



33-SERIES

**2-ROW & 4-ROW
PEANUT COMBINE**

OPERATOR'S MANUAL

THIS MANUAL TO ACCOMPANY MACHINE

PART NO. 33-OM-01
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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 and ends twelve (12) 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.

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Tifton GA

TO THE PURCHASER

The **KMC PEANUT COMBINE** has been carefully designed and manufactured to give years of dependable service. In order to operate it efficiently and maintain it 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 operation of each component 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.



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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 safety procedures.

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Do not permit any one to ride on the machine. 2. Keep all persons a safe distance away from the rear and sides of the machine while it is in operation. 3. Drive safely during transport; excessive speeds while turning on rough grounds or over hills could cause tractor tip over. 4. Make sure hitch components are attached securely before operating or transporting. 5. Use flashing warning lights when operating on highways, except where prohibited by law. 6. Stop engine and disengage PTO before leaving operator's position to adjust, lubricate, clean or unclog machine. | <ol style="list-style-type: none"> 7. Keep all shield in place. 8. Keep hands, feet, and clothing away from moving parts. 9. Make sure that everyone is clear of machine before starting tractor or operating machine. 10. DANGER - Install safety struts and pins prior to working under tank. Failure to do so may result in serious injury or death. 11. Be sure combine is on level surface before dumping the tank. DO NOT dump tank under power lines 12. Maximum towing speed is 10 MPH loaded . . . 20 MPH empty. 13. Observe all safety decals located on machine. |
|---|---|



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 operators 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 on the lines below.

Model No. _____ **Serial No.** _____ **Purchase Date** _____

ASSEMBLY INSTRUCTIONS

There are several things which may need assembling before the peanut combine is ready for operation. The assembly order will depend on how the machine has been disassembled for shipping.

MOUNT THE TANK TO THE COMBINE

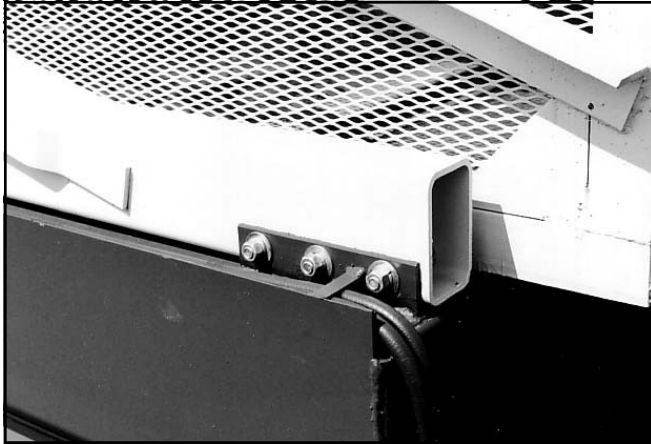


Figure 1

First lift the tank into position using the loops provided on the tank frame, this will help keep the tank near level while working it into position. Align bolt holes and air-lift duct and lower into position and install bolts into support arms. Make sure tank is sitting flat on combine top and square with sides and frame before disconnecting lift front tank. If tank does not sit flat on combine, adjust support arms to right or left as needed to allow tank to sit flat on frame. Secure tank to combine by tightening attachment bolts previously installed. Next connect hydraulic hoses between combine mainframe and tank using the hoses provided. See Figure 1.

MOUNT THE REAR HOOD



Figure 2

For some shipping situations, it may be necessary to mount the rear hood. If so, first hang the rear hood onto the mainframe by interlocking the front lip of the hood with the rear lip on the mainframe. Center the hood on the rear support, then secure its position by installing capscrews through mounting holes in edge of hood and bolt holes in rear tube of combine. See Figure 2. Connect Transport lights.

ATTACH DRIVELINE

Before attaching driveline be sure that it matches the ratio of the gearbox. Four row combines are all 1000 RPM machines. A decal should be in place over the gearbox of two row combines, if not, turn the input shaft one revolution and observe the output and a determination can be made. If the output makes only approximately 3/4 of a turn it is a 1000 RPM machine. If the output makes 1-1/3 turns it is a 540 RPM machine. Attach the base end of the driveline to the input shaft using the capscrew provided, tighten bolts securely. Some drivelines attach using a quick disconnect pin which is a part of the driveline. Secure driveline shield to tongue by attaching chain (provided on driveline) to shield and tongue.

ATTACH FOUR ROW TONGUE



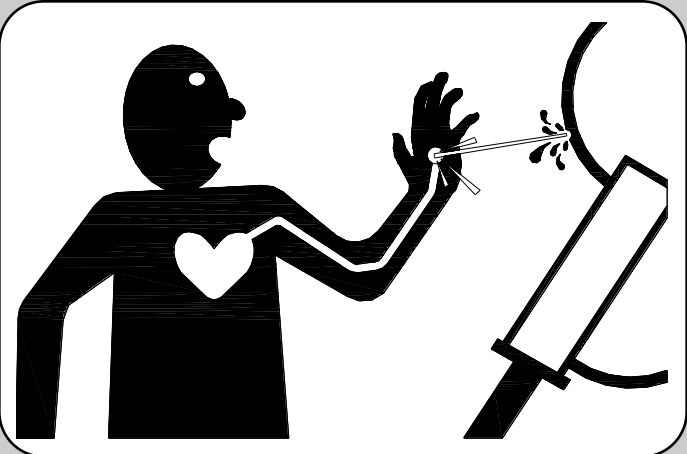
Some combines may require the attachment of the pivot tongue. To do this slide the fork of the tongue over the pivot tube on the tongue support and insert the pivot pin. Secure with the nut and washer provided. Next select either the transport or operation position and move the tongue against the appropriate stop and insert the stop pin. See Figure 3.

PRE-DELIVERY CHECKOUT

1. Open all shields and check chains and belts for proper tension.
2. Check setscrews and jam nuts on all sprockets, sheaves, shafts, etc. for proper torque.
3. Check oil level in gear boxes, remove top plug, oil should reach mark on end of dip stick. On Four row machines remove the level plug on front face of gear box. Oil should just reach bottom of hole. Add high grade SAE 90 weight oil if necessary.
4. Check all lubrication points (see chart on page 14) and lubricate accordingly.
5. Check airlift duct at bottom for proper alignment with hopper.
6. Connect tongue to tractor (see page 6 for instructions) then connect hydraulic lines for tank and header. Slowly raise and lower the tank and header to work all air out of lines. Check lines for leaks and correct if necessary.
7. Install tractor PTO driveline, be sure driveline matches gearbox. Operate combine at 1/2 speed for 5 minutes. Stop combine and check for loose bolts, nuts, chains, belts, sprockets, etc. and for hot bearings and gear box.
8. Make any necessary corrections and run again at full speed for 10 minutes and check all items again.
9. Check tire pressure and set at 32 PSI. Also check lug nuts for proper torque.
10. Set delivery duct air damper fully open (linkage in top hole.)
11. Disengage all strippers before going to the field. Stripper handles should be rotated full counter-clockwise position.



CAUTION: Never check for leaks with bare hands as small oil leaks under pressure can penetrate skin and cause serious injury.



WARNING

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.

PRINCIPLES OF PEANUT HARVEST

The KMC Peanut Combine is designed to be used for the removal of peanut pods from peanut vines which have been uprooted. It will then separate the peanuts from the vines, placing the pods in a storage tank on top of the machine, and return the vines to the ground. The combine must be pulled and powered by a farm tractor.

* Efficiency of the combine is not measured in tons or acres per hour, but in the cleanliness of the sample.

STEPS OF THE PROCESS

1. The peanuts are lifted off the ground and taken into the combine by the pickup attachment, which delivers them to the threshing cylinders for picking.
2. The threshing cylinders strip the vines pulling the pods off the vines. Additional stripping tines can be engaged into the number one, two, three, and four cylinders to increase the aggressiveness in tough conditions.
3. When the peanut pods are pulled off the vines they fall through separator concaves and onto a shaker pan which conveys them to the cleaning shoe located at the rear of the machine. The concaves prevent most of the vine material from falling onto the shaker pan and cleaning shoe.
4. The peanuts and small vine material which has fallen onto the pan moves on to a comb agitator which tosses the material into a stream of air. Any small vines, leaves or trash are blown out the rear of the machine by this air.
5. Any large material which falls through the agitator comb will fall onto the cleaning shoe. Here a blast of air will lift the lighter of these materials out the back and an oscillating motion will work the heavier items out the back. The cleaning shoe consists of one screen called the chaffer. The opening in this screen is adjustable for different size peanuts and different conditions. It allows the peanuts to fall through but not the trash. The bottom of the cleaning shoe has two rows of stemmer saws to cut the stems off the peanuts.
6. A cross auger or air chute then takes the peanuts to the airlift delivery chute which takes them to the storage tank on top of the combine.

