

8840 Windrower

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DIVISION 1

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Section 1001

INTRODUCTION

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GENERAL INFORMATION

To Our Customer

We appreciate your confidence in our farm equipment and thank you for your patronage. In preparing this manual, we hope we have furnished you with a valuable tool for operating and maintaining this fine machine. Use this manual as your guide. Practicing the instructions given here will result in many years of dependable service from your machine.

Your Dealer can give you assistance with parts and specially trained personnel to assist you in repair and maintenance. Call your Dealer if you need any assistance or information.

Introduction

This service manual has been prepared with the latest service information available at the time of publication. Read the service manual carefully before doing any service on this machine. This manual is one of the most important tools available to the service technician.

"Right" and "Left" as used throughout this manual is determined by facing in the direction the machine will travel when in use.

The photos, illustrations, and data used in this manual were current at the time of printing, but due to possible production changes, your machine can vary slightly. The Manufacturer reserves the right to redesign and change the machine as necessary without notification.



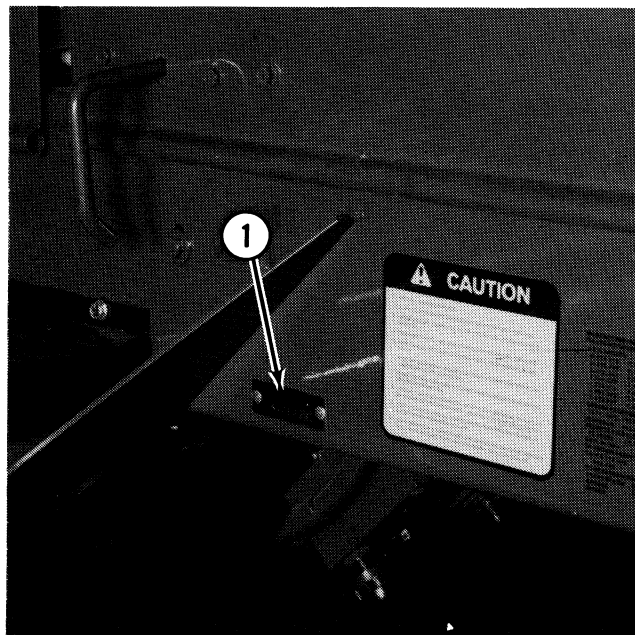
WARNING:

Some pictures in this manual show the machine with safety shields removed to allow for a better view of the subject of the picture. The machine should never be operated with any of the safety shields removed.

Serial Number Location

The serial number is important information about the machine. You will need the serial number when ordering some replacement parts.

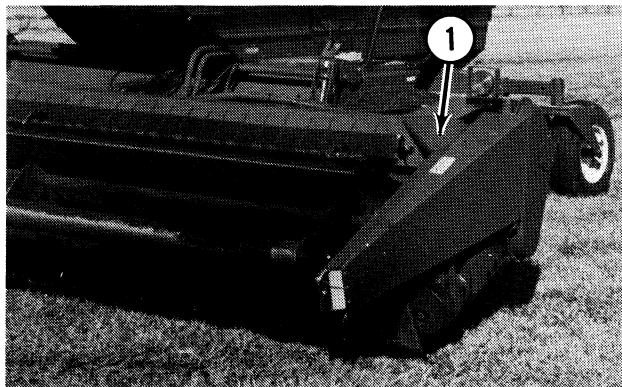
The tractor serial number plate is located on the left side of the tractor mainframe below the operator's platform.



