



Box Drills

TECHNICAL MANUAL

Box Drills

TM159219 06MAY15 (ENGLISH)

Preview Only

John Deere Des Moines Works
PRINTED IN U.S.A.



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 diagnostics. Repair sections tell how to repair the components. Diagnostic 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.

This manual is part of a total product support program.

FOS MANUALS—REFERENCE

TECHNICAL MANUALS—MACHINE SERVICE

COMPONENT MANUALS—COMPONENT SERVICE

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

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

NX,TM1592,IFCA -19-13JUL98-1/1

Preview Only

Contents

Section 10—Safety and General Information

- Group 05—Safety
- Group 10—Lubricants
- Group 15—General Information
- Group 20—Repair Specifications

Section 20—Welding

- Group 05—Repair and Welding

Section 30—Ground Tools, Opener Disks and Press Wheels

- Group 05—Ground Tools—9400 Hoe Drill
- Group 10—Openers—450, 455, 1520 and 9400 Disk Drill
- Group 11—Openers—750
- Group 12—Openers—1530
- Group 13—Openers—1535
- Group 14—Openers—1560 and 1590
- Group 20—Press Wheels—450, 455, 1520 and 9400
- Group 21—Press Wheel, Gauge Wheel and Closing Wheel—750
- Group 22—Gauge Wheel and Closing Wheel—1530
- Group 23—Gauge Wheel and Closing Wheel 1535
- Group 24—Press Wheel, Gauge Wheel and Closing Wheel—1560 and 1590

Section 40—Electrical and Monitor Systems

- Group 05—Connector Repair
- Group 10—Select Lift Control Repair—455
- Group 15—COMPUTER TRAK® Monitor System—455, 750, 1560 and 1590
- Group 20—Steering Control Repair—750 and 1560
- Group 25—Electronic Population Rate Control

Section 50—Drive System

- Group 05—Ground Drive Repair
- Group 10—Meter Drive Repair
- Group 15—Fertilizer Gear Box Repair
- Group 20—Grass Seed Drive
- Group 25—Seed Transmission and Drives 1535

Section 60—Wheel Bearings and Tires

- Group 05—Replace Bearings and Inflate Tires

Section 70—Hydraulic Systems and Components

- Group 05—Valve and Motor Repair
- Group 10—Cylinder Repair

Section 80—Multiple Drill Hitches

- Group 05—Identification

Section 90—Row Markers

- Group 05—Repair

Section 100—Seed Box Repair

- Group 05—Repair Seed Box

Section 110—Seed Metering Mechanisms

- Group 05—Seed Metering Mechanisms

Section 230—Opener Operation, Tests and Adjustments

- Group 05—Opener Theory of Operation
- Group 10—Adjust Ground Tools—9400 Hoe Drill
- Group 11—Adjust Openers—450, 455, 1520 and 9400 Disk Drill
- Group 12—Adjust Openers—750
- Group 13—Adjust Openers—1530 and 1535
- Group 14—Adjust Openers—1560 and 1590
- Group 15—Adjust Press Wheels
- Group 20—Troubleshooting

Section 240—Electrical System Operation

- Group 05—Wiring Diagrams
- Group 10—Tests and Diagnosis

Section 250—Drive System

- Group 05—Ground Drive Theory of Operation
- Group 10—Meter Drive Theory of Operation
- Group 15—Grass Seed Drive Theory of Operation
- Group 20—Tests and Adjustments

Section 270—Hydraulic Systems Operation

- Group 05—Opener Lift System—450 and 9400
- Group 06—Down-Pressure System—455, 750, 1520, 1560 and 1590
- Group 10—Hitch and Transport Systems
- Group 15—Row Marker System

Section 280—Multiple Drill Hitches

- Group 05—9400 Adjustments
- Group 10—Troubleshooting

Section 290—Row Markers

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 © 2015
DEERE & COMPANY
Moline, Illinois
All rights reserved.
A John Deere ILLUSTRATION™ Manual
Previous Editions
Copyright © 1996, 1998, 2001, 2002, and 2006

