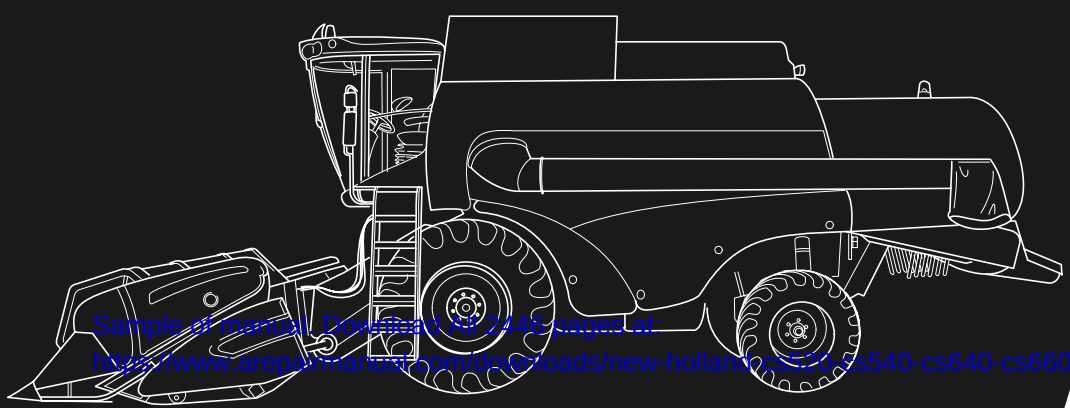
REPAIR MANUAL

NEW HOLLAND
CS520
CS540
CS640
CS660
CL560



NEW HOLLAND

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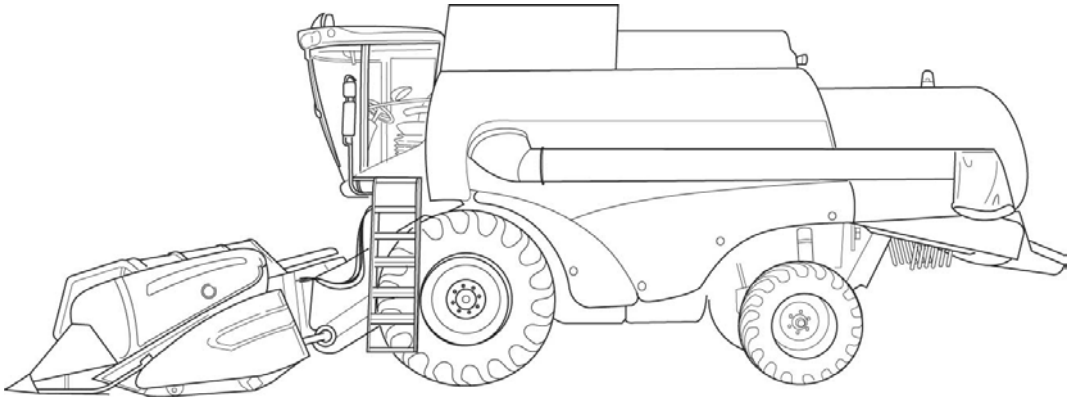


CL560
CS520
CS540
CS640
CS660

Contents

INTRODUCTION

Contents

INTRODUCTION

Foreword (- A.10.A.40)

CS540, CS640, CS520, CS660, CL560

Technical Information

This manual has been produced by a new technical information system. This new system is designed to deliver technical information electronically through CDROM and in paper manuals. A coding system called ICE 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 customers 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 customers concern, you will find all the information classified using the new ICE 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 this new ICE coding into technical information , you will be able to search and retrieve just the right piece of technical information you need to resolve that customers 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 that the piece of technical information is written for.

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 customers 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 letter A, B, C 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.

	SECTION										
	A - Distribution Systems										
		B - Power Production									
			C - Power Train								
				D - Travelling							
					E - Body and Structure						
						F - Frame Positioning					
							G - Tool Positioning				
								H - Working Arm			
									J - Tools and Couplers		
										K - Crop Processing	
											L - Field Processing
PRODUCT											
Tractors	X	X	X	X	X	X		X	X		
Vehicles with working arms: backhoes, excavators, skid steers, ...	X	X	X	X	X	X	X	X	X		
Combines, forage harvesters, balers, ...	X	X	X	X	X	X	X	X	X	X	
Seeding, planting, floating, spraying equipment, ...	X	X	X	X	X	X	X		X		X
Mounted equipment and tools, ...					X	X	X		X		

This manual contains these Sections. The contents of each Section are explained over the following pages.

Contents

Section Contents

SECTION A, DISTRIBUTION SYSTEMS
This Section covers the main systems that interact with most of the functions of the product. It includes the central parts of the hydraulic, electrical, electronic, pneumatic, lighting and grease lubrication 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.

SECTION B, POWER PRODUCTION
This Section covers all the functions related to the production of power to move the machine and to drive various devices.

SECTION C, POWER TRAIN
This Section covers all the functions related to the transmission of power from the engine to the axles and to internal or external devices and additional Process Drive functions.

SECTION D, TRAVELLING
This Section covers all the functions related to moving the machine, including tracks, wheels, steering and braking. It covers all the axles both driven axles and non-driven axles, including any axle suspension.

SECTION E, BODY AND STRUCTURE
This Section covers all the main functions and systems related to the structure and body of the machine. Including the frame, the shields, the operator’s cab and the platform.

SECTION G, TOOL POSITIONING
This Section covers all the functions related to the final and/or automatic positioning of the tool once the tool is positioned using the Working Arm or the machine frame.

SECTION K, CROP PROCESSING
This Section covers all the functions related to crop processing.

