

***TOP GUN®***  
***on the***  
***BALEPRO®***  
***Complete Feed Ration 650***

**Operator's  
Manual**



***TOP GUN<sup>®</sup>***  
***on the***  
***BalePro<sup>®</sup>***  
***Complete Feed Ration 650***

**Operator's  
Manual**

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E12522V1

Highline Manufacturing Ltd.

TOP GUN on the CFR 650 (TG650)

### **Highline Team Message**

***Congratulations on your purchase of the TOP GUN for the Complete Feed Ration 650 (TG650) manufactured by Highline Manufacturing Ltd.***

*This Operator's Manual has been prepared to provide information necessary for the safe and efficient operation of your TOP GUN. In the manual you will find safety procedures, maintenance routines and detailed operational instructions.*

*If you find that you require information not covered in this manual, please feel free to consult your local dealer. Your dealer is always able to contact Highline for this technical information.*

*Highline Manufacturing Ltd. thanks and congratulates you for selecting a TOP GUN for the Complete Feed Ration 650 as your machine of choice.*

*Highline Manufacturing Ltd.*

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## **GENERAL DESCRIPTION OF THE TOP GUN 650**

The TOP GUN is an attachment to the Complete Feed Ration 650 (CFR650).

The TOP GUN has animal bedding capabilities by moving processed material through the blower discharge nozzle. The direction and discharge height of the nozzle is adjustable through hydraulic controls to place the materials at the desired location.

The TOP GUN has animal feeding capabilities by placing processed material in a windrow or into a feeding bunk. The blower is disengaged and the auger housing is opened to allow material to be discharged from the side of the machine.

The TOP GUN has land reclamation capabilities by placing processed materials into the area requiring the reclamation. The direction and discharge height of the nozzle is adjustable through hydraulic controls to place the materials at the desired location.

The discharge blower takes power through a belt drive that is clutched to the main driveline. The auger is driven by a belt from the flail drum of the CFR650.

The CFR650 must be turned off when the TOP GUN blower clutch is engaged.  
The CFR650 must be turned off when the auger housing is moved into the feeding position.

The operator of the CFR650/TOP GUN is located in the tractor cab to control the speed of driving, the speed of operation of the CFR650/TOP GUN, the direction of the blower nozzle output .

## **INTENDED USE OF THE TOP GUN**

The TOP GUN is designed to blow animal bedding materials that have been initially processed from a bale by the CFR650.

The TOP GUN is designed to take animal feed materials that have been initially processed from a bale by the CFR650 and place them in a windrow or feed bunk.

The TOP GUN is designed to blow land reclamation materials that have been initially processed from a bale by the CFR650.

The TOP GUN is intended for use in farming applications and land reclamation applications. The TOP GUN is intended for off road use only unless used in land reclamation use. (Get appropriate permits from local authorities for land reclamation applications.)

The TOP GUN is intended for use in locations away from people who could be harmed by the discharged materials.

Any uses of the TOP GUN other than the above stated Intended Uses shall be considered misuse of the TOP GUN . This misuse shall include (but not limited to):

- Using the TOP GUN on public roads (except for land reclamation uses).
- Using the TOP GUN around people or in public places.
- Discharging materials other than for animal bedding, feed materials or land reclamation.
- Discharging materials that have not been initially processed by the CFR650.

Always use the TOP GUN according to the instructions contained in this Operator's Manual and on the safety and instruction decals on the machine.

Perform regular maintenance and repair to ensure the TOP GUN operates safely and

efficiently.

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## **SERIAL NUMBER**

Your serial number is found on the serial number plate attached to the TOP GUN 650.

It is important to record the serial number for proof of ownership and for any service or maintenance assistance.

**Serial Number**

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**Owner**

---

**Model**

---

**Date of Purchase**

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**SAFETY SIGN-OFF FORM**

Highline Manufacturing Ltd. 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 TOP GUN 650 should read and clearly understand all Safety, Operating and Maintenance information presented in this manual.

Do not operate or allow someone to operate this equipment until this information has been reviewed. This information should be reviewed by all operators before the season start-up.

This sign-off sheet is provided for record keeping to indicate that the person working with the equipment has read and understood the information in the Operator's Manual and has been instructed in the safe operation of the equipment.

<b>Date</b>	<b>Employee's Signature</b>	<b>Employer's Signature</b>

## SAFETY ALERT SYMBOL

The Safety Alert Symbol means:



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

The Safety Alert Symbol combined with a Signal Word alert to the presence of a hazard and the degree of possible injury.



Indicates an imminently hazardous situation that, if not avoided, **WILL** result in **DEATH OR SERIOUS INJURY**. The color is Red with White lettering.



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 or unsafe practices. The color is Orange with Black lettering.



Indicates a potentially hazardous situation that, if not avoided, **MAY** result in **MINOR INJURY**. The color is Yellow with Black lettering.

### **GENERAL SAFETY**

1. Ensure that anyone who is going to operate, maintain or work near the TOP GUN 650 is familiar with the recommended operating, maintenance procedures and safety information contained in this manual and follows all the safety precautions.
2. In addition to the design and configuration of the equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of the machine.
3. The TOP GUN 650 shall not be operated without all the guards in place.

### **SAFETY DECALS**

1. Keep decals and signs clean and legible at all times.
2. Replace decals and signs that are damaged, missing or have become illegible.
3. Replaced parts that displayed a decal should also display the current decal.
4. Decals are available from the Highline Parts Department.
5. Be familiar with the decals, the type of warning and the area or function(s) related to the area(s) that requires your awareness.



### **DO NOT CONTACT ROTATING DRIVELINE**

Contact with rotating driveline will cause serious injury or death.  
Keep all driveline guards in place.  
Securely attach drivelines at both ends.  
Check that the driveline guards turn freely on the driveline.

### **DO NOT OPERATE WITH SHIELDS MISSING**

Stop engine and ensure the PTO driveline is stopped before working on driveline



### **DO NOT CONTACT THE ROTATING BLOWER**

Contact with rotating blower blades can cause serious injury or death.

Keep hands out of the blower chamber when the blower is rotating.

Always disengage power takeoff, set park brake, lower loader forks to the ground, shut off tractor engine, remove key, and wait for PTO to stop turning before unplugging by hand or servicing.

Keep guards in place and in good condition.



### **DO NOT CONTACT THE ROTATING AUGER**

Keep fingers and hand out of the auger tube and chamber.  
Never attempt to manually remove debris while the auger is rotating.

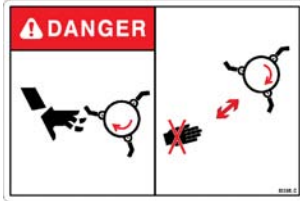
Contact with the rotating auger will cause serious injury or death.  
Keep all auger guards in place.



### **DO NOT OPERATE WITH SHIELDS MISSING**

Contact with the moving belt or sheaves may cause serious injury or death.

Keep shields fastened in place.  
Keep away from moving parts.



### DO NOT CONTACT ROTATING FLAILS

Contact with moving parts can cause serious injury or death.

Keep hands out of the cutting area and processor tub when the flail drum is rotating.



### STAY BACK FROM AN OPERATING MACHINE WHICH CAN DISCHARGE OBJECTS AT HIGH SPEED

Stay clear of the nozzle when discharging for bedding.

Stay clear from auger side when discharging for feeding.



Thrown material or objects can cause serious injury or death.

Do not operate within 100 ft (30m) of any person.

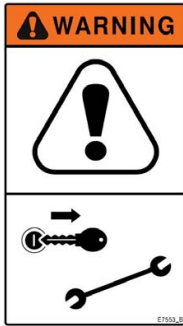
Keep all shields and guards in place.



### DO NOT PLACE HAND IN THIS AREA WHEN RAISING OR LOWERING THE LID

Serious injury could result if hands are placed in this clamping area.

### READ, UNDERSTAND, AND FOLLOW SAFETY INSTRUCTIONS



Read, understand and follow all instructions and safety messages included in this manual and on decals attached to the machine. These instructions and safety messages contain important information.

Allow only responsible, properly instructed individuals to operate and service the machine.

Failure to follow the instructions and safety messages in this manual and on the decals attached to the machine could result in serious injury or death.

Keep all safety and instruction decals in good condition. Replace any missing or damaged decals

### SHUT DOWN THE TRACTOR BEFORE DISMOUNTING TRACTOR



Shut down the tractor and remove the key before repairing, servicing, lubricating or cleaning the machine.

Relieve all hydraulic pressure in the hoses before going near the machine. Leave the hydraulics in the "float" position.

### DO NOT EXCEED 80° TURNS IN OPERATION



Do not operate the Constant Velocity (CV) driveline at greater than 80° to prevent damage to the driveline.



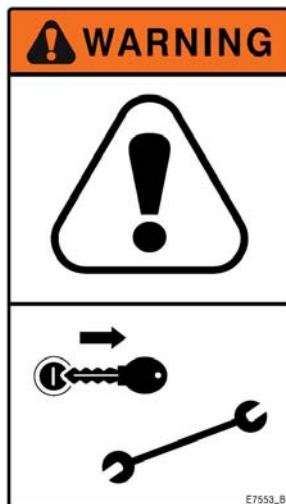
**DO NOT ATTEMPT TO LIFT THE HITCH WITHOUT USING THE JACK**



### **ENSURE SLOW MOVING VEHICLE SIGN IS IN PLACE**

Ensure the Slow Moving Vehicle sign is in place, clean and easily visible.

Ensure the reflectors are in place, clean and easily visible.



