



**PROPELLER AGITATOR**

**HD PROPELLER AGITATOR**

**RACEWAY AGITATOR**

***OPERATOR'S MANUAL***

## **GUARANTEE**

All Husky Farm Equipment manufactured by Husky Farm Equipment Limited is guaranteed. Guarantee covers all the replacement cost or repair of all parts said to be defective from manufacture. Guarantee also covers labour installing said parts, if installed at Husky's Manufacturing plant. Time and use is the essence of the guarantee. If equipment is used on a private property for an individual's use, guarantee will be in effect for twelve months from date of invoice. If equipment is used for commercial use to do custom work for money then guarantee will be in effect for three months only from date of invoice.

## **EXEMPTIONS FROM GUARANTEE**

Cost of transportation of equipment to or from Husky Farm Equipment Limited either by customer or by Husky's service staff or cost of mail or of public transportation is not covered. Tires and electric or hydraulic motors are covered by manufacturer's warranty and although Husky may assist to get warranty, Husky will not be responsible other than that allowed by manufacture's warranty. Items subject to normal wear from use is not covered by guarantee if faulty part is simply worn.

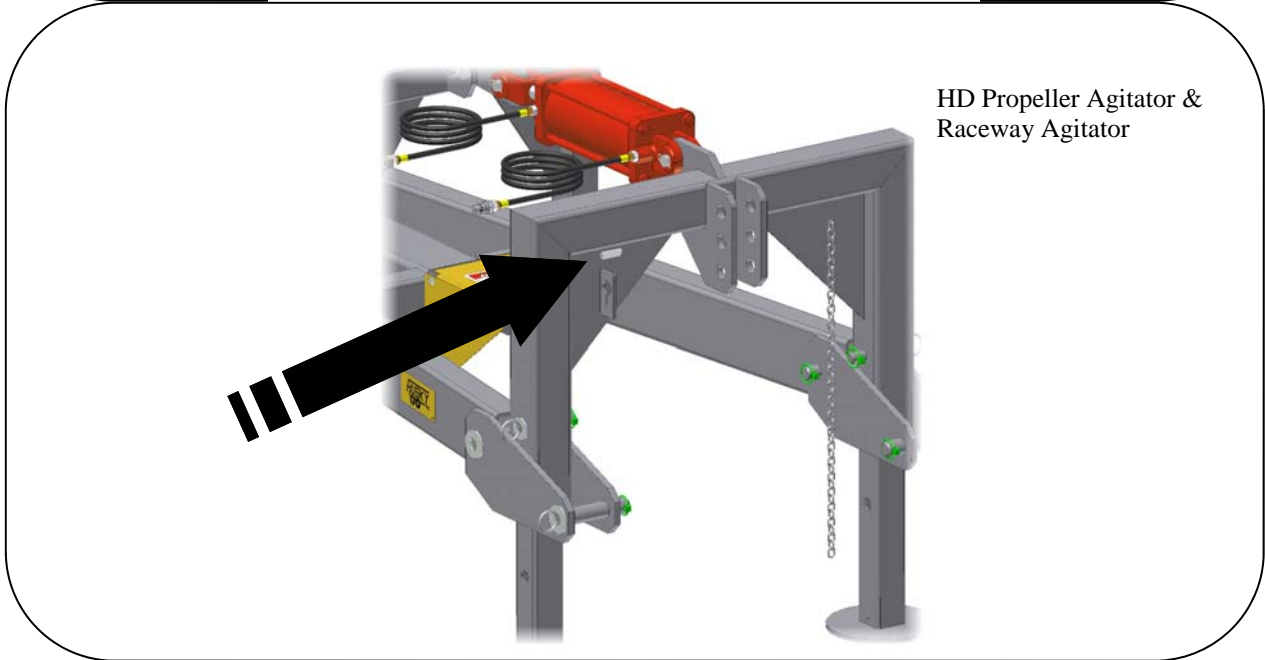
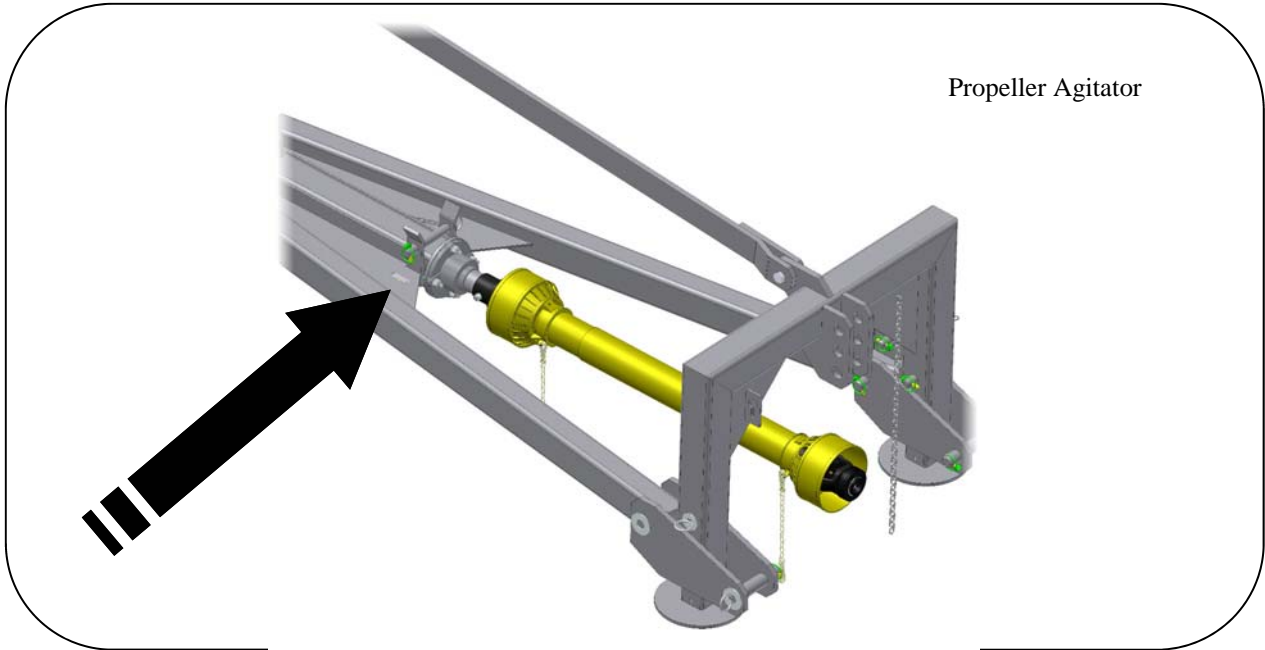
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# SERIAL NUMBER LOCATION

