

459 Standard (S.N. 380001-) Round Baler (Export Edition)



OPERATOR'S MANUAL 459 Standard Round Baler OMFH313134 ISSUE G4 (ENGLISH)

CALIFORNIA Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Ottumwa Works

Export
PRINTED IN U.S.A.



Introduction

Foreword



459 Standard Baler

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine are available in other languages (see your John Deere dealer to order).

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and must remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing the direction the implement travels when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (PIN) in the Specification or Identification Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

BEFORE DELIVERING THIS MACHINE, ensure that your dealer performed a predelivery inspection.

THIS BALER IS DESIGNED SOLELY for use in customary agricultural or similar operations ("INTENDED USE"). Use in any other way is considered as contrary to the intended use. The manufacturer accepts no liability for damage or injury resulting from this misuse, and these risks must be borne solely by the user. Compliance with and strict adherence to the conditions of operation, service, and repair as specified by the manufacturer also constitute essential elements for the intended use.

THIS BALER SHOULD BE OPERATED, serviced and repaired only by persons familiar with all its particular characteristics and acquainted with the relevant safety rules (accident prevention). The accident prevention regulations, all other generally recognized regulations on safety and occupational medicine and the road traffic regulations must be observed at all times. Any arbitrary modifications carried out on this baler will relieve the manufacturer of all liability for any resulting damage or injury.

If you are not the original owner of this machine, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

PP98408,00007C6 -19-09APR12-1/1

E62394 —JUN—09APR12

Dealers Record

Owners Name _____ Date Sold _____
 Address _____ Model _____
 City _____ Serial Number _____
 State _____ Zip _____

PP98408,00007C7 -19-30SEP11-1/1

Predelivery

After the baler has been set up, inspect it to be sure that it is in good running condition before delivering it to the customer. The following checklist is a reminder of important points to inspect. Check off each item as it is found satisfactory after proper adjustment has been made.

- ☐ Baler has been assembled correctly.
- ☐ Check hydraulic hose and connections for oil leaks.
- ☐ With Auto-Tie option; Check monitor. Make sure that communication signal is received when monitor is turned on.
- ☐ Hydraulic cylinders operate properly.
- ☐ Lower pickup and cycle twine arms to check for proper function.
- ☐ Gate opens and closes freely.
- ☐ Belt tracking is satisfactory.
- ☐ Check bale shape indicator adjustment.
- ☐ Check bale size alarm for proper function.
- ☐ Machine lubricated and gear case level checked. (See Lubrication and Maintenance section.)
- ☐ Drive chains have been adjusted correctly and lubricated.
- ☐ Warning lights are operating correctly.
- ☐ Check that shipping cover on SMV sign has been removed and sign is properly displayed.
- ☐ All hardware tight.
- ☐ Tire pressures checked.
- ☐ Decals intact and legible.
- ☐ Safety chain is attached.
- ☐ Check operating functions of any optional equipment installed.
- ☐ If equipped, make sure that fire extinguisher is filled and pressurized.

(Date Set Up) _____

(Signature) _____

PP98408,00007C8 -19-30SEP11-1/1

Delivery

The following checklist is a reminder of important information which must be conveyed to the customer at the time the baler is delivered. Check off each item as it is fully explained to the customer.

- ☐ John Deere warranty.
- ☐ Safe and correct operation and service.
- ☐ Daily and periodic inspections.
- ☐ Servicing machine regularly and correctly.
- ☐ Explain proper bale handling procedures.
- ☐ Advise customer to use safety chain.
- ☐ Advise use of baler fire extinguisher.
- ☐ Explain correct ASAE standard dimensions for PTO hookup.
- ☐ Give the operator's manual to the customer and encourage customer to read entire manual.
- ☐ Advise customer of safety precautions that must be observed while using this baler.
- ☐ Advise customer never to discharge bales on sloping ground and if moving bales with a tractor loader, the loader MUST have a grapple.
- ☐ Advise customer to set out front and rear wheels on tractors having adjustable tread width to avoid driving over hay. (See Preparing the Tractor section.)

- ☐ Review information on how to prepare the baler. (See Preparing the Baler section.)
- ☐ Review recommended procedures for attaching to or detaching from tractor. (See Attaching and Detaching section.)
- ☐ Recommended transporting information. (See Transporting section.)
- ☐ Make customer aware of all optional equipment offered for this machine. (See Attachments section.)
- ☐ Recommended lubricants. (See Lubrication and Maintenance section.)
- ☐ Review service intervals and lubrication points. (See Lubrication and Maintenance section.)
- ☐ Review all adjustments. (See Service section.)
- ☐ Recommended machine storage. (See Storage section.)
- ☐ Have customer record machine serial number in the Specifications section.
- ☐ John Deere parts and service.
- ☐ Remove and file this page.

(Date Delivered) _____

(Signature) _____

PP98408,00007C9 -19-13DEC11-1/1

After-Sale

It is suggested the following items be checked sometime during the first season of operation.

- ☐ Inspect entire machine for loose or missing hardware.
- ☐ Check belt lacings for excess wear.
- ☐ Check belt pins every 1000 bales. Replace worn or damaged pins.
- ☐ All chains are correctly tightened
- ☐ All safety shields and safety chain are in place.
- ☐ Check for broken or damaged parts.

- ☐ If possible, run the baler to see if it is functioning properly.
- ☐ A good quality twine is being used and is threaded correctly.
- ☐ Check operating adjustments. If possible, inspect wraps on a few bales.
- ☐ Review the entire operator's manual with the customer and stress the importance of safety precautions, special operating conditions, and proper and regular lubrication.

(Date Checked) _____

(Signature) _____

PP98408,00007CA -19-13DEC11-1/1

Contents

	Page		Page
Safety Features			
Machine Safety Features	05-1	Install BaleTrak™ Pro Monitor- Controller in ComfortGard™ Cab	21-1
Safety		Install BaleTrak™ Pro Monitor- Controller in SOUND-GARD™ Cab	21-2
Recognize Safety Information	10-1	Preparing the Baler	
Follow Safety Instructions	10-1	Check Bale Size Switch	25-1
Protect Bystanders	10-1	Select Twine	25-1
Operate Baler Safely	10-2	Load Twine Box	25-1
Operate Safely on Slopes	10-2	Route Twine—Right-Hand Side (Rear Arm)	25-2
Handle Round Bales Safely	10-3	Route Twine—Left-Hand Side (Front Arm)	25-4
Prepare For Emergencies	10-3	Adjust Twine Spacing (Hydraulic Twine Tie)	25-7
Fire Prevention	10-4	Adjust Baler Hitch	25-9
In Case of Fire	10-4	Wheel Spindle Positions on 459 Standard Baler with Regular Pickup and 11L-14 Tires	25-10
Extinguishing a Fire	10-5	Check Wheel Nut Torque	25-11
Wear Protective Clothing	10-5	Check Tire Inflation Pressures	25-11
Handle Agricultural Chemicals Safely	10-6	Attaching and Detaching	
Stay Clear of Rotating Drivelines	10-7	Assemble Main PTO Driveline	30-1
Use Safety Lights and Devices	10-7	Attach Baler to Tractor Drawbar	30-1
Use a Safety Chain	10-8	Install Drawbar Shield	30-2
Tow Loads Safely	10-8	Connect PTO Driveline	30-2
Practice Safe Maintenance	10-9	Attach to Tractor Hydraulic System	30-3
Remove Paint Before Welding or Heating	10-9	Tractor Convenience Outlet	30-4
Avoid Heating Near Pressurized Fluid Lines	10-10	Install Bale Size Alarm (Hydraulic Twine Only)	30-4
Avoid High-Pressure Fluids	10-10	Connect Baler Wire Harness to Tractor (BaleTrak™ Pro System)	30-5
Dispose of Waste Properly	10-10	Connect Tail or Warning Light Plug to Tractor	30-6
Safety Sign Location		Detach Baler From Tractor	30-6
Replace Safety Signs	15-1	Transporting	
Safety Signs	15-2	Prepare Baler for Transport	35-1
Preparing the Tractor		Follow Safe Transport Procedures	35-2
Select Tractor PTO Speed	20-1	Light Enhancement Module Operation	35-2
Adjust Tractor Drawbar	20-1	Extended Rear-View Mirror	35-3
Tractor Drawbar (Heavy-Duty)	20-2	Break-In Period	
Three-Point Hitch Position	20-3	Break-In Baler	36-1
Adjust Tractor Wheels	20-3	After the First 10 Hours—Wheel Nut Torque	36-1
Check Ballast, Wheel Spacing, and Tire Inflation	20-3	After the First 50 Hours—Gear Case	36-1
Adjust Tractor Hydraulic Outlets	20-4	After the First 50 Hours—Wheel Nut Torque	36-2
Tractor Convenience Outlet	20-4		
Right-Hand Rear-View Mirror	20-5		
Extended Rear-View Mirror	20-6		
Preparing the Tractor for BaleTrak™ Pro			
Install BaleTrak™ Pro Monitor- Controller on Open-Station Tractor	21-1		

Continued on next page

Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

COPYRIGHT © 2014
DEERE & COMPANY
Moline, Illinois
All rights reserved.
A John Deere ILLUSTRATION © Manual

Page	Page
Operating the Baler	
Before Each Use of the Baler.....	40-1
Handle Round Bales.....	40-1
Crop Preparation.....	40-1
Breaking-In Baler.....	40-1
Indicators For Baler Operation.....	40-2
Normal Baling Operation.....	40-3
Recommended Baling Guidelines.....	40-5
Feed Round Bales.....	40-5
Interpret Bale Shape Indicators.....	40-7
Weave in the Windrow.....	40-9
Adjust Audible Bale Size Alarm Volume (Hydraulic Twine Wrap Only).....	40-9
Operate Wrap Control (Hydraulic Twine Wrap Only).....	40-10
Adjust Twine Tension.....	40-11
Adjust Pickup Height.....	40-12
Adjust Gauge Wheels.....	40-13
Adjust Gathering Wheel Height (If Equipped).....	40-14
Lock the Gate.....	40-15
Adjust Bale Size Switch (Hydraulic Twine Wrap Only).....	40-16
Remove Compressor Rack.....	40-16
Install Compressor Rack.....	40-16
Adjust Compressor Rack.....	40-17
Start a Bale in Difficult Conditions.....	40-18
Bale Short, Dry, Slick Crops.....	40-19
Bale Cornstalks.....	40-20
Bale Long, Stiff, Cane-Type Crops.....	40-21
Bale Wet Hay.....	40-22
Operate Baler with Bale Ramp (If Equipped).....	40-22
Understand Bale Ramp Regulator (Relief) Valve.....	40-23
Adjust Bale Ramp (If Equipped).....	40-23
Operating with BaleTrak™ Pro System	
BaleTrak™ Pro Monitor-Controller	
System Introduction.....	41-1
BaleTrak™ Pro Monitor-Controller Description.....	41-2
BaleTrak™ Pro Monitor-Controller	
Keys and Switches.....	41-3
BaleTrak™ Pro Monitor-Controller	
Displays and Indicators.....	41-4
BaleTrak™ Pro Monitor-Controller	
Setup Values and Initial Settings.....	41-5
BaleTrak™ Pro Monitor-Controller	
Customer, Setup, and Diagnostic Modes.....	41-6
BaleTrak™ Pro Monitor-Controller Channels.....	41-7
BaleTrak™ Pro Monitor-Controller Operation.....	41-8
Optional Variable Core Feature.....	41-9
Adjusting Variable Core Diameter (If Equipped).....	41-10
Activate BaleTrak™ Pro	
Monitor-Controller Alarms.....	41-11
Adjust Audible Alarm Volume.....	41-11
Set Bale Diameter.....	41-12
Adjust Bale Diameter Display.....	41-13
Twine Wrap Terms and Settings.....	41-14
Set Twine Spacing.....	41-16
Set Number of Twine End Wraps.....	41-17
Set Twine End Wrap Distance.....	41-17
View and Reset Bale Counters.....	41-19
Manual Actuator, Wrap, and Bypass	
Switches.....	41-19
Bypass Switch (Twine Wrap Only).....	41-20
Reset BaleTrak™ Pro Monitor- Controller To Initial Settings (Channel 001).....	41-20
Dry Straw Twine Wrap Program (Channel 002).....	41-21
Set Twine Re-Extension (Channel 003).....	41-21
Set Cinch Wrap (Channel 004).....	41-22
Adjust Bale Diameter Sensor (Channel 005).....	41-23
Monitor-Controller Display, Metric or English Units (Channel 008).....	41-24
Set Near-Full Indicator Set Point (Channel 010).....	41-24
Test Oversize Bale and Gate Closed Switch—Monitor-Controller Assisted Test (Channels 013 and 014).....	41-25
Test Twine Actuator Current (Channel 018).....	41-26
Test Tractor Convenience Outlet Voltage (Channel 019).....	41-27
Test Liquid Crystal Display (LCD) Panel (Channel 020).....	41-28
Twine Arm Calibration (Channel 029).....	41-29
Adjust Delay of Twine Eject (Channel 033).....	41-30
Change Baler Model Program (Channel 201).....	41-30
Twine Feature (Channel 202)(Turning On and Off).....	41-31
Activate Optional Variable Core Operation (Channel 208).....	41-31
Attachments	
Pickup Gauge Wheels.....	45-1
Belt Lacing Tool (Vise for Clipper Laces).....	45-1
Skiving Tool.....	45-1
Hydraulic Pickup Lift.....	45-2
Variable Core Valve—BaleTrak™ Pro System.....	45-2
Crop Deflector Kit.....	45-2
Electrical Outlet Socket.....	45-3
Extended Rear-View Mirror.....	45-3
Right-Hand Rear-View Mirror.....	45-3
Fire Extinguisher.....	45-4
Bale Counter.....	45-4
BaleTrak™ Pro Monitor-Controller (If Equipped).....	45-4
BaleTrak™ Pro Monitor-Controller	
Mounting Brackets.....	45-5
Mounting Kit for Open Station 6000 and 7000 Series Tractors.....	45-5
Gathering Wheels.....	45-6
Hydraulic Bale Ramp.....	45-6

Continued on next page

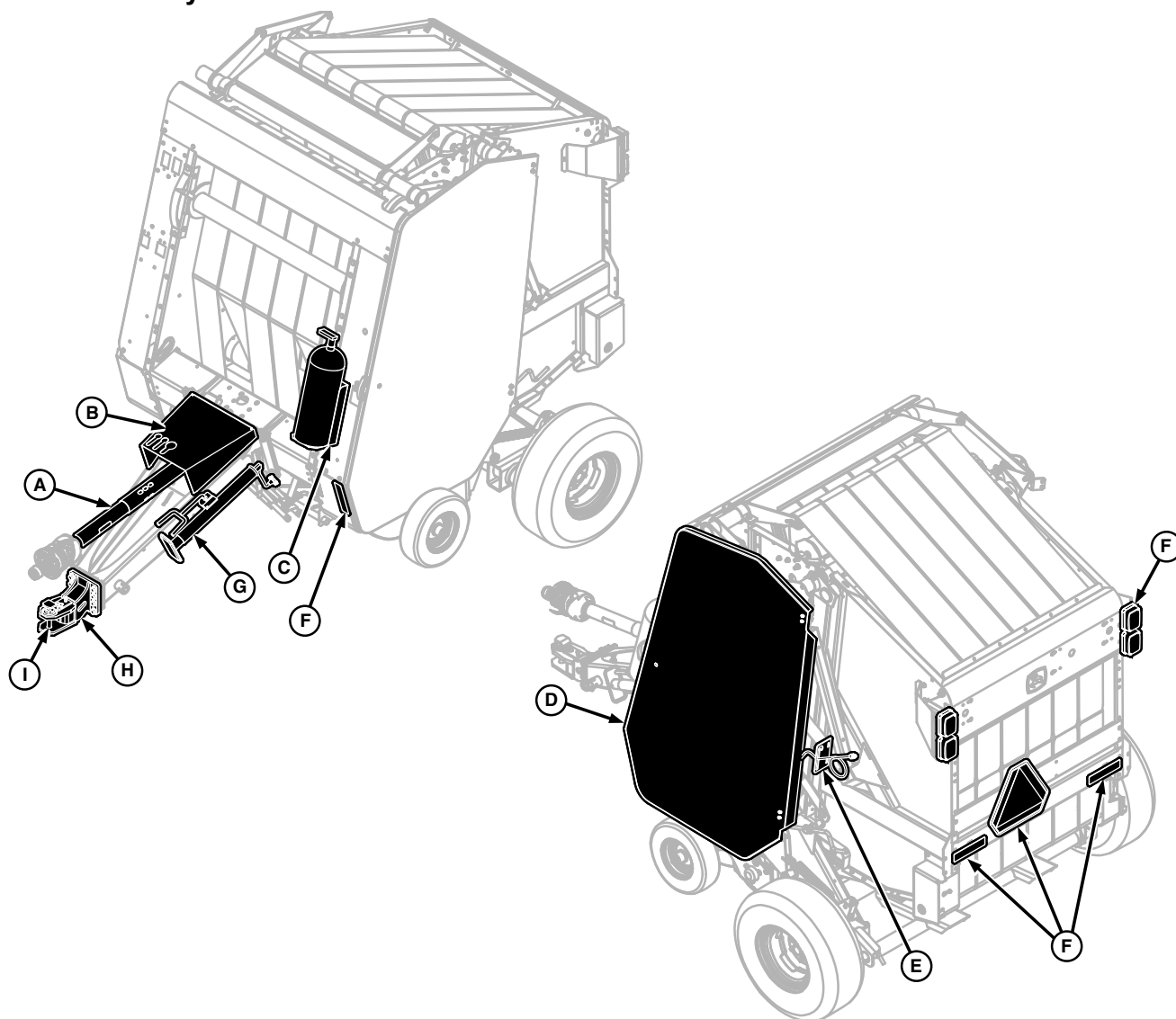
	Page		Page
Lubrication and Maintenance		Slip Main PTO Driveline Slip Clutch (If Equipped).....	60-28
Grease.....	50-1	Adjust Initial Length of Pickup Drive Belt Idler Spring.....	60-30
Gear Case Oil.....	50-1	Adjust Pickup Drive Belt Idler	60-31
Alternative and Synthetic Lubricants	50-2	Adjust Pickup Float Springs.....	60-32
Observe Lubrication Symbols.....	50-2	Check Pickup Tooth Rotational Play.....	60-32
Perform Lubrication and Maintenance.....	50-2	Adjust Twine Cutter Tension (Hydraulic Twine Wrap Only).....	60-34
Fire Prevention	50-2	Adjust Clearance Between Cutter Link Support and Twine Arm (Hydraulic Twine Wrap Only).....	60-37
Belt Pins	50-3	Adjust Twine Arm Distance From Right Sidesheet (Hydraulic Twine Wrap Only)	60-38
Tension Arm Wear Channels.....	50-3	Adjust Front Twine Arm (Hydraulic Twine Wrap Only).....	60-38
Every 10 Hours.....	50-4	Adjust Twine Cutter-to-Twine Arm (Hydraulic Twine Wrap Only)	60-40
Every 30 Hours.....	50-5	Check and Adjust Twine Cutter Knife (Hydraulic Twine Wrap Only)	60-41
First 50 Hours.....	50-9	Adjust Twine Arm-to-Starter Roll, Cutter Link Support, and Twine Arm Stop (Hydraulic Twine Wrap Only)	60-42
Every 100 Hours.....	50-9	Adjust Lower Feed Roll Scraper.....	60-47
Annually.....	50-9	Adjust Twine Indicator Retaining Strap.....	60-47
Troubleshooting		Adjust Bale Size Indicator.....	60-48
PTO Driveline Difficulties	55-1	Adjust Take-Up Arm Compression Spring	60-48
Drive Chain Difficulties	55-1	Check Microswitches.....	60-49
Gear Case Difficulties.....	55-2	Raise Gate With Hoist	60-49
Diagnose Hydraulic Functions.....	55-3	Check Belt Pins	60-50
Twine Wrap Difficulties	55-5	Check Belt Tracking	60-51
Twine Wrap Difficulties (Hydraulic Twine Wrap Only).....	55-10	Adjust Belt Tracking.....	60-53
Twine Wrap Difficulties—BaleTrak™ Pro System.....	55-11	Install Belts	60-56
BaleTrak™ Pro Monitor-Controller Difficulties ..	55-17	Repair Belts.....	60-57
Feed Difficulties	55-24	Belts Eligible for Warranty Replacement	60-62
Pickup Difficulties	55-27	Belts Not Eligible for Warranty Replacement ...	60-63
Bale Quality	55-30	Adjust Hydraulic Twine Arm Cylinder Initial Length (Hydraulic Twine Wrap Only) ..	60-66
General Baler Difficulties	55-32	Install Hydraulic Twine Arm Cylinder (Hydraulic Twine Wrap Only)	60-66
BaleTrak™ Pro Monitor-Controller Error Codes	55-36	Adjust Bale Size Switch (Hydraulic Twine Wrap Only).....	60-67
Service—Baler		Adjust Bale Size Link for Maximum Bale Size (Hydraulic Twine Wrap Only)	60-68
Detailed Service Information	60-1	Adjust Bale Shape Indicators	60-69
Practice Safe Service Procedures.....	60-1	Remove and Install Bale Ramp (If Equipped) ..	60-71
Fire Prevention	60-2	Service—BaleTrak™ Pro System	
Keep Service Area Clean	60-2	BaleTrak™ Pro System Component Locations ..	61-1
Service Tires Safely.....	60-3	Wire Diagram—BaleTrak™ Pro Monitor-Controller Control System.....	61-2
Rotate Output Shaft By Hand	60-3	Wire Harness Diagram—BaleTrak™ Pro Monitor-Controller.....	61-4
Baler Wire Harness Diagram (Hydraulic Twine Wrap Only).....	60-4	Wire Harness Diagram—Baler	61-6
Hydraulic System Diagram	60-6	Adjust Twine Arm Distance From Right Sidesheet—BaleTrak™ Pro System	61-8
Adjust Lower Drive Roll Chain.....	60-7	Twine Electric Actuator Installation Adjustment ..	61-9
Adjust Upper Roll Drive Chain.....	60-8		
Replace Drive Roll Bearings or Left-Hand Sprockets	60-8		
Install Left-Hand Upper Drive Roll Bearing.....	60-9		
Replace Left-Hand Lower Drive Roll Bearing...60-13			
Replace Right-Hand Lower Drive Roll Bearing	60-20		
Install Upper Right-Hand Drive Roll Bearing ...	60-24		
Replace Main Drive Shear Bolt (If Equipped)...60-26			
Adjust Main PTO Driveline Slip Clutch (If Equipped).....	60-27		

Continued on next page

	Page		Page
Adjust Twine Cutter Tension	61-13	Metric Bolt and Screw Torque Values	75-4
Replace Bale Diameter Sensor	61-16	Unified Inch Bolt and Screw Torque Values	75-5
Replace Gate Close Switch	61-17		
Replace Oversize Bale Switch	61-18	Serial Numbers	
Replace and Adjust Bale Diameter		Serial Number Plate	80-1
Sensor Mounting Bracket	61-18	Serial Number Plate Description	80-1
Adjust Bale Diameter Sensor (Channel 005)	61-19	Record Baler Serial Number	80-1
Test Gate Close and Oversize Bale		Keep Proof of Ownership	80-2
Switches—Monitor-Controller		Keep Machines Secure	80-2
Assisted Test (Channel 013 and 014)	61-20		
Test Twine Wrap Actuator Current			
(Channel 018)	61-21		
Test Tractor Convenience Outlet			
Voltage (Channel 019)	61-22		
Test Liquid Crystal Display (LCD)			
Panel (Channel 020)	61-22		
Adjust Oversize Bale Switch	61-23		
Adjust Bale Size Link For Maximum			
Bale Size (Oversize Warning)	61-24		
Adjust Gate Close Switch	61-24		
Twine Arm Calibration Procedure			
(Channel 029)	61-25		
Adjust Clearance Between Cutter Link			
Support and Twine Arm	61-25		
Adjust Front Twine Arm	61-26		
Adjust Twine Cutter-to-Twine Arm	61-28		
Check and Adjust Twine Cutter Knife	61-30		
Adjust Twine Arm-to-Starter Roll,			
Cutter Link Support, and Twine Arm Stop	61-31		
Storage			
End of Season	65-1		
Start of Season	65-1		
Assembly			
Perform Predelivery Service Safely	70-1		
Adjust Baler Hitch	70-1		
Install Wheel Spindles on 459			
Standard Baler with Regular Pickup			
and 11L-14 Tires	70-3		
Check Wheel Nut Torque	70-4		
Check Tire Inflation Pressures	70-4		
Install Jack	70-4		
Install Shearbolt PTO Driveline (If Equipped)	70-5		
Install Slip Clutch PTO Driveline (If Equipped)	70-5		
Install Hitch Pin and Safety Chain	70-6		
Install Slow Moving Vehicle (SMV)			
Sign in Operating Position	70-6		
Install Bale Counter (If Equipped)	70-7		
Install Fire Extinguisher (If Equipped)	70-7		
Cycle Twine Arms	70-8		
Specifications			
459 Standard Round Baler Specifications	75-1		
BaleTrak™ Pro Monitor-Controller			
Specifications	75-2		
Tractor Compatibility	75-3		
Hitch Weights	75-3		

Safety Features

Machine Safety Features



A — Fully shielded power take-off (PTO).

B — Hinged shielding over slip clutch covers rotating input shaft. Provides easy service access.

C — Fire extinguisher mounting location to accommodate installation of extinguisher where use conditions dictate.

D — Doors and shields on both sides of baler cover drive components. Mechanical latches make opening and closing convenient for service access.

E — Rear gate lockout secures gate in open position for access to inside of bale chamber.

F — Slow moving vehicle (SMV) emblem, flashing warning lights, red tail lights, and reflectors enhance visibility

during road transport. Flashing warning lights synchronize with tractor turn signals to indicate turn intention to vehicular traffic.

G — Hitch jackstand supports and positions hitch for hookup and removal.

H — Safety chain further secures machine to tractor drawbar.

I — Drawbar hitch pin retainer keeps implement hitch pin in place.

PP98408,000047B -19-09JUL13-1/1

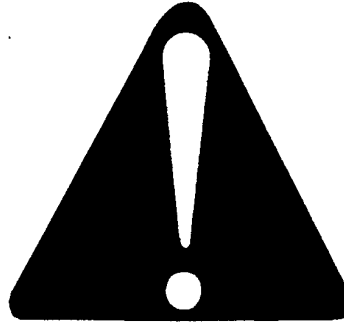
E69485 —UN—19MAR13

Safety

Recognize Safety Information

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



T81389 —UN—28JUN13

DX,ALERT -19-29SEP98-1/1

Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.



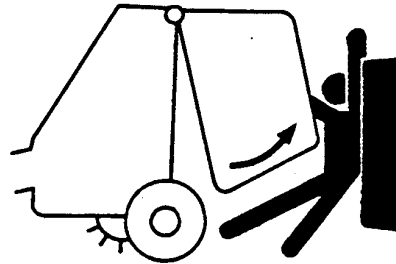
TS201 —UN—15APR13

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ -19-16JUN09-1/1

Protect Bystanders

To prevent crushing injury be sure bystanders stand clear before operating gate and unloading bale.



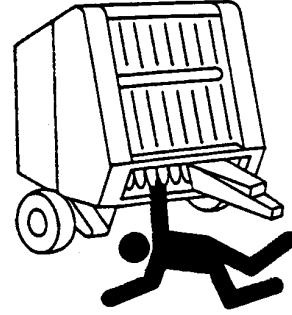
E32162 —UN—12SEP88

PP98408,00007CD -19-30SEP11-1/1

Operate Baler Safely

To avoid injury or death by being pulled into the machine:

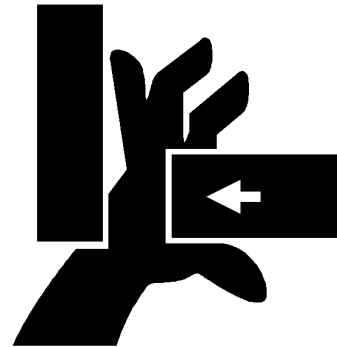
- DO NOT attempt to feed crop or twine into baler or unplug feed area WHILE BALER IS RUNNING. The baler feeds material faster than you can release it.
- Disengage PTO and shut off engine.
- Stand clear of baler at all times when machine is operating.



PP98408,00007CE -19-30SEP11-1/2

E32161—UN—12SEP88

If baler plugs during twine arm cycle, it is recommended that twine arms be manually positioned to release any "hold" they may have on the crop plug. Turn off power to twine arms. This will help to make the unplugging operation easier and prevent twine arms from moving unexpectedly while your hands may be in the path of the twine arms. Stay out of the path of twine arms at all times when power to the arms is ON.



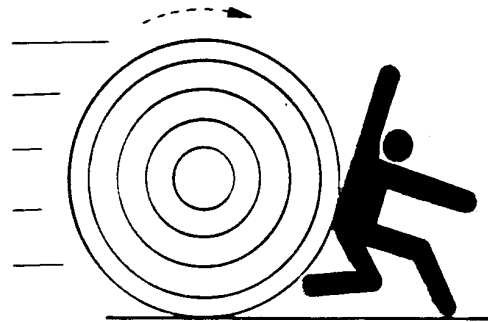
PP98408,00007CE -19-30SEP11-2/2

E47598—UN—07JAN00

Operate Safely on Slopes

Be especially careful when operating on hillsides. The baler may tip sideways if it strikes a hole, ditch, or other irregularity.

To prevent injury or damage from a rolling bale, discharge bales on level ground or in such a manner that the bale will not roll.



PP98408,00007CF -19-30SEP11-1/1

E36866—UN—30APR92

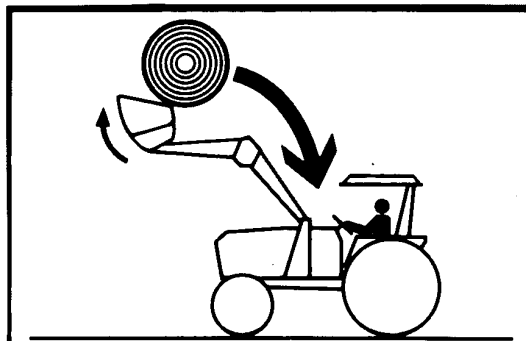
Handle Round Bales Safely

To help prevent personal injury, do not handle round bales without approved John Deere Round Bale Handling attachments.

Improper use of loaders to handle round bales can result in serious injury or death to the tractor/loader operator. This could be caused by the bale rolling back down the loader into the operator's station.

To attain optimum stability and visibility:

- Do not handle bales that exceed the bale weight limitations of the loader.
- Carry the bale slowly and as low as possible to the ground.
- Operate the loader controls smoothly, avoiding jerky operation.



- When handling round bales on a slope, always approach the bale with the tractor facing uphill.
- Never use the tractor/loader to stop a rolling bale.

PP98408,00007D0 -19-30SEP11-1/1

W00226—UN—04DEC91

Prepare For Emergencies

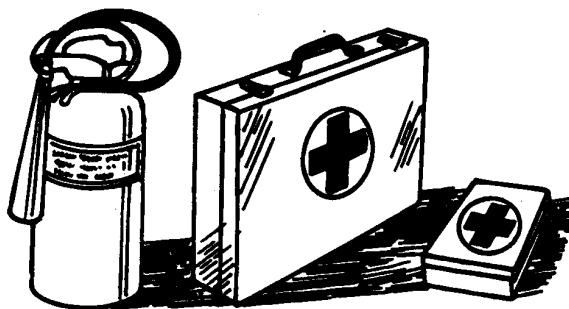
Be prepared if a fire starts.

1. Eject bale immediately.
2. Move tractor and baler upwind 9 m (30 ft.) away from flammable material.
3. Raise gate and engage gate lock valve.
4. Use fire extinguisher or other water supply to put out fire.

A 9.5 L (2-1/2 gal.) pressurized-water fire extinguisher is recommended. See manufacturers recommendation for inspection and maintenance.

Keep first aid kit handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



TS291—UN—15APR13

PP98408,00007D1 -19-07NOV11-1/1

Fire Prevention

To reduce the risk of fire, follow these guidelines, especially in dry crop conditions:

- Equip the baler with a water-type fire extinguisher. Large capacity water fire extinguishers are recommended because application of water can cool hot parts to prevent a fire. (See Attachments section.)
- Keep foreign material from building up on the machine near potentially hot areas, such as bearings on the ends of baler rolls and slip-clutch. Remove this buildup as part of the regular service operations and at the end of each use.
- Avoid high pressure power-washing adjacent to the bearings on ends of baler rolls to prevent damaging seals.
- Check bearings on ends of baler rolls regularly for early signs of failure replace as necessary. (See Lubrication and Maintenance section or see your John Deere dealer.)
- If noticeable changes in machine performance occur which might indicate a part is beginning to fail, stop baling immediately and investigate the cause of any sounds, smells, or sights which are unusual.
- Promptly eject bales after they have been tied or wrapped. Do not use the baler to transport bales from the field. Do not bring a baler, with a bale inside it, into a building. Never leave a baler unattended with a bale inside the chamber.



- Use extreme care if it is necessary to park a baler in a field of dry crop or stubble. Whenever possible, park baler on bare ground or in an area surrounded by bare ground. Before leaving a baler which has been operating, verify there are no areas which are hot enough to start a fire. Do not leave the baler unattended near bales which have been baled wet, because spontaneous combustion can occur.
- If service operations require using a welder, cutting torch or grinder on the baler, refer to Fire Prevention in Service—Baler section for guidelines which may prove useful in preventing a fire.
- Use extreme care when smoking around the baler.

PP98408,00007D2 -19-30AUG12-1/1

TS227 —UN—15APR13

In Case of Fire

Stop baling immediately at the first sign of trouble. This may be a scorched smell, an unusual sound, or the sight of smoke or flame.

Do not risk personal injury. If a fire is too far advanced, do not try to extinguish it.

If you can safely extinguish the fire, proceed carefully and follow these guidelines:

- Position the tractor upwind from the baler to avoid the fire from overtaking the tractor.
- Open the baler gate to eject any crop material from the bale chamber, and drive away from this material.
- Use a fire extinguisher or other source to spray water at the base of the flame, and to cool adjacent parts. Do



not position yourself under an open baler gate. It may fall if baler is on fire.

PP98408,00007D3 -19-30SEP11-1/1

TS227 —UN—15APR13

Extinguishing a Fire

Stop baling immediately at the first sign of trouble. This can be a scorched smell, an unusual sound, or the sight of smoke or flame.

CAUTION: Avoid serious personal injury from fire. Do not attempt to extinguish a fire that is too far advanced.

If you can safely extinguish the fire, proceed carefully and follow these guidelines:

1. Position the tractor upwind from the baler to avoid the fire from overtaking the tractor.
2. Open the baler gate to eject any crop material from the bale chamber, and drive away from this material.
3. Use a fire extinguisher or other source to spray water at the base of the flame, and to cool adjacent parts. Do



not position yourself under an open baler gate or raised tension arm because they can fall if baler is on fire.

PP98408,00006BD -19-21FEB12-1/1

TS227—UN—15APR13

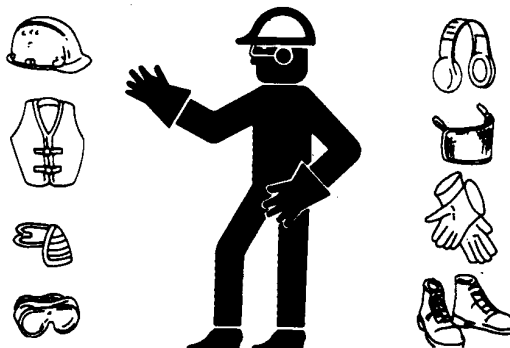
Wear Protective Clothing

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



DX,WEAR -19-10SEP90-1/1

TS206—UN—15APR13

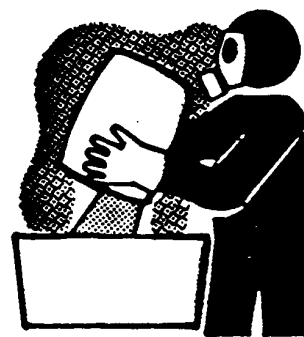
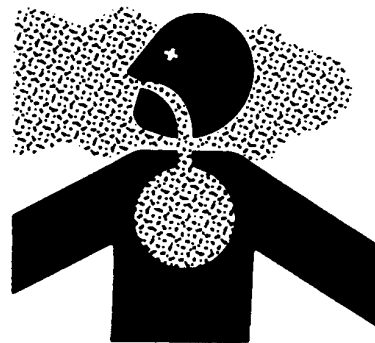
Handle Agricultural Chemicals Safely

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled **'Caution'**: Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.



A34471

DX,WW,CHEM01 -19-24AUG10-1/1

TS220 —UN—15APR13

A34471 —UN—11OCT88

Stay Clear of Rotating Drivelines

Entanglement in rotating driveline can cause serious injury or death.

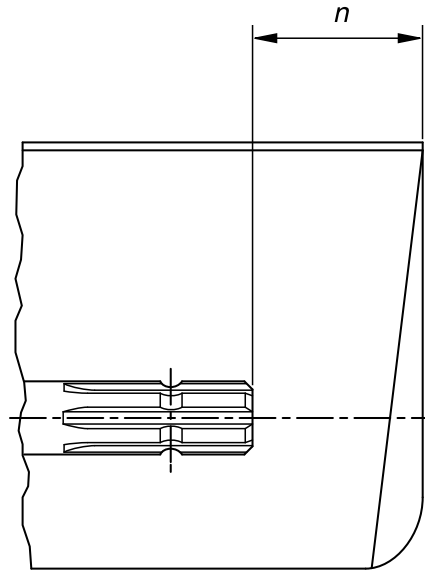
Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Wear close fitting clothing. Stop the engine and be sure that PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

Do not install any adapter device between the tractor and the primary implement PTO drive shaft that will allow a 1000 rpm tractor shaft to power a 540 rpm implement at speeds higher than 540 rpm.

Do not install any adapter device that results in a portion of the rotating implement shaft, tractor shaft, or the adapter to be unguarded. The tractor master shield shall overlap the end of the splined shaft and the added adaptor device as outlined in the table.

PTO Type	Diameter	Splines	$n \pm 5 \text{ mm (0.20 in.)}$
1	35 mm (1.378 in.)	6	85 mm (3.35 in.)
2	35 mm (1.378 in.)	21	85 mm (3.35 in.)
3	45 mm (1.772 in.)	20	100 mm (4.00 in.)



TS1644 — UN—22AUG95

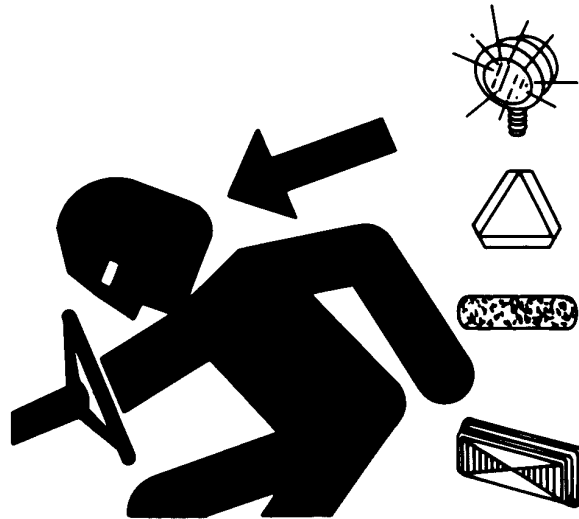
H96219 — UN—29APR10

DX,PTO -19-30JUN10-1/1

Use Safety Lights and Devices

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.



TS951 — UN—12APR90

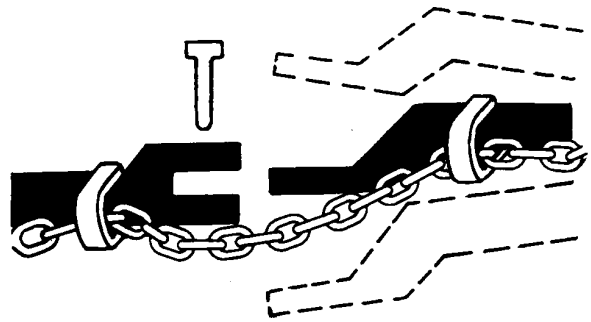
DX,FLASH -19-07JUL99-1/1

Use a Safety Chain

A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

See your John Deere dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine. Do not use safety chain for towing.



DX,CHAIN -19-03MAR93-1/1

TS217 —UN—23AUG88

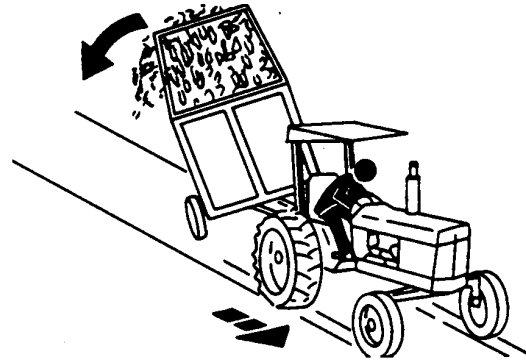
Tow Loads Safely

Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control. Consider the total weight of the equipment and its load.

Observe these recommended maximum road speeds, or local speed limits which may be lower:

- If towed equipment does not have brakes, do not travel more than 32 km/h (20 mph) and do not tow loads more than 1.5 times the tractor weight.
- If towed equipment has brakes, do not travel more than 40 km/h (25 mph) and do not tow loads more than 4.5 times the tractor weight.

Ensure the load does not exceed the recommended weight ratio. Add ballast to recommended maximum for tractor, lighten the load, or get a heavier towing unit. The



tractor must be heavy and powerful enough with adequate braking power for the towed load. Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.

DX,TOW -19-02OCT95-1/1

TS216 —UN—23AUG88

Practice Safe Maintenance

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.



TS218 —UN—23AUG88

DX,SERV -19-17FEB99-1/1

Remove Paint Before Welding or Heating

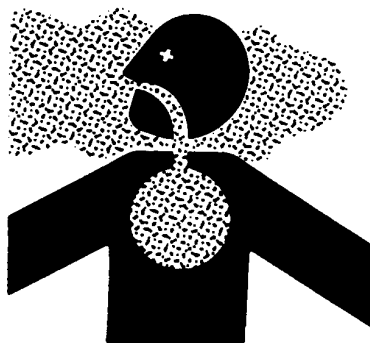
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place.



Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

TS220 —UN—15APR13

DX,PAINT -19-24JUL02-1/1

Avoid Heating Near Pressurized Fluid Lines

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.



DX,TORCH -19-10DEC04-1/1

TS953 —UN—15MAY90

Avoid High-Pressure Fluids

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

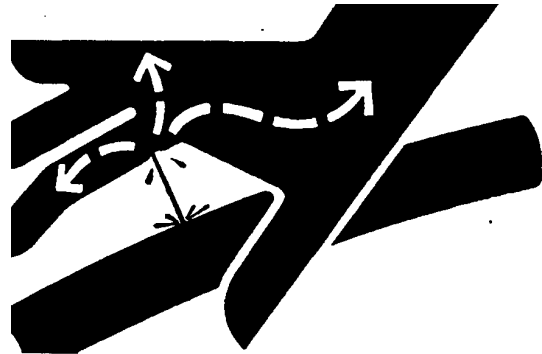
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar



with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID -19-12OCT11-1/1

X9811 —UN—23AUG88

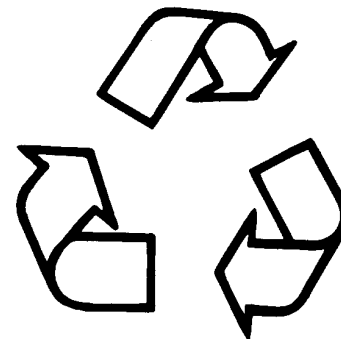
Dispose of Waste Properly

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.



Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

DX,DRAIN -19-03MAR93-1/1

TS1133 —UN—15APR13

Safety Sign Location

Replace Safety Signs

Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.



TS201 —UN—15APR13

DX,SIGNS -19-18AUG09-1/1

Safety Signs

(A) — Danger DO NOT TAKE CHANCES. To avoid injury or death by being pulled into the machine.

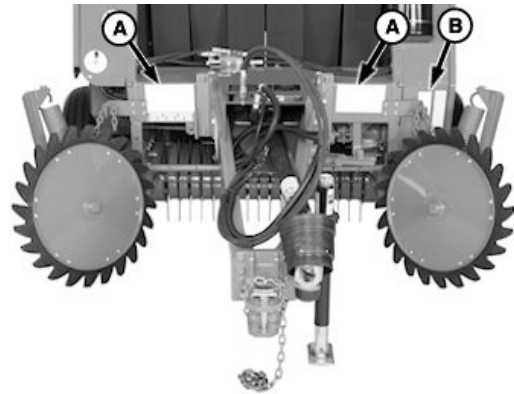
DO NOT attempt to feed crop or twine into baler or unplug feed area WHILE BALER IS RUNNING. The baler feeds material faster than you can release it.

Disengage PTO and shut off engine.

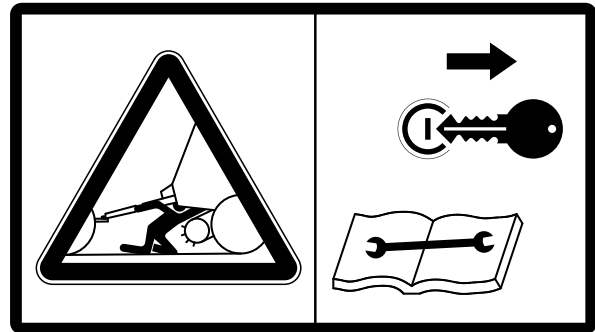
(B) — Warning Avoid crushing between twine arm and twine cutter.

Twine arm can move unexpectedly.

Keep hands out of its path and turn off power.



Front Frame



(A) — Danger



(B) — Warning

Continued on next page

PP98408,0000774 -19-07FEB14-1/10

E67865 —UN—14SEP12

SSE309022 —UN—26FEB09

SSH154128 —UN—24FEB09

(A) — Caution Operate only with 540 rpm PTO.



PTO Cover



(A) — Caution

Continued on next page

PP98408,0000774 -19-07FEB14-2/10

E67767 —UN—10SEP12

SSCC41458 —UN—24FEB09

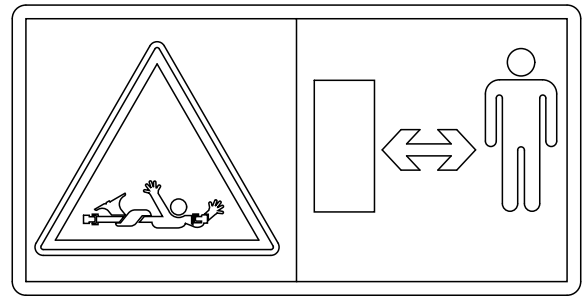
(A) — Danger Entanglement in rotating driveline can cause serious injury or death.

Keep all shield in place.

Avoid contact with rotating parts.



PTO Cover



(A) — Danger

Continued on next page

PP98408,0000774 -19-07FEB14-3/10

E67768 —UN—10SEP12

SSE307458 —UN—18SEP08

(A) — Warning Avoid serious personal injury from fire.

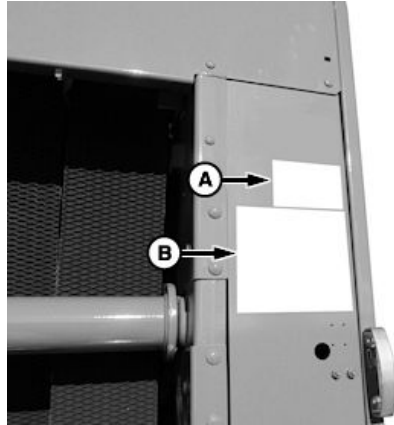
Do not attempt to extinguish a fire that is too far advanced.

See Operator's Manual for information about preventing and extinguishing fires before operating.

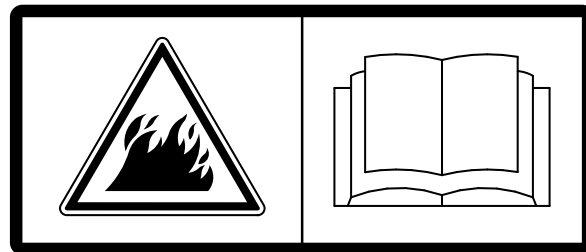
(B) — Important There is a risk of fire during operation of large round balers, especially in dry material.

TO MINIMIZE THE RISK: Check often, for crop buildup, wrapping and overheating around all moving parts. Attach a pressurized water fire extinguisher to baler (see Operator's Manual for more information).

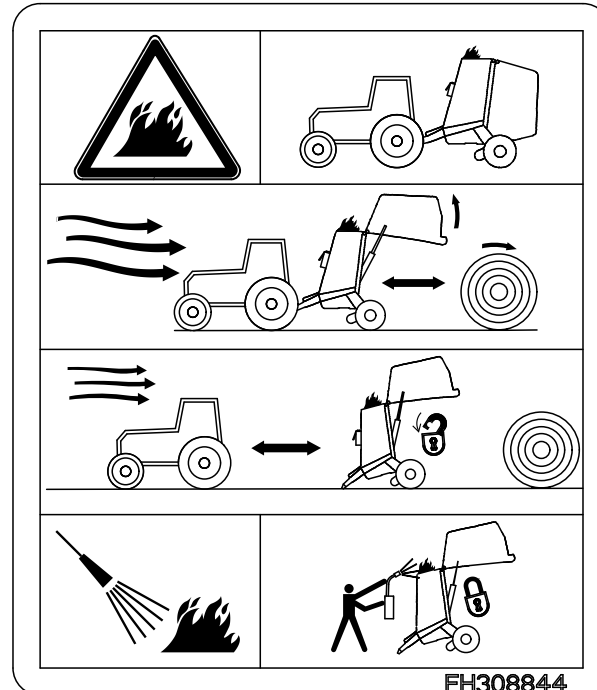
IF FIRE SHOULD OCCUR: Eject bale immediately. Move tractor and baler upwind 9 m (30 ft.) away from flammable material. Raise gate and engage gate lock valve. Use fire extinguisher or other water supply to put out fire.



Left-Hand Side



(A) — Warning



(B) — Important

Continued on next page

PP98408,0000774 -19-07FEB14-4/10

E67769 —JUN—11SEP12

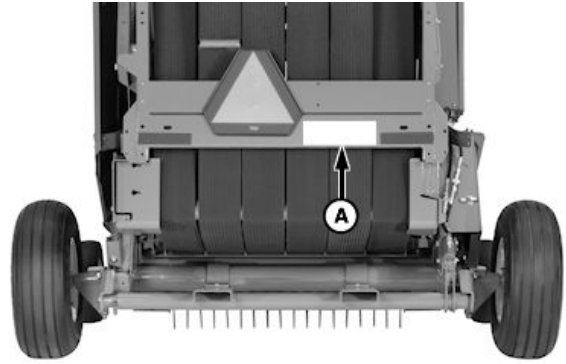
SSE309021 —JUN—26FEB09

SSE67781 —JUN—11SEP12

(A) — Warning Help prevent crushing injury: Be sure bystanders stand clear before operating gate and unloading bale.

STAY CLEAR OF GATE AND PUSH BAR while being raised or lowered.

WATCH FOR ROLLING BALE.



Rear Gate

SSE67780 —UN—11SEP12



(A) — Warning

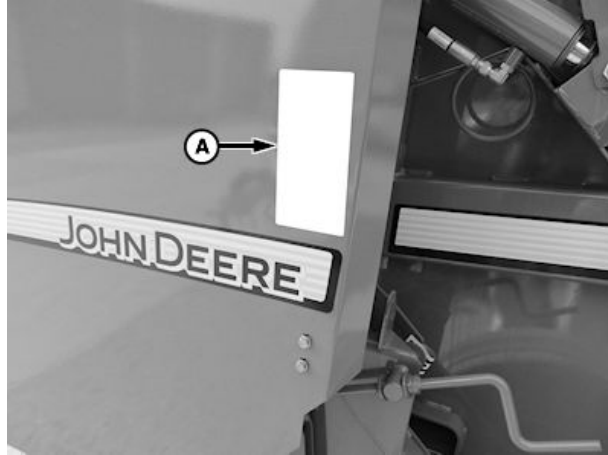
Continued on next page

PP98408,0000774 -19-07FEB14-5/10

E67866 —UN—14SEP12

(A) — Warning ENGAGE GATE LOCK before working on or around gate in raised position.

STAND CLEAR before unlocking gate lock.



Left-Hand Door Shown



Left-Hand Side Door Open



(A) — Warning

Continued on next page

PP98408,0000774 -19-07FEB14-6/10

E67867 —UN—14SEP12

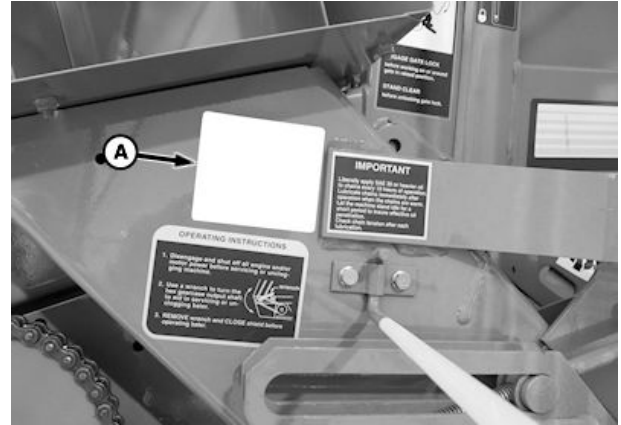
E67772 —UN—11SEP12

SSE309016 —UN—26FEB09

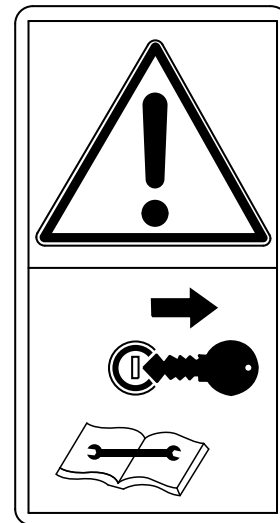
(A) — Caution Keep all shields in place.

Disengage and shut off all engine and motor power before servicing or unclogging machine.

Keep hands, feet, and clothing away from power-driven parts.



Left-Hand Side Door Open



(A) — Caution

Continued on next page

PP98408,0000774 -19-07FEB14-7/10

E67773 —UN—11SEP12

SSZ59872 —UN—16JUL08

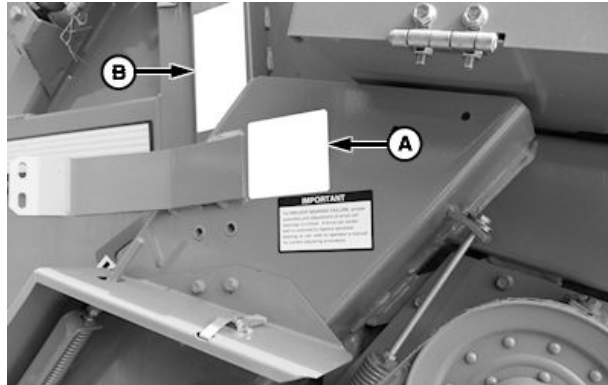
(A) — Caution Keep all shields in place.

Disengage and shut off all engine and motor power before servicing or unclogging machine.

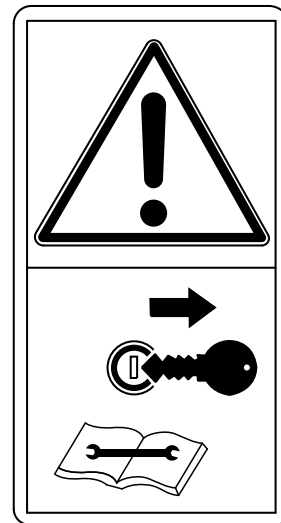
Keep hands, feet, and clothing away from power-driven parts.

(B) — Warning ENGAGE GATE LOCK before working on or around gate in raised position.

STAND CLEAR before unlocking gate lock.



Right-Hand Side Shown



(A) — Caution



(B) — Warning

Continued on next page

PP98408.0000774 -19-07FEB14-8/10

E67869—UN—18SEP12

SSZ59872—UN—16JUL08

SSE309016—UN—26FEB09

(A) — Warning Do not exceed this implement's maximum transport speed of 32 km/h (20 mph).

Exceeding this speed may result in loss of control during transport or braking and serious injury or death.

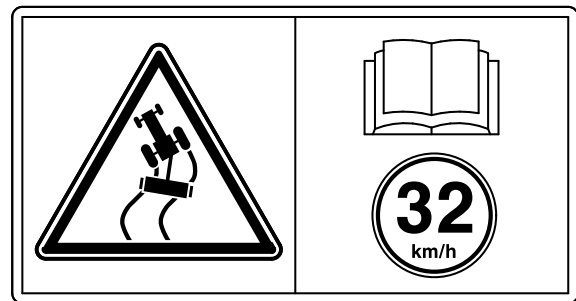
Transport only with a properly ballasted tractor and a properly attached safety tow chain.

Do not transport with a motor vehicle.

Reduce speed and use additional caution when on inclines, towing under adverse surface conditions, and turning.



Left-Hand Side



(A) — Warning

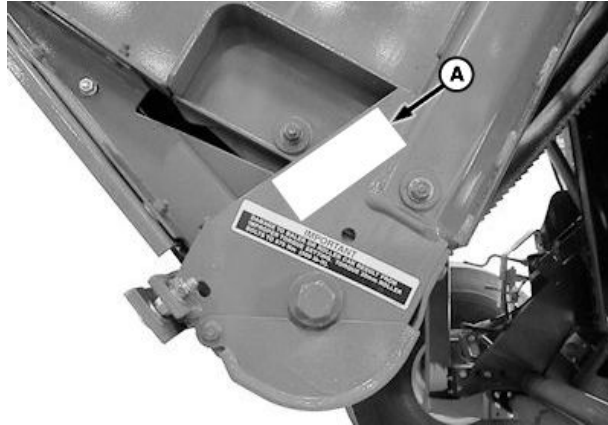
Continued on next page

PP98408,0000774 -19-07FEB14-9/10

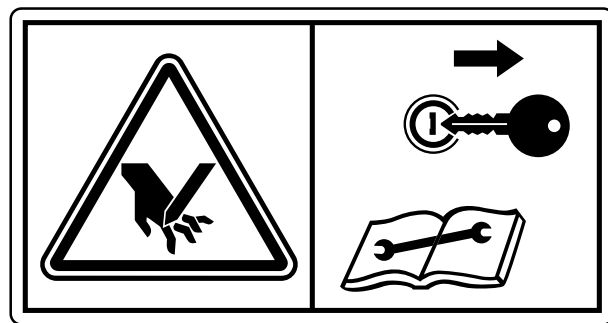
E67777 —UN—11SEP12

SSA83030 —UN—21FEB06

(A) — Warning AVOID INJURY TO FINGERS. Shut off all power before servicing. Keep hands clear when machine is running.



Gate Frame Both Sides



(A) — Warning

PP98408,0000774 -19-07FEB14-10/10

E67779 —UN—11SEP12

SSE72518 —UN—07FEB14

Preparing the Tractor

Select Tractor PTO Speed

IMPORTANT: Never operate baler equipped for 540 rpm PTO drive with a tractor equipped for 1000 rpm PTO.

Always run tractor at rated, or below, PTO speed. Overspeed will cause damage to drive system.

Tractor must be equipped with a 540 rpm PTO shaft and have a minimum output of 41.2 kW (55 hp.).

If necessary, see your tractor operator's manual to change PTO stub shaft.

PP98408,0000DB9 -19-07FEB13-1/1

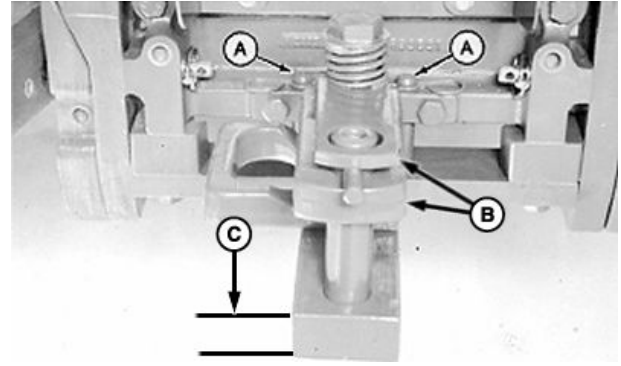
Adjust Tractor Drawbar

CAUTION: To avoid personal injury, use locking pins to hold drawbar stationary when operating PTO-driven implements.

1. Remove locking pins (A) and slide drawbar to center position (shown).
2. Install locking pins.
3. If equipped, remove clevis (B).

IMPORTANT: To avoid baler tongue or hitch damage, do not operate baler with tractor drawbar thicker than 51 mm (2.0 in.).

4. Measure drawbar thickness (C). Baler tongue hitch is compatible with tractor drawbar thickness up to 51 mm (2.0 in.).
5. Position 3-point hitch lower link sway blocks to provide maximum ground to tractor clearance. (See tractor operator's manual.)



John Deere 7000 Series Tractor Shown

A—Locking Pins
B—Clevis

C—Drawbar Thickness

E55187 —UN—04JUN07

Continued on next page

PP98408,0000DBA -19-07FEB13-1/2

IMPORTANT: Failure to conform to the following setup dimensions can result in serious powerline damage.

6. If drawbar is offset, turn drawbar so offset is down, as shown.

7. Set drawbar to the following dimensions:

540 rpm PTO Size	A mm (in.)	B mm (in.)	C mm (in.)
1-3/8 in.	356 (14)	152—305 (6—12)	330—508 (13—20)

IMPORTANT: To avoid powerline damage when front of tractor points down, there must be a minimum of 90—102 mm (3.5—4.0 in.) clearance (B) between powerline and top of hitch strap (D). Measure on level ground.

If tractor drawbar is too low the following problems can occur:

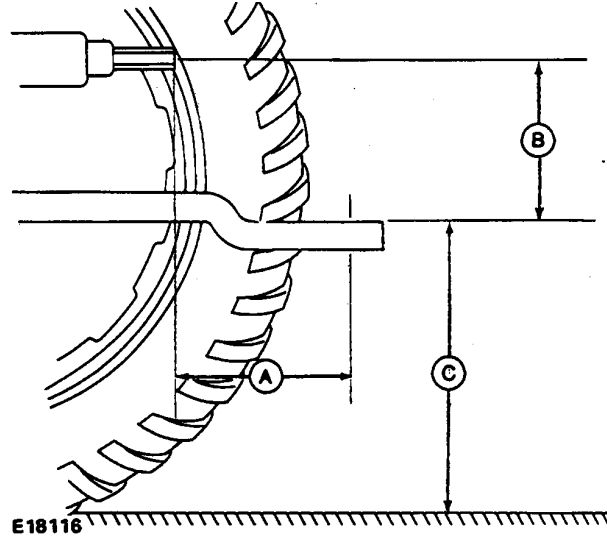
- Drag tall windrows
- Feeding capacity is reduced due to feed opening being closed
- Pickup will not raise high enough for transport
- Inadequate pickup float at recommended spring settings
- Slow bale discharge

To increase drawbar height, flip drawbar over (offset up).

If tractor drawbar is too high the following problems can occur:

- Pickup teeth will not touch ground
- Gate cannot clear the bale during discharge

A—Dimension, End of PTO to Hole in Drawbar
B—Dimension, Center of PTO to Top of Drawbar
C—Dimension, Top of Drawbar to Ground
D—Hitch Strap



PP98408,0000DBA -19-07FEB13-2/2

Tractor Drawbar (Heavy-Duty)

IMPORTANT: Some tractors are not equipped with a drawbar strong enough for use with the baler. If so, replace drawbar with a heavy-duty drawbar.

Inspect your tractor drawbar frequently for cracking or bending. Replace it immediately if any damage is observed.

See your John Deere dealer for information on special heavy-duty drawbars that are available for many John Deere tractor models.

Baler tongue hitch is compatible with tractor drawbar thickness up to 51 mm (2.0 in.).

PP98408,0000DBB -19-07FEB13-1/1

Three-Point Hitch Position

IMPORTANT: To prevent damage to PTO driveline when making turns, lock tractor lower lift links in the up position.

Lock tractor lower lift links in the up position. (See tractor operator's manual.)

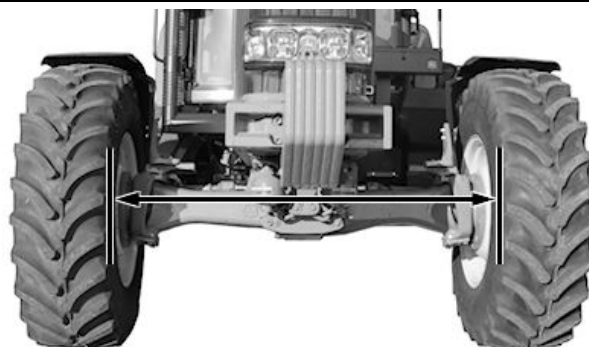
PP98408,0000DBC -19-07FEB13-1/1

Adjust Tractor Wheels

NOTE: Adjust tractor wheels toward upper end of specifications to improve:

- Bale shape by crowding ends of pickup
- Ability to pick up crop

Adjust front wheels to provide an inside tire-to-tire dimension of 1372—1524 mm (54—60 in.).



E67206 —UN—07AUG12

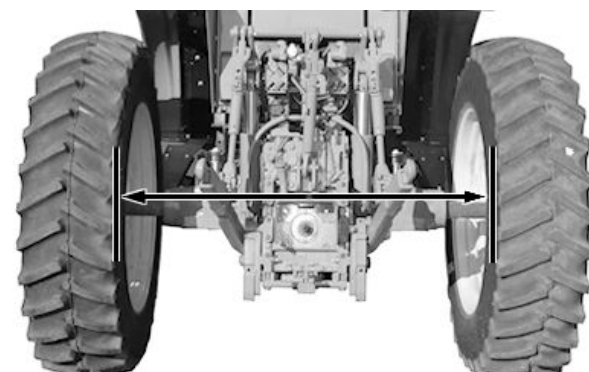
PP98408,0000DBD -19-07FEB13-1/2

Adjust rear tractor wheels to provide an inside dimension according to specifications. Do not exceed outside dimension limitations to prevent machine damage.

Tire-to-Tire Dimension	
4 ft. Wide Baler	1372—1524 mm (54—60 in.) Outside dimension not to exceed 2591 mm (102 in.)

IMPORTANT: Do not make short turns or cause the baler to jackknife while backing, as damage can occur to the PTO driveline, tractor tires, baler frame, and gathering wheels.

NOTE: If tread setting is too narrow, operator will not be able to make properly shaped bales without driving on windrow. This can result in bales with soft ends and loose twine. (See INTERPRET



E67207 —UN—07AUG12

BALE SHAPE INDICATORS and WEAVE IN THE WINDROW in Operating the Baler section.)

PP98408,0000DBD -19-07FEB13-2/2

Check Ballast, Wheel Spacing, and Tire Inflation

Provide sufficient weight to stabilize tractor when operating on hilly land or other adverse conditions. (See your tractor operator's manual).

To insure proper stability, adjust ballast, wheel spacing, and tire inflation according to tractor operator's manual.

PP98408,0000DBE -19-07FEB13-1/1

Adjust Tractor Hydraulic Outlets

The tractor must have two double-acting selective control valves (SCV); one for gate control and one for manual hydraulic twine wrap. Only one SCV is needed when baler is equipped with optional Auto-Tie feature.

NOTE: Adjust hydraulic flow with a bale in chamber and hot oil.

NOTE: Check times with no bale in chamber and hot oil.

Adjust tractor hydraulic remote outlets to provide approximately 5 second gate opening time.

When lowering the baler gate, avoid putting hydraulics into float position. SCV lever must return to neutral position.

See Hydraulics and Selective Control Valves in tractor operator's manual.

PP98408,0000DBF -19-07FEB13-1/1

Tractor Convenience Outlet

John Deere 5000, 6000, 7000, or 8000 series tractors

Standard convenience outlet (A) provides power for:

- Hydraulic Twine: Bale size alarm
- BaleTrak™ Pro monitor-controller

A—Convenience Outlet



E66075—UN—19JUN12

BaleTrak is a trademark of Deere & Company

PP98408,0000DC0 -19-07FEB13-1/3

Other tractor models without a convenience power outlet

Order convenience outlet kit AE50549 from your John Deere dealer. Kit consists of 12 gauge wires and a circuit breaker. When installing kit, attach the power and ground wires directly to the battery terminal clamp bolts, only.

IMPORTANT: If equipped with BaleTrak™ Pro, monitor-controller is polarity sensitive. The red lead from the monitor-controller power input MUST be installed on the positive (+) side of a 12 V system. Failure to do so will cause monitor-controller to not function.



E39605—UN—27NOV95

Continued on next page

PP98408,0000DC0 -19-07FEB13-2/3

Other tractor models with a convenience power outlet, equipped with BaleTrak™ Pro

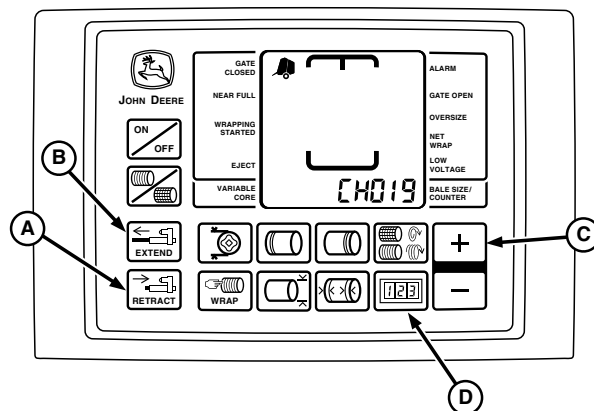
Complete the following check to determine if the convenience power outlet provides adequate power for the BaleTrak™ Pro system.

1. With tractor engine running and the monitor in twine mode, press and hold the COUNTER key (D) while turning on the monitor.
2. Continue to hold the COUNTER key and press PLUS key (C) until CH019 appears in the digital display.
3. Release COUNTER key (D). View voltage readout.
4. Using the EXTEND key (B), extend twine actuator slightly.
5. Push and hold the RETRACT key (A) until the actuator stalls out in cutoff position and note voltage displayed.

IMPORTANT: Monitor-controller is polarity sensitive.

Red lead from monitor-controller power input MUST be installed on the positive (+) side of a 12 V system.

NOTE: If a convenience outlet is needed, order convenience outlet (AE50549) from your John Deere dealer.



A—RETRACT Key
B—EXTEND Key

C—PLUS Key
D—COUNTER Key

6. If voltage is less than 9.7 V, install convenience outlet kit. Attach power and ground wires directly to battery terminal clamp bolts, only.

PP98408,0000DC0 -19-07FEB13-3/3

E52484—UN—24JUN03

Right-Hand Rear-View Mirror

To assist in seeing bale size indicator while baling, install right-hand rear-view mirror. See your John Deere dealer.



PP98408,0000DC1 -19-07FEB13-1/1

E63789—UN—15JUN12

Extended Rear-View Mirror

Install an extended rear-view mirror on tractor to improve visibility of traffic behind the baler when towing on public roads. See your John Deere dealer.



E63790 —JUN—15JUN12

PP98408,0000DC2 -19-07FEB13-1/1

Preparing the Tractor for BaleTrak™ Pro

Install BaleTrak™ Pro Monitor-Controller on Open-Station Tractor

NOTE: Monitor-controller mounting bracket is available from your John Deere dealer.

Mount monitor-controller bracket on cowl or fender area. Be sure to check for mounting hardware clearance before drilling.

An additional monitor-controller unit is available to allow convenient changing of baler from one tractor to another.



E40573 —UN—22JUN96

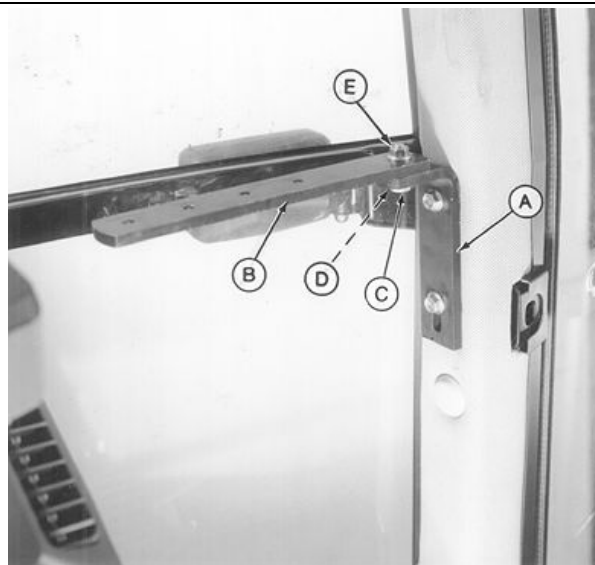
PP98408,0000DC3 -19-07FEB13-1/1

Install BaleTrak™ Pro Monitor-Controller in ComfortGard™ Cab

NOTE: On some tractors, it is necessary to remove the foam corner post panel to gain access to the mounting studs. The panel will need holes drilled in order to fasten bracket (see photo).

1. Remove top two plugs from lower right-hand front cab post.
2. Install angle (A) to cab post. Fasten with two M10 x 20 mm flange-head cap screws.
3. Install monitor-controller strap (B) to angle (A). Fasten with cap screw (C), washer (D) and flange nut (E).

A—Angle
B—Monitor-Controller Strap
C—Cap Screw, M10 x 35 mm
D—Washer
E—Flange Nut



E38450 —UN—25APR95

PP98408,0000DC4 -19-07FEB13-1/3

4. Put monitor-controller (A) pivot bracket on top of mounting bracket. Fasten with M6 x 16 cap screw.
5. Route harness along right-hand side of cab, away from operating levers, and toward the rear of cab.

A—Monitor-Controller



E52435 —UN—16JUN03

Continued on next page

PP98408,0000DC4 -19-07FEB13-2/3

6. Connect harness power plug to convenience outlet (A).
7. Route harness through grommet in back of cab, or drill a 44 mm (1-3/4 in.) diameter hole in rear wall if necessary.

A—Convenience Outlet



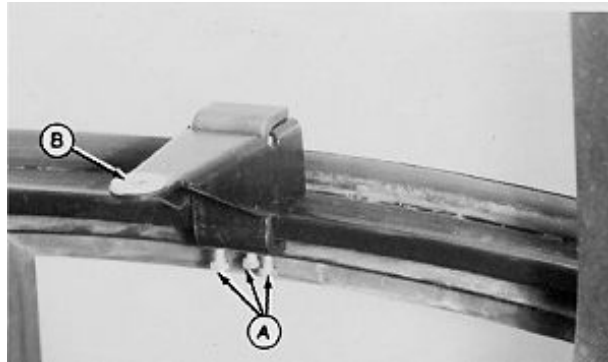
E66075—UN—19JUN12

PP98408,0000DC4 -19-07FEB13-3/3

Install BaleTrak™ Pro Monitor-Controller in SOUND-GARD™ Cab

1. Assemble monitor-controller bracket (B) to base.
2. Attach base to window ledge. Fasten with cap screws (A).

A—Cap Screws, 5/16 x 1-3/4 in. B—Bracket
(3 used)



E21705—UN—15SEP88

PP98408,0000DC5 -19-07FEB13-1/3

3. Put monitor-controller (A) pivot bracket on top of mounting bracket. Fasten with M6 x 16 cap screw.
4. Route harness along right-hand side of cab, away from operating levers, and toward the rear of cab.

A—Monitor-Controller



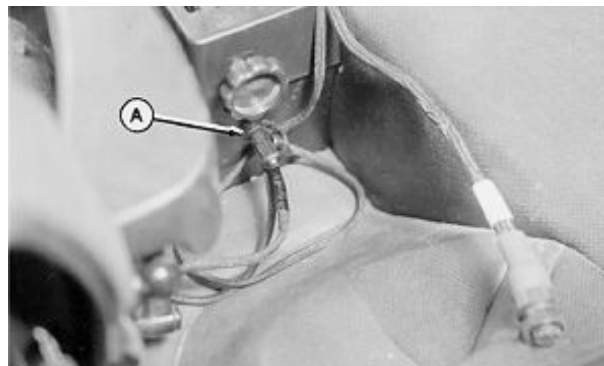
E52435—UN—16JUN03

Continued on next page

PP98408,0000DC5 -19-07FEB13-2/3

5. Connect harness power plug to convenience outlet (A).
6. Route harness through grommet in back of cab, or drill a 44 mm (1-3/4 in.) diameter hole in rear wall if necessary.

A—Convenience Outlet



E21708 —UN—06JUL89

PP98408,0000DC5 -19-07FEB13-3/3

Preparing the Baler

Check Bale Size Switch

IMPORTANT: Damage to baler can occur if overfilled. To avoid baler damage, test switch prior to operating. Intent of switch is to alert

operator that bale size has exceeded 1.5 m (5 ft.). (See ADJUST BALE SIZE SWITCH in Service—Baler section or ADJUST OVERSIZE BALE SWITCH in Service - BaleTrak™ Pro System section if equipped.)

PP98408,0000DC6 -19-07FEB13-1/1

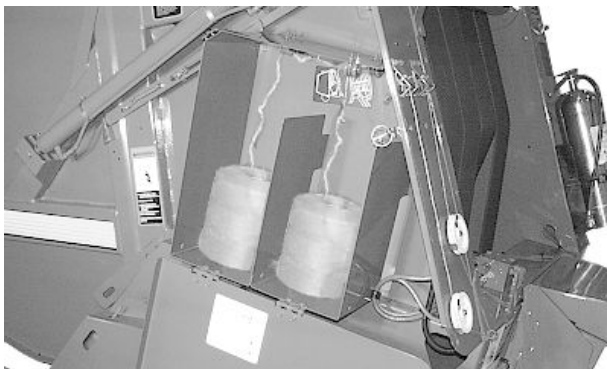
Select Twine

A good quality twine plays an important part in proper baler operation. Select the twine which meets the ASABE standards for a more trouble-free baling operation.

Twine of good tensile strength and uniformity in size must be selected for proper baling operation. This will help prevent twine from breaking during handling and transporting of bales.

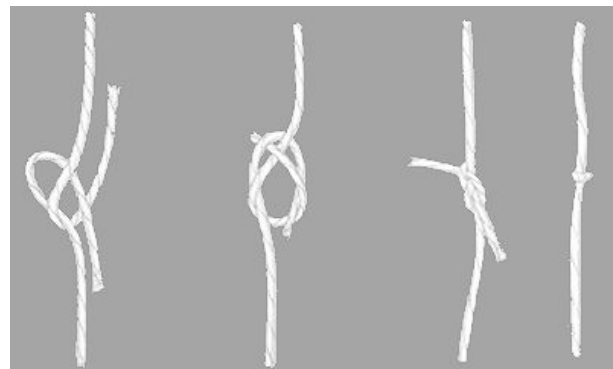
PP98408,0000DC7 -19-07FEB13-1/1

Load Twine Box



Right-Hand Side

E69388 —UN—07FEB13



Plastic Twine (Sheet Bend Knot)

E26419 —UN—12SEP00

1. Open twine compartment door.

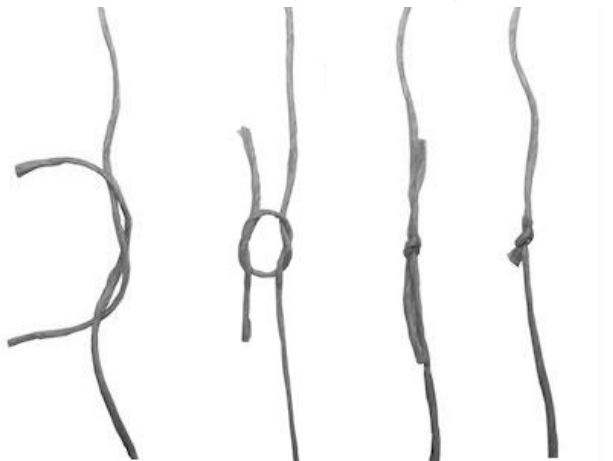
NOTE: Up to four balls of twine can be loaded into twine box by stacking on top of each other. Two twine balls shown.

2. Place one ball of good quality twine in each twine box. Be sure that twine is pulled from end of the ball marked TOP.

IMPORTANT: The twine knot must be small enough to pass through the guides and twine arm.

3. **Stacked twine balls;**

- a. Join twine balls by tying the inside end of one ball to the outside of other ball.
 - Tie plastic twine balls together with a sheet bend knot.
 - Tie sisal twine balls together with a square knot.
- b. Trim loose ends of twine as close to knot as possible.



Sisal Twine (Square Knot)

E66911 —UN—15JUN12

4. Route twine through guides, as shown.

PP98408,0000DC8 -19-07FEB13-1/1

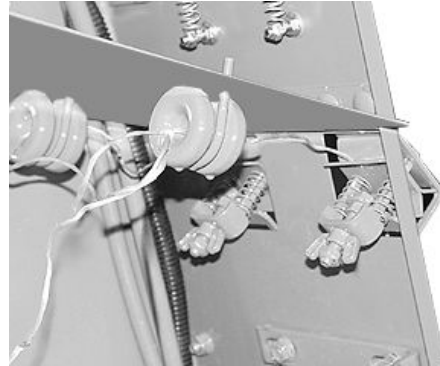
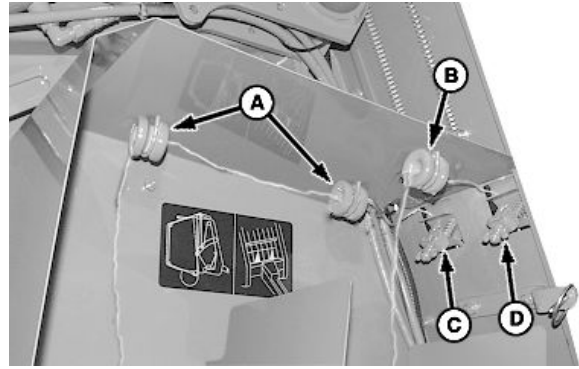
Route Twine—Right-Hand Side (Rear Arm)

NOTE: Detailed threading diagrams are located on inside of twine compartment door and right-hand side of tongue.

1. Pull twine from rear-most twine ball through guides (A).
2. Pull twine from front-most twine ball through guide (B).
3. Insert twine between tension plates (C) and (D) and pull out through front side.

A—Rear Twine Guides
B—Front Twine Guide

C—Tension Plate
D—Tension Plate



PP98408,0000DC9 -19-07FEB13-1/6

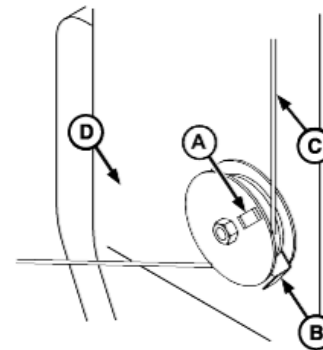
E53967 —UN—10DEC04

E54029 —UN—05JAN05

4. When using plastic twine and small sisal twine, wrap twine a FULL turn around twine moving indicator (A). Twine must wrap behind strand which comes down from twine box. Check that indicator (A) is free to spin.

NOTE: Wrapping large sisal twine a full turn around the indicator can cause the twine to cling to itself and break or cause excessive twine tension.

5. **Large Sisal Twine:** Route twine around indicators (A) and (B) as shown, without making a full turn.
6. Route twine from indicator (A) through guides (C) and (D).
7. Route twine from indicator (B) through guides (C) and (E).



Left-Hand Side Shown

A—Twine Moving Indicator
B—Twine Guide

C—Twine
D—Baler Front Sheet

Continued on next page

PP98408,0000DC9 -19-07FEB13-2/6

E54349 —UN—06JUL05

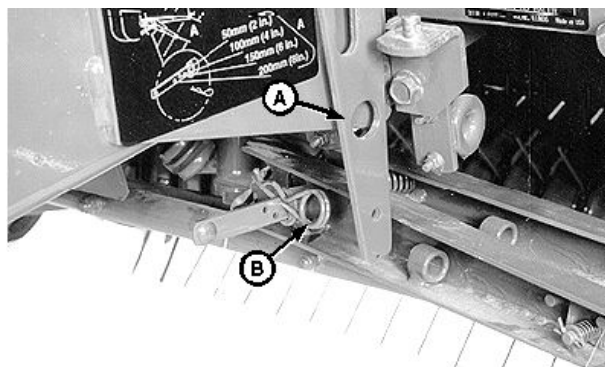
CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power **BEFORE** adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is **ON**.

8. Remove spring pin (B).
9. Lift twine arm stop (A) and move front twine arm away from rear twine arm.

A—Twine Arm Stop

B—Spring Pin



E47588 —UN—07JAN00

E40126 —UN—21JUN96

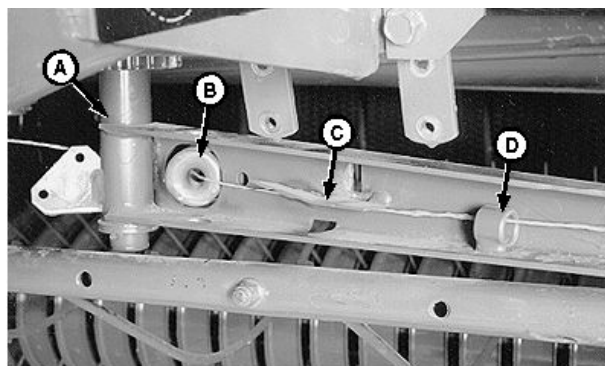
PP98408,0000DC9 -19-07FEB13-3/6

NOTE: Front twine arm is removed for illustration purpose.

10. Route twine behind arm pivot (A), through guide (B), under tab (C) and through guide (D).

A—Arm Pivot
B—Guide

C—Tab
D—Guide



E40127 —UN—25JUN96

Continued on next page

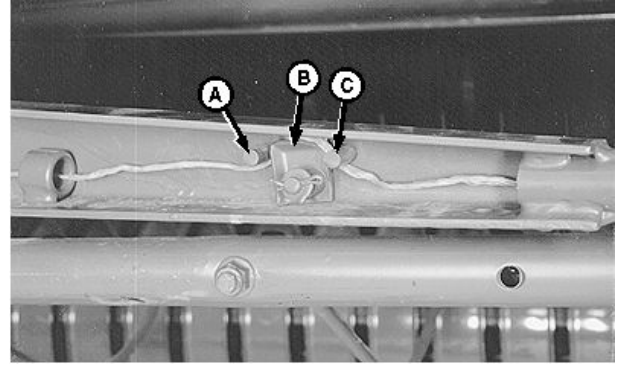
PP98408,0000DC9 -19-07FEB13-4/6

NOTE: Remove any crop buildup from tension plate area and make sure twine moving indicator pulleys spin freely.

11. Route twine under guide pin (A), over top of tension plate (B) and under guide pin (C). Pull on twine to get twine between plates.

A—Guide Pin
B—Tension Plate

C—Guide Pin



PP98408,0000DC9 -19-07FEB13-5/6

E40128—UN—21JUN96

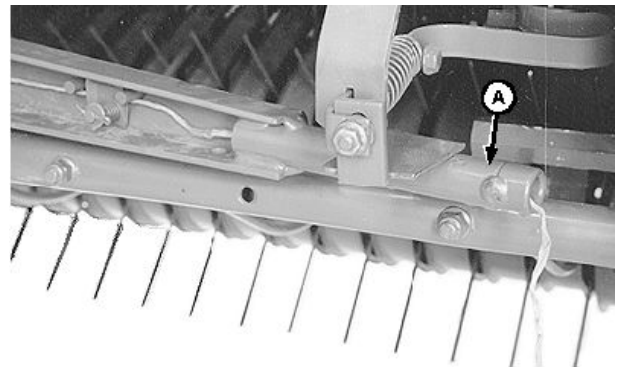
12. Pull twine through twine tube (A). Pull on twine to remove slack between guides. Twine pull must be within specifications with twine perpendicular to the twine arm. To adjust twine tension, see ADJUST TWINE TENSION in Operating the Baler section.

Specification

Twine Tension—Pull
(Force)..... 22—45 N
(5—10 lb.-force)

13. Cut twine 305—381 mm (12—15 in.) beyond end of twine tube (A).
14. Lift twine arm stop and move front twine arm toward rear twine arm. Install spring pin, removed in earlier step, in one of the four positions for desired twine spacing.
15. Adjust twine spacing.

- Manual Hydraulic Tie: See ADJUST TWINE SPACING-Manual Hydraulic Tie in this section.
- AUTO-TIE: See SET TWINE SPACING in Operating Baler with BaleTrak™ Pro System section.



A—Twine Tube

16. Route twine for front arm.

- Manual Hydraulic Tie: Repeat earlier steps.
- AUTO-TIE: See ROUTE TWINE — LEFT-HAND SIDE (Front Arm)

PP98408,0000DC9 -19-07FEB13-6/6

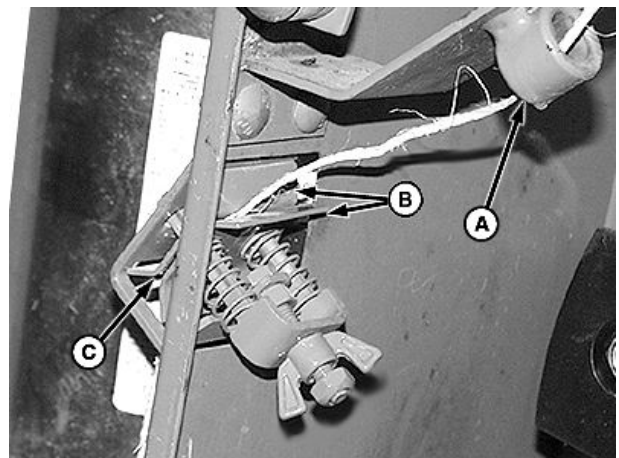
E40129—UN—21JUN96

Route Twine—Left-Hand Side (Front Arm)

1. Route twine through rear arm. (See ROUTE TWINE—RIGHT-HAND SIDE [REAR ARM] in this section.)
2. Pull twine through front guide (A) at front of twine box.
3. Insert twine between tension plates (B) and pull out through front side (C).

A—Front Guide
B—Tension Plates

C—Front of Baler



Continued on next page

PP98408,0000DCA -19-07FEB13-1/5

E48928—UN—18SEP00

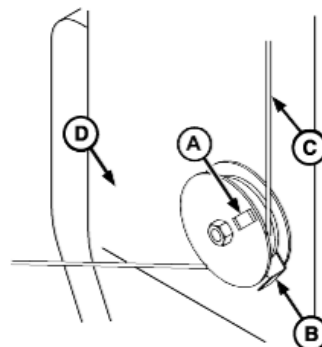
4. When using plastic twine and small sisal twine, wrap twine a FULL turn around twine moving indicator (A). Twine must wrap behind strand which comes down from twine box. Check that indicator is free to spin.

NOTE: Wrapping large sisal twine a full turn around the indicator can cause the twine to cling to itself and break or cause excessive twine tension.

