

# SERVICE MANUAL

**9090X / 9090X GE / 9090X H / 9090X O /  
9090X COFFEE / 9090X OLIVE PLUS /  
9090X OLIVE PLUS GE**  
Grape Harvester

**Part number 47914333**

1<sup>st</sup> edition English  
July 2015



# Link Product / Engine

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<b>Product</b>	<b>Market Product</b>	<b>Engine</b>
9090X	North America	F4HE9687
9090X COFFEE	North America	F4HE9687
9090X GE	North America	F4HE9687
9090X H	North America	F4HE9687
9090X O	North America	F4HE9687
9090X OLIVE PLUS	North America	F4HE9687
9090X OLIVE PLUS GE	North America	F4HE9687

# Contents

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## INTRODUCTION

Rear axle system .....	27
[27.100] Powered rear axle .....	27.1
Hydrostatic drive .....	29
[29.300] Rear hydrostatic transmission .....	29.1
[29.218] Pump and motor components .....	29.2
[29.202] Hydrostatic transmission .....	29.3
Brakes and controls .....	33
[33.202] Hydraulic service brakes .....	33.1
Hydraulic systems .....	35
[35.300] Reservoir, cooler, and filters .....	35.1
[35.610] Machine leveling control system .....	35.2
[35.000] Hydraulic systems .....	35.3
[35.736] Boom hydraulic system .....	35.4
[35.903] Shaking hydraulic system .....	35.5
[35.904] Cleaning hydraulic system .....	35.6
[35.930] Conveyor receiver system .....	35.7
[35.946] Frame positioning lifting .....	35.8
[35.952] Destemmer system .....	35.9
Frames and ballasting .....	39
[39.100] Frame .....	39.1
Steering .....	41
[41.101] Steering control .....	41.1
Electrical systems .....	55
[55.924] Cab fruit harvesting controls .....	55.1
[55.000] Electrical system .....	55.2

[55.100] Harnesses and connectors .....	55.3
[55.408] Warning indicators, alarms, and instruments .....	55.4
[55.425] Boom, dipper, and bucket control system .....	55.5
[55.930] Harvesting hopper control system .....	55.6
[55.DTC] FAULT CODES .....	55.7
<b>Fruit harvester shaking .....</b>	<b>56</b>
[56.300] Shaking frame .....	56.1
[56.301] Shaking control .....	56.2
[56.304] Connecting rods, front plates, and shakers .....	56.3
[56.305] Adjustable width system .....	56.4
<b>Cleaning .....</b>	<b>74</b>
[74.200] Upper extractors .....	74.1
[74.204] Lower extractors .....	74.2



# INTRODUCTION

# Contents

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## INTRODUCTION

Foreword (*) .....	3
Foreword (*) .....	4
Basic instructions (*) .....	8
Torque Hydraulic connectors (*) .....	11
Special tools (*) .....	13
Conversion factors (*) .....	19
Product identification (*) .....	20

(\*) See content for specific models

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## Foreword

9000 X	NA
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### IMPORTANT INFORMATION

All repair and maintenance operations described in this manual must be carried out exclusively by the New Holland Service network, strictly complying with the instructions provided and using specific tools as required.

Any operator who carries out the operations specified in this document without complying strictly with the instructions provided shall be personally liable for the damages that may result.

The manufacturer and all organizations in its distribution chain, including, without limitation, national, regional, and local dealers, do not accept any liability for damages resulting from a malfunction of parts and/or components not approved by the manufacturer and used for maintenance operations and/or repair of products manufactured or marketed by the manufacturer. In no case is a warranty granted to the product manufactured or marketed by the manufacturer in case of damage caused by improper operation of parts and/or components not approved by the manufacturer.

No reproduction, partial or complete, of the text or illustrations is permitted.

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## Foreword

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### Technical Information

This information in this manual has been structured using a unique coding environment. This is the way in which technical information is created, stored and retrieved in the Technical Information Database. The location (on the machine) has been coded using SAP coding to align locations with the warranty system.

