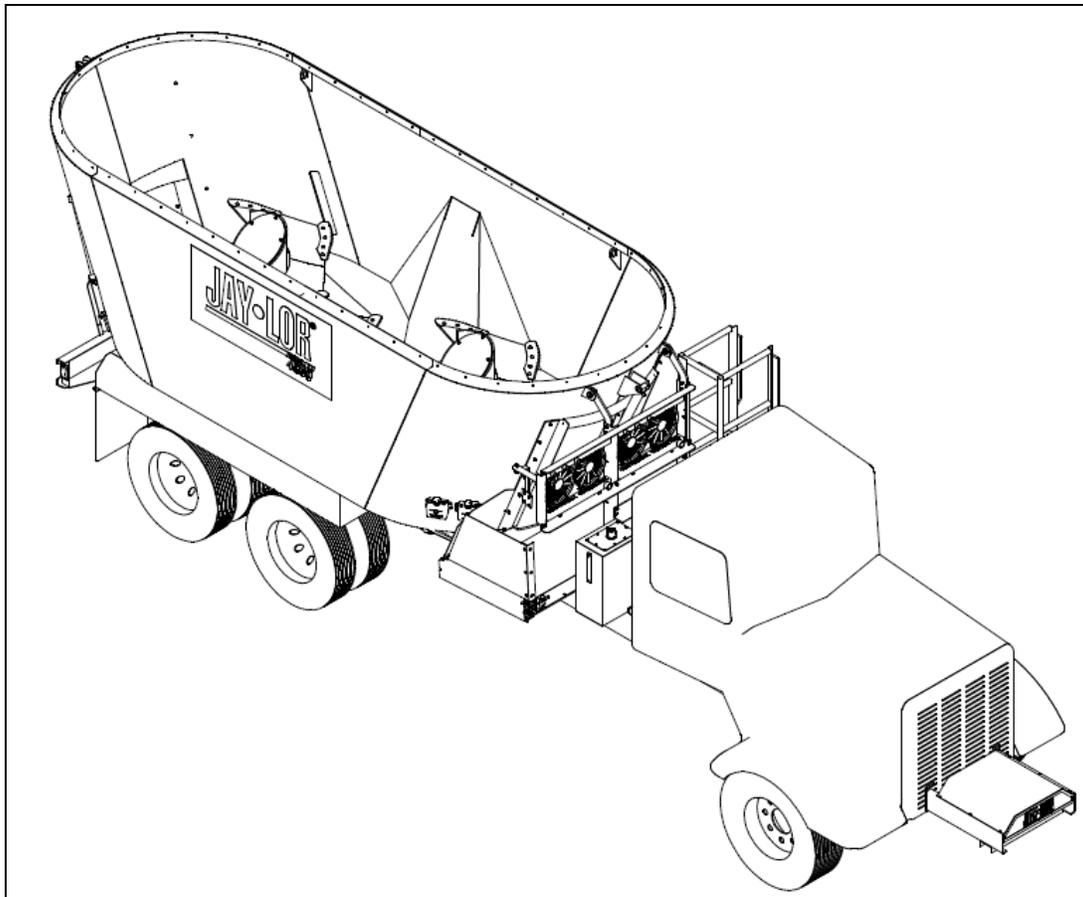


JAY•LOR®

Cutter • Mixer • Feeder

OPERATOR'S MANUAL

4000 SERIES HYDROSTATIC TRUCKMOUNTED MODELS



"Putting the 'Total' into TMR"

JAY-LOR® Fabricating Inc.
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INTRODUCTION

Congratulations on your choice of a JAY•LOR[®] Cutter-Mixer-Feeder to complement your operation. This equipment has been designed and manufactured to meet the needs of the discriminating buyer for efficient cutting, mixing and feeding.

Safe, efficient and trouble free operation of your mixer requires that you and anyone else who will be operating or maintaining the machine, read and understand the Safety, Operation, Maintenance and Troubleshooting information contained within the Operator's Manual.

This manual covers the 4000 Twin Auger Trailer Models manufactured by JAY•LOR[®]. Keep this manual readily available for reference and be sure to pass it on to new Operators or Owners. Contact your nearest JAY•LOR[®] Dealer or Distributor if you need assistance or information.

OPERATOR ORIENTATION - The directions left, right, front, and rear, as mentioned throughout the manual, are as seen from the driver's seat and facing forward.

POLICY STATEMENT

It is the policy of JAY•LOR[®] to improve its products where it is possible and practical to do so. JAY•LOR[®] reserves the right to make changes or improvements in design and construction at any time, without incurring the obligation to make these changes on previously manufactured units.

OWNER/OPERATOR'S RESPONSIBILITY

It is the Owner/Operator's responsibility to read the Operator's Manual, to operate, lubricate, maintain, and store the product in accordance with all instructions and safety procedures. Failure of the operator to read the Operator's Manual is a misuse of this equipment.

Like all mechanical products, JAY•LOR[®] products will require cleaning and upkeep. It is the Owner/Operator's responsibility to inspect the product and to have any part(s) and/or assemblies repaired or replaced when continued operation would cause damage or excessive wear to other components or cause a safety hazard.

It is the Owner/Operator's responsibility to deliver the product to the authorized JAY•LOR[®] Dealer or Distributor, from whom it was purchased, for service or replacement of defective parts which are covered by warranty. **Repairs to be submitted for warranty consideration must be made within thirty (30) days of failure.** It is the Owner/Operator's responsibility for any cost incurred by the Dealer for traveling to or hauling of the product for the purpose of performing a warranty obligation or inspection.

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RR # 2 Orton, Ontario, L0N 1N0 Tel: (519) 787-9353 Fax: (519) 787-7053

LIMITED WARRANTY

JAY•LOR® FABRICATING INC. (the Seller) warrants the articles and units sold to be free from defects in material and workmanship and to conform to applicable specifications. These express warranties are the sole warranties of the Seller, and any other warranties, express, implied in law or implied in fact, are hereby specifically excluded. Refer to the Operator's Manual content for any applicable warranties expressed otherwise.

Seller's sole obligation under its warranties will be, at its option, to repair or replace any article or part thereof which is proved to be other than warranted. Obligation under this warranty will be limited to replacement or repair of parts found, upon Seller's inspection, to be defective. All warranties shall expire 12 months from the date the unit or article is placed in service, or 12 months from the date the article or unit is delivered by the Seller, whichever expires first.

NO ALLOWANCES WILL BE MADE TO THE BUYER FOR ANY TRANSPORTATION, LABOUR CHARGES, PARTS ADJUSTMENTS OR REPAIRS, OR ANY OTHER WORK, UNLESS THESE CHARGES ARE AUTHORIZED IN ADVANCE BY THE SELLER.

The Seller shall in no event be liable for special or consequential damages. If an article is claimed to be defective in material or workmanship, or does not conform to specifications, the Seller, upon notice promptly given, will either examine the article or unit at its site, or issue shipping instructions to return to the Seller. The warranties shall not extend to any articles, units, or parts thereof which have been installed, used, or serviced, otherwise than in conformance with the Seller's applicable instructions, manuals, service bulletins, or, if none, which shall have been articles, units, parts thereof furnished by the Buyer or acquired from others at the Buyer's request and/or Buyer's specifications.

The warranties are not applicable for expenses either direct or consequential that may arise from the use or inability to use the articles and units sold by the Seller. The Seller shall in no event be responsible for and will not be held liable for losses, injury, or damage caused to persons or property by reason of operation of Seller's products or their failure.

This warranty does not cover parts and accessories that are under separate guarantees from the manufacturers and service can be obtained from their service facilities in USA and Canada. No warranty is extended to regular service items such as fluid, paint, tires, knives and the like.

This warranty pertains to components manufactured or installed by JAY•LOR® Fabricating Inc. only. This hereby excludes any warranties offered separately such as those offered by the truck manufacturer. In this event, please refer to the appropriate Warranty Statements offered by the separate manufacturer.

All claims for warranty must be directed to your dealer or distributor.

WARRANTY VOID IF NOT REGISTERED

CONTACT INFORMATION

Contact JAY•LOR® Fabricating Inc. at:

JAY•LOR®
Fabricating Inc
R.R. #2
Orton, ON
Canada
L0N 1N0

Phone: (519) 787-8058
Fax: (519) 787-7053
E-mail: jaylor@jaylor.com
On the web: www.jaylor.com

SERIAL NUMBER LOCATIONS

Always give your Dealer the Model Number and Serial Number of your JAY•LOR® Cutter-Mixer-Feeder when ordering parts or requesting service or other information. Depending on the type of service, the Serial Numbers of individual components and/or assemblies will be required. The Serial Number location required for servicing your JAY•LOR® Product is shown in **Figure 1**. For easy reference, please write this information in the Customer Reference Information section that follows.

