For use with high performance finishing and coating pumps in hazardous or non-hazardous locations. For professional use only.

Models M02xxx, M04xxx, M07xxx, M12xxx, M18xxx, and M34xxx

100 psi (0.7 MPA, 7.0 bar) Maximum Working Pressure

Important Safety Instructions

Read all warnings and instructions in this manual. For complete warnings and instructions see your pump or package manual. Hazard symbols refer to specific procedure risks. Save all instructions.

See page 3 for model information.
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Related Manuals

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<thead>
<tr>
<th>Manual</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>312792</td>
<td>Merkur Displacement Pump</td>
</tr>
<tr>
<td>312793</td>
<td>Merkur Bellows Displacement Pump</td>
</tr>
<tr>
<td>312794</td>
<td>Merkur Pump Assembly</td>
</tr>
<tr>
<td>312795</td>
<td>Merkur Bellows Pump Assembly</td>
</tr>
<tr>
<td>312797</td>
<td>Merkur Spray Packages, AA and Airless, Ambient</td>
</tr>
<tr>
<td>312798</td>
<td>Merkur Electrostatic Spray Packages</td>
</tr>
<tr>
<td>312799</td>
<td>Merkur Bellows Spray Packages, AA and Airless</td>
</tr>
<tr>
<td>313255</td>
<td>Merkur Heated Spray Packages</td>
</tr>
</tbody>
</table>
## Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

<table>
<thead>
<tr>
<th>![WARNING]</th>
<th>FIRE AND EXPLOSION HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable fumes, such as solvent and paint fumes, in <strong>work area</strong> can ignite or explode. To help prevent fire and explosion:</td>
<td></td>
</tr>
<tr>
<td>• Use equipment only in well ventilated area.</td>
<td></td>
</tr>
<tr>
<td>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</td>
<td></td>
</tr>
<tr>
<td>• Keep work area free of debris, including solvent, rags and gasoline.</td>
<td></td>
</tr>
<tr>
<td>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</td>
<td></td>
</tr>
<tr>
<td>• Ground all equipment in the work area. See <strong>Grounding</strong> instructions.</td>
<td></td>
</tr>
<tr>
<td>• Use only grounded hoses.</td>
<td></td>
</tr>
<tr>
<td>• Hold gun firmly to side of grounded pail when triggering into pail.</td>
<td></td>
</tr>
<tr>
<td>• If there is static sparking or you feel a shock, <strong>stop operation immediately</strong>. Do not use equipment until you identify and correct the problem.</td>
<td></td>
</tr>
<tr>
<td>• Keep a working fire extinguisher in the work area.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>![WARNING]</th>
<th>EQUIPMENT MISUSE HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misuse can cause death or serious injury.</td>
<td></td>
</tr>
<tr>
<td>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</td>
<td></td>
</tr>
<tr>
<td>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <strong>Technical Data</strong> in all equipment manuals.</td>
<td></td>
</tr>
<tr>
<td>• Use fluids and solvents that are compatible with equipment wetted parts. See <strong>Technical Data</strong> in all equipment manuals. Read fluid and solvent manufacturer’s warnings. For complete information about your material, request MSDS forms from distributor or retailer.</td>
<td></td>
</tr>
<tr>
<td>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer’s replacement parts only.</td>
<td></td>
</tr>
<tr>
<td>• Do not alter or modify equipment.</td>
<td></td>
</tr>
<tr>
<td>• Use equipment only for its intended purpose. Call your distributor for information.</td>
<td></td>
</tr>
<tr>
<td>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</td>
<td></td>
</tr>
<tr>
<td>• Do not kink or over bend hoses or use hoses to pull equipment.</td>
<td></td>
</tr>
<tr>
<td>• Keep children and animals away from work area.</td>
<td></td>
</tr>
<tr>
<td>• Comply with all applicable safety regulations.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>![WARNING]</th>
<th>SKIN INJECTION HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. <strong>Get immediate surgical treatment.</strong></td>
<td></td>
</tr>
<tr>
<td>• Do not point gun at anyone or at any part of the body.</td>
<td></td>
</tr>
<tr>
<td>• Do not put your hand over the spray tip.</td>
<td></td>
</tr>
<tr>
<td>• Do not stop or deflect leaks with your hand, body, glove, or rag.</td>
<td></td>
</tr>
<tr>
<td>• Do not spray without tip guard and trigger guard installed.</td>
<td></td>
</tr>
<tr>
<td>• Engage trigger lock when not spraying.</td>
<td></td>
</tr>
<tr>
<td>• Follow <strong>Pressure Relief Procedure</strong> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</td>
<td></td>
</tr>
</tbody>
</table>
### PRESSURIZED EQUIPMENT HAZARD
Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

