

HUSKY[®]

**LIQUID
MANURE
PUMP**

ELECTRIC

**OPERATOR'S
MANUAL**

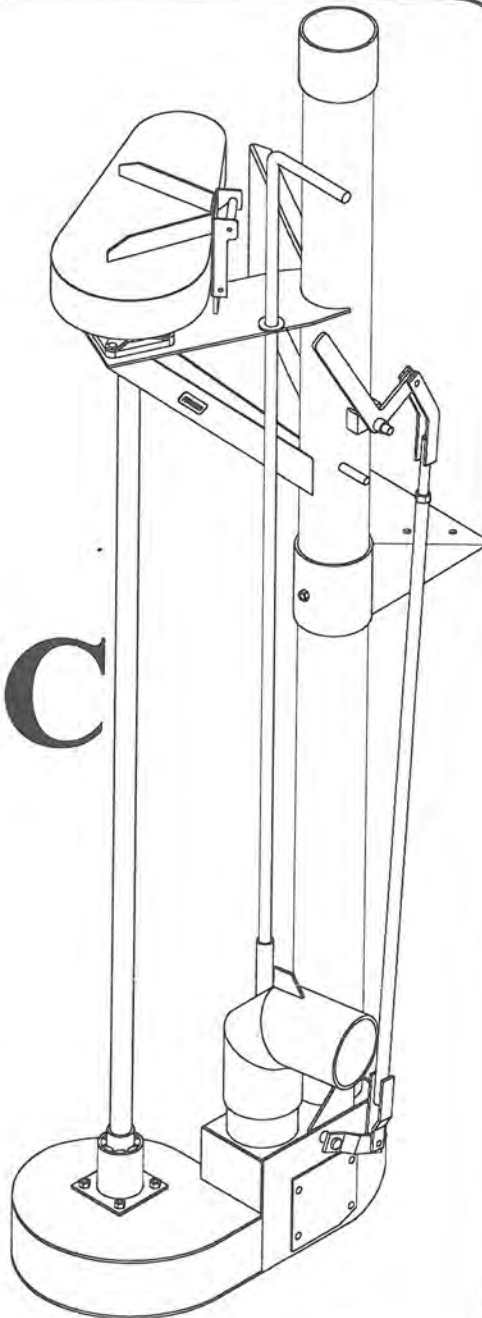


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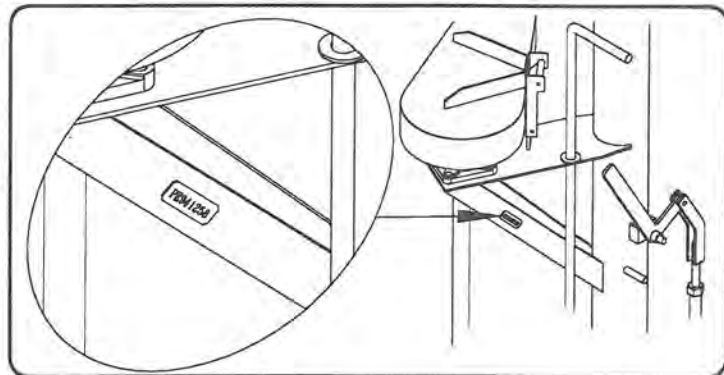
SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Liquid Manure Pump when ordering parts or requesting service or other information.

The serial number plate is located where indicated. Please mark the number in the space provided for easy reference.

SERIAL NUMBER LOCATION

Model type _____
 Serial number _____
 Production year _____



1 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT
YOUR SAFETY IS INVOLVED



The Safety Alert symbol identifies important safety messages on the Husky Liquid Manure Pump and in this manual. When You see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines

- DANGER** - An immediate and specific hazard which **WILL** result in severe personal injury or death if the proper precautions are not taken.
- WARNING** - A specific hazard or unsafe practice which **COULD** result in severe personal injury or death if the proper precautions are not taken.
- CAUTION** - Unsafe practices which **COULD** result in personal injury if the proper practices are not taken, or as a reminder of good safety practices.

SAFETY

YOU are responsible for the SAFE operation and maintenance of your Husky Liquid Manure Pump. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Husky Manure Pump be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating this equipment.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

Pump owners must give operating instructions to operators or employees before allowing them to operate the Manure Pump and at least annually thereafter per OSHA regulation 1928.57.

Manure Pump owners must follow safety practices as recommended by the Agriculture Safety Associations across Canada .

The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.

A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes themselves and bystanders to possible serious injury or death.

Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.

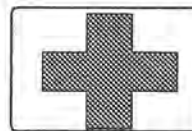
Think SAFETY! Work SAFELY!

