



Checchi & Magli

**PLANTING
MACHINE**

UNIFOX

UNIFOX DT

**USE
AND MAINTENANCE
MANUAL**

Original instructions in english

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Aim of the manual

This instruction manual is produced by the manufacturer to provide all those who have dealings with the work vehicle stated on the cover with all the necessary information and criteria to apply for its use.

Apart from adopting good use practices, operators (in compliance with their job responsibilities) are also required to read and understand the information contained in this use manual and put it into practice exactly as stated.

The original instructions are supplied by the manufacturer in English language.

To fulfil legal or commercial requirements, the original instructions may be supplied by the manufacturer in other languages.

This manual is an integral part of the work vehicle; it must be kept for future reference, in an easily accessible place known to all those concerned, for the entire working life of the work vehicle.

If the work vehicle is sold on, the seller is required to pass on the manual to the new owner.

The illustrations may differ from the actual configuration of the work unit however this does not affect in any way the instructions provided.

For any doubts contact the manufacturer or authorised service centres.

To highlight certain parts of the manual's contents deemed important for safety or information reasons the following symbols have been used, whose meanings are outlined below.



DANGER

This indicates information or procedures which, if not strictly followed, cause death or serious personal injury.



WARNING

This shows information or procedures which, if not followed, may cause death or serious personal injury.



CAUTION

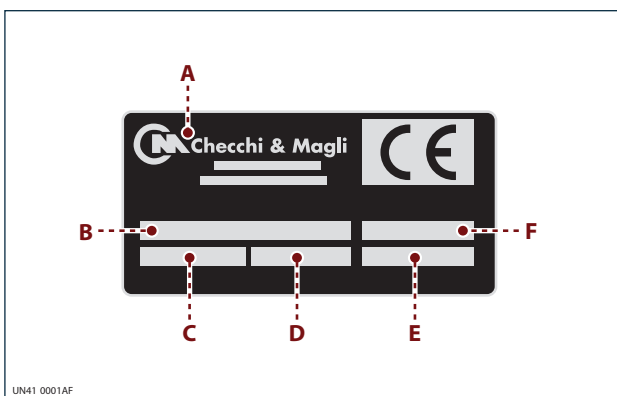
This shows information or procedures which, if not followed, may cause slight personal injury.

NOTICE

This highlights useful and important information and procedures.

Manufacturer and machine identification details

The plate shown, which is applied directly to the work vehicle, contains all the essential information for identifying the machine and the manufacturer.



- A) Manufacturer's identification details
- B) Work vehicle type
- C) Work vehicle model
- D) Work vehicle gross weight
- E) Serial number
- F) Year of manufacture

Annexed documentation

Along with this handbook, the customer is given the documentation specified.
The instructions for use and maintenance of any optional units that may be provided with the work vehicle which

are not considered in this manual.
- EC Declaration of conformity for the work vehicle.

Assistance request procedure

All requests for technical assistance must be made to the manufacturer's Technical Assistance Service or the authorised service centres.

Whenever making requests for technical assistance concerning the work vehicle, remember to quote the data shown on the data plate and the fault encountered.

Disclaimer notice

The work vehicle is delivered to the user under the conditions applicable at the time of purchase and specified in the sale agreement.

- Any modification which is not authorised by the manufacturer
- work vehicle misuse
- use of the work vehicle by the untrained or unauthorised personnel
- lack of maintenance

- the partial or total failure to comply with the instructions in this manual
- use of non-original spare parts or parts not designed specifically for the model concerned

shall result in forfeiture of the warranty and shall relieve the manufacturer of all and any liability for damage caused to persons, animals and property.

Glossary of terms

Rearing/overtipping: when the tractor/work vehicle suddenly upsets.

Plant spacing: this is the distance between one seedling and the next in the same row.

Row: the distance between each row.

Gripper: the pick-up unit for planting the seedling.
The number of grippers depends on the dispenser type.

General description

This work vehicle is designed and built for planting seedlings of various kinds rooted in conical, cylindrical or pyramidal - shaped root balls, as well as seedlings with developed leafage and bare root seedlings.

The work vehicle is a semi-carried device, equipped with a frame for attaching to the three-point hitch on a tractor and it is suitable for planting in fields and greenhouses. The moving parts of each planting unit are driven by the

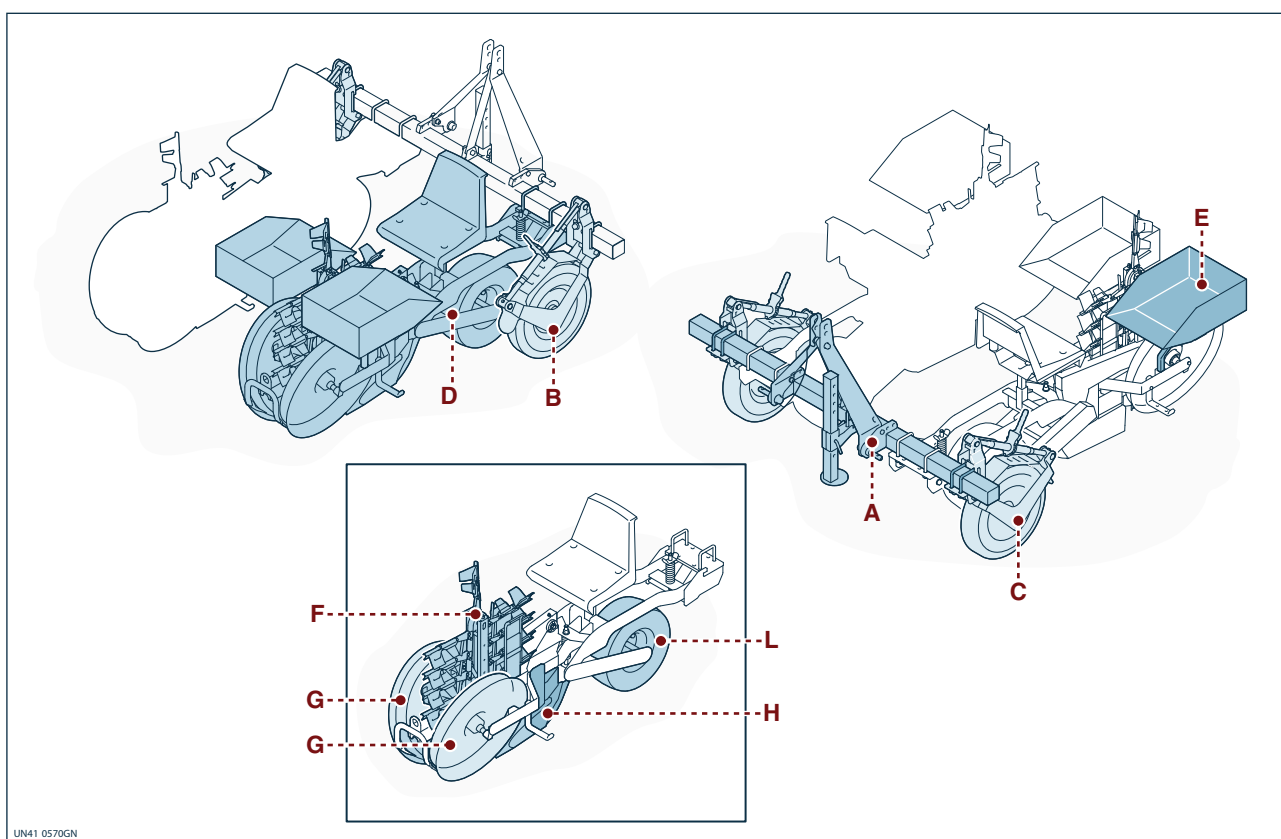
work vehicle's driving wheels (when these are touching the ground) and the movement of the tractor.