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

The serial number plate(s) 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 INTRODUCTION

Congratulations on your choice of a Husky Liquid Manure Agitator to compliment your farming operation. This equipment has been designed and manufactured to meet the need of most discerning operators. The highest quality components are used throughout, and each step of Husky manufacturing is inspected under strict quality control.

Safe, efficient and trouble-free operation of your Husky Liquid Manure Agitator requires that you and everyone else who will be operating or maintaining the machine read and understand all of the safety, operation, maintenance and trouble shooting information contained within this Operator's Manual.

Keep this manual handy for frequent reference and pass on to new operators or owners. Call your Husky Dealer if you need assistance, information or additional copies of the manuals.



## OPERATOR ORIENTATION

The directions left, right, front and rear, as mentioned throughout the manual, are as seen from the tractor driver's seat and facing in the direction of travel.

## 2 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 Agitator 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 guidelines

**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 Agitator. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Liquid Manure Agitator 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.

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

Husky Liquid Manure Agitator 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 does not understand 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.

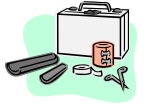
**Think SAFETY! Work SAFELY!**

## 2.01 GENERAL SAFETY

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



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. Do not allow riders on the machine or tractor.

6. Stop tractor engine, disengage PTO clutch, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

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

8. Review safety related items with all operators annually.

## 2.02 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting or unplugging.
2. Do not allow riders on the Husky Liquid Manure Agitator or the tractor during operation or transport.
3. Do not operate a PTO driven system unless the required shields are in place and secured.
4. 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.
5. Stop tractor engine, disengage PTO clutch, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
6. Before applying hydraulic pressure to the system, make sure everyone is clear and that all connections are tight and all components are in good repair.
7. Never enter manure tank or manure storage facility without wearing appropriate breathing gear that carries an independent supply of oxygen.
8. Always use a tractor of sufficient size and weight to maintain vehicle stability during transport and during use.
9. Clean or install reflectors and SMV emblem before transporting and add extra lights for transporting during times of limited visibility.
10. Make sure parking brake on the tractor is set and block wheels so it cannot roll.
11. Make sure the PTO is not run on too great an angle as it will cause vibration and could shear a pin in the PTO or it could cause the PTO to break and increase the danger of injury.
12. Review all safety instructions annually.

