SERVICE MANUAL

9090X / 9090X GE / 9090X H / 9090X O / 9090X COFFEE / 9090X OLIVE PLUS / 9090X OLIVE PLUS GE

Grape Harvester

Part number 47914333
1st edition English
July 2015

Link Product / Engine

Product	Market Product	Engine
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

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INTRODUCTION

(*) See content for specific models

Foreword

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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.

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 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 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

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

Basic instructions

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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.

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	**17 Nm** (**12.5 lb ft**)
1/4	**34 Nm** (**25.1 lb ft**)
3/8	**47 Nm** (**34.7 lb ft**)
1/2	**102 Nm** (**75.2 lb ft**)
5/8	**122 Nm** (**90.0 lb ft**)
3/4	**149 Nm** (**109.9 lb ft**)
1	**203 Nm** (**149.7 lb ft**)
1-1/4	**305 Nm** (**225.0 lb ft**)
1-1/2	**305 Nm** (**225.0 lb ft**)
2	**400 Nm** (**295.0 lb ft**)

ORFS hydraulic connections

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

Metric connections

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

Metric system

Nut nominal size	Tightening torque NM (lbsf/ft)
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

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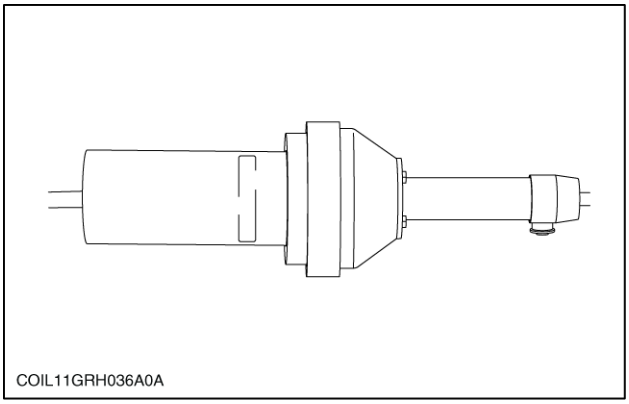
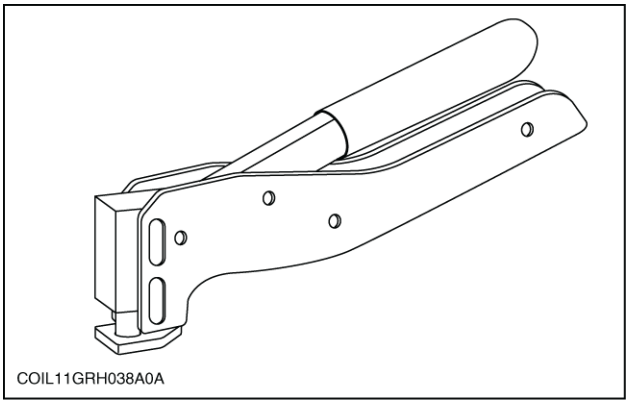
- List of special tools for the entire machine -

