This manual contains important warnings and information. READ AND KEEP FOR REFERENCE.

LIQUIDYNAMICS
Light Viscosity Bulk Transfer Cart

Instruction & Parts Manual

This Manual Covers P/N 33271

P/N 33271 shown

LIQUIDYNAMICS™
VALUE WORLDWIDE

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⚠ WARNING

This symbol indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

This symbol indicates a potentially hazardous situation which, if not avoided, may result in injury or damage to equipment.

READ THIS MANUAL CAREFULLY BEFORE OPERATING OR SERVICING THIS EQUIPMENT.

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

⚠ WARNING

DO NOT USE THIS CART SYSTEM TO PUMP FLAMMABLE, EXPLOSIVE OR CORROSIVE PRODUCTS SUCH AS GASOLINE, DIESEL FUEL, METHANOL, OR CHEMICALS.

⚠ WARNING

Before each use, inspect the power cord to ensure it is not cut, nicked, has any exposed wires and ground lug on plug is intact and functional.

UNCRATING & ASSEMBLY:

1. When removing carton exercise caution not to cut hose or power cord that may have shifted during transport.
2. Remove straps securing pump assembly from shipping pallet.
3. Inspect for damage. If damage is found please report damage to freight carrier.

Part Number # _____

Voltage: _____

Motor Serial # _____

Tested by: _____

Gearbox Serial # _____

Date: _____

Pump Serial # _____

All pumps have been assembled and tested at the factory and are ready for use. In cases where hoses are not provided, a few general guidelines should be followed.

Suction Hose:

- Use non-collapsible hose rated for 25” Hg Vacuum.
- Should be the same size as pump inlet or larger
- Short as practical, no greater than 15’ in length.
- If handling heavy lubes or operating in colder temperatures, consider using next larger hose diameter.

Discharge Hose:

- Should be the same size as pump discharge or larger.
- Short as practical. Maximum hose length will vary according to viscosity of product handled. Consult factory.

INTRODUCTION

Light Viscosity 20 GPM bronze transfer pump systems are designed for the bulk transfer of light oils, Hydraulic Fluid, Transmission Fluid and Antifreeze and other water based fluids using either 115 VAC. or 208-230VAC. All pumps systems are tested and shipped to operate with 115 VAC unless otherwise specified.

20 GPM bronze transfer pumps are positive displacement external gear design, which are exceptionally well suited for handling refined oils and temperatures to 400F. Pump and motor connections are achieved using a rigid double NEMA C face connection protecting a rubber pillow block style coupling connection from misalignment due to rough handling.

Pumps can be operated in a vertical or horizontal orientation. All pumps include an external bypass valve set at the factory for optimum performance.

TECHNICAL DATA

Motor RPM	1750 RPM
Motor HP	2 HP
Motor Voltage	115/230 VAC
Flow Rate @ 1750 RPM	20 GPM
Pump Bypass pressure (external)	50 PSI
Pump Inlet	1” NPTF
Inlet Strainer	30 Mesh
Suction Hose Length	1” x 10’
Pump Discharge	1” NPTF
Discharge Hose Length	1” x 20’
Shipping Weight	111 lbs.
Plumbing Material	Heavy Duty, Schedule 80 PVC

⚠ WARNING

Before each use, inspect the power cord to ensure it is not cut, nicked, has any exposed wires and ground lug on plug is intact and functional.

OPERATION

1. Ensure power switch located on motor is in the off position.
2. Insert power cord plug into 110VAC receptacle.
3. Insert suction stub into container to be emptied.
4. Place nozzle into container to be filled (Ensure nozzle is not inadvertently open).
5. Turn power switch to the “ON” position.
6. Open discharge nozzle, allowing air to escape and pump to pick up prime.
7. Once flow is established, monitor filling process to prevent over filling container.
8. Close nozzle once desired amount is dispensed.
9. Turn power switch to the off position.

If transfer is complete it is considered a good practice to disconnect the hose from the suction stub. While pump is running, holding suction hose up allowing product to gravity flow to pump. Open discharge nozzle to allow majority of product to be purged from the system. This practice reduces the amount of cross contamination when handling different grades of product.

10. Stow discharge nozzle & suction stub.

Note: When operating at the upper end of the viscosity range or colder temperatures, it may be necessary to “walk-the-hose” (Disconnecting suction hose from the suction stub while pump is running, allowing oil to purge from hose and pump cavity). This procedure will protect the motor from attempting to start under an excessive load. Failing to adhere to this procedure will cause motor to overheat, trip the circuit breaker and adversely shorten the useful life of the motor.

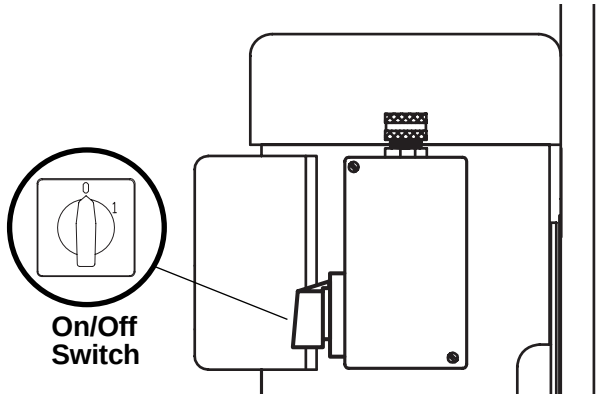
⚠ CAUTION

Dry running leads to immediate damage to pump components. Due to tight running clearances, liquids containing solids and abrasives will accelerate pump wear.