**Think SAFETY! Work SAFELY!**

## 2.03 MAINTENANCE SAFETY

1. Read and understand all the information contained in the Operator's Manual regarding maintenance, adjusting and operating Husky Liquid Manure Agitator.
2. Block the frame up securely and firmly if adjustments and maintenance to the Liquid Manure Agitator are required.
3. Exercise extreme caution when working around or with high-pressure hydraulic systems. Depressurize the system when connecting or disconnecting the hose couplers.
4. Wear heavy gloves and eye protection when searching for suspected hydraulic leaks. A high- pressure concentrated stream of hydraulic fluid can pierce the skin. If such an event happens, seek immediate medical attention as infection and toxic reaction could develop.
5. Do not attempt any adjustment or maintenance to any system of the Husky Liquid Manure Agitator when the implement is in motion.
6. Be very careful and exercise extreme caution when working around or near a rotating PTO shaft.
7. Do not operate PTO system unless the rotating shield and all other guards are in place.
8. Never wear ill-fitting, baggy or frayed clothing and never have unkempt long hair when working around or on any of the drive system components.
9. Stop the engine, place all controls in neutral, remove the ignition key, set the park brake and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging any system or component.
10. 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.



## 2.04 HYDRAULIC SAFETY

1. Make sure that all components in the hydraulic system are kept in good condition and are clean.
2. Replace any worn, cut, abraded, flattened or crimped hoses and metal lines.
3. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure; 1600 to 2300 pounds per square inch. Such repairs will fail suddenly and create a hazardous and unsafe condition.

4. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.



5. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
6. Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged and kept in good repair.
7. Make sure all hydraulic hoses are not snagged on anything .

## 2.05 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. Ensure that the Husky Liquid Manure Agitator is hitched positively and safely to the tractor drawbar. Use proper safety chain to secure a safe hitch hookup when transporting.
4. Transport according to local regulations covering maximum width, weight and length.
5. Do not exceed speed limits. Reduce speed on rough roads and surfaces.
6. Always use a tractor of sufficient size and weight to maintain vehicle stability during transport.
7. Always use hazard warning flashers on tractor when transporting unless prohibited by law.

**Think SAFETY! Work SAFELY!**

## 2.06 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.

## 2.07 STORAGE SAFETY

1. Store the Husky Liquid Manure Agitator on a firm, level surface.
2. Store away from areas of human activity. Do not permit children to play on or around the stored Liquid Manure Agitator.
3. Make sure the unit is sitting, or blocked up firmly and solid and will not tip or sink into a soft area.

## 2.08 TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. Check wheel bolt torque daily.

## 2.09 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 Agitator is replaced that carries a safety decal, apply a new decal immediately.
4. Safety decals or signs are available from your Dealers 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.
- Wash area with soapy water and install decal while still soapy, then it can be smoothed out easily.
- Place the sign in position and slowly peel back the remaining paper, smoothing the sign as it is applied.



### 3 SAFETY DECAL LOCATIONS

The types of decals on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with the various Safety Decals, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

Think SAFETY! Work SAFELY!



REMEMBER - If safety decals have been damaged, removed, become illegible or parts replaced without decals, new decals must be applied. New decals are available from your authorized dealer.

## 4 OPERATION

### 4.01 TO THE NEW OPERATOR OR OWNER

Husky Farm Equipment's Liquid Manure Agitators are designed to efficiently agitate the holding tank/lagoon manure. Many of the features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. The manual will take you step-by-step through your working day. By following the operating instructions in conjunction with a good maintenance program, your Husky Liquid Manure Agitator will provide many years of trouble-free service.

#### General Information About the Husky Liquid Manure Agitator

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 these products.

The Husky Liquid Manure Agitator should be operated only by those who have been trained to do so, and who have read these operating instructions and operating manual.

Failure to follow the instructions, procedures and safety precautions in this manual may increase the possibility of an accident or injury.

Depending on which model of Agitator, and the accompanying fan/auger bought with the machine, the Agitator will either run at 540 RPM or 1000 RPM .