### **SHUTDOWN PROCEDURE**

For your safety and the safety of others, this shutdown procedure must be followed before dismounting from the tractor for inspecting, repairing, servicing, cleaning, or lubricating the machine.

- Step 1: Reduce the engine speed to idle.
- Step 2: Disengage tractor power takeoff.
- Step 3: Set tractor park brake.
- Step 4: Lower bale loader forks to the ground.
- Step 5: Shut off tractor engine and remove key.
- Step 6: Cycle tractor controls to relieve any residual circuit pressure.
- Step 7: Wait for drum to stop turning.





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### 2.0 TOP GUN 650 PREPARATION

#### General Preparation

1. Park the tractor and CFR 650 on level ground.
  - Engage the tractor parking brake.
2. Shut off the tractor engine and remove the key.
3. Check the condition of the auger.



Disconnect the PTO driveline from the tractor.

Do not place hands in the auger when it is rotating. Contact with the rotating auger will cause serious injury or death.

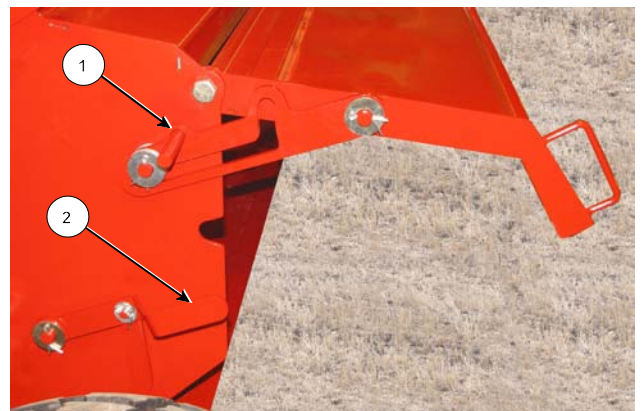
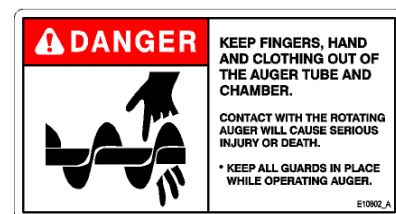
Do not move the auger housing doors while the flail drum is rotating as this will expose the rotating auger and the rotating blower.

- Raise the upper auger housing cover.
  - Release the handle (1).
  - Raise the cover.
  - Latch the handle in the slot.
- Lower the bottom auger housing cover.
  - Use the lower handle (2) to lower the bottom housing door.



Park On Level Ground

212123



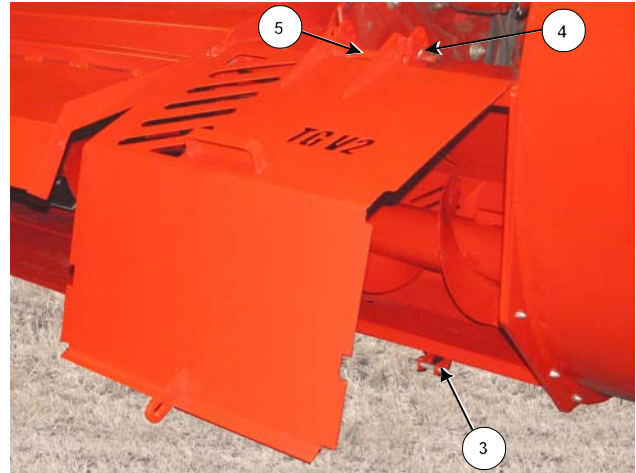
Raise Auger Housing Covers

212125C

## Section 2 - TOP GUN 650 Preparation

### 4. Raise the transition housing cover.

- Remove the pin from the bottom of the cover (3).
  - Place the pin back into the tabs.
- Remove the hair pin (4) from the hinge pin (5) at the top of the cover.
- Remove the hinge pin.
- Rotate the cover to the open position.
- Install the hinge pin (5).
- Install the hair pin (4).



Raise the Transition Housing Cover

212129C

### 5. Clear the auger area of any material buildup.

- Check the condition of the auger flighting.
- Check the condition of the rubber paddles.

Note: The auger will be imbalanced if paddles are missing or damaged. This will cause vibration and possible bearing damage.

Note: All the paddles must be replaced as a set if any of them are damaged. The paddles are manufactured to be the same weight to maintain rotational balance.

- Remove twine or other materials wrapped around the auger.

Note: Remove the twine from the auger and blower every 25 bales. Premature bearing failure can occur if twine is allowed to build up.



Check Condition of Flighting and Paddles

212124



Remove Twine From Auger

212126



## Section 2 - TOP GUN 650 Preparation

6. Remove any material that has built up at the entrance to the blower housing.



Remove Material From Blower Entrance

212127

7. Check the condition of the blower blades.

- Remove any debris that has collected in the blower housing area.
- Remove any twine that is wrapped around the blower blades.

Note: Remove the twine from the auger and blower every 25 bales. Premature bearing failure can occur if twine is allowed to build up.

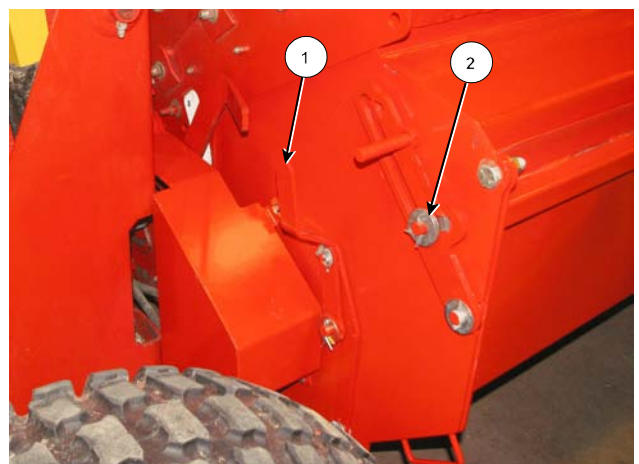
- View the blower blades through the transition housing.
- Inspect the blades for damage that would interfere with blower operation.



Remove Twine & Check Blades

212127

8. Close the lower auger housing cover.
  - Move the handle (1) to the closed position.
9. Close the upper auger housing cover.
  - Move the handle (2) to the closed position.
  - Place the pin firmly into the slot.



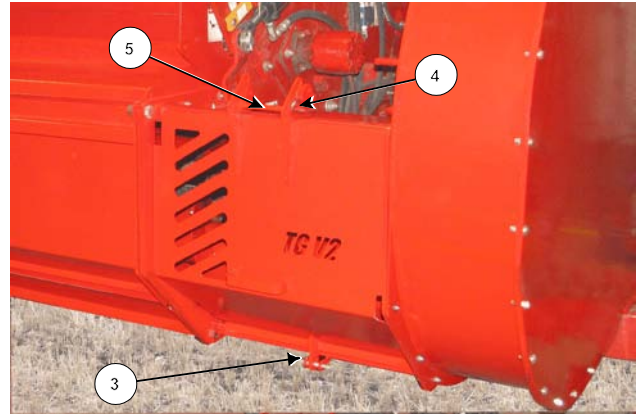
Close the Auger Housing Covers

212128C

## Section 2 - TOP GUN 650 Preparation

10. Lower the transition housing access cover.

- Remove the pin from the bottom of the cover (3).
- Remove the hair pin (4) from the hinge pin (5).
- Remove the hinge pin.
- Rotate the cover to the closed position.
- Install the hinge pin (5).
- Install the hair pin (4).
- Install the bottom pin (3).



Lower the Transition Housing Access Cover

201033

11. Check the condition of the blower drive belt.

- Lift the drive shield.
- Rest the shield on the support tab located on the blower housing.



Lift Drive Shield - Rest in Support Tab

212131

- Check the drive belt.
- Check the belt tension.
- See the Section 4 - "Maintaining the TOP GUN" for Blower Belt Tension Adjustment.



Check Drive Belt and Tension

212132

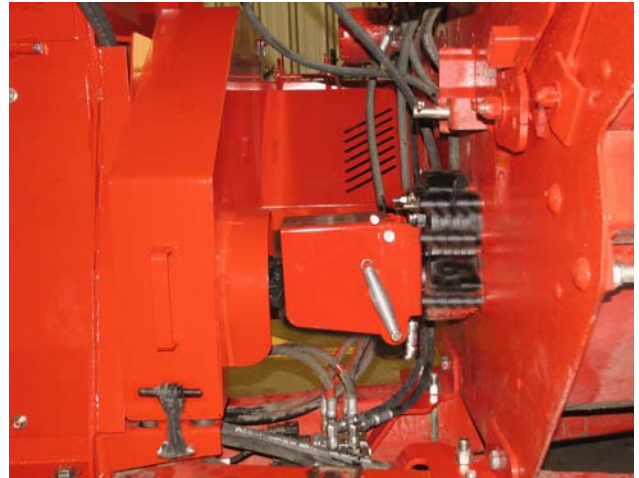
## Section 2 - TOP GUN 650 Preparation

- Lower the blower drive shield and fasten with the rubber holder.



The TOP GUN shall not be operated without all the driveline shields in place.

- Lower the driveline shield.



Lower Drive Shields

212133

12. Check the condition of the auger drive belt.

- Open the drive shield at the back of the machine.
  - Remove the hair pin to open the shield.

- Check the drive belt.

- Check the belt tension.

- See the Section 4 - "Maintaining the TOP GUN" for Auger Belt Tension Adjustment.



Open Auger Drive Shield

212134

13. Move the auger drive shield into place and fasten.



The TOP GUN shall not be operated without all the driveline shields in place.



