

64-SERIES

6400 POULTRY LITTER WINDROWER

OPERATOR MANUAL

THIS MANUAL TO ACCOMPANY MACHINE

PART NO: 64-OM-01 PRINTING DATE: SEPT 2011

WARRANTY POLICY

KELLEY MANUFACTURING COMPANY (KMC) warrants that all goods sold to the original purchaser of any KMC product shall be free of any defects in material and workmanship if used under normal operating conditions. The warranty period begins on the date of purchase by the retail customer. For non-commercial users the warranty ends twelve (12) months thereafter. For commercial users the warranty period ends six (6) months thereafter. KMC's sole responsibility is to repair and/or replace the defective part or parts at no cost to purchaser. This remedy is the **SOLE AND EXCLUSIVE REMEDY** of purchaser.

The purchaser must fill out and return the warranty registration form found in the front of the operator's manual. Failure to return the warranty registration form within 30 days shall result in the goods being sold "AS IS", and all warranties shall be excluded.

This warranty shall not apply to those items that are by nature worn in normal service, including but not limited to belts, springs, teeth, chains, etc. Items such as tires, tubes, and gearboxes and all other items warranted by the original manufacturer are warranted only to the extent of their individual manufacturer warranty, and KMC is not warranting any of said items. All warranty claims must be made through a KMC licensed dealer, and a warranty form request must be submitted to KMC within 30 days of failure or the warranty provision shall be unenforceable against KMC.

No agent or person has authority to change or add to this warranty as written.

THE ABOVE IS THE ONLY WARRANTY MADE BY KMC AND IS MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. KMC MAKES NO WARRANTY OF MERCHANTABILITY AS TO ANY GOODS MANUFACTURED BY KMC AND FURTHER, KMC DOES NOT WARRANT ANY SUCH GOODS AS SUITABLE FOR ANY PARTICULAR PURPOSE TO THE RETAIL CUSTOMER. THE SUITABILITY OF GOODS FOR ANY PURPOSE PARTICULAR TO THE CUSTOMER IS FOR THE CUSTOMER, IN HIS SOLE JUDGEMENT, TO DETERMINE. KMC FURTHER MAKES NO WARRANTIES WITH RESPECT TO ITS MANUFACTURED GOODS THAT WOULD NORMALLY BE DISCLOSED BY AN EXAMINATION. THIS IS THE FULL AND FINAL EXPRESSION OF ALL WARRANTY LIABILITY OF KMC. NO OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, SHALL BE ENFORCEABLE AGAINST KMC.

Kelley Manufacturing Co. 80 Vernon Drive / Zip 31794 P.O. Drawer 1467 / Zip 31793 Tifton GA

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TO THE PURCHASER

This **KMC Poultry House Litter Windrower** has been carefully designed and manufactured to give years of dependable service. In order to operate it efficiently and maintain if properly, please read the instructions within this manual thoroughly.

While reading the manual through, you will notice that it is divided into sections which clearly explain the assembly and operations of each components of this machine. A Table of Contents is also provided for quick reference to these sections

Some components of this machine are labeled left or right. The notations are determined facing the direction the machine will travel in use.

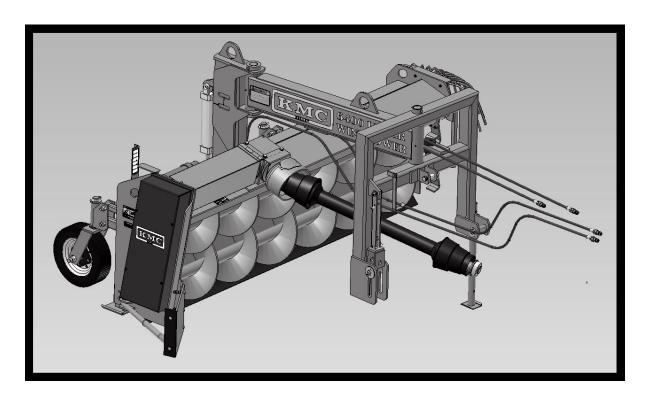


This safety alert symbol is used throughout this manual to identify safety messages. When you see this symbol, read the message which follows as it will advise you of possible injury.

After reading this Operator's Manual, Please keep it for reference each season.

To insure procurement of the proper repair parts, please record your machine's Serial Number and Purchase Date as shown below:

Model No	
Serial No	
Purchase Date	



Retail Customers Responsibility Under The KMC Warranty

The retail customer's responsibilities are:

- 1. To read the Operator's Manual and operate the **Poultry Litter Windrower** in accordance with instructions given in the manual
- To inspect the **Poultry Litter Windrower** daily, lubricate as specified and repair or replace parts as needed, especially when continued use would cause damage or excess wear to other parts.
- 3. To maintain and keep in place all safety shields and devices.
- 4. When Warranty Service is necessary, it is the customer's responsibility to deliver the machine to the KMC dealer from which is was purchased, Warranty repairs should be submitted to the dealer within **thirty (30)** days of failure.
- 5. Dealer travel to the machine or hauling the machine to his shop for the purpose of performing warranty service is not allowed under KMC warranty. It is a cost to be paid for by the retail customer. Any arrangement whereby the dealer agrees to absorb all or part of this cost is strictly between the dealer and retail customer.

