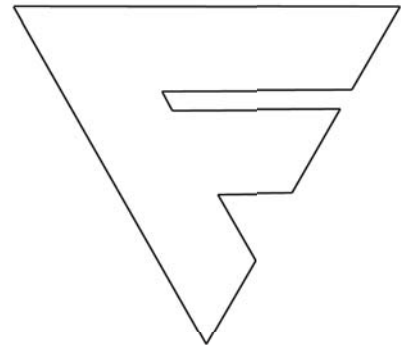


FREEMAN



MODEL 1592 BALER

OPERATOR'S MANUAL

Introduction

This manual explains the proper operation of your machine. Study and understand these instructions thoroughly before operating the machine. Failure to do so could result in personal injury or equipment damage. Consult your Freeman dealer if you do not understand the instructions in this manual, or if you need additional information.

The instructions, illustrations, and specifications in this manual are based on the latest information available at time of publication. Your machine may have product improvements and features not yet contained in this manual.

J.A. Freeman & Son, Inc. reserves the right to make changes at any time without notice or obligation.

EN10839.D98

Operating instructions are included in the small cabled Operator's Manual and the full size Operator's Manual, which are both included with the machine. The small manual must remain attached to the machine for handy reference. Store it in the manual container to protect it from damage.

Lubrication and maintenance procedures are in the full size Maintenance Manual, which is also included with the machine. Refer to it for all lubrication and maintenance procedures.

Additional copies of the manuals are available from your dealer. Use the reorder number on the front cover to order additional manuals.

Right and left sides of the machine are determined by facing in the direction of forward travel.

EN-OM-0221-AP92

**OMAP98-1
SERIAL NO. 501-
ORDER NO. PB 33495**

EN10837.D98

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EN10838.D98

**J.A. FREEMAN & SON, INC.
LIMITED WARRANTY**

J.A. FREEMAN & SON, INC. (hereinafter "J.A. Freeman & Son, Inc.") warrants to the original purchaser of each new agricultural equipment product ("Product") that such Product shall be free from defects in material and/or workmanship, under normal use and service for one (1) year after delivery to the original purchaser. THIS LIMITED WARRANTY SHALL APPLY ONLY TO COMPLETE MACHINES. ALL PARTS ARE COVERED UNDER A SEPARATE WARRANTY. EQUIPMENT AND ACCESSORIES NOT OF J.A. FREEMAN & SON, INC.'S MANUFACTURE ARE WARRANTED ONLY TO THE EXTENT OF THE ORIGINAL MANUFACTURER'S WARRANTY AND SUBJECT TO THEIR ALLOWANCE TO J.A. FREEMAN & SON, INC. ONLY IF FOUND DEFECTIVE BY SUCH MANUFACTURER. During the warranty period, the authorized J.A. Freeman & Son, Inc. dealer shall furnish replacement component parts without charge for any Product that fails because of defects in material and/or workmanship. THIS WARRANTY IS VOID UNLESS WARRANTY REGISTRATION CARD IS COMPLETED AND RETURNED WITHIN TEN (10) DAYS FROM THE DATE OF DELIVERY.

EXCLUSION OF WARRANTIES: EXCEPT FOR THE WARRANTIES EXPRESSLY AND SPECIFICALLY MADE HEREIN, J.A. FREEMAN & SON, INC. MAKES NO OTHER WARRANTIES, AND ANY POSSIBLE LIABILITY OF J.A. FREEMAN & SON, INC. HEREUNDER IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

The **SOLE AND EXCLUSIVE REMEDY** against J.A. Freeman & Son, Inc. by any person to whom this warranty may extend will be for the repair or replacement of defective Products in the manner provided in this warranty. In no event shall J.A. Freeman & Son, Inc.'s liability exceed the purchase price of the Product. J.A. Freeman & Son, Inc. shall not be liable to any person under any circumstances for any incidental or consequential damages (including, but not limited to, loss of profits) occurring for any reason at any time.

If, during the warranty period, any Product becomes defective by reason of material and/or workmanship and if J.A. Freeman & Son, Inc. is timely notified of such defect, J.A. Freeman & Son, Inc. shall, at its option, supply a replacement Product or component part or request return of the Product or the component part to its plant in Portland, Oregon or to a J.A. Freeman & Son, Inc. authorized dealer. No Products or component parts shall be returned without prior written authorization from J.A. Freeman & Son, Inc., and this warranty does not obligate J.A. Freeman & Son, Inc. to bear any transportation charges in connection with the repair or replacement of defective Products. The warranty repair or replacement must be made at a J.A. Freeman & Son, Inc. authorized dealer and J.A. Freeman & Son, Inc. will pay such authorized dealer's labor in accordance with J.A. Freeman & Son, Inc.'s standard rates.¹ The original purchaser shall be responsible for the cost, if any, of transporting the machine to the J.A. Freeman & Son, Inc. authorized dealer or the travel time of the authorized dealer's service personnel to make a repair on the original purchaser's site or other location.

This warranty shall not apply to any Product which shall have been installed or operated in a manner not recommended by J.A. Freeman & Son, Inc., nor to any Product which shall have been neglected, or used in any way which, in J.A. Freeman & Son, Inc.'s opinion, adversely affects its performance; nor with respect to wear items including but not limited to pick up teeth, belts, and drive chains and sprockets; nor to any Product in which parts not manufactured or approved by J.A. Freeman & Son, Inc. have been installed or used, nor to normal maintenance services or replacement of normal service items.

The sole purpose of the limited express warranty shall be to provide the original purchaser with repair or replacement of Products in the manner provided herein. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as J.A. Freeman & Son, Inc. is willing and able to repair or replace a Product in the prescribed manner.

THIS WRITING CONSTITUTES THE FINAL, COMPLETE AND EXCLUSIVE EXPRESSION OF THE WARRANTY. NO AFFIRMATION OF FACT OR PROMISE, AND NO DESCRIPTION, AND NO SAMPLE OR MODEL MADE OR PRESENTED BY ANY PERSON WITH RESPECT TO THE PRODUCTS MANUFACTURED OR SOLD BY J.A. FREEMAN & SON, INC. SHALL CONSTITUTE A WARRANTY UNLESS EXPRESSLY AUTHORIZED OR CONFIRMED BY J.A. FREEMAN & SON, INC. IN WRITING. NO STATEMENT BY ANY PERSON SHALL CHANGE THE TERMS OR THE SCOPE OF THE WARRANTIES, LIMITATIONS AND DISCLAIMERS EXPRESSED HEREIN UNLESS SPECIFICALLY AUTHORIZED IN WRITING BY J.A. FREEMAN & SON, INC.

J.A. Freeman & Son, Inc. reserves the right to modify, alter, and improve any Product without incurring any obligation to replace any Product previously sold with such modified, altered, or improved Product.

No person is authorized to give any other warranty, or to assume any additional obligation on J.A. Freeman & Son, Inc.'s behalf unless made in writing, and signed by an officer of J.A. Freeman & Son, Inc.

J.A. FREEMAN & SON, INC.
Portland, Oregon

¹ Unless otherwise required by law. Call J.A. Freeman & Son, Inc. for details.

Receiving and Delivery Report

DEALER PREP

Check or perform the following:

Performed By:

- ☐ Check that all optional and loose items (controllers, driveline, etc.) are included with baler.
- ☐ Inspect decals and shields for transit damage.
- ☐ Complete baler preparation as per dealer setup instructions.
- ☐ Fill out *Customer / Dealer* information.
- ☐ Complete *Record Identification Numbers*.

signature

date

EN10841.D98

DEALER / CUSTOMER

dealer

owner

address

address

city

city

state/province

state/province

postal code

postal code

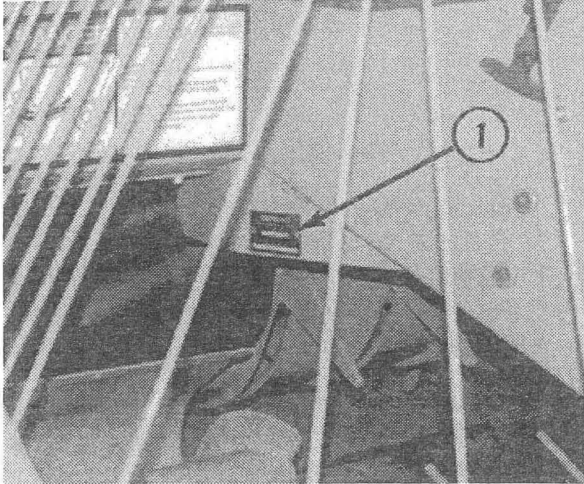
country

country

EN09221.D97

Receiving and Delivery Report

RECORD IDENTIFICATION NUMBERS



(1) Freeman 1592 Baler

Serial Number _____

(2) Baler Controller

Serial Number _____

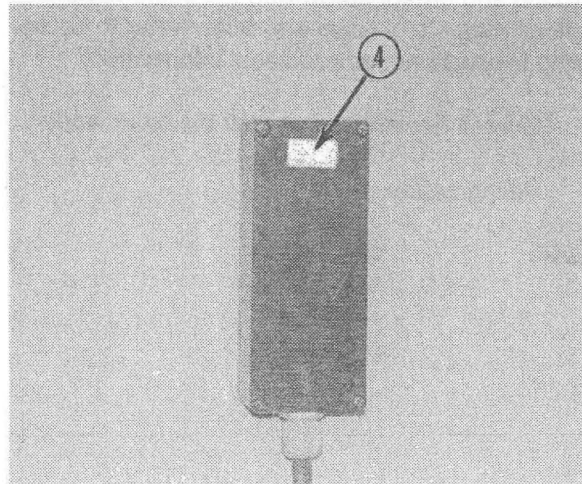
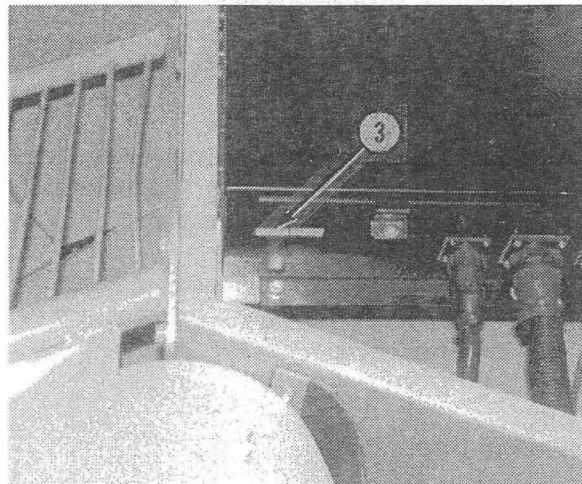
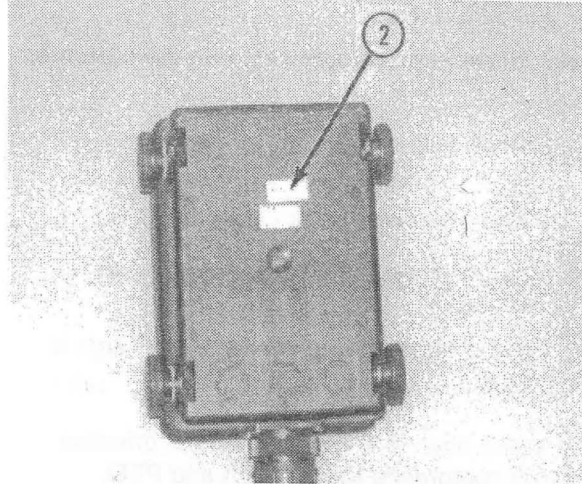
(3) Control Panel

Serial Number _____

(4) Diagnostic Controller

Serial Number _____

NH08031.D98 NH08032.D98 NH08033.D98 NH08034.D98



EN10842.D98

Receiving and Delivery Report

DELIVERY

Check or perform the following with the customer:

Baler

- ☐ Review all sections of *Operator's Manual*.
- ☐ Grease or oil all lubrication points.
- ☐ Ensure slow moving vehicle (SMV) sign is installed.
- ☐ Install hitch and implement input driveline per customer's tractor hitch and PTO dimensions (refer to "Preparing the Equipment" section for instructions).
- ☐ Threading and initializing twine.
- ☐ Preparing to bale when arriving at the field.
- ☐ Adjusting bale size.
- ☐ Setting and monitoring bale density.
- ☐ Ideal baling speed.
- ☐ Driving technique to use (weaving) when baling narrow windrows.

Controller

- ☐ Install *Baler Controller* on customer's tractor; route wire harness. Refer to "Preparing the Equipment" section for instructions.
- ☐ Explain operation of *Control Panel*, *Baler Controller*, and *Diagnostic Controller*; ensure all are functioning correctly.
- ☐ Rethreading twine and resetting knot sensor finger.
- ☐ Unplugging feeder and feed chute.
- ☐ Emptying the bale chamber.
- ☐ Troubleshooting the twine knotter.

Review of Operation

Explain and demonstrate with the customer the various aspects of baler operation (refer to dealer setup instructions for additional information).

- ☐ Overall explanation of how the baler works.
- ☐ Baling safety.

Performed By:

signature

date

EN10843.D98

Receiving and Delivery Report

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Freeman 1592 Baler

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EN10844.D98

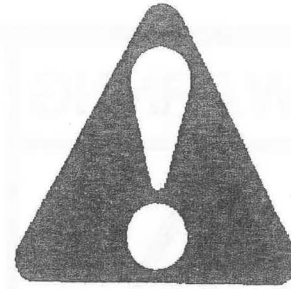
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Safety Messages

BE AWARE OF SAFETY INFORMATION

N-L-0044-AP92

This is the safety-alert symbol. This symbol placed on your machine or in the manual is used to alert you to the potential for bodily injury or death.



EN-OM-0179-AP92

UNDERSTAND SIGNAL WORDS

N-L-0045-AP92

A signal word "**DANGER**", "**WARNING**", or "**CAUTION**" is used with the safety-alert symbol.

Safety signs with signal word "**DANGER**", "**WARNING**", or "**CAUTION**" are located near specific hazards.

DANGER - Imminent hazards which, if not avoided, will result in serious personal injury or death.

WARNING - Potential hazards or unsafe practices which, if not avoided, could result in serious personal injury or death.

CAUTION - Potential hazards or unsafe practices which, if not avoided, could result in minor personal injury or product or property damage.



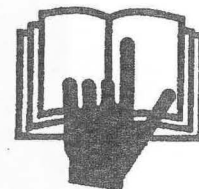
EN-OM-0180-AP92

READ MANUALS

N-L-0016-AP92

Do not operate the machine unless the instructions and safety messages in the following manuals have been carefully read and understood:


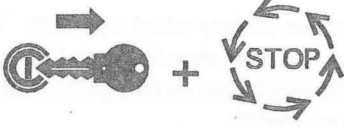

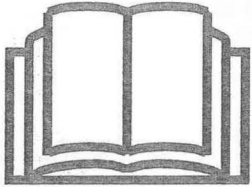

- Baler Operator's Manual
- Tractor Operator's Manual




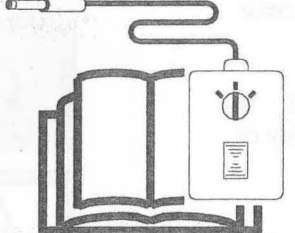


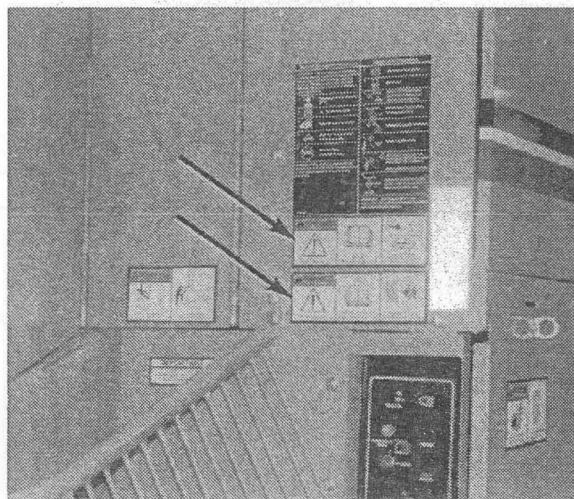
EN10845.D98

Safety Decals

7000A-937 7000A-932 ENH08035.D98

 WARNING	<p>7000A-937</p>	
		
<p>Safety Message</p>	<p>Read Operator's Manual</p>	<p>Shut Off Engine And Let Flywheel Stop Before Servicing.</p>

 WARNING	<p>7000A-932</p>	
		<p>Keep Away While Using Diagnostic Control.</p>
<p>Safety Message</p>	<p>Read Manual Before Using Diagnostic Control.</p>	<p>Keep Away While Using Diagnostic Control.</p>



N-OM-5519-FE95

Safety Decals

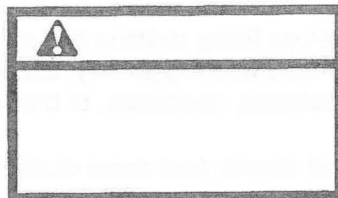
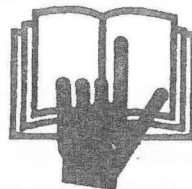
FOLLOW INSTRUCTIONS

N-L-0016-AP92 N-L-0046-AP92

Carefully read and understand all safety messages in the manuals and on your machine safety decals.

Safety decals located on your machine contain important information that will help you operate your equipment safely. Keep safety decals in good condition. Replace missing or damaged safety decals.

Allow only responsible, properly instructed individuals to operate the machine. Carefully supervise inexperienced operators.

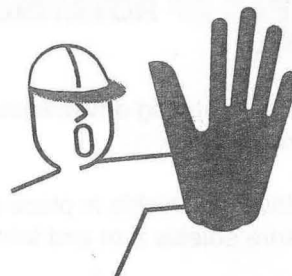


EN00181.D97

KEEP SPECTATORS AWAY FROM MACHINE

NL02197.A97

Keep all spectators and other workers away from the machine and work area while in operation.

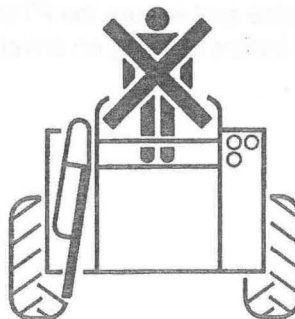


EN-OM-0184-AP92

NO RIDERS

NL02824.D98

Falling from baler or tractor can cause serious injury. Riders are not allowed on the baler. The tractor operator is the only person to be riding the tractor.



EN10846.D98

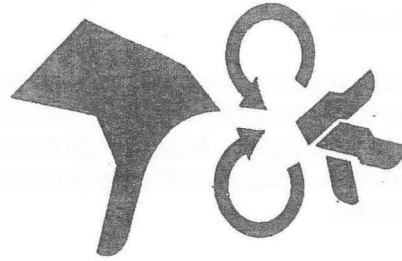
Safety Messages

AVOID MOVING PARTS

N-L-0072-JL92

Contact with moving parts can cause death or serious injury.

- Keep away from power driven parts such as pickup reels, belts, rollers, chains, knotters, sprockets, crank arms, etc. Some components do not move continuously during operation, but intermittently start and stop.
- Wear close fitting clothing and confine long hair. Avoid wearing jewelry, such as rings, wrist watches, necklaces, or bracelets.
- Keep all shields and doors closed during operation.



EN10847.D98

STAY CLEAR OF ROTATING DRIVELINES

N-L-0242-FE93

Entanglement in rotating driveline can cause death or serious injury.

- Keep driveline shields in place at all times. Make sure shields turn and telescope freely.
- Wear close fitting clothing and confine long hair.
- Stop engine and ensure the PTO driveline is stopped before working on driveline.



EN10848.D98

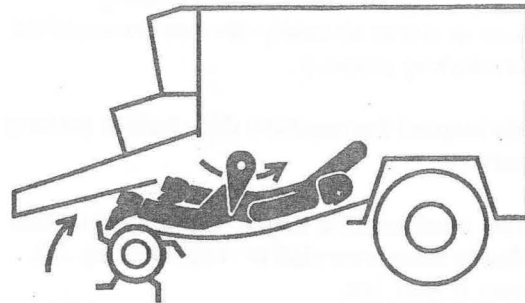
Safety Messages

STAY CLEAR OF FEED INTAKE AREA

NL02825.D98

Baler intake system can pull you in, causing death or serious injury. Stay clear of pickup reel and feed intake area. Baler can take in crop faster than you can let go.

- **NEVER** feed crop by hand.
- **NEVER** remove any material from the baler intake while it is running.
- **NEVER** try to unplug baler by hand while it is running - use the reversing feature to unplug.
- **ALWAYS** disengage power take-off, shut off tractor engine, set park brake, remove key, and wait for flywheel to stop before working on the baler for any reason including: servicing, inspecting, or unplugging the baler by hand.