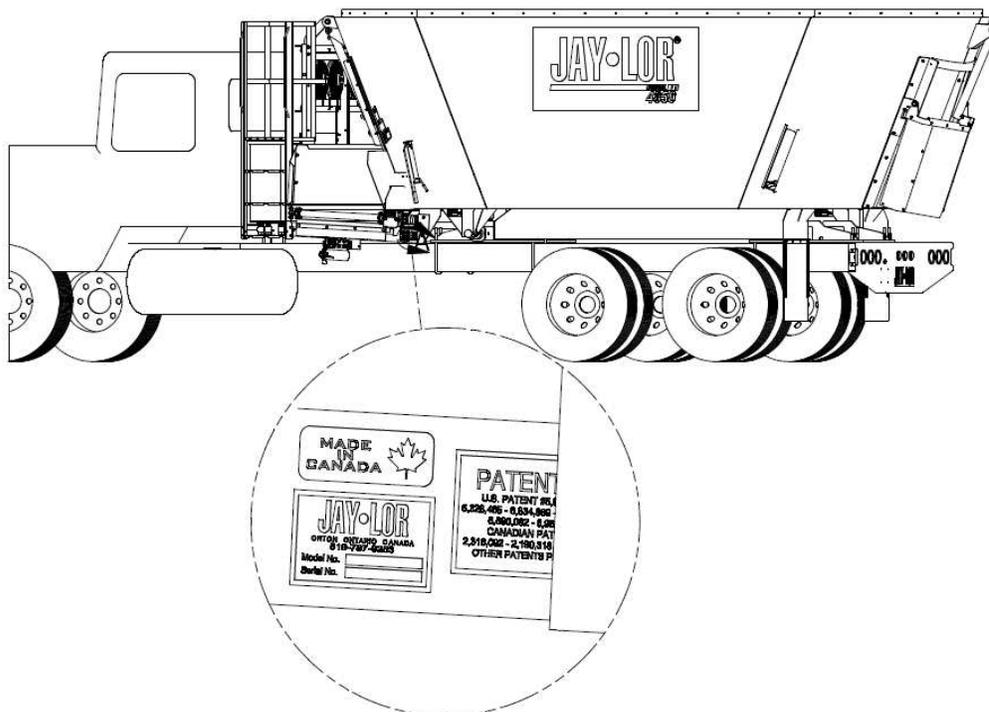


Figure 1: Serial Number Location

SAFETY

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

BEFORE YOU START!

**Read the safety messages on the implement and shown in your manual.
Observe the rules of safety and common sense!**

Safety Alert Symbol

This Safety Alert Symbol means:

- **ATTENTION!**
- **BECOME ALERT!**
- **YOUR SAFETY IS INVOLVED!**



The Safety Alert Symbol identifies important safety messages on your JAY•LOR® Cutter-Mixer-Feeder and in your manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Understand 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** – Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.
- **WARNING** – Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
- **CAUTION** – Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practice.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or manufacturer directly.

Safety Guidelines

YOU are responsible for the **SAFE** operation and maintenance of your JAY•LOR® Cutter-Mixer-Feeder. **YOU** must ensure that **YOU** and **ANYONE** else who is going to operate, maintain, or work around the JAY•LOR® Cutter-Mixer-Feeder 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 safety practices that should be adhered to while operating the machine.

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. All accidents can be avoided. Do not risk injury or death by ignoring good safety practices.

- Vertical Mixer owners **must** give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- 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 them**.
- JAY•LOR® feels that a person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself 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!**

General Safety



- Read and understand the Operator's Manual and all safety signs before operating, servicing, maintaining, adjusting, or unplugging the Vertical Mixer.



- Only trained competent persons shall operate the Vertical Mixer. An untrained operator is not qualified to operate the machine.



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



- Provide a fire extinguisher for use in case of a fire. Store in a highly visible place.



- Do not allow riders on the Vertical Mixer.



- Wear appropriate protective gear. This list includes but is not limited to:
 - A hard hat
 - Protective footwear with slip resistant soles
 - Protective eyewear
 - Heavy gloves



- Place controls in neutral, stop engine, disengage power source, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.



- Do not drink and drive.



- Review safety related items annually with all personnel who will be operating or maintaining the Vertical Mixer.

Operating Safety



- Read and understand the Operator's Manual and all safety signs before using.



- Place controls in neutral, stop engine, disengage power source, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.



- Stay away from unloading door and conveyor discharge when unloading or moving.



- Do not operate when any guards are damaged or removed. Install and secure guards before starting.



- Keep hands, feet, clothing and hair away from all moving and/or rotating parts.



- Do not allow riders on the machine during operation or transporting.



- Clear the area of bystanders, especially small children, before starting.



- Stay out of the mixing chamber and away from the auger when engine is running. Keep others away.



- Stay away from overhead power lines when loading. Electrocutation can occur without contact.



- Clean reflectors, lights, SMV signs, before transporting.



- Follow all local laws and regulations when transporting the machine on public roads and highways.



- Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses, and couplings are in good condition.



- Review safety instructions with all personnel annually.

Maintenance Safety

- 
 - Follow ALL the operating, maintenance, and safety information in the manual.
- 
 - Support the machine with blocks or safety stands when changing tires or working beneath.
- 
 - Follow good shop practices:
 - Keep service areas clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate lighting for the job at hand.
- 
 - Use only tools, jacks, and hoists of sufficient capacity for the job.
- 
 - Place controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- 
 - Relieve pressure from the hydraulic circuit before servicing or disconnecting.
- 
 - Make sure all guards are in place and properly secured when maintenance work is completed.
- 
 - Before applying pressure to a hydraulic system, make sure all lines, fittings, and couplers are tight and in good condition.
- 
 - Keep hands, feet, hair, and clothing away from all moving and/or rotating parts.
- 
 - Maintain fasteners in running gear systems at their specified torque at all times.
- 
 - Clear the area of bystanders, especially small children, when carrying out any maintenance and repairs or making any adjustments.

Hydraulic Safety

- 
 - Make sure that all components in the hydraulic system are kept in good condition and are clean.
- 
 - Replace any worn, cut, abraded, flattened, or crimped hoses or metal lines immediately.
- 
 - Relieve pressure before working on hydraulic systems.
- 
 - Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps, or cements. The hydraulic system operates under extremely high pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
- 
 - 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.



- 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.



- Before applying pressure to the system, make sure all components are tight and that lines, hoses, and couplings are not damaged.

Tire Safety



- 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.



- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.



- Have a qualified tire dealer or repair service perform required tire maintenance.

Transport Safety



- Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.



- Do not allow anyone to ride on the machine during transport.



- Reduce speed on rough roads and surfaces.



- Always use hazard warning flashers when transporting unless prohibited by law.



- Drive carefully and defensively at all times and especially when negotiating uneven or hilly terrain.



- Watch for overhead obstructions. Stay away from power lines and low tree branches.

Storage Safety



- Store unit in an area away from human activity.



- Do not permit children to play on or around the stored machine.



- Store the unit in a dry, level area. Support the machine with planks if required.



Safety Signs



- Keep safety signs clean and legible at all times.



- Replace safety signs that are missing or have become illegible.



- Replaced parts that displayed a safety sign should also display a safety sign.



- Safety signs are available from your dealer, distributor, or the factory.

How to Install Safety Signs

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

SIGN-OFF FORM

JAY•LOR® Fabricating Inc. follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the machine must read and clearly understand ALL Safety, Operating, and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information with personnel.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of the equipment.

SAFETY SIGN LOCATIONS

The types of safety signs and typical locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area of particular function related to that area which requires your SAFETY AWARENESS.