SAFETY PROCEDURES

Safety and performance are the primary objectives of the designers of KMC equipment. Safety features have been incorporated into this machine where possible and warnings given in other areas. For your safety, **PLEASE** read and observe the following suggestions,

- 1. **READ** the Owner's Manual.
- 2. Do not permit anyone to ride on the machine.
- 3. Before starting or operating the machine, make a walk-around inspection and check for obvious defects such as loose mounting bolts and damaged components. Correct any deficiencies before starting.
- 4. Keep all persons a safe distance away from the rear and sides of the machines while it is in operation.

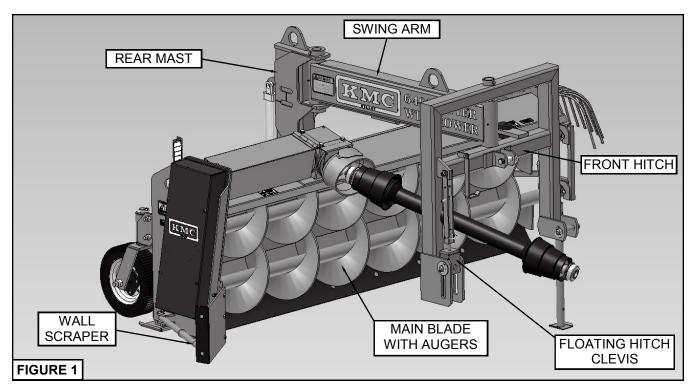


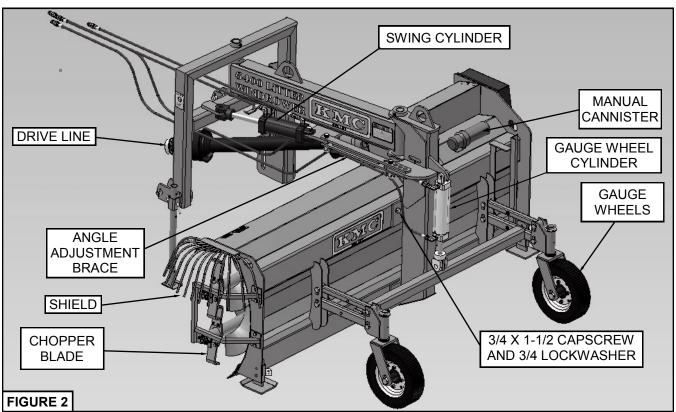
- 5. Do not allow children to operate the Litter Windrower. Only experienced tractor operators should operate the tractor when using the Litter Windrower.
- The work area should be cleared of objects that can be pickup and become entangled in the auger.
- 7. Drive safely during transport; excessive speed while turning on rough ground or over hills could cause tractor to tip over.
- 8. Make sure hitch components are attached securely before operating or transporting.
- 9. Use flashing warning lights when on highways, except where prohibited by law.
- 10. Disengage auger, apply parking brake, and stop tractor engine before dismounting tractor.
- 11. Keep all shields in place.
- 12. Keep hands, feet and clothing away from moving parts.
- 13. Make sure everyone is clear of machine before starting tractor or operating machine.
- 14. Observe all safety decals located on machine.

Please check with the proper authorities about state restrictions and/or regarding permits that may be necessary when transporting equipment on any highways in your state

POULTRY LITTER WINDROWER BASIC FEATURES

Throughout this manual we will be discussing various features and components of the KMC Poultry Litter Windrower. References to various components for adjustments, settings, performance, and lubrication are made. The following diagram will help in identifying these components.



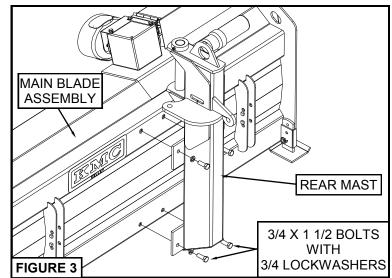


ASSEMBLY INSTRUCTIONS

The Poultry Litter Windrower is shipped in nine pieces; the front hitch, swing arm, rear mast, main blade assembly, wall scraper, hitch cylinder, swing cylinder, driveline, and angle adjustment brace.