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



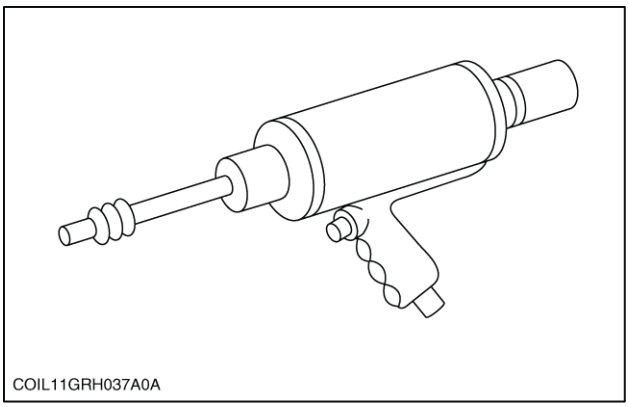
COIL11GRH036A0A 1

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



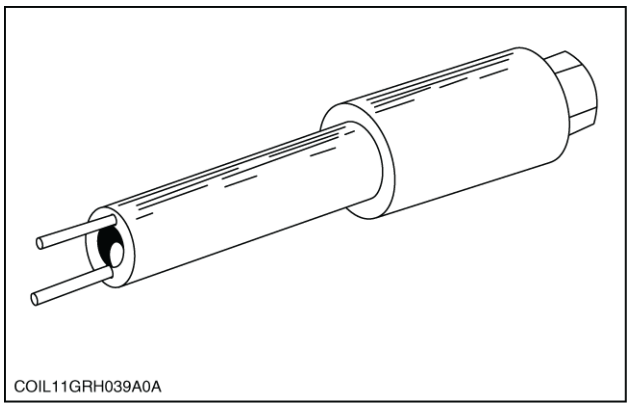
COIL11GRH038A0A 2

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



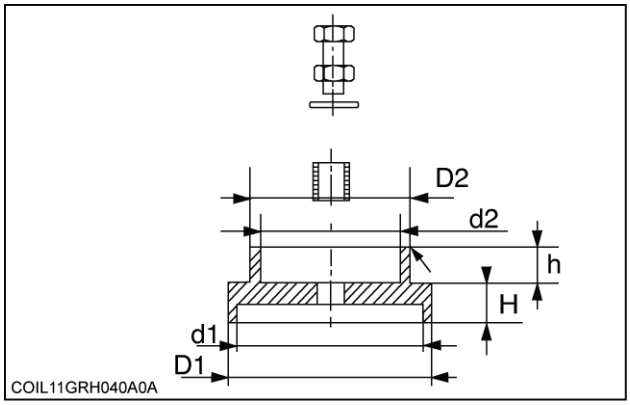
COIL11GRH037A0A 3

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



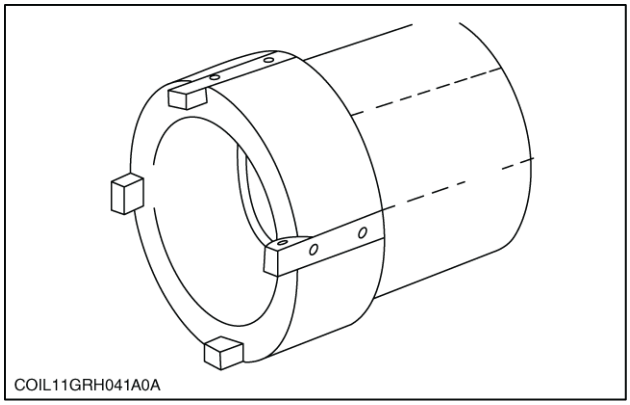
COIL11GRH039A0A 4

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**).