884-87121-1

1. Serial Number Location on Tractor

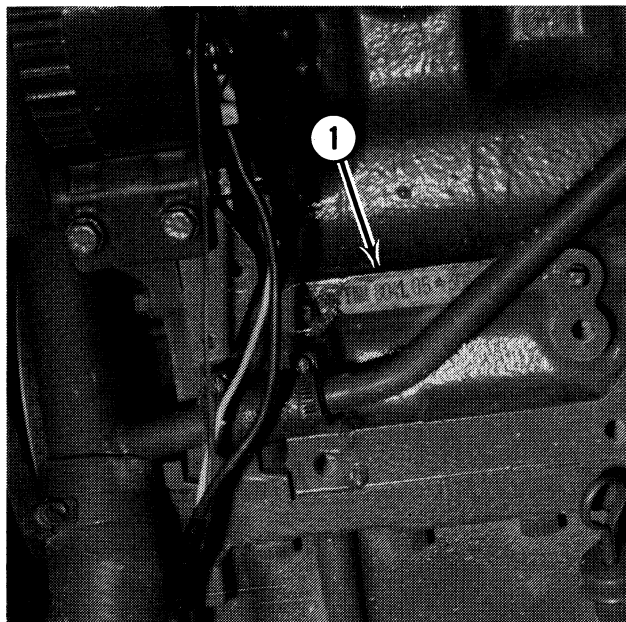
The header serial number plate is located on the left end of the header frame.



84TR-87036-3

1. Serial Number Location on Header

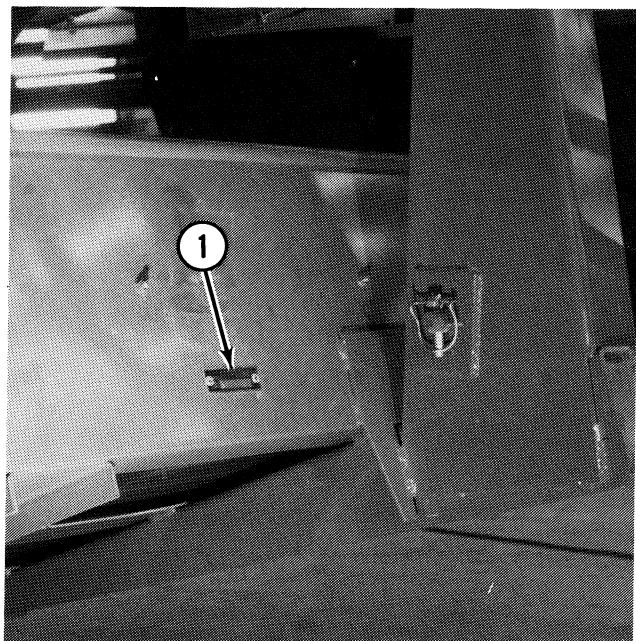
The engine serial number is stamped in the engine block.



8200-86143-1

1. Serial Number stamped in Cylinder Block

The serial number plate is for the optional double windrow attachment is located at the right end on the rear frame member.



DWA-88087-6

1. Serial Number Location on Double Windrow Attachment

Replacement Parts

To obtain prompt, efficient service, always remember to give the dealer the following information:

1. Correct part number description.
2. Model number of the machine.
3. Serial number of the machine.

U.S. and Metric Units

Measurements are given in U.S. units followed by their equivalent in metric units. Hardware sizes are given in inches for U.S. hardware and millimeters for metric hardware.

Table of Contents

A Table of Contents is in the front of this manual. The Table of Contents shows the divisions and the sections that are in each division. The individual divisions and sections also have a Table of Contents.

Page Numbers

All page numbers are made of two numbers separated by a dash, such as 4002-9. The number before the dash is the section number. The number following the dash is the page number in that section. Page numbers will be at the the upper right or left of each page.

Section 1002

SAFETY RULES, GENERAL MACHINE SPECIFICATIONS, AND STANDARD TORQUE SPECIFICATIONS

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SAFETY RULES

The manufacturer of this product is concerned about your safety and is committed to the prevention of accidents. A major factor in prevention of accidents is safe and proper use of the equipment. Be sure you or anyone who does any maintenance or service work on this machine reads and understands this manual prior to doing any maintenance or service work on this machine.



This Safety Alert Symbol indicates important safety messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

Read and understand all operating instructions and precautions before attempting to operate or service the machine.

Caution others, especially children, about climbing on the machine or being too close while machine is operating.

