4435, 4435 Hydro Combines

JOHN DEERE

TECHNICAL MANUAL

4435, 4435 Hydro Combines

TM4464 (01MAY91) English

John Deere Werke Zweibrücken
TM4464 (01MAY91)

LITHO IN U.S.A.
ENGLISH

FOREWORD

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

Live with safety: Read the safety messages on the first pages of this manual as well as 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 risk of personal injury.

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.

Binders, binder labels and tab sets can be ordered by John Deere dealers direct from the John Deere Distribution Service Center.

This manual is part of a total product support program.

FOS Manuals – Reference

Technical Manuals – Machine service

Component Technical Manuals – Component service

Fundamentals of Service (FOS) Manuals
cover basic theory of operation, fundamentals of troubleshooting, general maintenance and the basic types of failures and their causes. FOS Manuals are for the training of 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.

Component Technical Manuals
are concise service guides for specific components. Component technical manuals are written as stand-alone manuals covering multiple machine applications.

4435, 4435 HYDRO COMBINES TECHNICAL MANUAL TM4464 (MARCH-90)

CONTENTS OF SECTIONS IN GROUPS

CONT-ZI501AE-111189

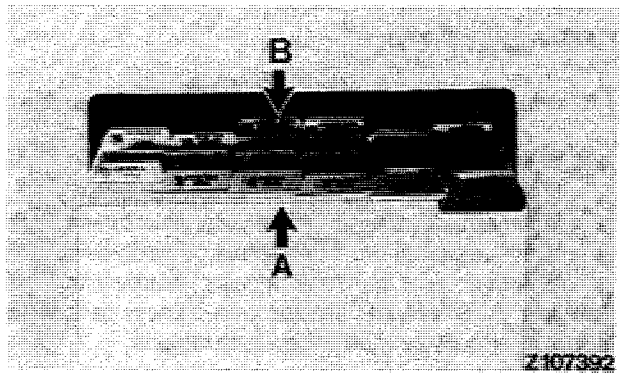
CONTENTS OF SECTIONS IN GROUPS – CONTINUED

TECHNICAL MANUAL TABS

INTRODUCTION

To fully utilize this manual, you must understand how it is organized. Only two tab colors are used – green and yellow, each representing a different type of information. Spend a minute reading this now and save many minutes of searching later.

A-Green tabs **B-Yellow tabs**



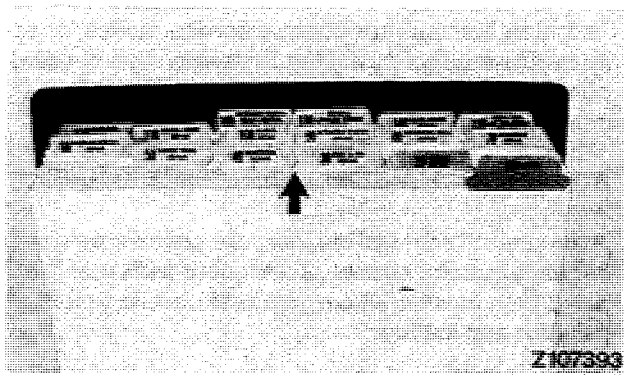
Z107392-ZI304AE-011085

GREEN TAB SECTIONS

The green tab sections are REPAIR sections, telling you how to repair components of the various systems.

Repair of a component includes:
– Removal from machine (if necessary)
– Disassembly
– Inspection
– Replacement of parts
– Assembly
– Adjustment
– Installation on machine (if necessary)

The numbers, used for the repair (green tab) sections, are part of an overall service publication numbering system. The numbers identify the same sections in the parts catalog, flat rate manual, service information bulletins and service training courses.



Z107393-ZI304AE-011085

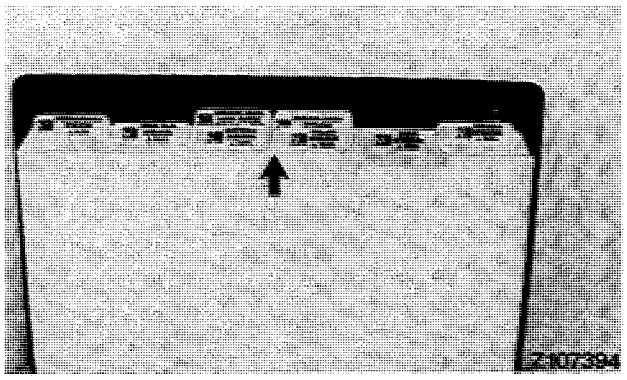
YELLOW TAB SECTIONS

Each yellow tab section contains information on:

– System Operation
– System Tests

System operation explains how the system and its components work.