The seedling falls from the dispenser into the furrow created by the ploughshare and the packing wheels fill back up and compact the soil around the seedling root ball.

The work vehicle is manufactured in several models which differ mainly in terms of number of planting units featured and number of cups in the dispensing unit.

Main parts (UNIFOX)

The illustration shows the work vehicle with two planting units.

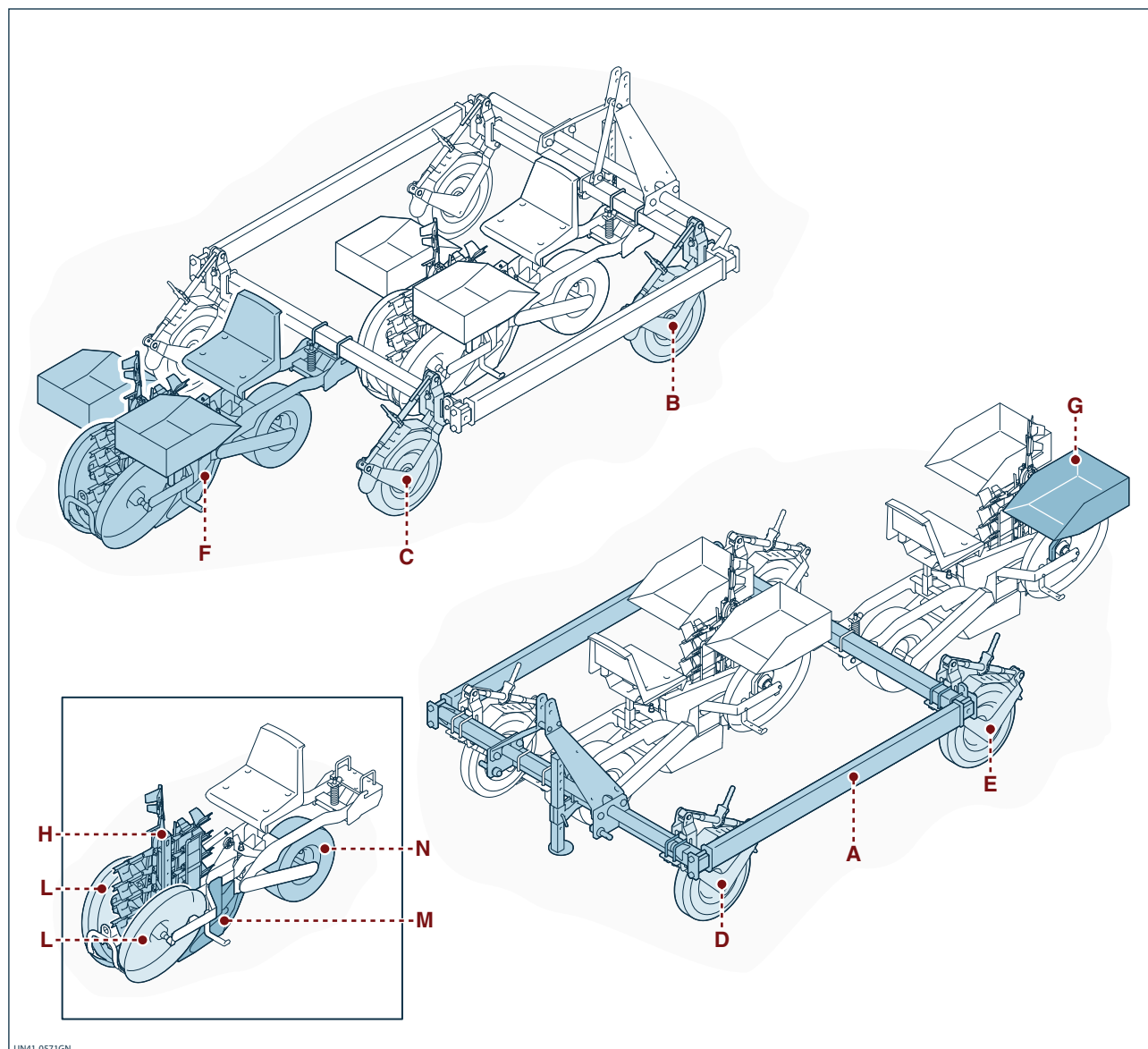


- A)** Structure for attaching to the three-point hitch on a tractor (frame)
- B)** RH support wheel
- C)** LH support wheel
- D)** Planting unit

- E)** Plant box
- F)** Dispenser
- G)** Packing wheels
- H)** Ploughshare
- L)** Driving wheel