Ø	RPM	HP	TYPE
21 1/8"	1000	80	3 Blade Fan
23 1/2"	1000	120	3 Blade Fan
26 1/2"	540	80	3 Blade Fan
28 1/2"	540	120	3 Blade Fan
27"	490 max	120	Auger

The Auger Agitator is specifically designed to run at a speed of equal to or less than 490 RPM. Do NOT attempt to run the Auger at a speed greater than this

Spline Adaptors are not permitted for use with Husky Farm Equipment Liquid Manure Agitators. All agitators must be run at the proper Tractor RPM with at least the minimum recommended HP as shown in the chart above.

### 4.02 HOW THE MACHINE WORKS

The Husky Liquid Manure Agitator uses a P.T.O. driven propeller similar to a boat propeller to break up and stir the manure in a lagoon or pit.

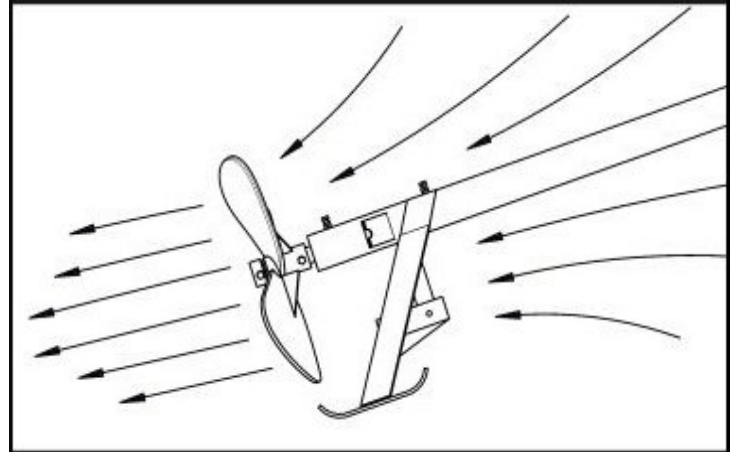


FIG. 1 PRINCIPLES OF OPERATION

## 4.03 BREAK-IN FOR AGITATOR

Although there are no operational restrictions on the agitator when it is new, there are some mechanical checks that must be done to insure long term integrity of the unit. When using the agitator for the first time, follow this procedure:

### A. Before Using

1. Lubricate all grease points.
2. Re-torque wheel bolts to the values listed in Maintenance section.

### B. After 40 and 100 miles on the road or 2 hours and 5 hours of use (if equipped with wheels):

1. Retorque wheel bolts to the specified values listed in Maintenance section.
2. Check all hardware. Tighten as required.
3. Lubricate all grease points.

### C. Then go to the service schedule as outlined in the maintenance schedule.

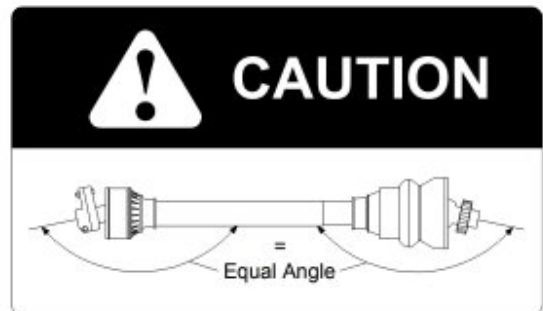
## 4.03.1 TOWING

1. When towing the Husky Liquid Manure Agitator always put a safety pin in the draw bolt and use safety chains as required by the Department of Transport.
2. At high speed the agitator may weave on the road, never travel at excessive speed.
3. Always check wheel bolts and bearings and tires before and during towing.
4. Tie a red flag, or red light at night on the end of the agitator while towing or as required by the Department of Transport.
5. Use Slow Moving Vehicle sign if towing less than 25 M.P.H. or as required by the Department of Transport.

## 4.04 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Husky Liquid Manure Agitator requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both personal safety and maintaining the good mechanical condition of the Agitator that this checklist be followed.

1. Lubricate the machine per the schedule outlined in the "Maintenance Section".
2. Use only a tractor of adequate power and weight to operate the Agitator.
3. Ensure that the machine is properly attached to the tractor using a pin and lynch system that is supplied when new.
4. Ensure that the PTO driveline is securely attached on both ends, that there is proper overlap in length so that the PTO won't come apart or jam up, and that there is **equal bend on both ends of PTO** when working.