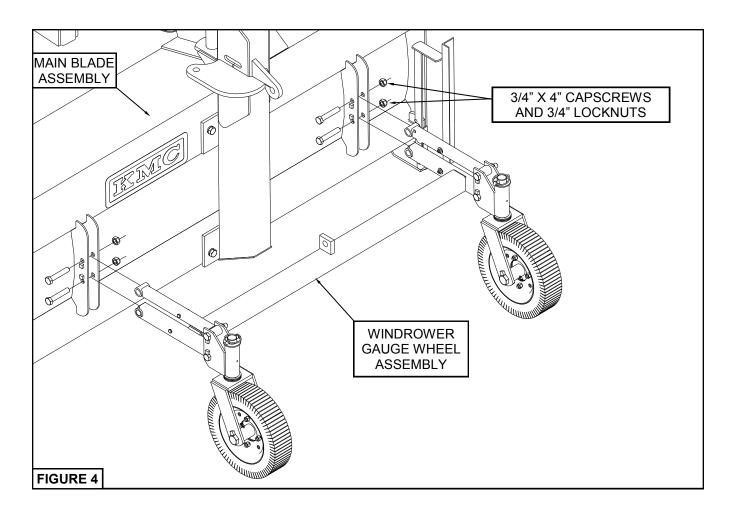
WINDROWER REAR MAST

Assembling the Litter Windrower is accomplished by bolting the rear mast to the main blade assembly with the four included 3/4 x 1-1/2in bolts and lockwashers.

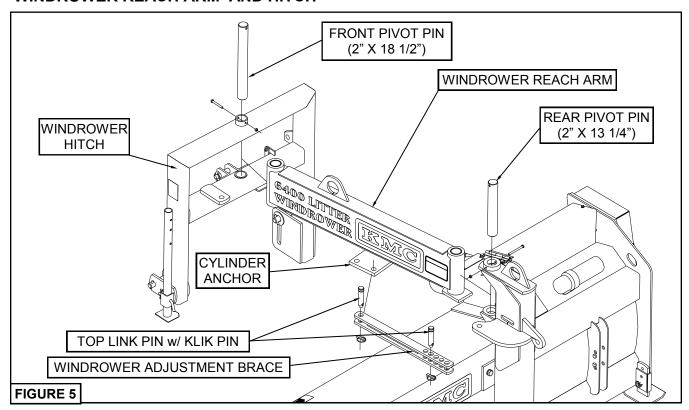


WINDROWER GAUGE WHEELS

Next attach the Windrower Gauge Wheels to the rear of the Main Blade Assembly using four 3/4" X 4" capscrew and four 3/4" stover locknuts.

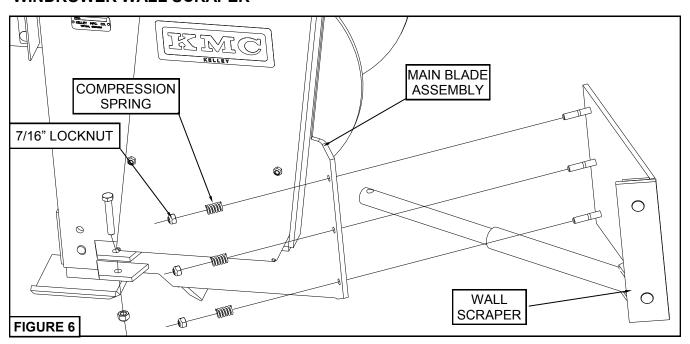


WINDROWER REACH ARM AND HITCH



The swing arm is attached to the rear mast with the Rear Pivot Pin (64-026-008), which is held in place with a 3/8" x 3" capscrew and a 3/8" stover locknut. When attaching the Windrower Reach Arm, the side with the cylinder anchor should face to the left of the machine. Next attach the front hitch to the Windrower Reach Arm with the Front Pivot Pin (64-026-007) and a 3/8" x 3" capscrew and a 3/8" stover locknut. Next attach the Windrower Adjustment Brace to the Windrower Reach cylinder anchor plate and the Rear Mast with a Top Link Pin (16-050-092) and a 7/16" x 1 3/4" Klik Pin (02-050-002) in each hole.

WINDROWER WALL SCRAPER

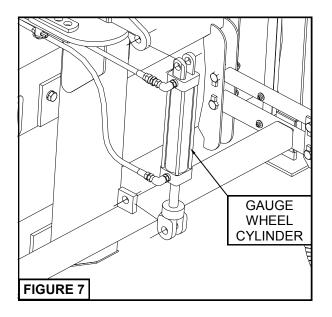


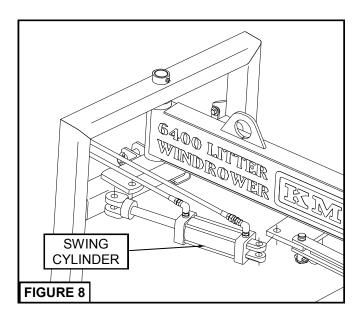
The Wall Scraper (64-082-004) is attached to the Blade Assembly with three 7/16" X 2 1/2" bolts, Compression Spring (44-050-001) and 7/16" locknuts. The tube and rod assembly of the wall scraper

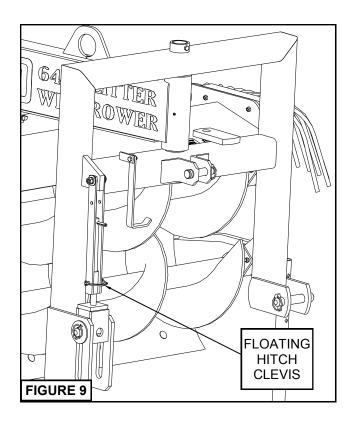
is attached to the tabs on the rear of the blade assembly using a 1/2" x 3-1/2" bolt and 1/2" locknut. The spring should go on the outer facing surface of the blade assembly as shown in Figure 6. Only tighten the locknut until 2 threads are visible on the outside of the bolt.