### MOVING PARTS HAZARD
Moving parts can pinch or amputate fingers and other body parts.
- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** in this manual. Disconnect power or air supply.

### PERSONAL PROTECTIVE EQUIPMENT
You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:
- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection
Models

Check your motor’s identification plate (ID) for the 6-digit part number of your motor. Use the following matrix to define the construction of your motor. For example, motor part number M04LT0 represents an air motor (M), with 400 cc displacement, a 3.5 in. piston diameter and a 2.5 in. stroke (04), low noise exhaust (L), and DataTrak™ monitoring with runaway protection (T). The last digit (0) is unassigned.

<table>
<thead>
<tr>
<th>First Digit</th>
<th>Second and Third Digits (displacement, piston diameter x stroke)</th>
<th>Fourth Digit (Exhaust Type)</th>
<th>Fifth Digit (Data Monitoring)</th>
<th>Sixth Digit</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>(Air Motor)</td>
<td></td>
<td></td>
<td></td>
<td>(not assigned)</td>
</tr>
<tr>
<td>04</td>
<td>200 cc, 2.5 in x 2.5 in.</td>
<td>F* (Flush pump (limited use))</td>
<td>N (None (Compatible with DataTrak with Cycle Count))</td>
<td>0</td>
</tr>
<tr>
<td>04</td>
<td>400 cc, 3.5 in. x 2.5 in.</td>
<td>L (Low noise)</td>
<td>T (Compatible with DataTrak with Runaway Protection)</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>700 cc, 4.5 in. x 2.5 in.</td>
<td></td>
<td>P (Park - Vent valve to be parked in down position (compatible with DataTrak with Cycle Count))</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1200 cc, 6.0 in. x 2.5 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>1800 cc, 7.5 in. x 2.5 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>3400 cc, 7.5 in. x 4.75 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Uses a smaller muffler. Limited use.

Do not operate the air motor without a plumbed exhaust line or muffler installed.

<table>
<thead>
<tr>
<th>Air Motor Part No.</th>
<th>Series</th>
<th>Displacement (cc)</th>
<th>Stroke (in.)</th>
<th>Piston Diameter, in. (mm)</th>
<th>Low Noise</th>
<th>Linear Sensor Compatible</th>
<th>DataTrak Cycle Count Compatible</th>
<th>DataTrak with Runaway Protection Compatible</th>
<th>Park (Lowers to down position)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M02LN0</td>
<td>C</td>
<td>200</td>
<td>2.5</td>
<td>2.5 (63)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M02LH0</td>
<td>A</td>
<td>200</td>
<td>2.5</td>
<td>2.5 (63)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M02LT0</td>
<td>A</td>
<td>200</td>
<td>2.5</td>
<td>2.5 (63)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M04LN0</td>
<td>D</td>
<td>400</td>
<td>2.5</td>
<td>3.5 (89)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M04LT0</td>
<td>D</td>
<td>400</td>
<td>2.5</td>
<td>3.5 (89)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M07LN0</td>
<td>D</td>
<td>700</td>
<td>2.5</td>
<td>4.5 (114)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M07LT0</td>
<td>D</td>
<td>700</td>
<td>2.5</td>
<td>4.5 (114)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M12FN0</td>
<td>D</td>
<td>1200</td>
<td>2.5</td>
<td>6.0 (152)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M12LN0</td>
<td>D</td>
<td>1200</td>
<td>2.5</td>
<td>6.0 (152)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M12LT0</td>
<td>D</td>
<td>1200</td>
<td>2.5</td>
<td>6.0 (152)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M12LP0</td>
<td>D</td>
<td>1200</td>
<td>2.5</td>
<td>6.0 (152)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M18LN0</td>
<td>D</td>
<td>1800</td>
<td>2.5</td>
<td>7.5 (191)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M18LT0</td>
<td>D</td>
<td>1800</td>
<td>2.5</td>
<td>7.5 (191)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>M34LN0</td>
<td>A</td>
<td>3400</td>
<td>4.75</td>
<td>7.5 (191)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
Component Identification