System tests tell you how to test the system and diagnose the problem.



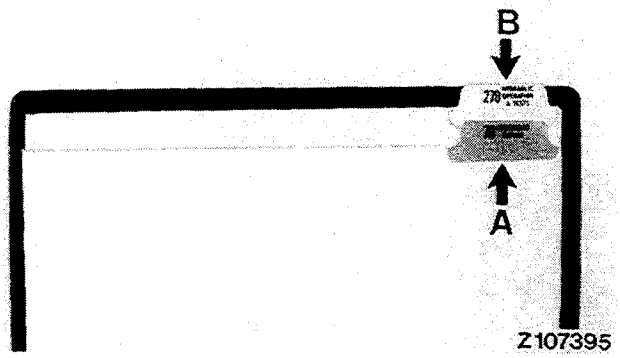
Z107394-ZI304AE-011085

TAB POSITIONS

Each green tab and its corresponding yellow tab have the same tab position. This helps you to quickly locate the related information.

A-Green tab
- **Section 70**
- **Hydraulic Repair**

B-Yellow tab
- **Section 270**
- **Hydraulic System Operation/Tests**



Z107395-ZI505AE-010289

THREE-STEP PROCEDURE

Use the following three-step procedure to locate the desired information.

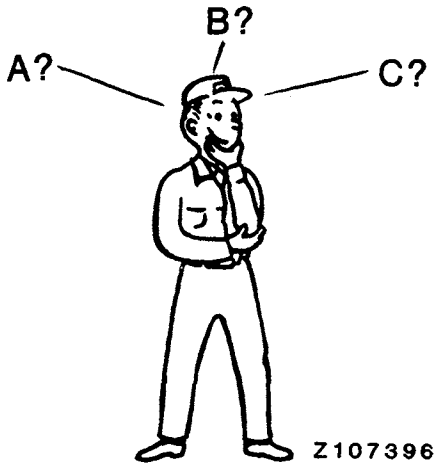
1. Determine the type of information you need: Is it?

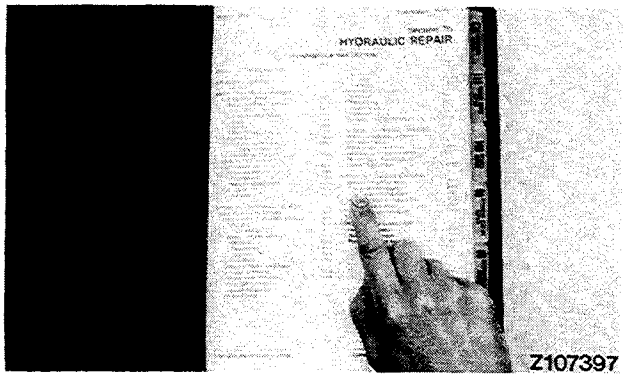
A – Repair
B – Operation
C – Tests

2. Go to the appropriate section tab:

Green – for Repair
Yellow – for Operation or Tests

3. Use the Table of Contents on the first page of each section to locate the information.





Z107396,Z107397-ZI305AE-011085

SAFETY AND YOU

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.

T81389;053;TMSAFE 19 07OCT85

IMPORTANT

The IMPORTANT message identifies potential problems which may cause consequential damage to machine. Following recommended procedure will instruct technician how to avoid problem.

A68;N01;0000 19 U 05NOV82

NOTES

The word NOTE is followed by a statement that identifies a qualification or exception to a previous statement. A "NOTE" may also identify nice-to-know information pertinent to, but not directly related to previous statement.