- Think **SAFETY!** Work **SAFELY!**

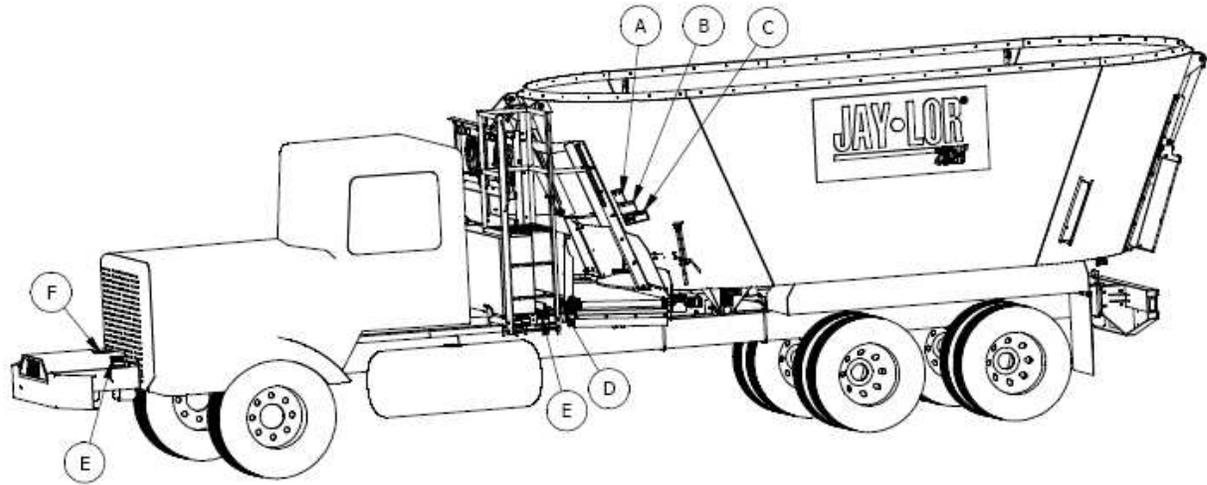


Figure 2: Safety Decal Location



Figure 3: Decal A

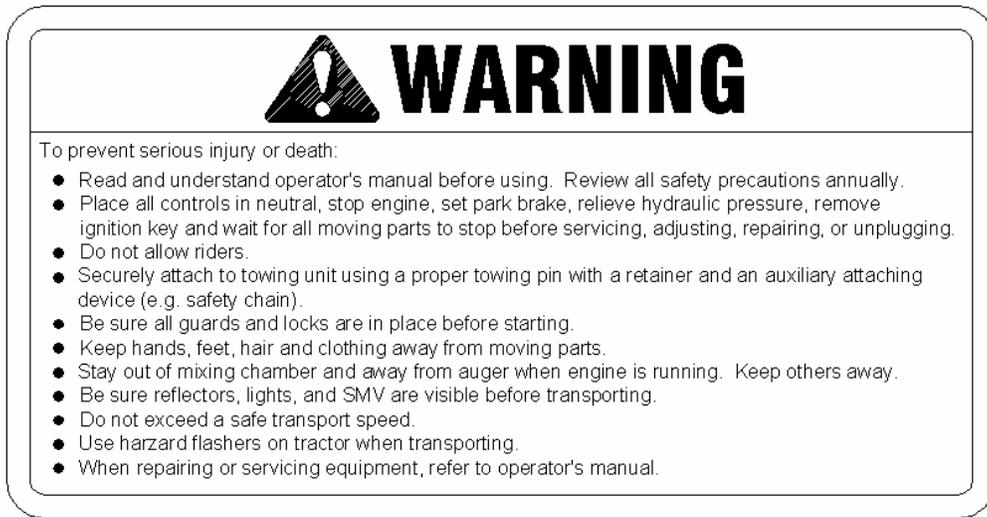


Figure 4: Decal B

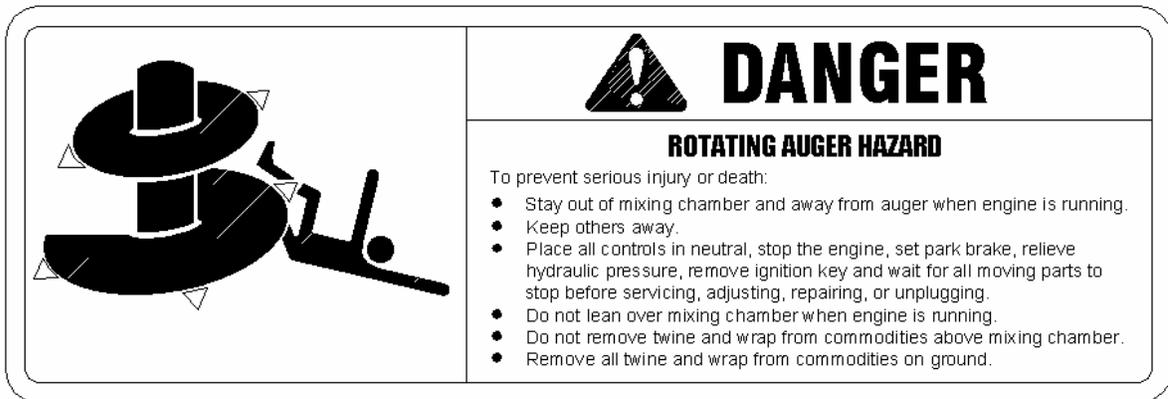


Figure 5: Decal C



Figure 6: Decal D



Figure 7: Decal E



Figure 8: Decal F

REMEMBER – If Safety Signs have been damaged, removed, become illegible, or parts replaced without signs, new signs must be applied. New signs are available from your authorized dealer.

OPERATION

The JAY•LOR® Cutter-Mixer-Feeder is specifically designed to cut and mix feed ingredients into a total mixed ration (TMR). Many of the features incorporated into this machine are the result of suggestions made by customers like you. Located at the back of this manual is a suggestion/comments sheet that can be faxed or mailed to JAY•LOR®.

Read this manual carefully to learn how to operate the machine safely and how to adjust it to provide maximum efficiency. Following the operating instructions with a proper maintenance program will extend the life of your machinery.

MACHINE COMPONENTS

The machine is designed with hydraulically powered vertical augers. The vertical augers cut and mix a variety of feed ration ingredients into an even, uniform mixture. Knives located on the periphery of the auger flights cut material as the augers rotate in a clockwise rotation. Restrictor blades located at the front left and rear right corners of the mixing chamber are adjustable to regulate cutting action of feed rations. Planetary gearboxes are located under the auger center posts to provide rotation to the augers. A hydraulic motor attached to the bottom of the planetary gearboxes and it is powered by hydrostatic pumps. The hydrostatic pumps can either be mounted in front of the engine and powered from a front engine power take-off (FEPTO) or behind the engine and powered from a rear engine power take-off (REPTO). The pumps are connected to the engine by a driveshaft between the engine PTO flange and the pumps. There is an auxiliary pump mounted on the hydrostatic pumps to provide power for all the auxiliary functions (conveyor motor and hydraulic cylinders).

The planetary gearbox is equipped with a remote oil reservoir to display oil level and condition.

On all models, a hydraulically powered unloading door is opened to allow the mixed feed ration out of the mixing chamber. Discharge options include front door and a rear door.

On front door discharge models, the feed ration is distributed onto a hydraulically powered chain slat conveyor option. The conveyor unloads the feed mixture as required. The conveyor is capable of slide travel to the discharge side of the machine, as required to match with the feeding device. There are various conveyor options that are explained in the sections that follow.

On rear door discharge models, the feed ration is distributed onto the ground immediately below. This option is useful for customers desiring premixed rations that can be stocked and used later.

Standard models include a 4-point weighing system to monitor the amount of feed ration inside the mixing chamber. This system incorporates weigh bars located beneath the floor of the drum and a scale indicator option usually located at the front of the machine.

A manifold with a series of solenoid-actuated directional valves direct hydraulic flow between the operations of the unloading door assembly, conveyor, and conveyor slide travel. The valves are actuated electrically from inside the truck cab.

A control console assembly is located beside the truck driver's seat. The console houses all of the controls necessary to operate the machine. This includes a scale indicator, as well as the switches controlling operations such as those of hydrostatic pumps (auger rotation), door, and conveyor.

NOTE: the 4425 and 4575 mixers are only equipped with one auger so the number of components will vary.



Figure 9: Mixer Components

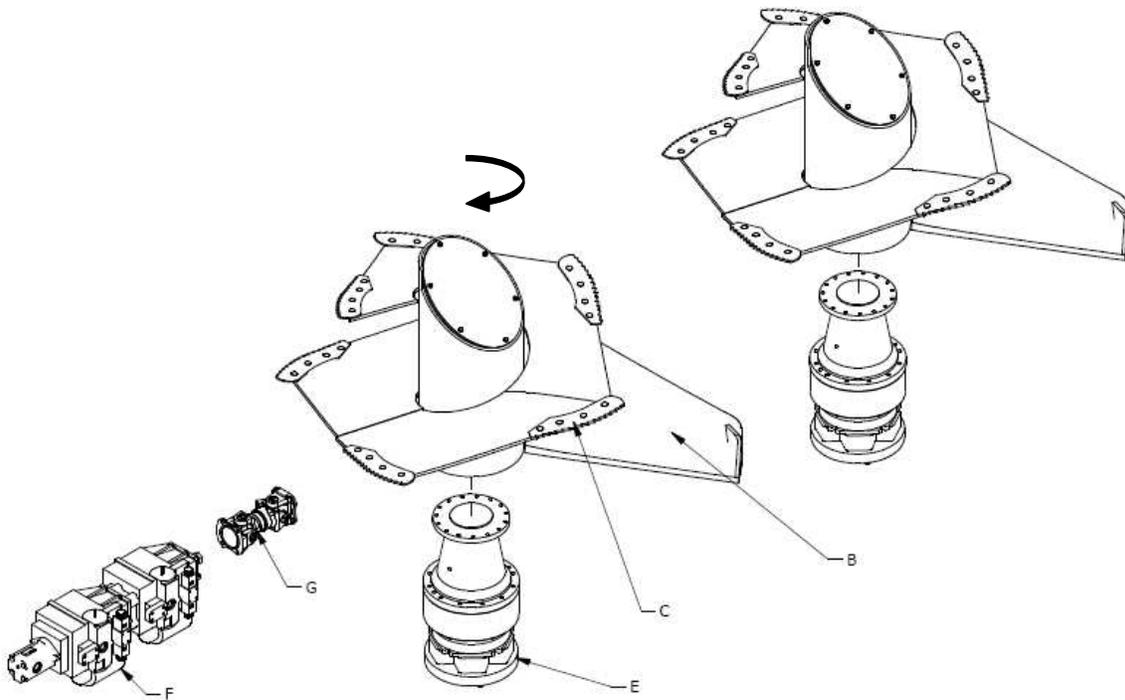


Figure 10: Drive System Components

- A. Mixing Chamber
- B. Vertical Augers (x2)
- C. Cutting Knives
- D. Restrictor Blade (x2)
- E. Planetary Gearbox and Motor (x2)
- F. Hydraulic Pumps
- G. Driveshaft

PRE-OPERATION CHECKLIST

Efficient and safe operation of the JAY•LOR® Cutter-Mixer-Feeder requires that each operator reads and understands all 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 the personal safety and maintaining the good mechanical condition of the machine that this checklist is followed.

Before operating the machine the following areas should be checked off:

1. Lubricate the machine as per Maintenance Schedule.
2. Use only recommended hydraulic oil.
3. Ensure that the machine is properly attached to the truck chassis.
4. Check the hydraulic system. Be sure that the hydraulic reservoir on the mixer is filled to the required level.
5. Check the oil level and condition in the planetary gearbox. Be sure they are within the proper levels. Be sure there are no leaks on the gearbox. Stop leaks before continuing.
6. Inspect all hydraulic lines, hoses, fittings, and couplers for tightness and wear.
7. Check that the auger is able to rotate freely. Remove all string, twine, or other entangled material.
8. Close and secure all guards and safety devices.

BREAKING-IN

Although there are no operational restrictions on the machine when used for the first time, it is recommended that the following items be checked:

A. Before Starting:

- Check oil level and condition of the planetary gearbox.
- Ensure that the hydraulic oil level and condition is within the normal operation limits.
- Cycle the unloading door and conveyor several times to fully charge the hydraulic system with oil.
- Check for debris and/or any other items that could block or affect machine operation.
- Follow any break-in guidelines as recommended by the truck manufacturer.

