide range of fluids. Understanding how to properly operate and maintain these pumps can significantly enhance their performance and lifespan. This article will provide a comprehensive overview of Aro diaphragm pumps, including their components, operation, maintenance, troubleshooting, and safety considerations.

Understanding Aro Diaphragm Pumps

Aro diaphragm pumps are positive displacement pumps that use a flexible diaphragm to move fluids. These pumps are particularly effective for

transferring viscous, abrasive, and corrosive substances. The design of Aro diaphragm pumps allows for self-priming capabilities and dry-running without damage.

Key Components of Aro Diaphragm Pumps

To fully comprehend the operation of an Aro diaphragm pump, it is important to familiarize yourself with its key components:

1. **Diaphragm:** The heart of the pump, it flexes to create suction and discharge of fluid.
2. **Pump Body:** Houses the diaphragm and provides structural integrity.
3. **Inlet and Outlet Valves:** Control the flow of fluid into and out of the pump.
4. **Air Supply Port:** Allows compressed air to enter the pump, powering the diaphragm movement.
5. **Air Control Valve:** Regulates the air supply to the diaphragm, controlling the pump's operation.
6. **Mounting Feet:** Provide stability and secure the pump to a surface.

Operating the Aro Diaphragm Pump

Operating an Aro diaphragm pump effectively requires following specific guidelines to ensure optimal performance and longevity.

Initial Setup

Before using the pump, ensure the following steps are completed:

1. **Location:** Place the pump on a stable surface to prevent vibrations and movement during operation.
2. **Connections:** Connect the inlet and outlet hoses securely to prevent leaks.
3. **Air Supply:** Connect the air supply source, ensuring it meets the required pressure specifications.

Starting the Pump

To start the pump, follow these steps:

1. **Check Valves:** Ensure that the inlet and outlet valves are functioning correctly.
2. **Air Pressure:** Adjust the air pressure to the recommended level, usually between 40-100 psi, depending on the pump model.
3. **Power On:** Activate the air supply to the pump, and observe the diaphragm's movement.
4. **Fluid Flow:** Monitor the fluid flow from the outlet to ensure it is steady and free of interruptions.

Operating Guidelines

When operating the pump, consider the following:

- **Fluid Compatibility:** Ensure that the fluid being pumped is compatible with the materials used in the pump.
- **Temperature Limits:** Be aware of the temperature limits of the pump to avoid damage.
- **Viscosity:** Consider the viscosity of the fluid being pumped, as this can impact flow rates.

Maintenance of Aro Diaphragm Pumps

Regular maintenance is crucial for ensuring the longevity and efficiency of Aro diaphragm pumps.

Routine Maintenance Tasks

Perform the following maintenance tasks regularly to keep your pump in optimal condition:

1. **Inspect for Leaks:** Regularly check for any signs of fluid leaks around the pump.
2. **Check Air Supply:** Ensure that the air supply is clean and free of moisture.
3. **Clean Filters:** If applicable, clean or replace air filters to prevent clogging.
4. **Tighten Connections:** Periodically check and tighten all hose and connection fittings.

Diaphragm Inspection and Replacement

The diaphragm is a critical component that may require inspection and replacement over time. Follow these steps:

1. **Remove the Pump Cover:** Carefully detach the cover to access the diaphragm.
2. **Inspect for Damage:** Look for cracks, tears, or signs of wear on the diaphragm.
3. **Replace if Necessary:** If damage is detected, replace the diaphragm with a suitable replacement part according to the manufacturer's specifications.

Troubleshooting Common Issues

Despite regular maintenance, issues may arise during the operation of Aro diaphragm pumps. Here are some common problems and their solutions:

Problem: Pump Not Starting

- Cause: Lack of air supply or low air pressure.
- Solution: Check the air supply connection and ensure that the pressure is within the required range.

Problem: Irregular Flow Rate

- Cause: Blocked inlet or outlet valves.
- Solution: Inspect and clean the valves to ensure they are operating correctly.

Problem: Excessive Noise During Operation

- Cause: Air leaks or worn components.
- Solution: Check for air leaks and inspect internal components for wear.

Safety Considerations

When operating and maintaining Aro diaphragm pumps, safety should always be a priority. Consider the following safety measures:

1. Personal Protective Equipment (PPE): Always wear appropriate PPE, such as gloves and goggles, especially when handling hazardous fluids.
2. Ventilation: Ensure adequate ventilation in the work area to disperse any potentially harmful vapors.
3. Emergency Procedures: Familiarize yourself with emergency procedures in case of a spill or equipment failure.
4. Training: Ensure all personnel operating the pump are properly trained in its use and maintenance.

Conclusion

The **Aro diaphragm pump manual** serves as a vital guide for anyone involved in the operation and maintenance of Aro diaphragm pumps. By understanding the components, proper operating procedures, maintenance practices, troubleshooting techniques, and safety considerations, users can ensure the efficient and safe operation of these valuable tools. Regular attention to maintenance and adherence to guidelines will maximize the performance and lifespan of Aro diaphragm pumps, making them a reliable choice for fluid transfer in various applications.

Frequently Asked Questions

What is the primary function of an ARO diaphragm pump?

The primary function of an ARO diaphragm pump is to transfer fluids, including corrosive and viscous materials, using a diaphragm mechanism that creates suction and discharge without the need for mechanical seals.

Where can I find the manual for my ARO diaphragm pump?

You can find the manual for your ARO diaphragm pump on the official ARO website under the 'Support' section or by contacting their customer service for assistance.

What are the common applications for ARO diaphragm pumps?

Common applications for ARO diaphragm pumps include chemical processing, water treatment, food and beverage production, and transferring hazardous materials in various industrial settings.

How do I troubleshoot my ARO diaphragm pump if it is not working?

To troubleshoot your ARO diaphragm pump, check for obstructions in the inlet and outlet, ensure that air supply is adequate, inspect for leaks, and verify that the diaphragm is not damaged or worn.

What maintenance is required for ARO diaphragm pumps?

Regular maintenance for ARO diaphragm pumps includes checking and replacing diaphragms and valves as needed, ensuring proper lubrication, and inspecting for any signs of wear or damage.

Are ARO diaphragm pumps suitable for abrasive materials?

Yes, ARO diaphragm pumps can be suitable for abrasive materials, especially those designed with materials like polypropylene or aluminum, but it's essential to choose the right model and configuration based on the specific application.

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Unlock the full potential of your ARO diaphragm pump with our comprehensive manual. Discover how to optimize performance and maintenance. Learn more now!

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