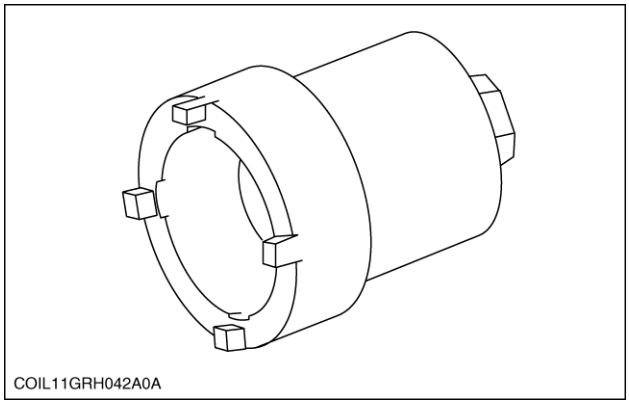
COIL11GRH040A0A 5

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



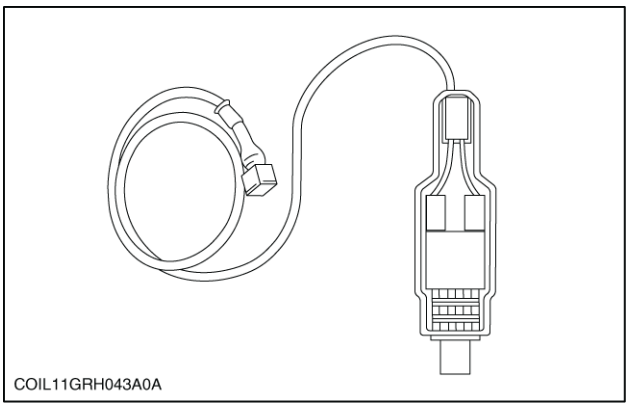
COIL11GRH041A0A 6

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



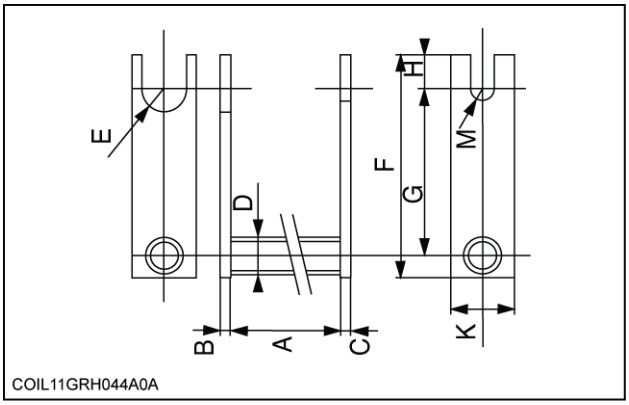
COIL11GRH042A0A 7

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



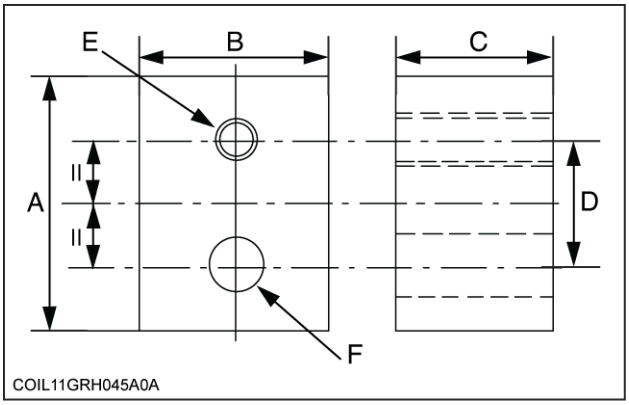
COIL11GRH043A0A 8

Clamp to remove complete rotors from the destemmers.
A = **475 mm** (**18.701 in**).
B and C = **10 mm** (**0.394 in**).
D = Ø: **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**).



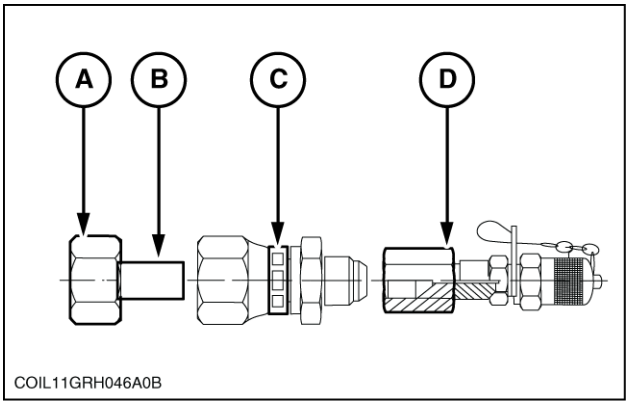
COIL11GRH044A0A 9

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 = Ø: **30 mm** (**1.181 in**) + **0.2 mm** (**0.008 in**) + **0.5 mm** (**0.020 in**).