WINDROWER CYLINDERS AND HITCH CLEVIS

The gauge wheel cylinder, swing cylinder, floating hitch clevis, and adjustment brace are secured with their respective pins. Make sure the hydraulic hoses are routed to minimize possible damage.





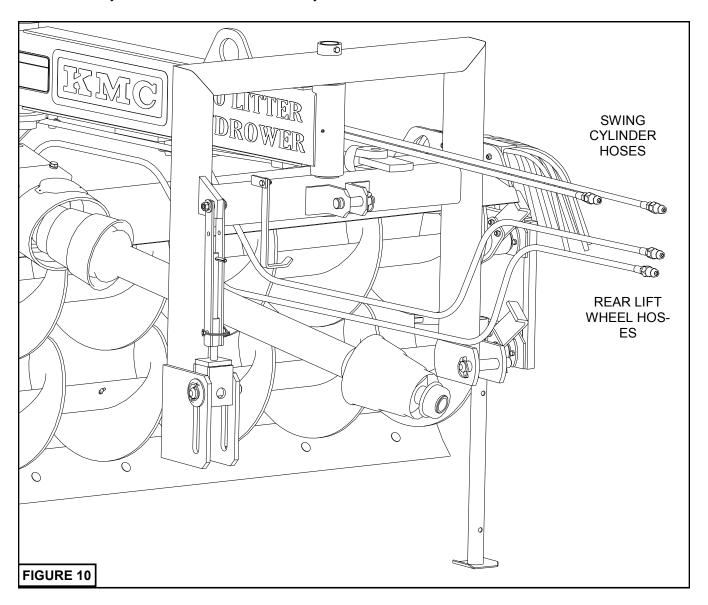


MACHINE SETUP

ATTACHING TO TRACTOR

The KMC Poultry Litter Windrower is designed to be operated with tractors having Category II three-point hitches. Two sets of tractor hydraulic remotes are also required to operate the cleaner.

Once the tractor has been set, attach the Poultry Litter Windrower to the tractor's lower lift arms using the provided hitch pins. Attach the tractor top link to the Windrower using an appropriate hitch pin. Install tractor stabilizing bars to minimize lateral movement of the Litter Windrower. Attach both sets of hydraulic hoses to the tractor's hydraulic remotes.



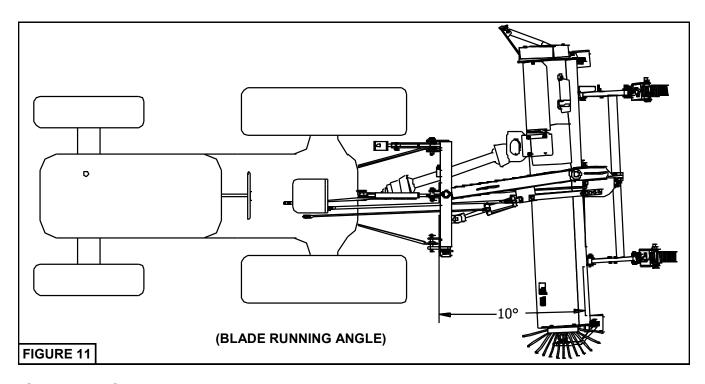


<u>CAUTION:</u> BEFORE DISCONNECTING FROM TRACTOR, LOWER JACKSTAND AND RAISE GAUGE WHEELS TO THEIR HIGHEST POSITION UNTIL THE BLADE OR SKID SHOES ARE RESTING FIRMLY ON THE GROUND. THIS WILL PREVENT MACHINE FROM BECOMING UNSTABLE AND TIPPING OVER.

OPERATING INSTRUCTIONS

The KMC Poultry Litter Windrower is made up of 5 main components: a hitch frame, a swing arm, a rear mast, a main blade assembly, and a wall scraper. The Poultry Litter Windrower runs next to the wall and through the interior of the house. Material is moved along the blade and discharged by the auger system into windrows. Care should be taken when operating next to walls as the wall scraper attachment will not flex around posts and other obstacles and is only meant to funnel litter into the augers. For cleaning next to walls a KMC Wall Cleaner is recommended.

The Litter Windrower has three main adjustments, two on the swing arm and one on the front hitch. Depending on the windrowing method used and the width of the house it may be necessary to have the left set of tractor tires running on a pile of litter. In this case the floating hitch clevis should allow the windrower to self level or an optional front hitch cylinder can be used to level the Litter Windrower with the floor. The swing cylinder and angle adjustment brace are used to set the running angle. A 10° to 30° running angle is recommended. Beyond 30°, the driveline joint angle exceeds manufacturer recommendations and can damage the C.V. joint. The cylinder on the swing arm can also be used to help navigate around obstacles near the wall.



Operating Speed

The auger rotational speed should be set to keep material sufficiently cleaned out from in front of the blade. The auger speed is adjusted by varying the tractor engine RPM. Recommended PTO RPM is 540.