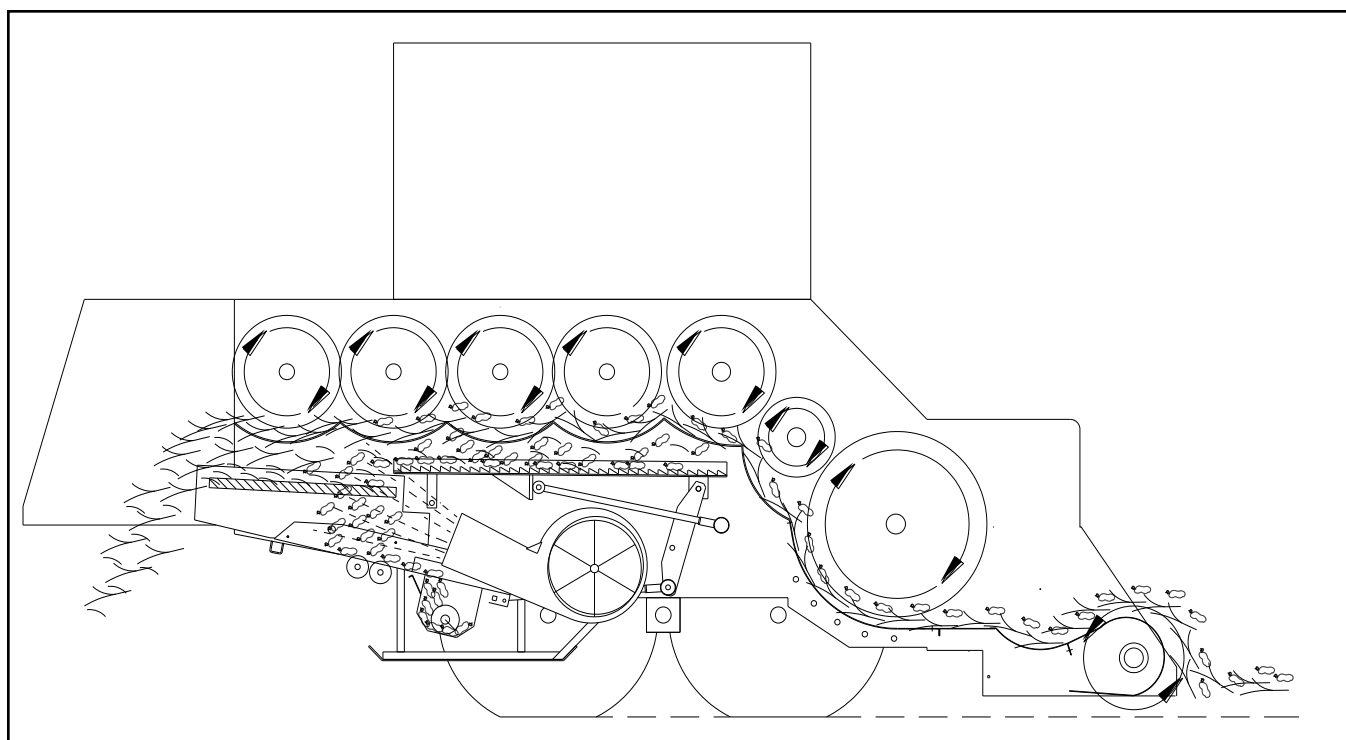


Figure 5 Material Flow Through Combine

FUNDAMENTALS FOR GOOD PERFORMANCE

1. The peanut vines must not be too green or good separation will be slow and difficult.
2. Moisture content of the peanut should not be too high or too low, otherwise increased damage or LSK's may result.
3. Keep the windrow centered entering the combine so that the combine does not get overloaded on either side.
4. Make sure combine is properly adjusted for peanut and field conditions.
 - A. Chaffer opening must be adjusted to allow all peanuts to fall through yet minimize foreign material from flowing through.
 - B. Use as much air as necessary to separate peanuts from trash without blowing peanuts out the rear of the combine.
 - C. Select a ground speed that will not overload the combine. Too much ground speed is one of the greatest causes of poor performance in separation.
5. Make sure the operator knows how to operate the combine properly and efficiently.
6. The efficiency of the combine is not measured in acres covered/hour, but in cleanliness of the sample.

OPERATION INSTRUCTIONS

NOTE: KMC COMBINES SHOULD BE OPERATED AT A PTO SPEED RANGE OF 900 RPM FOR OPTIMUM PERFORMANCE AND FUEL EFFICIENCY.

BEFORE HOOKING COMBINE TO THE TRACTOR

If combine is delivered with the tongue in the transport (center hitch) position, it must be re-positioned to (left hitch) position for field use (see figure 6) to re-position tongue:

- (a) Raise header with tongue jack until all pickup springs clear the ground. Place wood blocks or other support under each skid shoe of the header.
- (b) Remove stop pin and pivot the tongue to the operation position and re-insert the stop pin.
- (c) Raise the header with the tongue jack and remove the support blocks.
- (d) For tongues with hydraulic tongue option, remove stop pin and activate cylinder.



CAUTION: Always keep stop pin inserted during normal operation and transport. Personal injury can result from unexpected cylinder movement.

TRACTOR SETUP AND ATTACHING TO THE COMBINE



CAUTION: Check drawbar to PTO relationship before installing driveline. Too short of a length could damage tractor or combine.

The distance from the end of the tractor PTO to the center of the hitch pin should be 14" for 1-3/8-6 PTO, 16" for 1 3/8-21 PTO, and 20" for 1 3/4-20 PTO.

Adjust tractor drawbar if necessary to achieve this dimension. Attach the tongue of the combine to the tractor drawbar using a 1 1/4 x 5 inch grade 5 bolt. Tighten bolt securely. Attach the driveline to the tractor, make sure driveline and combine gearbox match. Secure driveline shields upper and lower halves with chains provided. This will insure longer life of the shields which is very important for safe operation.

Attach the hydraulic lines for the tank and header. Raise and lower both tank and header to insure proper operation.

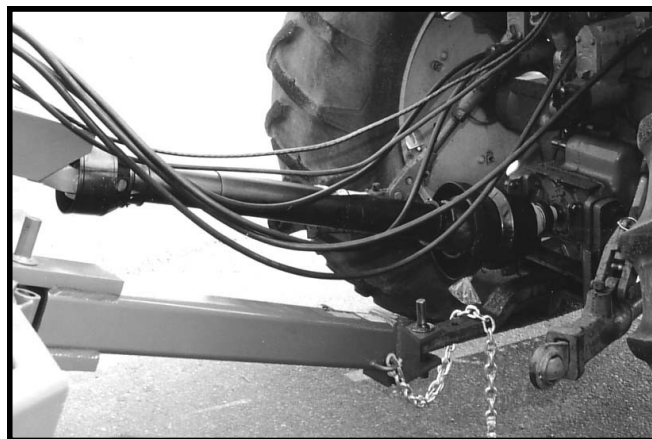


Figure 6

PICKUP AND HEADER

The KMC combine is equipped with a hydraulic cylinder to raise and lower the pickup attachment.



CAUTION: Always install safety latch on tongue when transporting.

In operation the pickup height should be set with the springs approximately one inch above ground. This will minimize spring wear and nut losses from lift height. For operator convenience on 2-row machines, a stop can be set to return the pickup to this height each time the pickup is raised. First establish the proper height for the pickup then, (on two row combines) screw the two jam nuts on the stop rod down to the trunnion. On the four row machines add cylinder rod donuts until the cylinder will not collapse any farther.

The pickup speed is variable and should be set to match ground speed. (See Figures 7 & 8). Proper adjustment of the pickup speed will reduce losses. If the pickup is running too fast it will tend to pull the vines apart as they are rising to the header and nuts will be pulled off the vines. If the pickup is running too slow it will push the vines along the ground before picking them up which will also result in excess losses.

