

**PRODUCT DATA SHEET**
**Mix & Go Systems**

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**Description of Included Models**

Model Number	Description	Shipping Weight
SS445	Basic 12 Volt DC transfer pump with Santoprene® diaphragms, 20' battery cable, 1" X 12' EPDM Hose, ball-valve nozzle, 825 digital meter, designed for liquid recirculation mixing only and GEM Cap tank mounting.	35 lbs. 15.9 kgs.
SS445X771	Same as above with EPDM seals	35 lbs. 15.9 kgs.

To select the correct pump and adapter for use with your mini-bulk, refer to the Selection Guide in the Reference Literature section at the end of this page. The detailed Parts and Technical Service Guide can be found in that same location.

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**Available Options**

**No Options Available at this Time.**

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**Accessories - Pump Tank Adapters**

Part Number	Description
445KTF1691	6" collar adapter (GEM Cap). To retro-fit older tanks with 6 3/4" E-Z Handler™ mini-bulk tank opening (12 bolt). Includes collar adapter, mounting ring and hardware.
445KTF1596	6" collar adapter (GEM Cap). To retro-fit older tanks with 6" Scienco® opening (6, 11 or 13 bolt). Includes collar adapter and hardware.

NOTE: See selection guide in the Reference Literature section for the correct selection guidelines in the use of these adapters.

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## Performance

Maximum Outlet Pressure	15 PSI (1.09 BAR)
Maximum flow rate <sup>1</sup>	13.0 GPM (49.3 LPM)
Maximum Viscosity of fluid pumped	3000 CPS (SAE140 Gear Oil at 68°F)
Maximum ambient operating temperature	130 °F (54 °C)*
Minimum ambient operating temperature	-10 °F (-23 °C)*
Minimum dry vacuum	10 Inches of Hg.
Minimum suction lift**	10 Feet

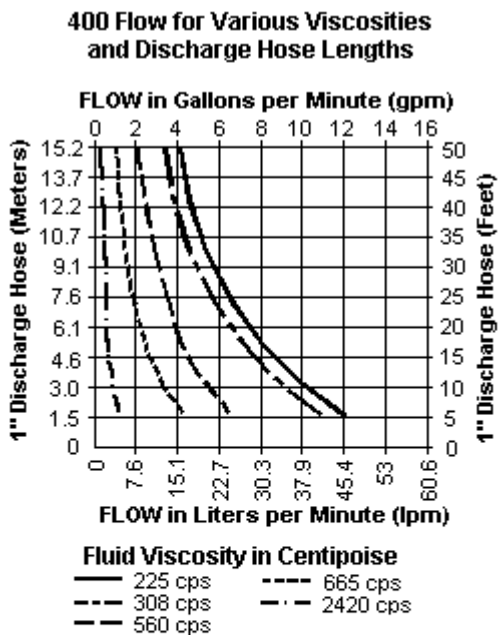
<sup>1</sup> Nominal flow rate at nominal voltage using a standard hose and manual nozzle with low viscosity fluid.

\* Consult factory for extreme temperature applications outside this range.

\*\* The lift in feet is equivalent to the vertical distance from the surface of the fluid in the tank to the inlet of the pump, PLUS the friction losses through the vertical and horizontal runs of pipe, all elbows and other fittings. The system should be designed to require a minimum amount of suction lift.

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## Flow Curve



### NOTES:

- SUCTION LOSSES - Pump mounted on 208 liter drum, 1/2 full with a standard suction pipe.
- VERTICAL HEAD LOSSES - Hose horizontal with pump.
- OTHER LOSSES - Additions for other in-line components
  - SureStop Disconnect - 0.15 M
  - Other disconnects - 4.0 M
  - 1" Check Valves - 2.7 M
  - 1" Elbow - 0.8 M

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## Fluid Compatibility

The Series 400 Diaphragm Pumps have been shown to be compatible with a significant listing of fluids (all 1997 formulations used in North America). For the full listing refer to the 400 Series Pump Parts & Technical Service Guide in the Reference Literature section.

The Series 400 Diaphragm Pumps are NOT compatible with the following fluids: very strong acids and any fluid with a flash point below 100 °F

If in doubt about the compatibility of a specific fluid, contact the supplier of the fluid to check for any adverse reactions to the following wetted materials:

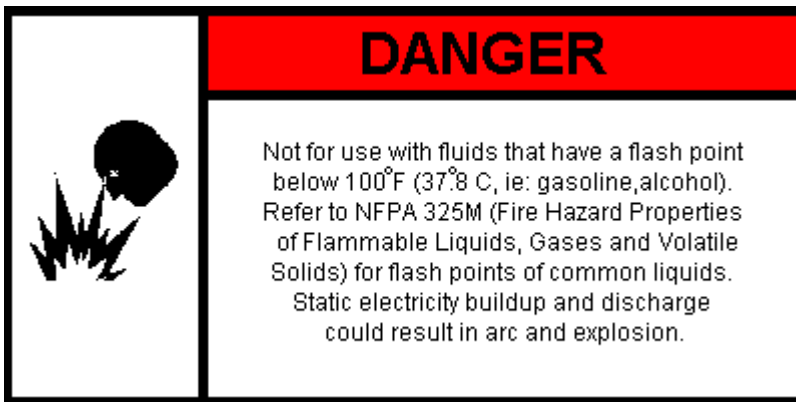
Fluorocarbon (Viton®)

