

# On-Demand Pump

312010 rev.B

***For pumping non-flammable fluids including motor oils, hydraulic fluid, and antifreeze. Do not use to pump water.***

**Model 260550, 2.3 gpm (9 lpm), 115 VAC**

*370 psi (2.59 MPa, 25.9 bar) Maximum Working Pressure*



## **Important Safety Instructions**

Read all warnings and instructions in this manual. Save these instructions. See Table of Contents on page 2.

**Patent No. 6,662,970**



# Contents

|                               |          |                              |           |
|-------------------------------|----------|------------------------------|-----------|
| <b>Warnings</b> .....         | <b>2</b> | <b>Operation</b> .....       | <b>6</b>  |
| <b>Installation</b> .....     | <b>4</b> | <b>Troubleshooting</b> ..... | <b>7</b>  |
| System Plumbing .....         | 4        | <b>Parts</b> .....           | <b>9</b>  |
| Mounting Pump on Tank .....   | 5        | <b>Technical Data</b> .....  | <b>10</b> |
| Connection Hose .....         | 5        |                              |           |
| Electrical Installation ..... | 5        |                              |           |
| Priming .....                 | 6        |                              |           |

## Warnings

The following general warnings are for the setup, use, grounding, maintenance, and repair of this equipment. Additional, more specific warnings may be found throughout the body of this manual where applicable. *Symbols appearing in the body of the manual refer to these general warnings. When these symbols appear throughout the manual, refer back to these pages for a description of the specific hazard.*

|  <b>WARNING</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <b>FIRE AND EXPLOSION HAZARD</b><br>When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion: <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Eliminate all ignition sources, such as cigarettes and portable electric lamps.</li> <li>• Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.</li> <li>• Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.</li> <li>• Ground all equipment in the work area.</li> <li>• Use only grounded hoses.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a fire extinguisher in the work area.</li> </ul> |
|               | <b>ELECTRIC SHOCK HAZARD</b><br>Improper grounding, setup, or usage of the system can cause electric shock. <ul style="list-style-type: none"> <li>• Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.</li> <li>• Connect only to grounded power source.</li> <li>• All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|  <b>WARNING</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• Protective eyewear</li> <li>• Clothing and respirator as recommended by the fluid and solvent manufacturer</li> <li>• Gloves</li> <li>• Hearing protection</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | <p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop dispensing and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | <p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Data</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with authorized replacement parts only.</li> <li>• Do not alter or modify equipment.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul> |
|               | <p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

# Installation



This On-Demand dispensing pump is a positive displacement gear pump. The motor is a totally enclosed 115 VAC unit, with sealed bearings, and requires minimal maintenance.

When unpacking, check for shipping damage. Report any shipping damage to delivering carrier immediately. See **Parts**, page 9.

## System Plumbing

The On-Demand pump delivers a constant output flow even with a varying load. It is important the system plumbing be of adequate size to handle the rated pump flow at a pressure drop that is less than maximum rated pressure for the pump model used. All plumbing and hoses used in the installation should have a pressure rating compatible with the pump.

### Flow and pressure switch settings

| Model No. | Pressure Switch Setting      | Output Flow Rate  |
|-----------|------------------------------|-------------------|
| 260550    | 370 psi (2.59 MPa, 25.9 bar) | 2.3 gpm (8.9 lpm) |

If the system pressure drop at the rated pump flow is greater than the pressure switch setting, the motor will cycle on and off when the hose valve is opened to dispense fluid. If this happens, reduce system pressure by using a larger diameter hose or using a less restrictive valve.

## Mounting Pump on Tank

1. Install supplied bung adapter fitting (12) into the tank bung port and tighten.
2. Use a 3/4 in. (19 mm) steel or PVC pipe with 3/4 npt pipe threads on one end as a suction tube.
3. Measure the length from the top of the bung adapter to the bottom of the tank. Cut the suction tube length to 1/2 in. (13 mm) less than this measurement.
4. Apply pipe thread sealant to suction tube threads and install pipe into pump inlet.
5. Insert suction tube assembly through bung adapter and lower pump onto the bung adapter.
6. Position the pump so that the outlet port is in the desired position. Tighten the swivel nut on the pump to the bung adapter.