Chapters

Each Chapter is identified by a letter and number combination e.g. Engine B.10.A The first letter is identical to the Section letter i.e. Chapter B.10 is inside Section B, Power Production.
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

POWER PRODUCTION
ENGINE _ 10.A

TECHNICAL DATA
ENGINE - General specification (B.10.A - D.40.A.10)
CS540
FUNCTIONAL DATA

ENGINE - Dynamic description (B.10.A - C.30.A.10)
CS540
SERVICE
ENGINE - Remove (B.10.A - F.10.A.10)
CS540
DIAGNOSTIC
ENGINE - Troubleshooting (B.10.A - G.40.A.10)
CS540

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

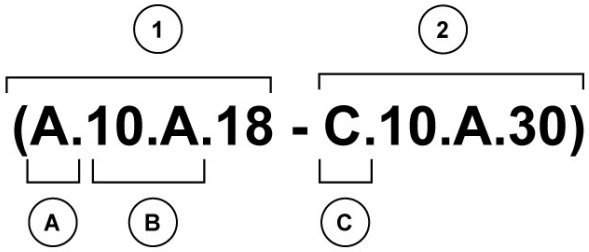
POWER PRODUCTION - B
ENGINE

ENGINE - Dynamic description (B.10.A - C.30.A.10)
CS540
ENGINE - General specification (B.10.A - D.40.A.10)
CS540
ENGINE - Remove (B.10.A - F.10.A.10)
CS540
ENGINE - Troubleshooting (B.10.A - G.40.A.10)
CS540

Information Units and Information Search

Each chapter is composed of information units. Each information unit has the ICE 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	Stack valve - Sectional View (A.10.A.18 - C.10.A.30)				
Information Unit ICE code	A	10.A	18	C	10.A.30
ICE code classification	Distribution systems	Primary hydraulic power	Stack valve	Functional data	Sectional view



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Navigate to the correct information unit you are searching for by identifying the function and information type from the ICE code.

- **(1)** Function and **(2)** Information type.
- **(A)** corresponds to the sections of the repair manual.
  (B) corresponds to the chapters of the repair manual.
  (C) corresponds to the type of information listed in the chapter contents, Technical data, Functional Data, Diagnostic or Service.
  (A) and **(B)** are also shown in the page numbering on the page footer.
  THE REST OF THE CODING IS NOT LISTED IN ALPHANUMERIC ORDER IN THIS MANUAL.
- You will find a table of contents at the beginning and end of each section and chapter.
  You will find an alphabetical index at the end of each chapter.
- By referring to **(A)**, **(B)** and **(C)** of the coding, you can follow the contents or index (page numbers) and quickly find the information you are looking for.

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. A.10.A / 9

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 behaviour 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 behaviour of parts and/or components not approved by the Manufacturer.

Safety rules (- A.50.A.10)

CS540, CS640, CS520, CS660, CL560

WARNING AND DANGER SYMBOL

This warning symbol points out important personal safety messages. Carefully read the following safety regulations and observe advised precautions in order to avoid potential hazards and safeguard your health and safety. In this manual the symbol is accompanied by the following key words:
WARNING - Warnings concerning unsuitable repair operations that may jeopardise the safety of Repair personnel.
DANGER - Specific warnings concerning potential hazards for operator safety or for other persons directly or indirectly involved.

ACCIDENT PREVENTION

Most accidents or injuries that occur in workshops are the result of non-observance of simple and fundamental safety regulations. For this reason, IN MOST CASES THESE ACCIDENTS CAN BE AVOIDED by foreseeing possible causes and consequently acting with the necessary caution and care.

Accidents may occur with all types of machine, regardless of how well the machine in question was designed and built.

A careful and judicious service technician is the best guarantee against accidents.

Precise observance of the most basic safety rule is normally sufficient to avoid many serious accident

⚠ **DANGER** ⚠

M871 - Shut down the machine, remove key, be sure all moving parts have stopped and all pressure in the systems is relieved before cleaning, adjusting or lubricating the equipment.

SAFETY RULES

General guidelines

- Carefully follow specified repair and maintenance procedures.
- Do not wear rings, wristwatches, jewellery, unbuttoned or loose articles of clothing such as: ties, torn clothing, scarves, open jackets or shirts with open zips that may remain entangled in moving parts. It is advised to wear approved safety clothing, e.g.: non-slip footwear, gloves, safety goggles, helmets, etc.
- Do not carry out repair operations with someone sitting in the driver’s seat, unless the person is a trained technician who is assisting with the operation in question.
- Do not operate the machine or use any of the implements from different positions, other than the driver’s seat.
- Do not carry out operations on the machine with the engine running, unless specifically indicated.
- Stop the engine and check that the hydraulic circuits are pressure-free before removing caps, covers, valves, etc.
- All repair and maintenance operations must be carried out using extreme care and attention.
- Service steps and platforms used in the workshop or elsewhere should be built according to standard accident prevention regulations.
- Disconnect the p.t.o. from the and label all controls to indicate that the machine is being serviced. Any parts that are to be raises must be locked in position.
- Brakes are inoperative when manually released for repair or maintenance purposes. Use blocks or similar devices to control the machine in these conditions.
- Only use specified towing points for towing the machine. Connect parts carefully. Make sure that all pins and/or locks are secured in position before applying traction. Never remain near the towing bars, cables or chains that are operating under load.