The coding classifies all information in three ways.

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 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 letter number 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 numeric order. .

Section Number	Description
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
69	Bale wagons
70	Ejection
71	Lubrication system
72	Separation
73	Residue handling
74	Cleaning
75	Soil preparation
76	Secondary cleaning / Destemmer
77	Seeding
78	Spraying
79	Planting
80	Crop storage / Unloading
82	Front loader and bucket
84	Booms, dippers and buckets
86	Dozer blade and arm
88	Accessories
89	Tools
90	Platform, cab, bodywork and decals

This manual contains these sections.

	Contents
INTRODUCTION	
Engine	10
Rear axle system	27
Hydrostatic drive	29
Brakes and controls	33
Hydraulic systems	35
Frames and ballasting	39
Direction	41
Electrical systems	55
Grape harvester shaking	56
Product feeding	60
Cleaning	74
Secondary cleaning / Destemmer	76
Crop storage / Unloading	80
Accessories	88

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

### Section Contents

Engine — 10

Rear axle system — 27

Hydrostatic drive — 29

Brakes and controls — 33

Hydraulic systems — 35

Frames and ballasting — 39

Direction — 41

Electrical systems — 55

Grape harvester shaking — 56

Product feeding — 60

Cleaning — 74

Secondary cleaning / Destemmer — 76

Crop storage / Unloading — 80

Accessories — 88

### Chapters

Each Chapter is identified by a number. e.g., Shaking control 56.301. The first number is identical to the Section number i.e. Chapter 56.301 is inside Section 56, Grape harvester shaking. 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.

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.

## **Information Units and Information Search**

Each chapter is composed of information units. The coding is not included in the Information Unit title.

### **Page Header and Footer**

The page header will contain the following references:

- Section and Chapter description

The page footer will contain the following references.

Printed references found at the base of each page then equate to

- The publication number for that Manual, Section or Chapter
- Version Reference
- Publication date
- Section , chapter and page reference e.g., 56.301 / 4

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## Basic instructions

9000 X

NA

### SHIMMING

For each adjustment operation, select adjusting shims, individually measure using a micrometer, then add up the recorded values. Do not rely on measuring the entire shimming set, which may be incorrect, and do not rely on 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 for at least thirty minutes in the oil it will be sealing.
- Thoroughly clean the shaft, and check that the working surface on the shaft is undamaged.
- Fit the lip seal toward the fluid. If you are fitting a hydrodynamic lip seal, the grooves should be oriented so that the fluid is directed toward the inner side of the seal (take the shaft direction of rotation into consideration).
- Coat the lip seal with a thin layer of lubricant (use oil rather than grease), then fill the gap between the lip seal and the dust lip seal of the double-lip seals with grease.
- Insert the seal into its seat and press down using a flat punch. Do not tap the seal with a hammer or mallet.
- During assembly, make sure that the seal is fitted perpendicularly to its seat. Once this operation is completed, check to make sure that the seal is in contact with the bearing stop, if required.
- To prevent damaging the lip seal on the shaft, fit an appropriate protective guard during installation.

### "O" RINGS

Lubricate the "O" rings before fitting them into the seats. This prevents them from overturning and twisting, which would make them ineffective.

### SEALING COMPOUNDS

Apply one of the following sealing compounds to the mating surfaces marked with an X: Silmate RTV, Rhodorsil CAF 1, or Loctite Plastic Gasket. Before applying the sealing compound, prepare the surfaces as follows:

- Remove any dirt using a metal brush.
- Thoroughly degrease the surfaces using one of the following cleaning agents: trichloroethylene, gasoline, or a water and soda solution.

