



# DP-20 Diaphragm Hand Pump

## Owner's Manual



# STOP

**DO NOT RETURN  
THIS PRODUCT  
TO THE STORE!**

Please contact GPI before returning any product. If you are missing parts or experience problems with your installation, our Customer Support Department will be happy to assist you.

GPI Customer Support  
**800-835-0113 or  
316-686-7361**

To the owner...

Congratulations on receiving your GPI DP-20 Diaphragm Hand Pump. We are pleased to provide you with hand pump designed to give you maximum reliability and efficiency.

Our business is the design manufacture, and marketing of liquid handling, agricultural, and recreational products. We succeed because we provide customers with innovative, reliable, safe, timely, and competitively-priced products. We pride ourselves in conducting our business with integrity and professionalism.

We are proud to provide you with a quality product and the support you need to obtain years of safe, dependable service.

President  
Great Plains Industries, Inc.

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## GENERAL INFORMATION

The GPI DP-20 Diaphragm Hand Pump is designed to manually pump petroleum-based liquids from a tank with a 2-inch bung.



The GPI DP-20 Diaphragm Hand Pump is approved for use with Gasoline (up to 15% alcohol blends such as E15), diesel fuel (up to 20% biodiesel blends such as B20), kerosene, petroleum products such as medium oil (up to 30 weight) and hydraulic fluid.

The DP-20-UL model is approved for use with Gasoline, Gasoline/Ethanol blends at levels designated as "gasohol" (E10 maximum), diesel and kerosene.

## SAFETY INSTRUCTIONS



The following safety alert symbols are used in this manual.

### DANGER

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

### WARNING

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

### CAUTION

**CAUTION** indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTES give you information that can improve efficiency of operations.

### WARNING

When using this product, basic precautions should always be followed, including the following:

- Read all the instructions before using the product.
- To reduce the risk of injury, close supervision is necessary when a product is used near children.
- Do not put fingers or hands into the product.

#### It is your responsibility to:

- know and follow applicable national, state, and local safety codes pertaining to installing and operating electrical equipment for use with flammable liquids.
- know and follow all safety precautions when handling petroleum fuels.
- ensure that all equipment operators have access to adequate instructions concerning safe operating and maintenance procedures.

Observe all safety precautions concerning safe handling of petroleum fuels.

## INSTALLATION

### Install Suction Pipe

1. Remove the two protective plugs from the pump inlet and outlet.
2. Wrap the threaded end of the suction pipe with 3 to 4 turns of thread tape.
3. Install the suction pipe into the pump inlet and tighten firmly with a pipe wrench.

### Install Pump on Tank

1. Before installing the pump, clean the tank interior of all dirt and foreign material.
2. Lubricate the threads of the pump inlet with thread tape or a thread-sealing compound approved for use with petroleum fuels.
3. Extend the suction pipe longer than necessary for the height of the tank. It will automatically adjust to the proper height when installed.
4. Insert the pump in the bung and rotate it to the desired position.
5. Tighten the lock nut down against the bung until snug.

NOTE: To prevent the buildup of pressure and possible fuel leakage through the nozzle, make sure the tank is vented.

### Attach Hose and Nozzle

1. Wrap both ends of the hose with 3 to 4 turns of thread tape.
2. Screw either end of the hose into the pump outlet.
3. Screw the nozzle onto the other end of the hose.

### Install Handle

NOTE: Clevis pins may be installed from either side of the handle.

1. Slide the grip onto the pump handle.
2. With the open side of the link facing down, line up one end between the link holes on the pump. Insert a clevis pin through the holes and secure with a small cotter pin

### CAUTION

Orientation of link is critical to prevent pinching risk.

3. With the open side of the handle facing the pump, line up the free end of the link between the bottom set of holes on the handle. Insert a clevis pin through the holes and secure with a small cotter pin. (Figure 1)

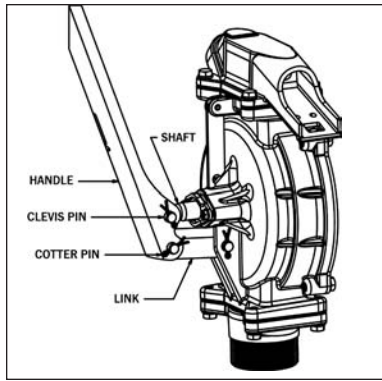


Figure 1

4. Line up the upper set of holes on the handle around the pump-shaft hole. Insert a clevis pin through the holes and secure with a small cotter pin.

