

680, 690, 680 MultiCut and 690 MultiCut Large Square Balers

**John Deere Werke Zweibrücken
TM4581 (04DEC00)**

Printed in Germany
ENGLISCH

Introduction

FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.



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

Technical manuals are divided in two parts: repair and operation and tests. Repair sections tell how to repair the components. Operation and tests sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

Contents

SECTION 05—Safety

Group 05—Safety Information

SECTION 10—General Information

Group 05—Specifications/Serial Number

Group 10—Basic Settings

SECTION 40—Electrical System

Group 05—Sensor Tests

Group 15—Valve Checks

Group 20—Setting Electronic Values

Group 25—Power Supply

Group 30—Fuses

Group 35—Changing Sensors

Group 40—Changing Boards

Group 45—Troubleshooting

Group 50—Circuit Diagrams

SECTION 50—Power Train

Group 05—Lower Pickup Drive Gearbox

Group 10—Upper Pickup Drive Gearbox

Group 15—Rake Gearbox with Spring-Loaded
Ratchet Clutch

Group 20—Transfer Gearbox (Knotter-Rake)

Group 25—Overload Clutch

Group 30—Brake Band

Group 35—Cam-Type Cut-Out Clutch

Group 40—Main Gearbox

Group 45—Main Drive Jointed Shaft

Group 50—Pickup Drive Jointed Shaft

Group 55—Knotter Drive Jointed Shaft

Group 60—Adjusting Length of Jointed Shafts

Group 65—Free-Running Friction Clutch

SECTION 70—Hydraulic System

Group 05—On-Board Hydraulics

Group 10—Hydraulic System (Driven by Tractor)

SECTION 80—Hitching and Chassis

Group 05—Tongue

SECTION 100—Pickup System

Group 05—Removing and Installing Scraper

Group 10—Removing and Installing Tines

Group 15—Removing and Installing Spring
Suspension

Group 20—Removing and Installing Complete
Pickup

Group 25—Removing and Installing Tine Carriers

Group 30—Removing and Installing Feed Augers

Group 35—Rake Bar and Feeder Bar

Group 40—Cutting System

SECTION 110—Baling Components

Group 05—Residual Bale Ejector

Group 10—Plunger

Group 15—Connecting Rod

Group 20—Plunger Blades and Stationary Blades

Group 25—Baling Flaps

Group 30—Tensioning Element

SECTION 120—Binding Mechanism

Group 05—Knotter Gearbox

Group 10—Knotter Shaft

Group 15—Knotter

Group 20—Needles

Group 25—Needle Yoke

Group 30—Actuating Linkage

Group 35—Knotter Central Lubrication System

Group 40—Twine Knotter

SECTION 140—Accessories

Group 05—Compressor

Index

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.

TM4581-19-04DEC00

COPYRIGHT© 1997
DEERE & COMPANY
European Office Mannheim
All rights reserved
A John Deere ILLUSTRATION® Manual

Section 05 Safety

Contents

Page

Group 05—Safety Information

LIVE WITH SAFETY

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.



DX,LIVE -19-25SEP92

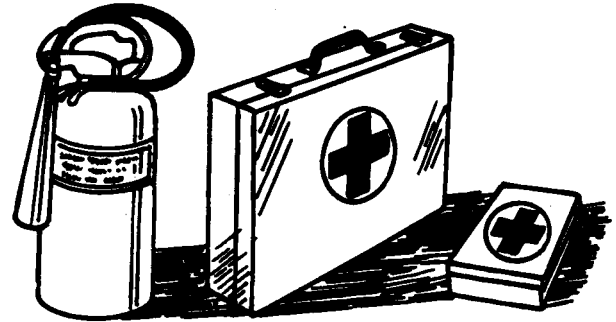
TS231 -19-07OCT88

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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



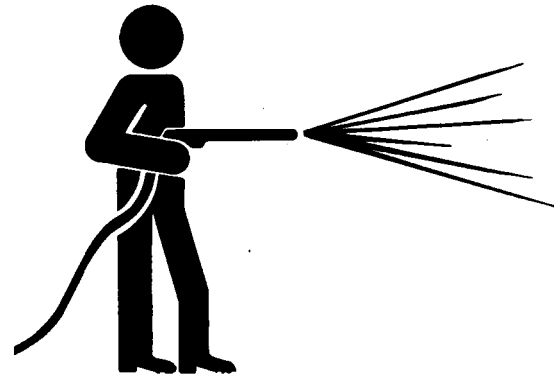
DX,FIRE2 -19-03MAR93

TS291 -UN-23AUG88

WORK IN CLEAN AREA

Before starting a job:

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.