### SPLIT PINS

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

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## PROTECTING THE ELECTRONIC/ELECTRICAL SYSTEMS DURING CHARGING OR WELDING

To avoid damaging the electronic/electrical systems, always follow the safety instructions below:

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 machine or any header attached to the machine.
  - Position the welder ground clamp as close to the welding area as possible.
  - If welding in close proximity to a computer module, the module should be removed from the machine.
  - 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 using a battery charger to carry out charging procedures on the machine.

**NOTICE:** *If welding has to be carried out on the machine or the header (if it is attached), disconnect the battery ground cable from the machine 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



**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.**

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## 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 of original parts, as they are the same parts installed during standard manufacturing operations. 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
- Reference number of the part to be ordered, as shown in the parts Microfiches or in the Spare Parts Catalogue. Orders are created from these documents.

## TOOLS

The tools that New Holland suggests and illustrates in this manual are:

- Specifically researched and designed for use with New Holland machines
- Essential for reliable repair operations
- Accurately built and rigorously tested to offer efficient and long-lasting operation

Using these tools makes it possible for repair personnel to:

- Operate under optimal technical conditions
- Obtain the best results
- Save time and effort
- Work under safe conditions

**NOTE:** *The wear limits indicated for certain parts are recommended but not binding. The terms "front," "rear," "right," and "left" (when referring to different parts) refer to the operator's point of view seated in the tractor seat facing the direction of travel of the machine during operation.*

## Torque Hydraulic connectors

9000 X

NA

**NOTICE:** The data below applies to general use of lightly lubricated, standard hydraulic connection threads whose counterparts are steel.

### BSP hydraulic adapter connections

Nut nominal size	Tightening torques
BSP SIZE	Nm (lbsf/ft)
1/8	<b>17 Nm (12.5 lb ft)</b>
1/4	<b>34 Nm (25.1 lb ft)</b>
3/8	<b>47 Nm (34.7 lb ft)</b>
1/2	<b>102 Nm (75.2 lb ft)</b>
5/8	<b>122 Nm (90.0 lb ft)</b>
3/4	<b>149 Nm (109.9 lb ft)</b>
1	<b>203 Nm (149.7 lb ft)</b>
1-1/4	<b>305 Nm (225.0 lb ft)</b>
1-1/2	<b>305 Nm (225.0 lb ft)</b>
2	<b>400 Nm (295.0 lb ft)</b>

### ORFS hydraulic connections

Nut nominal size SAE dashboard	Thread	Equivalent BSP size	Tightening torque NM (lbsf/ft)
-	9/16-18	1/8	<b>14 Nm (10.3 lb ft)</b>
-4	11/16-16	1/4	<b>24 Nm (17.7 lb ft)</b>
-6	13/16-16	3/8	<b>33 Nm (24.3 lb ft)</b>
-8	1-14	1/2	<b>44 Nm (32.5 lb ft)</b>
-10	1-3/16-12	5/8	<b>58 Nm (42.8 lb ft)</b>
-12	1-7/16-12	3/4	<b>84 Nm (62.0 lb ft)</b>
-16	1-11/16-12	1	<b>115 Nm (84.8 lb ft)</b>
-20	2-12	1-1/4	<b>189 Nm (139.4 lb ft)</b>
-24	-	1-1/2	<b>244 Nm (180.0 lb ft)</b>

### Metric connections

Nut nominal size	Tightening torques
Metric nut	Nm (lbsf/ft)
M10	<b>18 Nm (13 lb ft)</b>
M12	<b>20 Nm (15 lb ft)</b>
M14	<b>25 Nm (19 lb ft)</b>
M16	<b>45 Nm (33 lb ft)</b>
M18	<b>50 Nm (37 lb ft)</b>
M20	<b>70 Nm (52 lb ft)</b>
M22	<b>75 Nm (55 lb ft)</b>
M26	<b>110 Nm (81 lb ft)</b>
M33	<b>220 Nm (162 lb ft)</b>
M42	<b>230 Nm (170 lb ft)</b>
M48	<b>250 Nm (258 lb ft)</b>

