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Product: 1500 Series DC Stationary

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OPERATING AND MAINTENANCE INSTRUCTIONS

Blade Master DC Models are a high-volume, low-energy, transfer pump equipped with a (U.L. /C.S.A. Class 1. Division 1, Group D) motor designed to pump light viscous to heavy viscous products at low pressure. This pump is designed to self-prime to a **MAXIMUM** of a **SIX FOOT OF VERTICAL LIFT**. **CAUTION DO NOT** subject this unit to total head pressure over 20 P.S.I.

MOUNTING PROCEDURES

Blade Master DC Models should be permanently mounted. To mount the pump in a stationary position, the following instructions are recommended. Find the exact location you wish to mount the pump, place the pump in the horizontal position. Drill 9/64 inch holes in the bottom section of the square tubing frame, 2 holes in the front, 2 holes in the middle, and 2 holes in the rear sections of the lower square tubing. Use 1/4 inch grade 5 bolts with flat washers to fasten down the pumping unit. When bolting frame in place make a good solid positive ground connection to the frame. The "Blade Master" may also be used as a mobile pump so you can move it to wherever transfer of product is desired. **CAUTION** When operating as a mobile pumping unit it must be securely grounded at all times.

CONNECTIONS

CAUTION WHEN PUMPING EXPLOSIVE PRODUCTS, ALL HOSE COUPLINGS MUST BE EXPLOSION PROOF RATED. The hose must have a static wire, which provides electrical continuity between the hose couplings, to dissipate static electrical charge. All components must also be underwriter's laboratories, Inc., listed for CLASS 1, DIVISION 1 GROUP D. **CANADA** Must be Canadian standards association listed.

When making connections, be sure that all threads are sealed with the proper thread sealing compound. The pump comes with a standard 1 1/2 inch inlet/outlet which may be reduced to desired

inlet/outlet size. Dixon Pumps does not recommend reducing the inlet/outlet to any smaller than 1 1/2 inch! ***REMEMBER*** that when you reduce the inlet/outlet it will reduce your volume of flow. ***NOTE*** When reducing the inlet/outlet size, or when pumping in excess of 10 P.S.I. head pressure, the duty cycle of the motor will be decreased. **TO PREVENT THE MOTOR FROM OVERHEATING, CLOSELY MONITOR THE TEMPERATURE OF THE MOTOR. IF THE MOTOR OVERHEATS, IT WILL FAIL WHICH WILL AUTOMATICALLY VOID THE WARRANTY. DIXON ALSO RECOMMENDS THAT YOU DO NOT EXCEED 40 FEET OF DISCHARGE HOSE!**

SHUT - OFF NOZZLE

CAUTION USING ANY SHUT-OFF NOZZLE IN THE OFF POSITION WILL OPERATE THE PUMP IN THE BY-PASS MODE. THE PUMP WILL ONLY OPERATE FOR 3 MINUTES IN FULL BY-PASS. ANY LONGER THAN 3 MINUTES MAY CAUSE THE MOTOR TO OVER HEAT AND FAIL. IF THE MOTOR FAILS THIS WILL VOID THE WARRANTY. **NOTE** A SHUT-OFF NOZZLE CAN ONLY OPERATE ON THE OUTLET SIDE OF THE PUMP

WIRING

When inlet/outlet connections and mounting procedures have been completed, the following electrical connections are recommended. It is recommended that you hard-wire the Blade Master Model 1583 directly to the battery by clamping one lead to the positive side of the battery, and the other lead to the negative side of the battery. This is a positive displacement pump making it possible to turn the pump in the direction that flow is desired, you may reverse the leads and the pump will turn in the opposite direction. When the direction of the pump is correct and battery connections are complete, route the #4 gauge 3 conductor SOW power cord (Green wire not used) (NOT MORE THAN 30 FEET IN LENGTH) to where the pump is located.

SWITCH REQUIREMENTS

If desired, you may install an on/off switch any place in the line, or a forward / reverse switch (UL/CSA CLASS 1 DIV. 1 GROUP D) which will give you the capability of reversing the flow of the pump.

IMPORTANT THE SWITCHES SHOULD BE RATED FOR 120/60 AMP, 12/24 VOLT DC. THE FORWARD / REVERSE SWITCH MUST HAVE A STOP POSITION BETWEEN FORWARD AND REVERSE TO ALLOW THE PUMP TO COMPLETELY STOP BEFORE ENGAGING IN THE OPPOSITE DIRECTION.

WARNING ALL OF THE FOLLOWING ELECTRICAL CONNECTIONS MUST FOLLOW THE UL OR CSA STANDARD GUIDELINES FOR EXPLOSION PROOF CONNECTIONS OF CLASS 1 DIV. 1 GROUP D CATEGORY.