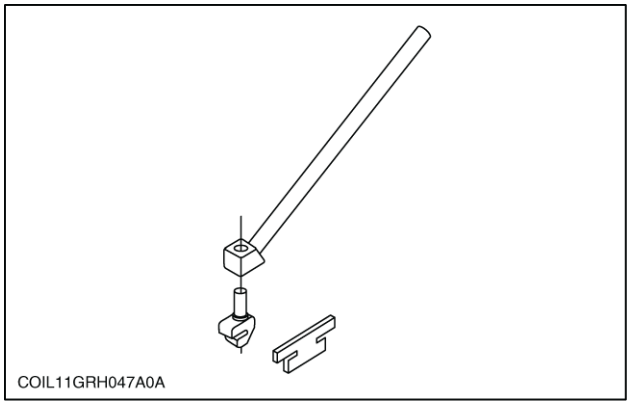
COIL11GRH045A0A 10

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



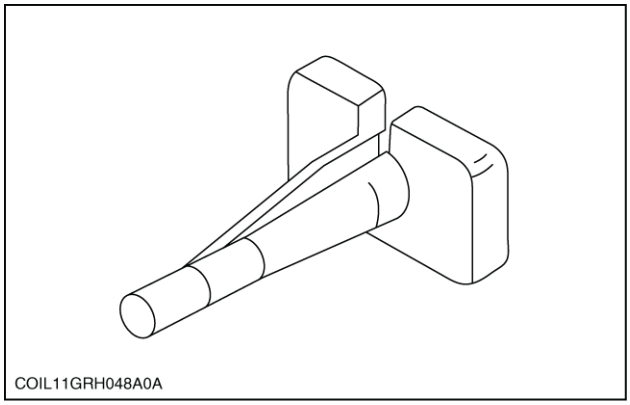
COIL11GRH046A0B 11

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



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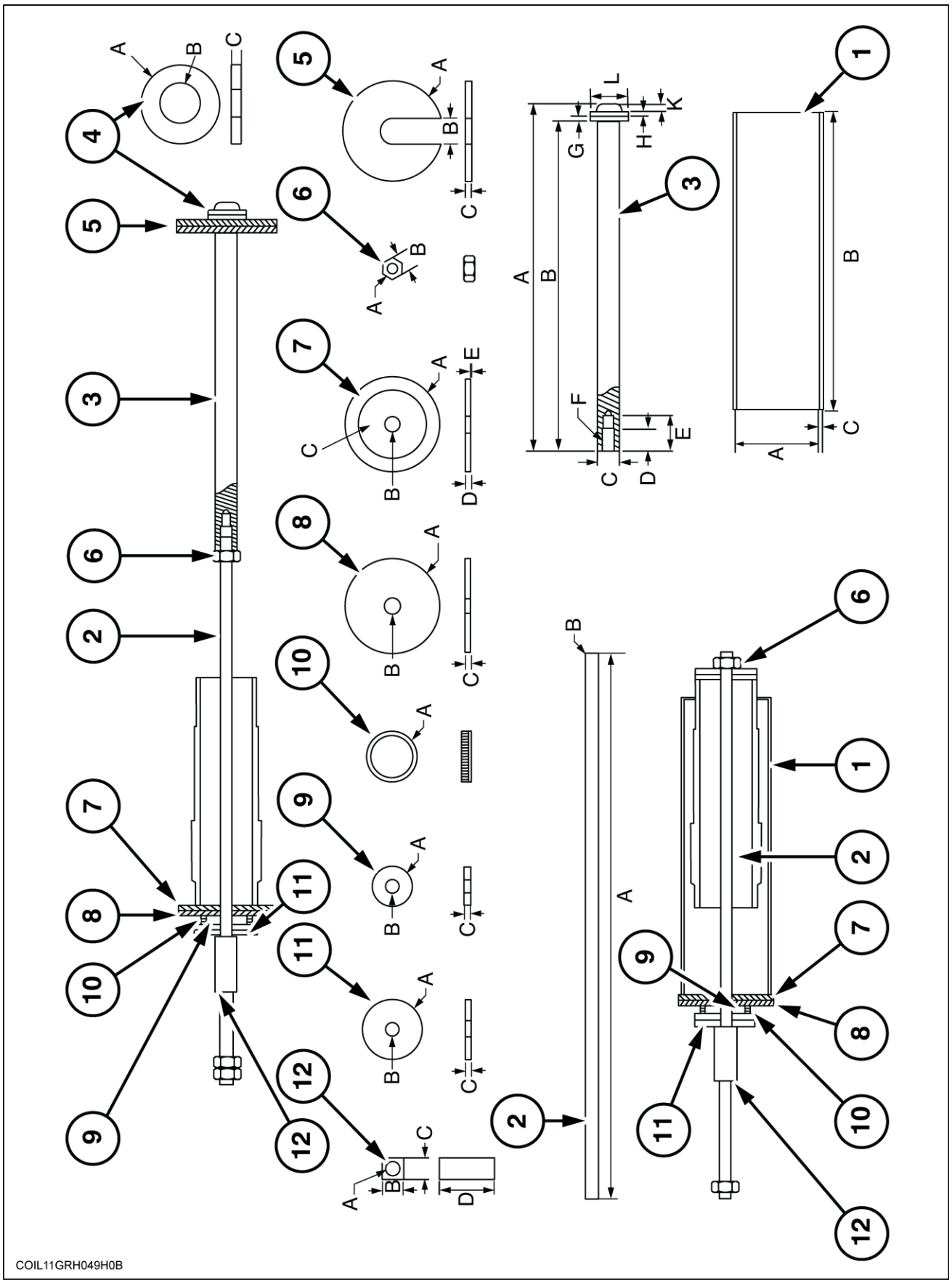
Tool for removing and refitting the front struts.