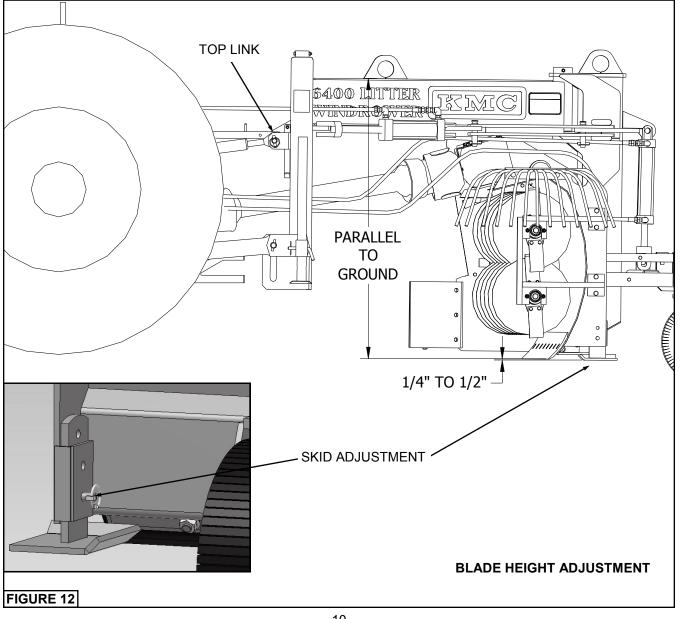
The Litter Windrower should be operated at a ground speed of 3/4 miles per hour or slower. Ground speed will be dependent on the amount of material being removed and the auger speed.

Blade Height

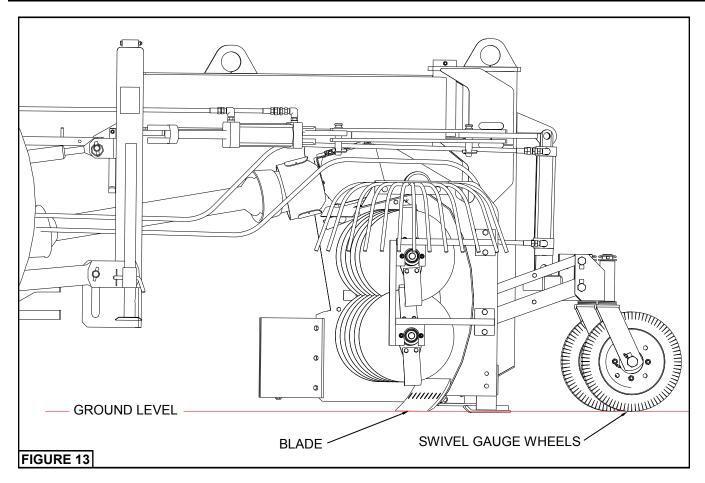
The blade height is set by adjusting the tractor lift arm height, the length of the top link, and the position of the blade skids. Once the blade height is set, the desired amount of material can be removed quickly. The following steps can be used as a guide to set the blade height once the Litter windrower is attached to the tractor.

- 1. Position the tractor and Litter Windrower on level ground.
- 2. Position skids so they are level or just below the bottom of the blade
- 3. Lower the lift arms of the tractor.
- 4. Adjust top link so the swing arm on the Litter Windrower is parallel to the ground.
- 5. Pull the tractor forward one to two feet and observe how the blade moves in relation to the ground. If the blade tries digging into the ground the top link needs to be let out. If adjusting the top link causes the swing arm to not be parallel to the ground the skids may need to be lowered. Repeat step 5 until the blade skims along the top of the ground at the desired height, usually 1/4in to 1/2in.

Note: The skid height may have to be lowered in houses with softer floors to compensate for any soil compression under the skids as they move.



WINDROWER OPERATION WITH GAUGE WHEELS & CENTER TOP LINK INSTALLED

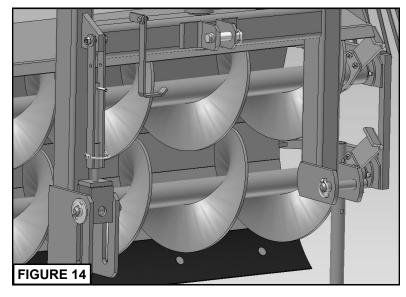


Operating the KMC Litter Windrower equipped with rear, swivel gauge wheels is similar to operation with skids but a few key differences. Once the Windrower is connected to the tractor lift arms and top link, the operator should sit in the tractor seat and raise the gauge wheels until the windrower blade is sitting on the ground. Adjust the lift arms up and down until the main swing arm, running from the hitch to the blade, is level. Ease the tractor forward to account for any slop in the linkages. It may be necessary to re-level the machine at this point. Once the Windrower is level, ease the gauge wheels down until the blade is barely off the ground. This will be the initial starting position when entering the house. Once inside the house the gauge wheels can be adjusted to raise or lower the blade as needed. When making sharp turns or backing up, it is recommended that the Windrower is picked up using the lift arms to avoid overstressing the gauge wheels.