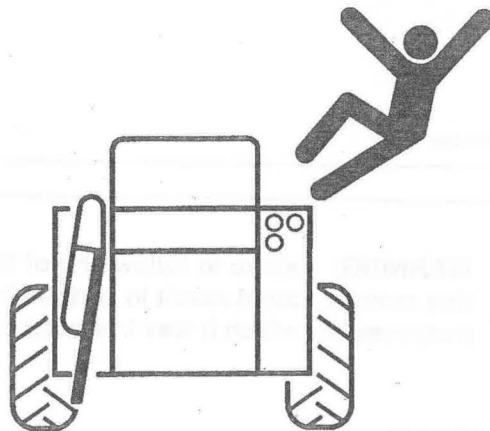
EN10849.D98

ACCESS ONTO BALER

NL02826.D98

Falling from baler can cause serious injury.

- Use ladders supplied with baler to reach upper areas of baler.
- Ensure portable ladder is securely attached to baler before climbing.
- When working on top of baler, stay in designated walking area.
- Stay off top of baler if baler is not level.
- Stay off top of baler if it is slippery.



EN10850.D98

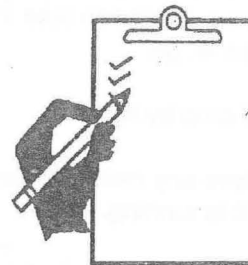
KEEP MACHINE IN GOOD CONDITION

N-L-0022-AP92

Be sure the machine is in good operating condition and that all safety devices are installed and functioning properly.

Visually inspect the machine daily before starting the machine.

Make no modifications to your equipment unless specifically recommended or requested by J.A. Freeman & Son, Inc.



EN10851.D98

WORKING ON THE BALER

Normal Shutdown Procedure

For your safety and the safety of others, the *Normal Shutdown Procedure* (refer to the "Shutdown Procedure" section) must be followed before dismounting from the tractor for repairing, servicing, cleaning, or lubricating the baler.

Diagnostic Procedure

To dismount the tractor for diagnosing the baler, follow the *Diagnostic Procedure* (refer to the "Shutdown Procedure" section).

After diagnosing a baler malfunction, follow the *Normal Shutdown Procedure* before making repairs or adjustments.

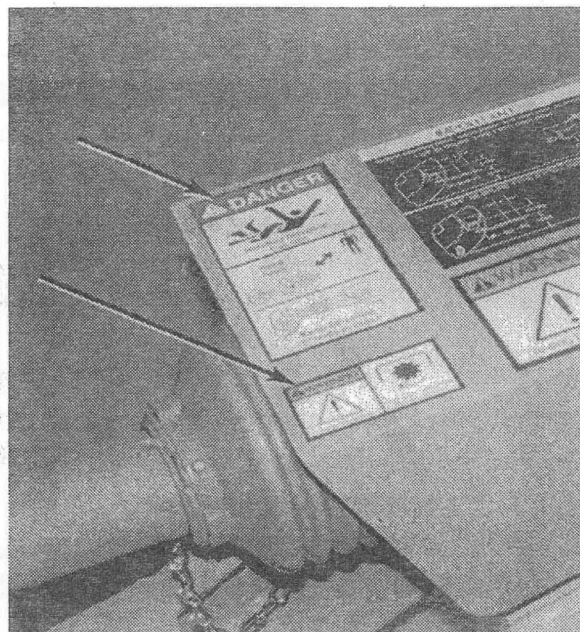
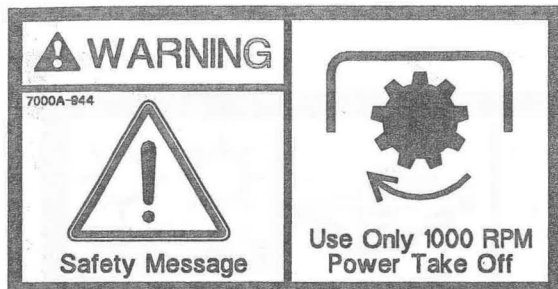
EN10852.D98



WARNING: Failure to follow any of the above safety instructions or those that follow within this manual, could result in serious injury or death. This machine is to be used only for those purposes for which it was intended as explained in this operator's manual.

EN-OM-0240-AP92

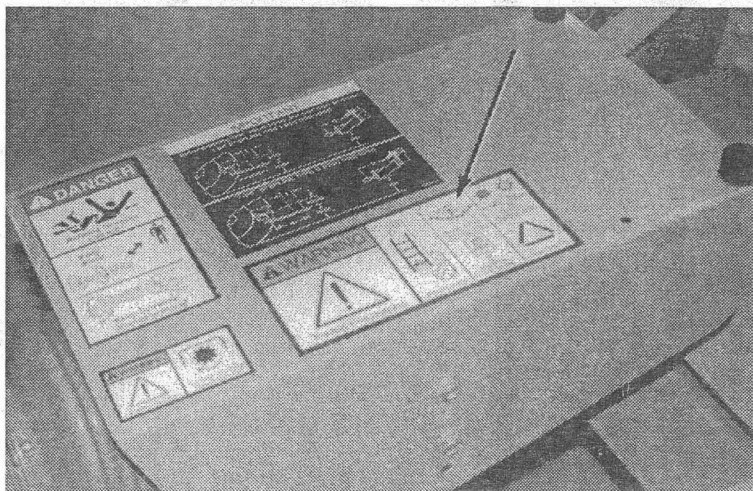
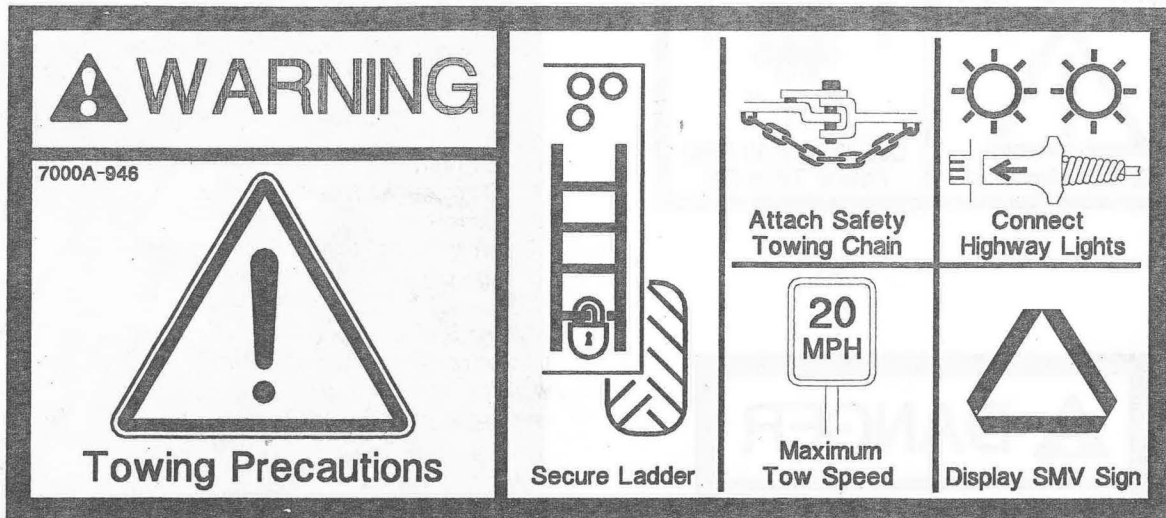
Safety Messages



N-OM-5519-FE95

Safety Decals

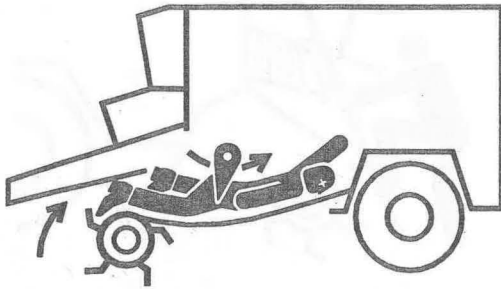
7000A-946 ENH08037.D98



N-OM-5519-FE95

Safety Decals

DANGER

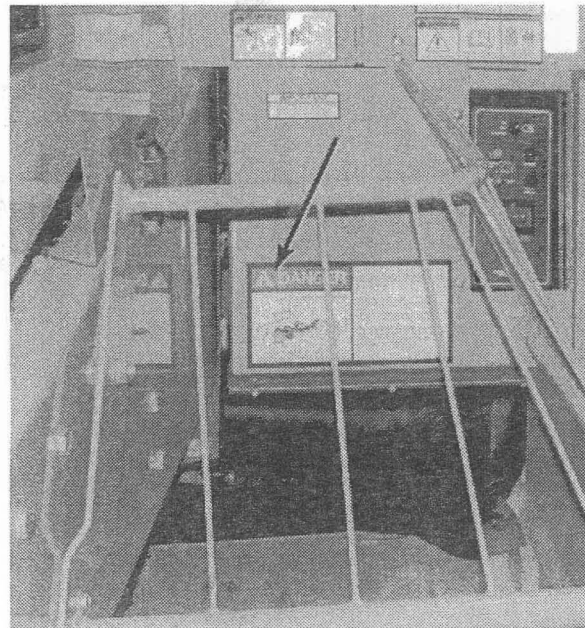
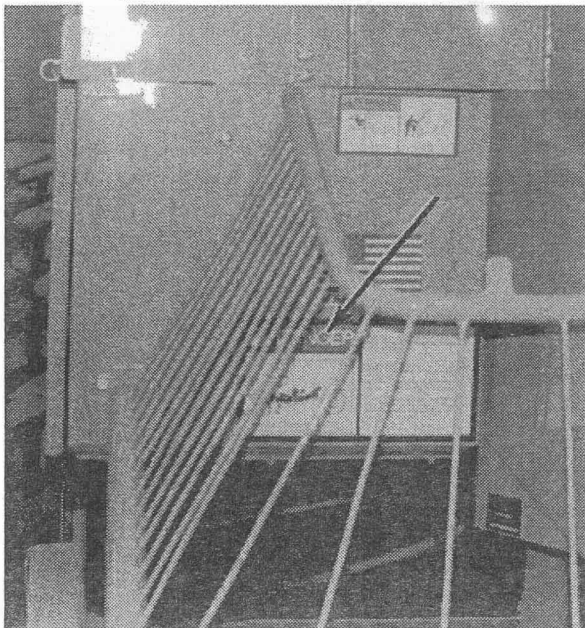


**BALER INTAKE CAN PULL YOU IN
CAUSING DEATH OR SERIOUS INJURY.**

Stay clear of pick-up reel and feed intake area. Baler may take in crop faster than you can let go.

- NEVER feed crop by hand.
- NEVER remove material from baler intake while it is running.
- NEVER try to unplug baler by hand while it is running. Use reversing feature to unplug.
- ALWAYS disengage power take-off, shut off tractor engine, set park brake, remove key, and wait for flywheel to stop before manually unplugging or servicing.

7000A-897

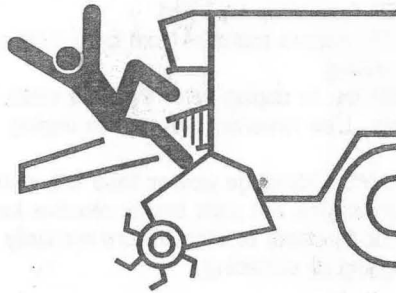


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Safety Decals

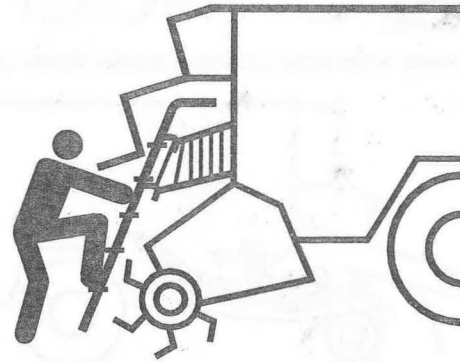
7000A-925 ENH08040.D98 ENH08041.D98

WARNING

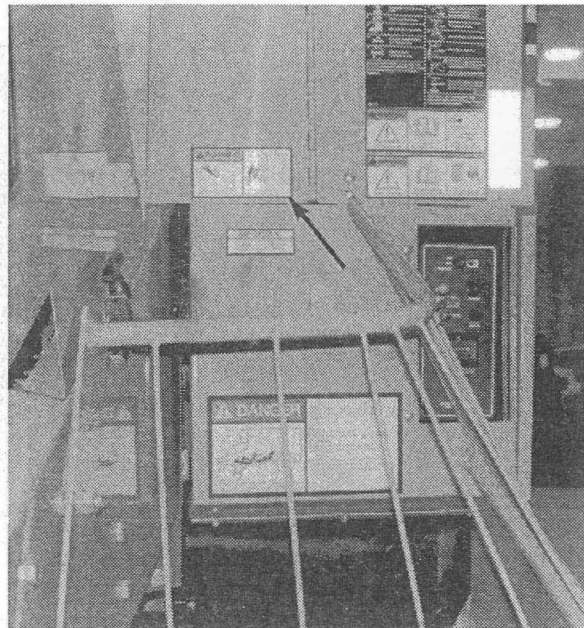
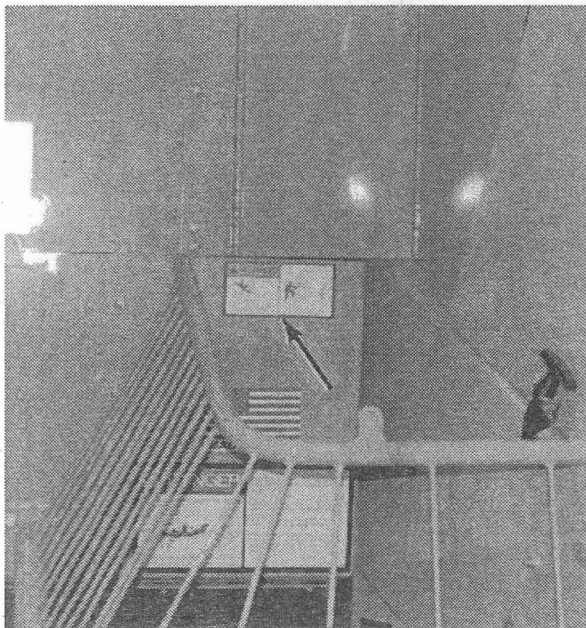


FALLING OFF MACHINE
CAN CAUSE INJURY.

7000A-925

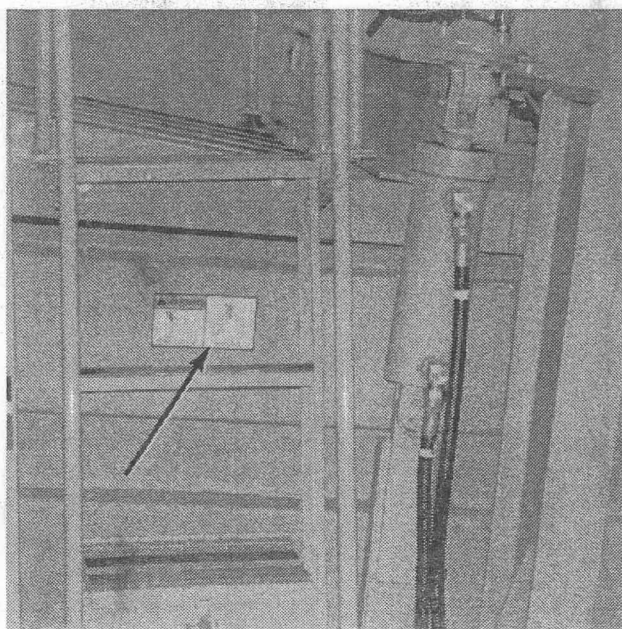
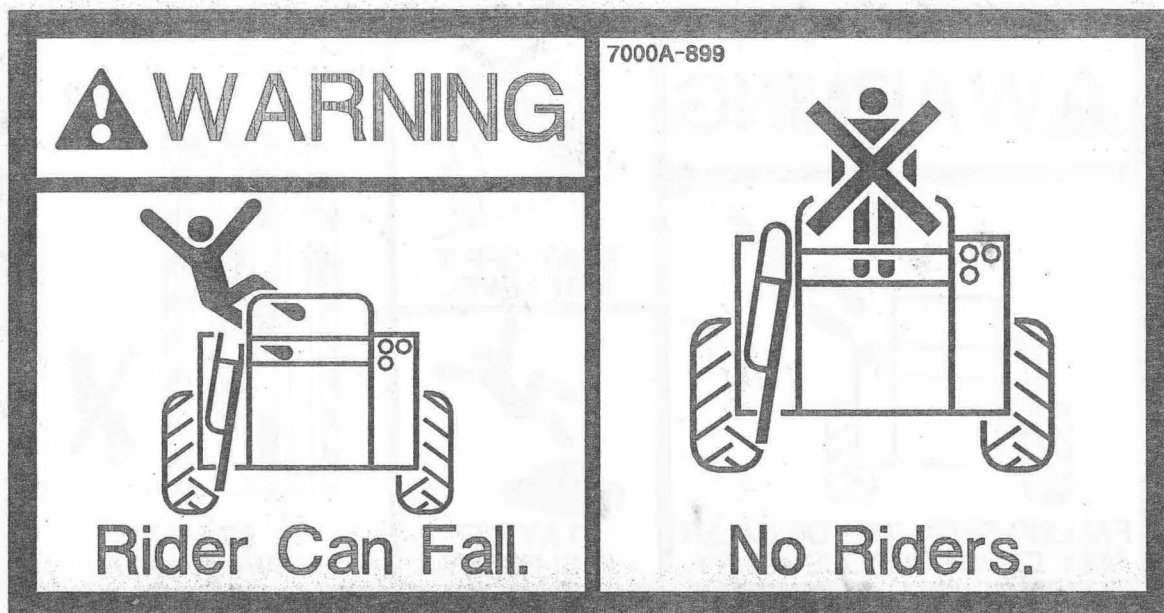


USE LADDER TO
REACH SCREENS.



N-OM-5519-FE95

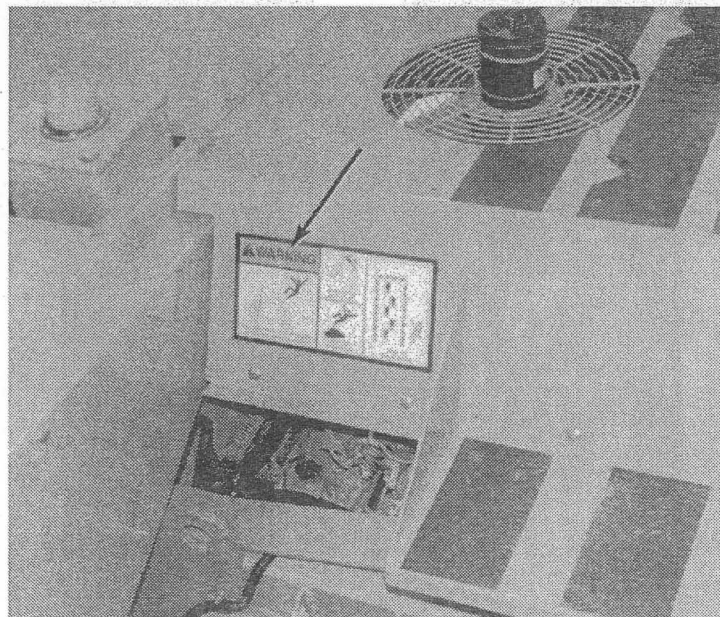
Safety Decals



N-OM-5519-FE95

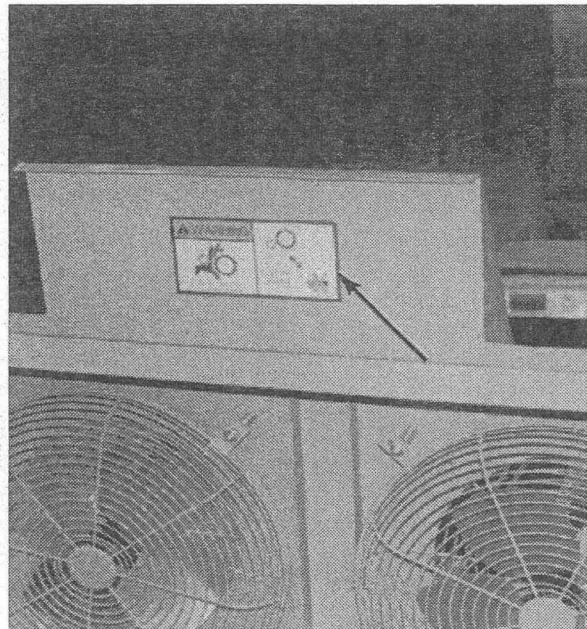
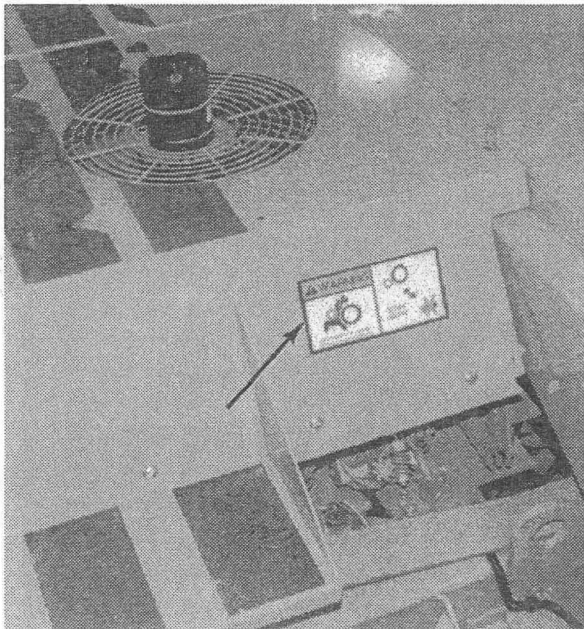
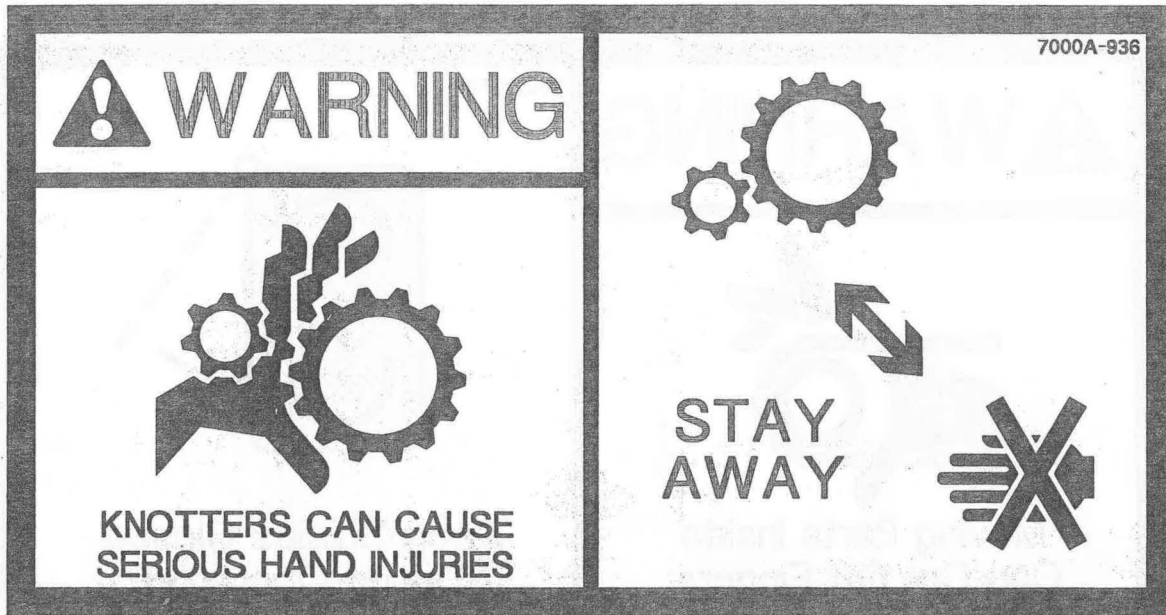
Safety Decals