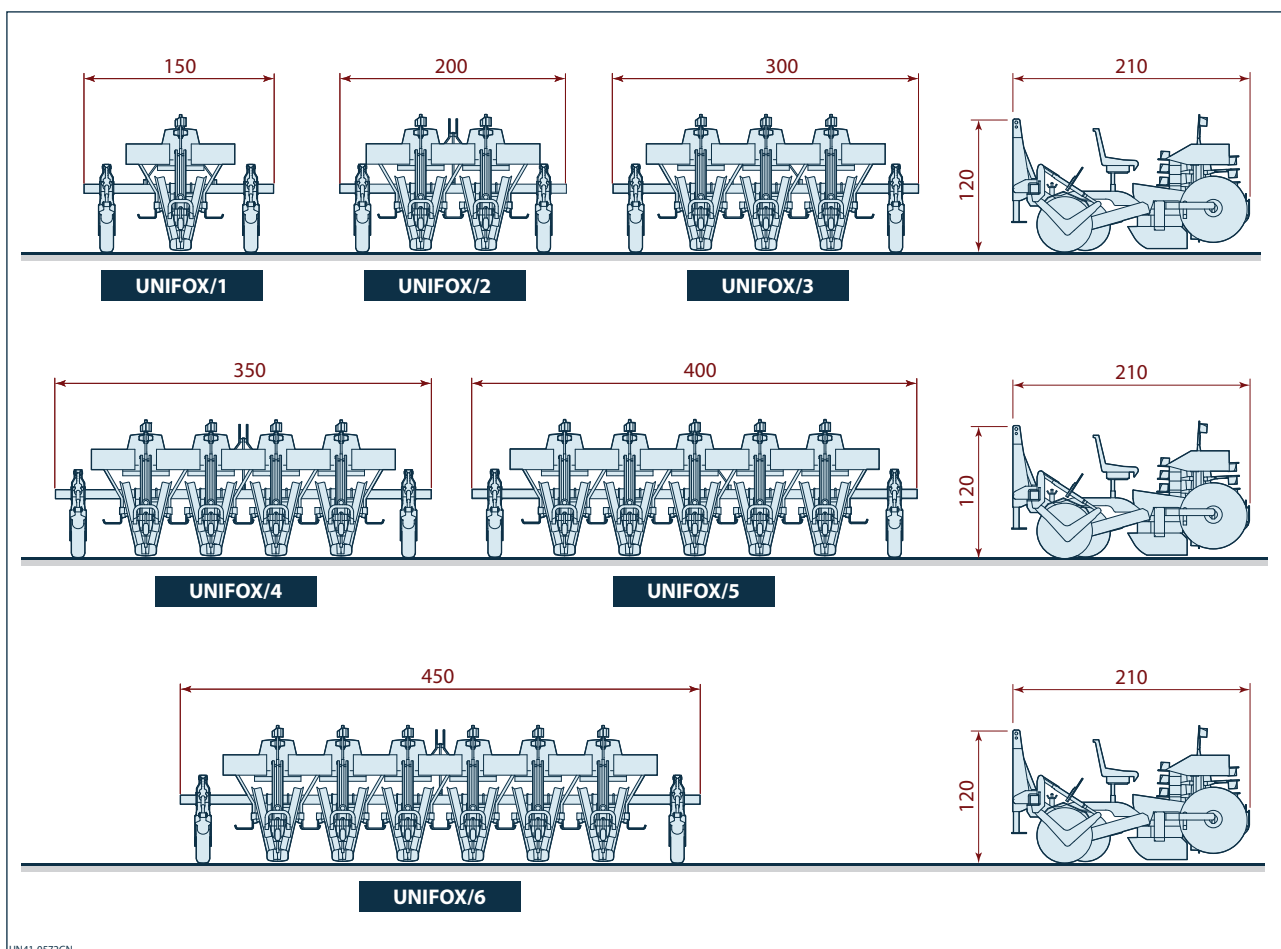
Main parts (UNIFOX DT)

The illustration shows the work vehicle with two planting units.



- A)** Structure for attaching to the three-point hitch on a tractor (double frame)
- B)** RH front support wheel
- C)** RH rear support wheel
- D)** Left front support wheel
- E)** Left rear support wheel

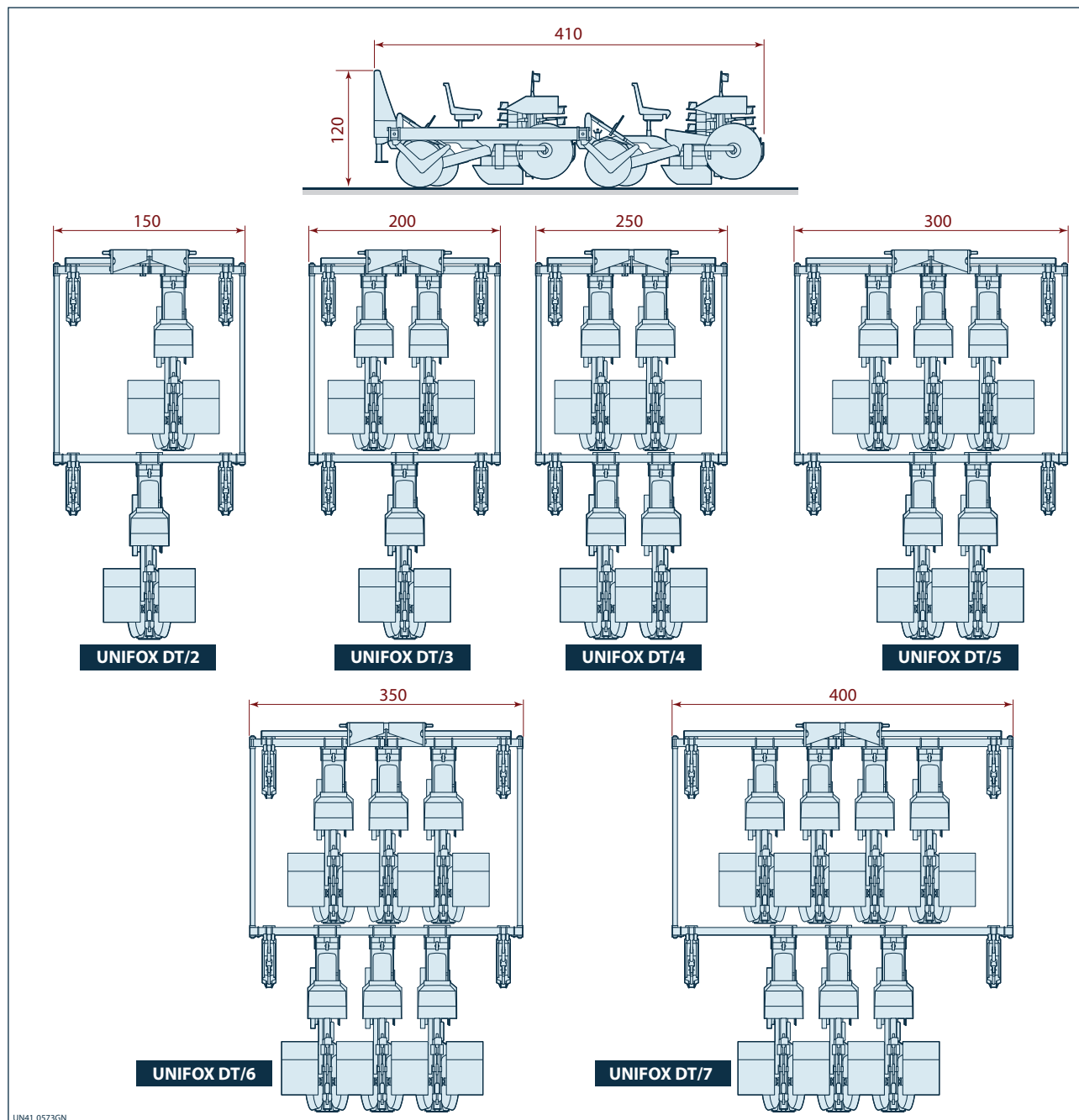
- F)** Planting unit
- G)** Plant box
- H)** Dispenser
- L)** Packing wheels
- M)** Ploughshare
- N)** Driving wheel