B. After operating for ½ hour:

- Check that all bolts and fasteners are all tightened properly. (See Torque Spec.)
- Check the auger. Remove all string, twine, or other entangled material.
- Check that no hoses are pinched, rubbing, or being crimped. Re-align as required.
- Check for oil leaks. Stop leaks before continuing.
- Lubricate all grease fittings.

C. After operating for 5 hours and 10 hours:

- Retorque all mounting nuts, fasteners, and hardware.
- Check that auger turns freely.
- Check the auger. Remove all string, twine, or other entangled material.
- Proceed with normal servicing and maintenance schedule as defined in the Maintenance Section.

CONTROLS

Weighing

The scale system on standard truck-mounted models includes 4 weighbars. The weighbars electronically measure the amount of ration inside of the mixing chamber.

There are various scale indicators available for use on your JAY•LOR® Cutter-Mixer-Feeder. The mounting assembly for most Weigh-tronix® Scale Indicators is the same. When attaching the indicator to the machine, be sure that it is securely fastened. Typically, the indicator slides down into the mounting bracket, and it is also necessary to use a wire or plastic fastener to secure the indicator to the mounting bracket. For more information on mounting, refer to the Weigh-tronix® manual included in this binder.

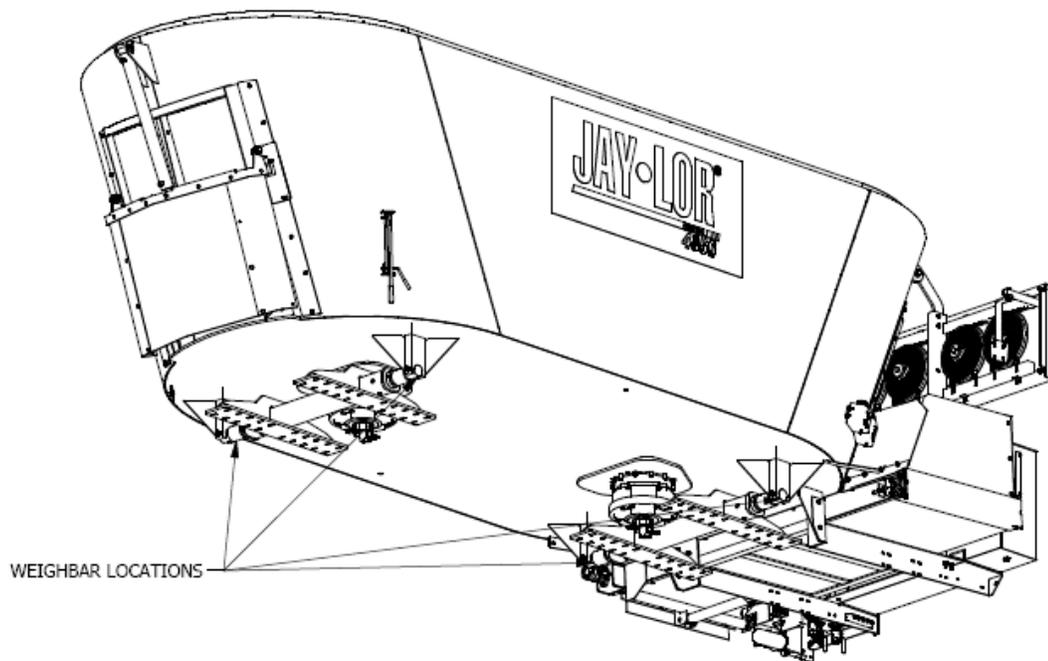


Figure 11: 4-Point Scale System

Most scale options configured in truck-mounted applications use a single scale indicator mounted in the cab of the truck and a remote indicator mounted on the mixer. The remote indicator can be located on the front right or left side of the mixer. The mounting bracket assembly allows the scale indicator to be turned to face every direction.

Note: Once the desired position of the scale indicator is set, ensure that the mounting bracket arm assembly nuts are tightened firmly to secure the bracket to the machine.

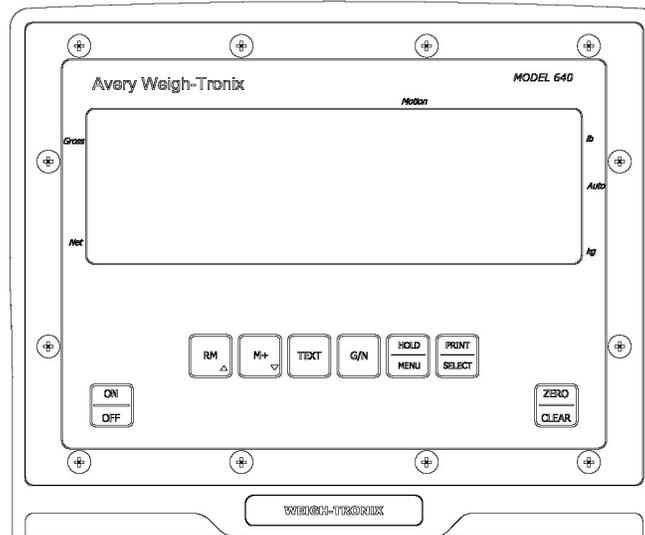


Figure 12: Typical Scale Indicator

On the bottom of the indicator are outlets for attaching the weighbar cords. These should not be confused with the power supply, which will not attach in the same outlet. The weighbar cords are pushed in, and then the tightening ring threaded into place. Make sure that the plugs are free of moisture or other contaminants, as this will affect the performance of the weighing system.

On standard models, the mixer weigh bars are plugged into a junction bar and then a single line is run into the scale head in the cab from the junction bar. The power cord is run to a power connection in the cab from the vehicle's electrical system. This should be a 12-volt negative grounded power supply.



Warning: To avoid injury or death, always follow all safety and operational instructions and constraints pertaining to the battery, to avoid injury or death.

Some models may be equipped with a second indicator, referred to as the Remote Indicator. This indicator is usually adjusted such that viewing from the loading equipment is permitted. In most cases the remote indicator does not allow full access to weigh system parameters. These are usually controlled from the main indicator as described earlier. The remote indicator attaches to the main indicator via a cable. Like all of the other connections, ensure that the plugs are free from any moisture and other contaminants as this will affect the performance of the weighing system.

Note: *The scale will be programmed to display weight in either kilograms (kg) or pounds (lbs.). This is set by the manufacturer and must be ordered to suit. If your scale is not programmed to your preferred units of measurement, please contact your local JAY•LOR® Dealer.*

Note: *For complete information on Scale Operation and Settings, see the attached Weigh-Tronix® Users Manual.*

Control Console

Located beside the truck driver's seat is the control console. The control console houses all of the main control switches necessary to operate the machine. Most machine configurations have the following switches and arrangements:

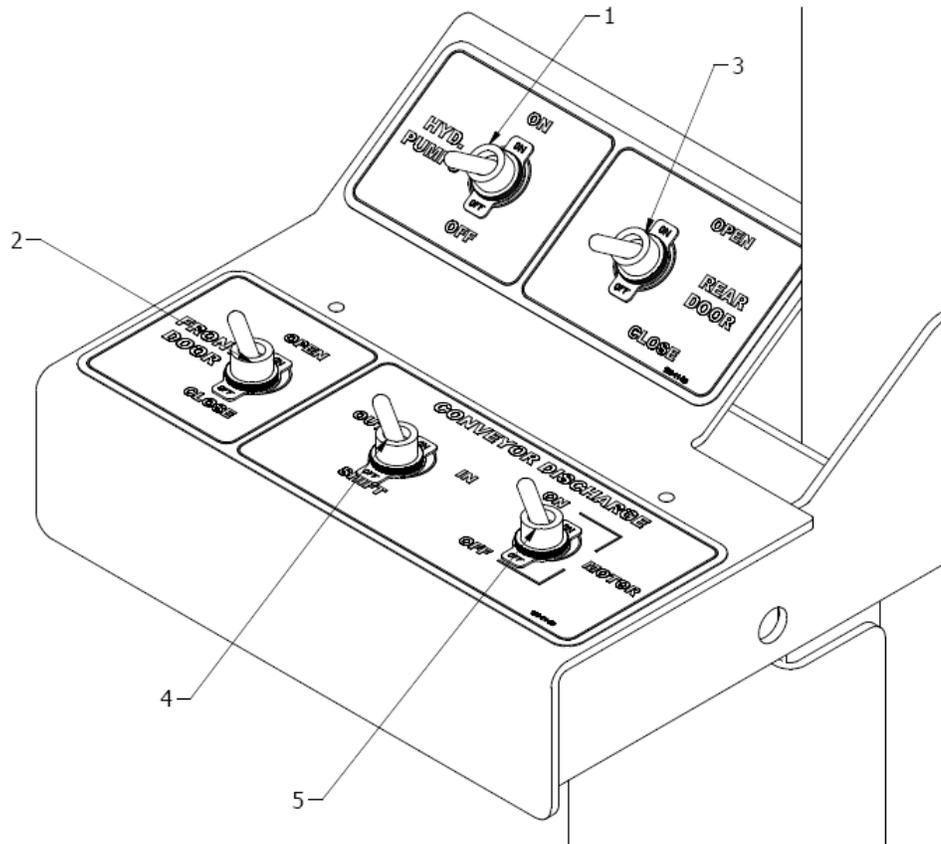


Figure 13: In Cab Console

1. **Hydraulic Pump ON/OFF:** This is a toggle switch that engages the hydrostatic pumps, consequently engaging auger rotation. Auger speed can be increased by increasing the truck's engine speed. To disengage the driveline, simply switch the toggle switch to the off position. This will stop the auger rotation.
2. **Front Door OPEN/CLOSE:** This is a momentary toggle switch that controls the open and close functions of the unloading door. By switching to the 'OPEN' position, the unloading door raises. By switching to the 'CLOSE' position, the unloading door lowers. The door can be stopped in any position by simply releasing the toggle switch.
3. **Rear Door OPEN/CLOSE:** If your machine is equipped with a rear unloading door option, there will be an extra momentary toggle switch that controls the raise and lower operations of the unloading door. The switch operates the same as that for the front unloading door.