7000A-920 ENH08043.D98



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Safety Decals



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Safety Decals

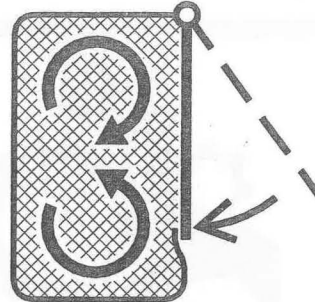
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WARNING

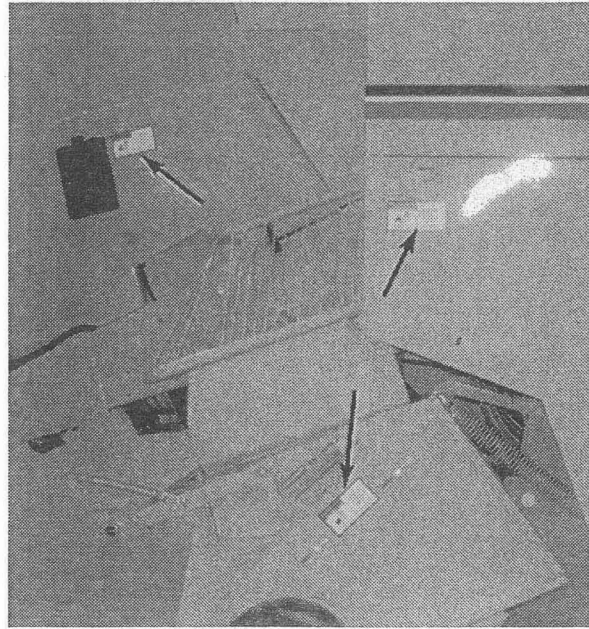
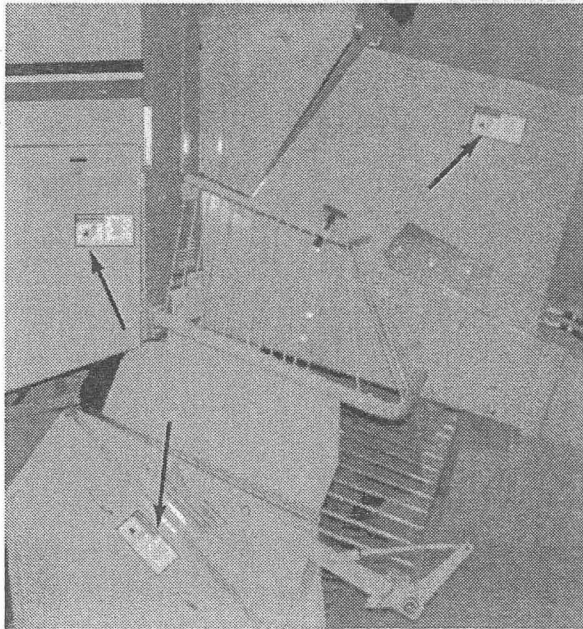


**Moving Parts Inside
Can Cut Off Fingers.**

7000A-896




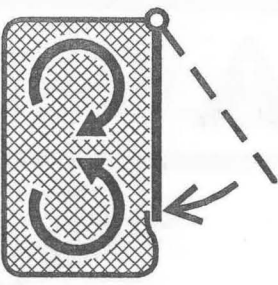


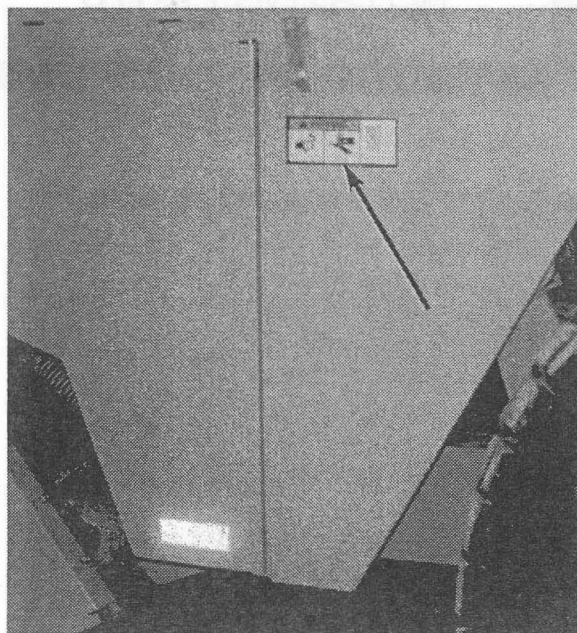
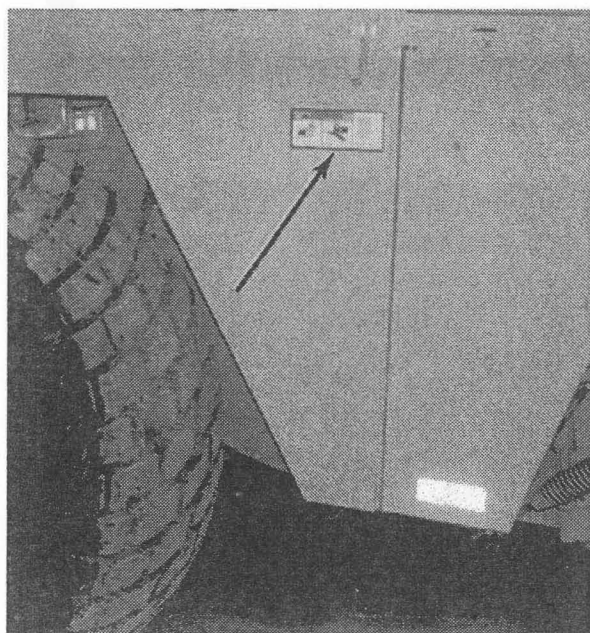
**Keep Shields Closed
During Operation.**



N-OM-5519-FE95

Safety Decals

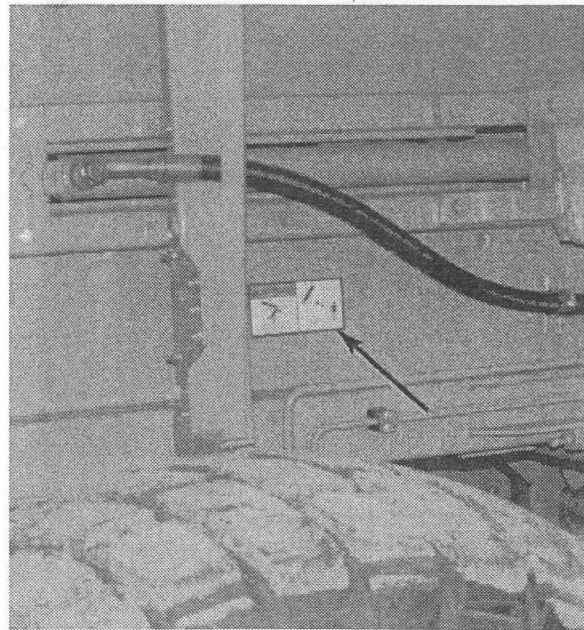
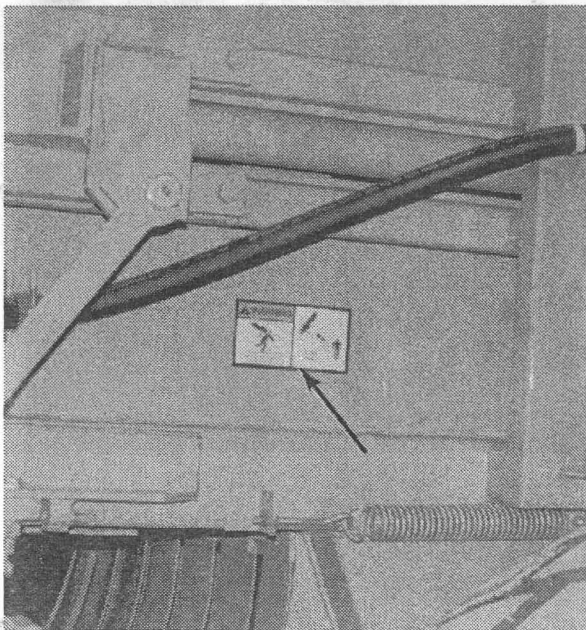
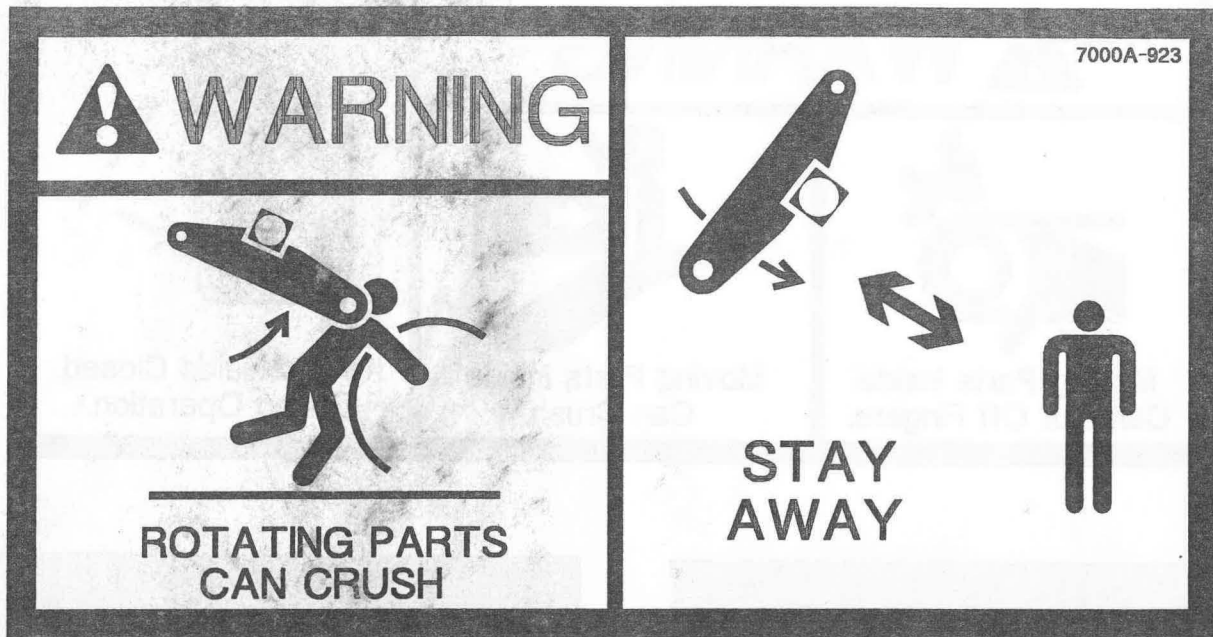
 WARNING		
 <p>Moving Parts Inside Can Cut Off Fingers.</p>	 <p>Moving Parts Inside Can Crush.</p>	<p>7000A-933</p>  <p>Keep Shields Closed During Operation.</p>



N-OM-5519-FE95

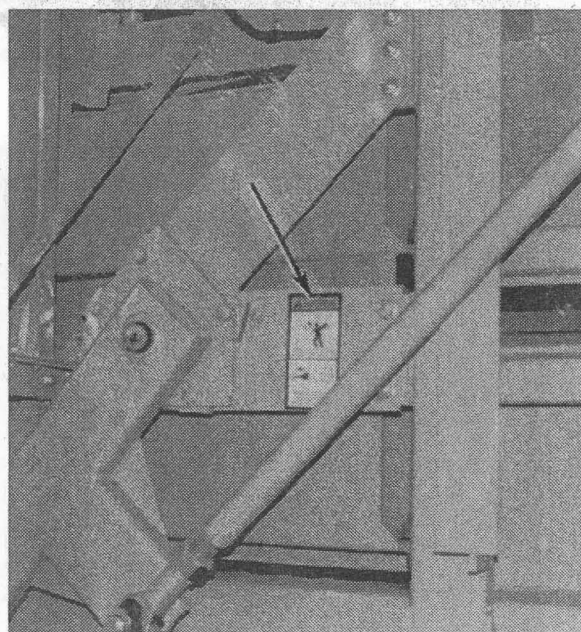
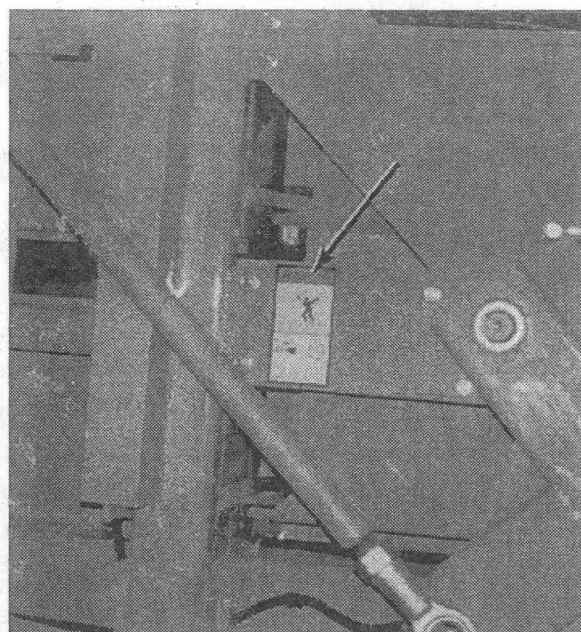
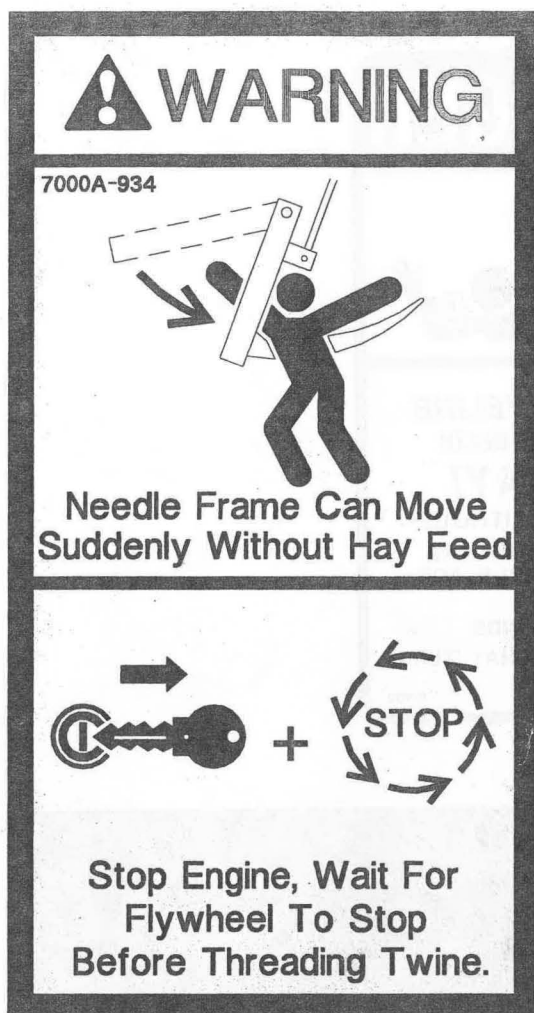
Safety Decals

7000A-923 ENH08050.D98 ENH08051.D98



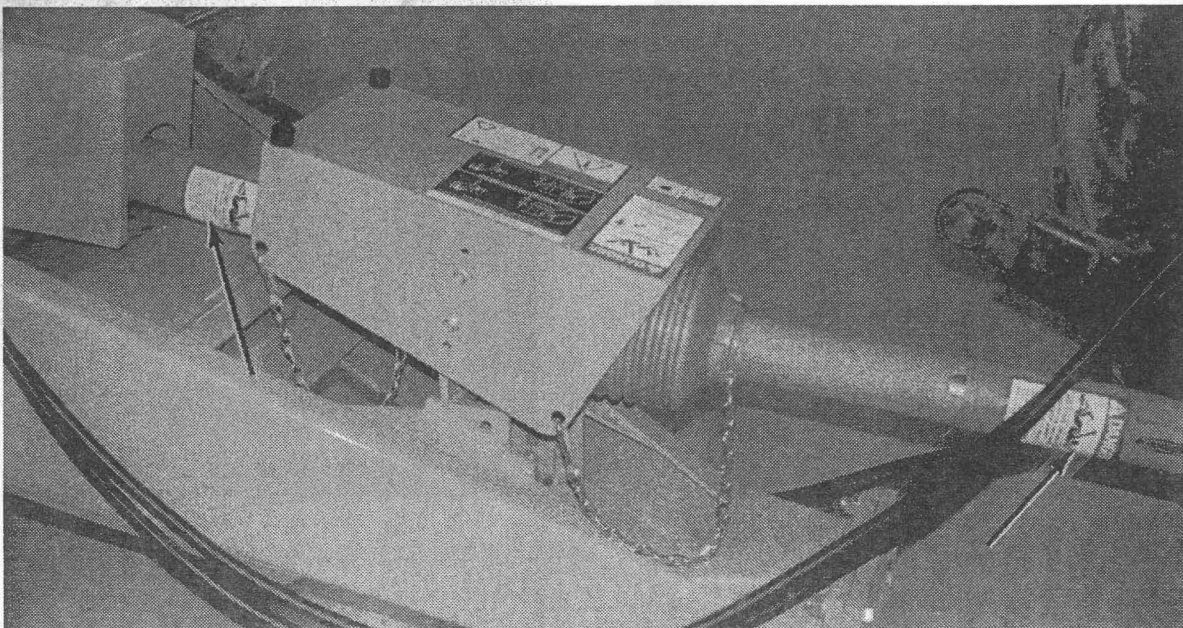
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Safety Decals



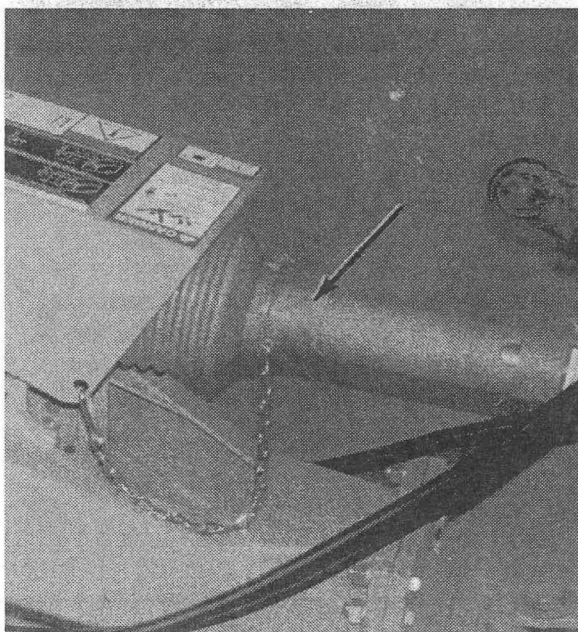
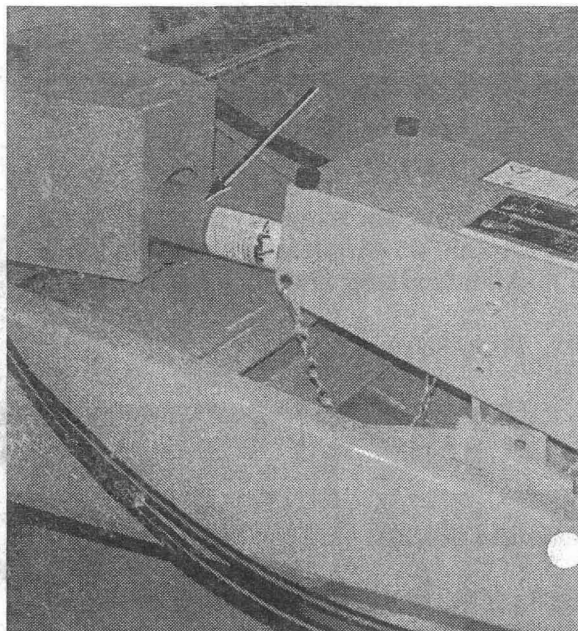
N-OM-5519-FE95

Safety Decals



N-OM-5519-FE95

Safety Decals



NOTE: Decal Located Under Shielding

EN-OM-1006-FE93

Preparing the Crop to Bale

CONVENTIONAL BALING

Crop Preparation

- General Crops:

Condition crop to ensure a uniform moisture content between leaves and stems. This promotes faster and more even drying.
- Corn Stalks:

Chop corn stalks to ensure better density of bales and easier bale formation.

