

INSTRUCTION MANUAL

4000-XXX-XX-X

INCLUDING: INSTALLATION AND MAINTENANCE

RELEASED: XX-XX-25
(REV: A)

for PUMP TUBES IN PP, PVDF, ALUMINUM and STAINLESS STEEL



**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.

DESCRIPTION

- ARO® drum pumps are used for discharging and/or transferring neutral, aggressive, thin liquid or low viscosity liquids from drums and other containers.
- An ARO® drum pump always consists of a pumping unit and a motor that are connected by means of a quick release coupling.
- Always use appropriate accessories to ensure safe and reliable operation of your ARO® drum pump.

MODEL DESCRIPTION CHART

4000-X X X-XX-X

Model Revision

Immersion Depth (Tube Length)

07 - 700 mm

10 - 1000 mm

12 - 1200 mm

Drive Shaft Material

H - Hastelloy

S - Stainless Steel

Impeller Type

A- Axial

R - Radial

S- Screw

Tube Material

A - Aluminum

K - PVDF

P - Polypropylene

S - Stainless Steel

**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.**

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OPERATING AND SAFETY PRECAUTIONS

READ, UNDERSTAND, AND FOLLOW THIS INFORMATION TO AVOID INJURY AND PROPERTY DAMAGE.



⚠ WARNING Pump and motors are industrial products. They must therefore be installed by qualified, experienced and authorized personnel.

- For your personal security please wear protection glasses and safety gloves before servicing or installing equipment.

⚠ WARNING Secure pump, connections and all contact points to avoid vibration.

- Use proper ventilation.
- Keep containers closed when not in use.
- Keep inflammables away from heat, open flames and sparks.
- Do not bend the pump or operate it when pump tube is under tension.

⚠ WARNING Excessive fluid pressure developed by pump can cause personal injury, pump damage or property damage.

- Fluid pressure developed by the pump does not exceed the maximum as stated in the manual.
- Be sure material hoses and other components are able to withstand fluid pressures developed by this pump. Check all hoses for damage or wear. Be certain dispensing device is clean and in proper working condition.
- Pump tube made from PP, PVDF or Aluminum may not be used in hazardous areas or for pumping inflammable liquids.
- For your personal security please wear protection glasses or face shield, protection suit and safety gloves when handling corrosive or dangerous liquids.

⚠ WARNING Turn off and remove power before disconnecting any cables and before servicing or installing equipment.

- Connect only to grounded power source.

⚠ WARNING HAZARDOUS PRESSURE. Can result in serious injury or property damage. Do not service or clean pump, hoses or dispensing valve while the system is pressurized.

⚠ WARNING HAZARDOUS MATERIALS. Can cause serious injury or property damage. Do not attempt to return a pump to the factory or service center that contains hazardous material. Safe handling practices must comply with local and national laws and safety code requirements.

- Obtain Material Safety Data Sheets on all materials from the supplier for proper handling instructions.

⚠ WARNING MISAPPLICATION HAZARD. Do not use models containing aluminum wetted parts with food products for human consumption. Plated parts can contain trace amounts of lead.

⚠ CAUTION Operate pump only when tightly fixed in the barrel or receptacle.

- Take care that the hose is fixed tight to the pump tube and lead safely to the container to be filled.
- Avoid dry running of the pump tube for this will damage bearings or seal.
- Pump may operate against a closed valve (e.g. nozzle).
- Connect motor carefully to the pump tube and take care that both are locked together.

⚠ CAUTION Verify the chemical compatibility of the pump wetted parts and the substance being pumped, flushed or recirculated. Chemical compatibility may change with temperature and concentration of the chemical(s) within the substances being pumped, flushed or circulated. For specific fluid compatibility, consult the chemical manufacturer.

- Pump may be used only for liquids which the pump materials are chemically resistant.
- For liquids containing clumsy solids use pump tube with strainer only.

⚠ CAUTION Be certain all operators of this equipment have been trained for safe working practices, understand it's limitations, and wear safety goggles / equipment when required.

⚠ CAUTION Do not use the pump for the structural support of the piping system. Be certain the system components are properly supported to prevent stress on the pump parts.

⚠ CAUTION Prevent unnecessary damage to the pump. Do not allow pump to operate when out of material for long periods of time.

- Disconnect power supply from motor when system sits idle for long period of time.
- Do not run the pump unattended.

