

# COMBINES 360/330/430/530/630/730

Technical Manual  
TM-4222 (Jan-74)

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## INTRODUCTION

This technical manual for model 360/330/430/530/630 and 730 combines is a concisely written publication for the service personnel. It contains procedures and specifications which an individual cannot be expected to remember. The table of contents on the first page of this manual lists the individual sections and their groups. A table of contents on the first page of each section lists the groups in the section and the page number of the major subjects found in each group. Coloured tabs make it easy to locate the individual sections.

Coverage for each components includes:

General information, diagnosing malfunctions, checks (if necessary), removal (if necessary), disassembly, repair, assembly (if necessary), installation (if necessary, adjustments, specifications and special tools.

Specifications and special tools are always listed at the end of each group.

The section "GENERAL INFORMATION" includes detailed specifications and instructions for "Pre-delivery, delivery and after-sales inspections" as well as "Engine and combine tune-up" to restore full performance.

Combine service and lubrication as well as lubricants required are described in the Operator's Manual.

In principle, the present technical manual contains specifications and service information on 3, 4 and 6 cylinder John Deere engines only — as far as the engine is concerned. However, section "General Information" includes vital specifications on Perkins 6.354 engine. Nevertheless, when doing repair work on a Perkins 6.354 6-cylinder engine, the "Perkins Shop Manual" on 6.354 engine should be consulted in any case.

Little explanation is given about theory of operation in this manual unless the theory is peculiar only to the component in the combine. Basic theory of operation and general information about the systems or components of the tractor will be found in the "JOHN DEERE Fundamentals of Service" manuals.

This manual was planned and written for the mechanic charged with combine service. Keep it in the shop where it is readily accessible and refer to it whenever in doubt about correct service procedures. Using it as a guide for any and all service problems will reduce error and costly delay.

Thus, make it a habit to use this manual when doing any repair work on a combine of the Zweibrücken series and keep it always close at hand. You will see that it becomes your most important special tool.

## Section 10

# GENERAL INFORMATION

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## Group 5

# SPECIFICATIONS

### SERIAL NUMBERS

The combine serial number is stamped into the name plate on the right-hand side of the operator's platform.

The serial number is also stamped into the right-hand angle frame of the combine (see figs. 1 and 2) if the name plate gets lost for any reason.

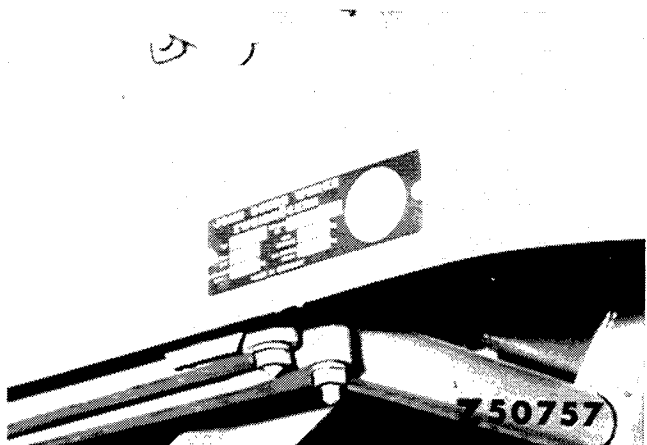


Fig. 1 — Serial Number Plate on Operator's Platform

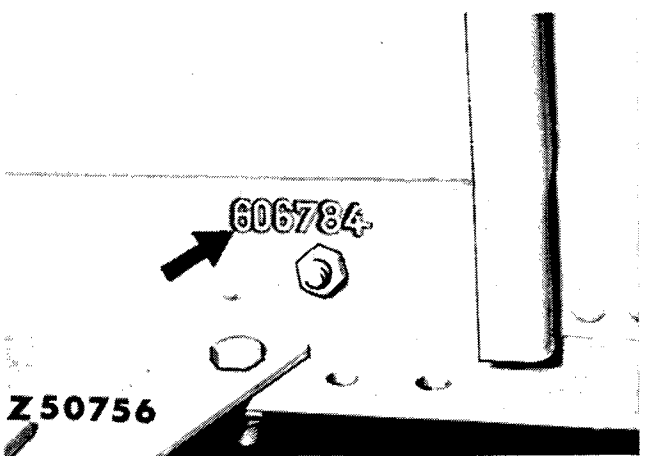


Fig. 2 — Serial Number Stamped into Angle Frame

The serial number of a John Deere engine is stamped into the name plate on the lower right of the cylinder block (see fig. 3).