Moisture Content

Baling at the proper moisture content helps in forming firm and well shaped bales, and preserves feed quality. Crop, weather condition, and storage method all affect what the optimum moisture content should be. Generally, crops should not be baled until the moisture content has dropped to 18%.

Crop that is too wet will result in operating difficulties and spoilage during storage.

Crop that is too dry will result in excessive leaf loss and poorly packed bales. In alfalfa, for example, 70% of the protein is in the leaves; significant leaf loss will yield poor forage.

EN10853.D98

Windrow Preparation

- The optimum windrow width is 4' (1.2 m).
- Windrows that are narrower than 3' (0.9 m) may result in inconsistent width bales.

If windrows cannot be combined and made wider, weave the tractor and baler slightly across the windrow to distribute crop in the bale chamber.

SILAGE BALING

Silage baling is when forage is baled at 50 - 75% moisture and wrapped in an airtight, plastic covering.

If interested in silage baling, obtain a copy of *Baled Haylage Using the 1592 Big Baler* from your Freeman dealer.

EN10854.D98

Preparing the Equipment

PREPARE TRACTOR

Tractor Requirements

- Minimum PTO horsepower . . 140 (104 kW)

Steep terrain or soft ground conditions may require a tractor of greater horsepower.

- PTO:
Type II 1000 rpm, 1-3/8" (35mm)
Type III 1000 rpm, 1-3/4" (45mm)

- Electrical:

12 volt power supplied through ASAE 7-pin connector outlet (for transport lights).

- Hydraulic system:
System type open or closed center
Maximum pressure 2900 psi (197 bar)

- Hydraulic outlets one set (pickup lift)

- Refer to the Tractor Operator's Manual for controls locations and operation instructions.

- An upright exhaust system.

- Minimum drawbar vertical load capacity 3,300 lb (1,500 kg)

- Minimum gross weight 15,000 lbs (6,810 kg)



WARNING: Loss of steering or braking control can cause death or serious injury. Use a tractor that is large enough for sufficient steering and braking control.

The Freeman 1592 baler, with a bale in the chamber, weighs approximately 22,500 lbs (10,200 kg):

- Do not tow faster than 20 mph (32 km/h).
- Do not tow with a tractor that weighs less than 15,000 lbs (6,810 kg).

Carry Fire Extinguisher

A 2½ gal (9.5 liter) pressurized water fire extinguisher is recommended to be carried on the tractor.

Adjust Tractor Wheels

Adjust tractor wheels as wide as possible to increase stability, and to avoid running over the windrow. The optimum windrow width for the baler is 4' (1.2 m).

ATTACH BALER TO TRACTOR

NL02827.D98



WARNING: Disengage PTO, shut off tractor engine, and set parking brake, when attaching baler to tractor.

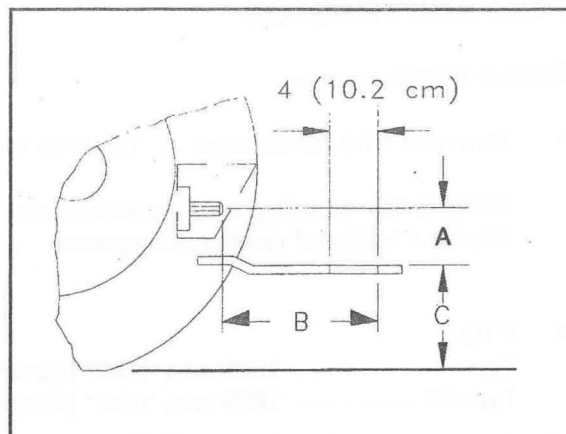


WARNING: Use only 1000 rpm power take off.

Adjust Tractor Drawbar

Adjust drawbar per ASAE standards for the type of 1000 rpm PTO on the tractor:

- Type II: 1-3/8" (35 mm) diameter, 21 spline.
- Type III: 1-3/4" (45 mm) diameter, 20 spline.



Drawbar Adjustment

Dim.	TYPE II PTO	TYPE III PTO
A	8.0 - 12.6" (20.3 - 32.0 cm)	8.7 - 13.8" (22.1 - 35.1 cm)
B	15.75" (40.0 cm)	19.7" (50.0 cm)
C	13.0 - 19.7" (33.0 - 50.0 cm)	15.0 - 22.0" (38.1 - 55.9 cm)

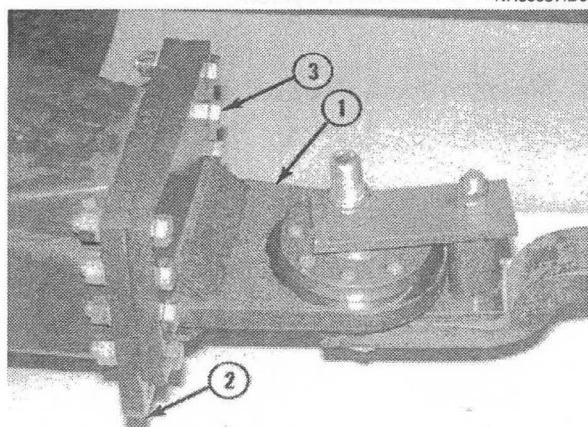
EN10856.D98

Install / Adjust Baler Hitch

NH08057.D98

Install or adjust hitch (1) so point (2) is 16-18" (41-46 cm) above the ground when baler is hitched to tractor. After adjusting, ensure eight 5/8" x 2-1/2" bolts (3) are properly torqued.

NOTE: The hitch can be moved up or down, or turned over to achieve proper height.



EN10857.D98

Preparing the Equipment

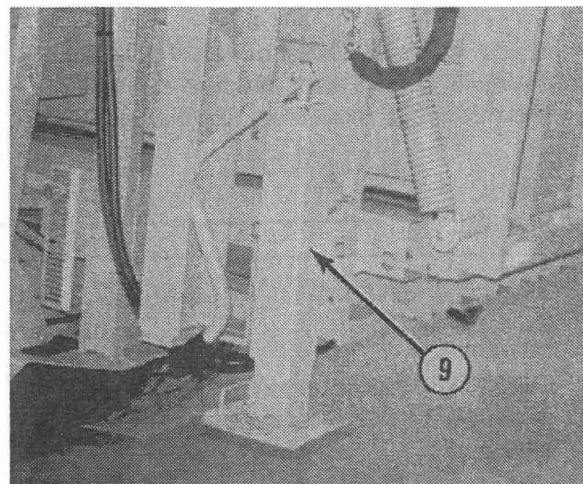
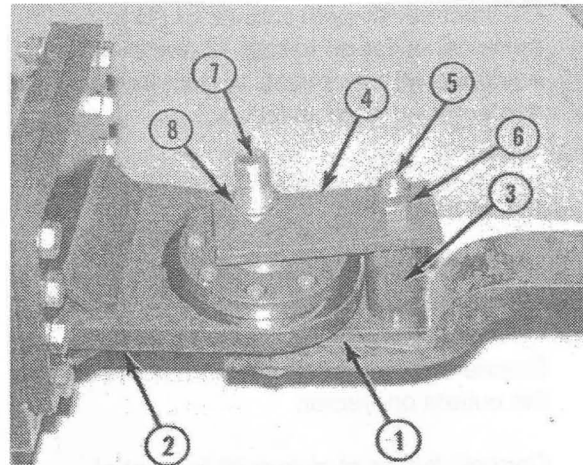
Hitch to Tractor Drawbar

NH08058.D98 NH08059.D98 NH08060.D98

IMPORTANT: To prevent damage to the baler tongue, fully raise the three-point lift and remove any quick-attach hitch.

1. Check that drawbar is equipped with an accessory hole 4" (10.2 cm) forward from drawbar pin hole. If not, contact tractor dealer.
2. Ensure drawbar is locked in center position.
3. Align hole in drawbar with hole in baler hitch.
4. Place plate (1) on top of drawbar. Lower hitch (2) until ball-joint rests on plate.
5. Install spacer (3) and plate (4) with 5/8" x 7-1/2" bolt (5) and double nuts (6).
6. Install 1-1/4" x 9-1/2" drawbar bolt (7) with washers and locknut (8).

NOTE: Install bolts (5) and (7) from below to prevent snagging and dragging of crop.

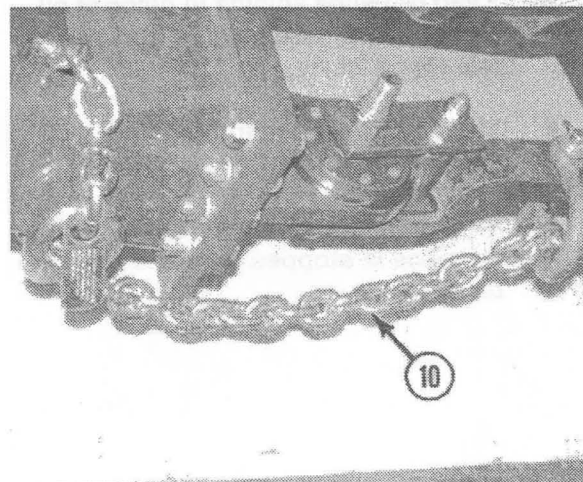


Remove Jack

Raise and remove jack from tongue. Stow at location (9).

Install Safety Chain

Connect safety chain (10) from baler, through support, and to drawbar structure as shown. Leave only enough slack for turning.

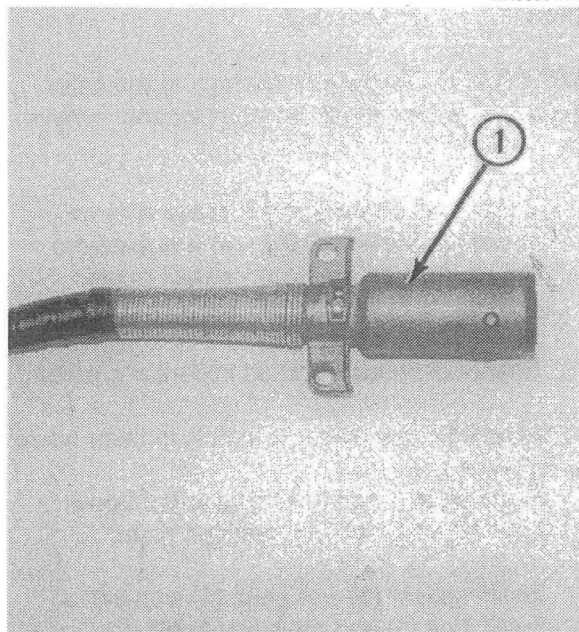


EN10858.D98

Connect Tail Lights

NH08061.D98

- Connect seven-pole connector (1) to electrical outlet on tractor. If tractor is not equipped with an outlet, contact tractor dealer for outlet installation.
- Amber lights are used for warning; red for rear marker lights.



Connect Hydraulic Hoses

- Ensure the style of couplers on hoses match the outlets on tractor.
- Connect hoses of pickup lift to a set of outlets on tractor.
- Switch hoses at tractor outlets if auxiliary hydraulic control lever direction does not match desired movement of pickup lift.

EN10859.D98

INSTALL / CONNECT IMPLEMENT INPUT DRIVELINE



DANGER: Entanglement in rotating driveline can cause death or serious injury.

- Keep driveline shields in place at all times. Make sure shields turn and telescope freely.
- Wear close fitting clothing and confine long hair.
- Stop engine and ensure the PTO driveline is stopped before working on driveline.

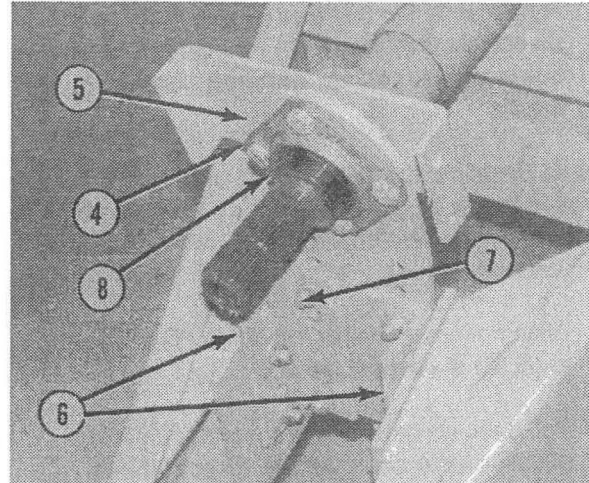
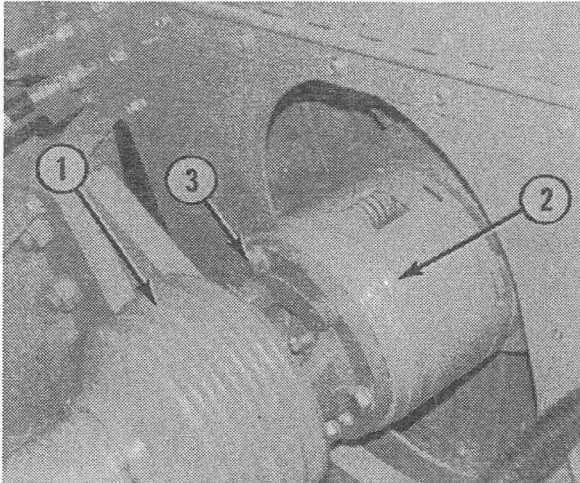


WARNING: Disengage PTO, shut off tractor engine, and set parking brake, when attaching implement input driveline to tractor.

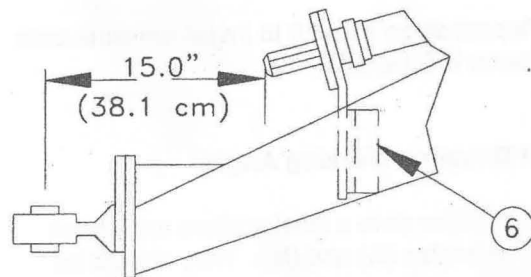
EN10860.D98

Install Rear Driveline

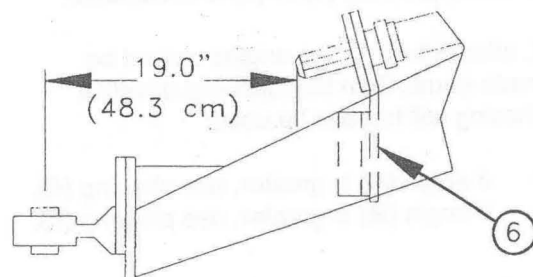
NH08062.D98 NH08063.D98 NL02828.D98 NL02829.D98



1. Attach rear driveline (1) to baler clutch (2) with six M12 x 25 bolts (3) and lock washers. Ensure mating surfaces are clean and free of paint.
2. Insert spline end through carrier bearing (4).
3. Assemble carrier bearing mount (5) and brackets (6) per type of PTO used.
 - Flanges of brackets (6) point rearward for type II PTO; forward for type III PTO.
 - Use eight ½ x 1-1/2 bolts (7), lock washers, and nuts; finger tighten only.
4. Install lock collar (8) onto carrier bearing (4); **finger tighten only.**



Type II PTO Rear Driveline Installation



Type III PTO Rear Driveline Installation

EN10861.D98

Preparing the Equipment

Install Front Driveline

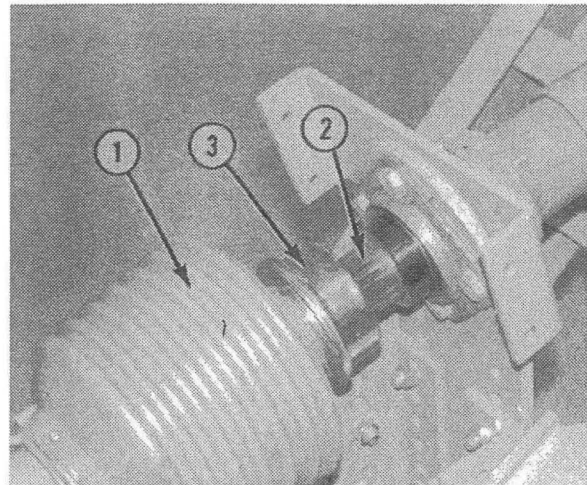
NH08064.D98 NL02830.D98 NL02831.D98



WARNING: Do not use a type III driveline on a type II PTO shaft. The driveline can come off and cause damage and serious injury.

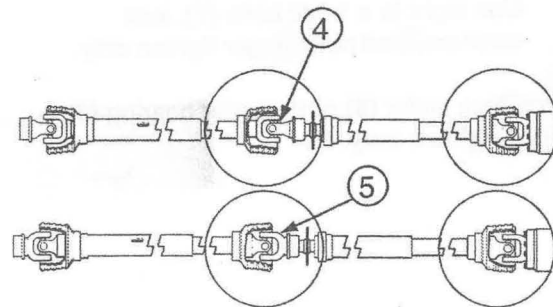
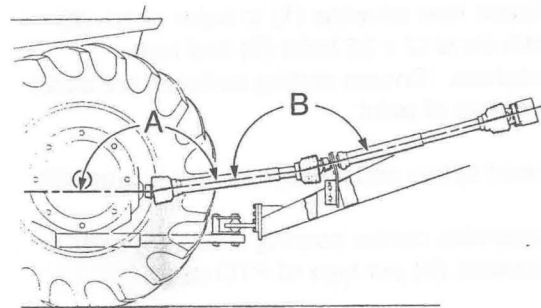
NOTE: Install the correct ends of the front driveline to the baler and tractor as indicated by diagram on driveline shield. Initially install as per driveline phasing (4).

1. Align splines and start driveline (1) onto shaft (2) at carrier bearing.
2. Pull back on collar (3) and continue sliding driveline onto shaft until collar snaps into locked position. Pull back on driveline to ensure it is properly connected.
3. Repeat steps 1 and 2 to install driveline onto tractor PTO shaft.



Adjust Driveline Working Angle

1. Pull tractor onto a level surface and check drive angles (A) and (B). They should be equal.
2. If the angles are not equal, adjust the carrier bearing vertically until they are as close as possible to being equal. Tighten bolts.
3. If, after adjusting, the angles are equal, then driveline phasing (4) or (5) is acceptable.
4. If, after adjusting, the angles cannot be made equal, then the following driveline phasing will have to be used:
 - If angle (A) is greater, use phasing (4).
 - If angle (B) is greater, use phasing (5).



