



2300 Series Combine

Service Training Manual

Form 5063 (Rev. 12/2004)

Case IH



Agricultural Equipment Service Training

PROGRAM STUDY WORKBOOK



2300 SERIES COMBINE

Rev. 1/2003

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Program Study Workbook

To The Technician: This Program Study Workbook is designed to enhance your proficiency of the 2300 series combines with respect to each section of the Service Training Manual. The questions and format are designed to increase your comprehension of important concepts and material that are addressed in each section of the manual. Along the right side of the questions is a column of boxes labeled 'Page'. As you look up your answers in the manual, please record the page number where you found the information. This will become your guide to finding topics in the manual after you have completed the Service Training Program and the Program Study Workbook.

The Service Training Manual and Program Study Workbook should also be utilized to address other concerns you have about related systems on the 2300 series that may not be covered in the program that you are attending.

Use your excess time during the training program as focused, self-directed study toward the system or systems you feel you need to improve upon.

If you still have questions or want a further explanation/clarification, talk with other students in your program and/or the Training Facilitator.

Make the most productive use of your time in the program. The more knowledge you have of the entire machine when you finish, the more effective you become to your employer.

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INTRODUCTION

Refer to Section one of the training manual and additional information provided for the current model year machines.

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- 1 What are the rated engine speeds for 2300 series combines?

2344_____ 2366_____ 2388_____

- 2 What are the horsepower ratings for the 2300 series combines?

2344_____ 2366_____ 2388_____

- 3 List the engine displacements for each model.

2344_____ 2366_____ 2388 _____

- 4 What type of aspiration does each model have?

2344_____ 2366_____ 2388 _____

- 5 List the rotor diameter and length for each model.

2344_____ 2366_____ 2388 _____

- 6 Where should the Operators Manual be stored on the combine?

- 7 What is the current version for AFS software and desk top? _____

- 8 In what model year was 2388 combine with PIN JJC0265156 built? _____

- 9 What electrical schematic booklet would you use for a 2002 model year machine? _____

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|--|------|
| 10 You have a customer that would like to know more about the 2200 series Corn Heads. What is the number of the video you could show? _____ | |
| 11 Which hydraulic pressure checks are identified on the pre-delivery checklist? _____

Does each Model Year have different pre-delivery instructions? _____

_____ | |
| 12 What advantage is there to the feeder chain roller kit? _____
_____ | |
| 13 What changes were made to the rotary screen system? _____

_____ | |
| 14 How was the rotor drive on the 2388 changed? _____
_____ | |
| 15 What protection was added to the MY2003 model 2366 that was not on the MY2002 model 2366? _____
_____ | |
| 16 What are the major differences between the specialty rotor and the AFX rotor? _____

_____ | |

HYDRAULICS

Page

- 1 As oil flows through an orifice:
- A The pressure after the orifice will increase.
 - B The pressure before the orifice will decrease
 - C The pressure on each side of the orifice will be equal.
 - D The pressure before the orifice will be higher than the pressure after the orifice.

- 2 When a pilot operated system is activated:
- A The secondary section controls the movement of the primary section.
 - B The primary section must move first followed by the secondary section.
 - C The primary and secondary sections move at the same time.
 - D Only the secondary section moves.

- 3 The hydraulic system on the 2300 series combine is:
- A Closed center
 - B Open center
 - C A combination of open and closed center
 - D Vertically integrated impeller pump system

- 4 The P.F.C. pump is needed to operate which functions?
- _____
- _____
- _____

- 5 What hydraulic function is teed in between the Steering Priority Valve and the Main Valve stack? _____

- 6 **True or False** The pilot poppet of a pilot operated relief valve controls the opening pressure of the valve.

If **False**, why? _____

Page

7 The hydraulic oil temperature sensor is located:

- A In the hydraulic oil reservoir.
- B On the outlet side of the P.F.C. pump.
- C In the case drain line of the hydro pump.
- D In the return hydraulic oil filter head

8 The hydraulic oil and filter change interval on 2300 series combines is:

- A Once every five years.
- B Once a year or 300 hours.
- C Every 1000 hours
- D After the first 50 hours then every 1000 hours.