DX,CLEAN -19-04JUN90

T6642EJ -UN-18OCT88

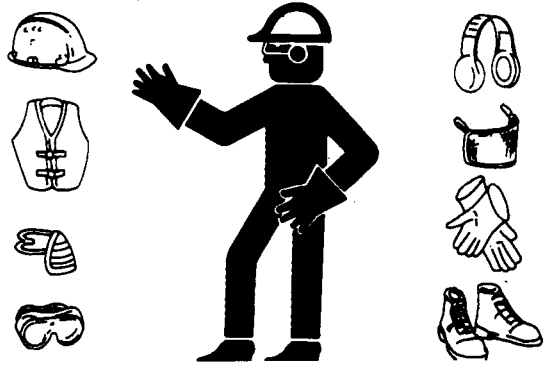
WEAR PROTECTIVE CLOTHING

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.



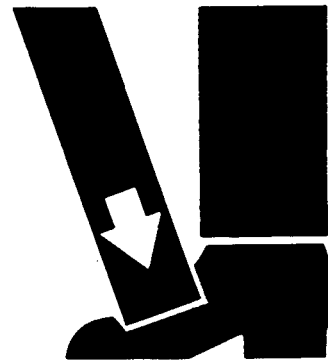
DX,WEAR -19-10SEP90

TS206 -JUN-23AUG88

USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



DX,LIFT -19-04JUN90

TS226 -JUN-23AUG88

REPLACE SAFETY SIGNS

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



DX,SIGNS1 -19-04JUN90

TS201 -JUN-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.

Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.



DX,SERV -19-03MAR93

TS218 -JUN-23AUG88

USE PROPER TOOLS

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.



DX,REPAIR -19-04JUN90

TS779 -JUN-08NOV89

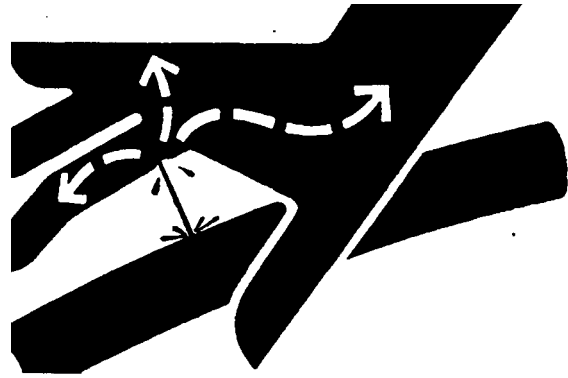
AVOID HIGH-PRESSURE FLUIDS

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 from Deere & Company Medical Department in Moline, Illinois, U.S.A.



-JUN-23AUG88

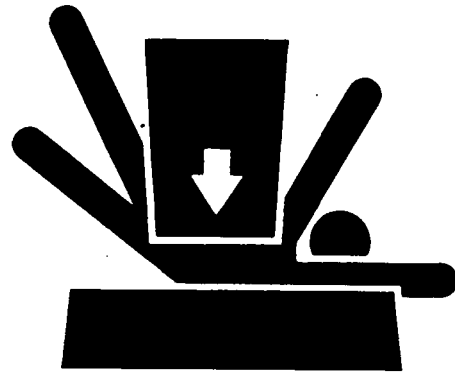
X9811

DX,FLUID -19-03MAR93

SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



-JUN-23AUG88

TS229

DX,LOWER -19-04JUN90

REMOVE PAINT BEFORE WELDING OR HEATING

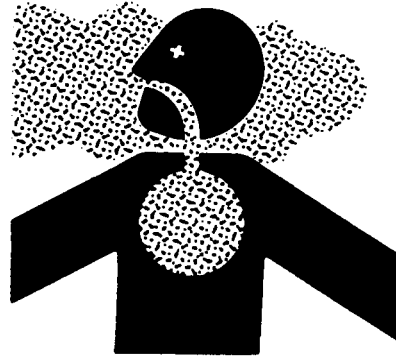
Avoid potentially toxic fumes and dust.

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

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- 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.



TS220 -JUN-23AUG88

DX,PAINT -19-03MAR93

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 be accidentally cut when heat goes beyond the immediate flame area.



TSS63 -JUN-15MAY90

DX,TORCH -19-03MAR93

HANDLE FLUIDS SAFELY—AVOID FIRES

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.



TS227 -JUN-23AUG88

DX,FLAME -19-04JUN90

DISPOSE OF WASTE PROPERLY

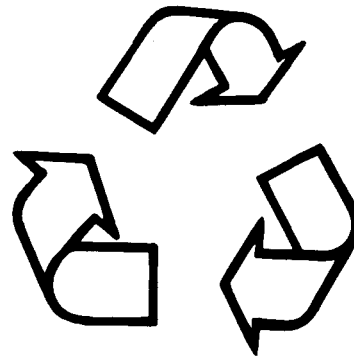
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

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.



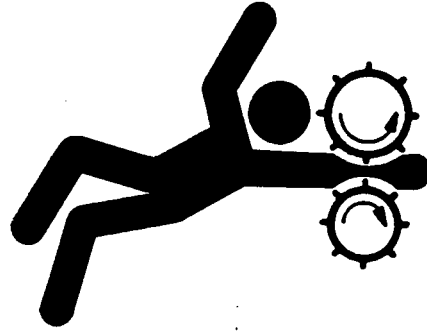
TS1133 -JUN-26NOV90

DX,DRAIN -19-03MAR93

SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.