- 4. Conveyor Shift IN/OUT:** This is a momentary toggle switch that controls the conveyor slide travel. By switching to the 'OUT' position, the conveyor will slide out to the left-hand side of the machine, up to a maximum 20 inches of travel. By switching to the 'IN' position, the conveyor will slide into the right hand side of the machine, until it is centered over the truck chassis. When the conveyor is centered over the truck chassis, the machine is within most maximum road width requirements. The shifting of the conveyor can be stopped at any time by simply releasing the toggle switch.
- 5. Conveyor Motor ON/OFF:** This is a toggle switch that controls engagement of the conveyor apron chain for unloading. By switching to the 'ON' position, the hydraulic motor engages to drive the conveyor apron chain. By switching to the 'OFF' position, the hydraulic motor disengages, thus the conveyor apron chain stops.

HYDRAULIC PUMP SYSTEM

Each auger is powered by a hydrostatic pump which are attached together and powered by a single driveshaft from the engine. The pumps can be set up for either CCW(counter clock wise) or CW (clock wise) rotation. Typically if the pumps are mounted in front of the engine, a CCW pump is installed and a CW pump is used if the pumps are installed behind the engine.

Each hydrostatic pump is actuated by a electric solenoid which is switched from the in-cab console.

Each hydrostatic pump is equipped with a spin on filter. Refer to the '*Maintenance and Service Manual*' for filter replacement type and general maintence schedule.

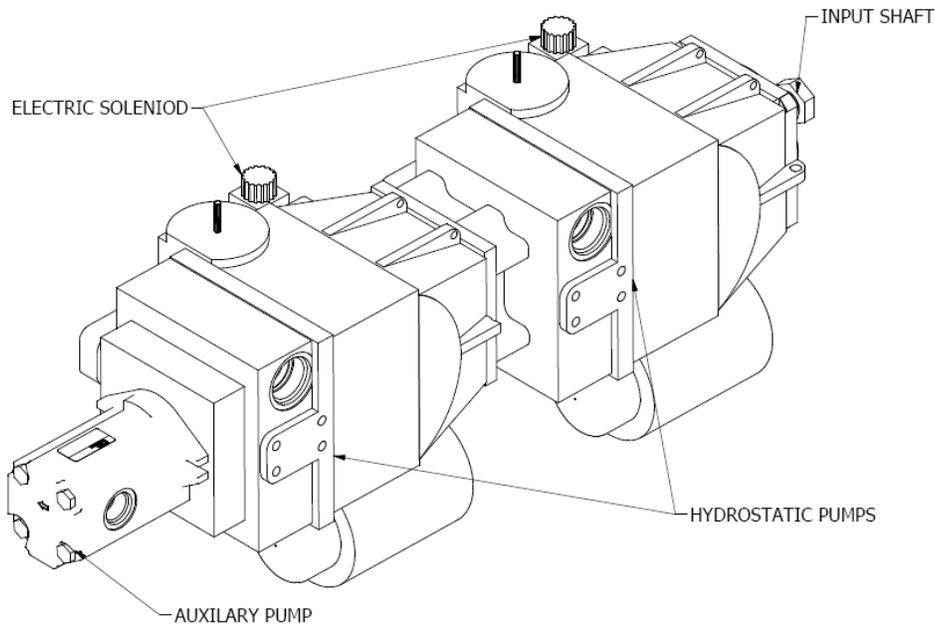


Figure 14: Hydraulic Pumps

AUXILIARY PUMP SYSTEM

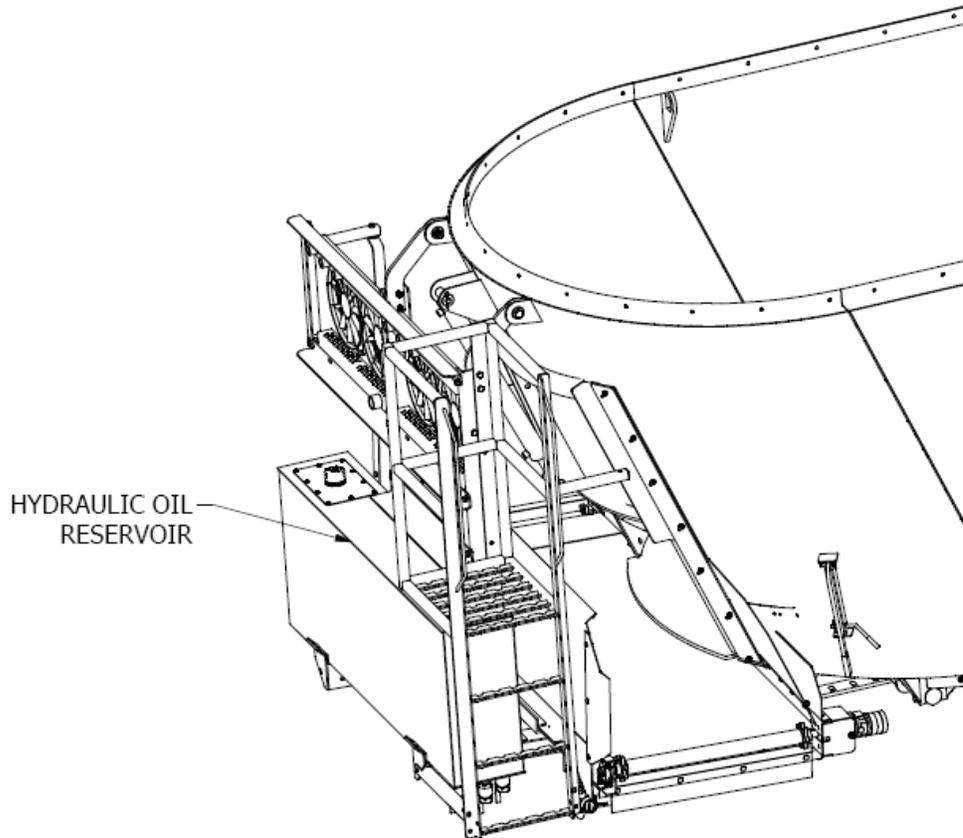
Located on the end of the hydrostatic pump is an auxiliary hydraulic gear pump. The pump is powered by the main driveline for the machine which ensures hydraulic power is available at all times provided that the truck engine is running.

The pump provides hydraulic fluid power to components such as the unloading door and discharge conveyor.

The auxiliary pump is designed for minimal maintenance and service. Refer to the '*Maintenance and Service Manual*' for instructions on servicing the auxiliary pump system.

HYDRAULIC OIL RESERVOIR

The auxiliary hydraulic pump system on your JAY•LOR® Cutter-Mixer-Feeder uses hydraulic oil for operation. A hydraulic oil reservoir assembly containing the hydraulic oil is located at the front of the machine behind the truck cab. The reservoir is designed for maximum efficiency for use with the hydraulic system.



Always keep the reservoir at least $\frac{3}{4}$ full of hydraulic oil. At no time is the fluid level to be lower than the minimum recommended level, as damage to the hydraulic system will occur. If the fluid level is higher than the maximum level, fluid may overflow the reservoir and cause fluid loss. Check the fluid level in the reservoir daily and replace with recommended oil as needed. The hydraulic oil reservoir has a filter/breather cap assembly located on the top of the unit, which must be attached to the reservoir at all times. This breather is removable, to allow the filling of the reservoir. If the filter/breather becomes contaminated, remove the breather, and clean it. Follow the instructions as described in the '*Maintenance and Service Information*' section.

The reservoir outlet lines are equipped with external shutoff valves. This is a service feature and can be closed or shut-off so items such as filters can be serviced without draining the hydraulic system oil.

ELECTRIC SOLENOID HYDRAULIC VALVE CONTROLS

Located underneath the conveyor assembly on the left side of the machine are the electric solenoid valve controls. Depending on options equipped with the machine, there may be 3 or 4 electric solenoid hydraulic valves banked onto an aluminum block manifold. Hydraulic fluid power supplied by the auxiliary pump enters the aluminum block manifold. The hydraulic flow is divided to the different circuits found on the machine (e.g. discharge door, conveyor). The valves are controlled electrically from the control console located in the truck cab.

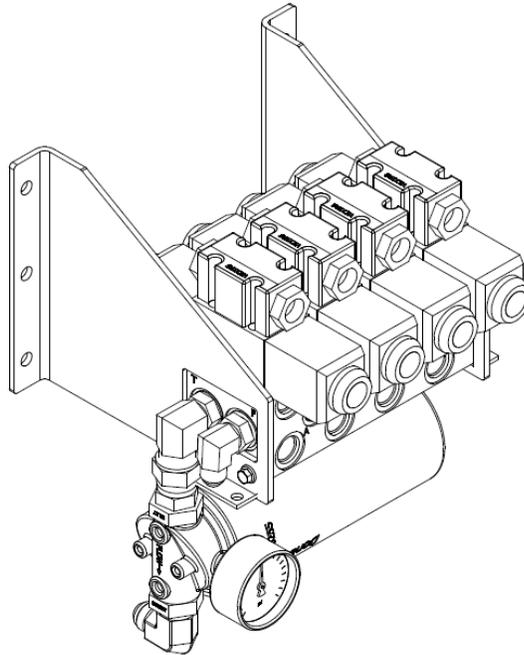


Figure 15: Electric Solenoid Valves

Auxiliary Circuit Filtration

Once hydraulic oil has circulated through the aluminum block manifold, it exits the block into a filter assembly. This assembly filters all of the oil supplied in the auxiliary pump circuit. The filter is a 'spin-on' type of filter. The filter is removed by turning the filter body counterclockwise until it is free from the filter housing. This filter will require periodic service and replacement. Refer to the *'Maintenance and Service Manual'* for filter service information.