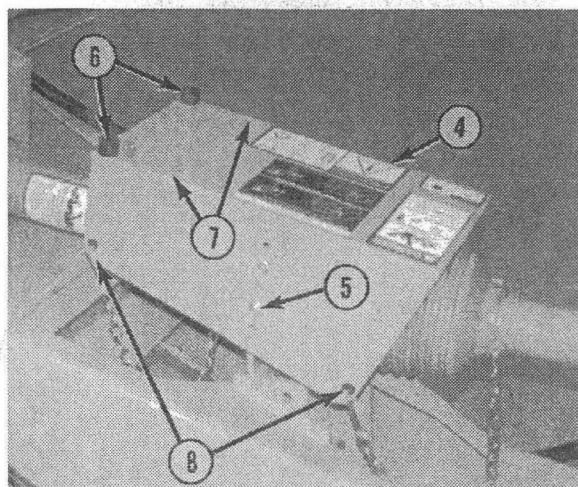
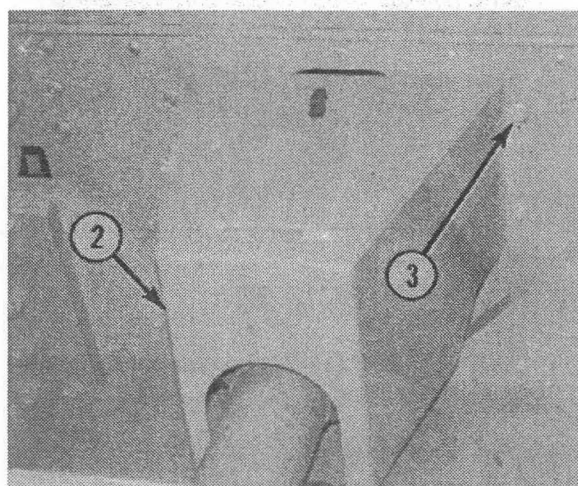
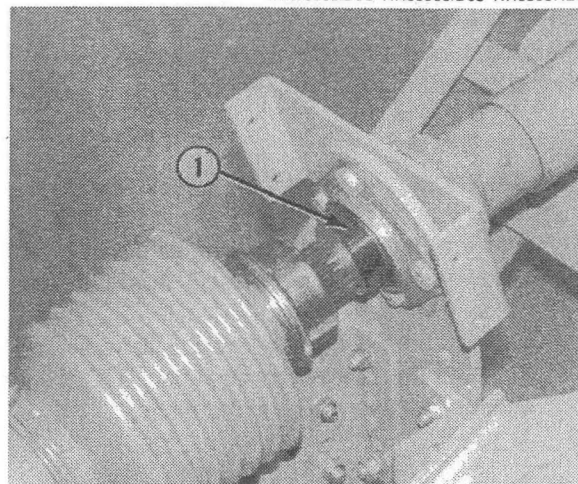
EN10862.D98

Preparing the Equipment

NH08065.D98 NH08066.D98 NH08067.D98

Complete Installation

1. Tighten carrier bearing lock collar (1).
 - Tighten by tapping a punch inserted into the hole of the collar. **Do not use set screw hole.**
 - Turn collar the same direction as the rotation of implement input driveline (clockwise when facing forward).
 - Complete by tightening set screw.
2. Install clutch shield (2) with four 5/16" x 3/4" flange head whiz bolts (3) and nuts.
3. Install carrier bearing shield (4) with four 5/16" x 3/4" flange head whiz bolts (5) and nuts.
4. Install bumpers (6) into rear holes as shown when equipped with a Type II driveline, or into front holes (7) when equipped with a Type III driveline.
5. Attach driveline shield chains (8) to shield (4) and to tractor frame.



Preparing the Equipment

Inspect Driveline Installation

IMPORTANT: To prevent damage, the implement input driveline must operate unobstructed.

With the tractor and baler on a level surface:

- Confirm that the working angles of the drivelines have been correctly adjusted.
- Ensure there is no interference between the driveline and the tractor drawbar, PTO shields, or baler tongue and hitch.
- Pull the baler and turn right and left until the rear tractor tires almost touch the tongue.
- ♦ Ensure the driveline does not bind, or interfere with the tongue and hitch.
- ♦ Amount of vibration should not be excessive.

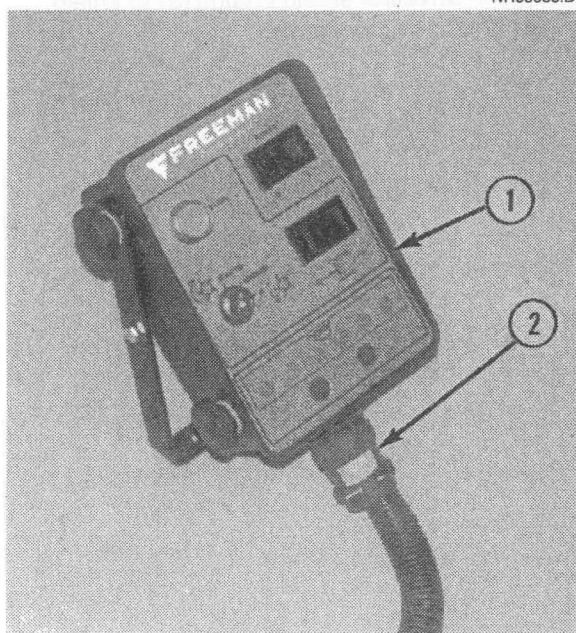
EN10864.D98

INSTALL CONTROLLER

1. Mount controller **(1)** at a convenient location near the operator.

NOTE: Check for mounting hardware clearance before drilling any holes.

2. Route wire harness **(2)** from baler, to tractor, and into bottom of controller.



NH08068.D98

EN10865.D98

Preparing the Equipment

POSITION TWINE NEEDLES

NH08069.D98 NH08070.D98



WARNING: Use of the *Diagnostic Controller* is limited to diagnosing particular baler setup operations and malfunctions. Any use other than those for which it is intended can lead to death or serious injury.

If the twine needle yoke (1) is not in its home position as shown, perform the following:

1. Follow *Diagnostic Procedure* in "Shutdown Procedure" section.
2. Set *Function Selector* (2) to KNOTTER.

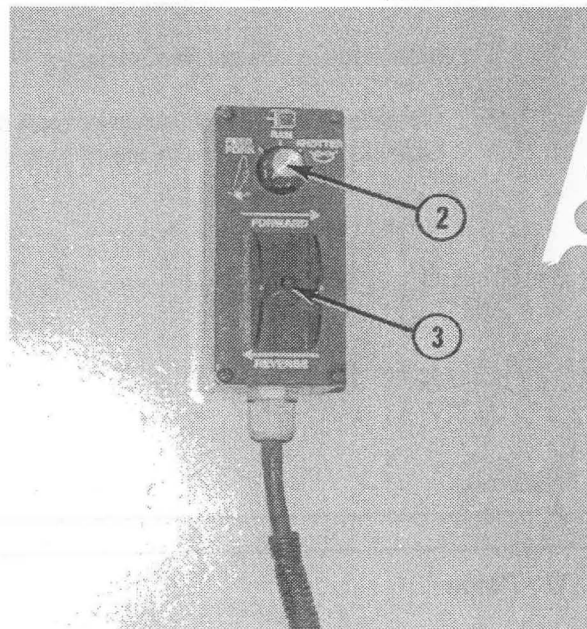
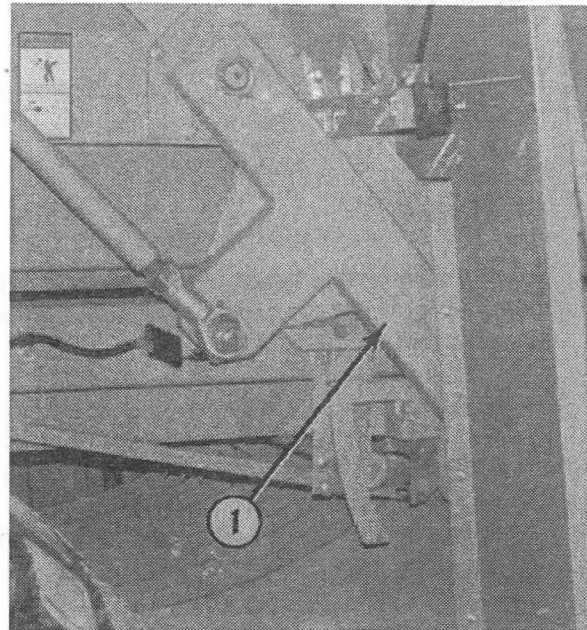


WARNING: Maintain a safe distance from moving components when operating the baler with the *Diagnostic Controller*.

3. Open side panel of baler to view yoke movement.
4. Push and hold the *Forward / Reverse Switch* (3) to FORWARD and cycle the knotter until the twine needle yoke has returned home.

NOTE: Release *Forward / Reverse Switch* when twine needle yoke has fully returned home - it will not stop automatically.

5. Remove *Diagnostic Controller* and return controls to original settings (refer to *Diagnostic Procedure*).
6. Follow *Normal Shutdown Procedure*.



EN10866.D98

Preparing the Equipment

INSTALL TWINE

NH08071.D98

Select Twine

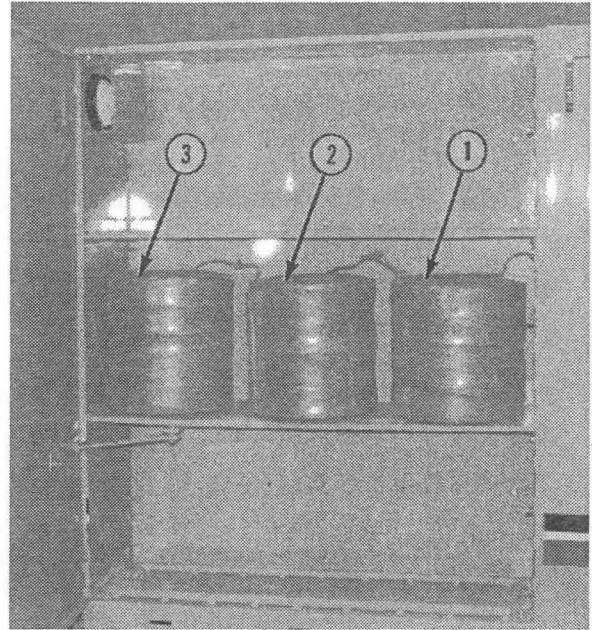
Material polypropylene
Minimum knot strength 350 lbs (160 kg)

Load Twine

There are two twine boxes - each holding up to nine balls of twine - located behind doors on each side of baler.

To load:

1. Place twine balls into each twine box with the end marked "TOP" pointed up. **A minimum of three balls must be installed on each side.**
2. Pull twine out of the middle of the top end of each ball.
3. Tie twine ends in correct sequence:
 - Outside of balls (1) to inside of balls (2).
 - Outside of balls (2) to inside of balls (3).

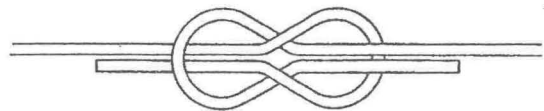


EN10867.D98

Tie Twine

N-L-0267-MR93

- Use a square knot.
- Trim loose ends.
- Knot must be tight and small enough to pass through twine guides and tubes.



EN09237.D97

Preparing the Equipment

Route Twine



WARNING: Follow Shutdown Procedure before routing twine. Contact with any moving components can cause death or serious injury.

NOTE: There are three individual twines to be routed on each side of baler. When routing through guides, do not cross twines.

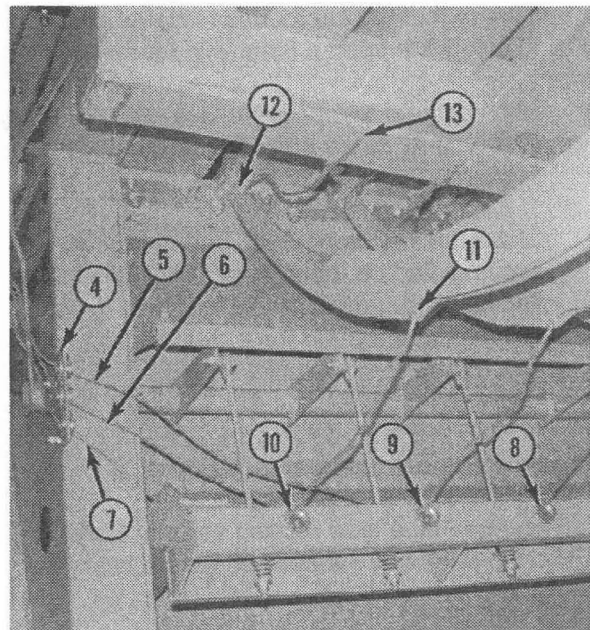
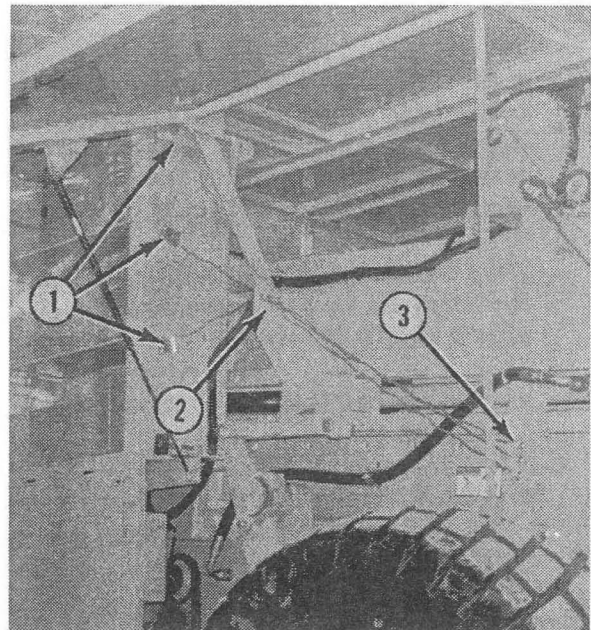
1. Pull twines from the middle of the three rear most twine balls and out through guides (1).
2. Route twines through guides (2), (3), and (4).
3. Route twines through twine tensioner from front to back:
 - Twine (5) to location (8).
 - Twine (6) to location (9).
 - Twine (7) to location (10).

IMPORTANT: Twines must be routed **over** the tension plate located inside tensioner. A small tool with a hook on the end will aid in threading twine through tensioner.

4. With twine needles retracted, route each twine through its associated needle.
 - Route over roller (11).
 - Exit through "eye" (12).
5. Tie each twine individually to the baler cross member (13), directly above its associated needle.
6. Repeat for other side.

NOTE: Twines will be initialized in the knotters while baling the first two bales. Refer to *Tying Off Bale* in "Baling" section for instructions.

NH08072.D98 NH08073.D98



EN10868.D98

Preparing the Equipment

Towing the Baler

PREPARE FOR TOWING

NH08074.D98



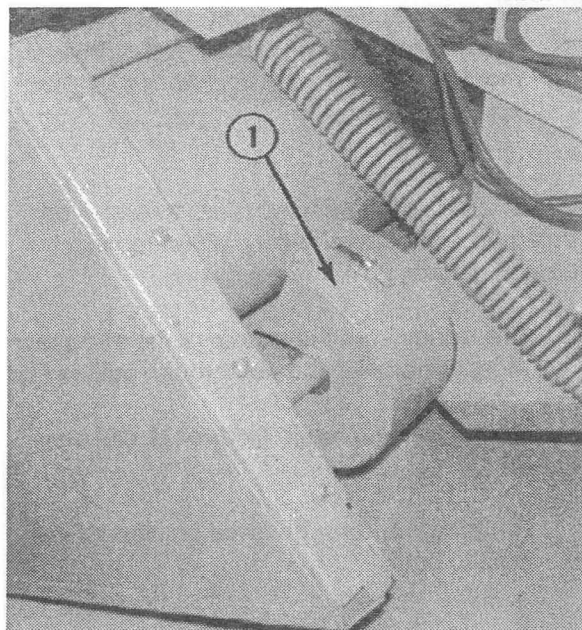
WARNING: Loss of steering or braking control can cause death or serious injury. Use a tractor that is large enough for sufficient steering and braking control.

The Freeman 1592 baler, with a bale in the chamber, weighs approximately 22,500 lbs (10,200 kg):

- Do not tow faster than 20 mph (32 km/h).
- Do not tow with a tractor that weighs less than 15,000 lbs (6,810 kg).

To prepare for towing:

- Ensure that the tractor used is large enough to safely transport a baler without brakes.
- Hitch baler to tractor (refer to *Attach Baler to Tractor* in "Preparing the Equipment" section).
- Clean out any crop, chaff, or dirt that has accumulated on the pickup. Open shield (1) and clean out any material that has accumulated around the pickup clutch.
- Raise pickup.
- Raise and secure discharge ramp.
- Ensure that a slow moving vehicle (SMV) sign is properly installed on rear of baler and is in good condition.



EN10869.D98

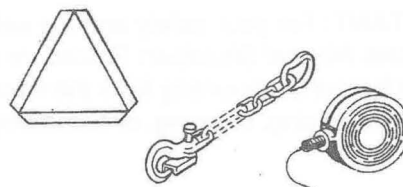
Towing the Baler

TOWING

N-L-0278-MR93



WARNING: Obey all applicable laws regarding the use of lights, a slow moving vehicle sign, safety chain, and other possible requirements concerning road use. Use good judgement and drive carefully.



WARNING: Falling from baler or tractor can cause serious injury. Riders are not allowed on the baler. The tractor operator is the only person to be riding the tractor.

EN10870.D98

Towing the Baler

Shutdown Procedure

NORMAL SHUTDOWN PROCEDURE

IMPORTANT: For your safety and the safety of others, this *Normal Shutdown Procedure* must be followed before dismounting from the tractor for repairing, servicing, cleaning, or lubricating the baler.

A variation of this *Normal Shutdown Procedure* may be used if so instructed within this manual, or the tractor manual, or if an emergency requires it.

IMPORTANT: To diagnose a baler malfunction, follow the *Diagnostic Procedure*.

Normal Shutdown Procedure:

1. Disengage power-take-off (PTO).
2. Set tractor park brake.
3. Shut off baler controller.
4. Shut off tractor engine and remove key.



WARNING: Baler components can move if the flywheel is still turning - causing death or serious injury. Flywheel coastdown time can be up to 1 minute if shutdown at idle PTO speed, or 1½ minutes if shutdown at 1000 PTO rpm. Wait for flywheel to stop before working on or near the baler.

5. Wait for baler flywheel to stop.

EN10871.D98

DIAGNOSTIC PROCEDURE

NH08075.D98

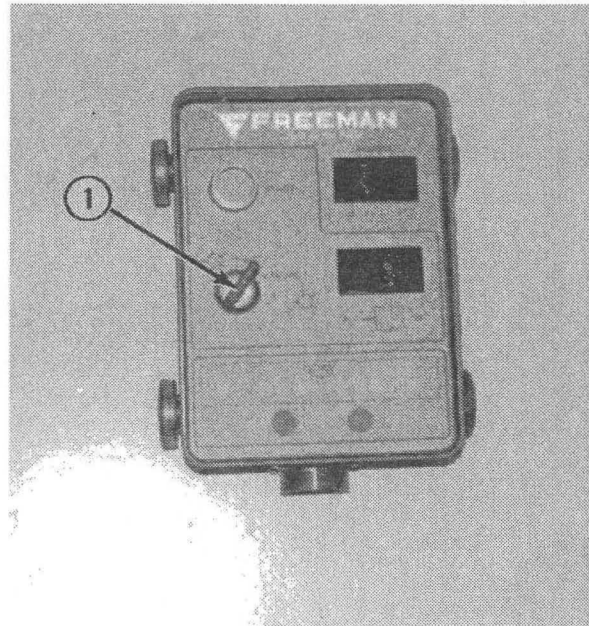


WARNING: Use of the *Diagnostic Controller* is limited to diagnosing particular baler setup operations and malfunctions. Any use other than those for which it is intended can lead to death or serious injury.

IMPORTANT: After diagnosing a baler malfunction, follow the *Normal Shutdown Procedure* before making repairs or adjustments.