A68; N01;0000 19 V 05NOV82

Section 10
GENERAL

CONTENTS OF THIS SECTION

INHA-ZI5101AE-111189

SPECIFICATIONS

ENGINE	
Make	JOHN DEERE
Model (4435)	6359 DZ 004
Model (4435 Hydro)	6359 TZ 003
Displacement	5880 cm^3 (359 cu.in.)
Number of cylinders	6
Bore	106.5 mm (4.2 in.)
Stroke	110 mm (4.33 in.)
Power (4435)	82 kW (110 hp) (according to ISO 2288)
Power (4435 Hydro)	92 kW (124 hp) (according to ISO 2288)
Compression ratio (4435)	17.8 to 1
Compression ratio (4435 Hydro)	16.8 to 1
Minimum compression at starter cranking speed (180 rpm)	2400 kPa (24 bar; 342 psi)
Flywheel torque at 1400 rpm (4435)	364 Nm (272 ft-lb)
Flywheel torque at 1500 rpm (4435 Hydro)	420 Nm (300 ft-lb)
Full load speed	2500 rpm
Slow idle speed	1200 to 1300 rpm
Fast idle speed	2675 to 2725 rpm
Firing order	1 – 5 – 3 – 6 – 2 – 4
Type of lubrication	Gear pump force feed
Valve clearance (cold or hot):	
– Intake valves	0.35 mm (0.014 in.)
– Exhaust valves	0.45 mm (0.018 in.)
Make of injection pump	STANDADYNE™ DB2 RE 12323
Injection nozzles	STANDAYNE™ Four-Hole
Opening pressure of a new injection nozzle (4435)	22100 kPa (221 bar; 3200 psi)
Opening pressure of a new injection nozzle (4435 Hydro)	25500 kPa (255 bar; 3700 psi)

SPECI-ZI51005AE-111189

ELECTRICAL SYSTEM

Voltage	12 Volts
Alternator	95 Amps (Bosch)
Starting motor	3 kW (4 hp) (Bosch)
Ether starting aid	Standard

TRANSMISSION

Standard (4435)	Automotive: 4 forward speeds, 1 reverse speed
Ground speed drive (4435)	POSI-TORQ
Ground speed drive (4435 Hydro)	Hydrostatic drive
Type	Infinitely variable in each gear

GROUND SPEEDS (4435)
(with 23.1-26 10PR tires)

1st gear	1.5 to 3.4 km/h	(0.9 to 21. mph)
2nd gear	3.0 to 6.9 km/h	(1.9 to 4.3 mph)
3rd gear	5.4 to 12.5 km/h	(3.4 to 7.8 mph)
4th gear	10.8 to 25.0 km/h	(6.7 to 15.5 mph)
Reverse gear	3.4 to 7.8 km/h	(2.1 to 4.8 mph)

GROUND SPEEDS (4435 HYDRO)
(with 23.1-26 10PR tires)

1st gear	0.4 to 3.3 km/h	0.25 to 2.1 mph
2nd gear	1.0 to 6.7 km/h	0.6 to 4.1 mph
3rd gear	1.8 to 12.1 km/h	1.1 to 7.4 mph
4th gear	4.1 to 25 km/h	2.5 to 15 mph

BRAKES

Foot brakes	Hydraulically-actuated disk brakes, also acting on individual wheels
Parking brake	Mechanical disk brakes

STEERING SYSTEM

Type	Hydrostatic steering

TIRE PRESSURES

Front Axle:	
– 23.1-26 10 PR tires	170 kPa (1.7 bar 24 psi)
– 28.1-26 12 PR tires	200 kPa (2.0 bar; 28 psi)
Rear Axle:	
– 10.0-16 8 PR tires	310 kPa (3.1 bar; 45 psi)
– 11.2-24 8 PR tires	300 kPa (3.0 bar; 43 psi)

SPECI-ZI51005BE-111189

CAPACITIES

Fuel tank	300 l (80 U.S.gal.)	
Engine crankcase (incl. oil filter) 4435	11 l (3 U.S.gal.)	
4435 Hydro	13 l (3.5 U.S.gal.)	
Transmission case	6.6 l (1.75 U.S.gal.)	
Final drives (each)	2.1 l (0.6 U.S.gal.)	
Hydraulic system:		
– Incl. lines and components	25 l (6.6 U.S.gal.)	
– Hydraulic oil reservoir	20 l (5.3 U.S.gal.)	
Hydraulic reel drive system:		
– Incl. lines and components	12 l (3.2 U.S.gal.)	
– Hydraulic oil reservoir	10 l (2.6 U.S.gal.)	
Cooling system	25 l (6.6 U.S.gal.)	