Fig. 1: NXT Air Motor components

Key:
A  Air valve
B  Air inlet, 1/4 in. npt(f) for M02xxx and M04xxx models, 1/2 in. npt(f) for M07xxx, M12xxx, and M18xxx models
C  Muffler (M18xxx models have a second muffler, see inset. Model M12Fxx has smaller mufflers; not shown.)
D  Pilot valve
E  Manifold
F  Solenoid release button (for DataTrak models with runaway protection)
G  Ground screw
H  Solenoid bracket (for DataTrak models with runaway protection)
J  Solenoid (for DataTrak models with runaway protection)
K  Reed switch (DataTrak models)

M18xxx models have two mufflers (C).
Grounding

See Fig. 2. Verify that the ground screw (GS) is attached and tightened securely to the air motor. Connect the other end of the ground wire (U) to a true earth ground.

Accessories

Bleed-type master air valve

- Required in your system to relieve air trapped between it and the air motor when the valve is closed.
- Be sure the valve is easily accessible from the pump and located downstream from the air regulator.

Air regulator

Adjusts air pressure to the motor and fluid outlet pressure of pump. Locate it close to the pump. Install a gauge to read air pressure.

Air filter

Removes harmful dirt and moisture from compressed air supply.
Troubleshooting

**NOTICE**
Check all possible problems and causes before disassembling the pump.

Relieve the pressure before checking or servicing the equipment.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air motor will not run.</td>
<td>DataTrak solenoid engaged (DataTrak models with runaway protection).</td>
<td>Push solenoid release button (118). Remove solenoid and manually move pin.</td>
</tr>
<tr>
<td></td>
<td>Damaged air valve (17).</td>
<td>Replace or service air valve (17). See page 9.</td>
</tr>
<tr>
<td>Air continuously exhausting from muffler.</td>
<td>Damaged air valve plate (105) or cup (112).</td>
<td>Replace or service air valve (17). See page 9.</td>
</tr>
<tr>
<td>Icing inside motor.</td>
<td>Air motor operating at high pressure or high cycle rate.</td>
<td>Reduce pressure, cycle rate, or duty cycle of motor. Reduce dew point of compressed air in moisture coalescing filter.</td>
</tr>
</tbody>
</table>
Repair

Preventive Maintenance Schedule
The operating conditions of your system determine how often maintenance is required. Establish a preventive maintenance schedule by recording when and what kind of maintenance is needed, and then determine a regular schedule for checking your system.

Pressure Relief Procedure

1. Engage the trigger lock.
2. Close the bleed-type master valve.
3. Disengage the trigger lock.
4. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.
5. Engage the trigger lock.
6. Open all fluid drain valves in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to spray again.
7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

For motors with DataTrak: If equipped with a run-away protection solenoid, remove two screws (18) and the solenoid bracket (26). Pull the solenoid (25) out of the air valve.

Repair Air Valve

Replace Complete Air Valve
1. Stop the pump at the middle of its stroke. Relieve the pressure. See procedure at left.
2. Disconnect the air line to the motor.
3. For motors with DataTrak: Remove screw (32) to disconnect the reed switch (31) from the air valve (17).

FIG. 3: Reed switch assembly & air line removal

• Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from skin injection or moving parts.
• Do not lift or move motor while pressurized.
5. Remove screws (18). Remove the air valve (17) and gasket (16*).