Santoprene™

Polypropylene

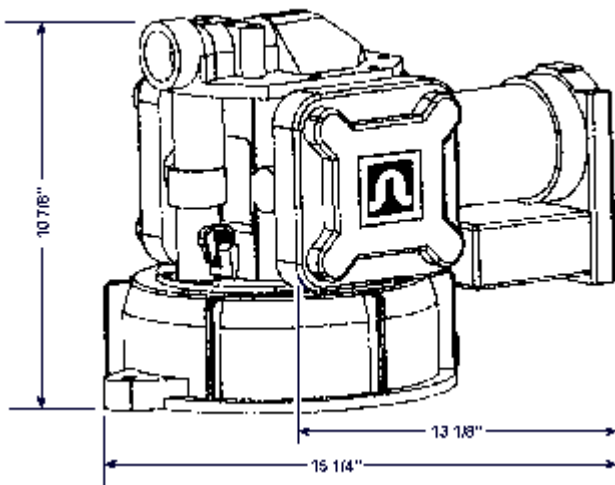
300 Series Stainless Steel

Buna N (Nitrile)



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## Dimensions



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## Repair

To maintain Explosion-proof UL listing on the motor, motors that need repair should be taken to an authorized repair shop or returned to the factory for service. Refer to the Warranty Procedure presented in the Reference Literature section for product handling procedures when warranty service or repair is required.

Refer to Parts and Technical Service Guide packed with the pump and/or available for reference and printing in the Reference Literature section of this web page for the procedure to be followed for motor/gear assembly removal, gear assembly replacement and diaphragm assembly/check valve replacement.

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## Maintenance

To keep the pump running at its best, periodically perform the following procedures:

### Chemical Applications -

Do not allow any chemical to remain in the pump for any extended period of time, whereby the chemicals are allowed to "dry out". Using the appropriate fluid, thoroughly clean the diaphragm and check valve assemblies by flushing the pump with:

1. Diesel or kerosene for petroleum based chemicals
2. Water for water based chemicals

### All Applications -

1. On an annual basis, check the four #10-24 X 1/2" machine screws (item 11) holding the diaphragms in place. If loose, tighten screws to prevent internal leakage.

Note: NEVER EXCEED 50 INCH-POUNDS of torque when replacing the pump covers or tightening the diaphragm screws. The threaded inserts could be stripped out.

2. Check the oil level in the pump gear box periodically. The oil level should be level with the bottom edge of the sight cap holes located on the front of the pump body. Always check the oil level when the pump is level.
3. Replace oil with approximately 16 ounces of automotive grade SAE 30W through one of the sight cap holes if there are any indication of contamination after draining the contaminated oil. Contamination can be noted by a milky appearance to the oil or the level being above the base of the sight caps.
4. Examine the diaphragm/check valve assemblies for excessive wear annually or if oil contamination is noted, (items 7, 8, 9 and 10).

See meter's Parts and Technical Service Guide for additional recommended maintenance procedures.

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## Frequently Asked Questions

The questions below are linked to the answers for that particular question. Point and click on the question of interest and you will be move to the answer to that question. Buttons are provided to allow you to move back to this question list or to the original INDEX.

1. [My pump only pumps for a few minutes and then stops. What is happening?](#)
2. [The oil in the pump appears milky. Is there a problem?](#)
3. [Why do I have to use the heavy wire supplied with the DC pump for connection to my battery?](#)

### **1. My pump only pumps for a few minutes and then stops. What is happening?**

Generally "short cycling" indicates the motor is drawing too much current from the power source for some reason, and the

thermal relay is opening to protect the insulation from the resulting heat build up. If this is what is happening the thermal relay will reset after 10 to 20 minutes and the motor will again operate. The causes of too high a current in this pump design are few and generally related to a motor defect such as a binding pump or motor bearing or shorted motor windings.

See the Troubleshooting Guide in your Owner's Manual packed with your unit or the copy available in the Reference Documents section of this More Info page for things to check.

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## **2. The oil in the pump appears milky. Is there a problem?**

The oil in the motor gear box should always appear clear and clean. A milky appearance or a change in color or appearance of this oil virtually always indicates a leak has developed and the pumped fluid is contaminating the oil. Drain the oil and thoroughly flush the gear box with clean kerosene. Locate and repair the leak. Replace the lubricating oil with approximately 16 ounces of a SAE 30W motor oil before returning the pump to service.

See the Troubleshooting Guide in your Owner's Manual packed with your unit or the copy available in the Reference Documents section of this More Info page for more details on these procedures.

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## **3. Why do I have to use the heavy wire supplied with the DC pump for connection to my battery?**

Your pump is a commercial grade unit and as such draws a high current from your battery to do the work required. If that current were routed through a light wire, heating and possible damage of the wire, and reduced voltage at the pump would be the result. The wire supplied with your pump is sized to provide that optimum performance you demand and the pump can provide if properly installed.

It is also recommended a 30 amp slow blow fuse be installed in the power line to insure safety, should a short circuit develop in the pump wiring. Although the pump draws much less in normal operation, motor starting currents are significantly higher, necessitating the higher rating on the fuse.