Overall dimensions (UNIFOX)


UN41 057ZGN

		UNIFOX technical characteristics						
		UNIFOX/1	UNIFOX/2	UNIFOX/3	UNIFOX/4	UNIFOX/5	UNIFOX/6	
Required tractor power	HP	20	25	30	40	50	60	
Minimum row spacing	cm	50 - 90						
Plant spacing distance	Number of grippers	1	cm					320 - 700
		2	cm					160 - 350
		5	cm					64 - 140
		10	cm					23 - 78
		15	cm					18 - 52
		20	cm					13 - 39
Planting unit	n°	1	2	3	4	5	6	
Driving wheel (*)	n°	1	2	3	4	5	6	
Idle wheels (right and left)	n°	2						
Idle wheels tyre pressure	bar	2,5						
Driving wheels tyre pressure	bar	1						
Weight	kg	230	400	600	770	920	1110	

(*) The driving wheels are fitted on every planting unit

Overall dimensions (UNIFOX DT)


UN41 0573GN

		UNIFOX DT technical characteristics						
			UNIFOX DT/2	UNIFOX DT/3	UNIFOX DT/4	UNIFOX DT/5	UNIFOX DT/6	UNIFOX DT/7
Required tractor power	HP		25	30	40	50	60	70
Minimum row spacing	cm		25 - 50					
Plant spacing distance	Number of grippers	1	320 - 700					
		2	160 - 350					
		5	64 - 140					
		10	23 - 78					
		15	18 - 52					
		20	13 - 39					
Planting unit	n°	2	3	4	5	6	7	
Driving wheel (*)	n°	2	3	4	5	6	7	
Idle wheels (right and left)	n°	4						
Idle wheels tyre pressure	bar	2,5						
Driving wheels tyre pressure	bar	1						
Weight	kg	530	685	860	1045	1245	1485	

(*) The driving wheels are fitted on every planting unit

Seedling size

The table shows the type and size of seedlings that the work vehicle can plant.

Seedling size			
	A (cm)	min.	0,5
		max.	4
	B (cm)	min.	4
		max.	12
	C (cm)	min.	5
		max.	23
	D (cm)	min.	9
		max	35

Plant spacing distance

The work vehicle plants seedlings with variable spacing options.

For the range of possible spacing options, see “Adjusting the plant spacing”.

Permitted gradients

The ground conditions (slippery, sloping, etc.) and the type of tractor used can reduced the stability of the tractor/work vehicle assembly and cause sudden, dangerous movements, especially when the work vehicle is lifted off the ground.

It is up to the tractor driver to assess the environmental conditions of the work area and not to exceed the weights allowed on the axles and the permitted gradients established for the tractor (see tractor user manual).

Declaration of conformity

CHECCHI & MAGLI s.r.l.

Via Guizzardi n° 38

40054 – BUDRIO (BOLOGNA) - ITALIA

hereby declares, under its own responsibility that the planting machine in question, i.e. models:

UNIFOX/1 - UNIFOX/2 - UNIFOX/3 - UNIFOX/4 - UNIFOX/5 - UNIFOX/6 - UNIFOX DT/2 - UNIFOX DT/3 - UNIFOX DT/4 - UNIFOX DT/5 - UNIFOX DT/6 - UNIFOX DT/7

comply with the Essential and Health Safety Require-

ments provided for by Directive 2006/42/CE.

The following regulations in particular have been applied: UNI EN ISO 12100-1, UNI EN ISO 12100-2 and UNI EN 13857, on machine safety.

Budrio

CHECCHI & MAGLI s.r.l

Legal representative

Nerio Checchi

Guards



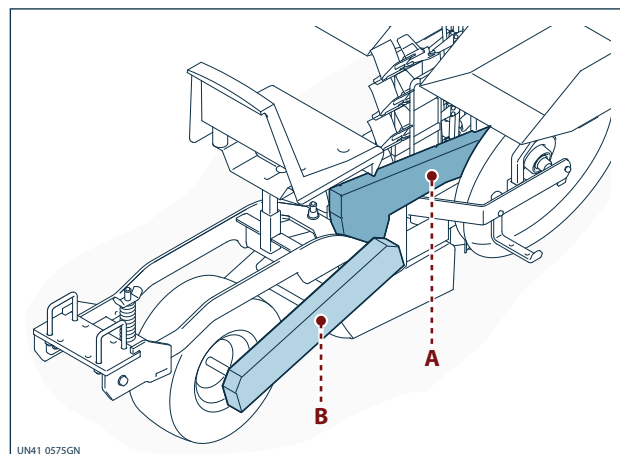
WARNING

Never use the machine without the safety guards.

