Massey Ferguson[®]

8816 / 8824 / 8824-70cm Planter

WORKSHOP SERVICE MANUAL 4283380M1 A Rev.

CONTENTS

GENERAL INFORMATION	01
ROW UNIT	02
DRIVE TRANSMISSION	03
AIR SYSTEM	04
HYDRAULICS	05
ELECTRICAL	06
FRAME	
TROUBLESHOOTING	08
FERTILIZER SYSTEM	09
CONSOLES AND MONITORS	10

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8816 / 8824 / 8824-70cm Planter

WORKSHOP SERVICE MANUAL 4283380M1

01 - General Information

Contents

GENERAL INFORMATION	
General Information	
Serial Number Plate Location	. 01-2
SAFETY	
Safety Alert Symbol	01.3
Safety Messages	. 01-3
Informational Messages	01-3
Safety Signs	
General Operation and Service	
Operating	
Agricultural Chemicals	
Transporting	
Servicing	
	. 01-7
SPECIFICATIONS	
8816-30 in / 8824-30 in	
Frame	
Tires and Wheels	
8816	
8824	
Markers (Optional)	
Row Units	
Air System	
Hydraulic System	01-10
Shear Pins	
Electronic Seed Drive Controller	
Fuse	01-11
Approximate Shipping Weights	
8824-70cm	
Frame	
Tires and Wheels	
8824-70cm	
Markers	
Row Units	
Air System	
Hydraulic System	
Shear Pins	
Monitor	
Fuse	01-14
Approximate Shipping Weights	01-14

FIELD OPERATIONS AND ADJUSTMENTS

Contents

Tractor Preparation	01	-1	5
Recommended Tractor Horsepower			
Recommended Tractor Horsepower With Fertilizer Openers			
Wheel Tread Spacing			
Tractor PTO			
Tire Inflation			
Front Weights			
Hydraulic Requirements			
Electrical Requirements			
Connecting the Planter to the Tractor			
Three-point Hitch			
Drawbar Hitch			
Hydraulic Lines			
Pump Fluid			
Control Box Switches			
Operating Notes Folding and Unfolding the Planter			
Safety Folding Procedure			
Unfolding Procedure			
Markers			
Operation			
Sequence Valve			
Position Switch			
Shear Bolts			
Seed Recommendations			
Initial Pressure Settings			
Liquid Fertilizer			
Tire Pressure and Radius - Piston Pump Drive			
Piston Pump Chain			
Distribution to Openers			
Check Valve Orifices			
Checking Application Rate			
Piston Pump Rate Chart - Double Chain			
Piston Pump Rate Chart - Single Chain			
Piston Pump Slide Chart - Ground Drive			
Fertilizer Openers			
Double-Disc Openers			
Single-Disc Openers			
General Opener Adjustments			
Spacing Adjustment			
Vertical Alignment			
Depth Adjustment			
Swivel Adjustment			
Spring Tension Adjustment			
Application Rate (non-CE)			
Application Rate			
Checking Application Rate			
Insecticide Rate Chart - Clay Granules			
Insecticide Rate Chart - Sand Granules			
Herbicide Rate Chart	01	-4	2
Application Rate (CE)	01	-4	3
Application Rate	01	-4	3
Checking Application Rate	01	-4	13
Insecticide Rate	01	-4	4
Approximate rate in kg/hectare @ 8 mph with 18 cm or 36 cm spreaders	01	-4	4
Insecticide Rate Chart - Sand Granules	01	-4	15
Approximate rate in kg/hectare @ 8 mph with 18 cm or 36 cm spreaders	01	-4	-5
Herbicide Rate Chart	01	-4	6
Approximate rate in kg/hectare @ 8 mph with 18 cm or 36 cm spreaders			
ISOBUS Planter Controller			
ISOBUS Planter Controller			
Component Service	01	-4	-7

Contents

Implement Switch 0 Implement Switch Procedure 0 Priming the Hydraulic Circuits 0 Frame Control Box 0 Radar Device 0 Radar Sensor 0 Test Button 0 Torque Values For Standard Bolts 0 Original Sensor 0 Torque Values For Standard Bolts 0	01-48 01-49 01-50 01-50 01-50
Special Torque Values)1-52)1-53
INSTALLATION INSTRUCTIONS Installation Instructions	01-55
INDEX	01-57

NOTES

GENERAL INFORMATION

GENERAL INFORMATION



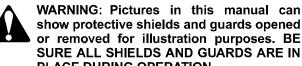


FIG. 1: Model 8824 Forward Fold Planter with Central Fill System.