1.01 GENERAL SAFETY

1. Read and understand the Operator's Manual and safety signs before operating, maintaining, adjusting or unplugging the manure pump.



2. Have a first aid kit available for use should the need arise and know how to use it.



3. Have a fire extinguisher available for use should the need arise and know how to use it.



4. Install and properly secure all shields and guards before operating.

5. Stop Electric Motor and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

6. Never enter manure storage facility without appropriate respiratory equipment and an independent oxygen supply.

7. Review safety related items with all operators annually

1.02 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting or unplugging.

2. Do not operate unless the required shields are in place and secured.

3. Never wear loose fitting clothing, keep hands, feet, hair and clothing away from all moving and/or rotating parts, while working with machinery, use personal protective clothing and eye and ear protection as needed.

4. Stop Electric Motor and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

5. Never enter Manure tank or manure storage facility without wearing appropriate breathing gear that carries an independent supply of oxygen.

6. Review all safety instructions annually.

1.03 MAINTENANCE SAFETY

1. Read and understand all the information contained in the Operator's Manual regarding maintenance, adjusting and operating the Manure Pump.
2. Do not attempt any adjustment or maintenance to any part of the Manure Pump when it is in motion.
3. Be very careful and exercise extreme caution when working around or near a rotating shaft.
4. Do not operate pump unless the rotating shield and all other guards are in place.
5. Never wear ill-fitting, baggy or frayed clothing when working around or on any of the drive system components.
6. Stop the motor and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging any system or component.
7. Never enter tank or manure storage facility without wearing appropriate breathing gear that carries an independent supply of oxygen. The buddy system is also a recommended procedure.

1.04 TRANSPORT SAFETY

1. Make sure you are in compliance with all local regulations regarding transporting Agricultural equipment on public roads and highways. Consult your local law enforcement agency for further information.
2. Ensure that the SMV (Slow Moving Vehicle) emblem and all reflectors and lights required by the local highways and transport authorities are in place and are clean and visible by overtaking and oncoming traffic.
3. Transport according to local regulations covering maximum width, weight and length.
4. Do not exceed speed limits. Reduce speed on rough roads and surfaces.
5. Always use a vehicle of sufficient size and weight to maintain vehicle stability during transport.

Think SAFETY! Work SAFELY!

1.05 MANURE STORAGE FACILITY SAFETY

1. Never enter tank or manure storage facility without wearing appropriate breathing gear that carries an independent supply of oxygen .
2. Keep others, especially children, out of these structures.
3. Use special care when opening storage facilities to prevent yourself or others from falling in.
4. Stored manure gives off hydrogen sulfide gas. One breath can kill. Keep away. Keep others away.
5. Do not enter storage facility without oxygen supplying equipment. The surface always crusts and looks solid. It is not. Stay away.
6. Set and adjust agitator before placing in pit. Never enter pit to unplug. Remove first.
7. Always have a ladder in storage tank as a means of getting out should you inadvertently fall in.

1.06 SAFETY DECALS

1. Keep safety decals and signs clean and legible at all times.
2. Replace safety decals if destroyed, missing, painted over or unreadable.
3. If a section of the pump is replaced that carries a safety decal, apply a new decal immediately.
4. Safety decals or signs are available from your Dealer Parts Department.

HOW TO INSTALL SAFETY DECALS:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Place sign in position and slowly peel back paper.

3 OPERATION

3.01 TO THE NEW OPERATOR OR OWNER

Husky Farm Equipment's Electric Liquid Manure Pumps are designed to agitate and transfer manure or sewage from Point A to Point B. It comes in a 3" pipe size, and a 4" pipe size, and designed for pit depths from 4 feet to 12 feet (with other sizes built to order). These pumps are usually driven with an Electric motor with motor sizes ranging from 5 HP to 10 HP. By following the operating instructions in conjunction with a good maintenance program, your Manure Pump will provide many years of trouble-free service.

GENERAL INFORMATION

Husky Farm Equipment Limited designs and manufactures all of its products so they can be operated safely. However the responsibility for safe operation rests with those who use and maintain the products.

The Husky Electric Liquid Manure Pump should be operated only by those who have been trained to do so, and who have read these operating instructions, procedures and safety precautions in this manual may increase the possibility of an accident or injury.

The Husky Electric pumps are equipped with an agitation spout that rotates at the bottom of the pump to mix up the material before pumping. The Pump can be changed from agitation to pumping by moving the lever at the top of the pump, this is not recommended to be done while the pump is running. The lever locks over centre either way.