Restrictor Blades

The restrictor blades are located at the front-left and rear-right corners of the mixing chamber walls. Each restrictor blade comes complete with an adjustment pin that locks the blade into position. When completely inserted, the restrictor blades will slow a large bale or mixed feed from moving around the outside of the mixing chamber, thus allowing the knives to perform aggressive cutting. The restrictor blades may be retracted to the out position to lessen the cutting action. The best position of the restrictor blade is based on user preference.

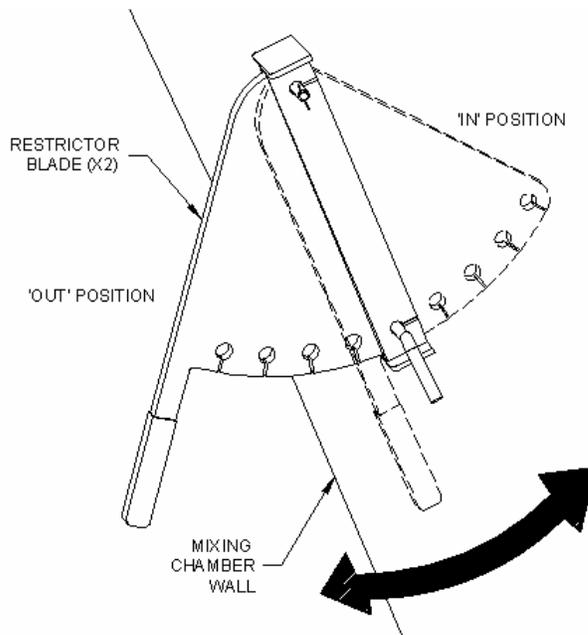


Figure 16: Restrictor Blade.

Important: Position the Restrictor Blades in the 'IN' (retracted) position during transportation of the machine to reduce overall width.

FRONT DOOR DISCHARGE CONFIGURATIONS

Front Door Discharge

The front discharge door is controlled hydraulically from the cab. The door is opened to allow feed out of the mixing chamber onto the conveyor.

The door can be raised to any position up to a maximum of 32 inches (81 cm) in height. Use the door guide markings to determine the door opening height.

In most cases the door will be opened fully to unload the mixed ration. However, the most suitable door opening height may be determined in combination with the speed of the conveyor and the ground speed of the machine when unloading.

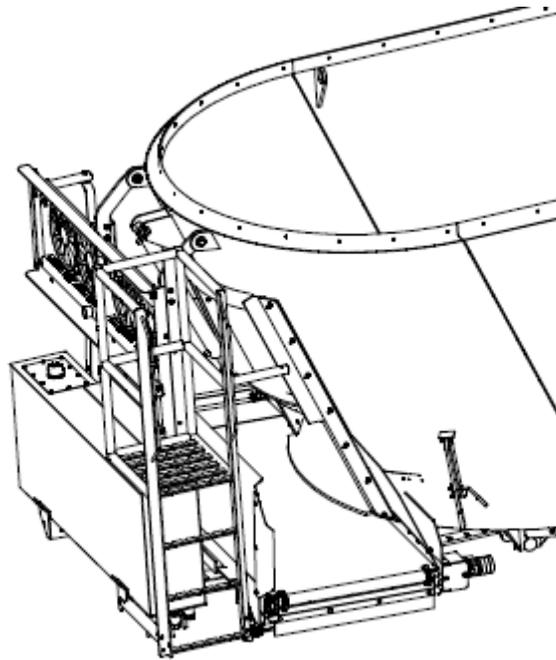


Figure 17: Front Discharge Door

Unloading Conveyor

The conveyor must be greased on a regular basis, as per the Maintenance Schedule. When unloading the machine, engage the conveyor before opening the discharge door. The speed of the conveyor can be adjusted to suit unloading requirements, by adjusting the flow control on the tractor.

The conveyor has an adjustment to tighten or loosen the chain. There is an adjuster located on both sides of the conveyor, at the end of the conveyor opposite to the hydraulic motor. Use wrenches to tighten or loosen the tension on the conveyor chain. Refer to the *'Maintenance and Service Information'* for more details.

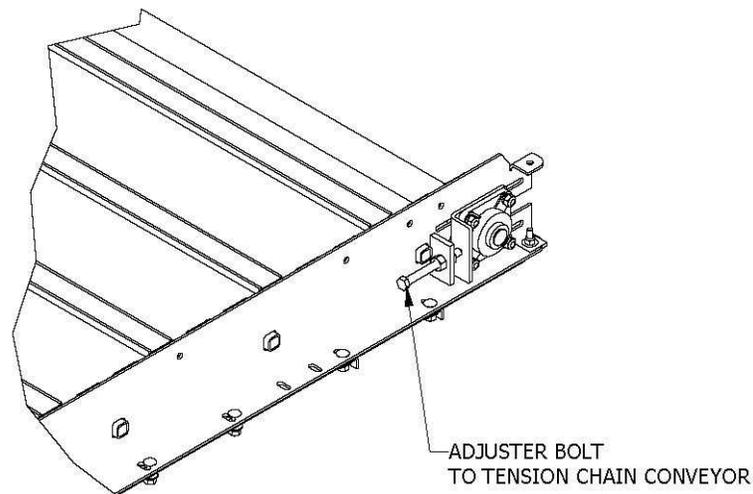


Figure 18: Chain Tensioning

REAR DOOR DISCHARGE CONFIGURATIONS

The rear discharge door is controlled hydraulically from the cab. On most units, the rear door option is equipped in addition to the front discharge door option.

Important: Always ensure that the rear door is completely closed when mixing and/or adding commodities to prevent ration loss.

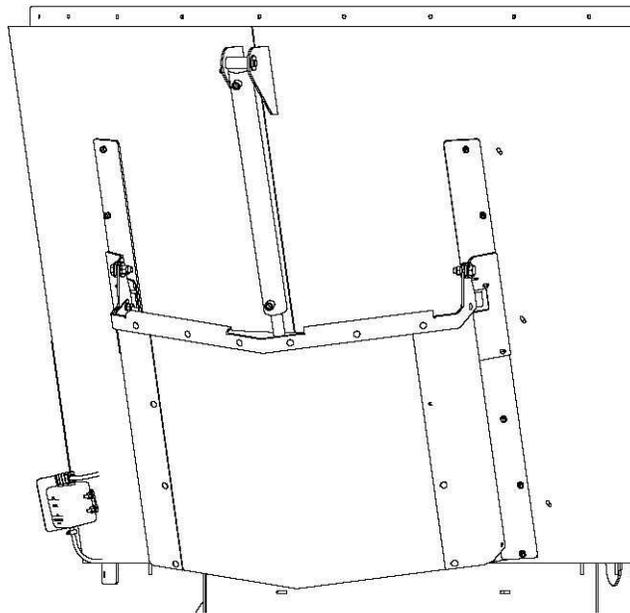


Figure 19: Rear Discharge Door Assembly.

GEARBOX LUBRICATION

The gearbox on your JAY•LOR® Cutter-Mixer-Feeder uses synthetic oil as its lubricant. The oil reservoir, on the right side of the mixer drum, contains the lubricant for the gearbox. The oil has a colorant added, which makes the fluid level more visible in the reservoir. Refer to the *'Maintenance and Service Information'* section for information on the lubricant specifications for your JAY•LOR® Cutter-Mixer-Feeder.

Every JAY•LOR® Cutter-Mixer-Feeder is equipped with an oil reservoir. The polyethylene body is a very durable material, which is able to withstand severe impact. However, if a reservoir is damaged, it must be replaced with an approved reservoir and/or components, recommended by the manufacturer. If a reservoir sustains any damage, call your JAY•LOR® Dealer or Distributor immediately.

The polyethylene reservoir has decals indicating the maximum and minimum oil level range under normal operating conditions. At no time is the fluid level to be lower than the minimum recommended level, as damage to the gearbox may occur. If the fluid level is higher than the maximum level, the oil may overflow either at the reservoir or underneath the machine at the gearbox, and cause fluid loss. Check the fluid level in the reservoir daily.

The oil reservoir has a filter/breather located on the top, which must be attached to the reservoir at all times. This breather is removable, to allow the filling of the reservoir. If the filter/breather becomes contaminated, remove the breather, and clean it. Follow the instructions as described in the *'Maintenance and Service Information'* section.