8800 Series Forward Fold Planters are designed, built and tested to make sure high quality, maximum strength and long service life. All the models feature positive air metering and hydraulic, or contact tire mechanical seed drive for accurate seed spacing.

The Central Fill System planter is designed for planting corn, soybeans, milo, popcorn, and oil crop sunflowers.

8816-30	16 Row 30 inch Forward Fold Planter
8824-30	24 Row 30 inch Forward Fold Planter
8824-70cm	24 Row 70 cm Forward Fold Planter



show protective shields and guards opened or removed for illustration purposes. BE SURE ALL SHIELDS AND GUARDS ARE IN PLACE DURING OPERATION.

This manual was prepared from the latest information available at publication time. The company reserves the right to make changes at any time without notice or obligation.

General Information

SERIAL NUMBER PLATE LOCATION

FIG. 2: The serial number plate (1) is found on the top of the left end of the left-hand wing frame.

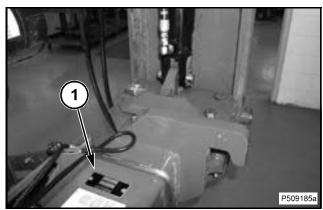


FIG. 2

SAFETY

SAFETY ALERT SYMBOL

FIG. 3: The safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Look for the safety alert symbol both in this manual and on safety signs on this machine. The safety alert symbol will direct your attention to information that involves your safety and the safety of others.

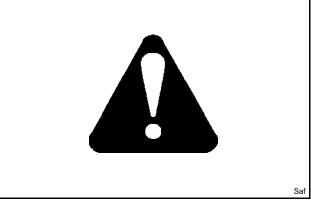


FIG. 3

SAFETY MESSAGES

FIG. 4: The words DANGER, WARNING or CAUTION are used with the safety alert symbol. Learn to recognize these safety alerts and follow the recommended precautions and safety practices.



DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in DEATH OR VERY SERIOUS INJURY.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in DEATH OR SERIOUS INJURY.



CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in MINOR INJURY.



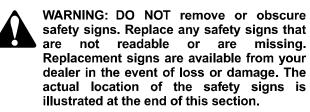
FIG. 4

INFORMATIONAL MESSAGES

The words IMPORTANT and NOTE are not related to personal safety, but are used to give additional information and tips for operating or servicing this equipment.

- IMPORTANT: Identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of the machine, process, or its surroundings.
- NOTE: Identifies points of particular interest for more efficient and convenient repair or operation.

SAFETY SIGNS



If a used machine has been purchased, make sure all safety signs are in the correct location and can be read.

Replace any safety signs that can not be read or are missing. Replacement safety signs are available from your dealer.

GENERAL OPERATION AND SERVICE

Operating

- Read and understand all the operating and safety precautions before operating the machinery.
- In addition to the equipment configuration and design, hazard control and accident prevention depend on awareness, concern, prudence and proper training of the personnel in the operation, maintenance, transport and storage of the equipment.
- Always raise the implement, shut off the tractor engine, set the brakes, shift to park position (or neutral) and install the cylinder lockup channels before working around the machine.
- Avoid working under the planter. However, if it becomes unavoidable to do so, make sure the planter is securely blocked and the cylinder lockup channels are in place.
- Do not attempt to lubricate or adjust the planter while the machine is in operation.
- The machinery operation must be performed only by persons who are responsible and delegated to do so.
- Only the operator must be permitted on the tractor (unless tractor has a factory-installed instructor seat) when the tractor and the planter are moving. Never permit anyone to ride on the planter.
- Avoid wearing loose-fitting clothing and jewelry. Always tie up long hair that can be caught in the moving parts.
- Wear personal protective equipment (PPE) such as, but not limited to, protection for eyes, lungs, ears, head, hands and feet when operating, servicing or repairing the equipment.
- Make sure all persons are clear before operating the tractor or machine.
- Do not leave the tractor or implement unattended with the engine running.
- Never attempt to operate the planter unless seated in the operator's seat on the tractor with the seat belt fastened.