5. When using large sisal twine, route twine around indicator without making a full turn.

A—Twine Moving Indicator
B—Twine guide

C—Twine
D—Baler Front Sheet



Left-Hand Side Shown

PP98408,0000DCA -19-07FEB13-2/5

ES4349—UN—06JUL05

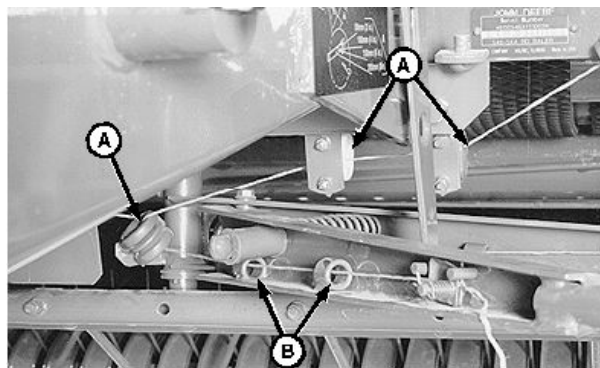
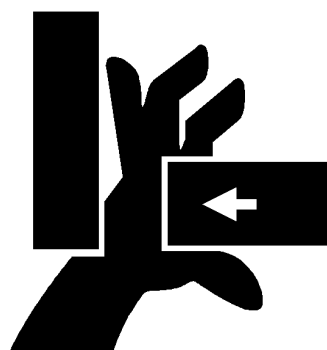
- CAUTION:** Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power BEFORE servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

6. Route twine through guides (A) and (B).

A—Twine Guides

B—Twine Guides



Continued on next page

PP98408,0000DCA -19-07FEB13-3/5

E47598—UN—07JAN00

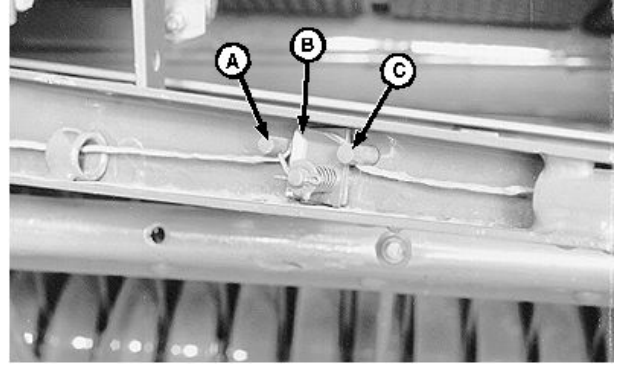
E40140—UN—21JUN96

NOTE: Remove any crop buildup from tension plate area and make sure twine moving indicator pulleys spin freely.

7. Route twine under guide pin (A), over top of tension plate (B) and under guide pin (C). Pull on twine to get twine between plates.

A—Guide Pin
B—Tension Plate

C—Guide Pin



E40141—UN—21JUN96

PP98408,0000DCA -19-07FEB13-4/5

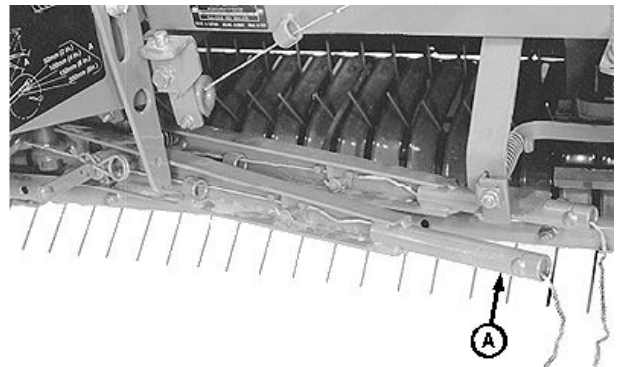
8. Pull twine through twine tube (A). Pull on twine to remove slack between guides. Twine pull must be within specifications with twine perpendicular to the twine arm. To adjust twine tension, see ADJUST TWINE TENSION in Operating the Baler section.

Specification

Twine Tension—Pull
(Force)..... 22—45 N
(5—10 lb.-force)

9. Cut twine 305—381 mm (12—15 in.) beyond end of twine tube (A).

A—Twine Tube



E40142—UN—21JUN96

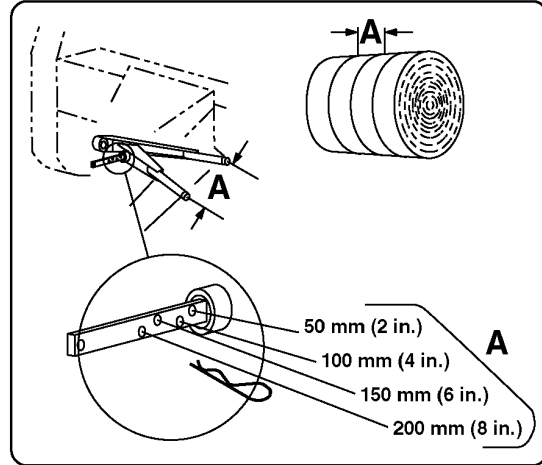
PP98408,0000DCA -19-07FEB13-5/5

Adjust Twine Spacing (Hydraulic Twine Tie)

Adjusting twine spacing on balers with hydraulic double twine wrap is a two part procedure that involves the following:

- Setting distance (A) between twine arms to match desired twine spacing (A) on the bale. (See decal located on left-hand side of tongue.)
- Adjusting flow control valve to obtain appropriate sweep time (in seconds).

NOTE: Sweep time is the time required for twine arms to travel from extreme right-hand side of baler (twine cylinder fully extended) to the home position (twine cylinder fully retracted). The flow control valve controls the sweep time and is adjusted by turning the valve knob clockwise or counterclockwise as necessary.



Decal on Left-Hand Side of Tongue

To adjust twine spacing:

1. Determine the desired twine spacing (A) on bale. There are four settings possible:
 - 50 mm (2 in.)
 - 100 mm (4 in.)
 - 150 mm (6 in.)
 - 200 mm (8 in.)

**A—Twine Spacing Distance
Between Arms**

2. Set distance (A) between tips of twine arms to the desired setting by installing spring pin in the appropriate position.

Continued on next page

PP98408,0000DCB -19-07FEB13-1/2

E44277—UN—04AUG97

NOTE: Distance between twine arms and sweep time must be synchronized or twine spacing will not be uniform.

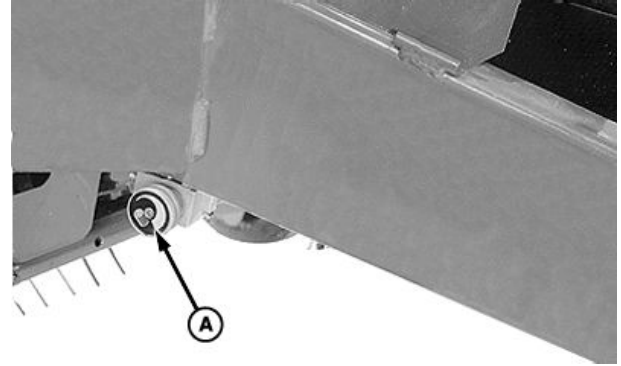
Sweep times assume that tractor is at rated PTO speed. If operating at less than rated PTO speed, increase sweep time. If operating at more than rated PTO speed, reduce sweep time.

Do not vary tractor PTO speed when tying bales. Bale rotation speed must be constant for consistent twine spacing from one bale to the next.

3. Set the sweep time as follows (see chart):

BALE HEIGHT	TWINE SPACING			
	50 mm (2 in.)	100 mm (4 in.)	150 mm (6 in.)	200 mm (8 in.)
	SWEEP TIME (SECONDS)			
1219 mm (48 in.)	21	10	7	6
1524 mm (60 in.)	25	12	8	7

- On the twine spacing chart, locate the time (in seconds), bale height, and distance between twine arms.
- Rotate adjusting knob (A) two complete turns clockwise from full open position. (*This will provide a starting point for adjusting the sweep time.*)
- Move twine arm to extreme right-hand side of baler (twine cylinder fully extended) using tractor hydraulics with tractor engine at rated PTO speed.
- With tractor engine at rated PTO speed, move twine arms to home position while holding tractor SCV lever. Observe time for the arms to move from extreme right side of baler to home position.



A—Adjusting Knob

- If sweep time is too short, turn flow valve knob clockwise.
- If sweep time is too long, turn flow valve knob counterclockwise.

- When desired sweep time has been obtained, turn knob locking ring clockwise and tighten.

For example: (See chart) If making 1219 mm (48 in.) bales with twine arm spacing set at 100 mm (4 in.), adjust valve knob (A) until sweep time equals 10 seconds.

- If spacing between any two wraps on a bale is less than 100 mm (4 in.) apart, decrease sweep time by turning knob counterclockwise.
- If spacing between any two wraps on a bale is more than 100 mm (4 in.) apart, increase sweep time by turning knob clockwise.

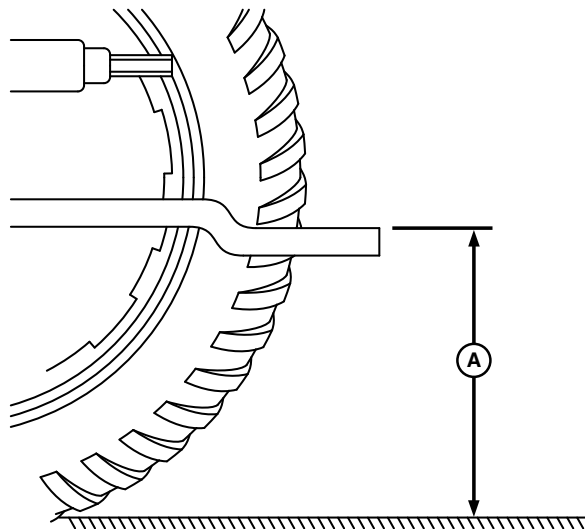
PP98408,0000DCB -19-07FEB13-2/2

E55813—UN—06JUN08

Adjust Baler Hitch

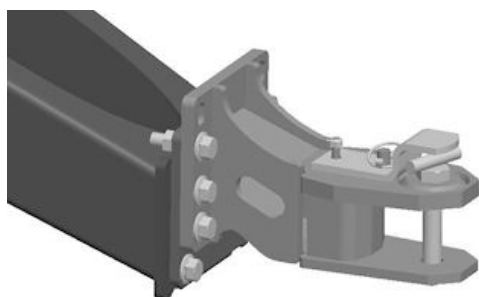
1. Measure from top of tractor to the ground. Measure on level ground.

A—Dimension



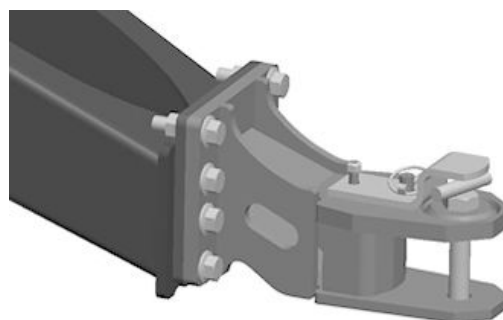
E62317 —UN—04APR12

PP98408,0000EA5 -19-07FEB13-1/3



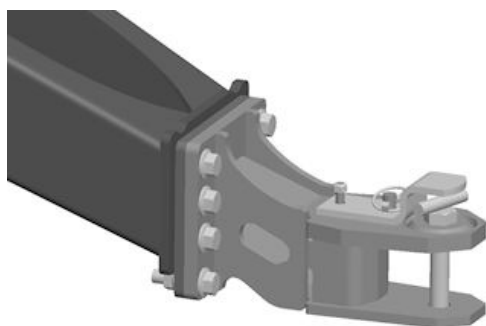
Position 1

E60309 —UN—13JUL11



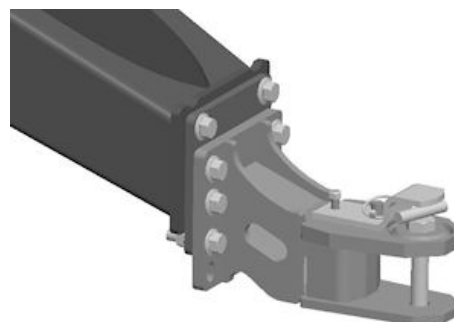
Position 2

E60310 —UN—13JUL11



Position 3 (Factory Setting)

E60311 —UN—13JUL11



Position 4

E60312 —UN—13JUL11

NOTE: All baler hitches are factory installed in position 3.

2. Adjust baler hitch according to the drawbar dimension.

Regular Pickup	Drawbar Dimension (A)
Position 1	432—559 mm (17—22 in.)
Position 2	230—432 mm (13—17 in.)
Position 3	Not Recommended
Position 4	Not Recommended

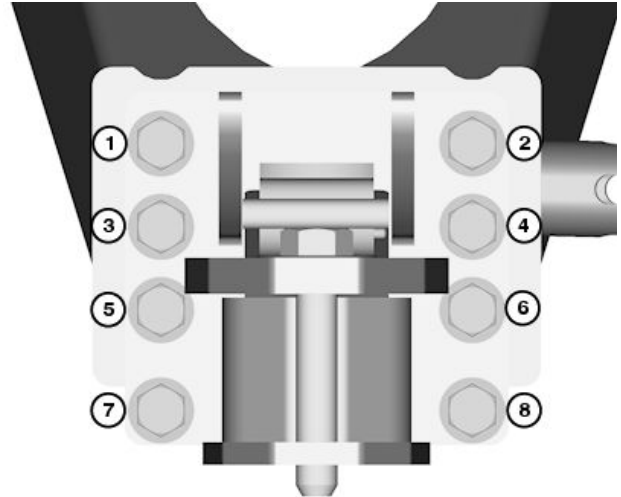
Continued on next page

PP98408,0000EA5 -19-07FEB13-2/3

3. Tighten hardware using sequence 1—8 as shown.
4. Tighten hardware to specification.

Specification

Adjustable Hitch
Hardware—Torque.....350 N·m
(258 lb.-ft.)



E62321—UN—04APR12

PP98408,0000EA5 -19-07FEB13-3/3

Wheel Spindle Positions on 459 Standard Baler with Regular Pickup and 11L-14 Tires

NOTE: Wheel spindle position controls baler height and feeding capacity.

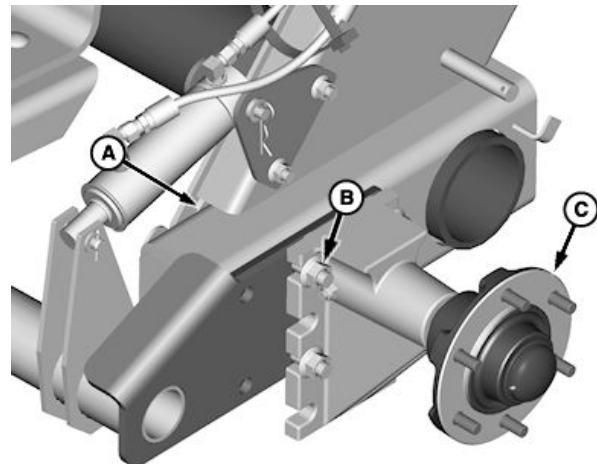
Normal position is recommended for most baling conditions.

- Recommended with bale ramp. Bale diameter will have to be reduced depending on tractor drawbar height.
- Pickup teeth will touch the ground when pickup is lowered. Recommended to adjust height with at least 25 mm (1 in.) ground clearance.

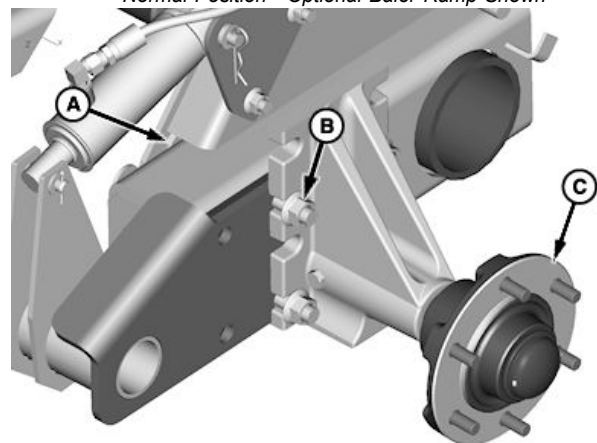
Raised position is recommended for cornstalks, straw crops with tall stubble, or soft ground conditions. (See BALE CORNSTALKS in Operating the Baler section.)

- Recommended with bale ramp.
- Pickup teeth will not touch the ground with pickup lowered.
- If pickup will not lower or bounces excessively, adjust pickup float springs to provide less force (float). (See ADJUST PICKUP FLOAT SPRINGS in Service—Baler section.)

A—Cap Screw, M16 x 160-10.9 (4 used) C—Spindle
B—Flange Nut, M16 (4 used)



Normal Position—Optional Baler Ramp Shown



Raised Position—Optional Bale Ramp Shown

E66115—UN—21JUN12

E66116—UN—21JUN12

PP98408,0000DCC -19-07FEB13-1/1

Check Wheel Nut Torque

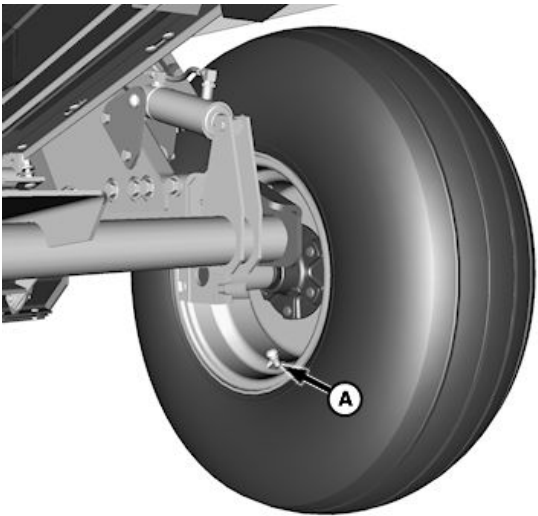
IMPORTANT: Install wheels with valve stems toward the inside.

Incorrect assembly can cause wheel nuts to loosen.

Whenever a wheel has been removed and installed, check wheel nut torque after one hour of operation and repeat until nuts maintain specified torque.

Whenever a wheel has been removed and installed, check wheel nut torque after one hour of operation and repeat until nuts maintain specified torque. Wheel nuts must be tightened to specifications.

Install wheel with valve stem (A) toward the inside. Fasten with six 1/2 in. nuts.



11L-14 Tires Shown

A—Valve Stem

Specification

Wheel Nuts—Torque..... 115 N·m
(85 lb.-ft.)

E65913—UN—18JUN12

PP98408,0000DCD -19-07FEB13-1/1

Check Tire Inflation Pressures

Tires	kPa (bar) (psi)
Regular, 11L-14, 8 PR	207 (2.1) (30) ^a

^aFor making bales at maximum weight and density, inflate 11L-14, 8 PR tires to 248 kPa (2.5 bar) (36 psi).

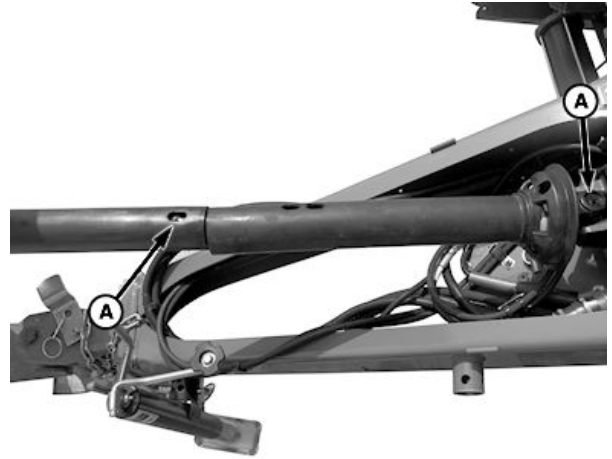
PP98408,0000DCE -19-07FEB13-1/1

Attaching and Detaching

Assemble Main PTO Driveline

1. Make sure to align lubrication fittings (A) when assembling PTO driveline.
2. Wipe dirt and any excess grease from shaft and sleeve to avoid contamination and wear. Assemble telescoping members together.
3. Apply multipurpose grease, or equivalent, to lubrication fitting at sleeve before operating. (See Lubrication and Maintenance section.)

A—Lubrication Fittings

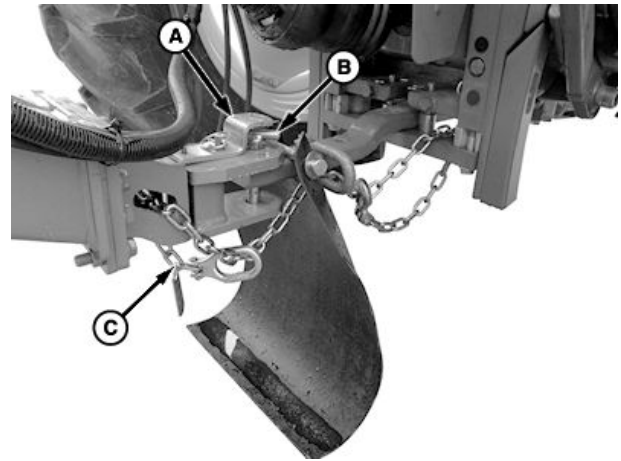


EG2346 —UN—05APR12

PP98408,0000DCF -19-07FEB13-1/1

Attach Baler to Tractor Drawbar

1. Remove quick-lock pin, raise, and rotate bracket (A) 90°. Remove hitch pin (B).
2. Back up tractor to baler. Align tractor drawbar with front of baler tongue.
3. Engage tractor parking brake and place transmission in Park.
4. Shut off tractor engine and remove key.
5. Install hitch pin. Raise and rotate bracket (A) over hitch pin. Install quick-lock pin.
6. Route safety chain (C) through loop on drawbar (if equipped) and connect to tractor drawbar supporting structure, as shown. Do not fasten to drawbar. Remove all slack except what is needed for turns.
7. Connect PTO driveline. (See CONNECT PTO DRIVELINE in this section.)



A—Bracket
B—Hitch Pin

C—Safety Chain

E61064 —UN—30MAR12

PP98408,0000DD0 -19-07FEB13-1/2

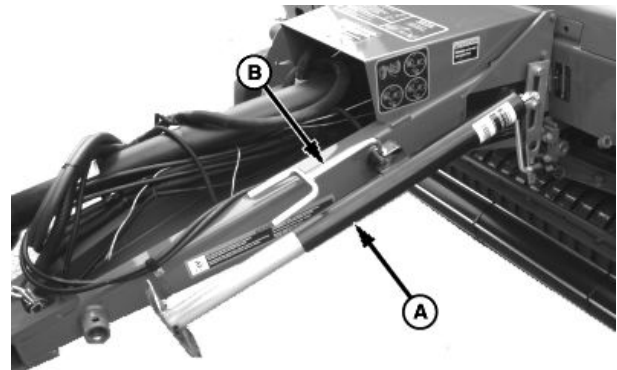
8. Turn handle on jack to take load off jack.
9. Remove quick-lock pin, PTO support, and jack.

IMPORTANT: Store jackstand (A) with handle toward baler to prevent water entering jack gearset.

10. Install jack (A) in storage location (shown) with handle facing toward baler. Fasten with pin and PTO support (B) and quick-lock pin. Face PTO support towards front of tongue.

A—Jackstand

B—PTO Support



E55809 —UN—06JUN08

PP98408,0000DD0 -19-07FEB13-2/2

Install Drawbar Shield

IMPORTANT: Drawbar shield is required to keep crop flowing underneath tractor and baler hitch area.

1. Install pin (A), washers (B), and retaining ring (C).
2. Slide drawbar shield onto drawbar.
3. Drawbar shield can be installed with baler attached to tractor drawbar by removing pin (A) and reassembling in front of the hitch.

A—Pin
B—Washers

C—Retaining Ring



E66201 —UN—21MAY12

PP98408,0000DD1 -19-07FEB13-1/1

Connect PTO Driveline

CAUTION: Shut off tractor engine before attaching PTO driveline. Entanglement in rotating driveline can cause serious injury or death.

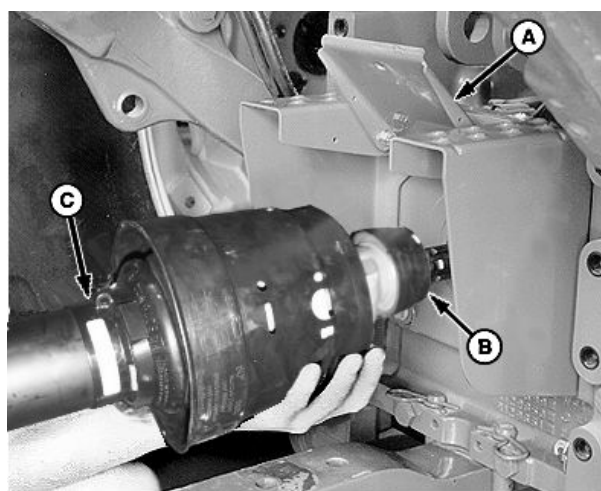
Never operate 540 rpm baler with 1000 rpm PTO tractor.

IMPORTANT: Keep driveline and powershaft splines clean of paint, dirt, and chaff. Apply John Deere Moly High Temperature EP Grease or John Deere EP Moly Grease on tractor PTO shaft before connecting PTO driveline.

1. Shut off tractor engine and remove key.
2. Raise tractor PTO shield (A), if equipped.
3. Pull back on collar (B). Collar will click and hold in ready position.
4. Align splines by rotating baler driveline. Push driveline onto tractor PTO shaft until collar (B) snaps forward.
5. To check if latched, pull back on shield (C). Do not pull on collar (B) as this will release latch.
6. Lower tractor PTO shield or reinstall if removed.

A—PTO Shield
B—Collar

C—Shield



TS198 —UN—23AUG88

E54038 —UN—07JAN05

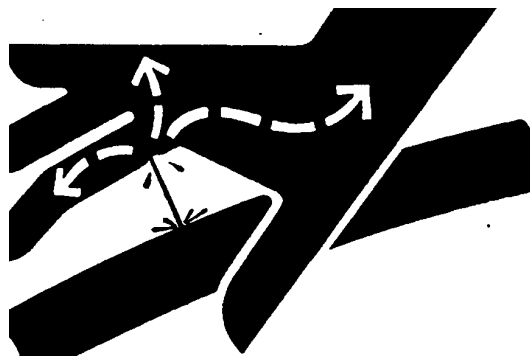
PP98408,0000DD2 -19-07FEB13-1/1

Attach to Tractor Hydraulic System

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene can result. Doctors unfamiliar with this type of injury must reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

Hydraulic hoses can fail due to physical damage, kinks, age, and exposure. Check hoses regularly. Replace damaged hoses.



IMPORTANT: All hydraulic couplers must be clear of debris, dust, and sand. Use protective caps on fluid openings until ready to make connection. Foreign material can damage the hydraulic system.

PP98408,0000DD3 -19-07FEB13-1/2

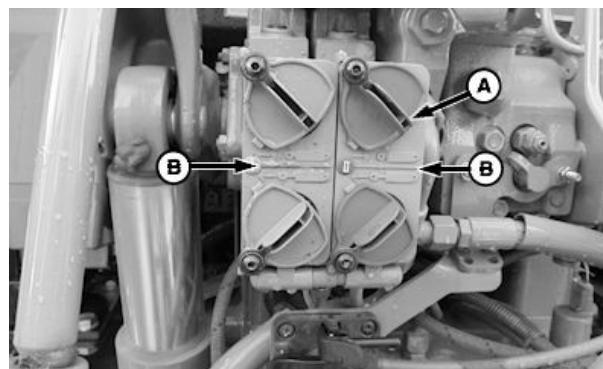
X9811—UN—23AUG88

NOTE: For tractors having only one set of selective control valve receptacles, baler must be equipped with either a hydra-selector valve or electric actuated twine wrapping system. See your John Deere dealer for conversion attachments necessary to operate baler.

To help identify and properly connect hoses, Hose Identification Kits are available from your John Deere dealer.

Tractor remote cylinder receptacles are labeled I through IV. Receptacles are identified from top to bottom.

ISO hydraulic couplers are standard with the baler. If they do not fit the tractor, see your John Deere dealer.



A—Dust Covers

B—Cylinder Symbols

1. Clean off dust covers (A) and hose ends.
2. Check to be sure symbols (B) on receptacle identification plate, indicating cylinder movement, match cylinder travel direction.

CAUTION: On tractors with transport lock for selective control valve (SCV), such as John Deere 7000 Series tractors, push SCV lever into transport lock position before attaching implement, to prevent implement movement, and possible personal injury.

3. To operate the gate: Insert hydraulic hoses into tractor receptacles (SCV I). When tractor selector control valve lever is moved rearward, the gate will open.

4. To operate hydraulic twine arms, insert hydraulic hoses into tractor receptacles (SCV II). When selector control lever is moved forward, the twine arms will move to the right.

NOTE: Attaching hydraulic hoses to tractor as specified, will prevent inadvertent opening of gate with an unwrapped bale if incorrect SCV is moved.

5. If equipped with optional hydraulic pickup lift, insert hydraulic hoses into next set of tractor receptacles (SCV III).
6. Push hoses firmly into tractor receptacles.

PP98408,0000DD3 -19-07FEB13-2/2

E62264—UN—30MAR12

Tractor Convenience Outlet

NOTE: Outlet is protected by a 30 Amp fuse. The key switch must be in the ON or ACCESSORY position when using the outlet.

Convenience outlet (A) is used to power:

- Manual Hydraulic Tie: Bale size alarm.
- AUTO-TIE: BaleTrak™ Pro monitor-controller.

A—Convenience Outlet



E66075 —UN—19JUN12

PP98408,0000DD4 -19-07FEB13-1/1

Install Bale Size Alarm (Hydraulic Twine Only)

1. Route bale size alarm harness (A) along tongue with hydraulic hoses and into back of tractor.
2. Plug into convenience outlet. If tractor is not equipped with convenience outlet, see your John Deere dealer.

A—Bale Size Alarm Harness



E26159 —UN—22SEP88

Continued on next page

PP98408,0000DD5 -19-07FEB13-1/2

NOTE: On an excessively noisy tractor, locate alarm (A) at ear level.

3. Locate bale size alarm (A) so it is easily heard while operating the baler. Adjust shutter on alarm for desired volume. (See ADJUST AUDIBLE BALE SIZE ALARM VOLUME [Manual Hydraulic Tie] in Operating the Baler section.)

A—Bale Size Alarm



E26162—UN—22SEP88

PP98408,0000DD5 -19-07FEB13-2/2

Connect Baler Wire Harness to Tractor (BaleTrak™ Pro System)

1. Route baler wire harness into tractor operator's platform or station.
2. Connect baler wire harness to BaleTrak™ Pro monitor-controller (A). Line up timing mark on connectors and tighten locking ring. *Monitor-controller power plug is connected to tractor convenience outlet.*

A—Monitor-Controller



E52435—UN—16JUN03

PP98408,0000DD6 -19-07FEB13-1/1

Connect Tail or Warning Light Plug to Tractor

NOTE: If towing tractor is not equipped with an electrical outlet, field installation of Seven-Terminal Auxiliary Electric Kit is required. Kit can be ordered through your John Deere dealer.

Make sure that baler tail and warning lights operate with tractor tail and warning lights and turn signals.

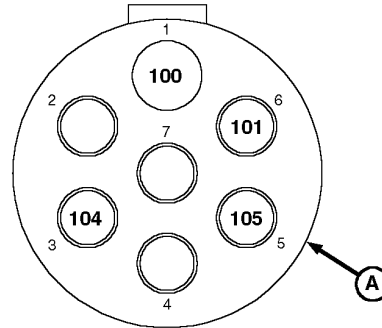
Connect tail or warning light plug (A) to seven-terminal outlet on tractor. Check tail or warning light function. (See LIGHT ENHANCEMENT MODULE OPERATION in Transporting section.)

Terminal	Circuit	Function	Wire Color
1	100	Ground	Black
2		Open	
3	104	Left-Hand Turn or Warning Light	Yellow
4		Open	
5	105	Right-Hand Turn or Warning Light	Green
6	101	Tail Lights	Brown
7		Open	

A—Baler Tail or Warning Light Plug



Tractor Seven-Terminal Outlet



Baler Tail or Warning Light Plug

E62265—UN—30MAR12

E47631—UN—08JAN00

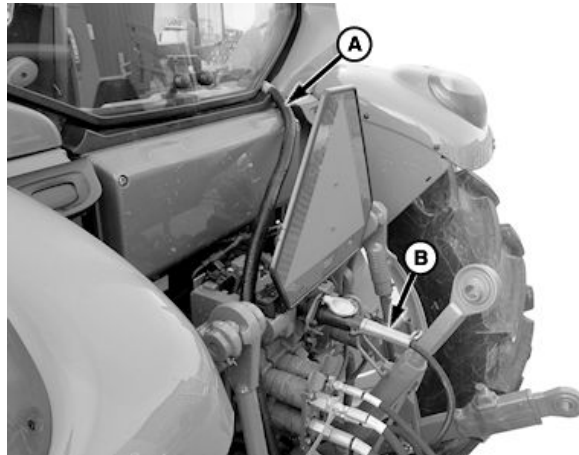
PP98408,0000DD7 -19-07FEB13-1/1

Detach Baler From Tractor

CAUTION: To prevent personal injury caused by unexpected movement:

- Park machines on a level surface
- Engage tractor parking brake and place transmission in Park
- Disengage PTO
- Shut off tractor engine and remove key

1. Park baler on a level surface, or block both baler wheels so baler cannot roll after detaching from the tractor.
2. Engage tractor parking brake and place transmission in Park.
3. Shut off tractor engine and remove key.
4. Disconnect baler wire harness (A) and tail or warning light plug (B). Install protective caps. Store warning light plug and wire harness in PTO shield slots.



A—Baler Wire Harness

B—Tail or Warning Light Plug

E61072—UN—30MAR12

Continued on next page

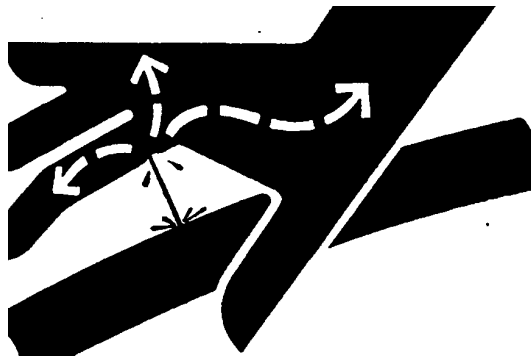
PP98408,0000DD8 -19-07FEB13-1/5

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene can result. Doctors unfamiliar with this type of injury must reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

On 7000 Series John Deere tractors; Push SCV lever lockout to the right (transport lock) before detaching implements to prevent implement movement and possible personal injury.

5. To disconnect hoses, pull hoses from tractor receptacles.



PP98408,0000DD8 -19-07FEB13-2/5

X9811—UN—23AUG88

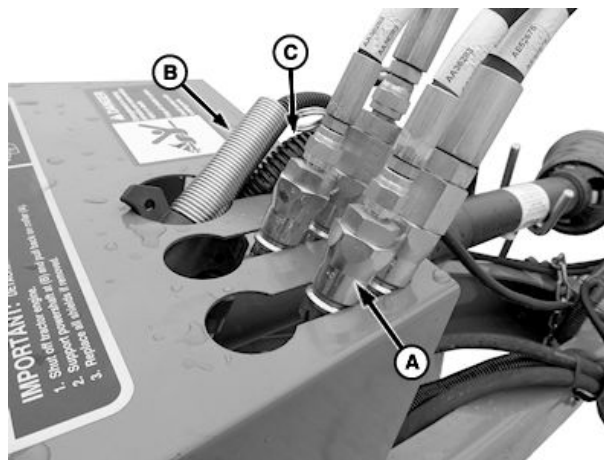
E62266—UN—30MAR12

IMPORTANT: Store hydraulic fittings and wire harnesses as shown. Damage can occur if not stored properly.

6. Store hydraulic hoses (A), warning light plug (B), and baler wire harness (C) in PTO shield.

A—Hydraulic Hoses
B—Warning Light Plug

C—Baler Wire Harness



Continued on next page

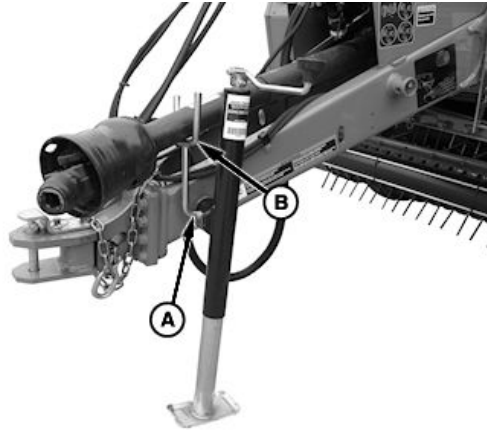
PP98408,0000DD8 -19-07FEB13-3/5

E61065—UN—30MAR12

7. Remove quick-lock pin, pin with PTO support and jackstand from storage location. Put jackstand in tongue support location.
8. Insert PTO support pin (A) through jackstand with support facing front of tongue and fasten with quick-lock pin.
9. Turn handle clockwise to take load off tractor drawbar. After disconnecting PTO from tractor, place driveline in PTO support (B).

A—Pin

B—PTO Support



E62267—UN—02APR12

PP98408,0000DD8 -19-07FEB13-4/5

CAUTION: Shut off tractor engine before detaching PTO driveline. Entanglement in rotating driveline can cause serious injury or death.

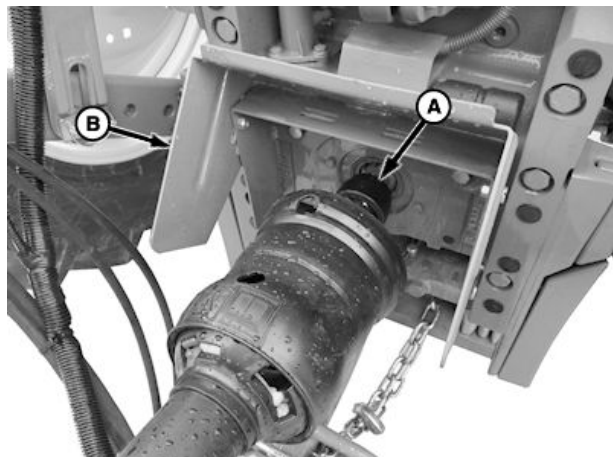
10. Raise tractor PTO shield (B), if equipped.
11. Support driveline and pull back on collar (A). Slide driveline off tractor shaft. Place driveline in PTO support on jackstand.
12. Lower tractor PTO shield (B) or reinstall if removed.
13. Disconnect safety chain from tractor.
14. Remove hitch pin.
15. Carefully drive tractor away from baler.

A—Collar

B—PTO Shield



TS198—UN—23AUG88



E62268—UN—02APR12

PP98408,0000DD8 -19-07FEB13-5/5

Transporting

Prepare Baler for Transport

The construction of this implement may not meet all local or national requirements for operation on a public roadway. In regions or countries that have national certification requirements for roadway operation, it may be impossible for this implement to be approved for such roadway operation. The customer is responsible for understanding and complying with all local, regional, and national requirements regarding roadway operation.

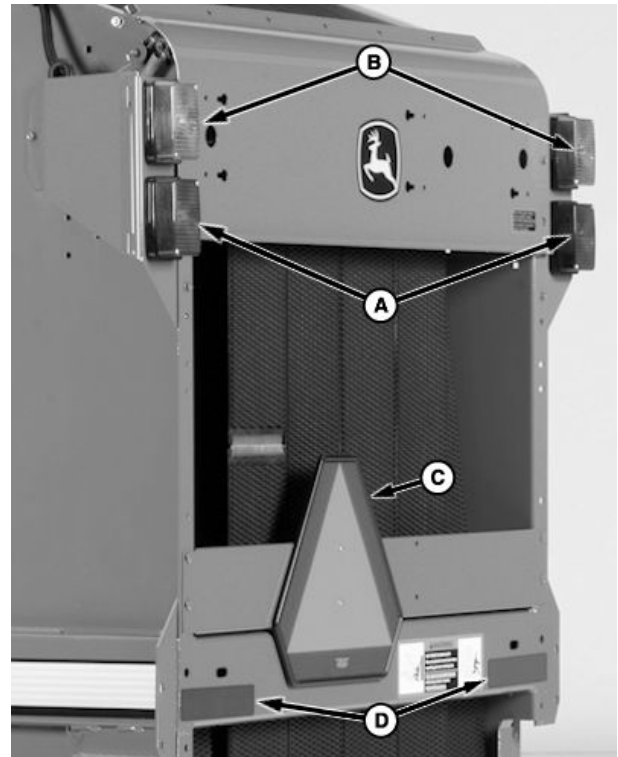
CAUTION: To avoid injury to others, transport baler with bale chamber empty.

1. Empty bale chamber before transporting.
2. Close gate.
3. Raise pickup fully.

CAUTION: Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use hand signals or turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible and in good working order. Replace or repair lighting and marking that has been damaged or lost.

4. Be sure SMV emblem (C), turn or warning lights (B), tail lights (A) and reflectors (D) are clean and visible. Make sure that baler turn or warning lights operate with tractor warning lights and turn signals.



A—Tail Lights (Red)
B—Turn or Warning Lights
(Amber)

C—SMV Emblem
D—Reflectors

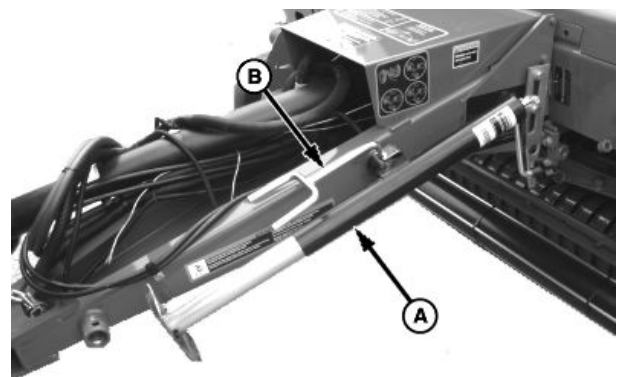
E67368 —UN—14AUG12

PP98408,000054D -19-20AUG13-1/3

5. Ensure jackstand (A) is pinned in storage position with PTO support pin (B), as shown.

A—Jackstand

B—PTO Support



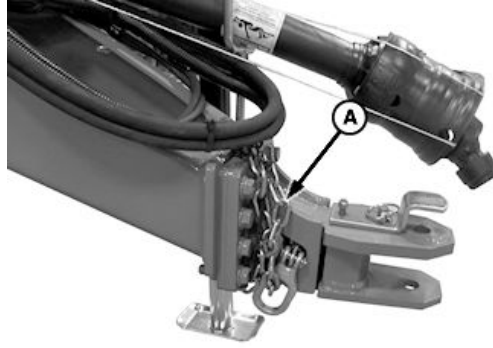
E55809 —UN—06JUN08

Continued on next page

PP98408,000054D -19-20AUG13-2/3

CAUTION: If baler separates from the drawbar, a safety chain will help control drawn equipment. Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning. Do not use safety chain for towing.

6. Make sure safety chain (A) is attached to drawbar support or other specified anchor locations. Do not fasten to drawbar. Provide only enough slack in the chain to permit turning.
7. If transporting machine behind a tractor without connecting PTO driveline, remove PTO driveline. Transport parts in another vehicle to prevent possible loss, damage, and contamination to driveline.



A—Safety Chain

PP98408,000054D -19-20AUG13-3/3

E60890—UN—27FEB12

Follow Safe Transport Procedures

CAUTION: To help prevent severe injury or death to you or someone else, follow recommended transport procedures:

- Transport with bale chamber empty.
- Raise pickup fully.
- Travel at a reasonable and safe speed. Do not exceed weight and speed guidelines shown in TOW LOADS SAFELY and observe maximum transport speed found in the Safety

section. Reduce speed considerably when traveling over rough ground.

- Stop slowly.
- Avoid possible loss of control or tractor overturn. Tow only with correctly ballasted tractor.
- Sound tractor horn before backing baler up.

If necessary, add ballast as described in your tractor operator's manual. Add ballast to tractor as required to maintain stability.

PP98408,0000DDA -19-07FEB13-1/1

Light Enhancement Module Operation

In addition to tail and warning lights, the lighting circuit incorporates a lighting enhancement module. This module causes red tail lights to function as turn signals as well as tail lights. During normal transport, both amber warning lights will flash in unison at high intensity and both red tail lights will illuminate steady at low intensity.

When a turn is signaled, the red tail light in direction of turn will flash at high intensity in unison with the amber warning light. The opposite side amber and red lights will illuminate steady at high intensity.



Located on Right-Hand Sidesheet

PP98408,0000DDB -19-07FEB13-1/1

E54030—UN—05JAN05

Extended Rear-View Mirror

⚠ CAUTION: When towing the baler on public roads, an extended mirror to improve visibility of traffic behind the baler is recommended. See your John Deere dealer.



E63790 —UN—15JUN12

PP98408,0000DDC -19-07FEB13-1/1

Break-In Period

Break-In Baler

IMPORTANT: Belts and drive loads increase as the bale size approaches maximum diameter. Frequent forming of oversize bales can lead to premature failures.

A break-in period of approximately 50 bales or until paint inside bale chamber has worn off can increase the life and reduce maintenance of baler. During the break-in period, a 1.1 m (42 in.) bale diameter or smaller bale is recommended.

Before operation, lubricate members of driveline liberally.

IMPORTANT: If slippage occurs during action on slip clutch, disengage PTO and reengage at low idle until slip clutch reengages, then operate at rated PTO speed.

Fraying of belts is possible. Cut the wires if necessary.

PP98408,0000DDD -19-07FEB13-1/1

After the First 10 Hours—Wheel Nut Torque

Check wheel nut torque after the first 10 hours of use. (See CHECK WHEEL NUT TORQUE in Preparing the Baler section.)

IMPORTANT: Whenever a wheel has been removed and installed, check wheel nut torque after one hour of operation and repeat until nuts maintain specified torque.



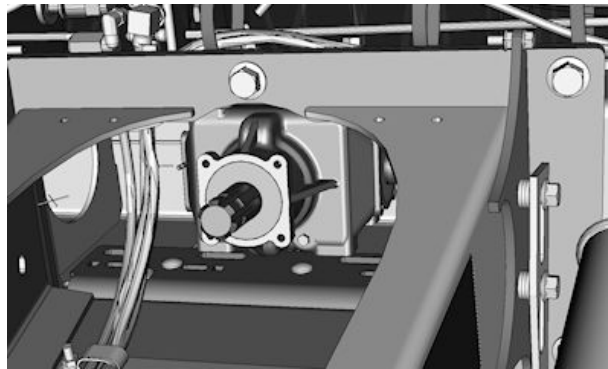
11L x 14 Tires

E67265—UN—08AUG12

PP98408,0000DDE -19-07FEB13-1/1

After the First 50 Hours—Gear Case

Change the oil in the gear case after the first 50 hours of operation. (See EVERY 100 HOURS or ANNUALLY in Lubrication and Maintenance section.)



PTO and Shield Removed

E66194—UN—26JUN12

PP98408,0000DDF -19-07FEB13-1/1

After the First 50 Hours—Wheel Nut Torque

Check wheel nut torque after the first 50 hours of use. (See CHECK WHEEL NUT TORQUE in Preparing the Baler section.)

IMPORTANT: Whenever a wheel has been removed and installed, check wheel nut torque after one hour of operation and repeat until nuts maintain specified torque.



11L x 14 Tires

E67265 —UN—08AUG12

PP98408,0000DE0 -19-07FEB13-1/1

Operating the Baler

Before Each Use of the Baler

Check the belts:

NOTE: Belts are designed specifically for this machine and are tested to withstand a normal usage of the baler.

Due to the different environments, the belts may have been damaged by foreign bodies. This damage generally does not generate any functional or reliability issues. However, if the damage is located in the bale shape sensor path, contact your John Deere dealer to prevent any additional damage to the belt.

Adjust the baler:

1. Adjust pickup height. (See ADJUST PICKUP Height in this section.)

2. Adjust pickup float spring. (See ADJUST PICKUP FLOAT SPRING in Service—Baler section.)
3. Adjust pickup gauge wheels. (See ADJUST PICKUP GAUGE WHEELS in this section.)

Set monitor-controller functions:

1. Adjust bale diameter. (See SET BALE DIAMETER in Operating with BaleTrak™ Pro System section.)
2. Reset bale counter. (See VIEW AND RESET BALE COUNTER in Operating with BaleTrak™ Pro System section.)

PP98408,0000DE1 -19-07FEB13-1/1

Handle Round Bales

See the loader or tractor operator's manual on proper procedures for lifting and handling round bales.

PP98408,0000DE2 -19-07FEB13-1/1

Crop Preparation

Make windrows either:

- Up to one-half the width of the baler chamber.
- The full width of the baler chamber to eliminate weaving.

Unless bales are being made for silage or a preservative is being applied to hay, wait until moisture content of hay is 20% or drier before baling.

For additional information and a more in-depth description on hay and forage harvesting, see John Deere's Fundamentals of Machine Operation (FMO) Manual FMO14104B. This manual covers all types of vehicles, regardless of manufacturer, starting with basic theory and proceeding through complex systems. To order this manual and others, see the John Deere Service Literature



TS1646—UN—02OCT95

form at the back of this manual or see your John Deere dealer.

PP98408,0000DE3 -19-07FEB13-1/1

Breaking-In Baler

IMPORTANT: Belts and drive loads increase as the bale size approaches maximum diameter. Frequent forming of oversize bales can lead to premature failures.

A break-in period of approximately 50 bales can increase the life and reduce maintenance of baler. During the break-in period, a 1.1 m (42 in.) bale diameter or smaller bale is recommended.

PP98408,0000DE4 -19-07FEB13-1/1

Indicators For Baler Operation

BALE SHAPE INDICATORS (A and B)

Bale shape indicators show the shape of each end of the bale by measuring slack in the two outside belts nearest the left-hand and right-hand sidesheets. When the left-hand belt is tight, the left-hand indicator will read high showing that side of baler is filled with hay. As the indicator falls, it indicates that side of the bale needs hay to tighten the belt. (See INTERPRET BALE SHAPE INDICATORS in this section.)

IMPORTANT: Do not bale in red zone. Belts and drive loads increase as bale size approaches maximum diameter. Frequent forming of oversize bales can lead to premature failures.

BALE SIZE INDICATOR (C)

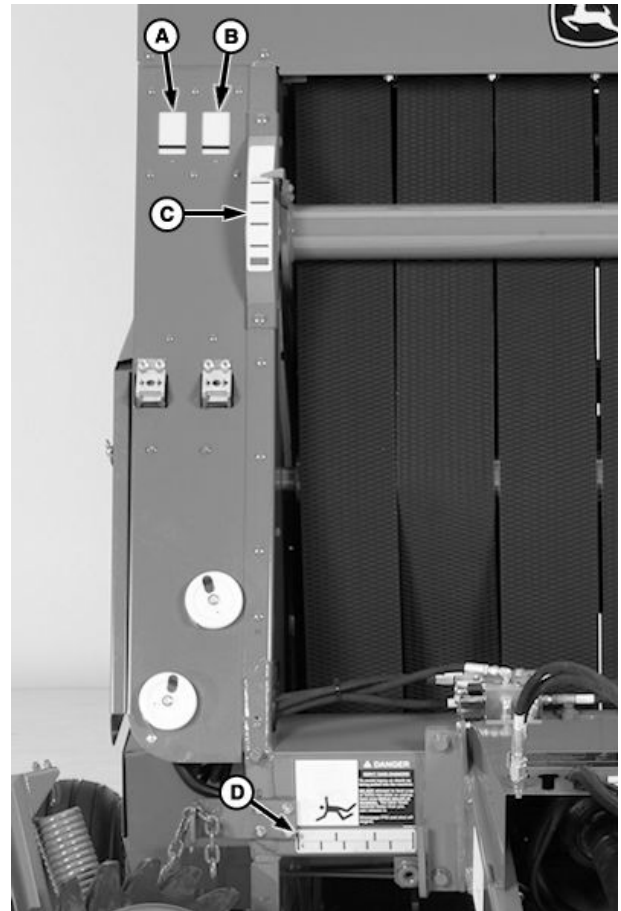
Used as a guide to approximate bale size. Reading near top indicates small bale. Reading near bottom indicates large bale. The red zone indicates an oversize bale.

TWINE ARM INDICATOR (D)

Indicates position of twine arms and is used as a guide for spacing twine on the bale.

A—Bale Shape Indicator for
Right Side of Bale
B—Bale Shape Indicator for
Left Side of Bale

C—Bale Size Indicator
D—Twine Arm Indicator



Continued on next page

PP98408,0000DE5 -19-07FEB13-1/2

EG7583—UN—28AUG12

Hydraulic Twine Wrap Only: AUDIBLE BALE SIZE ALARM (A)

NOTE: Following steps describe operations with Manual Hydraulic Tie. For Auto-Tie operations see Operating with BaleTrak™ Pro Systems section.

The alarm first comes on when bale is near desired size. Continue baling and keep indicators even and as high as possible until bale size alarm stops. When bale size alarm (A) stops, stop forward travel and extend twine arms.

If baling is continued, the alarm (A) will warn of oversize bale. Immediately stop forward travel and start twine wrapping cycle.

IMPORTANT: Do not continue to bale after alarm sounds the second time. Baling oversize bales can reduce machine life.

Alarm volume is adjustable. (See ADJUST AUDIBLE BALE SIZE ALARM VOLUME — Manual Hydraulic Tie in this section.)

A—Bale Size Alarm



E26162—UN—22SEP88

PP98408,0000DE5 -19-07FEB13-2/2

Normal Baling Operation

IMPORTANT: Make sure that tractor and baler have been properly prepared for field operations. See Preparing the Tractor, Preparing the Baler, and Attaching and Detaching sections for related directions.

1. Start tractor engine.
2. Be sure that gate is closed.
3. Engage PTO and raise throttle setting to PTO rated speed.
4. Drive forward and start into windrow.
5. Observe bale shape indicators. Try to keep both indicators at the top of the operating zone and



Bale Shape Indicators

balanced side-to-side. See INTERPRET BALE SHAPE INDICATORS for further information and corrective action.

E38864—UN—30APR92

Continued on next page

PP98408,0000DE6 -19-07FEB13-1/2

NOTE: Following steps describe operations with manual hydraulic tie. For Auto-Tie operations see Operating with BaleTrak™ Pro Systems section.

NOTE: Bale size alarm is ON when plugged into the tractor convenience outlet.

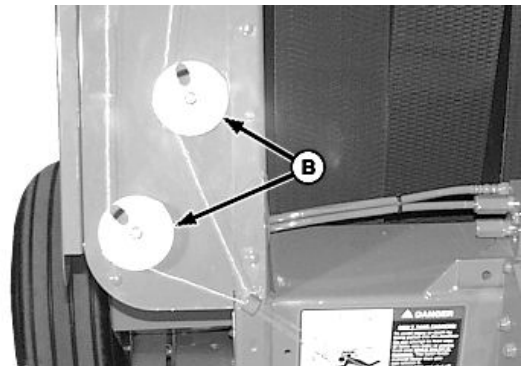
6. At preset distance under full bale diameter setting, NEAR FULL indicator sounds bale size alarm (A). Alarm will continue to sound until bale reaches full size. Continue to bale through alarm, while preparing to start wrap cycle. When bale reaches full size, alarm stops indicating that bale is ready to wrap.

IMPORTANT: If baling continues after alarm stops, alarm will sound again to warn of an oversize bale. Continuing to operate with oversize bale in chamber can cause severe gate damage and roller breakage.

7. While continuing forward travel and baling, initiate twine wrapping cycle observing spinners (B). Twine has started on the bale when spinners start rotating.
8. With wrapping started, stop forward travel, but maintain engine speed at PTO rated setting during wrap cycle.
9. At the end of the tying cycle, confirm that twine has cut.
10. Eject bale. (For best results, leave PTO engaged while opening and closing gate.) Back up 2—3 m (8—10 ft.) and open gate. Pull forward to clear bale with gate. Close gate and continue normal operations with next bale.

A—Bale Size Alarm

B—Spinners



PP98408,0000DE6 -19-07FEB13-2/2

E26162—UN—22SEP88

E53993—UN—03JAN05

Recommended Baling Guidelines

For consistent density and properly shaped bales, the following conditions must be set:

- Bale shape indicators properly adjusted. (See ADJUST BALE SHAPE INDICATORS in Service-Baler section.)
- Correct tractor tire spacing. (See ADJUST TRACTOR WHEELS in Preparing the Tractor section.)
- Proper driving technique.

Baling windrow one-half width or less than bale chamber:

1. Start feeding windrow in the center of baler.
2. Move quickly to one side for several yards feeding the baler, as close as possible to the sidesheet, without leaving hay in the field.

NOTE: Weaving back and forth across the windrow must be done quickly in a crisp zigzag fashion to balance crop intake side-to-side. Weaving too often or too slowly puts too much crop in the center of the bale and must be avoided.

3. Move quickly to the other side for several yards feeding the baler, as close as possible to the sidesheet, without leaving hay in the field.

4. Move quickly back to the other side feeding the baler, as close as possible to the sidesheet. Continue feeding this side until the bale shape indicator reaches the top of the operating zone or the other indicator drops to the bottom of the operating zone.
5. Move quickly to the other side and continue feeding this side until the indicator reaches the top of the operating zone or the other indicator drops to the bottom of the operating zone.
6. Repeat steps 4 and 5 as necessary.

As bale diameter increases, indicators are less sensitive to raise and fall as hay is fed into the baler. **Do not weave from one side unless indicator reaches the top of the operating zone or the other indicator drops to the bottom of the operating zone.** If the indicator does not reach the top of the operating zone on each side before weaving, that side of the bale is not tight.

After the NEAR FULL indicator alarm sounds, try to keep the indicators at the top of the operating zone.

PP98408,0000DE7 -19-07FEB13-1/1

Feed Round Bales

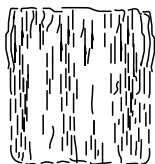
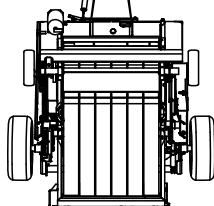
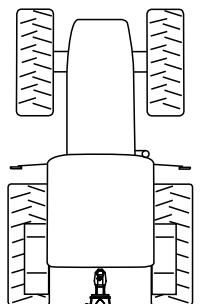
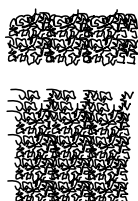
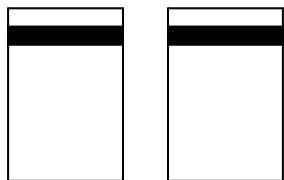
Improperly disposing of waste can threaten the environment and ecology. Remove wrapping material from bales before they are fed to reduce possible

problems of material wrapping in machinery, ingestion by livestock etc. Inquire on the proper way to recycle or dispose of waste from you local environmental or recycling center, or from your John Deere dealer.

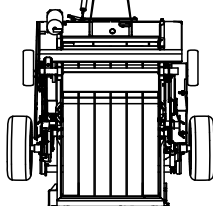
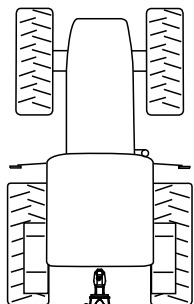
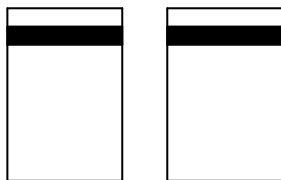
PP98408,0000DE8 -19-07FEB13-1/1

Interpret Bale Shape Indicators

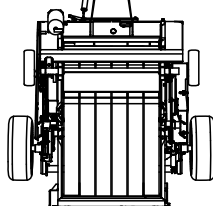
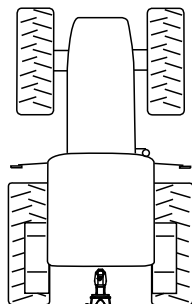
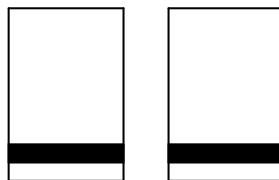
I



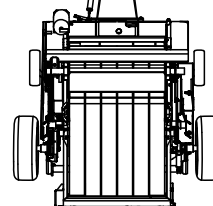
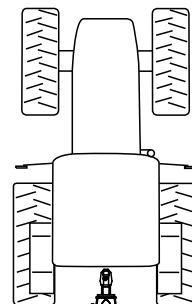
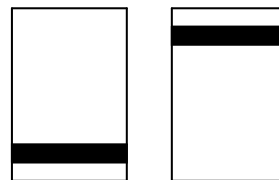
II



III



IV



The illustration on the facing page and the following information describes the relationship between the indicators, windrow variations, and actual bale shape.

Continued on next page

PP98408,0000DE9 -19-19MAR13-1/2

E69486 —UN—19MAR13

To ensure optimum bale shape and maximum bale density, BOTH indicators must reach the top of the operating zone as shown in Example (I). Indicators must be at the top of the operating zone when bale is being wrapped and for as much time as is possible during bale formation. See RECOMMENDED BALING GUIDELINES in this section.

IMPORTANT: Bale shape indicators show the shape of each end of the bale by measuring slack in the two outside belts nearest the left-hand and right-hand sidesheets. When the left-hand belt is tight, the left-hand indicator will read high showing that side of baler is filled with hay. As the indicator moves toward the bottom, it indicates that side of the bale needs hay to tighten the belt.

I—Best shaped bales are formed when windrow has uniform density side-to-side and the width is the same as bale chamber (1.2 m [4 ft.]).

Weaving is not necessary. If this is not practical, create windrows up to one-half the width of the bale chamber and follow the bale shape indicators. (See RECOMMENDED BALING GUIDELINES in this section.)

II—If full-width windrow is heavy on the outside edges and light at the center, an hourglass shaped bale will be formed even though shape indicators are balanced and high.

If possible, weaving back and forth across the windrow will help to fill the middle of the bale. Otherwise, proper windrow formation can be needed.

III—Both indicators will read low and a barrel shaped bale is formed if any of the following conditions exist:

- Windrow width is approximately 2/3—3/4 the width of the baler.
- Windrow correct but operator not be weaving over far enough.
- The windrow is full width but heavier density in the middle of the windrow.
- Weaving back and forth too frequently.

If windrow is almost as wide as the bale chamber, reduce tractor rpm and increase ground speed to spread material across pickup.

Windrow preparation must be less than one-half bale chamber or full width of bale chamber. If necessary, rake windrow to obtain correct width.

Bale shape indicators cannot reach maximum height when operating in certain crops such as light coastal Bermuda Grass or short wheat straw, because ends of bale are soft.

IV—If narrow windrow is baled without weaving back and forth, a cone shaped bale will be formed.

- Operator feeding one side more than other.

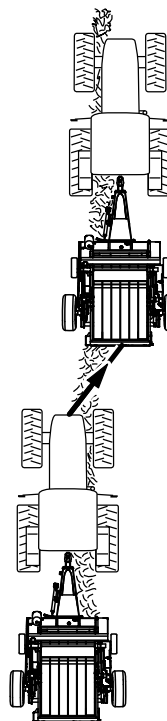
Weave back and forth across narrow windrow to feed crop to keep both indicators as high as possible. (See WEAVE IN THE WINDROW in this section.)

PP98408,0000DE9 -19-19MAR13-2/2

Weave in the Windrow

Weaving back and forth across the windrow must be done quickly in a crisp zigzag fashion to balance crop intake side-to-side. Weaving too often or too slowly puts too much crop in the center of the bale and must be avoided.

Move quickly to one side for several yards feeding the baler, as close as possible to the sidesheet, without leaving hay in the field. Then, move quickly to the other side for several yards feeding the baler, as close as possible to the sidesheet. (See RECOMMENDED BALING GUIDELINES in this section.)



E69487 —UN—19MAR13

PP98408,0000DEA -19-19MAR13-1/1

Adjust Audible Bale Size Alarm Volume (Hydraulic Twine Wrap Only)

Open or close alarm door (A) to obtain desired volume.

A—Alarm Door



E40136 —UN—21JUN96

PP98408,0000DEB -19-07FEB13-1/1

Operate Wrap Control (Hydraulic Twine Wrap Only)

IMPORTANT: Wrap cycle must be started while traveling forward and baling. This allows twine to catch on the bale.

Start wrapping when the first audible alarm stops, indicating full-size bale, and before the second alarm, indicating oversize bale.

NOTE: Keep engine speed constant while wrapping. Varying engine speed will change number of twine wraps and their spacing across the bale. When baling dry straw, it will be desirable to quickly place twine across full width of bale to prevent straw from coming out of feed opening while tying.

Examples show operation of John Deere 7000 Series Tractor.

1. Push forward and hold SCV lever (A) until pointer reaches position (B). Stop forward travel when spinners (C) show twine is caught on bale and moving.
2. Release lever for 4—6 seconds to apply right-hand end wraps.

NOTE: Baler flow control valve regulates twine arm speed as it moves across the bale to provide equally speed twine wrap.

3. Pull and hold lever rearward to bring back twine arms across bale.

When baling dry straw:

- Push forward and hold SCV lever until pointer reaches (B) again.
 - Pull on SCV lever to position twine arms at each index mark for approximately 2—3 seconds.
4. When pointer reaches the last index mark, release lever for 4—6 seconds to apply left-hand end wraps.
 5. Pull lever rearward again to move twine arms to cut-off and home positions. Look at spinners to check that twine has cut.

A—SCV Lever
B—Pointer Position

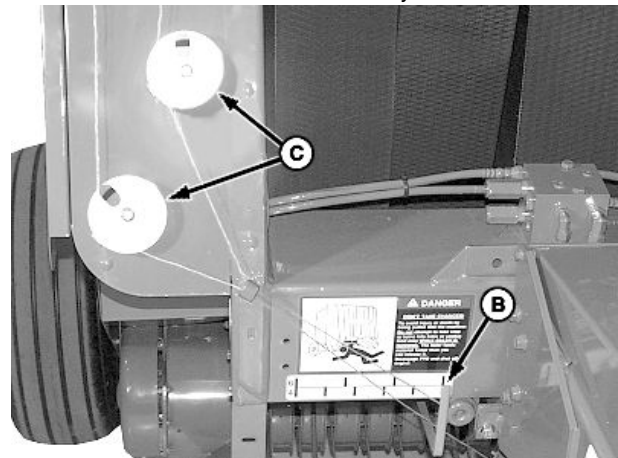
C—Spinners



Extend Twine Arm Cylinder



Retract Twine Arm Cylinder



RW21854 —UN—21AUG92

RW21853 —UN—21AUG92

E53994 —UN—03JAN05

PP98408,0000DEC -19-07FEB13-1/1

Adjust Twine Tension

CAUTION: To avoid injury or death by being pulled into the machine:

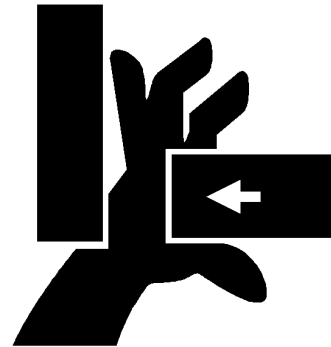
DO NOT attempt to feed twine into baler or pull twine from twine arms **WHILE BALER IS RUNNING**. The baler feeds material faster than you can release it.

Disengage PTO and shut off tractor engine.

Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is **ON**.

NOTE: It can be necessary to adjust twine tension when changing to a different size twine or when changing from sisal to plastic.



TS679 —UN—26SEP89

E47598 —UN—07JAN00

PP98408,0000DED -19-07FEB13-1/3

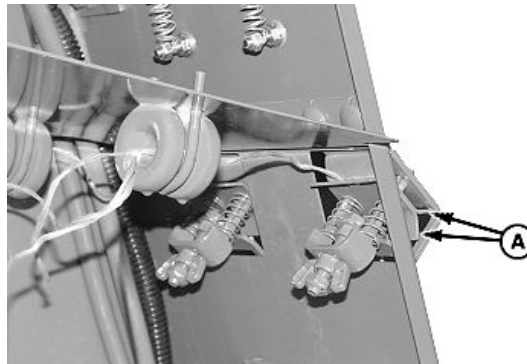
Twine tension is controlled by spring-loaded tension plates (A).

Adjust twine tension while pulling twine perpendicular to end of twine tube.

- If twine tension is too high, the twine cannot start to wrap around the bale or twine can break.
- If twine tension is too loose, the twine cannot hold the bale adequately.

To adjust twine tension:

1. Lower pickup to avoid twine arms from bending pickup teeth.
2. Move twine arms to home position. Make sure that twine is routed correctly. (See ROUTE TWINE in Preparing the Baler section.)
3. Open twine compartment door on right-hand side of baler.



A—Tension Plates

E53995 —UN—04JAN05

Continued on next page

PP98408,0000DED -19-07FEB13-2/3

4. Remove crop buildup from tension plates (A) located on door bands and from tension plates (B) located on twine arms.
5. Attach spring scale to twine from rear twine arm (C). Pull twine perpendicular to the twine arm. Twine pull must be within specifications.

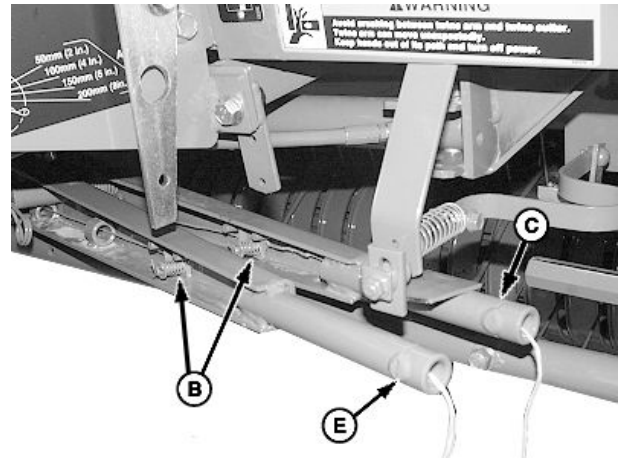
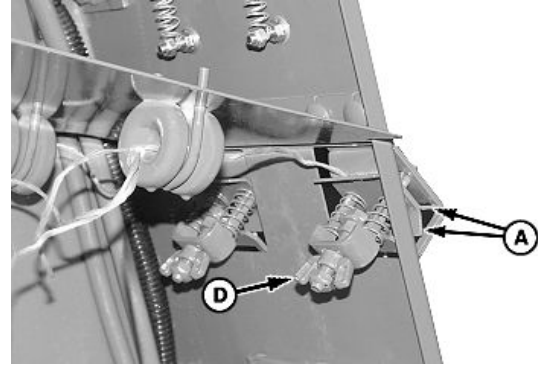
Specification

Twine Pull—Force..... 22—45 N
(5—10 lb.-force)

- Tighten wing nut (D) to increase tension on twine.
 - Loosen wing nut (D) to decrease tension on twine.
6. Repeat Step 5 to adjust twine tension for front twine arm (E).
 7. Cut twine 305—381 mm (12—15 in.) beyond end of twine arms (C and E)

A—Tension Plates (Door Bands)
B—Tension Plates (Twine Arms)
C—Rear Twine Arm

D—Wing Nut
E—Front Twine Arm



PP98408,0000DED -19-07FEB13-3/3

E53996—UN—04JAN05

E53997—UN—04JAN05

Adjust Pickup Height

IMPORTANT: Operating with pickup teeth contacting the ground will cause pickup damage.

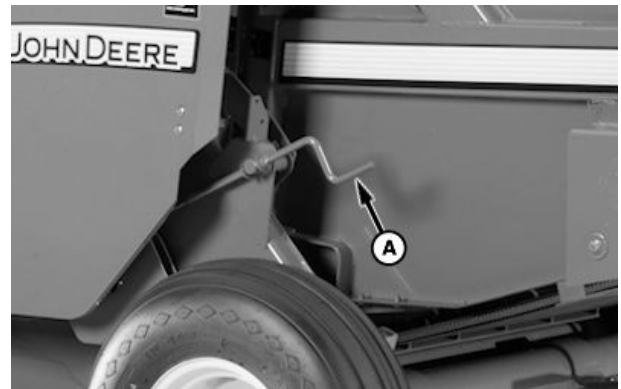
Operate pickup teeth as high as possible yet harvest field adequately.

Adjust pickup teeth height to obtain a ground clearance of 25—50 mm (1—2 in.) for an initial setting. The final adjustment will be determined by field conditions.

To adjust pickup height:

- Turn crank (A) clockwise to raise the pickup
- Turn crank (A) counterclockwise to lower the pickup

Always raise pickup to transport position when crossing ditches and moving from field to field.



A—Pickup Turn Crank

PP98408,0000DEE -19-07FEB13-1/1

E67264—UN—08AUG12

Adjust Gauge Wheels

IMPORTANT: Gauge wheels must be positioned so pickup is as high as possible, but still allow the pickup teeth to clean the field adequately. Operating with pickup teeth contacting the ground will cause pickup damage.

NOTE: Pickup gauge wheels are optional on regular pickup.

Three factors determine the adjustment for gauge wheels:

- Tractor drawbar height
- Wheel spindle position
- Baler tire size
- Baler hitch position (See ADJUST BALER HITCH in Preparing the Baler section.)

If any one of these factors change, adjust gauge wheels.

Position gauge wheels to operate pickup teeth as high as possible and clean field adequately.

1. Park baler on a level surface. Baler hitch height must match the drawbar height of the tractor used for baling.
2. Loosen lock nut (A) and raise wheel to top of slot. Tighten lock nut. Repeat on opposite side.

IMPORTANT: Distance between the gauge wheel and ground must always be equal to or less than the distance between pickup teeth and ground. If not, gauge wheels will not protect pickup.

NOTE: If baler is in lowered position, a minimum pickup teeth ground clearance of 25 mm (1 in.) is not possible using gauge wheels due to a limited adjustment slot in gauge wheel arms.

Position and tighten gauge wheel in top of slot and adjust tooth-to-ground clearance with the



A—Lock Nut

mechanical crank. (See ADJUST PICKUP HEIGHT in this section.)

3. Adjust pickup until pickup teeth have a minimum of 25 mm (1 in.) ground clearance.
4. Loosen lock nut (A) and lower wheel until it contacts the ground. Tighten lock nut (A). Repeat on opposite side. *(Final adjustment will be determined by field conditions.)*

IMPORTANT: Pickup float springs must be adjusted after gauge wheels are installed.

5. For initial pickup float spring setting with gauge wheels installed, see ADJUST PICKUP FLOAT SPRINGS in Service—Baler section. If excessive bouncing of the pickup occurs, decrease float spring force as needed.

ES4252—UN—23MAY05

PP98408,0000DEF -19-07FEB13-1/1

Adjust Gathering Wheel Height (If Equipped)

IMPORTANT: Gathering wheels must never be in heavy contact with the ground or damage to gathering wheels can occur.

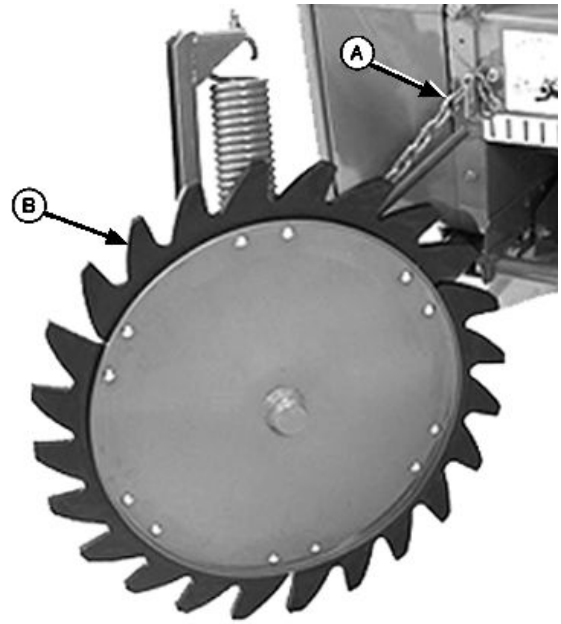
NOTE: This procedure is an initial setting; final adjustment will be determined by field conditions.

1. Remove chain (A) from chain anchor support and lower wheel (B) to ground.
2. Raise chain (A) one link and install back in chain anchor support. Wheel must be approximately 25 mm (1 in.) from the ground.

If less than one chain link is needed for an adjustment, twist the chain and install back in chain anchor support.

A—Chain

B—Gathering Wheel



E40021 —UN—29MAY96

PP98408,0000DF0 -19-07FEB13-1/2

3. Spring (A) is hooked in a hole in chain anchor support and a link in the lower end of the chain to help the gathering wheel float over irregular ground.

A—Spring



E67382 —UN—15AUG12

PP98408,0000DF0 -19-07FEB13-2/2

Lock the Gate

CAUTION: While working inside or around the baler with an open gate, the gate lock lever and channel must be moved to locked position. Use this safety feature anytime the gate is open. Close the gate anytime the baler must be left unattended.

If gate is not locked while performing this procedure, the gate could close suddenly causing injury or death.

If gate cannot be fully raised to engage gate lock channel (A) during service, use hoist or appropriate lifting device to support gate.

Channel (A) locks the left-hand gate lift cylinder to prevent the gate from falling if the hydraulic lift system fails.

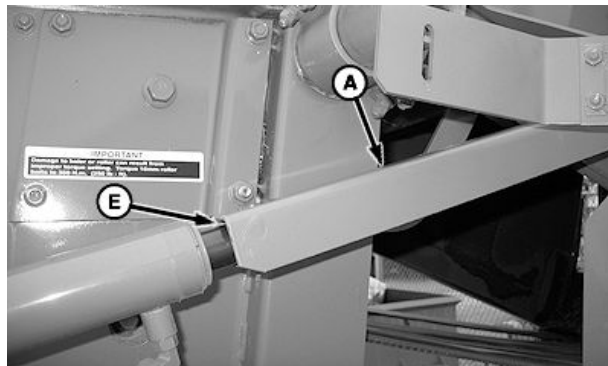
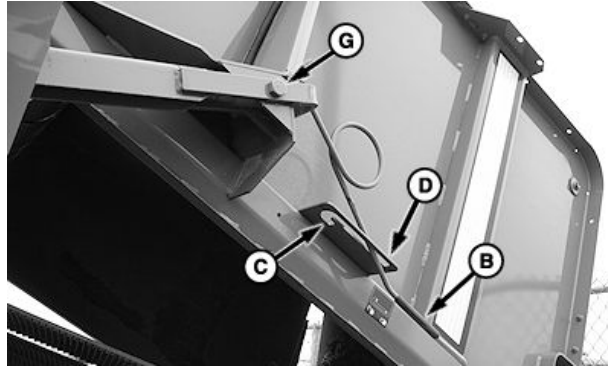
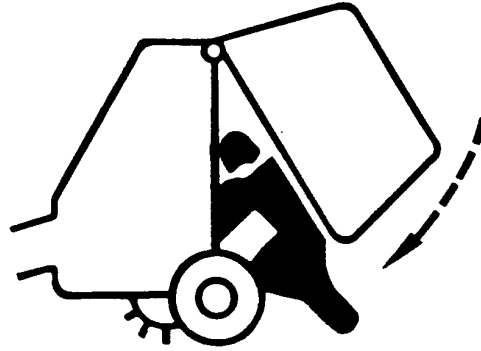
To lock gate in open position:

1. Raise gate fully.
2. Move lever (B) to locked position (D). Inside surface (E) of channel (A) must contact top of cylinder rod. If channel (A) does not contact top of cylinder (as shown), adjust gate lock channel (A) side-to-side to engage cylinder rod or loosen cap screw (G), see your John Deere dealer.
3. Lower gate cylinder slowly, approximately 20 mm (3/4 in.). Ensure gate lock channel (A) is against top of cylinder rod and end of cylinder barrel. If inside of channel (F) of gate lock channel (A) is not against top of cylinder rod and end of cylinder, see your John Deere dealer.

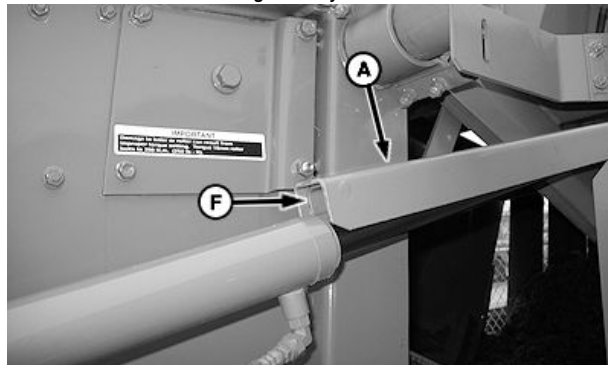
To unlock gate:

1. Move lever (B) to unlocked position (C).
2. Lower the gate.

A—Channel	E—Inside Surface
B—Lever in Gate Lock Position	F—Inside of Channel
C—Unlocked Position	G—Cap Screw
D—Locked Position	



Channel Against Cylinder Rod Shown



Channel Not Against Cylinder Rod Shown

PP98408,0000DF1 -19-07FEB13-1/1

TS698 —UN—21SEP89

E57017 —UN—13APR09

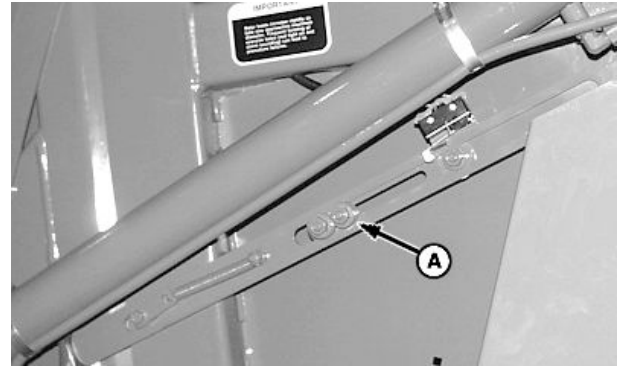
E56984 —UN—30MAR09

E57018 —UN—13APR09

Adjust Bale Size Switch (Hydraulic Twine Wrap Only)

IMPORTANT: Belts and drive loads increase as bale size approaches maximum diameter. Frequent forming of oversize bales (bale size alarm on) can lead to premature failures.

1. Close gate.
2. Adjust switch as follows:
 - For maximum bale size indication:
 - a. Loosen nut (A) and move rearward to end of slot.
 - b. Tighten nut (A).
 - For smaller bale size indication:
 - a. Loosen nut (A) and move forward in slot.
 - b. Tighten nut (A).



Right-Hand Side

A—Nut

PP98408,0000DF2 -19-07FEB13-1/1

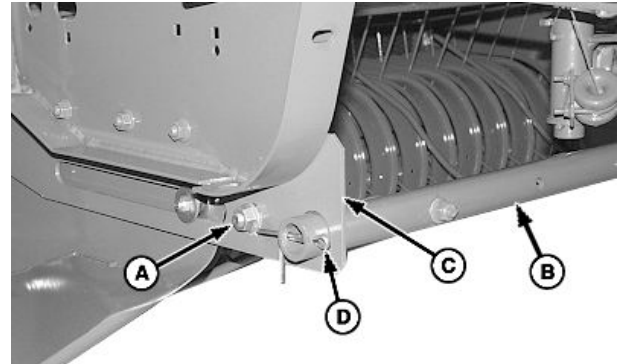
E53998—UN—06JAN05

Remove Compressor Rack

1. Remove cap screw and lock nut (A). Remove cotter pin (D) from right-hand end of compressor rack tube.
2. Slide compressor rack (B) away from right-hand bracket (C).
3. Lower right-hand end and remove compressor rack from left-hand bracket.

A—Lock Nut
B—Compressor Rack

C—Right-Hand Bracket
D—Cotter Pin



PP98408,0000DF3 -19-07FEB13-1/1

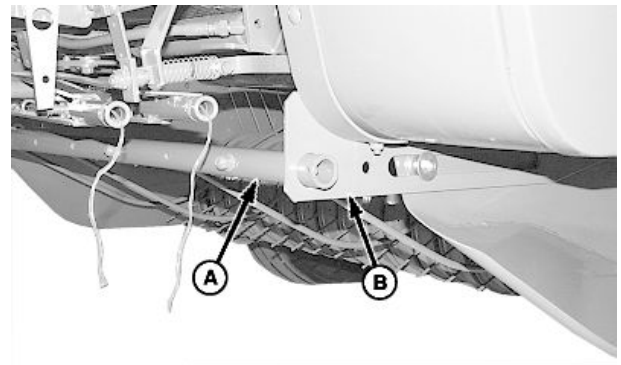
E53999—UN—04JAN05

Install Compressor Rack

1. Install compressor rack (A) in left-hand bracket (B).

A—Compressor Rack

B—Left-Hand Bracket



Continued on next page

PP98408,0000DF4 -19-07FEB13-1/2

E54000—UN—04JAN05

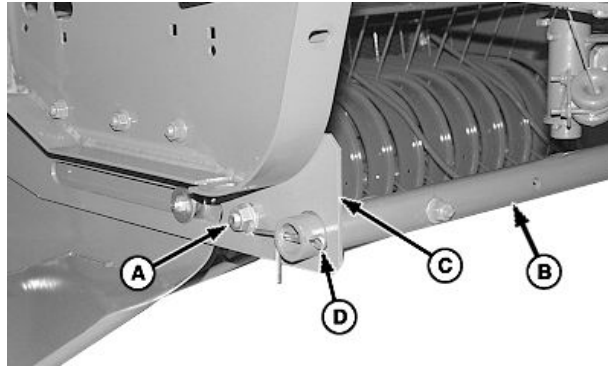
2. Lift right-hand end and slide compressor rack (B) into bracket (C).
3. Install cap screw and lock nut (A). Install cotter pin (D) into right-hand end of compressor rack tube.

NOTE: Make sure that compressor rods do not interfere with twine arms. Adjust individual rods, as necessary, or adjust compressor rack for clearance.

4. Adjust to desired operating height. Tighten lock nut (A). (See ADJUST COMPRESSOR RACK in this section.)

A—Cap Screw and Lock Nut
B—Compressor Rack

C—Bracket
D—Cotter Pin



ES3999—UN—04JAN05

PP98408,0000DF4 -19-07FEB13-2/2

Adjust Compressor Rack

To improve feeding, the compressor rack can be adjusted up or down.

1. Loosen lock nut (A).

NOTE: Make sure that compressor rods do not interfere with twine arms. Adjust individual rods, as necessary, for clearance.

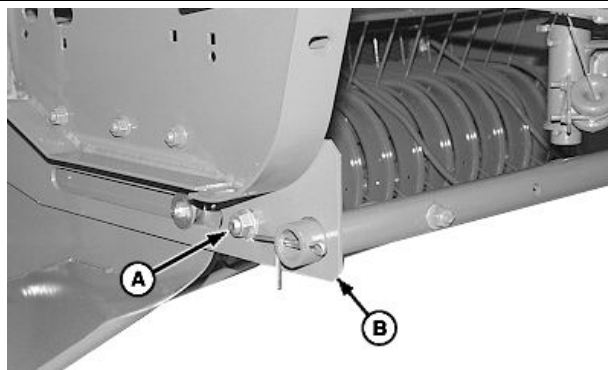
2. Adjust rack to desired height.

For an initial height setting, adjust compressor rack strap parallel to edge of mounting bracket (B).

3. Tighten lock nut (A).

IMPORTANT: Belt damage can occur if crop is allowed to build up on top of compressor rack.

In short, dry, slick crops it can be necessary to remove compressor rods or compressor rack, if material builds up on top of rods. (See REMOVE COMPRESSOR RACK in this section.)



A—Lock Nut

B—Mounting Bracket

NOTE: Reinstall compressor rack or compressor rods when buildup conditions cease or when returning to bale hay crops.

ES4001—UN—04JAN05

PP98408,0000DF5 -19-07FEB13-1/1

Start a Bale in Difficult Conditions

1. See BALE SHORT, DRY, SLICK CROPS; BALE CORNSTALKS; BALE WET HAY; and BALE LONG, STIFF, CANE-TYPE CROPS in this section.
2. Check pickup belt tension and condition. (See ADJUST PICKUP DRIVE BELT IDLER in Service—Baler section.)
3. Check for broken or missing pickup teeth.
4. To ensure smooth uninterrupted crop flow while starting a bale, try the following:
 - Select a gear that will give 6—8 km/h (4—5 mph) forward travel speed at rated PTO speed.
 - Reduce tractor engine speed to slow idle (900—1200 rpm) when starting the bale.
 - Drive forward at least 3 m (10 ft.) without stopping to allow enough crop into the baler to start rolling.
 - Resume rated PTO speed.
5. If windrows are wide and ropy, do the following:
 - a. Operate pickup as high as practical.
 - b. Start in a slow gear, allowing crop to feed in from the sides.
 - c. Approach windrow with crop centered on pickup to reduce plugging at crop dividers. Do not cut across the windrow.
 - d. Travel forward slowly, as needed, to allow material to feed smoothly.
6. Use variable core feature, if equipped, for long, stiff, cane-type crops.
7. Make windrows narrower than the bale chamber width and avoid getting crop under deflectors to improve bale starting in crops such as bahia grass, coastal bermuda grass, sudex, sudan grass, and star grass.
8. Check belt and starter roll bars for excessive wear that can contribute to bale starting problems. (See CHECK PICKUP TOOTH END PLAY in Service—Baler section.)

PP98408,0000DF6 -19-07FEB13-1/1

Bale Short, Dry, Slick Crops

CAUTION: DON'T TAKE CHANCES! To avoid injury or death by being pulled into the machine:

Do not attempt to feed crop or twine into baler or unplug feed area while baler is running. The baler feeds material faster than you can release it.

Disengage PTO and shut off engine.

To reduce plugging try one or more of the following techniques:

1. Check pickup belt tension and condition. (See ADJUST PICKUP BELT IDLER in Service—Baler section.)
2. Check for missing or broken pickup teeth.
3. Raise pickup as high as practical.
4. Reduce engine speed to 1500 rpm or below (reduces chaffing) and shift transmission to higher gear to maintain ground speed.
5. If equipped with variable core, reduce bale density as necessary. (See OPERATE VARIABLE CORE in Operating with BaleTrak™ Pro System section.)
6. Regular Pickup Only: Remove individual compressor rods, leaving one center rod and one rod on each end of the cross tube. If material still accumulates, remove compressor rack. **Always replace compressor rack under normal conditions.** (See REMOVE or INSTALL COMPRESSOR RACK in this section.)
7. Make larger windrows (rake together as necessary), but keep windrows narrower than bale chamber width.
8. Disengage PTO anytime crop is not being fed into baler, such as turns and field borders.
9. In short, dry conditions, it can be necessary to lower the baler. (See WHEEL SPINDLE POSITIONS in Preparing the Baler section.)



TS679—UN—26SEP89

10. Adjust pickup float springs to provide more force (float). (See ADJUST PICKUP FLOAT SPRINGS in Service—Baler section.)
11. When baling dry straw, it can be necessary to place twine across full width of bale or use net wrap (if equipped) to prevent straw from coming out of feed opening while tying.
12. If machine rpm is less than rated PTO speed, use the following charts as a guideline for desired wraps.

TWINE WRAP CHART		
Engine rpm	Mechanical Setting	Monitor-Controller Setting
Rated Speed	10 cm (4.0 in.)	10 cm (4.0 in.)
1800 rpm	10 cm (4.0 in.)	9 cm (3.5 in.)
1500 rpm	10 cm (4.0 in.)	8 cm (3.0 in.)
1300 rpm	10 cm (4.0 in.)	6 cm (2.5 in.)

If bales fail to start rotating due to one or both sides of the windrow extending outside width of bale chamber, try the following suggestions:

1. Make windrows narrower than bale chamber width.
2. Center baler over windrow while starting, to avoid getting crop under the crop dividers.

PP98408,0000DF7 -19-14MAR13-1/1

Bale Cornstalks

⚠ CAUTION: DON'T TAKE CHANCES! To avoid injury or death by being pulled into the machine:

Do not attempt to feed crop or twine into baler or unplug feed area while baler is running. The baler feeds material faster than you can release it.

Disengage PTO and shut off engine.