Emphasize the importance of safety when working around and operating the machine.

Always remain seated and have seat belt fastened while operating machine.

Make sure all safety shields are in place before operating the machine.

Place all control levers in neutral. Engage parking brake control lever, center and lock steering wheel, and shut off engine before:

- 1. Leaving the operator's seat**
- 2. Refueling**
- 3. Lubricating**
- 4. Cleaning the reel or hay conditioner**
- 5. Adjusting the machine**

Never stand behind tractor while the header is running.

Do not ride on the machine at any time.

Never carry riders.

Never operate machine at high speeds in crowded places.

Never suddenly reverse wheels to stop or backup.

Always lower header to ground when parking.

Always apply parking brake when parking.

Always travel with header as low as possible.

Always remove ignition key when parking machine.

Always keep hands, feet and clothing away from moving parts. Never wear loose clothing while operating or servicing the machine.



DANGER

Before doing any maintenance or service work on the tractor or the header you must:

- Put all controls in NEUTRAL.**
- Apply the parking brake.**
- Lower the header to the floor.**
- Center and lock the steering wheel.**
- Stop the engine.**
- Make sure all moving parts have stopped.**

Always apply the parking brake and block the wheels before working on or under the machine.

Never check or lubricate chains while machine is running.

After lubricating, servicing, or adjusting the machine, make sure all tools and equipment have been removed before operating the machine.

Always use a piece of cardboard or wood to search for suspected pressurized hydraulic leaks. NEVER use hands; escaping fluid under pressure can penetrate skin.

Never adjust, lubricate, or repair machine with engine running.

If the machine is equipped with a double windrow attachment, always turn off the engine and engage the parking brake and neutral lock control before:

- 1. Leaving the operator's seat.**
- 2. Crawling under the machine to check the draper.**
- 3. Making adjustments to the draper or conveyor.**

If the machine is equipped with a double windrow attachment, be aware of the conveyor ground clearance. Avoid excessive speed, especially when transporting over rough or uneven ground.

Never remove the cap from a hot radiator; escaping steam and hot fluids can cause personal injury.

Always jack on solid support and block tires when raising tractor.

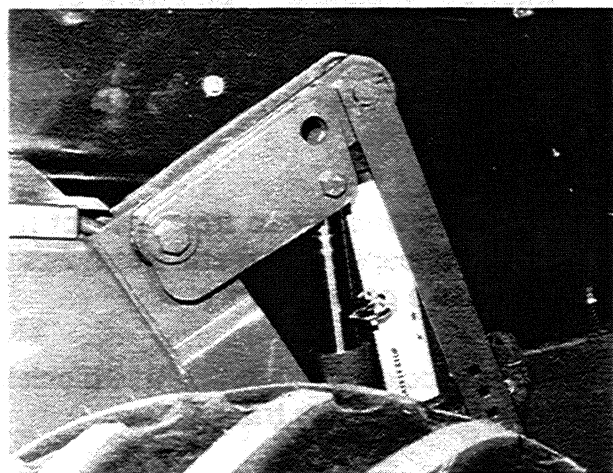
Always install header safety stops at both ends of the header before working on or under the header. See the following photos.

EARLY PRODUCTION HEADERS



82TR-87001-4

HEADER SAFETY STOP IN STORAGE POSITION



82TR-86138-9

HEADER SAFETY STOP IN SAFETY POSITION

LATE PRODUCTION HEADERS



82TR-88073-3

HEADER SAFETY STOP IN STORAGE POSITION



82TR-88073-1

HEADER SAFETY STOP IN SAFETY POSITION

Do not tow or drive machine with header up and safety stops in safety position.

BE AWARE of the transport width and be careful when transporting the machine on narrow roads and across narrow bridges. See General Machine Specifications in this section for overall dimensions.

Always use ample safety warnings and adequate lights when transporting the machine on public roads. Be sure the SMV emblem is visible. Check with your local law enforcement agencies for specific requirements.