ITEMS	DESCRIPTIONS	DIMENSIONS	QUAN-TITY	MATERIAL
1	Tube	A = **193.7 mm** (**7.626 in**) is the internal diameter of the tube. B = **650 mm** (**25.6 in**). C = **5.4 mm** (**0.213 in**) is the thickness of the tube.	1	
2	Threaded rod	A = **1200 mm** (**47.2 in**). B = Ø M **30 mm** (**1.2 in**).	1	Class 8.8
3	Pin	A = **760 mm** (**29.9 in**). B = **720 mm** (**28.3 in**). C & D = **50 mm** (**2.0 in**). E = **80 mm** (**3.1 in**). F = M **30 mm** (**1.2 in**). G & H & K = **12 mm** (**0.5 in**). L = **80 mm** (**3.1 in**).	1	E 36
4	Washer	A = Ø **80 mm** (**3.1 in**). B = Ø **80.2 mm** (**3.157 in**). C = **12 mm** (**0.5 in**)3	2	E 24
5	Washer	A = Ø **85 mm** (**3.3 in**). B = **55 mm** (**2.165 in**). C = **12 mm** (**0.5 in**).	2	E 24
6	Nut	A = Ø M **30 mm** (**1.181 in**). B = **45 mm** (**1.772 in**).	3	Class 8.8
7	Washer	A = Ø **205 mm** (**8.071 in**). B = Ø **32 mm** (**1.260 in**). = Ø **193 mm** (**7.598 in**). D = **12 mm** (**0.472 in**). E = **1 mm** (**0.039 in**).	1	E 24
8	Washer	A = Ø **205 mm** (**8.071 in**) B = Ø **32 mm** (**1.260 in**). C = **12 mm** (**0.472 in**).	1	E 24
9	Washer	A = Ø **85 mm** (**3.346 in**). B = Ø **32 mm** (**1.260 in**). C = **15 mm** (**0.591 in**).	1	E 24
10	Thrust ball	A = internal Ø **85 mm** (**3.346 in**).	1	SKF 51117
11	Washer	A = Ø **132 mm** (**5.197 in**). B = Ø **32 mm** (**1.260 in**). C = **12 mm** (**0.472 in**).	4	E 24
12	Internal threaded square socket	A = Ø M **30 mm** (**1.181 in**). B & C = **45 mm** (**1.772 in**). D = **120 mm** (**4.724 in**).	1	XC 38



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Conversion factors

9000 X	NA

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**

Surface

1 ha	**=**	**2.471 acre**	**1 acre**	**=**	**0.4047 ha**

Volume

1 litre	**=**	**0.0063 barrel**	**1 barrel**	**=**	**158.987 litre**
1 litre	**=**	**0.028 US bushel**	**1 US bushel**	**=**	**35.2391 litre**
1 litre	**=**	**0.2642 US gal**	**1 US gal**	**=**	**3.7853 litre**
1 litre	**=**	**1.057 US quart**	**1 US quart**	**=**	**0.9464 litre**
1 mm3	**=**	**0.061 in3**	**1 in3**	**=**	**16387 mm3**

Weight

1 kg	**=**	**2.204 pound**	**1 pound**	**=**	**0.4536 kg**

Torque

1 Nm	**=**	**0.7376 lbf.ft**	**1 lbf.ft**	**=**	**1.3558 Nm**

Power supply

1 kW	**=**	**1.358 hp**	**1 hp**	**=**	**0.746 kW**

Pressure

1 bar	**=**	**14.505 lbf/in2** (psi)	**1 lbf/in2** (psi)	**=**	**0.06894 bar**
1 kPa	**=**	**0.145 lbf/in2** (psi)	**1 lbf/in2** (psi)	**=**	**6.894 kPa**
1 pa	**=**	**10-5 bar**	**1 bar**	**=**	**100 kPa**