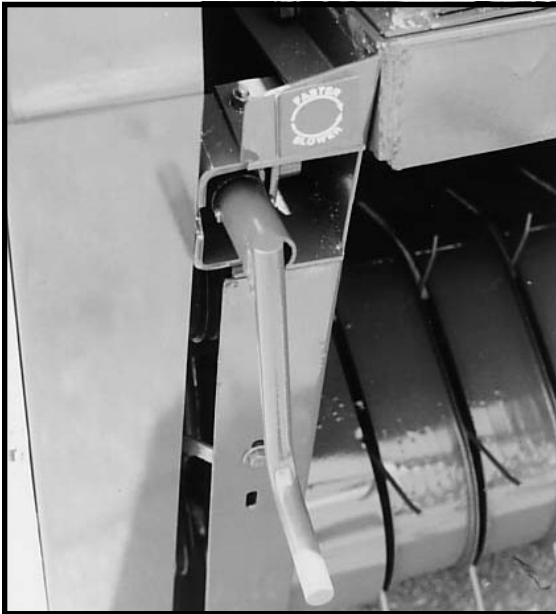


Figure 7 Pickup Speed Control - 2-Row



Figure 8 Pickup Speed Control - 4-Row

To adjust the pickup speed the combine must be in operation. **NOTE: THIS IS THE ONLY ADJUSTMENT WHICH MUST BE MADE WHILE THE COMBINE IS IN OPERATION, BE SURE THAT TRACTOR BRAKES ARE LOCKED IN POSITION BEFORE LEAVING TRACTOR SEAT AND THAT ALL SHIELDS ARE IN PLACE.** To increase pickup speed turn adjustment handle in a clockwise direction, to reduce speed turn it counter-clockwise. To get the most out of the combine adjust the ground speed to match field conditions as they change. Peanuts should feed smoothly from the pickup band to the number one cylinder. For two row combines, if hesitations occur, adjusting the header baffle up may solve the problem. The baffle is made in three sections, slotted holes in each section allows them to be adjusted individually. Usually the center baffle is adjusted higher than the ends. To get the most out of the combine adjust the ground speed to match field conditions as they change.*



CAUTION: ADJUSTING THE BAFFLES TOO HIGH COULD ALLOW PEANUTS RECIRCULATING ON THE NUMBER ONE CYLINDER TO BOUNCE OUT THE FRONT OF THE MACHINE.

PICKUP AUGER ADJUSTMENT AND OPERATION (4-ROW ONLY)

The purpose of the auger is to transfer vines to the center of the machine after they have been lifted by the pickup reel. **PROPER VINE FLOW IS IMPORTANT AND ALLOWS THE PICKING AND SEPARATION SYSTEMS TO PERFORM EFFICIENTLY AND SAVE MORE PEANUTS.** Ideally, vines should flow to THE REAR of the auger and then be transported to the throat of the machine. If they tend to flow in front of the auger instead of being fed underneath it, they will enter the center of the throat, causing the middle of the picking and separation systems to be overloaded, causing peanut loss.

The auger can be adjusted horizontally or vertically as a means of creating proper vine flow. These adjustments are located on the auger shaft ends.

To raise or lower the auger, loosen the drive chain and the two bolts on the sides of the frame members as shown in Figure 9. Then screw the adjustment bolt out to raise the auger or in to lower it. To move auger forward or backward, loosen the four bolts in the auger bearing mount plate. Re-tighten chain and all bolts securely when either of the above adjustments are made.

NOTE: In most cases, raising the auger will allow vines to feed in the desired manner (underneath the auger). If vines still do not feed appropriately after auger is raised, it may be necessary to move the auger forward.

NOTE: It is important that the auger be positioned low enough to keep the trough swept clean and prevent dirt and trash from building up.



CAUTION: MOVING AUGER FORWARD INCREASES THE POTENTIAL FOR VINES TO WRAP OR RE-CIRCULATE AROUND THE AUGER.

In small vines which feed well under the auger, it may be necessary to move the auger to the rear and/or lower it to prevent vines from wrapping or building in the trough.

IT IS VERY IMPORTANT THAT VINES FEED FROM THE BACK OF THE AUGER!

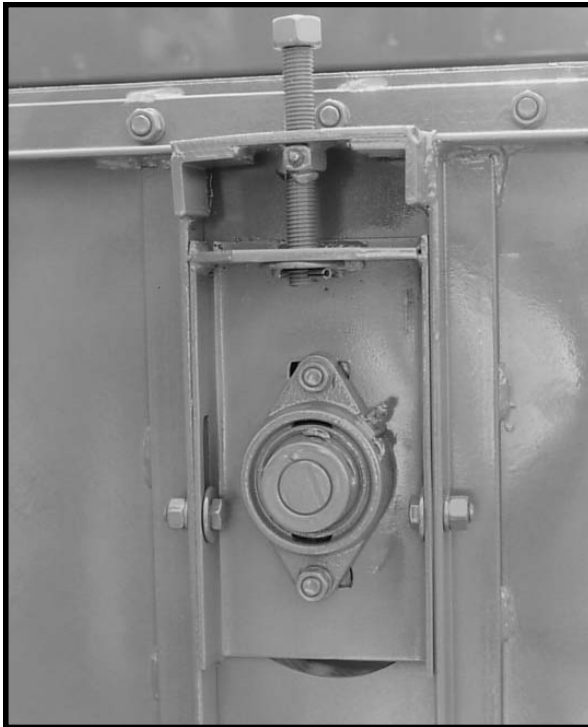


Figure 9

VINE HOLD DOWN

The vine hold down assembly is standard equipment on the 4-row and optional on the 2-row. Proper setting is essential for smooth flow of material into the combine. Both vertical and horizontal adjustments are provided to fit the vine conditions. In small vines that try to roll in front of the leader, lower and extend



Figure 10

the tine bar. Larger vines are easier to pick up but more difficult to feed smoothly under the auger. The vine hold down is essential here as well. Smooth feeding at the front of the combine improves efficiency for the whole machine. In larger vines, raise and retract the tine bar toward the auger.



CAUTION: If the tine bar is raised and not retracted, it can be damaged when the header is raised.

In certain conditions, it is helpful to remove some of the tines from the tine bar. Such as when peanuts are easily knocked off the vines or when large vines have a difficult time turning toward the center of the combine. The most important tines to keep on are the ones directly over the windrows. A recommended initial 4-row setting for Georgia, Florida, and Alabama is 3 off, 9 on, 9 off, 9 on and 3 off. (See Figure 10.)

PICKING CYLINDERS

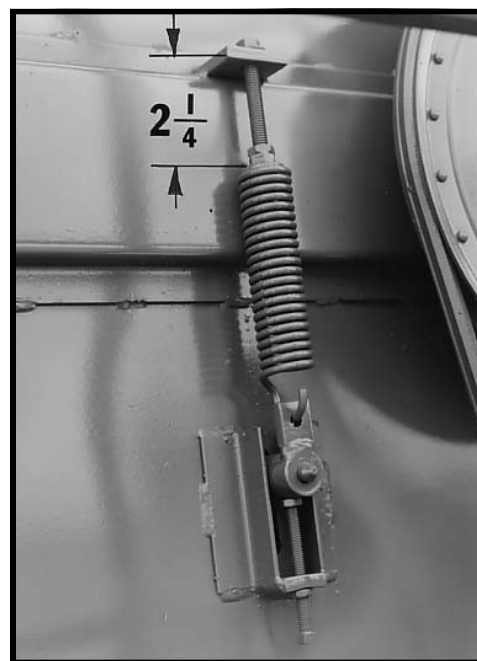


Figure 11 Concave Tension Adjustment

After the windrow has been picked up it moves into a series of cylinders which are equipped with spring tines that pull the peanuts off the vines. The cylinders are rotating at a high rate of speed, therefore it is important to keep a constant and adequate supply of material flowing into the combine to minimize damage and shelling of peanuts. Proper speed of the cylinders is also important, therefore tractor RPM should be maintained at PTO speed or 900 RPM. A quick check can be made by counting the speed of the number one cylinder. THE CORRECT SPEED OF THE NUMBER ONE CYLINDER IS 110 R.P.M.

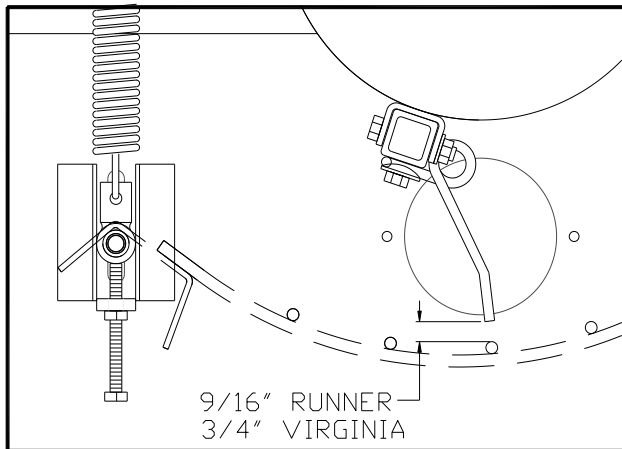


Figure 11A CONCAVE HEIGHT ADJUSTMENT

Underneath each cylinder is a cylinder concave, the rear four are floating concaves. They may need adjusting to achieve the proper clearance between the cylinder spring and the concave. To make this adjustment back off the adjustment nut on the setscrew on bottom of the concave until the springs miss the concave by 9/16 inch for runner peanuts and 3/4 inch for Virginia type nuts (See Figure 11A). Closer settings may be necessary for rank vines if they build up on the concaves closing up the holes. Follow this procedure on all cylinder concaves starting with the number four cylinders continuing through the sixth concave. The seventh concave is adjusted differently. It should set so that the concave will just miss the cylinder spring.