## Connection Hose

A flexible hose must be used to connect the pump outlet to solid plumbing. The pump outlet port is a -12 JIC 37 degree flare male fitting.

## Electrical Installation

The pump uses a 115 VAC, single phase, 60 Hz motor. The electrical circuit supplying the motor must be on a circuit breaker and be rated to carry a minimum current greater than the motor full load current.

Motor current rating: 10.6 amps full load

1. Turn power switch OFF.
2. Remove conduit box cover by removing screws in the opposite corner of cover. A 1/2 in. (13 mm) conduit opening is provided on the right side of the conduit box just below the pressure switch.
3. Connect the 115 VAC to the black wire in the conduit box.
4. Connect the neutral supply wire to the two white wires in the conduit box. Make sure both white wires are connected. The small diameter wire is the pressure switch.
5. Connect ground wire to the motor housing using the green screw in the motor housing inside the conduit box.
6. Replace conduit cover, making sure gasket is in place.
7. Finish wiring the electrical circuit to the breaker box.

## Priming

1. Attach the connection hose to the outlet of the pump. Insert the opposite end of the hose into the tank through the fill opening.
2. Turn power switch ON. The pump should prime in a few seconds. If priming does not start, see steps 4-6.
3. When pumps starts to prime, turn power switch OFF. Go to step 7.
4. If priming does not start, remove the outlet fitting (18) by disconnecting the small diameter sensing hose (17) from the outlet fitting and remove the fitting.
5. Fill the outlet port of the pump to within 1/2 in. (13 mm) of the top.
6. Replace the outlet fitting and reconnect the sensing hose. Repeat step 2. Once the pump is primed the inlet check valve will prevent loss of prime.
7. Attach the connection hose to the system plumbing.

## Operation



When system is not in use, always turn power switch OFF. Failure to do so can result in a spill if a hose ruptures or a leak occurs in the system plumbing. If a leak occurs, pressure will drop in the system signaling the pump to turn on.



See **Parts**, page 9 for reference numbers.

The on-demand dispensing pumps sense the pump outlet pressure and turn the pump on or off depending on the pressure. When a dispensing valve is opened, the pressure in the system drops and the pump will start pumping fluid. When the dispensing valve is closed, the pressure increases and the pump will stop.

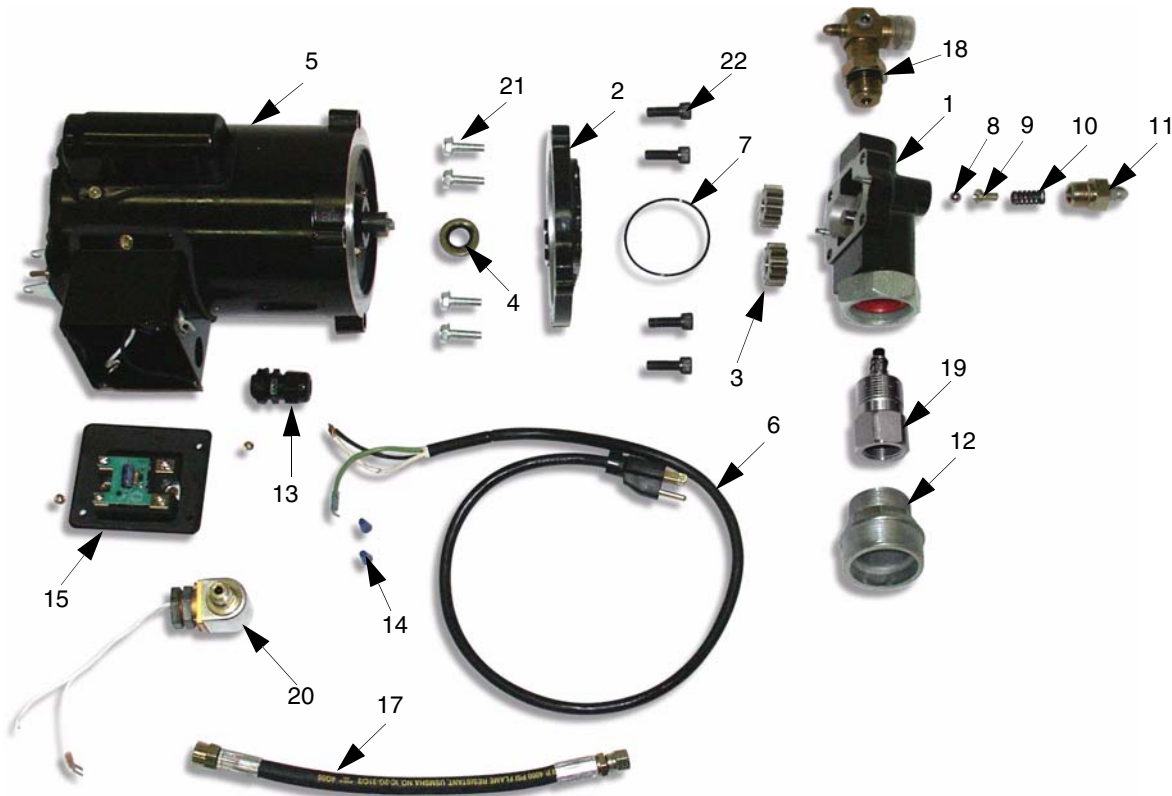
1. To start the pump, turn power switch ON. Power switch is located on the back side of the motor.
2. Place the outlet of the dispensing valve into the fill tube of the vehicle.
3. Open the dispensing valve to the full open position until the desired amount of fluid has been dispensed.
4. To stop dispensing, close the dispensing valve.

