

## WARRANTY

***Use only MASTERFLEX precision tubing with MASTERFLEX pumps to ensure optimum performance. Use of other tubing may void applicable warranties.***

The Manufacturer warrants this product to be free from significant deviations from published specifications. If repair or adjustment is necessary within the warranty period, the problem will be corrected at no charge if it is not due to misuse or abuse on your part, as determined by the Manufacturer. Repair costs outside the warranty period, or those resulting from product misuse or abuse, may be invoiced to you.

***The warranty period for this product is 2 years from the date of purchase.***

## PRODUCT RETURN

To limit charges and delays, contact the seller or Manufacturer for authorization and shipping instructions before returning the product, either within or outside of the warranty period. When returning the product, please state the reason for the return. For your protection, pack the product carefully and insure it against possible damage or loss. Any damages resulting from improper packaging are your responsibility.

## TECHNICAL ASSISTANCE

If you have any questions about the use of this product, contact the Manufacturer or authorized seller.

## OPERATING MANUAL

**MASTERFLEX<sup>®</sup> I/P<sup>®</sup>**

### AIR-POWERED PUMP DRIVE

Model No.

**07589-30**

**MASTERFLEX<sup>®</sup>**

(US & Canada only) Toll Free 1-800-MASTERFLEX • 1-800-637-3739  
(Outside US & Canada) 1-847-381-7050

[www.masterflex.com](http://www.masterflex.com) • [techinfo@masterflex.com](mailto:techinfo@masterflex.com)

\*EN809 manufactured by:

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Barrington, IL 60010

A-1299-0714B

Edition 07

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# PUMP FOR LIQUIDS ORIGINAL INSTRUCTIONS

## SPECIFICATIONS

### Output:

|                         |                      |
|-------------------------|----------------------|
| Pump Speed:             | 100 to 650 rpm       |
| Torque output, maximum: | 360 oz-in (26 kg-cm) |
| Regulation:             | ± 10%                |
| Power Output:           | 3/4 hp (560 W)       |

### Input:

|                 |                                            |
|-----------------|--------------------------------------------|
| Compressed air: | 24 cfm (0.68 m³/min) @ 100 psig (10.3 bar) |
|-----------------|--------------------------------------------|

### Construction:

|                         |                                                                |
|-------------------------|----------------------------------------------------------------|
| Dimensions (W × H × D): | 8-1/2 in × 11-1/4 in × 12-5/8 in (21.6 cm × 28.6 cm × 32.1 cm) |
| Weight:                 | 18 lbs (8.2 kg)                                                |
| Enclosure Rating:       | Not Applicable                                                 |

### Environment:

|                                                     |                                                                                                        |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Operating Temperature:                              | 1°C to 40°C (34°F to 104°F)                                                                            |
| Storage Temperature:                                | -10°C to 65°C (+14°F to 149°F)                                                                         |
| Humidity:<br>(non-condensing)                       | 20% to 80%                                                                                             |
| Altitude:                                           | Less than 2000 m                                                                                       |
| North American Rating:                              | Class I, Division 2, Groups A, B, C, & D, T6                                                           |
| ATEX Rating:                                        | CE  II 3 G c IIC T6 |
| Group:                                              | II (Non-mining equipment)                                                                              |
| Category:                                           | 3 (No ignition source)                                                                                 |
| Zone:                                               | 2 (Infrequent exposure)                                                                                |
| Type of Atmosphere:                                 | G (Gas)                                                                                                |
| Gas Group                                           | IIC (Hydrogen/Acetylene)                                                                               |
| Method of Protection:                               | "c" (Non-electrical equipment construction)                                                            |
| Temperature Classification:                         | T6 (85°C max. surface temperature)                                                                     |
| Chemical Resistance:<br>brass, aluminum and plastic | Exposed materials are painted CRS,                                                                     |
| Compliance (for CE mark):                           | EN809 (EU Machine Directive)<br>EN13463-1 and EN13463-5<br>(EU ATEX Directive)                         |

## MAINTENANCE

The air motor is a rotary vane type motor. Lubrication is necessary for the bearings, shaft seals and rust prevention.

Excessive moisture in the air line can cause rust formation in the motor and can cause ice to form in the muffler due to expansion of air through the motor.

### RECOMMENDED LUBRICANTS

Use a misting type oil rated 50 to 200 SSU (ISO Grade 7 to 46) at 100°F (38°C). Unscrew the bowl to fill the lubricator. Press up on the bottom drain to empty bowl.

### CLEANING

Keep the drive enclosure clean with mild detergents. Never immerse nor use excessive fluid.

### DRAIN OPERATION

The filter/regulator assembly has a manual drain. Check it frequently for water accumulation. Open drain by pressing up on bottom of bowl.

### TROUBLESHOOTING

If drive does not operate, disconnect power:

- Check pump head for tubing jam.
- Check air supply.
- Check lubricant level.

Contact your dealer for further service needs.