While running the KMC Litter Windrower with a top link will place more down pressure on the blade in heavy in heavy cake situations, running without the top link has its advantages. Running semi-mount makes the Windrower easier to pick up with smaller tractors and helps the operator make straighter passes inside the houses by returning weight to the front tires of the tractor. To run semi-mount, without the top link, simply attach the lower lift arms of the tractor to the windrower. Raise the gauge wheels until the blade is on the ground and adjust the lift arms until the windrower swing arm is level. Lower the gauge wheels until the blade is barely off the ground. This is no need to ease forward because there is no top link to adjust. This will be the starting position when entering the house. A key difference in operating semi-mount is that the gauge wheels can be used to pick up the blade while making turns and backing up. Caution should be exercised when backing up because the front of the windrower may tilt up since the top link in not connected.

Floating Hitch Operation

The standard model Litter Windrower comes equipped with a floating hitch point for the right lift arm. The floating hitch is designed to allow the windrower to self level should the left side of the tractor need to ride on top of the windrow. The floating hitch is held stationary in the level position by a 5/16 safety hitch pin for easy hook up. Once the lift arm is attached, place the pin in the pin retaining holes at the top of the floating link. Continue to set the blade height as described in the Blade Height section. Once in the poultry house, the hitch will work independently and re-

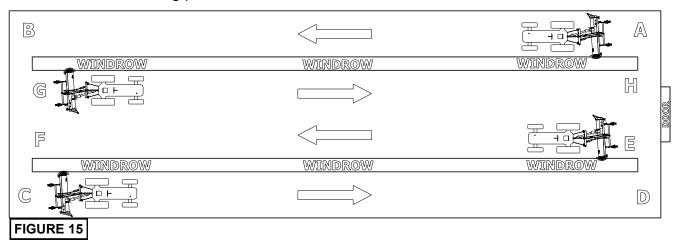


quires no further adjustment. An optional hydraulic link, KMC part number 64-082-005, can be ordered to take the place of the floating link if desired. Note: The floating hitch works best in correlation with the skids, so it is important to set the skid height even when using the gauge wheels.

Windrowing Procedures

The following procedures are a recommendation for windrowing a poultry house and can be modified to suit individual needs.

- 1. Set the blade height
- 2. Back the windrower into Corner A and set tractor PTO to 540rpms
- 3. In low gear, ease forward and scrape the litter off the wall of the house
- 4. After reaching Corner B, turn off the PTO and move the windrower to Corner C
- 5. Once in Corner C, set the PTO to 540rpms and ease forward scraping litter of the second wall
- 6. After reaching Corner D, turn off the PTO and move to Position E
- 7. Once in Position E, set the PTO to 540rpms and proceed down the middle, right of the house
- 8. After reaching Position F, turn off the PTO and move the windrower to Position G
- 9. Once in Position G, set the PTO to 540rpm and proceed down the middle, left of the house
- 10. After reaching position H the house should be windrowed



Note: Because house widths vary it may be necessary to make two passes down the edge of the wall to cover the full width of the house. The tractor should remain as level as possible to get the best results but the floating hitch link will allow the windrower to self level should the left side of the tractor need to ride on an existing windrow. The windrow can also be turned off and used as a scrape blade to drag litter out of Corners B and D.

Turning Windrows

Several methods may be used to turn the windrows depending on tractor size and preferred practice. If desired the entire windrow can be straddled and moved in one pass. This method puts a lot of load on the tractor and may break the shear bolt if the tractor rpm is reduced to far. A second method is to swing the Litter Windrower all the way to the left and run the tractor down the edge of the windrow. Since the Litter Windrower over hangs the edge of the tractor it should be turning the outer half of the litter back over the top of the windrow pile. This method will place the outer litter on the inside of the pile for the second heat and expose the inner litter that has already been through a heat. The second method allows the tractor to remain level and reduce the load on the PTO.

Spreading Windrows

A general method for spreading windrows is to straddle the windrows and adjust the gauge wheels so that the Litter Windrower will move a third of a pile per pass. The first pass should move the top third of the litter towards the walls. The second pass should move the middle third of the pile towards the center of the house. As the windrow moves a pile there will be a smaller pile each time on the discharge end. Continue making circular passes through the house until the litter is evenly spread. It is important to remember that the Litter Windrower can be turned off and used as a scrap blade to drag litter around and spread the litter evenly next to walls.

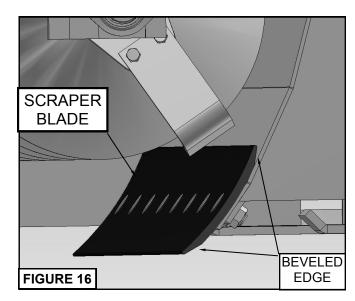
MAINTENANCE

Cleaning Machine

The environment that the Litter Windrower is used in can be highly corrosive to steel components. Therefore, the Litter Windrower should be washed off after each use. When washing the Litter Windrower with a high pressure washer, do not get water stream too close to the bearings on the Litter Windrower. Although the bearings are sealed, a stream of high pressure water placed too close to the bearings may penetrate the bearing seals allowing water to enter, and ultimately damage, the bearings. It is recommended that the Litter Windrower be sheltered when not in use.

