880
Hydrostatic Drive
Windrower

JOHN DEERE

TECHNICAL MANUAL

880 Hydrostatic Drive
Windrower

TM 1013 (01 NOV70) English

John Deere Ottumwa Works
TM1013 (01 NOV70)

LITHO IN U.S.A.
ENGLISH

880 HYDROSTATIC DRIVE WINDROWER

TECHNICAL MANUAL

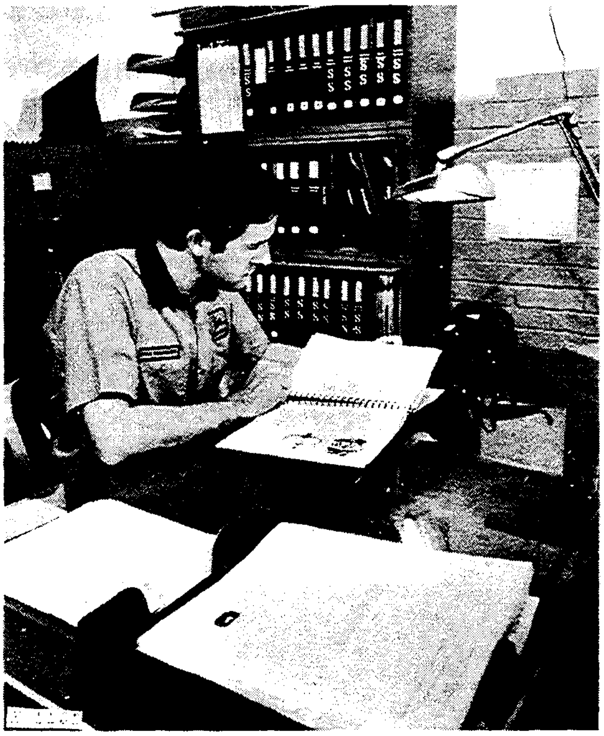
TM-1013 (NOV-70)

CONTENTS

"All information, illustrations and specifications contained in this technical 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. "

Litho in U.S.A.

INTRODUCTION



Use FOS Manuals for Reference

Use Technical Manuals for Actual Service

This technical manual is part of a twin concept of service:

- FOS Manuals-for reference
- Technical Manuals-for actual service.

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) *Manuals* cover basic theory of operation, fundamentals of trouble shooting, general maintenance, and basic types of failures and their causes. FOS Manuals are for training new men and for reference by experienced men.

Technical Manuals are concise service guides for a specific machine. Technical Manuals are on-the-job guides containing only the vital information needed by a journeyman mechanic.

When a serviceman should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

Some features of this technical manual:

- Table of contents at front of whole manual
- Contents at *front* of each Section
- Specifications at *end* of each Group
- Special tools at end of each Group

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

This technical manual was planned and written for you-a journeyman mechanic. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

Litho in U.S.A.

