SERVICE MANUAL

CR9090

EU built combine for NA - Series [1940 -] /

CX8080 Elevation / CX8090 Elevation

Tier 4A

Combine

Part number 47695751
1st edition English
March 2014

NEW HOLLAND AGRICULTURE

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INTRODUCTION

(*) See content for specific models

Foreword

CR Series Tier IV	NA
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IMPORTANT INFORMATION

All repair and maintenance works listed in this manual must be carried out only by staff belonging to the NEW HOLLAND Service network, strictly complying with the instructions given and using, whenever required, the special tools.

Anyone who carries out the above operations without complying with the prescriptions shall be responsible for the subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional or local dealers, reject any responsibility for damages due to the anomalous behavior of parts and/or components not approved by the manufacturer himself, including those used for the servicing or repair of the product manufactured or marketed by the Manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the Manufacturer in case of damages due to an anomalous behavior of parts and/or components not approved by the Manufacturer.

Basic instructions - How to use and navigate through this manual

CR Series Tier IV	NA
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Technical Information

This manual has been produced by a new technical information system. This new system is designed to deliver technical information electronically through Web delivery (eTim), DVD and in paper manuals. A coding system called SAP has been developed to link the technical information to other Product Support functions, e.g., Warranty.

Technical information is written to support the maintenance and service of the functions or systems on a customer's machine. When a customer has a concern on his machine it is usually because a function or system on his machine is not working at all, is not working efficiently, or is not responding correctly to his commands. When you refer to the technical information in this manual to resolve that customer's concern, you will find all the information classified using the SAP coding, according to the functions or systems on that machine. Once you have located the technical information for that function or system then you will find all the mechanical, electrical or hydraulic devices, components, assemblies and sub assemblies for that function or system. You will also find all the types of information that have been written for that function or system, the technical data (specifications), the functional data (how it works), the diagnostic data (fault codes and troubleshooting) and the service data (remove, install adjust, etc.).

By integrating SAP coding into technical information, you will be able to search and retrieve just the right piece of technical information you need to resolve that customer's concern on his machine. This is made possible by attaching 3 categories to each piece of technical information during the authoring process.

The first category is the Location, the second category is the Information Type and the third category is the Product:

- LOCATION - is the component or function on the machine, that the piece of technical information is going to describe e.g. Fuel tank.
- INFORMATION TYPE - is the piece of technical information that has been written for a particular component or function on the machine e.g. Capacity would be a type of Technical Data that would describe the amount of fuel held by the Fuel tank.
- PRODUCT - is the model for which the piece of technical information is written.

Every piece of technical information will have those 3 categories attached to it. You will be able to use any combination of those categories to find the right piece of technical information you need to resolve that customer's concern on his machine.

That information could be:

- the description of how to remove the cylinder head
- a table of specifications for a hydraulic pump
- a fault code
- a troubleshooting table
- a special tool

How to use this manual

This manual is divided into Sections. Each Section is then divided into Chapters. Contents pages are included at the beginning of the manual, then inside every Section and inside every Chapter. An alphabetical Index is included at the end of a Chapter. Page number references are included for every piece of technical information listed in the Chapter Contents or Chapter Index.

Each Chapter is divided into four Information types:

- Technical Data (specifications) for all the mechanical, electrical or hydraulic devices, components and, assemblies.
- Functional Data (how it works) for all the mechanical, electrical or hydraulic devices, components and assemblies.
- Diagnostic Data (fault codes, electrical and hydraulic troubleshooting) for all the mechanical, electrical or hydraulic devices, components and assemblies.
- Service Data (remove disassembly, assemble, install) for all the mechanical, electrical or hydraulic devices, components and assemblies.

Sections

Sections are grouped according to the main functions or a systems on the machine. Each Section is identified by a number 00, 35, 55, etc. The amount of Sections included in the manual will depend on the type and function of the machine that the manual is written for. Each Section has a Contents page listed in alphabetic/numeric order. This table illustrates which Sections could be included in a manual for a particular product.