The aggressiveness of the picking cylinders can be adjusted by increasing or decreasing the number of strippers engaged in the picking cylinders. When first beginning a new field or new conditions **START WITH ALL STRIPPERS DISENGAGED**. If you find peanuts still attached to the vines which have gone through the machine, engage the first stripper to the center position. If this is not enough then engage the second stripper to the center position and proceed through all five strippers until all are engaged half-way. If additional aggressiveness is needed engage the second stripper fully proceeding as before.

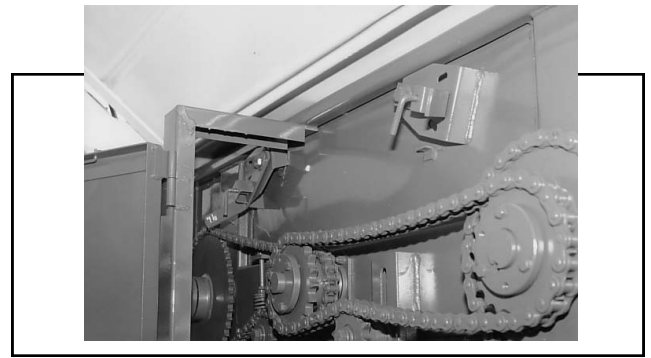


Figure 12 UPPER STRIPPER ADJUSTMENT

Use upper strippers last, engaging them progressively until you reach a point where there are no longer any peanuts being left on the vine. In extremely dry peanuts where LSK's sometimes occur reverse the order of stripper engagement, start at the rear bottom and work forward. The rear bottom strippers are not as aggressive as the front bottom strippers. **DO NOT USE UPPER STRIPPERS IN DRY PEANUTS.** This usually results in fewer LSK's. It is important to balance ground speed and stripper engagement to minimize LSK's and damage. **NOTE:** As conditions change from morning to afternoon strippers may need to be removed to minimize damage.



Figure 13 LOWER STRIPPER ADJUSTMENT

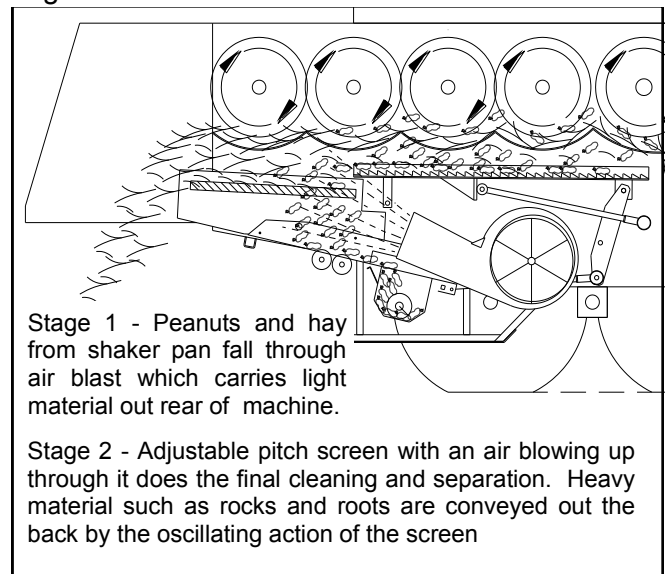


Figure 14

The most important area of the combine is the separation system. More peanuts are lost and more poor grades are received due to improper adjustments of the cleaning shoe and separator fan than any other area. The KMC peanut combine has a unique separation system which gives improved performance in grades and capacity. There are two stages to the KMC system, first the peanuts and foreign material coming off the shaker are tossed into an airstream which blows most of the lighter hay material out the back of the combine. This pre-cleans and lessens the amount of material which the cleaning shoe has to work with. It is easier for the peanuts to fall through the screen under these conditions. The second stage of cleaning is by an oscillating cleaning shoe. The Chaffer has adjustable openings for different size peanuts. The chaffer is available in two sizes, one with a wide spacing 2 1/4" between rows of fingers and one with a small 1 5/8" spacing.

The openings are controlled by a lever in the center of the screen, see figure 15. The purpose of the chaffer is to separate the peanuts from materials that are close in size and weight to the peanut. Although vine and field conditions will influence the final setting of the chaffer the following recommendations are made for initial start-up.

| | SPANISH | RUNNER | VIRGINIA |
|---------|---------|--------|----------|
| CHAFFER | 5/8" | 7/8" | 1 1/8" |

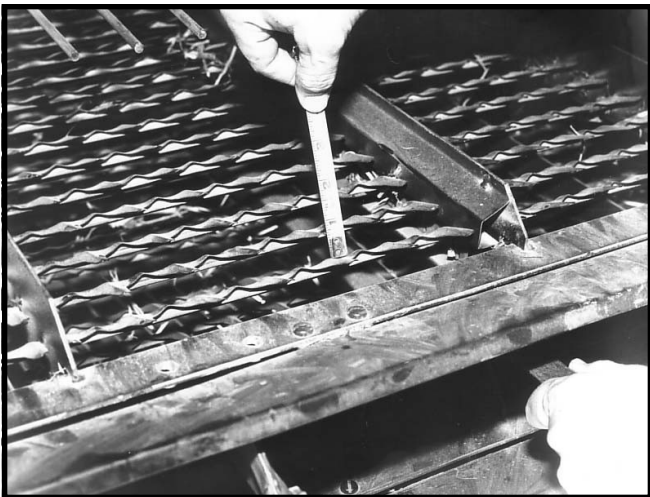


Figure 15 Screen Adjustment

The larger the screen openings the greater the possibility of getting all the peanuts into the tank, however, this also increases the potential of foreign material being put into the tank. Therefore a balance must be found to give optimum performance. Located at the rear of the chaffer is an adjustable tailboard. It's purpose is to retain lighter peanuts which do a lot of bouncing before falling through the chaffer. The

tail board is normally set in an upward position. This should be lowered if high amounts of foreign material are found in the peanuts. See Figure 16.



Figure 16 Tailboard Adjustment

The Main Fan is an essential part of the separation process. The principal of separation is air and gravity, as the peanuts and foreign material fall from the agitator rods onto the cleaning shoe gravity begins to pull the peanuts downward, air then blows the hay and foreign material out the back. Therefore, the right combination of air for conditions must be determined.

First START WITH MAXIMUM AIR FROM THE FAN. Check behind the combine to see if peanuts are being blown out, this can best be determined by someone other than the operator observing the materials flowing off the rear of the screen.

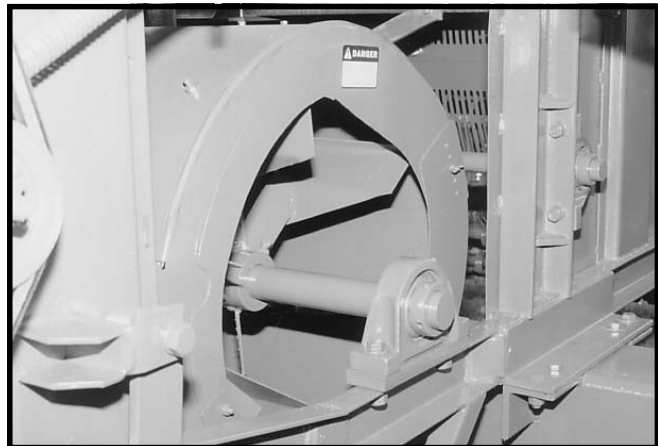


Figure 17 Adjustable Dampers

If excessive peanut loss is occurring the air from the fan can be reduced in either of two ways, one by changing the drive belt on the fan sheaves or by changing the setting of the adjustable dampers. To change the air speed loosen the tension bolt on the fan idler until the belt can be put around the large sheave,

then retention the idler. To change the damper remove the wing nut on the top side of the damper then adjust both halves of the damper the same amount then secure with the wing nut (See Figure 17). Both sides of the fan **MUST** be set the same or uneven air distribution will occur.