5. Check that PTO shields are in place and that it can rotate freely and telescope freely. Secure the PTO shield safety chain (if supplied) to the PTO guards.
  - A. Inspect all hydraulic lines, hoses, fittings and connectors. Tighten any loose fittings and replace any damaged components.
  - B. Use a clean cloth to wipe any accumulated dirt from the couplers before connecting to the tractor's hydraulic system.
  - C. Be sure the hydraulic reservoir in the tractor is filled to the required specification.
  - D. Be sure the tractor hydraulic system specifications match the requirements of the motors & cylinders
6. Check the tires and ensure that they are inflated to the specified pressure (See Specifications Section). Check the wheel bolt torques. Be sure to re-torque as required to the specified level.
7. Be sure that any lights, reflectors or SMV signs if installed are clean.

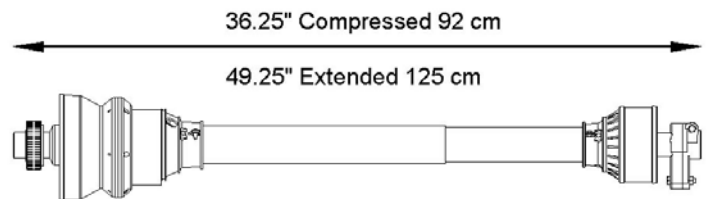
## 4.05 EQUIPMENT MATCHING

Special attention must be given to selecting a tractor with sufficient power to safely maneuver and run the agitator.

As a general guideline, Table 1 lists the minimum horsepower requirements for the tractor when the unit is in normal operating conditions

**TABLE 1 TRACTOR HORSEPOWER REQUIREMENTS**

SIZE OF PUMP	APPROX. LITRES	RECOMMENDED TRACTOR HORSEPOWER
3" Electric Pump	14000 LPM (300 Imp GPM)	5 HP Electric Motor
4" Electric Pump	20000 LPM (450 Imp GMP)	10 HP Electric Motor
6" K-31 Pump	14000 LPM (3000 Imp GPM)	60 to 70 Tractor HP
8" H-5000 Pump	23000 LPM (5000 Imp GPM)	90 to 100 Tractor HP
8" H-6000 Pump	31000 LPM (7000 Imp GPM)	150 to 160 Tractor HP
10" H-10000 Pump	44000 LPM (10000 Imp GPM)	150 to 160 Tractor HP
8" PL490 Lagoon Pump	31000 LPM (7000 Imp GPM)	150 to 160 Tractor HP
10" PL490 Lagoon Pump	44000 LPM (10000 Imp GPM)	150 to 160 Tractor HP
Propeller Agitator	100000 LPM (22000 Imp GPM)	80 to 150 Tractor HP
HD Propeller Agitator	100000 LPM (22000 Imp GPM)	120 to 160 Tractor HP
Auger Agitator (Raceway Agitator)	100000 LPM (22000 Imp GPM)	120 to 160 Tractor HP



**FIG. 2 DRIVELINE DIMENSION**

### HYDRAULIC SYSTEM:

If using a hydraulic system, make sure that the system is set to supply the specified volume and pressure for the pump. If you have any questions about the type of hydraulic system in the tractor or its output, consult the tractor Operator's Manual. The motor requires 20 GPM (75 Litre/min) flow at 2000 PSI.

If the dimension varies by more than 3 inches (76 mm) adjust the tractor drawbar, or 3 point hitch. (Refer to tractor manual for details.)

## 4.06 INSTALLATION OF THE AGITATOR

### 4.06.1 THREE POINT HITCH

1. The Husky Liquid Manure Agitator comes in a 3-point hitch mounting setup. After hooking up the 3-point hitch to the tractor, remove the heavy pin that holds the three point hitch upright. (Propeller Agitator Only)



2. When hooking up hydraulics follow these steps:
  - Inspect all hydraulic lines, hoses, fittings and connectors. Tighten any loose fittings and replace any damaged components.
  - Use a clean cloth to wipe any accumulated dirt from the couplers before connecting to the tractors hydraulic system.
  - Be sure the hydraulic reservoir in the tractor is filled to the required specification.
  - Be sure the tractors hydraulic system specifications match the requirements of the agitator.