## OPERATION

### To Dispense Fluid

NOTE: Nozzle may need to be held or wedged in place to prevent it from backing out of a tank opening during pumping.

1. Remove the nozzle from its holder and insert into the receiving tank of the equipment or vehicle.
2. To operate the pump, manually move the handle in a push/pull motion. The pump may require a few strokes to prime before fluid begins flowing.
3. After dispensing the desired amount of fluid, drain the hose and nozzle. Place the nozzle in its holder and return the handle to its upright storage position.

### To Lock Pump

1. Push the handle to the forward position and guide the clasp through the slot in the handle.
2. Insert a padlock through the clasp hole and lock. (Figure 2)

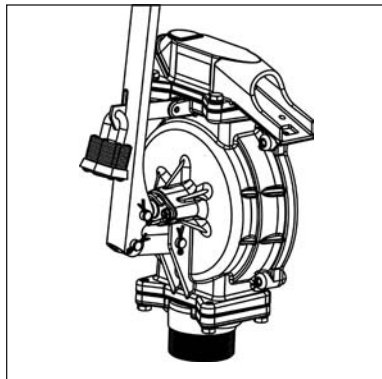


Figure 2

## MAINTENANCE

During daily use, the GPI DP-20 Hand Pump is essentially maintenance free. However, the pump should be inspected periodically for signs of wear. If leaks are present, make appropriate repairs. Refer to the Troubleshooting section.

## REPAIR

Replace the shaft seal if it begins to leak.

1. Before replacing the shaft seal, check whether the leak can be corrected by tightening the seals (tighten two screws on the bushing retainer plate).
2. If tightening the seals doesn't correct the leak, disconnect the handle from the shaft by removing a cotter pin and clevis pin.
3. Remove the two screws, retainer plate and bushing.
4. Remove the old seals (two parts) from the shaft and discard. Replace with two new seals. Ensure that the slits in the two seals are not aligned.
5. Press seals into the pump housing with the bushing and retainer plate.
6. Tighten the retainer plate down with two screws. Torque to 20-24 in. lbs.
7. Reconnect the handle to the shaft using the cotter pin and clevis pin. (Figure 3)

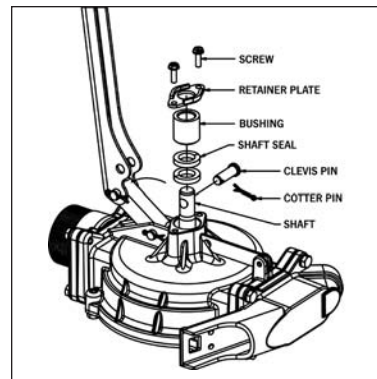


Figure 3

### Cleaning the Inlet Screen

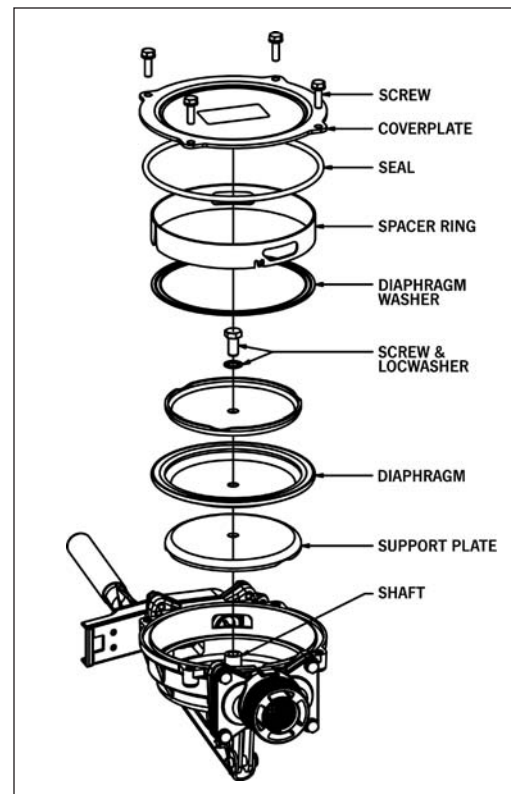
The inlet screen may require cleaning if debris is impeding the flow of liquid.