Fasten the Auger Drive Shield

212135

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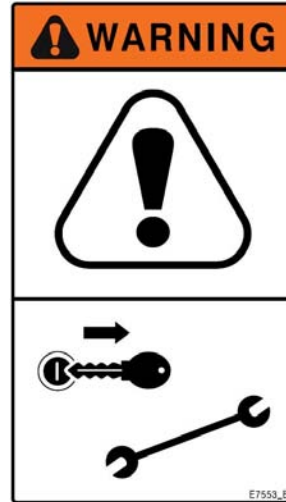


### 3.0 OPERATING THE TOP GUN 650

#### Operating For Bedding - Using the Blower

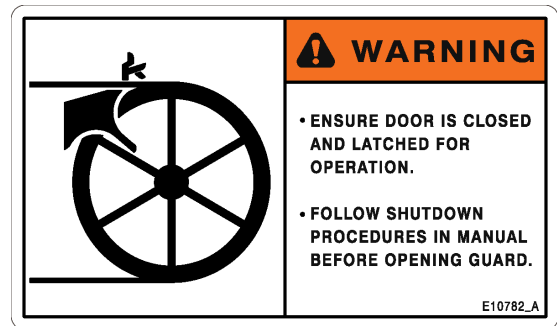


Shut off the tractor engine and remove the key.



Wait for all components to stop rotating.

Do not place hands in the TOP GUN drive clutch area while the driveline is turning. Contact with the rotating drive line or pulley can cause serious injury.



Ensure all shields are in place and in good condition.



### Section 3 - Operating the TOP GUN 650

1. Close the lower auger housing cover.
  - Move the handle (1) to the closed position.



Do Not Contact the Rotating Auger.

Keep fingers and hand out of the auger chamber.

Never attempt to manually remove debris while the auger is rotating. Contact with the rotating auger will cause serious injury or death.



2. Close the upper auger housing cover.
  - Move the handle (2) to the closed position.
  - Place the pin firmly into the slot.



Close the Auger Housing Covers

212128C

3. Close and lock the auger transition housing door.

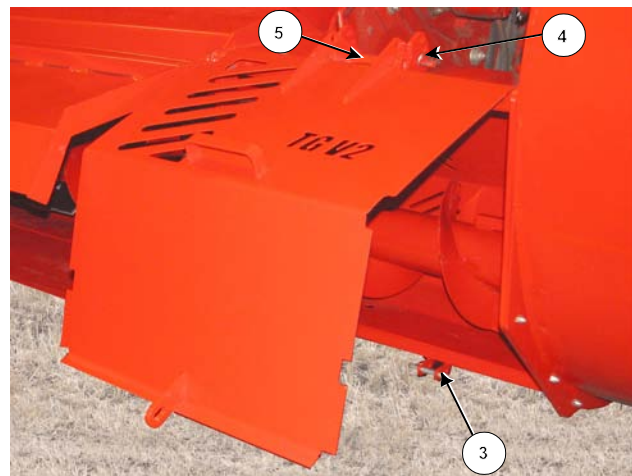


Do Not Contact the Rotating Blower.

Never attempt to manually remove debris while the blower is rotating. Contact with the rotating blower parts will cause serious injury or death.



- Remove the pin from the bottom of the cover (3).
- Remove the hair pin (4) from the hinge pin (5).
- Remove the hinge pin.

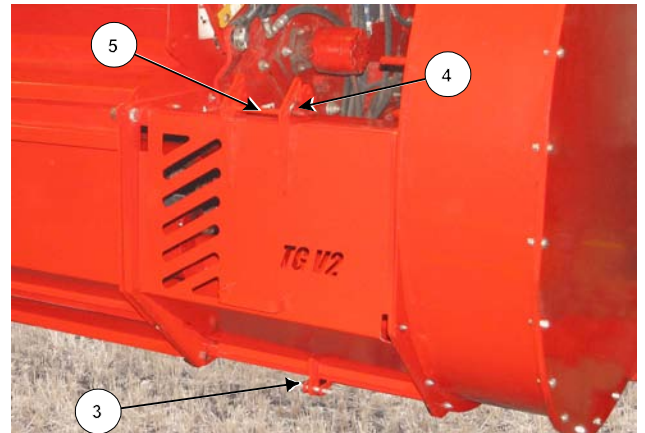


Close the Transition Housing Cover

212129C

### Section 3 - Operating the TOP GUN 650

- Rotate the cover to the closed position.
- Install the hinge pin (5).
- Install the hair pin (4).
- Install the bottom pin (3).



Lower the Transition Housing Access Cover

201033

#### 4. Set the aggression level of the flails.

The TOP GUN has the guard rod adjustment handle located on the back wall of the machine.

There are five guard rod settings that determine the level of aggression of the flails.

The decal under the handle gives a guide to the guard rod setting.

- Pull the handle (1) out of the handle lock.
- Raise or lower the handle to the desired discharge setting as indicated on the decal.
- Lock the handle in the notch.



Set the Aggression Level of the Flails

212136C

To avoid plugging, it is suggested to start with using an aggression setting of #2 or #3.

To Increase the discharge rate:

- Raise the handle to a higher number.

To Decrease the discharge rate:

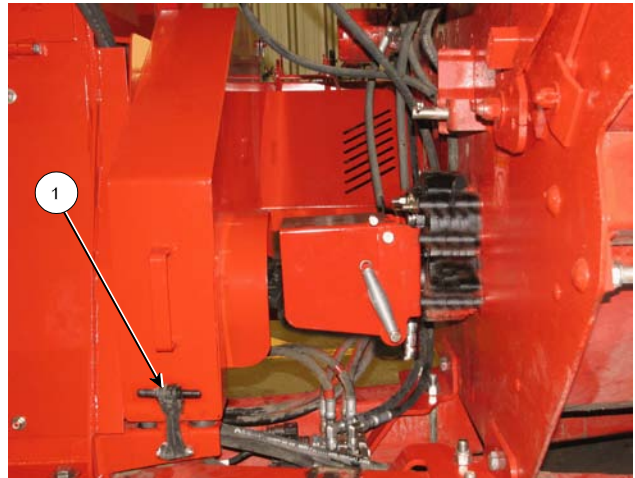
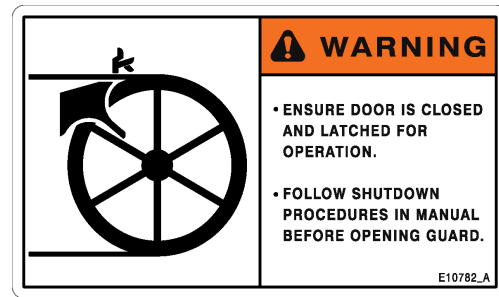
- Lower the handle to a lower number.

5. Release the shield rubber latch (1).



Wait for all components to stop rotating.

Do not place hands in the TOP GUN drive clutch area while the driveline is turning. Contact with the rotating clutch or pulley can cause serious injury.



Release the Rubber Latch

212133C

6. Raise the blower drive shield and place on the rest tab located on the blower housing.



Raise the Blower Drive Shield

212131

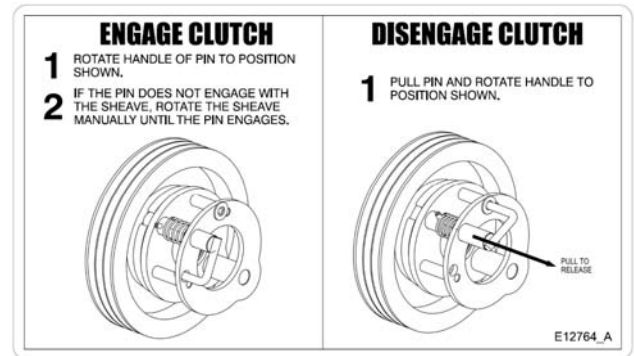
7. Raise the gearbox shield.



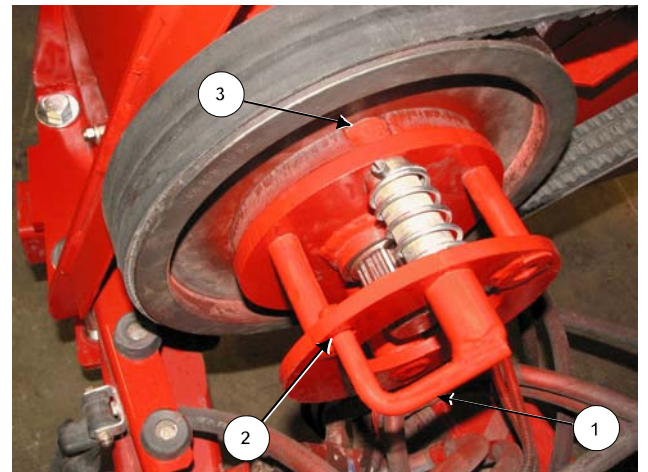
### Section 3 - Operating the TOP GUN 650

8. Engage the TOP GUN blower drive clutch.

- Rotate the pulley to have the clutch pin near the top.