INTRODUCTION

**Metric system**

<b>Nut nominal size</b>	<b>Tightening torque NM (lbsf/ft)</b>
5/16-24	. 10 Nm (7 lb ft)
3/8-24	. 10 Nm (7 lb ft)
7/16-20	. 14 Nm (10 lb ft)
1/2-20	. 20 Nm (15 lb ft)
9/16-18	. 22 Nm (20 lb ft)
5/8-18	. 27 Nm (20 lb ft)
3/4-16	. 48 Nm (35 lb ft)
7/8-14	. 81 Nm (60 lb ft)
1-1/16-12	. 108 Nm (79 lb ft)
1-3/16-12	. 136 Nm (100 lb ft)
1-5/16-12	. 148 Nm (108 lb ft)
1-5/8-12	. 173 Nm (127 lb ft)
1-7/8-12	. 216 Nm (158 lb ft)
2-1/2-12	. 334 Nm (245 lb ft)



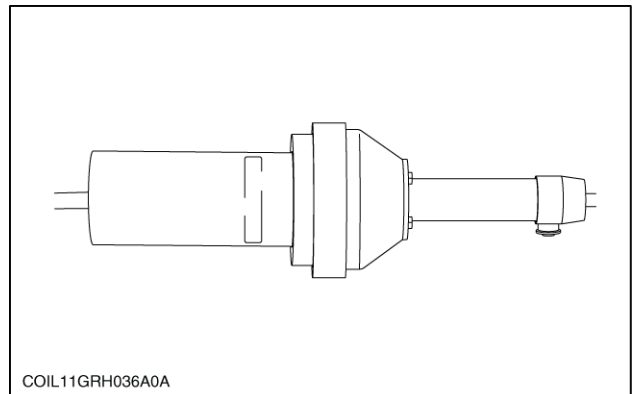
## Special tools

9000 X

NA

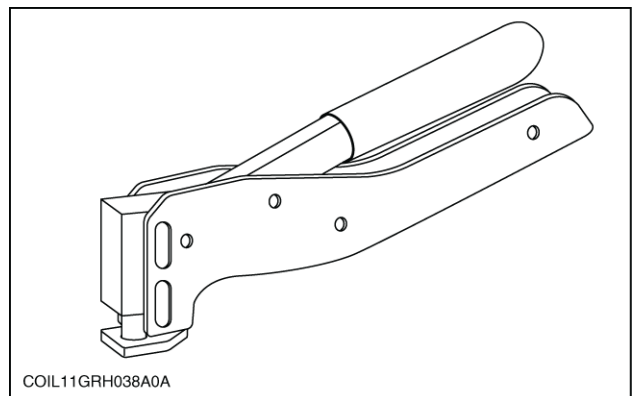
### - List of special tools for the entire machine -

Hot air blower to weld conveyor belts, Ref.: 298207.



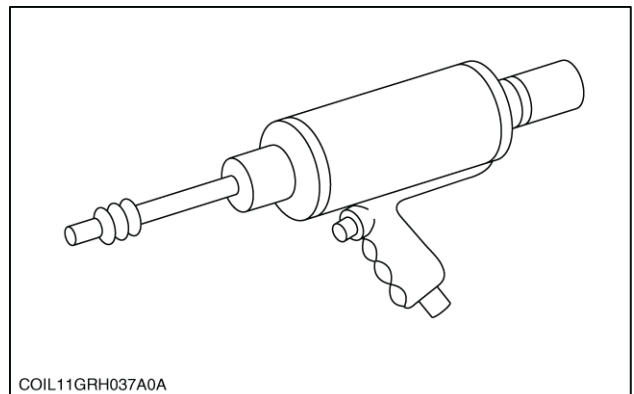
COIL11GRH036A0A 1

Manual pliers to fit rivets to baskets. Ref. : 298201.