1. Remove the pump from the tank. Remove the suction pipe from the pump.
2. Remove four screws and the inlet.
3. Set aside the valve plate and seal.
4. Clean the inlet screen.
5. Reassemble the valve plate, seal and inlet to the pump (the valve plate should be installed so that the springs are facing down toward the inlet opening).
6. Reinstall four screws.
7. Reinstall the suction pipe in the pump and the pump on the tank.

## Replacing the Diaphragm and Coverplate Seal

Figure 4

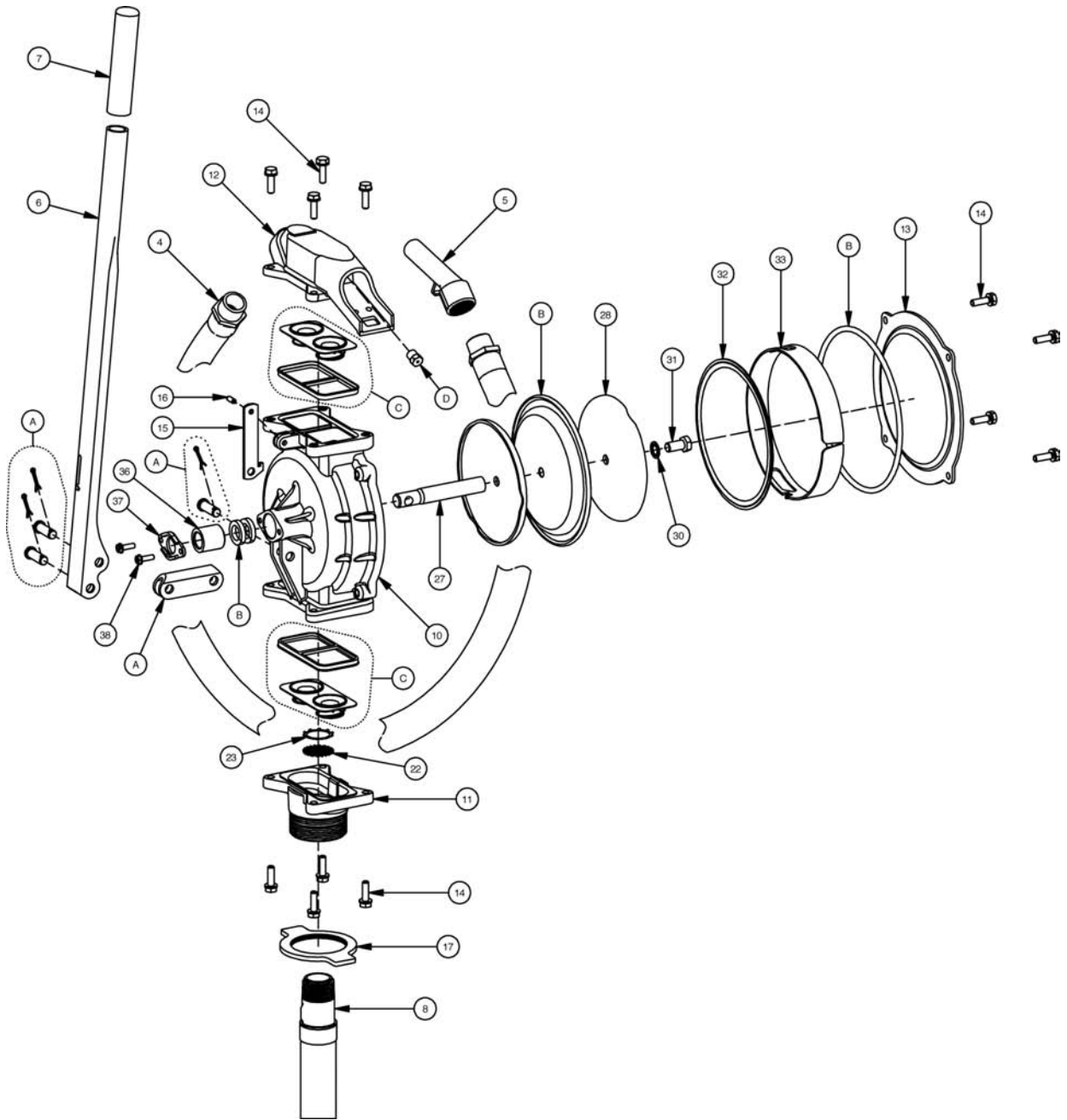
1. Remove four screws and the coverplate.
2. Remove the seal, spacer ring and diaphragm washer from the pump.
3. Remove the screw and lock washer from the diaphragm assembly while holding the pump handle to prevent rotation.
4. Remove the diaphragm support plates and the diaphragm.
5. Replace one support plate, a new diaphragm and the second support plate. Ensure the diaphragm is oriented as shown in Figure 4 (open side faces up towards the coverplate).
6. Reinstall the lock washer and screw.
7. Pull the pump handle all the way back. Replace the diaphragm washer, making sure it is oriented as shown in Figure 4 (inner edge flares upward toward coverplate).
8. Replace the spacer ring, making sure its holes line up with the openings in the pump and its bent tab with the groove in the pump.
9. Replace the coverplate seal with a new one.
10. Reinstall the coverplate and four screws.