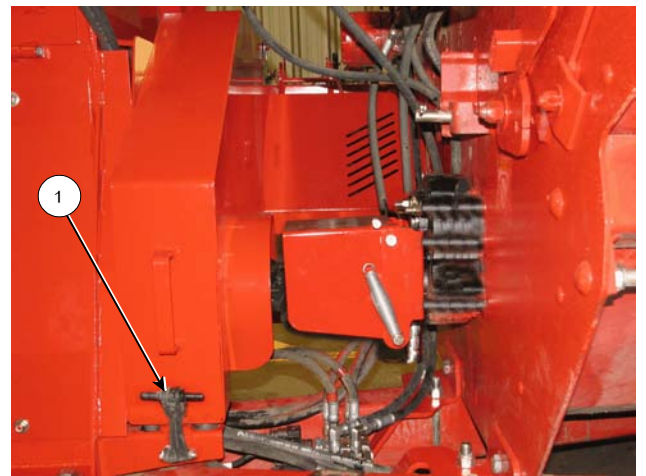
- Pull the handle (1) out and rotate into the hole (2) to engage the clutch pin into the sheave.
- The spring will pull the handle into the handle hole.
- The clutch pin (3) will move into one of the sheave plate cutouts.
- If the clutch pin does not engage into a sheave cutout, manually rotate the sheave until the pin snaps into a cutout (3).



Move Handle Into Engaged Position

9. Lower the blower drive shield and fasten with the rubber latch (1).

10. Lower the gearbox shield.



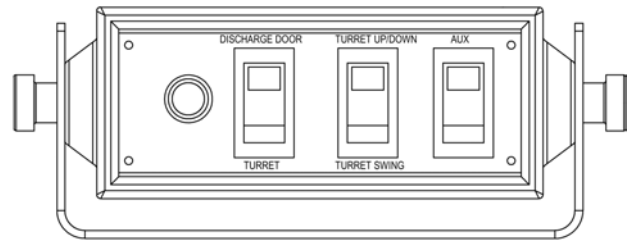
Lower the Drive Shields

### Section 3 - Operating the TOP GUN 650

11. The turret spout and nozzle are controlled by the electric console and hydraulic controls in the tractor cab.

To swing the turret:

- On the control console, select Turret.
- Select Turret Swing.
- Operate the hydraulic lever which will engage the hydraulic motor (2) to rotate the turret.



Control Console

41583

To move the turret nozzle up/down:

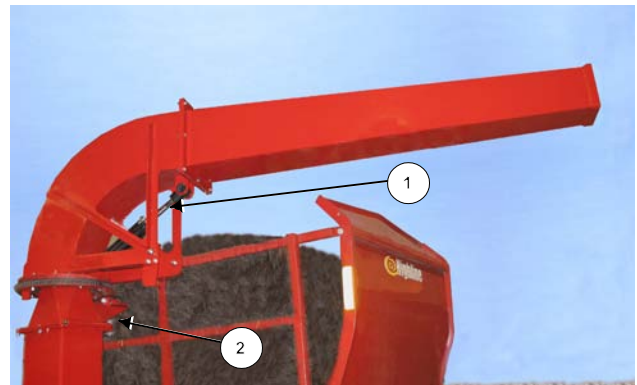
- On the control console, select Turret.
- Select Turret Up/Down
- Operate the hydraulic lever to move the hydraulic cylinder (1) which will raise or lower the turret nozzle.

12. Rotate the spout to discharge the material to the desired area.

- Rotate using the hydraulic motor (1).

13. Raise or lower the discharge spout for the amount of height and throw.

- Use the hydraulic cylinder (2) to raise or lower the spout.



Position the Turret Spout for Discharge

212139C

14. Engage the driveline to start the blower, processor and auger.

15. Set the speed of the feed rollers.
- Refer to the CFR650 Operators Manual for instructions.

16. Begin to process a bale in the CFR 650.

17. As material is processed, the belt driven auger will move the material into the blower.

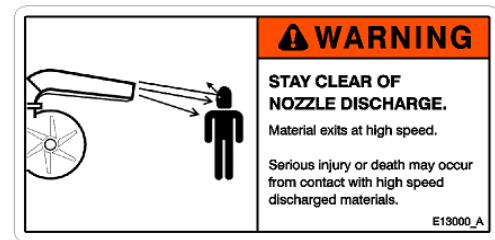


Should any serious vibration be detected during the operation of the machine, immediately stop the machine. Determine the source of the problem and fix it before resuming operation.

18. Operate the CFR 650 /TOP GUN.



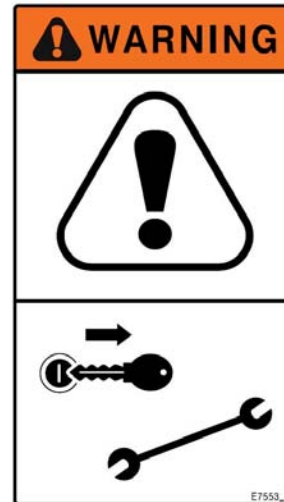
Avoid discharging material in the area of people and animals.



### Operating For Feeding - Not Using the Blower

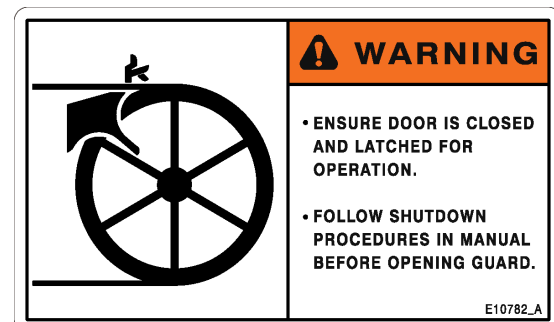


Shut off the tractor engine and remove the key.



Wait for all components to stop rotating.

Do not place hands in the TOP GUN drive clutch area while the driveline is turning. Contact with the rotating drive line or pulley can cause serious injury.



Ensure all shields are in place and in good condition.





1. Open the upper and lower auger housing doors.



Do Not Contact the Rotating Auger.

Keep fingers and hand out of the auger chamber.

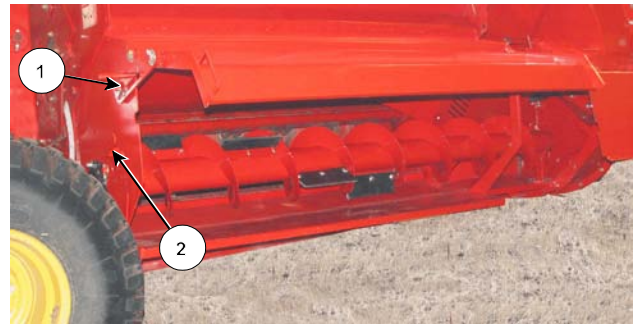
Never attempt to manually remove debris while the auger is rotating.

Contact with the rotating auger will cause serious injury or death.

Keep all auger guards in place.



- Raise the upper auger housing door.
- Lock the upper housing by placing the slot in the handle (1) over the pin.
- Lower the bottom auger housing door by moving the handle (2).

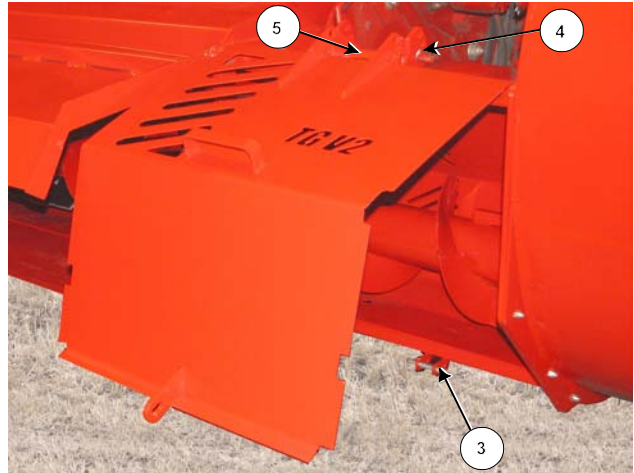


Open the Auger Housing Doors

212124C

#### 2. Raise the transition housing cover.

- Remove the pin from the bottom of the cover (3).
- Place the pin back into the tabs.
- Remove the hair pin (4) from the hinge pin (5) at the top of the cover.
- Remove the hinge pin.
- Rotate the cover to the open position.
- Install the hinge pin (5).
- Install the hair pin (4).



Raise the Transition Housing Cover

212129C

#### 3. Set the aggression level of the flails.

The TOP GUN has the guard rod adjustment handle located on the back wall of the machine.

There are five guard rod settings that determine the level of aggression of the flails.

The decal under the handle gives a guide to the guard rod setting.

- Pull the handle (1) out of the handle lock.
- Raise or lower the handle to the desired discharge setting as indicated on the decal.
- Lock the handle in the notch.



Set the Aggression Level of the Flails

212136C

To Increase the discharge rate:

- Raise the handle to a higher number.

To Decrease the discharge rate:

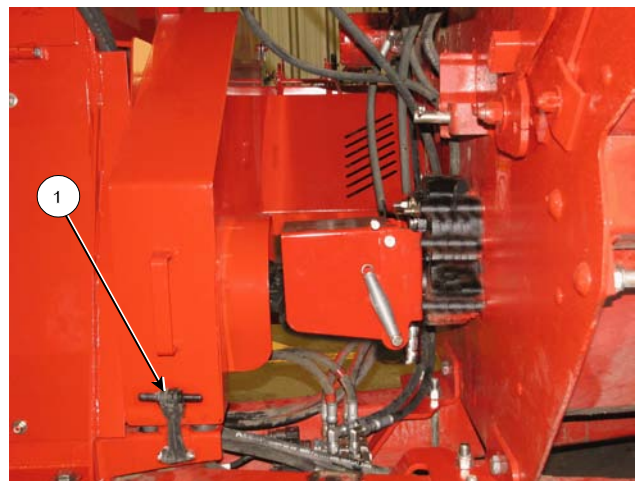
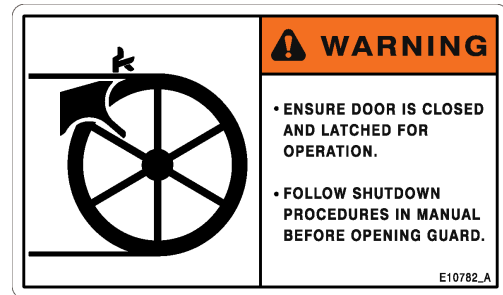
- Lower the handle to a lower number.