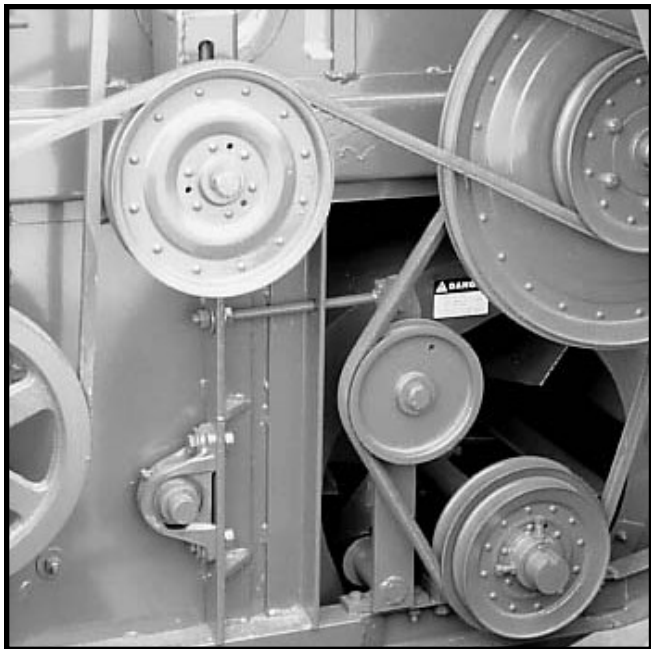


Figure 18 Separator Fan Drive

STEMMER SAWS

As the peanuts fall from the chaffer they fall onto a set of stemmer saws. These saws remove the stems from the peanuts and dispose of the vine fragments. The saws turn in opposite direction which rotates most all peanuts into position for stem removal.

DELIVERY AUGER

The delivery auger is located at the front of the cleaning shoe. It conveys the peanuts into the path of the air from the airlift fan. The bottom trough of the auger is designed to pivot down for cleanout of servicing.

AIRLIFT FAN

The airlift fan supplies the energy to lift the peanuts into the storage tank on top of the combine. The amount of air can be varied to meet field conditions by means of a damper in the lower end of the fan housing. The control lever can be set from high to low. See Figure 18. The recommended settings are high for heavy yield peanuts, medium for dry light peanuts and low for small low yield peanuts.

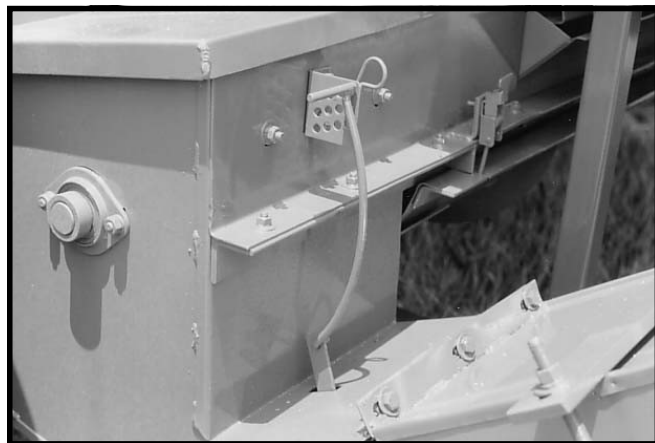


Figure 19 Airlift Adjustment - 4-Row

Inadequate air flow will result in the delivery duct plugging. Too much air will result in increased LSK's. Always inspect peanuts in tank when first starting up, this will help determine the proper air flow.

THE TANK

The tank is located on top of the combine. Care should be taken not to over fill the tank as excess peanuts will plug the delivery system and eventually spill on to the ground. The tank is emptied by two hydraulic cylinders which lift the bottom of the tank until it reaches a vertical position. The peanuts exit through a door on the top right side of the tank. The maximum recommended dump height is ten foot three inches.



DANGER: NEVER WORK ON COMBINE WITH TANK RAISED UNLESS SUPPORT STRUTS ARE IN PLACE ON CYLINDERS.

Periodic cleaning of the air release grid on the top of the tank delivery duct may be necessary. See Figure 20. A heavy buildup of vines and roots in the grid can cause shelling of peanuts.



Figure 20

Proper air adjustment is for the peanuts to just reach the far side of the tank when it's empty.



DANGER: NEVER LIFT TANK WHILE UNDERNEATH POWER LINES.

COMBINE TRANSPORT

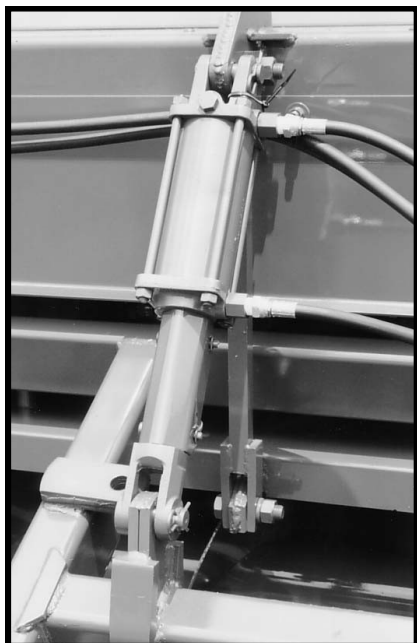


Figure 21

When towing the combine on public roads be sure that the weight of the towing vehicle is equal to or greater than the weight of the combine which is 8,700 lbs., 2-row and 13,400 lbs., 4-row. **We do not recommend speeds of greater than 20 MPH empty or 10 MPH loaded.**

When towing machine make sure cylinder transport lock is properly engaged for safe transport. (See Figure 21).

TROUBLE SHOOTING OTHER PARTS OF THE COMBINE

| PROBLEM | POSSIBLE CAUSE AND SOLUTION |
|---|---|
| <p>1. Vines rolling in front of pickup, not being picked up by header.</p> | <p>1. Small vines or high winds will not allow springs to penetrate vines. Install vine hold down attachment and for extreme conditions bend pickup spring up slightly 1" from end.</p> <p>2. Make sure pickup speed is matched to ground speed.</p> |
| <p>2. Peanuts bunching in front of pickup before entering combine.</p> | <p>1. Pickup speed is too slow. Increase speed of pickup by adjusting hydraulic valve.</p> |
| <p>3. Pickup pulling vines apart and losing peanuts on the ground.</p> | <p>1. Pickup speed is too fast. Reduce speed of pickup by turning crank counter-clockwise.</p> |
| <p>4. Vines plugging between No. 1 cylinders and pickup.</p> | <p>1. Cylinder baffle adjusted too low, raise baffle.</p> |
| <p>5. Peanuts left on vines after going through combine.</p> | <p>1. Combine not running up to speed. Be sure tractor is running at proper PTO speed.</p> <p>2. Strippers not set aggressive enough. Engage stripper springs starting with first bar until all peanuts are removed from vines. Do not engage more strippers than are absolutely necessary.</p> <p>3. If No. 2 does not solve the problem then: (a) check for broken or loose stripper springs or (b) reduce ground speed to meet tough field conditions</p> |
| <p>6. Excessive LSK's</p> <p>First, determine where LSK's are originating. If you find only kernels in the tank and hulls on the ground, it usually means that the shelling is taking place inside the machine. (Use solutions 1-3)</p> <p>If you find kernels and hulls in the tank it usually means that the shelling is taking place in the delivery system. (Use solutions 4-7)</p> | <p>1. Too many strippers engaged. Back out strippers if possible without creating peanut loss.</p> <p>2. Reduce PTO speed for less aggressive action in picking cylinders.</p> <p>3. Check picking cylinder and concave setting, (Page 8) and for obstructions in concaves. Remove if necessary.</p> <p>4. Too much air to delivery duct. Reduce air by closing damper in fan duct.</p> <p>5. Foreign material in airlift duct. Clean out duct and check for misalignment between duct and hopper.</p> <p>6. Stemmer saws plugged. Clean out stemmer saws and reduce opening in sieve to reduce chance of re-plugging.</p> <p>7. Damaged delivery duct or auger trough and hopper. Repair or replace damaged parts.</p> |

1. Vines rolling in front of pickup, not being picked up by header.

1. Small vines or high winds will not allow springs to penetrate vines. Install vine hold down attachment and for extreme conditions bend pickup spring up slightly 1" from end.
2. Make sure pickup speed is matched to ground speed.

2. Peanuts bunching in front of pickup before entering combine.

1. Pickup speed is too slow. Increase speed of pickup by adjusting hydraulic valve.

3. Pickup pulling vines apart and losing peanuts on the ground.

1. Pickup speed is too fast. Reduce speed of pickup by turning crank counter-clockwise.

4. Vines plugging between No. 1 cylinders and pickup.

1. Cylinder baffle adjusted too low, raise baffle.

5. Peanuts left on vines after going through combine.

1. Combine not running up to speed. Be sure tractor is running at proper PTO speed.
2. Strippers not set aggressive enough. Engage stripper springs starting with first bar until all peanuts are removed from vines. Do not engage more strippers than are absolutely necessary.
3. If No. 2 does not solve the problem then: (a) check for broken or loose stripper springs or (b) reduce ground speed to meet tough field conditions

6. Excessive LSK's

First, determine where LSK's are originating. If you find only kernels in the tank and hulls on the ground, it usually means that the shelling is taking place inside the machine. (Use solutions 1-3)

If you find kernels and hulls in the tank it usually means that the shelling is taking place in the delivery system. (Use solutions 4-7)

1. Too many strippers engaged. Back out strippers if possible without creating peanut loss.
2. Reduce PTO speed for less aggressive action in picking cylinders.
3. Check picking cylinder and concave setting, (Page 8) and for obstructions in concaves. Remove if necessary.
4. Too much air to delivery duct. Reduce air by closing damper in fan duct.
5. Foreign material in airlift duct. Clean out duct and check for misalignment between duct and hopper.
6. Stemmer saws plugged. Clean out stemmer saws and reduce opening in sieve to reduce chance of re-plugging.
7. Damaged delivery duct or auger trough and hopper. Repair or replace damaged parts.