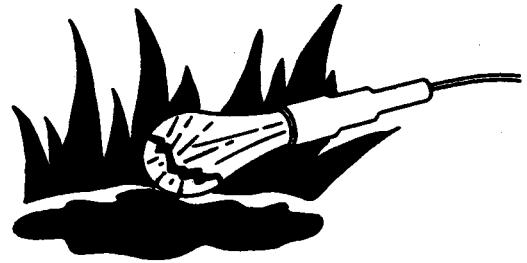


DX, LOOSE -19-04JUN90

TS228 -JUN-23AUG88

ILLUMINATE WORK AREA SAFELY

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



DX, LIGHT -19-04JUN90

TS223 -JUN-23AUG88

Section 10 General Information

Contents

Page

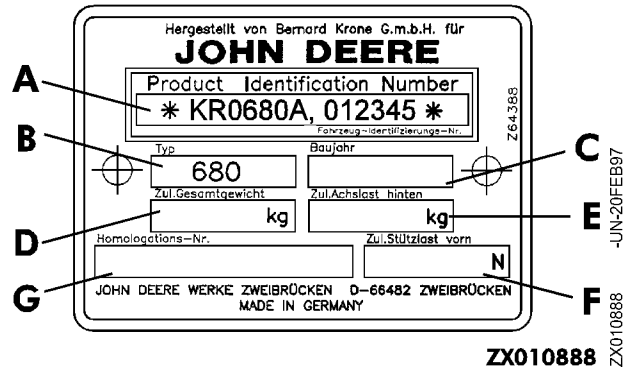
Group 05—Specifications/Serial Number

Group 10—Basic Settings

Adjusting working height	10-10-1
Needle setting relative to the plunger . . .	10-10-2
Lateral needle adjustment	10-10-4
Adjusting needle yoke brake	10-10-5
Adjusting plunger blades and stationary blades	10-10-5
Cleaning rail adjustment	10-10-6
Adjusting cutting mechanism sensor	10-10-6
Adjusting knotter sensor	10-10-7
Adjusting rake drum sensor	10-10-7
Adjusting plunger position sensor	10-10-8
Adjusting brake band on flywheel	10-10-8
Knotter	10-10-9
Adjusting twine mount	10-10-10
Adjusting blade lever	10-10-10
Brake Adkustment	10-10-11

SERIAL NUMBER PLATE

- A—Serial number
- B—Model
- C—Year of production
- D—Permissible total weight
- E—Permissible rear axle load
- F—Permissible front axle load
- G—Homologation number (in certain countries only)



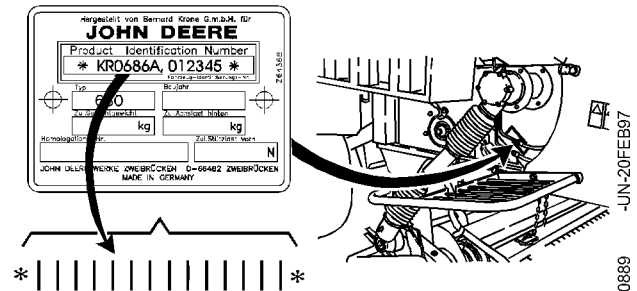
ZX010888

ZX,OMGPP1004872-19-15JAN97

SERIAL NUMBER

The serial number plate is located on the right-hand side of the baler.

When ordering spare parts, always quote the baler serial number. This will help your dealer in giving you prompt, efficient service.



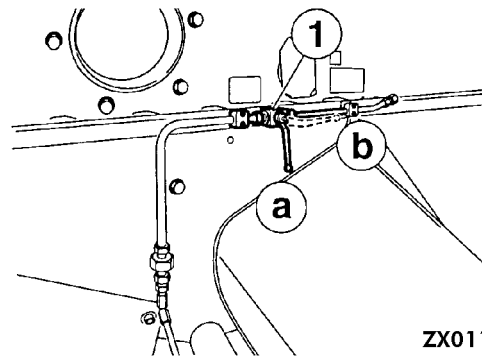
ZX010889

ZX,OMGPP1004873-19-15JAN97

ADJUSTING PICKUP WORKING HEIGHT

Raise pickup and lock it by means of the shut-off tap (1).

- a = closed position
- b = open position



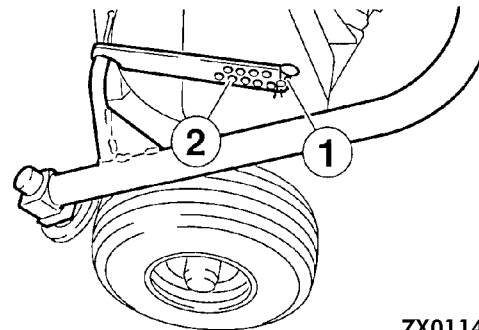
ZX011417

-JUN-13JUN97
ZX011417

ZX,TMP680008887-19-01JUN97

- Remove spring pin (1).
- Move gauge wheels to desired position on bar (2) and secure with spring pin (1).