To diagnose baler:

1. Engage tractor park brake.
2. Idle engine.
3. Switch *Baler Control* (1) to MANUAL and remove controller key.



EN10872.D98

Shutdown Procedure

4. Insert controller key into *Baler Mode Selector (2)* and switch to DIAGNOSTIC MODE.

NH08076.D98 NH08077.D98

5. Connect *Diagnostic Controller* to *Control Panel* at connection (3).

6. Set *Function Selector (4)* on *Diagnostic Controller* to desired function (refer to "Preparing the Equipment" and "Baling" sections for operation instructions):

- FEED FORK
- RAM (plunger)
- KNOTTER



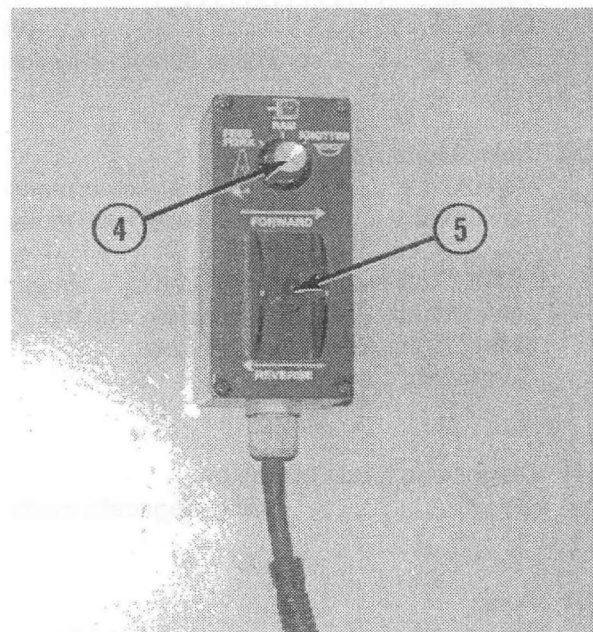
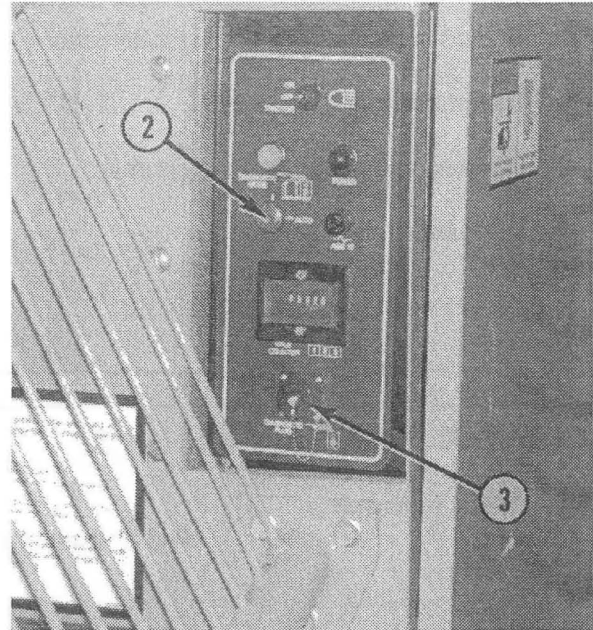
WARNING: Maintain a safe distance from moving components when operating the baler with the *Diagnostic Controller*.

7. Push and hold *Forward / Reverse Switch (5)* to either FORWARD or REVERSE to cycle function.



WARNING: When baler diagnosis is complete, follow the *Normal Shutdown Procedure* before correcting the problem.

8. Disconnect *Diagnostic Controller* from *Control Panel* and stow in rear toolbox of baler.
9. Return *Baler Mode Selector (2)* to AUTO MODE and remove controller key. Return to tractor and follow *Normal Shutdown Procedure*, or resume baling.



EN10873.D98

Shutdown Procedure

Controls and Adjustments

This section contains the following information:

- Use of controls.
- Operational adjustment procedures.
- Initial adjustment settings.

Refer to "Baling" section for instructions on the use of controls during various baler operations, and for specific adjustment settings for a particular crop, condition, or application.

EN10874.D98

CONTROL PANEL

- (1) **Power Indicator**
On electric power on

- (2) **Lights**
Up on
Center off
Down controlled by tractor switch

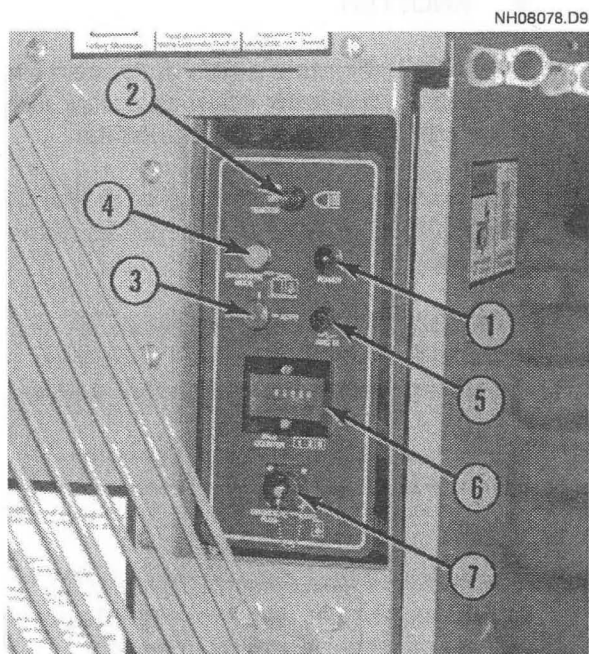
- (3) **Baler Mode Selector**
Vertical diagnostic mode
Horizontal automatic mode

NOTE: This selector is operated by a single controller key used in conjunction with the *Baler Control* located on the *Baler Controller*.

- (4) **Diagnostic Mode Indicator**
On using diagnostic mode

- (5) **Fuse**
Rating 10 amp

- (6) **Bale Counter**
Records number of bales. Push button to reset.



- (7) **Diagnostic Controller Connection**

Diagnosing baler problems can be aided by the use of the *Diagnostic Controller*. Refer to *Diagnostic Procedure* in "Shutdown Procedure" section for instructions on its use.

NH08078.D98

BALER CONTROLLER

NH08079.D98

(1) Power Switch

Right on
Left off

(2) Start Switch

Push start baler operation

For baler operation to start, controls must be set as follows:

- Tractor PTO engaged
- *Power Switch* to ON
- *Baler Control* to FORWARD / AUTO

(3) Baler Control

Vertical forward / automatic
Angled manual (diagnostic)
Horizontal and hold reverse feeder

NOTE: This control is operated by a single controller key used in conjunction with the *Baler Mode Selector* located on the *Control Panel*.

(4) Manual Plunger Control

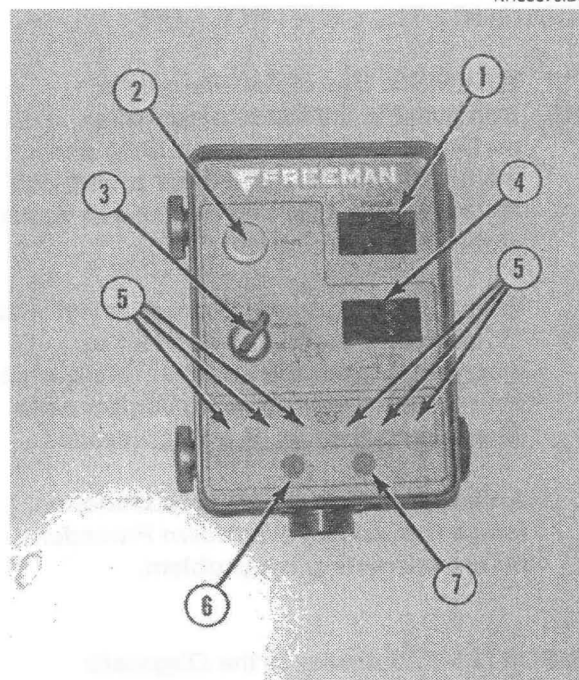
Right and hold extend
Left and hold retract

Baler Control must be set to MANUAL.

(5) Knotter Operation Indicators

Illuminate when knotters are operating and should go out after two or three additional strokes of the plunger. If an indicator remains on, a mistie has occurred on the indicated twine string, and must be corrected (refer to *Tying Off Bale* in "Baling" section).

NOTE: Indicators correspond with knotters left to right.



(6) Automatic Shutdown Indicator

On shutdown mode

If the hydraulic fluid temperature reaches 220°F (104°C), or if its level in the tank becomes too low, baler operation will automatically stop. Replenish the fluid supply and/or allow it to cool before resuming baling.

(7) Alternator Indicator

On not charging

EN10876.D98

DIAGNOSTIC CONTROLLER

NH08080.D98



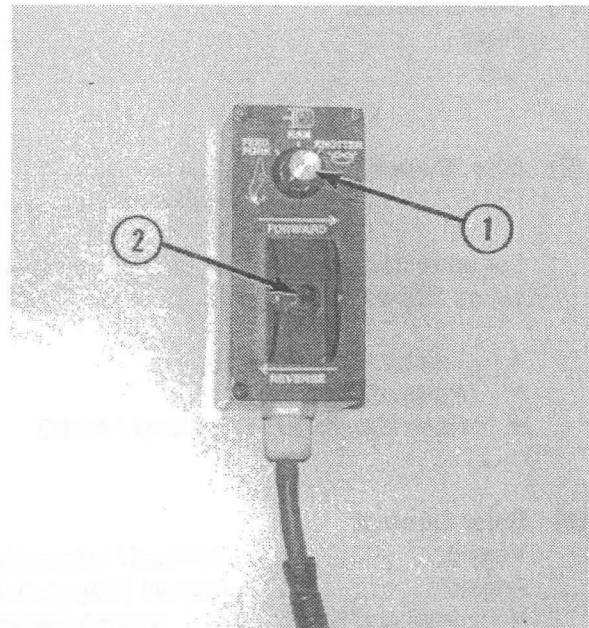
WARNING: Use of the *Diagnostic Controller* is limited to diagnosing particular baler setup operations and malfunctions. Any use other than those for which it is intended can lead to death or serious injury.

Follow the Diagnostic Procedure (refer to "Shutdown Procedure" section) to diagnose a baler malfunction. Maintain a safe distance from moving components when using the *Diagnostic Controller*.

After diagnosing the baler malfunction, follow the *Normal Shutdown Procedure* before correcting the problem.

IMPORTANT: Operation of the *Diagnostic Controller* requires:

1. Tractor PTO remain engaged and run at 500 (maximum) PTO rpm.
2. *Baler Control* on *Baler Controller* be turned to MANUAL, and the controller key removed.
3. The controller key be inserted into *Baler Mode Selector* on *Control Panel* and turned to DIAGNOSTIC MODE.
4. *Diagnostic Controller* plugged into *Control Panel*.



(1) Function Selector

Left feed fork
Center ram (plunger)
Right knotter

(2) Forward / Reverse Switch

Up and hold forward
Down and hold reverse

EN10877.D98

MONITORS

NH08081.D98

(1) Voltmeter

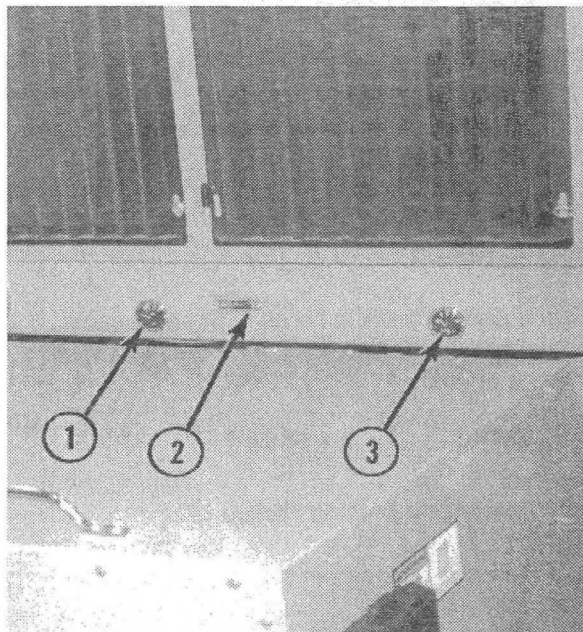
Normal 12.0 - 15.0 volts

(2) Hydraulic Fluid Filter Condition Indicator

Change filters when the yellow indicator reaches the red area on the indicator.

(3) Hydraulic Fluid Temperature Gauge

- Do not operate baler when fluid temperature is lower than 20°F (-7°C). If necessary to operate at low temperatures, contact a Freeman dealer.
- If hydraulic fluid temperature is 20° to 32°F (-7° to 0°C), warm the fluid up at 500 PTO rpm until it reaches 32°F (0°C). Then increase PTO speed to 1000 rpm.
- The baler will not operate if the fluid temperature goes above 220°F (104°C); it will automatically shut down. Cool by allowing the fans to run, and running the PTO at 500 rpm. Determine and correct the cause of overheating.



EN10878.D98

Controls and Adjustments

PICKUP

NH08082.D98

Pickup Lift

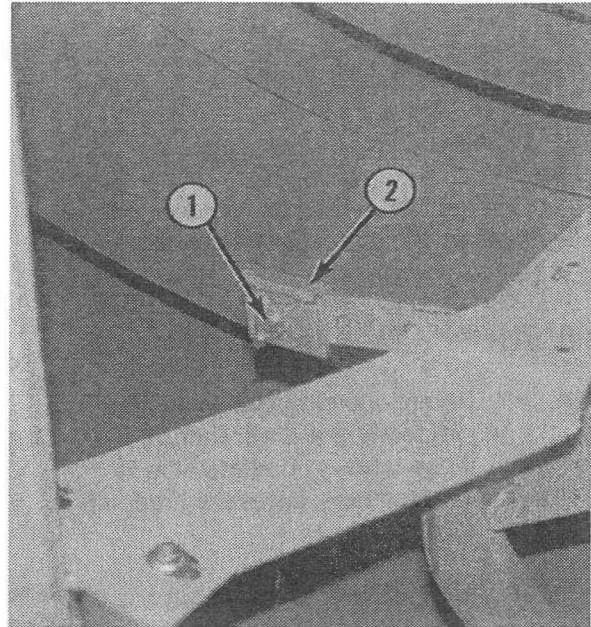
Operated by the auxiliary hydraulic control lever on the tractor.

Pickup Height

Adjust pickup teeth to be as high as possible above ground - normally 1" (2.5 cm) - without leaving any crop.

To adjust:

1. Raise pickup using *Pickup Lift*.
2. Remove locking pin (1).
3. Slide stop block (2) along bar to desired hole; insert locking pin.
 - Move toward pickup to increase pickup height; move away to decrease.
 - Stop block can be turned end-for-end for small adjustments.
4. Lower pickup before resuming operation.



EN10879.D98

Controls and Adjustments

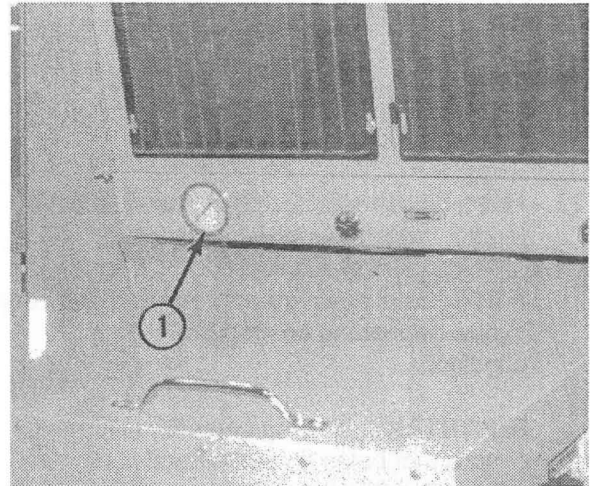
BALE DENSITY

NH08083.D98 NH08084.D98 NH08085.D98

(1) Plunger Pressure Gauge

Plunger pressure indicated on the gauge is relative to bale density. Normal pressure for most baling operations is 3,800 to 4,500 psi (260 to 310 bar).

NOTE: Actual pressure is shown when the plunger is almost at full extension. Note pressure before adjusting system.



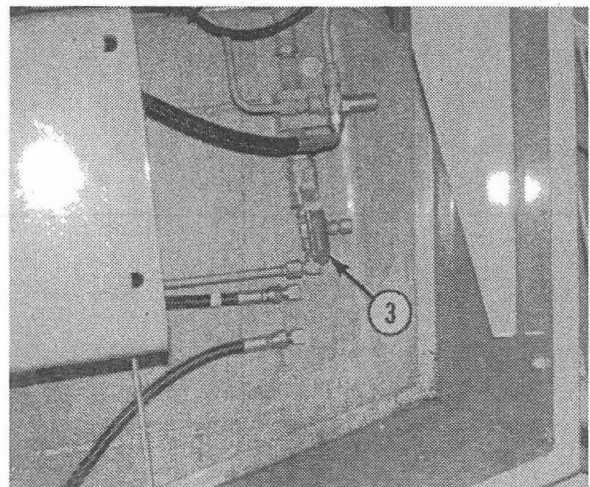
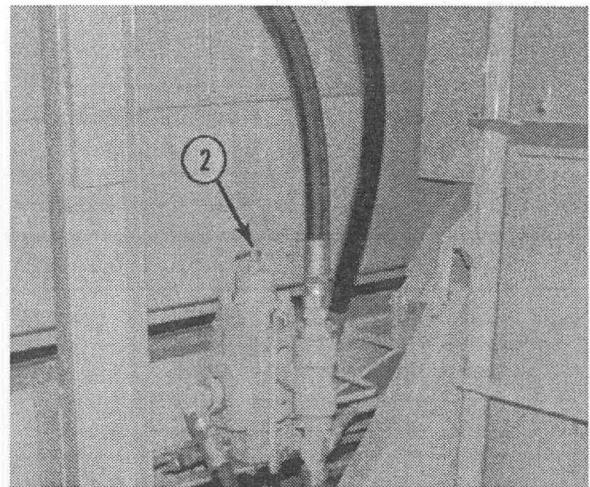
(2) Density Pressure Control

Clockwise increase
Counterclockwise decrease

(3) Density System Shutdown

Vertical open
Horizontal closed

Close the valve to shut off the bale density system when performing prolonged diagnosis to the baler or emptying the bale chamber (refer to *Emptying the Bale Chamber* in "Baling" section for instructions).



EN10880.D98

BALE LENGTH

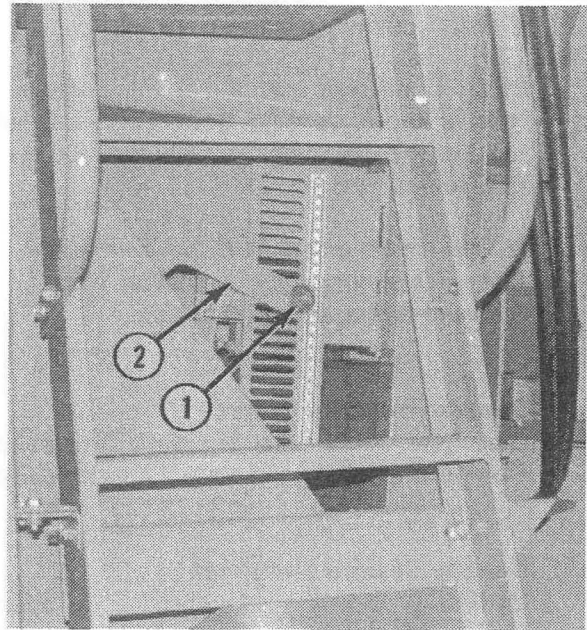
NH08086.D98

To adjust:

1. Pull out locking pin (1).
2. Raise adjustment bar (2) to increase bale length; lower to reduce.

NOTE: Bale sizes are approximate and vary in size depending on crop and baling conditions.

IMPORTANT: If sizing bales for shipment, ensure that bales do not exceed maximum shipping width. Bale lengths can vary 6" (15 cm) at any particular setting.



Adjustment Bar Setting	Approximate Bale Length	
	Feet	Meters
#1 - 5	3 - 4	0.9 - 1.2
#5 - 10	4 - 5	1.2 - 1.5
#10 - 15	5 - 7	1.5 - 2.1
#15 - 20	7 - 8	2.1 - 2.4
#20 - 23	8 - 9	2.4 - 2.7

Controls and Adjustments

DISCHARGE RAMP

NH08087.D98

Baler is equipped with either a slide or roller style discharge ramp.

Towing Position

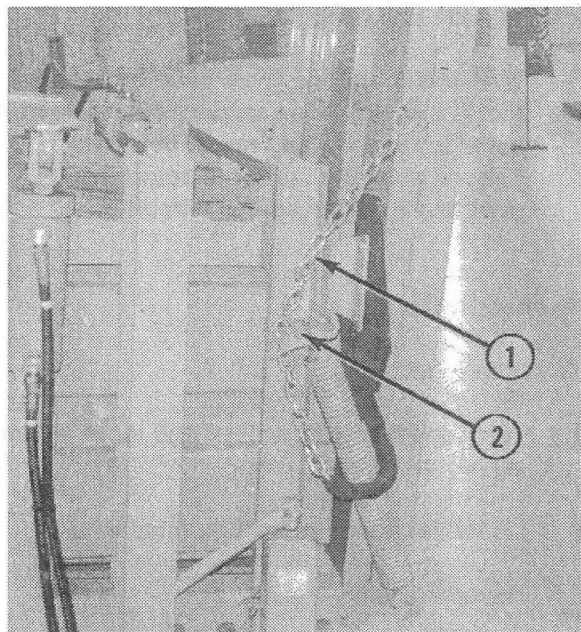
With no bale on chute, raise to full upright position. Lock by engaging chain (1) on both sides into hooks (2).

Baling Position



WARNING: Never stand under bale ramp when lowering; it can drop suddenly and cause serious injury.

Remove chain from lock hooks and lower chute.



EN10882.D98

TONGUE JACK

NH08088.D98



WARNING: Do not use the quick adjust pin when machine weight is on jack. The tongue can drop suddenly and cause serious injury.