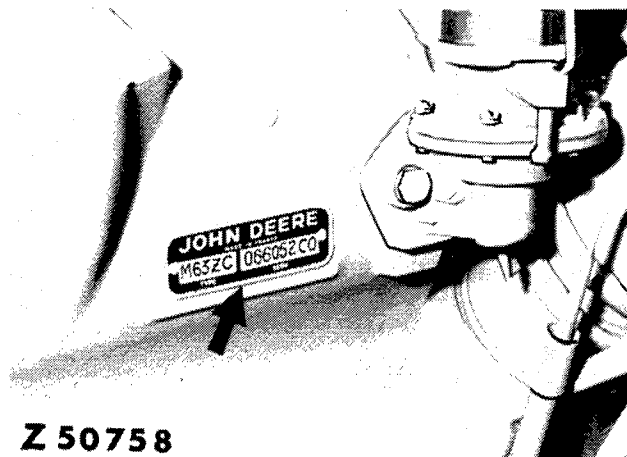


Fig. 3 — Engine Serial Number on a John Deere Engine

The serial number of a 6.354 Perkins engine is stamped into a level face on the injection pump drive housing at the left of the cylinder block (see fig. 4).

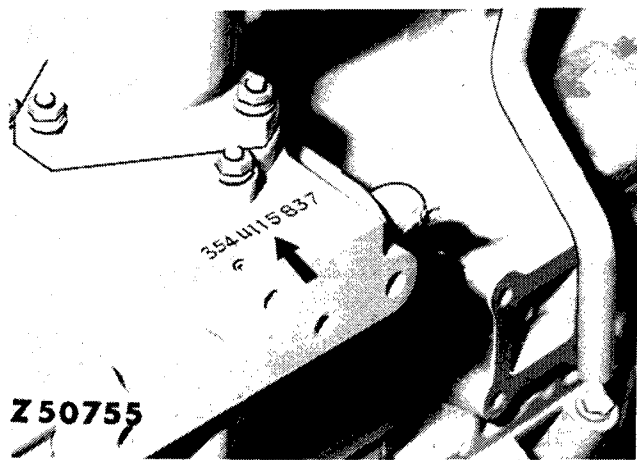


Fig. 4 — Serial Number Stamped into Perkins Engine

The serial number of the cutting platform is stamped into a plate on the outer right side panel of the platform (see fig. 5).

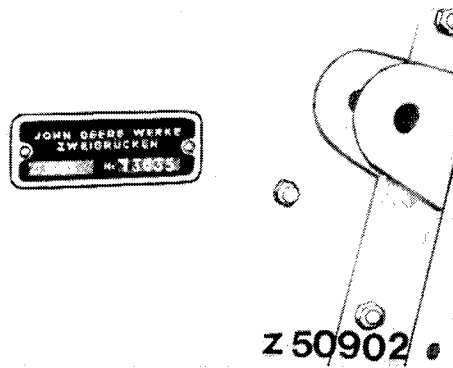


Fig. 5 — Serial Number of Cutting Platform

*NOTE: When ordering parts or making out a warranty claim, always state the serial numbers required as they are vital for proper parts delivery or processing of claims, resp.*

#### MODEL NUMBERS

The injection pump, injection nozzles, generator, starter and the main hydraulic pump have model numbers to facilitate identification of different makes of a given unit.

DESCRIPTION	360 Combine	330 Combine
	<b>SPECIFICATIONS</b>	
	<i>NOTE: Specifications of John Deere engines with small bore are marked "A".</i>	
	<i>Specifications of John Deere engines with large bore are marked "B".</i>	
<b>ENGINE</b>		
Make		John Deere
Model A		152 D 27 Z
B		164 D 27 Z
C		
Type		4-stroke
Injection procedure		Direct
Number of cylinders		3
Bore and stroke - in. (mm) A		3.86 x 4.33 (98x110)
B		4.02 x 4.33 (102x110)
Displacement - cu.in. (cm <sup>3</sup> ) A		152 (2490)
B		164 (2690)
Horsepower SAE-HP A	44 (power required)	45
B		52
DIN PS A	40 (power required)	42
B		48
Max. torque at 1350 rpm		110 ft.lbs. (15.2 mkg)
at 1400 rpm		126 ft.lbs. (17.4 mkg)
Rated engine speed		2500 rpm
Slow idle		1280 rpm
Fast idle		2675 rpm
Compression ratio		16.7 : 1
Compression at starter speed, min.		308.5 psi (21 kg/cm <sup>3</sup> )
Permissible compression differential among cylinders		49.8 psi (3.5 kg/cm <sup>3</sup> )
Max. gas leakage at rated speed (A and B) m <sup>3</sup> /h (cu.ft./h)		1,415 (50)
Valve clearance (hot or cold)		
- intake valve in. (mm)		0.014 (0.35)
- outlet valve in. (mm)		0.018 (0.45)