Decals with "DANGER", "CAUTION", "WARNING", and other information, appear on the machine for your safety. Read the information carefully.

Replace any safety decals that are badly worn or can no longer be read. See Section 1004 for the location of the safety decals.

GENERAL MACHINE SPECIFICATIONS

Tractor

MACHINE DIMENSIONS

Overall length with auger header 242 IN (6146.8 mm)
 Height, top of steering wheel 98 IN (2489.2 mm)
 Height, top of cab 121 IN (3073.4 mm)
 Overall width (outside of hub to outside
 of hub) 119.6 IN (3037.8 mm)
 Overall width
 21.5L x 16.1 flotation tire 148.5 IN (3695.7 mm)
 Wheel base 132 IN (3352.8 mm)
 Tread width 127.0 IN (3225.8 mm)
 Clearance under walking beam 29 IN (736.6 mm)
 Clearance under frame 33.5 IN (850.9 mm)
 Weight (approximate) 6750 LBS (3065 kg)
 with 14 FT auger header 10 250 LBS (4654 kg)
 with 16 FT auger header 10 500 LBS (4767 kg)

TIRES

Drive wheels 21.5L x 16.1, turf or bar tread
 Wheel nuts 5/8-18 threads
 Torque 200 LB·FT (271 N·m)
 Rear caster wheels 9.5L-15 4-ply
 implement type rib
 Wheel bolts 9/16-18 threads
 Torque 110 to 130 LB·FT (149 to 176 N·m)
 Tire pressure, all tires 20 psi (138 kPa)

ENGINE

Case IH, 4T-390 Diesel Engine
 Horsepower 98 at 2300 rpm (r/min)
 High Idle 2500 rpm (r/min)
 Displacement 238 CU IN (3.9 L)
 Engine oil
 Type Case IH No. 1 Engine Oil,
 SAE 15W 40, API CE, CDII/CF-4
 Capacity 12 U.S. quarts (10.4 L)
 Cooling system capacity 22 U.S. quarts (20.8 L)
 Cooling fan diameter 20 IN (508 mm)
 Fuel tank capacity 50 U.S. gallons (194 L)

ELECTRICAL SYSTEM

System voltage 12 volts
 Grounding Negative
 Battery, minimum cranking
 capacity at 0°F, Two 12 V, 450 amp
 Alternator
 Make Robert Bosch
 Amps output 65

DRIVE SYSTEM

Final drive Roller chain
 Primary reduction No. 50
 Final reduction No. 80
 Tandem pump Vickers Model 19
 Ground drive motors Vickers variable
 displacement motors

HYDRAULIC SYSTEM

System capacity 23 U.S. gallons (87 L)
 Reservoir capacity 20 U.S. gallons (76 L)
 Type of fluid Engine Oil, SAE 15W 40
*NOTE: The oil specified for the engine can be used
 in hydraulic system. See Engine oil, Type in this
 chart for the engine oil specification.*

Type of fluid, alternate Case IH Hy-Tran Plus
*NOTE: Hy-Tran Plus can be added to the factory
 installed oil, but to get the full benefit of the qualities
 of Hy-Tran Plus a complete oil replacement
 is required.*

Main system relief pressure 5000 psi (34 475 kPa)

CAB

Cab glass Tinted, 63 sq ft (5.9 m²)
 Steering column 5 position tilt
 Steering column gauges Engine coolant
 temperature gauge, engine oil
 pressure gauge, digital speedometer
 Instrument panel gauges 4 function gauge
 cluster with audible warning,
 voltmeter, fuel gauge, flotation
 pressure gauge, hourmeter

AIR CONDITIONING

System size 22,000 BTU/hr
 Fluid Freon F-12
 Capacity 4 LBS (2 kg)
 Compressor Sankyo SD-508
 Displacement 8.4 CU IN (138 cm³)

ACCESSORIES

Lights 4 lights front, square halogen
 2 lights rear, square halogen
 flashers on header and tractor
 tail light, turn signals
 Rear view mirrors, right and left deluxe
 Controls Shape-coded handles