PROBLEM

POSSIBLE CAUSE AND SOLUTION

-
- | | |
|--|---|
| 7. Excessive foreign material in sample. | <ol style="list-style-type: none">1. Too little air through separator. Place fan drive belt on small sheave.2. If material is small and dry, reduce aggressiveness of stripper springs.3. If material is small clods of soil, re-shaking of vines may be necessary.4. If material is vines and hay, reduce the openings of chaffer. Make sure peanuts will still fall through chaffer. |
|--|---|
-
- | | |
|---|---|
| 8. Excessive peanuts found in loose hay behind combine. | <ol style="list-style-type: none">1. Peanuts being blown out back. Reduce air velocity of fan by placing drive belt on large drive pulley or close fan inlet dampers.2. Insufficient breakup of hay. Engage more strippers.3. Chaffer opening too small. Increase openings by 1/16th inch increments. Check screen for buildup of hay, sticks or mud.4. Insufficient air to take loose hay off screens. Increase air flow by putting drive belt on small fan sheave.5. Combine running too fast for conditions. Slow ground speed down. |
|---|---|
-
- | | |
|--------------------------|---|
| 9. Airlift duct plugging | <ol style="list-style-type: none">1. Too little air. Increase damper openings for more air flow.2. Check for damaged duct or fan. Repair or replace as necessary.3. Check tension on airlift drive belt. Adjust or replace if necessary.4. Make sure combine is running at proper PTO speed. |
|--------------------------|---|
-
- | | |
|------------------------|---|
| 10. Tank will not dump | <ol style="list-style-type: none">1. Check hydraulic coupling engagement to tractor.2. Improper hose coupling for tractor model.3. Faulty cylinder. Replace as necessary.4. Insufficient hydraulic pressure. |
|------------------------|---|
-

PROBLEM

POSSIBLE CAUSE AND SOLUTION

11. Excessive machine vibration.

Excess vibration of the combine occurs sometimes and may be the result of either misalignment of the shaker pan and stemmer bottom or loose setscrews on the number three cylinder. First check the number three picking cylinder, if it is loose (can be rocked back and forth on the shaft without the shaft moving) center the cylinder and tighten the setscrews.

1. Position Combine on a level surface and disconnect push rod arms from rocker arms located at front of the shaker pan.
2. Loosen setscrews on rocker shaft and setscrews on square pan shaft at rear of shaker pan.
3. Center the front of the pan by measuring from the inside of the frame skin to the outside of the pan on each side. Adjust the position of the pan until the measurements are the same or within an 1/8" of the same. Repeat the procedure for the rear of the pan. After setting the rear, recheck the front and if no further adjustments are necessary tighten all setscrews front and rear to lock in position.
4. Disconnect stabilizer rod from rear corner of frame. Loosen setscrews on front lower stemmer shaft. Center stemmer bottom front like the shaker pan was done. Set push rod arms at 34" (2-row) & 34 1/4" (4-row) center of hole to center of hole and reconnect to rocker arms (make sure eccentric drive is in center of stroke). Adjust right pushrod arm in or out to center rear of stemmer bottom between frame. Here the difference in measurements should not exceed 1/16". Tighten setscrews at front of stemmer and reattach stabilizer rod. The bolt which attaches stabilizer rod should slide through mounting hole without rubbing or having to apply any pressure. Adjust stabilizer end in or out as necessary to achieve this position.

MAINTENANCE

There are certain things which need daily or regular attention to keep your combine in good operating condition.

LUBRICATION is the most important of these. The following chart shows points that require lubrication and the intervals at which they require it. The cylinder bearings on the combine are pre-lubed and non-lubricatable. This is because most often these bearings are over greased. This attracts dust and dirt to the seals of the bearings which eats them away and allows the dirt to penetrate the bearing and cause it to fail. Also improper cleaning of the grease fitting allows dirt to be pumped directly into the bearing which causes premature failure.