1. Cut or rake stalks before baling to improve pickup tooth life.
2. Do not rake more than six rows together or plugging can occur at the pickup area. Higher productivity can be obtained by baling smaller windrows at faster ground speeds. Avoid crowding the edges of the windrow and avoid windrows wider than the baler chamber to reduce plugging at the crop dividers.
 - Since cornstalks tend to roll and spread out in front of the pickup, windrows 1/2—3/4 the width of the bale chamber usually do not require weaving, and reduce plugging at crop dividers.
 - Windrows less than 1/2 the width of the bale chamber, and normal weaving allows one side of the pickup to clear as the other side is feeding.
 - Let shredded cornstalk windrows sit overnight if possible. Windrows will settle overnight gaining moisture which will improve feeding and reduce wear on pickup components.
3. Maintain rated PTO speed for most cornstalk baling conditions, to facilitate a regular flow to the bale chamber.
4. If equipped, remove starter roll scraper.
5. Check for missing or broken teeth. Replace if necessary.
6. Check pickup belt tension and condition. (See ADJUST PICKUP DRIVE BELT IDLER in Service—Baler section.)
7. Add extra compressor rods if cornstalks push up between existing rods and cause plugging.
8. Install the following kits to increase productivity even further:
 - Gathering Wheel Kit
 - Hydraulic Ramp Kit
 - Hydraulic Pickup Lift Kit



TS679 —UN—28SEP89

PP98408,0000DF8 -19-14MAR13-1/1

Bale Long, Stiff, Cane-Type Crops

CAUTION: DON'T TAKE CHANCES! To avoid injury or death by being pulled into the machine:

Do not attempt to feed crop or twine into baler or unplug feed area while baler is running. The baler feeds material faster than you can release it.

Disengage PTO and shut off engine.

If bales fail to start rotating due to crop wedging into top of starting chamber, try the following suggestions:

1. Check pickup belt tension and condition. (See ADJUST PICKUP BELT IDLER in Service—Baler section.)
2. Condition crop as much as possible so stems will bend and form bale core without wedging.
3. Make windrows narrower than bale chamber width.
4. Approach windrow with crop centered in pickup.
 - Avoid getting crop under crop dividers.
5. Approach windrow at an angle and immediately turn and drive forward.
 - This allows stems to bend and start bale core.
 - Avoid getting crop under crop dividers.
6. If equipped with hydraulic pickup lift, raise and lower pickup during bale starting. This is usually done at reduced ground speed.
7. Travel forward at least 3 m (10 ft.) without stopping to allow enough crop into baler to start rolling.
8. Use variable core feature, if equipped, to form bale core with less belt tension.



TS679—UN—26SEP89

9. Surface moisture on bottom of windrow causes crop to slip more easily against forming belts. Turn windrows with a rake or tedder to improve bale starts.
10. Reduce bale density by using variable (soft) core feature. (See ADJUST VARIABLE (SOFT) CORE DIAMETER in this section.) Reduced belt tension allows belts to deflect and start bale.
11. If machine rpm is less than rated PTO speed, use the following charts as a guideline for desired wraps.

TWINE WRAP CHART		
Engine rpm	Mechanical Setting	Monitor-Controller Setting
Rated Speed	10 cm (4.0 in.)	10 cm (4.0 in.)
1800 rpm	10 cm (4.0 in.)	9 cm (3.5 in.)
1500 rpm	10 cm (4.0 in.)	8 cm (3.0 in.)
1300 rpm	10 cm (4.0 in.)	6 cm (2.5 in.)

PP98408,0000DF9 -19-14MAR13-1/1

Bale Wet Hay

CAUTION: DON'T TAKE CHANCES! To avoid injury or death by being pulled into the machine:

Do not attempt to feed crop or twine into baler or unplug feed area while baler is running. The baler feeds material faster than you can release it.

Disengage PTO and shut off engine.

If bales fail to start rotating due to windrows being wet on the bottom, try the following suggestions:

1. Check pickup belt tension and condition. (See ADJUST PICKUP DRIVE BELT IDLER in Service—Baler section.)
2. Increase feed opening by:
 - Lowering pickup as low as practical.
3. Reduce tractor engine speed to slow idle (900—1200 rpm) while starting.
4. Approach windrow with crop centered on pickup to reduce plugging at crop dividers. Do not cut across the windrow.
5. Travel forward at least 3 m (10 ft.) without stopping to allow enough crop into the baler to start rolling.
6. Resume rated PTO speed.
7. Be sure that the tractor drawbar pin or hitch parts are not dragging and bunching the windrow. Use drawbar shielding as necessary.
8. Surface moisture on bottom of windrow causes crop to slip more easily against forming belts. Turn windrows with a rake or tedder to improve bale starts.



T5679 —UN—28SEP89

PP98408,0000DFA -19-14MAR13-1/1

Operate Baler with Bale Ramp (If Equipped)

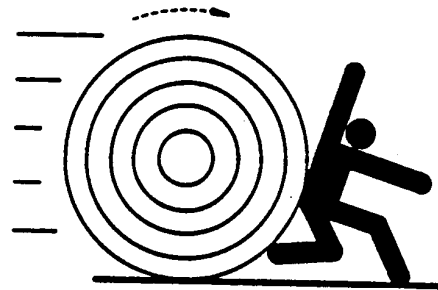
Optional bale ramp allows the bale to roll away from the baler, minimizing the need to stop and reverse the tractor to eject the bale on level or moderately rolling terrain.

CAUTION: To prevent injury or damage from a rolling bale, discharge bales on level ground or in such a manner that the bale will not roll.

1. Form and wrap bale as usual.
2. Raise gate to eject bale. Hold tractor hydraulic lever until gate is fully raised. Do not stop gate while raising.

As gate is raising, hydraulic oil from tensioning valve is diverted through an add-on regulator valve to a hydraulic cylinder attached to bale ramp. Bale ramp tilts just before gate is fully open, causing the bale to roll away from the baler. Regulator valve is adjustable to set gate-to-bale ramp timing. (See ADJUST BALE RAMP [IF EQUIPPED] in this section.)

3. Push forward on tractor SCV lever to tilt bale ramp (to horizontal position) and close baler gate.
4. After gate is closed, continue baling operation.



E32692 —UN—08DEC88



E67362 —UN—14AUG12

PP98408,0000DFB -19-07FEB13-1/1

Understand Bale Ramp Regulator (Relief) Valve

The bale ramp uses baler hydraulics with an add-on regulator valve to direct oil flow to a hydraulic cylinder attached to bale ramp.

When operator pulls tractor SCV lever rearward, hydraulic oil from tractor flows through baler tensioning valve, gate lock valve, and base end of gate cylinders, raising gate.

As gate raises (gate cylinders extend), pressure in the gate raising circuit increases. When this pressure reaches the setting of the ramp regulator valve, oil flows to the ramp cylinder, and front of ramp will raise. *The gate cylinders must be almost extended before front of ramp raises.*

When operator pushes tractor SCV lever forward, gate cylinders retract and return oil from ramp cylinder flows through an internal check valve (within regulator valve), causing ramp to return (cylinder retracts).

Initial adjustment of relief valve (4-1/2 turns in from fully out) gives approximately 8274—10342 kPa (82.74—103.42 bar) (1200—1500 psi). At this setting, gate must be almost fully raised when front of bale ramp raises.

Adjusting the relief valve clockwise will delay the timing of the ramp.

NOTE: For further information, see **ADJUST BALE RAMP (IF EQUIPPED)** in this section.

PP98408.0000DFC -19-07FEB13-1/1

Adjust Bale Ramp (If Equipped)

IMPORTANT: Bale ramp regulator valve must be adjusted to initial setting (set for heaviest bale) before operating gate and bale ramp.

Initial setting:

- Loosen jam nut.
- Turn valve stem fully counterclockwise, then turn valve stem clockwise 4-1/2 turns. *(Final adjustment will be determined by field operation.)*
- Tighten jam nut.

Check operation of bale ramp by slowly opening and closing gate fully using tractor hydraulics.

Check initial timing setting by opening the gate and observing ramp operation. Gate must be almost fully raised before ramp tilts.

To adjust gate-to-ramp timing:

1. Loosen jam nut.
2. Turn valve stem in or out approximately 1/4 turn at a time to regulate oil flow, changing gate-to-ramp timing.
 - If ramp tilts too soon, delay timing (decrease oil flow) by turning valve stem clockwise approximately 1/4 turn at a time. Recheck timing.
 - If ramp does not tilt, advance timing (increase oil flow) by turning valve stem counterclockwise approximately 1/4 turn at a time. Recheck timing. *This will cause ramp to tilt sooner and provide more pressure to lift heavy bales.*
3. Tighten jam nut.
4. Start tractor engine and recheck timing. Adjust as necessary.

PP98408.0000DFD -19-07FEB13-1/1

Operating with BaleTrak™ Pro System

BaleTrak™ Pro Monitor-Controller System Introduction



A—Monitor-Controller

The BaleTrak™ Pro system provides accurate and useful information to help the operator make the best bales possible.

In addition, the operator can adjust most control settings from the tractor seat without inconvenience or delays. By pushing a single button, twine arms can be extended or retracted, or the auto wrap cycle can be initiated.

The BaleTrak™ Pro system is factory preset, functional, and ready to use. Operate the baler briefly with factory settings to become familiar with the settings before adjusting or resetting them. The system will remember the settings when power is shut off.

The system can be used to troubleshoot baler malfunctions and gives error code messages during malfunctions. Convenient channels are available to ensure correct baler switch and sensor adjustments.

The BaleTrak™ Pro system monitors or controls the following baling operations and conditions:

- Bale Diameter
- Automatic Twine Wrapping
- Bale Eject
- Bale Count
- Gate Closed
- Variable Core Diameter (If Equipped)
- Alarms
 - Gate Open
 - Oversize Bale
 - Low Tractor Voltage
- Error Codes of System Malfunctions

E52435—UN—16JUN03

PP98408,0000DFE -19-07FEB13-1/1

BaleTrak™ Pro Monitor-Controller Description

The monitor-controller (A) uses switches, a liquid crystal display (LCD), and a microprocessor to monitor and control the baling and wrapping operations. The following conditions can be set (programmed) into the controller by the operator:

- Bale Diameter
- Twine Wrap:
 - Spacing
 - Number of End Wraps (Both Ends)
 - Twine End Wrap Distance (Both Ends)
 - Re-Extension Wrap Distance
 - Cinch Wrap
 - Delay of Twine Eject
 - Dry Straw
 - Variable Core Diameter (If Equipped)

NOTE: The conditions set by the operator will revert back to the initial settings when controller is reset (Channel 001).

The monitor-controller is mounted on the tractor and is powered by the tractor's 12 V electrical system. When first turned on, the controller performs a self-test to ensure that the system is ready to operate. The controller, then sends a brief communication signal to the twine wrap actuator and waits for a reply before starting normal operations. If a reply signal is not received, the controller will not go into operating mode and the STOP indicator will light.

The monitor-controller uses sensors and switches to perform the following:



A—Monitor-Controller

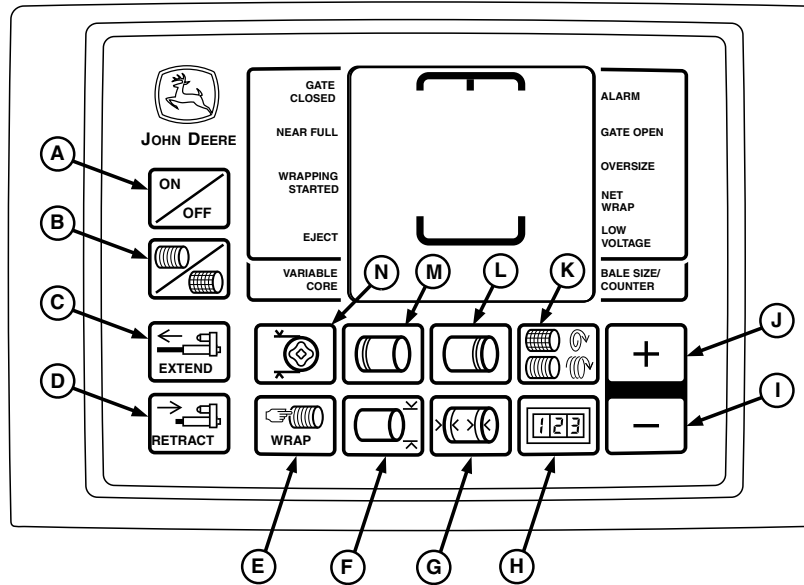
- The sensors are used for monitoring:
 - Bale Diameter
- The switches are used for monitoring:
 - Gate (Open or Closed)
 - Oversize Bale

To perform the wrapping process, the controller provides current to operate the bale wrap actuator. This is done automatically by the controller or manually by the operator pressing the WRAP key.

E52435—UN—16JUN03

PP98408,0000DFF -19-07FEB13-1/1

BaleTrak™ Pro Monitor-Controller Keys and Switches



A—Monitor ON or OFF Switch
 B—Selector Switch (Twine Only)
 C—Actuator Extend—Manual (Twine Only)
 D—Actuator Retract—Manual (Twine Only)

E—Wrap Cycle—Manual Start
 F—Bale Diameter
 G—End Wrap Distance (Twine Only)
 H—Bale Counters
 I—Minus Key

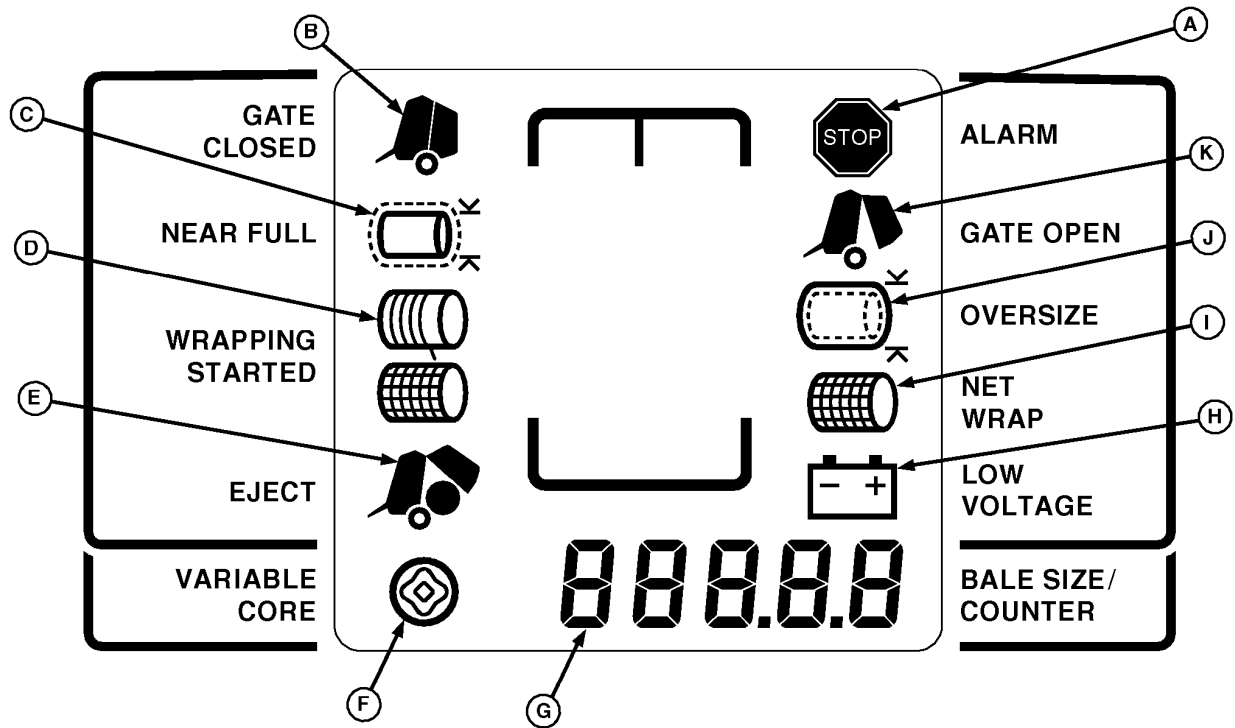
J—Plus Key
 K—Twine Spacing
 L—Number of Right-Hand End Wraps (Twine Only)
 M—Number of Left-Hand End Wraps (Twine Only)

N—Variable Core Diameter (If Equipped)

PP98408,0000E00 -19-07FEB13-1/1

E52458 —UN—19JUN03

BaleTrak™ Pro Monitor-Controller Displays and Indicators



A—Stop Indicator (Flashing or Steady)	E—Eject	H—Low Voltage Alarm	L—Audible Alarm (Not Shown)
B—Gate Closed	F—Variable Core On (If Equipped)	I—Not Used	
C—Near Full	G—Digital Display (Bale Size or Counter)	J—Oversize Alarm	
D—Wrapping Started		K—Gate Open Alarm	

NOTE: Indicator I is not used in this application.

PP98408,0000E01 -19-07FEB13-1/1

E67369 —UN—15AUG12

BaleTrak™ Pro Monitor-Controller Setup Values and Initial Settings

BALE DIAMETER

Readout Display Range	77—160 cm (30.5—63 in.)
Diameter Adjustment Range	91—152 cm (36—60 in.)
Diameter Initial Setting ^a	142 cm (56 in.)
Near Full Size Range	1—27 cm (0.5—10.0 in.)
Near Full Size Initial Setting ^a	11 cm (4.5 in.)

^aSettings revert to these values when monitor-controller is reset. (See BaleTrak™ Pro MONITOR-CONTROLLER—RE-SET TO INITIAL SETTINGS [CH 001] in this section.)

TWINE WRAP

Spacing Range	2—26 cm (1—10 in.)
Spacing Initial Setting ^a	10 cm (4 in.)
Number of End Wraps Range	
Left-Hand End	0—5 Wraps
Right-hand End	0.5—5.0 Wraps
Number of End Wraps Initial Setting ^a	2 Wraps
Left-Hand, Right-Hand End Wrap Distance Range	8—26 cm (3—10 in.)
End Wrap Distance Initial Setting (Right and Left-Hand) ^a	10 cm (4 in.)
Re-Extension Wrap Distance Range	OFF ^a , 20, 40, 60 cm (8, 16, 24 in.)
Cinch Wrap Initial Setting (From Left-Hand End)	OFF ^a , 25 cm (10 in.)
Dry Straw	OFF ^a , ON
Delay of Twine Eject	0—10 Seconds
Delay of Twine Eject, Initial Setting	0 Seconds

^aSettings revert to these values when monitor-controller is reset. (See BaleTrak™ Pro MONITOR-CONTROLLER—RE-SET TO INITIAL SETTINGS [CH 001] in this section.)

VARIABLE CORE DIAMETER

Diameter Adjustment Range	81—142 cm (32—56 in.) ^a
Diameter Initial Setting	91 cm (36 in.)

^a10 cm (4 in.) below size setting.

PP98408,0000E02 -19-22FEB13-1/1

BaleTrak™ Pro Monitor-Controller Customer, Setup, and Diagnostic Modes

There are three types of channeled programs:

- Customer Channels (CH001—033)
- Setup Channels (CH201, 202, and 208)
- Diagnostic Channels (CH301—312) (See your John Deere dealer)

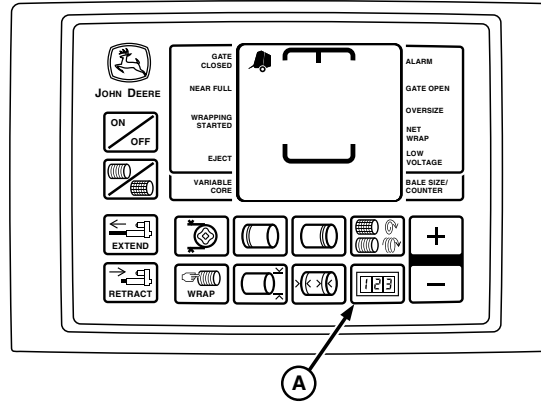
Customer Channels (CH001—033) are used to:

- Set near-full indicator set point.
- Reset monitor-controller to initial settings.
- Access dry straw twine wrap program.
- Adjust bale diameter.
- Adjust twine wrap.
- Activate re-extension and cinch wrap program.
- Check positions of sensors and switches.
- Test twine actuators.
- Test LCD display.
- Test tractor voltage.
- Adjust delay of twine eject.

Setup Channels (CH201, 202, and 208) are used to:

A—COUNTER Key

- Select baler model.
- Activate or deactivate twine arm.
- Activate or deactivate variable core.



E52441—UN—18JUN03

PP98408,0000E03 -19-07FEB13-1/3

To Enter Customer Channels:

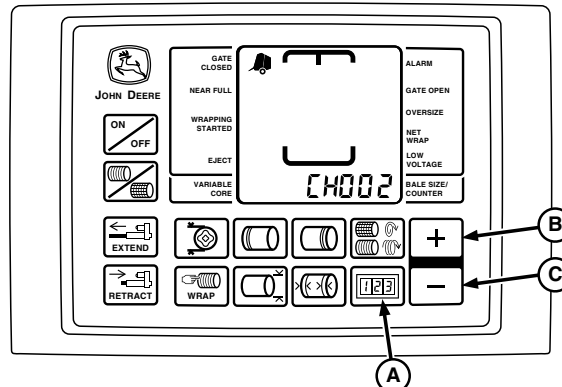
1. Turn tractor key to ON position. Do not start tractor engine. Press and hold COUNTER key (A), while turning monitor-controller ON.
2. Continue to hold COUNTER key (A) and press PLUS key (B) or MINUS key (C) until desired channel appears in digital display. Release key to see the current value for this channel.

To change channels, press and hold COUNTER key (A) and use the PLUS key (B) and MINUS key (C) to access other channels.

3. Turn monitor-controller OFF to enter setting into memory.
4. Turn tractor key to OFF position and remove key.

A—COUNTER Key
B—PLUS Key

C—MINUS Key



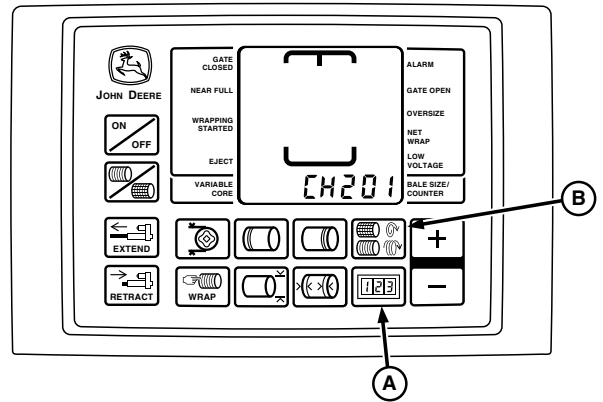
E52451—UN—18JUN03

Continued on next page

PP98408,0000E03 -19-07FEB13-2/3

To Enter Setup Channels:

1. Turn tractor key to ON position. Do not start tractor.
2. Press and hold COUNTER key (A) and NUMBER OF WRAPS key (B) while turning monitor-controller ON. **CH201** is displayed.
3. Release both keys. Bale model is displayed.
4. Press and hold COUNTER key (A) and press the PLUS key until desired channel is shown in display.
5. Turn monitor-controller OFF to enter setting into memory.
6. Turn monitor-controller ON. Baler model will appear for approximately 2 seconds. Verify that model is correct.
7. Turn tractor key to OFF position and remove key.



A—COUNTER Key

B—NUMBER OF WRAPS Key

PP98408,0000E03 -19-07FEB13-3/3

BaleTrak™ Pro Monitor-Controller Channels

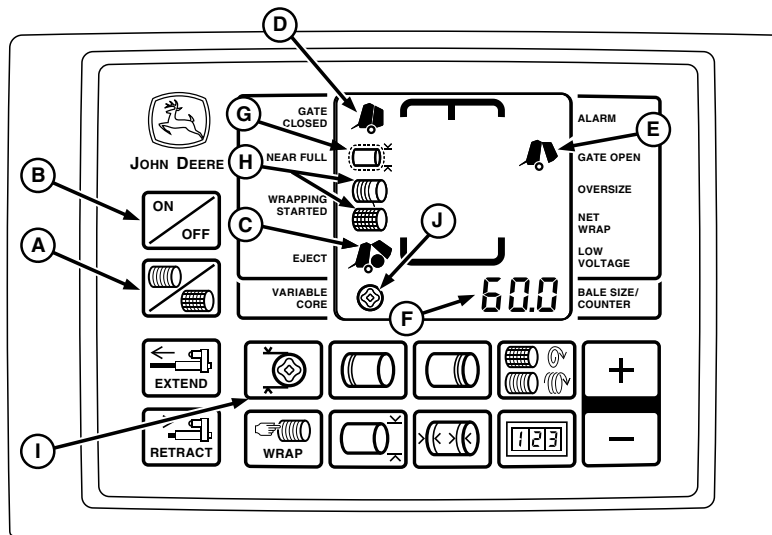
NOTE: Channel listings and page numbers can be found under Operating or Service BaleTrak™ Pro Systems in the Table of Contents or under C in the Alpha Index.

NOTE: Monitor will power off after approximately 30 minutes of inactivity.

CUSTOMER and SETUP CHANNELS		
Channel Number	Contents	Remarks
001	Reset All Settings to Factory Initial Settings	See factory initial settings
002	Dry Straw Twine Wrap Program	Plus key turns ON, minus turns OFF
003	Re-extension Twine Tying Program	Plus key turns on and increases, minus turns off and decreases (OFF, 8.0, 16.0, 24.0)
004	Cinch Wrap Twine Tying Program	Plus key turns ON, minus turns OFF
005	Calibration of Bale Size Diameter Sensor	At value 173
008	Measurement Units	Will display SI for metric and En for English
010	Offset of Near Full Alarm	Initial setting is 4.5 (0.5-10.0) inches
013	Test of Oversize Switch	Released=12, depressed=00 & tone
014	Test of Right Gate Closed Switch	Released=12 & tone, depressed=00
018	Test of Current in Actuators	Read the current
019	Test of System Voltage	Read the voltage
020	Test of LCD Screen	Display indicators
029	Twine Arm Calibration Value	
033	Delay of Twine Eject	Default 0 (0—10 seconds)
201	Baler Model	4xx to 5xx
202	Twine	0= OFF, 1= ON
208	Variable Core	0= OFF, 1= ON

PP98408,0000E04 -19-07FEB13-1/1

BaleTrak™ Pro Monitor-Controller Operation



A—Twine Switch
B—ON or OFF Switch
C—Eject Indicator
D—Gate Closed Indicator

E—Gate Open Indicator
F—Digital Display
G—Near Full Indicator

H—Wrapping Started Indicator
I—Variable Core Key
J—Variable Core Indicator

Turn tractor key to ON position. Turn on monitor by pressing the on or off switch (B). Twine operation symbol will be briefly displayed.

GATE CLOSED (D) must be ON. This indicates gate is latched and ready to bale.

Digital display (F) will show bale diameter increasing in 1 cm (0.50 in.) increments within display range of 77—160 cm (30.5—63 in.).

NEAR FULL indicator (G) flashes and beeps twice when bale reaches a diameter 11 cm (4-1/2 in.) smaller than bale diameter setting. (Gives a chance to fill bale ends properly.)

WRAPPING STARTED indicator (H) (Twine) will light, beep, and start wrapping automatically when bale reaches diameter setting. Stop travel and maintain engine speed at rated PTO during wrap and ejection cycle. Observe twine arm pointer and twine pulleys on the baler for proper operation. When wrapping is completed and actuator returns to home position, **EJECT** indicator (C) will light and stay on until gate is opened.

Confirm twine has been cut by observing twine pulleys. Back up (if not equipped with bale ramp). Eject bale using hydraulic control lever. **GATE OPEN** indicator (E) lights during normal ejection.

GATE OPEN indicator will go out and **GATE CLOSED** indicator will come on indicating normal operations can continue.

A wrap and gate open cycle adds one bale to both the total and resettable bale counters. Resettable counter is automatically displayed for 8 seconds when a bale is added.

If equipped with variable core solenoid valve, depress optional variable core key (I) if soft core is desired. Variable core indicator (J) will light when optional variable core feature is selected. Solenoid valve must be installed for indicator (J) to light.

NOTE: Switch (A) is TWINE ONLY in this application.

E67417 —UN—17AUG12

PP98408,0000E05 -19-07FEB13-1/1

Optional Variable Core Feature

The BaleTrak™ Pro system uses an optional VARIABLE (SOFT) CORE feature to lower the core density of the bale, or can improve bale starting in long, stiff, cane-type crops. This feature uses the monitor-controller in conjunction with the bale diameter sensor (A) and solenoid valve (B) (*located on the tensioning control valve*) to reduce hydraulic pressure at the rod end side of the tension and gate cylinders.

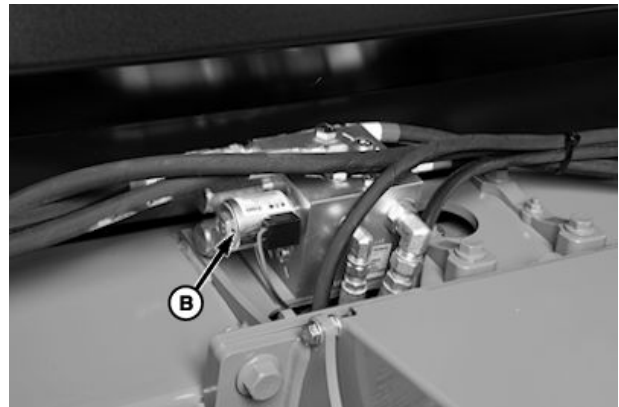
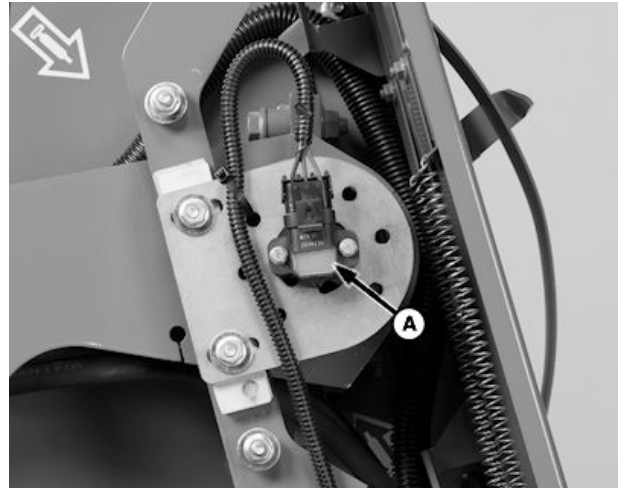
The diameter of the soft core can be adjusted 81—142 cm (32—56 in.) and is set by entering the desired core dimension into the monitor-controller.

NOTE: *The conditions set by the operator will revert to initial settings when monitor-controller is reset. The initial setting for the variable core is 91 cm (36 in.).*

Pushing the VARIABLE CORE DIAMETER button on the monitor-controller energizes the variable core solenoid. The energized solenoid routes the oil from rod end of tension and gate cylinders through the low pressure relief valve, then back to the base end of the tension and gate cylinders. The lower pressure allows a looser bale to form initially.

When the bale size reaches the variable core diameter setting (*preset by operator*), the monitor-controller de-energizes the solenoid. At this point, oil from rod end of tension and gate cylinders is routed through the adjustable pressure relief valve, then back to the base end of the tension and gate cylinders. Bale formation is then completed at the higher relief pressure. The higher pressure forms tighter and denser outer bale layers.

The tractor selector control valve lever must be in the neutral position. If the SCV lever is in the float position, the variable core feature will not work.



A—Bale Diameter Sensor

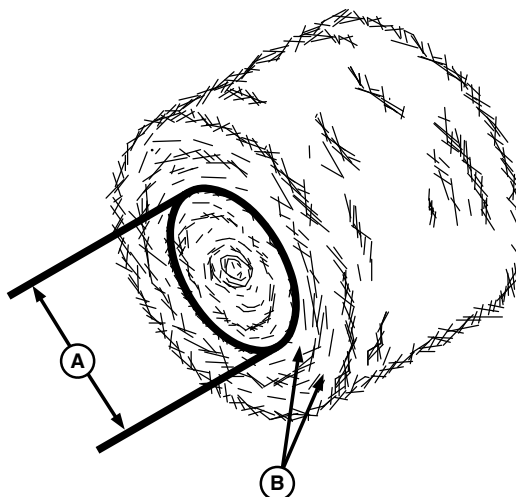
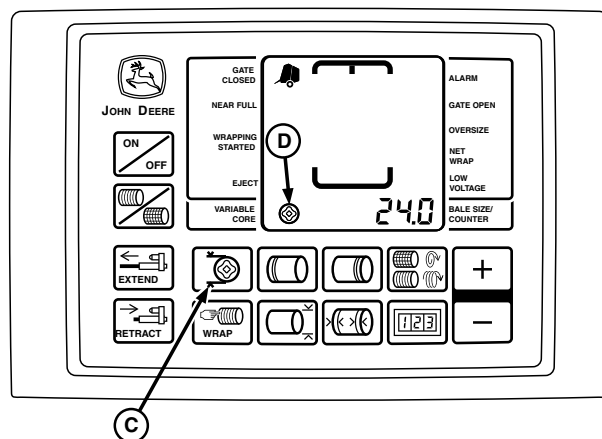
B—Solenoid Valve

PP98408,0000E06 -19-07FEB13-1/1

E67418 —UN—17AUG12

E66837 —UN—20JUL12

Adjusting Variable Core Diameter (If Equipped)



A—Variable Core Diameter

B—High Density Outer Layers

C—VARIABLE CORE Key
D—Core ON Indicator

The variable core diameter (A) can be adjusted from 81 cm (32 in.) up to 4 inches below bale diameter setting at 1 cm (0.5 in.) increments.

The initial setting for variable core diameter is 91 cm (36 in.).

The variable core diameter (A) can only be set at least 10 cm (4 in.) under bale diameter setting so tight, dense, outer layers are formed. High density outer layers (B) helps the bale hold its shape when wrapped and repel water.

To set variable core diameter (A):

- Turn tractor key to ON. Do not start tractor engine.
- Turn monitor-controller ON.
- Depress and hold VARIABLE CORE key (C).
- Press the PLUS or MINUS key until desired setting appears in digital display. Release key to enter setting

into memory. This setting will be used whenever the variable core feature is selected.

To use variable core feature:

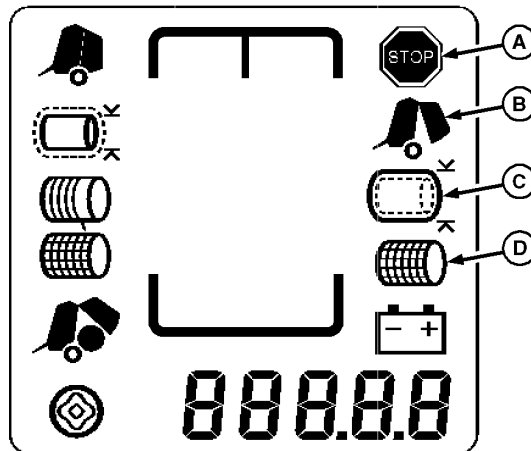
- Depress VARIABLE CORE key (C); core indicator (D) indicates that variable core is ON and will stay on throughout the baling process.
- To check variable core setting; depress and hold VARIABLE CORE key (C) to display setting. Release and depress VARIABLE CORE key (C) to activate variable core feature. Core indicator (D) must display on monitor-controller.
- To turn variable core feature OFF, depress VARIABLE CORE key (C) twice and core indicator (D) will go out.
- Variable core remains in last operation mode when monitor-controller is turned off and on.

E67419 —JUN—17AUG12

PP98408,0000E07 -19-07FEB13-1/1

Activate BaleTrak™ Pro Monitor-Controller Alarms

IMPORTANT: Continuing to operate with a **GATE OPEN** or **OVERSIZE** alarm can result in baler damage.



A—Stop Indicator
B—Gate Open Indicator

C—Oversize Bale Indicator

D—Not Used

Three conditions can activate the flashing **STOP** indicator (A) and alarm. Should the flashing **STOP** display and the alarm sound during normal operation, stop baling immediately. Take corrective action to silence alarm and cancel visual indicators.

The following conditions will activate the flashing **STOP** indicator (A) and alarm:

- **GATE OPEN (B):** Gate is open. Continuing to operate can twist gate and result in machine damage.

- **OVERSIZE (C):** Bale is above maximum allowable diameter. Continuing to operate with oversize bale in chamber can cause severe gate damage, roller breakage, and belt splice damage.

A flashing **STOP** indicator with no alarm can also appear at start-up if wiring to actuator is disconnected or damaged.

PP98408,0000E08 -19-07FEB13-1/1

Adjust Audible Alarm Volume

Open or close alarm door (A) to obtain desired volume.

A—Alarm Door



PP98408,0000E09 -19-07FEB13-1/1

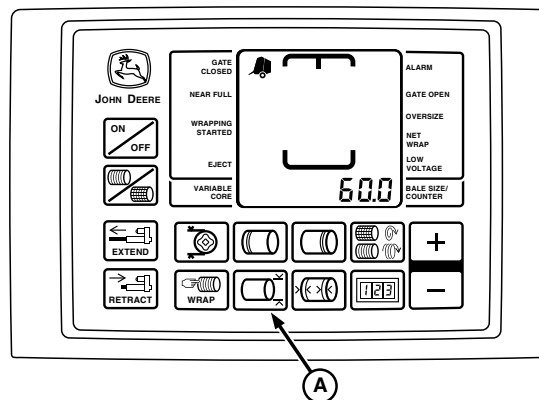
Set Bale Diameter

Initial setting for bale diameter is 142 cm (56 in.).

Bale diameter can be set from 91—152 cm (36—60 in.) at 1 cm (0.5 in.) increments.

- Press BALE DIAMETER key (A) and PLUS key to raise diameter setting.
- Press BALE DIAMETER key (A) and MINUS key to lower diameter setting.

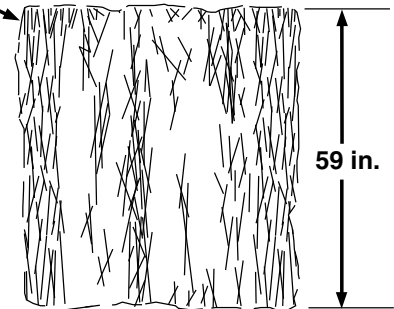
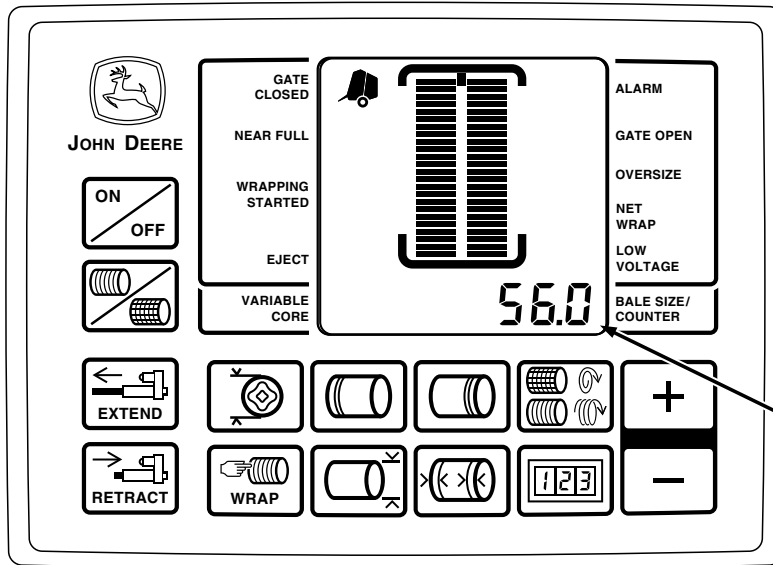
A—Bale Diameter Key



E52443 — UN—02/JUN08

PP98408,0000E0A -19-07FEB13-1/1

Adjust Bale Diameter Display



E58127 —UN—19OCT09

1. Make a bale and tie.
2. Before ejecting the bale, note the monitor-controller display for bale size or diameter setting.
3. Eject the bale and compare actual size of bale to the monitor-controller bale diameter setting.

NOTE: To check actual bale size, measure bale horizontally and vertically on both ends. Add the four measurements together and divide by four to determine average bale diameter.

4. Determine the actual bale size difference from the monitor-controller setting.

For example, if the bale diameter setting is 142 cm (56 in.), but the actual bale measures 150 cm (59 in.), the bale is 8 cm (3 in.) larger than the monitor bale diameter setting.

5. If bale diameter setting and actual bale size do not agree, make the following adjustment:

- Using tractor selector valve, raise belt tension arm until monitor-controller display reads from 76 through 152 cm (50 and 60 in.). Note the displayed size.

CAUTION: Adjusting bale diameter sensor can cause the twine arms or net wrap actuator to cycle if set size is exceeded during the adjustment. Stay clear of these areas.

- Adjust bale diameter sensor on the tension arm so monitor-controller displays actual bale diameter. (See ADJUST BALE DIAMETER SENSOR [Channel 005] in Service—BaleTrak™ Pro System.)

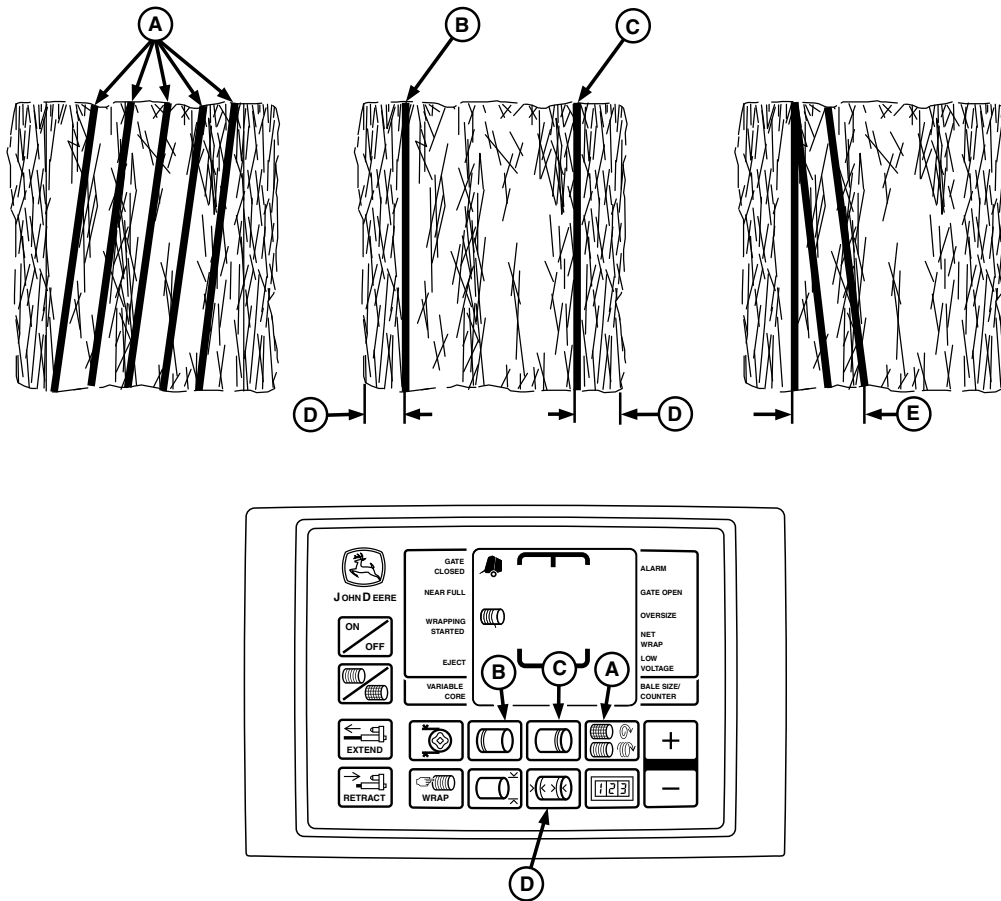
For example, if monitor-controller display reads 56 and the actual bale is 8 cm (3 in.) larger than the displayed diameter, adjust sensor until 59 is displayed on monitor.

- Lower belt tension arm.

6. Repeat Steps 1—5 as necessary.

PP98408,0000E0B -19-07FEB13-1/1

Twine Wrap Terms and Settings



A—Twine Spacing
B—Number of Left-Hand End Wraps

C—Number of Right-Hand End Wraps
D—Left-Hand and Right-Hand End Wrap Distance

E—Re-Extension or Cinch Wrap Distance

There are eight factors involved in properly placing twine on the bale. The factors are:

- Twine Spacing
- Number of Left-Hand End Wraps
- Number of Right-Hand End Wraps
- Left-Hand End Wrap Distance
- Right-Hand End Wrap Distance
- Re-Extension Wrap Distance
- Cinch Wrap
- Dry Straw

NOTE: The monitor-controller is programmed to apply approximate twine spacing in the center of the bale. Twine spacing will decrease toward the ends of bale.

Twine Spacing (A) is the distance between twine wraps. Spacing is increased or decreased depending on how fast the twine arms move across the bale.

Mechanical twine arm spacing ranges are between 5, 10, 15, and 20 cm (2, 4, 6, and 8 in.).

Monitor-controller twine spacing range is between 5—26 cm (2—10 in.) at 1 cm (0.5 in.) increments. Initial setting is 10 cm (4 in.).

To obtain uniform twine spacing on a bale, the setting for twine arm spacing and the monitor-controller setting for twine spacing must be the same.

Number of Left-Hand End Wraps (B) and Right-Hand End Wraps (C) controls how long the twine arms pause at the end of the bale to apply the set number of end wraps for the bale diameter. End wrap setting ranges between 0.5—10 wraps. Initial setting is 2 wraps.

NOTE: The setting for the number of end wraps is approximate for each twine arm. With various settings of adjustable twine guide, the twine from both arms will be the same distance from the end of bale. The bale will have twice the number of end wraps as indicated on the monitor-controller. (See **SET TWINE END WRAP DISTANCE** in this section.)

Continued on next page

PP98408,0000E0C -19-07FEB13-1/2

808JUN-02—UN—E52468

Left-Hand or Right-Hand End Wrap Distance (D) limits the twine arm travel to the outer ends of the bale. An initial setting of 10 cm (4 in.) has been set for both sides. The settings can be changed in 1 cm (0.5 in.) increments.

- End wrap distance settings for left and right-hand sides range between 8—26 cm (3—10 in.).

NOTE: End wrap distances are an approximate indication where twine will be placed on the bale.

To place twine the same distance from the edge on both ends, a slightly different setting can be required for each end.

Check setting of mechanical twine guide when revising monitor-controller settings.

Re-Extension Wrap Distance (E) is a feature that can help prevent twine unrolling. It places a wrap of twine back

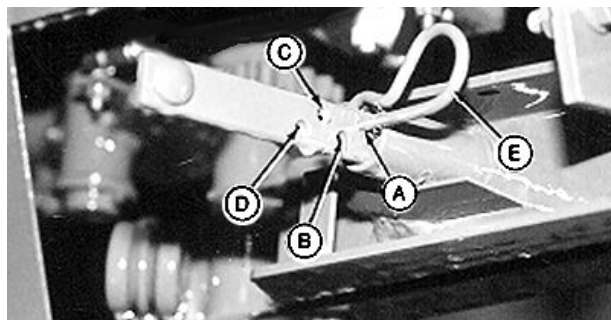
toward middle of bale from left-hand end wrap location AFTER the set number of end wraps have been applied. Re-Extension wrap settings are 20, 40, and 60 cm (8, 16 and 24 in.). (See SET TWINE RE-EXTENSION [Channel 003] in this section.)

Cinch Wrap is a feature that can decrease loose twine and improve twine spacing on left-hand end of the bale. It places a wrap of twine approximately 25 cm (10 in.) away from left-hand end wrap location PRIOR to applying the set number of end wraps. (See SET CINCH WRAP [Channel 004] in this section.)

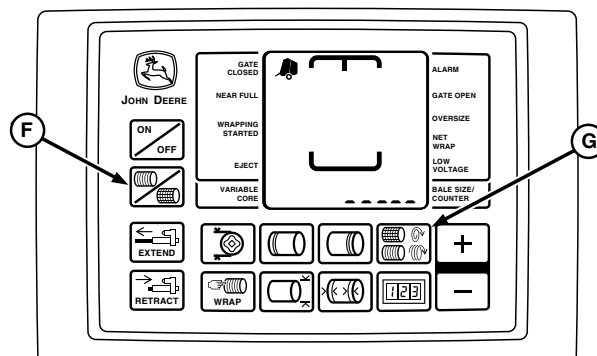
Dry Straw Twine Wrap is a feature to place twine across full width of bale to reduce straw from flaking off bale during tying. Twine arms are programmed to move right, left, and back to right side to resume normal tying cycle. Turn program ON or OFF. (See DRY STRAW TWINE WRAP PROGRAM in this section.)

PP98408,0000E0C -19-07FEB13-2/2

Set Twine Spacing



E38438 —UN—19JUN96



E52444 —UN—02JUN08

A—5 cm (2 in.) Twine Arm Spacing
B—10 cm (4 in.) Twine Arm Spacing

C—15 cm (6 in.) Twine Arm Spacing
D—20 cm (8 in.) Twine Arm Spacing

E—Spring Pin
F—Twine Symbol
G—Twine Spacing Key

Set Mechanical Twine Arm Spacing:

The monitor-controller maintains twine spacing for various bale diameters at rated PTO speed.

1. Set distance between the twine arms by installing spring pin (E) in the desired position:

Hole ID	Twine Arm Spacing
A	5 cm (2.0 in.)
B	10 cm (4.0 in.)
C	15 cm (6.0 in.)
D	20 cm (8.0 in.)

2. When operating at rated PTO speed, the monitor-controller twine spacing setting must be the same as the mechanical twine arm spacing.
3. When operating less than rated PTO speed, set monitor-controller twine spacing setting less than mechanical twine arm spacing. This number can vary with different PTO speeds. Check twine spacing on bale and adjust monitor-controller setting to get desired twine spacing.

Set Monitor-Controller Twine Spacing:

1. Turn tractor key to ON position. Do not start tractor engine. Turn monitor-controller ON.
2. Press TWINE SPACING key (G). Press PLUS or MINUS keys until desired twine spacing, 2—26 cm (1.0—10.0 in.), appears in digital display.

Use the following chart as a guideline. Monitor-controller settings can vary with crop conditions and between balers.

Engine rpm	Mechanical Setting	Monitor-Controller Setting
Rated Speed	10 cm (4.0 in.)	10 cm (4.0 in.)
1800 rpm	10 cm (4.0 in.)	9 cm (3.5 in.)
1500 rpm	10 cm (4.0 in.)	8 cm (3.0 in.)
1300 rpm	10 cm (4.0 in.)	6 cm (2.5 in.)

3. Six seconds after last adjustment, setting will be entered into memory. Be sure monitor-controller twine spacing setting and mechanical twine arm spacing setting agree with each other.
4. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

PP98408,0000E0D -19-07FEB13-1/1

Set Number of Twine End Wraps

Set Number of Right-Hand and Left-Hand End Wraps:

NOTE: The bale will have twice the number of left-hand end wraps, as indicated on the monitor-controller, when the twine contacts the twine guide. (See SET TWINE END WRAP DISTANCE in this section.) The setting for the number of end wraps is approximate for each twine arm.

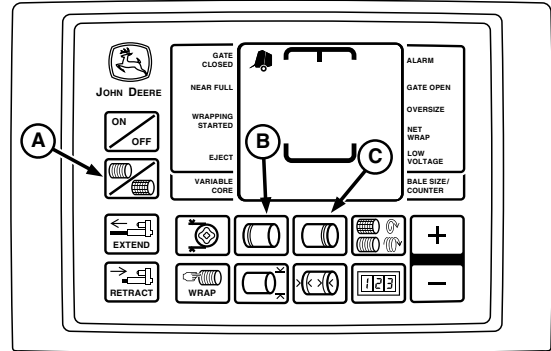
NOTE: If more end wraps are needed, increase number on the monitor.

If fewer end wraps are needed, decrease number on the monitor.

1. Turn tractor key to ON position. Do not start tractor engine. Turn monitor-controller ON.

NOTE: The reference numbers (0.5—5) displayed on monitor for desired number of end wraps, will not be the actual number of wraps on end of bale.

2. Press left-hand END WRAP key (B) or right-hand END WRAP key (C). Press Plus or MINUS keys until desired number of end wraps (0.5—5 for right-hand side) and (0.0—5 on left-hand side), appears in digital display.



A—Twine Symbol

B—Left-Hand End Wrap Key

C—Right-Hand End Wrap Key

3. After six seconds, setting will be entered into memory.
4. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

PP98408,0000E0E -19-07FEB13-1/1

E52445 —UN—02JUN08

Set Twine End Wrap Distance

Set Mechanical Twine Guide For End Wrap Distance (If Equipped)

NOTE: Equipped with left-hand twine guide only. (See TWINE WRAP TERMS AND SETTINGS in this section.)

The twine guide controls twine wrap distance from left-hand end of bale. Twine wrap distance can be adjusted 89—190 mm (3-1/2—7-1/2 in.) at 25 mm (1 in.) increments.

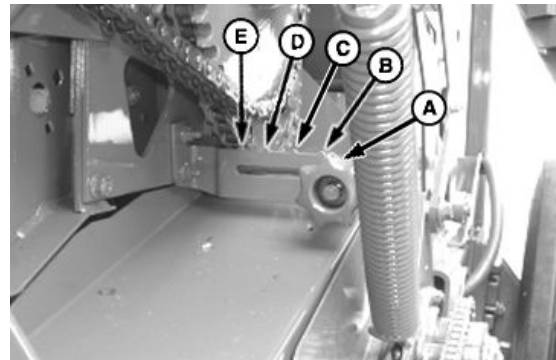
For most baling conditions, adjust twine guide to position (B). This setting will position twine end wraps approximately 114 mm (4-1/2 in.) from end of bale.

For dry, slick crops such as straw, coastal Bermuda grass, or flax, increase twine wrap distance to prevent twine from falling off bale.

For crops, such as alfalfa, that fill the bale ends well and produce square shoulders, decrease twine end wrap distance to improve bale appearance and reduce bale spoilage.

To adjust guide:

1. Loosen knob.
2. Move knob as follows:



A—Twine End Wrap Distance—89 mm (3-1/2 in.)

B—Twine End Wrap Distance—114 mm (4-1/2 in.)

C—Twine End Wrap Distance—140 mm (5-1/2 in.)

D—Twine End Wrap Distance—165 mm (6-1/2 in.)

E—Twine End Wrap Distance—190 mm (7-1/2 in.)

- Toward baler sidesheet to increase twine end wrap distance
- Away from baler sidesheet to decrease twine end wrap distance

3. Tighten knob.

Continued on next page

PP98408,0000E0F -19-07FEB13-1/2

E58005 —UN—21SEP09

Set Right-Hand and Left-Hand End Wrap Distance

NOTE: To ensure that twine placement is controlled by mechanical twine guide, adjust monitor-controller twine end wrap distance 1—3 cm (0.50—1.00 in.) less than mechanical twine guide setting. This adjustment will increase number of end wraps.

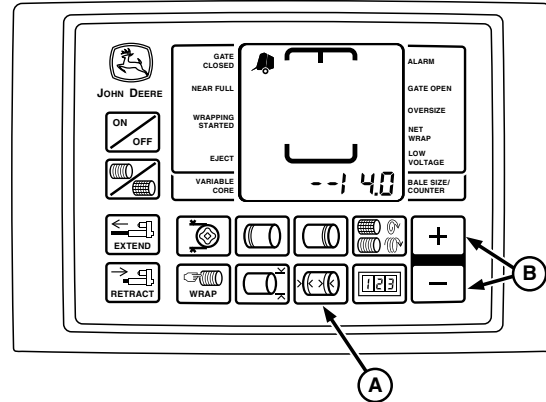
1. Turn tractor key to ON position. Do not start tractor engine. Turn monitor-controller ON.
2. Press right and left-hand END WRAP DISTANCE key (B). Right end wrap distance will be displayed as shown. Press PLUS or MINUS keys until desired distance 8—26 cm (3—10 in.) appears in digital display. Press END WRAP DISTANCE key a second time to set left end wrap distance. Display will be as shown. (End wrap distances are approximate.)

To place twine the same distance from the edge on both ends, a slightly different setting can be required for each end.

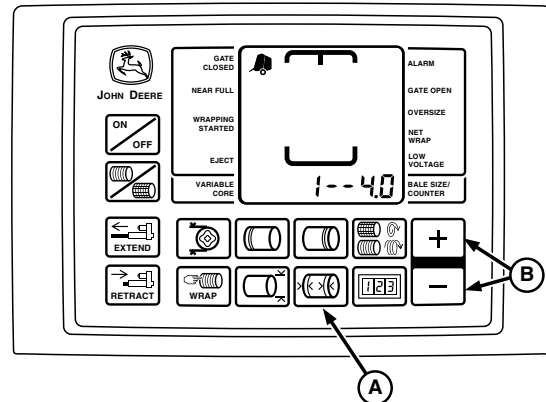
3. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

A—Twine Symbol

B—Right-Hand and Left-Hand End Wrap Distance



Right-Hand End Wraps Setting



Left-Hand End Wraps Setting

E52447 —UN—29JUL03

E52446 —UN—10JUL03

PP98408,0000E0F -19-07FEB13-2/2

View and Reset Bale Counters

BaleTrak™ Pro monitor-controller is equipped with two bale counters; RESETABLE and TOTAL BALE.

The RESETABLE counter can be cleared or modified as desired, while the TOTAL BALE counter cannot be reset or cleared. A wrap and gate latch open cycle will add one bale to both of the counters.

To view counter memory:

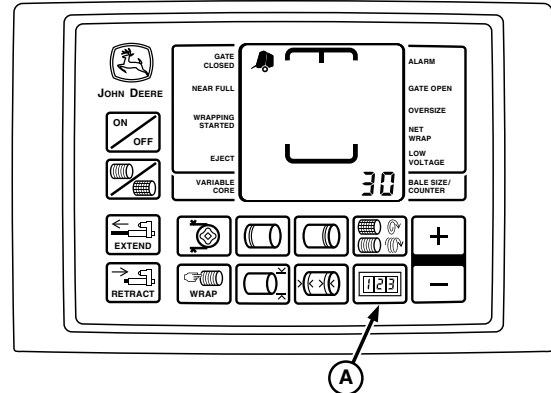
NOTE: When key (A) is pressed, display will show bale count for 6 seconds, then revert to regular display.

1. Depress COUNTER key (A) once to display RESETABLE counter.
2. Depress COUNTER key twice to display TOTAL BALE counter.

To clear RESETABLE counter memory:

1. Press COUNTER key (A) once, then release.
2. While count is displayed, press and hold MINUS key until display shows 0000.

NOTE: Bale count in RESETABLE counter can be increased to add fields together, or decreased, to remove aborted bales (such as bales not wrapped correctly). Adding or removing bales



A—COUNTER Key

from RESETABLE counter will not affect the TOTAL BALE counter.

To change number of bales in RESETABLE counter:

1. Press and hold COUNTER key (A).
2. While holding key (A), press PLUS or MINUS key to change bale count as desired.

PP98408,0000E10 -19-07FEB13-1/1

Manual Actuator, Wrap, and Bypass Switches

Press and release WRAP key (C) to start an automatic twine wrap cycle before bale reaches preset diameter.

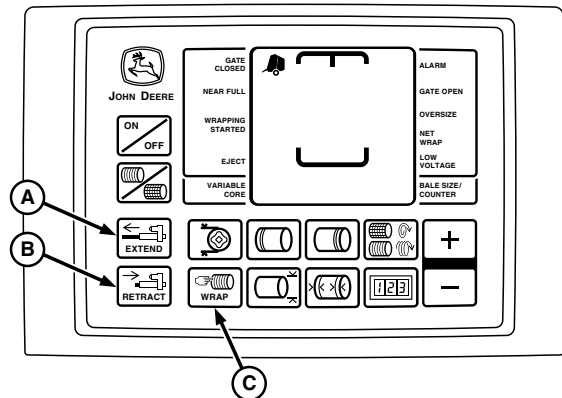
Once started, the bale wrapping cycle uses current settings stored in the monitor-controller memory (number of wraps, end wraps, and end wrap distance). This feature is useful to wrap an undersized bale when finishing a field. Monitor-controller resumes fully automatic operation on next bale.

EXTEND (A) and RETRACT (B) keys are used to manually operate **twine actuator only**. Pressing either key during an automatic wrap cycle will cancel the cycle and move actuator as desired.

NOTE: Twine end wrap spacing distance will be overridden when EXTEND or RETRACT keys are used.

For example, if right-hand end wrap distance is set at 13 cm (5 in.) and EXTEND key is pressed, twine arm will not stop at the 13 cm (5 in.) setting. It will either contact right-hand sidesheet, or actuator will be fully extended.

Bale can be finished using the EXTEND (A) or RETRACT (B) keys, or by pressing WRAP key (C) to start an automatic wrap cycle.



A—EXTEND Key
B—RETRACT Key

C—WRAP Key

When using EXTEND (A) and RETRACT (B) keys, bale counter will not register additional bales.

Bypass switch on the baler harness can also be used to manually operate twine actuator in the event of an electronic failure. (See BYPASS SWITCH [TWINE WRAP ONLY] in this section for additional information.)

PP98408,0000E11 -19-07FEB13-1/1

Bypass Switch (Twine Wrap Only)

Bypass switch (A) allows direct operation of the twine actuator in the event of an electronic failure. Move switch to retract or extend twine actuator. Actuator is fully retracted when twine arms are in home position.

To use bypass switch:

1. Unplug TWINE ACTUATOR connector from NORMAL OPERATION connector in monitor-controller harness near rocker switch.
2. Remove dust cap from BYPASS connector. Install dust cap on NORMAL OPERATION connector.
3. Plug TWINE ACTUATOR connector into BYPASS connector.

NOTE: Twine arms will not cycle automatically if bypass switch is connected.

To return to electronic operation:

1. Unplug TWINE ACTUATOR connector from BYPASS connector.



A—Bypass Switch

E40008 —UN—22MAY96

2. Remove dust cap from NORMAL OPERATION connector. Install dust cap on BYPASS connector.
3. Plug TWINE ACTUATOR connector into NORMAL OPERATION connector.

PP98408,0000E12 -19-07FEB13-1/1

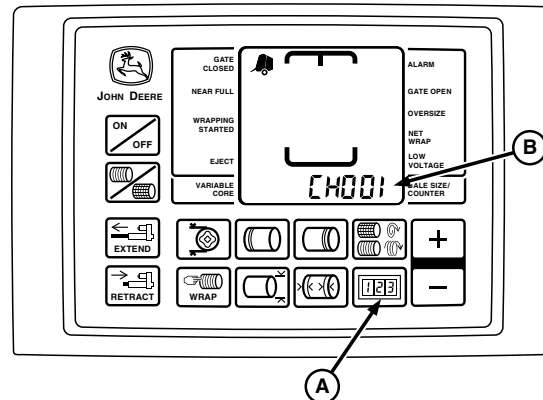
Reset BaleTrak™ Pro Monitor-Controller To Initial Settings (Channel 001)

All adjustable monitor-controller settings can be simultaneously reset to initial settings using the following procedure:

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor ON.
3. Release key; digital display must show **050**.
4. Simultaneously press and hold PLUS and MINUS keys until digital display changes from **050—099**; then release keys.

NOTE: Display change is a visual indication that adjusted set points have reverted to initial settings. (See BaleTrak™ Pro MONITOR-CONTROLLER SETUP VALUES AND INITIAL SETTINGS, in this section, to see which settings have changed.)

5. Turn monitor off to enter initial settings into memory.



A—COUNTER Key

B—CH001 Displayed

- If in English units, the reset values will be in English.
- If in metric units, the reset values will be in metric.

6. Turn tractor key to OFF position. Remove key.

PP98408,0000E13 -19-07FEB13-1/1

E52442 —UN—18JUN03

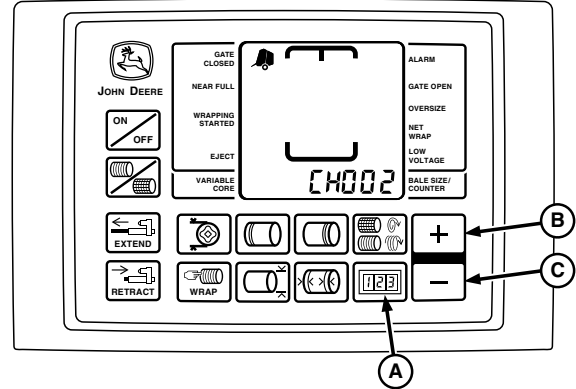
Dry Straw Twine Wrap Program (Channel 002)

When baling dry straw, it can be desirable to quickly place twine across full width of bale to prevent straw from flaking off in the baler.

The dry straw twine program provides for full speed twine arm movement from right to left, after the normal full speed starting pass from left to right. The twine arms will return to the right side, pause to place the set number of right-end wraps on the bale, and continue to apply twines as set in the monitor-controller.

To access program:

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor-controller ON.
3. Continue to hold COUNTER key (A) and press PLUS key (B) until **CH002** appears in digital display.
4. Release COUNTER key (A) and **OFF** must be displayed.
5. Press PLUS key (B) to turn ON program.
6. Turn monitor-controller OFF to enter setting into memory. This program will stay active until **CH002**



A—COUNTER Key
B—PLUS Key

C—MINUS Key

is accessed again and the MINUS key (C) is used to return display to OFF.

7. Turn tractor key to OFF position. Remove key.

PP98408,0000E14 -19-07FEB13-1/1

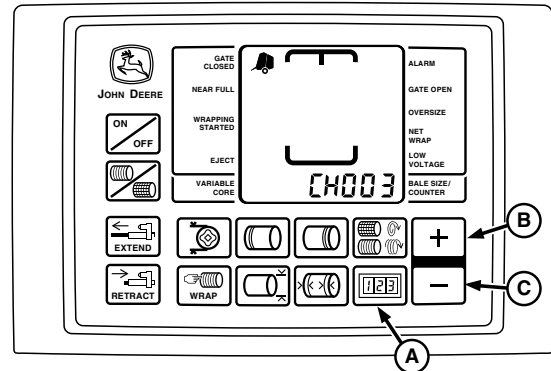
Set Twine Re-Extension (Channel 003)

Re-Extension is a feature that can help prevent twine unrolling. It places a wrap of twine back toward the middle of the bale from the left-hand end wrap location by the distance indicated by the setting. This is done **after** the set number of end wraps have been applied.

Setting	Feature
OFF	OFF
8	Approximately 20 cm (8 in.) of re-extension
16	Approximately 40 cm (16 in.) of re-extension
24	Approximately 60 cm (24 in.) of re-extension

To access special wrap program:

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A). Turn monitor-controller ON.
3. Continue to hold COUNTER key (A) and press PLUS key (B) until **CH003** appears in digital display.
4. Release COUNTER key (A) and view current setting (see chart).
 - Press PLUS key (B) to increase setting.



A—COUNTER Key
B—PLUS Key

C—MINUS Key

- Press MINUS key to reduce setting.

5. Turn monitor-controller OFF to enter setting into memory.
6. Turn tractor key to OFF position. Remove key.

PP98408,0000E15 -19-07FEB13-1/1

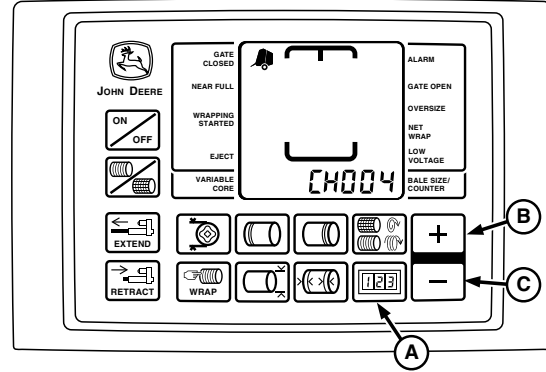
Set Cinch Wrap (Channel 004)

Cinch Wrap is a feature that can decrease loose twine and improve twine spacing on the left-hand side of the bale. It places a wrap of twine approximately 25 cm (10 in.) away from the left-hand end wrap location **prior** to applying the set number of end wraps.

Setting	Feature
Cinch	Cinch Wrap ON

To access special wrap program:

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A). Turn monitor-controller ON.
3. Continue to hold COUNTER key (A) and press PLUS key (B) until **CH004** appears in digital display.
4. Release COUNTER key (A) and view current setting (see chart).
 - Press PLUS key (B) to turn ON.
 - Press MINUS key (C) to turn OFF.
5. Turn monitor-controller OFF to enter setting into memory.



A—COUNTER Key
B—PLUS Key

C—MINUS Key

6. Turn tractor key to OFF position. Remove key.

E52453 — UN—1&JUN03

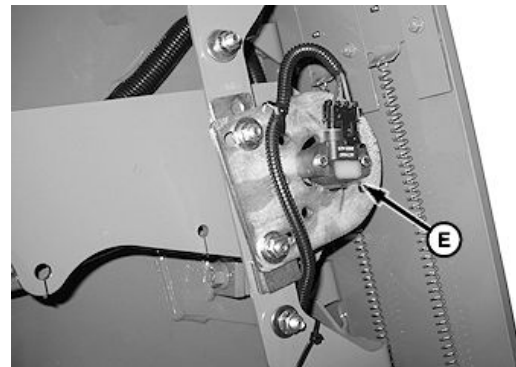
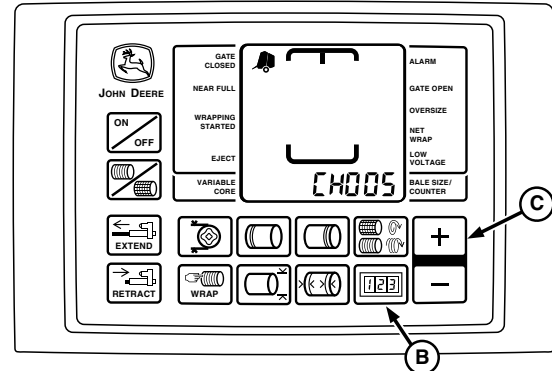
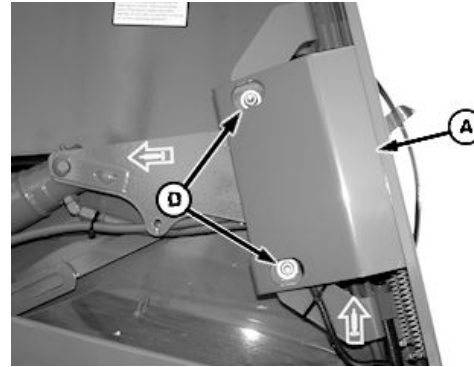
PP98408,0000E16 -19-07FEB13-1/1

Adjust Bale Diameter Sensor (Channel 005)

1. Remove shield (A) by loosening nuts (D).
2. Start tractor engine.
3. Using tractor selector valve, raise gate and belt tension arm all the way to the top.
4. Engage tractor parking brake and place transmission in Park.
5. Lock gate in open position.
6. Shut off tractor engine.
7. Turn tractor key to ON position. Do not start tractor engine.
8. Press and hold COUNTER key (B) while turning monitor-controller ON.
9. Continue to hold COUNTER key (B) and press PLUS key (C) until **CH005** appears in digital display.
10. Loosen mounting hardware and rotate sensor (E) fully clockwise. Rotate sensor counterclockwise until **173** is displayed and a steady tone sounds.

NOTE: If **173** is exceeded while rotating sensor counterclockwise or while tightening screws, rotate sensor clockwise and repeat Steps 9 and 10 as necessary.

11. Tighten sensor mounting screws.
12. Turn monitor-controller OFF. Turn tractor key to OFF position.
13. Lower gate and belt tension arm using tractor selector valve.
14. Install shield (A):
 - Make sure that front edge of shield is behind door band flange.
 - Make sure that front edge of shield is against door band.
 - Tighten nuts (D).



Shield Removed

A—Shield
B—COUNTER Key
C—PLUS Key

D—Nuts
E—Sensor

PP98408,0000E17 -19-07FEB13-1/1

E56980 —UN—27MAR09

E52526 —UN—02JUN08

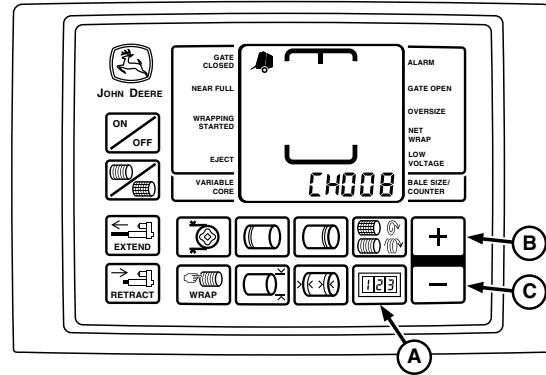
E56987 —UN—30MAR09

Monitor-Controller Display, Metric or English Units (Channel 008)

NOTE: Monitor-controller is initially set to display in English units (inches; in.).

To change setting:

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor-controller ON.
3. Continue to hold COUNTER key and press PLUS key (B) until **CH008** appears in digital display.
4. Release COUNTER key and view current setting; either **En** for English (inches) or **SI** for metric (centimeters, cm).
5. Use PLUS key (B) and MINUS key (C) to change to desired setting.
6. Turn monitor-controller OFF to enter setting into memory.



A—COUNTER Key
B—PLUS Key

C—MINUS Key

7. Turn tractor key to OFF position. Remove key.

PP98408,0000E18 -19-07FEB13-1/1

E52525 —UN—26JUN03

Set Near-Full Indicator Set Point (Channel 010)

NEAR-FULL indicator (A) informs operator when bale has almost reached desired size, based on the bale diameter setting. The point below the diameter setting, at which the indicator comes on, is adjustable between 1—27 cm (0.5—10.0 in.), in 1 cm (0.5 in.) increments.

Initial setting is 11 cm (4.5 in.).

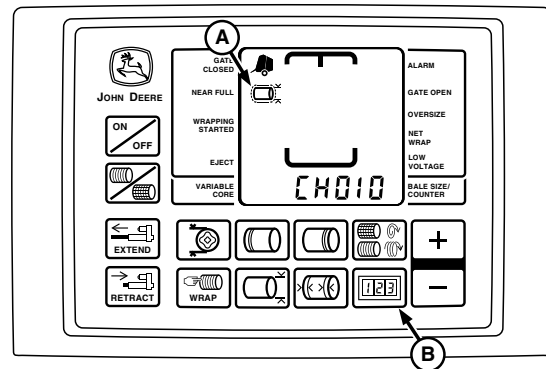
If bale diameter is set at 183 cm (72 in.) and the near-full distance is left at initial setting of 11 cm (4.5 in.), the near-full indicator will come on when bale diameter reaches 172 cm (67.5 in.).

If bale diameter setting is changed, near-full indicator set point need not change, unless a different near-full distance is desired.

To change near-full indicator set point:

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (B) while turning monitor-controller ON.
3. Continue to hold COUNTER key (B) and press PLUS key until **CH010** appears in digital display.
4. Release COUNTER key and view current near full setting 1—27 cm (0.5—10.0 in.).

NOTE: Increasing near-full distance to highest setting of 27 cm (10.0 in.) provides maximum time between NEAR-FULL indication and the wrapping cycle.



A—Near-Full Indicator

B—COUNTER Key

Decreasing near full distance to lowest setting of 1 cm (0.5 in.) will minimize the time between the NEAR-FULL indication and the wrapping cycle.

5. Use PLUS and MINUS keys to change near-full distance to desired setting.
6. Turn monitor-controller OFF to enter setting into memory.
7. Turn tractor key to OFF position. Remove key.

PP98408,0000E19 -19-07FEB13-1/1

E52455 —UN—18JUN03

Test Oversize Bale and Gate Closed Switch—Monitor-Controller Assisted Test (Channels 013 and 014)

NOTE: Microswitch position and operation can be checked by using the monitor-controller diagnostic channels.

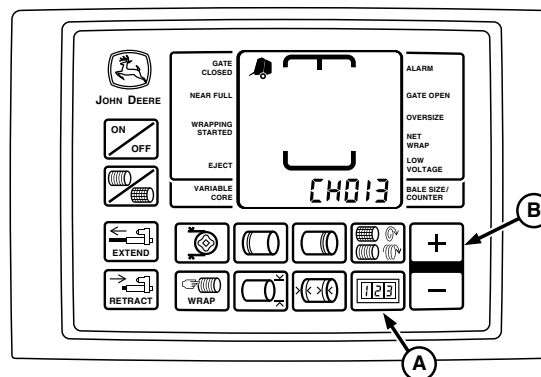
1. Start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor-controller ON.
3. Continue to hold COUNTER key (A) and press PLUS key (B) until digital display shows desired channel.
4. Release key and view reading (gate closed).

NOTE: Tension arm must be fully raised for oversize bale switch to be depressed.

5. Open gate and view reading or listen for tone.
6. If readings are not as shown, adjust switch position and test again. (See ADJUST GATE LATCH SWITCHES

Diagnostic Channel	Function	Gate Closed Reading	Gate Open Reading
013	Oversize Bale Switch	012 (Switch Released)	00 (Zero) (Switch Depressed) (Tone)
014	Right-Hand Gate Switch	00 (Zero)	012 (Tone)

7. If switch adjustment does not produce normal readings:
 - a. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.
 - b. Check for correct wire connections. (See WIRE HARNESS DIAGRAM—BALER in Service section.)
 - c. Check wire harness for cuts and breaks.



A—COUNTER Key

B—PLUS Key

and ADJUSTING OVERSIZE BALE SWITCHES in Service section.)

- d. Check harness connectors for damaged (pushed back) terminals.
- e. Replace switch if necessary. (See your John Deere dealer.)

PP98408,0000E1A -19-07FEB13-1/11

E52528—UN—26JUN03

Test Twine Actuator Current (Channel 018)

IMPORTANT: Current overload protection to twine actuator is bypassed when using channel 018. Extended use of channel 018 can cause actuator damage.

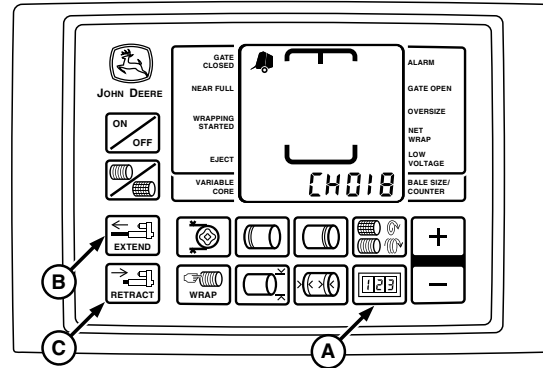
NOTE: Channel 018 allows operator use of EXTEND key (B) and RETRACT key (C) to position actuator for service.

This test is used to determine the working condition of the actuator through its entire range of operation.

To Test Actuator (Motor and Linkage):

IMPORTANT: Remove roll of net wrap material from baler if testing net actuator voltage. Otherwise, if PTO is engaged with net actuator extended, net will feed into empty baler and can cause damage to pickup or rotary feed system.

1. If testing net and wrap actuator current, remove roll of net wrap material from baler.
2. Turn tractor key to ON position. Do not start tractor engine.
3. Press and hold COUNTER key (A) while turning monitor-controller ON.
4. Continue to hold COUNTER key (A) and press PLUS key until **CH018** appears in digital display.
5. Release COUNTER key; digital display will change to show actuator static current flow reading of **0** to **1**.
6. Use EXTEND key (B) and RETRACT key (C) to operate actuator in both directions. Display must show a current flow reading between **1** and **8** while actuator motor is operating during mid stroke (no load).
 - Below normal readings indicate low tractor voltage, or poor or corroded harness connections
7. Continue to operate actuator to fully retracted position. Display must show stall (*load*) current reading between **22** and **30**.
 - Above normal readings indicate binding linkage or partially shorted motor windings
 - Current spike reading indicates mechanical obstruction to linkage
8. Press RETRACT key (C) to move actuator to home position.
9. Turn monitor-controller OFF. Turn tractor key to OFF position and remove key.



A—COUNTER Key
B—EXTEND Key

C—RETRACT Key

E52520 — UN—26/JUN03

PP98408,0000E1B -19-07FEB13-1/1

Test Tractor Convenience Outlet Voltage (Channel 019)

Complete the following check to determine if the convenience outlet provides adequate power to the BaleTrak™ Pro system.

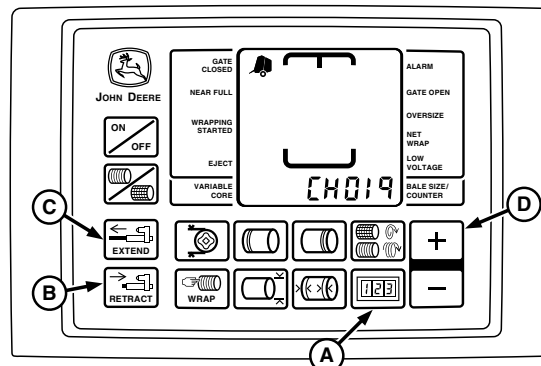
IMPORTANT: Remove roll of net wrap material from baler if testing net actuator voltage. Otherwise, if PTO is engaged with net actuator extended, net will feed into empty baler and can cause damage to pickup or rotary feed system.

1. If testing net wrap actuator current, remove roll of net wrap material from baler.
2. Start tractor engine.
3. Press and hold COUNTER key (A) while turning monitor-controller ON.
4. Continue to hold COUNTER key (A) and press PLUS key (D) until **CH019** appears in the digital display.
5. Release COUNTER key (A) and view voltage readout.
6. Using EXTEND key (C), extend twine or net actuator slightly.
7. Push and hold RETRACT key (B) until actuator stalls out in the fully retracted position. Note voltage displayed during first 4 seconds after stalling.

Specification

Convenience
Outlet—Voltage
(Minimum).....9.7 V

8. If voltage is less than specifications, install Convenience Outlet Kit AE50549. Only this kit must be used to provide a convenience outlet due to wire



A—COUNTER Key
B—RETRACT Key

C—EXTEND Key
D—PLUS Key

size, lack of splices, and a 30 Amp circuit breaker included in this kit. When installing this kit, attach power and ground wires directly to battery terminal clamp bolts, only. (See TRACTOR CONVENIENCE OUTLET in Preparing the Tractor section.)

CAUTION: Convenience outlet is wired directly to battery. Turning off tractor key will not disconnect power to monitor.

9. Turn monitor-controller OFF. Turn off tractor engine and remove key.

Disconnect power cord to monitor when working around knife arm. Turning off tractor key will NOT turn off power to monitor.

PP98408.0000E1C -19-07FEB13-1/1

E52521—UN—26JUN03

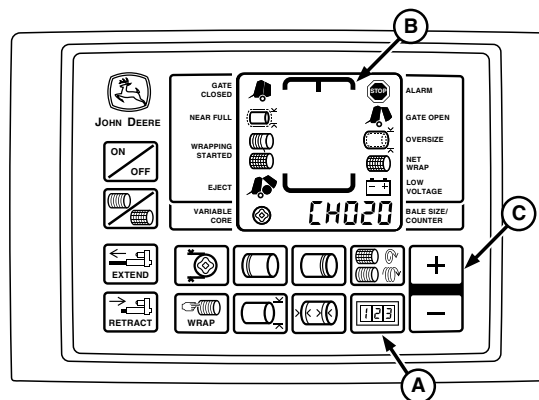
Test Liquid Crystal Display (LCD) Panel (Channel 020)

Use the following test procedure to check if a segment of the LCD panel has failed.

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor-controller ON.
3. Continue to hold COUNTER key (A) and press PLUS key (C) until **CH020** appears in digital display.

NOTE: Number of bale shape indicator bars displayed is 24 bars per side.

4. Release keys and view entire LCD panel (B). Make sure that all segments and indicators are displayed. If not, see your John Deere dealer.
5. Turn monitor-controller OFF. Turn tractor key to OFF position and remove key.



A—COUNTER Key
B—LCD Panel

C—PLUS Key

E52529 — UN—10JUN08

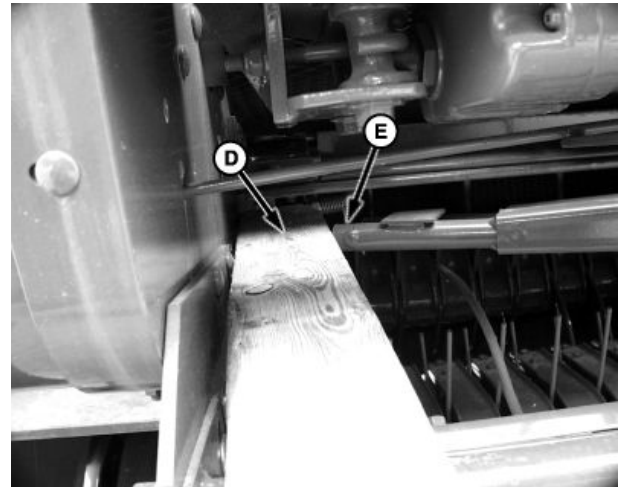
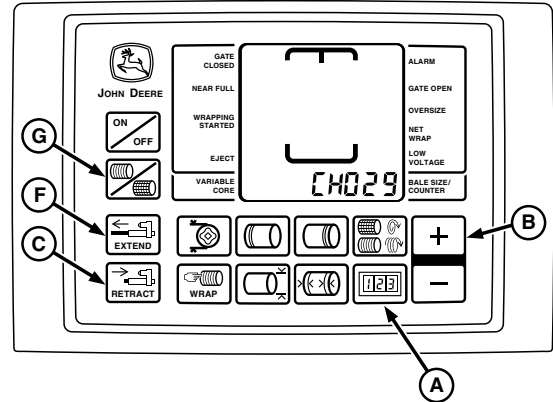
PP98408,0000E1D -19-07FEB13-1/1

Twine Arm Calibration (Channel 029)

1. Turn tractor key to ON position. Do not start tractor engine. Turn monitor-controller ON.
2. Briefly press TWINE or NET key (G), ensure monitor-controller is in TWINE mode (indicator will briefly show on screen).
3. Turn monitor-controller OFF.
4. Press and hold COUNTER key (A) while turning monitor ON.
5. Continue to hold COUNTER key (A) and press PLUS key (B) until **CH029** appears in digital display. Release both keys.
6. Press and hold RETRACT key (C) until twine actuator fully retracts and display reads zero.

NOTE: 89 mm equals 3-1/2 in., which is standard dimension for most 4 in. wide lumber, such as a 2 x 4 or 4 x 4.

7. Place an 89 mm (3-1/2 in.) wood block (D) on right side of bale chamber, so twine arm (E) will contact the wood block when actuator is extended.
8. Press EXTEND key (F), extend actuator until it stalls by contacting wood block (D).
9. Enter value displayed in to **CH029** by pressing PLUS and MINUS keys (B) together and listening for two confirming beeps.
10. Press RETRACT key (C) to release and Remove wood block.



A—COUNTER Key
B—PLUS Key
C—RETRACT Key
D—Wood Block

E—Twine Arm
F—EXTEND Key
G—TWINE or NET Key

PP98408,0000E1E -19-07FEB13-1/1

E52575—UN—10JUL03

E52472—UN—19JUN03

Adjust Delay of Twine Eject (Channel 033)

The initial setting for time between cut-off of twine and display of the eject icon is zero seconds.

In some conditions, twine unrolling can be reduced by delaying bale ejection until bale has rotated to a position where twine ends are just above contact area for the push bar. This time delay value depends on operator reaction time, bale size, and PTO speed. A suggested starting value of 1.5 seconds can be entered, but other values need to be tried to obtain best results, as small changes can have significant impact on twine unrolling. If bale continues to rotate after twine is cut, ends of twine can adhere better to a bale.

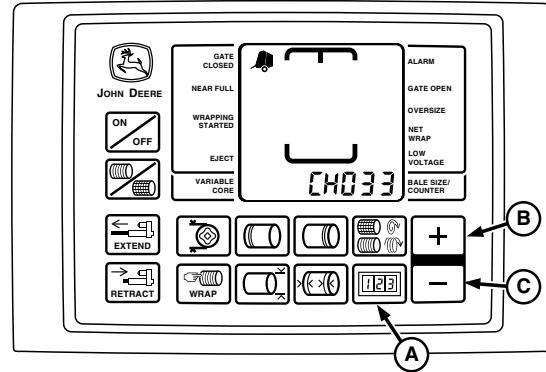
To Change Setting:

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor-controller ON.
3. Continue to hold COUNTER key and press PLUS key (B) until **CH033** appears in digital display.
4. Release COUNTER key and view current setting.
5. Use PLUS and MINUS keys (B) and (C) to change the delay of twine eject icon to desired setting (0—10 seconds).

A—COUNTER Key
B—PLUS Key

C—MINUS Key

6. Turn monitor-controller OFF to enter setting into memory.
7. Turn tractor key to OFF position. Remove key.



E55146 — UN — 11MAY07

PP98408,0000E1F -19-07FEB13-1/1

Change Baler Model Program (Channel 201)

The monitor-controller software includes various model programs. Each program is written specifically for the baler model for which the monitor-controller was originally supplied.

When replacing monitor-controller with a new unit, or moving monitor-controller to a different model baler, review and revise the model program if necessary.

NOTE: The twine, net wrap, slip clutch alert, and optional variable core features will not operate correctly unless the model number displayed on monitor-controller matches baler model number.

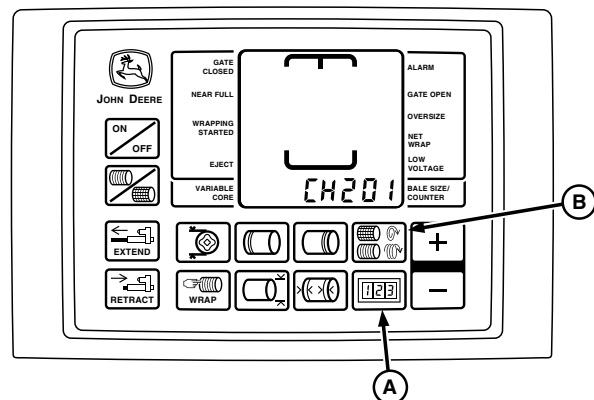
To Change Model Program:

1. Turn tractor key to ON position. Do not start tractor.
2. Press and hold both COUNTER key (A) and NUMBER OF WRAPS key (B) while turning monitor-controller to ON. **CH201** must be displayed.
3. Release both keys. Baler model is displayed.
4. Press PLUS or MINUS key to change to desired model.
5. Turn monitor-controller OFF to enter setting into memory.

A—COUNTER Key

B—NUMBER OF WRAPS Key

6. Turn monitor-controller ON to verify baler model number. Which is displayed approximately 2 seconds. If displayed baler model number is incorrect, repeat Steps 1—6.
7. Turn tractor key to OFF position and remove key.



E52456 — UN — 10JUN08

PP98408,0000E20 -19-07FEB13-1/1

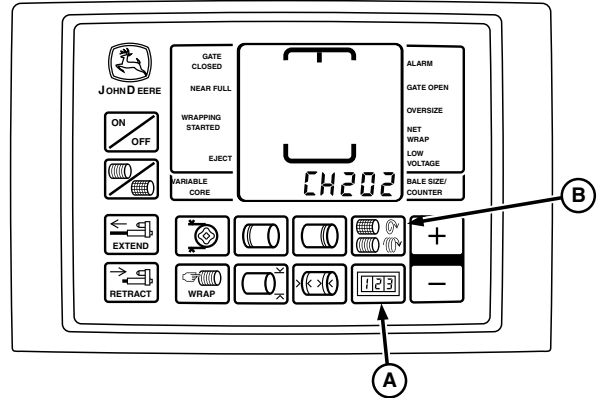
Twine Feature (Channel 202) (Turning On and Off)

The twine feature can be turned OFF or ON by accessing Channel 202.

NOTE: The twine feature will not operate correctly unless the model number displayed on monitor-controller matches baler model number.

