



# 1-MD Magnetic Drive Pump – Mild Corrosive Fluids

Circulation of mildly corrosive acids, alkalis, solvents, brine, plating solutions, sterile solutions, and other mildly corrosive chemicals and solutions that are compatible with the pumps material of construction

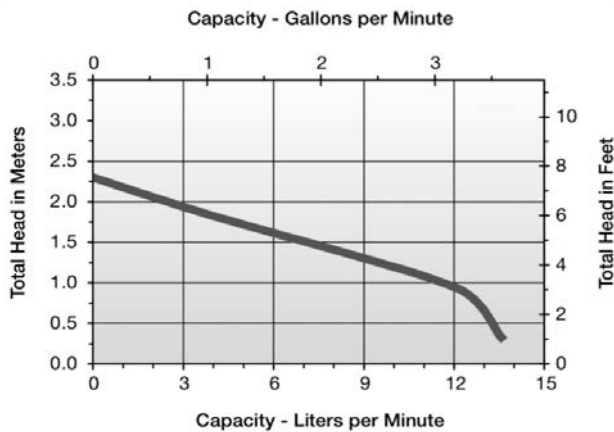
- Impeller magnet is uncoated, permanent high quality ceramic/ barium ferrite
- The model has a titanium shaft and thrust washer for excellent wear and corrosion resistance
- 1/70 HP open FC motor
- Glass-filled polypropylene magnet housing and volute
- 1.1 specific gravity
- Nitrile O-ring
- Rulon J (Teflon<sup>®</sup>) thrust washers
- Titanium thrust washers and shaft



**Note: In-Line Only**

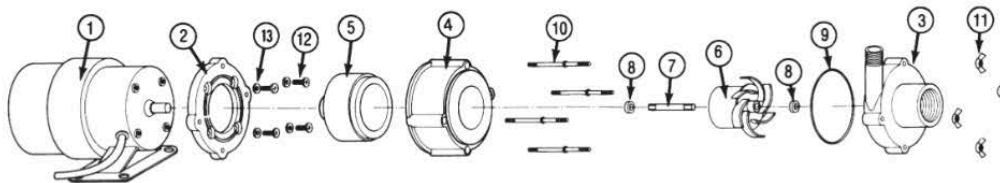
<b>RPM:</b>	2700/3000
<b>Capacity:</b>	13.2 LPM
<b>Shut Off:</b>	2.3m
<b>Liquid Temp:</b>	66°C
<b>Discharge:</b>	12.7 mm
<b>Intake:</b>	12.7 mm
<b>Electrical:</b>	230V, 50/60Hz, 90 Watts
<b>MODEL:</b>	<b>589012</b>

Performance Curves 1-MD 230V, 50/60Hz





1-MD



Note: Motor configuration may vary from model to model.

REPLACEMENT PARTS LIST																				
ITEM NO.	PART NO.	DESCRIPTION	PUMP MODEL & CATALOG NUMBER																	
			1-MD 589002	1-MD 589012	1-MD 589098	2-MD 580002	2-MD 580012	2-MD 580038	2-MD 580098	3-MD 581002	3-MD 581012	3-MD 581098								
*1	977108	MOTOR, 115 VOLT	1																	
*1	977452	MOTOR, 115 VOLT				1														
*1	977853	MOTOR, 220/240 VOLT		1			1													
*1	977862	MOTOR, 230 VOLT, CONDUIT BOX							1											
1	977402	MOTOR, 115 VOLT											1							
*1	977915	MOTOR, 220/240 VOLT														1				
2	180042	ADAPTOR/BASE										1								1
2	180037	ADAPTOR/BACKET								1										
2	180031	ADAPTOR/BACKET	1	1	1	1	1	1						1	1					
3	186021	VOLUTE	1	1	1															
3	180079	VOLUTE				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	180004	HOUSING, MAGNET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	180602	DRIVE MAGNET ASSEMBLY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	181165	IMPELLER/MAGNET ASSEMBLY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	180058	SHAFT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	921067	WASHER, THRUST	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9	924007	O-RING	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	911403	STUD, COLLARED	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
11	920003	NUT, WING #8-32	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
12	920006	NUT, HEX #8-32	4												4	4				
12	901424	SCREW, MACH #8-32 X 1/2"		4		4	4	4												
13	921075	WASHER, FLAT, #8	4	4		4	4	4						4	4					

- \* Indicates motors with sleeve bearings.
- \* Ces moteurs sont pourvus de paliers filetés.
- \* Indica motores con baleros de manguito interior.