## TROUBLESHOOTING

| SYMPTOM                             | PROBABLE CAUSE               | CORRECTIVE ACTION  |
|-------------------------------------|------------------------------|--|
| A. FLUID LEAKS AROUND SHAFT SEAL    | 1. Shaft seals settled       | Tighten two screws on the retainer and torque to approximately 20 in-lb. (or hand tighten – then another half turn until leak stops.   |
|                                     | 2. Seals worn                | Replace the seals (see “Repair Section”)   |
| B. FLUID LEAKS AT ANTI-SIPHON VALVE | 1. Anti-siphon valve loose   | Tighten anti-siphon valve and torque approximately 150 in-lb.  |
|                                     | 2. Anti-siphon valve damaged | Replace anti-siphon valve.   |
| C. LOW FLOWRATE                     | 1. Inlet screen clogged      | Remove the pump from the tank. Remove the suction pipe. Clean the inlet screen. Replace the suction pipe and place the pump on the tank using the installation instructions.                   |
|                                     | 2. Suction pipe leak         | Remove the pump from the tank. Inspect the suction pipe to ensure it is not worn or damaged. Replace as necessary and install the suction pipe and pump again using installation instructions. |

## ILLUSTRATED PARTS LIST



| Item No. | Part No.  | Description                   | No. Req'd. |
|----------|-----------|-------------------------------|------------|
| A        | 138500-01 | Hardware Kit .....            | 1          |
| B        | 138501-01 | Diaphragm & Seal Kit.....     | 1          |
| C        | 138502-01 | Check Valve & Gasket Kit..... | 1          |
| D        | 138503-01 | Anti-Siphon Valve Kit.....    | 1          |
| 4        | 114045-1  | Hose (UL Model) .....         | 1          |
|          | 110187-09 | Hose (Non-UL Model) .....     | 1          |
| 5        | 138123-01 | Unleaded Nozzle.....          | 1          |
| 6        | 138109-01 | Handle.....                   | 1          |
| 7        | 906001-43 | Grip .....                    | 1          |
| 8        | 110100-1  | Suction Pipe, Plastic .....   | 1          |
| 10       | 138100-01 | Housing.....                  | 1          |
| 11       | 138101-01 | Inlet.....                    | 1          |
| 12       | 138102-01 | Outlet.....                   | 1          |
| 13       | 138103-01 | Cover.....                    | 1          |
| 14       | 904005-39 | Screw, 1/4-20 x 7/8" .....    | 12         |

| Item No. | Part No.  | Description                   | No. Req'd. |
|----------|-----------|-------------------------------|------------|
| 15       | 138111-01 | Clasp .....                   | 1          |
| 16       | 904008-32 | Spring Pin.....               | 1          |
| 17       | 138112-01 | Lock Nut.....                 | 1          |
| 22       | 138126-01 | Inlet Screen .....            | 1          |
| 23       | 138127-01 | Retaining Ring.....           | 1          |
| 27       | 138113-01 | Shaft.....                    | 1          |
| 28       | 138106-02 | Diaphragm Retainer.....       | 2          |
| 30       | 904008-43 | Lock Washer, 3/8", split..... | 1          |
| 31       | 904008-30 | Screw, 3/8-24 x 3/4" .....    | 1          |
| 32       | 138105-01 | Diaphragm Washer .....        | 1          |
| 33       | 138104-01 | Spacer Ring .....             | 1          |
| 36       | 114016-1  | Bearing.....                  | 1          |
| 37       | 114017-2  | Bearing Retainer.....         | 1          |
| 38       | 904004-30 | Screw, #10-32 x 5/8" .....    | 2          |

## SPECIFICATIONS

The GPI DP-20 Diaphragm Hand Pump is compatible with a wide variety of petroleum products and fits any container with a 2-inch NPT bung.