Turning Feature On and Off:

1. Turn tractor key to ON position. Do not start tractor.
2. Press and hold both COUNTER key (A) and NUMBER OF WRAPS key (B) while turning monitor-controller to ON. **CH201** must be displayed.
3. Release both keys. Baler model is displayed.
4. Press and hold COUNTER key (A) and press the PLUS key until **CH202** is displayed.
5. Release COUNTER key (A).
6. Press PLUS or MINUS key to change displayed value to **0** (twine **OFF**) or **1** (twine **ON**).
7. Turn monitor-controller OFF to enter setting into memory.



A—COUNTER Key

B—NUMBER OF WRAPS Key

8. Turn monitor-controller ON to verify baler model number. Model number is displayed approximately 2 seconds. If displayed baler model number is incorrect, see **BALER MODEL PROGRAM [CHANNEL 201]** in this section.
9. Turn tractor key to OFF position and remove key.

PP98408,0000E21 -19-07FEB13-1/1

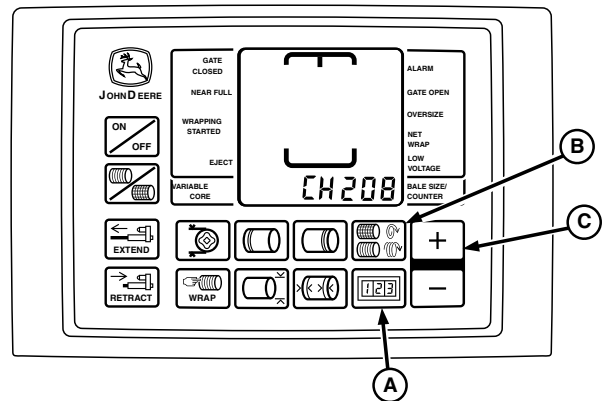
Activate Optional Variable Core Operation (Channel 208)

The optional variable core operation can be turned OFF and ON by accessing channel 208.

NOTE: The twine, net wrap, slip clutch alert, and optional variable core features will not operate correctly unless the model number displayed on monitor-controller matches baler model number.

Turning Feature On and Off:

1. Turn tractor key to ON position. Do not start tractor.
2. Press and hold both COUNTER key (A) and NUMBER OF WRAPS key (B) while turning monitor-controller to ON. **CH201** must be displayed.
3. Release both keys. Baler model is displayed.
4. Press and hold COUNTER key (A) and press the PLUS key (C) until **CH208** is displayed.
5. Release COUNTER key (A).
6. Press PLUS or MINUS key to change displayed value to **0** (variable core **OFF**) or **1** (variable core **ON**).
7. Turn monitor-controller OFF to enter setting into memory.



A—COUNTER Key

B—NUMBER OF WRAPS Key

C—PLUS Key

8. Turn monitor-controller ON to verify baler model number. Model number is displayed approximately 2 seconds. If displayed model number is incorrect, see **BALER MODEL PROGRAM (CHANNEL 201)** in this section.
9. Turn tractor key to OFF position and remove key.

PP98408,0000E22 -19-07FEB13-1/1

Attachments

Pickup Gauge Wheels

Improves pickup flotation in uneven terrain.



E54315 —UN—22JUN05

PP98408,0000E23 -19-07FEB13-1/1

Belt Lacing Tool (Vise for Clipper Laces)

Belt lacing tool and hardware are available for repairing broken belts.

For further information or to order belt lacing tool, phone or write to:

MATO Corporation
P.O. Box 7268
Beckley, West Virginia 25926-0268
Telephone: (800) 344-6286
Fax: (304) 255-2501



E36384 —UN—28AUG90

PP98408,0000E24 -19-21FEB13-1/1

Skiving Tool

Enables easy removal of rubber layers on belts in preparation for belt splicing.



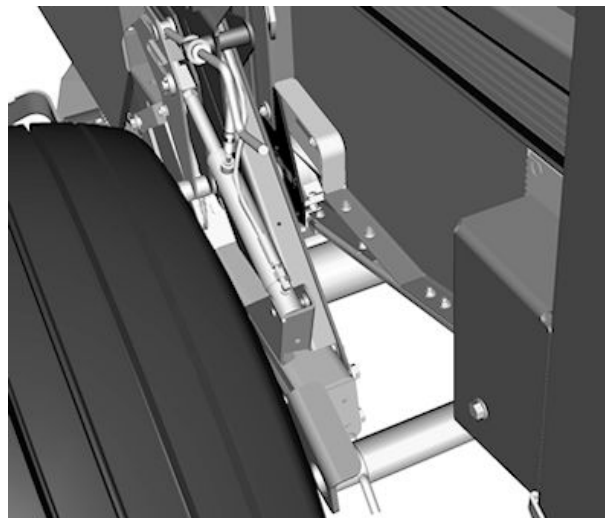
E39822 —UN—21MAR96

PP98408,0000E25 -19-07FEB13-1/1

Hydraulic Pickup Lift

The hydraulic pickup lift allows the operator to lift pickup for transport from the tractor seat. Hydraulic lines attach to tractor hydraulic system. Tractor must be equipped with a second set of hydraulic outlets unless the baler uses hydraulic twine wrap. It then requires three sets of hydraulic outlets.

The baler pickup lift crank allows pickup to return to a preset height when pickup is lowered.



E66530 —UN—10JUL12

PP98408,0000E26 -19-07FEB13-1/1

Variable Core Valve—BaleTrak™ Pro System

Reduces hydraulic pressure for easier bale starts in difficult conditions.

Reduces core density and is adjustable for soft core size.

Operator can engage, disengage, or adjust conveniently from the tractor seat using the BaleTrak™ Pro monitor-controller.

Order auxiliary wire harness to install this feature. See your John Deere dealer.



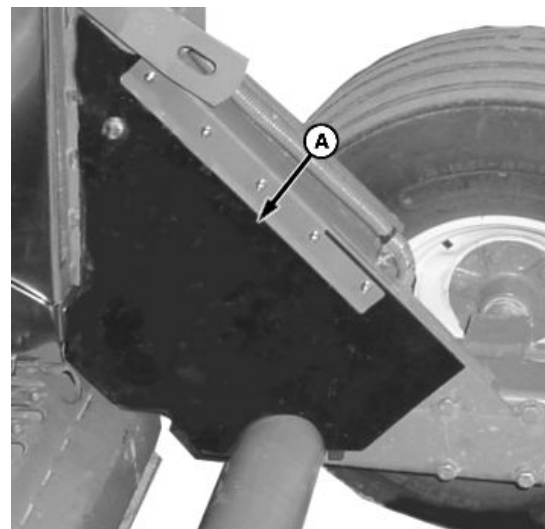
E40323 —UN—13JUN96

PP98408,0000E27 -19-07FEB13-1/1

Crop Deflector Kit

NOTE: Crop deflectors are optional on Regular pickups, without COVER-EDGE™ Surface Wrap.

Prevents crop buildup in corners of baler.



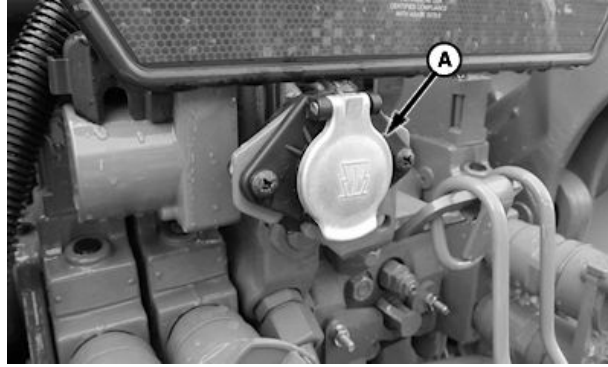
E54424 —UN—10OCT05

PP98408,0000E28 -19-07FEB13-1/1

Electrical Outlet Socket

This seven-terminal auxiliary outlet socket (A) can be installed on tractors to plug in electrical equipment such as the tail or warning light plug.

**A—Seven-Terminal Auxiliary
Outlet Socket**



E65910—UN—14JUN12

PP98408,0000E29 -19-07FEB13-1/1

Extended Rear-View Mirror

To improve visibility of traffic behind the baler, an extended mirror is recommended. See your John Deere dealer.



E63790—UN—15JUN12

PP98408,0000E2A -19-07FEB13-1/1

Right-Hand Rear-View Mirror

Install mirror on right-hand side of tractor to see bale shape indicators and bale size indicator while baling.



E63789—UN—15JUN12

PP98408,0000E2B -19-07FEB13-1/1

Fire Extinguisher

An optional 9.5 L (2-1/2 gal.) pressurized-water fire extinguisher can be mounted in the holes that are provided on the baler. (See ASSEMBLY section in this manual.)



PP98408,0000E2C -19-07FEB13-1/1

E54036 —UN—06JAN05

Bale Counter

Bale counter keeps a record of the number of bales baled.



PP98408,0000E2D -19-07FEB13-1/1

E21646 —UN—22SEP88

BaleTrak™ Pro Monitor-Controller (If Equipped)

A second monitor-controller can be ordered for installation on a second tractor, if desired.



PP98408,0000E2E -19-07FEB13-1/1

E52436 —UN—16JUN03

BaleTrak™ Pro Monitor-Controller Mounting Brackets

Required for installation of monitor-controller on 6000, 7000 and 8000 Series tractors with ComfortGard™ operator's station, and for John Deere tractors with SOUND-GARD™ operator's stations.



For ComfortGard™ Operator Station



For SOUND-GARD™ Operator Station

E40571—UN—22JUN96

E40572—UN—22JUN96

PP98408,0000E2F -19-07FEB13-1/1

Mounting Kit for Open Station 6000 and 7000 Series Tractors

Required for installation of BaleTrak™ Pro monitor-controller.



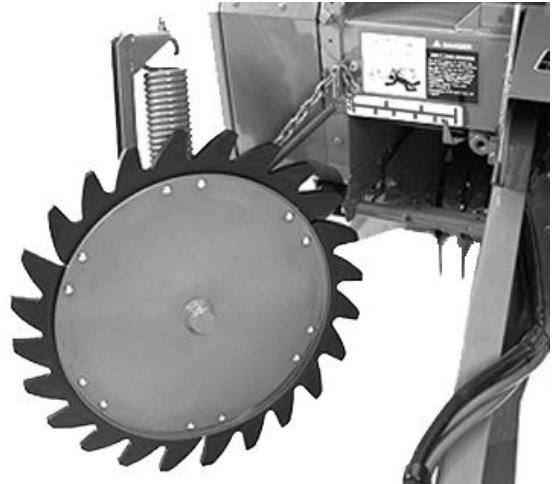
E40573—UN—22JUN96

PP98408,0000E30 -19-07FEB13-1/1

Gathering Wheels

Helps reduce crop loss in uneven windrows. The wheels also have a feature to minimize damage from hitting obstructions.

Gathering wheels are mounted on each side of baler in front of the pickup.

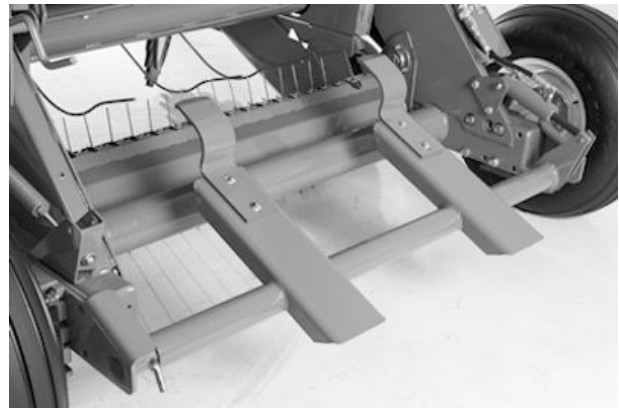


E48797 —UN—11AUG00

PP98408,0000E31 -19-07FEB13-1/1

Hydraulic Bale Ramp

Allows bale to roll away from baler eliminating the need to backup when ejecting the bale, except on sloping ground.



E66695 —UN—18JUL12

PP98408,0000E32 -19-07FEB13-1/1

Lubrication and Maintenance

Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere SD Polyurea Grease is preferred.

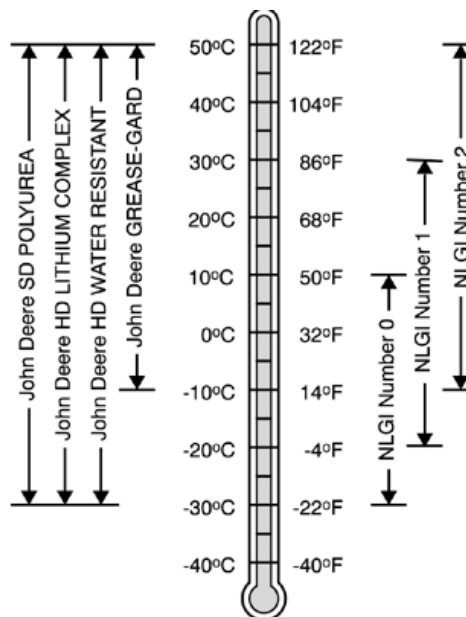
The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere HD Water Resistant Grease
- John Deere GREASE-GARD™

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB

IMPORTANT: Some types of grease thickeners are not compatible with others. Consult your grease supplier before mixing different types of grease.



Greases for Air Temperature Ranges

GREASE-GARD is a trademark of Deere & Company

PP98408,0000E33 -19-07FEB13-1/1

TS1673 —UN—31OCT03

Gear Case Oil

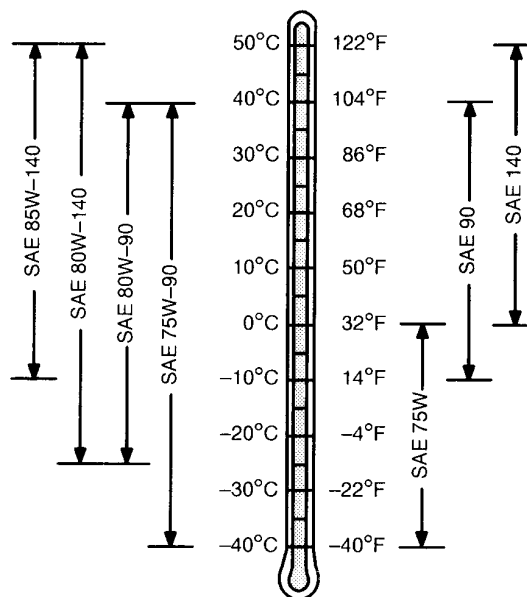
Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere GL-5 GEAR LUBRICANT
- John Deere EXTREME-GARD™

Other oils can be used if they meet the API Service Classification GL-5.

Arctic oils (such as Military Specification MIL-L-10324A) can be used at temperatures below -30 °C (-22 °F).



EXTREME-GARD is a trademark of Deere & Company.

PP98408,0000E34 -19-07FEB13-1/1

TS1653 —UN—14MAR96

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Consult your John Deere dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to both conventional and synthetic lubricants.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

PP98408,0000E35 -19-07FEB13-1/1

Observe Lubrication Symbols

&lubsym; Lubricate with John Deere EP Moly or an equivalent SAE multipurpose-type grease (unless otherwise specified) at hourly intervals indicated on the symbols.

&oilsym; Lubricate with SAE 30 or heavier oil at hourly intervals indicated on the symbols.

&brusym; Brush periodically with John Deere EP Moly or an equivalent SAE multipurpose-type grease.

PP98408,0000E36 -19-07FEB13-1/1

Perform Lubrication and Maintenance

CAUTION: Do not clean, lubricate, or adjust machine while it is in motion.

IMPORTANT: The maintenance intervals recommended are based on normal conditions. Severe or unusual conditions can require more frequent lubrication.

Perform each lubrication and service illustrated in this section at the beginning of the season and at the end of the season.

Clean lubrication fittings before using grease gun. Replace lost or broken fittings immediately. If a new fitting fails to take grease, remove and check for failure of adjoining parts.

PP98408,0000E37 -19-07FEB13-1/1

Fire Prevention

Keep foreign material from building up on the machine near potentially hot areas, such as bearings on the ends of baler rolls and slip-clutch. Remove this buildup as part of the regular service operations and at the end of each use.

Leaf blowers, blower-vacuums, or similar devices can be used to remove loose crop buildup. Compressed air can be used to remove more difficult buildup.

Avoid high-pressure power-washing near the bearings to prevent damaging seals.

Regularly check bearings for early signs of failure, and replace as indicated. Turn off power to baler and check

for unusual noises, hot parts, smells of scorching, and discolored paint or metal. To check condition of bearings:

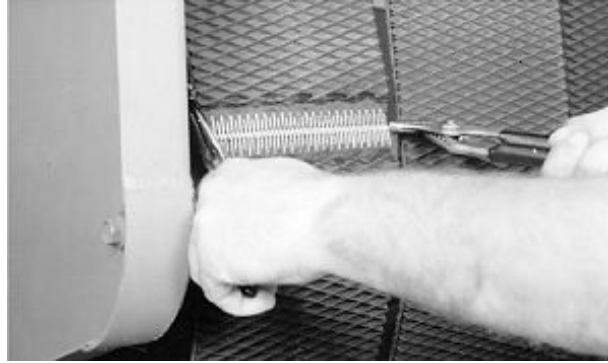
- Open gate and lock it.
- With the belts slackened, rotate each of the rollers by hand, paying attention to grinding noises, or rough rotation.
- Push, pull, and gently pry to check bearing radial play.
- Watch and feel for looseness in the bearings.

Soon after operation, the temperature at each bearing location can be checked to see if it is noticeably hotter than the others. Replace worn or damaged bearings.

PP98408,0000E38 -19-07FEB13-1/1

Belt Pins

Check pins for wear and breakage every 1000 bales (500 bales in sandy conditions). Replace pins if plastic covering is worn or as necessary.



E24275—UN—13SEP88

PP98408,0000E39 -19-07FEB13-1/1

Tension Arm Wear Channels

Check wear channels for groove depth every 5000 bales (every 2500 bales in sandy conditions).

CAUTION: To avoid injury or death caused by unexpected lowering of the gate, engage gate lock before working on, around, or under gate in raised position.

IMPORTANT: Excessive grooves worn into wear channel and tension arm will increase belt edge wear and can wear through tension arm.

To check for groove depth in wear channels:

1. Fully raise and lock gate.
2. If groove depth (A) exceeds specifications, repair or replace wear channels and tension arm. See your John Deere dealer.

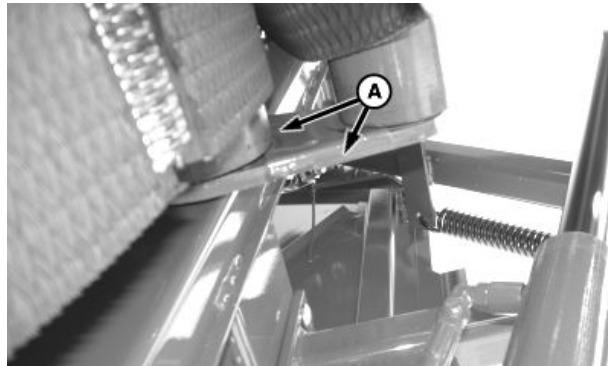
Specification

Maximum Groove Depth Worn Into Wear Channel and Tension Arm—Depth.....	3 mm (1/8 in.)

3. Repeat on opposite side.



TS698—UN—21SEP89



E56903—UN—09MAR09

A—Groove

PP98408,0000E3A -19-07FEB13-1/1

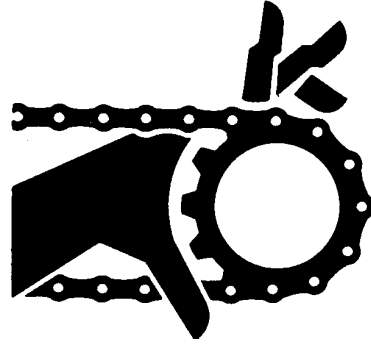
Every 10 Hours

Chains

CAUTION: To help prevent injury, do not lubricate chains with machine running.

Liberal apply SAE 30 or heavier oil to chains every 10 hours of operation.

Lubricate chains immediately after operation when the chains are still warm. Let the machine stand idle for a short period to ensure effective oil penetration, resulting in longer chain life.



PP98408,0000E3B -19-07FEB13-1/3

T5284 —UN—23AUG88

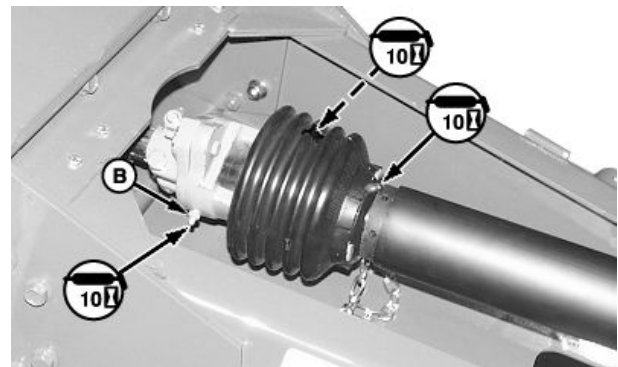
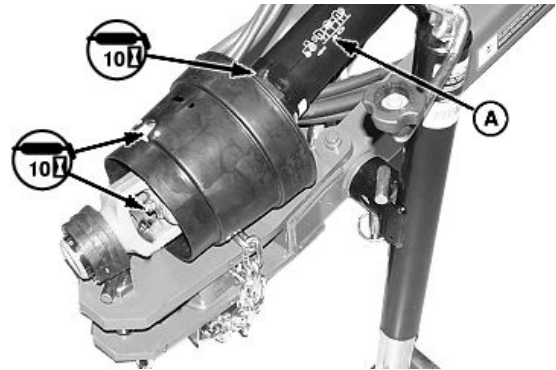
Shearbolt PTO Driveline (If Equipped)

NOTE: PTO driveline lubrication points are shown on diagram (A) and on PTO shield.

NOTE: It is recommended to lubricate fitting (B) after a shearbolt failure.

A—Diagram

B—Lubrication Fitting



Shearbolt

Continued on next page

PP98408,0000E3B -19-07FEB13-2/3

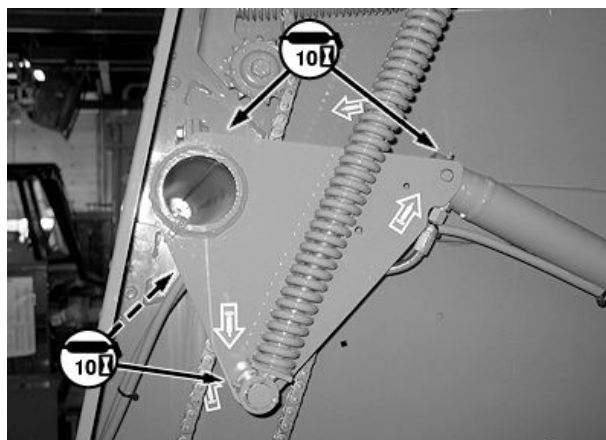
E53983 —UN—17DEC04

E53984 —UN—17DEC04

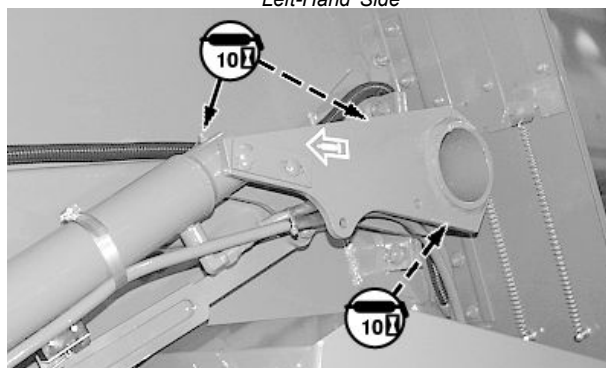
E67297 —UN—13AUG12

Tension Arm and Cylinder Pivots

Lubricate tension arm and cylinder pivots on both sides of machine.



Left-Hand Side



Right-Hand Side

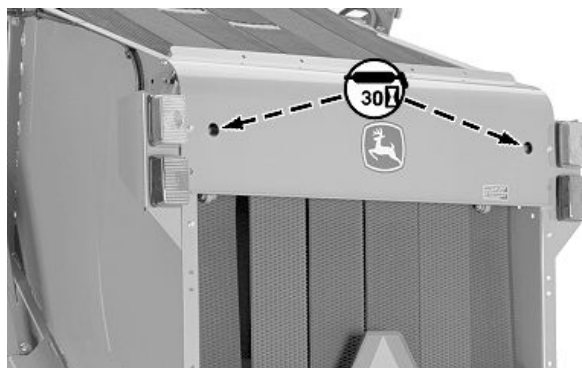
PP98408,0000E3B -19-07FEB13-3/3

E56906 —UN—10AUG10

E54034 —UN—06JAN05

Every 30 Hours

Bale Shape Sender Arms



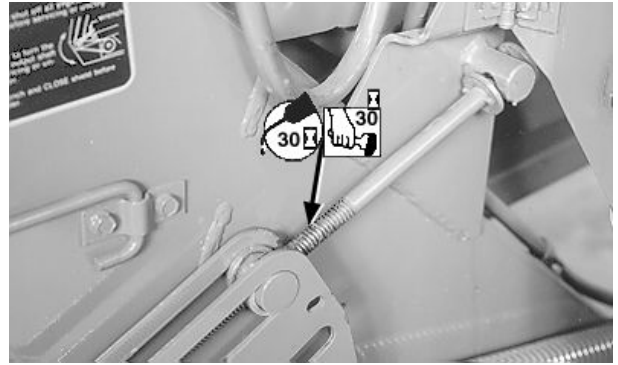
Continued on next page

PP98408,0000E3C -19-07FEB13-1/8

E53986 —UN—17DEC04

Pickup Lift Crank

Lubricate crank threads with SAE 30 or heavier oil, or with John Deere EP Moly or an equivalent SAE multipurpose grease.



PP98408,0000E3C -19-07FEB13-2/8

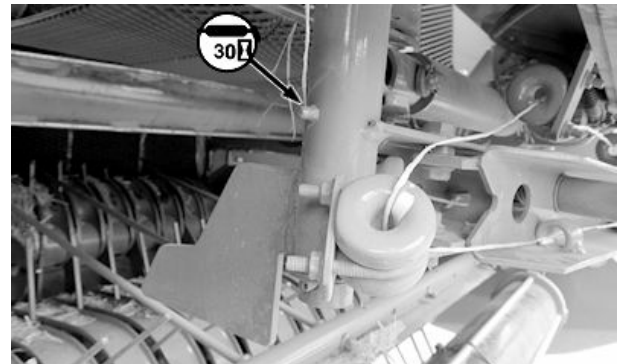
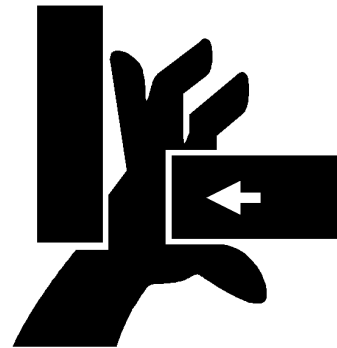
E47610 —UN—07JAN00

Twine Arm Hub

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is **ON**.

Clean off material or crop buildup from actuator rod.



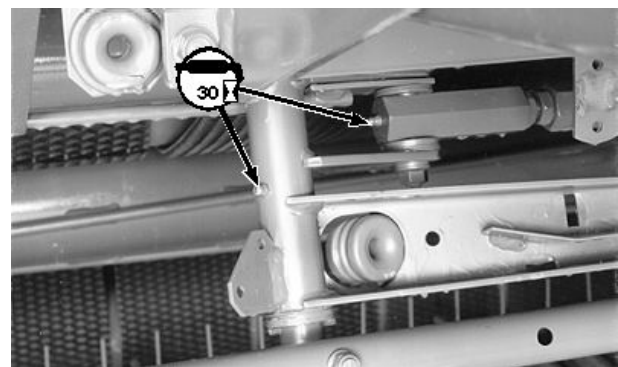
PP98408,0000E3C -19-07FEB13-3/8

E47598 —UN—07JAN00

E67298 —UN—10AUG12

NOTE: Hydraulic cylinder pivot lubrication fitting is on machines equipped with hydraulic actuated twine wrap only.

Clean off material or crop buildup from actuator rod.



Twine Wrap Only

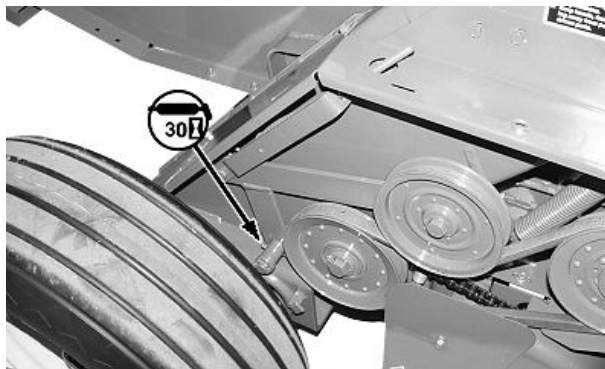
Continued on next page

PP98408,0000E3C -19-07FEB13-4/8

E39204 —UN—16FEB96

Pickup Drive Idler Pivot

NOTE: Shield removed for photographic purpose.



Right-Hand Side

PP98408,0000E3C -19-07FEB13-5/8

E53989—UN—20DEC04

Pickup Idler Arm

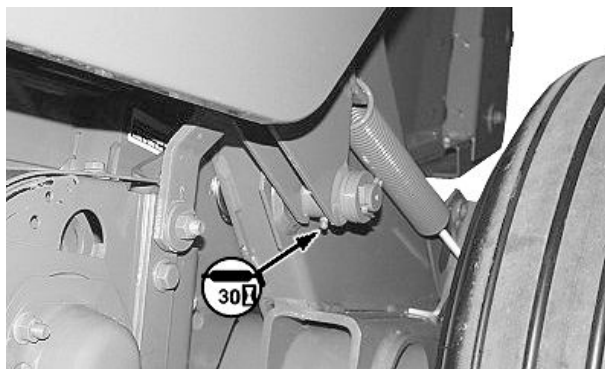


Right-Hand Side

PP98408,0000E3C -19-07FEB13-6/8

E53990—UN—20DEC04

Pickup Lift Bellcrank Pivot



Left-Hand Side

PP98408,0000E3C -19-07FEB13-7/8

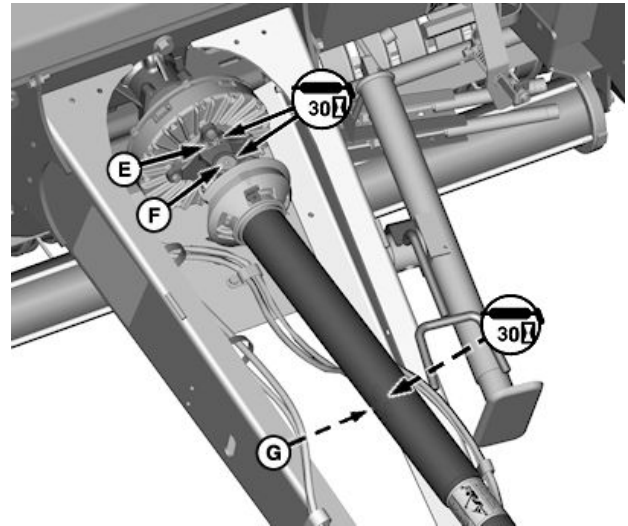
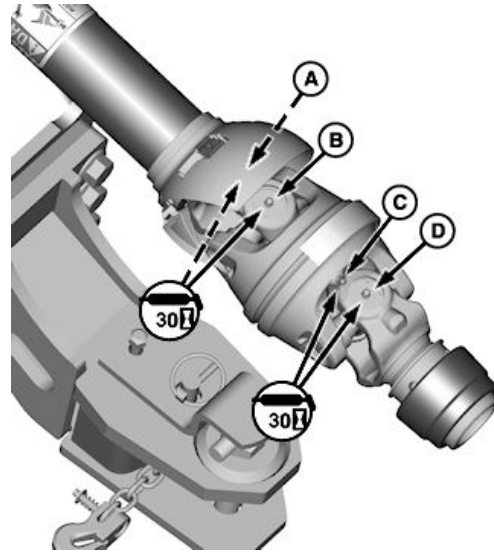
E53988—UN—20DEC04

Continued on next page

Slip Clutch PTO Driveline (If Equipped)

A—5 Pumps
B—5 Pumps
C—30 Pumps
D—5 Pumps

E—5 Pumps
F—5 Pumps
G—10 Pumps



E62422 —UN—09AUG12

E62423 —UN—09AUG12

PP98408,0000E3C -19-07FEB13-8/8

First 50 Hours

Gear Case

NOTE: Driveline removed for illustration purposes.

Drain and refill gear case after the first 50 hours.

IMPORTANT: Do not over fill gear case as this will result in overheating and oil leakage.

Check level of lubricant with dipstick. Lubricant must fall between grooves on dipstick.

Refill as necessary using SAE 85-140 API GL-5 gear lubricant. Drain and refill gear case once each season.

Specification

Gear Case—Capacity..... 1.2 L
(1.25 qt.)

Tighten dipstick to specification.



Removing Drain Plug

Specification

Dipstick—Torque..... 29 ± 3 N·m
(21 ± 2 lb.-ft.)

PP98408,0000E3D -19-07FEB13-1/1

E57911—UN—25AUG09

Every 100 Hours

Gear Case

IMPORTANT: Do not over fill gear case as this will result in overheating and oil leakage.

Check level of lubricant with dipstick (A). Lubricant must fall between grooves on the dipstick.

Refill as necessary using SAE 85-140 API GL-5 gear lubricant. Drain and refill gear case once each season.

Specification

Gear Case—Capacity..... 1.2 L
(1.25 qt.)

Tighten dipstick to specification.

Specification

Dipstick—Torque..... 29 ± 3 N·m
(21 ± 2 lb.-ft.)



A—Dipstick

PP98408,0000E3E -19-07FEB13-1/1

E65980—UN—13JUN12

Annually

Baler Wheel Bearings

Remove the wheels; then clean, repack, and adjust bearings. Use John Deere EP Moly or an equivalent SAE multipurpose type grease, or wheel bearing grease.



Continued on next page

PP98408,0000E3F -19-07FEB13-1/3

E39740—UN—16FEB96

Gear Case

Drain and refill gear case annually.

NOTE: Driveline removed for illustration purposes.

IMPORTANT: Do not over fill gear case as this will result in overheating and oil leakage.

Check level of lubricant with dipstick. Lubricant must fall between grooves on dipstick.

Refill as necessary using SAE 85-140 API GL-5 gear lubricant. Drain and refill gear case once each season.

Specification

Gear Case—Capacity..... 1.2 L
(1.25 qt.)



Removing Drain Plug

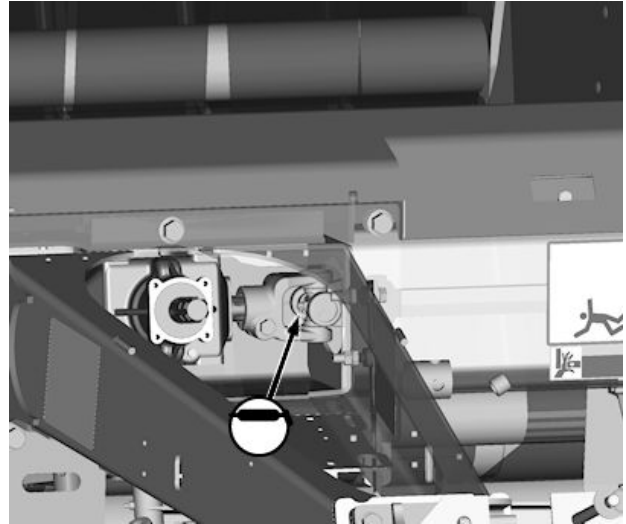
E57911 —UN—25AUG09

PP98408,0000E3F -19-07FEB13-2/3

Gearbox Output Shaft U-Joint

NOTE: Driveline and shields removed for illustration purposes.

Grease lubrication fitting annually or every 250 hours.



E62434 —UN—10APR12

PP98408,0000E3F -19-07FEB13-3/3

Troubleshooting

PTO Driveline Difficulties

Symptom	Problem	Solution
Driveline will not telescope correctly	Shield damaged.	Replace shield.
	Lack of lubrication.	Clean and lubricate.
	Tractor drawbar not installed correctly.	Check dimensions. Install drawbar correctly.
	Driveline bent or twisted.	Replace.
	Telescoping tubes worn.	Replace shaft and tube as necessary, apply John Deere EP Moly High-Temperature Grease, or equivalent.
Driveline vibrates excessively	CV joint balls or sockets worn.	Replace worn or damaged parts. Inject with John Deere EP Moly High-Temperature Grease, or equivalent.
	Driveline bent or twisted.	Replace.
	Driveline cross bearings worn.	Replace bearings.
	Constant velocity joint worn or damaged.	Replace worn or damaged parts.
	Splines on tractor shaft worn.	Replace tractor shaft.
Driveline will not stay engaged	Splines on yoke worn.	Replace yoke.
	Worn pawls.	Replace parts.

PP98408,0000E40 -19-07FEB13-1/1

Drive Chain Difficulties

Symptom	Problem	Solution
Prematurely failed drive chains	Lack of lubrication.	Lubricate chains, every 10 hours, after operation when chains are still warm. (See EVERY 10 HOURS in Lubrication and Maintenance section.)
	Operating too tight or too loose.	Adjust chain tension. (See ADJUST LOWER AND UPPER ROLL DRIVE CHAINS in Service—Baler section.)
	Misalignment of drive sprockets and idlers.	Align all sprockets and idlers. (See your John Deere dealer.)

PP98408,0000E41 -19-07FEB13-1/1

Gear Case Difficulties

Symptom	Problem	Solution
Gear case noisy	Lack of lubricant.	Check and add fluid if necessary.
	Loose or worn bearings.	See your John Deere dealer.
	Gears not meshing correctly.	See your John Deere dealer.
Gear case excessively hot (Over 105 °C [220 °F])	Oil level too high.	Operate with oil level at mark on dipstick.
	Lack of lubricant.	Check and add fluid if necessary.
	Defective bearings.	See your John Deere dealer.
	Bearings not installed correctly.	See your John Deere dealer.
	Bearings adjusted too tight.	See your John Deere dealer.
Leaking oil	Worn oil seals.	See your John Deere dealer.
	Missing or defective vent.	See your John Deere dealer.
	Oil level too high.	Drain to correct level. Operate with oil level at proper place on dipstick. (See EVERY 100 HOURS in Lubrication and Maintenance section.)
Gears noisy or wear prematurely	Lack of lubrication.	Add oil to correct level or replace worn gears.

PP98408,0000E42 -19-07FEB13-1/1

Diagnose Hydraulic Functions

Symptom	Problem	Solution
Baler will not feed; Hay plugged at feed opening.	Bale density is too high.	Check relief valve. Replace if defective. (See your John Deere dealer.)
	Gate opens while baling due to internal leakage in system components.	Repair or replace leaking component. (See your John Deere dealer.)
Bale sticks in chamber.	New baler.	Follow break-in instructions in Operating the Baler section.
	Bale density too high.	Check relief valve. Replace if defective. (See your John Deere dealer.)
	Damp crop or buildup on sidesheet.	Clean sidesheet.
	Excessive sidesheet friction.	Check straightness and straighten front sidesheet of baler if needed. (See your John Deere dealer.)
Bale density too low.	Faulty tension or gate cylinder.	Repair cylinder if leaking. (See your John Deere dealer.)
	Faulty relief valve.	Check relief valve. Replace if defective. (See your John Deere dealer.)
	Damaged O-rings or backup rings on relief or check valves.	Replace. (See your John Deere dealer.)
	Damaged seat or poppet in relief or check valves.	Replace. (See your John Deere dealer.)
	Foreign material keeping check or relief valve poppet from seating.	Clean or replace. (See your John Deere dealer.)
	Dirty hydraulic oil in tractor.	Change tractor filter and oil.
	Belts stretched too long.	Measure belts and replace or shorten if belts are longer than maximum listed. (See REPAIR BELTS in Service section.)
	Tension or gate cylinder extends when gate is closed and tractor selector control valve (SCV) is in neutral.	Air in hydraulic system. Open and close gate several times to remove air.
Gate opens while baling.		Faulty relief valve. Replace. (See your John Deere dealer.)
	Tractor selector control valve (SCV) leaking.	Repair or replace. (See your John Deere dealer.)

Continued on next page

PP98408,0000E43 -19-07FEB13-1/2

Troubleshooting

Symptom	Problem	Solution
Gate will not close or closes erratically.	Internal leak in baler hydraulic system.	Repair. (See your John Deere dealer.)
	Obstruction between gate and frame.	Remove obstruction.
	Crop buildup on belts.	Remove buildup. Operate PTO while closing gate.
	One or both orifices (located near quick-disconnect end of hoses) not installed correctly.	Reverse direction of orifices.
	Hydraulic flow of tractor too low.	Adjust tractor hydraulic flow. (See your tractor operator's manual.)
	Crop buildup on belts.	Remove buildup. Operate PTO while closing gate.

PP98408,0000E43 -19-07FEB13-2/2

Twine Wrap Difficulties

Symptom	Problem	Solution
Twine too tight or twine breaks while wrapping.	Twine not routed correctly.	Route twine correctly. (See ROUTE TWINE in Preparing the Baler section.)
	Bad twine, knots in twine, new ball with tight core, wet twine.	Remove bad twine or replace twine. (See SELECT TWINE in Preparing the Baler section.)
	Twine tension too high.	Reduce twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.)
	Crop buildup at twine guides.	Remove buildup.
	Deep grooves worn in twine guides.	Replace twine guides.
	Sisal twine binding at twine indicator wheels.	Route sisal twine only 1/4 of a turn around twine indicator wheels.
Twine falls off twine indicator wheel.	Retaining strap behind twine indicator wheel is not in correct position.	Adjust retaining strap. (See ADJUST TWINE INDICATOR RETAINING STRAP in Service—Baler section.)
	Plastic twine not wrapped a full turn around indicator wheel.	Wrap twine a full turn around indicator wheel.
Twine too loose on bale.	Twine tension too low.	Increase twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.)
	Broken or missing twine tension spring.	Replace spring.
	Crop buildup between twine tension plates.	Remove buildup.
	Tension or Gate cylinder leaking.	Repair or replace cylinder. (See your John Deere dealer.)
	Worn twine tension plates at twine box or twine arms.	Replace worn parts.
	Less than two wraps of twine on end of bale.	Pause longer to provide more wraps. (See OPERATE WRAP CONTROL—Manual Hydraulic Tie in Operating the Baler section.)
	Twine not wrapped a full turn around indicator wheels.	Wrap twine a full turn around indicator wheels.
Twine spacing not consistent.	Twine not routed correctly.	Route twine correctly. (See ROUTE TWINE in Preparing the Baler section.)
	Varying tractor engine speed.	Maintain consistent engine speed while wrapping bales.

Continued on next page

PP98408,0000E44 -19-07FEB13-1/5

Symptom	Problem	Solution
	Inconsistent operation.	See twine arm operating instructions. (See OPERATE WRAP CONTROL—Manual Hydraulic Tie in Operating the Baler section.)
	Hydraulic Twine Wrap: Hydraulic oil cold at start-up.	Some change in twine spacing can be expected during the first few bales made with cold hydraulic oil.
	Baling dry, slick crops, such as coastal Bermuda grass, straw or flax.	Bale when crop has more moisture.
	Twine or twine arms contacting compressor rod.	Lower compressor rack or align rod. (See ADJUST COMPRESSOR RACK in Operating the Baler section.)
	High twine tension on front twine arm causing distance between twine arms to change from setting.	Reduce twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.)
	Twine indicator wheels binding.	Correct binding.
	Hydraulic Twine Wrap; Internal cylinder leakage.	Install seal kit or replace cylinder. (See your John Deere dealer.)
	Hydraulic Twine Wrap; Twine arm speed and spacing not adjusted properly.	See Adjusting Twine Spacing—Manual Hydraulic Tie In Preparing the Baler section.
	Hydraulic Twine Wrap; Contamination in hoses causing orifice or flow valve to be plugged.	Flush hoses, cylinder, and orifice to remove contamination.
	Hydraulic Double Twine Wrap; Flow-control valve locking ring loose.	Tighten locking ring after making flow valve adjustment.
	Contamination in hoses causing orifice to be plugged.	Flush hoses, cylinder, and orifice to remove contamination.
Twine too close or too far from right-hand edge of bale.	Missing or bent twine guide rod, if equipped.	Replace or straighten rod.
	Barrel or cone-shaped bales.	Fill ends of bale by crowding windrow. Adjust bale shape indicators as necessary. (See ADJUST BALE SHAPE INDICATORS in Service—Baler section.)
	Not extending cylinder fully when tying off.	Before pausing for end wraps, make sure that twine cylinder is fully extended.

Continued on next page

PP98408,0000E44 -19-07FEB13-2/5

Symptom	Problem	Solution
	Baling dry, slick crops, such as coastal Bermuda grass, straw or flax.	Use more twine on bale ends. Bale when crop has more moisture. Increase twine distance from end of bale.
	Incorrect twine arm-to-right-hand sidesheet distance when cylinder or actuator is fully extended.	Adjust. (See ADJUST TWINE ARM DISTANCE FROM RIGHT SIDESHEET in Service—Baler section.)
Twine too close or too far from left-hand edge of bale.	Missing or bent twine guide rod.	Straighten or replace rod.
	Baling dry, slick crops, such as coastal Bermuda grass, straw or flax.	Bale when crop has more moisture. Increase twine distance from end of bale.
	Barrel or cone-shaped bales.	Fill ends of bale by crowding windrow. Adjust bale shape indicators if necessary. (See ADJUST BALE SHAPE INDICATORS in Service—Baler section.)
No twine on bale or twine not caught by bale.	Twine not routed correctly.	Route twine correctly. (See ROUTE TWINE in Preparing the Baler section.)
	Twine wrapped around twine tube after twine is out.	Reduce twine tension if necessary, on thin plastic twine. (See ADJUST TWINE TENSION in Operating the Baler section.) Use heavier twine.
	Twine from end of twine tubes too short.	With tractor shut off, pull out twine until 305—381 mm (12—15 in.) is exposed from end of twine arms. Remove crop buildup at twine arm tension plates. Reduce twine tension if necessary, on thin plastic twine. (See ADJUST TWINE TENSION in Operating the Baler section.) Use heavier twine.
	Worn twine tension plate at twine arm.	Replace tension plate.
	Broken or missing spring at twine tension plate on twine arm.	Replace spring.
	Twine tension too high.	Reduce twine tension. (See ADJUST TWINE TENSION in Operating The Baler section.) Replace worn twine guides.

Continued on next page

PP98408,0000E44 -19-07FEB13-3/5

Symptom	Problem	Solution
	Twine not fed in with crop.	Do not stop forward travel of tractor until twine is moving.
	Twine box empty.	Add twine. (See LOAD TWINE BOX in Preparing the Baler section.)
	Too many pickup teeth missing.	Replace pickup teeth.
Bale does not pull twine from rear twine arm tube. Twine extending from twine arm tube is too short.	Anvil is being pulled down by front twine arm tube instead of rear twine arm tube. Cutter strap support is bent.	Bend strap to allow 1—3 mm (1/32—1/8 in.) clearance between strap and twine arm tube.
Twine not cut.	Operator stops twine arm movement before twine is cut.	Move twine arms to full home position to actuate cutter. Check twine to see that it has stopped before discharging bale.
	Twine cutter out of adjustment.	Adjust twine cutter. (See ADJUST TWINE CUTTER TENSION in Service—Baler section.)
	Twine not routed correctly.	Route twine correctly. (See ROUTE TWINE in Preparing the Baler section.)
	Dull knife or uneven edge not making contact with anvil.	Rotate, sharpen, or replace knife.
	Knife not contacting anvil fully.	Align knife pivot shaft so full length of knife makes contact with anvil. (See CHECK and ADJUST TWINE CUTTER KNIFE in Service—Baler section.)
	Obstruction causing twine not to be guided under knife.	Remove obstruction.
	Bent twine guide rod.	Straighten or replace.
	Binding in twine arms or cutter linkage.	Repair or replace so linkage operates freely.
	Anvil is worn under knife.	Replace anvil.
	Foreign material buildup on top of anvil.	Adjust height of twine cutter. (See ADJUST TWINE CUTTER TO TWINE ARM in Service—Baler section.)
	Twine tension too high, preventing twine arms from going to home position.	Reduce twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.)
	Buildup between twine cylinder end and hex nut prevents full cylinder retraction.	Remove buildup.

Continued on next page

PP98408,0000E44 -19-07FEB13-4/5

Symptom	Problem	Solution
Twine unrolling.	Twine cutter stops left-to-right twine arm movement at knife.	Check that twine cutter linkage moves freely. Repair or replace parts as necessary. (See your John Deere dealer.)
		Remove twine knife and clean knife pivot bore and shaft.
		Slow gate raise time by adjusting SCV flow to 7—8 seconds, to reduce bale rolling distance. Maintain engine rpm during discharge.
		Let bale turn 25 seconds after cutting.
		Increase twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.)
		If equipped with BaleTrak™ Pro system use re-extension or cinch wrap programs. (See Operating with BaleTrak™ Pro System section.)
		Reduce number of end wraps.
	Twine ends contact ground.	Adjust delay of twine eject valve. (See ADJUST DELAY OF TWINE EJECT in Operating the Baler section.)
Bale size alarm continues sounding while wrapping bale.	Made an oversize bale.	Wrap bale after first bale size alarm stops. (See INDICATORS FOR BALER OPERATION in Operating the Baler section.)

PP98408,0000E44 -19-07FEB13-5/5

Twine Wrap Difficulties (Hydraulic Twine Wrap Only)

Symptom	Problem	Solution
Twine arms move too slow from left to right (more than 9 seconds).	Flow valve setting too low.	Adjust flow valve to increase flow.
	Dirt in flow valve.	Clean and flush valve.
	Flow valve is installed backwards.	See your John Deere dealer.
	Tractor hydraulic fluid dirty or dirt in cylinder port screen or orifice.	Flush baler hydraulic system. Change tractor filter and oil.
		Clean and flush cylinder.
	Tractor SCV adjusted for low flow	Increase setting. See tractor operator's manual.
	Internal cylinder leakage.	Install seal kit or replace cylinder. (See your John Deere dealer.)
	Plugged or partially plugged orifice at base end of twine arm cylinder.	Remove and clean orifice.
	Incorrect orifice size in hydraulic cylinder.	Replace orifice. (See your John Deere dealer.)
Twine arms will not return to home position.	Flow valve closed too far.	Open flow valve.

PP98408,0000E45 -19-07FEB13-1/1

Twine Wrap Difficulties—BaleTrak™ Pro System

Symptom	Problem	Solution
EXTEND or RETRACT and switches will not move twine actuator. STOP flashes.	Electric actuator does not have electrical power.	Check if twine arms move using bypass switch. (See procedure in Operating the Baler section.) •If arms do not move; Check tractor convenience outlet for blown fuse or defective circuit breaker. Replace fuse or circuit breaker if necessary. Check electric actuator connector for: •Proper connection •Corrosion •Broken wires •Tractor voltage
Twine falls off twine indicator wheel.	Retaining strap behind twine indicator wheel is not in correct position.	Adjust retaining strap. (See ADJUST TWINE INDICATOR RETAINING STRAP in Service—Baler section.)
	Plastic twine not wrapped a full turn around pulley.	Wrap twine a full turn around indicator wheel.
Twine too loose on bale.	Broken or missing twine tension spring.	Replace spring.
	Crop buildup between twine tension plates.	Remove crop buildup.
	Wrong tension spring pin.	Replace pin.
	Twine tension too low.	Increase twine tension. (See ADJUST TWINE TENSION in Preparing the Baler section.)
	Worn twine tension plates.	Replace worn parts.
	Less than two wraps of twine on end of bale.	Increase number of wraps. (See SET NUMBER OF TWINE END WRAPS in Operating with BaleTrak™ Pro System section.)
	Faulty bale tensioning valve.	Repair or replace valve. (See your John Deere dealer.)
	Belt tension or gate cylinder leaking.	Check for cylinder leaks. Repair as necessary. (See your John Deere dealer.)
	Twine not wrapped a full turn around twine indicators.	Wrap twine a full turn around twine indicators.

Continued on next page

PP98408,0000E46 -19-07FEB13-1/5

Troubleshooting

Symptom	Problem	Solution
Twine tension not uniform across width of bale.	Twine catching on bent compressor rod.	Straighten rod.
	Bale tension not uniform from side-to-side.	Check for correct twine routing. (See Preparing the Baler section for twine routing.) See Operating Baler section for proper baling technique. Check for leaks in tension system. Repair or replace parts as necessary. (See your John Deere dealer.)
	Faulty bale tensioning valve.	Repair or replace valve. (See your John Deere dealer.)
	Belt tension cylinder leaks.	Repair or replace cylinder. (See your John Deere dealer.)
Twine loose or wide twine spacing on left-hand side of bale.	Faulty bale tensioning valve.	Repair or replace valve. (See your John Deere dealer.)
	Belt tension cylinder leaks.	Repair or replace cylinder. (See your John Deere dealer.)
	Twine slips with loose crop.	Activate cinch wrap on channel 004 of monitor.
Twine loose on right-hand side of bale.	Twine not anchored well and slips around bale.	Too much twine tension. Twine catches late. (See ADJUST TWINE TENSION in Operating the Baler section.) Incorrect twine routing. (See ROUTE TWINE in Preparing the Baler section.)
	Excess right-hand end wraps pull down end of bale and create loose twine or wide twine spacing near right-hand end.	Continue to drive forward until twine pulleys are moving.
Twine arms move to right-hand side of baler and will not return, or returns part way and stops.	Twine arm caught on compressor rod.	Align compressor rod down. (See ADJUST COMPRESSOR RACK in Operating the Baler section.)
	Buildup of crop or cornstalks on compressor rods prevents twine arm travel.	See BALE CORNSTALKS in Operating the Baler section. Install or adjust compressor rod channel.
	Broken harness wire near slip clutch due to incorrect harness routing.	Route and clamp wire harness away from slip clutch.

Continued on next page

PP98408,0000E46 -19-07FEB13-2/5

Symptom	Problem	Solution
Twine spacing not consistent.	Twine arm speed and arm spacing are not matched.	Decrease or increase twine spacing on monitor. (See SET TWINE SPACING in Operating with BaleTrak™ Pro System section.)
	Twine not routed correctly.	Route twine correctly. (See ROUTE TWINE in Preparing the Baler section.)
	Baling dry, slick crops, such as coastal Bermuda grass, straw, prairie grasses, or flax. Twine will lag behind twine arm because of crop trying to come out of feed opening, then suddenly catching up with twine arm, leaving a space without twine.	Bale when crop has more moisture. Reduce engine speed to 1500 rpm or lower and shift to a higher gear. Use Dry Straw Twine Wrap program. (See procedure in Operating with BaleTrak™ Pro System section.)
	High twine tension on front twine arm causing distance between twine arms to change from setting.	Adjust twine tension. (See procedure in Operating the Baler section.)
	Twine indicator wheels binding.	Free up indicator wheels.
	Twine or twine arm contacting compressor rod.	Lower compressor rack or align rod. (See ADJUST COMPRESSOR RACK in Operating the Baler section.)
	Varying tractor engine speed.	Maintain consistent engine speed while wrapping all bales.
No twine on bale or twine not caught by bale.	Bale density varies across width of bale or shape not cylindrical.	
	Twine wrapped around twine tube.	Reduce twine tension, if necessary, on thin plastic twine. (See ADJUST TWINE TENSION in Operating the Baler section.)
	Twine from end of twine tube too short.	With tractor shut off, pull out twine until 305—381 mm (12—15 in.) is exposed from end of twine arms. Remove crop buildup at twine arm tension plates. Reduce twine tension, if necessary, on thin plastic twine. (See ADJUST TWINE TENSION in Operating the Baler section.) Use heavier twine. Replace worn twine tension plates at twine arm. Replace broken or missing spring at twine tension plate on twine arm.

Continued on next page

PP98408,0000E46 -19-07FEB13-3/5

Symptom	Problem	Solution
Twine too close to edge of bale.	Twine tension too high.	Reduce twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.) Replace worn twine guides.
	Twine snagged on guide.	Check for correct twine routing.
	Twine not fed in with crop.	Do not stop forward travel of tractor as soon as monitor-controller WRAPPING STARTED indicator comes on. Allow a few seconds for twine to be fed in with hay.
	Twine box empty.	Add twine. (See LOAD TWINE BOXES in Preparing the Baler section.)
	Too many pickup teeth missing.	Replace pickup teeth.
	Adjustable twine guide out of adjustment.	Adjust twine guide. (See SET TWINE END WRAP DISTANCE in Operating with BaleTrak™ Pro System section.)
	Barrel or cone shaped bales.	Fill ends of bale by crowding windrow.
	Twine guide too close to edge of bale.	Adjust twine guide. (See SET TWINE END WRAP DISTANCE in Operating with BaleTrak™ Pro System section.)
	Baling dry, slick crops such as straw or flax.	Use more twine. Increase twine distance from end of bale. (See TWINE WRAP TERMS AND SETTINGS in Operating with BaleTrak™ Pro System section.)
	Twine arm travels too far at right-hand side of baler, due to manually moving twine arms using monitor-controller EXTEND key.	If recycling twine arm, press monitor-controller WRAP key so setting for end twine spacing occurs.
Twine not cut.	Twine arm travel on right-hand side is out of adjustment.	Adjust. (See TWINE WRAP TERMS AND SETTINGS in Operating with BaleTrak™ Pro System section.)
	Bale is ejected before twine is cut.	Look at twine to see that it has stopped moving before discharging bale.
	Twine cutter out of adjustment.	Adjust twine cutter tension. (See procedure in Service—BaleTrak™ Pro System section.)
	Dull knife or uneven edge not making contact with anvil. Front twine arm stop installed backwards.	Rotate, sharpen, or replace knife. Install stop with trimmed edge toward twine arm.

Continued on next page

PP98408,0000E46 -19-07FEB13-4/5

Troubleshooting

Symptom	Problem	Solution
	Crop buildup on top of anvil.	Adjust height of twine cutter to twine arm. (See procedure in Service—Baler section.)
	Twine cutter anvil not level.	Adjust twine cutter so anvil is level (parallel with bottom edge of frame).
	Knife not contacting anvil fully.	Adjust knife so full length of knife edge makes contact with anvil. (See CHECK AND ADJUST TWINE CUTTER KNIFE in Service—Baler section.)
	Obstruction causing twine not to be guided under knife.	Remove obstruction.
	Bent twine guide rod.	Straighten or replace.
	Anvil is worn under knife.	Replace anvil.
	Binding in twine knife pivot or cutter linkage.	Repair or replace so linkage operates freely.
	Incorrect twine routing or bad ball of twine causing high twine tension.	Correct cause of high tension.
	Twine is above starter roll and misses twine guide.	Stop forward travel immediately when WRAPPING STARTED indicator is displayed and beeps. Reduce travel speed nearing completion of bale. Install compressor rack if removed. (See procedure in Operating the Baler section.) Add additional compressor rods.
	Twine not routed correctly.	Route twine correctly. (See ROUTE TWINE in Preparing the Baler section.)
	Low voltage prevents twine arms from activating twine cutter.	See your John Deere dealer.
	Twine tension too high, preventing twine arms from going to home position.	Reduce twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.)

PP98408,0000E46 -19-07FEB13-5/5

Symptom	Problem	Solution
Twine unrolling.		Slow gate raise time by adjusting SCV flow to 7—8 seconds, to reduce bale rolling distance. Maintain engine rpm during discharge. Let bale turn 25 seconds after cutting. Increase twine tension. (See ADJUST TWINE TENSION in Operating the Baler section.) Reduce number of end wraps on left-hand side. Use re-extension or cinch wrap programs. (See Operating with BaleTrak™ Pro System section.)
Twine actuator does not come all the way home. Twine does not cut off.	Low voltage to the monitor-controller under load.	Check tractor voltage. (See procedure in Service—BaleTrak™ Pro System section.)

PP98408,0000E46 -19-07FEB13-6/5

BaleTrak™ Pro Monitor-Controller Difficulties

Symptom	Problem	Solution
Monitor-Controller LCD display and switches do not work.	Monitor-controller connection to tractor is unplugged.	Plug in connection.
	Monitor-controller was hooked up with reverse polarity.	Check polarity of 12 V power supply.
Twine arm actuator does not function. Stop indicator displays. Alarm does not sound.	Twine arm actuator failed.	Replace actuator. (See your John Deere dealer.)
	Twine arm wedged against back side of knife.	Inspect wire harness and repair or replace. Use monitor-controller RETRACT key and retract twine arm. Clean and lubricate knife pivot.
Twine arm actuator does not function. Stop indicator displays and alarm sounds.	Twine arm actuator failed.	Replace actuator. (See your John Deere dealer.)
	Twine arm wedged against back side of knife.	Inspect wire harness and repair or replace. Use monitor-controller RETRACT key and retract twine arm. Clean and lubricate knife pivot.
Twine actuator does not complete its travel. STOP indicator displays and alarm sounds.	Twine arm travel restricted by foreign object or hay buildup.	Inspect and remove blockage.
STOP indicator is displayed on monitor-controller when activated.	Twine or net actuator disconnected.	Check actuator connectors.
	Wiring is loose or cut.	Check wire harness connector for breaks.
Automatic twine cycle does not function. STOP indicator displays and alarm sounds.	Defective gate latch switch.	Replace switch. (See your John Deere dealer.)
	Incorrect gate latch switch adjustment.	Adjust gate latch switches. (See procedure in Service—BaleTrak™ Pro System section.)
	Gate not closed and does not activate one gate switch.	Remove hay buildup from gate area. Operate baler at tractor rated PTO speed when closing the gate.
	Released selective control valve too soon after closing gate.	Continue to hold selective control valve 2 seconds after gate closes.
	Gate twisted and does not close.	See your John Deere dealer.

Continued on next page

PP98408,0000E47 -19-07FEB13-1/6

Symptom	Problem	Solution
	Manual BYPASS wire harness connected.	Return twine actuator connector to NORMAL OPERATION connector. (See BYPASS SWITCH [TWINE WRAP ONLY] in Operating with BaleTrak™ Pro System section.)
Twine arm actuator stops at full extension and will not retract.	Monitor-controller set for incorrect baler model.	Change monitor-controller setting. (See CHANGE BALER MODEL PROGRAM in Operating with BaleTrak™ Pro System section.)
		Inspect wire harness. Repair or replace.
Twine spacing to edge of bale is greater than monitor-controller setting.	Incorrect mechanical twine guide setting.	Adjust mechanical twine guide. (See SET TWINE SPACING in Operating with BaleTrak™ Pro System section.)
Number of end wraps is different from monitor-controller setting.	Incorrect mechanical twine guide adjustment.	Adjust mechanical twine guide. (See SET TWINE SPACING in Operating with BaleTrak™ Pro System section.)
	Not operating at tractor rated PTO speed.	Operate at rated PTO speed or at a consistent speed. A constant speed less than rated PTO speed will require a different monitor-controller setting.
Erratic twine spacing. (See Automatic Twine Spacing TWINE SPACING NOT CONSISTENT in this section.)	Twine catching on foreign object or compressor rods.	Inspect and remove blockage or adjust compressor rods. (See ADJUST COMPRESSOR RACK in Operating the Baler section.)
	Incorrect monitor-controller settings.	Reset to factory initial settings. (See procedures in Operating the Baler section.)
	Not operating at tractor rated PTO speed.	Operate at rated PTO speed or at a consistent speed. A constant speed less than rated PTO speed will require a different monitor-controller setting.
	Distance between twine arms incorrect for monitor-controller setting.	Set twine arm spacing for monitor-controller setting. (See SET TWINE SPACING in Operating with BaleTrak™ Pro System section.)
		Inspect wire harness. Repair or replace.
Twine wrap settings not consistent with different bale sizes.	Not operating at tractor rated PTO speed.	Operate at rated PTO speed or a consistent speed. A constant speed less than rated PTO speed will require a different monitor-controller setting.

Continued on next page

PP98408,0000E47 -19-07FEB13-2/6

Symptom	Problem	Solution
	Incorrect bale diameter sensor adjustment.	Adjust sensor. (See ADJUST BALE DIAMETER SENSOR in Service—BaleTrak™ Pro System section.)
Bale size inconsistent with monitor-controller setting.	Incorrect bale diameter sensor adjustment.	Adjust bale diameter sensor. (See procedure in Service—BaleTrak™ Pro System section.)
	Bale diameter sensor failed.	Replace sensor. (See procedure in Service—BaleTrak™ Pro System section.)
Near-full size indicator does not display on monitor-controller.	Bale diameter sensor failed.	Replace sensor. (See procedure in Service—BaleTrak™ Pro System section.)
Bales are not dense.	Bale diameter sensor failed.	Replace sensor. (See procedure in Service—BaleTrak™ Pro System section.)
	Incorrect bale diameter sensor adjustment.	Adjust bale diameter sensor. (See procedure in Service—BaleTrak™ Pro System section.)
Gate open indicator is on when gate is closed.	Incorrect gate latch switch adjustment.	Adjust switch. (See ADJUST GATE LATCH SWITCH in Service—BaleTrak™ Pro System section.)
	Defective gate latch switch.	Replace switch. (See your John Deere dealer.)
GATE CLOSED indicator is not displayed after attempting to close gate; STOP indicator can flash and buzzer can sound.	Gate did not close because gate lock engaged.	Unlock gate.
	Gate not fully closed due to an obstruction or twisted condition.	Remove obstruction or straighten gate.
	Belts pinched between lower gate roll and axle tube.	Raise gate fully and close gate at full tractor rpm. Operate PTO while closing.
GATE CLOSED indicator goes out, STOP indicator and buzzer come on while baling.	Gate latch not adjusted properly.	Adjust gate latch stop. (See procedure in Service—Baler section.)
	Gate latch switch not adjusted properly.	Adjust gate latch switch. (See procedure in Service—BaleTrak™ Pro System section.)
	Tractor selector control valve (SCV) leaking oil to gate hydraulic cylinder.	Repair tractor selector control valve (SCV). (See your John Deere dealer.)

Continued on next page

PP98408,0000E47 -19-07FEB13-3/6

Symptom	Problem	Solution
STOP indicator and buzzer come on when gate is closed.	Air in hydraulic system.	Open and close gate several times to remove air.
	Internal leak in gate hydraulic cylinder.	Repair or replace cylinder. (See your John Deere dealer.)
	Hydraulic cylinder not retracted when gate is closed.	Hold tractor SCV lever 2—3 seconds after GATE CLOSED indicator is displayed.
	Gate is not latched on one side.	Hold tractor SCV lever 2—3 seconds after GATE CLOSED indicator is displayed to make sure that both sides are latched.
	Gate latch switch not adjusted properly.	Adjust gate latch switch. (See procedure in Service—Baler section.)
	Defective gate latch switch.	Check gate latch switch. (See TEST GATE CLOSE AND OVERSIZE BALE SWITCHES in Service—BaleTrak™ Pro System section.) Replace if necessary. (See your John Deere dealer.)
	Poor connections or broken wires to gate latch switch.	Test wires for continuity. Repair as necessary.
GATE CLOSED indicator is displayed, but gate is open or not latched.	Oversize bale switch out of adjustment.	Adjust oversize bale switch. (See procedure in Service—BaleTrak™ Pro System section.)
	Shorted wires to oversize bale switch.	Test wire shorts. Repair as necessary.
	Gate latch switch not adjusted properly.	Adjust gate latch switch. (See procedure in Service—BaleTrak™ Pro System section.)
	Defective gate latch switch.	Check gate latch switch. (See TEST GATE CLOSE AND OVERSIZE BALE SWITCHES in Service—BaleTrak™ Pro System section.) Replace if necessary. (See your John Deere dealer.)
	Crop buildup in contact area.	Remove buildup.
Low voltage light comes on.	Shorted wires to gate latch switch.	Test wires for shorts. Repair as necessary.
	Low voltage to monitor-controller under load.	Check voltage. (See CHECK TRACTOR CONVENIENCE OUTLET VOLTAGE in Service—BaleTrak™ Pro System section.)

Continued on next page

PP98408,0000E47 -19-07FEB13-4/6

Symptom	Problem	Solution
Bale counter does not count bales.	For the monitor-controller to count a bale, an automatic wrap cycle must be followed by a gate opening cycle.	Check that gate latch switch is functioning properly. (See TEST GATE CLOSE SWITCH in Service—BaleTrak™ Pro System section.)
	Tension arm must go low enough to trigger next automatic wrap cycle.	Check that belts are correct length. Adjust or replace baler size sensor.
Monitor-controller functions do not display.	Monitor-controller was hooked up with reverse polarity.	Check polarity of 12 V power supply.
	Intermittent voltage loss due to loose connectors.	Disconnect and inspect connectors for bent or pushed back terminals.
	Intermittent connection in wire harness due to broken or frayed wire.	Inspect wire harness and repair or replace.
STOP indicator is displayed on monitor-controller when activated (E201).	Twine disconnected.	Check actuator connectors.
	Wiring is loose or cut.	Check wire harness connector for breaks.
Twine Wrap System: EXTEND or RETRACT and WRAP switches will not move twine actuator. STOP flashes.	Wiring has a break in it.	Check wire harness for breaks and check connectors for pushed back pins.
Twine arm actuator does not come all the way home. Twine does not cut off.	Low voltage to the monitor-controller under load.	See your John Deere dealer.
Twine arm actuator does not function. Stop indicator displays.	Twine arm actuator failed (E202).	Replace actuator. (See your John Deere dealer.)
		Inspect wire harness and repair or replace.
	Twine arm wedged against front side of knife.	Use monitor-controller RETRACT key to retract twine arm. Clean and lubricate knife pivot.
Twine actuator does not complete its travel. STOP indicator displays and alarm sounds.	Twine arm travel restricted by foreign object or hay buildup.	Inspect and remove blockage.
Automatic twine cycle does not function. STOP indicator displays and alarm sounds.	Defective gate latch switches.	Replace switches. See your John Deere dealer.
	Incorrect gate latch switch adjustment.	Adjust gate latch switches. (See procedure in Service—BaleTrak™ Pro System section.)
	Gate not closed and does not activate one gate switch.	Remove hay buildup from gate area. Operate baler at tractor rated PTO speed when closing the gate.

Continued on next page

PP98408,0000E47 -19-07FEB13-5/6

Symptom	Problem	Solution
	Released selective control valve too soon after closing gate.	Continue to hold selective control valve 2 seconds after gate closes.
	Gate twisted and does not close.	See your John Deere dealer.
	Manual BYPASS wire harness connected.	Return twine actuator connector to NORMAL OPERATION connector. (See BYPASS SWITCH [TWINE WRAP ONLY] in Operating with BaleTrak™ Pro System section.)
Twine arm actuator stops at full extension and will not retract.	Monitor-controller set for incorrect baler model.	Change monitor-controller setting. (See CHANGE BALER MODEL PROGRAM in Operating with BaleTrak™ Pro System section.)
		Inspect wire harness. Repair or replace.
Twine spacing to edge of bale is greater than monitor-controller setting.	Incorrect mechanical twine guide setting.	Adjust mechanical twine guide. (See SET TWINE SPACING and SET TWINE END WRAP DISTANCE in Operating with BaleTrak™ Pro System section.)
Number of end wraps is different from monitor-controller setting.	Incorrect bale diameter sensor adjustment.	Adjust bale diameter sensor. (See procedure in Service—BaleTrak™ Pro System section.)
	Not operating at tractor rated PTO speed. (without slip clutch alert)	Operate at rated PTO speed or at a consistent speed. A constant speed less than rated PTO speed will require a different monitor-controller setting.
Erratic twine spacing.	Incorrect monitor-controller settings.	Reset to factory initial settings and check baler model number. (See RESET BALETRAK™ PRO TO INITIAL FACTORY SETTINGS and CHANGE BALER MODEL PROGRAM in Operating with BaleTrak™ Pro System section.)
	Not operating at tractor rated PTO speed.	Operate at rated PTO speed or at a consistent speed. A constant speed less than rated PTO speed will require a different monitor-controller setting.
	Distance between twine arms incorrect for monitor-controller setting.	Set twine arm spacing for monitor-controller setting. (See SET TWINE SPACING in Operating with BaleTrak™ Pro System section.)
		Inspect wire harness. Repair or replace.

PP98408,0000E47 -19-07FEB13-6/6

Troubleshooting

Symptom	Problem	Solution
Twine wrapping settings not consistent with different bale sizes.	Not operating at tractor rated PTO speed.	Operate at rated PTO speed or a consistent speed. A constant speed less than rated PTO speed will require a different monitor-controller setting.
	Incorrect bale diameter sensor adjustment.	Adjust sensor. (See ADJUST BALE DIAMETER SENSOR in Service—BaleTrak™ Pro System section.)

PP98408,0000E47 -19-07FEB13-7/6

Feed Difficulties

Symptom	Problem	Solution
Baler will not feed hay. Plugged at feed opening.	Missing pickup teeth.	Replace teeth.
	Pickup drive idler not adjusted properly or pickup belt damaged.	Adjust idler or replace belt, if necessary. (See ADJUST PICKUP BELT IDLER in Service—Baler section.)
	Compressor rack too low.	Raise rack. (See ADJUST COMPRESSOR RACK in Operating the Baler section.)
	Gate opening while baling.	Check for leaking gate hydraulic cylinders or tractor valve. Repair or replace as necessary. (See your John Deere dealer.)
	Oversize bale.	Alarm not working or cannot be heard by operator. Adjust audible bale size alarm volume. (See ADJUST AUDIBLE ALARM VOLUME.) Bale size indicator incorrect. Adjust. (See ADJUST BALE SIZE AUDIBLE INDICATOR in Operating the Baler section.)
	Plugging at crop dividers.	See PLUG AT CROP DIVIDERS in Pickup Difficulties in this section.
	Gate not closed.	Eject bale. Close gate.
	Belts pinched between gate roll and baler axle.	Always operate PTO at rated speed during gate closing cycle to avoid pinching belts.
	PTO driveline shear bolt sheared.	Replace shear bolt. Use correct grade and length. (See REPLACE MAIN DRIVE SHEAR BOLT in Service—Baler section.)
	Wrappage or foreign material on starter roll.	Remove material.
Baler will not feed short, dry, slick, or brittle crops. (See BALE SHORT, DRY, SLICK CROPS in Operating the Baler section.)	Large windrows or too fast ground speed.	Reduce windrow size and reduce speed.
	Incorrect belt routing.	Properly route belts. (See INSTALL BELTS in Service—Baler section.)
	Pickup too low.	Raise pickup. (See ADJUST PICKUP HEIGHT in Operating the Baler section.)

Continued on next page

PP98408,0000E48 -19-07FEB13-1/3

Troubleshooting

Symptom	Problem	Solution
	Dry material flaking off bale collects and blocks feed opening.	Disengage PTO when turning between windrows and when not feeding material.
	PTO speed too fast.	Reduce engine speed to 1500 rpm or lower and shift to higher gear.
	Excessive buildup on top of compressor rack.	Remove all compressor rods except one center rod and one rod on each end of cross-tube.
	Pickup drive idler not adjusted properly or pickup belt damaged.	Adjust idler or replace belt, if necessary. (See ADJUST PICKUP DRIVE BELT IDLER in Service section.)
	Windrows too small.	Make larger windrows by raking. (See CROP PREPARATION in Operating the Baler section.)
	Weathered windrows (rained on several times).	Make larger windrows by raking. (See BALE CORNSTALKS and ADJUST PICKUP HEIGHT in Operating the Baler section.)
	Brittle crop breaks into smaller pieces easily.	Bale with dew on crop, especially rotary combined straw. Lower bale density. Use soft core valve to lower core density. (See ADJUST VARIABLE CORE DIAMETER in Operating with BaleTrak™ Pro System section.)
	Bale fails to start rotating due to one or both sides of windrow extending outside of bale edge, especially in dry bahia grass or coastal bermuda grass.	Make windrow narrower than bale width. Center baler over windrow while starting.
Baler will not feed cornstalks. (See BALE CORNSTALKS in Operating the Baler section.)	Pickup too high.	Lower pickup. (See ADJUST PICKUP HEIGHT in Operating the Baler section.)
	Windrows too large.	Make windrows smaller. Slow ground speed. Maintain PTO speed.
	Missing or broken pickup teeth.	Replace teeth.
	Pickup drive idler not adjusted properly or pickup belt damaged.	Adjust idler or replace belt, if necessary. (See ADJUST PICKUP DRIVE BELT IDLER in Service section.)

Continued on next page

PP98408,0000E48 -19-07FEB13-2/3

Troubleshooting

Symptom	Problem	Solution
Baler will not feed long, stiff, cane-type crops. (See BALE LONG, STIFF, CANE-TYPE CROPS in Operating the Baler section.)	Compressor rack too low.	Raise rack. (See ADJUST COMPRESSOR RACK in Operating the Baler section.)
	Material plugs at pickup and feed opening.	See BALE LONG, STIFF, CANE-TYPE CROPS in Operating the Baler section.
	Bale fails to start rotating due to crop wedging into top of starting chamber.	See Bale Long, Stiff, Cane-Type Crops in Operating the Baler section.
	Compressor rack too low.	Raise rack. (See ADJUST COMPRESSOR RACK in Operating the Baler section.)
Baler will not feed wet hay.	Surface moisture on bottom of windrow.	See Bale Wet Hay in Operating the Baler section.

PP98408,0000E48 -19-07FEB13-3/3

Pickup Difficulties

Symptom	Problem	Solution
Pickup teeth do not revolve.	Feed opening plugged with crop.	Reduce ground speed and windrow size.
	Pickup drive idler not adjusted properly or pickup belt damaged.	Adjust idler or replace belt, if necessary. (See ADJUST PICKUP DRIVE BELT IDLER in Service—Baler section.)
	Starter roll or pickup drive belt broken or missing.	Repair or replace. (See your John Deere dealer.)
	Broken cam or other internal pickup parts.	Check for failed or worn cam and internal parts. Repair or replace as necessary. (See your John Deere dealer.)
Pickup will not float or drop freely.	Excess or insufficient float assist.	Adjust pickup float springs. (See ADJUST PICKUP FLOAT SPRINGS in Service—Baler section.)
	Binding between flare and end strippers.	Remove chaff and dirt. Straighten any bent parts. Install gauge wheels to improve ground gauging.
Not picking up hay cleanly.	If equipped with gauge wheels; Crop or mud buildup between flare pivot plate and pickup gauge wheel arm.	Replace flare pivot plate. (See your John Deere dealer.)
	Pickup teeth set too high.	Lower pickup (See ADJUST PICKUP HEIGHT in Operating the Baler section.)
	Too much float spring tension, causing pickup to bounce or stay up.	Reduce float spring tension. (See ADJUST PICKUP FLOAT SPRINGS in Service—Baler section.)
	Damaged crop dividers or stripper, causing pickup to stay up.	Straighten or replace damaged parts. (See your John Deere dealer.)
	Ground speed too fast.	Reduce ground speed.
	Windrows too light.	Rake heavier windrows.
	Pickup teeth bent or broken.	Straighten or replace teeth. (See your John Deere dealer.)
	Light crop rolls forward instead of picking up.	Rake heavy windrows if possible. Operate baler at 1/2—2/3 normal rpm, and shift tractor to higher gear to maintain desired ground speed.

Continued on next page

PP98408,0000E49 -19-07FEB13-1/3

Symptom	Problem	Solution
		Reduce engine speed to 1500 rpm or lower and shift to a higher gear.
	Overcrowding ends.	Reduce crowding. Install converging wheels if not equipped.
	Tractor tires smashing crop into stubble.	Widen wheel spacing. (See ADJUST TRACTOR WHEELS in Preparing the Tractor section.)
Pickup teeth digging in ground.	Pickup set too low.	Raise pickup. (See ADJUST PICKUP HEIGHT in Operating the Baler section.)
	Gauge wheels (if equipped) are set too high relative to teeth.	Adjust gauge wheels. (See ADJUST GAUGE WHEELS in Operating the Baler section.)
	Poor pickup flotation.	Increase float spring tension. Check pivots. (See ADJUST PICKUP FLOAT SPRINGS in Service—Baler section.)
		Turn tractor drawbar over. (See ADJUST TRACTOR DRAWBAR in Preparing the Tractor section.)
	Rough terrain.	Install gauge wheels.
	If equipped, gauge wheel tire flat.	Inflate or repair as necessary. (See TIRE INFLATION PRESSURES in Preparing the Baler section.)
Pickup teeth contact starter roll.	Pickup raised too high.	Adjust upstop bracket inward so tab does not align with slot in end stripper. Repeat for other side.
Pickup teeth bent or broken	Pickup set too low.	Raise pickup. (See ADJUST PICKUP HEIGHT in Operating the Baler section.)
		Adjust gauge wheels (if equipped). (See ADJUST GAUGE WHEELS in Operating the Baler section.)
	Foreign material inside pickup strippers and broken teeth.	Remove material and replace teeth.
	Baling cornstalks.	Raise pickup. Higher tooth breakage can be expected. (See BALE CORNSTALKS in Operating the Baler section.)
	Operating twine arms with pickup in transport position.	Lower pickup. (See ADJUST PICKUP HEIGHT in Operating the Baler section.)

Continued on next page

PP98408,0000E49 -19-07FEB13-2/3

Troubleshooting

Symptom	Problem	Solution
Plugging at crop dividers.	Overcrowding ends.	Reduce crowding.
	Pickup set too low.	Raise pickup. (See ADJUST PICKUP HEIGHT in Operating the Baler section.)
	Tractor tires smashing crop into stubble.	Widen wheel spacing. (See ADJUST TRACTOR WHEELS in Preparing the Tractor section.)
	Pivoting crop divider overlaps (shingles) stationery end stripper on the wrong side.	Straighten pivoting crop dividers as required to give proper overlap (shingle). Front crop divider must be inside end stripper.
Inside of strippers worn.	Strippers bent up hitting tooth coils.	Raise pickup. (See ADJUST PICKUP HEIGHT in Operating the Baler section.)
		Check for binding at crop dividers.
		Increase float. (See ADJUST PICKUP FLOAT SPRINGS in Service—Baler section.)
		Install gauge wheels.
		Bend strippers down for clearance and check tooth coils on pickup teeth for damage.

PP98408,0000E49 -19-07FEB13-3/3

Bale Quality

Symptom	Problem	Solution
Cone shaped bale. Indicators read high and even.	Indicator sliders binding.	Remove material in track and straighten slider parts. Check for broken or missing slider springs.
	Bale shape indicators out of adjustment.	Adjust. (See ADJUST BALE SHAPE INDICATORS in Service—Baler section.)
	Broken spring on sender strap.	Replace spring.
	Outside belts are not the same length.	Belts must be the same length within 38 mm (1-1/2 in.). (See REPAIR BELTS in Service—Baler section.)
Barrel shaped bale. Indicators read high and even in green.	Bale shape indicators not adjusted properly.	Adjust. (See ADJUST BALE SHAPE INDICATORS in Service—Baler section.)
	Outside belts too short.	Check and correct belt length. (See REPAIR BELTS in Service—Baler section.)
Baler will not make dense bales.	Internal leak in belt tension or gate hydraulic cylinders.	Repair or replace as necessary. (See your John Deere dealer.)
	Internal leak in tensioning valve.	Repair or replace as necessary. (See your John Deere dealer.)
	Dirty or defective relief valve.	Clean or replace. (See your John Deere dealer.)
	Bale ends not filled tightly.	Crowd more hay in ends of baler. (See INTERPRET BALE SHAPE INDICATORS in Operating the Baler section.)
	Light crop conditions.	Make larger windrows by raking.
	Dirty hydraulic oil in tractor.	Change tractor filter and oil.
	Bale forming belts too short or too long.	Check length and correct. (See REPAIR BELTS in Service—Baler section.)
Baler will not make full size bale.	Bale size link not adjusted to maximum bale size.	Adjust to maximum bale size. (See ADJUST BALE SIZE LINK FOR MAXIMUM BALE SIZE in Service—Baler section.)

Continued on next page

PP98408,0000E4A -19-07FEB13-1/2

Troubleshooting

Symptom	Problem	Solution
	Bale forming belts are too short.	Increase belt length to recommended length. (See REPAIR BELTS in Service—Baler section.)
Ends of bale have rough appearance. (Dry hay crops)	Not filling bale ends properly.	Drive to fill bale ends. (See INTERPRET BALE SHAPE INDICATORS in Operating the Baler section.)

PP98408,0000E4A -19-07FEB13-2/2

General Baler Difficulties

Symptom	Problem	Solution
Gate opens while baling.	Tractor selector control valve (SCV) leaking oil into baler.	Repair or replace as necessary. (See your John Deere dealer.)
	Internal leak in baler hydraulic system.	Repair or replace as necessary. (See your John Deere dealer.)
	Baling oversize bales.	Check bale size alarm for proper operation (See ADJUST BALE SIZE SWITCH.)
Gate closes on belts.	PTO not engaged at rated speed when closing gate.	Operate PTO at rated speed during gate closing cycle to avoid pinching belts.
Belts do not track properly.	Lower rear gate roll out of adjustment.	Adjust roll. (See ADJUST BELT TRACKING in Service—Baler section.)
	Belts not correct length.	Correct belt length. (See REPAIR BELTS in Service—Baler section.)
	Belts not cut square when splicing.	Resplice belt. (See REPAIR BELTS in Service—Baler section.)
	Twine or mud buildup on baler rolls.	Remove buildup.
	Belts not routed correctly.	See belt routing diagram and reroute. (See INSTALL BELTS in Service—Baler section.)
	Bad bearing on roll.	Rotate all rolls by hand and inspect for loose bearings, and so on. Repair, or replace as necessary. (See your John Deere dealer.)
Diamond surfaces on bale forming belts are rubbing together.	Belt tension arm not fully down.	Lower tension arm with tractor hydraulic lever.
	Crop or mud buildup on rolls.	Clean rolls.
	Belts too short.	Repair belts. (See REPAIR BELTS in Service—Baler section.)
	Belts not routed properly.	See belt routing diagram and reroute. (See INSTALL BELTS in Service—Baler section.)
Belts slipping or not turning.	Belt tension arm not returning all the way down to tension belts.	Check to see that tension arm tightens belts.
	Gate not closed or rear gate closed but top idler arm in not down.	Hold tractor hydraulic SCV lever until belts turn.

Continued on next page

PP98408,0000E4B -19-07FEB13-1/4

Symptom	Problem	Solution
	Water dripping off belts and rollers.	Avoid baling in rain or frosted crop.
	Belts too long.	Check belts for proper length. (See REPAIR BELTS in Service—Baler section.)
	Nuts on spring rods holding tension arm up to high to tension belts.	Check for clearance between lower nut and trunnions. (See ADJUST TAKE-UP ARM COMPRESSION SPRING in Service—Baler section.)
Belts pinch between axle and lower gate roll.	Belts not turning while lowering gate.	Engage tractor PTO while lowering gate.
Starter roll wraps with hay.	Pickup drive idler not adjusted properly or pickup belt damaged.	Adjust idler or replace belt, if necessary. (See ADJUST PICKUP BELT IDLER in Service—Baler section.)
	Windrow wet on bottom.	Turn windrow. (See BALE WET HAY in Operating the Baler section.)
	Ground speed and rpm too high when starting bale.	Reduce rpm until bale core has formed.
	Gate not closed or rear gate closed but top idler arm in not down.	Hold tractor hydraulic SCV lever until belts turn.
	Windrow too large.	Decrease windrow size.
	Material pinched under pickup crop divider, tire, or gauge wheels (if equipped).	Start bale with windrow centered on pickup.
	Nicks, rough spots on starter roll.	Smooth with file.
Belt lacing failure.	Belts are not the same length.	Repair belts. (See REPAIR BELTS in Service—Baler section.)
	Improper belt splice hooks or poor quality splice.	See REPAIR BELTS in Service—Baler section.
	Extended usage causing crushed rubber and wearing hooks thin at the splice pin.	Replace lacing pins when plastic coating is worn through. (See REPAIR BELTS in Service—Baler section.)
Gate not fully closed.	Obstruction between gate and frame.	Remove obstruction.
	Hay buildup on belts in gate area in some crop conditions.	Remove buildup. Operate PTO while closing gate.
Bale sticks in chamber.	Paint on sidesheet of new baler.	Make several bales out of dry hay to polish sidesheet. Do not crowd ends so finished bale has soft ends.

Continued on next page

PP98408,0000E4B -19-07FEB13-2/4

Symptom	Problem	Solution
	Excessive sidesheet friction caused by buildup on sidesheet.	Remove buildup. Be sure that gate deflectors are installed in gate. Bale when hay is drier. Check straightness and straighten front sidesheet of baler if needed. (See your John Deere dealer.)
Damage to belt diamond pattern. Belts cut or broken.	Material buildup on compressor rack causing belts to contact starter roll.	See BALE SHORT, DRY, SLICK CROPS in Operating the Baler section.
	Foreign objects in windrow.	Operate with pickup high as possible. (See ADJUST PICKUP HEIGHT in Operating the Baler section.) Remove foreign objects from windrow.
	Bale forming belts contacting each other.	See DIAMOND SURFACES ON BALE FORMING BELTS ARE RUBBING TOGETHER in this section.
Belt edges fuzzy.	Normal break-in.	After break-in period, the fuzziness will stop. Trim loose ends.
Excessive PTO driveline shear bolt breakage.	Engaging tractor PTO too fast.	Reduce tractor rpm while engaging PTO. Engage tractor PTO slowly. Leave PTO on while ejecting bale.
	Wrong size or grade of shear bolt.	Replace with recommended shear bolt. (See REPLACE MAIN DRIVE SHEAR BOLT in Service—Baler section.)
	Hay wrapped on starter roll.	Remove hay.
Belts turn over or cross.	Closing gate with PTO engaged and strong winds prevailing and side hill operation.	Under these conditions, disengage PTO before opening gate and engage PTO just before gate closes to avoid pinching belts.
	Operating baler empty with gate up and no tension on belts for extended period.	Do not operate in this manner for extended time.
	Driving too long on one side of windrow at bale start. Hay pushes out between belts.	Center pickup on windrow at bale start.
New belts track back and forth on rolls.	Wax from belts builds up on rolls.	Use oil dry granules or talcum powder to polish rolls.

Continued on next page

PP98408,0000E4B -19-07FEB13-3/4

Troubleshooting

Symptom	Problem	Solution
	Belts not correct length.	Belts must be the same length within 38 mm (1-1/2 in.). (See REPAIR BELTS in Service—Baler section.)
	Bad fabric or construction of belt.	Repair or replace belt. (See REPAIR BELTS or REPLACE BELTS in Service—Baler section.)
	Gummy material on 3 ply belts.	Apply oil dry to backside of belts to remove gum. (See CHECKI BELT TRACKING in Service—Baler section and apply oil dry instead of talcum powder.)
Bale size alarm activated with tractor switch off.	Moisture and crop buildup near switch causes current flow.	Provide power through tractor ignition switch.
Bale size alarm is faintly audible continuously while baling.	Moisture and crop buildup near switch causes current flow.	Clean bale size switch terminal area. Apply silicon sealer to switch terminals.
Bale size alarm cannot be heard or is too loud.	Shutter on alarm can be closed or open too far.	Adjust shutter to control volume. (See ADJUST AUDIBLE ALARM VOLUME.)