4. Remove the shield rubber latch (1).



Wait for all components to stop rotating.

Do not place hands in the TOP GUN drive clutch area while the driveline is turning. Contact with the rotating clutch or pulley can cause serious injury.



Release the Rubber Latch

212133C

5. Raise the blower drive shield and place on the rest tab located on the blower housing.

6. Raise the gearbox shield.



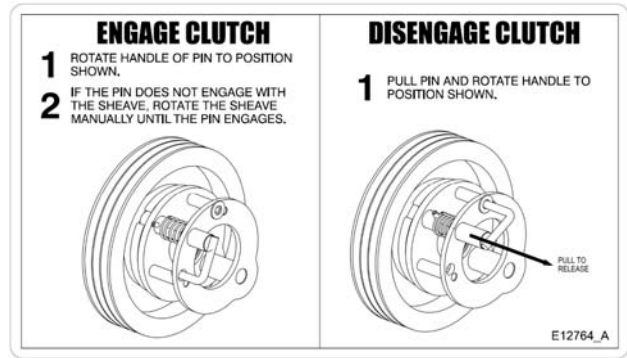
Raise the Blower Drive Shield

212131

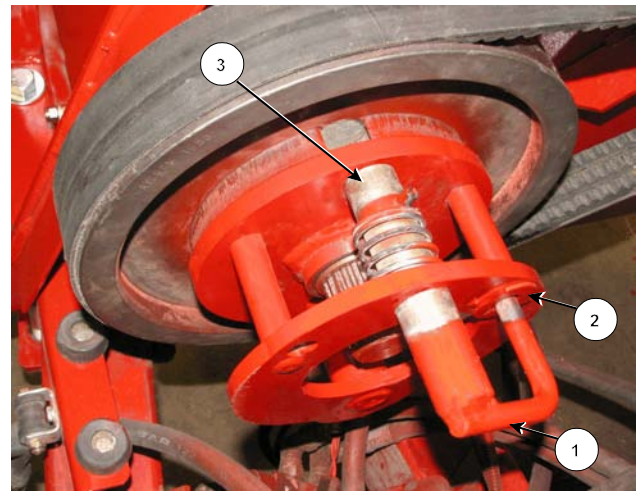
### Section 3 - Operating the TOP GUN 650

#### 7. Disengage the TOP GUN blower drive clutch.

- Rotate the pulley to have the clutch pin near the top.



- Pull the handle (1) out and rotate into the washer (2) to disengage the clutch pin from the sheave.
- The spring will pull the handle into the washer.
- The clutch pin (3) will move out of the sheave plate cutouts.



Move Handle Into Disengaged Position

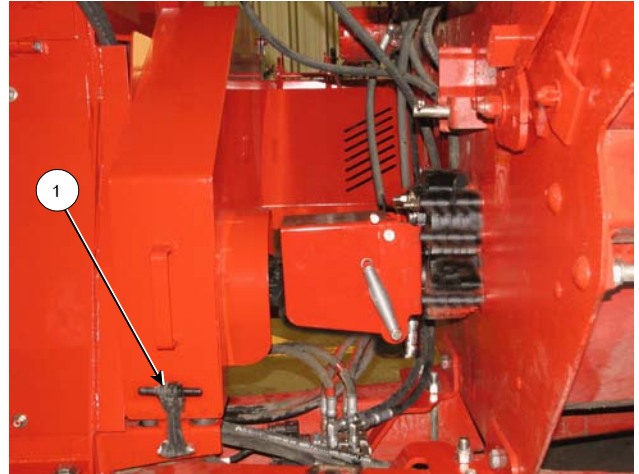
213002C

### Section 3 - Operating the TOP GUN 650

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8. Lower the blower drive shield and fasten with the rubber latch.

9. Lower the gearbox shield.



Lower the Drive Shields

212133C

10. Lower the CFR650 upper discharge door.

- Raise or lower the upper deflector door to adjust the amount of spreading of material.
- Use the hydraulic cylinder to adjust the door.



Lower the Upper Discharge Door

213001

Raised - material will be spread out over a wide area.

- Place the rubber deflector into the tabs on the door.

Midway - deflector door will control the height and distance of discharged material.

- Place the rubber deflector into the tabs on the door.

Lowered - the material will be left in a windrow or directed into a feed bunk.

- Allow the rubber deflector to hang down.



### Section 3 - Operating the TOP GUN 650

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11. Engage the driveline to start the processor and auger.
12. Set the speed of the feed rollers.
  - Refer to the CFR650 Operators Manual for instructions.
13. Begin to process a bale in the CFR 650.
14. The TOP GUN auger is driven by the belt drive from the rear of the flail drum. The auger will discharge material out the side of the machine.



Should any vibration be detected during the operation of the machine, immediately stop the machine. Determine the source of the problem and fix it before resuming operation.

15. Drive ahead while operate the CFR 650 /TOP GUN.



Avoid discharging material in the area of people and animals.



### Unplugging the TOP GUN

1. Reduce the engine speed to idle.
2. Disengage tractor power take off (PTO).
3. Set the tractor park brake.



Shut off tractor engine and remove key.



Wait for all components to stop rotating.



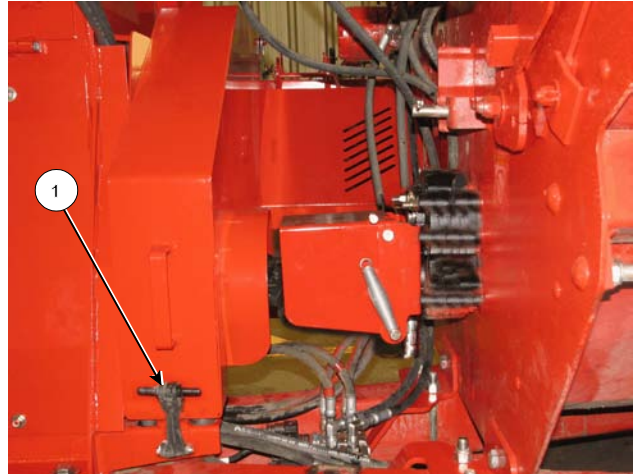
Do Not Contact Rotating Auger.  
Keep fingers and hand out of the auger chamber.  
Never attempt to manually remove debris while the auger is rotating.  
Contact with the rotating auger will cause serious injury or death.



Do Not Contact Rotating Blower.  
Keep fingers and hand out of the blower chamber when blower is rotating.  
Never attempt to manually remove debris while the blower is turning.  
Contact with the rotating blower blades will cause serious injury or death.



4. Remove the shield rubber latch (1).



Remove the Rubber Latch

212133C

5. Raise the blower drive shield and place on the rest tab located on the blower housing.



Raise the Blower Drive Shield

212131

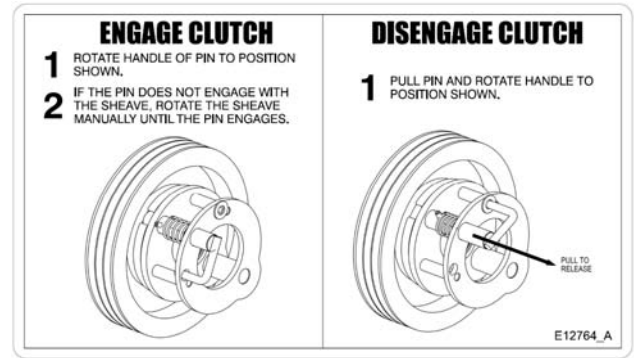
6. Raise the gearbox shield.



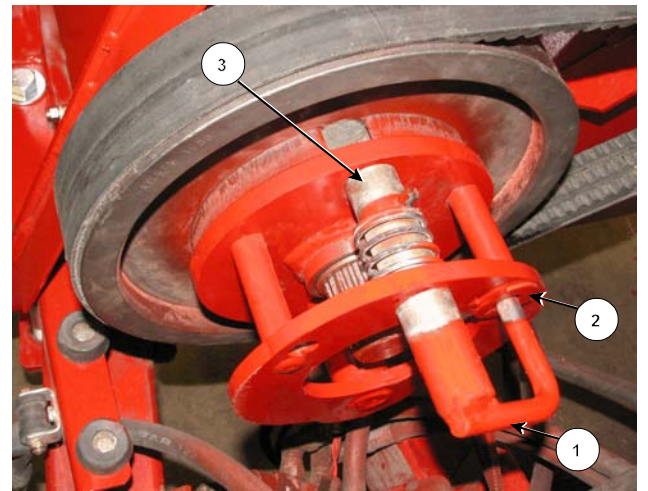
### Section 3 - Operating the TOP GUN 650

7. Disengage the TOP GUN blower drive clutch.

- Rotate the pulley to have the clutch pin near the top.



- Pull the handle (1) out and rotate into the washer (2) to disengage the clutch pin from the sheave.
- The spring will pull the handle into the washer.
- The clutch pin (3) will move out of the sheave plate cutouts.