6. To repair the air valve, go to Disassemble the Air Valve, step 1 at right. To install a replacement air valve, continue with step 7.

7. Align the new air valve gasket (16* on the manifold, then attach the air valve (17).

8. For motors with DataTrak: If equipped with a runaway protection solenoid, remember to reattach the solenoid bracket and the solenoid.

9. For motors with DataTrak: Use screw to attach the reed switch assembly to the new air valve. Be sure the sensor cables are connected properly (see pump or package manual).

10. Reconnect the air line to the motor.

---

### Replace Seals or Rebuild Air Valve

Air Valve Seal Kits are available. See page 21 to order the correct kit for your pump. Parts are marked †.

Air Valve Repair Kits are available. See page 21 to order the correct kit for your pump. Parts are marked ◆.

Air Valve End Cap Kits are available. See page 21 to order the correct kit for your pump. Parts are marked ※.

#### Disassemble the Air Valve

1. Perform steps 1-5 under Replace Complete Air Valve, page 9.

2. See Fig. 5. Use a 2 mm or 5/64 hex key to remove two screws (109†). Remove the valve plate (105◆).

3. **M02xxx and M04xxx Motors:** Remove the cup (112◆) and spring (111◆).

   **M07xxx, M12xxx, and M18xxx Motors:** Remove the two-piece cup assembly (◆112a, b, and c), and spring (111◆).

4. Remove the snap ring (110◆) from each end. Use the piston to push the end caps (107◆, 117◆) out of the ends. Remove end cap o-rings (106†◆, 119†◆).

5. Remove the piston (102◆). Remove the u-cup seals (108†◆) from each end and the detent assembly (103◆) and detent cam (104◆) from the center.
Apply lubricant.

Fig. 6: Air valve assembly

DataTrak Models with Runaway Protection

Two-Piece Cup for M07xxx, M12xxx, and M18xxx Motors
Reassemble the Air Valve

1. Lubricate detent cam (104♣) and install into housing.

2. Lubricate the u-cups (108†♣) and install on the piston (102♣) with lips facing toward the center of the piston.

3. Lubricate both ends of the piston (102♣) and install it in the housing.

4. Lubricate and install the detent assembly (103♣) into the piston.

5. **Standard models (No DataTrak or DataTrak with cycle count only):** Lubricate new o-rings (106†♣) and install on the end caps (107♣). Install the end caps into the housing.

**DataTrak models with runaway protection solenoid:** Lubricate and install new o-ring (106†♣) on bottom end cap (107♣). Lubricate and install new o-ring (119†♣) and runaway reset button (118) on top end cap (117♣). Install the end caps (107♣, 117♣) into the housing.

6. Install a snap ring (110♣) on each end to hold end caps in place.

7. Install the spring (111♣).

8. **M02xxx and M04xxx Motors:** Lubricate and install the air valve cup (112♣). Align the small round magnet with the air inlet.

9. Install the valve plate (105♣). Tighten the screws (109†♣) to hold it in place.
Replace Pilot Valves

1. Stop the pump at the middle of its stroke. Relieve the pressure. See page 9.

2. Disconnect the air line to the motor.

3. Remove the tie rod shield (TS). Slide the drip shield (DS) down on the tie rods.

4. Use a 10 mm socket wrench to remove the old pilot valves (19) from the top and bottom covers.

5. Lubricate and install the new pilot valves (19). Torque to 95-105 in-lb (11-12 N•m).

Repair Air Motor

NOTE: Air Motor Seal Kits are available. See page 21 for the correct kit for your motor. Parts included in the kit are marked with an asterisk (*). For best results, use all the parts in the kit.

Disconnect the Air Motor

1. Flush the pump, if possible. (See package manual) Relieve the pressure. (See page 9.)

2. Disconnect the air and fluid hoses, the ground wire, and the tie rod shield.

3. Hold the flats of the air motor piston rod with a wrench. Use another wrench to loosen the coupling nut (CN).
Disassemble the Air Motor

1. **For motors with DataTrak:** Remove screw to disconnect the reed switch from the air valve. See Fig. 3, page 9.