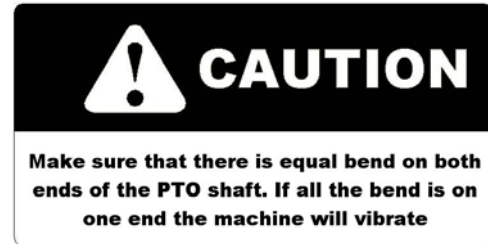
### 4.06.2 OPTIONAL TRAILER

1. There is an optional trailer that is available to transport the machine behind a tractor or truck. If you purchased a trailer and are installing it under the machine, simply raise up the machine and roll the trailer under it until it gets to the lifting ring (Propeller Agitator) or the stop angles (HD Propeller Agitator)
2. Lower the machine until it rests on the trailer and install the positioning bolt through the lifting ring on the machine, making sure safety pins are in place and it is safe. Then install the hitch bracket on the propeller end of the machine with the hitch end protruding through between the propeller blades, again making sure it is installed safely.
3. After trailer installation is complete remove machine from tractor and install a red flag or whatever is required by your Department of Transportation on the trailing end of the machine.

## 4.06.3 HOOKING UP PTO

### HOOKING UP PTO

1. Install the PTO shaft onto the tractor PTO. Make sure the lock pin is secure and cannot come off. If equipped with safety collar, check that the pin has returned to running position. Check the shield on the PTO to make sure it is turning freely and in proper working condition. If equipped, fasten PTO safety chain to the propeller and tractor. Never operate a machine unless the PTO shield is working properly. Check the propeller end of the PTO to make sure it is secure on the shaft, and that the bolt and nut are attached properly.



### 4.06.4 OPEN TOP PIT

1. Back the tractor over the lagoon and lower the machine into the liquid. Do Not use the agitator as a Ram to open a hole in the crust.
2. Before starting the machine make sure that the parking brakes are on in the tractor and the equipment cannot roll or slide into the lagoon.
3. Block tractor wheels.

### 4.06.5 COVERED PIT

#### PROPELLER AGITATOR

1. If the Propeller is to be installed through a hole in a tank with a top on, then the machine can be bent in the middle to make it easier to get in the hole.
2. Lower propeller on the ground with the legs in the hole. Install the pin on the side of the three point hitch, then remove the pin at the top of the 3-point hitch as well as the pin right behind the PTO; this will allow the prop to bend in the middle. The tractor operator will have to back the tractor up as the Agitator is lowered into the hole. Special attention must be made during this operation as to ensure that the Agitator doesn't get caught on the concrete hole or any beams that may be protruding down under the floor. Back up until the feet touch the floor. Remove the pin located on the left side of the 3-point hitch, being careful as the drive shaft tube returns back into the cradle. Reinsert the pin located behind the PTO as well as the pin located on top of the 3-point hitch.



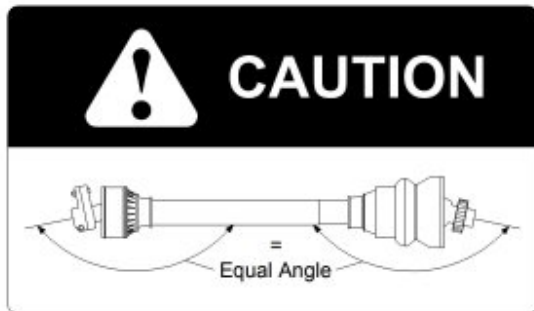
## RACEWAY (Auger) AGITATOR

The Raceway Agitator is specifically designed to maneuver through small openings in a floor to agitate raceways. Although the raceway was designed solely for this purpose it is not limited to it. Raceway Agitators may also be used in open pits.

1. Remove the locking pin near the front of the agitator.
2. Back the propeller up to the hole you want to enter. Using the hydraulics, bend the agitator until it fits into the hole. The tractor operator will have to back the tractor up as the Agitator is lowered into the hole. Special attention must be made during this operation as to ensure that the Agitator doesn't get caught on the concrete hole or any beams that may be protruding down under the floor.

## 4.07 OPERATION OF AGITATOR

1. Start the machine slowly and gradually increase speed making sure that it runs reasonably smooth. If the machine vibrates, the angle on the PTO is likely excessive and the Agitator must be raised or the top linkage must be adjusted to make the angles on each end of the PTO equal.



2. If the machine vibrates after a short time, check to see if the shaft is covered with string or hay. Also check to make sure the angle on the PTO did not change.
3. The suggested method of operation is to keep the blade near the surface to allow the solids to be sucked in to the fan and broke up. If too much air is drawn in, the propeller will cavitate and vibrate. Always keep the pit going in a circular motion.