CANADA MUST COMPLY WITH CANADIAN STANDARDS ASSOCIATION GUIDELINES.

IMPORTANT THIS PUMP UNIT DRAWS 120/60 AMPS OF DC CURRENT AT 12/24 VOLTS AND 60 AMPS AT 24 VOLTS. THE VEHICLES CHARGING SYSTEM MUST BE ABLE TO DELIVER THE REQUIRED 120/60 AMPS OF DC CURRENT AT 12/24 VOLTS. SUPPLYING LESS THAN 120/60 AMPS WILL CAUSE THE MOTOR TO OVERHEAT, AND MAY CAUSE FAILURE WHICH AUTOMATICALLY VOIDS THE WARRANTY.

WIRING CONNECTIONS

Blade Master DC Models come equipped with 20 feet of #4 gauge 3 conductor SOW power cord. Dixon Pumps does not recommend to exceed 30 feet in length, therefore, if longer cable lengths are required, please consult your distributor or our factory. The 4/3 SOW cord is wired into a UL listed junction box. Any non-factory alteration or modification of any Dixon product automatically voids this warranty. If you have any questions on the wiring call Dixon Pumps.

SPECIAL NOTE If the unit is going to be exposed to the weather, precautions must be taken to protect the motor from the elements. Water proof seals all connections to prevent moisture from seeping into the motor. Ideally the unit should be covered to protect it, which will prolong the life of the pump. When you have completed all of the above procedures, the "Blade Master" pump is ready for operation. You should first turn the pump on, and check all connections for leakage. If any leakage occurs, tighten all fittings until no leakage appears. For a list of products which may or may not be pumped with the Blade Master refer to chemical chart, your local distributor or our factory.

DUTY CYCLE

CAUTION Blade Master DC Models is not a continuous duty pump. **IT HAS A 30 MINUTE DUTY CYCLE WHICH MEANS YOU MAY PUMP CONTINUOUSLY FOR 30 MINUTES.** (WITH MAXIMUM 20 P.S.I. HEAD PRESSURE). It is then required that you let the motor cool down to ambient temperature. The pump is then ready to be operated for another full 30 minutes. Operating the pump for longer than 30 minutes may result in burning the motor up. This will automatically void the warranty. **THIS MOTOR IS NOT THERMALLY PROTECTED.**

GEAR REDUCER MAINTENANCE

This pump unit comes equipped with a 4.6:1 gear reducer that requires very minimal maintenance. Every 50 hours of operation you should check the mounting bolts for tightness. This unique gear reducer is designed with the synthetic lubricating oil within the gear reducer housing. This gear reducer should not become hot enough to cause any breakdown in the synthetic oil, to cause any breakdown with in the gear operation of this reducer. The synthetic gear lube should be changed every 2000 hours.

GENERAL MAINTENANCE

The "Blade Master" requires minimal maintenance, but the following maintenance procedures are required for maximum performance.

2. After 2000 hours of operation, you should add 22 ounces of synthetic lubricant. Dixon Pumps recommends Mobil SHC-629.

3. Periodically, all nuts and bolts should be checked and tightened securely to assure maximum performance of the pump unit.

TROUBLE SHOOTING GUIDE

<u>SYMPTOMS</u>	<u>PROBABLE CAUSE</u>	<u>REMEDY</u>
Pump will not prime or lift	(a) trying to self prime over 6 feet vertical lift	Reduce lift to 6 feet or install check valve at end of inlet line
	(b) Pump impellers are not sealing properly	Squirt approximately two tables spoons of oil in the inlet/outlet of the pump, coating the impellers completely
	(c) Line plugged or filter clogged	Flush line and clean filter
	(d) Suction line flush on bottom of drum or tank	Suction line minimum 1 inch clearance on all sides
	(e) Loose, Unsealed fittings	Check all fittings for or proper seals
	(f) By-Pass valve stuck open (IF EQUIPPED WITH BY-PASS)	Remove ends on by-pass check for any lodged objects in spring or plunger
Motor or wiring overheating	(a) Exceeding the duty cycle of the motor	Monitor motor, normal cycle is 20 minutes

TROUBLE SHOOTING GUIDE

SYMPTOMS

PROBABLE CAUSE

REMEDY

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| | (b) Creating too much head pressure on the pump | More than 20 P.S.I. head pressure will greatly decrease the duty cycle and the motor will need to be monitored for heating |
| | (c) Gauge of wire too small
length of cord is too long
SOW
30 feet in | The proper wire is 4 gauge 3 conductor not more than length |
| | (d) Alternator not delivering proper amps | Alternator must deliver 120/60 amps for 12/24 |
| | (e) Operating in by-pass mode too long (if equipped by-pass) | DO NOT operate in full by-pass for more than 3 minutes |

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