The Husky Electric pumps are belt driven, this has some definite advantages over direct drive models, the speeds can be adjusted by changing motor pulleys, the pump itself is slowed down with the belt drive, this allows for a larger impeller at the bottom and a larger inlet, therefore the Husky pump will take in more foreign material than direct drive pumps

3.02 HOW THE MACHINE WORKS

The Husky Electric Liquid Manure Pump uses a motor to drive a fan or impeller assembly that rotates at high speeds. This fan pushes the liquid up the pipe for pumping or out through the agitator as required.

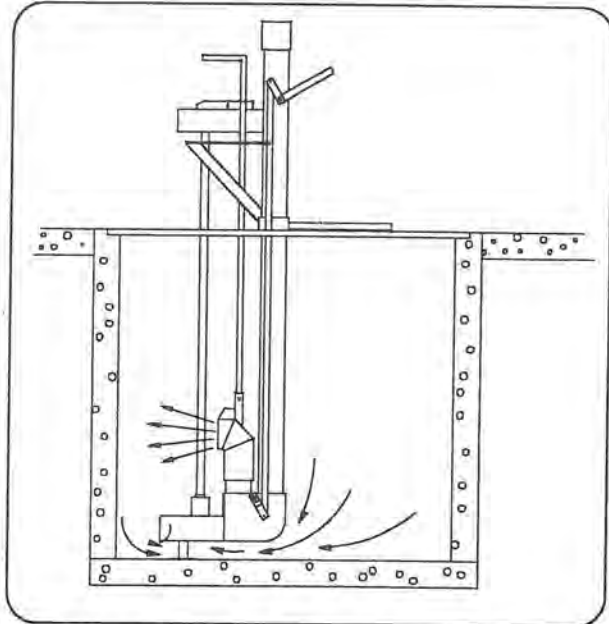


FIG. 1 PRINCIPALS OF OPERATION

3.03 BREAK-IN FOR ELECTRIC

There are some mechanical checks that must be done to insure long term integrity of the unit. When using the pump for the first time, follow this procedure:

A. Before Using

1. check motor amperage.

B. After 25 hours of use:

1. Check all hardware. Tighten as required.
2. Lubricate all grease points.

3.04 INSTALLATION OF THE PUMP

When installing the Husky Electric pump in a pit it must be made solid by attaching it to the floor or wall. If the pump is not fastened down it will rotate when starting and could cause damage to the wiring or cause personnel injury. Always have the Electric wiring installed by a qualified person and have it meet the standards of the electrical code in your area.

3.05 PIPE CONNECTION

The piping that is used to connect to the Husky Electric pump is usually either ABS or PVC plastic material. The Pipe must be installed so there are no valleys in a horizontal section that could freeze. The pipe can be installed above or underground there are so many different setups using the Electric pumps that the installer has to use his own discretion on the plumbing installation. The total head for discharging material is normally a maximum of about 30 ft. from the bottom of the pit, this will vary according to how thick the material is that is being pumped. Horizontally the pump will push long distances and again will be restricted by the consistency of the material. If the thicker material is not moving as fast as it expected it would be good practice to put a larger motor on the pump and speed the RPM'S up by using a large motor pulley

3.06 ELECTRIC MOTOR

The Husky Electric pump is designed to be driven with an Electric motor, normally a 5 HP motor is used for a 3" pump and a 10 HP motor is used for a 4 " pump. The motor should be wired to run **Counter Clock Wise** when looking at the pump from the top end or shaft end of motor. The Electric motor used should always be a totally enclosed motor as the manure could get into an open motor and destroy the motor. It is good practice to have a small (approx. 1/8 th inch) hole drilled in the end of a totally enclosed motor to let the condensation build up out (please check with your electrician before drilling). When doing this make sure that the drill does not penetrate the windings in the motor. After the pump is operating an electrician should do an amperage draw test on the motor to make sure it is not over loaded. If there is a problem with overload the motor can be fitted with a different size belt pulley available from the company .

3.07 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Husky Electric pump requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section . It is important for both personal safety and maintaining good mechanical condition of the pump that this check list be followed

1. Use only a motor of sufficient size to operate the pump.
2. Check pulley alignment and belt tension to avoid slippage, belt should be tight enough that the slack part of the belt between the pulleys can only be moved about 1/2 inch by hand.
3. Make sure the pump is fastened solid
4. Make sure belt shield is locked in place so it can't move
5. Make sure shaft shield is loose an able to rotate on the pump shaft.
6. Check all bolts and nuts through out the pump to make sure everything has been tightened from the factory.
7. Make sure all discharge pipe fittings and clamps are tight so the pipes will not come apart under pressure.

3.08 OPERATION OF THE PUMP

You are now ready to start the pump before starting make sure the discharge is closed. This can be done by moving the lever to the agitate position and locking it. Start the pump and check if the motor is working too hard.