# Troubleshooting

| Problem                             | Cause                                     | Solution                                                                                                                                    |
|-------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Motor runs but pump will not prime. | Dirt under pressure relief valve or seal. | Remove pressure relief valve and inspect, clean, or replace if damaged.                                                                     |
|                                     | Oil depth too high to prime.              | See <b>Priming Pump</b> , page 6.                                                                                                           |
|                                     | Worn or damaged gears.                    | Remove cover and inspect gears. Replace if worn or damaged.                                                                                 |
|                                     | Oil level low.                            | Refill tank.                                                                                                                                |
|                                     | Cover seal damaged.                       | Replace if worn or damaged.                                                                                                                 |
|                                     | Air leak in suction tube.                 | Inspect all joints in suction tube, make sure all joints have sealant applied.                                                              |
|                                     | Air lock in system.                       | This may occur if filter or meter or automatic shut-off nozzle is used. If this occurs, fill pump and meter with fluid through top of pump. |
|                                     | Motor does not run at proper speed.       | Check electric connections. Ensure supply voltage is at the proper level.                                                                   |
| Oil leaking in motor mount.         | Faulty or damaged motor shaft seal.       | Replace shaft seal (4).                                                                                                                     |
|                                     | Motor shaft worn.                         | Replace motor (5) if shaft has groove worn in seal area.                                                                                    |
| Unit pumps but output flow is low.  | Air leak in suction tube.                 | Check to make sure all joints in suction tube are sealed.                                                                                   |
|                                     | Suction tube too close to tank bottom.    | Suction tube must have a 2 in. (51 mm) minimum clearance.                                                                                   |
|                                     | Tank empty.                               | Refill tank.                                                                                                                                |
|                                     | Tank not vented.                          | Tank must be vented to atmosphere.                                                                                                          |
|                                     | Worn or damaged gears.                    | Remove cover and inspect gears (3). Replace if worn or damaged.                                                                             |
|                                     | Damaged motor.                            | Replace motor (5).                                                                                                                          |
|                                     | Clogged hose or nozzle.                   | Inspect and clean.                                                                                                                          |