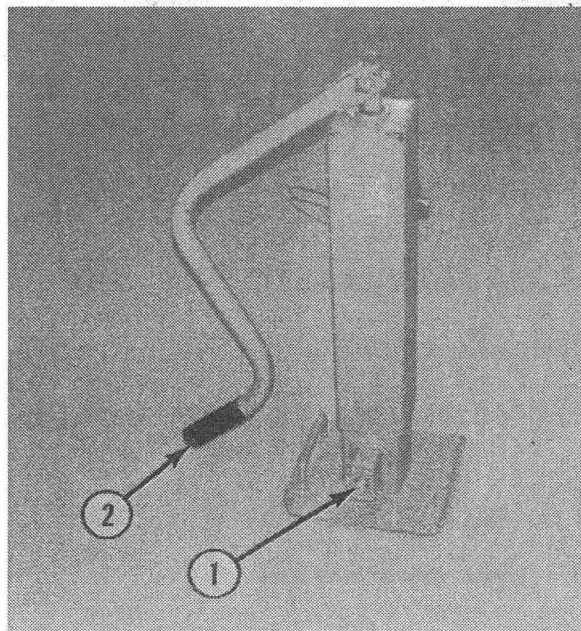
(1) Quick Adjust Pin

In jack foot locked
Out jack foot unlocked

Jack foot is spring loaded and will retract when unlocked.

(2) Handle

Clockwise extend jack
Counterclockwise retract jack



EN10883.D98

PORTABLE LADDER



WARNING: Falling from baler can cause serious injury. Use ladders supplied with baler to reach upper areas of baler. Ensure portable ladder is securely attached to baler before climbing.

Storage Position

To remove / stow:

1. Turn tab (1) until horizontal and move ladder slightly away from baler.
2. Lift ladder from bracket (2) on baler.
3. Reverse to stow ladder.

Twine Box Position

NOTE: Open twine box before installing ladder.

To install / remove:

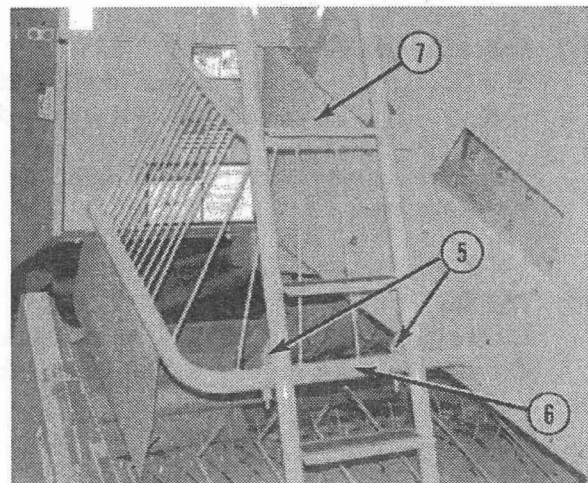
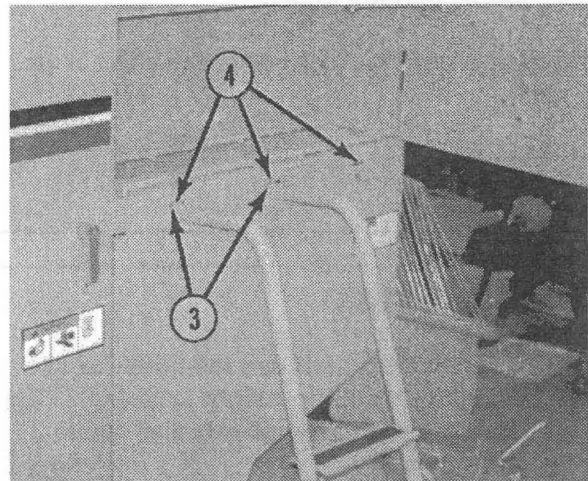
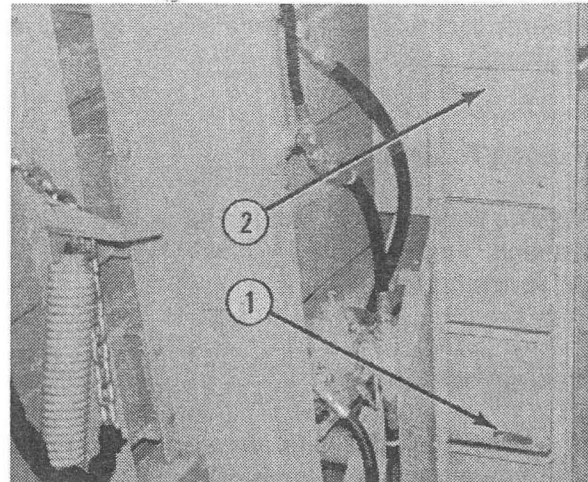
1. Engage tabs (3) at top of ladder into a pair of slots (4) just beneath the twine box.
2. Lower ladder to rest on ground.
3. Reverse to remove.

Front of Baler Position

To install / remove:

1. Rest ladder on pickup guard so hooks (5) will engage with lower bar (6) of guard.
2. Align tab (7) on guard with slot on ladder.
3. Lower ladder to attach.
4. Reverse to remove.

NH08089.D98 NH08090.D98 NH08091.D98



EN10884.D98

Controls and Adjustments

Baling

This section contains the following information:

- Baler theory of operation.
- Operation instructions and adjustment settings for using the baler in various crops, conditions, and applications.
- Unplugging procedures.

Refer to "Controls and Adjustments" section for controls familiarization, and baler adjustment procedures.

EN10885.D98



WARNING: Falling from baler or tractor can cause serious injury. Riders are not allowed on the baler. The tractor operator is the only person to be riding the tractor.



DANGER: Contact with baler or bales can cause death or serious injury. Keep all spectators and other workers away from baler and work area while in operation.



DANGER: Baler intake can pull you in, causing death or serious injury. Stay clear of pickup reel and feed intake area. Baler can take in crop faster than you can let go.

- NEVER feed crop in by hand.
- NEVER remove any material from baler intake while it is running.
- NEVER attempt to unplug baler by hand while it is running - use the reversing feature to unplug.
- ALWAYS disengage power take-off, shut off tractor engine, set park brake, remove key, and wait for flywheel to stop before working on the baler for any reason including: servicing, inspecting, or unplugging the baler by hand.



DANGER: Entanglement in rotating driveline can cause death or serious injury.

- Keep driveline shields in place at all times. Make sure shields turn and telescope freely.
- Wear close fitting clothing and confine long hair.
- Stop engine and ensure the PTO driveline is stopped before working on driveline.



DANGER: Contact with moving parts can cause death or serious injury.

- Keep away from power driven parts such as pickup reels, belts, rollers, chains, knotters, sprockets, crank arms, etc. Some components do not move continuously during operation, but intermittently start and stop.
- Wear close fitting clothing and confine long hair. Avoid wearing jewelry, such as rings, wrist watches, necklaces, or bracelets.
- Keep all shields and doors closed during operation.

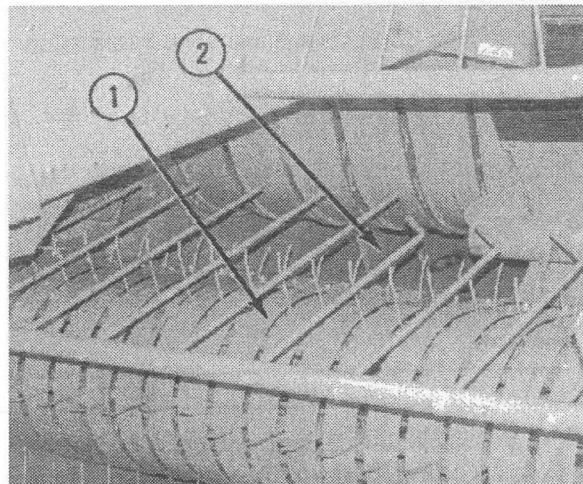
EN10886.D98

HOW THE BALER WORKS

NH08092.D98 NH08093.D98 NH08094.D98

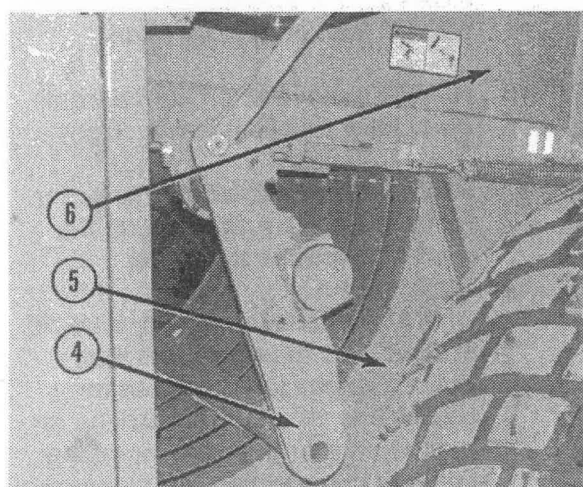
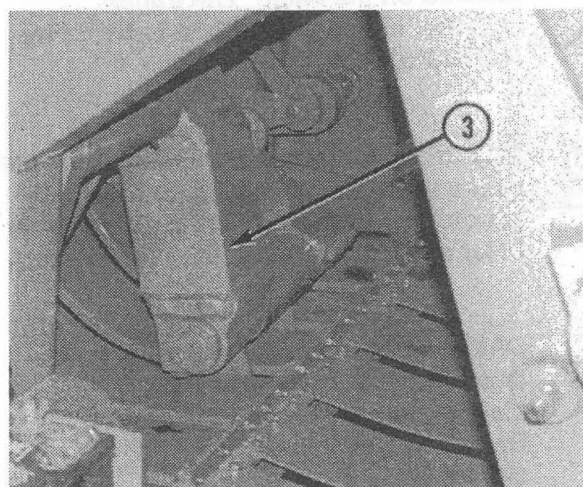
Pickup

1. Windrowed crop is picked up by pickup tines (1) and moved into the throat of the feed chute (2).



Accumulation

2. As material enters the feed chute, the continuously rotating feeder (3) pushes crop further into the feed chute for accumulation.
3. Feed fork (4) carries the accumulated material up feed chute (5) and into bale chamber (6).



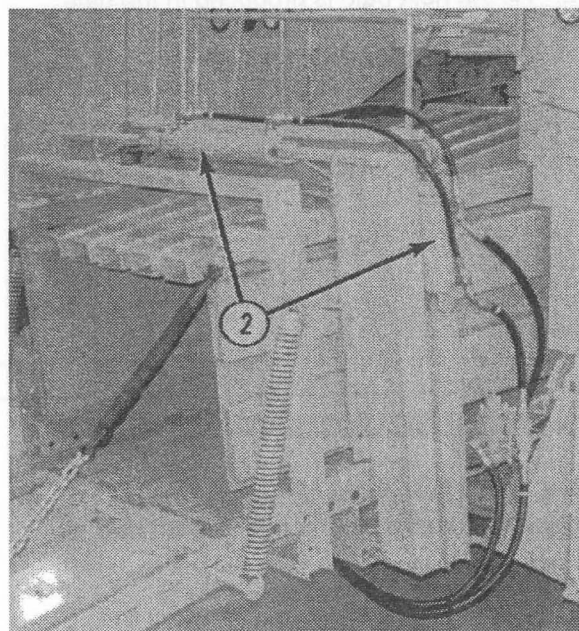
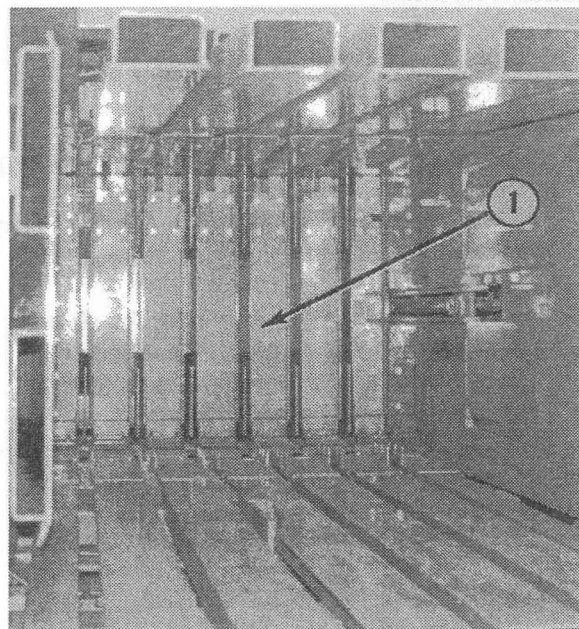
EN10887.D98

Baling

Compression

4. When an adequate amount of crop has entered bale chamber, the feed fork stops and holds the material up in chamber, while plunger (1) begins to extend and compress the crop.
5. As the plunger is applying pressure to the end of the forming bale, the density system (2) is applying pressure to top and sides of the bale through four hydraulic cylinders.
6. When the preset plunger pressure is reached, the density system reduces the pressure applied to the sides of the bale and the bale is allowed to move.
7. After the plunger fully extends, reverses, and is almost fully retracted, the feed fork loads another batch of material into the bale chamber. This cycle will continue until the preset bale length is reached.

NH08095.D98 NH08096.D98



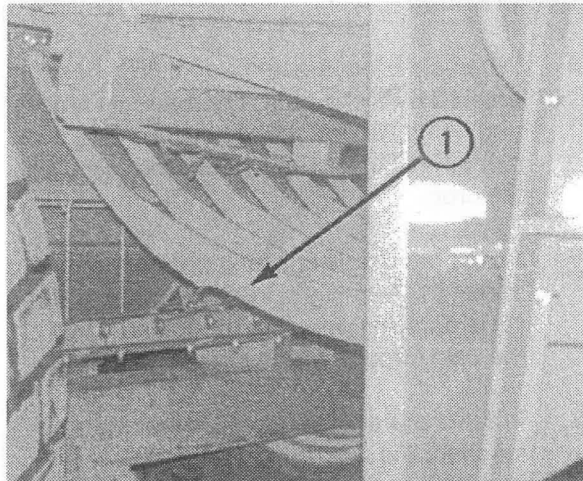
EN10888.D98

Baling

Knotting

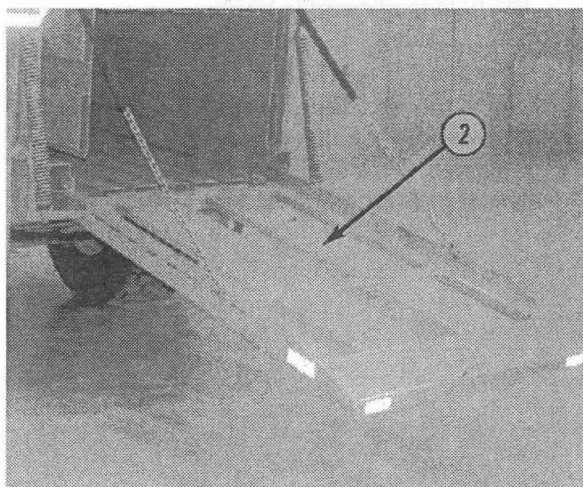
NH08097.D98 NH08098.D98

8. When the preset bale length is reached, the plunger will extend to compress the bale for the last time.
9. As the plunger begins to retract, the knotting cycle begins. The plunger will stop momentarily to allow the twine needles (1) to extend between the plunger and bale.
10. After the needles are extended, the plunger will finish retracting, and the feed fork will start to load another batch of material into the bale chamber.
11. The twine needles return to their home position, completing the knotting cycle.



Ejecting

12. As the next bale is produced in the bale chamber, the finished bale is pushed further back until it slides off discharge ramp (2).



EN10889.D98

PREPARE EQUIPMENT

IMPORTANT: Refer to "Preparing the Equipment" section for instructions on how to:

- Prepare tractor
- Attach baler to tractor
- Install and connect implement input driveline
- Install controller
- Select, install, and route twine

EN10890.D98

Baling

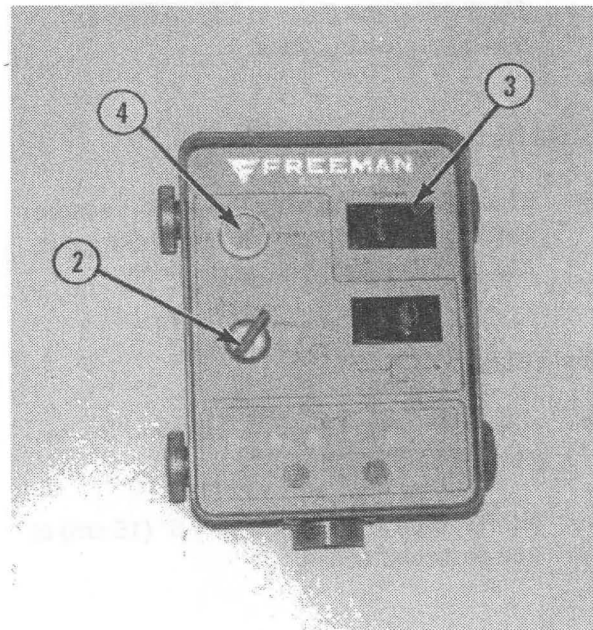
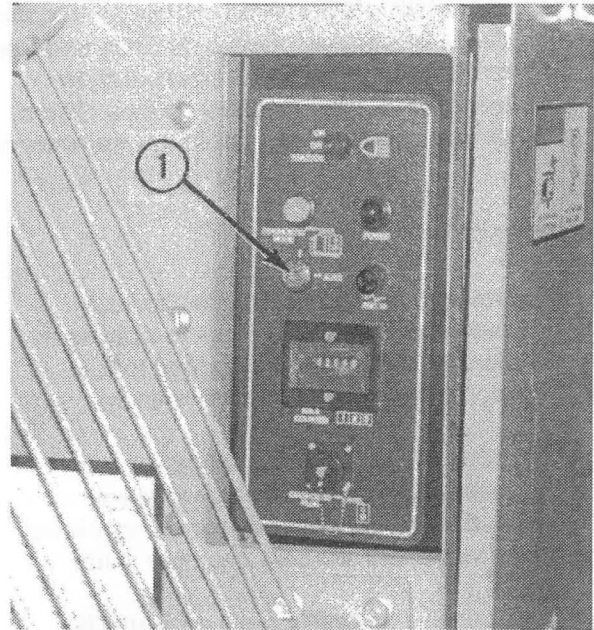
ARRIVING AT THE FIELD

IMPORTANT: Inspect the field for any object(s) (stones, limbs, etc.) that could damage the baler, or interfere with its proper operation.

1. Lower pickup.
2. Adjust pickup height.
3. Ensure twine needles are in their home position (refer to *Position Twine Needles* in "Preparing the Equipment" section for instructions).
4. Check that *Baler Mode Selector (1)* has been switched to AUTOMATIC and the controller key removed.
5. Insert controller key into *Baler Control (2)* and switch to FORWARD / AUTO.
6. Start tractor and run at low speed.
7. Engage PTO and increase its speed to 500 to 700 rpm.
8. Switch *Power Switch (3)* to ON and push *Start Switch (4)* to start baler.
9. Run baler, without baling, at 500 to 700 PTO rpm until the hydraulic fluid temperature is at least 32°F (0°C).

NOTE: Pickup, feeder, and feed forks will be operating.

NH08099.D98 NH08100.D98



EN10891.D98

Baling

BALING



WARNING: Equipment rollover can cause death or serious injury. Be alert and use extreme caution when operating on hillsides or near ditches, gullies, holes, or obstructions that could cause rollover.

Baling Speed

- Ideal ground speed provides enough material into the feed chute to activate the plunger every cycle of the feed fork - approximately 21 cycles per minute.
- There will be no effects on bale quality if ground speed is limited due to rough conditions, etc. because the plunger is not activated until the bale chamber is full.
- Excessive ground speed can cause the feeder or feed fork to stall. Refer to *Unplugging the Baler* in this section for unplugging instructions.

Bale Density

- While baling, note what the peak pressure reading of the *Plunger Pressure Gauge* is, and make adjustments accordingly.

Bale Size

- Adjust the *Bale Length Adjustment Bar* for desired bale length.

NOTE: Bale lengths can vary 6" (15 cm) at any particular setting.

To bale:

1. Increase PTO rpm to 1000.
2. Position baler with the windrow centered on the pickup.
3. Proceed forward.

NOTE: If baling crop that is in windrows narrower than 36" (0.9), inconsistent width bales could result. If windrows cannot be combined and made wider, weave the tractor and baler slightly across the windrow to distribute crop in the bale chamber.

TYING OFF BALE



WARNING: Twine needles and needle yoke move suddenly during knotting cycle and can cause death or serious injury if contacted.