The agitator can be rotated CW or CCW by turning the handle

3.09 REMOVING MANURE PUMP

If the pump must be removed for repairs or unplugging the motor can be removed by pulling out the hinge pin on the motor mount , if the pump has to be removed from the pit it can be lifted with any overhead device either a loader or a winch or come-along from the ceiling ,

4 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

1. Stop the motor and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging any system or component.
2. Keep hands, feet, hair and clothing away from all moving or rotating parts.
3. Make sure that all shields and guards are in place before operating.
4. Clear the area of bystanders, especially children, when carrying out any maintenance or making adjustments.
5. Never enter the tank without wearing appropriate breathing equipment that carries an independent supply of oxygen. Keep others out of the tank.

4.01 ANNUAL SERVICE

1. Grease Bearing.
2. Check bearing annually for wear and replace if needed
3. Check belts annually and replace when worn.

If the Husky Electric pump is used properly it should give many years of service. When worn parts are needed always call your dealer or the factory and get original parts.

4.01.1 FLUIDS AND LUBRICANTS

1. Grease

Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance and containing at least 1.5% molybdenum disulfide. Also acceptable is an SAE multi-purpose lithium base grease.

2. Storing Lubricants

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

4.01.2 GREASING

Refer to section 4.01.1 for recommended grease.

1. Use only a hand-held grease gun for all greasing. Air powered greasing systems can damage the seals on bearings and lead to early bearing failure.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean the lubricant passageway. Replace with a new fitting if necessary.
5. Grease all grease fittings daily.

4.01.3 BEARINGS

1. The bearing on the bottom of the Electric liquid manure pump is called a marine bearing and it is lubricated with the manure itself, this bearing needs no attention. When the pump is out of the pit you can check the bearing wear by lifting on the fan at the bottom, if the fan moves over 1/2 "/12.7mm it is time to change the bearing. (See changing the bearing in section 5.01.1 of this manual).
2. The bearing in the centre of the pump is an oil impregnated wooden block , it does not usually need replacing as it just keeps the shaft from whipping at high speeds. If the bearing is worn 1/2 "/12.7mm it is time to change the bearing. (See changing the bearing in section 5.01.1 of this manual)
3. The top bearing is a flange type ball bearing and is pre greased, one shot of grease annually is about right , if over greased it will push out the seal and allow dirt into the bearing.

5.01 MAINTENANCE

The efficient and safe operation of your Husky Electric Liquid Manure Pump will depend to a great degree on your diligence in following the maintenance and adjustment procedures outlined in this section. If you follow these recommendations, your Pump should work to its maximum potential.

5.01.1 CHANGING BEARINGS

During the life of the manure pump the bearings may become worn and need to be replaced. Proceed in this manner:

1. Stop the motor and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging any system or component.
2. Remove cover plate and foot assembly.
3. Inspect inside housing for wearing.
4. Remove bolt in centre of fan on bottom
5. Pull fan from shaft
6. Loosen lock collar or 4 bolts on top flange bearing
7. Move the shaft up from the bottom bearing
8. The bearing can then be removed by unbolting it from the housing.
9. The wooden support bearings in the middle can be changed without taking the pump apart.

6 TROUBLE SHOOTING

The Husky Farm Equipment Electric Liquid Manure Pump is a simple transportable pump that is used to transfer liquids. It is a reliable system that requires minimum maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems you may encounter. If you encounter a problem that is difficult, after having read through this trouble shooting section, please call your local Husky dealer or call the factory direct. Ask for service and have serial number of your Pump ready.

PROBLEM	CAUSE	SOLUTION
Manure won't pump.	Slurry too thick.	Add water & agitate.
	Lifting too far.	Decrease head
	Manure Foams	Change feed formula
	Motor running backwards	Rewire motor
	Fan or pipe plugged.	Unplug.
Fan rubbing on bottom of housing	Shaft has slid down from bearing	Slid up again & tighten lock collar
Agitator valve will not work	Agitator slipped off tube	Replace and secure
	Change box plugged	Remove pump and unplug

	A	B	C	E	F	G	H	I	M	O	P	R	S	T
Annual Service														
Break - In Bearings Servicing														
Changing Bearings														
Electric Motor														
Fluids and Lubricants														
General Safety														
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The Parts Book with a list of all the parts on your pump is enclosed with this manual at the time you purchase the pump new.

Contact your local dealer or the factory if you need a copy of the parts book or you need a new copy of this operator's manual

At the time of printing there is no charge for these books to an owner of Husky Liquid Manure Equipment.

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