The work vehicle is fitted with guards covering the transmission components to prevent accidental contact with the moving parts.

The illustration shows the protective casings (A - B) installed on a planting unit.

The protective casings are fitted on all the planting units of the work vehicle.

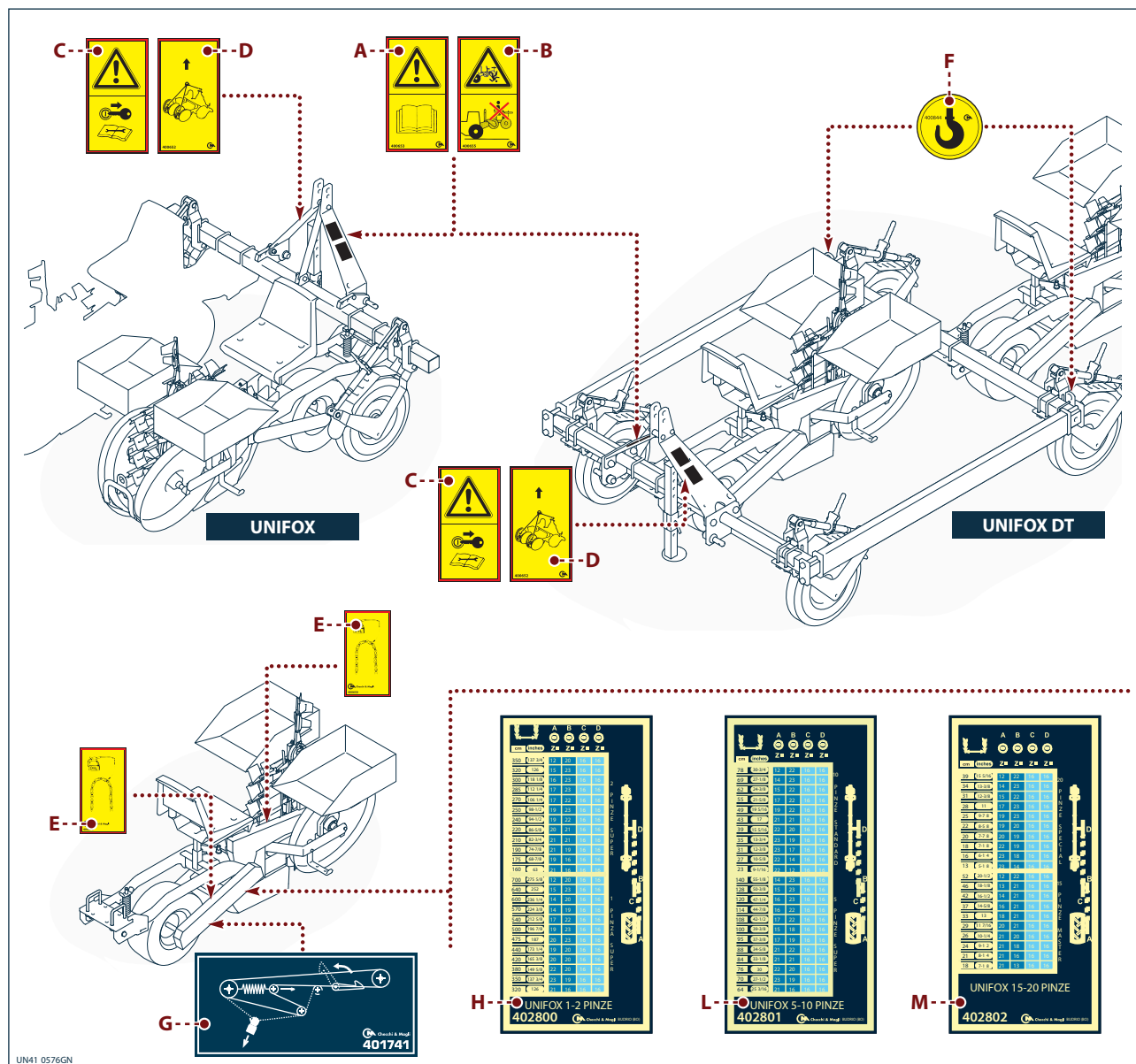


Information and safety signs


WARNING

Check that all the plates are legible; if they are not, clean them or - if they are damaged - replace them, applying the new ones in the same place as the old ones.

The illustration shows the locations and meanings of the signs affixed.



- A) Hazard plate:** read the use and maintenance manual before using the work vehicle.
- B) Hazard plate:** do not remain on the seat with the work vehicle lifted off the ground.
- C) Hazard plate:** switch off the tractor; remove the ignition key and store in a safe place before carrying out any type of work on the work vehicle.
- D) Information plate:** strap up at the anchor points shown to lift the work vehicle.
- E) Information plate:** lubricate the chain inside the casing to which the plate is affixed.
- F) Information plate:** hook up the work vehicle at the points shown to lift it.

- G) Information plate:** this graphically shows how to release the chain.
- H) Plant spacing plate (dispenser fitted with 1 - 2 grippers):** indicates the type of pin to be fitted according to the plant spacing required.
- L) Plant spacing plate (dispenser fitted with 5 - 10 grippers):** indicates the type of pin to be fitted according to the plant spacing required.
- M) Plant spacing plate (dispenser fitted with 15 - 20 grippers):** indicates the type of pin to be fitted according to the plant spacing required.
- The plates (E - G - H - L - M) are fitted on every planting unit.