ON/OFF SWITCH

A heavy duty rotary on/off switch is located on the motor electrical box. It is positioned for maximum protection from accidental breakage.

The switch is activated by lightly rotating the knob 25 degrees right or left. “0” (the 12:00 O’clock position) is “OFF” and “1” (the 2:00 O’ clock position) is “ON”.



(Fig. 1)

MAINTENANCE

Frequency

Since usage varies for different users, the frequency and extent of pump maintenance is best established based upon past performance. Keeping detailed maintenance records of past performance aids in determining future preventive maintenance intervals. During routine operating inspections, pay particular attention to seal, bypass, bearing areas of the pump and abnormal vibration or noise.

⚠ WARNING

Before attempting to service the pump disconnect motor power and release all pressure within the system. Wear appropriate personal protection equipment and handle equipment with care.

Inspect for Wear

PUMP

If the gear pump exhibits reduced flow, an inability to maintain pressure, is noisy or performs otherwise abnormally; refer to the Troubleshooting Matrix.

If the problem persists, the pump should be inspected for wear or damage. Pump internals may be readily inspected in the field usually without removal from the drive or system plumbing. Simply remove the cover screws to pull the cover. Full pump removal and complete disassembly may be needed for a comprehensive inspection. Contact the factory.

BYPASS

The external bypass valve is factory set and should not require any maintenance or adjustment.

COUPLING

Visually inspect the rubber coupling spider located between the pump and motor.

MOTOR

2 HP 115/230V TEFC Totally enclosed fan cooled motor.

No preventive maintenance is required on motor assembly.

Visually inspect to ensure shroud, mounting bolts and electrical cords are secure.

Sealed bearings require no lubrication.

Not approved for Class I Div 2 explosion proof environment

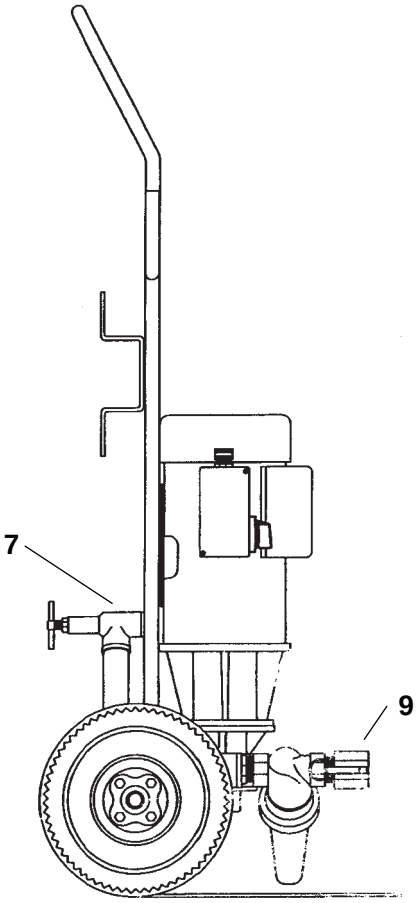
CART

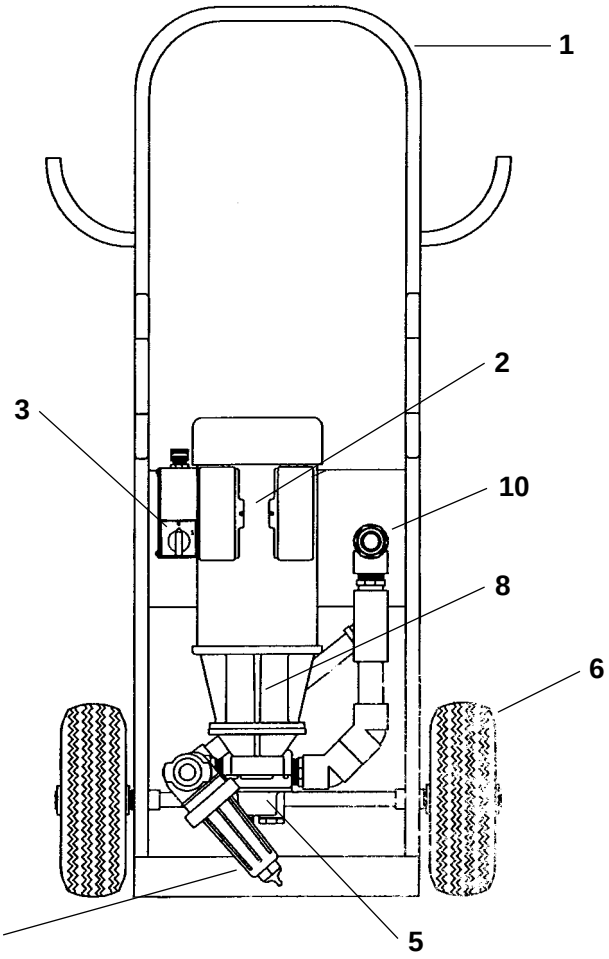
Constructed of thick wall powder coated steel tubing.