COIL11GRH038A0A 2

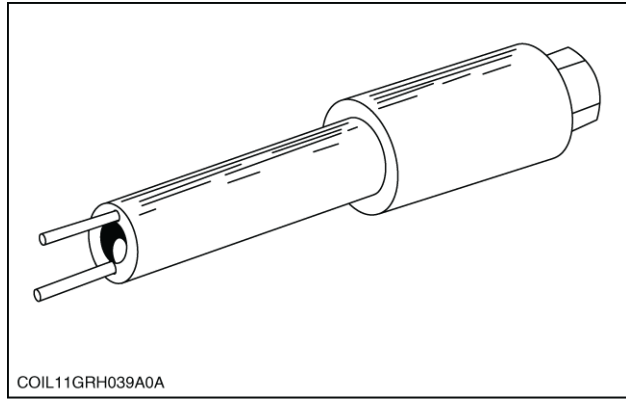
Pneumatic pliers to fit rivets to baskets. Ref. : 298202.



COIL11GRH037A0A 3

## INTRODUCTION

Tool to screw the lift cylinder parachute valves onto the front of the machine. Ref: 298228.



COIL11GRH039A0A 4

Tool to fit the wheel motor brake pistons. Ref: 298229.

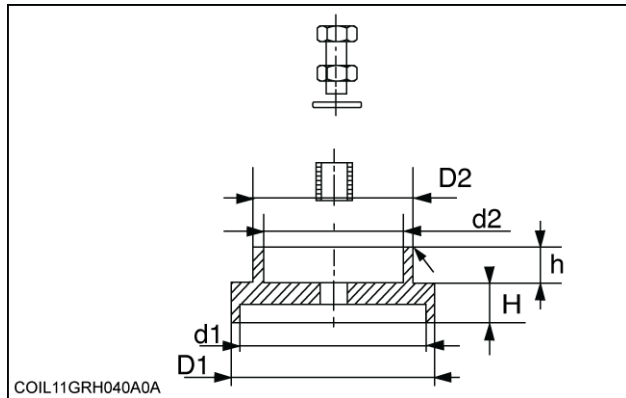
H and h = **10 mm (0.394 in)**.

D1 = **215 mm (8.465 in)**.

d1 = **205 mm (8.071 in)**.

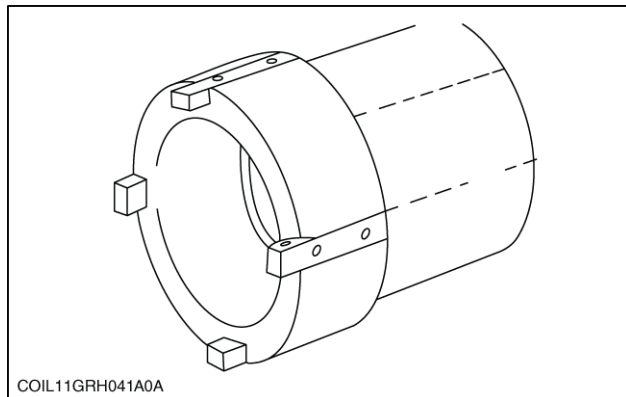
D2 = **190 mm (7.480 in)**.

d2 = **180 mm (7.087 in)**.



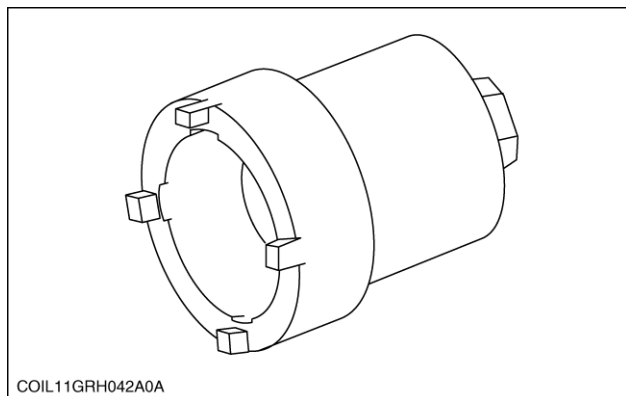
COIL11GRH040A0A 5

Spanner to tighten the extractor castellated nuts. Ref: 298231.