⚠ WARNING = Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

⚠ CAUTION = Hazards or unsafe practices which could result in minor personal injury, product or property damage.

NOTICE = Important installation, operation or maintenance information.

CONNECTING THE MOTOR AND PUMPING UNIT- USING THE PUMP

⚠ WARNING Pinch hazard. Keep hands and fingers away from clamp ring and pump tube before coupling or uncoupling the motor. Refer image on page no 5.

- To connect pump tube and motor place motor in upright position onto the pump tube and fix it by a quarter turn of the clamp ring.
- When connecting the motor to the pump tube please be aware that the locking pin reaches into the appropriate gap of the pump tube.
- Do not use excessive force when connecting or disconnecting the motor and pumping unit.
- Securely fix the drum pump within container by means of accessories such a drum adapters or clamps.
- Do not immerse the drum pump any deeper than the discharge point or spigot.
- Make sure to connect the hose and pumping unit securely.
- Prior to use, inspect all cables for possible signs of damage.
- Before you connect the mains plug check to make sure that the motor is powered OFF (the "0" half of the switch, flush with the motor housing).
- After plugging the power plug the motor can be turned on and the drum pump be operated.
- Always use great care when working with aggressive or environmentally harmful liquids.
- Avoid spreading liquid onto the floor when taking out the pump from barrel. Please be aware that the liquid inside the tube and the hose will flow back into the receptacle after switching off the motor.

DISASSEMBLING THE DRUM PUMP

- Disconnect the main plug.
- Remove the motor from the pumping unit. To unlock the connector, turn the clamping ring counter-clockwise by a quarter turn and pull off the motor vertically.
- Do not use excessive force.
- Store the motor in as safe place and keep it away from aggressive fumes.

Dismantling the Pump type

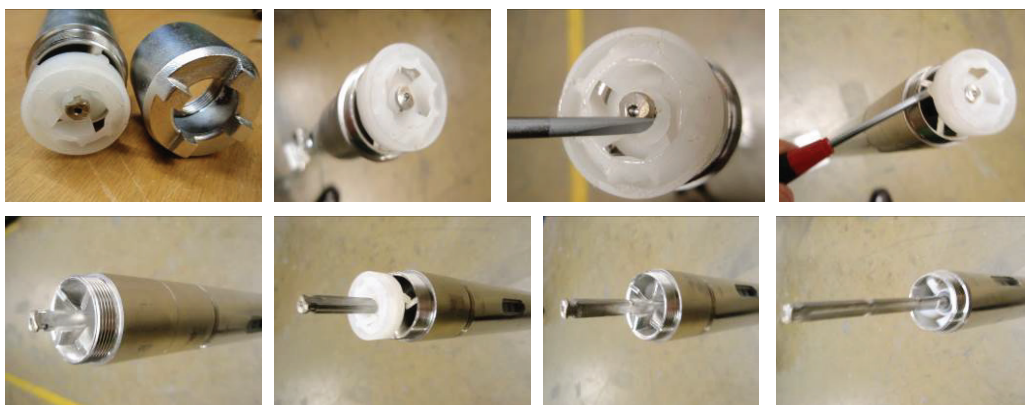
For Axial impeller type:

- Move back the impeller on the shaft. The snap ring is now freely accessible.
- Using a screwdriver, you can remove the snap ring from the shaft.
- Pull the impeller from the shaft (use tools).



For Radial impeller type:

- Unscrew the pump foot. **Left hand thread!** Using a screw driver you can remove the snap ring from the shaft.
- Pull the impeller from the shaft (use tools).
- Unscrew the 1st stage. **Left hand thread!** Remove snap ring.
- Pull the 2nd stage from the shaft. Repeat it with the next stage.



Dismantling the Pump tube:

Type Axial:

- Unscrew the hexagon nut (L) or the slot nut (M) from the Shaft (H). If the impeller (K) is very tight on the shaft (H), it may be helpful to first dismantle the bearing bush (D), which has a left-handed thread.