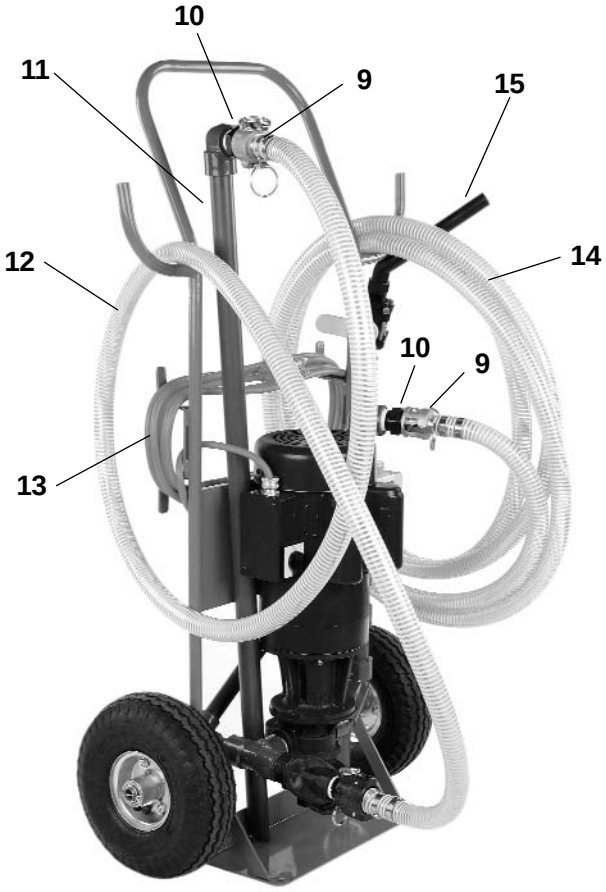
Tire inflation up to 50 PSI

Troubleshooting Matrix

Difficulty	Probable Cause	Remedy
No Liquid Delivery	1. Closed Valves	Open valves
	2. Plugged suction	Eliminate restriction, check strainer
	3. Air leak at suction	Locate and repair leak
	4. Bypass valve pressure set to low	Adjust bypass pressure
	5. Suction lift too high	Do not exceed vapor pressure of liquid
	6. Motor wired incorrectly	Check wiring diagram
	7. Wrong rotation	Correct rotation
Low Liquid Delivery	1. Pump shaft speed incorrect	Check driver speed, motor speed
	2. Discharge pressure too high	Reduce downstream pressure
	3. Bypass valve pressure set to low	Adjust bypass pressure
	4. Air leak at suction	Locate and repair leak
	5. Worn or damaged pump	Inspect and repair as required
	6. High viscosity	Verify original application conditions
Gradually Loses Prime	1. Suction lift too high	Improve suction pressure
	2. Air or gas in fluid	Eliminate air or gas from fluid
	3. Air leak at suction	Locate and repair leak
	4. Worn or damaged pump	Inspect and repair as required
Noisy	1. Cavitating	Improve system suction pressure, provide adequate NPSH (net positive suction head)
	2. Solid particles in fluid	Clean suction strainer
	3. Air or gas in fluid	Eliminate air or gas from fluid
	4. Worn or damaged pump	Inspect and repair as required
Motor Runs Hot or Overloads	1. Discharge pressure too high	Reduce downstream pressure. Check relief valve setting. Be sure discharge pressure gauges function correctly
	2. Shaft speed too fast	Reduce speed
	3. Fluid viscosity higher than expected	Raise fluid temperature
	4. Incorrectly wired motor	Check wiring diagram
	5. Binding internal pump parts	Inspect and correct condition
	6. Motors normally feel hot	Verify if actual motor amperage draw is correct
Seal Leaks	1. Dry running	Open valves. Prime pump.
	2. Solids in fluids	Add suction strainer
	3. Damaged during field replacement	Inspect and replace damaged components







Spare Parts Items

1. P/N 901102	Cart Frame, Powder Coated
2. P/N 905001	2 HP, Dual Voltage TEFC Motor
3. P/N 905002	Rotary ON/OFF Switch
4. P/N 900325-01	30 Mesh Strainer, Complete
5. P/N 901126	Pump, Bronze 20 GPM
6. P/N 901007	Pneumatic Wheel, 10” (1 ea.)
7. P/N 540060	External Bypass Valve
8. P/N 901132	Spider Coupler, rubber (inside housing)
9. P/N 900333	Camlock Coupler, Female
10. P/N 900332-M	Camlock Coupler, Male
11. P/N 950083	Suction Stinger, 1” x 37”
12. P/N 900279	Suction Hose 1” x 10’, PVC
13. P/N 905006-25	Power Cord, 12/3 x 25’ w/molded plug
14. P/N 900278	Discharge Hose, 1” x 20’, PVC
15. P/N 900297	1” Nozzle/Valve, Polypropylene

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