Move Handle Into Disengaged Position

213002C

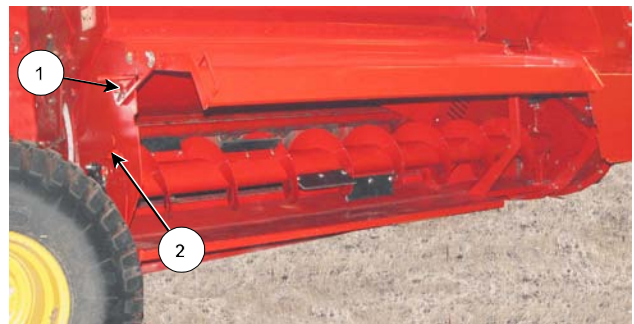
8. Open the upper and lower auger housing doors.



Do Not Contact the Rotating Auger.  
Keep fingers and hand out of the auger chamber.  
Never attempt to manually remove debris while the auger is rotating.  
Contact with the rotating auger will cause serious injury or death.  
Keep all auger guards in place.



- Raise the upper auger housing door.
- Lock the upper housing by placing the slot in the handle (1) over the pin.
- Lower the bottom auger housing door by moving the handle (2).

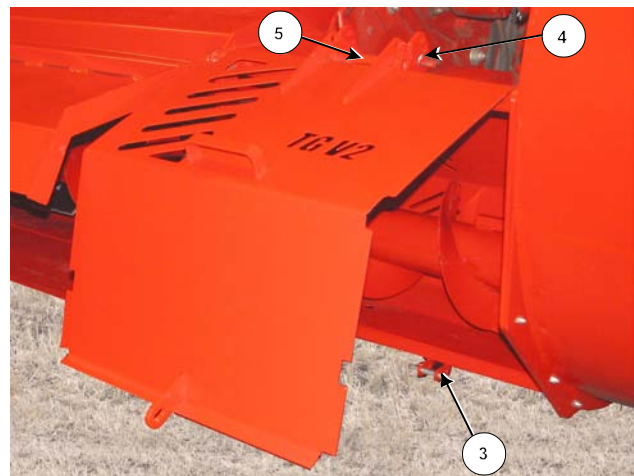


Open the Upper Auger Housing Door

212124C

9. Raise the transition housing cover.

- Remove the pin from the bottom of the cover (3).
- Place the pin back into the tabs.
- Remove the hair pin (4) from the hinge pin (5) at the top of the cover.
- Remove the hinge pin.
- Rotate the cover to the open position.
- Install the hinge pin (5).
- Install the hair pin (4).



Raise the Transition Housing Cover

212129C

10. Clear the auger area.



Clear the Auger Area

212124

11. Clear the blower blade area.



Do Not Contact Rotating Blower. Keep fingers and hand out of the blower chamber when blower is rotating.

Never attempt to manually remove debris while the blower is turning. Contact with the rotating blower blades will cause serious injury or death.



Clear the Blower Area

212127

12. Open the access hatch on the blower housing.

- Remove any material inside the housing.



Open Hatch - Clear Blower Housing

213003

13. Clear the spout of any material.

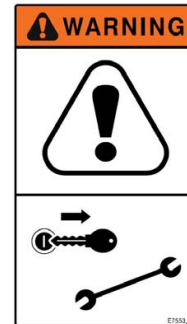
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## **4.0 MAINTAINING THE TOP GUN 650**



Shut down the tractor and remove the key before repairing, servicing, lubricating or cleaning the machine.

Relieve all hydraulic pressure in the hoses. Disconnect the hydraulic hoses from the tractor before going near the machine.

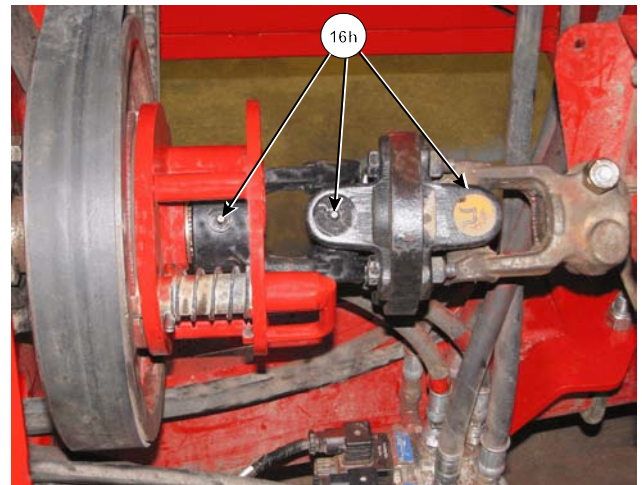


### **Lubrication**

Lubricate all grease fittings with a quality lithium soap compatible E.P. grease meeting the N.L.G.I. #2 specifications and containing no more than 1% molybdenum disulfide.

### **Every 16 Hours**

- Lubricate 3 points on the driveline joint connecting the clutch to the flail drum gearbox.



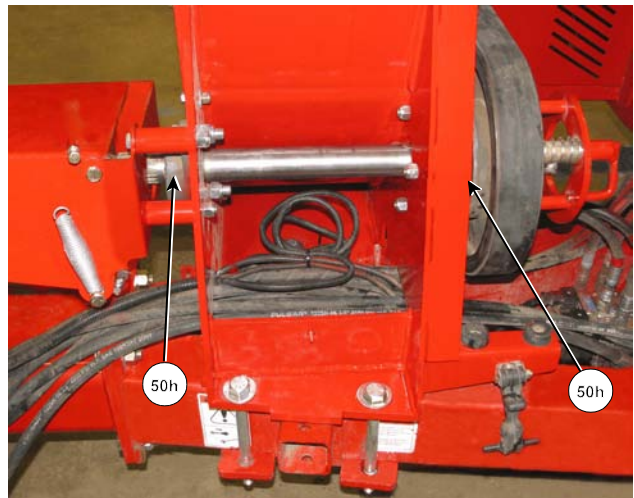
Grease Clutch Driveline Joint

213005C



**Every 50 Hours**

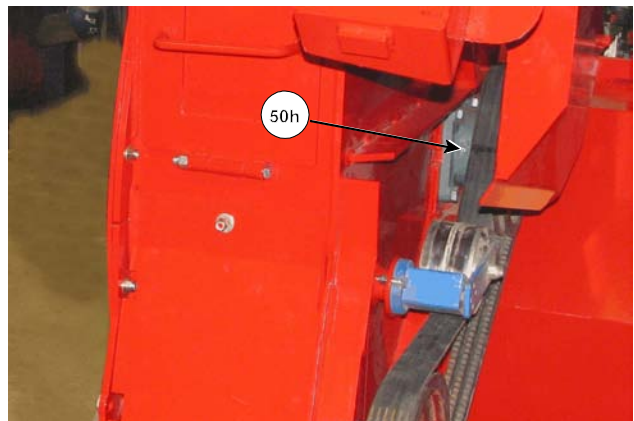
- Lubricate 2 points on the blower clutch shaft
  - Raise the clutch drive shield and rest on the tab.
  - Lubricate the front bearing.
  - Lubricate the rear bearing.



Grease Blower Clutch Shaft

213004C

- Lubricate 1 point on the blower impeller shaft bearing.
  - Raise the blower drive shield and place in the holder tab.
  - Lubricate the blower bearing.



Grease Blower Impeller Shaft Bearing

213006C

- Lubricate the auger rear bearing.
  - Open the drive shield at the back of the machine.
    - Remove the hair pin to open the shield.



Open Auger Drive Shield

212134

## Section 4 - Maintaining the TOP GUN 650

- Access the auger rear bearing grease point by reaching between the drive belt to the auger bearing.

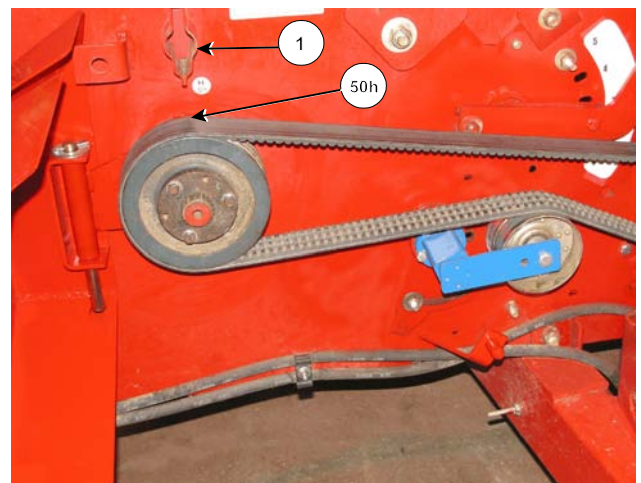


Grease Auger Rear Bearing

213007C

### Greasing the CFR 650 Rear Flail Drum Bearing (Every 50 hours)

- To access the CFR 650 rear flail drum bearing:
  - Open the auger drive shield.
  - The bearing grease zerk is behind the sheave on the flail drum shaft.



Grease Flail Bearing - Twine Cutter Access

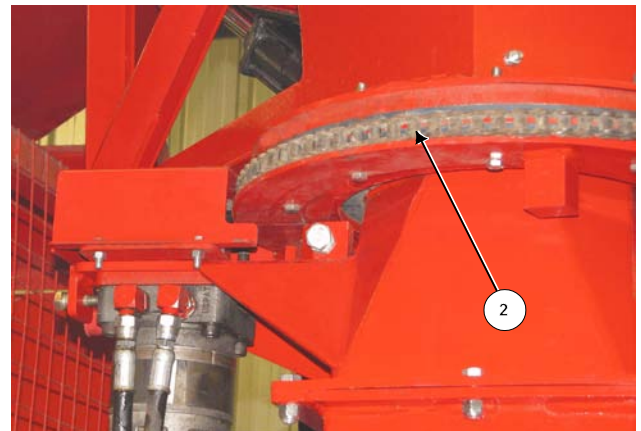
212134C

### Twine Cutter Access

- To access the twine cutter opening (1), open the drive guard door.