- The tractor must be equipped with rollover protective structure (ROPS), and a seat belt. Use the seat belt during operation.
- Make sure the tractor is in good operating condition, and has adequate braking capabilities.
- Do not dismount from a moving tractor.
- Regulate the ground speed to field conditions, and maintain control at all times.
- When working around discs, be careful to not get cut on the sharp edges.
- Watch for overhead wires or other obstructions when raising markers, and when moving the planter with the marker(s) raised.
- Disconnect the planter. Store the planter where children do not normally play. Stabilize the planter by using suitable supports, and block the wheels.
- Always lower the planter when not in use and relieve pressure in the hoses and cylinders.
- Do not allow children to ride on, play on, or operate equipment. Always keep children away from the equipment operating, servicing, and storage areas.
- Do not stand between the tractor and planter to install the hitch pin when the tractor engine is running.

Agricultural Chemicals

- Ag chemicals can be very hazardous. Improper use of fertilizer, fungicides, herbicides, insecticides and pesticides can injure people, plants, animals, soil and other people's property.
- Always read and follow all manufacturers' instructions before opening any chemical container.
- Even if you think you know them, read and follow instructions each time you use a chemical.
- Use same precautions when adjusting, servicing, cleaning or storing the planter as used when installing chemicals into the hoppers or tanks.
- Inform anyone who comes in contact with chemicals of the potential hazards involved and the safety precautions required.
- Stand upwind and away from the smoke from a chemical fire.
- Store or dispose of all unused chemicals only in a manner as specified by the chemical manufacturer.

Transporting

- Do not transport planter in excess of 25 km/h (15 mph).
- Use a tractor with a minimum weight of at least 2/3 of the fully loaded planter.
- Use good judgment when transporting the planter on the highway. Maintain complete control of the machine at all times.
- Comply with the state and local laws governing highway safety and regulations when moving the machinery.
- Always make the necessary safety precautions prior to transporting the machine on public roads.
- Make sure SMV (Slow Moving Vehicle) emblem is clean and visible. SMV is not required in CE on the 8824-70cm.
- Use flashing warning lights except when prohibited by law.
- Watch for overhead wires or other obstructions when transporting the planter with markers raised.
- Make sure the markers are completely folded before transporting or parking the planter.
- Install the transport cylinder lockup devices before transporting the planter.
- For Drawbar Hitch Models: Always fasten the transport safety chain to the tractor drawbar and use the retainer on the hitch pin.

Servicing

- Always raise the implement, shut off the tractor engine, and install cylinder lockup channels before working around the machine.
- After repairing or adjusting the planter, remove all of the tools and parts from the machine before operating the planter.
- Tire changing can be very hazardous and must be done by trained personnel using the proper tools and equipment.
- Do not inflate the tire that was seriously under-inflated or run flat. Have it checked by qualified personnel.
- Lower the planter to the ground before attempting to remove a wheel for tire repair.

FIG. 5: Fluid Leak Detection

 Correct the hydraulic leaks immediately. All the fittings must be tight and all the lines and hoses in good condition. Escaping hydraulic fluid, under extremely high pressure, can penetrate the skin and cause blood poisoning. Use a piece of wood or cardboard to detect fluid leaks. If injured by escaping fluid, see a doctor immediately.

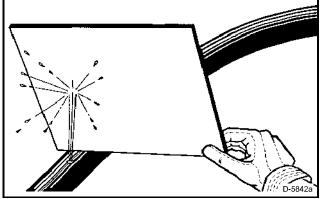


FIG. 5

NOTES

SPECIFICATIONS

8816-30 IN / 8824-30 IN

Frame

Main Frame (Toolbar) Size	17.5 x 17.5 cm (7 x 7 in)
Flexibility	+/- 21 degrees each wing
Fold Cylinders	Two 5 x 20 inch double acting
Wheel Lift Cylinders	Eight cylinders - 16 Row Eight cylinders - 16 Row Eight cylinders (24 Row Standard, two additional, optional)
Master Cylinder	
Slave Cylinder	
Lift Assist Cylinder	Two 2-1/2 x 12 inches additional, (two additional, optional on 8824)
Shaft and Disc Bearings	Sealed and lubricated