NOTE: Make sure that the gauge wheels on both sides of the pickup are in the same position on the bar with holes (2).



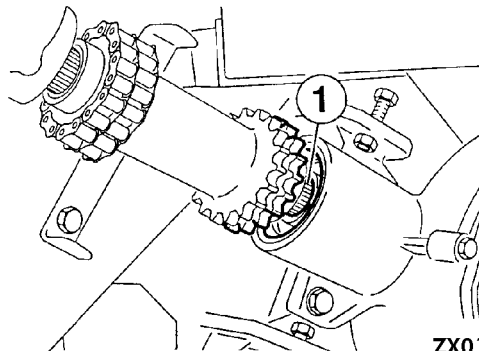
ZX011418

-JUN-13JUN97
ZX011418

ZX,TMP680008888-19-01JUN97

SETTING THE RAKE RELATIVE TO THE PLUNGER

Turn drive shaft (1) of rake gearbox in working direction until guide roller is visible in window on the right-hand side of the machine.

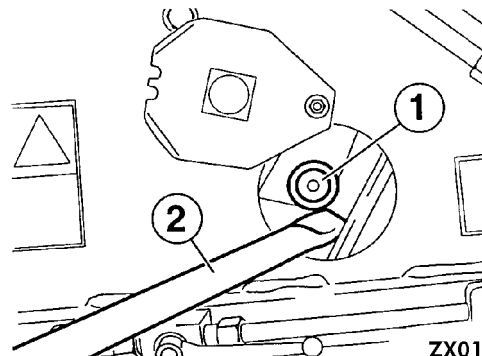


ZX011419

-JUN-13JUN97
ZX011419

ZX,TMP680008889-19-01JUN97

Fasten guide roller (1) in this position with a mounting bar (2).



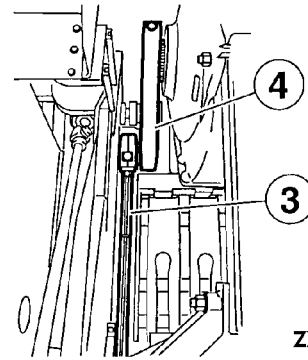
ZX011420

-JUN-13JUN97
ZX011420

ZX,TMP680008890-19-01JUN97

Move connecting rod (3) and main crank (4) to extended position (rear dead center of plunger) by turning flywheel (1) in working direction (2).

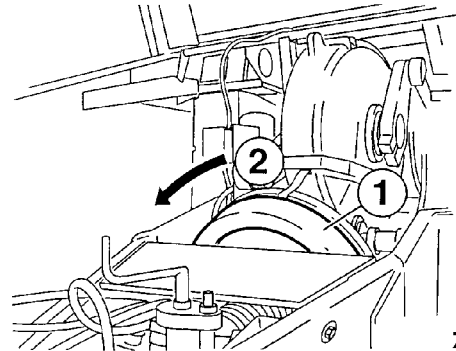
- 1—Flywheel
- 2—Working direction
- 3—Connecting rod
- 4—Main crank



ZX011421

-JUN-13JUN97

ZX011421



ZX011422

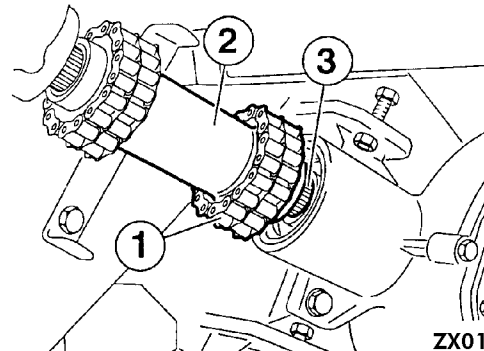
-JUN-13JUN97

ZX011422

ZX,TMP680008891-19-01JUN97

Connect sleeve (2) and drive shaft (3) by means of roller chain (1).

NOTE: Turn the machine manually through one entire revolution. With connecting rod and main crank in extended position, the guide roller must be in the center of the window. Make sure that the rake clutch is engaged.



ZX011423

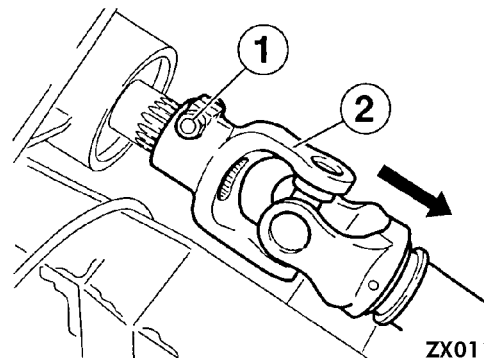
-JUN-13JUN97

ZX011423

ZX,TMP680008892-19-01JUN97

SETTING NEEDLES RELATIVE TO THE PLUNGER

- Removing knotter drive shaft
- Remove screw (1).
- Pull off jointed shaft (2).