Section 10
GENERAL

CONTENTS OF THIS SECTION

Group 5
SPECIFICATIONS

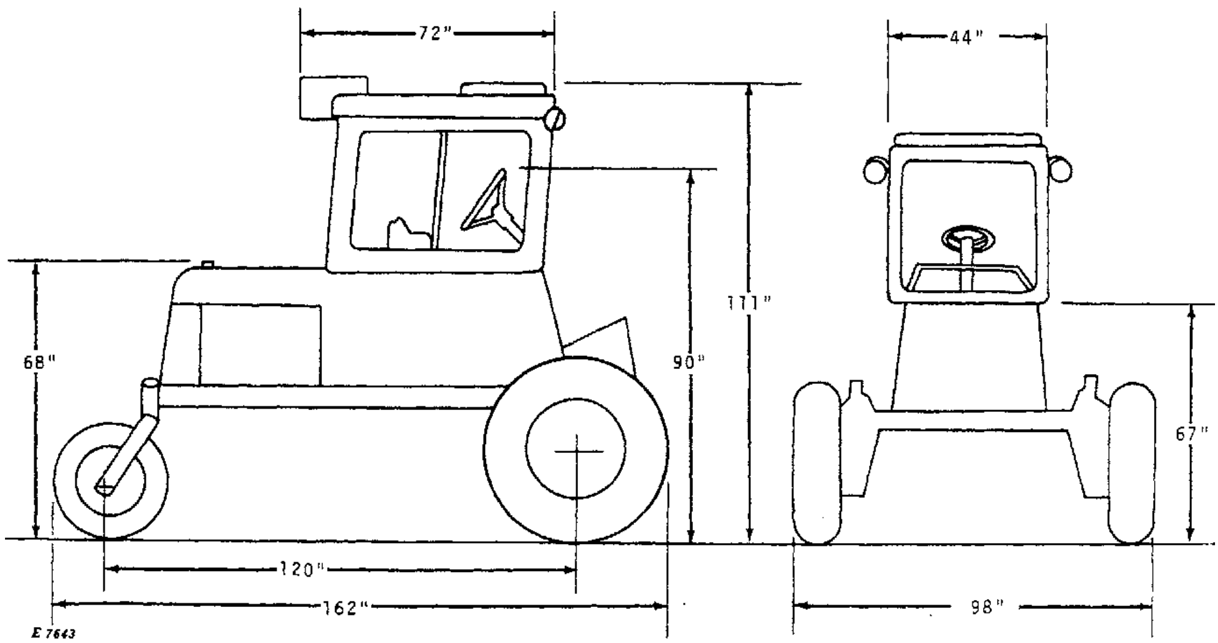


Fig. 1-Windrower Dimensions

WINDROWER DIMENSIONS (Traction Unit with 11.2-24 Tires)
Height to top of radiator cap .... 68 in.
Height to top of steering wheel .... 90 in.
Height to top of cab .... 111 in.
Wheelbase .... 120 in.

Overall length .... 162 in.
Overall width .... 98 in.
Width of cab .... 44 in.
Length of cab .... 72 in.

Litho in U.S. A:

Section 20
ENGINE

Group 5
GENERAL INFORMATION

For engine information, refer to SM-2080 - John Deere 135, 180, and 202 Power Units - and the windrower operator's manual.

FOS a

No effort has been made to explain theory of engine operation. If you wish to review basic principles of engines, we recommend the John Deere FOS Manual - ENGINES for this service.

Section 30

ELECTRICAL SYSTEM

CONTENTS OF THIS SECTION

Group 5

DESCRIPTION

GENERAL INFORMATION

The John Deere 880 Hydrostatic Drive Windrower is equipped with a battery, alternator, voltage regulator, starter, and wiring harness. (See Specifications.)

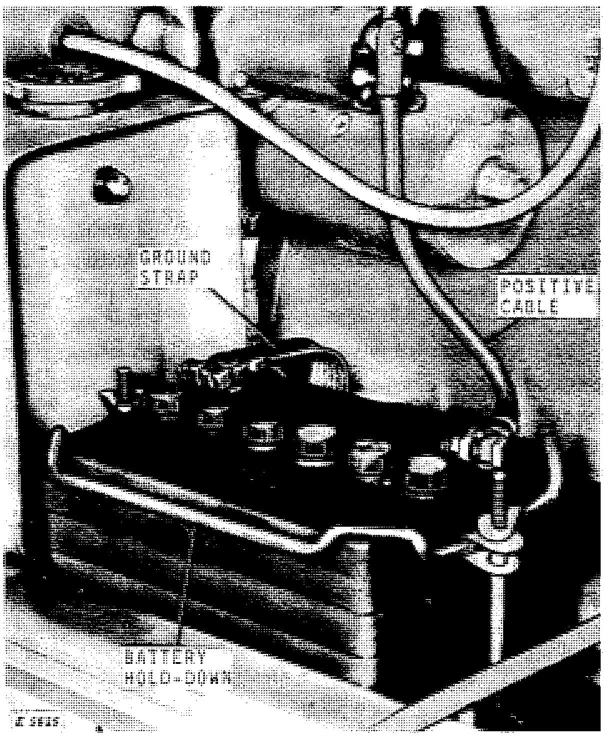


Fig. 1-Battery

Fos a

Refer to FOS Manual - ELECTRICAL SYSTEMS for additional information and testing precautions.

Certain precautions should be followed when testing or servicing the windrower's electrical system to prevent personal injury or damage to the system. A discussion of these follows:

BATTER'''

The battery is located on the left-hand side of engine compartment.

Dangers with Batteries

To avoid injury from a spark or short circuit, DISCONNECT THE BATTERY-GROUND STRAP when working on any part of the electrical system or engine. This will also prevent accidental starting.

As a precaution, disconnect battery cables from positive (+) terminals before quick-charging batteries on the windrower. Failure to do so may burn out the alternator diodes or the regulator.

CAUTION: Gas from battery electrolyte is flammable; keep battery away from all sparks or fires.

Section 40
POWER TRAIN

CONTENTS OF THIS SECTION

Litho in U.S.A.