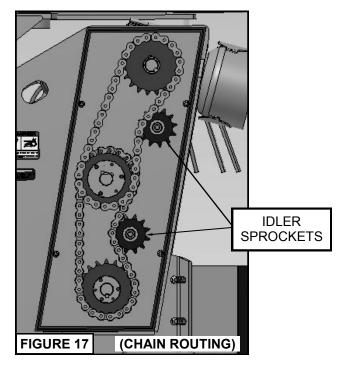
Scraper Blade Replacement

The scraper blade mounts onto the bottom of the main blade with 5/8" x 1 1/2" #3 Reg. plow bolts, lockwashers, and nuts. Mount the blade with the beveled edge down and to the rear. The scraper blade is double sided for increased life and should be flipped after the edge has worn down 3/4in or sooner.



Chain Maintenance

The Litter Windrower uses a #80 heavy chain to transmit power from the gearbox to the augers. Before each use, the chain should be inspected for wear. The chain tension sprockets should also be checked to ensure proper chain tightness and to prevent chain slippage. Proper slack in tension side of chain should be 1/2" - 1". To adjust the tension sprocket loosen the 5/8in nut with a 15/16 inch wrench and slide tension sprocket to tighten chain. Retighten nut and check chain tightness. The chain cover is packed with moly grease, KMC part number 02-050-138, to lubricate the chain. Before use, remove cover and ensure chains are running through moly grease to minimize overheating. Add moly grease as needed.

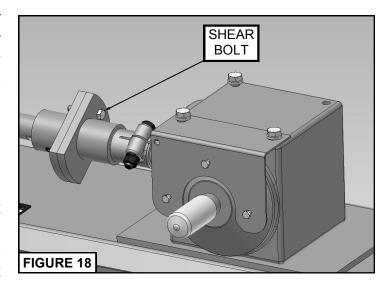


Gearbox Maintenance

The gearbox on the Litter Windrower uses 80w90 gear oil, KMC part # 03-050-080. The oil level should be checked before the machine is used for the first time. The oil should then be changed after the first 30 to 50 hours of operation and then every 500 hours or annually.

Shear Bolt Replacement

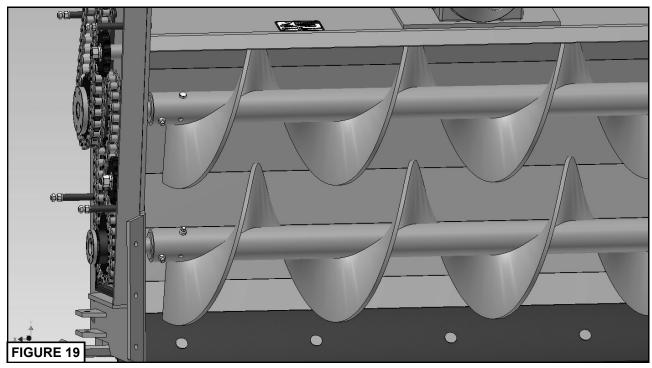
To replace the shearbolt on the litter windrower, turn off the tractor and clear the augers of any obstructions that may have caused the shearbolt to shear. Remove the 5/16 capscrew holding down the jackshaft shield. The shield can then be flipped up out of the way exposing the shear plates. Spin the augers until the bolt hole in the first shear plate on the chain side of the shaft aligns with the bolt hole in the second shear plate on the gearbox side of the shaft. Place a 3/8 x 2in grade 5 capscrew into the aligned bolt



holes and through both plates. Secure in place with a 3/8 lockwasher and hex nut. Note: A replacement shearbolt is placed in the owner's manual canister at the factory.

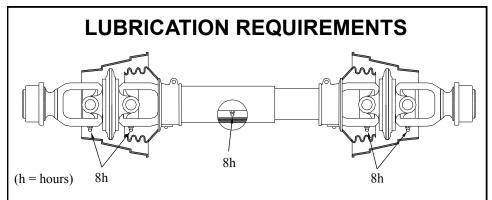
Timing of the Augers

The augers on the Litter Windrower have been timed at the factory. Should the augers get out of time there will be interference resulting in bent flighting and other damage to the machine. If the augers jump time, shut off the tractor immediately. Remove the chain cover and inspect the bottom chain and lower sprockets for wear and damage. To re-time the augers to their original positions, with the bottom chain removed, spin the top auger until the end of the flighting closest to the chains points towards the ground. Hold in place and spin the bottom auger until the end of the flighting closest to the chains also points towards the ground. Reinstall bottom chain while keeping the tension side tight. Once the chain is installed and tightened, check the direction of the flighting ends to make sure they still point in the same direction.