Header

Weight

14 FT Header	3500 LBS (1589 kg)
16 FT Header	3750 LBS (1703 kg)

Overall Width

14 FT Header ..	188 IN (4.78 m)
16 FT Header	212 IN (5.38 m)

Width of Cut

14 FT Header	168 IN (4.26 m)
16 FT Header	192 (4.88 m)

Header Flotation Hydraulic, adjustable from the control console

Header Lift Relief

Pressure	2000 psi (13 790 kPa)
----------------	-----------------------

Header Drive Hydraulic

Jack Shaft Speed	1200 rpm (r/min)
------------------------	------------------

Guard Angle (adjustable)	5-11°
--------------------------------	-------

Lift Range	-3 to +22-1/4 IN (- 76.6 to +565.15 mm)
------------------	---

Sickle

Speed

Cycles per minute	920
Strokes per minute	1840

Stroke	3 IN (76 mm)
--------------	--------------

Minimum Cutting Height	1 IN (25 mm)
------------------------------	--------------

Drive	Timed gearboxes with swaybar
-------------	------------------------------

Guard Spacing	3 IN (76 mm)
---------------------	--------------

Reel

Construction all metal bats with cam track actuated tines

Number of Bats	5
----------------------	---

Drive	Belt and chain
-------------	----------------

Diameter	42 IN (1067 mm)
----------------	-----------------

Speed (adjustable)	65 to 75 rpm (r/min)
--------------------------	----------------------

Tines	Heavy duty
-------------	------------

Augers

Type dual, opposed rotation

Diameter

Upper	9 IN (228.6 mm)
-------------	-----------------

Lower	9 IN (228.6 mm)
-------------	-----------------

Speed

Upper	330 rpm (r/min)
-------------	-----------------

Lower	525 rpm (r/min)
-------------	-----------------

Drive Chain Size Sealed No. 50

Roller Chain

Hay Conditioner

Length

Upper	110 IN (2749 mm)
-------------	------------------

Lower	110 IN (2749 mm)
-------------	------------------

Diameter

Upper, Rubber	8 IN (203 mm)
---------------------	---------------

Lower, Steel	7-3/4 IN (197 mm)
--------------------	-------------------

Speed

Upper	920 rpm (r/min)
-------------	-----------------

Lower	920 rpm (r/min)
-------------	-----------------

Drive..... Double No. 60 roller chain running in oil with U-joints to the rolls

Type Engaging Rollers

Material Discharge (adjustable)

96 IN (2438 mm) maximum swath

to a 40 IN (1016 mm) minimum windrow, depending on conditions

Double Windrow Attachment

Type of Conveyor	Draper	Hydraulic Motors	gear type
Length	105.5IN (2680 mm)	Manufacturer	Eaton
Width	49IN (1245 mm)	Displacement	1.77 CU IN (29.0 cc) per rev
Draper Drive Roller Speed engine		Capacity at	
at 2500 rpm (r/min)	1400 rpm (r/min)	3000 rpm(r/min)	25.5 gpm (96.5 L/min)
Draper Length	200IN (5080 mm)	Rotation	either direction
Draper Width	44IN (1118 mm)	Deflector Control Valve	
Drive	hydraulic	Maximum Pressure	3000 psi (20 685 kPa)
Conveyer Drive Pump	gear type	Maximum Flow	15 gpm (57 L/min)
Manufacture	Eaton	Check Valve Type	Ball
Displacement	1.02 Cu In(16.7cc) per rev	Check Valve Spring	5 psi (34 kPa)
Capacity		Relief Valve Setting	2000 psi (13 790 kPa)
at 3000 rpm (r/min)	12 gpm (45L/min)	Pump Control	electric clutch
Rotation from drive end	CCW	Deflector	Hydraulic cylinder actuated foot pedal control

STANDARD TORQUE SPECIFICATIONS

U.S. Standard Hardware

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers, dry, or when lubricated with engine oil. Not applicable if special graphites, molydisulfide greases, or other extreme pressure lubricants are used.