ZX011424

-JUN-13JUN97

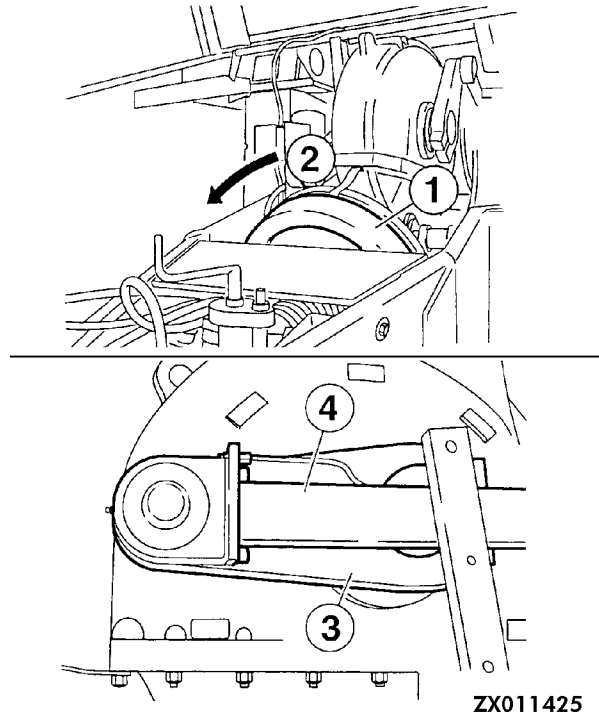
ZX011424

ZX,TMP680008893-19-01JUN97

Positioning Plunger

Turn flywheel (1) in working direction (2) until crank arm (3) and connecting rod (4) overlap (front dead center of plunger).

- 1—Flywheel
- 2—Working direction
- 3—Crank arm
- 4—Connecting rod



-JUN-13-JUN97
ZX011425

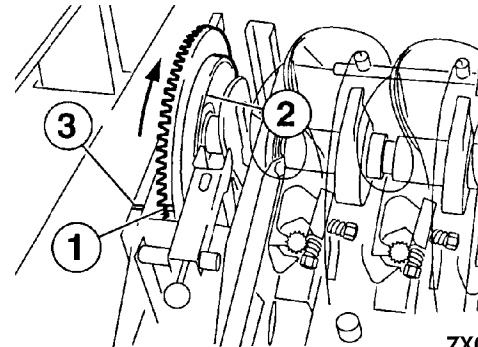
ZX011425

ZX,TMP680008894-19-01JUN97

Positioning Knotter Drive

- Align coloured mark (1) on crown wheel (2) with upper rear edge (3) of knotter gearbox.
- Install jointed shaft.

IMPORTANT: Check setting.



-JUN-13-JUN97

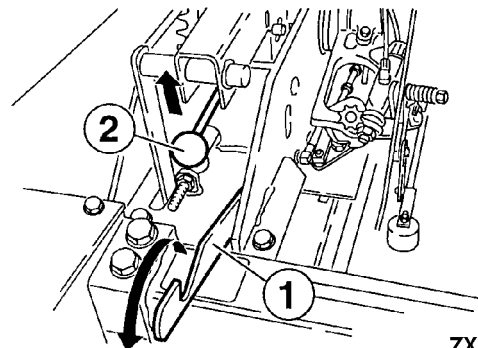
ZX011426

ZX011426

ZX,TMP680008895-19-01JUN97

CHECKING PLUNGER-TO-NEEDLE SETTING

- Trip the tying cycle by hand.
- Move locking lever (1) down.
- Move lever (2) up.



-JUN-13-JUN97

ZX011427

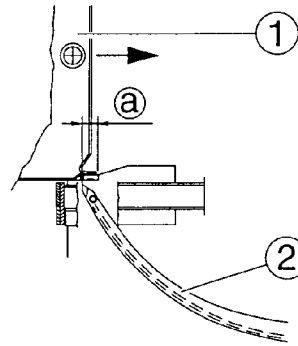
ZX011427

ZX,TMP680008896-19-01JUN97

Basic Settings

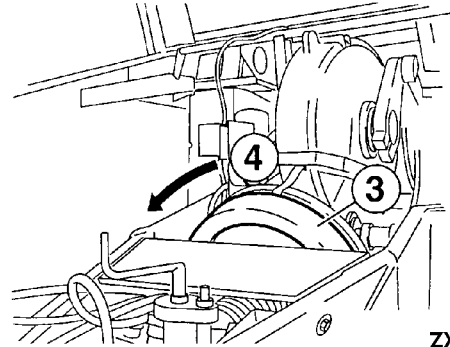
Move plunger (1) in working direction by turning flywheel until needle tip (2) is at the same height as the plunger blade.

IMPORTANT: In this position the needle tip must be covered by the plunger, with dimension $a = 40 - 70$ mm (1.57 - 2.76 in.).