	PRODUCT					
	Tractors					
		Vehicles with working arms: backhoes, excavators, skid steers, ….				
			Combines, forage harvesters, balers, ….			
				Seeding, planting, floating, spraying equipment, ….		
SECTION					Mounted equipment and tools, ….	
00 - Maintenance						
05 - Machine completion and equipment						
10 - Engine						
14 - Main gearbox and drive						
18 - Clutch						
21 - Transmission						
23 - Four wheel drive system						
25 - Front axle system						
27 - Rear axle system						
29 - Hydrostatic drive						
31 - Implement power take-off						
33 - Brakes and controls						
35 - Hydraulic systems						
36 - Pneumatic system						
37 - Hitches, drawbars and implement couplings						
39 - Frames and ballasting						
41 - Steering						
44 - Wheels						
46 - Steering clutches						
48 - Tracks and track suspension						
50 - Cab climate control						
55 - Electrical systems						
56 - Grape harvester shaking						
58 - Attachments/headers						
60 - Product feeding						
61 - Metering system						
62 - Pressing - Bale formation						

63 - Chemical applicators					
64 - Chopping					
66 - Threshing					
68 - Tying/Wrapping/Twisting					
69 - Bale wagons					
70 - Ejection					
71 - Lubrication system					
72 - Separation					
73 - Residue handling					
74 - Cleaning					
75 - Soil preparation/Finishing					
76 - Secondary cleaning / Destemmer					
77 - Seeding					
78 - Spraying					
79 - Planting					
80 - Crop storage / Unloading					
82 - Front loader and bucket					
83 - Telescopic single arm					
84 - Booms, dippers and buckets					
86 - Dozer blade and arm					
88 - Accessories					
89 - Tools					
90 - Platform, cab, bodywork and decals					

Section Contents

Section	Number	Description
Maintenance	00	
Machine completion and equipment	05	
Engine	10	
Main gearbox and drive	14	
Clutch	18	
Transmission	21	
Four wheel drive system	23	
Front axle system	25	
Rear axle system	27	
Hydrostatic drive	29	
Implement power take-off	31	
Brakes and controls	33	
Hydraulic systems	35	This Section covers the central parts of the hydraulic system. The components that are dedicated to a specific function are listed in the Chapter where all the technical information for that function is included.
Pneumatic system	36	This Section covers the pneumatic system. The components that are dedicated to a specific function are listed in the Chapter where all the technical information for that function is included.
Hitches, drawbars and implement couplings	37	
Frames and ballasting	39	
Steering	41	
Wheels	44	
Steering clutches	46	
Tracks and track suspension	48	
Cab climate control	50	
Electrical systems	55	The Section covers the central parts of the electrical, electronic, and lighting systems. The components that are dedicated to a specific function are listed in the Chapter where all the technical information for that function is included.
Grape harvester shaking	56	
Attachments/headers	58	
Product feeding	60	
Metering system	61	
Pressing - Bale formation	62	
Chemical applicators	63	
Chopping	64	
Threshing	66	
Tying/Wrapping/Twisting	68	
Bale wagons	69	
Ejection	70	
Lubrication system	71	
Separation	72	
Residue handling	73	
Cleaning	74	
Soil preparation/Finishing	75	
Secondary cleaning / Destemmer	76	
Seeding	77	
Spraying	78	
Planting	79	
Crop storage / Unloading	80	
Front loader and bucket	82	

Section	Number	Description
Telescopic single arm	83	
Booms, dippers and buckets	84	
Dozer blade and arm	86	
Accessories	88	
Tools	89	
Platform, cab, bodywork and decals	90	This Section covers all the main functions and systems related to the body of the machine, including the operators cab and the platform.

Chapters

Each Chapter is identified by a number e.g. Hydraulic systems - Main control valve - 35.359. The first number is identical to the Section number i.e. Chapter 35.359 is inside Section 35, Hydraulic systems. The second number is representative of the Chapter contained within the Section.

CONTENTS

The Chapter Contents lists all the technical data (specifications), functional data (how it works), service data (remove, install adjust, etc..) and diagnostic data (fault codes and troubleshooting) that have been written in that Chapter for that function or system on the machine.

Contents

ENGINE

ENGINE - Engine and crankcase – 10.001

TECHNICAL DATA

ENGINE - Engine and crankcase - General specification (10.001 - D.40.A.10)

FUNCTIONAL DATA

ENGINE - Engine and crankcase - Dynamic description (10.001 - C.30.A.10)

SERVICE

ENGINE - Engine and crankcase - Remove (10.001 -F.10.A.10)

DIAGNOSTIC

ENGINE - Engine and crankcase - Troubleshooting (10.001 - G.40.A.10)

INDEX

The Chapter Index lists in alphabetical order all the types of information (called Information Units) that have been written in that Chapter for that function or system on the machine.