Optional accessories

Manual lift row tracers (max. row spacing: cm 110)
Manual lift row tracers (max. row spacing: cm 150)
Hydraulic row tracers with discs
FOXDRIVE PLUS irrigation kit
300 l tank - 1 outlet pipe with brackets
300 l tank - 2 outlet pipes with brackets
300 l tank - 3 outlet pipes with brackets
300 l tank - 4 outlet pipes with brackets
Special cushioned seat
Additional packing wheels flex Ø 580 x 80
Complete standard plant holder
Additional seat FOX - FOXDRIVE - R 14 - anchorable to the frame
Tilted tray holder (crate holder)
Tray holders for seedlings rooted in small root balls
Rotary tray holder - 4 sides - FOX - FOXDRIVE - R14
UNITRIUM root ball separator
Dispenser mod. Super fitted with 1 gripper
Dispenser mod. Super fitted with 2 grippers
Dispenser mod. Super fitted with 5 grippers
Dispenser mod. Special fitted with 15 grippers
Dispenser mod. Master fitted with 20 grippers
Transversal 2-shelf tray holder (shelf size: cm 200)
Transversal 2-shelf tray holder (shelf size: cm 250)
Transversal 2-shelf tray holder (shelf size: cm 300)
Transversal 2-shelf tray holder (shelf size: cm 350)
Transversal 2-shelf tray holder (shelf size: cm 400)
Kit of ridger discs Ø 410 mm FOXDRIVE
Kit of rear ridger ploughs FOXDRIVE - R14
Disc in front of the UNITRIUM ploughshare
Hydraulic removable frame
Towed frame for TRIUM/2 + 1 barrel
Towed frame for TRIUM/2 + 2 barrels
Microgranulator 1 row - drive wheel
Microgranulator 2 rows - drive wheel
Microgranulator 3 rows - drive wheel
Microgranulator 4 rows - drive wheel
Microgranulator 5 rows - drive wheel
Microgranulator 6 rows - drive wheel
Manure spreader 1 row - drive wheel
Manure spreader 2 rows - drive wheel
Manure spreader 3 rows - drive wheel
Manure spreader 4 rows - drive wheel
Manure spreader 5 rows - drive wheel
Manure spreader 6 rows - drive wheel

Noise

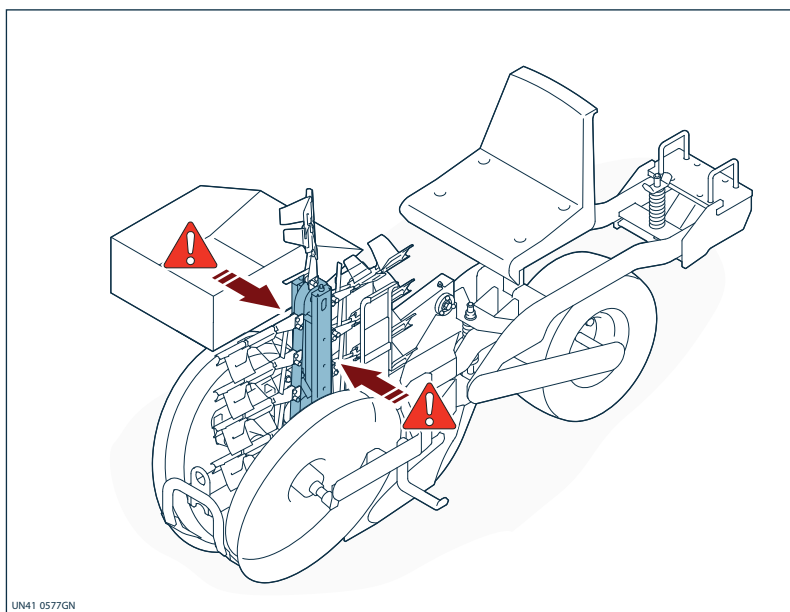
The use of the planting machine does not mean a significant increase in the noise levels of the tractor to which the planting machine is hitched.

Check the tractor manufacturer's manual to decide which PPE to adopt for hearing protection.

Residual risks

During the design and construction stages, the manufacturer has focused particular attention on safety aspects; nevertheless the risks described below remain.

- Risk of hands being crushed in the moving parts of the dispenser.
- Danger of getting crushed or trapped when hitching and unhitching the work unit to and from the tractor.



Read this manual carefully before proceeding with any operations concerning use, maintenance or other work on the work vehicle.

Heed and comply with the symbols on the work vehicle, especially those concerning safety.

To reduce risks of accidents as much as possible, the tractor must be driven by a trained operators who is able to coordinate the work of all the other staff involved in the work.

The machine must only be put to the uses specified by the manufacturer; misuse may cause safety and health risks and could result in damage of a financial nature.

Before using the work vehicle check that the guards are all fitted correctly.

Before hitching the work vehicle up to the tractor, make sure the tractor is in good condition.

Check that the work vehicle coupling to the tractor at the third point of the hitch is securely locked so that it cannot work loose.

During use, wear the personal protective equipment and clothing envisaged by the laws in force on safety in the workplace.

In the event of a failure, do not carry out any repairs on site unless you are certain that the area you are in is appropriate and the equipment required is available; it is more advisable to take the time needed to return the business premises rather than carry out repair work in poor safety conditions.

When driving on the roads, the driver must comply with the highway code, ensuring the tractor is road-worthy and the relative signs to signal jutting objects are affixed.

Do not carry people on the work vehicle when moving from one area to another or on the roads.

Maintenance and adjustment work must be carried out with the work vehicle on flat, compact ground, with the tractor engine off, parking brake engaged, ignition key removed.

Never leave the driver's seat when the tractor engine is running.

Before leaving the tractor, lower the work vehicle to the ground, stop the engine, engage the parking brake, and remove the ignition key from the control panel and store in a safe place.

Safety advice for handling and transportation

Perform handling and transportation manoeuvres in compliance with the information provided by the manufacturer and stated directly on the machine, on the packing and in the instructions for use.

The staff assigned to handling the load must have the required ability and experience and must be skilled in the use of the lifting means adopted.