9 When the hydraulic oil filter plugs, the filter bypass warning light will illuminate?

- A True
- B False

10 The three operating modes of the P.F.C. Pump are:

11 What is the function of the compensator?

12 What is the purpose of the high-pressure standby spool?

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13 How is Signal line pressure bled to the reservoir?

14 Why are there Signal checks in the system?

15 How many orifices are located in the steering priority spool? _____

16 What is the purpose of the dynamic sensor orifice?

17 Threaded into the steering priority valve is an orifice check.
What is its function? _____

18 The steering hand pump is an:

- A Open center design
- B Closed center design
- C A combination of open and closed center

19 Inside the steering hand pump is a 0.031" orifice. What is the purpose of this orifice? _____

Page

20 Why should the steering signal relief pressure be set lower than high-pressure standby? _____

21 The main valve assembly is located:
A Behind the door on the left hand operators platform
B Behind the door on the right hand operators platform.
C Below the P.F.C. pump.
D Below the cab.

22 List the functions that the main valve assembly controls: _____

23 How many test ports are located on the main valve assembly? _____

24 When lowering the reel:
A Both the reel lower and the signal valve solenoids must be energized.
B Only the reel lower solenoid must be energized.
C Only the signal valve must be energized.

25 For diagnostic purposes, if there is no electrical current available at the reel drive solenoid coil, how can you manually override the valve? _____

26 If electrical current is not available, which main valve assembly functions can be manual overridden? _____

- | |
|------|
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| |
- 27 Are the reel raise and lower cartridges interchangeable? _____
How can I tell them apart? _____

- 28 What is the purpose of the signal valve solenoid? _____

- 29 The signal valve solenoid must be energized when activating these functions: _____

- 30 The reel lower valve: _____
A Is Pilot operated
B Has reverse free flow capabilities
C Is an SV3 type cartridge valve
D All of the above
- 31 The unloading auger swing and the reel fore/aft control valves are: _____
A Not interchangeable
B Interchangeable
Why? _____

- 32 The unloading auger swing valve has: _____
A One alternating check valve.
B One pilot-operated check valve.
C Two pilot-operated check valves.
D None of the above.

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33 The unloading auger engage cylinder is:

- A Single acting
- B Double acting with two decelerators
- C Optional
- D Double acting with an orifice to control engagement speed.

34 The field tracker valve has :

- A One relief valve
- B Two relief valves
- C An alternating check valve system
- D Both B and C

35 What internal components of the header valve can be replaced to repair header leak down? _____

36 The auxiliary gear pump is:

- A Located on the PTO housing
- B Located on the feeder house
- C Mounted to the P.F.C. pump
- D Mounted to the engine

37 When checking regulated pressure, what other pressure reading must be checked before making any adjustments? _____

38 The pressure regulator valve directs oil to the following components:

Page

39 The pressure regulator valve is:

- A Adjustable
- B Non adjustable
- C A pilot operated type valve
- D Both A and C

40 On MY2001 machines, what is different about the pressure regulator, unload auger engage and 44/66 separator engage valves? _____

41 What is the purpose of the check valve in the supply line of the service brake valve? _____

42 The park brake valve is located where? _____

43 What is the function of the park brake pressure switch? _____

44 The park brake valve contains two solenoids. What does each solenoid control and what are their general shapes? _____

45 What is the purpose of the relief valve in the park brake valve? _____

46 When the combine is shut off, the park brake is:

- A Engaged
- B Disengaged

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47 If the combine cannot be started and must be towed, what should be done to disengage the park brake? _____

48 How far should we expect to tow the combine using the tow feature? _____

49 What should be done to tow the combine long distances? _____

50 The reel drive valve is: _____

A Open center

B Close center

51 What is the purpose of the orifice located in the signal channel of the reel drive valve? _____

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52 Where is the relief valve for the reel drive circuit located? _____

53 The 2388 separator drive (PTO) clutch (prior to 2002) receives oil pressure from:

- A The P.F.C. pump
- B The auxiliary gear pump
- C The Pressure Regulator valve
- D A 5 GPM gear pump mounted to front left side of engine

54 If the steering signal relief pressure is below specifications, how is it corrected? _____

55 If the regulated pressure is below specifications, what other pressure test should be made before adjusting the regulated pressure? _____

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