CYLINDER

Type	Rasp bar	
Width	1040 mm	(41 in.)
Diameter	610 mm	(24 in.)
Drive (standard)	POSI-TORQ with V-belt and hydraulic adjustment	
Speed range	400 to 1100 rpm	
– With reduction gear engaged	158 to 420 rpm	
Number of rasp bars and filler plates	8	

CONCAVE

Number of bars	14	
Width	1040 mm	(41 in.)
Stone trap	Regular	
1st de-awning plate	Spare part only	

BEATER

Type	Box cylinder	
Width	1040 mm	(41 in.)
Diameter	300 mm	(12 in.)
Speed	850 to 880 rpm	

STRAW WALKER SYSTEM

Length	3.65 m	(12 ft.)
Total walker area	3.80 m^2	(40.8 sq-ft.)
Total separating area	4.30 m^2	(46.3 sq-ft.)

CLEANING UNIT

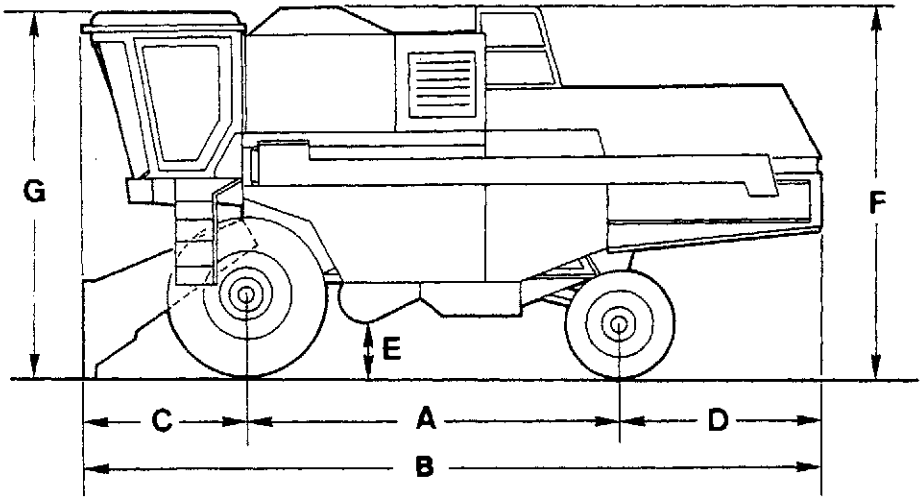
Type	Reciprocating chaffer and sieves with blower fan	

SPECI-ZI51005AE-150491

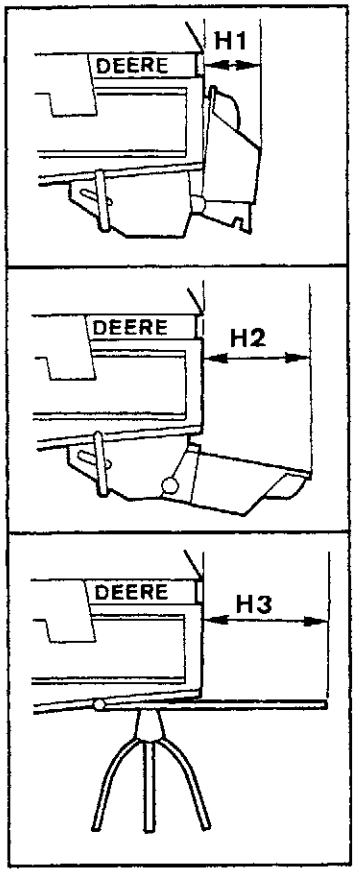
CHAFFER WITH EXTENSION		
Type (standard)	Deep tooth – laminated sheet metal, adjustable Regular tooth – spare part only	
Width	97 cm	(38 in.)
Length (with extension)	185 cm	(72.8 in.)
Area (with extension)	1.80 m²	(19.4 sq-ft.)
SIEVES		
Type (standard)	Laminated sheet metal, adjustable	
Width	97 cm	(38 in.)
Length	152 cm	(60 in.)
Area	1.48 m²	(15.9 sq-ft.)
Total sieve area	3.41 m²	(36.7 sq-ft.)
Dividers:		
– On chaffer	Installed as standard	
– On grain return pan	Installed as standard	
FAN		
Type	Blower fan	
Drive adjustment	V-belt, infinitely variable electrical adjustment	
Fan blade diameter	580 mm (22.5 in.)	
Number of fan blades	4	
Speed range	450 ± 20 to 1200 ± 30 rpm	
Adjustable windboards	1 in 3 positions	
HEADER DRIVE SHAFT		
Speed ranges:		
Inner chain position	570 rpm	
Outer chain position	500 rpm	
GRAIN TANK		
Capacity (standard)	4400 l	(125 bu.)
Discharge volume	3000 l/min	(90 bu./min.)
WEIGHTS		
Net weight with straw chopper:		
– Without header	8000 kg	(17,650 lbs.)
– Permissible total weight for road transport	9400 kg	(20,725 lbs.)
Permissible front axle load for road transport	6750 kg	(14880 lbs.)
Permissible rear axle load	3200 kg	(7005 lbs)
Permissible trailer load	2000 kg	(4400 lbs)