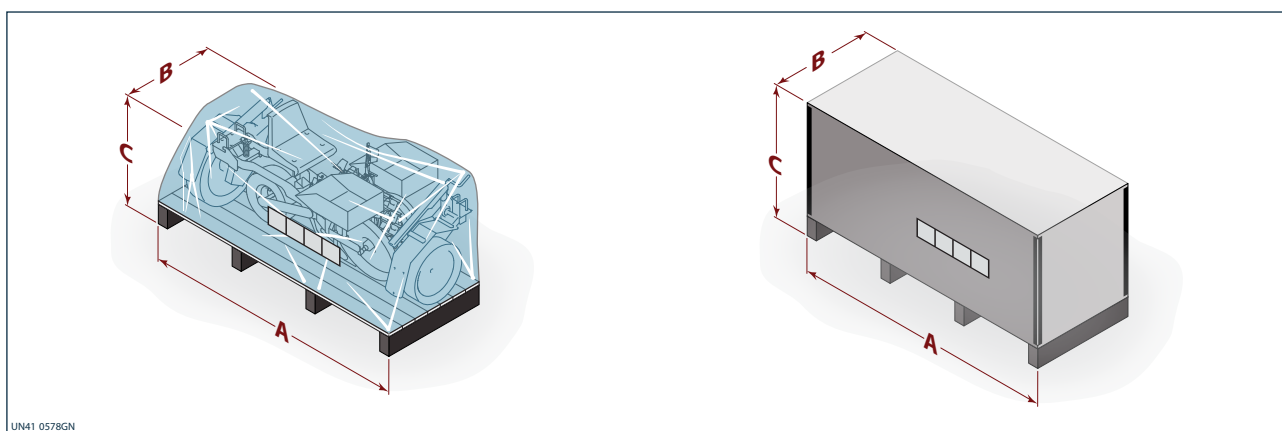
Packing

The type of packing is chosen according to the selected means of transport and the destination.

The work unit can be delivered fully assembled, or to facilitate carriage, disassembled and packed in several packages.

The illustration shows the types of packing most commonly used.

All the information for safe loading/unloading procedures is printed on the packing.



UNIFOX indicative packaging dimensions							
		UNIFOX/1	UNIFOX/2	UNIFOX/3	UNIFOX/4	UNIFOX/5	UNIFOX/6
Parcels	n°	1	1	2	2	3	3
A	cm	220	220	220	220	220	220
B		80	80	80	80	80	80
C		110	110	110	110	110	110

UNIFOX DT indicative packaging dimensions							
		UNIFOX DT/2	UNIFOX DT/3	UNIFOX DT/4	UNIFOX DT/5	UNIFOX DT/6	UNIFOX DT/7
Parcels	n°	2	2	2	3	3	4
A	cm	220	220	220	220	220	220
B		80	80	80	80	80	80
C		110	110	110	110	110	110

Handling and lifting the packed unit



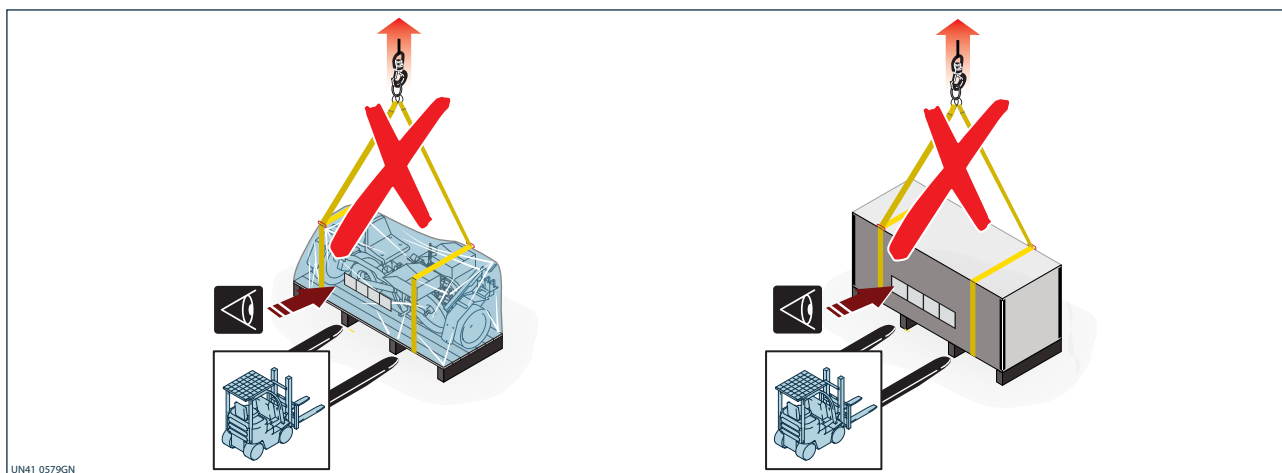
WARNING

**Lift the packed machine using appropriate hoisting means for the load to lift.
Check the parcel weight stated on the packing itself.**

Authorised personnel must comply with the instructions contained on the packing, in particular those concerning security.

Handle the packed equipment slowly, with care and caution, to prevent it swinging dangerously.

The illustration shows the harnessing points and lifting procedure.



Lifting (UNIFOX)



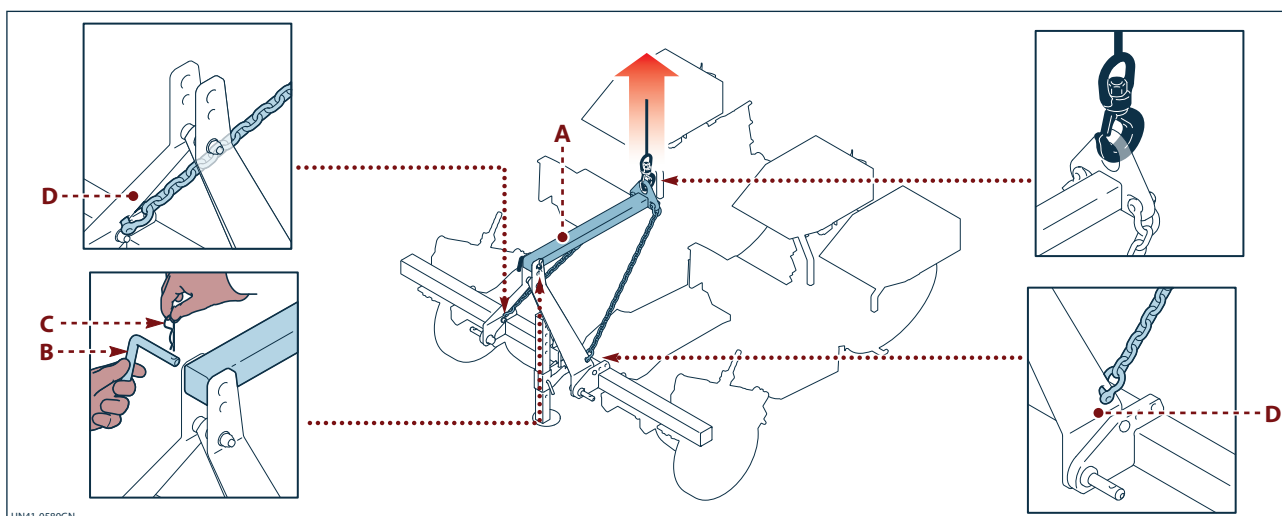
WARNING

During lifting watch out for the load swinging, as the hook-up point is never perfectly at the centre of gravity.

ised personnel in order to safeguard their own safety and that of the other people involved in the operations. The illustration shows the hook-up points for lifting the work unit with two planting units fitted.