-JUN-13JUN97

ZX011428



-JUN-13JUN97

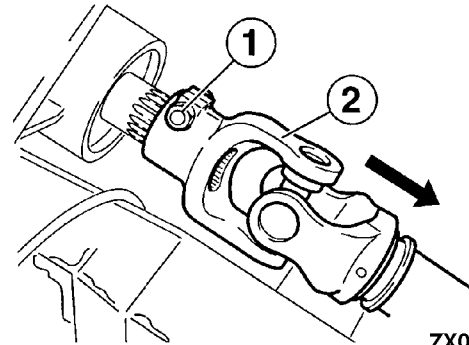
ZX011429

ZX011429

ZX,TMP680008897-19-01JUN97

To adjust dimension "a", alter position of the knotter drive jointed shaft.

- Remove screw (1).
- Pull off jointed shaft (2).
- Adjust dimension "a".
- Reinstall jointed shaft.



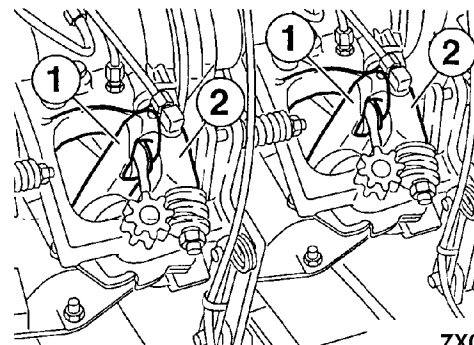
-JUN-13JUN97

ZX011430

ZX,TMP680008898-19-01JUN97

LATERAL NEEDLE ADJUSTMENT

- Trip the tying cycle by hand.
- Move needles to upper position by turning flywheel in working direction.
- Needles (1) must just laterally touch the knotter frames (2).



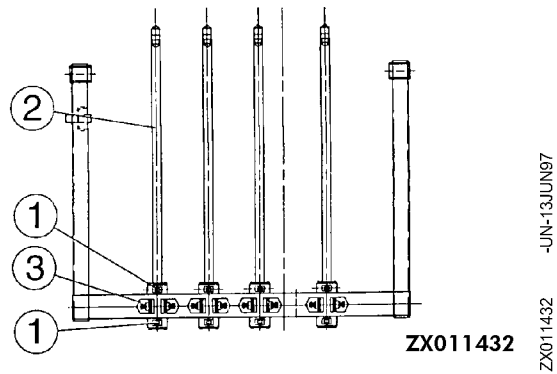
-JUN-13JUN97

ZX011431

ZX,TMP680008899-19-01JUN97

Correcting Needle Position

- Loosen clamping screws (1).
- Move needles (2) to correct position by means of clamping screws (3).
- Tighten clamping screws (1).



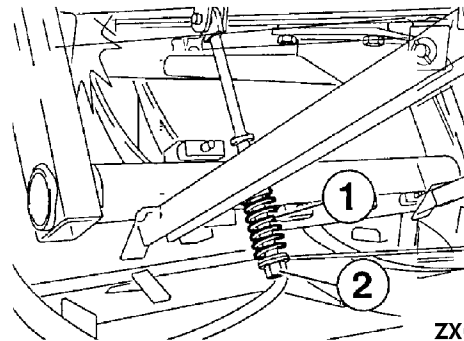
-JUN-13JUN97
ZX011432

ZX,TMP680008900-19-01JUN97

ADJUSTING NEEDLE YOKE BRAKE

Adjust length of spring (1) to 110 mm (4.33 in.) by means of nut (2).

IMPORTANT: Adjust the spring on both sides by the same amount.



-JUN-13JUN97
ZX011433

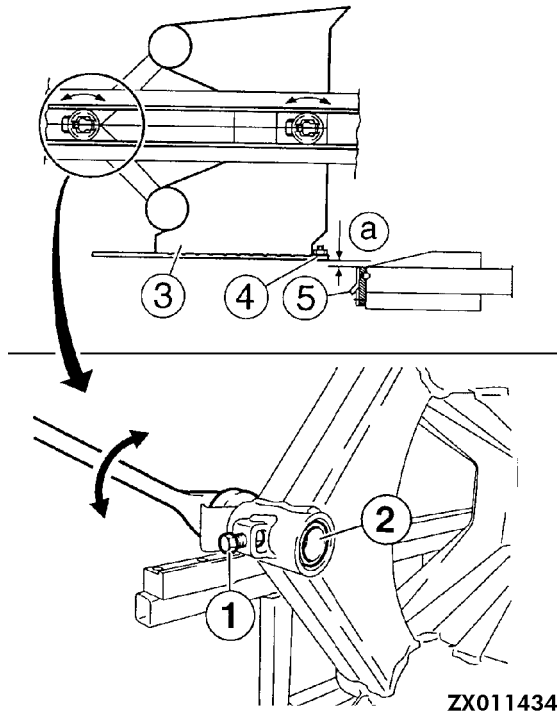
ZX,TMP680008901-19-01JUN97

ADJUSTING PLUNGER BLADES AND STATIONARY BLADES

- Loosen clamp bedding (1).
- Raise or lower plunger (3) by turning eccentric sleeves (2).
- Adjust dimension (a = 2 - 4 mm; 0.08 - 0.16 in.) between plunger blade (4) and stationary blade (5).
- Tighten clamp bedding (1).