PP98408,0000E4B -19-07FEB13-4/4

BaleTrak™ Pro Monitor-Controller Error Codes

Error Code	Description	Solution
E0 01	Erratic supply voltage when actuator operating	Check Battery Check Alternator Check wires and connections See Channel 019 in Service section
E0 02	Low Voltage	Check Alternator Check that wires and connections perform voltage test, see Testing Tractor Outlet Voltage, Channel 19, in Service Section
E0 03	High Voltage	Check alternator See Channel 019 in Service section
E1 02	Bale size sensor disconnected or shorted to ground	Check wires and connectors Check sensor
E1 03M	Bale size sensor shorted to power	Check wires and connectors Check sensor
E1 04	Bale size sensor below working range	Check sensor adjustment, see Channel 005 in Service section
E1 05	Bale size sensor above working range	Check sensor adjustment, see Channel 005 in Service section
E2 01	Twine actuator disconnected	Check wires and connectors
E2 02	Twine actuator faulty	Check that twine actuator using extend or retract switches Check twine actuator using bypass switch
E2 03	Timeout error during twine wrapping cycle	Check for obstruction or binding
E2 04	Twine actuator harness shorted to battery	Check wires and connectors Check twine actuator
E2 05	Twine actuator harness shorted to ground	Check wires and connectors Check sensor
E4 11	Right gate switch always open	Check right gate switch adjustment and function. See right gate switch adjustment and testing, Channel 014 in Service section
E4 12	Right gate switch always closed	Check right gate switch adjustment and function. See right gate switch adjustment and testing, Channel 014 in Service section
E4 3	Oversize switch always open	Check oversize switch adjustment and function. See oversize bale switch adjustment and testing, Channel 013 in Service section
E5 01	Open circuit, negative sensor circuit	Check sensor wires, connectors, and sensors
E5 02	Grounded circuit, negative sensor circuit	Check sensor wires, connectors, and sensors
E5 03	Shorted circuit, negative sensor circuit	Check sensor wires, connectors, and sensors
E5 11	Open circuit, positive sensor circuit	Check sensor wires, connectors, and sensors
E5 12	Grounded circuit, positive sensor circuit	Check sensor wires, connectors, and sensors
E5 13	Shorted circuit, positive sensor circuit	Check sensor wires, connectors, and sensors
E2 21	Variable core valve disconnected	Check wires and connectors Check variable core valve solenoid
E2 22	Variable core valve shorted to power	Check wires and connectors Check variable core valve solenoid
E2 23	Variable core valve shorted to ground	Check wires and connectors Check variable core valve solenoid

PP98408,0000E4C -19-07FEB13-1/1

Service—Baler

Detailed Service Information

See the technical (repair) manual for detailed service information or see your John Deere dealer.



TS224—UN—17JAN89

PP98408,0000E4D -19-07FEB13-1/1

Practice Safe Service Procedures

CAUTION: To help prevent personal injury caused by unexpected movement, be sure to service the machine on a level surface.

If machine is connected to a tractor, engage tractor parking brake and place transmission in Park, shut off engine and remove key.

If machine is detached from tractor, block wheels to prevent movement.

While working inside or around the baler with an open gate, the gate lock lever (A) must be moved to locked position. Use this safety feature anytime the gate is open. Close the gate anytime the baler must be left unattended.

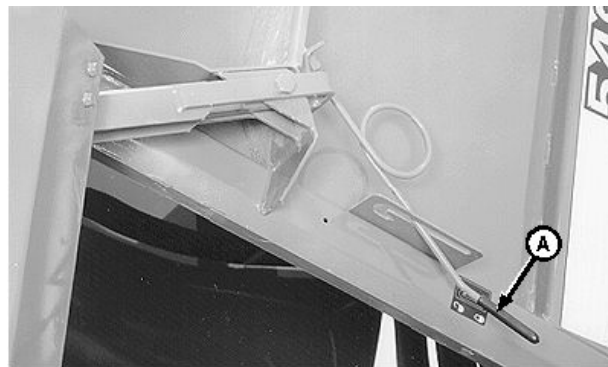
Before servicing or adjusting baler:

1. Disengage all power.
2. Shut off tractor engine.
3. Wait until all moving parts have stopped.
4. Let all components cool.

IMPORTANT: Disconnect power supply to electronic controls when servicing electrical systems or when welding on baler. Over-voltage can damage the electronic controls.



TS898—UN—21SEP89



E40185—UN—25JUN96

A—Gate Lock Lever

PP98408,0000E4E -19-07FEB13-1/1

Fire Prevention

Keep foreign material from building up on the machine near potentially hot areas, such as bearings on the ends of baler rolls and slip-clutch. Remove this buildup as part of the regular service operations and at the end of each use.

Leaf blowers, blower-vacuums, or similar devices can be used to remove loose crop buildup. Compressed air can be used to remove more difficult buildup.

Avoid high-pressure power-washing next to the bearings to prevent damaging seals.

Check bearings regularly for early signs of failure, replace as necessary. Turn off power to baler and check for unusual noises, hot parts, smells of scorching, and discolored paint or metal. Check condition of bearings. (See FIRE PREVENTION in Lubrication and Maintenance section.)

If service operations require using a welder, cutting torch or grinder on the baler, these guidelines can prove useful in preventing a fire:

1. Park baler on pavement or bare ground.
2. Remove chaff to minimize exposure of flammable material to sparks; if chaff cannot be removed, soak it thoroughly with water before starting. Protect hoses and belts from exposure to sparks, arcs, or flames.
3. Be sure a fully charged water-type fire extinguisher or other source of water is ready for immediate use.
4. Use an assistant to watch for fire while welding, cutting, or grinding.
5. After welding, cutting or grinding is finished, wait long enough to allow parts to cool down before starting to bale. Verify that no sparks or slag have started a fire before leaving service area.

PP98408,0000E4F -19-07FEB13-1/1

Keep Service Area Clean

⚠ CAUTION: Understand service procedure before doing work. Keep area clean and dry

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before performing adjustments on electrical systems or welding on machine.

On towed implements, disconnect wire harnesses from tractor before servicing electrical system components or welding on machine.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

Disconnect battery ground cable (-) before performing adjustments on electrical systems or welding on machine.



TS218 —UN—23AUG88

PP98408,0000E50 -19-07FEB13-1/1

Service Tires Safely

⚠ CAUTION: Explosive separation of a tire and rim parts can cause serious injury or death.

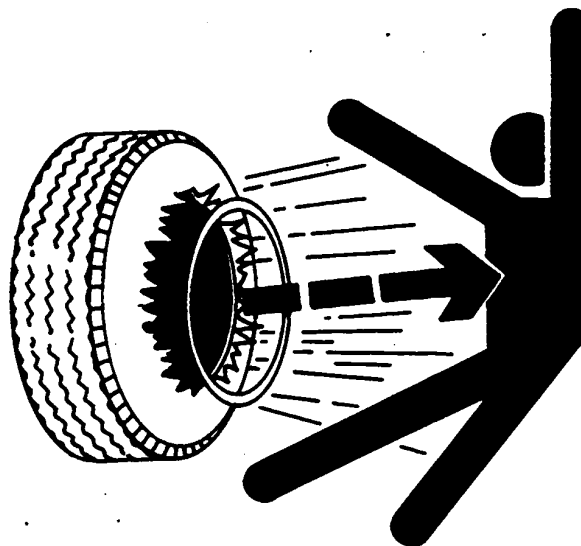
Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure.

Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



TS211 —UN—15APR13

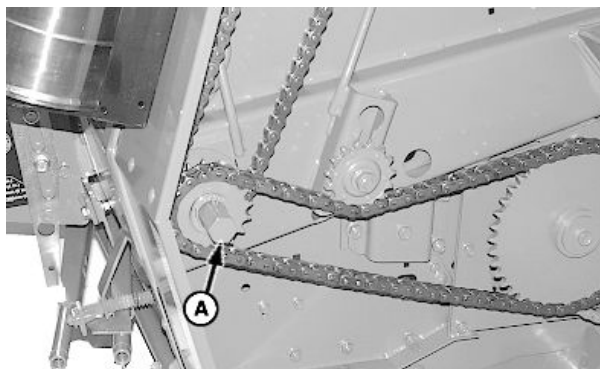
PP98408,0000E51 -19-07FEB13-1/1

Rotate Output Shaft By Hand

⚠ CAUTION: Never use any type of tool or wrench on shaft while tractor engine is running. Always remove tool from shaft as soon as you are finished using it.

If it is necessary to rotate the shaft by hand, an open-end wrench can be placed on the gear case output shaft (A).

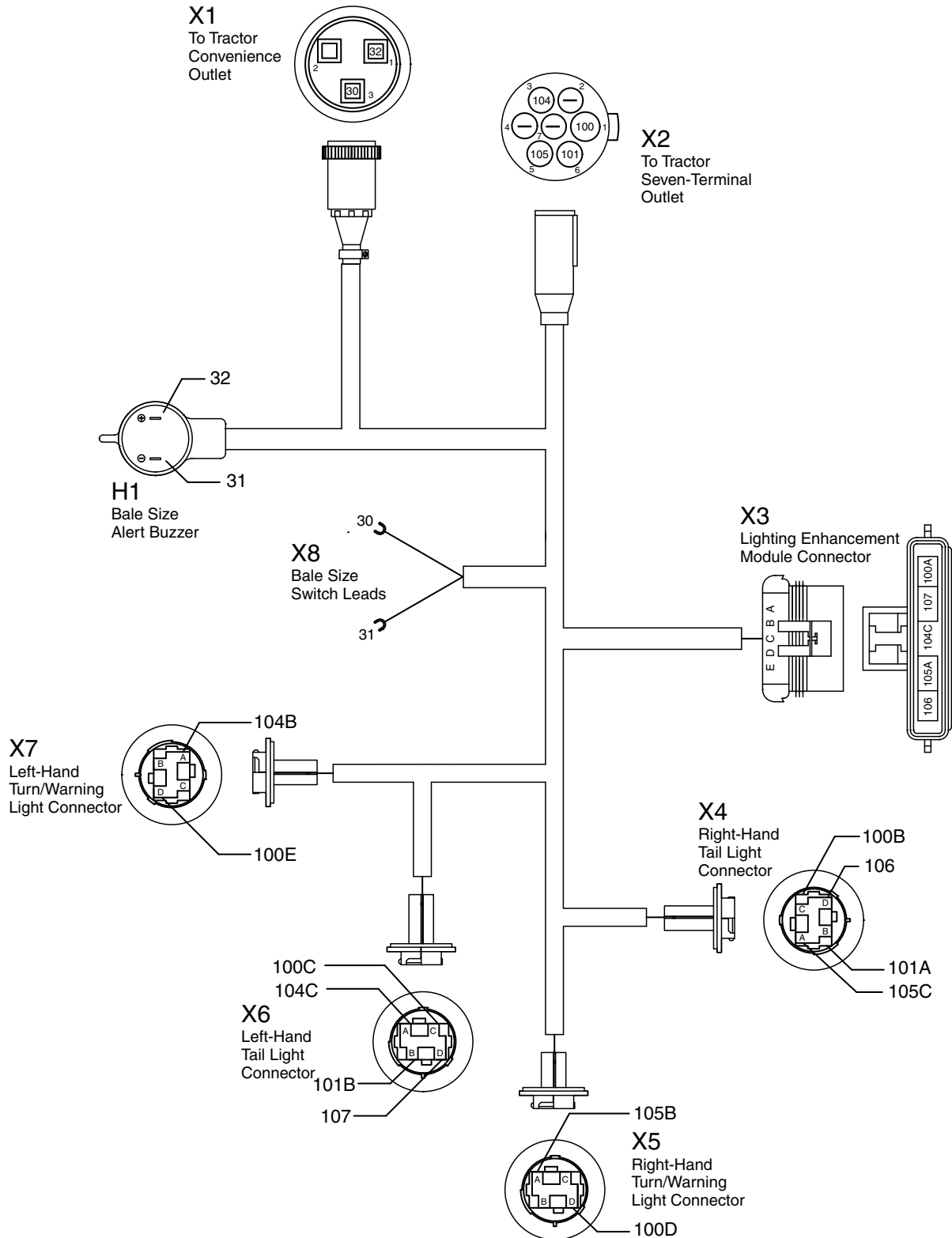
A—Gear Case Output Shaft



E54006 —UN—05JAN05

PP98408,0000E52 -19-07FEB13-1/1

Baler Wire Harness Diagram (Hydraulic Twine Wrap Only)



Continued on next page

PP98408.0000E53 -19-07FEB13-1/2

E57339 —UN—24JUN09

X1 To Tractor Convenience Outlet

Terminal	Circuit	Function	Wire Color
1	32	Power	Red
2		Open	
3	30	Ground	Black

X2 To Tractor Seven-Terminal Outlet

Terminal	Circuit	Function	Wire Color
1	100	Ground	Black
2		Open	
3	104	Left-hand Turn or Warning Light	Yellow
4		Open	
5	105	Right-hand Turn or Warning Light	Green
6	101	Tail Lights	Brown
7		Open	

X3 Lighting Enhancement Module Connector

Terminal	Circuit	Function	Wire Color
A	100A	Ground	Black
B	107	Left-hand Flasher	Orange
C	104C	Left-hand Turn or Warning Light	Yellow
D	105A	RH Turn or Warning Light	Green
E	106	Right-hand Flasher	Violet

X4 Right-Hand Tail Light Connector

Terminal	Circuit	Function	Wire Color
A	105C	Right-hand Turn or Warning Light	Green
B	101A	Right-hand Tail Lamp	Brown
C	100B	Ground	Black
D	106	Right-hand Flasher	Violet

X5 Right-Hand Turn or Warning Light Connector

Terminal	Circuit	Function	Wire Color
A	105B	Power	Green
B		Open	
C		Open	
D	100D	Ground	Black

X6 Left-Hand Tail Light Connector

Terminal	Circuit	Function	Wire Color
A	104C	Left-hand Turn or Warning Light	Yellow
B	101B	Left-hand Tail Lamp	Brown
C	100C	Ground	Black
D	107	Left-hand Flasher	Orange

X7 Left-Hand Turn or Warning Light Connector

Terminal	Circuit	Function	Wire Color
A	104B	Power	Yellow
B		Open	
C		Open	
D	100E	Ground	Black

X8 Bale Size Switch Leads

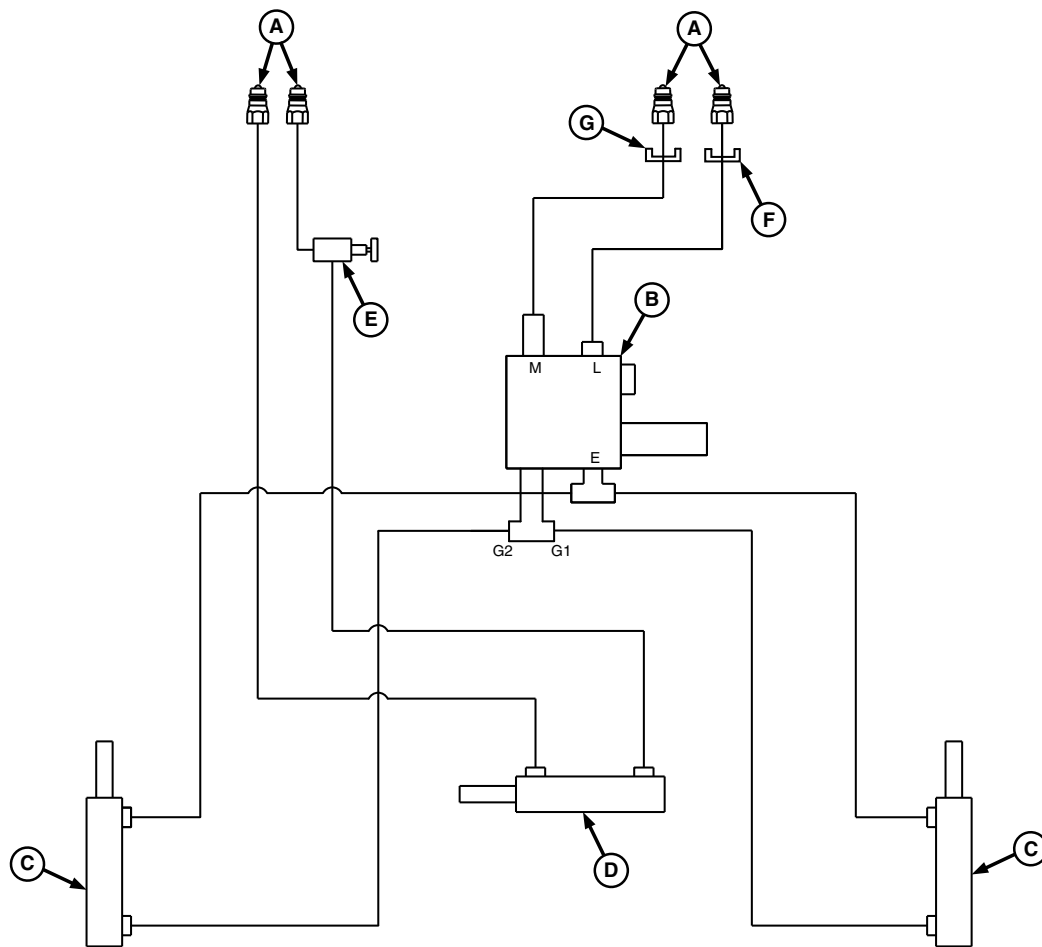
Terminal	Circuit	Function	Wire Color
—	30	Ground to Switch	Black
—	31	Ground Switch to Buzzer	Tan

H1 Bale Size Alert Buzzer

Terminal	Circuit	Function	Wire Color
—	32	Power	Red
—	31	Ground	Tan

PP98408,0000E53 -19-07FEB13-2/2

Hydraulic System Diagram



A—To Tractor SCV Ports
B—Tensioning Valve
C—Tension or Gate Cylinders

D—Twine Arm Cylinder —
Hydraulic Twine Wrap Only
E—Flow Valve — Hydraulic Twine
Wrap Only

F—Orifice (Stamped 351)
G—Orifice (Stamped 361)

An optional hydraulic bale ramp is available. Bale ramp is operated by bale tension or gate control system.

If baler is equipped with optional hydraulic pickup lift, an additional set of hydraulic outlets is needed.

Hydraulic system for the balers use the following major components:

- Tensioning valve (B)—Used to direct oil flow, check flow, and limit hydraulic pressures.
- Tension or gate (*double-acting*) cylinders (C)—Used to raise and lower the gate and to control bale tensioning.
- Twine arm (*double-acting*) cylinder (D)—Used to actuate twine. *Use with SCV controlled hydraulic twine wrapping. Not used with BaleTrak™ Pro system.*
- Flow Valve (E) — Used to regulate twine arm sweep time
- Optional pickup lift cylinder (not shown)—Used to raise and lower pickup using tractor SCV.

PP98408,0000E54 -19-07FEB13-1/1

E67364 —UN—14AUG12

Adjust Lower Drive Roll Chain

To ensure that lower strand is the tight side of the chain:

- Close gate and engage PTO a few seconds.
- Stop tractor engine and remove key.

1. Open left-hand side door.

2. To adjust chain tension:

- Loosen idler sprocket nut (A).
- Adjust idler sprocket to meet total mid-span chain deflection (B) specifications.

Specification

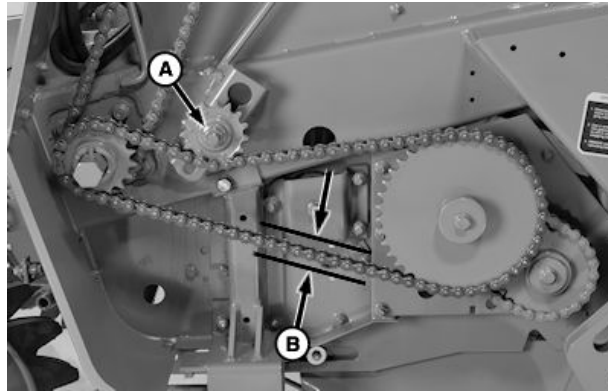
Mid-Span

Deflection—Distance..... 10—16 mm
(3/8—5/8 in.)

- When idler sprocket is within last 6 mm (1/4 in.) of slot travel, remove one link (offset 1/2 link) if chain has odd number of links or two links if even number of links.
- Tighten idler nut (A) to specification.

Specification

Idler Nut—Torque..... 163 N·m
(120 lb.-ft.)



A—Idler Sprocket Nut

B—Dimension, 10—16 mm
(3/8—5/8 in.)

E67365—UN—14AUG12

PP98408,0000E55 -19-07FEB13-1/1

Adjust Upper Roll Drive Chain

To ensure the rear strand is the tight side of chain:

- Close gate and engage PTO a few seconds.
- Stop tractor engine and remove key.

Open left-hand side door.

When idler arm stop (A) is within 3 mm (1/8 in.) of contacting drive roll bracket bolt (B), remove links from chain (C).

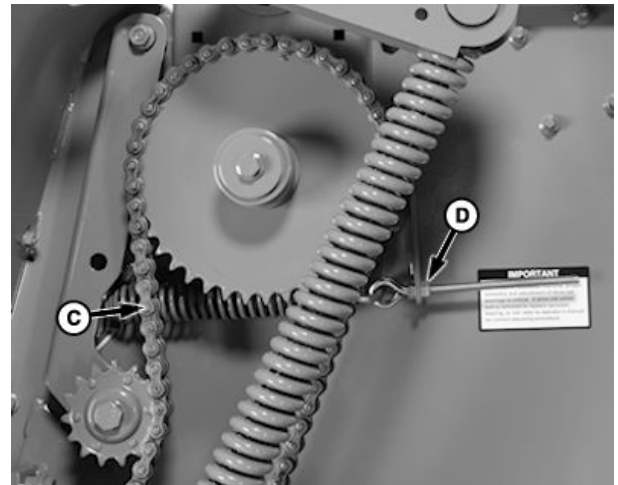
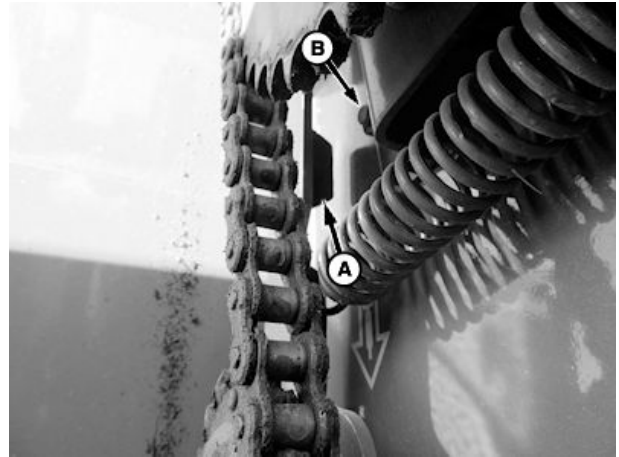
To remove chain link:

1. Loosen nut (D) to release chain tension.
2. Remove two links from chain (C).
3. Hold eyebolt from turning and tighten nut (D) against angle.
4. Check arm for contact. Repeat procedure as necessary.

Close left-hand side door.

A—Idler Arm Stop
B—Drive Roll Bracket Bolt

C—Chain
D—Nut



E67453 —UN—21AUG12

E67454 —UN—21AUG12

PP98408,0000E56 -19-07FEB13-1/1

Replace Drive Roll Bearings or Left-Hand Sprockets



Left-Hand Side Shown

E54511 —UN—15MAY06



Right-Hand Side Shown

E54507 —UN—04MAY06

IMPORTANT: 1.5 and 3.0 mm thick washers at lower left-hand drive roll position only, must be machined and hardened to keep shaft end center bolt tight.

NOTE: When replacing drive sprocket, the procedure for installing center bolt and washers in left-hand drive roll must be followed to avoid loosening of center bolt.

NOTE: Make note of all washers and spacers when removing drive roll bearing. Replace with new washers to ensure proper joint. The exact number of washers and spacers must be installed in the same order and in same location as removed when drive roll bearing is installed.

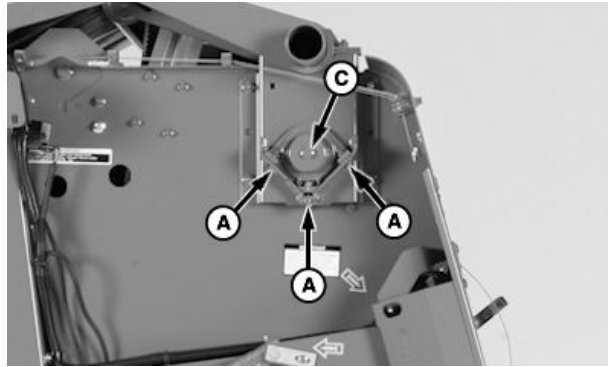
PP98408,0000E57 -19-07FEB13-1/1

Install Left-Hand Upper Drive Roll Bearing

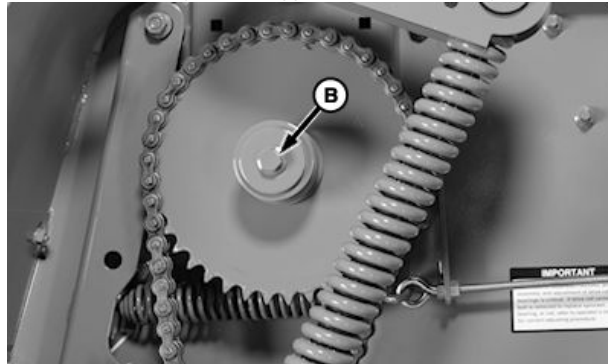
IMPORTANT: To prevent bearing failure, always loosen the three **RIGHT-HAND SIDE** flange mounting bolts (A) before tightening left-hand side (drive side) center bolt (B). Adjust and tighten right-hand side mounting bolts per this instruction **AFTER** left-hand side is tightened.

1. Right-hand side of baler: Loosen three flange mounting cap screws (A) and cap screw (C).
2. Loosen and remove cap screw (B) on left-hand side of baler.
3. Remove drive chain.
4. Carefully remove washers and sprocket, noting the position and number of washers removed at each location.
5. Remove flange nuts.
6. Remove and discard bearing.

A—Cap Screw, M8 (3 used) C—Cap Screw, M12 x 80 mm
B—Cap Screw, M12 (Drive Side)



Right-hand Upper Drive Roll Bearing



Left-hand Upper Drive Roll Bearing

PP98408,0000E58 -19-07FEB13-1/8

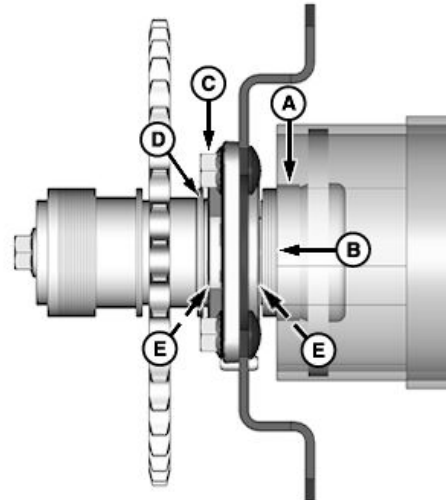
7. Install chamfered spacer (A) (chamfer toward roll), washers (B), washer (E), and bearing on shaft, snug four flange nuts (C), and pull roll firmly to left-hand side of baler.
8. Center roll side-to-side:
 - Center roll side-to-side.
 - Measure from outer rubber strip to side sheet on both sides to check roll centering.
 - The difference between the two dimensions must be 6 mm (0.24 in.) or less.
 - If needed, add or remove washers between roll and left-hand bearing to center roll.
 - Washer (E) must be on both sides of bearing.
9. Tighten flange nuts (C) to specifications.

Specification

Flange Nut and
Bolt—Torque.....95 N·m
(70 lb.-ft.)

NOTE: Install sprocket with larger hub pointing toward roll.

10. Install sprocket and two washers (D) and one washer (E). Be sure washer (E) is next to bearing on both sides.



A—Chamfered Spacer
B—Washers (5 Used, As
Required)
C—Flanged Nut

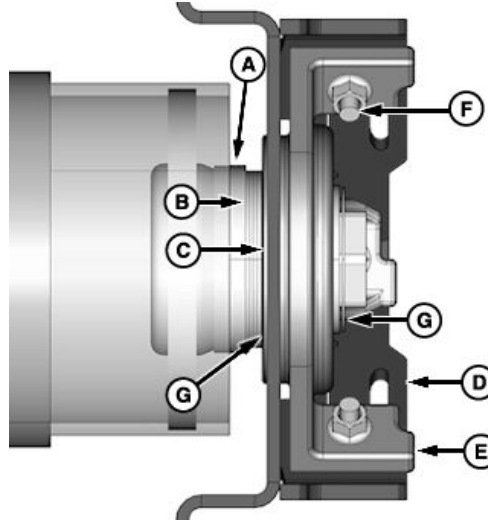
D—Washers (2 Used)
E—Washers, 45.2 x 57.2 x .9
mm (Each Side of Bearing)

Continued on next page

PP98408,0000E58 -19-07FEB13-2/8

18. **Right-hand Side of Baler:** Make sure that there are enough washers (B) between end of roll tube and bearing to locate bearing cast housing correctly. Remove three M8 cap screws (F) to be installed later.
19. Hold bearing (C) tight against washers. Edge of mounting strap (D) must align within the step of cast housing (E) in three locations.
20. Washers (G) must be next to bearing on both sides.

A—Spacer
 B—Thin Washer (4 Used, As Required)
 C—Bearing
 D—Mounting Strap
 E—Cast Housing
 F—Cap Screw, M8 (3 used)
 G—Washer, 45.2 x 57.2 x .9 mm (2 used) (Each Side of Bearing)



E67519 —UN—24AUG12

PP98408,0000E58 -19-07FEB13-5/8

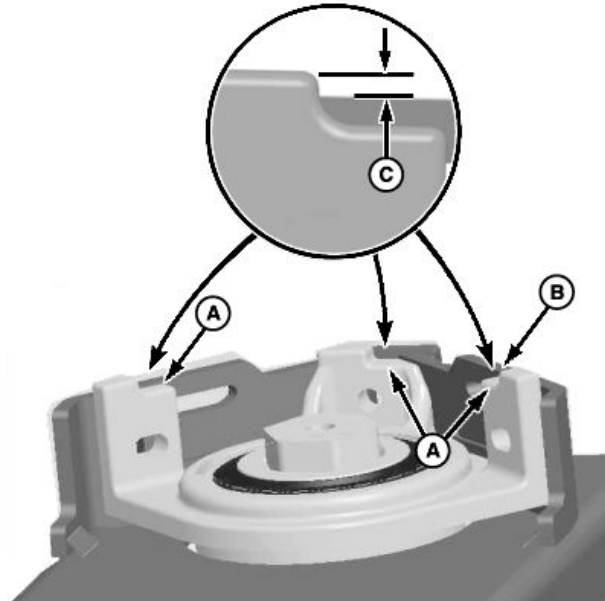
21. Add or subtract washers behind bearing, if necessary, to locate cast step (A) correctly with mounting edge (B) in all three locations. Set mounting edge to specification (C).

Specification

Cast Step—Distance.....1.5—4.5 mm
 (0.059—0.177 in.)

22. Washers (G) must be on each side of bearing.

A—Cast Step
 B—Mounting Strap Edge
 C—Dimension, 1.5—4.5 mm
 (0.059—0.177 in.)



E54508 —UN—15MAY06

Continued on next page

PP98408,0000E58 -19-07FEB13-6/8

23. Install three flange mounting cap screws (A) and nuts (B). Only tighten cap screws enough to get a light between cast flange and mounting strap. Some rotation (a light tap) of the cast flange around the outer race can be required to align flange correctly at all three locations. Do not tighten cap screws at this time.

24. Check to see if roll is centered in hole in sidesheet.

25. If necessary, loosen cap screws (A) and flange nuts (B) to insert shims (F) between bearing mounting flange and cast bearing flange to center roll in holes in sidesheet.

26. Do not tighten cap screws at this time.

NOTE: Rolls must rotate freely. Check roll clearance through hole in sidesheet.

If roll is equipped with wiper pins, it is permissible to grind drive roll wiper pins to 3 mm (0.12 in.) minimum height.

27. Spin upper drive roll to verify clearance with sidesheet hole according to specifications. Add or remove shims (F) or move right-hand bearing plate, or grind drive roll wiper pins, if equipped.

Specification

Rollers-to-

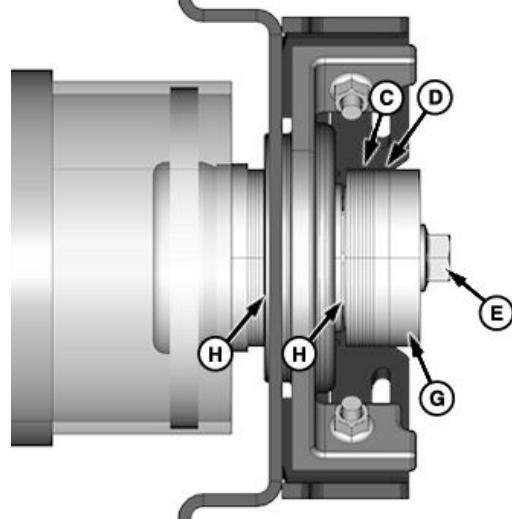
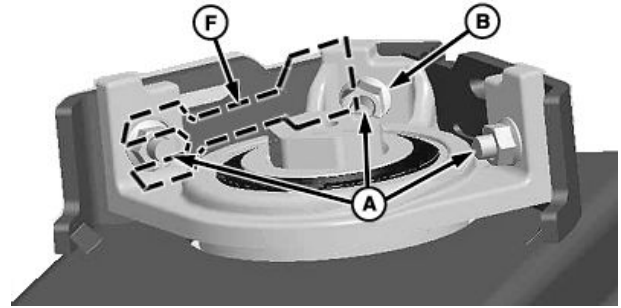
Sidesheet—Radial

Clearance..... 1 mm
(0.04 in.)

IMPORTANT: To avoid center cap screw from loosening or hex knock, keep washers (C and D) centered on shaft.

28. Install one washer (H) and washers (C) between bearing and end of hex shaft, so washers are flush with end of shaft, and add one more washer. Add large thick ID washer (D). Washer (H) must be next to bearing.

29. Install cap screw (E) and end washer (G).



A—Flanged Cap Screws (3 used)
B—Flanged Nut (3 used)
C—Washers
D—Large (Thick Washer)

E—Cap Screw, M12 x 80 mm
F—Shims
G—Washer, 13 x 70 x 12 mm
H—Washer, 45.2 x 57.2 x .9 mm

Continued on next page

PP98408,0000E58 -19-07FEB13-7/8

E57567 —UN—09JUL09

E67520 —UN—24AUG12

IMPORTANT: To prevent bearing failure, always tighten cap screw (C) before tightening flange mounting cap screws (A and B).

NOTE: Ensure that washers do not rotate by hand. Joint must be clamped to eliminate hex knock.

30. Tighten cap screw (C) to specification.

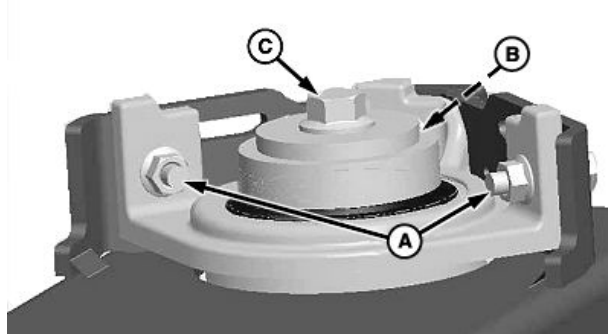
Specification

M12 Cap
Screw—Torque.....140 N·m
(103 lb.-ft.)

31. Tighten middle flange mounting cap screw (B) first. Tighten remaining two flange mounting cap screws (A). Tighten all three cap screws to specification.

Specification

Cap Screw—Torque.....40 N·m
(30 lb.-ft.)



A—Cap Screw, M8 (2 used)
B—Cap Screw, M8

C—Cap Screw, M12 x 80 mm

32. Check position of mounting edge to cast step in three locations. If mounting edge does not align in the cast sets, repeat Steps 19—31.

33. Reinstall and adjust drive chains.

PP98408,0000E58 -19-07FEB13-8/8

E57566 —UN—09JUL09

Replace Left-Hand Lower Drive Roll Bearing

CAUTION: To prevent bearing failure, always loosen the three right-hand side flange mounting bolts (A) before tightening left-hand side (drive side) center cap screw (B).

1. Right-hand Side of Baler:

- Loosen three flange mounting cap screws (A) and cap screw (C).
- Remove pickup drive roll belt (D).
- Finger tighten cap screws (A) to allow side-to-side movement of cast housing and position roll to check roll wiper-to-sidesheet clearance.

2. **Left-hand Side of Baler:** Remove crop buildup around shaft and roll area.

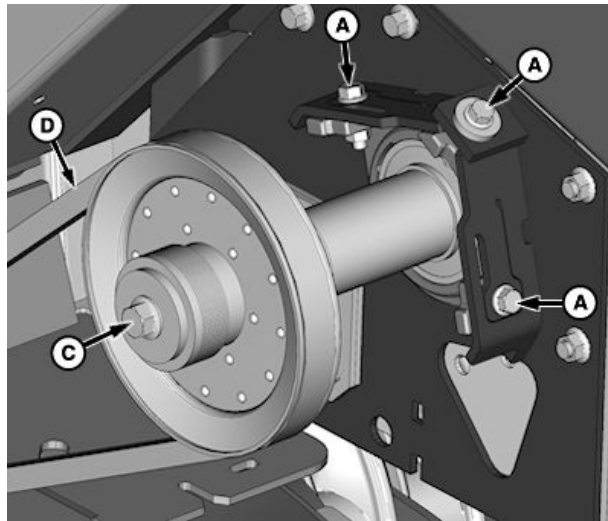
3. Remove cap screw (B) and sprocket, noting position and quantity of washers at each location.

4. Remove lower drive roll chain (E) and starter roll chain (F).

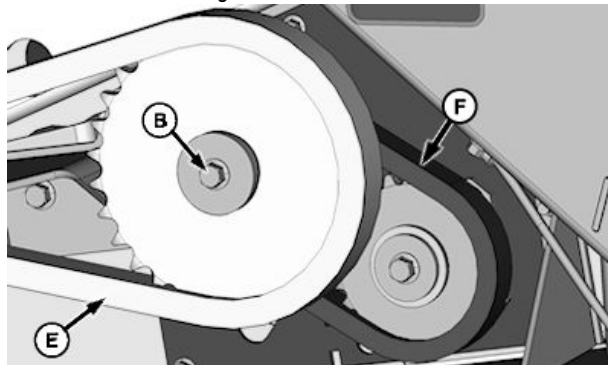
5. Remove four cap screws through bearing housing and remove bearing.

A—Flanged Mounting Bolts (3 used)
B—Cap Screw, M12 x 80 mm
C—Cap Screw, M12 x 80 mm

D—Pickup Drive Roll Belt
E—Lower Drive Roll Chain
F—Starter Roll Chain



Right-Hand Lower Drive Roll



Left-Hand Lower Drive Roll

Continued on next page

PP98408,0000E59 -19-07FEB13-1/12

E67549 —UN—24AUG12

E67522 —UN—24AUG12

6. Wire brush roll shaft.

IMPORTANT: Locate housing with UP stamp (A) toward top of baler.

Clean washers and replace if necessary.

A—Stamp (UP)

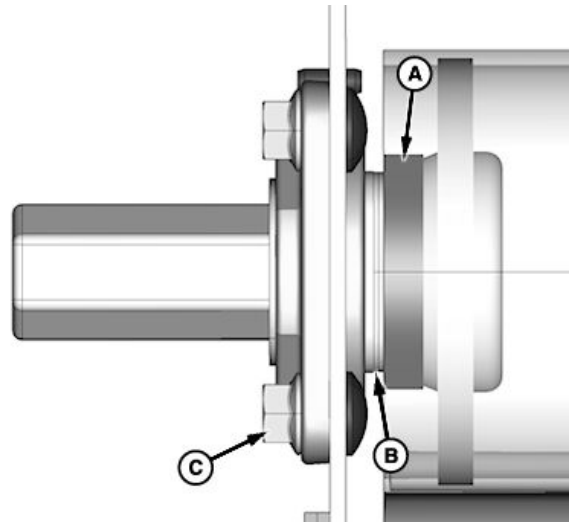


E54919 —UN—30NOV06

PP98408,0000E59 -19-07FEB13-2/12

IMPORTANT: All 1.5 and 3.0 mm (0.06 and 0.12 in.) thick washers must be machined and hardened on left-hand lower drive roll position to avoid center bolt loosening or hex knock.

7. Install chamfered spacer (A) (chamfer toward roll), hardened washers (B), and bearing (with UP stamp toward top of baler) on shaft, snug four flange nuts (C), and pull roll firmly to left-hand side of baler.
8. Center roll side-to-side:
 - Center roll side-to-side.
 - Measure from outer rubber strip to sidesheet on both sides to check roll centering.
 - The difference between the two dimensions must be 6 mm (0.24 in.) or less.
 - If needed, add or remove washers between roll and left-hand bearing to center roll.
9. Tighten flange nuts (C) to specifications.



E67502 —UN—22AUG12

	Specification
Flange Nut and Bolt—Torque.....	95 N·m (70 lb.-ft.)

A—Chamfered Spacer
B—Hardened Washers (1.5 or 3 mm, As Required)

C—Flange Nuts (4 used)

Continued on next page

PP98408,0000E59 -19-07FEB13-3/12

NOTE: Permissible to grind drive roll wiper pins to 3 mm (0.12 in.) height.

10. Wiper pins on lower drive roll (A) and starter roll bars (B) must clear sidesheet holes according to specifications.

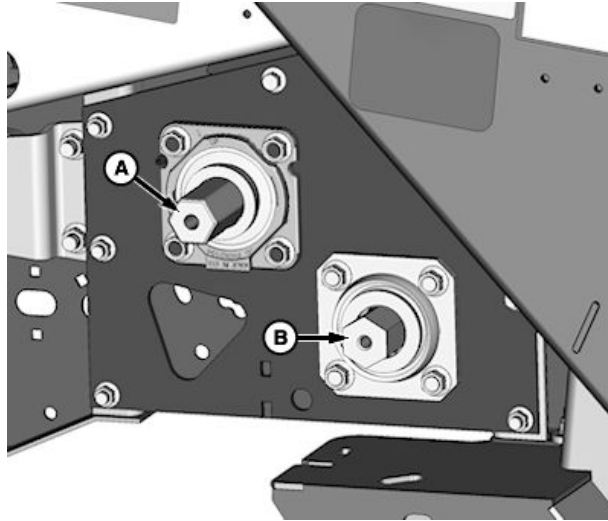
If roll wiper pin contacts sidesheet hole, reposition bearing housing or bearing plate or grind wiper pin.

Specification

Roll-to-Sidesheet—Radial Clearance..... 1 mm
(0.04 in.)

A—Lower Drive Roll

B—Starter Roll



E67550—UN—24AUG12

PP98408,0000E59 -19-07FEB13-4/12

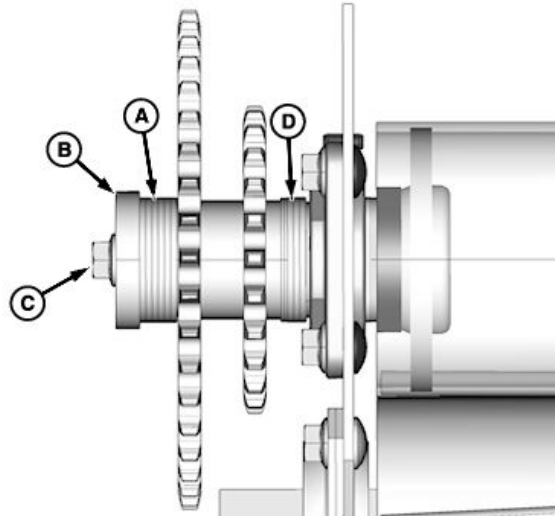
11. Install sprocket and hardened washers (D).
12. Tap right-hand side of roll to remove all end play to left-hand side of baler.
13. Hold lower roll shaft to left-hand side and push lower drive roll sprocket and washers inward.
14. Using a straight edge, check alignment between gear case output shaft outer sprocket and lower drive sprocket. Add or remove machined and hardened washers between bearing and sprocket on lower drive roll shaft, as needed.
15. Add or remove regular washers between bearing and sprocket on starter roll shaft, as needed, to align starter roll sprocket with lower drive roll sprocket.

IMPORTANT: To avoid hex knock and cap screw (C) from loosening, keep hardened washers (A) centered about shaft. Make sure hardened washers (A) are not clamped between end of shaft and thick washer (B).

16. Install hardened washers (A) between sprocket and end of shaft so washers extend 3—6 mm (0.12—0.24 in.) past end of shaft.
17. Install cap screw (C) with thick washer (B). Tighten cap screw (C) to specification.

Specification

Cap Screw—Torque..... 140 N·m
(103 lb.-ft.)



E67504—UN—23AUG12

A—Hardened Washers (3 mm, As Required)

B—Thick Washer, 13 x 70 x 12 mm

C—Cap Screw, M12 x 80 mm

D—Hardened Washers (1.5 or 3 mm, As Required)

18. Ensure that washers do not rotate by hand. Joint must be clamped to eliminate hex knock.

Continued on next page

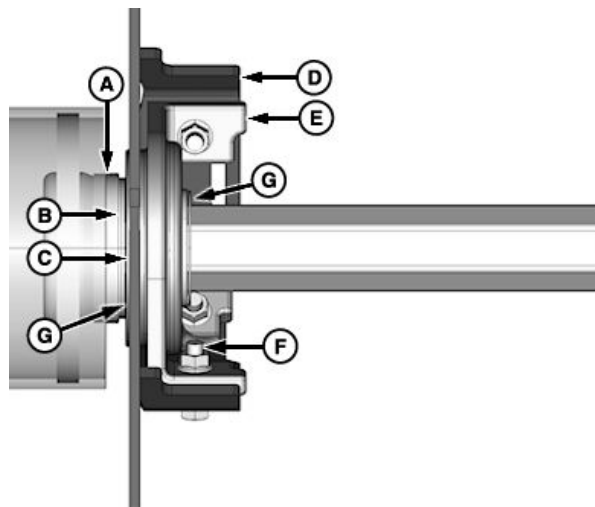
PP98408,0000E59 -19-07FEB13-5/12

19. **Right-hand Side of Baler:** Make sure that there are enough washers (B) between end of roll tube and bearing to locate bearing cast housing correctly. Remove three M8 cap screws (F) to be installed later. Washer (G) must be next to bearing on both sides.

20. Hold bearing (C) tight against washers. Edge of mounting strap (D) must align with the step of cast housing (E) in three locations.

A—Spacer
B—Thin Washer (2 Used, As Required)
C—Bearing
D—Mounting Strap

E—Cast Housing
F—Cap Screw, M8 (3 used)
G—Washers, 45.2 x 57.2 x .9 mm (2 used) (Each Side of Bearing)



Continued on next page

PP98408,0000E59 -19-07FEB13-6/12

E67545—UN—24AUG12

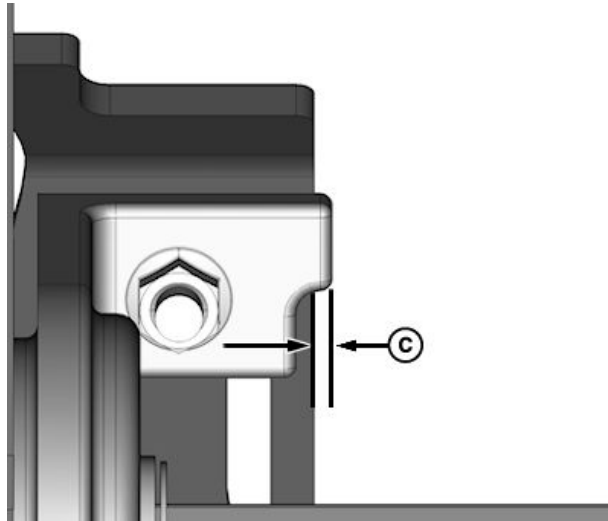
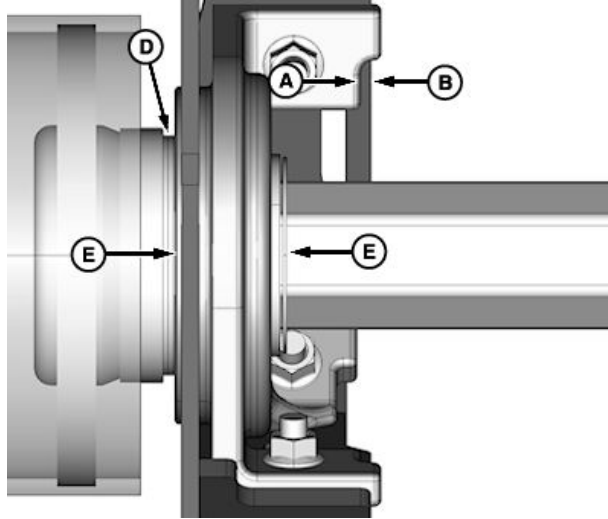
21. If necessary, add or subtract washers (D) behind bearing to locate cast step (A) correctly with mounting edge (B) in all three locations. Set mounting edge to specification (C).

Specification

Cast Step—Distance..... 1.5—4.5 mm
(0.059—0.177 in.)

Be sure there is one washer (E) on each side of bearing.

A—Cast Step	D—Washers, 1.5 mm (0.060 in.)
B—Mounting Strap Edge	(2 Used, As Required)
C—Dimension, 1.5—4.5 mm	E—Washers, 45.2 x 57.2 x .9
(0.059—0.177 in.)	mm (2 used) (Each Side of Bearing)



E61864—UN—24AUG12

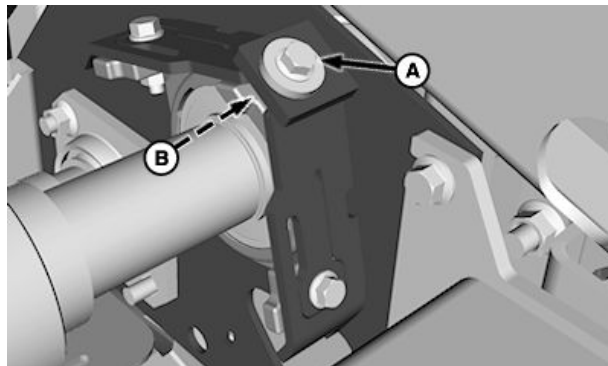
E61865—UN—22OCT12

PP98408,0000E59 -19-07FEB13-7/12

22. Install three flange mounting cap screws (A) and nuts (B). Only tighten cap screws enough to get a light contact between cast flange and mounting strap. Some rotation (a light tap) of the cast flange around the outer race can be required to align flange correctly at all three locations. Do not tighten cap screws at this time.

23. Check to see if roll is centered in hole in sidesheet.

A—Flanged Cap Screws (3 used)	B—Flange Nut (3 used)



E67383—UN—21AUG12

Continued on next page

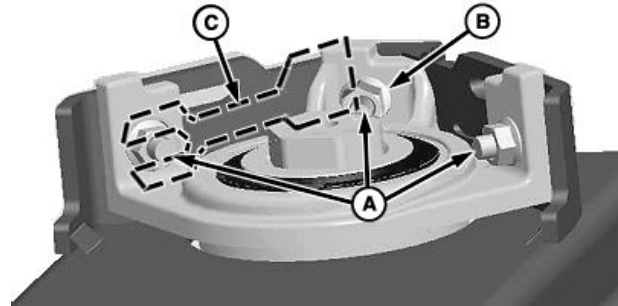
PP98408,0000E59 -19-07FEB13-8/12

24. If necessary, loosen cap screws (A) and flange nuts (B) to insert shims (C) between bearing mounting flange and the cast bearing flange to center rolls in holes in sidesheet.
25. Only retighten cap screws enough to get a light contact between cast flange and mounting strap. Some rotation (a light tap) of the cast flange around the outer race can be required to align flange correctly at all three locations. Do not tighten cap screws at this time.

NOTE: Rolls must rotate freely. Check roll clearance through hole in sidesheet.

If roll is equipped with wiper pins, it is permissible to grind drive roll wiper pins to 3 mm (0.12 in.) minimum height.

26. Spin upper drive roll to verify clearance with sidesheet hole according to specifications. Add or remove shims (C) or move right-hand bearing plate, or grind drive roll wiper pins, if equipped.



A—Cap Screws
B—Flange Nuts

C—Shims

Specification

Rollers-to-Sidesheet—Clearance..... 1 mm
(0.04 in.)

PP98408,0000E59 -19-07FEB13-9/12

NOTE: Be sure there is no clearance between components.

27. Install washers, hollow sleeve, washers, and sheave in same position and quantity removed. Then install washers (A) between sheave and washer (B) as specified here:

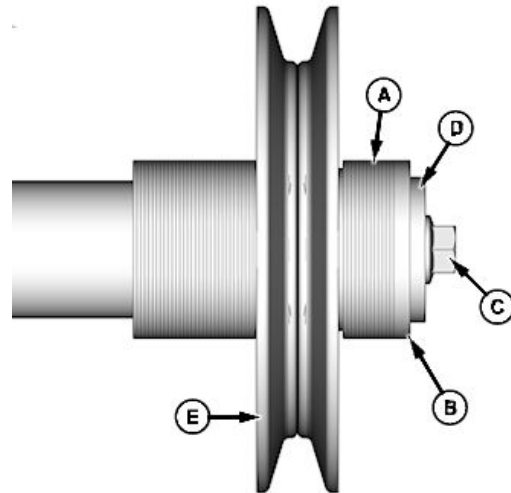
Install 1.5 mm (0.060 in.) washers (A) against the outside of sheave until flush with end of shaft, then add one more 6 mm (0.25 in.) washer (B).

IMPORTANT: To avoid center cap screw from loosening or hex knock, keep washer (A and B) centered on shaft.

28. Install cap screw (C) and end washer (D).

A—Washers
B—Washer, 6 mm (0.25 in.)
C—Cap Screw, M12 x 80 mm

D—End Washer, 13 x 57 x 6 mm
E—Hub of Sheave



Regular Pickup Shown

Continued on next page

PP98408,0000E59 -19-07FEB13-10/12

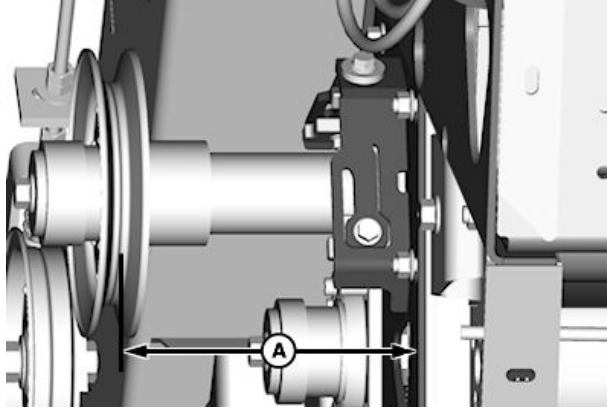
29. Check dimensions (A) between face of bearing plate and center of sheave groove.

Specification

Dimension
(A)—Distance..... 190 mm
(7.48 in.)

30. If dimension measured in Step 29 cannot be obtained within ± 1.5 mm (0.060 in.), add or remove washers inside the hub of the sheave to obtain dimension.
31. If washers are added or removed inside the sheave, repeat Steps 27 and 28 to clamp components securely in place on the shaft.

A—Dimension, 190 mm (7.48 in.)



E67553 — UN—27AUG12

PP98408,0000E59 -19-07FEB13-11/12

IMPORTANT: To prevent bearing failure, always tighten cap screw (C) before tightening flange mounting cap screws (A and B).

NOTE: Ensure that washers do not rotate by hand. Joint must be clamped to eliminate hex knock.

32. Tighten cap screw (C) to specification.

Specification

M12 Cap
Screw—Torque..... 140 N·m
(103 lb.-ft.)

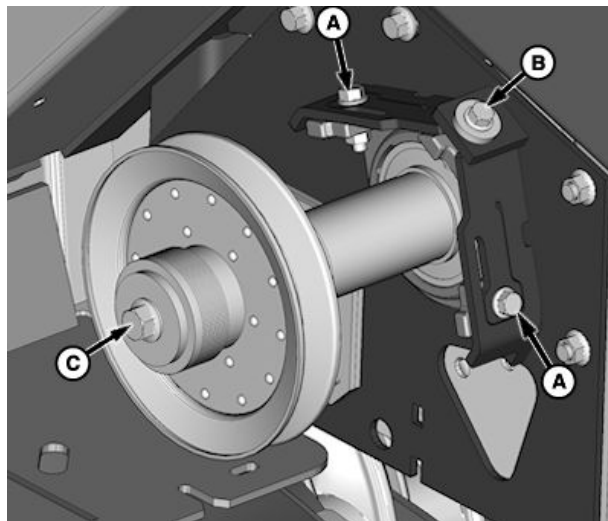
33. Tighten middle flange mounting cap screw (B) first. Tighten remaining two flange mounting cap screws (A). Tighten all three cap screws to specification.

Specification

Cap Screw—Torque..... 40 N·m
(30 lb.-ft.)

34. Check position of mounting edge to cast step in three locations. If mounting edge does not align in the cast sets, repeat Steps 19—26.

35. Reinstall all chains or belts and adjust properly.



A—Cap Screw, M8
B—Middle Cap Screw, M8

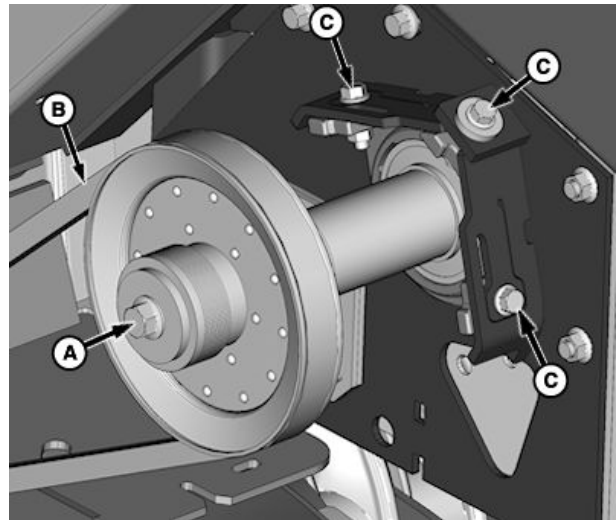
C—Cap Screw, M12 x 80 mm

E67551 — UN—24AUG12

PP98408,0000E59 -19-07FEB13-12/12

Replace Right-Hand Lower Drive Roll Bearing

1. Loosen cap screw (A).
2. Remove drive belt (B).
3. Carefully remove cap screw (A) and washers outside sprocket or sheave taking note of quantity and position of washers.
4. Remove sheave.
5. Remove remaining washers, hollow sleeve, and washers next to bearing again noting quantity and position of all the parts.
6. Loosen and remove cap screws (C) from bearing and mounting flange. Note position and quantity of any shims between cast bearing flange and mounting flange.
7. Remove old bearing.
8. Install new bearing with cast bearing flange.



A—Cap Screw
B—Drive Belt

C—Cap Screw (3 used)

Continued on next page

PP98408,0000E5A -19-07FEB13-1/7

E67552 —UN—24AUG12

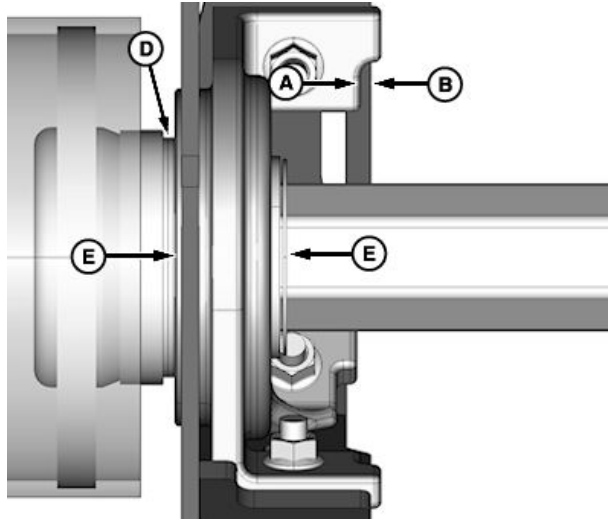
9. If necessary, add or subtract washers (D) behind bearing to locate cast step (A) correctly with mounting edge (B) in all three locations. Set mounting edge to specification (C).

Specification

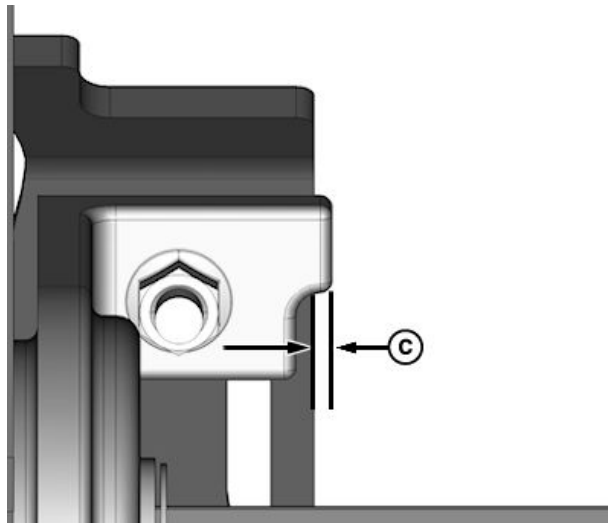
Cast Step—Distance..... 1.5—4.5 mm
(0.059—0.177 in.)

Be sure there is one washer (E) on each side of bearing.

A—Cast Step	D—Washers, 1.5 mm (0.060 in.)
B—Mounting Strap Edge	(2 Used, As Required)
C—Dimension, 1.5—4.5 mm	E—Washers, 45.2 x 57.2 x .9
(0.059—0.177 in.)	mm (2 used) (Each Side of
	Bearing)



E61864—UN—24AUG12



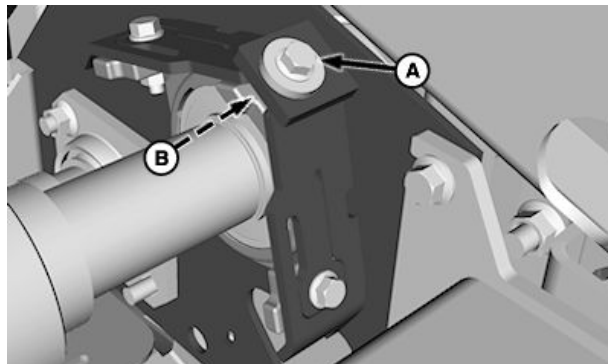
E61865—UN—22OCT12

PP98408,0000E5A -19-07FEB13-2/7

10. Install three flange mounting cap screws (A) and nuts (B). Only tighten cap screws enough to get a light contact between cast flange and mounting strap. Some rotation (a light tap) of the cast flange around the outer race can be required to align flange correctly at all three locations. Do not tighten cap screws at this time.

11. Check to see if roll is centered in hole in sidesheet.

A—Flanged Cap Screws (3	B—Flange Nut (3 used)
used)	



E67383—UN—21AUG12

Continued on next page

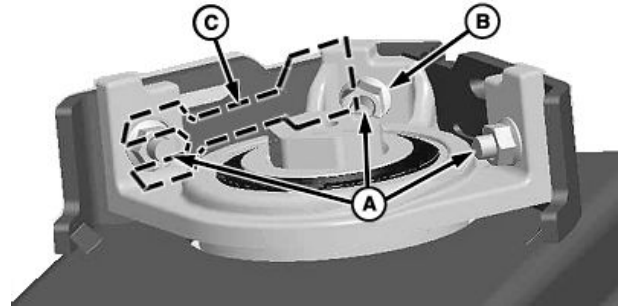
PP98408,0000E5A -19-07FEB13-3/7

12. If necessary, loosen cap screws (A) and flange nuts (B) to insert shims (C) between bearing mounting flange and the cast bearing flange to center rolls in holes in sidesheet.
13. Only retighten cap screws enough to get a light contact between cast flange and mounting strap. Some rotation (a light tap) of the cast flange around the outer race can be required to align flange correctly at all three locations. Do not tighten cap screws at this time.

NOTE: Rolls must rotate freely. Check roll clearance through hole in sidesheet.

If roll is equipped with wiper pins, it is permissible to grind drive roll wiper pins to 3 mm (0.12 in.) minimum height.

14. Spin upper drive roll to verify clearance with sidesheet hole according to specifications. Add or remove shims (C) or move right-hand bearing plate, or grind drive roll wiper pins, if equipped.



A—Cap Screws
B—Flange Nuts

C—Shims

Specification

Rollers-to-Sidesheet—Clearance..... 1 mm
(0.04 in.)

PP98408,0000E5A -19-07FEB13-4/7

E67505 —UN—23AUG12

NOTE: Be sure there is no clearance between components.

15. Install washers, hollow sleeve, washers, and sheave in same position and quantity removed. Then install washers or spacer (A) between clutch or sheave and washer (B) as specified here:

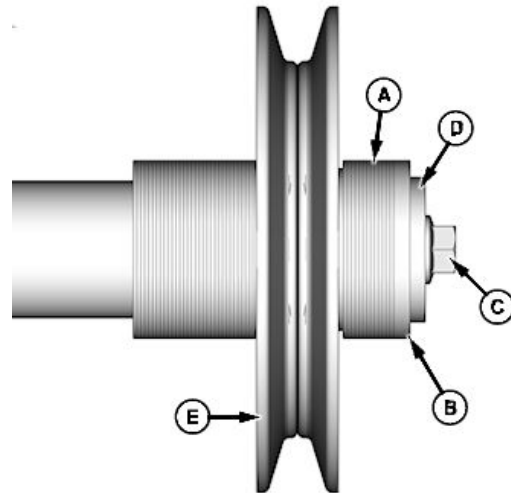
Install 1.5 mm (0.060 in.) washers (A) against the outside of sheave until flush with end of shaft, then add one 6 mm (0.25 in.) washer (B).

IMPORTANT: To avoid center cap screw from loosening or hex knock, keep washer (A and B) centered on shaft.

16. Install cap screw (C) and end washer (D).

A—Washers
B—Washer, 6 mm (0.25 in.)
C—Cap Screw, M12 x 80 mm

D—End Washer, 13 x 57 x 6 mm
E—Hub of Sheave



Regular Pickup Shown

Continued on next page

PP98408,0000E5A -19-07FEB13-5/7

E67524 —UN—24AUG12

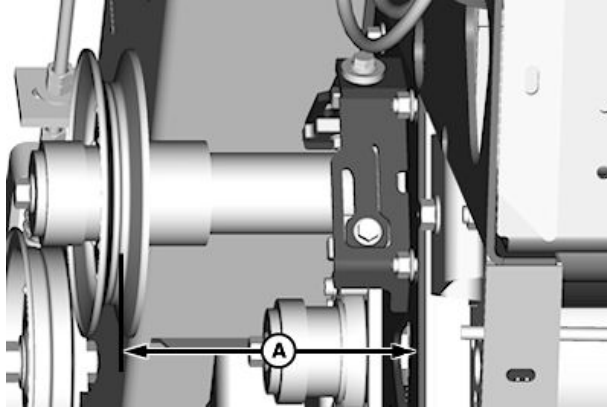
17. Check dimensions (A) between face of bearing plate and center of sheave groove.

Specification

Dimension
(A)—Distance..... 190 mm
(7.48 in.)

18. If dimension measured in Step 17 cannot be obtained within ± 1.5 mm (0.060 in.), add or remove washers inside hub of sheave to obtain dimension.
19. If washers are added or removed inside hub of sheave, repeat Steps 15 and 16 to clamp components securely in place on the shaft.

A—Dimension, 190 mm (7.48 in.)



E67553 — UN—27AUG12

PP98408,0000E5A -19-07FEB13-6/7

IMPORTANT: To prevent bearing failure, always tighten M12 cap screw (C) before tightening flange mounting M8 cap screws (A—B).

NOTE: Ensure that washers do not rotate by hand. Joint must be clamped to eliminate hex knock.

20. Tighten cap screw (C) to specification.

Specification

M12 Cap
Screw—Torque..... 140 N·m
(103 lb.-ft.)

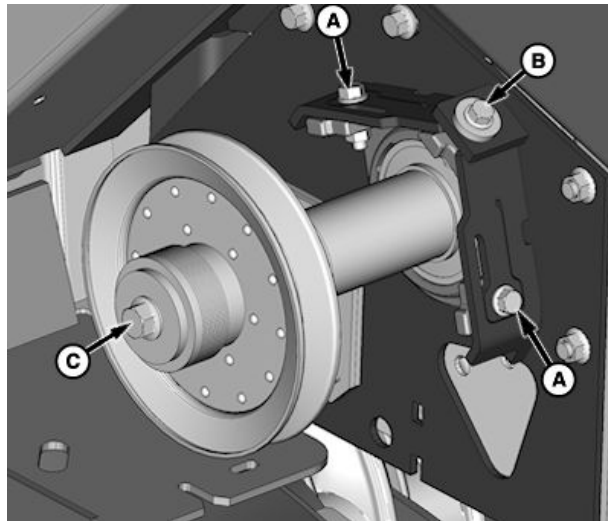
21. Tighten middle flange mounting cap screw (B) first. Tighten remaining two flange mounting cap screws (A). Tighten all three cap screws to specification.

Specification

Cap Screw—Torque..... 40 N·m
(30 lb.-ft.)

22. Check position of mounting edge to cast step in three locations. If mounting edge does not align in the cast sets, repeat Steps 9—21.

23. Reinstall all chains or belts and adjust properly.



**A—Cap Screw, M8
B—Middle Cap Screw, M8**

C—Cap Screw, M12 x 80 mm

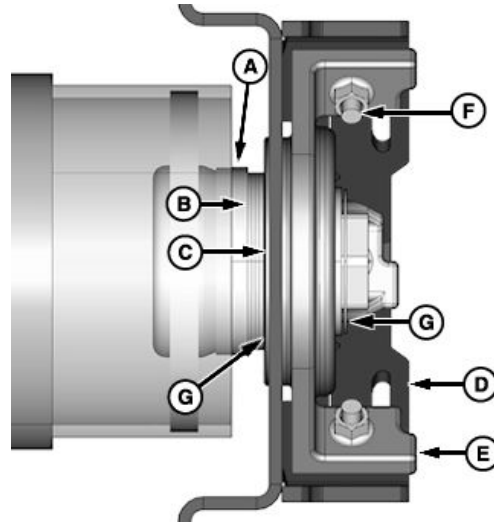
E67551 — UN—24AUG12

PP98408,0000E5A -19-07FEB13-7/7

Install Upper Right-Hand Drive Roll Bearing

1. Install spacer (A) with chamfer pointing towards center of baler.
2. Make sure that there are enough washers (B) between end of roll tube and bearing to locate bearing cast housing correctly. Remove three M8 cap screws (F) to be installed later. Washer (G) must be next to bearing on both sides.
3. Hold bearing (C) tight against washers. Edge of mounting strap (D) must align with the step of cast housing (E) in three locations.

A—Spacer	E—Cast Housing
B—Thin Washer (4 Used, As Required)	F—Cap Screw, M8 (3 used)
C—Bearing	G—Washers, 45.2 x 57.2 x .9 mm (2 used) (Each Side of Bearing)
D—Mounting Strap	



PP98408,0000E5B -19-07FEB13-1/4

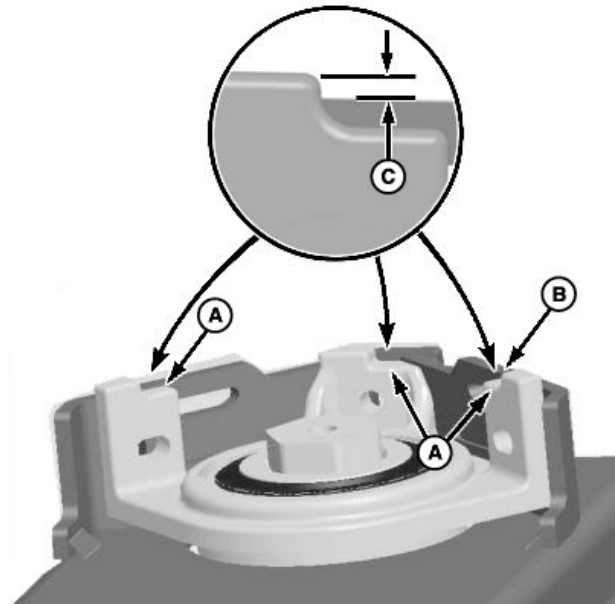
E67519—UN—24AUG12

4. Add or subtract washers behind bearing, if necessary, to locate cast step (A) correctly with mounting edge (B) in all three locations. Set mounting edge to specification.

Specification

Cast Step—Distance..... 1.5—4.5 mm
(0.059—0.177 in.)

A—Cast Step	C—Dimension, 1.5—4.5 mm
B—Mounting Strap Edge	(0.059—0.177 in.)



Continued on next page

PP98408,0000E5B -19-07FEB13-2/4

E54509—UN—15MAY06

5. Install three flange mounting cap screws (A) and nuts (B). Only tighten cap screws enough to get a light contact between cast flange and mounting strap. Some rotation (a light tap) of the cast flange around the outer race can be required to align flange correctly at all three locations. Do not tighten cap screws at this time.

NOTE: Rolls must rotate freely. Check roll clearance through hole in sidesheet.

If roll is equipped with wiper pins, it is permissible to grind drive roll wiper pins to 3 mm (0.12 in.) minimum height.

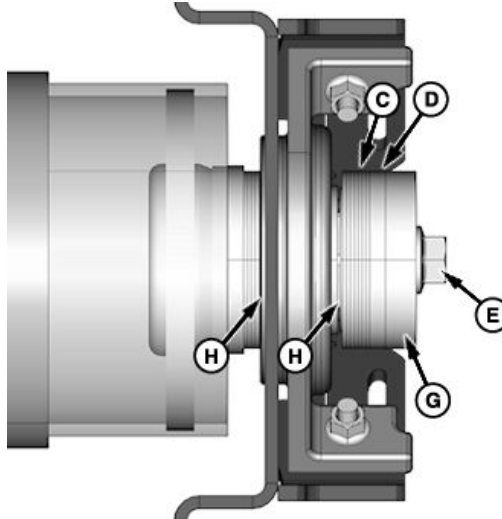
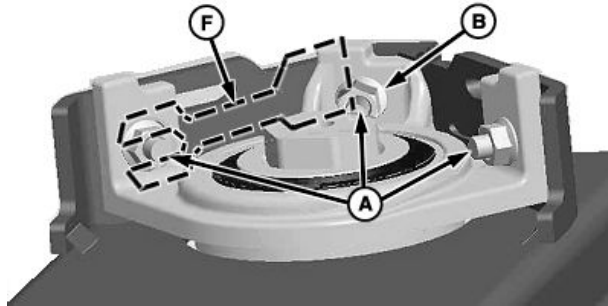
6. Spin upper drive roll to verify clearance with sidesheet hole according to specifications. Add or remove shims (F) or move right-hand bearing plate, or grind drive roll wiper pins, if equipped.

Specification

Rollers-to-
Sidesheet—Clearance..... 1 mm
(0.039 in.)

IMPORTANT: To avoid center bolt loosening or hex knock, keep washers (C) centered on shaft. Ensure that washers do not rotate by hand. Joint must be clamped to eliminate hex knock.

7. Install one washer (H) and washers (C) between bearing and end of hex shaft, so washers are flush with end of shaft, and add one more washer. Add large thick ID washer (D). Washer (H) must be next to bearing on both sides.
8. Install cap screw (E) and end washer (G).



- A—Flanged Cap Screw (3 used)
B—Flanged Nut (3 used)
C—Washers
D—Large (Thick Washer)
E—Cap Screw, M12 x 80 mm
F—Shims
G—Washer, 13 x 70 x 12 mm
H—Washers, 45.2 x 57.5 x .9 mm (2 used) (Each Side of Bearing)

E67567—UN—09JUL09

E67520—UN—24AUG12

Continued on next page

PP98408,0000E5B -19-07FEB13-3/4

IMPORTANT: To prevent bearing failure, always tighten cap screw (C) before tightening flange mounting cap screws (A and B).

9. Tighten cap screw (C) to specification.

Specification

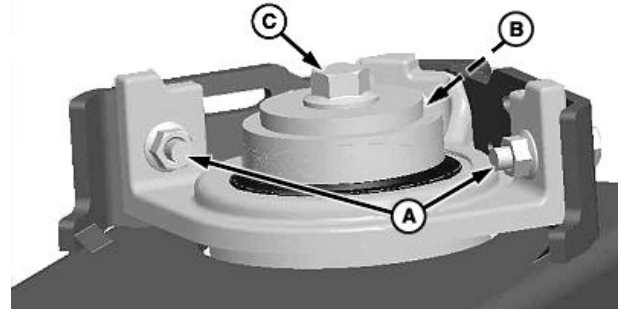
M12 Cap
Screw—Torque.....140 N·m
(103 lb.-ft.)

10. Tighten middle flange mounting cap screw (B) first. Tighten remaining two flange mounting cap screws (A). Tighten all three cap screws to specification.

Specification

Cap Screw—Torque.....40 N·m
(30 lb.-ft.)

11. Check position of mounting edge to cast step in three locations. If mounting edge does not align in the cast sets, repeat Steps 2—10.



A—Cap Screw, M8 (2 used)
B—Cap screw, M8

C—Cap Screw, M12 x 80 mm

E57566 —UN—09JUL09

PP98408,0000E5B -19-07FEB13-4/4

Replace Main Drive Shear Bolt (If Equipped)

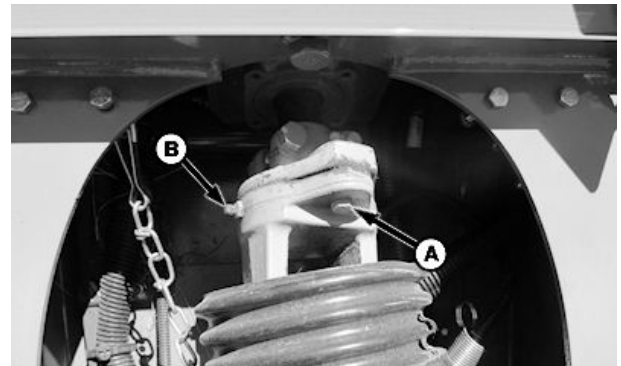
1. Raise PTO cover.
2. Install a 5/16 x 2 in., Grade 5, cap screw and lock nut (A).

IMPORTANT: Ensure that shear bolt is tightened to specifications.

3. Tighten lock nut to specification.

Specification

Main Drive Shear
Bolt—Torque.....19.5 N·m
(14 lb.-ft.)



A—Lock Nut

B—Lubrication Fitting

E66130 —UN—13AUG12

PP98408,0000E5C -19-07FEB13-1/1

Adjust Main PTO Driveline Slip Clutch (If Equipped)

IMPORTANT: Disassemble and clean dirt between pressure plate and disk spring to maintain driveline protection. Dirt becomes trapped between pressure plate and disk spring and will not allow disk spring to flatten.

IMPORTANT: If distance between rear plate and tab on pressure plate is not within specifications, slip clutch will not slip, causing damage to drive components or can slip too easily.

Failure to follow the order of the following steps can damage the clutch.

NOTE: Clutch can be adjusted while on machine.

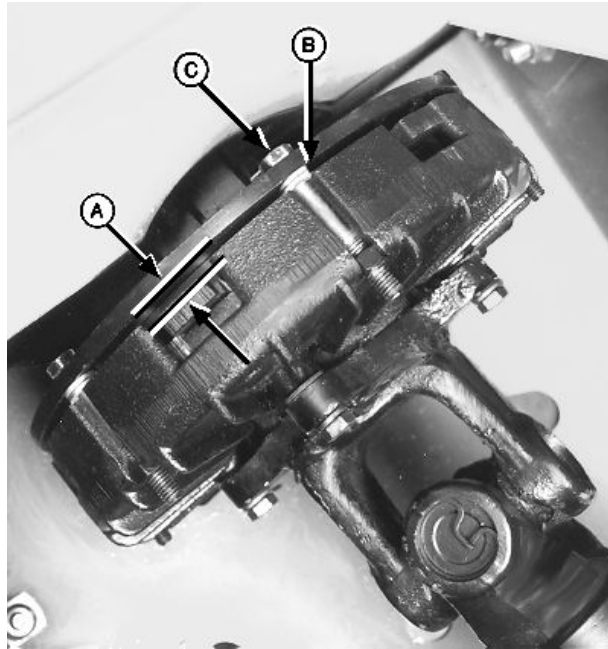
1. Raise gate fully using tractor hydraulics to slack belts.
2. Turn off tractor engine and remove key.
3. Lock gate.
4. Disconnect PTO driveline from tractor.
5. Measure distance (A).

Specification

Rear Plate-to-Tab on Pressure	
Plate—Distance.....	4.7—7.1 mm (0.185—0.280 in.)

NOTE: If distance (A) is less than specification, go to step 7.

6. If distance (A) exceeds specification, perform the following special instructions:
 - a. Remove one cap screw (C) from clutch.
 - b. Remove one washer (B) between rear plate and clutch housing.
 - c. Install washer (B) between head of cap screw (C) and rear plate.
 - d. Tighten cap screw.
 - e. Repeat steps (a—d) for remaining five cap screws.
7. If distance (A) is less than specification, perform the following special instructions:



A—Distance
B—Washer

C—Cap Screw

- a. Remove one cap screw (C) from clutch.
- b. Remove one washer (B) between head of cap screw (C) and rear plate.
- c. Install washer (B) between rear plate and clutch housing.
- d. Tighten cap screw.
- e. Repeat steps (a—d) for remaining five cap screws.
8. Measure distance (A). If distance is still not within specification, and there are no washers between rear plate and housing, replace clutch friction disks. (See your John Deere Dealer.)
9. Unlock and lower gate.

PP98408,0000E5D -19-07FEB13-1/1

E39742—JUN—06MAR96

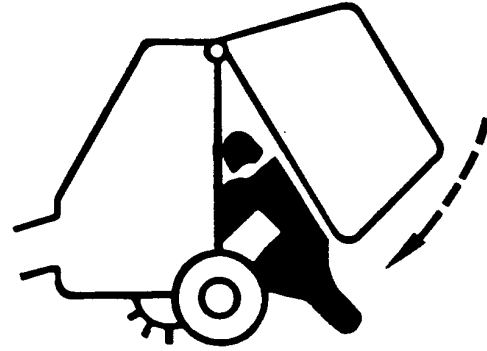
Slip Main PTO Driveline Slip Clutch (If Equipped)

CAUTION: Make sure that gate is locked. If gate is not locked while performing this procedure, the gate could close suddenly causing injury or death.

IMPORTANT: Disassemble and clean dirt between pressure plate and disk spring to maintain drive protection. Dirt becomes trapped between pressure plate and disk spring and will not allow disk spring to flatten.

IMPORTANT: At the beginning of each season, verify baler or tractor main drive slip clutch is not seized. Otherwise drive train damage can occur.

1. Raise gate fully using tractor hydraulics to slack belts.
2. Turn off tractor engine and remove key.



3. Lock gate.
4. Disconnect PTO driveline from tractor.

Continued on next page

PP98408,0000E5E -19-07FEB13-1/2

TS698 —UN—21SEP89

IMPORTANT: Loosen slip clutch bolts evenly. Failure to do so will cause clutch to fail.

If baler is operated with a seized-up clutch, damage to drive train can result.

NOTE: Do not loosen cap screws more than three turns.

5. Loosen six slip clutch cap screws (A) evenly, 1—2 turns at a time.

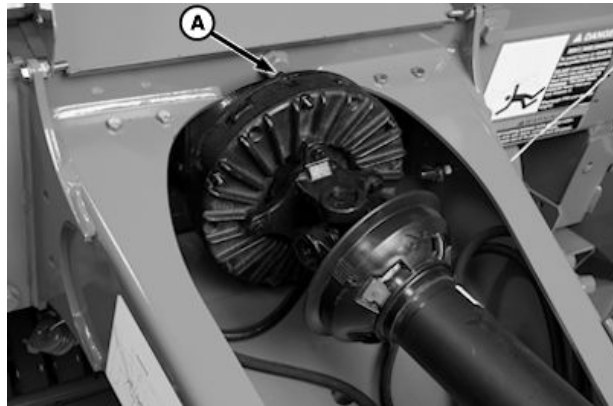
⚠ CAUTION: Never use any type of tool or wrench on shaft while tractor engine is running. Always remove tool from shaft immediately after use.

6. Put a 1-3/8 in. socket (B) and wrench with long handle on output shaft of gear case. Extend handle, if necessary, to contact baler axle or ground to keep wrench from rotating as shown.
7. Insert bar (C) between yoke and U-joint as shown.
8. Slip the clutch.
9. Remove socket (B) and bar (C).
10. Adjust slip clutch. (See ADJUST MAIN PTO DRIVELINE SLIP CLUTCH in this section.)
11. Unlock and lower gate.

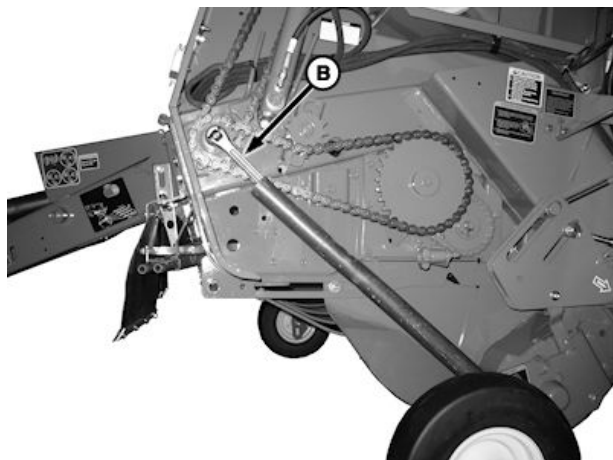
A—Cap Screw (6 used)

C—Bar

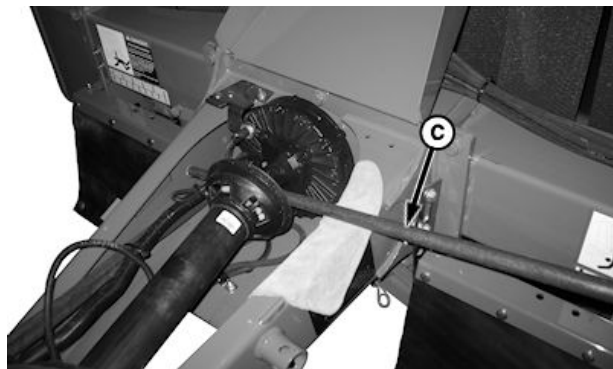
B—Socket



E66611—UN—12JUL12



E61198—UN—22MAR12



E61199—UN—22MAR12

PP98408,0000E5E -19-07FEB13-2/2

Adjust Initial Length of Pickup Drive Belt Idler Spring

1. Remove shield (A).

A—Shield



PP98408,0000E5F -19-22JUL13-1/2

E54033 —UN—06JAN05

IMPORTANT: If spring has been removed, the initial length of spring must be adjusted before adjusting the belt idler.

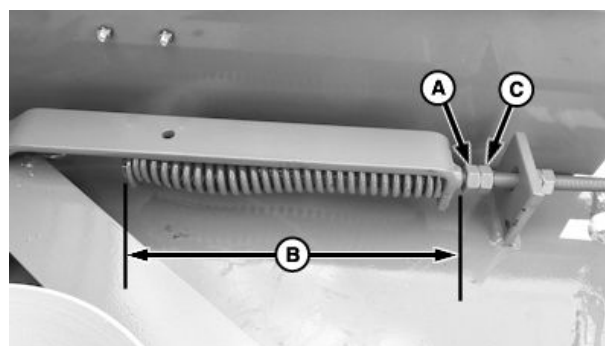
2. Adjust initial length of spring by obtaining distance (B) between far end of screw head and end of spacer.

Adjust nut (A) until distance (B) is within specifications and tighten jam nut (C) against nut (A).

Specification

Idler Spring—Initial
Length..... 215 mm
(8-1/2 in.)

3. Install spring on baler.
4. Adjust pickup drive belt idler. (See ADJUST PICKUP DRIVE BELT IDLER [REGULAR PICKUP] in this section.)



A—Nut
B—Distance

C—Jam Nut

PP98408,0000E5F -19-22JUL13-2/2

E70468 —UN—17JUL13

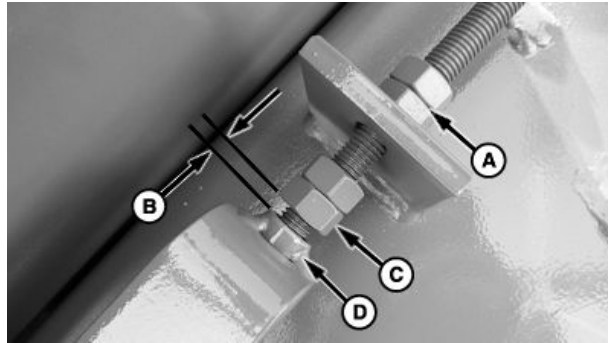
Adjust Pickup Drive Belt Idler

IMPORTANT: The belt tensioner is designed to protect pickup components; overtightening reduces protection. Check adjustment daily.

1. Before adjusting idler, perform the following:
 - a. Start tractor engine and engage PTO.
 - b. Observe spacer (D) relative to nut (C).
 - If total movement is more than 3 mm (1/8 in.), inspect belt for a burn or thin spot and inspect drive sheave groove for debris.
 - Inspect belt and replace if necessary.
 - c. Stop tractor and remove engine key.
2. Adjust pickup idler as follows:
 - a. Loosen jam nuts (A).
 - b. Adjust rear jam nut (A) until clearance (B) between nut (C) and end of spacer (D) is within specifications.

Specification

Spacer-to-
Nut—Clearance.....4—6 mm
(5/32—1/4 in.)



A—Jam Nuts
B—Clearance, 4—6 mm
(5/32—1/4 in.)

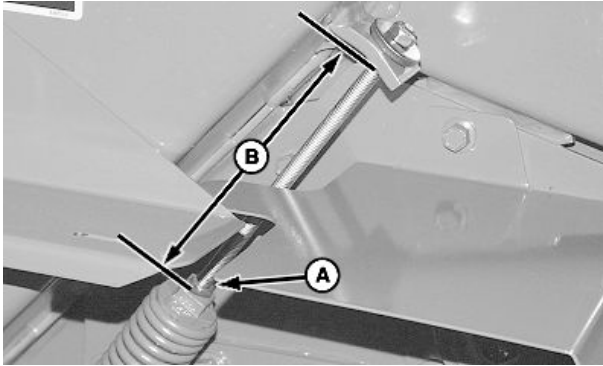
C—Nut
D—Spacer

- c. Tighten front jam nut (A) against rear jam nut.
- d. Install shield.

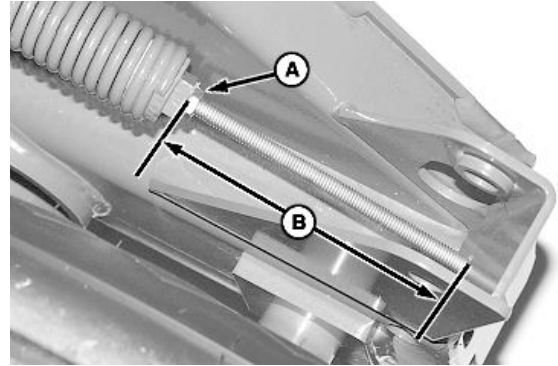
E70438—UN—12JUL13

PP98408,0000E60 -19-22JUL13-1/1

Adjust Pickup Float Springs



Right-Hand Side



Left-Hand Side

A—Jam Nut

B—Float Spring Setting
Dimension

Dimension (B) is an initial float spring setting for pickup tooth-to-ground clearance of 25—50 mm (1—2 in.)

More spring force will be needed if:

- Operating at pickup tooth-to-ground clearance above 50 mm (2 in.)