## 4.08 REMOVAL

When removing the Husky Liquid Manure Agitator take caution not to lift it up through the lid of the pit or up through any heavy solids. Bending could result.

To remove the propeller agitator from a covered pit, reverse the installation procedure in 4.06.5.

## 4.09 CLEAN-UP

At the end of agitating your manure facility, follow this procedure to clean the machine:

1. Wash the outside of the Husky Liquid Manure Agitator with a hose or pressure washer.
2. All Husky Liquid Manure Agitators are subject to the effects of acid in the manure. Store the agitator away from the pit area, preferably inside. It is good practice to spray the agitator with oil both before and after use.
3. Always store the Husky Liquid Manure Agitator with propeller end lower than 3-point hitch; this allows moisture to drain away from bearing.

## 4.10 STORAGE

### 4.10.1 PLACING IN STORAGE

After the seasons use, inspect all systems of the Husky Liquid Manure Agitator. Repair or replace any worn or damaged components to prevent any down time at the beginning of the next season. Since the machine works with manure, it is necessary to thoroughly wash the unit to prevent manure acids from working on the components while in storage. All manure, debris and residue should be removed. It is good practice to have a small canister sprayer and to spray light oil on the agitator both before and after using.

1. Inspect all hydraulic hoses, lines, couplers and fittings. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded or is separating from the crimped end of the fitting.
2. Lubricate all grease fittings (see Maintenance Section). Make sure that all grease cavities have been filled with grease to remove any water residue from the washing.
3. Check the bearings according to the maintenance section.
4. Touch up all paint nicks and scratches to prevent rusting.

### 4.10.2 REMOVING FROM STORAGE


Before starting to use the machine, the customer should do a thorough inspection and servicing. Follow this procedure:

1. Lubricate all grease fittings to remove any condensation that accumulated during the storage period.
2. Before towing trailer, torque all wheel bolts and check tire pressure to the specified values.

## 5 SERVICE AND MAINTENANCE

### 5.01 MAINTENANCE

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

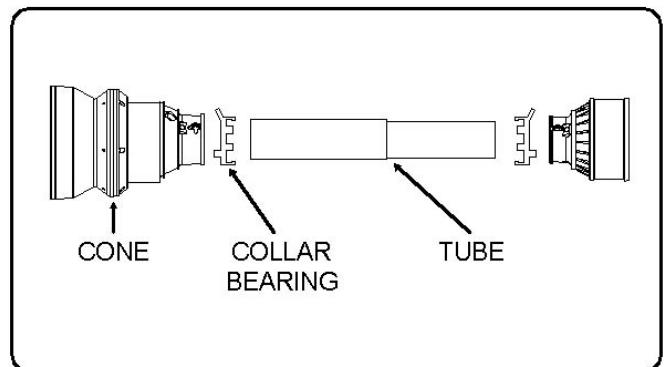
**MAINTENANCE SAFETY**

1. **Stop tractor engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, repairing, adjusting or unplugging.**
2. **Be careful when working around a high-pressure hydraulic system. Wear the proper eye and hand protection when searching for leaks. Use a piece of wood or cardboard as a backdrop when searching for leaks.**
3. **Seek immediate medical attention if hydraulic fluid pierces the skin as toxic reaction and infection could develop.**
4. **Keep hands, feet, hair and clothing away from all moving or rotating parts.**
5. **Make sure that all shields and guards are in place before operating.**
6. **Clear the area of bystanders, especially children, when carrying out any maintenance or making adjustments.**
7. **Always securely support the frame with stands or large blocks when removing a tire or working under the machine.**
8. **Never enter a tank without wearing appropriate breathing equipment that carries an independent supply of oxygen. Keeps others out of tank.**

#### 5.01.1 PTO SAFETY SHIELD MAINTENANCE

It is important that the shield components rotate freely over the PTO shaft. Lubricating both the shield bearings and also periodic cleaning will ensure safe operation of the rotating shield. To disassemble, clean and lubricate the shield, follow this procedure:

1. Press down the collar bearing catches with a screwdriver to release the cone. Pull the cone towards the tube to remove it.
2. Spread the collar bearing and remove from the tube. Clean collar and the yoke bearing groove. After cleaning thoroughly, apply a good coat of grease to bearing groove.
3. Fit the collar bearing into the groove and the tube ensuring that the collar catches are centered over the matching holes. The tube and bearing must rotate freely in the bearing groove.
4. Fasten the cone by lining up the cone grease fitting over the grease filling hole on the collar bearing. Make sure that all catches are fastened and that the shield turns freely over the shaft.