COIL11GRH041A0A 6

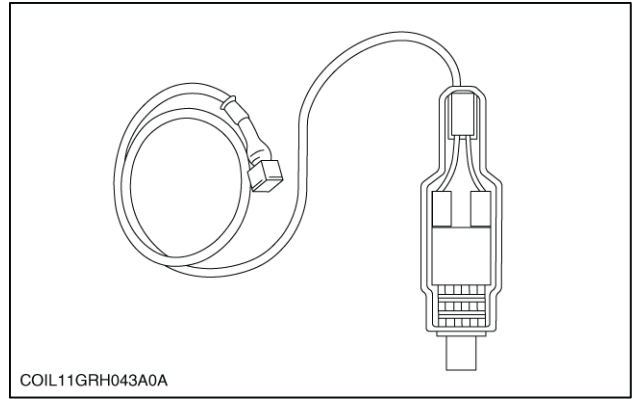
Spanner to tighten the lower chopper castellated nuts. Ref: 298217.



COIL11GRH042A0A 7

## INTRODUCTION

Norias from ground washing position control cable. Ref: 944033078.

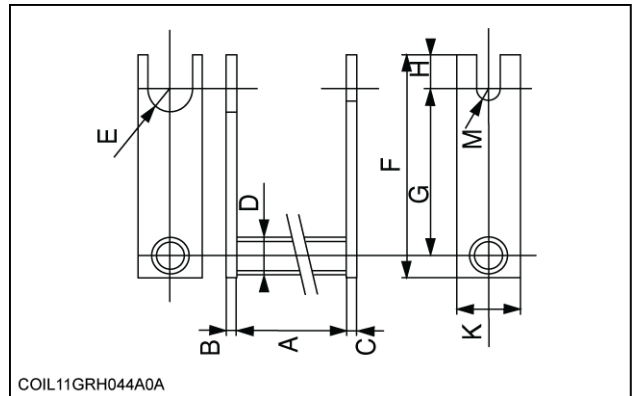


COIL11GRH043A0A

COIL11GRH043A0A 8

Clamp to remove complete rotors from the destemmers.

- A = **475 mm (18.701 in)**.
- B and C = **10 mm (0.394 in)**.
- D =  $\varnothing$ : **26 - 34 mm (1.024 - 1.339 in)**.
- E = Radius **21 mm (0.827 in)**.
- F = **200 mm (7.874 in)**.
- G = **150 mm (5.906 in)**.
- H = **30 mm (1.181 in)**.
- K = **60 mm (2.362 in)** centred on the tube.
- M = radius **11 mm (0.433 in)**.

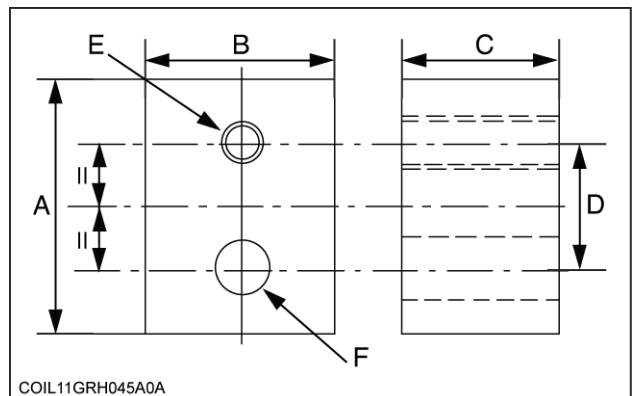


COIL11GRH044A0A

COIL11GRH044A0A 9

Extraction tool for removing the shaker control unit.