Less spring force will be needed if:

- The pickup does not lower to desired operating height.
- The pickup bounces too much and leaves crop.

1. Remove access panel.
2. Loosen jam nut (A).

IMPORTANT: Any dimension less than 60 mm (2-3/8 in.) at the right-hand spring will stretch or weaken the spring.

3. Tighten screw into spring plug until dimension (B), between spring plug and spring anchor, is attained.

WITHOUT GAUGE WHEELS	
Right-Hand Side	170 mm (6-11/16 in.)
Left-Hand Side	155 mm (6-3/32 in.)
WITH GAUGE WHEELS	
Right-Hand Side	100 mm (3-15/16 in.)
Left-Hand Side	100 mm (3-15/16 in.)

4. Tighten jam nut (A).

PP98408,0000E61 -19-07FEB13-1/1

Check Pickup Tooth Rotational Play

CAUTION: To avoid injury or death caused by unexpected lowering of the gate, engage gate lock before working on, around, or under gate in raised position.



Continued on next page

PP98408,0000E62 -19-07FEB13-1/2

TS698 —UN—21SEP89

Excessive tooth rotational play in the feed opening area will reduce bale starting and feeding performance. Worn cams, spider bores, cam arm shafts, and cam bearings contribute to excessive tooth rotational play.

To check for rotational play:

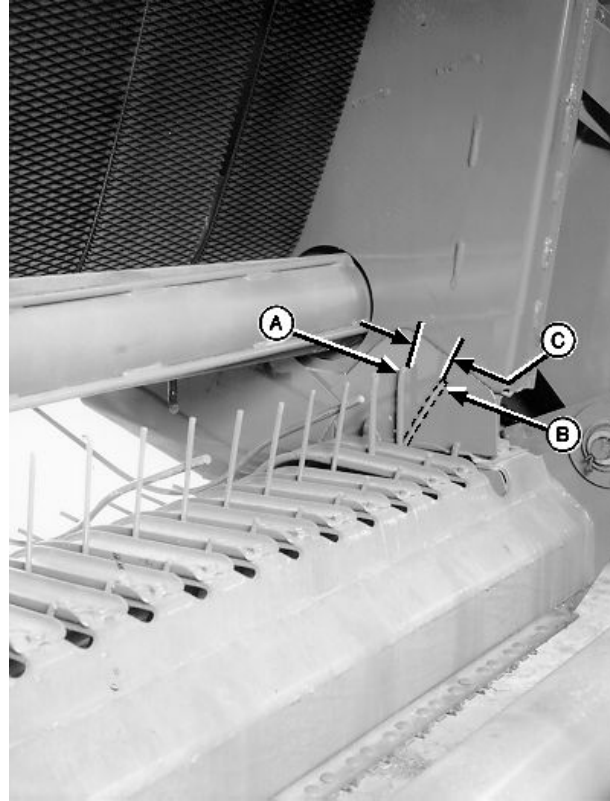
1. Fully raise and lock gate.
2. Raise the pickup to transport position.

⚠ CAUTION: Never use any type of tool or wrench on shaft while tractor engine is running. Always remove tool from shaft as soon as you are finished using it.

3. Put a wrench on the gear case output shaft. Turn wrench clockwise until a row of pickup teeth are straight up.
4. Rotate the tooth bar forward, by hand, until the rotation has stopped. Mark the position of the outside tooth tip (A) on the end stripper panel.
5. Rotate the tooth bar rearward, by hand, until the rotation has stopped. Mark the position of the outside tooth tip (B) on the end stripper panel. Measure and record the distance between marks.
6. Mark the row and repeat Steps 3—5 on the remaining rows of teeth.
7. If the average distance (C) between marks exceeds specifications, check wear in cams, spider bores, cam arm shafts, and cam bearings, and replace as needed.

Specification

Marks on End Stripper	
Panel—Distance.....	51 mm (2 in.)



A—Tooth Tip Position
B—Tooth Tip Position

C—Dimension

8. Return pickup to operating height.
9. Remove wrench from output shaft.

E40646—UN—15JUL96

PP98408,0000E62 -19-07FEB13-2/2

Adjust Twine Cutter Tension (Hydraulic Twine Wrap Only)

NOTE: Adjust twine distance from right sidesheet before performing this adjustment.

1. Adjust twine distance from right sidesheet. (See procedure in this section.)

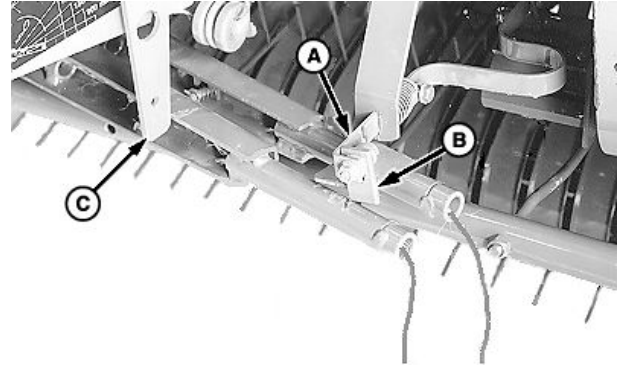
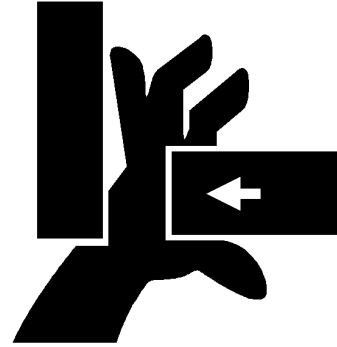
CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power BEFORE servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

2. Adjust cutter link (A) by putting two washers in front of contact tab (B) and four washers behind contact tab.
3. Make sure twine arm stop (C) is in the down position.
4. Start tractor engine.

A—Cutter Link
B—Contact Tab

C—Twine Arm Stop



PP98408,0000E63 -19-07FEB13-1/4

E47598 —UN—07JAN00

E40625 —UN—06SEP00

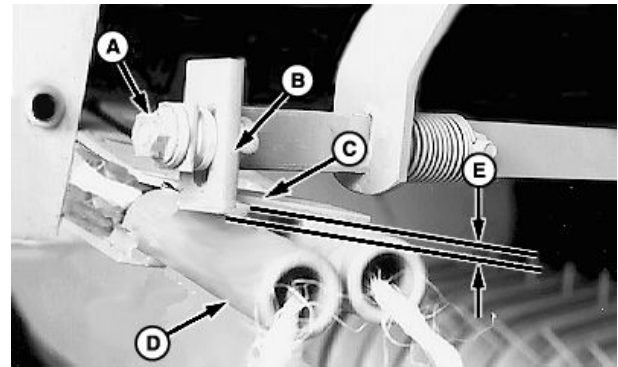
5. Using tractor hydraulics, move twine arms until front edge of strap (C) lightly contacts tab (B).
6. Stop tractor engine and remove key.
7. Adjust tab (B) so clearance (E) between bottom edge of tab (B) and bottom side of strap (C) is within specifications. Tighten nut (A) while holding tab (B) vertical.

Specification

Bottom Edge of	
Tab-to-Bottom Side of	
Strap—Clearance.....	2—4 mm (3/32—5/32 in.)

NOTE: Light contact between tab (B) and front twine arm (D) is acceptable.

8. Start tractor engine.
9. Using tractor hydraulics, move twine arm forward. Front twine arm must pass under tab (B). Adjust tab if necessary.
10. Using tractor hydraulics, move twine arm behind twine cutter.



A—Nut
B—Tab
C—Strap (welded to rear twine arm)
D—Front Twine Arm (if equipped)
E—Clearance

11. Stop tractor engine and remove key.

Continued on next page

PP98408,0000E63 -19-07FEB13-2/4

E40583 —UN—06SEP00

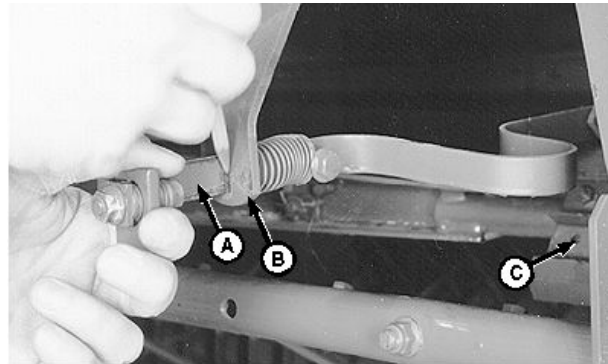
⚠ CAUTION: Be careful when working around the knife. It is sharp.

12. Gently pull cutter link (A) forward until knife (C) contacts hex anvil. Remove slack, but DO NOT deform cutter link.

13. Mark cutter link (A) at support (B) as shown.

A—Cutter Link
B—Support

C—Knife



Continued on next page

PP98408,0000E63 -19-07FEB13-3/4

TS288 —UN—23AUG88

E39276 —UN—19JUN96

NOTE: Twine arm stop (A) must be in the down position.

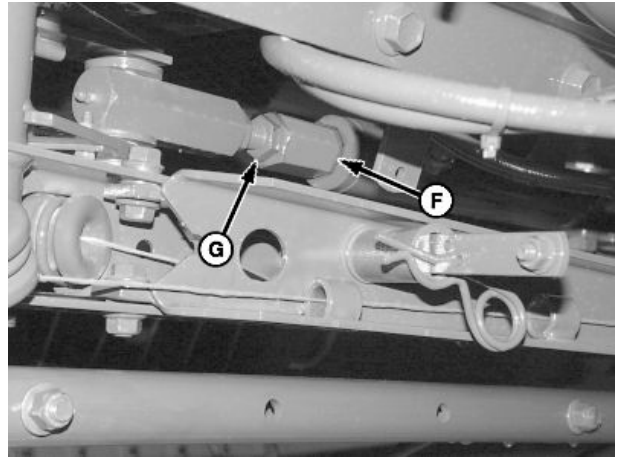
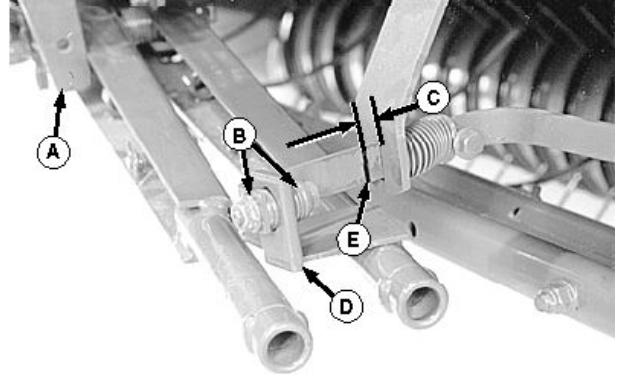
14. Start tractor engine.
15. Using tractor hydraulics, operate twine arms through one complete cycle. Return twine arms to home position. Cylinder must be retracted with hex block (F) contacting cylinder end cap.
16. Stop tractor engine and remove key.
17. Check distance (C) between mark (E) on cutter link and front side of cutter link support. Distance must be within specifications.

Specification

Cutter Link-to-Front	
Side of Cutter Link	
Support—Distance.....	5—7 mm (3/16—9/32 in.)

Mark on Cutter Link-to-Front Side of Cutter Link Support

- To increase distance (C), move washers (B) from front of tab (D) to rear of tab.
 - To decrease distance (C), move washers (B) from rear of tab (D) to front of tab.
18. If moving the washers cannot bring distance (C) within specification, put two washers (B) in front of tab (D) and four washers behind tab, then perform the following:
 - a. Loosen jam nut (G).
 - To increase distance (C), turn hex block (F) away from cylinder barrel until distance (C) is within specification.
 - To decrease distance (C), turn hex block (F) toward cylinder barrel until distance (C) is within specification.
 - b. Tighten jam nut.
 19. Start tractor engine.
 20. Operate twine arm through one complete cycle returning twine arm to home position.
 21. Stop tractor engine and remove key.



A—Twine Arm Stop	E—Mark
B—Washers (2 in front; 4 in back)	F—Hex Block
C—Distance	G—Jam Nut
D—Contact Tab	

22. Check distance (C). Repeat steps 17 through 21 if necessary.

PP98408,0000E63 -19-07FEB13-4/4

E40387—UN—16APR97

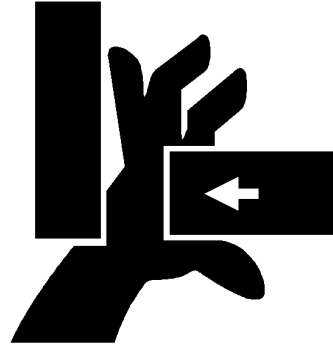
E54017—UN—05JAN05

Adjust Clearance Between Cutter Link Support and Twine Arm (Hydraulic Twine Wrap Only)

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

IMPORTANT: Do not operate twine arms with pickup in raised position, or damage to pickup teeth can occur.



E47598 —UN—07JAN00

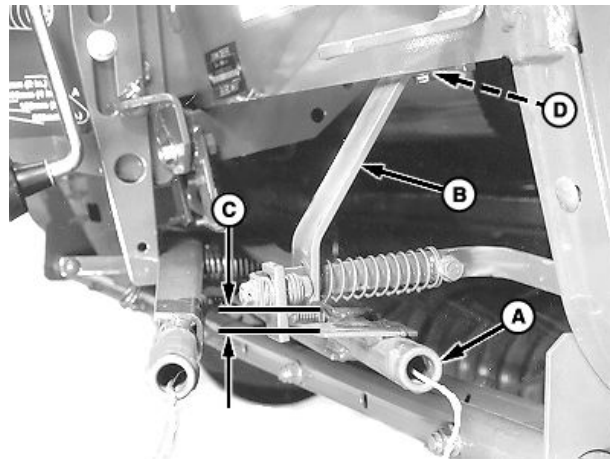
PP98408,0000E64 -19-07FEB13-1/2

1. Move twine arm (A) under cutter link support (B) as follows:
 - a. Start tractor engine.
 - b. Operate tractor hydraulics to move twine arm (A) in position.
 - c. Shut off tractor engine. Remove key.
2. Measure clearance (C) between bottom edge of cutter link support (B) and top of twine arm strap. Clearance (C) must be within specifications.

Specification

Bottom Edge of Cutter Link Support-to-Top of Twine Arm Strap—Clearance.....	6—12 mm (1/4—1/2 in.)

- If clearance (C) is less than specifications, remove shims (D) between cutter link support (B) and underneath crossbeam. If shims do not exist, lower twine arms relative to cutter link support. (See ADJUST TWINE ARM-TO-STARTER ROLL, CUTTER LINK SUPPORT AND TWINE ARM STOP in this section.)
- If clearance (C) is more than specifications, add shims (D).



A—Twine Arm
B—Cutter Link Support

C—Clearance
D—Shims

3. Change shims by loosening two self-tapping screws.
4. Remove end play at front of cutter link support toward center of baler. Tighten screws.

E54018 —UN—05JAN05

PP98408,0000E64 -19-07FEB13-2/2

Adjust Twine Arm Distance From Right Sidesheet (Hydraulic Twine Wrap Only)

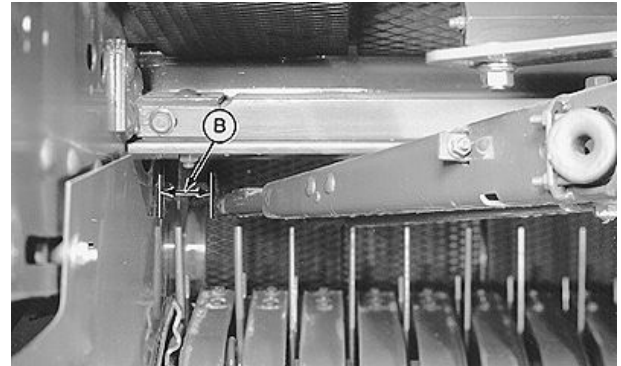
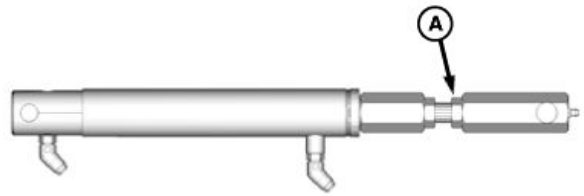
IMPORTANT: Do not operate twine arms with pickup in raised position or damage to pickup teeth can occur.

1. Lower pickup.
2. Move twine arms all the way to right-hand side of baler using tractor hydraulics.
3. Stop tractor engine and remove key.
4. While lightly holding twine arm to the rear to remove any end play, measure sidesheet to twine arm distance (B). Distance must be within specifications.

Specification

Sidesheet-to-Twine Arm—Distance.....	83—133 mm (3-1/4—5-1/4 in.)

5. To adjust distance, loosen jam nut (A) and turn cylinder rod in end block.
 - Turn cylinder rod into end block to increase distance.
 - Turn cylinder rod out from end block to decrease distance.
6. Tighten jam nut (A).
7. If adjustment was made, adjust twine cutter tension. (See ADJUST TWINE CUTTER TENSION in this section.)



A—Jam Nut

B—Twine Arm Distance

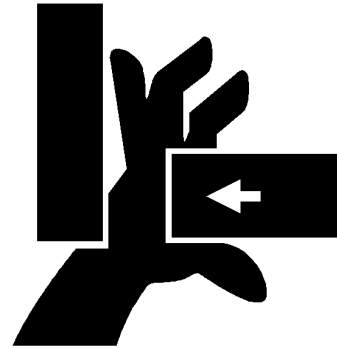
PP98408,0000E65 -19-14MAR13-1/1

Adjust Front Twine Arm (Hydraulic Twine Wrap Only)

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

1. Move twine arms to home position using tractor hydraulics.
2. Stop tractor engine and remove key.



Continued on next page

PP98408,0000E66 -19-07FEB13-1/2

3. Remove nut and bolt (E), spring-locking pin (D), washer (G), spacer (H), spring (C) and twine spacing strap (F).
4. Measure height difference (I) between tops of twine arms (J and K). Twine arm (K) must be higher than twine arm (J) to within specifications.

Specification

Front Twine Arm-to-Rear
Twine Arm—Distance.....4.5—7.5 mm
(3/16—5/16 in.)

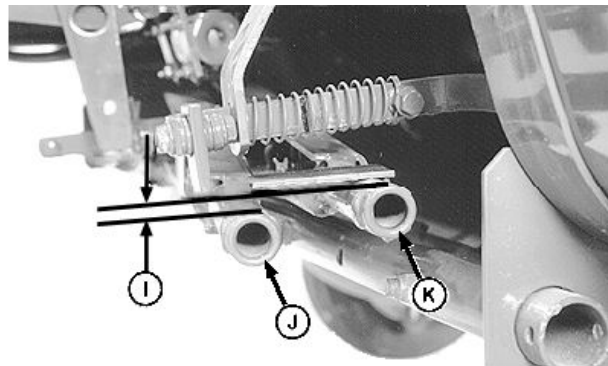
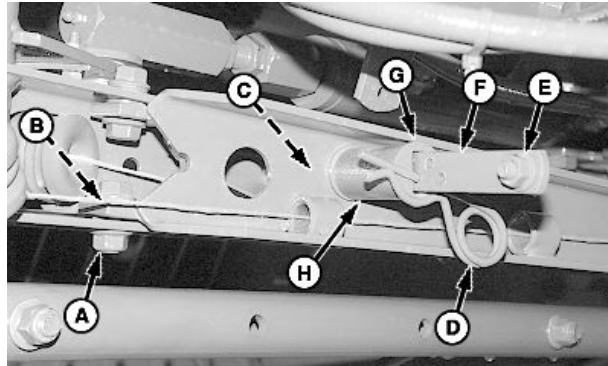
5. To adjust distance, loosen nut (A) enough so end of twine arm can be moved manually with some resistance.
 - If height difference (I) is less specified, move end of twine arm down until correct dimension is obtained.
 - If height difference (I) is greater than specified, move end up of twine arm until correct dimension is obtained.

6. Tighten nut (A) to specifications:

Specification

Twine Arm Nut—Torque.....80 N·m
(60 lb.-ft.)

7. Install twine spacing strap, spring, spacer, washer, and nut and bolt. Install spring-locking pin (D) in desired hole. (See ADJUST TWINE SPACING in Preparing the Baler section.)



A—Cap Screw and Nut
B—Bushings
C—Spring
D—Spring-Locking Pin
E—Nut and Bolt
F—Twine Spacing Strap

G—Washer
H—Spacer
I—Height Difference
J—Front Twine Arm
K—Rear Twine Arm

PP98408,0000E66 -19-07FEB13-2/2

E54019—UN—05JAN05

E39279—UN—30JUN99

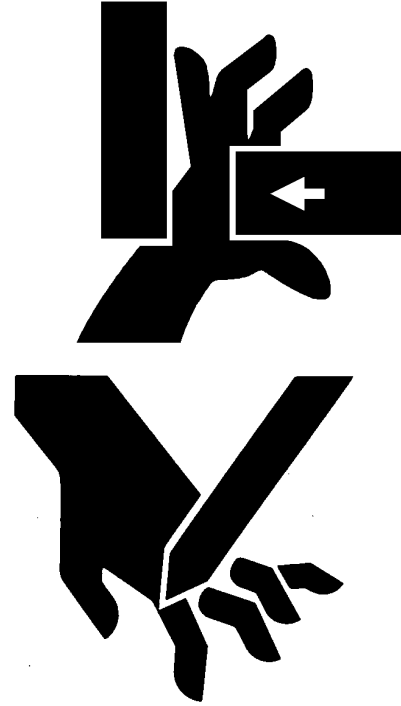
Adjust Twine Cutter-to-Twine Arm (Hydraulic Twine Wrap Only)

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is **ON**.

Twine knife has two cutting edges. Be careful when working around the knife. It is sharp.

1. Remove crop material from knife and hex anvil area.
2. Start tractor engine.



PP98408,0000E67 -19-07FEB13-1/2

E47598 —UN—07JAN00

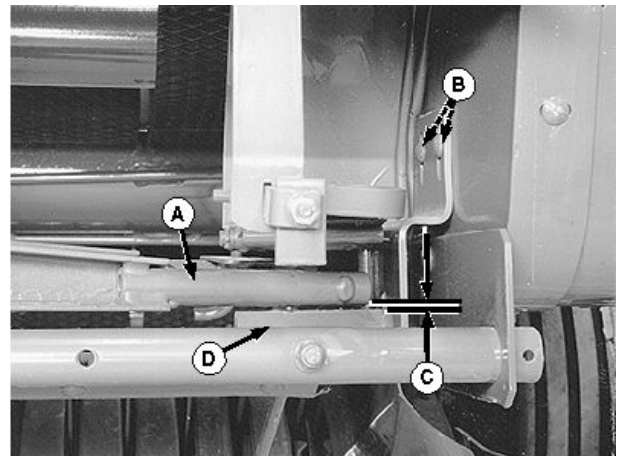
TS268 —UN—23AUG88

NOTE: Dimension (C) applies to the front arm. Rear arm must clear the bottom of the twine knife.

3. Move twine arms using tractor hydraulics until front twine arm tube (A) is centered over hex anvil (D).
4. Stop tractor engine and remove key.
5. Open left-hand door and loosen nuts (B).
6. Adjust twine cutter, so clearance between knife hex anvil (D) and twine arm tube (A) is within specifications (C). Twine cutter bracket must be level (parallel with bottom edge of frame).

Specification

Knife Hex Anvil-to-Twine	
Arm Tube—Clearance.....	0.5—3.5 mm (0.020—0.138 in.)



A—Front Twine Arm Tube
B—Nuts

C—Clearance
D—Hex Anvil

7. Tighten nuts (B).
8. If rear twine arm contacts bottom side of knife support and minimum clearance in Step 6 is obtained, bend twine cutter bracket so hex anvil is parallel to twine arm.

9. Check knife adjustment. (See CHECK KNIFE ADJUSTMENT in this section.)

PP98408,0000E67 -19-07FEB13-2/2

E39275 —UN—19JUN96

Check and Adjust Twine Cutter Knife (Hydraulic Twine Wrap Only)

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

Twine knife has two cutting edges. Be careful when working around the knife. It is sharp.

IMPORTANT: Make sure that cutter anvil is properly adjusted before adjusting knife. (See **ADJUST TWINE CUTTER-TO-TWINE ARM** in this section.)

Do not operate twine arm with pickup in raised position, or damage to pickup teeth can occur.

NOTE: Make sure that knife edge is straight. If not, rotate, replace, or sharpen knife.

If knife edge is less than 3 mm (1/8 in.) from rear of hex flat, the knife has become too short due to sharpening. Invert or replace knife, if necessary.

1. Remove crop material from knife and hex anvil area.
2. Move twine arms behind twine cutter as follows:
 - a. Start tractor engine.
 - b. Operate tractor hydraulics to move twine arm in position.

c. Shut off tractor engine. Remove key.



E47598 —UN—07JAN00

TS288 —UN—23AUG88

PP98408,0000E68 -19-07FEB13-1/2

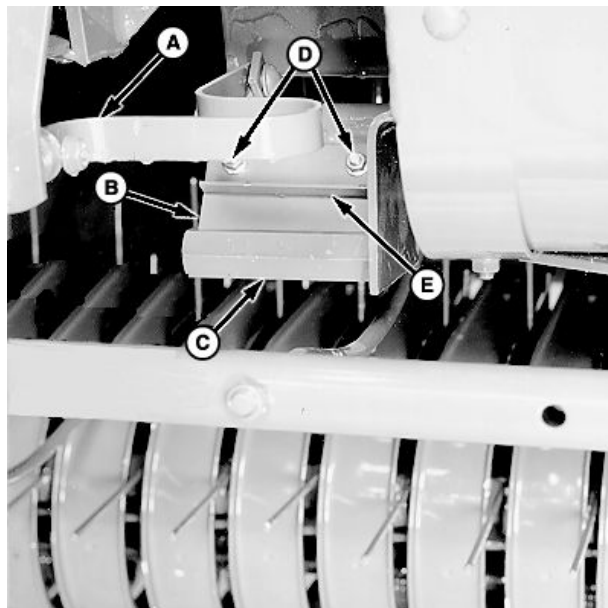
3. Pull cutter strap (A) forward until knife (B) contacts hex anvil (C). If full length of knife does not contact hex anvil, adjust knife.

To adjust knife:

- a. Loosen nuts (D).
- b. Pull angle (E) down until full width of knife (B) contacts hex anvil (C). Knife edge must be near center of hex flat.
- c. Tighten nuts (D). Pull cutter strap forward to make sure full width of knife contacts hex anvil. If not, repeat adjustment procedure.
- d. Check twine cutter-to-twine arm clearance. (See **ADJUST TWINE CUTTER TO TWINE ARM** this section.)

A—Cutter Strap
B—Knife
C—Hex Anvil

D—Nuts
E—Angle



E39690 —UN—06SEP00

PP98408,0000E68 -19-07FEB13-2/2

Adjust Twine Arm-to-Starter Roll, Cutter Link Support, and Twine Arm Stop (Hydraulic Twine Wrap Only)

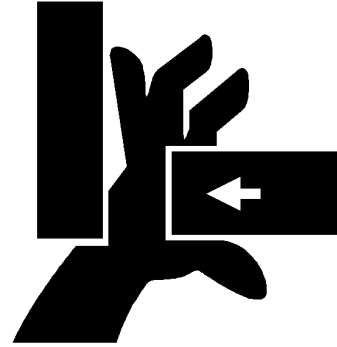
CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is **ON**.

NOTE: Adding or removing shims located between the twine arm support and crossbeam will affect dimensions at the following locations:

- Twine arm to starter roll:
 - Twine arm pointing directly toward rear.
 - Twine arm toward right side of baler.
 - Twine arm toward left side of baler.
- Twine arm to cutter link support.
- Twine arm to twine arm stop.

Check dimensions at all locations before performing any adjustments. Adding or removing shims at one location can change the dimension at another location.



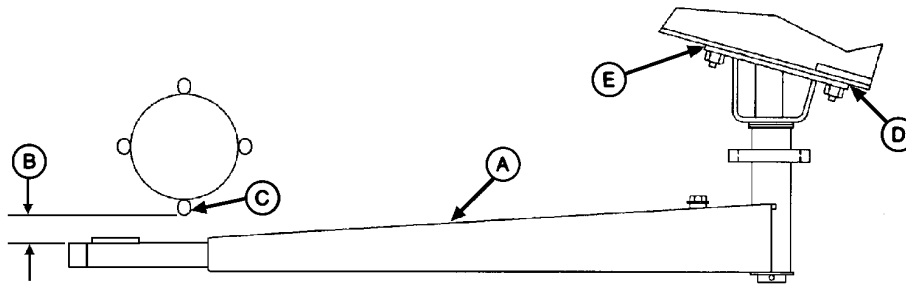
1. Start tractor engine and raise gate fully. Lower pickup so twine arm will not contact pickup teeth.
2. Shut off tractor engine and remove key. Lock the gate.
3. Remove lower drive roll chain so starter roll can be rotated by hand.

Continued on next page

PP98408,0000E69 -19-07FEB13-1/5

E47598 —UN—07JAN00

Adjust Twine Arm to Starter Roll



E40616—UN—16DEC97

A—Twine Arm
B—Dimension

C—Starter Roll Rod
D—Shim Location

E—Shim Location

1. Move twine arms until rear twine arm (A) points toward rear of baler.
 - a. Start tractor engine.
 - b. Operate tractor hydraulics to move twine arm in position.
 - c. Shut off tractor engine. Remove key.
2. Rotate starter roll until starter roll rod (C) is closest to the twine arm tube.
3. By hand, remove end play at end of twine arm toward starter roll. Check dimension (B) between starter roll rod (C) and twine arm tube. Dimension (B) must be within specifications.

Specification

Starter Roll Rod-to-Twine
Arm Tube—Distance.....6—12 mm
(1/4—1/2 in.)

4. If dimension (B) is less than specified:
 - Remove shims, as necessary, at location (D) between twine arm support and crossbeam.

Remove an equal number of shims at the right-hand and left-hand mounting bolts. One shim moves twine arm approximately 3 mm (1/8 in.).

OR

- Add shims, as necessary, at location (E) between twine arm support and crossbeam. Add an equal number of shims at the right-hand and left-hand mounting bolts.

5. If dimension (B) is more than specified:

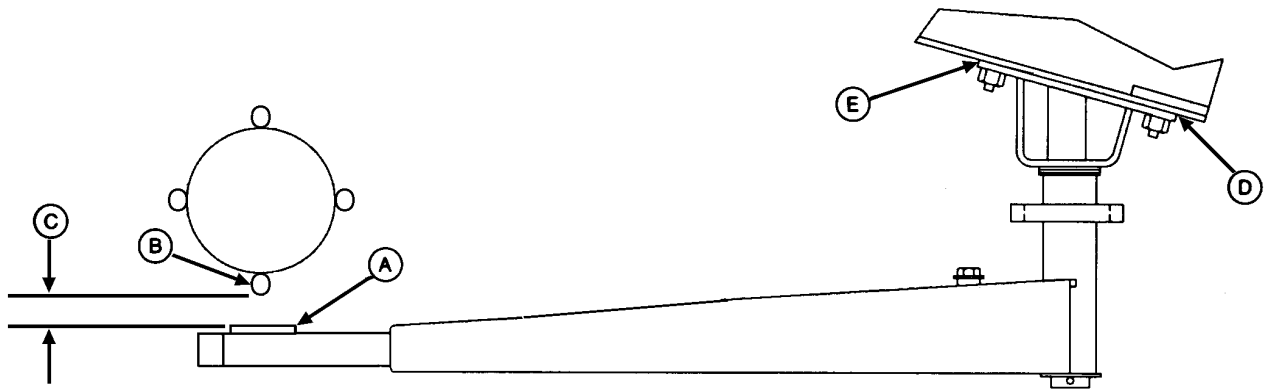
- Remove shims, as necessary, at location (E) between twine arm support and crossbeam. Remove an equal number of shims at the right-hand and left-hand mounting bolts. One shim moves twine arm approximately 3 mm (1/8 in.)

OR

- Add shims, as necessary, at location (D) between twine arm support and crossbeam.

Continued on next page

PP98408,0000E69 -19-07FEB13-2/5



A—Strap
B—Starter Roll Rod

C—Dimension
D—Shim Location

E—Shim Location

6. Move twine arms to right of center so strap (A) is below starter roll rod (B).
 - a. Start tractor engine.
 - b. Operate tractor hydraulics to move twine arm in position.
 - c. Shut off tractor engine. Remove key.
7. Rotate starter roll until starter roll rod (B) is closest to twine arm strap (A).
8. By hand, remove twine arm end play at end of twine arm toward starter roll.
9. Check dimension (C) between starter roll rod (B) and strap (A). Dimension (C) must be to specifications.

Specification

Starter Roll Rod-to-Strap—Clearance
(Minimum)..... 3 mm
(1/8 in.)

10. If dimension (C) is less than specified, add an equal number of shims at right-hand location (D and E), or remove an equal number of shims at left-hand location (D and E).
11. Move twine arm left of center so strap (A) is below starter roll rod (B).
 - a. Start tractor engine.
 - b. Operate tractor hydraulics to move twine arm in position.
 - c. Shut off tractor engine. Remove key.
12. Rotate starter roll until starter roll rod (B) is closest to twine arm strap (A).
13. If dimension (C) is less than specified, add an equal number of shims at the left-hand locations (D and E), or remove an equal number of shims at the right-hand locations (D and E).

Continued on next page

PP98408.0000E69 -19-07FEB13-3/5

E41680—UN—31OCT96

Adjust Twine Arm-to-Cutter Link Support

1. Move twine arms until twine arm (A) lightly contacts the cutter link contact tab.
 - a. Start tractor engine.
 - b. Operate tractor hydraulics to move twine arm in position.
 - c. Shut off tractor engine. Remove key.
2. Check dimension (C) between top of twine arm strap and bottom edge of cutter link support (B). Dimension (C) must be within specifications.

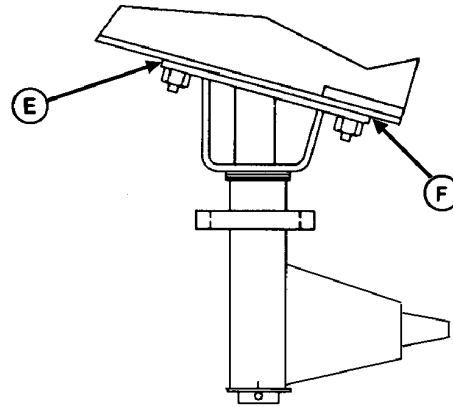
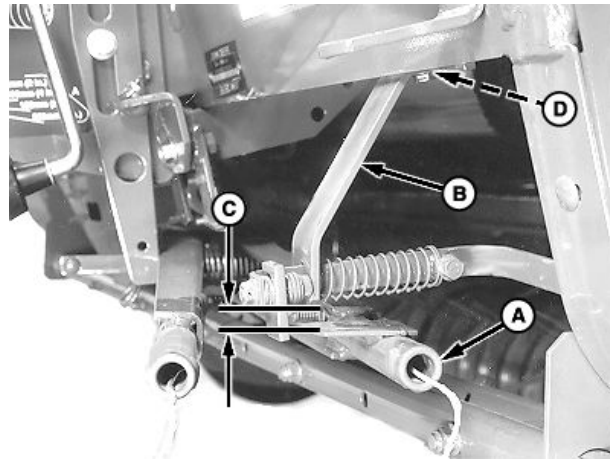
Specification

Top of Twine Arm	
Strap-to-Bottom	
Edge of Cutter Link	
Support—Clearance.....	6 mm
	(1/4 in.)

3. If dimension (C) is less than specified and no shims exist at location (D) between support (B) and crossbeam:
 - Add an equal number of shims between twine arm support and crossbeam at left-hand locations (E and F).

OR

 - Remove an equal number of shims between twine arm support and crossbeam at right-hand locations (E and F).



A—Twine Arm
B—Cutter Link Support
C—Dimension

D—Shim Location
E—Shim Location
F—Shim Location

Continued on next page

PP98408,0000E69 -19-07FEB13-4/5

E54018 —UN—05JAN05

E41682 —UN—24OCT96

Adjust Twine Arm-to-Twine Stop

1. Make sure twine arm stop (A) is in the down position.
2. Move twine arms to the home position.
 - a. Start tractor engine.
 - b. Operate tractor hydraulics to move twine arm in position.
 - c. Shut off tractor engine. Remove key.
3. Check overlap (C). There must be a minimum overlap between bottom of stop (A) and front twine arm surface to within specifications.

Specification

Bottom of Stop-to-Front
Arm Surface—Overlap..... 2 mm
(3/32 in.)

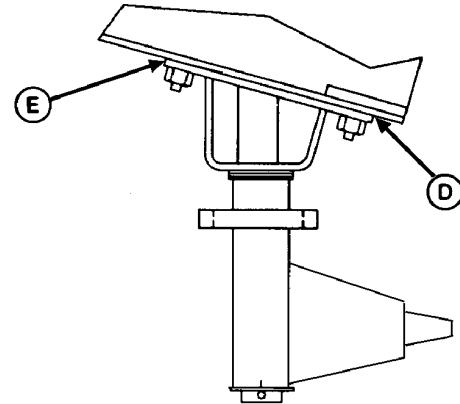
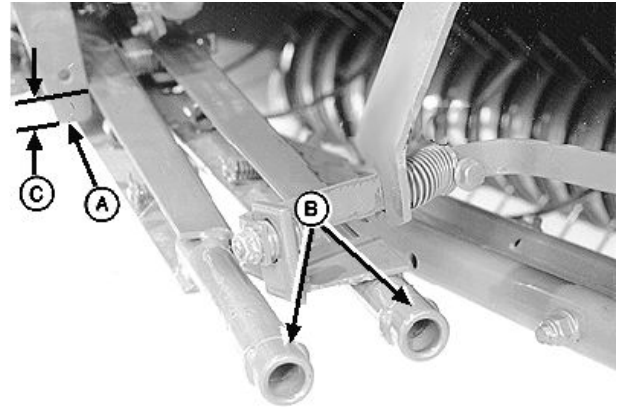
4. If dimension (C) is less than specified:
 - Add an equal number of shims at the right-hand locations (D and E).

OR

 - Remove an equal number of shims at the left-hand locations (D and E).

Checking Twine Arm Adjustments

1. Check clearances again between twine arm and starter roll, twine arm and cutter link support, and twine arm to twine arm stop. If twine arm to starter roll dimension has changed due to adjusting twine arm to cutter link support or twine arm stop, adjust shims between twine arm and crossbeam as needed.
2. Adjust twine cutter-to-twine arm. (See ADJUST TWINE CUTTER-TO-TWINE ARM in this section.)



A—Twine Arm Stop
B—Twine Arms
C—Minimum Overlap

D—Shim Location
E—Shim Location

3. Install lower drive roll chain.
4. Unlock and close gate.

PP98408,0000E69 -19-07FEB13-5/5

E40623 —UN—01 JUL 96

E40617 —UN—07 OCT 96

Adjust Lower Feed Roll Scraper

CAUTION: To avoid injury or death caused by unexpected lowering of the gate, engage gate lock before working on, around, or under gate in raised position.

1. Open gate fully.
2. Shut off tractor engine and remove key.
3. Lock the gate.
4. Loosen mounting lock nuts on scraper (A).
5. Using feeler gauge, adjust scraper (A) until roll-to-scraper clearance is within specifications at tightest points. Tighten lock nuts.

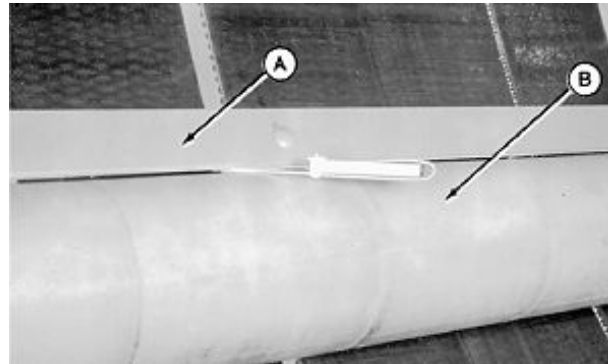
Specification

Lower Front Gate Roll-to-
Scraper—Clearance.....2.5—5.5 mm
(3/32—7/32 in.)

6. Rotate roll to make sure that scraper does not hit roll at any point as roll is rotated.
7. Unlock and lower gate.

A—Scraper

B—Gate Roll



TS688 —UN—21SEP89

E21748 —UN—13SEP88

PP98408,0000E6A -19-07FEB13-1/1

Adjust Twine Indicator Retaining Strap

NOTE: Perform adjustment on BOTH spinners.

1. Loosen cap screw (A).
2. Position retaining strap (B) in the eight o'clock position.
3. Adjust dimension (C) between strap and twine indicator wheel according to specifications.

Specification

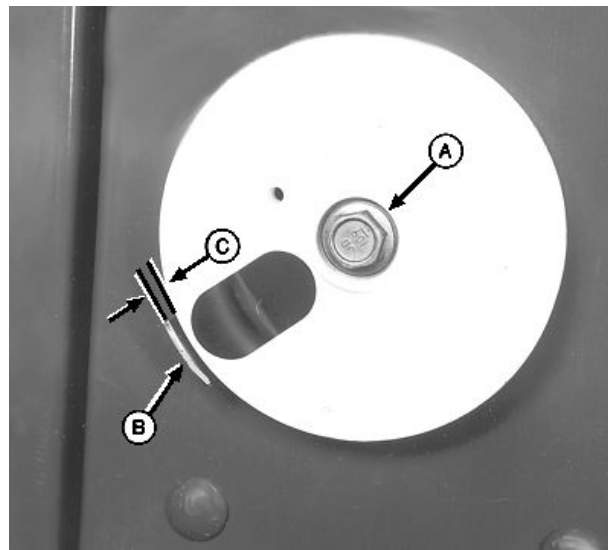
Strap-to-Twine Indicator
Wheel—Distance.....0.4—0.8 mm
(0.016—0.031 in.)

4. Tighten cap screw (A).
5. Twine indicator wheel must spin freely after adjustment.

A—Cap Screw

B—Retaining Strap

C—Distance



E39735 —UN—16FEB86

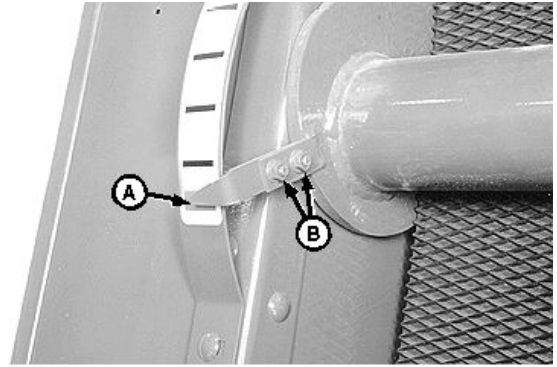
PP98408,0000E6B -19-07FEB13-1/1

Adjust Bale Size Indicator

1. Raise gate fully.
2. Shut off tractor and engage gate lock.
3. Loosen nuts (B) and line bottom edge of pointer (A) with bottom edge of red zone as viewed from tractor. Tighten nuts.
4. Disengage gate lock and lower gate.

A—Pointer

B—Nuts



E40191—UN—08JUL96

PP98408,0000E6C -19-07FEB13-1/1

Adjust Take-Up Arm Compression Spring

If spring has been replaced or stop nuts have been removed, adjust spring as follows:

1. Close gate and lower tension arm.
2. Remove any wrappage or buildup on rolls.
3. With chamber empty, gate shut and tension arm down, briefly engage PTO.
4. If forming belts are installed proceed to Step 6.

Without forming belts; Adjust stop nuts (A) until dimension (B) is within specifications.

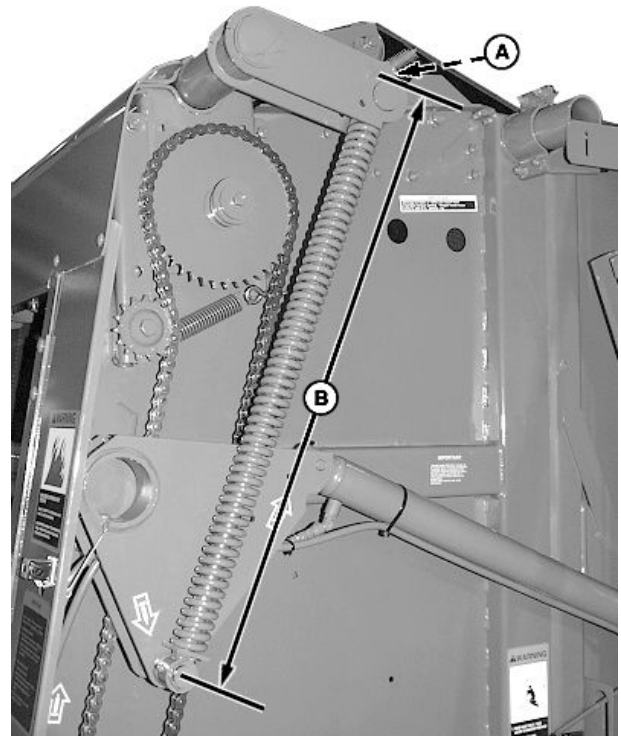
Specification

Spring—Distance..... 905 mm $\pm$ 1.5 mm
(35-5/8 in. $\pm$ 1/16 in.)

5. Adjust spring after forming belts are installed. (See Step 6.)

A—Stop Nuts

B—Dimension



E54020—UN—05JAN05

Continued on next page

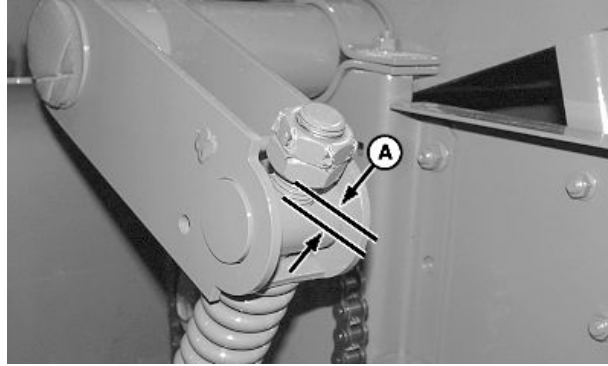
PP98408,0000E6D -19-07FEB13-1/2

- With forming belts installed, adjust stop nuts until gap (A) is between nut and pivot to within specifications.

Specification

Nut-to-Pivot—Gap.....8—12 mm
(0.315—0.472 in.)

A—Gap



E54021—UN—05JAN05

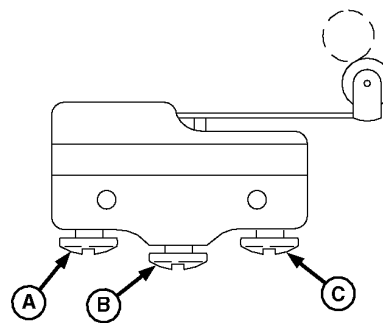
PP98408,0000E6D -19-07FEB13-2/2

Check Microswitches

NOTE: Label wires before disconnecting from switch to ensure proper connection to switch terminals.

Only terminals (A) and (B) are used.

- Disconnect all wires from switch.
- Attach multimeter leads to common (A) and normally open (B) terminals.
 - When switch lever is released, there must be no continuity through the switch.
 - When lever is depressed (click is heard), there must be continuity through the switch.
- Move lead from normally open (B) to normally closed (C) terminal.
 - When switch lever is released, there must be continuity through the switch.
 - When lever is depressed (click is heard), there must be no continuity through the switch.



A—Common Terminal
B—Normally Open Terminal

C—Normally Closed Terminal

- If continuity test results are not as described, replace switch.

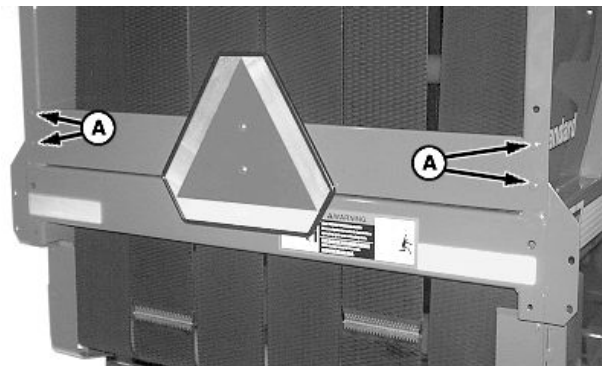
E38432—UN—21FEB95

PP98408,0000E6E -19-07FEB13-1/1

Raise Gate With Hoist

- Remove four round head bolts (A) to remove top belt shield.
- Wrap chain hoist around cross frame member and raise gate.
- When finished, replace shield and SMV symbol.

A—Round-Head Bolts



E54022—UN—05JAN05

PP98408,0000E6F -19-07FEB13-1/1

Check Belt Pins

Check pins for wear or damage every 1000 bales (500 in sandy conditions) otherwise broken pins are difficult to remove. Replace pins if broken, or if plastic cover is worn through.

To remove pin, grip pin with pliers and turn 90° (1/4 turn) before pulling or tapping out.



E24275 —UN—13SEP88

PP98408,0000E70 -19-07FEB13-1/1

Check Belt Tracking

IMPORTANT: If belts are new and have not been used, add talcum powder to simulate crop dust or the belts may not track properly on the rolls.

Only use baby powder made with talcum. Do not use powder with corn starch. Corn starch will absorb moisture and cling to rolls.

It is best to powder belts on a sunny, dry day with baler in a building or under shelter. If baler is outside, be sure that belts and rolls are dry. Do not put powder on damp (early morning dew) belts.

Use baby powder that is made with talcum. A large bottle, 15 oz. plus, can be necessary.

CAUTION: When positioning the gate to provide access for service, always make sure tension arm (A) is fully raised and against tension arm stops (B). This procedure prevents gate from lower unexpectedly.

Lock gate by fully raising gate and moving lever (E) to locked position. Crop material can hold the tension arm at a lower position and material can be redistributed during servicing. This could cause tension arm (A) to swing up and suddenly lower the gate, even if the gate lock is engaged.

Failure to verify that tension arm (A) is positioned against stops (B) can result in serious injury or death.

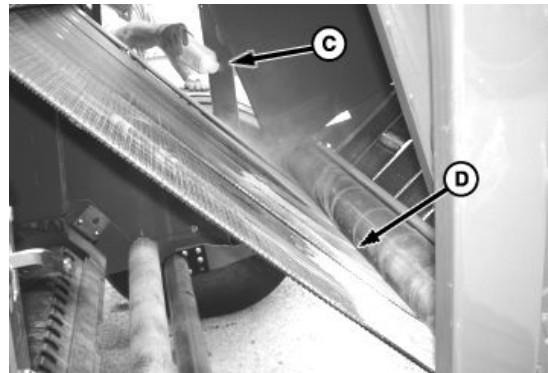
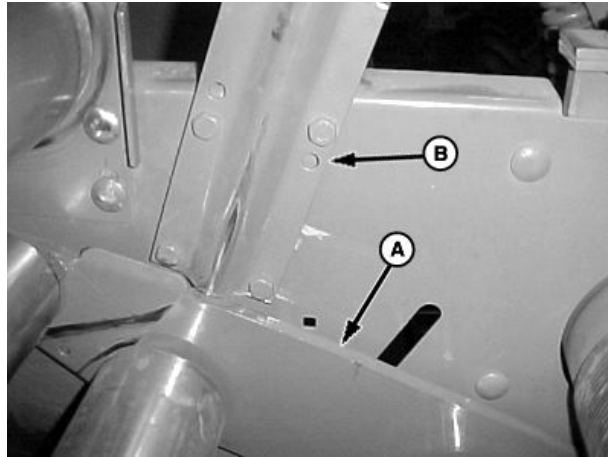
Close the gate any time baler must be left unattended.

If gate cannot be fully raised to engage gate lock channel, use hoist or appropriate lifting device to support gate.

CAUTION: To avoid serious injury from entanglement, ensure bystanders stand clear when operating baler. **DO NOT** apply powder with baler running.

1. Position gate as follows:

- a. With tractor attached to baler, open gate fully, lower gate until belts are slack and tension arm (A) remains against tension arm stop (B). Shut off tractor engine and remove key. **Use hoist or appropriate lifting device to support gate..**
- b. Stand outside of baler tire, and liberally sprinkle powder (C) on all belts (D). Remove hoist or jackstands. Start tractor, close gate, and engage



A—Tension Arm
B—Tension Arm Stop
C—Talcum Powder

D—Powder on Belts
E—Lever in Gate Lock Position

PTO to rotate belts approximately 2.4 m (8 ft.). Disengage PTO.

- c. Repeat steps a and b until complete length of belts are thinly coated.

Continued on next page

PP98408,0000E71 -19-07FEB13-1/2

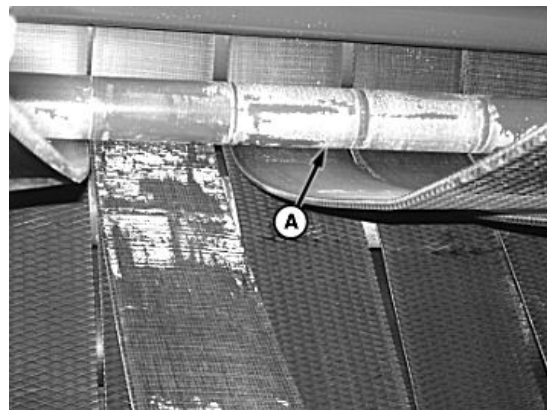
E55649—UN—07APR08

E55650—UN—07APR08

E57871—UN—18AUG09

CAUTION: When removing powder from rolls (A), lock gate, shut off tractor engine and remove key.

2. If belts are slightly damp, or humidity is high, powder can stick to rolls (A). If rolls are coated, remove powder from rolls, and reapply powder to belts.
3. Remove any wrappage or buildup on rolls.
4. Determine if gate closes evenly using the following instructions:
 - a. Open gate using tractor hydraulics.
 - b. Stop tractor engine and remove key.
 - c. Move tractor SCV lever to float position to allow gate to close freely.
 - d. If both sides of gate contact main frame at the bottom, proceed to Step 5.
 - e. If one side makes contact but the other side has gap between gate and frame, see your John Deere dealer for proper procedure to straighten the gate.
5. Park baler on level surface. With baler empty and gate closed, engage PTO and run at slow speed. Hold tractor hydraulic lever in gate closing position to apply tension to belts while checking.



A—Rolls

Check the tracking of the belts by observing belt positions relative to belt guides.

6. Shut off tractor engine and remove key. Adjust rolls, if necessary. (See ADJUST BELT TRACKING in this section.)

PP98408,0000E71 -19-07FEB13-2/2

E57872 —UN—18AUG09

Adjust Belt Tracking

IMPORTANT: Check belt tracking before making any belt tracking adjustments.

If belts are new and have not been used, add baby powder to simulate crop dust and allow belts to track freely.

NOTE: Check belt tracking with PTO engaged and tractor at lowest rpm. Hold tractor hydraulic lever in gate closing position to apply tension to belts while checking.

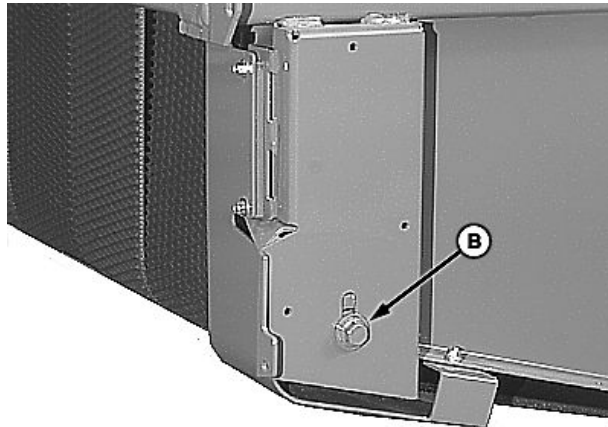
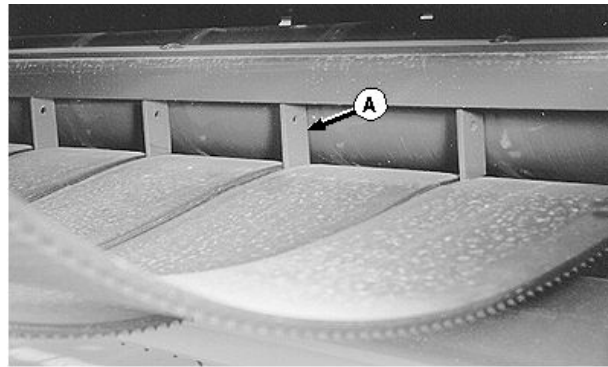
1. If adjustment is needed, raise tension arm fully before adjusting rolls.
- Light contact with belt guides is acceptable, but belts must not curl against guide straps.**
2. Loosen cap screw and adjust number 8 roll in slot with small movements. Let baler run at least 30—40 seconds to observe tracking between adjustments.
3. If belts are not centered at lower belt guide (A), perform the following adjustments.

If belts track to the left:

- a. Loosen cap screw (B) at right side.
- b. Raise RIGHT end of lower rear gate roll.
- c. Tighten cap screw (B) to 140 N·m (105 lb.-ft.).

If belts track to the right:

- a. Loosen cap screw (B) at right side.
- b. Lower RIGHT end of lower rear gate roll.



A—Lower Belt Guide

B—Cap Screw

- c. Tighten cap screw (B) to 140 N·m (105 lb.-ft.).

NOTE: Light contact with belt guides is acceptable, but belts must not curl against guide straps.

Continued on next page

PP98408,0000E72 -19-07FEB13-1/4

E40115—UN—21JUN96

E48783—UN—10AUG00

4. If belts are not centered at the upper front belt guide (A), make the following adjustments:

If belts track to the right:

- Open twine box door.
- Loosen cap screw (B) at right-hand side.
- Raise RIGHT end of front idler roll.
- Tighten cap screw (B) to 140 N·m (105 lb.-ft.).

OR

- Open left-hand door.
- Loosen cap screw at left-hand side.
- Lower LEFT end of front idler roll.
- Tighten cap screw.

If belts track to the left:

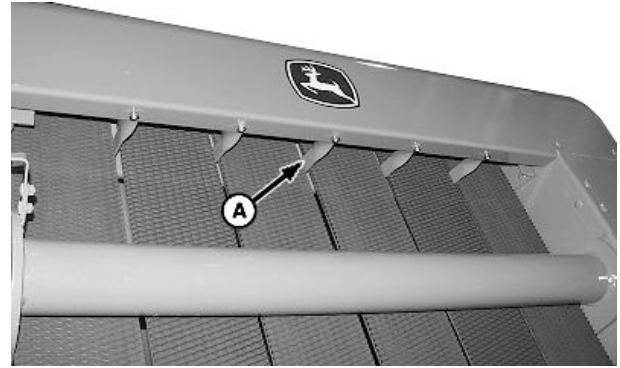
- Loosen cap screw (B) at left-hand side.
- Raise LEFT end of front idler roll.
- Tighten cap screw (B) to 140 N·m (105 lb.-ft.).

OR

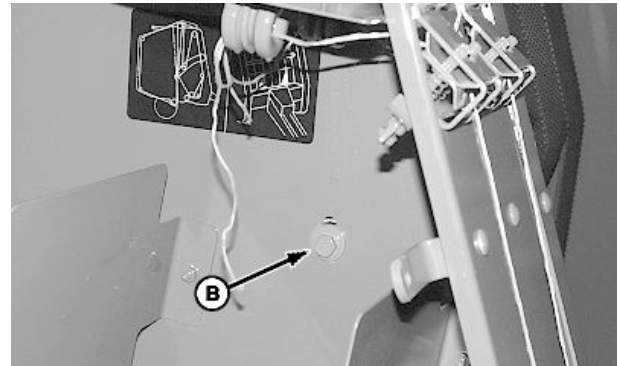
- Loosen cap screw at right-hand side.
- Lower RIGHT end of front idler roll.
- Tighten cap screw (B) to 140 N·m (105 lb.-ft.).

A—Front Belt Guide

B—Cap Screw

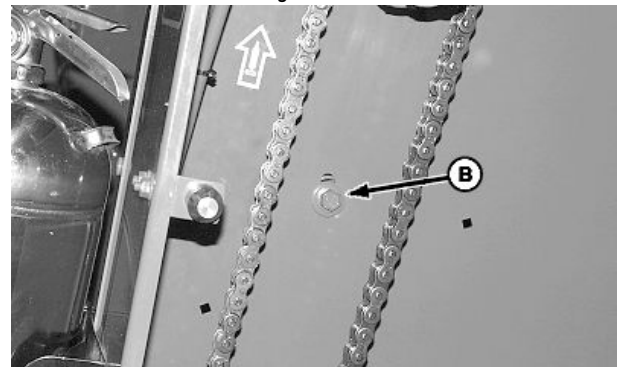


E54023 —UN—05JAN05



E54024 —UN—05JAN05

Right-Hand Side



E54025 —UN—05JAN05

Left-Hand Side

Continued on next page

PP98408,0000E72 -19-07FEB13-2/4

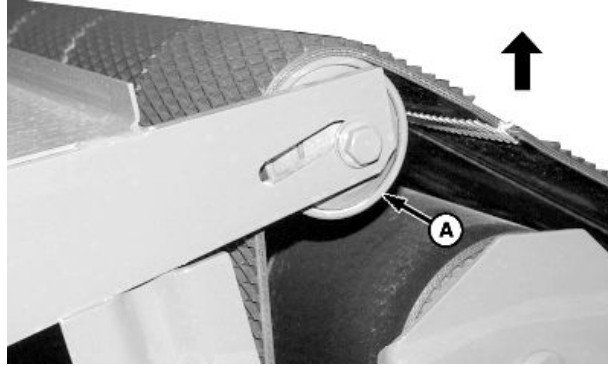
5. If belts are not centered at the upper rear guide, make the following adjustment:

- If belts track to the right, move RIGHT end of take-up roll (A) (in direction shown) in short leg of L shaped slot.
- If belts track to the left, move LEFT end of take-up roll (A) (in direction shown) in short leg of L shaped slot.
- Tighten cap screw to specification.

Specification

Cap Screw—Torque..... 140 N·m
(105 lb.-ft.)

A—Take-Up Roll



E57873—UN—18AUG09

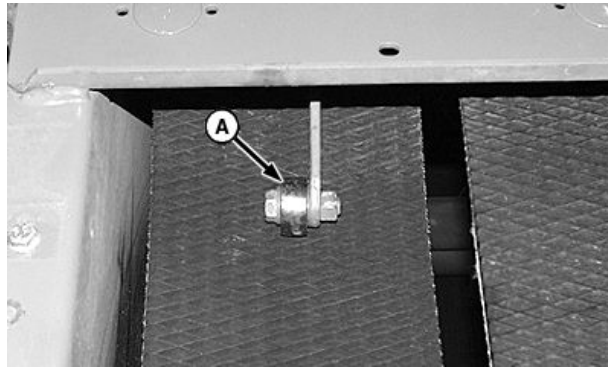
PP98408,0000E72 -19-07FEB13-3/4

6. If outside belts track to the outside, rubbing the lower belt guide or side of baler, adjust as follows:

- Move roller from the normal outside position (A) on the sender arm to inside position (B). The belt will track towards the middle of the baler.

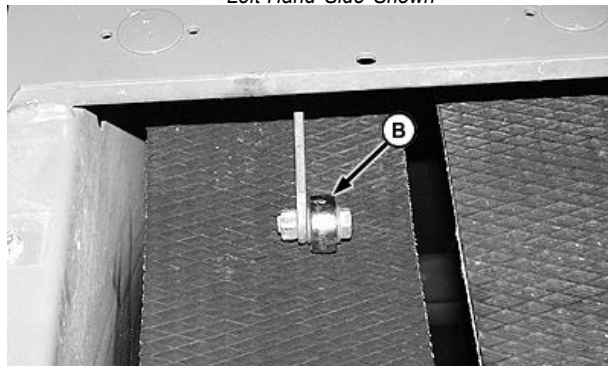
A—Roller (Normal Outside Position)

B—Roller (Inside Position)



E47618—UN—07JAN00

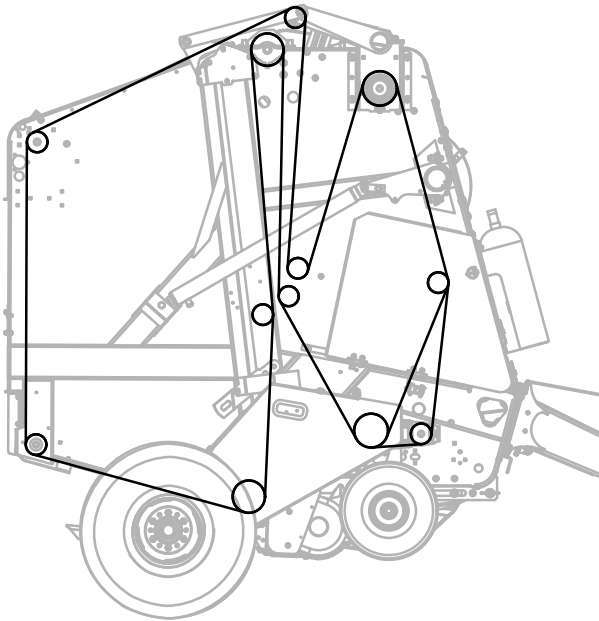
Left-Hand Side Shown



E47619—UN—07JAN00

PP98408,0000E72 -19-07FEB13-4/4

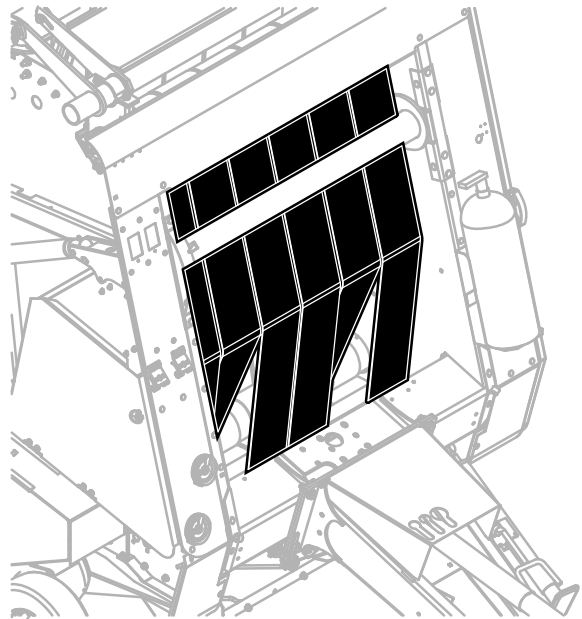
Install Belts



NOTE: See illustration for location of long and short belts. Install belts with diamond portion of the belt to the outside. Make sure that belts are installed through the individual guides.

See Specification section for proper length of belts.

1. Close gate to tighten belts.



2. Engage PTO and rotate belts until splice appears between bottom gate roll and tension arm roll.
3. Open gate fully to slack belts. Engage gate lock channel.
4. Shut off tractor engine and remove key.

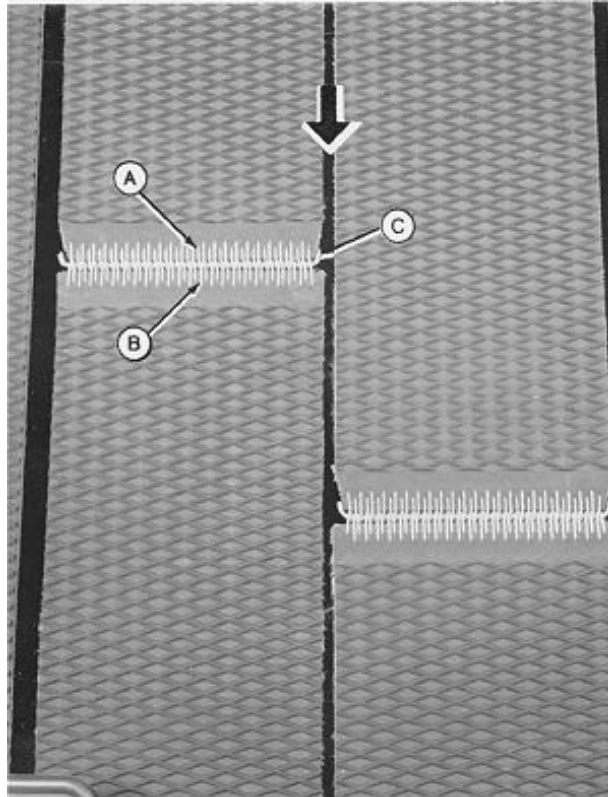
Continued on next page

PP98408,0000E73 -19-19MAR13-1/2

E69488 —UN—20MAR13

5. Remove splicing pin (C). Hook trimmed end of new belt (A) to square end of old belt (B) with splicing pin (C). Pull new belt through baler by hand, using the old belt.
6. Thread belts so when viewed in the direction of travel (see illustration), the square cornered end of belt leads the end with trimmed corners. (See decal located on right-hand side of baler, above twine box.)
 - Belt end with trimmed corners (A) must have 44 hooks in splice.
 - Belt end with square corners (B) must have 45 hooks in splice.
7. Install splicing pin (C). Bend ends of pin at 70° to 80° angle pointing toward the trimmed end of belt (A) as shown.
8. Repeat Steps 1—7 for other belts.
9. Disengage gate lock channel and close gate.

A—Trimmed End of New Belt C—Splicing Pin
B—Square End of Old Belt



E21796—UN—13SEP88

PP98408,0000E73 -19-19MAR13-2/2

Repair Belts

NOTE: For further information or to order belt lacing tool, phone or write to:
MATO Corporation
P.O. Box 7268
Beckley, West Virginia 25926-0268
Telephone: (800) 344-6286
Fax: (304) 255-2501

1. Remove broken belts.



E35384—UN—28AUG90

Continued on next page

PP98408,0000E74 -19-21FEB13-1/9

2. Using a square and sharp knife, remove damaged area. Check belt to be sure that it is cut squarely

IMPORTANT: If belt lengths are less than specifications, belts will contact each other and accelerate wear to the belt diamond pattern. Belt contact occurs between the rear two tension arm rollers when the baler is empty and the gate is closed.

If belts are longer than specifications, belts can slip on drive rolls and bale density can be reduced.

Make sure that all belts are within 38 mm (1-1/2 in.) of the other belts of similar length. There must not be more than 152 mm (6 in.) difference between the long and short belts.

NOTE: If belts are shorter than the specified dimensions, a short piece of belt can be added. Splices (on same belt) must be at least 305 mm (12 in.) apart.



3. Check belt length. Make sure that belt is neither longer or shorter than specified.

E21797 —UN—24JUN99

Belt Lengths			
	Minimum	Repair	Maximum
Short Belts	11 633 mm (458 in.)	11 709 mm (461 in.)	11 760 mm (463 in.)
Long Belts	11 773 mm (463-1/2 in.)	11 849 mm (466-1/2 in.)	11 900 mm (468-1/2 in.)

Continued on next page

PP98408,0000E74 -19-21FEB13-2/9

IMPORTANT: Cut only the diamond pattern. Cutting deeper can damage the belt cords.

Do not use a grinder to remove diamond pattern. Heat from grinder can damage rubber and fabric.

4. Remove diamond pattern from belt using a knife or skiving tool.

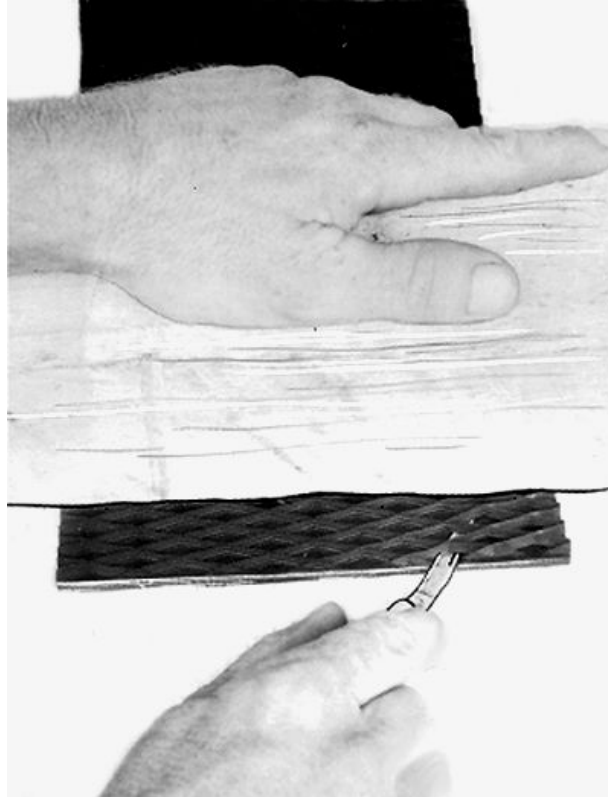
NOTE: To reduce cutting effort, dip knife blade in liquid soap.

- If using a knife:
 - Use approximately 25—51 mm (1—2 in.) thick board to hold belt as shown.
 - Measure 25 mm (1 in.) from end of belt. Use a sharp knife to remove diamond pattern while being careful not to cut to the cord.
- If using a skiving tool:
 - Lay belt on a flat surface against a back stop.
 - Adjust skiving tool pressure plate to thickness of belt using thumb screw (A).
 - Turn thumb screw (A) down another half turn and lock with outer screw (B).
 - Holding skiver firmly against belt, push skiver along full width of belt.
 - Repeat, if necessary, until diamond pattern is removed.

IMPORTANT: Do not leave more than 0.5 mm (0.020 in.) of pattern on belt in area to be laced. If too much material is left on belt, hooks will not fasten properly to belt.

Do not remove too much material. If belt cords show, repeat steps 2—4. Make sure that belt length is still within specifications. Add section of belt if necessary.

NOTE: Illustrations show incorrect and correct examples of diamond pattern removal from belt.



E21799—UN—24JUN99

E39823—UN—24JUN99

Continued on next page

PP98408,0000E74 -19-21FEB13-3/9

- Belt (A) is cut too deep. Damage to belt cords will occur.
- Belt (B) is cut too high. Hooks will not fully penetrate through the belt.
- Belt (C) is cut correctly.

More examples of incorrectly cut belts:

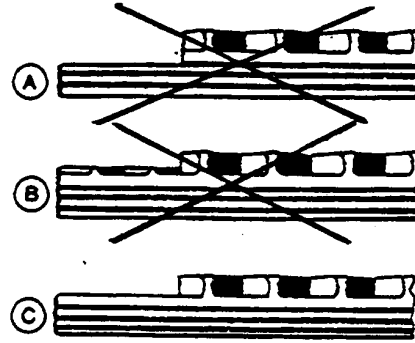
- Middle photo shows vertical cut is too deep; belt cords have been damaged (cut), seriously weakening the belt.
- Bottom photo shows too much diamond pattern was removed, exposing the belt cords.

A—Thumb Screw

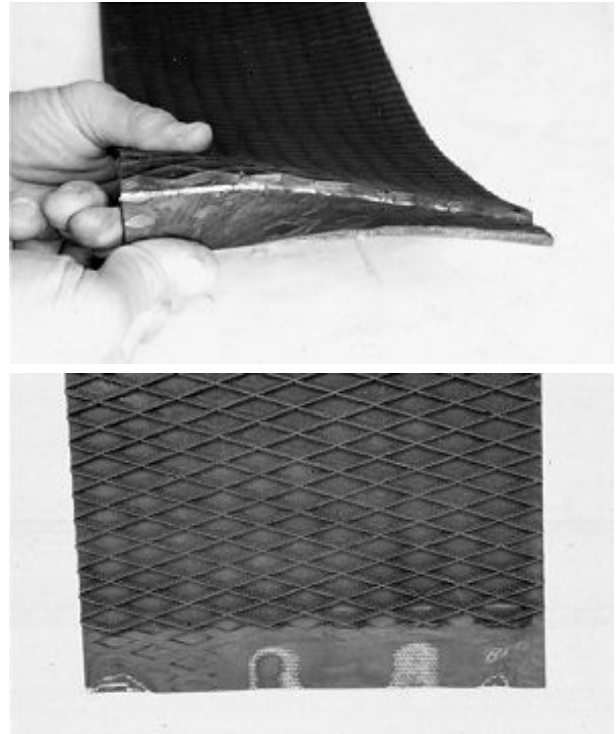
B—Outer Screw

A—Cut Too Deep
B—Cut too High

C—Cut Correctly



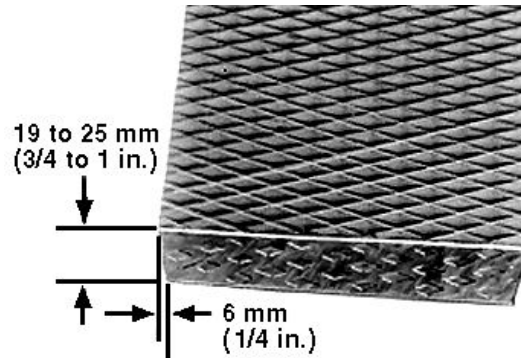
Belt Cross Section



PP98408,0000E74 -19-21FEB13-4/9

IMPORTANT: Trailing end of belt must be trimmed using dimensions shown in illustration. DO NOT vary from these dimensions.

- Trim trailing end of belt as shown.



Continued on next page

PP98408,0000E74 -19-21FEB13-5/9

E27606 —UN—12SEP88

E27614 —UN—12SEP88

E27615 —UN—12SEP88

E39835 —UN—27MAR96

IMPORTANT: If repair is needed on only one end of belt, count the hooks. There must be 44 hooks for the trimmed end of belt and 45 hooks for the square end of belt.

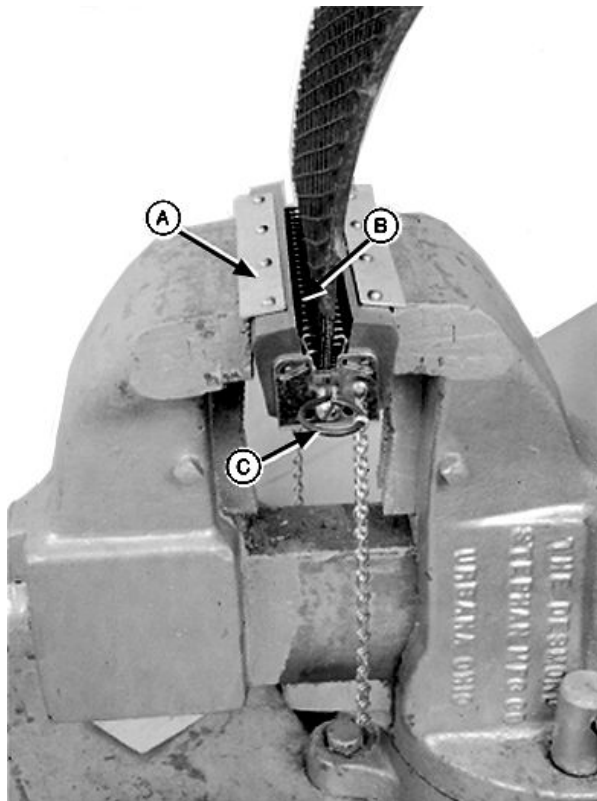
6. Put belt lacing tool (A) in a vise. Set the determined number of hooks (B) in center of the lacing tool and insert long pin (C) to hold hooks (B) in position.

NOTE: Remove cardboard holding the hooks together before pressing lacing hooks onto belt end.

7. Visually align belt so hooks (B) are centered in belt. Make sure that full width of belt is in contact with bottom of lacer. Tighten vise to force the lacing hooks through the belt.

A—Belt Lacing Tool
B—Hooks

C—Pin



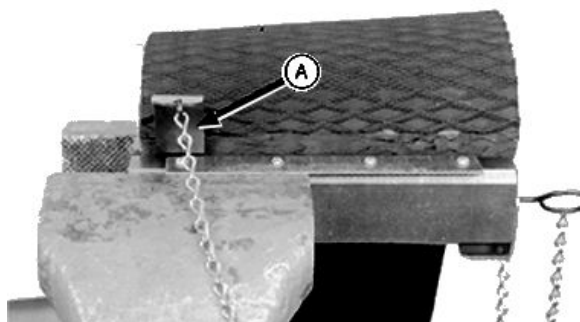
E21801—UN—25JUN99

PP98408,0000E74 -19-21FEB13-6/9

IMPORTANT: To ensure that hooks are clinched correctly, retighten vise on approximately six hooks at a time to exert maximum pressure. Doing this will increase the life of the belt.

8. Starting at one end of belt and keeping pressure plate (A) centered in the vise, retighten vise to exert maximum pressure on approximately six hooks at a time.

A—Pressure Plate



E21802—UN—25JUN99

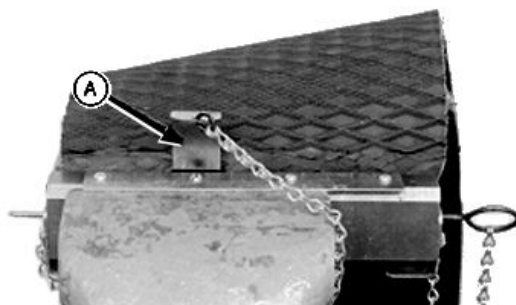
Continued on next page

PP98408,0000E74 -19-21FEB13-7/9

9. Always keeping pressure plate (A) centered in the vise, move belt, and lacing tool over six hooks and retighten vise.

10. Repeat procedure until all hooks are clinched.

A—Pressure Plate



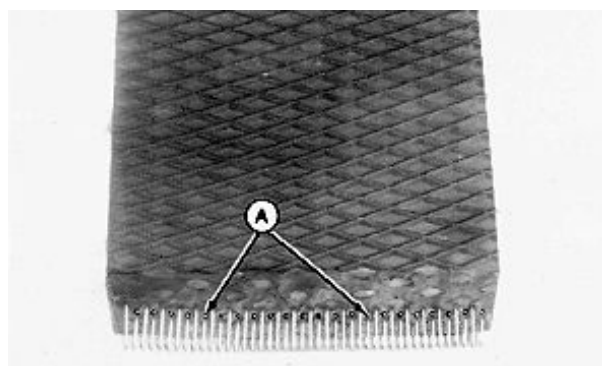
E21803 —UN—25JUN99

PP98408,0000E74 -19-21FEB13-8/9

11. Belt splices are properly installed when points (A) come through belt from opposite side and are slightly clinched.

12. Install belts. (See INSTALL BELTS in this section.)

A—Points

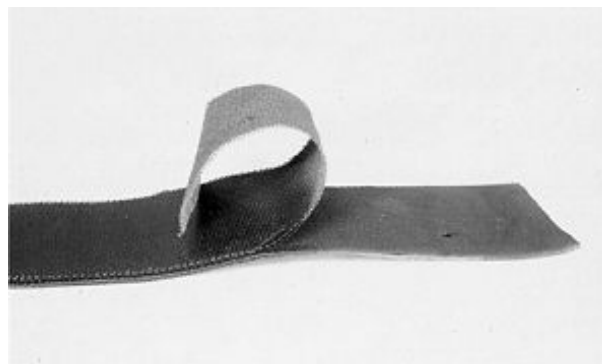


E21804 —UN—13SEP88

PP98408,0000E74 -19-21FEB13-9/9

Belts Eligible for Warranty Replacement

Bale forming belts are warrantable if the material or workmanship is defective and machine is under warranty. Ply separation is considered warranty if within the item warranty.



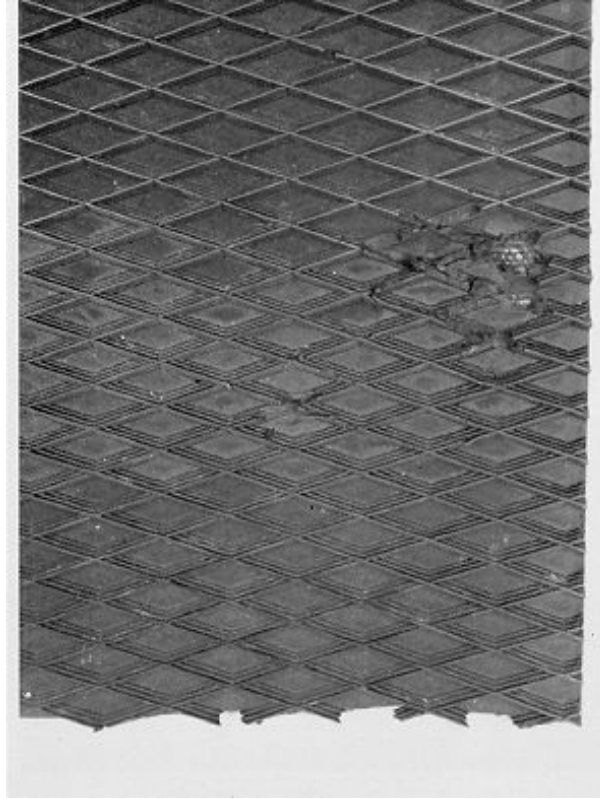
E27607 —UN—12SEP88

PP98408,0000E75 -19-07FEB13-1/1

Belts Not Eligible for Warranty Replacement

The following illustrations are belts damaged by accumulation of crop or foreign objects on top of compressor rack and between belts in the starter roll area. A small slug of the buildup will pass between the lower drive roll and the belt, which forces the belt into the starter roll. The bars of the starter roll remove chunks of rubber from the belt or tear the belt fabric.

- Chunks of rubber missing from surface of belt.



E27608 —UN—12SEP88

Continued on next page

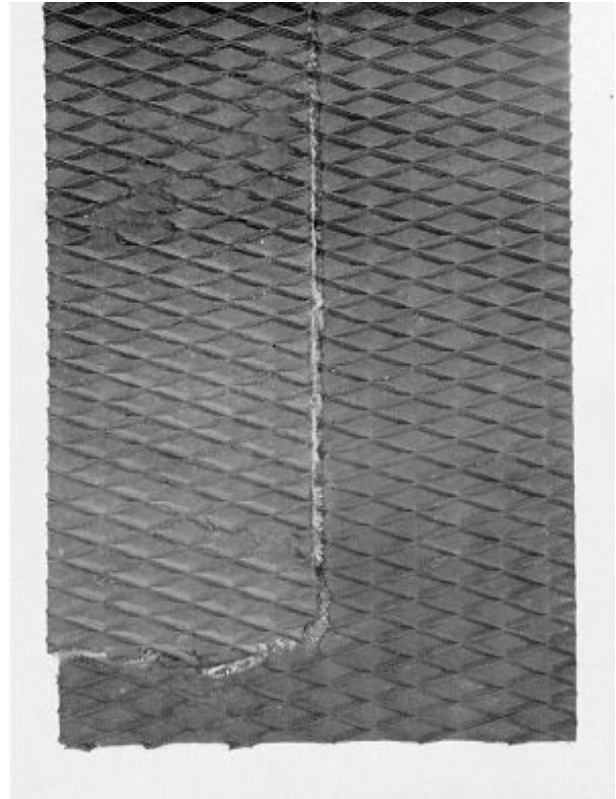
PP98408,0000E76 -19-07FEB13-1/4

- Belts with holes or tears.

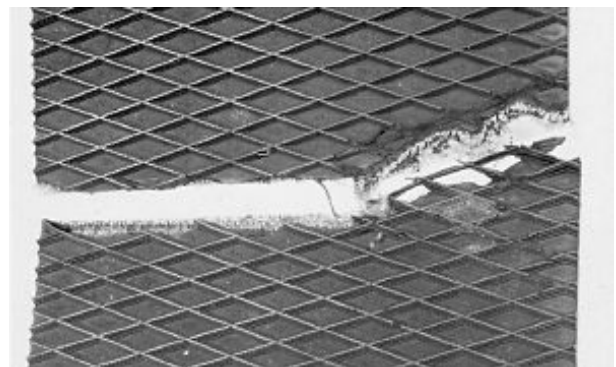
NOTE: This is not ply separation.

- Belts that are cut or torn in two.
- Back side of belt showing damage caused by foreign objects.
- The following illustrations show the lacing (splice) pins wearing or breaking, and the use of improper hooks or lacing techniques.
- The wearing or breaking of pins is normal. The severity of wear or breaking of pins is related to field conditions, density of bales, belt tracking, and type of crop. Pins are wear items and must be checked weekly and replaced as needed.
- Belt lacing not holding due to an insufficient number of diamond pattern removed.
- Belt fabric cut when cutting down toward surface of the belt to remove diamond pattern.
- Too much of diamond pattern removed for belt lacing.
- Small frays (A) in belts is normal.

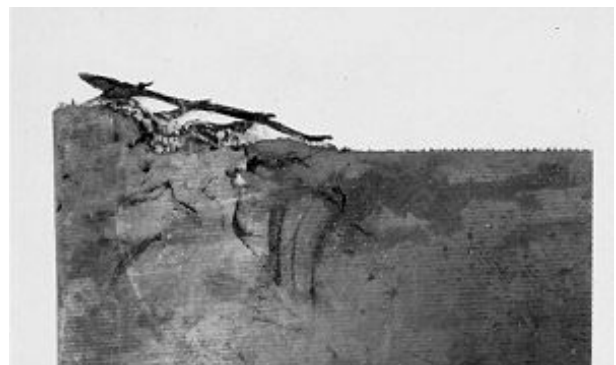
A—Frays



E27609 —UN—12SEP88



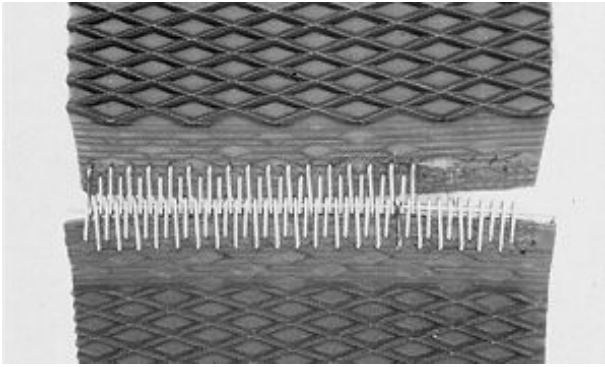
E27610 —UN—12SEP88



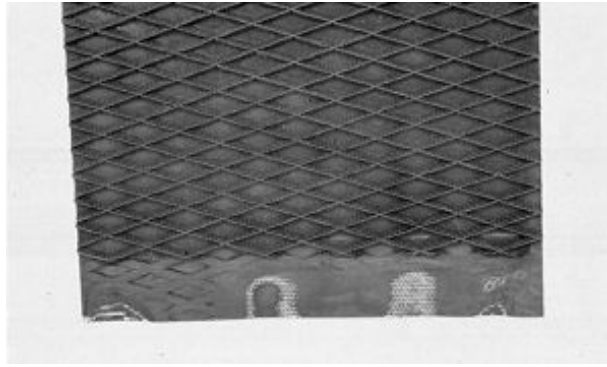
E27611 —UN—12SEP88

Continued on next page

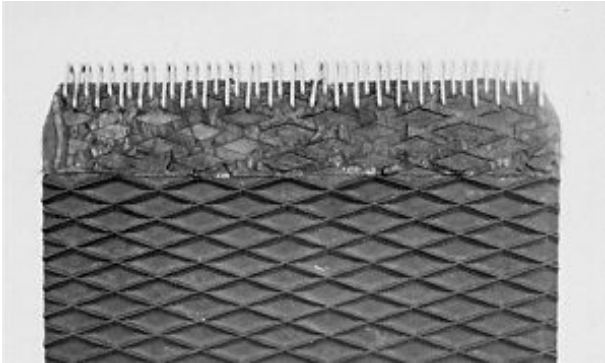
PP98408.0000E76 -19-07FEB13-2/4



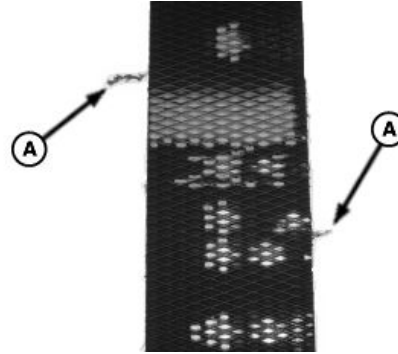
E27612—UN—12SEP88



E27615—UN—12SEP88



E27613—UN—12SEP88



E54524—UN—03MAY08



E27614—UN—12SEP88

Continued on next page

PP98408,0000E76 -19-07FEB13-3/4

Adjust Hydraulic Twine Arm Cylinder Initial Length (Hydraulic Twine Wrap Only)

NOTE: If either hex block (E) or end block (B) of the twine cylinder have been removed, the following procedure will bring the cylinder's retracted and extended lengths close to settings required for proper twine cutter tension and twine arm position at right end of bale. These settings must be checked (and reset if necessary) when the cylinder is installed on baler.