**Construction:** Lightweight, die-cast aluminum housing. Stainless steel piston shaft. Buna-N diaphragm and seals. Built-in air valve to prevent leakage at nozzle.

**Pumping Capacity:** 0.2 gallon (0.75 litres) per stroke.

**Inlet:** Standard 1-inch NPT pipe.

**Outlet:** Standard 3/4-inch NPT pipe.

**Shipping Weight:** 14.8 lbs.

**Hose and Nozzle:** 3/4-inch x 8 ft. Buna-N electrically conductive hose. Plastic unleaded nozzle. Built-in nozzle holder.

**Suction Pipe:** Plastic, adjustable from 22 to 40 in. (56-102cm).

## PARTS AND SERVICE

For warranty consideration or other service information, please contact your local distributor. If you need further assistance, contact the GPI Customer Service Department in Wichita, Kansas, during normal business hours. A toll free number is provided for your convenience.

**1-800-835-0113**

To obtain prompt, efficient service, always be prepared with the following information:

1. The model number of your pump.
2. The manufacturing date code of your pump.
3. Part descriptions and numbers.

Part descriptions and numbers can be obtained from the Illustrated Parts List.

For warranty work, always be prepared with your original sales slip or other evidence of purchase date.

Please contact GPI before returning any pump. It may be possible to diagnose the trouble and find a solution with a telephone call. GPI can also inform you of any special requirements you will need to follow for shipping.



## Limited Warranty Policy

Great Plains Industries, Inc. 5252 E. 36<sup>th</sup> Street North, Wichita, KS USA 67220-3205, hereby provides a limited warranty against defects in material and workmanship on all products manufactured by Great Plains Industries, Inc. This product includes a 2 year warranty from date of purchase as evidenced by the original sales receipt. A 30 month warranty from product date of manufacture will apply in cases where the original sales receipt is not available. Reference product labeling for the warranty expiration date based on 30 months from date of manufacture. Manufacturer's sole obligation under the foregoing warranties will be limited to either, at Manufacturer's option, replacing or repairing defective Goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the Buyer, and Buyer's exclusive remedy for breach of any such warranties will be enforcement of such obligations of Manufacturer. The warranty shall extend to the purchaser of this product and to any person to whom such product is transferred during the warranty period.

This warranty shall not apply if:

- A. the product has been altered or modified outside the warrantor's duly appointed representative;
- B. the product has been subjected to neglect, misuse, abuse or damage or has been installed or operated other than in accordance with the manufacturer's operating instructions.

To make a claim against this warranty, contact the GPI Customer Service Department at 316-686-7361 or 800-835-0113. Or by mail at:  
Great Plains Industries, Inc.  
5252 E. 36<sup>th</sup> St. North  
Wichita, KS, USA 67220-3205

GPI will step you through a product troubleshooting process to determine appropriate corrective actions.

**GREAT PLAINS INDUSTRIES, INC., EXCLUDES LIABILITY UNDER THIS WARRANTY FOR DIRECT, INDIRECT, INCIDENTAL AND CONSEQUENTIAL DAMAGES INCURRED IN THE USE OR LOSS OF USE OF THE PRODUCT WARRANTED HEREUNDER.**

The company herewith expressly disclaims any warranty of merchantability or fitness for any particular purpose other than for which it was designed.

This warranty gives you specific rights and you may also have other rights which vary from U.S. state to U.S. state.

Note: In compliance with MAGNUSON MOSS CONSUMER WARRANTY ACT – Part 702 (governs the resale availability of the warranty terms).



5252 East 36th Street North  
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***GREAT PLAINS INDUSTRIES, INC.***

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[www.gpipumps.net](http://www.gpipumps.net)

**1-800-835-0113**