Temperature

1 °C	**=**	((1.8 x °C) + 32) **33.8 °F**	**1 °F**	**=**	(0.56 x (°F - 32)) **-17.36 °C**

Flow rate

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

Product identification

9000 X	NA

EXPLANATION OF MACHINE SERIAL NUMBERS

Example: No. HAG 00 --- E 00 001 001

HAG 00 --- E 00 001 001: the first three figures is a code for Coëx production (France)

HAG 00 --- E 00 001 001: free areas are marked 00

HAG 00 --- E 00 001 001: these three figures relate to the machine type

9060L = ---

HAG 00 --- . E 0 0001 001: a different "code" letter for each machine in the same series

HAG 00 --- E 00 001 001: free areas are marked 00

HAG 00 --- E 00 001 001: serial number

HAG 00 --- E 00 001 001: the last three figures contain a sequential number for each machine within a series

In short, this machine is the first 9060L of series 001 produced at Coëx. (France)

SERVICE MANUAL

Rear axle system

9090X COFFEE , 9090X GE , 9090X H , 9090X OLIVE PLUS GE , 9090X OLIVE PLUS , 9090X O , 9090X

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Rear axle system - 27

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9090X COFFEE , 9090X GE , 9090X H , 9090X OLIVE PLUS GE , 9090X OLIVE PLUS , 9090X O , 9090X

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Rear axle system - 27

Powered rear axle - 100

(*) See content for specific models

Rear axle - Transform - Changing the rear track -

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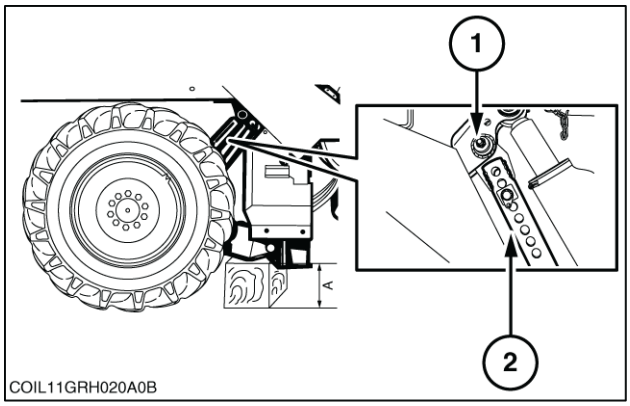
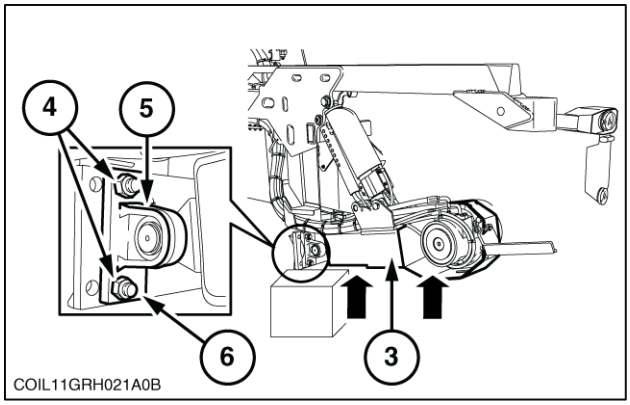
NOTE: *To change the rear track of the machine by* ***160 mm*** *(****6.3 in****), you must turn over the wheel arm fastening bearings. The bearings are moved by* ***40 mm*** *(****1.6 in****).*

1. Remove the corresponding rear wheel. To do this:
   - Apply the parking brake.
   - Lift the machine using its standalone system.
   - Place a cubed wooden block measuring A = **450 mm** (**17.7 in**) under the rear wheel arm pivot.
   - Lower the machine using its standalone system until the wheel is just off the ground.
   - Shut down the engine.
   - Remove the wheel.
2. Remove the pin **(1)** of the height stop telescopic tube **(2)**.