**FIG 6 DRIVELINE SHIELD COMPONENTS**

## 5.01.2 PTO DRIVELINE SHEAR PIN

The PTO driveline is equipped with a shear pin to prevent damage to the mechanical drive should an object jam in the fan.

Follow this procedure when replacing the shear pin:

1. Stop tractor engine, place all controls in neutral, set parking brake, remove ignition key and wait for all moving parts to stop before dismounting.
2. Remove the ends of the shear bolt from each part of the yoke. It may be necessary to tap out the bolts with a punch if the end is distorted.
3. *What to check for on the brass bearing and thrust washer type of shear flange assembly:* Check that the brass bearing is not worn. Check that the thrust washer is in place and not worn or missing. Check the snap ring that it is correctly seated in the groove.
4. *What to check for on the ball bearing shear flange assembly:* Check that all the balls are in the cavity. Ensure that the grease fitting is in place and tight to hold all the balls in the proper location. If the shear flange was allowed to rotate several times, then the ball grooves on the inner and outer parts should be checked for wear or fracture.
5. Line up the bolt hole and install the shear bolt recommended by the manufacture.
6. Tighten the shear bolt securely in position.
7. Determine the cause of the bolt shearing. Remove the cause before using the machine again.



## 5.01.3 CHANGING BEARINGS

During the life of the Husky Liquid Manure Agitator the bearings may become worn and need to be replaced. Proceed in this manner:

1. Stop tractor engine, place all controls in neutral, set parking brake, remove ignition key and wait for all moving parts to stop before adjusting or repairing the machine.
2. Remove implement end of PTO from shaft.
3. Clean shaft with sandpaper and remove top bearing
4. Remove propeller blade and remove bolts holding bottom marine bearings in place and the bolts on each side of the wood blocks.
5. Pull the complete shaft from the Husky Liquid Manure Agitator, being careful not to bend it.
6. Using a long poker, knock the worn bearings out of the tube through the bottom end.

## 5.02 SERVICE

### 5.02.1 BEARINGS

The bearings on the Agitator are of three different types. The bearing at the 3-point hitch end is a heavy thrust bearing to take the push from the prop blade. It is a double roller flange bearing and should have 5 shots of grease every 8 hours. In the center of the Agitator is an oil impregnated wood bearing, which simply stabilizes the shaft from vibrating over the long distance. This bearing does not require lubrication on the Propeller Agitator. However on the HD Propeller Agitator and the Auger Agitator we provide a grease zerk on these wood bearings which should be greased 5-10 shots daily. The bottom bearing on the propeller end is a marine type bearing and is lubricated with the manure itself and needs no further lubrication. When the shaft gets 1/2" movement the bearing(s) should be replaced.

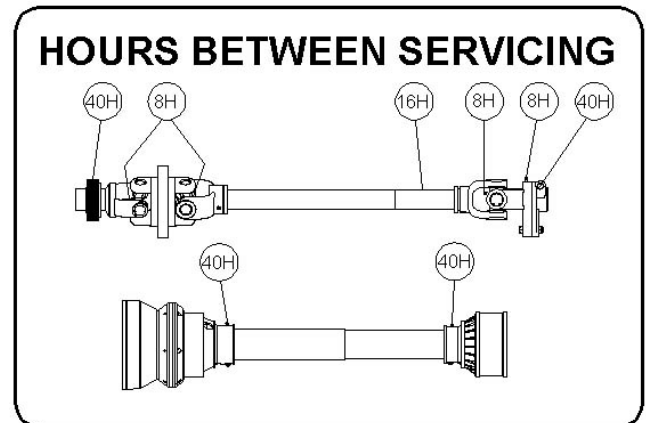
### 5.02.2 SERVICING INTERVALS

#### 8 HOURS OR DAILY

1. Grease PTO Knuckles
2. Grease PTO Shield.
3. Grease top thrust bearing, and wood bearings

#### ANNUALLY

1. Pull PTO apart and grease telescope.
2. Grease PTO Shield.
3. Replace bearings if shaft moves more than 1/2"



**FIG. 5 PTO DRIVELINE SERVICING**



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