SPECI-ZI51005DE-111189

DIMENSIONS



Z 116 641



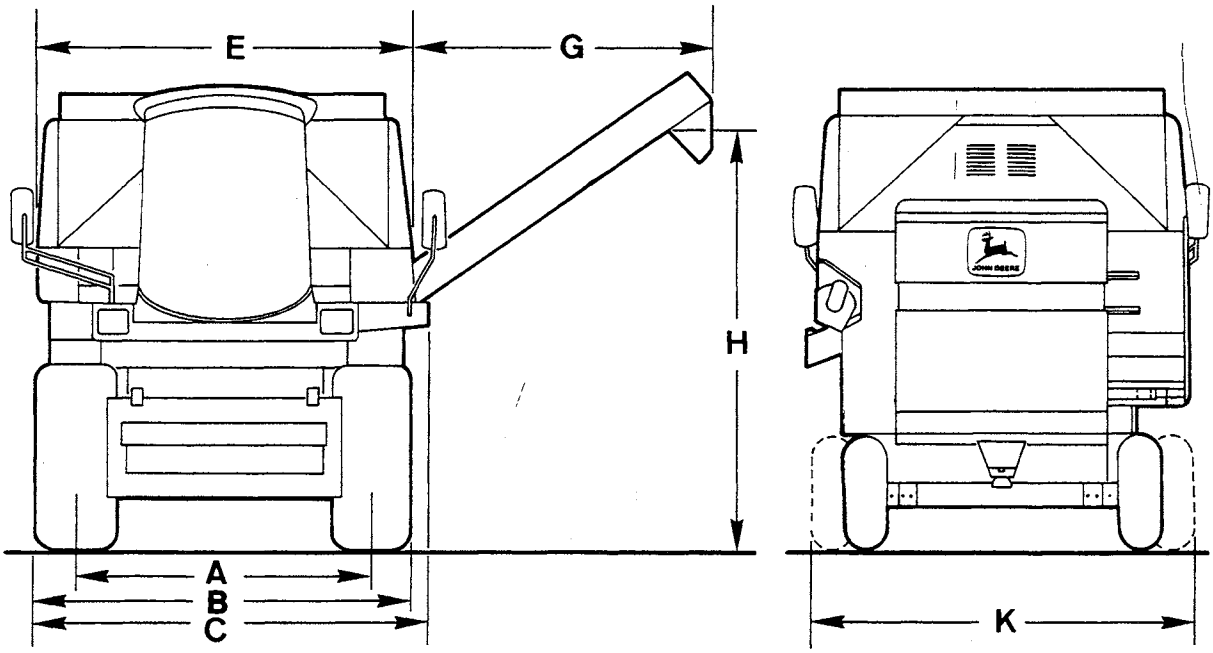
A–3722 mm (146 in.)
B–7300 mm (287.4 in.)
C–1400 mm (55 in.)
D–1960 mm (77 in.)
E– 450 mm (18 in.)
F–3830 mm (151 in.)
G–3800 mm (150 in.)

H1–Add 330 mm (13 in.) with straw chopper in transport position.
H2–Add 475 mm (19 in.) with straw chopper in operating position
H3–Add 660 mm (26 in.) with straw spreader installed

Z116641-4435AZE-051288

DIMENSIONS (Continued)

Width and Height



Z 116 642

Inner rim position
- A–2234 mm (88 in.)
- B–2779 mm (110 in.)
- C–2929 mm (115 in.)

Outer rim position
- A–2480 mm (98 in.)
- B–3025 mm (119 in.)
- C–3052 mm (120 in.)

With axle spacer and inner rim position
- A–2638 mm (104 in.)
- B–3183 mm (125 in.)
- C–3236 mm (127 in.)

With axle spacer and outer rim position
- A–2884 mm (114 in.)
- B–3429 mm (135 in.)
- C–3514 mm (138 in.)

E–2690 mm (105 in.)
G–2920 mm (115 in.)
H–3600 mm (142 in.)
K–2108 to 2821 mm (83 to 111 in.)
in 102 mm (4 in.) increments

Z116642-4435AZE-051288