- A = **80 mm (3.150 in)**.
- B = **50 mm (1.969 in)**.
- C = **38.5 mm (1.516 in)**.
- D = **33 mm (1.299 in)**.
- E = M **20 mm (0.787 in)** threaded.
- F =  $\varnothing$ : **30 mm (1.181 in) + 0.2 mm (0.008 in) + 0.5 mm (0.020 in)**.

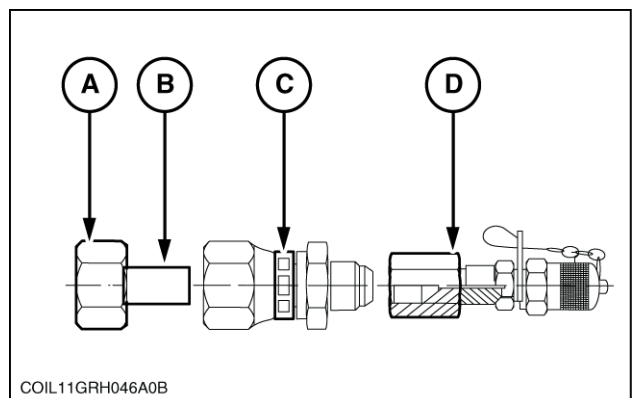


COIL11GRH045A0A

COIL11GRH045A0A 10

Adjusting the pressure of the transmission serial lines.

- A Nut 920018295 (1) 1"3/16--12 ORFS
- B Reduction 920018294 (1) 1"3/16 -- 13/16" ORFS
- C Reduction 920019524 (1) 13/16--16 ORFS -- 3/4--16 JIC
- D "Minimess" socket 920018948 (1) 3/4--16 UNF JIC rotary

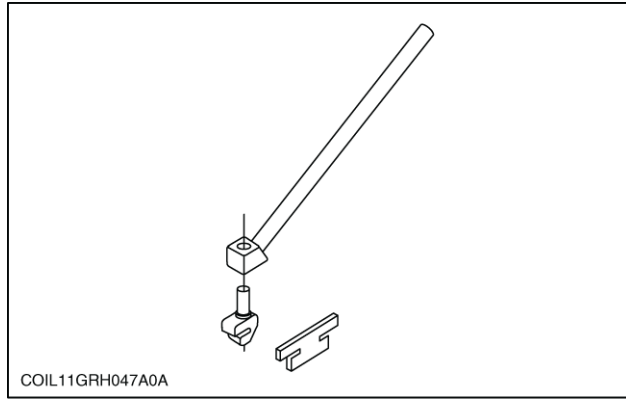


COIL11GRH046A0B

COIL11GRH046A0B 11

## INTRODUCTION

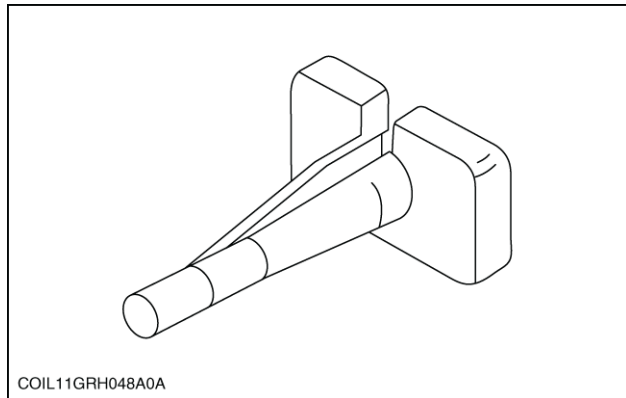
Tool for levelling the Norias rails. Ref: 944029815.



COIL11GRH047A0A 12

Tool to remove the pins in the round "Deutsch" harness connector of harvesting equipment Kit ref.: 380 000 350 comprising:

- 80 900 370 for pin Ø 8 mm white -
- 80 900 371 for pin Ø 6.8 mm green -
- 80 900 372 for pin Ø 4 mm yellow-
- 80 900 373 for pin Ø 2.6 mm blue



COIL11GRH048A0A 13

**Thanks very much for your reading,  
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manual**

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