- When loading or unloading the machine from the trailer (or other means of transport), select a flat area capable of sustaining the trailer or truck wheels. Firmly secure the machine to the truck or trailer and lock the wheels in the position used by the carrier.
- Electric heaters, battery-chargers and similar equipment must only be powered by auxiliary power supplies with efficient ground insulation to avoid electrical shock hazards.
- Always use suitable hoisting or lifting devices when raising or moving heavy parts.
- Take extra care if bystanders are present.
- Never use gasoline, diesel oil or other inflammable liquids as cleaning agents. Use non-inflammable, non toxic commercially available solvents.
- Wear safety goggles with side guards when cleaning parts with compressed air.
- Reduce the air pressure according to the local regulations in force.
- Do not run the engine in confined spaces without suitable ventilation.
- Never use naked flames for lighting when working on the machine or checking for leaks.
- All movements must be carried out carefully when working under, on or near the machine. Wear protective equipment: helmets, goggles and special footwear.
- When carrying out checks with the engine running, request the assistance of an operator in the driver's seat. The operator must maintain visual contact with the service technician at all times.
- If operating outside the workshop, position the machine on a flat surface and lock in position. If working on a slope, lock the machine in position. Move to a flat area as soon as is safely possible.
- Damaged or bent chains or cables are unreliable. Do not use them for lifting or towing. Always use suitable protective gloves when handling chains or cables.
- Chains should always be safely secured. Make sure that the hitch-up point is capable of sustaining the load in question. Keep the area near the hitch-up point, chains or cables free of all bystanders.
- Maintenance and repair operations must be carried out in a CLEAN and DRY area. Eliminate any water or oil spillage immediately.
- Do not create piles of oil or grease-soaked rags as they represent a serious fire hazard. Always store rags in a closed metal container. Before engaging the machine, make sure that there are no persons within the machine or implement range of action.
- Empty your pockets of all objects that may fall accidentally unobserved into the machine inner compartments.
- In the presence of protruding metal parts, use protective goggles or goggles with side guards, helmets, special footwear and gloves.
- When welding, use protective safety devices: tinted safety goggles, helmets, special overalls, gloves and footwear. All persons present in the area where welding is taking place must wear tinted goggles. NEVER LOOK DIRECTLY AT THE WELDING ARC WITHOUT SUITABLE EYE PROTECTION.
- Metal cables tend to fray with repeated use. Always use suitable protective devices (gloves, goggles, etc.) when handling cables.
- Handle all parts carefully. Do not put your hands or fingers between moving parts. Wear suitable safety clothing - safety goggles, gloves and shoes.

Start-up

- Never run the engine in confined spaces that are not equipped with adequate ventilation for exhaust gas extraction.
- Never place the head, body, limbs, feet, hands or fingers near rotating and moving parts.

Hydraulic systems

- A liquid leaking from a tiny hole may be almost invisible but, at the same time, be powerful enough to penetrate the skin. Therefore, NEVER USE HANDS TO CHECK FOR LEAKS but use a piece of cardboard or wood for this purpose. If any liquid penetrates skin tissue, call for medical aid immediately. Failure to treat this condition with correct medical procedure may result in serious infection or dermatosis.
- In order to check the pressure in the system use suitable instruments.

Wheels and Tyres

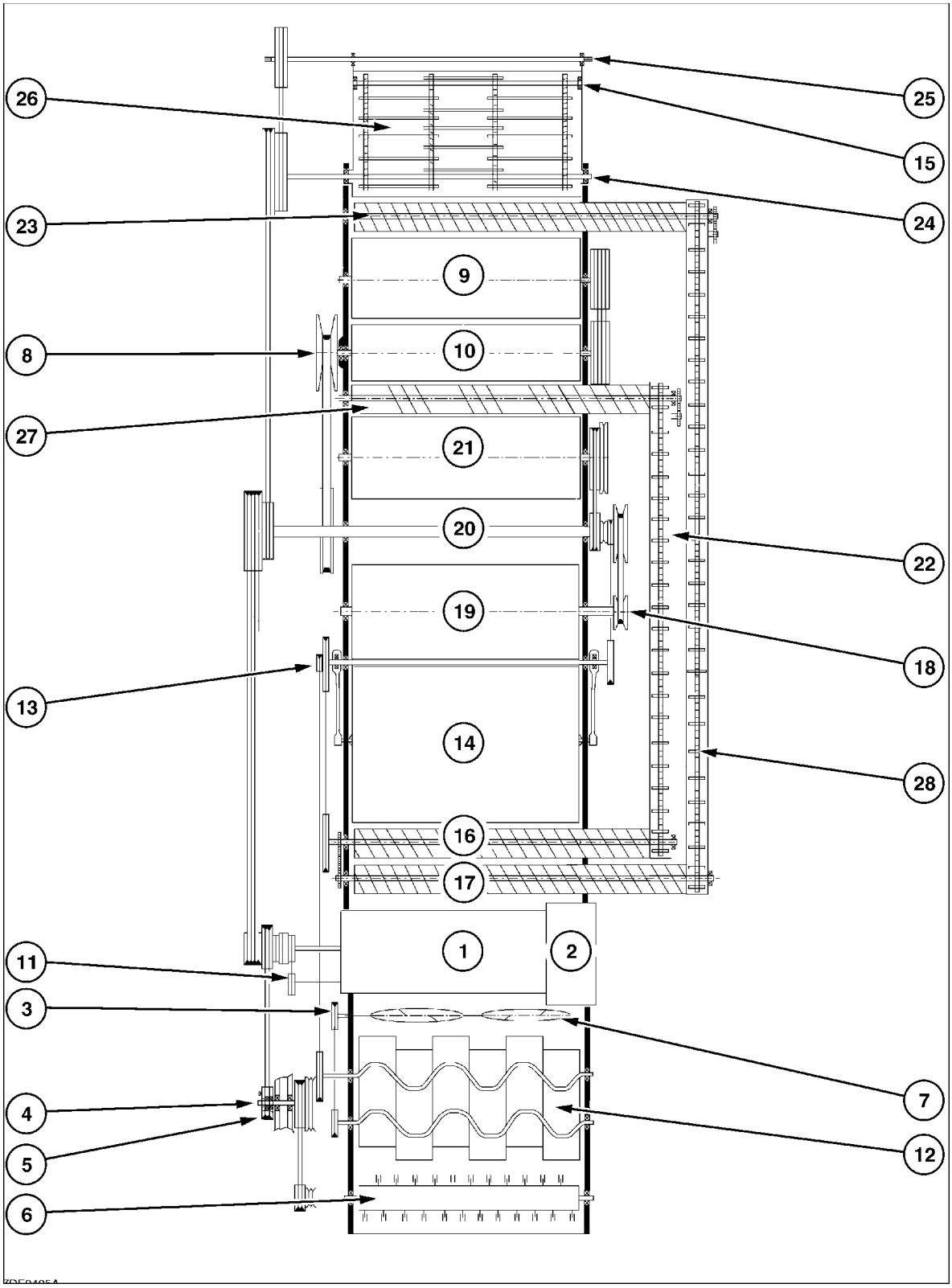
- Make sure that the tyres are correctly inflated at the pressure specified by the manufacturer. Periodically check the rims and tyres for damage.
- Stand away from (at the side of) the tyre when checking inflation pressure.
- Do not use parts of recovered wheels as incorrect welding brazing or heating may weaken and eventually cause damage to the wheel.
- Never cut or weld a rim mounted with an inflated tyre.
- To remove the wheels, lock all wheels. After having raised the machine, position supports underneath, according to regulations in force.
- Deflate the tyre before removing any objects that may be jammed in the tyre tread.
- Never inflate tyres using inflammable gases, as this may result in explosions and injury to bystanders.