2. Use a 10 mm socket wrench to remove four screws (18). Remove the air valve (17) and gasket (16*).

3. Remove the muffler(s).

4. Remove four screws (18) and remove the manifold (15*) and two gaskets (14*).

5. Use a 10 mm socket wrench to remove the pilot valves (19) from the top and bottom cover.

6. Remove the tie bolts.

7. Remove the top cover. Remove the o-ring (9*).

8. Remove the shield (12) from around the cylinder. Remove the cylinder (11).

9. Depending on your displacement pump model, you may need to remove an adapter from the bottom of the piston assembly.

10. Slide the piston assembly (5) straight up off the bottom cover.

**NOTICE**
Do not attempt to take apart the piston assembly (5).

11. Remove o-ring (8*) from around the piston.

12. Remove u-cup seals (3*, 43*), and o-ring (9*) from the bottom cover.

Reassemble the Air Motor

**NOTE:** For easier reassembly, start with the top cover (13) turned over on the workbench and assemble the air motor upside-down.

1. Lubricate and install the o-ring (9*) on the top cover (13).

2. **M07xxx, M12xxx, and M18xxx only:** Install the upper bumper (29) on the top cover (13).

3. Lubricate the inside of the cylinder (11). Lower the cylinder (11) onto the top cover (13).

4. Lubricate and install the o-ring (8*) around the piston (5).

5. Slide the piston assembly (5) down into the cylinder (11). Be sure the o-ring (9*) stays in place.

6. Install the shield (12) around the cylinder (11) and in the groove on the top cover (13).

<table>
<thead>
<tr>
<th>Model</th>
<th>Tie Bolt Hex Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>M02xxx</td>
<td>13 mm</td>
</tr>
<tr>
<td>M04xxx</td>
<td>13 mm</td>
</tr>
<tr>
<td>M07xxx and M12xxx</td>
<td>17 mm</td>
</tr>
<tr>
<td>M18xxx and M34xxx</td>
<td>17 mm</td>
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</table>
7. See Fig. 12. Lubricate and install new u-cup seal with flange (43°) in the bottom of the bearing in the bottom cover (1). The u-cup must face up and the flange must face down. Lubricate and install new u-cup seal (3°) in the top of the bearing. Lips must face up.

8. Lubricate and install the o-ring (9°) on the bottom cover (1).

9. M07xxx, M12xxx, and M18xxx only: Install the piston bumper (28) on the bottom cover (1).

10. See Fig. 13. Carefully place the bottom cover (1) on the cylinder (11), sliding the rod through the bearing. The manifold surfaces of the top and bottom covers must align. Be sure the shield (12) is in the groove on both the top and bottom covers.

11. Install the tie bolts (10) hand tight.

12. Install two gaskets (14°) on the manifold (15). Install the manifold (15). Torque bolts to 95-105 in-lb (10.7-11.9 N•m).

The manifold is reversible for ease of placement of muffler or remote exhaust.

13. Align the air valve gasket (16°) on the manifold, then attach the air valve.

14. Tighten the tie bolts (10) halfway. Work in a criss-cross pattern. Check that the shield remains in the grooves on both covers. Continue tightening the bolts in pattern to the torque specified in the following table.

15. Lubricate and install pilot valves (19) in top and bottom cover. Torque to 95-105 in-lb (11-12 N•m).

16. Reinstall muffler(s).
Torque varies by motor size.
M02xxx-M04xxx: 11-13 ft-lb (15-18 Nm)
M07xxx-M34xxx: 25-30 ft-lb (34-40 Nm)

Apply lubricant.