### Every Season

- Lubricate the turret chain (2) once every season.
  - Use a quality chain oil.



Lubricate Turret Chain

213010C

### Belt Tension Adjustment

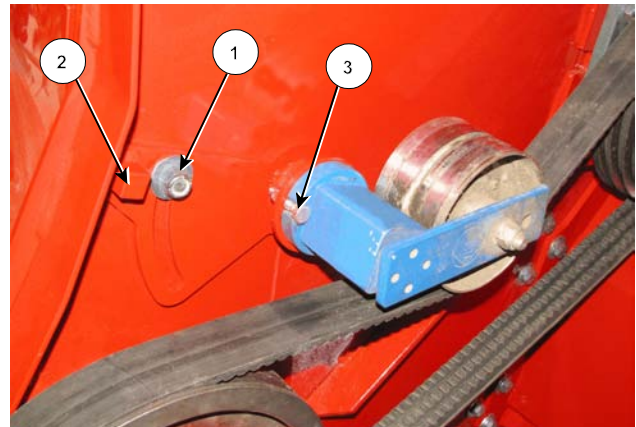
The belt tension adjusters will automatically adjust to keep the belt tight.

#### Blower Belt Tension Adjustment

If a different tension range is needed:

- Loosen the nut (1) in the slotted adjustment plate.
- Place a wrench onto the square bar (2).

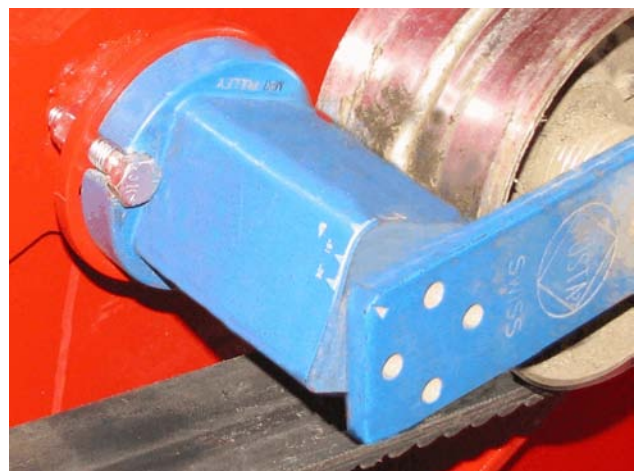
Note: The holder bolt (3) on the outside rim of the tensioner can be moved to other holes to increase the range of the tensioner.



Blower Belt Tension Adjustment

213008C

- Rotate the adjustment plate until the indicator on the tensioner arm shows a minimum tension of 25 degrees but not more than 30 degrees.
- Tighten the nut (1) onto the slotted adjustment plate.



Rotate Adjustment for Tension

213009

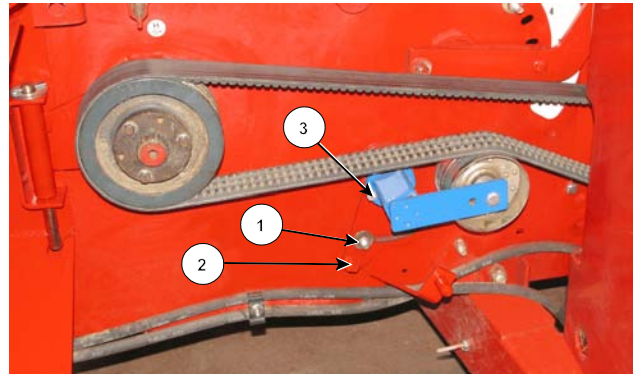


### Auger Belt Tension Adjustment

If a different tension range is needed:

- Loosen the nut (1) in the slotted adjustment plate.
- Place a wrench onto the square bar (2).

Note: The holder bolt (3) on the outside rim of the tensioner can be moved to other holes to increase the range of the tensioner.



Auger Belt Tension Adjustment

213011C

- Rotate the adjustment plate until the indicator on the tensioner arm shows a minimum tension of 25 degrees but not more than 30 degrees.
- Tighten the nut (1) onto the slotted adjustment plate.



Rotate Adjustment For Tension

213013

### **Replacing the Auger Paddles**

The auger paddles are manufactured to a tight weight tolerance to maintain rotational balance of the auger.

If a paddle is damaged, replace all 5 paddles as a set to maintain the rotational balance of the auger.

Replace only with Highline replacement parts.



Replace All Auger Paddles As A Set

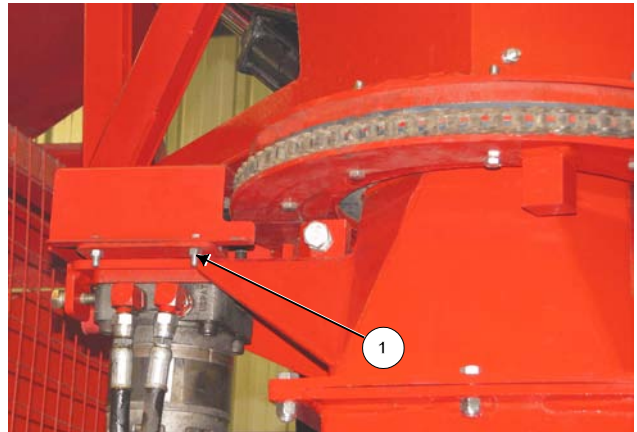
213082

## **Adjusting the Hydraulic Motor Gear Into the Turret Chain**

The gear on the turret motor should be fully engaged into the chain on the turret.

To adjust gear engagement:

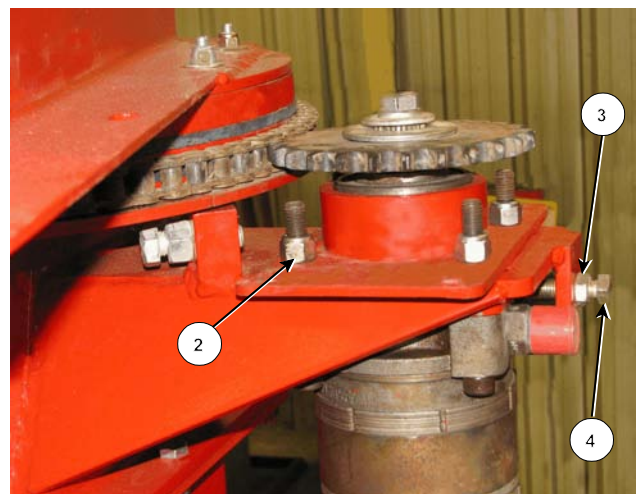
- Remove the fasteners (1) from the gear cover.
- Remove the gear cover.



Remove The Gear Cover

213010C

- Loosen the motor mount bolts (2) to allow the motor mount plate to slide.
- Loosen the engagement adjustment jamnut (3).
- Turn the adjustment bolt (4) to move the motor plate along the slots until the gear is fully engaged into the chain.
- Tighten the motor mount bolts (2).
- Tighten the adjustment jamnut (3).
- Replace the gear cover and fasten.



Adjust Gear Engagement

213012C

## 5.0 TROUBLESHOOTING

### Operation

#### Blower

Symptom	Problem	Solution
Excessive Blower Vibration	Broken blade.	Replace blade. Also replace blade on opposite side of the blower to maintain rotational balance.
	Missing blade.	Replace blade. Also replace blade on opposite side of the blower to maintain rotational balance.
	Foreign material lodged in blower.	Remove foreign material.
		Check for damage to the rotor. Contact Highline for proper repair procedure.
	Failed bearing.	Check if rotation feels rough. Replace failed bearing.
		Check for bearing side play and end play. Replace failed bearing.
		Visually inspect bearing. Replace failed bearing.
		Check condition of the grease seal.

## Section 5 - Troubleshooting

Symptom	Problem	Solution
Blower Does Not Spin	Drive clutch is not engaged.	Twist the clutch engage handle to move to the Engaged Position. Rotate the sheave until the drive pin snaps into a connecting hole in the drive plate. Ensure the drive pin is fully forward into the drive plate.
	Broken Belt.	Replace the belt.
	Foreign material lodged in housing.	Remove foreign material to allow blower to spin freely. Check condition of blades. Replace blade and also blade on opposite side of blower to maintain rotational balance.
	Blower bearing has seized.	Check bearings or replace.

Blower Stops Spinning	Blower drive clutch pin has moved out and no longer is engaged with the drive plate.	Twist the clutch engage handle to move to the Engaged Position. Rotate the sheave until the drive pin snaps into a connecting hole in the drive plate. Ensure the drive pin is fully forward into the drive plate.
	Belt has come off the sheaves or tensioner.	Place the belt on the sheaves and the tensioner. Check the alignment of the sheaves and tensioner. Adjust if needed.
	Broken belt.	Replace the belt.

Drive Belt Loose	Tension bracket has allowed idler to move.	Check that the nut on the tension bracket is in place. Replace the nut.
	Belt has stretched.	Replace the belt.
		Adjust belt tension see instructions - "Maintaining"

## Section 5 - Troubleshooting

### Auger

Symptom	Problem	Solution
Excessive Auger Vibration	Broken flighting.	Replace auger.
	Missing or damaged paddle.	Replace all the paddles as a set to maintain rotational balance.
	Foreign material lodged in auger.	Remove foreign material.
	Failed bearings.	Check if rotation feels rough. Replace failed bearing.
		Check for side and end play. Replace failed bearing.
		Visually inspect bearings. Replace failed bearings.
	Bent Auger Tube.	Replace auger.