Removal and Re-fitting

- Lift and handle all heavy parts using suitable hoisting equipment. Make sure that parts are sustained by appropriate hooks and slings. Use the hoisting eyebolts for lifting operations. Extra care should be taken if persons are present near the load to be lifted.
- Handle all parts carefully. Do not put your hands or fingers between parts. Wear suitable safety clothing - safety goggles, gloves and shoes.
- Avoid twisting chains or metal cables. Always wear safety gloves when handling cables or chains.

Driveline overview (- A.50.A.51)

CS540, CS640, CS520, CS660, CL560



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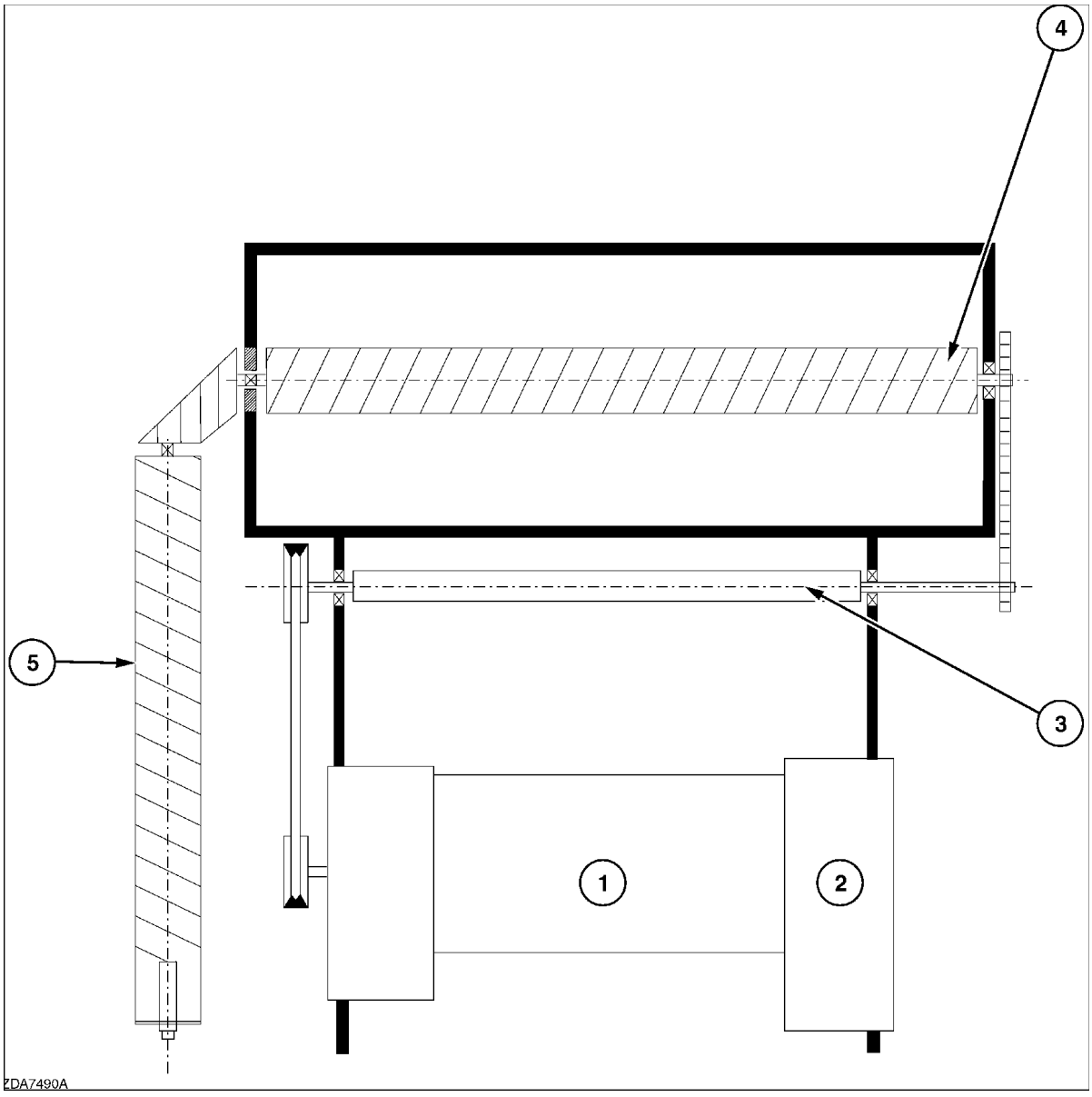
MAIN OUTPUT SHAFT