IMPORTANT: The plunger guide rollers must carry uniformly.

- 1—Clamp bedding
- 2—Eccentric sleeves
- 3—Plunger
- 4—Plunger blade
- 5—Stationary blade

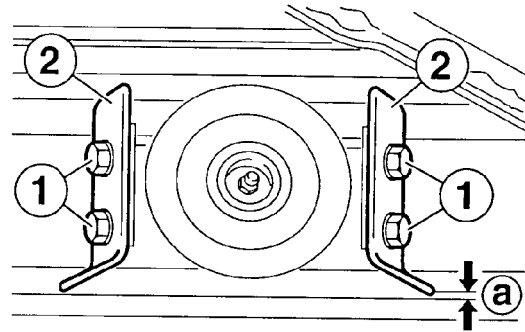


-JUN-13JUN97
ZX011434

ZX,TMP680008902-19-01JUN97

ADJUSTING PLUNGER CLEANING RAILS

- Loosen screws (1).
- Adjust cleaning rails (2) ($a = 1 - 2 \text{ mm}$; $0.04 - 0.08 \text{ in.}$).
- Tighten screws (1).



ZX011435

ZX,TMP680008903-19-01JUN97

-UN-13JUN97

ZX011435

ADJUSTING CUTTING MECHANISM SENSOR

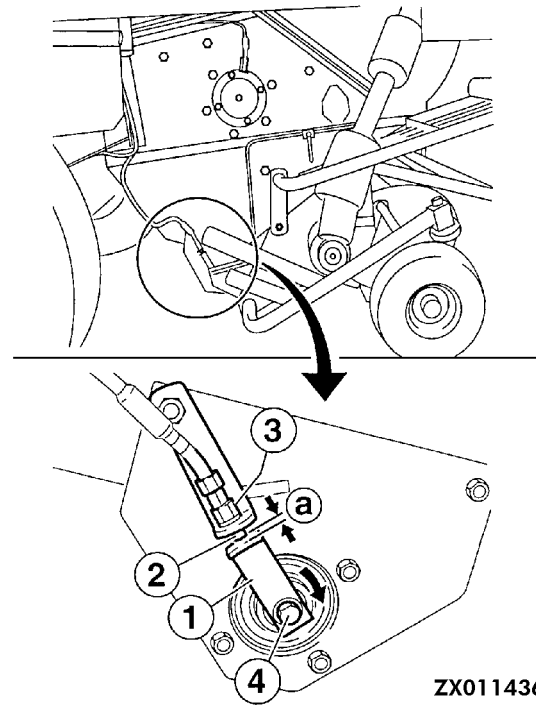
Engage cutting mechanism. Sending unit (1) must be aligned with sensor (2).

Adjust sending unit position as follows:

- Loosen screw (4).
- Move sending unit (1) to correct position.
- Tighten screw (4).

Adjust clearance ($a = 3 \text{ mm}$; 0.12 in.) between sending unit (1) and sensor (2) by means of nuts (3).

- 1—Sending unit
- 2—Sensor
- 3—Nut
- 4—Screw



ZX011436

ZX,TMP680008904-19-01JUN97

-UN-13JUN97

ZX011436

**Thank you very much for
your reading. Please Click
Here. Then Get COMPLETE
MANUAL. NO WAITING**



NOTE:

**If there is no response to
click on the link above,
please download the PDF
document first and then
click on it.**

ADJUSTING KNOTTER SENSOR

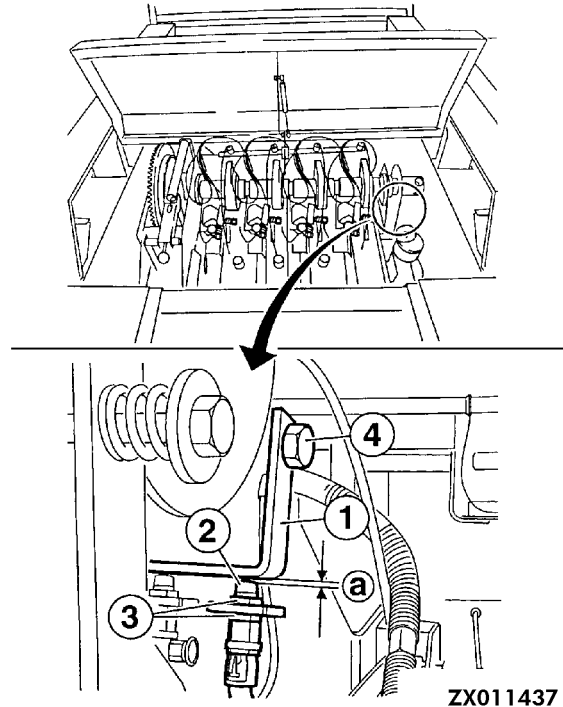
Sending unit (1) must be aligned with sensor (2) with knotter in "home" position.

Adjust sending unit position as follows:

- Loosen screw (4).
- Move sending unit (1) to correct position.
- Tighten screw (4).