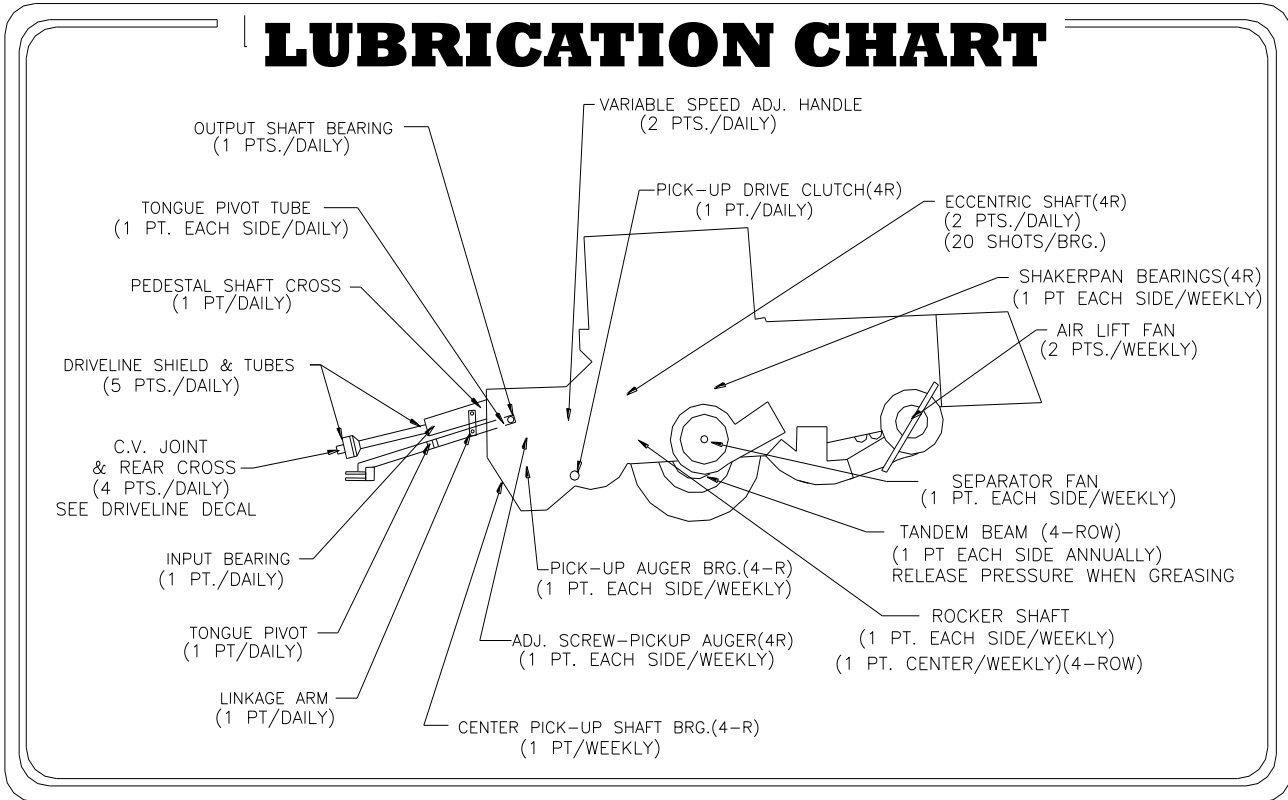


Figure 23 LUBRICATION CHART

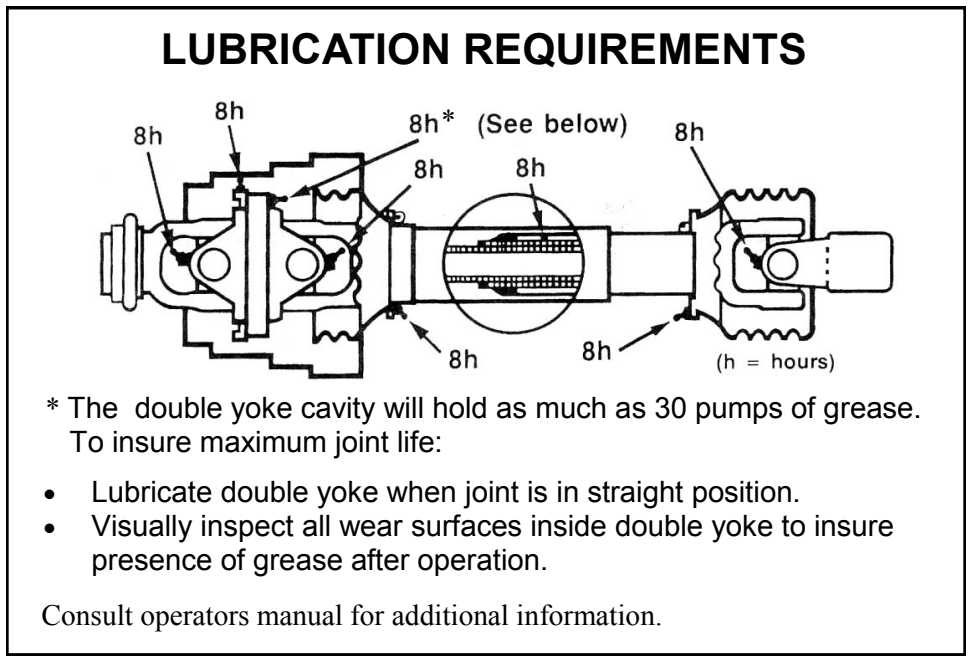


Figure 25 CONSTANT VELOCITY JOINT

SPRING MAINTENANCE should be performed daily to insure peak performance of the combine.

1. Pickup springs should be checked for broken or bent tines and for excessive rubbing on the pickup bands. Broken or bent springs can be replaced through the access opening underneath and at the rear of the pickup. Pickup should have some pivotal action to allow for misalignment of bands and springs.
2. Cylinder springs should be checked for broken or bent tines. Replacement of springs on the number one and two cylinders can be made by access through the front top cover. Replacement of the number three and four cylinders can be made by raising the storage tank.



DANGER: BE SURE SAFETY STRUTS ARE IN PLACE BEFORE WORKING UNDER RAISED TANK. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH!!

Replacement of the numbers five, six, and seven cylinders can be made by removing the top rear cover.

3. Stripper springs should also be checked for broken or bent tines. Replacement of these springs require the removal of the stripper bar. To accomplish this remove the stripper handle by removing the capscrew adjacent to the inside wall of the frame, then remove the capscrews on the left side of the combine. Drop the bar out of the machine, remove any springs between the end of the bar and the damaged spring, then replace the damaged spring. Next reinstall the bar.

SEPARATION SYSTEM

If the rubber torsional bushings in the pan or stemmer hangers ever need replacing, be sure that the bushing is pressed in properly. When reinstalling on combine place the eccentric in the middle of a stroke before tightening the bushing. **NEVER** lubricate these bushings.

If the eccentric bearings ever need replacing, make sure the relube holes in the bearing align with the grease groove in the housing. Also replace the formed sheet metal cavity rings. This will give a better seal than trying to straighten old ones that may have been bent.

Check fan air-ducts daily to make certain that they are clear of obstructions.

Check chaffer assembly daily to make sure it is secure and adjusted properly and clean of sticks and stems.

The drives for the combine should be inspected daily. The drives for all the cylinders and header are chain drives. These chains should be set where all the slack is taken out but not so that they are preloaded which can cause premature wear and failure. Usually 1" of movement in the tight side of the chain will be obtainable. The following photographs show the proper installation of chain drives.

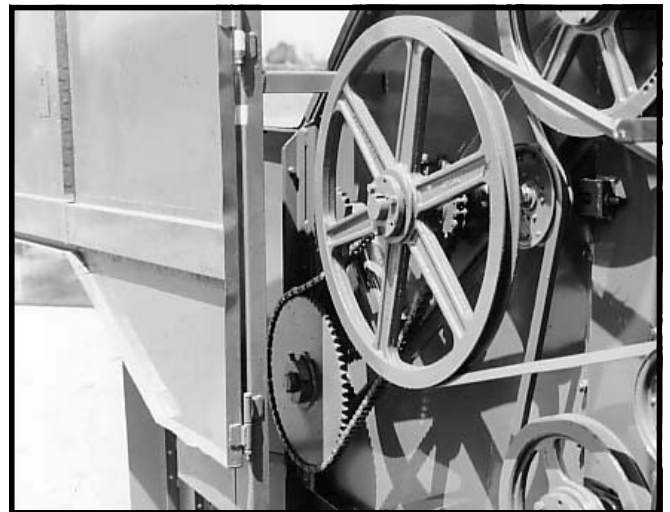


Figure 26 NO. 1 CYLINDER DRIVE

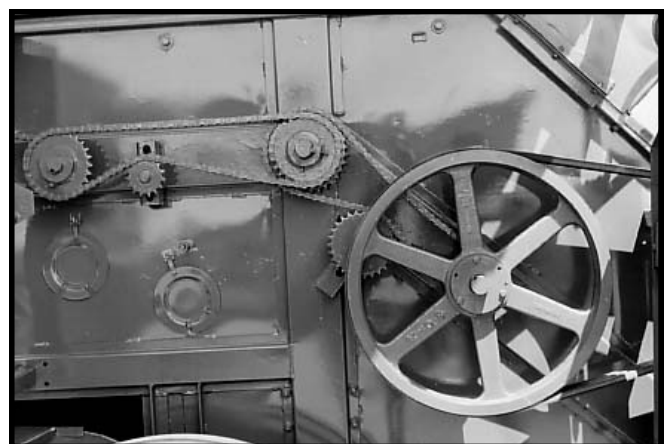


Figure 27 NO. 2, 3, & 4 CYLINDER DRIVE

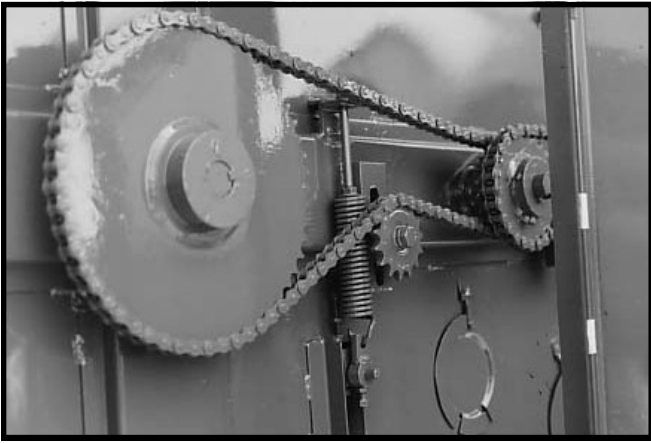


Figure 28 No. 5 Cylinder Drive

The main drive, both fans, eccentric, and stemmer saws are all driven by V-belts. Proper installation and tension of the belts is necessary for optimum performance. There are no twisted belts on the combine, however, the airlift fan and pick-up have a back wrap belt arrangements to achieve proper rotation and contact area. **All belts should be adjusted after two hours of operation to take-up looseness caused by initial stretch of belt.** Check regularly and tighten as needed; loose belts contribute to poor performance of the combine. The following pictures and illustrations show proper installation of drive belts.