1. Engine
2. Rotary dust screen
3. Chaff spreader drive shaft (If installed)
4. Chopper intermediate drive shaft (If installed)
5. Chopper clutch (If installed)
6. Chopper (If installed)
7. Chaff spreader (If installed)
8. Drum variator
9. Drum
10. Beater
11. Hydraulic pump shaft
12. Straw walkers
13. Eccentric shaft
14. Shaker shoe
15. Straw elevator bottom shaft
16. Clean grain cross auger
17. Returns cross auger
18. Fan variator
19. Fan
20. Intermediate shaft
21. Rotary separator (If installed)
22. Grain elevator
23. Returns top auger
24. Straw elevator top shaft
25. Header drive shaft
26. Straw elevator chain
27. Grain tank filling auger
28. Returns elevator

UNLOADING OUTPUT SHAFT



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1. Engine
2. Rotary dust screen
3. Unloading intermediate drive shaft
4. Grain tank bottom auger
5. Unloading auger

Basic instructions (- A.90.A.05)

CS540, CS640, CS520, CS660, CL560

SHIMMING

For each adjustment operation, select adjusting shims and measure individually using a micrometer, then add up the recorded values. Do not rely on measuring the entire shimming set, which may be incorrect, or the rated value indicated on each shim.

ROTATING SHAFT SEALS

For correct rotating shaft seal installation, proceed as follows:

- before assembly, allow the seal to soak in the oil it will be sealing for at least thirty minutes
- thoroughly clean the shaft and check that the working surface on the shaft is not damaged
- position the sealing lip facing the fluid; with hydrodynamic lips, take into consideration the shaft rotation direction and position the grooves so that they will deviate the fluid towards the inner side of the seal
- coat the sealing lip with a thin layer of lubricant (use oil rather than grease) and fill the gap between the sealing lip and the dust lip on double lip seals with grease
- insert the seal in its seat and press down using a flat punch, do not tap the seal with a hammer or mallet
- whilst inserting the seal, check that it is perpendicular to the seat; once settled, make sure that it makes contact with the thrust element, if required
- to prevent damaging the seal lip on the shaft, position a protective guard during installation operations

O-RING SEALS

Lubricate the O-RING seals before inserting them in the seats, this will prevent them from overturning and twisting, which would jeopardise sealing efficiency.

SEALING COMPOUNDS

Apply one of the following sealing compounds on the mating surfaces marked with an X: RTV SILMATE, RHODORSIL CAF 1 or LOCTITE PLASTIC GASKET. Before applying the sealing compound, prepare the surfaces as follows:

- remove any incrustations using a metal brush;
- thoroughly de-grease the surfaces using one of the following cleaning agents: trichlorethylene, petrol or a water and soda solution.

COTTER PINS

When fitting split cotter pins, ensure that the pin notch is positioned in the direction of the force required to stress the pin. Spiral cotter pins do not require special positioning.

PROTECTING THE ELECTRONIC/ ELECTRICAL SYSTEMS DURING CHARGING OR WELDING

To avoid damage to the electronic/electrical systems, always observe the following:

1. Never make or break any of the charging circuit connections, including the battery connections, when the engine is running.
2. Never short any of the charging components to ground.
3. Always disconnect the ground cable from the battery before arc welding on the combine or on any header attached to the combine.
   - Position the welder ground clamp as close to the welding area as possible.
   - If welding in close proximity to a computer module, then the module should be removed from the combine.
   - Never allow welding cables to lay on, near or across any electrical wiring or electronic component while welding is in progress.
4. Always disconnect the negative cable from the battery when charging the battery in the combine with a battery charger.

IMPORTANT: *If welding must be performed on the unit, either the combine or the header (if it is attached), the battery ground cable must be disconnected from the combine battery. The electronic monitoring system and charging system will be damaged if this is not done.*

Remove the battery ground cable. Reconnect the cable when welding is completed.

⚠ WARNING ⚠

84-110 - Battery acid causes severe burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Antidote - EXTERNAL: flush with water. INTERNAL: drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetables oil. Call physician immediately. EYES: flush with water for 15 minutes and get prompt medical attention.

SPARE PARTS

Only use original NEW HOLLAND spare parts bearing the logo shown below.

geninfo_03 1

Only genuine spare parts guarantee the same quality, duration and safety as original parts, as they are the same parts that are assembled during standard production. Only NEW HOLLAND genuine spare parts can offer this guarantee. When ordering spare parts, always provide the following information:

- Machine model (commercial name) and serial number
- part number of the ordered part, which can be found in the "Microfiches" or the "Spare Parts Catalogue", used for order processing

TOOLS

The tools that NEW HOLLAND suggests and illustrate in this manual have been:

- specifically researched and designed for use with NEW HOLLAND machines
- essential for reliable repair operations
- accurately built and rigorously tested so as to offer efficient and long-lasting operation

By using these tools, Repair Personnel will benefit from:

- operating in optimal technical conditions
- obtaining the best results
- saving time and effort
- working in safe conditions