Section 50
STEERING AND BRAKES

CONTENTS OF THIS SECTION

Group 5
STEERING

GENERAL INFORMATION

The STEERING LEVERS and STEERING WHEEL, through mechanical linkage, are connected to the piston pump swash plate control pintles of the hydrostatic transmission. By moving the steering levers, the volume of oil and the direction of oil flow within the hydrostatic transmission can be controlled. (See Hydraulics, Section 60.) The hydrostatic transmissions drive the ground wheels.

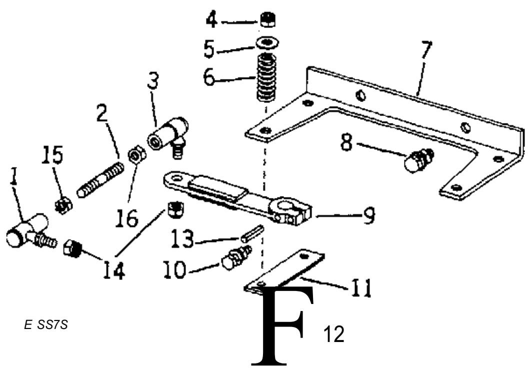
DIAGNOSING MALFUNCTIONS

Machine Tends to Drive to Right or Left

Motor swash plates improperly adjusted to each other.
Motor control linkage bent, bound up, or improperly adjusted.

Pump swash plates improperly adjusted to each other.
Pump control linkage improperly adjusted.

Steering levers not parallel to each other in neutral position.
Bent, loose, or improperly adjusted cam followers.
Worn or faulty cam.



1-Ball Joint (2 used)
2-Linkage Rod (2 used)
3-Ball Joint (2 used)
4-Cock Nut (4 used)
5-Washer (4 used)
6-Spring (4 used)
7-Mounting Plate
8-Cap Screw (2 used)
Hex. Nut (2 used)
9-Pump Control Arm (2 used)
10-Cap Screw (2 used)
Lock Washer (2 used)
Hex. Nut (2 used)
11-Friction Strap (2 used)
12-Cap Screw (4 used)
13-Spring Pin (2 used)
14-Lock Nut (4 used)
15-Jam Nut (2 used)
16-Jam Nut (2 used)

Fig. 1-Exploded View of Steering Lever Brake

Section 60
HYDRAULIC SYSTEM

CONTENTS OF THIS SECTION

Group 5
COMPONENTS AND TESTS

GENERAL INFORMATION

The John Deere 880 Windrower HYDRAULIC SYSTEM is an open-center type. It consists of a reservoir, control valves, heat exchanger, filter, hydraulic cylinders, and two hydrostatic transmissions.

Oil for the system is contained in a pressurized RESERVOIR. The reservoir has an inspection and cleanout cover, a pressure cap, and an oil level window.

Single-acting CONTROL VALVES, actuated through mechanical linkage, control the movements of the platform. System and circuit relief valves protect components from excess pressure.

The hydraulic CYLINDERS used for platform and reel lift are single acting.

The HEAT EXCHANGER consists of finned tubing. Oil passing through this tube is cooled by the engine fan.

Each HYDROSTATIC TRANSMISSION contains an in-line axial PISTON PUMP AND MOTOR. Both are manually controlled, variable displacement, over-center type. Pump output is routed to the motor through flow paths in a common valve plate. An additional component provided in these packages is an auxiliary CHARGE PUMP of the balanced vane, positive displacement type. The charge pumps supply necessary oil for the closed circuit within the hydrostatic transmissions and meet the demand for oil for the auxiliary system usage. High pressure relief valves regulate the pressure in both sides of the transmission circuit.

Hydraulic system FILTERING is accomplished by a rnicronic filter element.

Section 70
AIR CONDITIONING

CONTENTS OF THIS SECTION

880
Hydrostatic Drive
Windrower

JOHN DEERE

TECHNICAL MANUAL

880 Hydrostatic Drive
Windrower

TM1013 (01NOV70) English

John Deere Ottumwa Works
TM1013 (01NOV70)