Type Radial:

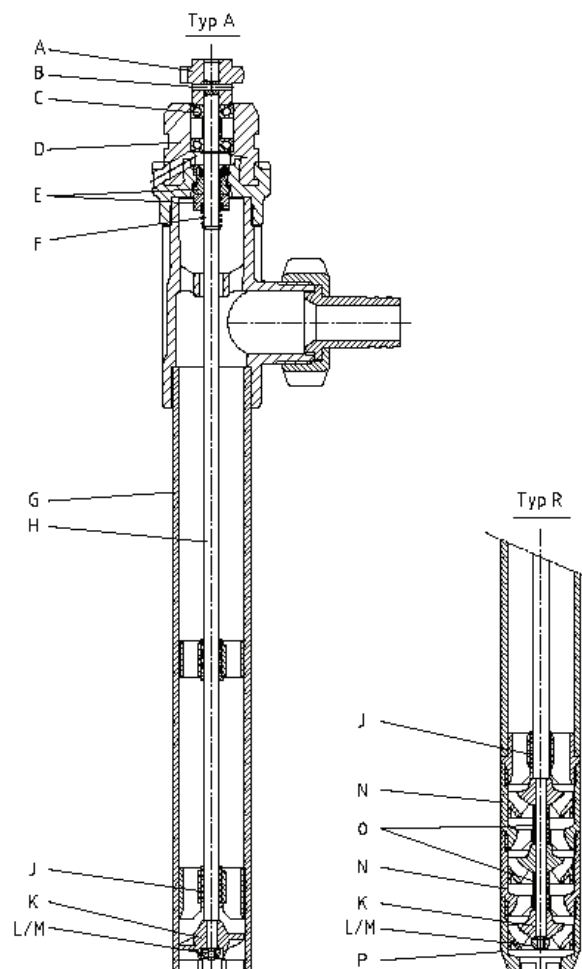
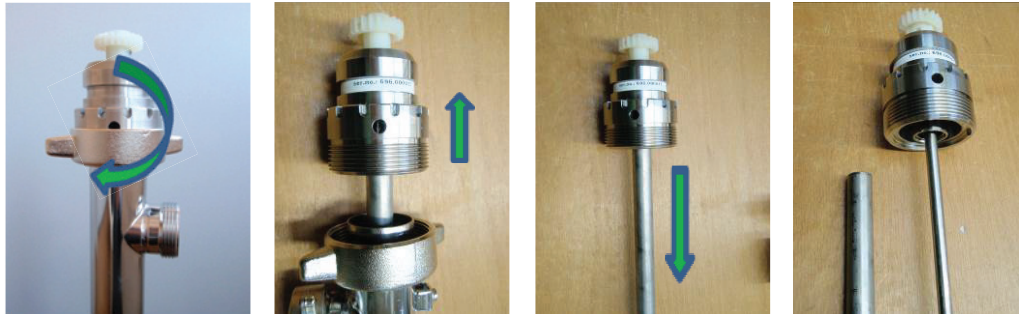
- To dismantle the pump, unscrew the pump foot (P), which has a left-handed thread. Next, unscrew the hexagon nut (L) or the slot nut (M) from the shaft (H). Pull off impeller (K), unscrew guiding ring (N) - left handed thread. Pull off next impeller and distance liner (O). Unscrew next impeller as described before.

Type Screw:

- Unscrew the hexagon nut (L) or the slot nut (M) on the shaft (H). Remove the feed screw (K). If the feed screw is tightly attached to the shaft (H), it may be beneficial to first remove the bearing bush (D), which has a left-handed thread. For the PP version, you should first unscrew the pump foot, which also has a left-handed thread.

All Types:

- Clamp bearing bush (D) into a vise, using soft vise jaws.
- Attention, do not deform the bearing bush with the vise.
- Unscrew the pump tube (G) from the bearing - left handed thread - by hand. If pump tube thread is very tight use pin - fitting properly into the outlet - or hose connector as lever to open the thread. Then pull shaft (H) along with bearing bush (D) out of the pump tube (G).
- To dismantle the mechanical seal (E) take off snap ring (F) and pull the mechanical seal down along the shaft (H). This paragraph does not apply to the seal less (SL) pump tubes.
- The coupling (A) can be removed from the shaft after taking off the clamping sleeve (B). This also makes the roller bearings (C) accessible. The plain bearing (J) is pressed into its seat and can be carefully pressed out again.
- To assemble the pump follow above instructions in the opposite sequence.