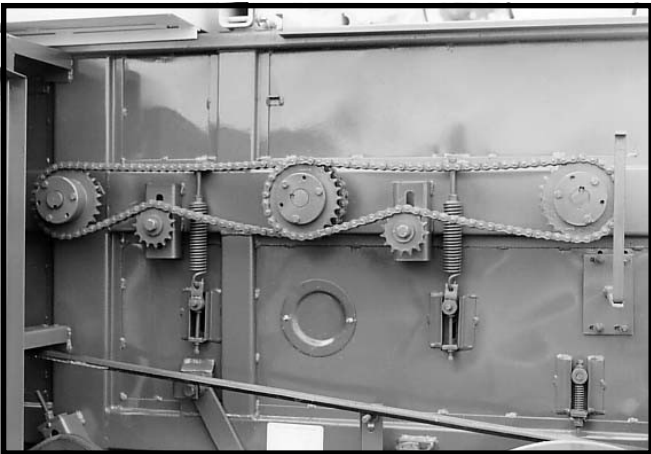


Figure 29 No. 6 & 7 Cylinder Drive

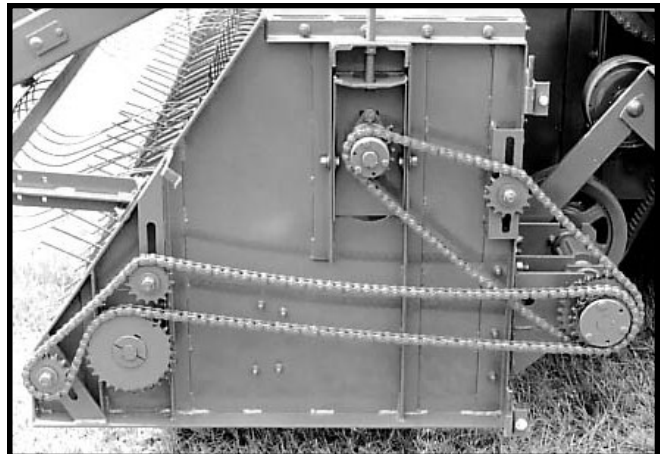


Figure 31 4-Row Header Drives

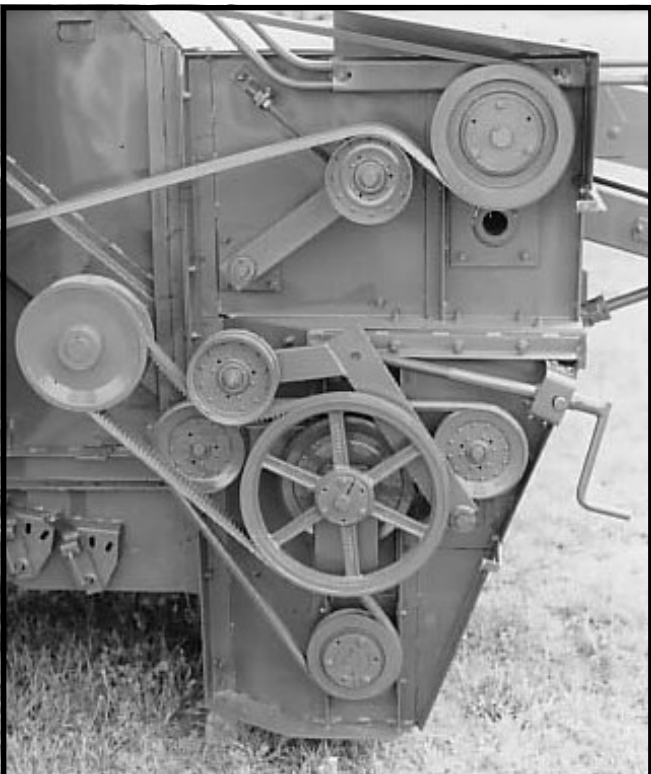


Figure 30 Main Drive & Main Drive (2-Row)

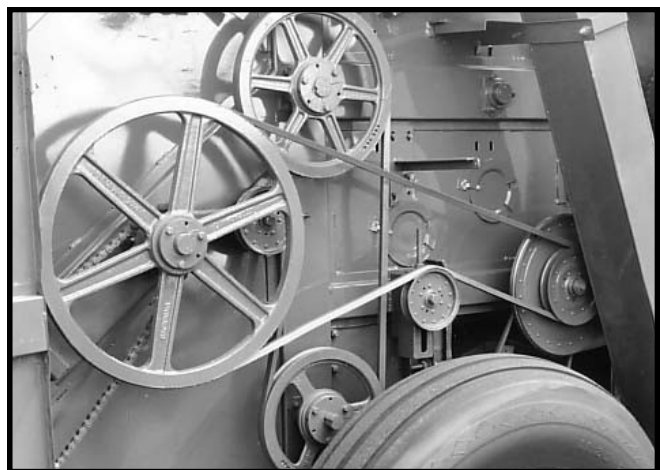


Figure 32 Eccentric & Jackshaft Drives



Figure 33 Stemmer Saw & Auger Drive



Figure 34 Separator Fan Drive

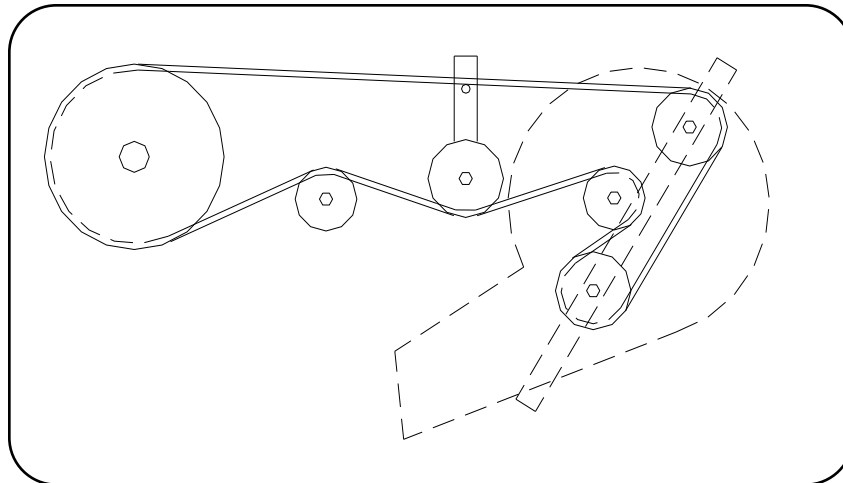


Figure 35 Air Lift Fan Drive

AFTER SEASON MAINTENANCE

1. Clean the combine thoroughly to remove all dirt and moisture holding materials.
2. Repaint worn and scratched parts if possible or coat machine with light oil or other rust inhibitor.
3. Loosen all belts to take tension off bearings and shafts.
4. Remove and clean all chains, store in oil if possible during off season. If not saturate and re-install, leave loose.
5. Grease all fittings, driveline, bearings, bushings, and pivot joints. NOTE: MAKE SURE ALL WATER IS PURGED FROM BEARINGS TO PREVENT RUSTING AND PITTING.
6. Store under shelter if possible. Collapse all hydraulic cylinders to prevent rods from rusting and pitting.

SPECIFICATIONS

HITCH: Stationary tractor drawbar types

PICKUP REEL: Low profile, 6-bar, camless, 61" wide on two row machines, 132" wide on four row machines. With variable speed with manual hand crank control

THRESHING SYSTEM: 7 cylinders, 7 stripper bars (individually adjusted), floating concaves under 4 rear cylinders.

DRIVELINE: 540 or 1000 RPM constant velocity driveline, safety shielded. 1000 rpm only on four row machines.

TANK CAPACITY: Two row, 135 cubic feet or 108.5 bushels. Four row, 270 cubic feet or 216 bushels. Tank hydraulic operated, 123" dumping height.

MACHINE WEIGHT: Two Row - 8,700 lbs
Four Row - 13,400 lbs

MACHINE HEIGHT: 11' 2"

MACHINE WIDTH: Two Row - 7' 7"
Four Row - 11' 9"

LENGTH: 23' 7-3/4"

TIRE SIZE: 11.25 X 24 HIGH FLOTATION, STANDARD.

WARNING

TO AVOID SERIOUS INJURY OR DEATH:

- AVOID BANKS AND DITCHES.
- REDUCE SPEED ON TURNS, SLOPES, AND ROUGH TERRAIN.
- AVOID IMPLEMENT CONTACT WITH ELECTRICAL POWER LINES
- NEVER RAISE TANK UNDER POWERLINES OR ALLOW IMPLEMENT TO COME IN CONTACT WITH ELECTRICAL POWERLINES.
- NEVER RAISE FULL TANK WHILE ON STEEP SLOPES, TERRACES, OR DITCHES. TIP OVER MAY RESULT.

33-050-146

WARNING

**ATTACH
TONGUE TO
STATIONARY
DRAWBAR
ONLY**

33-050-039

CAUTION

WHEN TRANSPORTING ON PUBLIC ROADS BE SURE THAT TOWING VEHICLES WEIGHT IS EQUAL TO OR GREATER THAN THE LOADED WEIGHT OF IMPLEMENT AND SAFETY CHAINS ARE USED.

MAXIMUM TOWING SPEED
20 M.P.H. EMPTY 10 M.P.H. LOADED

33-050-034

DANGER

- ROTATING FAN
- KEEP HANDS OUT OF FAN INLET OPENING
- CONTACT WITH ROTATING FAN COULD INJURE

33-050-036

DANGER

INSTALL SAFETY STRUTS ON TANK LIFT CYLINDER RAM BEFORE WORKING UNDER TANK.

33-050-035

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 |
|-------------|-----------------------|
| 1985 | 27986-29695 |
| 1986 | 29696-31095 |
| 1987 | 31096-33234 |
| 1988 | 33235-35548 |
| 1989 | 35549-38496 |
| 1990 | 38497-41771 |
| 1991 | 41772-44466 |
| 1992 | 44467-47001 |
| 1993 | 47002-48750 |
| 1994 | 48751-51549 |
| 1995 | 51551-54262 |
| 1996 | 54263-56661 |
| 1997 | 56662-59465 |
| 1998 | 59466-62097 |
| 1999 | 62098-63986 |
| 2000 | 63987-65692 |
| 2001 | 65693-67340 |
| 2002 | 67341-68699 |
| 2003 | 68700-70482 |
| 2004 | 70483-72646 |
| 2005 | 72647- |



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