Tires and Wheels

Tires	8816-eight, 8824-eight or ten optional, 255/70R-22.5
Tire Pressure (maximum)	
Wheel Bearings	
Fertilizer Pump Drive Wheel (if equipped)	
Size	
Pressure	

8816

Rows	
Row Spacing	
Transport Width	
Transport Length	
Transport Height	
Operating Length	6.59 m (22 ft 6 in)
Operating Width	
Transport Wheels	Four transport wheels, four wing wheels

8824

Rows	24
Row Spacing	
Transport Width	3.6 m (11 ft 11 in)
Transport Length	
Transport Height	
Operating Length	
Operating Width	
Transport Wheels	Four transport wheels, four (two additional, optional) wing wheels

Markers (Optional)

Туре	Automatic sequencing, tri-fold arms
Disc Size	40.6 cm (16 in) diameter
Disc Туре	Notched
Cylinder Sizes:	
16R-30 inch	64 x 610 mm (3 x 20 in)
24R-30 inch	

Row Units

Two 1585.8 liters (45 bu) central fill hoppers
Corn, soybean, sunflower, sugar beet, cotton, sorghum, milo, maize, navy bean, large edible bean, snap bean, peanut
Electronic controlled hydraulics
0.254 to 1.27 mm (0.010 to 0.050 in)
Sprocket, chain and shaft with hydraulic motor
11.4 x 40.6 cm (4.5 x 16 in)
10.3 x 30.1 cm (4 x 12 in)
30.8 cm dia (12 in dia)
4.5 to 50.0 kg (10 to 130 lb)
6.8 to 107 kg (50 to 230 lb)

Air System

Seed Meter Blowers	Two
Max. Blower Speed	
Operating Air Pressure (Min)	
Operating Air Pressure (Max)	

Hydraulic System

Tractor Remote Valve Requirements	
Frame Lift - Fold System Capacity	Approx. 42 liters (11 gal)
PTO Pump Circuit	
Return Line Filter	10 micron, spin-on cartridge-type
Suction Screen	100 mesh
Reservoir Capacity	
Fluid Cooler	Standard Equipment
Blower Motor	
Fluid Requirement (Max)	
Operating Pressure (Min)	3445 kPa (500 psi) @ rated PTO rpm
Operating Pressure (Max)	17 238 kPa (2500 psi*) @ rated PTO rpm
* Maintained by relief valve in planter proportional flow divider valve	e block

 * Maintained by relief value in planter proportional flow divider value block.

Shear Pins

Metering Unit Shaft	
Main Drive Shaft Sprockets	1/4 x 1 inch bolt, Grade 2
Herbicide/Insecticide Meter Shaft	5/32 x 1-1/4 inch roll pin

Electronic Seed Drive Controller

ISOBUS Planter Controller

Voltage	
Monitoring Capability	Row population, high/low population limits, areas (3), distance counter, seed spacing, seed count, acres/hour, ground speed
Program Capability	Seed Population, seed spacing

Fuse

Control Box	
SM400 Monitor	

Approximate Shipping Weights

8816-30	.6924 kg (15,265 lb)
8824-30	. 8494 kg (18,725 lb)

8824-70CM

Frame

Main Frame (Toolbar) Size	17.5 x 17.5 cm (7 x 7 in)
Flexibility	+/- 21 degrees each wing
Fold Cylinders	Two 5 x 20 inch double acting
Wheel Lift Cylinders	. Ten cylinders (24 Row Standard, two additional, optional)
Master Cylinder	
Slave Cylinder	Three 4 x 12 inches
Lift Assist Cylinder	Four 2-1/2 x 12 inches (two additional, optional)
Shaft and Disc Bearings	Sealed and lubricated

Tires and Wheels

Tires	
Tire Pressure (maximum)	
	Do not exceed maximum indicated on sidewall
Wheel Bearings	Tapered roller