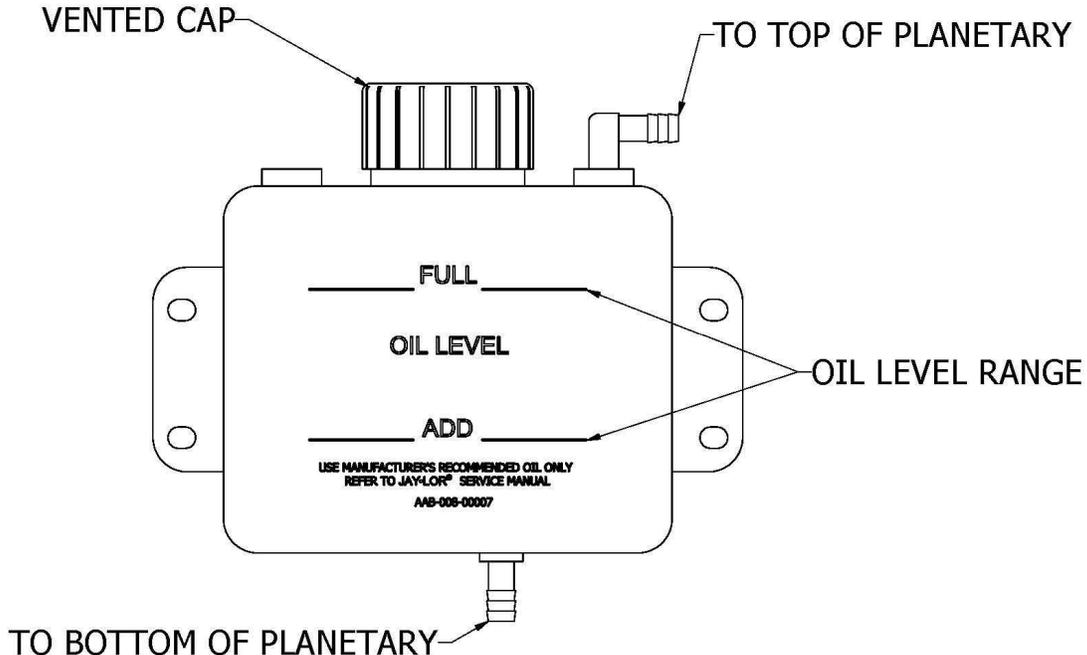


Figure 20: Plastic Reservoir Assembly.

FIELD OPERATION

General

The operation of the JAY•LOR® Cutter-Mixer-Feeder will vary greatly with the various feeds and climatic conditions. In most instances, “trial and error” is the best method of setting the machine up for a particular commodity to obtain maximum performance. To prevent over-cutting of feed, we suggest starting with the restrictor blades in the out position, and then adjusting to obtain the desired coarseness of the mix. The bulkiest and lightest commodities should be added first. Once these commodities are partially cut and broken apart, others can be added. Additional cutting will take place during mixing, so be careful not to over cut. The order in which the secondary ingredients are added is up to the operator. The type of mix required varies from one operation to the other, and therefore, mixing times and procedures will vary as well.

It is recommended that commodities are added to the mixing chamber while the augers are turning for maximum mix efficiency. The maximum rotational speed of the augers is 41 RPM. Starting the augers from a standstill with a full load in the mixing chamber places additional stress on the machine. Even though it is designed to handle this stress, repetitive startups under load may affect the service life of the machine. If however, due to circumstances, it is required to restart the machine while loaded, retract the restrictor blades all the way in order to decrease starting torque as much as possible.



Warning: *While loading the machine, be certain that no bucket or loading device comes into contact with the rotating auger inside the mixing chamber. This may cause serious damage to the mixer and/or loader, and may cause injury or death to the operator.*



Warning: *A loaded machine (machine and payload) may weigh as much as 50,000 lbs (22,730 kg). An operator must use his own discretion when negotiating rough and uneven terrain. Improper operation of the loaded machine can cause loss of control, severe injury, or death.*



Danger: *Never enter the mixing chamber or go on the conveyor unless all controls are in neutral, engine stopped, park brake set, ignition key removed and all moving parts have stopped. Failure to follow these safety precautions can result in serious injury or death.*

Important: *Always remove twine, string, and wrapping material from bales and/or other commodities from the ground that will be loaded into the mixing chamber. Failure to follow these requirements can cause damage to the machine.*

Cutting and Mixing Procedures

Follow these procedures when using the machine:

1. Review the Pre-Operation checklist, as described in the 'Pre-Operation Checklist' section.
2. Review the location and function of all controls, as described in the 'Controls' section.
3. Transport the machine to the feed storage area.
4. Starting:

Always follow this procedure when starting the machine to minimize high startup loads:

- a. Start the engine and run at low speed.
- b. Engage the Hydraulic pumps to start auger.
- c. Increase engine speed until the desired RPM is reached.
- d. Proceed with loading of the ration.

5. Stopping:

- a. Stop forward motion.
- b. Close unloading door.
- c. Stop conveyor when commodity is off.
- d. Slow engine to low idle.
- e. Disengage Hydraulic pumps.
- f. Stop engine if required.

6. Emergency Stopping:

If an emergency should arise, turn hydraulics off, stop forward motion and stop engine immediately.

7. Loading Feed Rations:

- a. Position the mixer where the loading machine has clear and easy access.
- b. Start the machine (Refer to #5).
- c. Begin adding ingredients to the mixing chamber in order to cut and mix a uniform feed ration.

Important: Always remove twine, string, and wrapping material from bales and/or other commodities from the ground that will be loaded into the mixing chamber. Failure to follow these requirements can cause damage to the machine.

Important: It is recommended to add the light and fluffy ingredients into the mixing chamber first. Then the heavier and denser material will force the lighter ingredients into the mixture.

- d. When adding ingredients, watch the numbers on the scale indicator to monitor the weight of each ingredient as they are added.
- e. Mixing times may vary depending on the ingredients being mixed. Typically, a total mixed ration is achieved in 3 to 5 minutes beginning after the last ingredient is added.



Danger: Never enter the mixing chamber or go on the conveyor unless all controls are in neutral, engine stopped, park brake set, ignition key removed and all moving parts

have stopped. Failure to follow these safety precautions can result in serious injury or death.



Figure 21: Total Mix Ratio (TMR) Achieved in Mixing Chamber.

Unloading Procedures

Follow these guidelines when unloading the machine:

1. Transport the machine to the feeding area.
2. If not already done, engage the hydraulic pump to start auger rotation.
3. For models equipped with front discharge:

Use a combination of the opening of the unloading door, speed of the conveyor, and ground speed to distribute the feed mixture to the desired areas. Follow this order:

- a. Start the conveyor;
- b. Raise the unloading door;
- c. Start the auger;
- d. Drive along feeding bunk/area to unload the feed mixture.

For models equipped with center side or corner door discharge:

Use a combination of the opening of the unloading door and ground speed to distribute the feed mixture to the desired areas. Follow this order:

- a. Raise the unloading door;
- b. Start the auger;
- c. Begin driving along feeding area to unload the feed mixture.

4. Monitor scale indicator readings to evaluate ration distribution to unloading areas.
5. Continue unloading until mixing chamber is empty or desired amount of mixed ration has been unloaded.

Important: It may be necessary, in order to completely empty the mixer of all commodities, to turn the auger at the fastest speed possible. This will propel the feed that is resting on the auger off its flighting, and allow the auger to unload this.

6. Unplugging:

Although plugging or clogging of material can occur in several ways, the list identifying ways for plugging or clogging to occur includes but is not limited to:

- a. Unloading door;
- b. Return end of conveyor on left/right discharge models.

Always place controls in neutral, stop engine, set park brake, remove ignition key, and wait for all moving parts to stop before unplugging.

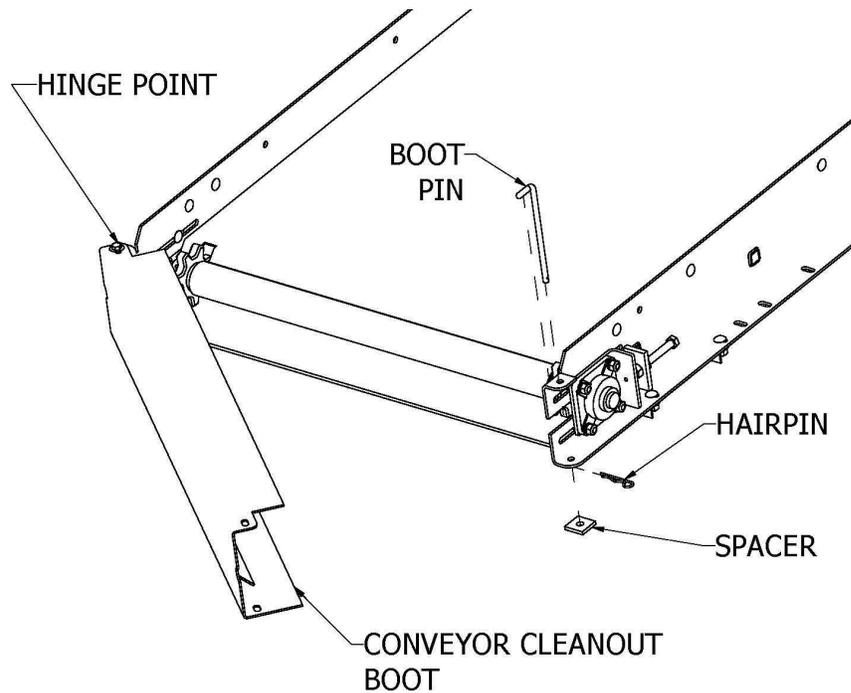


Figure 22: Conveyor Clean Out

Open discharge door or conveyor cleanout boot (if applicable) and clean out the clogged area. Close and secure the conveyor cleanout boot before starting again.

7. Entangled Material:

Twine, string, and wrapping material that is not removed from bales can get tangled in the auger or under the auger. If this material is not removed from under the auger, it can

damage seals and/or other components on the planetary gearbox, which is located underneath the auger center post. Always remove this material as soon as it is noticed.



Danger: *Always place controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before removing material. Failure to follow these safety precautions can result in serious injury or death.*

Operating Hints

1. Place the light, fluffy and least dense ingredients into the machine first. In that way, the heavier and denser material added later will push the light material into the auger. Always place hay (round, square, or loose) into the machine first.
2. Shake the bucket on the loader to control the amount of material being added to the machine. Watch the weight indicator to know exactly how much of each ingredient you are adding.
3. Operate the auger for 3 to 5 minutes after the last ingredient has been added and before unloading to ensure a uniform mixture. Mixing times will vary depending on the type of ingredients being mixed. Visually monitor the mixture to ensure that mixing is complete.
4. Consult with a feed nutritionist to determine the best combination of ingredients for your requirements. Following their recommendations will ensure the best results with your total mixed ration (TMR). This translates into maximum efficiency of your JAY•LOR[®] Cutter-Mixer-Feeder investment.