Combine 430	Combine 530	Combine 630	Combine 730
<p><i>Specifications for Perkins engines are marked by a "C". For all specifications not given in this manual see Perkins Manual on 6.354 engine.</i></p>			
John Deere	John Deere	John Deere	John Deere
202 D 26 Z 219 D 26 Z	202 D 24 Z 219 D 24 Z	303 D 30 Z 329 D 30 Z 6.354 Perkins	329 D 38 Z 6.354 Perkins
4-stroke	4-stroke	4-stroke	4-stroke
Direct	Direct	Direct	Direct
4	4	6	6
3.86 x 4.33 (98 x 110) 4.02 x 4.22 (102 x 110)	3.86 x 4.33 (98 x 110) 4.02 x 4.33 (102 x 110)	3.86 x 4.33 (98x110) 4.02 x 4.33 (102 x 110)	4.02 x 4.33 (102 x 110)
202 (3310) 219 (3590)	202 (3310) 219 (3590)	303 (4980) 329 (5390)	329 (5390)
59 67	68 75	88 95	105
62 70	74 81	95 101	111
149 lb.ft./1500 rpm (20.6 mkg/1500 U/min)	153 lb.ft./1500 rpm (21.2 mkg/1500 U/min)	230 lb.ft./1300 rpm (31.8 mkg/1300 U/min)	257 lb.ft./1300 rpm (35,5 mkg/1300 U/min)
168 lb.ft./1500 rpm (23,2 mkg/1500 U/min)	172 lb.ft./1500 rpm (23.7 mkg/1500 U/min)		
2500 rpm	2800 rpm	2500 rpm	2500 rpm
1000 rpm	1000 rpm	1000 rpm	1000 rpm
2675 rpm	2975 rpm	2675 rpm	2675 rpm
16,7 : 1	16,7 : 1	16,7 : 1	16,7 : 1
308.5 psi (21 kg/cm <sup>2</sup> )	308.5 psi (21 kg/cm <sup>2</sup> )	308.5 psi (21 kg/cm <sup>2</sup> )	355.5 psi (25 kg/cm <sup>2</sup> )
49.8 psi (3.5 kg/cm <sup>2</sup> )	49.8 psi (3.5 kg/cm <sup>2</sup> )	49.8 psi (3.5 kg/cm <sup>2</sup> )	49.8 psi (3.5 kg/cm <sup>2</sup> )
1,982 (70)	1,982 (70)	2,800 (99)	2,800 (99)
0.014 (0.35) 0.018 (0.45)	0.014 (0.35) 0.018 (0.45)	0.014 (0.35) 0.018 (0.45)	0.014 (0.35) 0.018 (0.45)

DESCRIPTION	Combine 360	Combine 330
Lubrication		Pressure lubrication system with full-flow filter
Oil pressure at 800 rpm		15 psi (1.5 kg/cm <sup>2</sup> )
Oil pressure at 2500 rpm		49.8 - 59.7 psi (3.5 - 4.2 kg/cm <sup>2</sup> )
Crankcase capacity		1.25 Imp. (1.5 US) Gals. (5.7 lit.)
Cooling system		Thermostat-controlled water cooling with circulation pump
Injection Pump Model		A) Roosa Master 1. DBGFC 331.2 DH  A) Roto Diesel DPA-R 3232898 (X) DPA-R 3432050 (A)  B) Roto Diesel DPA-R 3432190 E
Injection timing		max. 8°
Firing order		1 - 2 - 3
Injection nozzle		Roosa Master pencil-type
<b>CUTTER BAR</b>		
Width of cut	7'0" (2.20 m) 7'9" (2.45 m) 10" (3.04 m)	7' (2.20 m) 7'9" (2.45 m) 8.5' (2.60 m) 10' (3.04 m)
<b>KNIFE</b>		
Type of sections - standard	Heavy-duty over-serrated	Heavy-duty over-serrated
- optional (from 8.5' onward)	smooth	smooth
Drive type	Bell crank	Bell crank
Speed frequency	510 strokes/min.	510 strokes/min.
<b>REEL</b>		
Type	a) Spring tine reel b) Slat reel	a) Spring tine reel b) Slat reel
Dia. of spring tine reel	43.2" (1100 mm)	43.2" (1100 mm)
Dia. of slat reel	up to max. 39.8" (1010 mm)	up to max. 39.8" (1010 mm)