Group 05—Adjustments and Troubleshooting

Section 299—Dealer Fabricated Tool

Group 05—Dealer Fabricated Tools

Preview Only

Section 10 Safety and General Information

Contents

Page	Page
Group 05—Safety	
Recognize Safety Information	10-05-1
Understand Signal Words.....	10-05-1
Avoid High-Pressure Fluids.....	10-05-1
Avoid Heating Near Pressurized Fluid Lines	10-05-2
Prepare for Emergencies.....	10-05-2
Support Machine Properly	10-05-2
Work in Clean Area	10-05-3
Wear Protective Clothing.....	10-05-3
Service Machines Safely	10-05-3
Work In Ventilated Area.....	10-05-4
Illuminate Work Area Safely	10-05-4
Replace Safety Signs	10-05-4
Use Proper Lifting Equipment.....	10-05-5
Use Seat Belt Properly.....	10-05-5
Practice Safe Maintenance.....	10-05-6
Use Proper Tools.....	10-05-6
Remove Paint Before Welding or Heating	10-05-7
Dispose of Waste Properly	10-05-7
Live With Safety.....	10-05-7
Group 10—Lubricants	
Grease.....	10-10-1
Alternative and Synthetic Lubricants	10-10-1
Lubricant Storage	10-10-1
Group 15—General Information	
Unauthorized Modifications	10-15-1
Product Identification—450 Drill	10-15-1
Product Identification—450 Two-Unit Hydraulic Hitch	10-15-1
Product Identification—Three-Unit 455.....	10-15-2
Product Identification—750 (10 Ft.)	10-15-2
Product Identification—750 (15 Ft.)	10-15-3
Product Identification—750 (20 Ft.)	10-15-3
Product Identification—750 Separate Placement Box.....	10-15-4
Product Identification—750 Two-Unit Hydraulic Hitch	10-15-4
Product Identification—1520 (15 Ft.)	10-15-5
Product Identification—1520 (20 Ft.)	10-15-5
Product Identification—1530 (15 Ft.)	10-15-6
Product Identification—1535 (15 Ft.)	10-15-7
Product Identification—1560 (10 Ft.)	10-15-7
Product Identification—1560 (15 Ft.)	10-15-8
Product Identification—1560 (20 Ft.)	10-15-8
Product Identification—1560 (Separate Placement Box)	10-15-9
Product Identification—1590 Box Drill (10 ft)	10-15-9
Product Identification—1590 Box Drill (15 ft)	10-15-10
Product Identification—1590 Box Drill (20 ft)	10-15-10
Product Identification—9400 Hoe Drill	10-15-11
Product Identification—9400 Disk Drill	10-15-11
Product Identification—9400 Two-Unit Field Hitch	10-15-12
Product Identification—9400 Three-Unit Field Hitch.....	10-15-12
Product Identification—9400 Four-Unit Field Hitch.....	10-15-13
Product Identification—9400 Five-Unit Field Hitch with Endwise Transport.....	10-15-13
Product Identification—9400 Six-Unit Field Hitch	10-15-14
Product Identification—9400 Endwise Transport Hitch.....	10-15-14
Machine Specifications—450	10-15-15
Capacity—450 Small Box.....	10-15-15
Capacity—450 Large Box.....	10-15-16
Capacity—450 Grass Box	10-15-16
Machine Specifications—455	10-15-16
Capacity—455	10-15-17
Machine Specifications—750	10-15-17
Capacity—750	10-15-18
Machine Specifications—1520	10-15-18
Capacity—1520	10-15-18
Machine Specifications—1530	10-15-19
Capacity—1530	10-15-19
Machine Specifications—1535	10-15-20
Machine Specifications—1560	10-15-21
Machine Dimensions—1590.....	10-15-22
Machine Capacities—1590.....	10-15-22
Transport Weights—1590.....	10-15-23
Machine Specifications—9400	10-15-23

Continued on next page