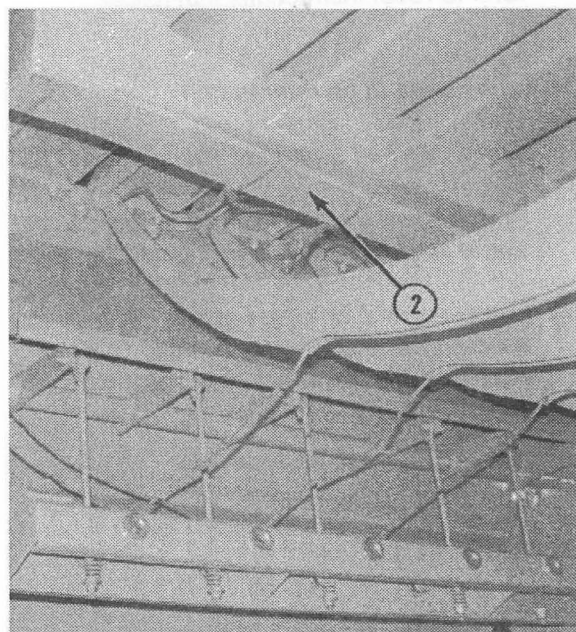
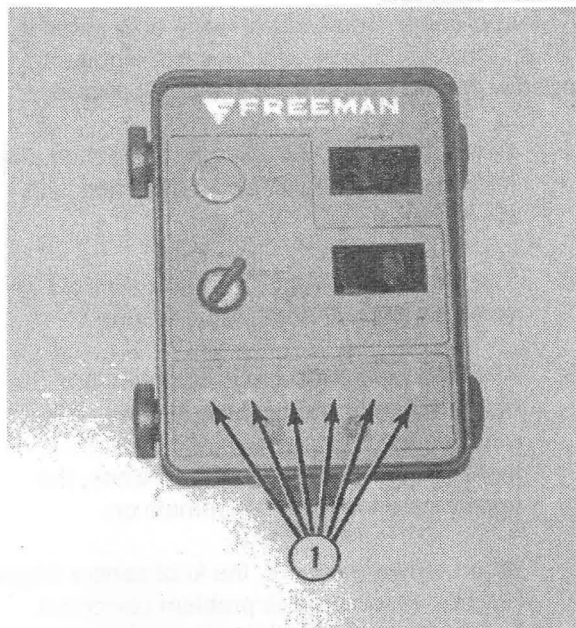
Knotting Cycle - First Bale in Chamber

The first bale, because there is no resistance to increase density, is loose and unusable. This bale is left untied and will fall off the discharge ramp in small pieces (to be baled up later) as the second bale is formed.

NOTE: The twines must be properly installed and tied to baler cross member before initializing (refer to *Install Twine* in "Preparing the Equipment" section).

1. When the preset bale length is reached, the twine needles extend through the bale, and twines are initialized in knotter.
2. The six *Knotter Operation Indicators* (1) will come on while the knotter is cycling.
3. After the knotting cycle is complete and the bale advances two or three strokes of the plunger, all six knot sensor fingers must be reset. Follow *Normal Shutdown Procedure* and refer to reset instructions that follow.
4. Remove twines from baler cross member (2).
5. Resume baling.

NH08101.D98 NH08102.D98



EN10893.D98

Baling

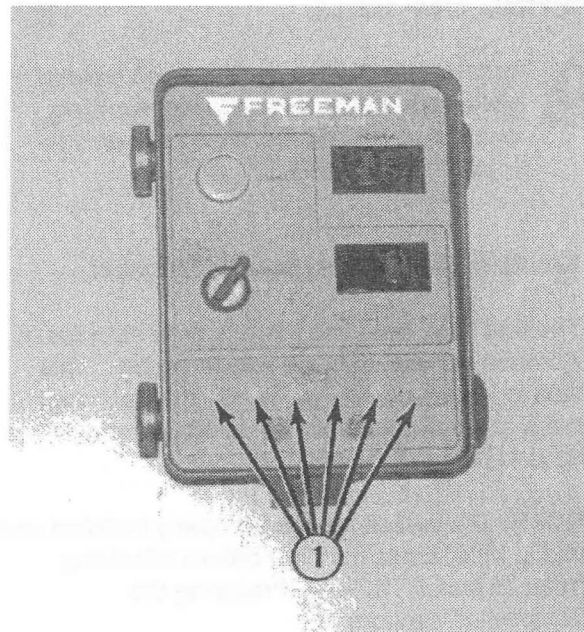
Knotting Cycle - Normal Operation

NH08101.D98

The application and tying of twine onto bales is an automatic function and does not require any special control during normal baling operations.

1. When the preset bale length is reached, the knotting cycle begins and bale is tied with six twines.
2. The six *Knotter Operation Indicators* (1) will come on while the knotter is cycling.
3. After the knotting cycle is complete and the bale advances two or three strokes of the plunger, the indicators should turn off. If there is a mistie on any of the twines, the appropriate indicator will remain on.

When a mistie occurs, the knot sensor finger must be reset and the problem corrected. Follow *Normal Shutdown Procedure* and refer to reset instructions that follow.



If a twine needs to be rethread:

1. Follow *Normal Shutdown Procedure*.
2. Properly route affected twine (refer to *Install Twine* in "Preparing the Equipment" section).
3. Complete next bale and initialize knotter for affected twine. Refer to *Knotting Cycle - First Bale in Chamber* in this section for instructions.

EN10894.D98

Reset Knot Sensor Finger

NH08103.D98 NH08104.D98

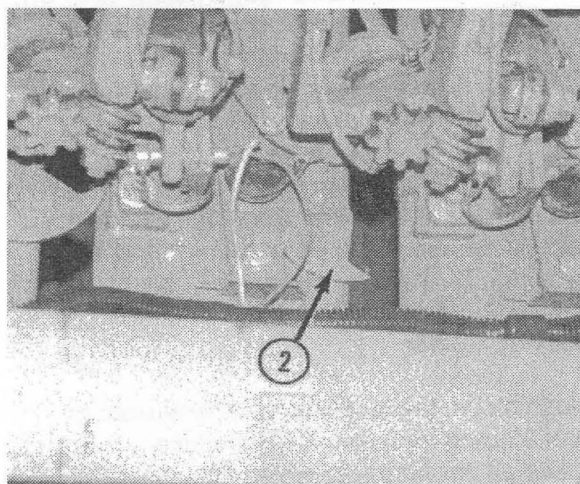
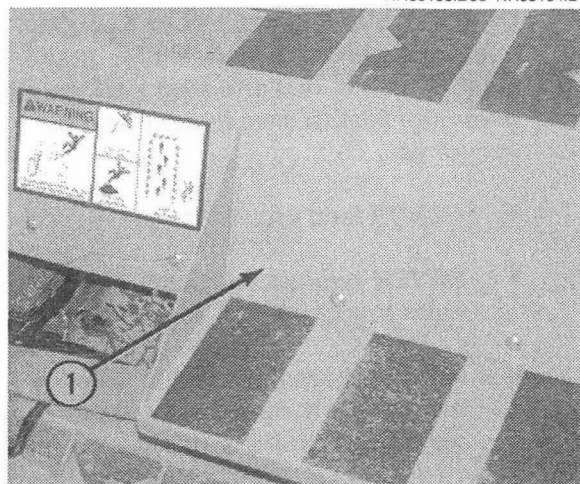


WARNING: Knotters can cause serious hand injuries. Keep hands out during operation.



WARNING: Falling from baler can cause serious injury. Stay off if baler is not level or if surface is slippery. When on top, stay in designated walking area.

1. Follow *Normal Shutdown Procedure*.
2. Use rear ladder to gain access onto baler; open lid (1) covering knotters.
3. Move knot sensor finger (2) rearward as shown with a long screwdriver or similar tool.
4. Close lid over knotters; dismount from baler.



EN10895.D98

Baling

UNPLUGGING THE BALER

NH08105.D98 NH08106.D98



DANGER: Baler intake can pull you in, causing death or serious injury. Stay clear of pickup reel and feed intake area. Baler can take in crop faster than you can let go.

- **NEVER** feed crop in by hand.
- **NEVER** remove any material from baler intake while it is running.
- **NEVER** attempt to unplug baler by hand while it is running - use the reversing feature to unplug.
- **ALWAYS** disengage power take-off, shut off tractor engine, set park brake, remove key, and wait for flywheel to stop before unplugging by hand or servicing.

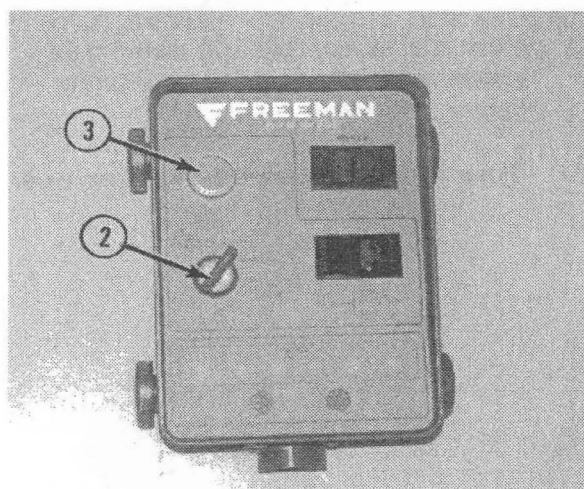
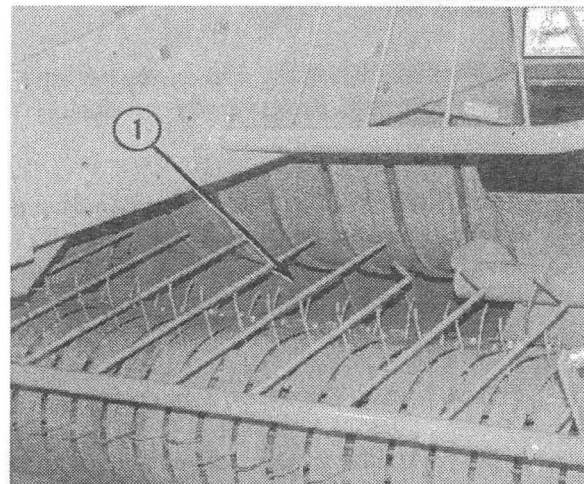
NOTE: The unplugging operations can be done with the use of the *Baler Controller* and do not require the use of the *Diagnostic Controller*.

Unplug Feeder

Plugging the feeder (1) is typically caused by over-feeding material into it. Reduce ground speed as necessary to prevent plugging.

To unplug:

1. Turn and hold *Baler Control* (2) to REVERSE. This will reverse the direction of the feeder and eject the plugged material from it.



2. Return *Baler Control* (2) to FORWARD / AUTO, and push *Start Switch* (3) to resume normal operation.
3. If plug was not fully removed, repeat steps 1 and 2 as necessary to remove plug.

IMPORTANT: Do not reverse feeder with pickup raised in highest transport position.

EN10896.D98

Unplug Feed Fork / Feed Chute

NH08107.D98 NH08108.D98



DANGER: Never attempt to unplug the baler by hand while the baler is running. Contact with moving parts can cause death or serious injury. **ALWAYS** disengage power take-off, shut off tractor engine, set park brake, remove key, and wait for flywheel to stop before unplugging by hand.

Plugging the feed chute (1) and stalling the feed fork is typically caused by over-feeding material into it. Reduce ground speed as necessary to prevent plugging.

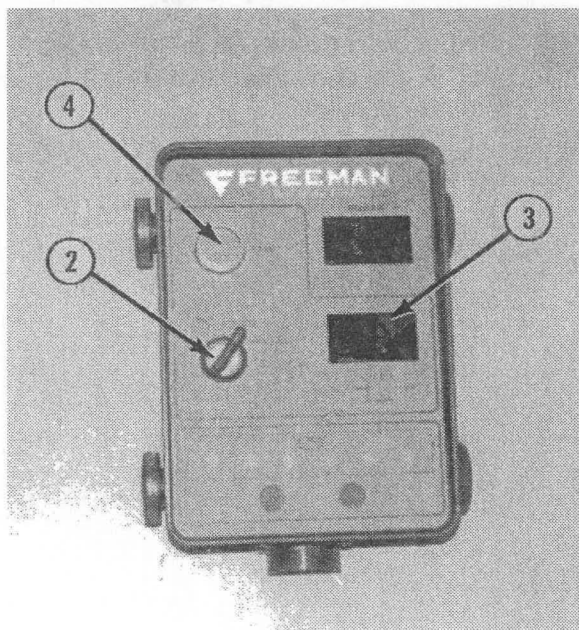
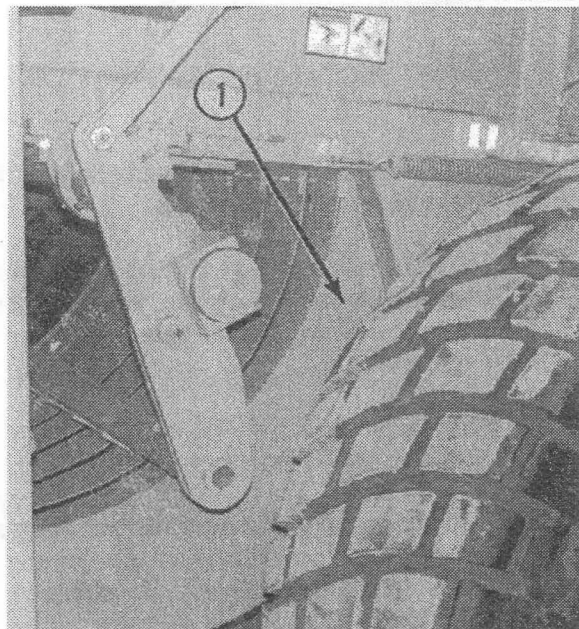
To unplug:

IMPORTANT: The plunger can not be extended if the twine needles are extended. If extended, refer to *Position Twine Needles* in "Preparing the Equipment" section for directions to retract them.

1. Switch *Baler Control* (2) to MANUAL.
2. Fully extend plunger using *Manual Plunger Control* (3).
3. Return *Baler Control* (2) to FORWARD / AUTO, and push *Start Switch* (4) to resume normal operation.

NOTE: Depending on length of bale in chamber, knotters can cycle when *Start Switch* is pushed.

4. If feed fork continues to stall, repeat steps 1 - 3 as necessary to remove plug.



EN10897.D98

Baling

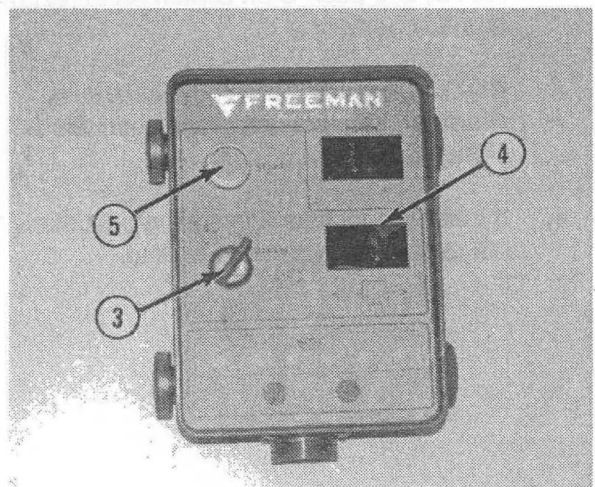
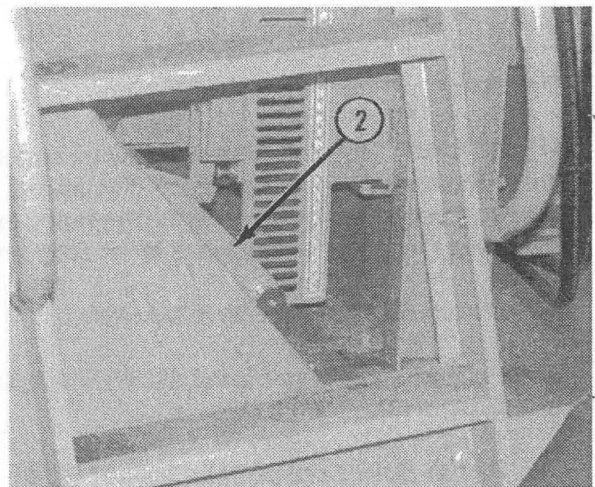
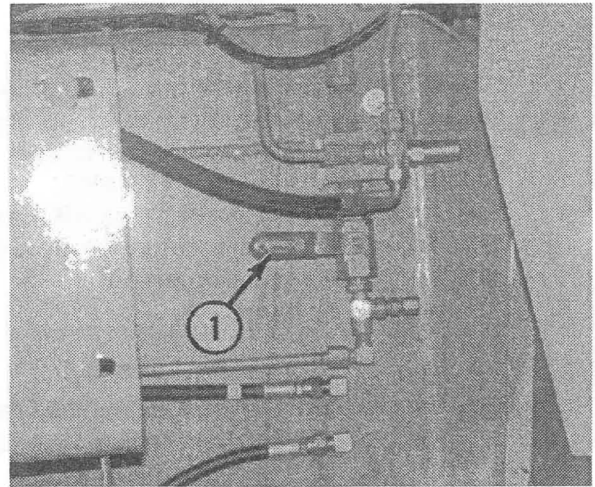
EMPTYING THE BALE CHAMBER

NH08109.D98 NH08110.D98 NH08111.D98

1. Follow *Normal Shutdown Procedure*.
2. Close *Density System Shutdown (1)* as shown.
3. Fully lower bale length adjustment bar (2) to make smallest bale possible.

NOTE: Any length bale can be made when emptying the bale chamber. However, it is easier to remove a small bale rather than a large one.

4. Start tractor and run PTO at 500 rpm and switch *Baler Control (3)* to MANUAL.
5. Fully extend plunger using *Manual Plunger Control (4)*. Hold switch until the *Plunger Pressure Gauge* reaches approximately 6,000 psi (410 bar). This releases the pressure applied to the sides of the bale.
6. Return *Baler Control (3)* to FORWARD / AUTO, and push *Start Switch (5)* to resume normal operation.



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NH08112.D98

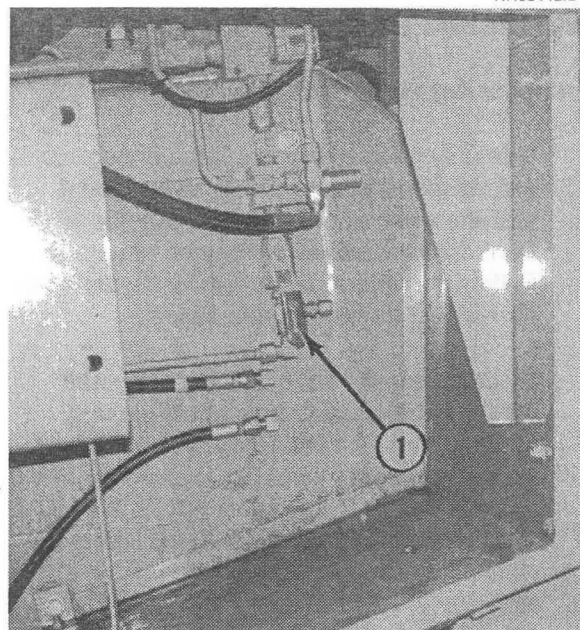


WARNING: Discharge ramp can be slippery and cause injury if you fall. Use caution when mounting, dismounting, and working upon ramp to remove a bale.

7. Produce one or more bales to push the previous, higher density bale out. The remaining bale in the chamber is low density and easy to remove.

NOTE: Obtaining a bale of low enough density to remove may require baling two to three bales.

8. Follow *Normal Shutdown Procedure* and remove bale from chamber.
9. Open *Density System Shutdown (1)* before resuming baling.



EN10899.D98

Baling

Handling Bales

HANDLING BALES

Front- or Rear-Mounted Bale Handler

- Use only tractors that are large enough to maintain adequate braking, steering and stability when handling bales. Additional front or rear end weight may be required. Follow the recommendations of the bale carrier and tractor manufacturers.
- Sloped ground, rough terrain or adverse conditions may adversely affect braking, steering and stability. Reduce speed to maintain control.
- Rear wheels should be set at maximum width, if adjustable, to increase tractor stability.
- Use a tractor with rollover protection structure (ROPS).

Front-Mounted Bale Handler

- Never carry a bale in a high position unless absolutely necessary and then only with extreme caution - moving very slowly and smoothly. Rapid or sudden movement can greatly increase the possibility of tractor rollover.
- Front-mounted bale handler must be equipped with a grapple or similar restraint device to prevent the bale from sliding down the loader arms onto the tractor operator.

Rear-Mounted Bale Handler

- Suddenly applying the tractor brakes when carrying a bale on a rear-mounted bale handler may cause the front end of the tractor to swing over - possibly causing loss of control.

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Handling Bales

BALE STORAGE



WARNING: Falling bales can cause serious injury. Do not stack bales on an uneven surface, or in an uneven stack that can tip over.

Unprotected bales cannot shed water and will spoil rapidly. Store large square bales in a shed to prevent loss of feed value and palatability to livestock.

Hay Shed Floor

- Do not put bales directly on a dirt or concrete floor. Both surfaces can become moist and ruin the bottom bales.
- Minimum floor protection should be a thick layer of loose straw or hay chaff. Additional protection is provided by putting a layer of coarse rock down first.

Hay Shed Walls

- Provide sidewall protection to prevent rain or direct sunshine from getting to bales.
- If the shed has three or four enclosed walls, adequate ventilation must be provided to disperse the moisture leaving the bales while curing.

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Handling Bales

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