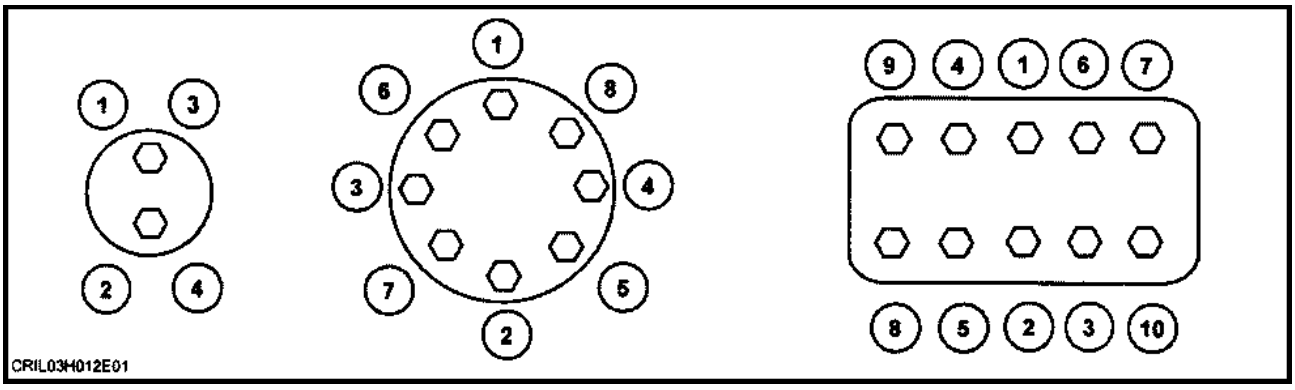
NOTE: *Wear limit values indicated for certain parts should be considered to be recommended, but not binding. The terms "front", "rear", "right-hand" and "left-hand" (when referred to different parts) are determined from the rear, facing in the direction of travel of the machine during operation.*

Torque (- A.90.A.10)

CS540, CS640, CS520, CS660, CL560

Minimum hardware tightening torques Nm lb ft lb in for normal assembly applications unless otherwise stated

IMPORTANT: *Shown below is the suggested initial torque tightening sequences for general applications, tighten in sequence from item 1 through to the last item of the hardware.*



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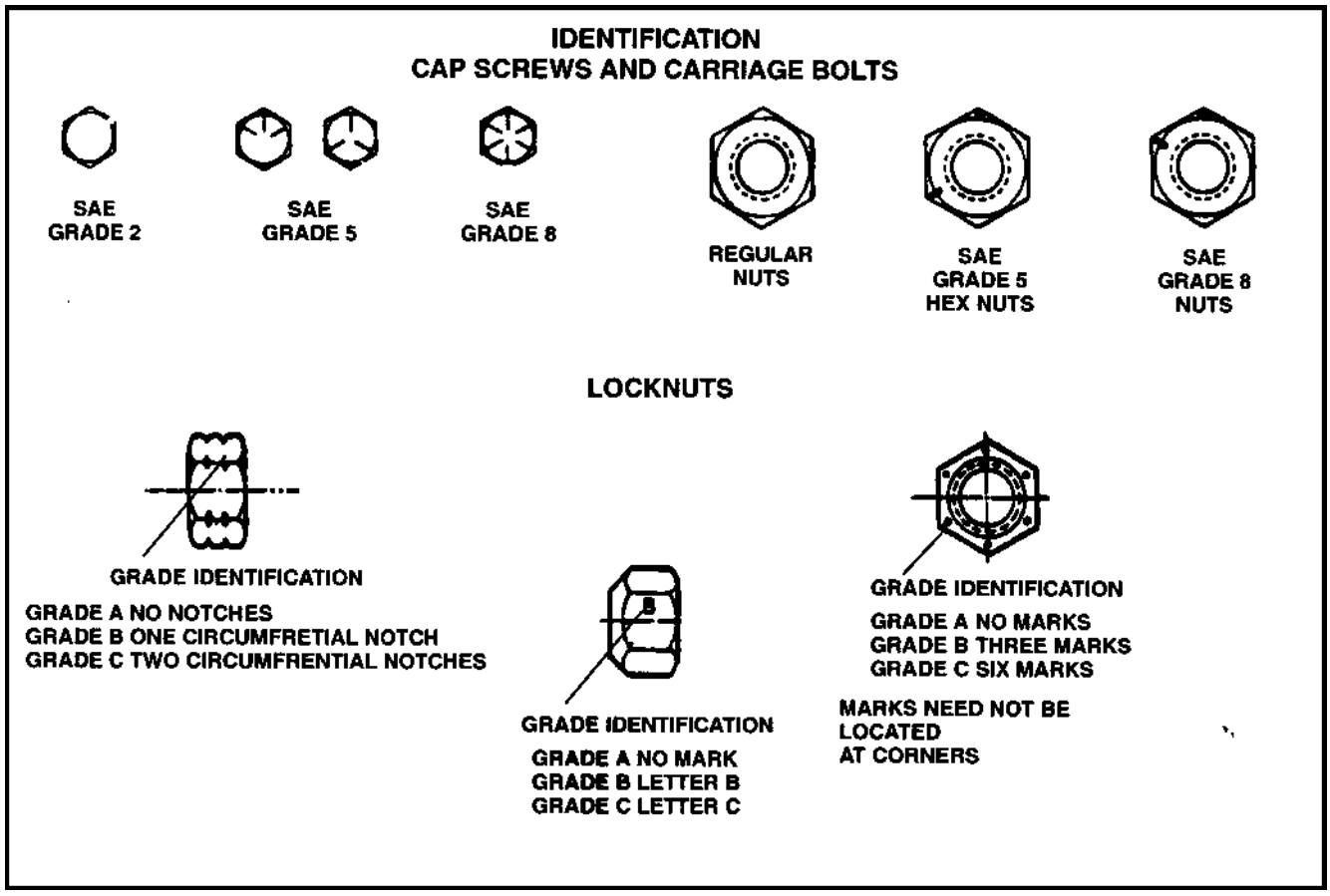
Imperial hardware