8824-70cm

Rows	
Row Spacing	
Transport Width	
Transport Length	
Transport Height	
Operating Length	
Operating Width	
Transport Wheels	Four transport wheels Six wing wheels

Markers

Туре	Automatic sequencing, tri-fold arms
Disc Size	40.6 cm (16 in) diameter
Disc Type	Notched
Cylinder Sizes:	
24R-70 cm	

Row Units

Seed Hoppers	
Seed Discs	Corn, soybean, sunflower, sugar beet, maize
Seed Drive System	Ground drive
Seed Disc-to-Metering Unit Clearance	0.254 to 1.27 mm (0.010 to 0.050 in)
Herbicide/Insecticide Hoppers	
Metering Unit Drives	Sprocket, chain and shaft from planter drive wheels
Gauge Wheel Tire Size	11.4 x 40.6 cm (4.5 x 16 in)
Single Closing Wheel Tire Size	10.3 x 30.1 cm (4 x 12 in)
Dual Closing Wheel Tire Size	30.8 cm dia (12 in dia)
Single Closing Wheel Down Pressure	4.5 to 50.0 kg (10 to 130 lb)
Dual Closing Wheel Down Pressure	6.8 to 107 kg (50 to 230 lb)

Air System

Seed Meter Blowers	Тwo
Max. Blower Speed	
Operating Air Pressure (Min)	12.7 mm (0.5 in) of water
Operating Air Pressure (Max)	

Hydraulic System

Tractor Remote Valve Requirements	Three
Frame Lift - Fold System Capacity	Approx. 42 liters (11 gal)
Blower Motor	
Fluid Requirement (Max)	
Operating Pressure (Min)	
Operating Pressure (Max)	17 238 kPa (2500 psi*)
* Maintained by relief valve in planter flow divider valve block.	

Shear Pins

Metering Unit Shaft	3/16 x 1-1/2 inch roll pin
Herbicide/Insecticide Meter Shaft	5/32 x 1-1/4 inch roll pin
Main Drive Shaft Sprockets	1/4 20T x 1 inch bolt, Grade 2

Monitor

SM400	Standard Equipment
Voltage	
Fuse	
Monitoring Capability	Row population, high/low population limits, areas (3), distance counter, seed spacing, seed count, acres/hour, ground speed

Fuse	
Control Box	30 amp
SM400 Monitor	7.5 amp, brown ATO
Approximate Shipping Weights	
8824-70cm	10 659 kg (23 500 lb)

FIELD OPERATIONS AND ADJUSTMENTS

TRACTOR PREPARATION

Recommended Tractor Horsepower

Planter Model	Minimum PTO HP Required	Planter Weight (dry)	Total Planter Weight	Desired Tractor Weight (Ibs)
8816 - 30 inch	150	18,000	23,400	15,600
8824 - 30 inch	200	27,500	32,900	21,933
8824 - 70 cm	200	27,500	32,900	21,933

Recommended Tractor Horsepower With Fertilizer Openers

Planter Model	Minimum PTO HP Required	Planter Weight (dry)	Total Planter Weight	Desired Tractor Weight (Ibs)
8816 - 30 inch	170	18,000	30,000	20,000
8824 - 30 inch	240	27,500	40,000	26,700
8824- 70 cm	240	27,500	40,000	26,700

Wheel Tread Spacing

IMPORTANT: Dual rear wheels are recommended for tractor stability and for load-carrying capacity when the planter is folded.

The ideal wheel tread spacing dimensions are listed below.

NOTE: Some outer wheels cannot be adjusted to these dimensions.

16-Row, 30 inch Model

Set inner wheel tread to 153 cm (60 in).

Set outer wheel tread to 305 cm (120 in).

24-Row, 30 inch Model

Set inner wheel tread to 153 cm (60 in).

Set outer wheel tread to 305 cm (120 in).

24-Row, 70 cm Model

Set inner wheel tread to 153 cm (60 in).

Set outer wheel tread to 305 cm (120 in).

NOTE: Set all the wheels equally from the tractor centerline.

When operating on hillsides or steep slopes, set the wheels as wide as possible for maximum stability and steering control. If the front axle is adjustable, set the wheels at the outside edge of the inner rear wheels.

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