COIL11GRH020A0B 1

3. Place a mobile lifting device under the wheel arm **(3)**.
4. Remove the 4 fixing screws **(4)** from the 2 fastening bearings **(5)**.

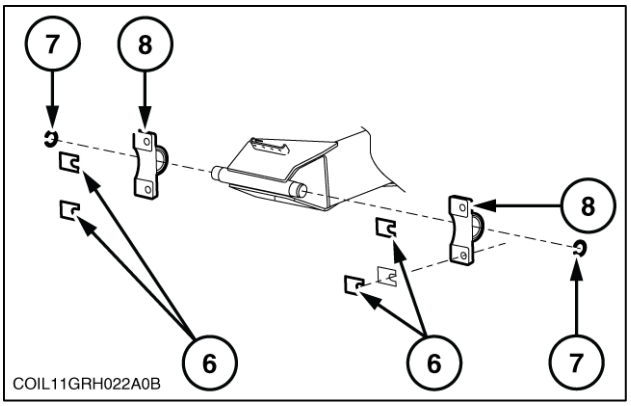


COIL11GRH021A0B 2

5. Mark the position of the spacer rings **(6)**.

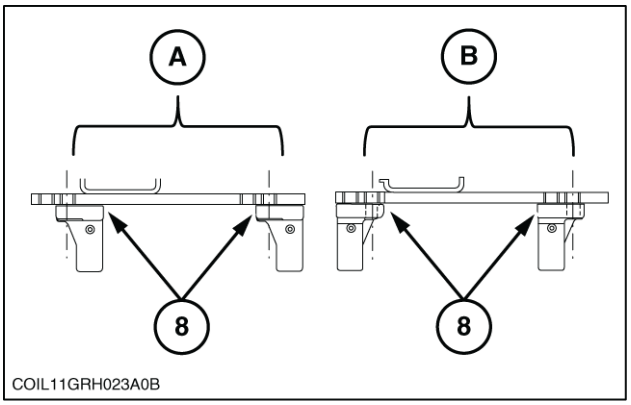
ATTENTION: *When reassembling, you must put spacer rings of the same thickness under each bearing.*

6. Remove the spring retaining rings **(7)** and pull out the bearings **(5)**.



COIL11GRH022A0B 3

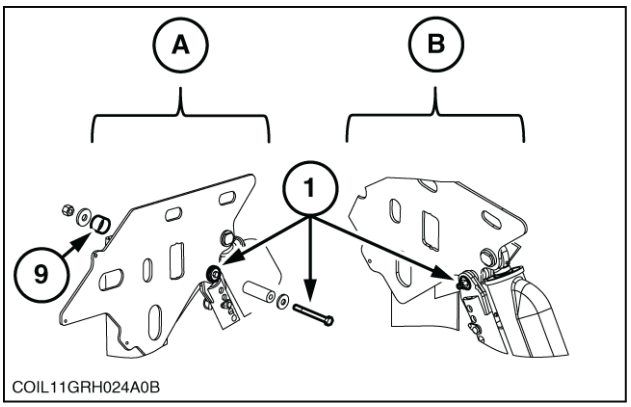
7. Fit the bearings **(8)** onto the wheel arms at the required track width.
   - Position A = wide track.
   - Position B = narrow track.
8. Replace the spring retaining rings **(7)**.
9. Replace the screws **(4)**, inserting the corresponding spacer rings. The tightening torque of the screws **(4)** is **650 N·m** (**5753.0 lb in**).



COIL11GRH023A0B 4

NOTE: *The diagrams show the positions of the right-hand wheel arm. The bearings are always fitted in the same holes located towards the outside of the machine. To change the track width, the bearings are simply turned over. For information, the other holes are not used.*

10. Replace the pin **(1)** of the height stop tube according to the desired track width.
    - Position A = wide track, the spacer **(9)** will be on the outside of the chassis.
    - Position B = narrow track, the spacer **(9)** will be on the inside of the chassis.



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11. Remove the mobile lifting device.
12. Replace the wheel. The tightening torque of the wheel is **700 N·m** (**6195.5 lb in**).
13. Start the engine and raise the machine using its hydraulic system. Remove the wooden wedge.