Nominal Size	SAE GRADE 2 Unplated or Silver plated	SAE GRADE 2 plated w/ZnCr GOLD	SAE GRADE 5 Unplated or Silver plated	SAE GRADE 5 plated w/ZnCr GOLD	SAE GRADE 8Unplated or Silver plated	SAE GRADE 8 plated w/ZnCr GOLD	LOCK-NUTS GR.B w/GR5 BOLT	LOCK-NUTS GR.B w/GR8 BOLT
1/4	**6.2 Nm 55 lb in**	**8.1 Nm 72 lb in**	**9.7 Nm 86 lb in**	**13 Nm 112 lb in**	**14 Nm 121 lb in**	**18 Nm 157 lb in**	**6.9 Nm 61 lb in**	**9.8 Nm 86 lb in**
5/16	**13 Nm 115 lb in**	**17 Nm 149 lb in**	**20 Nm 178 lb in**	**26 Nm 229 lb in**	**28 Nm 250 lb in**	**37 Nm 324 lb in**	**14 Nm 125 lb in**	**20 Nm 176 lb in**
3/8	**23 Nm 17 lb ft**	**30 Nm 22 lb ft**	**35 Nm 26 lb ft**	**46 Nm 34 lb ft**	**50 Nm 37 lb ft**	**65 Nm 48 lb ft**	**26 Nm 19 lb ft**	**35 Nm 26 lb ft**
7/16	**37 Nm 27 lb ft**	**47 Nm 35 lb ft**	**57 Nm 42 lb ft**	**73 Nm 54 lb ft**	**80 Nm 59 lb ft**	**104 Nm 77 lb ft**	**41 Nm 30 lb ft**	**57 Nm 42 lb ft**
1/2	**27 Nm 42 lb ft**	**73 Nm 54 lb ft**	**87 Nm 64 lb ft**	**113 Nm 83 lb ft**	**123 Nm 91 lb ft**	**159 Nm 117 lb ft**	**61 Nm 45 lb ft**	**88 Nm 64 lb ft**
9/16	**81 Nm 60 lb ft**	**104 Nm 77 lb ft**	**125 Nm 92 lb ft**	**163 Nm 120 lb ft**	**176 Nm 130 lb ft**	**229 Nm 169 lb ft**	**88 Nm 65 lb ft**	**125 Nm 92 lb ft**
5/8	**112 Nm 83 lb ft**	**145 Nm 107 lb ft**	**174 Nm 128 lb ft**	**224 Nm 165 lb ft**	**244 Nm 180 lb ft**	**316 Nm 233 lb ft**	**122 Nm 90 lb ft**	**172 Nm 127 lb ft**
3/4	**198 Nm 146 lb ft**	**256 Nm 189 lb ft**	**306 Nm 226 lb ft**	**397 Nm 293 lb ft**	**432 Nm 319 lb ft**	**560 Nm 413 lb ft**	**217 Nm 160 lb ft**	**305 Nm 226 lb ft**
7/8	**193 Nm 142 lb ft**	**248 Nm 183 lb ft**	**495 Nm 365 lb ft**	**641 Nm 473 lb ft**	**698 Nm 515 lb ft**	**904 Nm 667 lb ft**	**350 Nm 258 lb ft**	**494 Nm 364 lb ft**
1.0	**289 Nm 213 lb ft**	**373 Nm 275 lb ft**	**742 Nm 547 lb ft**	**960 Nm 708 lb ft**	**1048 Nm 773 lb ft**	**1356 Nm 1000 lb ft**	**523 Nm 386 lb ft**	**739 Nm 545 lb ft**

Metric hardware

Nominal Size	CLASS 5.8 UNPLATED	CLASS 5.8 UNPLATED	CLASS 8.8 UNPLATED	CLASS 8.8 UNPLATED	CLASS 10.9 UNPLATED	CLASS 10.9 UNPLATED	LOCKNUT CL.8 w/CL8.8 BOLT
M4	1.7 Nm 15 lb in	2.2 Nm 19 lb in	2.6 Nm 23 lb in	3.4 Nm 30 lb in	3.7 Nm 33 lb in	4.8 Nm 42 lb in	1.8 Nm 16 lb in
M6	5.8 Nm 51 lb in	7.6 Nm 67 lb in	8.9 Nm 79 lb in	12 Nm 102 lb in	13 Nm 115 lb in	17 Nm 150 lb in	6.3 Nm 56 lb in
M8	14 Nm 124 lb in	18 Nm 159 lb in	22 Nm 195 lb in	28 Nm 248 lb in	31 Nm 274 lb in	40 Nm 354 lb in	15 Nm 133 lb in
M10	28 Nm 21 lb ft	36 Nm 27 lb ft	43 Nm 32 lb ft	56 Nm 41 lb ft	61 Nm 45 lb ft	79 Nm 58 lb ft	30 Nm 22 lb ft
M12	49 Nm 36 lb ft	63 Nm 46 lb ft	75 Nm 55 lb ft	97 Nm 72 lb ft	107 Nm 79 lb ft	138 Nm 102 lb ft	53 Nm 39 lb ft
M16	121 Nm 89 lb ft	158 Nm 117 lb ft	186 Nm 137 lb ft	240 Nm 177 lb ft	266 Nm 196 lb ft	344 Nm 254 lb ft	131 Nm 97 lb ft
M20	237 Nm 175 lb ft	307 Nm 107 lb ft	375 Nm 277 lb ft	485 Nm 358 lb ft	519 Nm 383 lb ft	671 Nm 495 lb ft	265 Nm 195 lb ft
M24	411 Nm 303 lb ft	531 Nm 392 lb ft	648 Nm 478 lb ft	839 Nm 619 lb ft	897 Nm 662 lb ft	1160 Nm 855 lb ft	458 Nm 338 lb ft