LUBRICATION

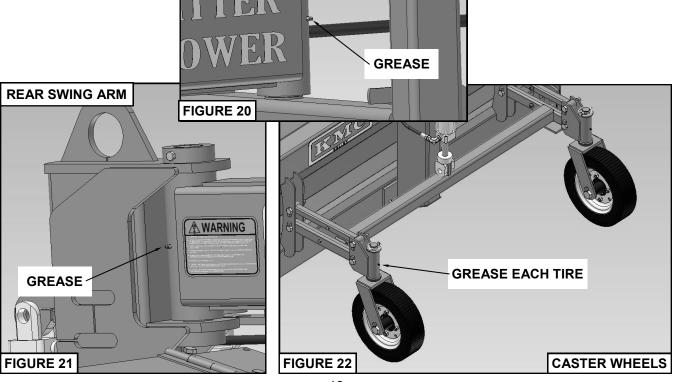
All bearings used on the Litter Windrower are sealed and require <u>no lubrication</u>. There is a grease fitting on each end of the swing arm that should be greased before each use. The caster wheels also need to be greased before each use. The driveline should be lubricated before each use and every 8 operating hours.



- * The double yoke cavity will hold as much as 30 pumps of grease. To insure maximum joint life:
- Lubricate double yoke when joint is in straight position.
- Visually inspect all wear surfaces inside double yoke to insure presence of grease after operation.

FRONT SWING ARM

 $Consult\ operators\ manual\ for\ additional\ information.$



TRANSPORTATION

When transporting the Litter Windrower, be aware that the Litter Windrower blade extends beyond the tractor tires. **Be careful when entering and exiting the poultry house**. Care should be taken not to hang the blade on any objects. DO <u>NOT</u> EXCEED 20 MPH WHEN TRANSPORTING WITH GAUGE WHEELS IN DOWN POSITION.

STORAGE

The Poultry Litter Windrower should be washed thoroughly. After washing, treating with a disinfectant is recommended to kill any remaining bacteria. Treat the metal components of the machine with a soluble oil to protect from rust and corrosion. One product which meets these requirements is called "Film Fluid" manufactured by Eureka Chemical Co., San Francisco, CA. It is sold in some tractor dealerships and farm supply dealers.

SPECIFICATIONS

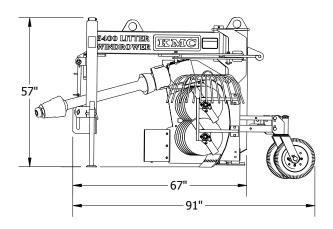
Machine Height: 57 inches Machine Width: 119 inches Machine Length: 67 inches

Machine Length with Gauge Wheels: 91 inches

Weight: 1932 lbs.

Blade Size: 95-1/2 x 6 x 3/8 inches

Gearbox Input Rotation Speed: 540 RPM



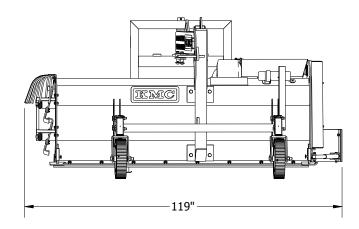


FIGURE 23

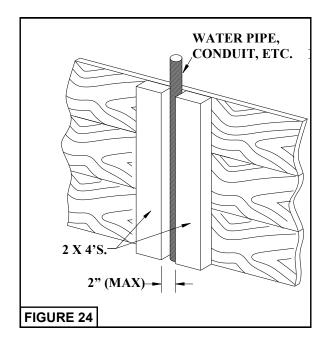
NOTE: Operation of the POULTRY LITTER WINDROWER places substantial lateral (sideways) force on the windrower. Make sure tractor hitch stabilizing bars are properly installed to minimize lateral movement of the Litter Windrower.

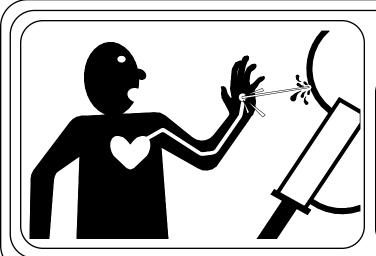


DANGER ROTATING AUGER: ALL PERSONS SHOULD STAY CLEAR OF ROTATING AUGER. BEFORE DISMOUNTING TRACTOR TO MAKE ADJUSTMENTS, DISENGAGE AUGER DRIVE.

Checking Poultry House for Obstructions

The KMC Poultry Litter Windrower is not designed to clean out around interior posts and other obstacles. The poultry house should be checked for obstacles that may hang on the windrower's blade. These obstacles may include exposed bolts, nails, wiring conduit, and water lines







DO NOT GO NEAR LEAKS

- High pressure oil easily punctures skin causing serious injury, gangrene or death.
- If injured, seek emergency medical help.
 Immediate surgery is required to remove oil.
- Do not use finger or skin to check for leaks.
- Lower load or relieve hydraulic pressure before loosening fittings.





The following is a list of serial numbers issued to our machines at the beginning of each year. To determine when a unit was made, find the range within which the particular serial number falls. It would have been produced between January 1 to December 31 of that year.

YEAR	SERIAL NUMBERS
2011	81776-83453
2012	83454-85092
2013	85093-





KELLEY MANUFACTURING CO.

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