Combine 430	Combine 530	Combine 630	Combine 730
Pressure lubrication with full-flow filter	Pressure lubrication with full-flow filter	Pressure lubrication with full-flow filter	Pressure lubrication with full-flow filter
15 psi (1.5 kg/cm <sup>2</sup> )	15 psi (1.5 kg/cm <sup>2</sup> )	15 psi (1.5 kg/cm <sup>2</sup> )	15 psi (1.5 kg/cm <sup>2</sup> )
49.8 - 59.7 psi (3.5 - 4.2 kg/cm <sup>2</sup> )	49.8 - 59.7 psi (3.5 - 4.2 kg/cm <sup>2</sup> )	49.8 - 59.7 psi (3.5 - 4.2 kg/cm <sup>2</sup> )	49.8 - 59.7 psi (3.5 - 4.2 kg/cm <sup>2</sup> )
125 Imp.Gals. (5.7 ltr. - 1.5 US Gals)	1.25 Imp.Gals (5,7 ltr. - 1.5 US. Gals)	2.13 Imp.Gals. (9.7 ltr. - 2.56 US Gals)	2,13 Imp.Gals. (9,7 ltr. - 2.56 US.Gals)
Thermostat-controlled water cooling with circulation pump	Thermostat-controlled water cooling with circulation pump	Thermostat-controlled water cooling with circulation pump	Thermostat-controlled water cooling with circulation pump
A) Roosa Master 1. DBGFC 431.2 DH	A) Roosa Master 1. DBGFC 431.7 DH	A) Roosa Master CDC 633 18 DG	B) Roosa Master CDC 633 29 DG
A) Roto Diesel DPA R 3248180 (X) DPA R 3442400 (A)	A) Roto Diesel DPA-R 3248330 (X) DPA-R 3442420 (A)	B) Roosa Master CBC 633-x 11 AL	
B) Roosa Master CBC 431-x 4 AL	B) Roto Diesel DPA-R 3442520	B) Roto Diesel DPA-R 3262080	B) Roosa Master CBC-X 14 AL
B) Roto Diesel DPA-R 3442510		B) Roto Diesel DPA-R 3462240 (from engine No.074585 CD)	
max. 8 <sup>0</sup> max. 7 <sup>0</sup> *	max. 8 <sup>0</sup>	max. 8 <sup>0</sup>	max. 8 <sup>0</sup>
1 - 3 - 4 - 2	1 - 3 - 4 - 2	1 - 5 - 3 - 6 - 2 - 4	1 - 5 - 3 - 6 - 2 - 4
Roosa Master pencil-type	Roosa Master pencil-type	Roosa Master pencil-type	Roosa Master pencil-type
7' (2,20 m) 7'9" (2.45 m) 8,5' (2,60 m) 10' (3.04 m)	8,5' (2.60 m) 10' (3.04 m) 12' (3.65 m) 14' (4.25 m)	8,5' (2.60 m) 10' (3.04 m) 12' (3.65 m) 14' (4.25 m) 16' (4.87 m)	8,5' (2.60 m) 10' (3.04 m) 12' (3.65 m) 14' (4.25 m) 16' (4.87 m) 18' (5.48 m)
Heavy-duty overser-rated	Heavy-duty over-serrated	Heavy-duty over-serrated	Heavy-duty over-serrated
Smooth	Smooth	Smooth	Smooth
Bell crank	Bell crank	Bell crank	Bell crank
510 strokes/min.	510 strokes/min.	510 strokes/min.	510 strokes/min.
a) Spring tine reel b) Slat reel	a) Spring tine reel b) Spring tine reel	a) Spring tine reel b) Spring tine reel	a) Spring tine reel b) Spring tine reel
43.2" (1100 mm)	43.2" (1100 mm)	43.2" (1100 mm)	43.2" (1100 mm)
up to max. 39.8" (1010 mm)	up to max. 39.8" (1010 mm)	up to max. 39.8" (1010 mm)	up to max. 39.8" (1010 mm)

\* with Roosa Master model CB injection pump

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