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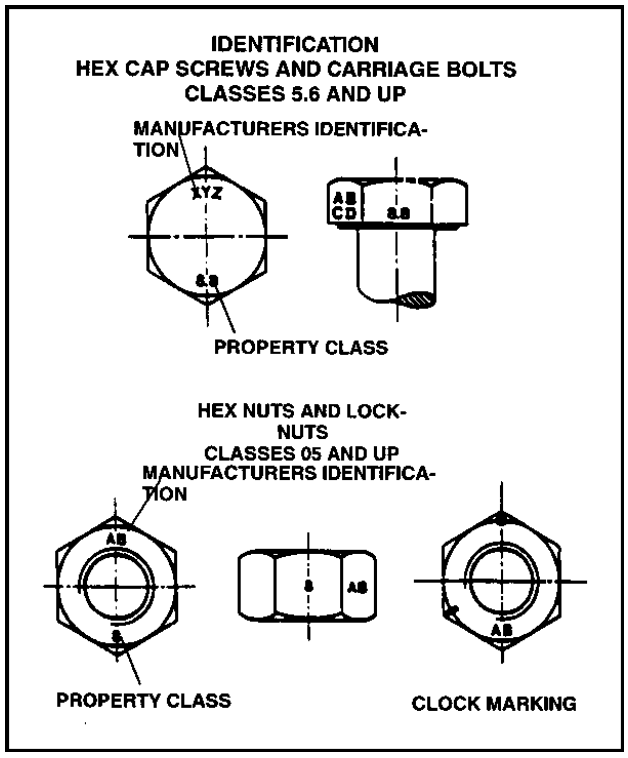
IDENTIFICATION
HEX CAP SCREWS AND CARRIAGE BOLTS
CLASSES 5.6 AND UP
MANUFACTURERS IDENTIFICA-
TION
XYZ
8.8
AB
CD
8.8
PROPERTY CLASS
HEX NUTS AND LOCK-
NUTS
CLASSES 05 AND UP
MANUFACTURERS IDENTIFICA-
TION
AB
8
AB
AB
PROPERTY CLASS
CLOCK MARKING

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Conversion factors (- A.92.A.21)

CS540, CS640, CS520, CS660, CL560

Linear

1 mm	=	0.03937 in	1 in	=	25.4 mm
1 Km	=	0.6214 miles	1 mile	=	1.6093 km
1 m	=	3.281 ft	1 ft	=	0.3048 m

Area

1 ha	=	2.471 acre	1 acre	=	0.4047 ha

Volume

1 liter	=	0.0063 barrel	1 barrel	=	158.987 liter
1 liter	=	0.028 US bushel	1 US bushel	=	35.2391 liter
1 liter	=	0.2642 US gal	1 US gal	=	3.7853 liter
1 liter	=	1.057 US quart	1 US quart	=	0.9464 liter
1 mm^3	=	0.061 in^3	1 in^3	=	16387 mm^3

Weight

1 kg	=	2.204 pound	1 pound	=	0.4536 kg

Torque

1 Nm	=	0.7376 lb.ft	1 lb.ft	=	1.3558 Nm

Power

1 kW	=	1.358 hp	1 hp	=	0.746 kW

Pressure

1 bar	=	14.505 psi	1 psi	=	0.06894 bar
1 kPa	=	0.145 psi	1 psi	=	6.894 kPa
1 pa	=	10 - 5 bar	1 bar	=	100 kPa

Temperature

1 °C	=	((1.8 x ° C) + 32) °F	1 °F	=	(0.56 x (° F - 32)) °C

Flow

1 L/min	=	0.2642 US gpm	1 US gpm	=	3.7853 L/min

Product identification (- A.80.A.10)

CS540, CS640, CS520, CS660, CL560

EXPLANATION OF MACHINE SERIAL NUMBERS

Example : n° 281368001

281368001: The first two digits identify the model within a product line:

CS520 = 24
CS540 = 28
CS640 = 29
CS660 = 27
CL560 = 36
28**1**368001: The third digit indicates the product line. There are 4 product lines in Zedelgem:

CX-CS-TX Combine harvesters:	1
Combine headers:	3
Balers:	4
Forage Harvesters:	5

281**368**001: These 3 digits indicate the batch in which the machine was made.

28**1368**001: Product line number **(1)** and batch **(368)** together form the series number (1368).

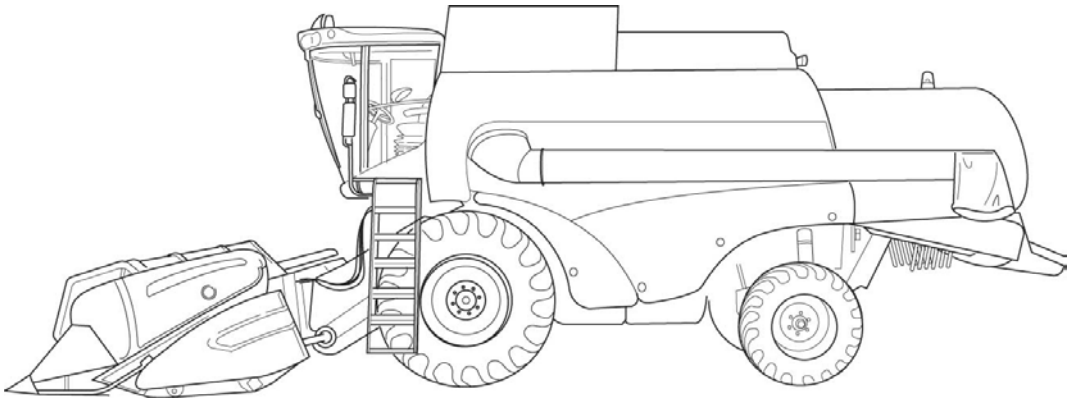
281368**001**: The last 3 digits are a sequential number for each model within a batch.

Summarizing we can say that this machine is the first CS540 of serie 1368.

NEW HOLLAND

REPAIR MANUAL

DISTRIBUTION SYSTEMS



CL560
CS520
CS540
CS640
CS660

Contents

DISTRIBUTION SYSTEMS - A

DISTRIBUTION SYSTEMS - A

PRIMARY HYDRAULIC POWER SYSTEM - 10.A

CL560
CS520
CS540
CS640
CS660

Contents

DISTRIBUTION SYSTEMS - A

PRIMARY HYDRAULIC POWER SYSTEM - 10.A