Adjust clearance (a = 3 mm; 0.12 in.) between sending unit (1) and sensor (2) by means of nuts (3).

- 1—Sending unit
- 2—Sensor
- 3—Nut
- 4—Screw

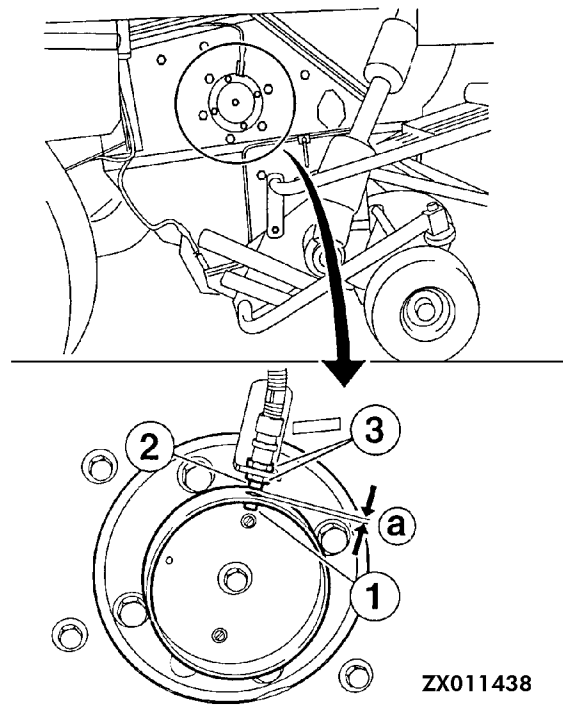


-JUN-13JUN97
ZX011437

ZX,TMP680008905-19-01JUN97

ADJUSTING RAKE DRUM SENSOR

Adjust clearance (a = 3 mm; 0.12 in.) between sending unit (1) and sensor (2) by means of nuts (3).

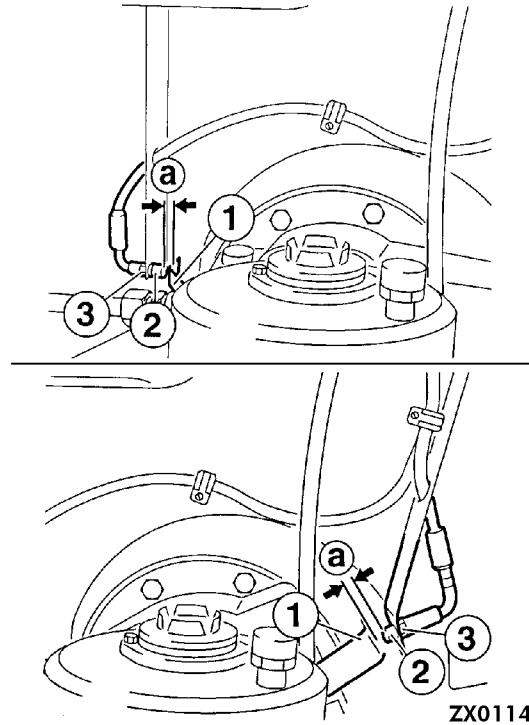


-JUN-13JUN97
ZX011438

ZX,TMP680008906-19-01JUN97

ADJUSTING PLUNGER POSITION SENSOR

Adjust clearance (a = 3 mm; 0.12 in.) between the two plunger position sensors (2) and sending unit (1) by means of nuts (3).



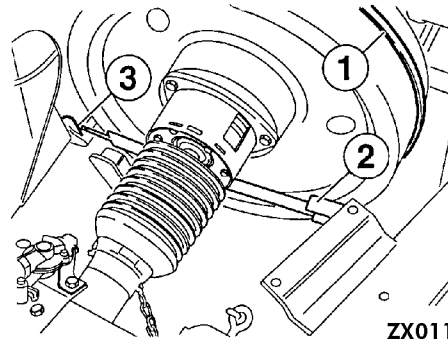
ZX011439

-JUN-13JUN97
ZX011439

ZX,TMP680008907-19-01JUN97

ADJUSTING BRAKE BAND ON FLYWHEEL

Brake band (1) is adjusted on front left (2) and right (3) side of flywheel with brake released.



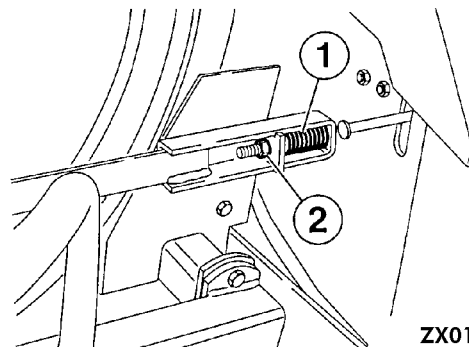
ZX011440

-JUN-13JUN97
ZX011440

ZX,TMP680008908-19-01JUN97

Left-Hand Side

Tension spring (1) by means of the lock nut (2) until a spring length of 65 mm (2.56 in.) is obtained.



ZX011441

-JUN-13JUN97
ZX011441

ZX,TMP680008909-19-01JUN97