U-cup faces up. Flange (bottom seal only) faces down. See Fig. 12, page 15.
## Air Motor Parts — All Models

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Qty</th>
<th>M02xxx</th>
<th>M04xxx</th>
<th>M07xxx</th>
<th>M12xxx</th>
<th>M18xxx</th>
<th>M34xxx</th>
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</table>
Ref.  Description                                    Qty  M02xxx  M04xxx  M07xxx  M12xxx  M18xxx  M34xxx  
25    SOLENOID/REED SWITCH, assembly, for DataTrak models with runaway protection, includes 18 (qty. 2 or 4 depending on model), 26, 31, 32, and 33.  1  See Reed Switch (31, this table)  24B565  24B566  24B566  
26    BRACKET, solenoid (for DataTrak models with runaway protection)  1  Not sold separately. See Solenoid/Reed Switch Assembly (25, this table)  
28    BUMPER KIT, includes lower bumper, upper bumper, and screws (M18xxx only)  1  24A914  24A914  24A915  24A915  
29    BUMPER, upper (M18xxx only)  1  Not sold separately. See Bumper Kit (28, this table)  
30    SCREW, M5, flat head (M18xxx only)  3  See Solenoid/Reed Switch Assembly (25, this table)  
31    SWITCH, reed, includes 32 (DataTrak models)  1  24B564  See Solenoid/Reed Switch Assembly (25, this table)  
32    SCREW, reed switch, 8-32 x 1.50, (DataTrak models)  1  Not sold separately. See Solenoid/Reed Switch Assembly (25 this table) or Reed Switch (31, this table)  
34    ADAPTER, muffler M12xxx  M18xxx  1  2  15T560  15T560  
35    LABEL, warning (not shown)  15W719  15W719  15W719  15W719  15W719  15F674  
39    O-RING, upper cover plug  1  Not sold separately. See Upper Cover Assembly (13, this table), Plug (40), or Bushing (41)  110782  
40    PLUG, upper cover (MxxLN0 or MxxLT0 models)  1  24E990  24E990  24E990  24E990  24E990  
43    SEAL, u-cup with flange  1  Not sold separately. See Air Motor Seal Kit (page 21) or Lower Cover Assembly (1, this table)  

* Included in Air Motor Seal Kit. See page 21.  
▲ Replacement Warning labels, signs, tags, and cards are available at no cost.
Air Valve Parts

DataTrak Models with Runaway Protection

Two-Piece Cup for M07xxx, M12xxx, and M18xxx Motors
Air valve parts are not sold individually. The table below shows possible kit options for each part. See page 21 to order the correct kit(s), or full replacement air valves, for your motor.

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>Qty.</th>
<th>Air Valve Repair Kit</th>
<th>Air Valve Seal Kit</th>
<th>Air Valve End Cap Kit</th>
<th>Other</th>
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† Included in Air Valve Seal Kit. See page 21.
◆ Included in Air Valve Repair Kit. See page 21.
★ Included in Air Valve End Cap Kit. See page 21.
# Kits and Accessories

<table>
<thead>
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<th>Kit Description</th>
<th>M02xxx</th>
<th>M04xxx</th>
<th>M07xxx</th>
<th>M12xxx</th>
<th>M18xxx</th>
<th>M34xxx</th>
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<tbody>
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## Dimensions

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<th>B (inch (mm))</th>
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<tbody>
<tr>
<td>M02xxx</td>
<td>6.8 (173)</td>
<td>9.2 (234)</td>
<td>6.2 (157)</td>
<td>4.2 (107)</td>
<td>5.5 (140)</td>
<td>4.5 (2.0)</td>
</tr>
<tr>
<td>M04xxx</td>
<td>7.0 (178)</td>
<td>9.4 (239)</td>
<td>8.4 (213)</td>
<td>6.8 (173)</td>
<td>5.8 (147)</td>
<td>6.7 (3.0)</td>
</tr>
<tr>
<td>M07xxx</td>
<td>7.7 (196)</td>
<td>10.1 (257)</td>
<td>9.4 (239)</td>
<td>6.8 (173)</td>
<td>10.8 (274)</td>
<td>13.3 (6.0)</td>
</tr>
<tr>
<td>M12xxx</td>
<td>7.7 (196)</td>
<td>10.1 (257)</td>
<td>11.4 (290)</td>
<td>8.6 (218)</td>
<td>11.7 (297)</td>
<td>24 (10.9)</td>
</tr>
<tr>
<td>M18xxx</td>
<td>7.7 (196)</td>
<td>10.1 (257)</td>
<td>12.9 (328)</td>
<td>10.1 (257)</td>
<td>14.8 (376)</td>
<td>26.5 (12.0)</td>
</tr>
<tr>
<td>M34xxx</td>
<td>10.0 (254)</td>
<td>12.4 (315)</td>
<td>12.9 (328)</td>
<td>10.1 (257)</td>
<td>15.1 (384)</td>
<td>27.5 (12.5)</td>
</tr>
</tbody>
</table>