Grade 5 Bolts, Nuts, and Studs		
  		
Size	Pound-Feet (LB-FT)	Newton metres (N·m)
1/4-20	8.4	11
1/4-28	9.7	13
5/16-18	19	24
5/16-24	19	26
3/8-16	31	42
3/8-24	35	47
7/16-14	49	67
7/16-20	55	75
1/2-13	76	105
1/2-20	85	115
9/16-12	110	150
9/16-18	120	165
5/8-11	150	205
5/8-18	170	230
3/4-10	265	360
3/4-16	295	405
7/8-9	430	585
7/8-14	475	640
1-8	645	875
1-12	705	955
1-1/8-7	795	1080
1-1/8-12	890	1210
1-1/4-7	1120	1520
1-1/4-12	1240	1680
1-3/8-6	1470	1990
1-3/8-12	1670	2270
1-1/2-6	1950	2640
1-1/2-12	2190	2970

Grade 8 Bolts, Nuts, and Studs		
  		
Size	Pound-Feet (LB-FT)	Newton metres (N·m)
1/4-20	12	16
1/4-28	14	18
5/16-18	25	33
5/16-24	27	37
3/8-16	44	59
3/8-24	49	67
7/16-14	70	95
7/16-20	78	105
1/2-13	105	145
1/2-20	120	165
9/16-12	155	210
9/16-18	170	235
5/8-11	210	285
5/8-18	240	325
3/4-10	375	510
3/4-16	420	570
7/8-9	605	820
7/8-14	670	905
1-8	910	1230
1-12	995	1350
1-1/8-7	1290	1750
1-1/8-12	1440	1960
1-1/4-7	1820	2460
1-1/4-12	2010	2730
1-3/8-6	2380	3230
1-3/8-12	2710	3680
1-1/2-6	3160	4290
1-1/2-12	3560	4820

Metric Hardware

Use the following torques when special torques are not given.

These values apply to fasteners with coarse threads as received from supplier, plated or unplated, or when lubricated with engine oil. These values do not apply if graphite or molydisulfide grease or oil are used.

Grade 8.8 Bolts, Nuts, and Studs 		
Size	Pound-Feet (LB·FT)	Newton metres (N·m)
M5 x 0.8	4.8	6
M6 x 1	8	11
M8 x 1.25	19	26
M8 x 1	21	28
M10 x 1.5	39	52
M10 x 0.75	45	61
M12 x 1.75	67	91
M12 x 1.5	70	95
M12 x 1	77	105
M14 x 2	105	145
M14 x 1.25	115	155
M16 x 2	165	225
M16 x 1.5	180	240
M18 x 2.5	230	310
M18 x 1.5	260	350
M20 x 2.5	325	440
M20 x 1.5	480	650
M24 x 3	560	760
M24 x 2	610	830
M30 x 3.5	1120	1510
M30 x 2	1240	1680
M36 x 3.5	1950	2650
M36 x 2	2190	2960

Grade 10.9 Bolts, Nuts, and Studs 		
Size	Pound-Feet (LB·FT)	Newton metres (N·m)
M5 x 0.8	6.7	9
M6 x 1	11	15
M8 x 1.25	27	36
M8 x 1	29	39
M10 x 1.5	53	72
M10 x 0.75	62	85
M12 x 1.75	93	125
M12 x 1.5	97	130
M12 x 1	105	145
M14 x 2	150	200
M14 x 1.25	160	215
M16 x 2	230	315
M16 x 1.5	245	335
M18 x 2.5	300	405
M18 x 1.5	355	485
M20 x 2.5	450	610
M20 x 1.5	665	900
M24 x 3	780	1050
M24 x 2	845	1150
M30 x 3.5	1550	2100
M30 x 2	1710	2320
M36 x 3.5	2700	3660
M36 x 2	3020	4100

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Section 1004

DECALS

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