LITHO IN U.S.A.
ENGLISH

D C G

TM1013 01NOV70

880 HYDROSTATIC DRIVE WINDROWER

TECHNICAL MANUAL

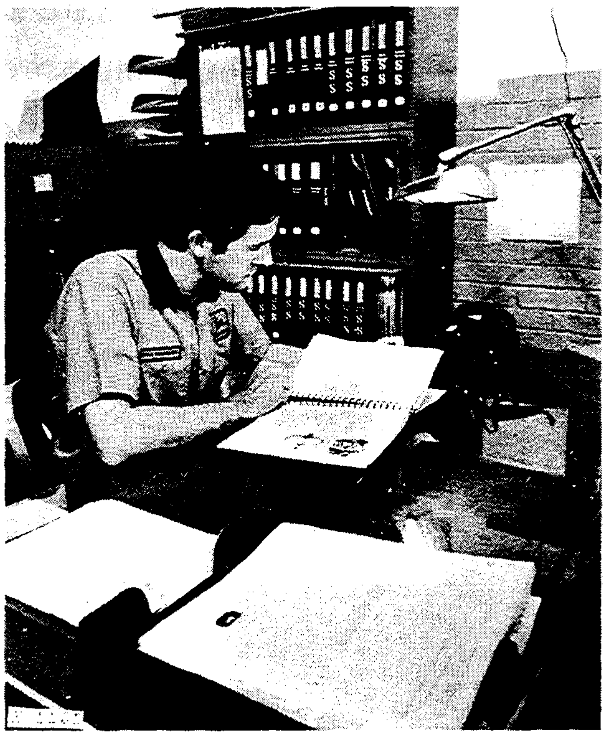
TM-1013 (NOV-70)

CONTENTS

"All information, illustrations and specifications contained in this technical 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."

Litho in U.S.A.

INTRODUCTION



Use FOS Manuals for Reference

Use Technical Manuals for Actual Service

This technical manual is part of a twin concept of service:

- **FOS Manuals—for reference**
- **Technical Manuals—for actual service.**

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) Manuals cover *basic* theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new men and for reference by experienced men.

Technical Manuals are concise service guides for a *specific* machine. Technical Manuals are on-the-job guides containing only the vital information needed by a journeyman mechanic.

FOS

When a serviceman should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

Some features of this technical manual:

- *Table of contents at front of whole manual*
- *Contents at front of each Section*
- *Specifications at end of each Group*
- *Special tools at end of each Group*

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

This technical manual was planned and written for you—a journeyman mechanic. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

Litho in U.S.A.

Section 10
GENERAL

CONTENTS OF THIS SECTION

Group 5
SPECIFICATIONS

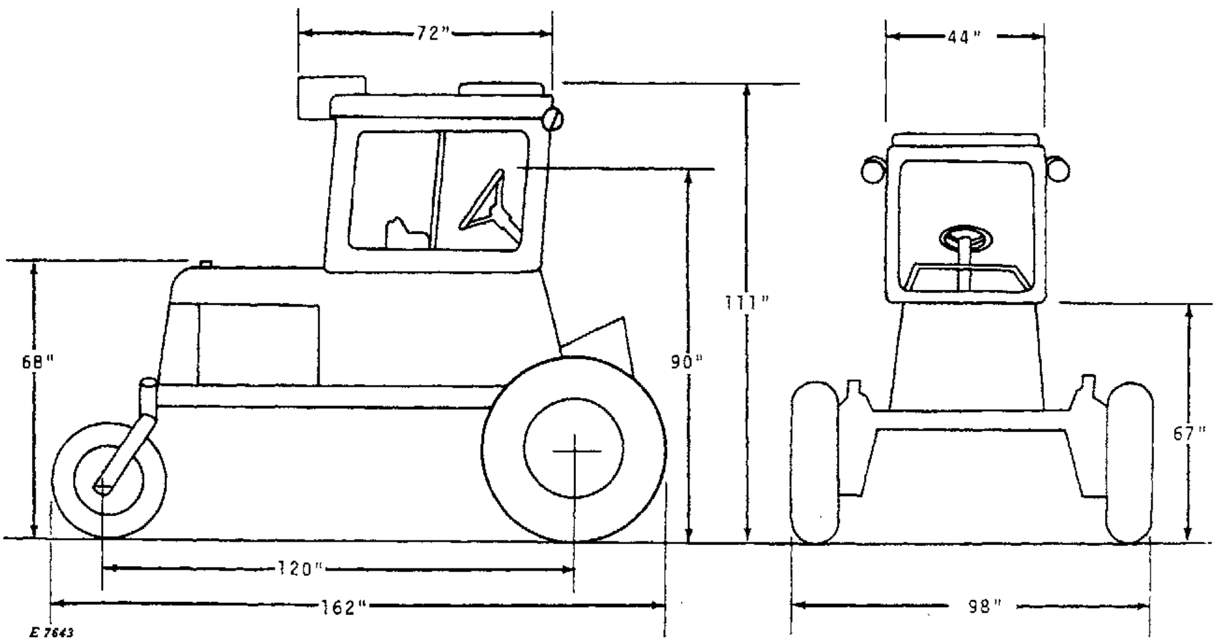


Fig. 1-Windrower Dimensions

WINDROWER DIMENSIONS (Traction Unit with 11.2-24 Tires)

Height to top of radiator cap	68 in.
Height to top of steering wheel	90 in.
Height to top of cab	111 in.
Wheel base	120 in.
Overall length	162 in.
Overall width	98 in.
Width of cab	44 in.
Length of cab	72 in.