### REPLACEMENT PARTS AND ACCESSORIES

07055-52, Replacement air motor

07042-85, Replacement regulator/lubricator

## SAFETY PRECAUTIONS

**WARNINGS:**  *Tubing breakage may result in fluid being sprayed from pump. Use appropriate measures to protect operator and equipment.*

*The air supply must be disconnected from pump before removing or installing tubing. Fingers or loose clothing could get caught in drive mechanism. Do not operate this pump without cover or interlock door properly closed and latched. Rotating parts can cause serious injury.*

*To reduce risk of injury, do not pump materials hotter than 150 degrees Fahrenheit, (65.5°C).*

*Periodically examine bearings and moving parts for excessive wear that can cause overheating of surfaces from friction.*

*Select tubing for chemical compatibility. Ground or electrically bond containers during fluid transfer to avoid electrostatic charge buildup that can ignite vapors when discharged. Refer to NFPA 77.*

**CAUTION:**  *Do not exceed 650 rpm. Speeds in excess of 650 rpm may cause damage to the unit.*

*Do not attempt to use other materials in lieu of recommended tubing, as pump performance could be severely compromised with possible damage to the pump.*

**ATEX Rating:** The model is rated as Group II, Category 3 (Zone 2) equipment using constructional safety (c) protection, with a T6 (<85° C) temperature classification for use in Gas Group IIC (acetylene) environments:

CE  II 3 G c IIC T6

**North American Rating:** Class I, Division 2, Groups A, B, C, & D, T6

## Explanation of Symbols

### CAUTION:



**Risk of Danger. Consult Operator's manual for nature of hazard and corrective actions.**

### CAUTION:



**Risk of crushing. Keep fingers away from rotor while pump is in operation. Stop pump before loading or unloading tubing.**

### CAUTION:



**Hot Surface. Do not touch.**

### WARNING:



**Risk of Ignition. Periodically examine bearings and moving parts for excessive wear that can cause overheating of surfaces from friction. Ground or electrically bond containers during fluid transfer to avoid electrostatic charge buildup that can ignite vapors when discharged.**



## WARNING: PRODUCT USE LIMITATION

This product is not designed for, nor intended for use in, patient-connected applications, including, but not limited to, medical and dental use, and, accordingly, has not been submitted for FDA approval. If drive is used in a manner not specified in this manual the protection provided by the equipment may be impaired.

## SETUP AND DRIVE OPERATION

### INTRODUCTION AND GENERAL DESCRIPTION

This air-powered pump drive when used with a MASTERFLEX® ATEX-rated I/P® Pump Head, is an excellent variable-flow pump for hazardous-duty applications, when properly grounded, or when electrical power is not available.

### VARIETY OF PUMP HEADS ACCEPTED

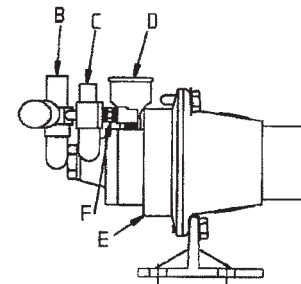
Mount up to 2 MASTERFLEX I/P compatible Pump Heads. See individual Pump Heads for flow rates.

### SETUP AND DRIVE OPERATION

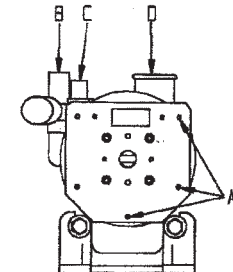
1. Unpack the drive, save packing material until proper product operation has been verified.
2. Install pressure gauge, pressure regulator/lubricator/filter assembly (B, C) muffler (D) and pipe nipple (F).  
See Figure 1 for proper orientation. (All items and fittings included.)  
Use thread seal for all connections to reduce the possibility of air leakage.
3. Connect compressed air line to 1/4 NPT connection on regulator.
4. Mount Pump Head and load tubing. (See Pump Head manual.)
5. Turn on compressed air line to start pumping. (Maximum: 100 psig inlet.)
6. Adjust flow rate with the adjustment knob on top of the regulator.  
Vary flow rate from 20 to 100 psig. At higher pressures, the pump speed may exceed 650 rpm. **DO NOT EXCEED 650 RPM.**  
(Lock flow rate by using snap-action push-pull knob on filter regulator B.)
7. For continuous-duty or high-speed application, use of the lubricator is recommended. Adjust the lubricator with the adjustment knob on top.  
For higher speeds, set lubricator to provide 1-3 drops/minute. Use a lower setting for lower speeds. See MAINTENANCE for RECOMMENDED LUBRICANTS. (Lock lubrication rate by using snap-action push-pull knob.)

**A. Pump Head Mounting Holes**  
**B. Filter/Regulator Control Knob**  
**C. Lubricator Control Knob**

**D. Muffler**  
**E. Air Motor**  
**F. Pipe Nipple**



Side view of drive



Front view of drive

Figure 1