Parts list applies to products shown. Other models are available; however, parts may vary. For other models, contact Parts Depot, factory, or distributor for replacement parts. Be sure to give the six digit product number and model number when requesting parts.



## GB PUMP CONSTRUCTION

The patented Little Giant magnetic drive pump design consists of a cylindrical drive magnet attached to the motor shaft, which rotates around a chemical resistant plastic separator housing. Inside this housing is a magnet completely encapsulated in chemical resistant plastic, and fixed to the impeller. The impeller assembly is free to rotate on a spindle that is supported at both ends. The spindle is held captive and does not turn. Front and rear thrust washers are utilized as wear bearings. The washers are held captive and do not revolve. This prevents wear on the shaft. With the magnetic coupling the motor drives the impeller. This coupling eliminates the conventional shaft seal and its possibility of leakage.

### PUMP MATERIALS

The plastic parts are made of glass-filled polypropylene. The spindle shaft, which is stationary, and the captive thrust washers (front and rear) are titanium. The O-ring seal is nitrile. The impeller-driven magnet is uncoated ceramagnet A (barium ferrite) type ceramic.

### INSTALLATION

Your Little Giant pump is delivered to you completely preassembled and pretested from the factory. The MD-series pumps handle most mildly corrosive fluids such as low concentrations of acids and alkalis in pH range of 5 to 9 at fluid temperatures up to 150 ° F. It is ready for immediate use. The pump may be installed in any position. It may be mounted vertically with the pump head down. Proper plumbing connections should be made. See specification table to determine what size intake and discharge your pump has. Use a thread sealer on all pipe connections and hand tighten only. Excessive force may damage the plastic part. Make sure the wing nuts are tight before operating the pump.

Motor nameplates list all electrical data. Make sure the pump is connected to proper voltage before operating. When wiring pumps with no plug, the green (or green/yellow) wire is the ground. The other two wires are line (live).

These pumps are not submersible. Operate the pumps only in the in-line mode. Do not put the units in liquid. Pump should be installed in a dry area and protected from splash. These pumps are not self priming models. **IMPORTANT:** The pump must be installed so that the pump head (volute) is flooded before starting. That is, the inlet of the pump must be below the level of the surface of the liquid being pumped. (See Figure 1.)

Do not restrict the intake side of the pump. Connections on the intake side should not be of smaller inside diameter pipe or tubing or hose than the intake inside diameter of the intake thread designation. If reduced flow is required restrict the discharge side. Installing a valve or other type of restriction device on the discharge side is the proper method for reducing flow from the pump. When using a valve the pump can be throttled to provide various flow rates and pressures without harming the motor or the pump parts.

The pump should not be installed in a manner that will subject it to splashing or spraying.

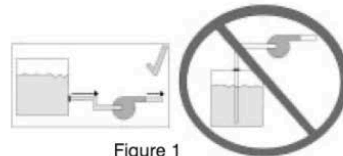


Figure 1

### SERVICE INSTRUCTIONS



**MAKE CERTAIN THE UNIT IS DISCONNECTED FROM THE POWER SOURCE BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENT!**

1. The motor's sleeve bearings should be lubricated every six months with two to three drops of S.A.E. 20 weight non-detergent oil. The oil holes are located on top at each end of the motor.
2. All wetted parts can be serviced by removing the four wing nuts from the housing. The pump head components can easily be replaced in the field if necessary.
3. Lightly clean any corrosion or debris which may clog the impeller.
4. If pump is tripping circuit breakers, GFCI, or not operating properly after cleaning, return to Little Giant or its authorized service center. **DO NOT** attempt repairs yourself.
5. Be certain power cord is in good condition and contains no nicks or cuts.