![Diagram of Air Motor Dimensions](image)

- **A**: Dimension along the motor's length.
- **B**: Dimension across the motor's width.
- **C**: Dimension from the motor's front to the end.
- **D**: Dimension from the motor's base to the motor's top.
- **E**: Dimension from the motor's front to the motor's end.
Mounting Hole Diagrams

M02xxx (2.5 in.)

- Two M8 mounting holes
- 3 in. (76 mm)
- Three 3/8-24 tie rod holes
- Two M8 x 1.25
- 3-1/4 in. (83 mm) bolt circle
- 2.2 in. (56 mm)

M04xxx (3.5 in.)

- Two M8 mounting holes
- 3 in. (76 mm)
- 4-1/2 in. (114 mm) bolt circle
- 0.55 in. (14 mm) bolt circle
- 5.9 in. (150 mm) bolt circle
- 2.75 in. (70 mm) bolt circle
- 3-1/4 in. (83 mm) bolt circle
- 3.0 in. (76 mm)

M07xxx (4.5 in.)

- Two M8 mounting holes
- 4 in. (102 mm)
- 4-1/2 in. (114 mm) bolt circle
- 0.55 in. (14 mm) bolt circle
- 5.9 in. (150 mm) bolt circle
- 2.75 in. (70 mm) bolt circle
- 2.75 in. (70 mm) bolt circle
- 3.0 in. (76 mm)
Mounting Hole Diagrams

M12xxx (6 in.)

- Two M8 mounting holes
- 4 in. (102 mm)
- 5.906 in. (150 mm) bolt circle
- 2.0 in. (50 mm)
- 5.250 in. (133 mm)
- 3.38 in. (86 mm)
- Four M8 X 1.25 optional mounting holes
- Three 5/8-11 tie rod holes

M18xxx (7.5 in.) and M34xxx (7.5 in.)

- Two M8 mounting holes
- 4 in. (102 mm)
- 5.906 in. (150 mm) bolt circle
- 3.1 in. (78 mm)
- 5.250 in. (133 mm)
- 3.1 in. (78 mm)
- Four M8 X 1.25 optional mounting holes
- Three 5/8-11 tie rod holes
Technical Data

Maximum air inlet pressure ........................ 100 psi (0.7 MPa, 7.0 bar)
Stroke length (all except M34xxx) ............... 2.5 in.
Stroke length (M34xxx only) ..................... 4.75 in.
Air inlet size
  M02xxx – M04xxx ............................... 1/4 in.
  M07xxx – M34xxx ............................... 1/2 in.
Maximum motor speed ............................. 60 cycles per minute
(Do not exceed maximum recommended speed of fluid
pump, to prevent premature pump wear.)
Sound data
  M02xxx Air Motor
  Sound power* .................................... 82.8 dBA
  Sound pressure** ............................... 72.9 dBA
  M04xxx Air Motor
  Sound power* .................................... 83.4 dBA
  Sound pressure** ............................... 73.5 dBA
  M07xxx and M12xxx Air Motor
  Sound power* .................................... 80.1 dBA
  Sound pressure** ............................... 70.2 dBA
  M18xxx and M34xxx Air Motor
  Sound power* .................................... 78.8 dBA
  Sound pressure** ............................... 68.9 dBA

* Sound power at 70 psi (0.48 MPa, 4.8 bar), 20 cpm. Sound power measured per ISO-9614-2.
** Sound pressure was tested 3.28 feet (1 m) from equipment.
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