Index

ENGINE - 10

ENGINE

ENGINE - Engine and crankcase - Dynamic description (10.001 - C.30.A.10)

ENGINE - Engine and crankcase - General specification (10.001 - D.40.A.10)

ENGINE - Engine and crankcase - Remove (10.001 -F.10.A.10)

ENGINE - Engine and crankcase - Troubleshooting (10.001 - G.40.A.10)

Information Units and Information Search

Each chapter is composed of information units. Each information unit has the SAP code shown in parentheses which indicates the function and the type of information written in that information unit. Each information unit has a page reference within that Chapter. The information units provide a quick and easy way to find just the right piece of technical information you are looking for.

Example information unit	Engine oil pan- Sectional View (10.102AP - C.10.A.30)				
Information Unit SAP code	10	102	AP	C	10.A.30
SAP code classification	Engine	Pan and covers	Engine oil pan	Functional data	Sectional view

Page Header and Footer

The page header will contain the following references:

- Section and Chapter description

The page footer will contain the following references:

- Publication number for that Manual, Section or Chapter.
- Version reference for that publication.
- Publication date
- Section, chapter and page reference e.g. 10.102 / 9

Note to the Owner

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Engine repair information:

The engine repair information is not contained within this manual.
For engine repair information, please refer to the respective Service Manual for the engine type used in your vehicle.

Fault Code Resolution (FCR) information:

The FCR information is not contained within the paper version of the manual.
For FCR information, please refer to the Electronic Service Tool (EST) or the electronic version of this manual.

Electronic Service Tool (EST) information:

The EST information and how to handle Control Modules (CM) (e.g.: resetting of the CM, etc.) is not contained within this manual.
For EST information, please refer to the Electronic Service Tool User's Guide.

Foreword

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Soil, air, and water are vital factors of agriculture and life in general. When legislation does not yet rule the treatment of some of the substances required by advanced technology, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

NOTE: *The following are recommendations that may be of assistance:*

- Become acquainted with and ensure that you understand the relative legislation applicable to your country.
- Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, antifreeze, cleaning agents, etc., with regard to their effect on man and nature and how to safely store, use, and dispose of these substances.
- Agricultural consultants will, in many cases, be able to help you as well.

Helpful hints

- Avoid filling tanks using cans or inappropriate pressurized fuel delivery systems that may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when draining off used engine coolant mixtures, engine, gearbox and hydraulic oils, brake fluids, etc. Do not mix drained brake fluids or fuels with lubricants. Store them safely until they can be disposed of in a proper way to comply with local legislation and available resources.
- Modern coolant mixtures, i.e. antifreeze and other additives, should be replaced every two years. They should not be allowed to get into the soil, but should be collected and disposed of properly.
- Do not open the air-conditioning system yourself. It contains gases that should not be released into the atmosphere. Your NEW HOLLAND dealer or air conditioning specialist has a special extractor for this purpose and will have to recharge the system properly.
- Repair any leaks or defects in the engine cooling or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
- Protect hoses during welding as penetrating weld splatter may burn a hole or weaken them, allowing the loss of oils, coolant, etc.

Safety rules

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PRECAUTIONARY STATEMENTS
Personal Safety

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Throughout this manual and on machine decals, you will find precautionary statements ("DANGER", "WARNING", and "CAUTION") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.

⚠ DANGER ⚠

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

M1169A

⚠ WARNING ⚠

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.

M1170A

⚠ CAUTION ⚠

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with Caution is YELLOW.

M1171A

FAILURE TO FOLLOW "DANGER", "WARNING", AND "CAUTION" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY, DAMAGE TO HEALTH OR DEATH.

NOTICE: *Install new decals if the old decals are destroyed, lost painted over or cannot be read. When parts are replaced that have decals make sure you install a new decal with each new part.*

MACHINE SAFETY

NOTICE: *The word "notice" is used to inform the reader of something they need to know to prevent minor machine damage if a certain procedure is not followed.*

The precautionary statements ("Important") is followed by specific instructions. This statement is intended for machine safety.

INFORMATION

NOTE: *Instructions used to identify and present supplementary information.*

LEGAL OBLIGATIONS

This machine may be equipped with special guarding or other devices in compliance with local legislation. Some to these require active use by the operator. Therefor, check local legislations on the usage of this machine.