SPECIFICATIONS

880 Windrower (Traction Unit)

Engine:
John Deere EA-180-G, gasoline . . . . 57 hp
John Deere EA-202-D, diesel . . . . 56 hp

Electrical system . . . . 12 volts

Propelling drive . . . . Hydrostatic

Hydraulic system . . . . 10 U.S. gal.

Fuel tank . . . . 40 U.S. gal.

Tire sizes:
Drive wheels (standard) (20 psi) 11.2-24
High flotation (optional) (14 psi) . . . . . 18.4 - 16
Caster wheels (20 psi) . . . . 5.90 - 15

Overall length (with draper platform) . . . 19 ft. 6 in.

Tread width (center to center) . . . . 84 in.

Turning radius:
Steering wheel . . . . Variable
Levers . . . . 0 ft.

Ground speed . . . . 0-12 mph

Weight (with standard wheels and John Deere EA-180-G Engine) . . (Approx.) 3838 lbs.

Platforms (88 Drapers, 188 Augers)

Sizes and types . . . . 12-ft. and 14-ft. drapers with packup or bat reel; 12-ft. and 14-ft. augers

Cutterbar:
Type drive . . . . Enclosed, running in oil
Speed . . . . 1300 strokes per minute

Guards . . . . . . Heavy-duty, double forged steel
Knives (chrome):
Standard . . . . Overserrated
Extra . . . . Smooth or underserrated
Guard angle . . . . 9-1/2°

Reel:
Speed:
Auger . . . . 52-64 rpm
Auger (special sprocket) . . . . 41-74 rpm
Draper . . . . 39-61 rpm
Adjustments (Draper):
Vertical . . . . 27 in.
Horizontal . . . . 9 in.

Conveyor canvases:
Drive . . . . Bevel gear case
Speed . . . . 710 rpm
Draper tension . . . . Spring-loaded
Angle . . . . 30°

Range of cutting height:
Auger . . . . -5 in. to 27 in.
Draper . . . . -5 in. to 30 in.

Distance between canvases . . . . 36 in.

Weight:
12-Foot Auger . . . . (Approx.) 1743 lbs.
14-Foot Auger . . . . (Approx.) 1888 lbs.
12-Foot Draper with pickup reel . . . . (Approx.) 1708 lbs.
14-Foot Draper with pickup reel . . . . (Approx.) 1834 lbs.

80 Hay Conditioner

Type of rolls . . . . Formed steel fluted

Rolls:
Length . . . . 38 in.
Diameter . . . . 7-3/4 in.
Speed . . . . 688 rpm

Weight . . . . (Approx.) 405 lbs.

Engine

	EA-180-G	**EA-202-D**
Brake horsepower*	57	56
Number of cylinders	4	4
Bore and stroke, inches	3.86 x 3.86	3.86 x 4.33
Displacement in cubic inches	180.00	202.0
Compression ratio	7.5 to 1	16.7 to 1
Firing order	1-3-4-2	1-3-4-2
Intake valve clearance	0.014-in.	0.014-in.
Exhaust valve clearance	0.022-in.	0.018-in.
Slow idle	800 rpm	800 rpm
Fast idle	2680 rpm	2650 rpm
Working speed range	2500 rpm	2500 rpm
Type of fuel	Gasoline	Diesel
Cooling system	14 qts.	14 qts.
Crankcase (including filter)	7 qts.	7 qts.

Air cleaner (dry-type)

Electrical system . . . . 12-volts (negative ground)

* Factory observed at 85°F and 29.3 inches Hg. at 500 feet above sea level.

Group 10
TUNE-UP AND ADJUSTMENT

GENERAL INFORMATION

For engine information, refer to SM-2080 - John Deere 135, 180, and 202 Power Units.

For windrower tune-up and adjustment, refer to the windrower operator's manual.

TORQUE CHART

RECOMMENDED TORQUE IN FT-LBS
COARSE AND FINE THREADS

Bolt Diameter	 (B) Plain Head	 (D) Three Radial Dashes	 (F) Six Radial Dashes
1/4	Not Used	10	14
5/16	Not Used	20	30
3/8	Not Used	35	50
7/16	35	55	80
1/2	55	85	120
9/16	75	130	175
5/8	105	170	240
3/4	185	300	425
7/8	160	445	685
1	250	670	1030
1-1/8	330	910	1460
1-1/4	480	1250	2060