TRANSPORTING

The machine is designed to be easily and conveniently moved from location to location.

When transporting, follow this procedure:

1. Be sure all bystanders are clear of the machine.
2. Make sure that all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean, and can be seen by all overtaking and oncoming traffic.
3. Retract the conveyor so it is centered on the chassis.
4. Do not allow riders on the machine.
5. It is not recommended that the unit be transported for long distances when the mixing chamber is fully loaded. Transporting will compact the mixture and can make startup difficult.
6. Never transport faster than the road or terrain conditions will allow you to do safely.
7. Check with the local authorities on the rules and regulations governing the transporting of agricultural equipment on highways before starting. Always comply with these ordinances and regulations.

STORAGE

Should the machine be stored for a period of time, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time the next time the machine is to be used.

Recommended procedure:

1. Wash the entire machine thoroughly using a water hose or pressure washer to remove all dirt, mud, debris, or residue.
2. Inspect all drives and moving parts. Remove any string, twine, or other material that has become entangled in the auger knives, axles, or shafts. Be sure the components are clean and move freely.



Danger: *Always place controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before removing material. Failure to follow these safety precautions can result in serious injury or death.*

3. Inspect all hydraulic hoses, fittings, lines, couplers, and valves. Tighten any loose fittings. Replace any hose that is cut, nicked, or abraded, separating from the crimped fitting.
4. Inspect auger and knives for damaged or broken components. Repair or replace components as required.
5. Lubricate all grease points. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
6. Apply grease to the exposed cylinder rams. This includes the discharge door cylinder and the conveyor lift cylinder, if equipped.
7. Touch up all paint nicks and scratches to prevent rusting.
8. Move the machine to its storage position.
9. Select an area that is dry, level, and free of debris.
10. Unhook the machine from the tractor.
11. Block the wheels on the machine.
12. If the machine is not to be used for an extended period, consider removing the scale indicator from the machine and place in a clean and dry environment. Use the original packaging if available. Place all weigh bars and power cords so that they will not be exposed to weathering and/or damage.

TROUBLESHOOTING

General Troubleshooting

Your JAY•LOR® Cutter-Mixer-Feeder is designed to receive a variety of feed material in its mixing chamber to cut and mix prior to unloading. It is a simple and reliable system that requires minimal maintenance.

The following section lists common problems, causes, and solutions to the problems you may encounter with your JAY•LOR® Cutter-Mixer-Feeder. Should any maintenance and service be required as a result of troubleshooting, refer to the *'Maintenance and Service Information'* for assistance.

If you encounter a problem that is difficult to solve, even after having read through this troubleshooting section, please call your dealer or distributor. Before you call, please have this Operator's Manual and the serial number from your machine ready.

PROBLEM	CAUSE	SOLUTION
Material wraps around knives.	- Knives dull or worn out.	- Check auger, remove entangled material. - Check knife condition. Replace any worn, bent, and/or damaged knives.
Conveyor doesn't move.	- Insufficient oil flow. - Cold temperatures - Conveyor slats frozen down. - Conveyor jammed.	- Increase oil flow at tractor or flow divider. - Warm machine before operating. - Check oil level in tractor reservoir. Add as required. - Clear material out of slat pathway underneath the conveyor assembly.
'Dead Spot' during mixing.	- Material will not mix in certain locations inside the mixing chamber, commonly the front and back areas of the mixing chamber.	- Make sure the machine is level when mixing. - Check knife condition. Replace accordingly. - Check angling blade condition. Replace accordingly
	-	-

DRUM EXTENSION INSTALLATION (IF APPLICABLE)

Depending on the JAY•LOR® Cutter-Mixer-Feeder model and options you have chosen, your machine may be equipped with a plastic (HDPE) drum extension. If so, please follow these steps to install the extension on your twin auger machine:

1. Begin by unrolling both lengths of the HDPE extension. Measure the full length of one of the sections and mark the half way point. Each section should be 38' in length.
2. Line up the half way point of this section with the center rear of the drum, so that the extension sits flush on the angle iron at the top of the drum.
3. Using the holes in the angle iron as a guide, drill a hole (1/2" diameter) in the extension and fasten to the angle iron at or near this center rear point on the drum. Make sure that bolt heads sit on the outside of the extension.
4. Wrap the two ends around the angle iron as shown in Figure 18 below. Clamp both ends to the angle iron, making sure that the extension is pulled as tight as possible.

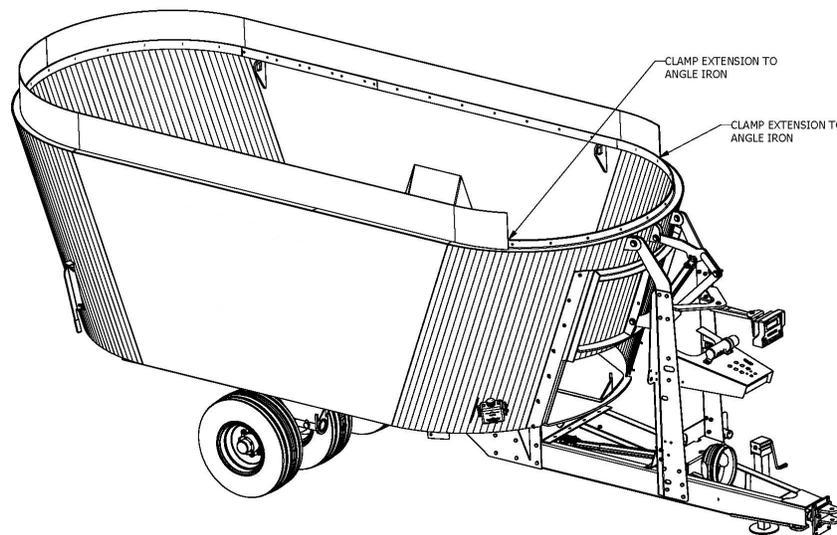


Figure 18 Securing First Extension Section

5. Repeat steps 1-4 for the second extension section, but start at the center front of the machine. Wrap both ends so that they overlap the first extension section. Clamp both ends to the first extension section as shown in Figure 19 below.

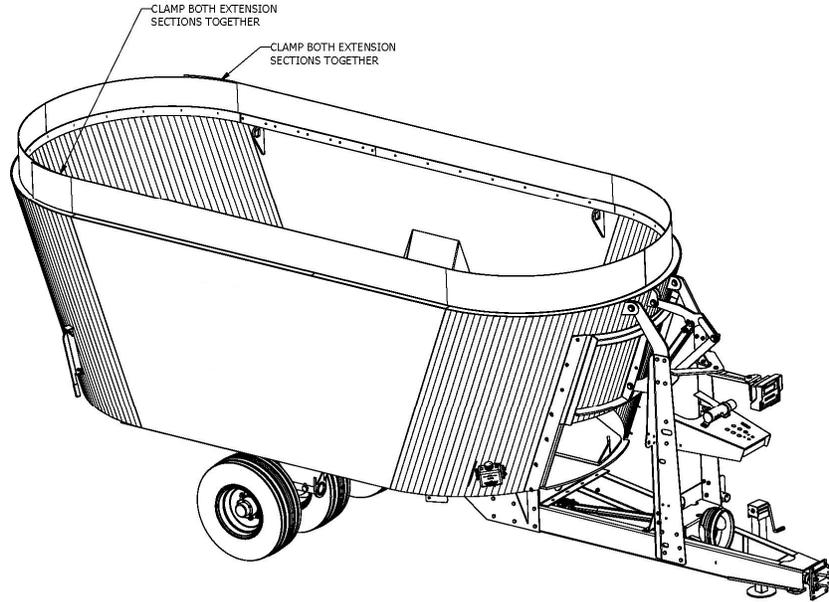


Figure 19 Securing Second Extension Section

6. Beginning at the front of the drum, start drilling and fastening the plastic extension to the angle iron, using the predrilled angle iron holes as a guide. Move in one direction around the drum.

7. Using the remaining hardware, drill and fasten a second row at the top of the overlapping extension sections (see Figure 20 below).

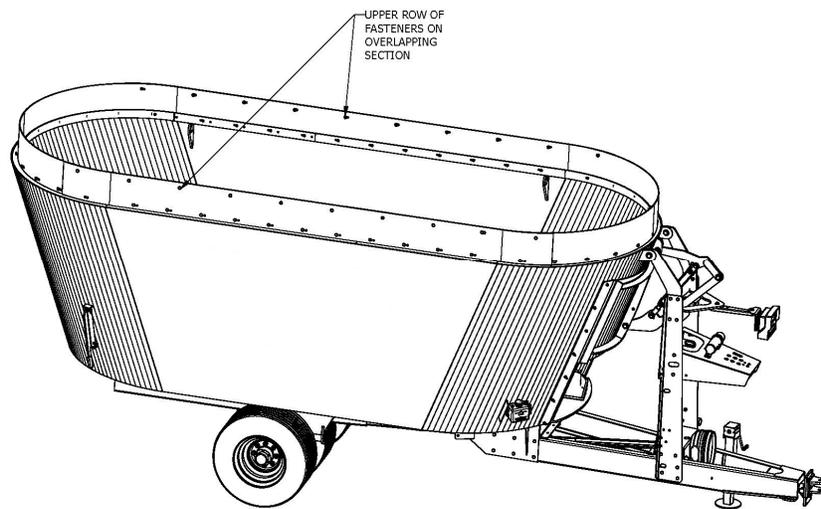


Figure 20 Securing Upper Row of Fasteners