Auger Does Not Spin	Broken Belt.	Replace the belt.
	Foreign material lodged in auger chamber.	Remove foreign material to allow auger to spin freely. Check condition of flighting and paddles. Replace paddles.
	Auger bearing has seized.	Check bearings or replace.

Auger Stops Spinning	Belt has come off the sheaves or tensioner.	Place the belt on the sheaves and the tensioner. Check the alignment of the sheaves and tensioner. Adjust if needed.
	Broken belt.	Replace the belt.

Drive Belt Loose	Tension bracket has allowed idler to move.	Check that the nut on the tension bracket is in place. Replace the nut.
	Belt has stretched.	Replace the belt.
		Move the tensioner.

## Section 5 - Troubleshooting

### Blower Turret

Symptom	Problem	Solution
Blower Turret Does Not Turn	Turret chain has come loose or is broken.	Tighten chain. Replace chain.
	Hydraulic motor sprocket not engaged in chain.	Adjust the hydraulic motor position so the gear is fully engaged into the chain. Tighten the motor mount.
	Foreign material lodged in rotational plates.	Remove foreign material to allow turret to move freely.
	Diverter Valve.	Confirm operation of the hydraulic diverter valve.
		Check that there is 12 volts at the solenoid connection when the turret swing switch is activated.
		Check that the solenoid is working - "clicks" when activated.
	Hydraulic motor.	Check hydraulic connections.
		Replace hydraulic motor.
Nozzle does not lift or lower	Hydraulic cylinder.	Check hydraulic connections.
	Cylinder pin missing.	Replace cylinder pin.
	Material lodged in joint.	Remove material.

# Highline New Equipment Limited Warranty Policy

One (1) Year / 12 Months - Parts and Labour

Highline Mfg. Inc (hereinafter "Highline") warrants this new product of Highline's manufacturer to be free from defects in material and workmanship, under normal use and service for one (1) full year after initial purchase/retail sale. Highline will warrant its product for one (1) year parts and labour, if performed by a qualified Dealer. This Limited Warranty shall apply only to complete machines of Highline's manufacture. Parts are covered by a separate Limited Warranty.

**EQUIPMENT AND ACCESSORIES NOT OF HIGHLINE'S MANUFACTURE ARE WARRANTED ONLY TO THE EXTENT OF THE ORIGINAL MANUFACTURER'S WARRANTY AND SUBJECT TO THEIR ALLOWANCE TO HIGHLINE ONLY IF FOUND DEFECTIVE BY SUCH MANUFACTURER.**

During the Limited Warranty period specified above, any defect in material or workmanship in any warranted item of Highline Equipment not excluded below shall be repaired or replaced at Highline's option without charge by any authorized independent Highline Dealer. An authorized Dealer must make the warranty repair or replacement. Labour in accordance with Highline's labour reimbursement policy. Highline reserves the right to supply remanufactured replacement parts as it deems appropriate.

## **RETAIL PURCHASER RESPONSIBILITY**

This Limited Warranty requires proper maintenance and periodic inspections of the Equipment as indicated in the Operator's Manual furnished with each new Equipment. The cost of routine or required maintenance and services is the responsibility of the retail purchaser. The retail purchaser is required to keep documented evidence that these services were performed. This Highline New Equipment Limited Warranty may be subject to cancellation if the above requirements are not performed.

## **EXCLUSIONS AND LIMITATIONS**

The warranties contained herein shall NOT APPLY TO:

1. Any defect which was caused (in Highline's sole judgement) by other than normal use and service of the Equipment, or by any of the following:
  - a. accident
  - b. misuse or negligence
  - c. overloading
  - d. of reasonable and proper maintenance
  - e. improper repair or installation
  - f. unsuitable storage
  - g. non-Highline approved alteration or modification
  - h. natural calamities
  - i. vandalism
  - j. parts or accessories installed on Equipment which were not manufactured or installed by Highline authorized Dealers
  - k. the elements
  - l. collision or other accident.
2. Any Equipment whose identification numbers or marks have been altered or removed.
3. Any Equipment which any of the required or recommended periodic inspection or services have been performed using parts not manufactured or supplied by Highline or meeting Highline Specifications including, but without limitation, lubricants (oil, grease), belt lacings, and hydraulic fluids.
4. Any Equipment used in demonstrations not performed by a Highline Dealer. Warranty will be at the discretion of Highline for all other demonstration warranty.
5. New Equipment delivered to the retail purchaser in which the warranty registration has not been completed and returned to Highline within ten (10) days from the date of purchase.
6. Any defect that was caused (in Highline's sole judgement) by operation of the Equipment not abiding by standard operating procedures outlined in the Operator's Manual.
7. Tire Limited Warranties and support are the responsibility of the respective product's manufacturer.
8. Transportation costs, if any, of transporting to the Highline Dealer.
9. In no event shall Highline's liability exceed the purchase price of the product.
10. Highline shall not be liable to any person under any circumstances for any incidental or consequential damages (including but not limited to, loss of profits, out of service time and damage to equipment which this equipment may be attached) occurring for any reason at any time.
11. Diagnostic and overtime labour premiums are not covered under this Limited Warranty Policy.

12. Depreciation damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, and/or lack of proper protection during storage.
13. Accessory systems and electronics not of Highline's manufacture are warranted only to the extent of such manufacturer's respective Limited Warranty if any.
14. Wear items which are listed by product group below:

#### **COMMON WEAR ITEMS**

Roller chain, sprockets, clutches, shear bolts, clutch components, chains, gearbox housings bolts/torqued parts, flails, feed roller belting, coupler chain, DRV couplers, bogie wheels, apron tines and hoses, blades and blade pans, blade bolts and nuts, skid shoes, chain guards, clutches and clutch components.

#### **PARTS WARRANTY**

Parts replaced in the warranty period will receive the balance of the one year New Equipment Limited Warranty. Replacement parts after the original machine warranty are warranted to be free from defects of material for ninety (90) days or the part will be repaired or replaced, without labour coverage for removal and reinstallation.

#### **EXCLUSION OF WARRANTIES**

UNLESS OTHERWISE REQUIRED BY LAW, AND EXCEPT FOR THE WARRANTIES EXPRESSLY AND SPECIFICALLY MADE HEREIN, HIGHLINE MAKES NO OTHER WARRANTIES, AND ANY POSSIBLE LIABILITY OF HIGHLINE HEREIN UNDER IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HIGHLINE RESERVES THE RIGHT TO MODIFY, ALTER AND IMPROVE ANY PRODUCT WITHOUT INCURRING ANY OBLIGATION TO REPLACE ANY PRODUCT PREVIOUSLY SOLD WITH SUCH MODIFICATION. NO PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY, OR TO ASSUME ANY ADDITIONAL OBLIGATION ON HIGHLINE'S BEHALF.





P.O. Box 307, VONDA SK S0K 4N0 CANADA  
TEL.306-258-2233 FAX.306-258-2010  
TOLL FREE 1-800-665-2010

## DELIVERY AND WARRANTY REGISTRATION

DELIVERY DATE

MONTH

DAY

YR

WARRANTY COVERAGE IS EFFECTIVE ONLY WHEN THIS FORM HAS ALL APPLICABLE INFORMATION COMPLETED, IS SIGNED BY BOTH THE OWNER AND THE AUTHORIZED SELLER AT THE TIME OF DELIVERY, AND IS RETURNED TO **HIGHLINE MANUFACTURING LTD.** WITHIN 10 DAYS FROM THE DATE OF PURCHASE. WARRANTY SERVICE MAYBE DENIED IF THIS FORM CONTAINS FALSE INFORMATION OR IS INCOMPLETE.

HIGHLINE AUTHORIZED DEALER or

HIGHLINE SALES DEPARTMENT

CUSTOMER NAME

\_\_\_\_\_

\_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PHONE \_\_\_\_\_

PHONE \_\_\_\_\_

I HEREBY ACKNOWLEDGE THAT:

1. I have received and accepted delivery of equipment described.
2. The equipment was checked thoroughly for loose or missing parts and has been adjusted in accordance with the PRE-DELIVERY CHECKLIST.
3. I have been provided with and have carefully read the Operator's Manual.
4. I have read and understand thoroughly the SAFETY PRECAUTIONS found in the Safety Section of the Operator's Manual.
5. I have read and understand the nature and extent of the Warranty and understand clearly that there were and are no other representations or warranties, either express or implied, made by anyone.
6. I have been advised on proper operation, maintenance and lubrication procedures of this equipment.
7. I have been instructed and do understand the application, limitations and capacities that this equipment was designed and recommended for, all of which is described in the Operator's Manual and other literature published by Highline Mfg. Ltd.

PLEASE TYPE OR PRINT LEGIBLY

BASIC MACHINE MODEL NO. \_\_\_\_\_

SERIAL # \_\_\_\_\_

OPTIONAL EQUIPMENT

\_\_\_\_\_

\_\_\_\_\_

### INSTRUCTIONS

1. Make sure registration is complete and signed.
2. White and yellow copies mail direct to HIGHLINE MFG. LTD.
3. Pink copy - Highline Authorized Dealer file.
4. Goldenrod copy - maintain in Operator Manual.

\_\_\_\_\_  
Authorized Sales Signature

\_\_\_\_\_  
Owner or Designated Representative Signature