1. With all parts on cylinder rod, fully extend cylinder.
2. Loosen jam nut (C) and turn end block (B) on cylinder rod to obtain distance (A) to specifications. Tighten jam nut.

Specification

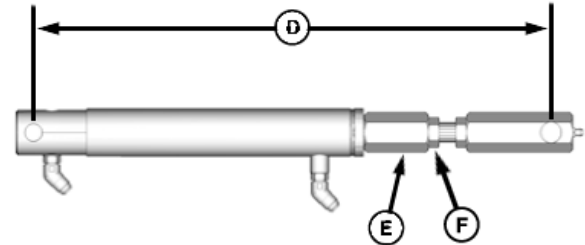
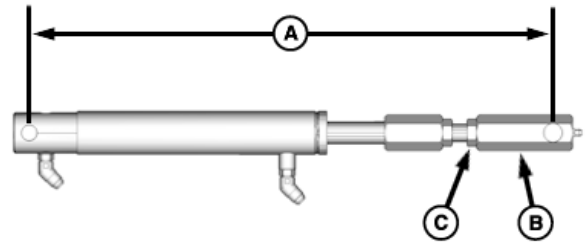
Cylinder—Distance..... 652 mm
(25-43/64 in.)

3. Fully retract cylinder. (Hex block (E) must contact cylinder end cap.)
4. Measure distance (D). Distance must be within specifications.

Specification

Cylinder (Retracted)—Distance..... 466 mm
(18-11/32 in.)

5. If distance is not to specifications, loosen jam nut (F).
6. Turn hex block (E) until specifications is obtained. Tighten jam nut (F).



A—Distance
B—End Block
C—Jam Nut

D—Distance
E—Hex Block
F—Jam Nut

7. Install cylinder. (See INSTALL HYDRAULIC TWINE ARM CYLINDER — HYDRAULIC TWINE WRAP ONLY in this section.)

PP98408,0000E77 -19-14MAR13-1/1

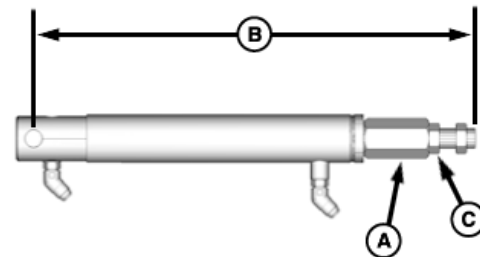
Install Hydraulic Twine Arm Cylinder (Hydraulic Twine Wrap Only)

1. Retract cylinder until hex block (A) contacts cylinder barrel. Distance (B) from center of hole in base end of cylinder to end of cylinder rod must be within specifications.

Specification

Center of Hole in Base
End-to-End of Cylinder
Rod—Distance..... 404 mm
(15-29/32 in.)

2. Turn hex block (A) on cylinder rod to obtain specifications. Hex block (A) must be contacting cylinder barrel. Tighten jam nut (C).



A—Hex Block
B—Dimension

C—Jam Nut

Continued on next page

PP98408,0000E78 -19-14MAR13-1/3

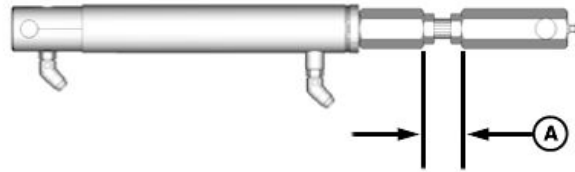
NOTE: If cylinder was removed with end block, see **ADJUST HYDRAULIC TWINE ARM CYLINDER INITIAL LENGTH (HYDRAULIC TWINE WRAP ONLY)** in this section for proper installation procedure.

3. Install cylinder on baler by turning cylinder rod into end block until dimension (A) is obtained between end block and hex block to specifications.

Specification

End Block-to-Hex
Block—Distance..... 28 mm
(1-3/32 in.)

The initial cylinder settings must be close to the desired setting for right-hand end wrap placement and twine cutter tension.

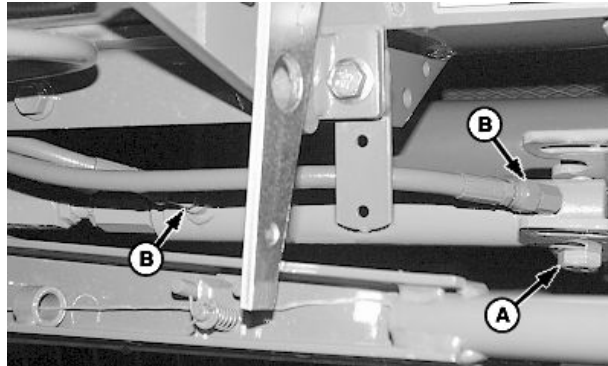


A—Dimension

E69483—UN—14MAR13

PP98408,0000E78 -19-14MAR13-2/3

4. Install base end of cylinder and fasten with cap screw and lock nut (A). Do not overtighten, cylinder must be free to pivot.
5. Connect hydraulic hoses (B).
6. Start tractor engine and operate twine arm through several complete cycles, using tractor hydraulics, to bleed air from cylinder.
7. Adjust position of twine arm to right sidesheet. (See **ADJUST TWINE ARM DISTANCE FROM RIGHT SIDESHEET** in this section.)
8. Adjust twine cutter tension. (See **ADJUST TWINE CUTTER TENSION** in this section.)



A—Cap Screw and Lock Nut

B—Hydraulic Hoses

E54028—UN—06JAN05

PP98408,0000E78 -19-14MAR13-3/3

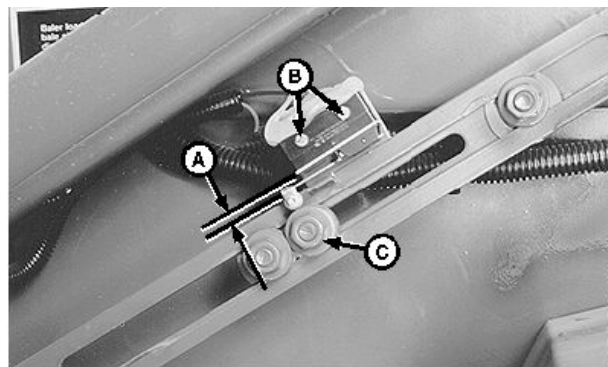
Adjust Bale Size Switch (Hydraulic Twine Wrap Only)

1. Raise gate until roller on bale size switch arm is centered over washers (C).
2. Loosen screws (B) and adjust switch to obtain a gap (A) between switch arm and body to specifications. Tighten screws (B).

Specification

Switch Arm-to-
Body—Gap..... 3 mm
(1/8 in.)

3. Turn tractor key switch ON. Bale size alarm (in tractor) must be activated when switch is at this position. If not, repeat Step 2 and decrease gap (A) dimension.
4. Raise gate fully using tractor hydraulics (*tension arm must be raised*), then lock gate.



**A—Gap
B—Screw**

C—Washers

E40188—UN—08JUL96

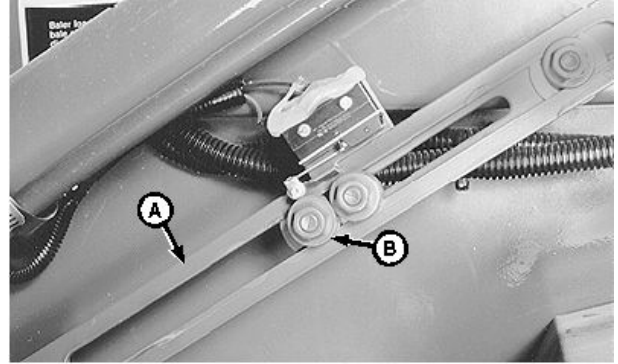
Continued on next page

PP98408,0000E79 -19-07FEB13-1/2

5. Manually push sliding link (A) forward until bale size switch roller is centered over washers (B).
6. Turn tractor key switch ON. Bale size alarm (in tractor) must activate when switch in at this position. If not, repeat Step 2 and decrease gap.

A—Link

B—Washers



E40189—UN—08JUL96

PP98408,0000E79 -19-07FEB13-2/2

Adjust Bale Size Link for Maximum Bale Size (Hydraulic Twine Wrap Only)

1. Adjust bale size switch. (See ADJUST BALE SIZE SWITCH [HYDRAULIC TWINE WRAP ONLY] in this section.)
2. Close gate.
3. Clamp bale size link (C) to the spring strap cap screw (B) using a pair of locking jaw pliers. (*This is to keep the link from moving as the gate is opened.*) Position the plier jaws over the spring strap cap screw (or washers) and under lower edge of link.
4. Raise gate fully using tractor hydraulics (*tension arm must be raised*), then lock gate.
5. Switch roller (D) must be centered on rear washers (E). If roller is not centered on washers, measure the distance between center of roller to center of rear washers.
6. Close gate and move bracket (A), forward or rearward, the number previously measured.
7. Repeat Steps 2—6 until roller is properly centered.

NOTE: If unable to attain proper roller position, see the round baler technical manual or see your John Deere dealer.

A—Bracket

B—Spring Strap Cap Screw

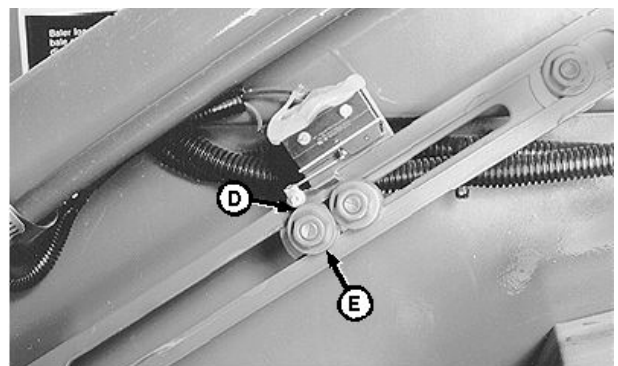
C—Bale Size Link

D—Switch Roller

E—Washers



E39178—UN—30JAN96



E40190—UN—08JUL96

PP98408,0000E7A -19-07FEB13-1/1

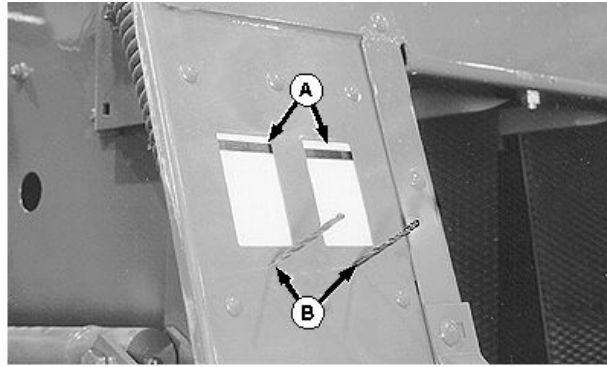
Adjust Bale Shape Indicators

Bale shape senders are located at the rear of baler. Right-hand arm controls right-hand indicator. Left-hand arm controls left-hand indicator.

1. To adjust, close gate and engage PTO for a few seconds. Shut off tractor.
2. Raise bale shape indicators (A) until holes in shield band and holes in indicator align. Insert pins (3/16 in. drill bits) through holes (B) to keep indicators in place.

A—Bale Shape Indicators

B—Holes



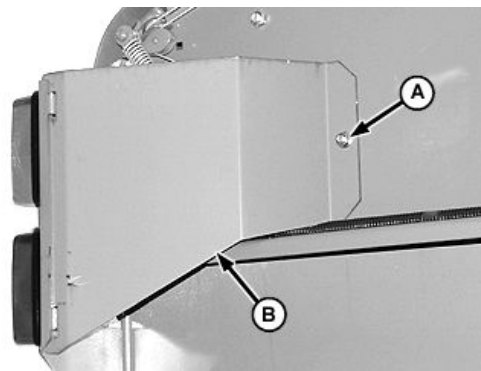
E39291—UN—19JUN96

PP98408,0000E7B -19-07FEB13-1/6

3. Remove lock nut and round-head bolt (A). Rotate shield (B) away from baler.

A—Lock Nut and Round-Head Bolt

B—Shield



Right-Hand Side Shown

E47752—UN—05FEB00

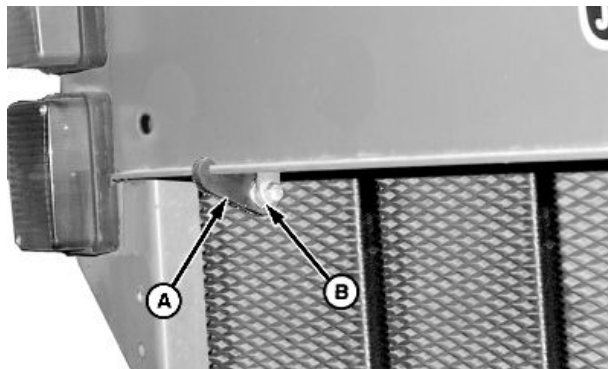
PP98408,0000E7B -19-07FEB13-2/6

NOTE: Bale shape gauge strap (A) is available through your John Deere dealer.

4. If bale shape gauge strap (A) is used:
 - a. Install strap (A) over roller bearing (B).
 - b. Attach end of strap over frame cross-member. Make sure that strap lip is seated on cross-member.

A—Bale Shape Gauge Strap

B—Bearing



Left-Hand Side Shown

E48271—UN—06JUL00

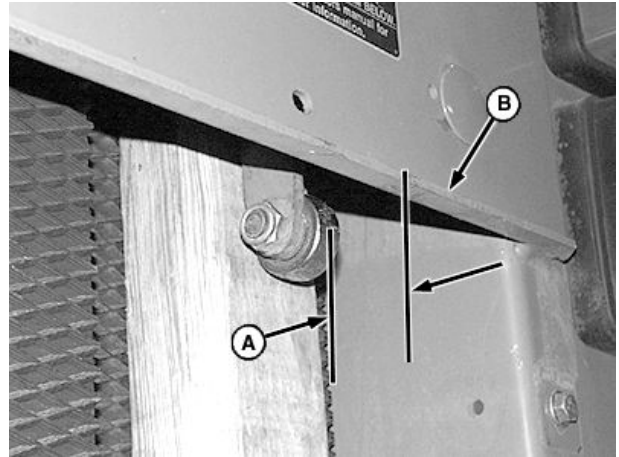
Continued on next page

PP98408,0000E7B -19-07FEB13-3/6

5. If bale shape gauge strap is not used:

- a. Put a 51 x 102 x 457 mm (2 x 4 x 18 in.) board between roller bearing and belt as shown.
- b. Position board to hold bale shape sender arm so rear of bearing is 62 mm (2-7/16 in.) (A) from rear edge of panel (B).

A—Dimension 62 mm (2-7/16 in.) **B—Rear Panel Edge**



Right-Hand Side Shown

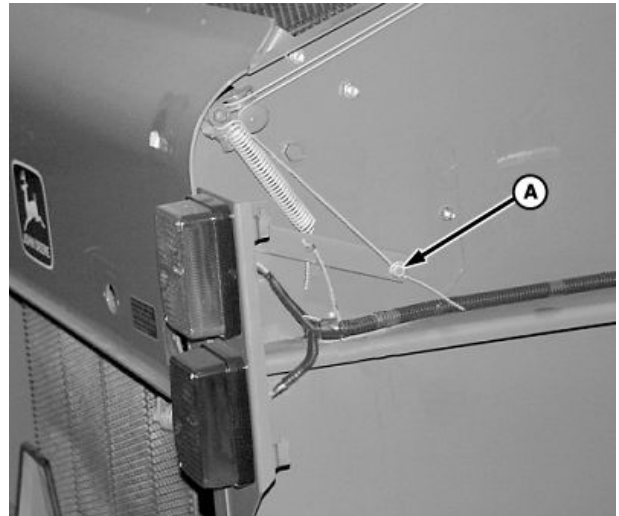
PP98408,0000E7B -19-07FEB13-4/6

E47620—UN—07JAN00

6. Loosen cable clamp nut (A).

7. Pull on cable until all slack is removed and tighten clamp nut.

A—Clamp Nut



Right-Hand Side Shown

PP98408,0000E7B -19-07FEB13-5/6

E55846—UN—30JUN08

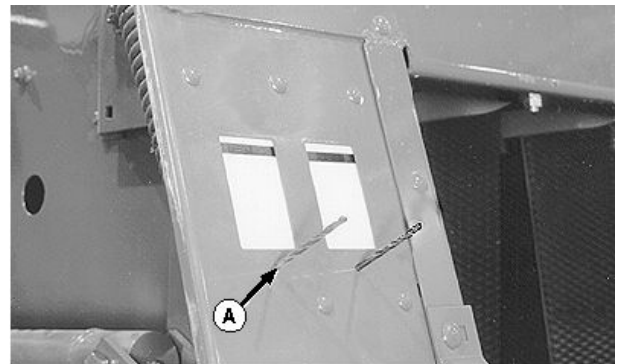
8. To check adjustment, remove pin (A) from right-hand indicator. A portion of the hole must be in alignment. If not, repeat previous steps.

9. Repeat adjusting procedure on left-hand side.

10. Remove pins (drill bits).

11. Rotate shield toward baler and fasten with round-head bolt and lock nut.

A—Pin



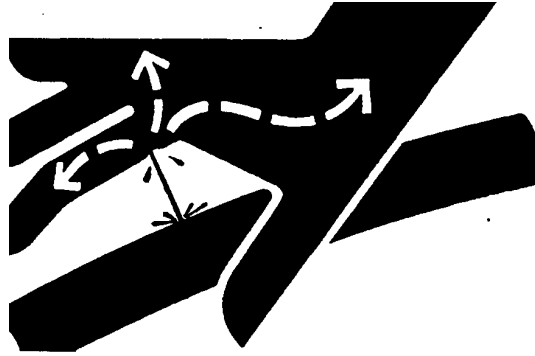
PP98408,0000E7B -19-07FEB13-6/6

E39294—UN—19JUN96

Remove and Install Bale Ramp (If Equipped)

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

IMPORTANT: All hydraulic couplers must be clear of debris, dust, and sand. Use protective caps on fluid openings until ready to make connection. Foreign material can damage the hydraulic system.



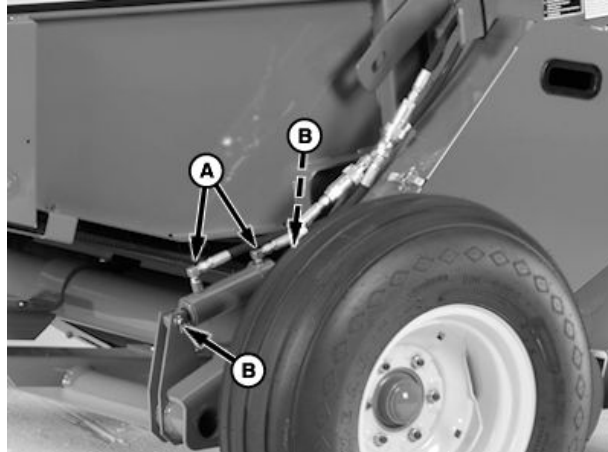
X9811—UN—23AUG88

PP98408,0000E7C -19-07FEB13-1/3

1. With gate closed, disconnect hydraulic couplers (A) to ramp cylinder.
2. Raise gate fully using tractor hydraulics and lock gate open.
3. Remove pins (B) and remove hydraulic cylinder from baler.

A—Hydraulic Couplers

B—Pins (2 used)



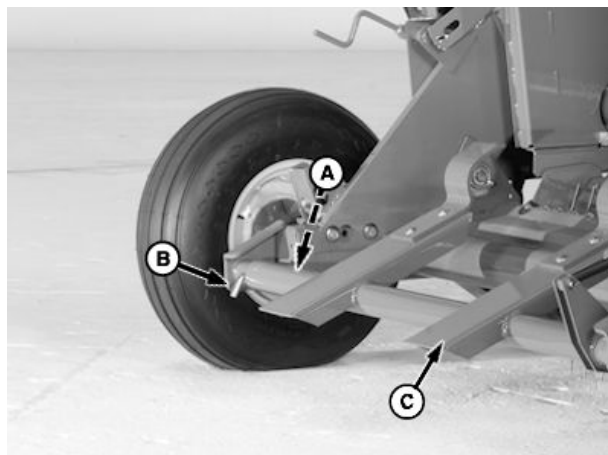
E67366—UN—14AUG12

PP98408,0000E7C -19-07FEB13-2/3

4. Remove spring clip (A) and pin (B).
5. Remove bale ramp (C).
6. To reinstall bale ramp, reverse order of removal.
7. Make sure hydraulic couplers on baler and ramp cylinder are clean before reconnecting hoses.
8. Cycle bale ramp and gate to remove air from hydraulic hoses before baling.
9. If necessary, adjust bale ramp. (See ADJUST BALE RAMP in Operating the Baler section.)

A—Spring Clip
B—Pin

C—Bale Ramp



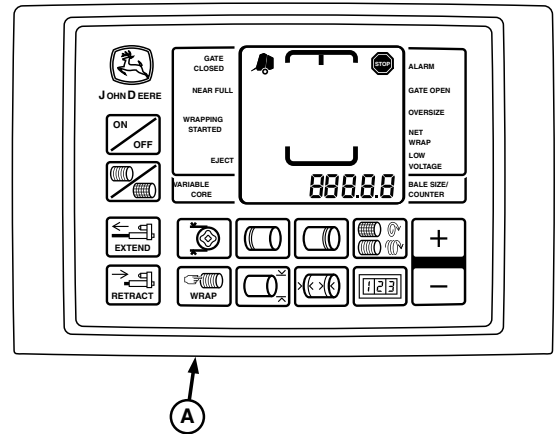
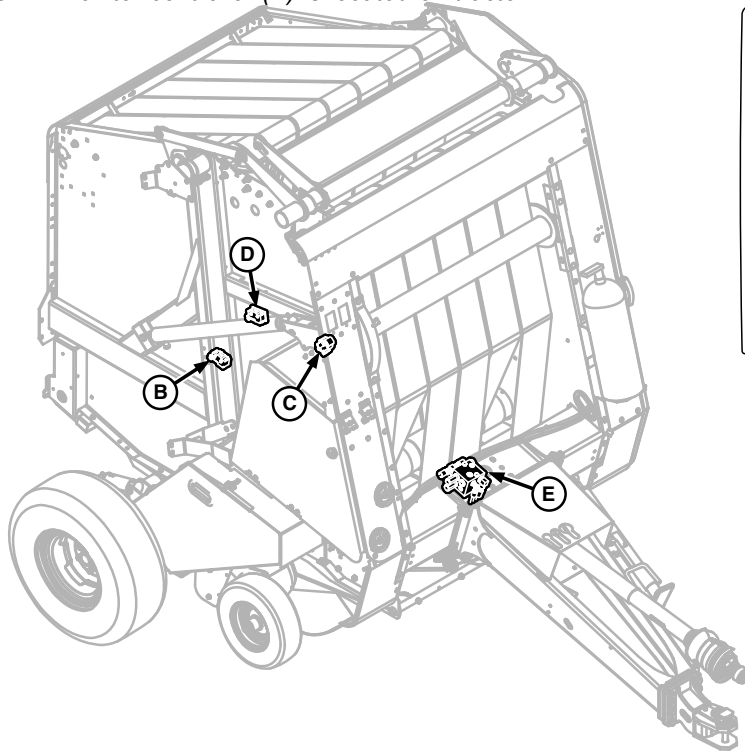
E67367—UN—14AUG12

PP98408,0000E7C -19-07FEB13-3/3

Service—BaleTrak™ Pro System

BaleTrak™ Pro System Component Locations

NOTE: Monitor-controller (A) is located on tractor.



A—Monitor-Controller (located on tractor)

B—Gate Latch Switch
C—Bale Diameter Sensor

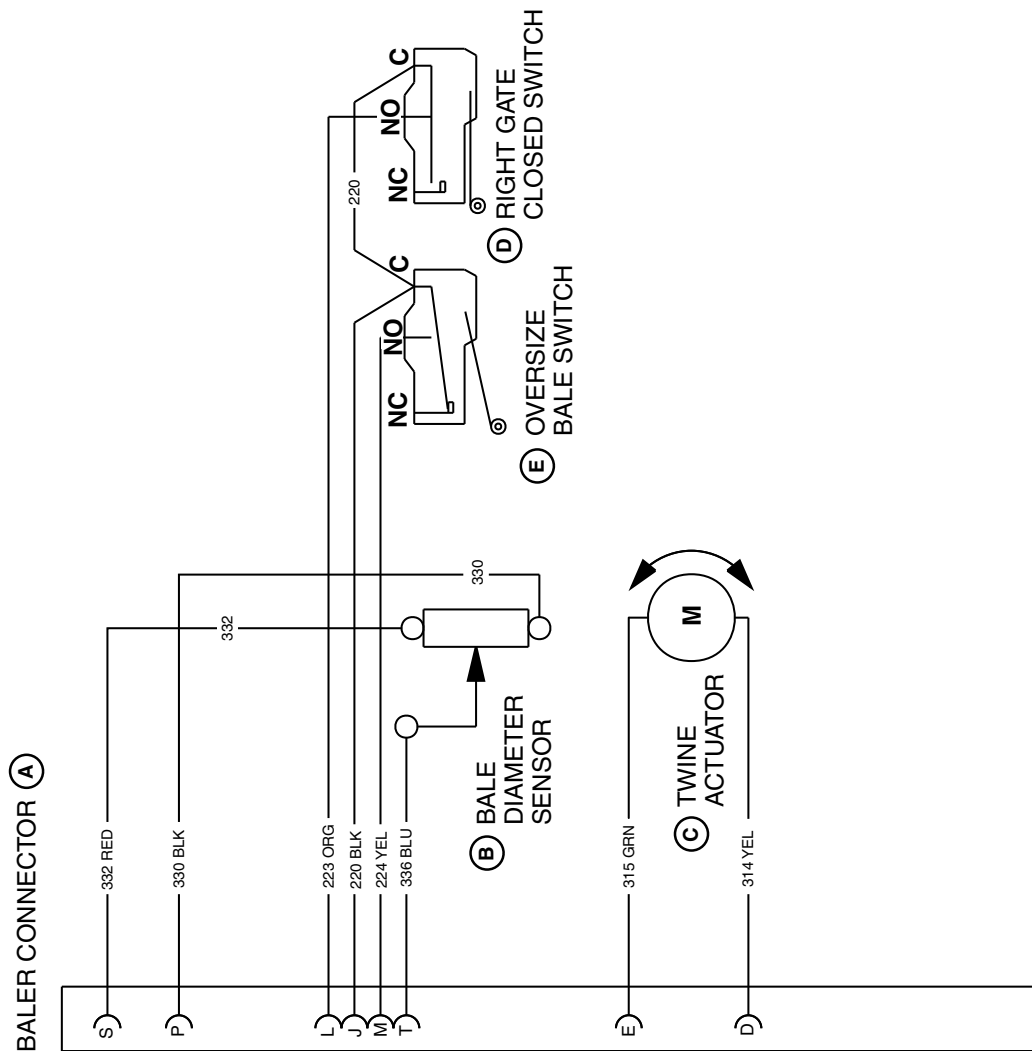
D—Oversize Bale Switch
E—Soft Core Solenoid (If Equipped)

PP98408,0000E7D -19-19MAR13-1/1

E69489 —UN—20MAR13

Wire Diagram—BaleTrak™ Pro Monitor-Controller Control System

NOTE: If baler is equipped with a soft core valve, an auxiliary wire harness is used.



SWITCHES SHOWN IN NORMAL BALING POSITION

Continued on next page

PP98408,0000E7E -19-07FEB13-1/2

E57943 —UN—31AUG09

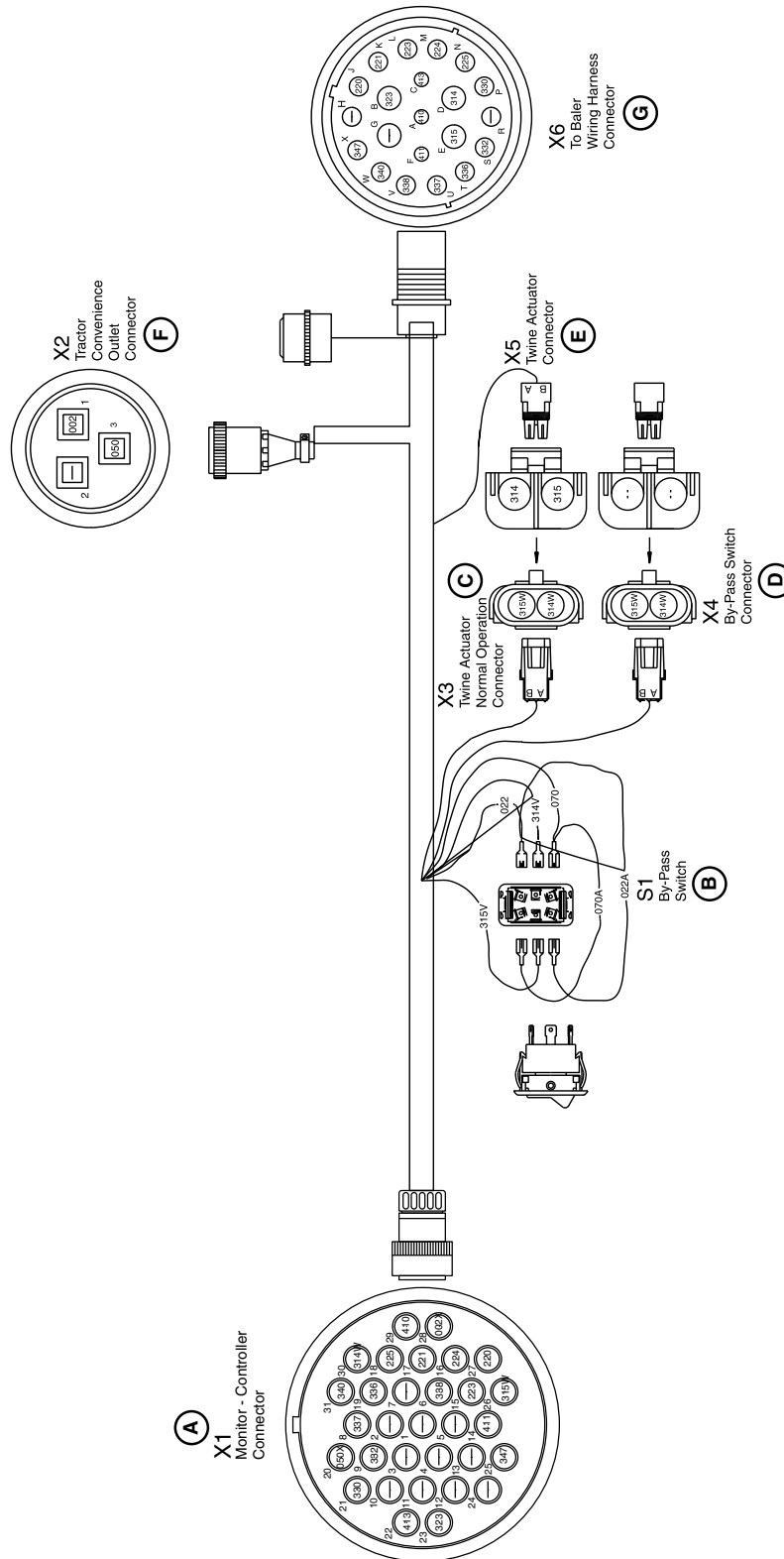
A—Bale Connector
B—Bale Diameter Sensor

C—Twine Actuator
D—Right Gate Closed Switch

E—Oversize Bale Switch

PP98408,0000E7E -19-07FEB13-2/2

Wire Harness Diagram—BaleTrak™ Pro Monitor-Controller



NOTE: If the baler is equipped with a soft core valve, pin X and W are used.

Continued on next page

PP98408,0000E7F -19-07FEB13-1/2

E57278 —UN—02JUN09

X1 BaleTrak™ Pro Monitor-Controller Connector			
Terminal	Circuit	Function	Wire Color
1		Open	
2		Open	
3		Open	
4		Open	
5		Open	
6	338	Not Used	Gray
7		Open	
8	337	Not Used	Purple
9	332	Not Used	Red
10		Open	
11		Open	
12		Open	
13		Open	
14	411	Not Used	
15	223	Right Gate Closed Switch	Orange
16	224	Oversize Switch	Yellow
17	221	Left Gate Closed Switch	Brown
18	225	Not Used	Green
19	336	Bale Size Sensor	Blue
20	050X	Ground	Black
21	330	Not Used	Black
22	413	Not Used	Orange
23	323	Not Used	Orange
24		Open	
25	347	Not Used	Purple
26	315W	Twine Actuator	Green
27	220	Switch Ground	Black
28	002X	Power	Red
29	410	Not Used	Black
30	314W	Twine Actuator	Yellow
31	340	Not Used	Black

X2 Tractor Convenience Outlet Connector			
Terminal	Circuit	Function	Wire Color
1	002	Power	Red
2		Open	
3	050	Ground	Black

X3 Twine Actuator Normal Operation Connector			
Terminal	Circuit	Function	Wire Color
A	314W	Twine Actuator	Yellow
B	315W	Twine Actuator	Green

X4 By-Pass Switch Connector			
Terminal	Circuit	Function	Wire Color
A	314V	Twine Actuator	Yellow
B	315V	Twine Actuator	Green

X5 Twine Actuator Connector			
Terminal	Circuit	Function	Wire Color
A	314	Twine Actuator	Yellow
B	315	Twine Actuator	Green

X6 To Baler Wire Harness Connector			
Terminal	Circuit	Function	Wire Color
A	410	Not Used	Black
B	323	Not Used	Orange
C	413	Not Used	Orange
D	314	Twine Actuator	Yellow
E	315	Twine Actuator	Green
F	411	Not Used	Brown
G		Open	
H		Open	
J	220	Ground	Black
K	221	Left Gate Closed Switch	Brown
L	223	Right Gate Closed Switch	Orange
M	224	Oversize Bale Switch	Yellow
N	225	Not Used	Green
P	330	Ground	Black
R		Open	
S	332	Not Used	Red
T	336	Bale Diameter Sensor	Blue
U	337	Not Used	Purple
V	338	Not Used	Gray
W ^a	340	Ground	Black
X ^a	347	Not Used	Purple

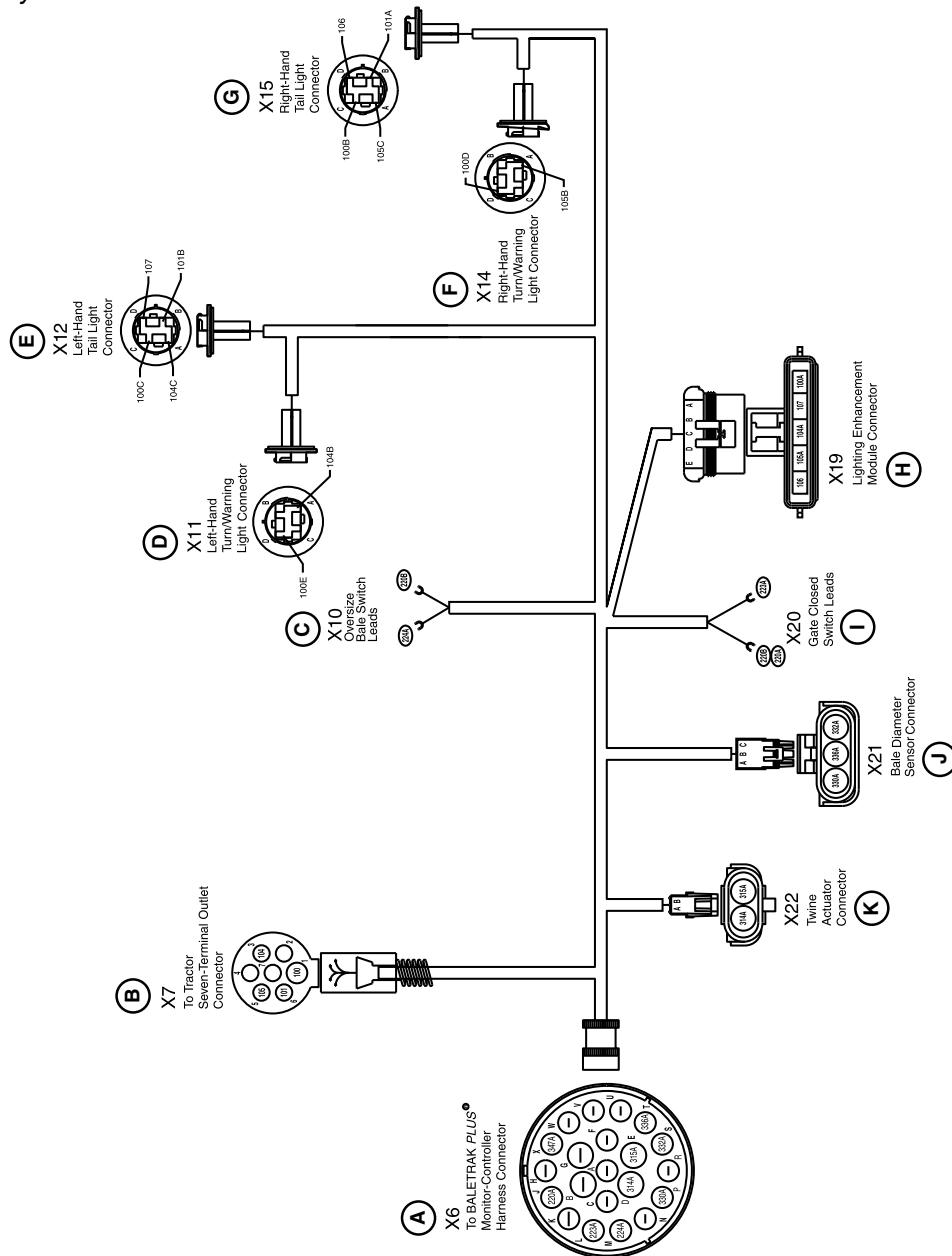
^aUsed on baler if equipped with soft core valve.

S1 By-Pass Switch Connector			
Terminal	Circuit	Function	Wire Color
—	315V	Twine Actuator	Green
—	070A	Ground	Black
—	022A	Power	Red
—	070	Ground	Black
—	314V	Twine Actuator	Yellow
—	022	Ground	Black

Auxiliary Wire Harness For Soft Core Attachment			
Terminal	Circuit	Function	Wire Color
W	340	Ground for Variable Core Solenoid	Black
X	347	Power for Variable Core Solenoid	Purple

Wire Harness Diagram—Baler

NOTE: If the baler is equipped with a soft core solenoid, an auxiliary wire harness is used.



A—Monitor-Controller Connector (X6)	E—Left-hand Tail Light Connector (X12)	H—Light Enhancement Module Connector (X19)	K—Twine Actuator Connector (X22)
B—Seven Terminal Connector (X7)	F—Right-hand Turn or Warning Light Connector (X14)	I—Gate Close Switch Leads (X20)	
C—Oversize Bale Switch Leads (X10)	G—Right-hand Tail Light Connector (X15)	J—Bale Diameter Connector (X21)	
D—Left-hand Turn or Warning Light Connector (X11)			

Continued on next page

PP98408,0000E80 -19-07FEB13-1/3

E66390 —UN—05JUL 12

X6 To BaleTrak™ Pro Monitor-Controller Harness Connector

Terminal	Circuit	Function	Wire Color
A		Open	
B		Open	
C		Open	
D	314A	Twine Actuator	Yellow
E	315A	Twine Actuator	Green
F		Open	
G		Open	
H		Open	
J	220A	Ground	Black
K		Open	
L	223A	Gate Closed Switch	Orange
M	224A	Oversize Bale Switch	Yellow
N		Open	
P	330A	Ground	Black
R		Open	
S		Open	
T	336A	Bale Size	Blue
U		Open	
V		Open	
W		Open ^a	
X		Open ^a	Purple

^aUsed on baler if equipped with a soft core valve.**X7 To Tractor Seven-Terminal Outlet Connector**

Terminal	Circuit	Function	Wire Color
1	100	Ground	Black
2		Open	
3	104	Left-hand Turn or Warning Light	Yellow
4		Open	
5	105	right-hand Turn or Warning Light	Green
6	101	Tail Lights	Brown
7		Open	

X10 Oversize Bale Switch Leads

Terminal	Circuit	Function	Wire Color
—	224A	Power	Yellow
—	220B	Ground	Black

X11 Left-Hand Turn or Warning Light Connector

Terminal	Circuit	Function	Wire Color
A	104B	Power	Yellow
B		Open	
C		Open	
D	100E	Ground	Black

X12 Left-Hand Tail Light Connector

Terminal	Circuit	Function	Wire Color
A	104C	Left-hand Turn or Warning Light	Yellow
B	101B	Left-hand Tail Lamp	Brown
C	100C	Ground	Black
D	107	Left-hand Flasher	Orange

X14 Right-Hand Turn or Warning Light Connector

Terminal	Circuit	Function	Wire Color
A	105B	Power	Green
B		Open	
C		Open	
D	100D	Ground	Black

X15 Right-Hand Tail Light Connector

Terminal	Circuit	Function	Wire Color
A	105C	Right-hand Turn or Warning Light	Green
B	101A	Right-hand Tail Lamp	Brown
C	100B	Ground	Black
D	106	Right-hand Flasher	Violet

X19 Lighting Enhancement Module Connector

Terminal	Circuit	Function	Wire Color
A	100A	Flasher	Black
B	107	Left-hand Flasher	Orange
C	104A	Left-hand Turn or Warning Light	Yellow
D	105A	Right-hand Turn or Warning Light	Green
E	106	Right-hand Flasher	Violet

X20 Gate Closed Switch Leads

Terminal	Circuit	Function	Wire Color
—	220A 220B	Ground	Black
—	223A	Power	Orange

X21 Bale Diameter Sensor Connector

Terminal	Circuit	Function	Wire Color
A	330A	Ground	Black
B	336A	Bale Diameter Sensor	Blue
C	332A	Sensor	Red

X22 Twine Actuator Connector

Terminal	Circuit	Function	Wire Color
A	314A	Twine Actuator	Yellow
B	315A	Twine Actuator	Green

Continued on next page

PP98408,0000E80 -19-07FEB13-2/3

Auxiliary Wire Harness For Soft Core Attachment

Terminal	Circuit	Function	Wire Color
W	340	Ground for Variable Core Solenoid	Black
X	347	Power for Variable Core Solenoid	Purple

PP98408,0000E80 -19-07FEB13-3/3

Adjust Twine Arm Distance From Right Sidesheet—BaleTrak™ Pro System

IMPORTANT: Do not operate twine arms with pickup in raised position or damage to pickup teeth can occur.

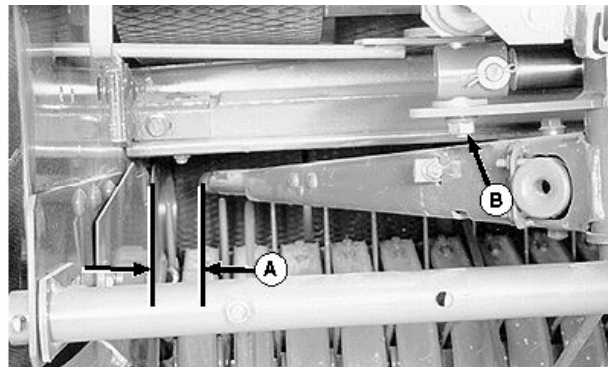
The twine cutter tension must be adjusted first before performing this procedure.

1. Lower pickup.
2. Turn tractor key to ON position. Do not start tractor engine.
3. Turn monitor-controller ON.
4. Move twine arms all the way to right-hand side of baler using monitor-controller EXTEND key.
5. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.
6. Measure sidesheet to twine arm distance (A). Distance must be within specifications with actuator fully extended and twine arm end play removed toward the rear.

Specification

Twine Arm-to-Right Sidesheet
(Electric)—Distance.....83—133 mm
(3-1/4—5-1/4 in.)

7. To adjust, loosen nut (B) enough so twine arms can be moved by hand, but with some resistance.
8. Move twine arms toward sidesheet as far as possible, then move twine arms to the rear to obtain recommended distance (A).
9. Tighten nut (B) enough to hold actuator bolt in position on twine arm when twine arm is moved to home position.
10. Turn tractor key to ON position. Do not start tractor engine.



A—Twine Arm Distance

B—Nut

11. Turn monitor-controller ON.
12. Move twine arms to the home position (*actuator fully retracted*) using monitor-controller RETRACT key.
13. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.
14. Tighten nut (B) to specifications with twine arms in home position.

Specification

Actuator Nut—Torque.....95 N·m
(70 lb.-ft.)

15. Repeat Steps 3—6 to confirm correct distance from right-hand end of bale. Repeat Steps 7—13 as necessary.
16. Adjust twine cutter tension. (See ADJUST TWINE CUTTER TENSION in this section.)
17. Verify twine arm calibration. (See TWINE ARM CALIBRATION PROCEDURE in this section.)

PP98408,0000E81 -19-07FEB13-1/1

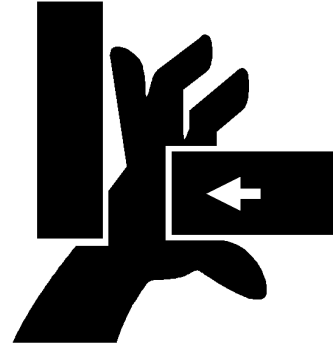
E39282—JUN—19JUN96

Twine Electric Actuator Installation Adjustment

⚠ CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power to twine arms **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

If electric actuator has been removed or replaced, or the twine cutter tension adjustment cannot be made by moving washers on the cutter strap, make the following adjustment:



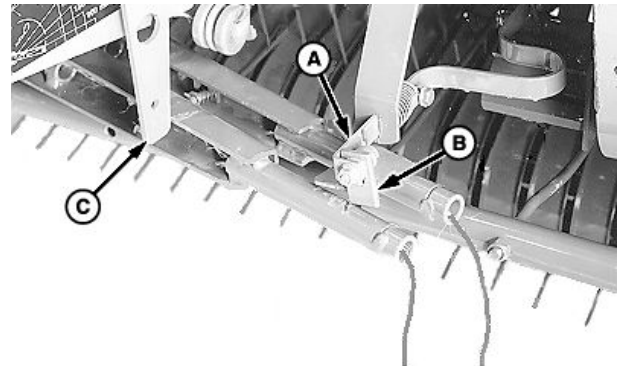
E47598 —UN—07JAN00

PP98408,0000E82 -19-07FEB13-1/5

1. Adjust cutter strap (A) by putting two washers in front of contact tab (B) and four washers behind contact tab (B). Make sure twine arm stop (C) is in the down position.
2. Turn tractor key to ON position. Do not start tractor engine. Set monitor-controller selector switch to TWINE symbol to turn monitor-controller ON.

A—Twine Cutter Strap
B—Contact Tab

C—Twine Arm Stop



E40625 —UN—06SEP00

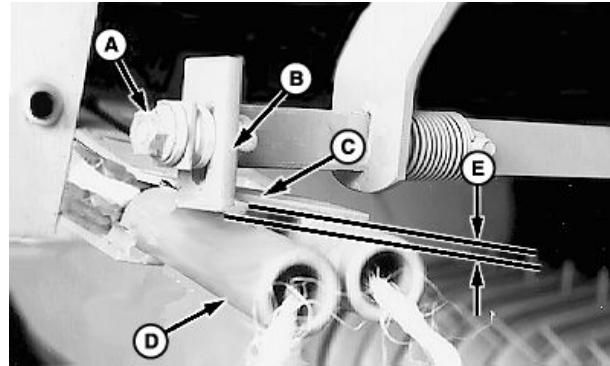
Continued on next page

PP98408,0000E82 -19-07FEB13-2/5

3. Press monitor-controller RETRACT key and move twine arms until twine arm (D) lightly contacts tab (B) and strap (C).
4. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.
5. Loosen nut (A) and adjust tab (B) to obtain dimension (E) between bottom edge of tab (B) and bottom side of strap (C) according to specifications. Keep tab (B) vertical and tighten nut (A).

Specification

Bottom Edge of	
Tab-to-Bottom Side of	
Strap—Overlap.....	2—4 mm
	(3/32—5/32 in.)



A—Nut
B—Tab
C—Strap

D—Twine Arm
E—Dimension

6. Turn tractor key to ON position. Set monitor-controller selector switch to TWINE symbol to turn monitor-controller ON.
7. Move twine arms forward using monitor RETRACT key.
8. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.
9. Check overlap dimension (E). Front twine arm must pass under tab (B). If necessary, adjust tab (B). Light contact between tab (B) and front twine arm (D) is acceptable.

10. Turn tractor key to ON position. Set monitor-controller selector switch to TWINE symbol to turn monitor-controller ON.
11. Move twine arms behind twine cutter using monitor-controller EXTEND key.
12. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.

Continued on next page

PP98408,0000E82 -19-07FEB13-3/5

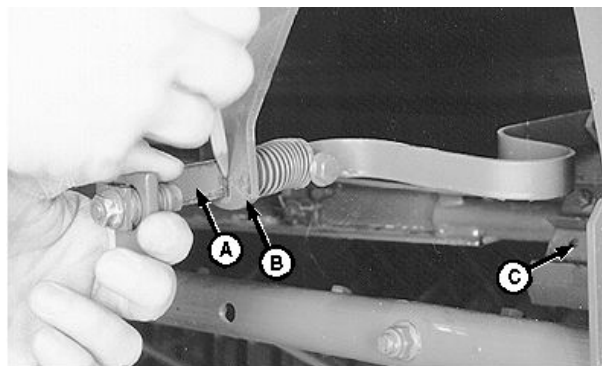
E40583—UN—06SEP00

⚠ CAUTION: Be careful when working around the knife. It is sharp.

13. Pull cutter strap (A) gently forward until knife (C) contacts hex anvil. Remove slack, but DO NOT deform cutter strap.
14. Mark along cutter strap (A) at support (B), as shown.

A—Cutter Strap
B—Support

C—Knife

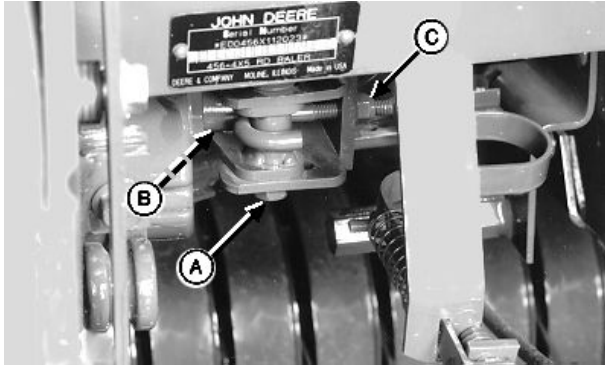


Continued on next page

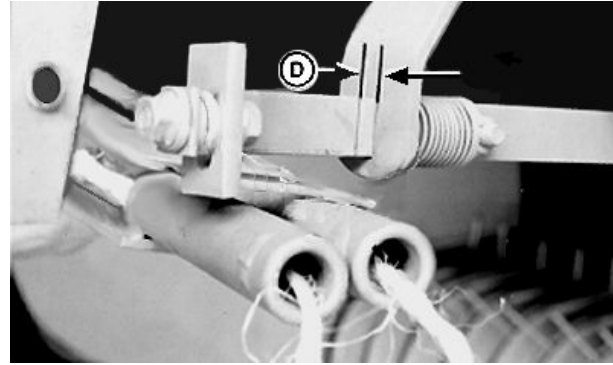
PP98408,0000E82 -19-07FEB13-4/5

TS268 —UN—23AUG88

E39276 —UN—19JUN96



E40647—UN—17JUL96



E40626—UN—29JUN96

- A—Cap Screw
B—Cap Screw
C—J-Bolt Nut
D—Twine Cutter Dimension

15. Loosen cap screw (A and B).
16. Loosen J-bolt nut (C).
17. Move cap screw (A) to end of slot toward actuator.
18. Tighten cap screws (A and B) enough so actuator pivot can be moved by hand, but with some resistance.
19. Turn tractor key to ON position. Set monitor-controller selector switch to TWINE symbol to turn monitor-controller ON.
20. Using monitor-controller RETRACT key, move twine arms to home position.
21. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.
22. Tighten J-bolt nut (C) to obtain dimension (D) between mark on cutter strap and strap support according to specifications.

Specification

Mark on Cutter	
Strap-to-Strap	
Support—Distance.....	5—7 mm
	(3/16—9/32 in.)

23. Tighten cap screw (A) to specifications.

Specification

Cap Screw (A)—Torque.....	140 N·m
	(103 lb.-ft.)

24. Tighten cap screw (B) to specifications.

Specification

Cap Screw (B)—Torque.....	95 N·m
	(70 lb.-ft.)

25. Turn tractor key to ON position. Set monitor-controller selector switch to TWINE symbol to turn monitor-controller ON.
 26. Using monitor-controller RETRACT key, cycle twine arm to home position (actuator fully retracted).
 27. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.
 28. Check twine cutter dimension (D).
 29. If dimension (D) is less than specified, loosen cap screws (A) and (B). Tighten J-bolt nut (C) until dimension (D) is obtained. Tighten cap screws (A) and (B).
- If dimension (D) is more than specified, loosen cap screws (A and B). Loosen J-bolt nut (C) until dimension (D) is obtained. Tighten cap screws (A) and (B).

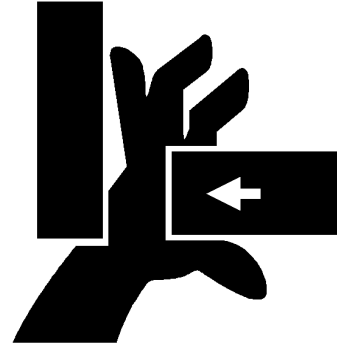
PP98408,0000E82 -19-07FEB13-5/5

Adjust Twine Cutter Tension

1. Turn tractor key to ON position. Do not start tractor engine. Set monitor-controller selector switch to TWINE symbol to turn monitor-controller ON.
2. Using monitor-controller EXTEND key, move twine arms behind twine cutter.
3. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power to twine arms BEFORE servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.



PP98408,0000E83 -19-07FEB13-1/4

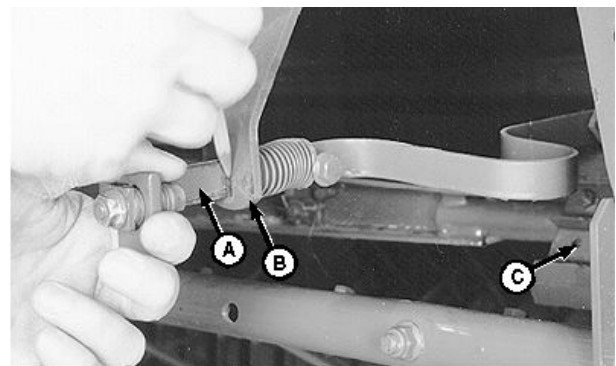
E47598 —UN—07JAN00

CAUTION: Be careful when working around the knife. It is sharp.

4. Pull cutter strap (A) gently forward until knife (C) contacts hex anvil. Remove slack, but DO NOT deform cutter strap.
5. Mark along cutter strap (A) at support (B), as shown.

A—Cutter Strap
B—Support

C—Knife



Continued on next page

PP98408,0000E83 -19-07FEB13-2/4

TS268 —UN—23AUG88

E39276 —UN—19JUN96

6. Make sure twine arm stop (A) is in the down position.
7. Turn tractor key to ON position. Set monitor-controller selector switch to TWINE symbol to turn monitor-controller ON.
8. Cycle twine arms (B) to home position using monitor-controller WRAP key.
9. Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.
10. Distance (C) between mark on cutter strap and strap support must be within specifications.

Specification

Mark on Cutter

Strap-to-Strap

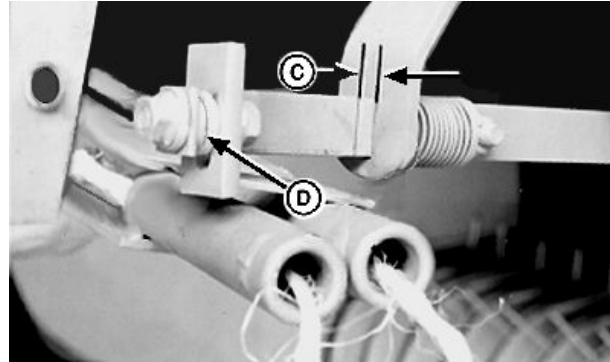
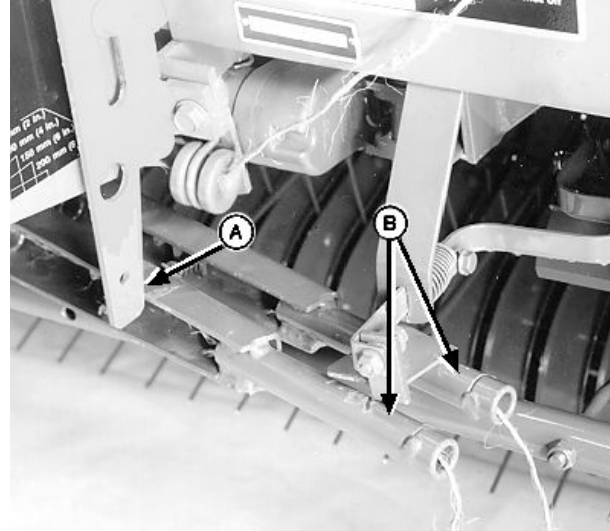
Support—Distance.....5—7 mm
(3/16—9/32 in.)

- To decrease distance (C), move washers (D) from front of strap to rear of strap.
- To increase distance, move washers from rear of strap to front of strap.

If twine cutter adjustment cannot be made by moving washers on cutter strap, see TWINE ELECTRIC ACTUATOR INSTALLATION ADJUSTMENT in this section.

A—Twine Arm Stop
B—Twine Arms

C—Dimension
D—Washers



Continued on next page

PP98408,0000E83 -19-07FEB13-3/4

E39771—UN—21FEB96

E39773—UN—29JUN96

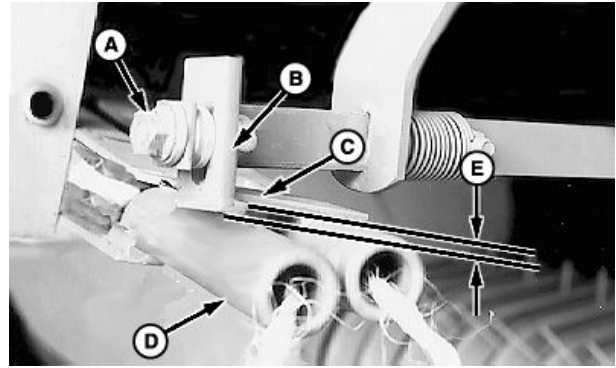
11. If washers have been moved, check overlap dimension (E) between bottom edge of tab (B) and bottom edge of strap (C). Dimension (E) must be within specifications.

Specification

Bottom Edge of
Tab-to-Bottom Edge
of Strap—Overlap
Distance.....2—4 mm
(3/32—5/32 in.)

To check overlap dimension:

- a. Turn tractor key to ON position. Turn monitor-controller ON.
- b. Using monitor-controller RETRACT key, move twine arms until twine arm (D) lightly contacts tab (B) and strap (C).
- c. Set monitor-controller selector switch to OFF. Turn tractor key to OFF position. Remove key.
- d. Loosen nut (A) and adjust tab (B) to obtain specification (E) between bottom edge of tab (B) and bottom side of contact strap (C). Keep tab (B) vertical and tighten nut (A).
- e. Turn tractor key to ON position. Turn monitor-controller ON.
- f. Move twine arms forward using monitor-controller RETRACT key.
- g. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.
- h. Check overlap dimension (E). Front twine arm must pass under tab (B). If necessary, adjust tab (B). Light contact between tab (B) and front twine arm (D) is acceptable.
- i. Make sure distance between mark on cutter strap and strap support is to specification.



A—Nut
B—Tab
C—Strap

D—Twine Arm
E—Dimension

E40583—UN—06SEP00

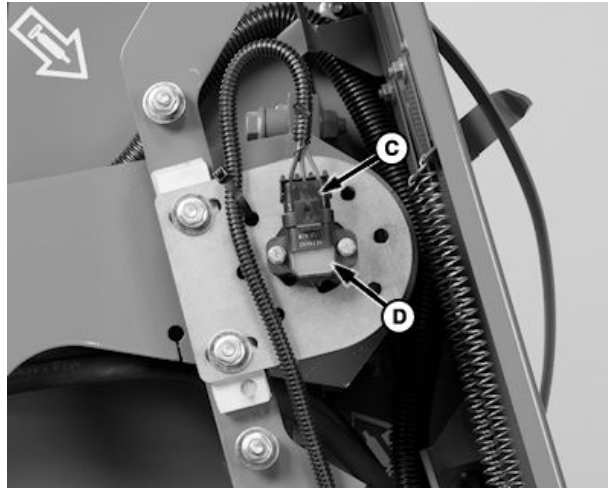
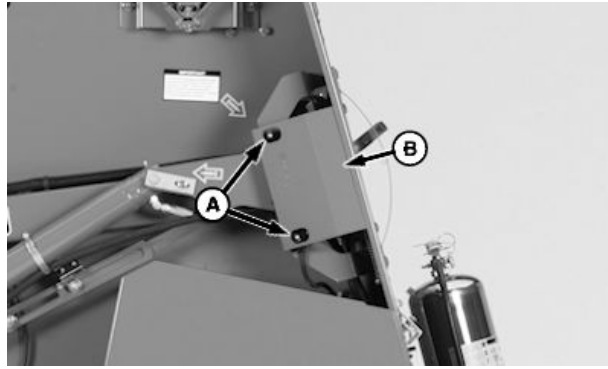
PP98408,0000E83 -19-07FEB13-4/4

Replace Bale Diameter Sensor

1. Turn monitor-controller selector OFF.
2. Turn tractor key to OFF position and remove key.
NOTE: Sensor is located on right-hand side of tension arm.
3. Loosen shield nuts (A) and remove shield (B).
4. Disconnect wire connector (C) from sensor (D).

A—Shield Nuts
B—Shield

C—Wire Connector
D—Sensor



E67373 —UN—15AUG12

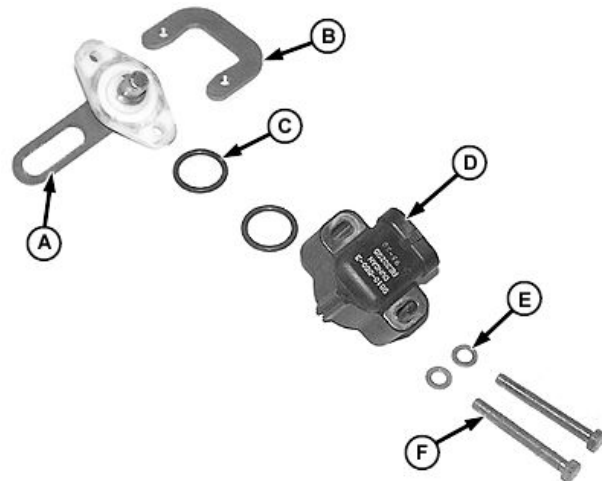
E67374 —UN—15AUG12

PP98408,0000E84 -19-07FEB13-1/3

5. Remove parts (A—F). Replace sensor (D).

A—Arm
B—Mounting Strap
C—O-ring (2 used)

D—Sensor
E—Washer (2 used)
F—Mounting Screw (2 used)



E48043 —UN—22MAY00

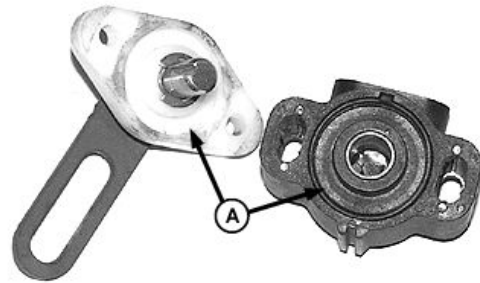
Continued on next page

PP98408,0000E84 -19-07FEB13-2/3

6. Install new sensor in reverse order of removal using the following special instructions:

- Make sure that O-rings are inserted in grooves (A).
- Adjust sensor. (See REPLACE and ADJUST BALE DIAMETER SENSOR MOUNTING BRACKET and ADJUST BALE DIAMETER SENSOR [CHANNEL 005] in this section.)

A—Grooves



E48044—UN—22MAY00

PP98408,0000E84 -19-07FEB13-3/3

Replace Gate Close Switch

1. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

NOTE: Label wires before disconnecting from switch to ensure proper connection to new switch terminals.

2. Label wires.
3. Remove mounting hardware and bracket with switch (A).
4. Disconnect wires from switch.
5. Remove switch from mounting bracket.
6. Install new switch in reverse order of removal using the following special instructions:
 - Adjust switch or bracket position for proper operation. (See ADJUST GATE CLOSE SWITCH in this section.)
 - Confirm switch operation by taking test readings using monitor-controller. (See TEST GATE CLOSE



A—Switch

AND OVERSIZE BALE SWITCHES [CHANNELS 013 AND 014] in this section.)

E48458—UN—20JUL00

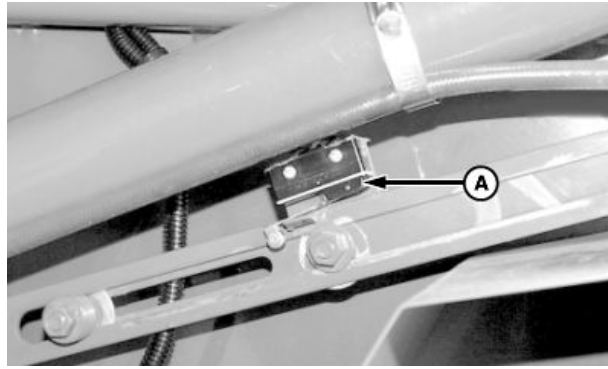
PP98408,0000E85 -19-07FEB13-1/1

Replace Oversize Bale Switch

1. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

NOTE: Label wires before disconnecting from switch to ensure proper connection to new switch terminals.

2. Label wires.
3. Remove mounting hardware and bracket with switch (A).
4. Remove switch from mounting bracket.
5. Disconnect wires from switch.
6. Install new switch in reverse order of removal using the following special instructions:
 - Adjust switch or bracket position for proper operation. (See ADJUST OVERSIZE BALE SWITCH in this section.)



A—Oversize Bale Switch

- Confirm switch operation by taking test readings using monitor-controller. (See TEST GATE CLOSE AND OVERSIZE BALE SWITCHES [CHANNELS 013 AND 014] in this section.)

PP98408,0000E86 -19-07FEB13-1/1

E48470—UN—21JUL00

Replace and Adjust Bale Diameter Sensor Mounting Bracket

When replacing mounting bracket, or before adjusting the sensor, the mounting bracket must be checked to ensure that it is properly centered.

NOTE: Ensure that seam in tube does not interfere with cap screws when centering mounting bracket.

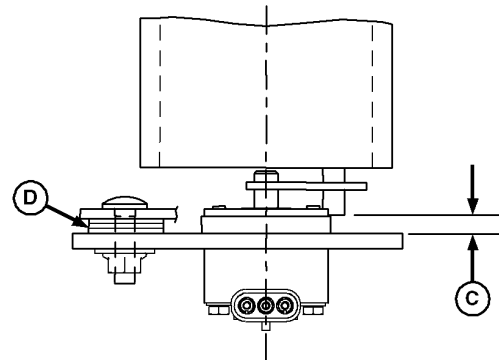
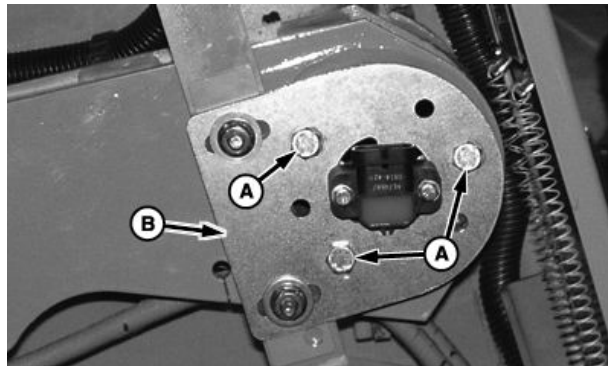
1. Insert three 5/16 x 2.0 in. cap screws (A) into three of the six holes in a triangular pattern on mounting bracket (B) with heads facing out.
2. Fasten cap screws with nuts on back of mounting bracket.
3. Loosen two mounting bolts holding bracket to baler.
4. Adjust bracket (B) so there is equal space between inside of the tube and the three cap screws. Tighten bracket mounting bolts.

CAUTION: Remove the three 5/16 in. cap screws and nuts before tension arm is moved. Failure to do this, will destroy the mounting bracket and sensor.

5. With bracket and sensor mounting screws tight, check for specified distance (C) between tension arm tube pin and plate. Add or remove shims (D) to obtain specified distance.

Specification

Pin-to-Plate—Distance (C).....	0.6—10 mm (0.24—0.40 in.)



A—Cap Screws (3 used)
B—Sensor Mounting Bracket
C—Distance
D—Shims

6. Adjust sensor. (See ADJUST BALE DIAMETER SENSOR (Channel 005) in this section.)

PP98408,0000E87 -19-07FEB13-1/1

E55822—UN—09JUN08

E55850—UN—07JUL08

Adjust Bale Diameter Sensor (Channel 005)

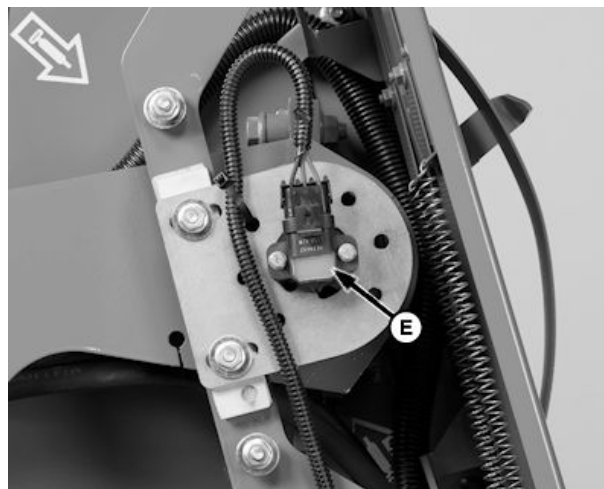
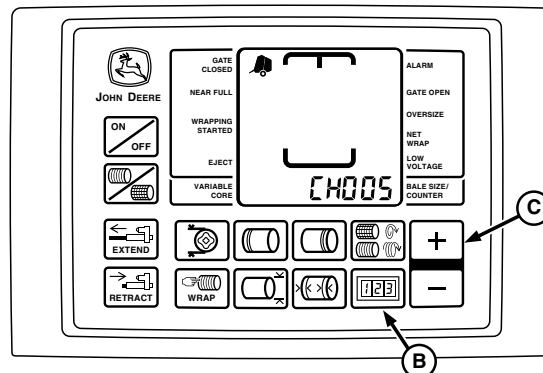
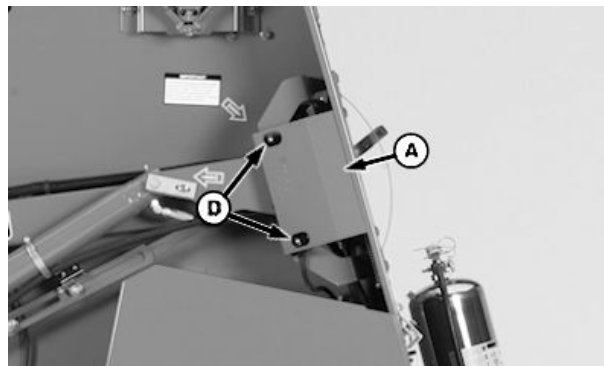
1. Remove shield (A) by loosening nuts (D).
2. Start tractor engine.
3. Using tractor selector valve, raise gate and belt tension arm all the way to the top.
4. Engage tractor parking brake and place transmission in Park.
5. Lock gate in open position.
6. Shut off tractor engine.
7. Turn tractor key to ON position. Do not start tractor engine.
8. Press and hold COUNTER key (B) while turning monitor-controller ON.
9. Continue to hold COUNTER key (B) and press PLUS key (C) until **CH005** appears in digital display.
10. Loosen mounting hardware and rotate sensor (E) fully clockwise. Rotate sensor counterclockwise until **173** is displayed and a steady tone sounds.

NOTE: If **173** is exceeded while rotating sensor counterclockwise or while tightening screws, rotate sensor clockwise and repeat Steps 9 and 10 as necessary.

11. Tighten sensor mounting screws.
12. Turn monitor-controller OFF. Turn tractor key to OFF position.
13. Lower gate and belt tension arm using tractor selector valve.
14. Install shield (A):
 - Make sure that front edge of shield is behind door band flange.
 - Make sure that front edge of shield is against door band.
 - Tighten nuts (D).

A—Shield
B—COUNTER Key
C—PLUS Key

D—Nuts
E—Sensor



PP98408,0000E88 -19-07FEB13-1/1

E67375—UN—15AUG12

E52526—UN—02JUN08

E67376—UN—15AUG12

Test Gate Close and Oversize Bale Switches—Monitor-Controller Assisted Test (Channel 013 and 014)

NOTE: Microswitch position and operation can be checked by using the monitor-controller diagnostic channels.

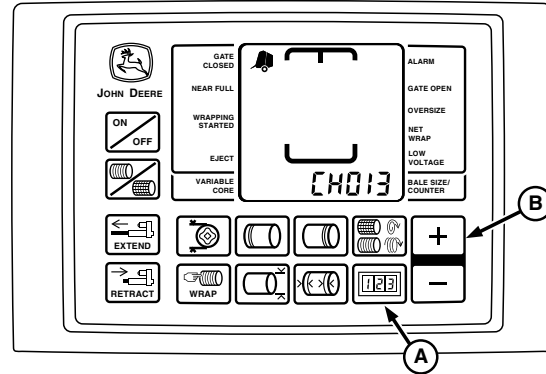
1. Start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor-controller ON.
3. Continue to hold COUNTER key and press PLUS key (B) until digital display shows desired channel.
4. Release key and view reading (gate closed).

NOTE: Tension arm must be raised for oversize bale switch to be closed.

5. Open gate and view reading or listen for tone.
6. If readings are not as shown, adjust switch position and test again. (See ADJUST GATE CLOSE SWITCH and ADJUST OVERSIZE BALE SWITCH in this section.)

Diagnostic Channel	Function	Gate Closed Reading	Gate Open Reading
013	Oversize Bale Switch	013 (Switch Released)	00 (Zero) (Switch Depressed) (Tone)
014	Gate Switch	00 (Zero) (Switch Depressed)	014 (Switch Released) (Tone)

7. If switch adjustment does not produce normal readings:
 - a. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.
 - b. Check for correct wiring connections. (See WIRE HARNESS DIAGRAM—BALER in this section.)
 - c. Check wire harness for cuts and breaks.



A—COUNTER Key

B—PLUS Key

- d. Check harness connectors for damaged (pushed back) terminals.
- e. Replace switch if necessary. (See your John Deere dealer.)

PP98408,0000E89 -19-07FEB13-1/1

E52528 — UN—26/JUN03

Test Twine Wrap Actuator Current (Channel 018)

IMPORTANT: Current overload protection to twine actuator is bypassed when using channel 018. Extended use of channel 018 can cause actuator damage.

NOTE: Channel 018 allows operator use of **EXTEND** and **RETRACT** keys to position twine actuator for service.

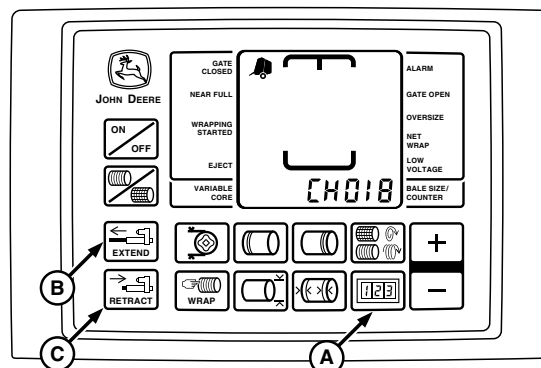
This test is used to determine the working condition of the actuator through its entire range of operation.

To test actuator (motor and linkage):

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold COUNTER key (A) while turning monitor-controller ON.
3. Continue to hold COUNTER key and press PLUS key until **CH018** appears in digital display.

NOTE: Current flow readings shown on digital display are relative numbers, not indications of measurable units (Amps).

4. Release COUNTER key; digital display will change to show actuator static current flow reading of **0** to **1**.
5. Use **EXTEND** and **RETRACT** keys (B) and (C) to operate actuator in both directions. Display must show a current flow reading between **1** and **8** while actuator motor is operating during mid stroke (no load).
 - Below normal readings indicate low tractor voltage, or poor or corroded harness connections
 - Above normal readings indicate binding linkage or partially shorted motor windings



A—COUNTER Key
B—EXTEND Key

C—RETRACT Key

- Current spike reading indicates mechanical obstruction to linkage
6. Continue to operate actuator to fully retracted position. Display must show stall (*load*) current reading between **22—30**.
 - Below normal reading indicates bad or corroded harness connections
 - Above normal reading indicates partially shorted motor windings or actuator binding
 7. Press **EXTEND** or **RETRACT** keys to move actuator to home position.
 8. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

PP98408,0000E8A -19-07FEB13-1/1

E52520 — UN—26JUN03

Test Tractor Convenience Outlet Voltage (Channel 019)

NOTE: Channel 019 allows operator use of **EXTEND** and **RETRACT** keys to position actuator for service.

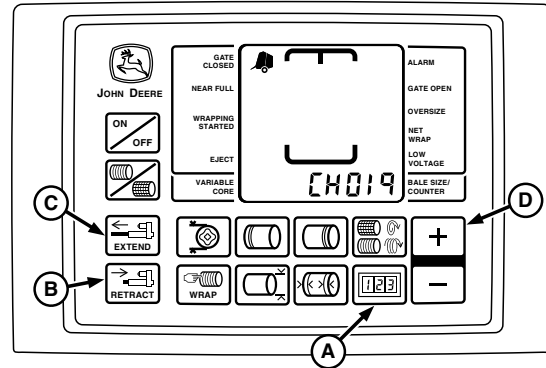
Complete the following check to determine if the convenience outlet provides adequate power to the BaleTrak™ Pro system.

1. Start tractor engine.
2. Press and hold **COUNTER** key (A) while turning monitor-controller ON.
3. Continue to hold **COUNTER** key and press **PLUS** key (D) until **CH019** appears in the digital display.
4. Release **COUNTER** key and view voltage readout.
5. Using **EXTEND** key (C), extend twine actuator slightly.
6. Push and hold **RETRACT** key (B) until actuator stalls out in the fully retracted position. Note voltage displayed during the first four seconds after stalling.

Specification

Convenience
Outlet—Voltage
(Minimum).....9.7 V

7. If voltage is less than specifications, install Convenience Outlet Kit AE50549. Only this kit must



A—COUNTER Key
B—RETRACT Key

C—EXTEND Key
D—PLUS Key

be used to provide a convenience outlet, due to its wire size, lack of splices and circuit breaker included in kit. When installing kit, attach power and ground wires directly to battery terminal clamp bolts only. (See **TRACTOR CONVENIENCE OUTLET** in Preparing the Tractor section.)

8. Turn monitor-controller OFF. Turn off tractor engine and remove key.

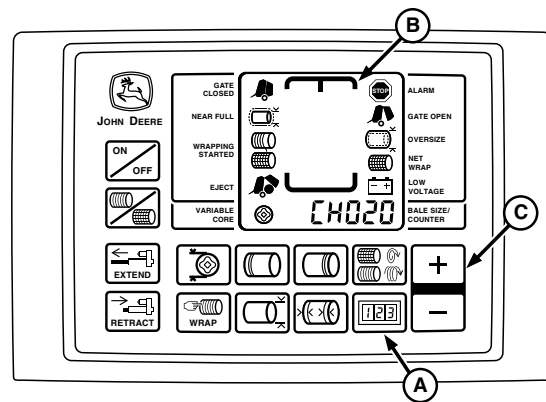
PP98408,0000E8B -19-07FEB13-1/1

E52521 —UN—26JUN03

Test Liquid Crystal Display (LCD) Panel (Channel 020)

Use the following test procedure to check if a segment of the LCD panel has failed.

1. Turn tractor key to ON position. Do not start tractor engine.
2. Press and hold **COUNTER** key (A) while Pressing **TWINE** or **NET** key to turn monitor-controller ON.
3. Continue to hold **COUNTER** key (A) and press **PLUS** key (C) until **CH020** appears in digital display.
4. Release keys and view entire LCD panel (B). Make sure that all indicators are displayed. If not, see your John Deere dealer.
5. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.



A—COUNTER Key
B—LCD Panel

C—PLUS Key

PP98408,0000E8C -19-07FEB13-1/1

E52529 —UN—10JUN08

Adjust Oversize Bale Switch

CAUTION: Make sure that gate is locked. If gate is not locked while performing this procedure, the gate could close suddenly causing injury or death.

1. Raise gate until roller on bale size switch arm is centered over washers (C).
2. Loosen screws (B) and adjust switch to obtain a gap (A) between switch arm and body to specifications. Tighten screws (B).

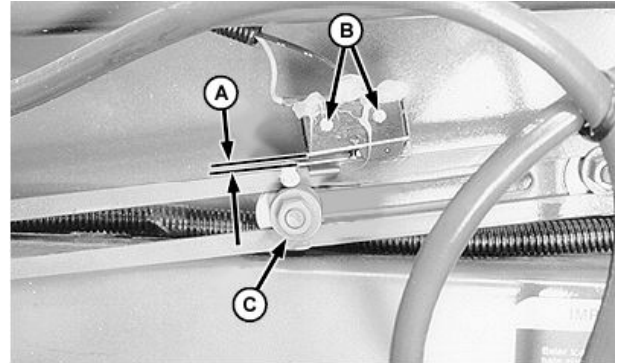
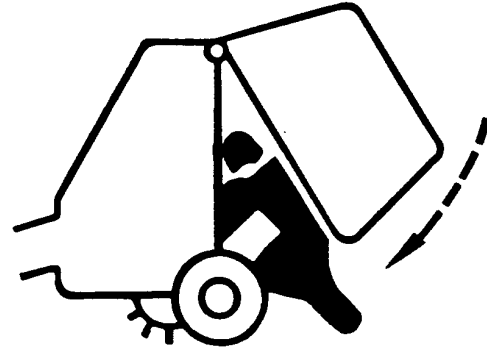
Specification

Arm-to-Body—Gap..... 3 mm
(1/8 in.)

3. Turn tractor key to ON position. Do not start tractor engine.
4. Turn monitor-controller ON. Bale size alarm (in tractor) must be activated when switch is at this position. If not, repeat Step 2 and decrease gap (A) dimension.
5. Raise gate fully using tractor hydraulics (*tension arm must be raised*), then lock gate.

A—Gap
B—Screw

C—Washers



PP98408,0000E8D -19-07FEB13-1/2

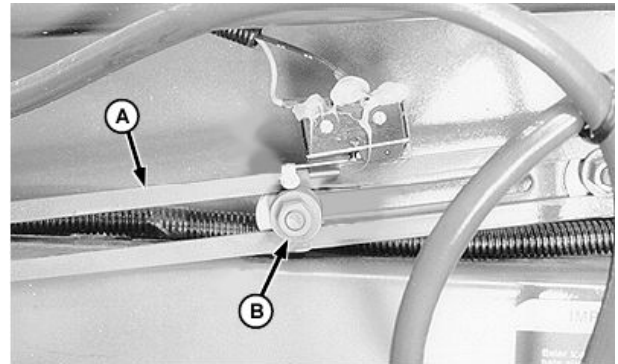
TS698 —UN—21SEP89

E48969 —UN—02OCT00

6. Manually push sliding link (A) forward until bale size switch roller is centered over washers (B).
7. Bale size alarm (in tractor) must activate when switch in at this position. If not, repeat Step 2 and decrease gap.
8. Lower gate.
9. Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

A—Link

B—Washers



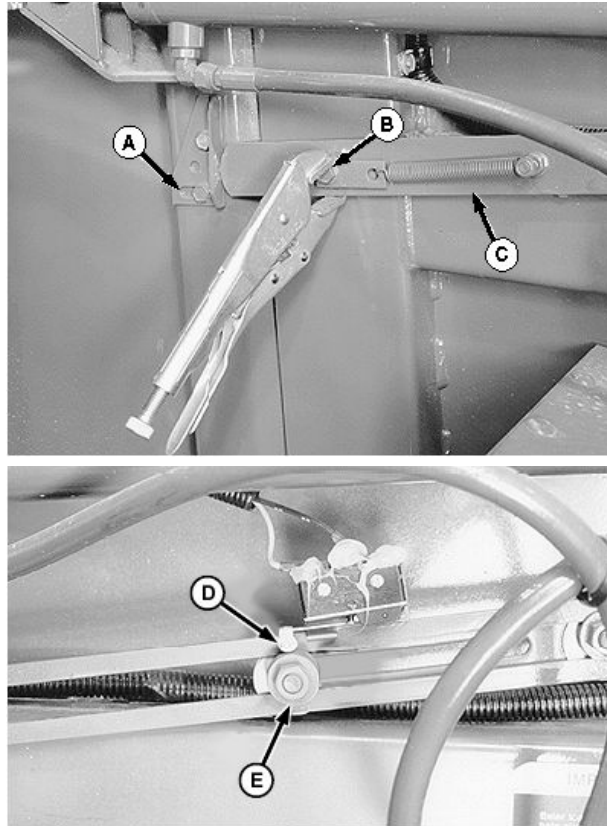
PP98408,0000E8D -19-07FEB13-2/2

E48970 —UN—02OCT00

Adjust Bale Size Link For Maximum Bale Size (Oversize Warning)

1. Adjust oversize bale switch. (See ADJUST OVERSIZE BALE SWITCH in this section.)
2. Close gate.
3. Clamp bale size link (C) to the spring strap cap screw (B) using a pair of locking jaw pliers. (*This is to keep the link from moving as the gate is opened.*) Position the plier jaws over the spring strap cap screw (or washers) and under lower edge of link.
4. Raise gate fully using tractor hydraulics (*tension arm must be raised*), then lock gate.
5. Switch roller (D) must be centered on washers (E). If roller is not centered on washers, measure the distance between center of roller to center of rear washers.
6. Close gate and move bracket (A), forward or rearward, the number previously measured.
7. Repeat Steps 2—6, as necessary, until roller is properly centered.

A—Bracket
B—Spring Strap Cap Screw
C—Bale Size Link
D—Switch Roller
E—Washers



E39289 —UN—19JUN96

E48971 —UN—02OCT00

PP98408,0000E8E -19-07FEB13-1/1

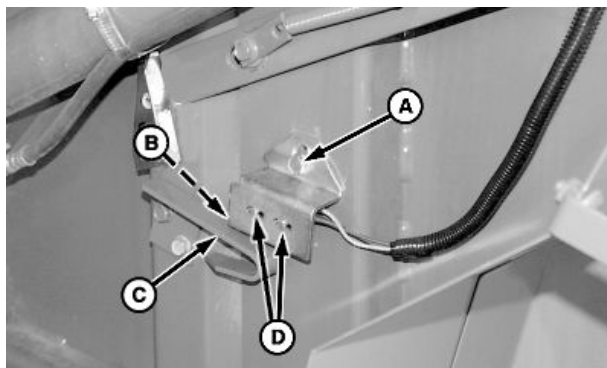
Adjust Gate Close Switch

1. Close gate. (*Gate or tension cylinders must be fully retracted.*)
2. If necessary, loosen screws (D) and move switch front-to-rear so roller (B) is centered on short leg of ramp (C).
3. Push switch arm against switch body and measure clearance between roller and ramp. Clearance must meet specifications.

Specification

Roller-to-
Ramp—Clearance.....0.05—2.00 mm
(0.02—0.08 in.)

4. Loosen cap screw (A) and adjust switch up-and-down to obtain specified clearance.
5. Confirm switch operation by taking test readings using monitor-controller. (See TEST GATE CLOSE



A—Cap Screw
B—Roller

C—Ramp
D—Screws

AND OVERSIZE BALE SWITCHES—MONITOR ASSISTED [CHANNELS 013 AND 014] in this section.)

E48468 —UN—21JUL00

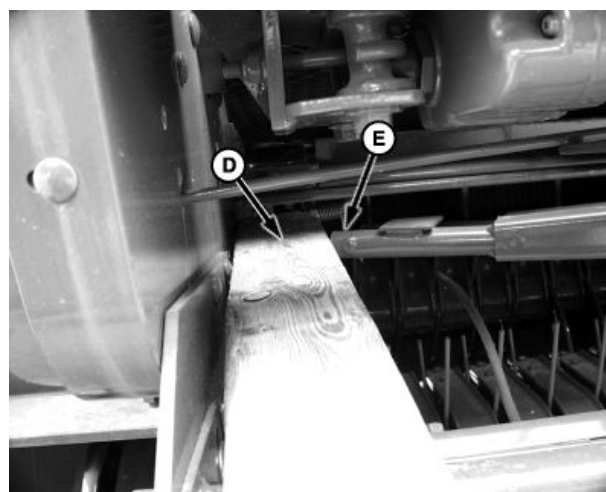
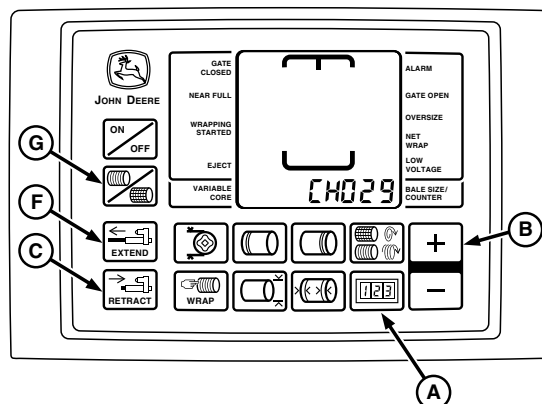
PP98408,0000E8F -19-07FEB13-1/1

Twine Arm Calibration Procedure (Channel 029)

1. Turn tractor key to ON position. Turn monitor-controller ON.
2. Briefly press TWINE or NET key (G), ensure monitor-controller is in TWINE mode (indicator will briefly show on screen).
3. Turn monitor-controller OFF.
4. Press and hold COUNTER key while turning monitor ON.
5. Continue to hold COUNTER key (A) and press PLUS key (B) until **CH029** appears in digital display. Release both keys.
6. Press and hold RETRACT key (C) until twine actuator fully retracts and display reads zero.

NOTE: 89 mm equals 3—1/2 in., which is standard dimension for most 4 in. wide lumber such as a 2 x 4 or 4 x 4.