| Problem                             | Cause                                                | Solution                                                            |
|-------------------------------------|------------------------------------------------------|---------------------------------------------------------------------|
| Motor stalls when nozzle is closed. | Bypass relief valve is stuck.                        | Inspect relief valve, making sure ball is free. Replace if damaged. |
|                                     | Low supply voltage.                                  | Check supply voltage.                                               |
|                                     | Gears damaged and binding.                           | Inspect gears. Gears should turn freely. Replace if damaged.        |
|                                     | Faulty pressure switch.                              | Replace pressure switch (20).                                       |
| Motor overheating.                  | Gears binding.                                       | Check to make sure gears turn freely on shaft.                      |
|                                     | Clogged hose or nozzle.                              | Inspect and clean if required.                                      |
|                                     | Operating pump more than 30 minutes continuous duty. | Limit operation to 30 minutes per hour.                             |
| Switch will not turn pump on.       | Blown fuse or tripped breaker.                       | Replace fuse or reset breaker.                                      |
|                                     | Electrical problem.                                  | Check that supply voltage is proper and getting to pump.            |
|                                     | Defective pressure switch (20).                      | Check and replace if defective.                                     |
|                                     | Damaged or defective motor.                          | Check motor (5), replace if damaged or defective.                   |
|                                     | Outlet pressure above pressure switch limit.         | Open dispense valve to relieve pressure.                            |

# Parts



| Ref. No. | Description                   | Qty. | Ref. No. | Description                           | Qty. |
|----------|-------------------------------|------|----------|---------------------------------------|------|
| 1a       | PUMP BODY                     | 1    | 13       | STRAIN RELIEF                         | 1    |
| 1b       | PUMP BODY, high flow          | 1    | 14       | NUT, wire                             | 2    |
| 2        | ADAPTER, pump motor           | 1    | 15       | RELAY, AC (for models with AC motors) | 1    |
| 3a       | GEAR, pump                    | 2    | 17       | HOSE, 1/4 in. x 12 in.                | 1    |
| 3b       | GEAR, pump, high flow         | 2    | 18       | CHECK VALVE, outlet                   | 1    |
| 4        | SEAL, shaft                   | 1    | 19       | CHECK VALVE, inlet                    | 1    |
| 5        | MOTOR, 115 VAC, 3/4 HP        | 1    | 20       | PRESSURE SWITCH, 370 psi              | 1    |
| 7        | O-RING, -144 nitrile (Buna N) | 1    | 21       | SCREW, cap, 5/16-18 x 1 in.           | 4    |
| 8        | BALL, relief valve            | 1    | 22       | SCREW, cap, 3/8-16 x 1 in.            | 4    |
| 9        | GUIDE, spring                 | 1    | 23▲      | LABEL, warning (not shown)            | 1    |
| 10       | SPRING, relief valve          | 1    |          | Part no. 15G901                       |      |
| 11       | HOUSING, relief valve         | 1    |          |                                       |      |
| 12       | ADAPTER, bung                 | 1    |          |                                       |      |

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

## Kits

| Kit Number | Description                      | Includes Items                            |
|------------|----------------------------------|-------------------------------------------|
| 260061     | ADAPTER, bung                    | 12                                        |
| 260120     | KIT, fluid                       | 1a, 2, 3a, 4, 7, 8, 9, 10, 11, 17, 21, 22 |
| 260276     | KIT, AC relay                    | 15                                        |
| 260292     | KIT, packing                     | 4, 7                                      |
| 260294     | KIT, gear                        | 3a, 4, 7                                  |
| 260296     | KIT, pressure relief             | 8, 9, 10, 11                              |
| 260501     | KIT, inlet check valve assembly  | 19                                        |
| 260502     | KIT, outlet check valve assembly | 18                                        |
| 260503     | KIT, 370 psi pressure switch     | 20a                                       |
| 260508     | KIT, motor, 115 VAC ¾ HP         | 5a, 6, 13, 14, 15, 23                     |

## Technical Data

|                          |                                                                                                               |
|--------------------------|---------------------------------------------------------------------------------------------------------------|
| Maximum Working Pressure | 370 psi (2.59 MPa, 25.9 bar)                                                                                  |
| Output Flow              | 2.3 gpm (9 lpm)                                                                                               |
| Inlet Size               | 3/4 in. npt                                                                                                   |
| Outlet Size              | -12 JIC male                                                                                                  |
| Horsepower               | 3/4 hp                                                                                                        |
| Max Current              | 10.6 amps                                                                                                     |
| Wetted parts             | carbon steel with zinc plating, stainless steel, galvanized steel, aluminum, nitrile, rubber, PVC, PVC cement |