CLEANING

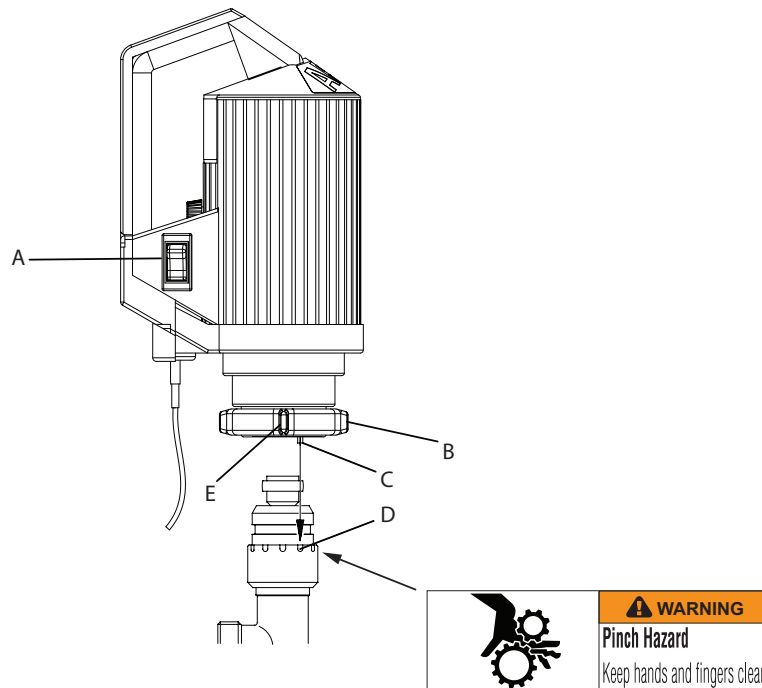
- Clean pump carefully after use, especially if corrosive liquids or liquids which tend to crystallize have been pumped.
- Regular cleaning will extend your pump's service life.
- To clean the pumping unit, flush it using suitable cleaning liquid or simply operate the pump in cleaning liquid for a short while. Make sure that the cleaning liquid is chemically compatible with the pumping unit.
- Do not immerse the motor into the cleaning liquid.
- Allow the pumping unit to dry thoroughly.
- The ball-bearings are permanently lubricated and do not require additional lubrication.

MAINTENANCE, SERVICE AND STORAGE

For storing the ARO drum pump, store the pump in a dry, dust-free environment, protected from impacts, vibrations, temperature extremes and in an environment with relative humidity less than 90% and make sure to protect it against mechanical damage. Prevent the pump from falling down when setting it aside for storage. If the pump falls down, the motor can be damaged.

The bearings are permanently lubricated and do not require additional lubrication. Take great care to keep the motor's venting slots clean and do not cover them. Avoid unnecessary mechanical impact or shock.


Regularly inspect the connection line for signs of damage. If any damage is found, replace with an original connection line or comparable rubber hose (three-pole).



WARNING: Pinch hazard. Keep hands and fingers away from clamp ring (B) and pump tube (D) before coupling or uncoupling the motor.

CERTIFICATION

Certification Standards and Markings

Description	Directive	Applied harmonized standards:	Marking
EC Machinery Directive	2006/42/EC	EN ISO 12100 : 2010 EN 809 : 2009	

WARRANTY DECLARATION

Ingersoll-Rand / ARO®, through its Reseller, warranty the products to be free of defects in material and workmanship, as determined by ARO inspection, within (24) TWENTY FOUR MONTHS from the date of placing the product in operation with the initial end customer or (26) TWENTY SIX MONTHS from the date of shipment, whichever occurs first. **Accordingly, the Warranty is not available for products purchased from unauthorized sellers, because IR cannot oversee or take action to correct product quality issues caused by unauthorized sellers.** This exclusion includes all products that are purchased from unauthorized sellers, including unauthorized Internet sites and unauthorized storefronts on online marketplaces.

Ingersoll-Rand/ARO® will provide a new part or repaired part, at its election, in place of any part which is found upon its inspection to be defective in material and workmanship during the period described above. Such part will be repaired or replaced without charge to the initial end customer during normal working hours at the place of business of a Reseller authorized to sell the type of Product involved or other establishment authorized by Company. Initial end customer must present proof of purchase (and purchase date) at the time of exercising this warranty and ship the product pre-paid authorized repair facility.

This warranty also does not apply to failures occurring as a result of abuse, misuse, negligent repairs, corrosion, substitution of non-Ingersoll Rand / ARO® parts, erosion and normal wear and tear, alterations or modifications made to the Products without express written consent of Ingersoll-Rand/ARO®, or failure to follow the recommended operating practices and maintenance procedures as provided in the product's operating and maintenance publications.

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