7. Place an 89 mm (3—1/2 in.) wood block (D) on right side of bale chamber so that the twine arm (E) will contact the wood block when actuator is extended.
8. Press EXTEND key (F), extend actuator until it stalls by contacting wood block (D).
9. Enter value displayed in to **CH029** by pressing PLUS and MINUS keys together and listening for two confirming beeps.
10. Press RETRACT key (C) to release and remove wood block.



A—COUNTER Key
B—PLUS Key
C—RETRACT Key
D—Wood Block

E—Twine Arm
F—EXTEND Key
G—TWINE or NET key

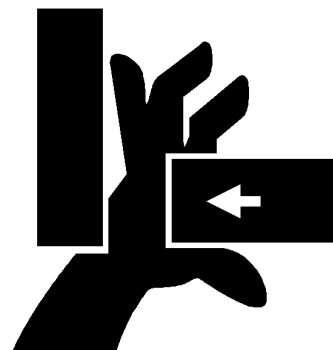
PP98408,0000E90 -19-07FEB13-1/1

Adjust Clearance Between Cutter Link Support and Twine Arm

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

IMPORTANT: Do not operate twine arms with pickup in raised position, or damage to pickup teeth can occur.



Continued on next page

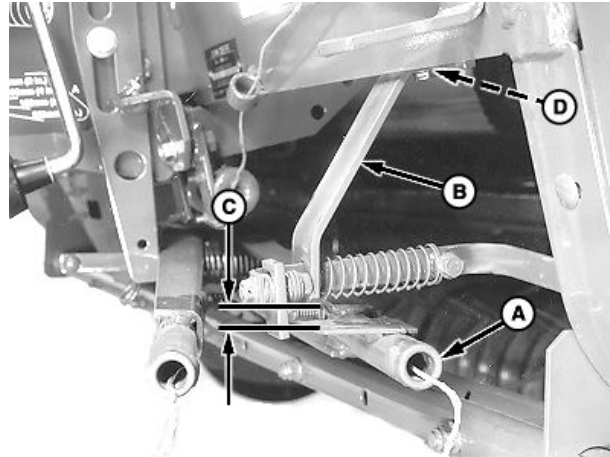
PP98408,0000E91 -19-07FEB13-1/2

1. Move twine arm (A) under cutter link support (B) as follows:
 - Turn tractor key to ON position. Do not start tractor engine.
 - Turn monitor-controller ON.
 - Press and momentarily hold TWINE or NET key to select TWINE mode.
 - Press EXTEND or RETRACT key to move twine arm (A) under cutter link support (B).
 - Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.
2. Measure clearance (C) between bottom edge of cutter link support (B) and top of twine arm strap. Clearance (C) must be within specifications.

Specification

Bottom Edge of Cutter Link Support-to-Top of Twine Arm Strap—Clearance.....	6—12 mm (1/4—1/2 in.)

- If clearance (C) is less than specifications, remove shims (D) between cutter link support (B) and underneath crossbeam. If shims do not exist, lower twine arms relative to cutter link support. (See ADJUST TWINE ARM-TO-STARTER ROLL, CUTTER LINK SUPPORT AND TWINE ARM STOP in this section.)



A—Twine Arm
B—Cutter Link Support

C—Clearance
D—Shims

- If clearance (C) is more than specifications, add shims (D).
3. Change shims by loosening two self-tapping screws.
 4. Remove end play at front of cutter link support toward center of baler. Tighten screws.

PP98408,0000E91 -19-07FEB13-2/2

E40634 —UN—06SEP00

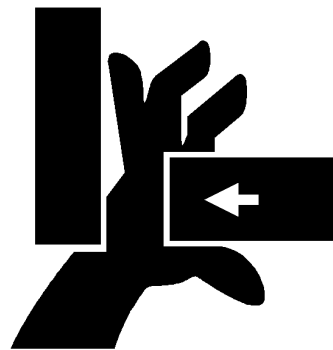
Adjust Front Twine Arm

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power BEFORE servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

1. Move twine arms to home position as follows:
 - Turn tractor key to ON position. Do not start tractor engine.
 - Turn monitor-controller ON.
 - Press and momentarily hold TWINE or NET key to select TWINE mode.
 - Press EXTEND or RETRACT key to move twine arm (A) under cutter link support (B).

- Set monitor-controller selector switch to OFF (centered) position. Turn tractor key to OFF position. Remove key.



Continued on next page

PP98408,0000E92 -19-07FEB13-1/2

E47598 —UN—07JAN00

2. Remove cap screw and nut (E), spring-locking pin (D), washer (G), spacer (H), spring (C) and twine spacing strap (F).
3. Measure height difference (I) between tops of twine arms (J) and (K). Twine arm (K) must be higher than twine arm (J) to within specifications.

Specification

Front Twine Arm-to-Rear

Twine Arm—Distance.....4.5—7.5 mm
(3/16—5/16 in.)

4. To adjust distance, loosen nut (A) enough so end of twine arm can be moved manually with some resistance.
 - If height difference (I) is less specified, move end of twine arm down until correct dimension is obtained.
 - If height difference (I) is greater than specified, move end up of twine arm until correct dimension is obtained.

5. Tighten nut (A) to specifications.

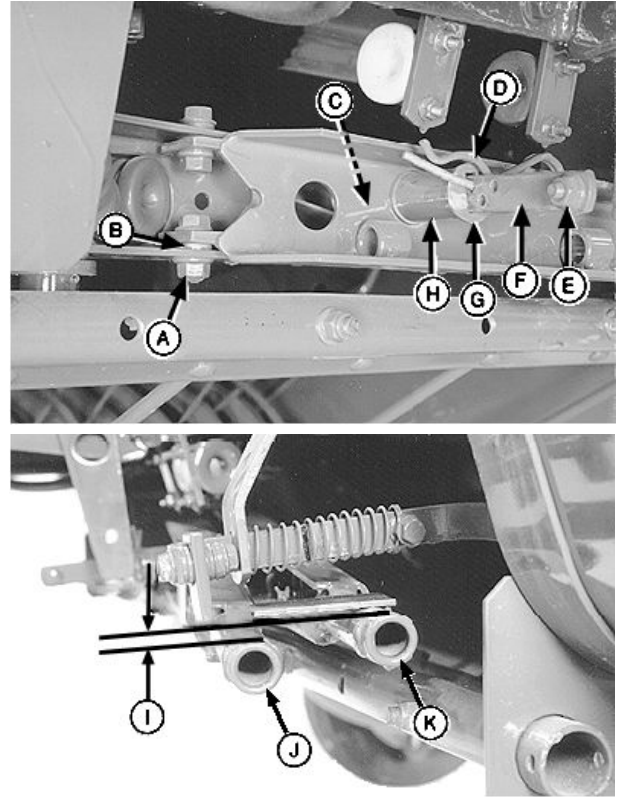
Specification

Twine Arm Nut—Torque.....80 N·m
(60 lb.-ft.)

6. Install twine spacing strap, spring, spacer, washer, and nut and bolt. Install spring-locking pin (D) in desired hole.

A—Cap Screw and Nut
B—Bushing
C—Spring
D—Spring-Locking Pin
E—Cap Screw and Nut
F—Twine Spacing Strap

G—Washer
H—Spacer
I—Height Difference
J—Front Twine Arm
K—Rear Twine Arm



E39280 —UN—02JUL99

E39279 —UN—30JUN99

PP98408,0000E92 -19-07FEB13-2/2

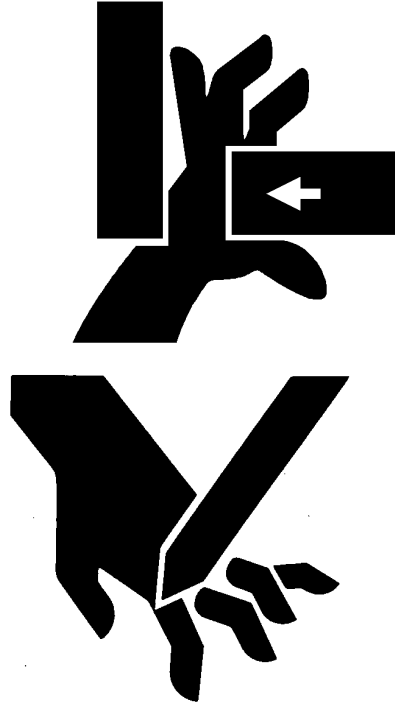
Adjust Twine Cutter-to-Twine Arm

⚠ CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is **ON**.

Twine knife has two cutting edges. Be careful when working around the knife. It is sharp.

1. Remove crop material from knife and hex anvil area.



E47598 —UN—07JAN00

TS288 —UN—23AUG88

Continued on next page

PP98408,0000E93 -19-07FEB13-1/2

NOTE: Dimension (F) applies to the front arm. Rear arm must clear the bottom of the twine knife.

2. Move twine arms until front twine arm tube (E) is centered over hex anvil (D) as follows:

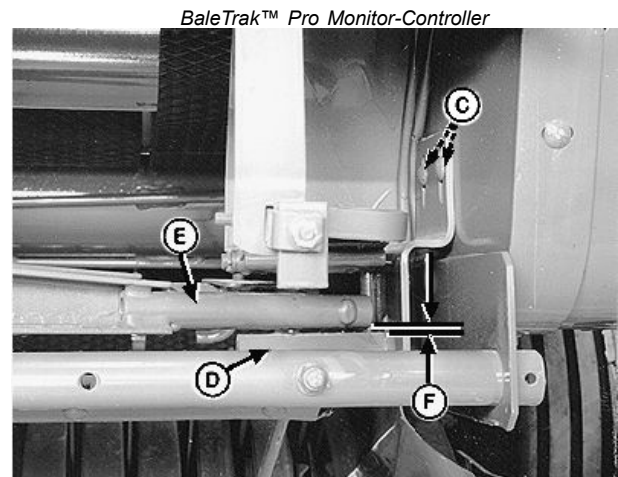
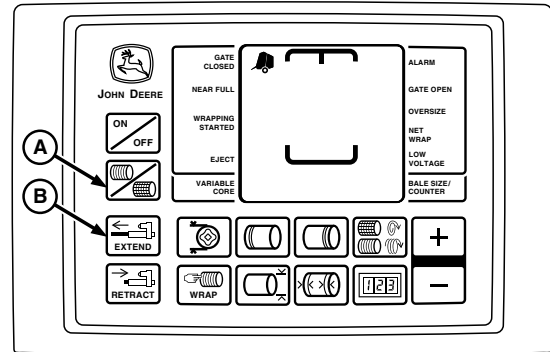
Electric Twine Wrap;

- Turn tractor key to ON position. Do not start tractor engine.
 - Turn monitor-controller ON.
 - While in TWINE mode, press monitor-controller EXTEND key (B) to move front twine arm tube until centered over hex anvil.
 - Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.
3. Open left-hand door and loosen nuts (C).
 4. Adjust twine cutter, so clearance (F) between knife hex anvil (D) and twine arm tube (E) is within specifications. Twine cutter bracket must be level (*parallel with bottom edge of frame*).

Specification

Knife Hex Anvil-to-	
Front Twine Arm	
Tube—Clearance.....	0.5—3.5 mm (0.020—0.138 in.)

5. Tighten nuts (C).
6. If rear twine arm contacts bottom side of knife support and minimum clearance in Step 4 is obtained, bend twine cutter bracket so hex anvil is parallel to twine arm.
7. Check knife adjustment. (See CHECK KNIFE ADJUSTMENT in this section.)



A—Twine Symbol
B—EXTEND Key
C—Nuts

D—Knife Hex Anvil
E—Front Twine Arm Tube
F—Clearance

PP98408,0000E93 -19-07FEB13-2/2

E52523—UN—02JUN08

E40624—UN—29JUN96

Check and Adjust Twine Cutter Knife

CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. Turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine ares is ON.

CAUTION: Twine knife has two cutting edges. Be careful when working around the knife. It is sharp.

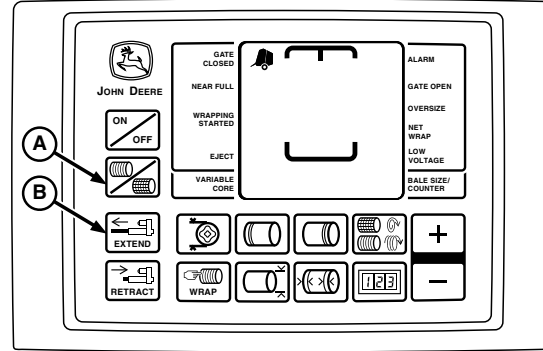
IMPORTANT: Make sure that cutter anvil is properly adjusted before adjusting knife. (See **ADJUST TWINE CUTTER TO TWINE ARM** in this section.)

Do not operate twine arm with pickup in raised position, or damage to pickup teeth can occur.

NOTE: Make sure that knife edge is straight. If not, rotate, replace, or sharpen knife.

If knife edge is less than 3 mm (1/8 in.) from rear of hex flat, the knife has become too short due to sharpening. Invert or replace knife, if necessary.

1. Remove crop material from knife and hex anvil area.
2. Move twine arms behind twine cutter as follows:



A—Twine Symbol

B—Extend Key

- Turn tractor key to ON position. Do not start tractor engine.
- Turn monitor-controller ON.
- In TWINE mode, press monitor-controller EXTEND key (B) to move twine arm behind twine cutter.
- Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.

PP98408,0000E94 -19-07FEB13-1/2

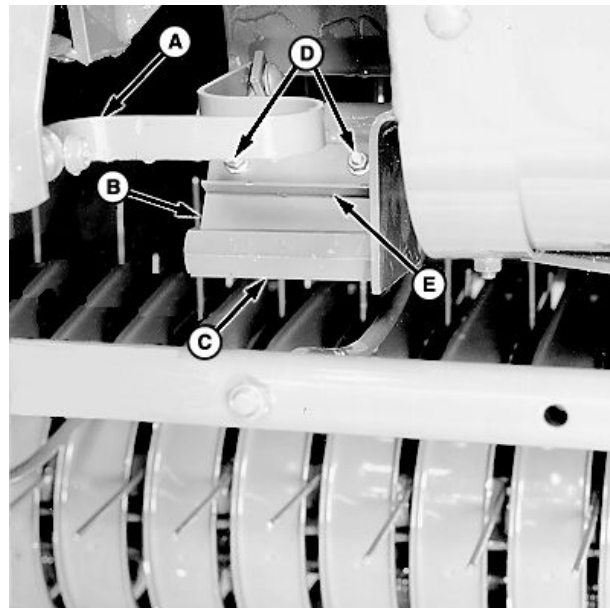
3. Pull cutter strap (A) forward until knife (B) contacts hex anvil (C). If full length of knife does not contact hex anvil, adjust knife.

To adjust knife:

- Loosen nuts (D).
- Pull angle (E) down until full width of knife (B) contacts hex anvil (C). Knife edge must be near center of hex flat
- Tighten nuts (D). Pull cutter strap forward to make sure full width of knife contacts hex anvil. If not, repeat adjustment procedure.
- Check twine cutter-to-twine arm clearance. (See **ADJUST TWINE CUTTER TO TWINE ARM** this section.)

A—Cutter Strap
B—Knife
C—Hex Anvil

D—Nuts
E—Angle



PP98408,0000E94 -19-07FEB13-2/2

Adjust Twine Arm-to-Starter Roll, Cutter Link Support, and Twine Arm Stop

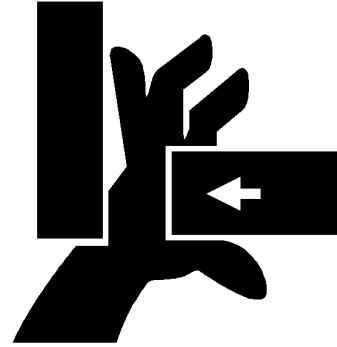
⚠ CAUTION: Twine arms can move unexpectedly. Keep hands out of twine arm path to avoid crushing. turn off power **BEFORE** servicing or adjusting twine arms or twine cutter mechanism.

Stay out of the path of twine arms at all times when power to twine arms is ON.

NOTE: Adding or removing shims located between the twine arm support and crossbeam affects dimensions at the following locations:

- *Twine arm to starter roll:*
 - *Twine arm pointing directly toward rear.*
 - *Twine arm toward right side of baler.*
 - *Twine arm toward left side of baler.*
- *Twine arm to cutter link support.*
- *Twine arm to twine arm stop.*

Check dimensions at all locations before adjustments are made. Adding or removing shims at one location can change the dimension at another location.



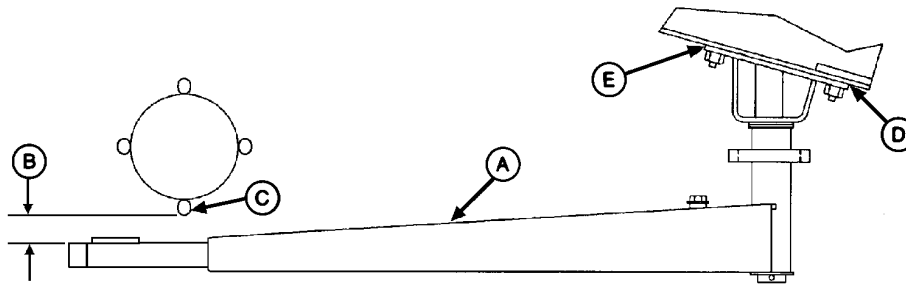
1. Start tractor engine and raise gate fully. Lower pickup so twine arm will not contact pickup teeth.
2. Shut off tractor engine and remove key. Lock the gate.
3. Remove lower drive roll chain so starter roll can be rotated by hand.

Continued on next page

PP98408,0000E95 -19-07FEB13-1/5

E47598 —UN—07JAN00

Adjust Twine Arm to Starter Roll



E40616—UN—16DEC97

A—Twine Arm
B—Dimension

C—Starter Roll Rod
D—Shim Location

E—Shim Location

1. Move twine arms until rear twine arm (A) points toward rear of baler.
 - Turn tractor key to ON position. do not start tractor engine.
 - Turn monitor-controller ON.
 - Press EXTEND key to move twine arm in position.
 - Turn monitor-controller OFF . Turn tractor key to OFF position. Remove key.
2. By hand, remove end play at end of twine arm toward starter roll. Check dimension (B) between starter roll rod (C) and twine arm tube. Dimension (B) must be within specifications.

Specification

Starter Roll Rod-to-Twine
Arm Tube—Distance.....6—12 mm
(1/4—1/2 in.)

3. If dimension (B) is less than specified:
 - Remove shims, as necessary, at location (D) between twine arm support and crossbeam. Remove an equal number of shims at the right-hand

and left-hand mounting bolts. One shim moves twine arm approximately 3 mm (1/8 in.).

OR

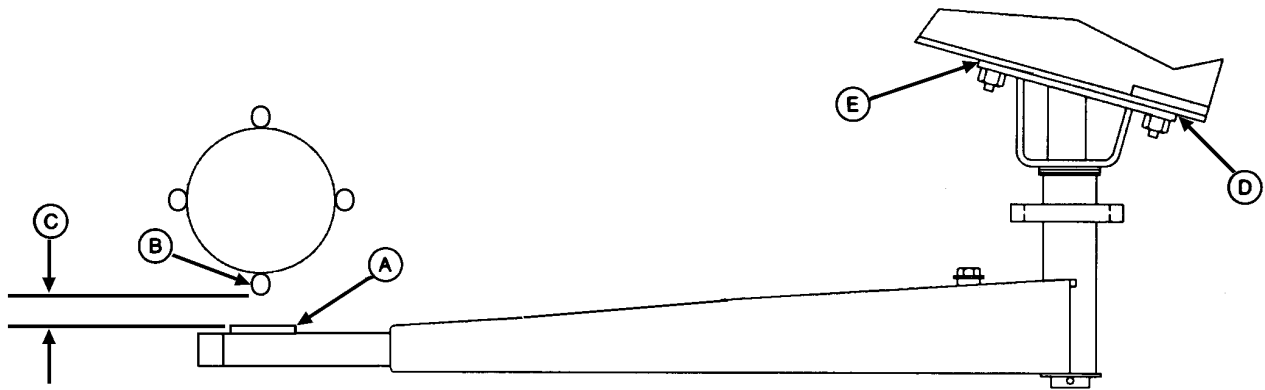
- Add shims, as necessary, at location (E) between twine arm support and crossbeam. Add an equal number of shims at the right-hand and left-hand mounting bolts.
4. If dimension (B) is more than specified:
 - Remove shims, as necessary, at location (E) between twine arm support and crossbeam. Remove an equal number of shims at the right-hand and left-hand mounting bolts. One shim moves twine arm approximately 3 mm (1/8 in.)

OR

- Add shims, as necessary, at location (D) between twine arm support and crossbeam.

Continued on next page

PP98408,0000E95 -19-07FEB13-2/5



A—Strap
B—Starter Roll Rod

C—Dimension
D—Shim Location

E—Shim Location

5. Move twine arms to right of center so strap (A) is below starter roll rod (B).
 - Turn tractor key to ON position. do not start tractor engine.
 - Turn monitor-controller ON.
 - Press EXTEND key to move twine arm in position.
 - Turn monitor-controller OFF . Turn tractor key to OFF position. Remove key.
6. Rotate starter roll until starter roll rod (B) is closest to twine arm strap (A).
7. By hand, remove twine arm end play at end of twine arm toward starter roll.
8. Check dimension (C) between starter roll rod (B) and strap (A). Dimension (C) must be to specifications.

Specification

Starter Roll Rod-to-
Strap—Clearance
(Minimum)..... 3 mm
(1/8 in.)

9. If dimension (C) is less than specified, add an equal number of shims at right-hand location (D and E), or remove an equal number of shims at left-hand location (D) and (E).
10. Move twine arm left of center so strap (A) is below starter roll rod (B).
 - Turn tractor key to ON position. do not start tractor engine.
 - Turn monitor-controller ON.
 - Press EXTEND key to move twine arm in position.
 - Turn monitor-controller OFF . Turn tractor key to OFF position. Remove key.
11. Rotate starter roll until starter roll rod (B) is closest to twine arm strap (A).
12. If dimension (C) is less than specified, add an equal number of shims at the left-hand locations (D and E), or remove an equal number of shims at the right-hand locations (D) and (E).

Continued on next page

PP98408,0000E95 -19-07FEB13-3/5

E41680 —UN—31OCT96

Adjust Twine Arm-to-Cutter Link Support

1. Move twine arms until twine arm (A) lightly contacts the cutter link contact tab.
 - Turn tractor key to ON position. do not start tractor engine.
 - Turn monitor-controller ON.
 - Press RETRACT key to move twine arm in position.
 - Turn monitor-controller OFF . Turn tractor key to OFF position. Remove key.
2. Check dimension (C) between top of twine arm strap and bottom edge of cutter link support (B). Dimension (C) must be within specifications.

Specification

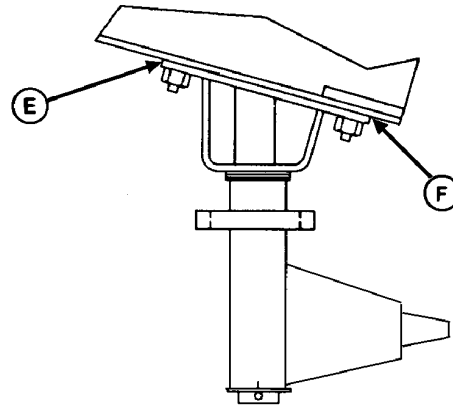
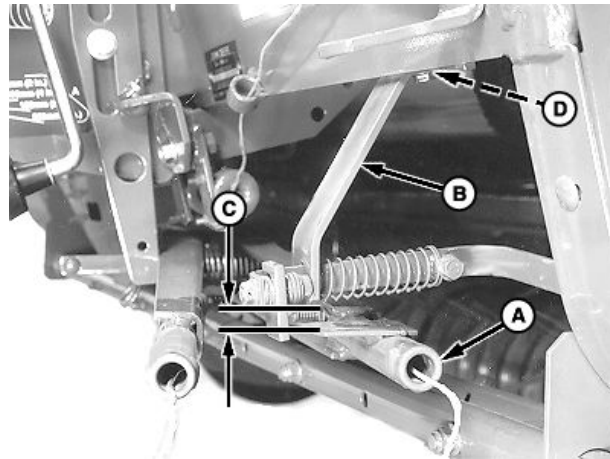
Top of Twine Arm	
Strap-to-Bottom	
Edge of Cutter Link	
Support—Clearance.....	6 mm
	(1/4 in.)

3. If dimension (C) is less than specified and no shims exist at location (D) between support (B) and crossbeam:

- Add an equal number of shims between twine arm support and crossbeam at left-hand locations (E) and (F).

OR

- Remove an equal number of shims between twine arm support and crossbeam at right-hand locations (E) and (F).



A—Twine Arm
B—Cutter Link Support
C—Dimension

D—Shim Location
E—Shim Location
F—Shim Location

Continued on next page

PP98408,0000E95 -19-07FEB13-4/5

E40634 —UN—06SEP00

E41682 —UN—24OCT96

Adjust Twine Arm-to-Twine Stop

1. Make sure twine arm stop (A) is in the down position.
2. Move twine arms to the home position.
 - Turn tractor key to ON position. Do not start tractor engine.
 - Turn monitor-controller ON.
 - Press RETRACT key to move twine arm in position.
 - Turn monitor-controller OFF. Turn tractor key to OFF position. Remove key.
3. Check overlap (C). There must be a minimum overlap between bottom of stop (A) and front twine arm surface to within specifications.

Specification

Bottom of Stop-to-Front
Arm Surface—Overlap..... 2 mm
(3/32 in.)

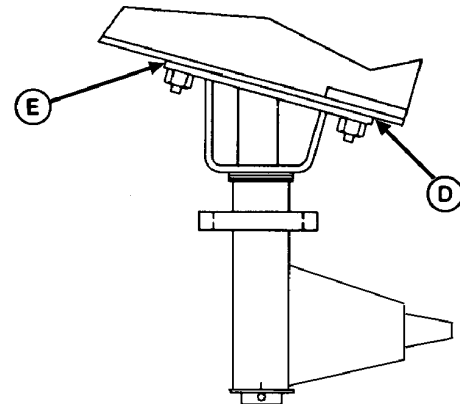
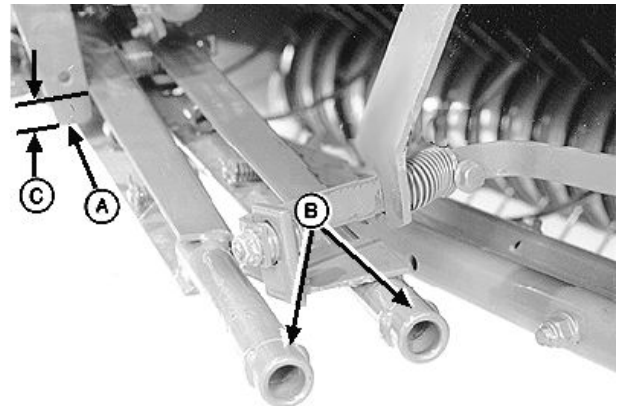
4. If dimension (C) is less than specified:
 - Add an equal number of shims at the right-hand locations (D) and (E).

OR

 - Remove an equal number of shims at the left-hand locations (D) and (E).

Checking Twine Arm Adjustments

1. Check clearances again between twine arm and starter roll, twine arm and cutter link support, and twine arm to twine arm stop. If twine arm to starter roll dimension has changed due to adjusting twine arm to cutter link support or twine arm stop, adjust shims between twine arm and crossbeam as needed.
2. Adjust twine cutter-to-twine arm. (See ADJUST TWINE CUTTER-TO-TWINE ARM in this section.)



A—Twine Arm Stop
B—Twine Arms
C—Minimum Overlap

D—Shim Location
E—Shim Location

3. Install lower drive roll chain.
4. Unlock and close gate.

PP98408,0000E95 -19-07FEB13-5/5

E40623 —UN—01 JUL 96

E40617 —UN—07 OCT 96

Storage

End of Season

1. Move baler to a dry place. If baler must be stored outside, belt life can be prolonged by covering or removing belts to protect from sunlight and ozone exposure.
2. Remove twine from twine boxes. Store twine inside during storage season.
3. Clean baler thoroughly inside and out. Trash and dirt will draw moisture and cause rust.
4. Apply a few drops of oil to all pivot points and linkages.
5. Thoroughly lubricate baler. (See Lubrication and Maintenance section.)
6. Apply a thin layer of grease to threads of all adjustment bolts.
7. Retract all hydraulic cylinders.
8. Paint all parts from which paint has been worn.
9. Clean all chains by washing them with diesel fuel. Dry well and coat with a heavy oil.
10. Put blocking under baler frame to take load off tires. DO NOT DEFLATE TIRES. If exposed, put cover over tires to protect them from light, grease, and oil.
11. If equipped with fire extinguisher, follow manufacturers recommendation for inspection and maintenance. If baler is subjected to cold weather, drain or treat fire extinguisher fluid with a nonflammable antifreeze solution to prevent damage.
12. Check all belt guides for wear especially wear channels at rear of tension arm. (See TENSION ARM WEAR CHANNELS in Lubrication and Maintenance Section.)
13. List the replacement parts that will be needed and order them.

PP98408,0000E96 -19-07FEB13-1/1

Start of Season

1. Check and fill gear case to dipstick level. (See Lubrication and Maintenance section.)
2. Remove heavy oil from chains and lubricate with 30W or heavier oil.
3. Lubricate complete machine. (See Lubrication and Maintenance section.) This will force any collected moisture out of the bearings.
4. Check tires for correct air pressure.
5. Tighten all hardware.
6. Check belt splice pins for damage. Replace as necessary.
7. If equipped with fire extinguisher, follow manufacturers recommendation for inspection and maintenance. Refill, pressurize, and test the fire extinguisher.
8. Review operator's manual and check adjustments.
9. Check function of oversize bale alarm. (See ADJUST BALE SIZE SWITCH in Service section.)

PP98408,0000E97 -19-07FEB13-1/1

Assembly

Perform Predelivery Service Safely

Understand the predelivery procedure before doing the work.

During the assembly, test, and adjustment procedures, it can be necessary to operate drives and hydraulic systems. Stay clear of machine elements when raising or lowering of gate or pickup and during operation of hydraulics, electronics, or drivelines.

Practice good communication with other service technicians. Be aware of their actions and alert them to potential hazards.

Never lubricate, service, or adjust machine while it is running. Keep hands, feet, and clothing away from power-driven or hydraulically operated parts. If it is



TS198 —UN—23AUG88

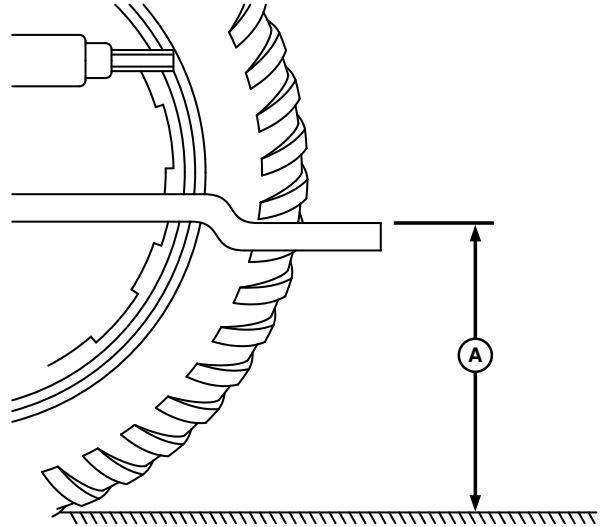
necessary to inspect the machine while it is in operation, be alert to moving parts in the immediate area.

PP98408,0000E98 -19-07FEB13-1/1

Adjust Baler Hitch

1. Measure from top of tractor to the ground. Measure on level ground.

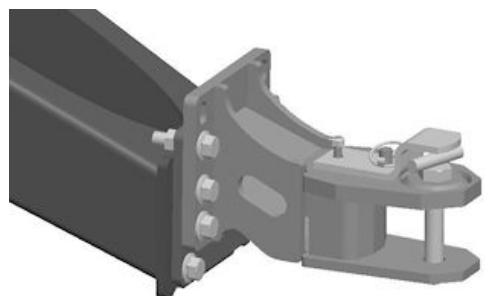
A—Dimension



E62317 —UN—04APR12

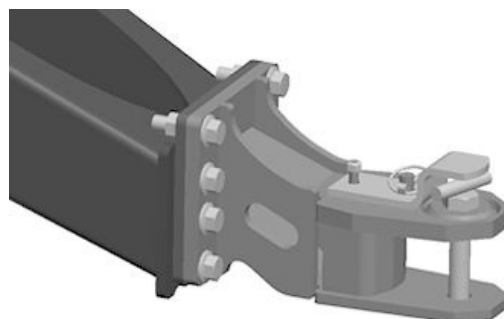
Continued on next page

PP98408,0000E99 -19-07FEB13-1/3



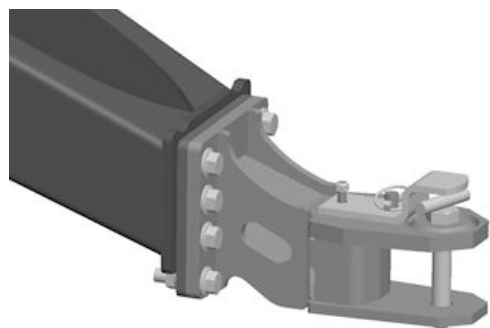
Position 1

E60309 —UN—13JUL11



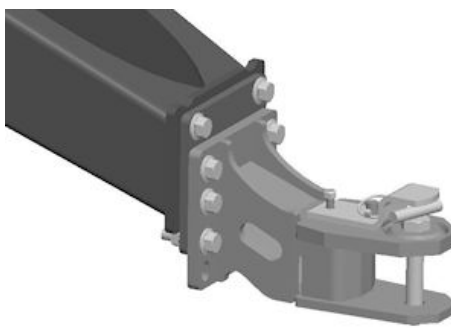
Position 2

E60310 —UN—13JUL11



Position 3 (Factory Setting)

E60311 —UN—13JUL11



Position 4

E60312 —UN—13JUL11

NOTE: All baler hitches are factory installed in position 3.

2. Adjust baler hitch according to the drawbar dimension.

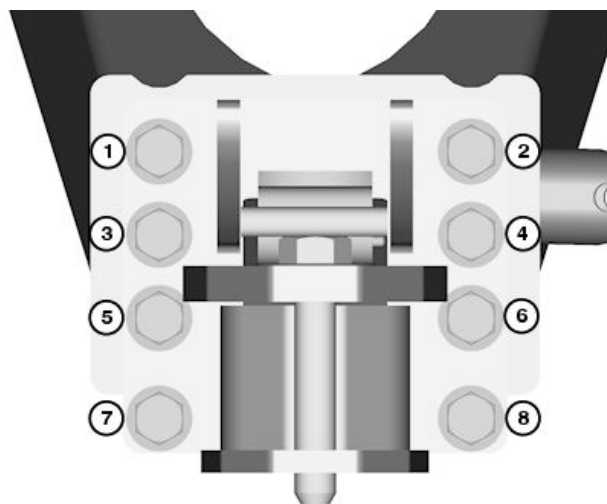
Regular Pickup	Drawbar Dimension (A)
Position 1	432—559 mm (17—22 in.)
Position 2	230—432 mm (13—17 in.)
Position 3	Not Recommended
Position 4	Not Recommended

PP98408,0000E99 -19-07FEB13-2/3

3. Tighten hardware using sequence 1—8 as shown.
4. Tighten hardware to specification.

Specification

Adjustable Hitch
Hardware—Torque.....350 N·m
(258 lb.-ft.)



E62321 —UN—04APR12

PP98408,0000E99 -19-07FEB13-3/3

Install Wheel Spindles on 459 Standard Baler with Regular Pickup and 11L-14 Tires

NOTE: Wheel spindle position controls baler height and feeding capacity.

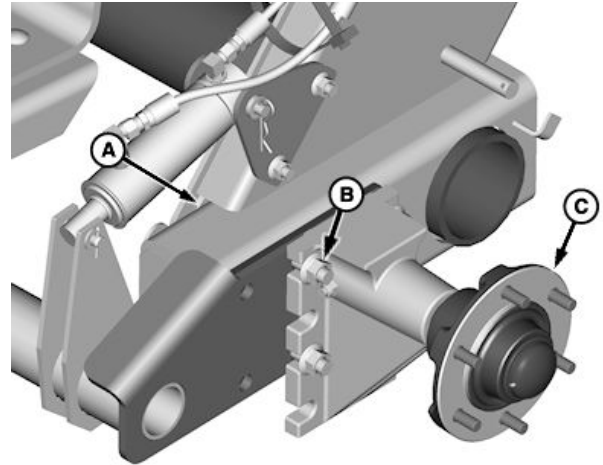
Normal position is recommended for most baling conditions.

- Recommended with bale ramp. Bale diameter will have to be reduced depending on tractor drawbar height.
- Pickup teeth will touch the ground when pickup is lowered. Recommended to adjust height with at least 25 mm (1 in.) ground clearance.

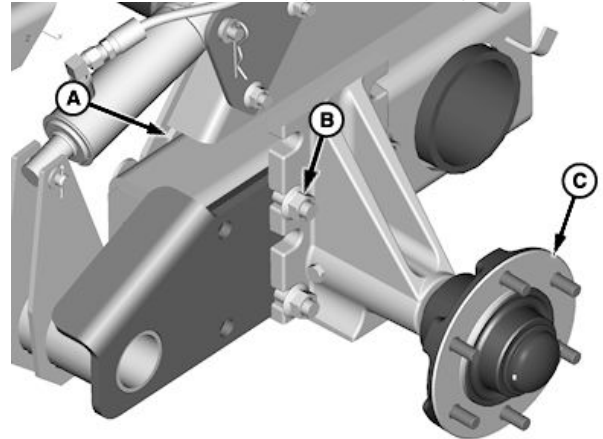
Raised position is recommended for cornstalks, straw crops with tall stubble, or soft ground conditions. (See **BALE CORNSTALKS** in Operating the Baler section.)

- Recommended with bale ramp.
- Pickup teeth will not touch the ground with pickup lowered.
- If pickup will not lower or bounces excessively, adjust pickup float springs to provide less force (float). (See **ADJUST PICKUP FLOAT SPRINGS** in Service—Baler section.)

A—Cap Screw, M16 x 160-10.9 (4 used) C—Spindle
B—Flange Nut, M16 (4 used)



Normal Position—Optional Bale Ramp Shown



Raised Position—Optional Bale Ramp Shown

PP98408,0000E9A -19-07FEB13-1/1

E66115—UN—21JUN12

E66116—UN—21JUN12

Check Wheel Nut Torque

IMPORTANT: Install wheels with valve stems toward the inside.

Incorrect assembly can cause wheel nuts to loosen.

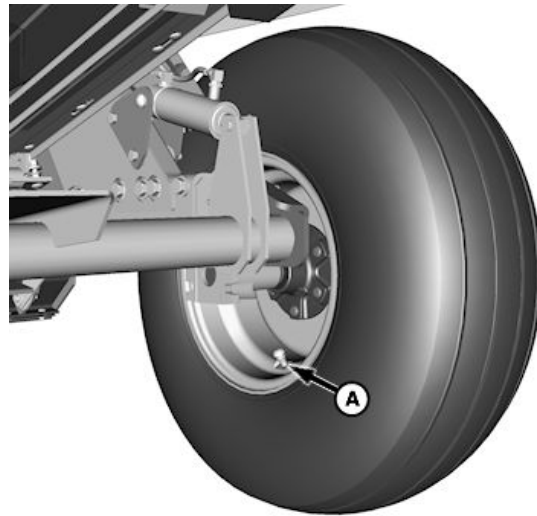
Whenever a wheel has been removed and installed, check wheel nut torque after one hour of operation and repeat until nuts maintain specified torque.

Install wheel with valve stem (A) toward the inside. Fasten with six 1/2 in. nuts.

Whenever a wheel has been removed and installed, check wheel nut torque after one hour of operation and repeat until nuts maintain specified torque. Wheel nuts must be tightened to specifications.

Specification

Wheel Nuts—Torque..... 115 N·m
(85 lb.-ft.)



11L-14 Tires Shown

A—Valve Stem

E65913—UN—18JUN12

PP98408,0000E9B -19-07FEB13-1/1

Check Tire Inflation Pressures

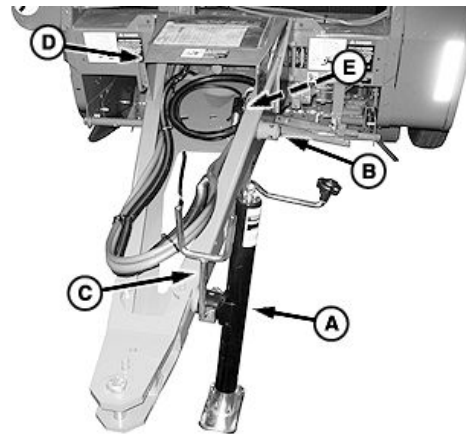
Tires	kPa (bar) (psi)
11L-14, 8 PR	207 (2.1) (30)

PP98408,0000E9C -19-07FEB13-1/1

Install Jack

1. Park baler on level surface.
2. Block both wheels at front and rear to prevent baler rolling.
3. Raise tongue with appropriate lifting device and remove jack (A) from storage location (B). Place in vertical position and secure with PTO support and quick-lock pin (C).
4. Remove shipping wire from PTO shield (D).
5. Raise PTO shield and remove tie strap (E) from hoses and wire harness.

A—Jack
B—Storage Location
C—PTO Support and Quick-Lock Pin
D—PTO Shield
E—Tie Strap



E57064—UN—24APR09

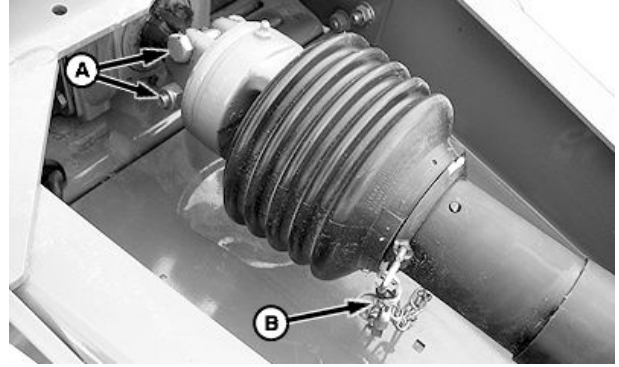
PP98408,0000E9D -19-07FEB13-1/1

Install Shearbolt PTO Driveline (If Equipped)

IMPORTANT: Cap screw head (A) must lead as driveline rotates counterclockwise when looking toward rear of baler.

1. Install yoke on input shaft. Fasten with cap screws and lock nuts (A). Install cap screws opposite each other, as shown.
2. Attach chain (B) to PTO shield to prevent shield from rotating.

A—Cap Screw and Lock Nut, M12 x 65 mm (2 used) B—Chain



E57062 —UN—23APR09

PP98408,0000E9E -19-07FEB13-1/1

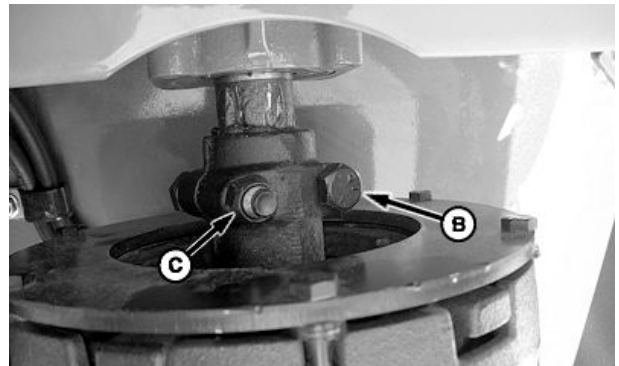
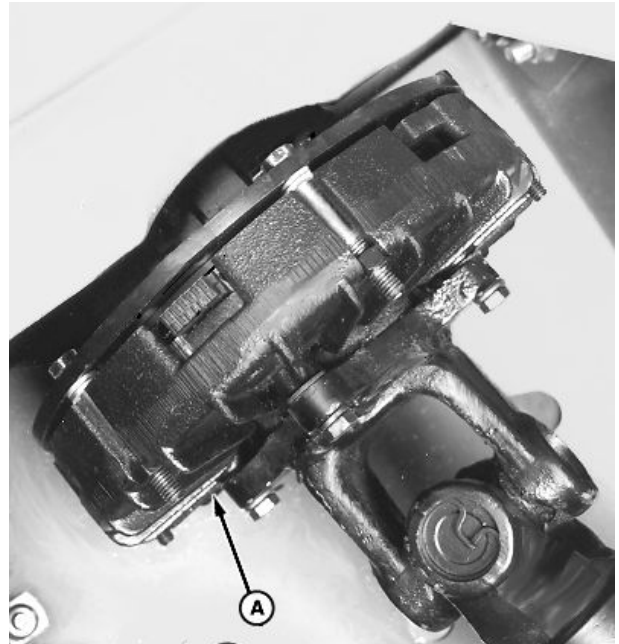
Install Slip Clutch PTO Driveline (If Equipped)

IMPORTANT: Cap screw heads (B) must lead as driveline rotates counterclockwise when looking toward rear of baler.

NOTE: Adjust cap screws evenly.

Install slip clutch and driveline (A). Fasten with cap screws (B) and lock nuts (C) included with driveline.

A—Slip Clutch and Driveline C—Lock Nut, M12 (2 used)
B—Cap Screw, M12 x 70 mm (2 used)



E57787 —UN—30JUL09

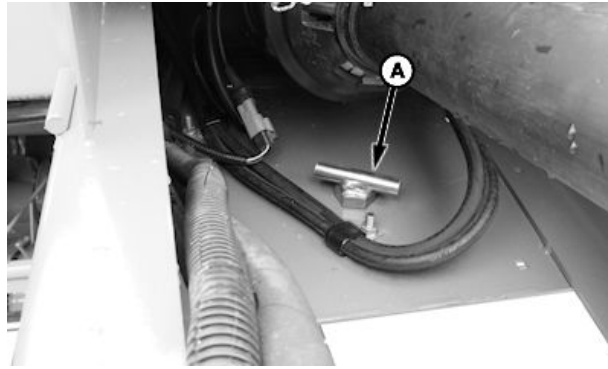
E57682 —UN—16JUL09

PP98408,0000E9F -19-07FEB13-1/1

Install Hitch Pin and Safety Chain

1. Remove hitch pin (A) from hole under driveline slip clutch.

A—Hitch Pin



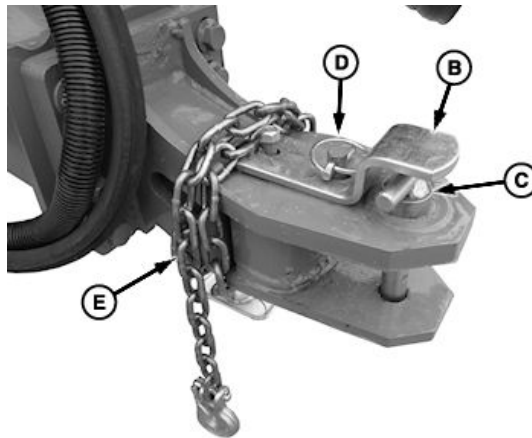
E62206—UN—30MAR12

PP98408,0000EA0 -19-07FEB13-1/2

2. Turn bracket (B) to the side and install hitch pin (C).
3. Return bracket (B) to operating position and install quick-lock pin (D).
4. Install safety chain (E).

B—Bracket
C—Hitch Pin

D—Quick-Lock Pin
E—Safety Chain

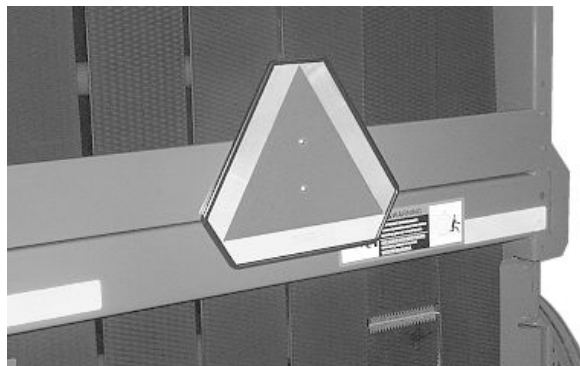


E62044—UN—30MAR12

PP98408,0000EA0 -19-07FEB13-2/2

Install Slow Moving Vehicle (SMV) Sign in Operating Position

1. Remove two M6 x 20 mounting cap screws, nuts and SMV sign.
2. Reinstall sign with reflective side away from machine (as shown). Fasten sign to machine using existing hardware.



E53960—UN—09DEC04

PP98408,0000EA1 -19-07FEB13-1/1

Install Bale Counter (If Equipped)

1. Install counter (A) with four 1/8 x 5/8 in. machine screws, lock washers, and nuts.

NOTE: Short spring link is not used in this application.

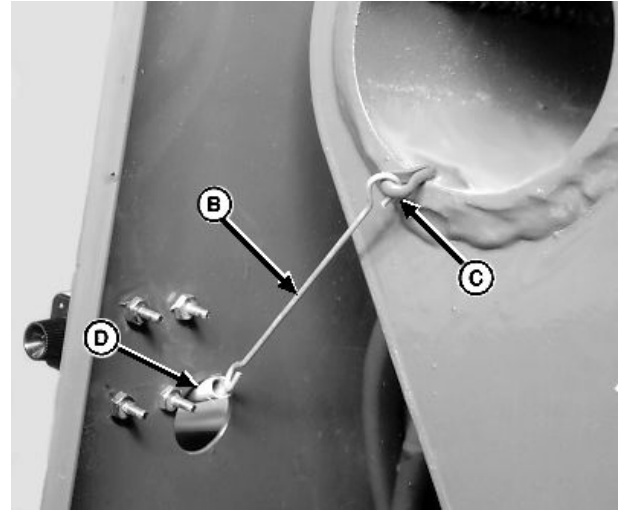
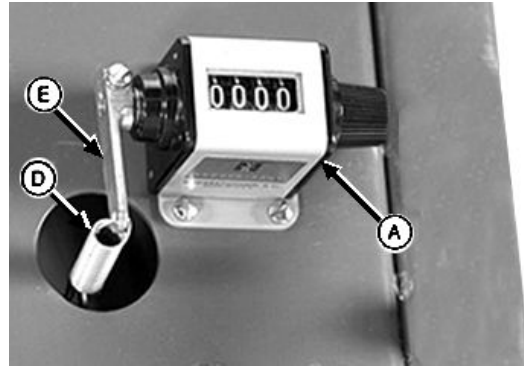
2. Hook long spring link (B) in eye of cotter pin (C).
3. Attach spring (D) to spring link (B) and counter arm (E). Close spring ends.

NOTE: Belt tension arm must be in down position.

4. Adjust counter arm (E) so slack is removed from spring (D).

A—Counter
B—Spring Link
C—Cotter Pin

D—Spring
E—Counter Arm



PP98408,0000EA2 -19-07FEB13-1/1

E40217—UN—09JUL96

E40556—UN—21JUN96

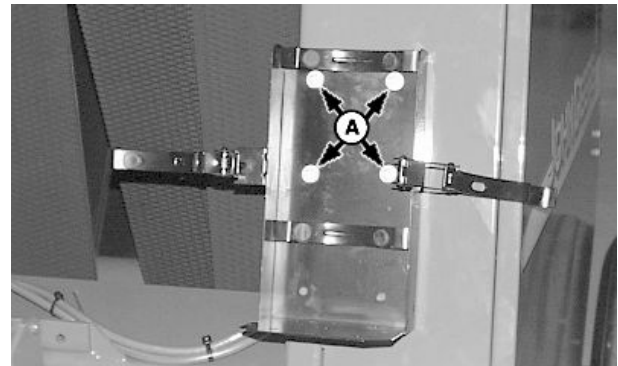
Install Fire Extinguisher (If Equipped)

A 9.5 L (2-1/2 gal.) pressurized-water fire extinguisher can be mounted in the holes that are provided on the baler. (See your John Deere dealer.)

NOTE: If bracket holes do not align with holes in baler, drill new holes in the bracket, NOT the baler.

1. Install bracket on left-hand front panel. Fasten with cap screws (A), 9 x 28 x 3 mm washers, and nuts.

A—Cap Screws, M8 x 25 mm (4 used)



Continued on next page

PP98408,0000EA3 -19-07FEB13-1/2

E54037—UN—06JAN05

IMPORTANT: If baler is subjected to cold weather, a nonflammable antifreeze solution must be used to prevent damage to extinguisher.

2. Fill, pressurize, and test fire extinguisher.
3. Fasten fire extinguisher to bracket.



E54036 —UN—06/JAN05

PP98408,0000EA3 -19-07FEB13-2/2

Cycle Twine Arms

Using the BaleTrak™ Pro monitor-controller, press the RETRACT key (A) and cycle twine arms to the home position (actuator fully retracted).

A—RETRACT Key



E69420 —UN—14/FEB13

PP98408,0000EA4 -19-14FEB13-1/1

Specifications

459 Standard Round Baler Specifications¹

Baler Dimensions

Length: Gate Closed	3612 mm (142.2 in.)
Length: Gate Open	4542 mm (178.8 in.)
Height: Gate Closed	2597 mm (102.2 in.)
Height: Gate Open	3251 mm (128 in.)
Width: Regular Pickup with Gauge Wheels	2516 mm (99.1 in.)

Bale

Diameter	889—1524 mm (35—60 in.)
Width	1171 mm (46.1 in.)
Typical Weight ^a	455 kg (1000 lb.)

^aDepending on crop conditions.

Regular Pickup

Width: Inside	1166 mm (45.9 in.)
Width: On Flare	1410 mm (55.5 in.)
Width: Between Outer Teeth	1123 mm (44.2 in.)
Drive	Roller chain with V-belt
Toothbars	4
Number of Teeth	36 (72 tines)
Tooth Spacing	66 mm (2.6 in.)
Stripper Diameter	254 mm (10 in.)

Forming Belts

Number	6
Width	178 mm (7 in.)
Type	3-ply combination nylon polyester, diamond tread, friction surface, with wire-type splices
Length	(2) 11 709 mm (461 in.) (4) 11 849 mm (466.5 in.)

Bale Wrap (Hydraulic Twine Wrap) (If Equipped)

Type	Double twine wrap
Control	Manual using SCV on tractor
Actuator Type	Hydraulic cylinder
Twine Spacing	Operator controlled with visual indicators. Adjustable via flow valve.

Bale Wrap (BaleTrak™ Pro) (If Equipped)

Type	Double twine wrap
Control	Self-activation; automatic at desired bale size
Actuator Type	Electric
Twine Spacing	Adjustable

Mechanical Bale Forming Indicators

Bale Size	Pointer or Scale
Twine Arm Position	Pointer or Scale
Bale Shape	Slide bars

Mechanical Bale Forming Indicators

Bale Size Alert—Hydraulic Twine Wrap	Buzzer (in tractor); set point adjustable to desired bale size. Indicates near, full, and oversize bale.
Bale Size Alert—BaleTrak™ Pro	Buzzer (in tractor); indicates oversize bale BaleTrak™ Pro—indicates near full and desired bale size.

Gear Case Oil Capacity

Oil Capacity	1.2 L (1.25 qt.)

Continued on next page

PP98408.000122A -19-15FEB13-1/2

Specifications

Tire Size

Standard 11L-14, 8 ply rating

Power Train

PTO Shaft Speed 540 rpm

Drive Protection Shear bolt or optional slip clutch

Tractor Recommended

Minimum Power 41 kW (55 hp.)

¹(Specifications and design subject to change without notice.)

PP98408,000122A -19-15FEB13-2/2

BaleTrak™ Pro Monitor-Controller Specifications

BaleTrak™ Monitor-Controller

Near-Full Bale	Indicator displayed and audible alarm
Full Bale	Indicator displayed and audible alarm
Auto-Wrap	Indicator displayed and audible alarm
Oversize Bale Protection	STOP or oversize indicator and audible alarm
Gate Closed	Indicator displayed
Nighttime Operation	Display area backlight
Continuous Twine Application	Indicator displayed
Auto Wrap Cycle	Activates when bale reaches preset size
Gate Closed	Indicator displayed
Bale Full Size—Wrapping Started	Indicator displayed
Wrapping Completed—Eject Bale	Indicator displayed
Wrap of Undersize Bale	Touch wrap key
Bale Size Indicator	Digital display
Set Bale Size	Touch bale size key and touch plus or minus key
Set Twine Spacing	Touch key and touch plus or minus key
Set Number of End Wraps, Right or Left	Touch key and touch plus or minus key
Set End Wrap Location, Right or Left	Touch key and touch plus or minus key
Set Re-extension and Cinch Wrap	Hold key and touch plus or minus key
Selection of Twine	Touch and hold twine key
Control of Variable Core	Diameter setting and on or off key
On Board Diagnostics	Digital LCD
Bale Counters	Resettable and total
Manual Actuator Movement with Electronic By-pass	Separate switch in harness
Low Voltage Indicator	Indicator displayed
Change Baler Model	Touch key and touch plus or minus key

PP98408,000123C -19-22FEB13-1/1

Specifications

Tractor Compatibility

IMPORTANT: See tractor operator's manual for proper ballast.

459 Standard Baler Tractor Compatibility (1 of 2)					
Tractor Requirements					
Model No.	Recommended PTO Horsepower	Implement Weight (goes into tractor ballast calculation)	7-Pin Connector Required	Number of SCV Pairs	Hydraulic Minimum Flow Rate from SCV
459 Standard	41 kW (55 hp.) minimum	1742 kg (3841 lb.)	Yes	One Two if equipped with hydraulic twine wrap or hydraulic pickup lift. Three if equipped with hydraulic twine wrap and hydraulic pickup lift.	22.7—24.6 L/min. (6—6.5 gpm)

459 Standard Baler Tractor Compatibility (2 of 2)								
Tractor Requirements								
Model No.	PTO Speed	Road Speed Maximum Limit	Drawbar Vertical Capacity	Drawbar Size	Electrical System Voltage	Electrical System Amps	Electrical System Grounding	Tractor Cab Required
459 Standard	540	32 km/h (20 mph)	420 kg (927 lb.)	Accept up to 51 mm (2 in.) thick drawbar.	12 VDC	20	Negative	No

PP98408,0000A00 -19-16JUL12-1/1

Hitch Weights

*NOTE: Weights are with typical optional equipment.
Weights with other optional equipment will vary.*

The maximum static vertical load for this machine is achieved with the bale chamber empty.

Maximum Static Vertical Load on Tractor Drawbar—Specification

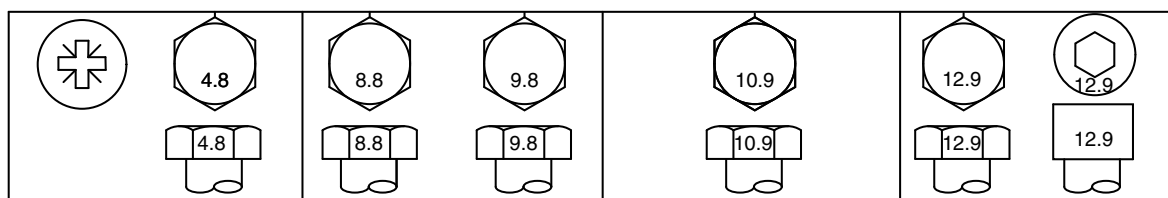
Specification

459 Standard
Baler—Weight on
Drawbar..... 420 kg
(927 lb.)

PP98408,0000A01 -19-30APR12-1/1

Metric Bolt and Screw Torque Values

TS1670 —UN—01MAY03



Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b	
	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N·m	lb.-ft.														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

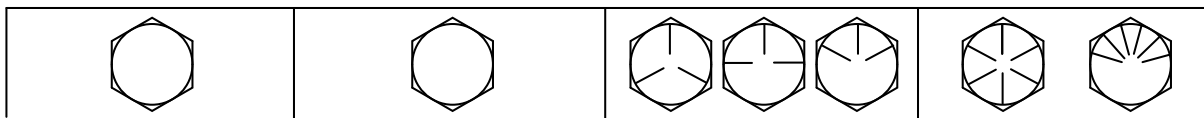
^a“Lubricated” means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

^b“Dry” means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.

DX,TORQ2 -19-12JAN11-1/1

Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



Bolt or Screw Size	SAE Grade 1				SAE Grade 2 ^a				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c	
	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
1/4	3.7	33	4.7	42	6	53	7.5	66	9.5	84	12	106	13.5	120	17	150
													N·m	lb.-ft.	N·m	lb.-ft.
5/16	7.7	68	9.8	86	12	106	15.5	137	19.5	172	25	221	28	20.5	35	26
									N·m	lb.-ft.	N·m	lb.-ft.				
3/8	13.5	120	17.5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	N·m	lb.-ft.														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

^aGrade 2 applies for hex cap screws (not hex bolts) up to 6 in. (152 mm) long. Grade 1 applies for hex cap screws over 6 in. (152 mm) long, and for all other types of bolts and screws of any length.

^b"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

^c"Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B, F13E or F13H zinc flake coating.

DX,TORQ1 -19-12JAN11-1/1

Serial Numbers

Serial Number Plate

Serial number identifying the baler is stamped on factory serial number plate.

These numbers and letters are required when ordering baler or attachment replacement parts.

To ensure that you have these numbers at hand, enter the appropriate serial number in the table provided under the illustration.

PP98408,00006CD -19-06MAR12-1/1

Serial Number Plate Description

Position	Use	Example
1—3	Factory Code	1E0
4—8	Model	0459C
9	Security Code	V
10	Year of Manufacture	C
11	Model Year	C
13—17	Sequential Manufacturing Number	380001



E60953—UN—05MAR12

Example Shown

PP98408,00006CE -19-06MAR12-1/1

Record Baler Serial Number

The serial number plate (A) is located on the left-hand side of the front frame.

Record the serial number in the table below.



E60918—UN—02MAR12

A—Serial Number Plate

Serial Number																
*																*

PP98408,00006CF -19-06MAR12-1/1

Keep Proof of Ownership

1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:
 - Mark your machine with your own numbering system
 - Take color photographs from several angles of each machine

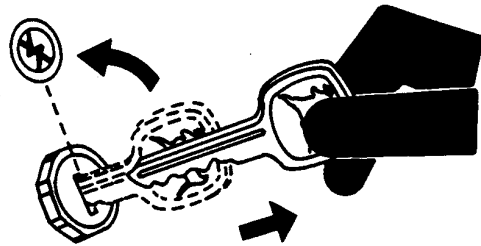


TS1680 —UN—09DEC03

DX, SECURE1 -19-18NOV03-1/1

Keep Machines Secure

1. Install vandal-proof devices.
2. When machine is in storage:
 - Lower equipment to the ground
 - Set wheels to widest position to make loading more difficult
 - Remove any keys and batteries
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When parking outdoors, store in a well-lighted and fenced area.
5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
6. Notify your John Deere dealer of any losses.



TS230 —UN—24MAY89

DX, SECURE2 -19-18NOV03-1/1

Index

	Page		Page
A			
Activate		Variable Core Diameter.....	41-10
Monitor-Controller Alarms	41-11	Adjust Upper Roll Drive Chain.....	60-8
Variable Core Operation (Channel 208).....	41-31	Adjusting	
Adjust		Lower Drive Roll Chain	60-7
Audible Alarm Volume.....	41-11	Twine Electric Actuator	61-9
Audible Bale Size Alarm Volume	40-9	After the First 10 Hours	
Bale Diameter Display	41-13	Wheel Nut Torque	36-1
Bale Diameter Sensor (Channel		After the First 50 Hours	
005).....	41-23, 61-19	Gear Case.....	36-1
Bale Diameter Sensor Mounting Bracket.....	61-18	After the First 50 Hours	
Bale Ramp (If Equipped).....	40-23	Wheel Nut Torque	36-2
Bale Shape Indicators.....	60-69	Assemble	
Bale Size Audible Indicator	40-16	Main PTO Driveline	30-1
Bale Size Indicator	60-48	Assembly	
Bale Size Link for Maximum Bale Size	60-68	Adjust Baler Hitch	70-1
Bale Size Link for Maximum Bale Size		Check Tire Inflation Pressures	70-4
(Oversize Warning)	61-24	Check Wheel Nut Torque	70-4
Bale Size Switch	60-67	Install Bale Counter (If Equipped).....	70-7
Baler Hitch	25-9, 70-1	Install Fire Extinguisher.....	70-7
Belt Tracking	60-53	Install Hitch Pin and Safety Chain.....	70-6
Clearance Between Cutter Link Support		Install Jack	70-4
and Twine Arm	60-37, 61-25	Install Shearbolt PTO Driveline	70-5
Compressor Rack	40-17	Install Slip Clutch PTO Driveline	70-5
Cutter Link Support.....	60-42, 61-31	Install Slow Moving Vehicle (SMV) Sign in	
Delay of Twine Eject (Channel 033).....	41-30	Operating Position.....	70-6
Front Twine Arm.....	60-38, 61-26	Install Wheel Spindles	
Gate Close Switch	61-24	Regular Pickup with 11L-14 Tires.....	70-3
Gathering Wheel Height.....	40-14	Perform Predelivery Service Safely	70-1
Gauge wheels	40-13	Attach	
Hydraulic Twine Arm Cylinder Initial Length	60-66	Baler to Tractor Drawbar.....	30-1
Initial Length of Pickup Drive Belt Idler Spring.....	60-30	Tractor Hydraulic System.....	30-3
Lower Feed Roll Scraper	60-47	Attachign and Detaching	
Main PTO Driveline Slip Clutch.....	60-27	Connect PTO Driveline	30-2
Oversize Bale Switch	61-23	Attaching and Detaching	
Pickup Drive Belt Idler.....	60-31	Assemble Main PTO Driveline	30-1
Pickup Float Springs.....	60-32	Attach Baler to Tractor Drawbar	30-1
Pickup Height.....	40-12	Attach to Tractor Hydraulic System	30-3
Take-Up Arm Compression Spring	60-48	Connect Baler Wire Harness to Tractor	
Tractor Drawbar	20-1	(BaleTrak Pro System).....	30-5
Tractor Hydraulic Outlets	20-4	Connect Tail or Warning Light Plug to Tractor	30-6
Tractor Wheels.....	20-3	Detach Baler from Tractor.....	30-6
Twine Arm Distance From Right Sidesheet	60-38	Install Bale Size Alarm	30-4
Twine Arm Distance Fromt Right Sidesheet	61-8	Install Drawbar Shield	30-2
Twine Arm Stop.....	60-42, 61-31	Tractor Convenience Outlet	30-4
Twine Arm-to-Start Roll.....	60-42	Attachments	
Twine Arm-to-Starter Roll.....	61-31	Bale Counter.....	45-4
Twine Arm-to-Starter Roll, Cutter Link		BaleTrak Pro Monitor-Controller (If Equipped).....	45-4
Support, and Twine Arm Stop	61-31	BaleTrak Pro Monitor-Controller Mounting	
Twine Cutter Knife.....	60-41, 61-30	Brackets	45-5
Twine Cutter Tension	60-34	Belt Lacing Tool (Vise for Clipper Laces)	45-1
Twine Cutter Tesion	61-13	Belt Skiving Tool.....	45-1
Twine Cutter-to-Twine Arm	60-40, 61-28	Crop Deflector Kit.....	45-2
Twine Indicator Retaining Strap	60-47	Electrical Outlet Socket.....	45-3
Twine Spacing (Hydraulic Twine Tie).....	25-7	Extended Rear-View Mirror.....	45-3
Twine Tension	40-11	Fire Extinguisher	45-4
Upper Roll Drive Chain	60-8	Gathering Wheels	45-6
		Hydraulic Bale Ramp	45-6

Continued on next page

	Page		Page
Hydraulic Pickup Lift	45-2	Belt Pins	
Mounting Kit for Open Station 6000 and 7000 Series Tractors	45-5	Check	60-50
Pickup Gauge Wheels	45-1	Belt Tracking	
Rear-View Mirror, Right-Hand	45-3	Adjust	60-53
Variable Core Valve—BaleTrak™ Pro System	45-2	Check	60-51
B		Belts	
Bale		Eligible for Warranty Replacement	60-62
Cornstalks	40-20	Install	60-56
Long, Stiff, Cane-Type Crops	40-21	Not Eligible for Warranty Replacement	60-63
Short, Dry, Slick Crops	40-19	Repair	60-57
Wet Hay	40-22	Bolt and screw torque values	
Bale Counter	45-4	Metric	75-4
Bale Counter (If Equipped)		Unified inch	75-5
Install	70-7	Break-In Baler	36-1
Bale Diameter Sensor		Break-In Period	
Adjust	61-19	After the First 10 Hours	
Replace	61-16	Wheel Nut Torque	36-1
Bale Diameter Sensor Mounting Bracket		After the First 50 Hours	
Replace and Adjust	61-18	Gear Case	36-1
Bale Quality		Wheel Nut Torque	36-2
Troubleshooting	55-30	Break-In Baler	36-1
Bale Ramp		Bypass Switch (Twine Wrap Only)	41-20
Removing and Install	60-71	C	
Bale Ramp (If Equipped)		Calibrating	
Adjust	40-23	Twine Arm (Channel 029)	41-29
Bale Shape Indicators		Calibration	
Adjust	60-69	Twine Arm Procedure (Channel 029)	61-25
Interpret	40-7	Change	
Bale Size Indicator		Baler Model Program (Channel 201)	41-30
Adjust	60-48	Channel 001	
Bale Size Link		Reset Monitor-Controller to Initial Settings	41-20
Adjust	60-68, 61-24	Channel 002	
Bale Size Switch		Dry Straw Twine Wrap Program	41-21
Adjust	60-67	Channel 003	
Baler		Set Twine Re-Extension	41-21
Break-In	36-1	Channel 004	
Breaking-In	40-1	Set Cinch Wrap	41-22
Baler Hitch		Channel 005	
Adjust	25-9, 70-1	Adjust Bale Diameter Sensor	41-23
Baler Operationg		Adjust Bale Diameter Sensor	61-19
Indicators	40-2	Channel 008	
Baler Serial Number		Monitor-Controller Display, Metric or English Units	41-24
Record	80-1	Channel 010	
BaleTrak Pro Monitor-Controller		Set Near-Full Indicator Set Point	41-24
Adjust Bale Diameter Display	41-13	Channel 013 and 014	
Specifications	75-2	Test Gate Close and Oversize Bale Switches	61-20
BaleTrak Pro Monitor-Controller (If Equipped)	45-4	Channel 018	
BaleTrak Pro Monitor-Controller Mounting Brackets ..	45-5	Test Twine Actuator Current	41-26
Baling Guidelines		Test Twine Wrap Actuator Current	61-21
Recommendations	40-5	Channel 019	
Baling Operation		Test Tractor Convenience Outlate Voltage	41-27
Normal	40-3	Test Tractor Convenience Outlet Voltage	61-22
Before Each Use of the Baler	40-1	Channel 020	
Belt Lacing Tool (Vise for Clipper Laces)	45-1	Test LCD Panel	41-28, 61-22

Continued on next page

	Page		Page
Channel 029		Drive Roll Bearings	
Twine Arm Calibration.....	41-29	Replace.....	60-8
Twine Arm Calibration Procedure	61-25	Dry Straw Twine Wrap Program (Channel 002)	41-21
Channel 033			
Adjust Delay of Twine Eject	41-30	E	
Channel 201		Electrical Outlet Socket	45-3
Change Baler Model Program	41-30	End of Season	
Channel 202		Storage	65-1
Twine Feature (Turning On and Off)	41-31	Error Codes	
Channel 208		Troubleshooting	55-36
Activate Variable Core Operation.....	41-31	Extended Rear-View Mirror	20-6, 35-3, 45-3
Channels 013 and 014			
Test Oversize Bale and Gate Closed Switch	41-25	F	
Check		Feed	
Bale Size Switch	25-1	Troubleshooting	55-24
Belt Pins.....	60-50	Fire	
Belt Tracking	60-51	Extinguishing.....	10-5
Microswitches	60-49	Fire Extinguisher.....	45-4
Pickup Tooth Rotational Play	60-32	Install.....	70-7
Tire Inflation Pressure.....	70-4	Fire Prevention	60-2
Tire Inflation Pressures	25-11	Front Twine Arm	
Tractor Ballast.....	20-3	Adjust.....	60-38, 61-26
Tractor Tire Inflation	20-3		
Tractor Wheel Spacing	20-3	G	
Twine Cutter Knife.....	60-41, 61-30	Gate	
Wheel Nut Torque	25-11, 70-4	Lock	40-15
Clearance Between Cutter Link Support and		Gate Close and Oversize Bale Switches	
Twine Arm		Test	61-20
Adjust.....	61-25	Gate Close Switch	
Clearance Between Cutter Link Support and		Adjust.....	61-24
Twine Arm		Replace.....	61-17
Adjust.....	60-37	Gathering Wheels.....	45-6
Connect		Gear Case	
Baler Wire Harness to Tractor (BaleTrak		Troubleshooting	55-2
Pro System)	30-5	General Baler	
PTO Driveline.....	30-2	Troubleshooting	55-32
Tail Light Plus to Tractor	30-6	Grease.....	50-1
Warning Light Plug to Tractor	30-6		
Cornstalks		H	
Bale.....	40-20	Hardware torque values	
Crop		Metric	75-4
Preparation	40-1	Unified inch	75-5
Crop Deflector Kit	45-2	Hitch Pin and Safety Chain	
Cutter Link Support		Install.....	70-6
Adjust.....	61-31	Hitch Weights	75-3
D		Hydraulic	
Decals		Troubleshooting	55-3
Safety Signs.....	15-2	Hydraulic Bale Ramp.....	45-6
Detach		Hydraulic Pickup Lift.....	45-2
Baler from Tractor	30-6	Hydraulic System	
Diagram		Diagram	60-6
Baler Wire Harness.....	60-4	Hydraulic Twine Arm Cylinder	
Hydraulic System	60-6	Install.....	60-66
Drive Chain			
Troubleshooting	55-1		

Continued on next page

	Page		Page
Hydraulic Twine Arm Cylinder Initial Length		Every 10 Hours	50-4
Adjust	60-66	Every 100 Hours	50-9
		Every 30 Hours	50-5
I		Fire Prevention	50-2
Install		First 50 Hours	50-9
Bale Counter (If Equipped)	70-7	Gear Case Oil	50-1
Bale Size Alarm	30-4	Observe Lubrication Symbols	50-2
BaleTrak Pro in ComfortGard Cab	21-1	Perform	50-2
BaleTrak Pro in SOUND-GARD Cab	21-2	Tension Arm Wear Channels	50-3
BaleTrak Pro on Open-Station Tractor	21-1		
Compressor Rack	40-16	M	
Drawbar Shield	30-2	Machine Safety Features	05-1
Fire Extinguisher	70-7	Machine Specifications	75-1
Hitch Pin and Safety Chain	70-6	Main Drive Shear Bolt	
Hydraulic Twine Arm Cylinder	60-66	Replace	60-26
Jack	70-4	Main PTO Driveline Slip Clutch	
Left-Hand Upper Drive Roll Bearing	60-9	Adjust	60-27
Shearbolt PTO Driveline	70-5	Slip	60-28
Slip Clutch PTO Driveline	70-5	Manual Actuator, Wrap, and Bypass Switches	41-19
Slowing Moving Vehicle (SMV) Sign	70-6	Metric bolt and screw torque values	75-4
Upper Right-Hand Drive Roll Bearing	60-24	Microswitches	
Wheel Spindles		Check	60-49
Regular Pickup		Monitor-Controller	
11L-14 Tires	70-3	Channels	41-7
Install Drawbar Shield	30-2	Customer, Setup, and Diagnostic Modes	41-6
		Description	41-2
J		Displays and Indicators	41-4
Jack		Keys and Switches	41-3
Install	70-4	Operation	41-8
		Setup Values and Initial Settings	41-5
L		Specifications	75-2
LCD Panel		Troubleshooting	55-17
Test	61-22	Monitor-Controller Display, Metric or English	
Left-Hand Lower Drive Roll Bearing		Units (Channel 008)	41-24
Replace	60-13	Monitor-Controller System	
Left-Hand Sprockets		Introduction	41-1
Replace	60-8	Mounting Brackets	
Left-Hand Upper Drive Roll Bearing		BaleTrak Pro	45-5
Install	60-9	Mounting Kit	
Light Enhancement		Open Station 6000 and 7000 Series Tractors	45-5
Module Operation	35-2		
Load		O	
Twine Box	25-1	Operate	
Lower Drive Roll Chain		Wrap Control (Hydraulic Twine Wrap Only)	40-10
Adjusting	60-7	Operate Baler with Bale Ramp (If Equipped)	40-22
Lower Feed Roll Scraper		Operating the Baler	
Adjust	60-47	Adjust Audible Bale Size Alarm Volume	40-9
Lubricants, Safety		Adjust Bale Ramp (If Equipped)	40-23
Safety, Lubricants	50-2	Adjust Bale Size Audible Indicator	40-16
Lubrication		Adjust Compressor Rack	40-17
Symbols	50-2	Adjust Gathering Wheel Height	40-14
Lubrication and Maintenance		Adjust Gauge Wheels	40-13
Annually	50-9	Adjust Pickup Height	40-12
Belt Pins	50-3	Adjust Twine Tension	40-11
		Bale Cornstalks	40-20

Continued on next page

	Page		Page
Bale Long, Stiff, Cane-Type Crops	40-21	Test Oversize Bale and Gate Close Switch (Channels 013 and 014).....	41-25
Bale Short, Dry, Slick Crops.....	40-19	Test Tractor Convenience Outlet Voltage (Channel 019)	41-27
Bale Wet Hay	40-22	Test Twine Actuator Current (Channel 018).....	41-26
Before Each Use of the Baler	40-1	Twine Arm Calibration (Channel 029).....	41-29
Breaking-In Baler	40-1	Twine Feature (Channel 202) Turning On and Off	41-31
Crop Preparation.....	40-1	Twine Wrap Terms and Settings	41-14
Extinguishing a Fire	10-5	View and Reset Bale Counters	41-19
Feed Round Bales	40-5	Optional Variable Core Feature	41-9
Handle Round Bales	40-1	Output Shaft	
Indicators for Baler Operation	40-2	Rotate By Hand.....	60-3
Install Compressor Rack.....	40-16	Oversize Bale Switch	
Interpret Bale Shape Indicators	40-7	Adjust.....	61-23
Lock the Gate.....	40-15	Replace.....	61-18
Normal Baling Operation.....	40-3		
Operate Baler with Bale Ramp (If Equipped).....	40-22		
Operate Wrap Control (Hydraulic Twine Wrap Only)	40-10		
Recommended Baling Guidelines.....	40-5		
Remove Compressor Rack.....	40-16		
Start a Bale in Difficult Conditions.....	40-18		
Understand Bale Ramp Regulator (Relief) Valve..	40-23		
Weave in the Windrow	40-9		
Operating the BaleTrak Pro System		P	
Manual Actuator, Wrap, and Bypass Switches	41-19	Pickup	
Operating with BaleTrak Pro System		Troubleshooting	55-27
Activate Monitor-Controller Alarms	41-11	Pickup Drive Belt Idler	
Activate Optional Variable Core Operation		Adjust.....	60-31
(Channel 208)	41-31	Pickup Drive Belt Idler Spring	
Adjust Audible Alarm Volume.....	41-11	Adjust.....	60-30
Adjust Bale Diameter Sensor (Channel 005).....	41-23	Pickup Float Springs	
Adjust Delay of Twine Eject (Channel 033).....	41-30	Adjust.....	60-32
Adjust Variable Core Diameter.....	41-10	Pickup Gauge Wheels.....	45-1
Bypass Switch (Twine Wrap Only).....	41-20	Pickup Tooth Rotational Play	
Change Baler Model Program (Channel 201).....	41-30	Check.....	60-32
Dry Straw Twine Wrap Program (Channel 002)...	41-21	Preparing the Baler	
Monitor-Controller Channels	41-7	Load Twine Box	25-1
Monitor-Controller Customer, Setup, and		Preparing the Baler	
Diagnostic Modes.....	41-6	Adjust Baler Hitch	25-9
Monitor-Controller Description	41-2	Adjust Twine Spacing (Hydraulic Twine Tie).....	25-7
Monitor-Controller Display, Metric or		Check Bale Size Switch	25-1
English Units (Channel 008)	41-24	Check Tire Inflation Pressures.....	25-11
Monitor-Controller Displays and Indicators	41-4	Check Wheel Nut Torque	25-11
Monitor-Controller Keys and Switches.....	41-3	Route Twine - Left-Hand Side (Front Arm)	25-4
Monitor-Controller Operation	41-8	Route Twine - Right-Hand Side (Rear Arm).....	25-2
Monitor-Controller Setup Values and Initial		Select Twine.....	25-1
Settings	41-5	Wheel Spindle Positions-Regular Pickup with 11L-14 Tires.....	25-10
Monitor-Controller System Introduction	41-1	Preparing the Tractor	
Optional Variable Core Feature	41-9	Adjust Tractor Drawbar	20-1
Reset Monitor-Controller to Initial Settings		Adjust Tractor Hydraulic Outlets	20-4
(Channel 001)	41-20	Adjust Tractor Wheels.....	20-3
Set Bale Diameter.....	41-12	Check Ballast, Wheel Spacing, and Tire Inflation ...	20-3
Set Cinch Wrap (Channel 004)	41-22	Extended Rear-View Mirror.....	20-6
Set Near-Full Indicator Set Point (Channel 010)..	41-24	Right-Hand Rear-View Mirror.....	20-5
Set Number of Twine End Wraps.....	41-17	Select Tractor PTO Speed	20-1
Set Twine End Wrap Distance	41-17	Three-Point Hitch Position	20-3
Set Twine Re-Extension (Channel 003).....	41-21	Tractor Convenience Outlet	20-4
Set Twine Spacing	41-16	Tractor Drawbar (Heavy Duty).....	20-2
Test LCD Panel (Channel 020)	41-28	Preparing the Tractor for BaleTrak Pro	
		Install Bale Track Pro Monitor-Controller	
		in ComfortGard Cab	21-1

Continued on next page

	Page		Page
Install BaleTrack Pro Monitor-Controller on Open-Station Tractor.....	21-1	Serial Number Plate.....	80-1
Install BaleTrak Pro Monitor-Controller in SOUND-GARD Cab.....	21-2	Serial Number Plate Description.....	80-1
PTO Driveline		Service-Baler	
Troubleshooting.....	55-1	Adjust Bale Size Indicator.....	60-48
PTO Driveline Slip Clutch		Adjust Bale Size Link for Maximum Bale Size.....	60-68
Adjust.....	60-27	Adjust Bale Size Switch (Manual Hydraulic Tie) ...	60-67
		Adjust Belt Tracking.....	60-53
		Adjust Clearance Between Cutter Link	
		Support and Twine Arm.....	60-37
		Adjust Front Twine Arm.....	60-38
		Adjust Hydraulic Twine Arm Cylinder Initial	
		Length.....	60-66
		Adjust Initial Length of Pickup Drive Belt	
		Idler Spring.....	60-30
		Adjust Lower Drive Roll Chain.....	60-7
		Adjust Lower Feed Roll Scraper.....	60-47
		Adjust Main PTO Driveline Slip Clutch.....	60-27
		Adjust Pickup Drive Belt Idler.....	60-31
		Adjust Pickup Float Springs.....	60-32
		Adjust Take-Up Arm Compression Spring.....	60-48
		Adjust Twine Arm Distance From Right Sheet.....	60-38
		Adjust Twine Arm-to-Starter Roll, Cutter	
		Link Support, and Twine Arm Stop.....	60-42
		Adjust Twine Cutter Tension.....	60-34
		Adjust Twine Cutter-to-Twine Arm.....	60-40
		Adjust Twine Indicator Retaining Strap.....	60-47
		Adjust Upper Roll Drive Chain.....	60-8
		Baler Wire Harness Diagram.....	60-4
		Belts Eligible for Warranty Replacement.....	60-62
		Belts Not Eligible for Warranty Replacement.....	60-63
		Check and Adjust Twine Cutter Knife.....	60-41
		Check Belt Tracking.....	60-51
		Check Microswitches.....	60-49
		Check Pickup Tooth Rotational Play.....	60-32
		Checking Belt Pins.....	60-50
		Fire Prevention.....	60-2
		Hydraulic System Diagram.....	60-6
		Install Belts.....	60-56
		Install Hydraulic Twine Arm Cylinder.....	60-66
		Install Left-Hand Upper Drive Roll Bearing.....	60-9
		Install Upper Right-Hand Drive Roll Bearing.....	60-24
		Keep Service Area Clean.....	60-2
		Raise Gate with Hoist.....	60-49
		Remove and Install Bale Ramp (If Equipped).....	60-71
		Repair Belts.....	60-57
		Replace Drive Roll Bearings or Left-Hand	
		Sprockets.....	60-8
		Replace Left-Hand Lower Drive Roll Bearing.....	60-13
		Replace Main Drive Shear Bolt.....	60-26
		Replace Right-Hand Lower Drive Roll Bearing.....	60-20
		Rotate Output Shaft By Hand.....	60-3
		Safe Service Procedures.....	60-1
		Service Information.....	60-1
		Slip Main PTO Driveline Slip Clutch.....	60-28
		Service-Balers	
		Adjust Bale Shape Indicators.....	60-69
		Service-BaleTrak Pro System	
		Adjust Twine Arm Distance From Right SideSheet..	61-8

Continued on next page

	Page		Page
Adjust Bale Diameter Sensor (Channel 005).....	61-19	Start of Season	
Adjust Bale Size Link for Maximum Bale		Storage	65-1
Size (Oversize Warning)	61-24	Storage	
Adjust Clearance Between Cutter Link		End of Season	65-1
Support and Twine Arm.....	61-25	Start of Season	65-1
Adjust Front Twine Arm.....	61-26		
Adjust Gate Close Switch	61-24		
Adjust Oversize Bale Switch	61-23		
Adjust Twine Arm-to-Starter Roll, Cutter			
Link Support, and Twine Arm Stop.....	61-31		
Adjust Twine Cutter Tension	61-13		
Adjust Twine Cutter-to-Twine Arm	61-28		
Check and Adjust Twine Cutter Knife	61-30		
Component Locations.....	61-1		
Replace and Adjust Bale Diameter Sensor			
Mounting Bracket.....	61-18		
Replace Bale Diameter Sensor.....	61-16		
Replace Gate Close Switch	61-17		
Replace Oversize Bale Switch.....	61-18		
Test Gate Close and Oversize Bale			
Switches (Channel 013 and 014).....	61-20		
Test LCD Panel (Channel 020)	61-22		
Test Tractor Convenience Outlet Voltage			
(Channel 019)	61-22		
Test Twine Wrap Actuator Current			
(Channel 018)	61-21		
Twine Arm Calibration Procedure			
(Channel 029)	61-25		
Twine Electric Actuator Installation Adjustment	61-9		
Wire Diagram - BaleTrak Pro			
Monitor-Controller Control System.....	61-2		
Wire Harness Diagram-BaleTrak Pro			
Monitor-Controller	61-4		
Wire Harness Diagram-Baler.....	61-6		
Set			
Bale Diameter	41-12		
Cinch Wrap (Channel 004)	41-22		
Near-Full Indicator Set Point (Channel 010).....	41-24		
Number of Twine End Wraps	41-17		
Twine End Wrap Distance.....	41-17		
Twine Re-Extension (Channel 003)	41-21		
Twine Spacing.....	41-16		
Shearbolt PTO Driveline			
Install.....	70-5		
Skiving Tool	45-1		
Slip			
Main PTO Driveline Slip Clutch.....	60-28		
Slip Clutch PTO Driveline			
Install.....	70-5		
Slow Moving Vehicle (SMV) Sign			
Install.....	70-6		
Specifications			
459 Standard Round Baler	75-1		
BaleTrak Pro Monitor-Controller Specifications	75-2		
Hitch Weights	75-3		
Tractor Compatibility	75-3		
Start a Bale			
Difficult Conditions	40-18		

Continued on next page

	Page		Page
Twine Arm		Wire Harness	
Calibration	61-25	Diagram	60-4
Twine Arm Distance From Right Sidesheet		Wire Harness Diagram	
Adjust	60-38, 61-8	Baler	61-6
Twine Arm Stop		BaleTrak Pro Monitor-Controller	61-4
Adjust	61-31		
Twine Arm-to-Starter Roll			
Adjust	61-31		
Twine Arm-to-Starter Roll, Cutter Link			
Support, and Twine Arm Stop			
Adjust	60-42		
Twine Cutter Knife			
Check and Adjust	60-41, 61-30		
Twine Cutter Tension			
Adjust	60-34, 61-13		
Twine Cutter-to-Twine Arm			
Adjust	60-40, 61-28		
Twine Electric Actuator			
Adjusting	61-9		
Twine Indicator Retaining Strap			
Adjust	60-47		
Twine Wrap			
Terms and Settings	41-14		
Troubleshooting	55-5		
Twine Wrap (Hydraulic Twine Wrap Only)			
Troubleshooting	55-10		
Twine Wrap Actuator Current			
Test	61-21		
Twine Wrap Difficulties-BaleTrak Pro System			
Troubleshooting	55-11		
U			
Understand Bale Ramp Regulator (Relief) Valve	40-23		
Unified inch bolt and screw torque values	75-5		
Upper Right-Hand Drive Roll Bearing			
Install	60-24		
V			
Variable Core Diameter			
Adjust	41-10		
Variable Core Operation (Channel 208)			
Activate	41-31		
Variable Core Valve—BaleTrak™ Pro System	45-2		
View			
Bale Counters	41-19		
W			
Wheel Nut Torque			
Check	25-11, 70-4		
Wheel Spindle Positions			
Regular Pickup with 11L-14 Tires	25-10		
Windrow			
Weave	40-9		
Wire Diagram			
BaleTrak Pro Monitor-Controller	61-2		

John Deere Service Literature Available

Technical Information

Technical information can be purchased from John Deere. Some of this information is available in electronic media, such as CD-ROM disks, and in printed form. There are many ways to order. Contact your John Deere dealer. Call **1-800-522-7448** to order using a credit card. Search online from <http://www.JohnDeere.com>. Please have available the model number, serial number, and name of the product.

Available information includes:

- **PARTS CATALOGS** list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.
- **OPERATOR'S MANUALS** providing safety, operating, maintenance, and service information. These manuals and safety signs on your machine may also be available in other languages.
- **OPERATOR'S VIDEO TAPES** showing highlights of safety, operating, maintenance, and service information. These tapes may be available in multiple languages and formats.
- **TECHNICAL MANUALS** outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in separate component technical manuals
- **FUNDAMENTAL MANUALS** detailing basic information regardless of manufacturer:
 - Agricultural Primer series covers technology in farming and ranching, featuring subjects like computers, the Internet, and precision farming.
 - Farm Business Management series examines "real-world" problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
 - Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
 - Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.



TS189 —UN—17JAN89



TS191 —UN—02DEC88



TS224 —UN—17JAN89



TS1663 —UN—10OCT97

DX,SERV LIT -19-31JUL03-1/1

John Deere Service Keeps You On The Job

John Deere Is At Your Service

CUSTOMER SATISFACTION is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.



TS201 —UN—15APR13

CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

Your John Deere dealer is dedicated to supporting your equipment and resolving any problem you may experience.

1. When contacting your dealer, be prepared with the following information:

- Machine model and product identification number
- Date of purchase
- Nature of problem

2. Discuss problem with dealer service manager.

3. If unable to resolve, explain problem to dealership manager and request assistance.

4. If you have a persistent problem your dealership is unable to resolve, ask your dealer to contact John Deere for assistance. Or contact the Ag Customer Assistance Center at 1-866-99DEERE (866-993-3373) or e-mail us at www.deere.com/en_US/ag/contactus/.

DX,IBC,2 -19-02APR02-1/1