The hook-up points for lifting apply for all the UNIFOX models.

Lifting operations must be carried out using suitable means for the load to be lifted, by qualified and author-



Proceed as outlined below.

- 1) Use the specific tool (A) provided with the work vehicle for lifting.
- 2) Strap up the work vehicle as shown in the figure.
- 3) Check that the pin (B) is secured by the lock pin (C) and that the chains are fastened stably to the frame (D).

Lifting (UNIFOX DT)

! WARNING

During lifting watch out for the load swinging, as the hook-up point is never perfectly at the centre of gravity.

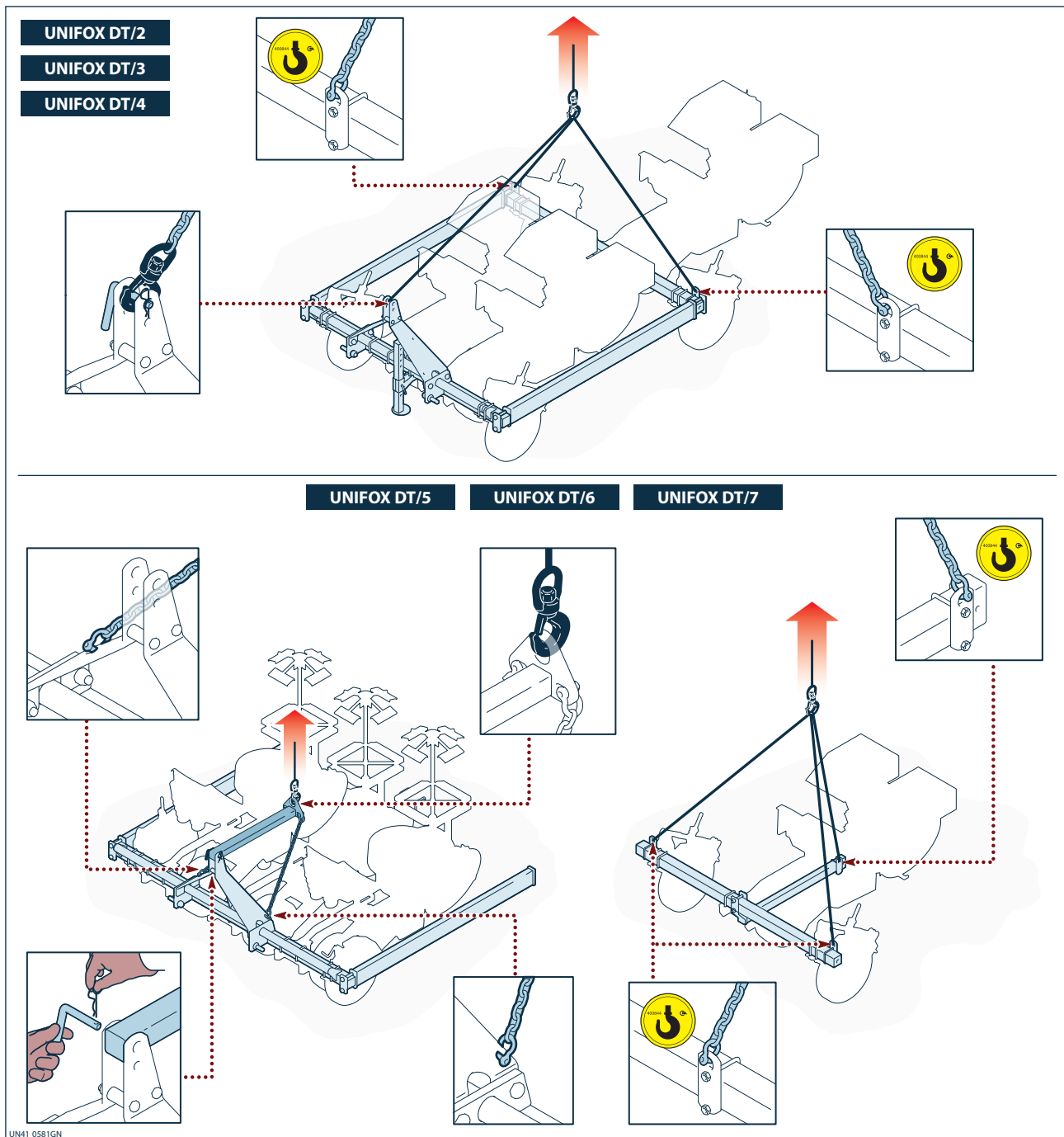
Lifting operations must be carried out using suitable means for the load to be lifted, by qualified and authorised personnel in order to safeguard their own safety and that of the other people involved in the operations.

The machine is equipped with lifting plates marked with appropriate signs.

The illustration shows the points for lifting the work vehicle.

The lifting procedure shown applies for all the work vehicle models specified in the manual.

The **UNIFOX DT/5 - UNIFOX DT/6 - UNIFOX DT/7** models must always be hoisted separately to avoid damage to the frame and possible injury to persons involved in the operations.



To lift the work vehicle, proceed as follows.
1) Before lifting check the stability of the harness.

2) Strap up the work vehicle or separate units as shown in the figure.

Unpacking and assembly

During unpacking, check that the components are in good condition and tally with the number stated; in the event of damage, report the damage to the retailer or directly to the manufacturer within 8 days of receiving the machine.

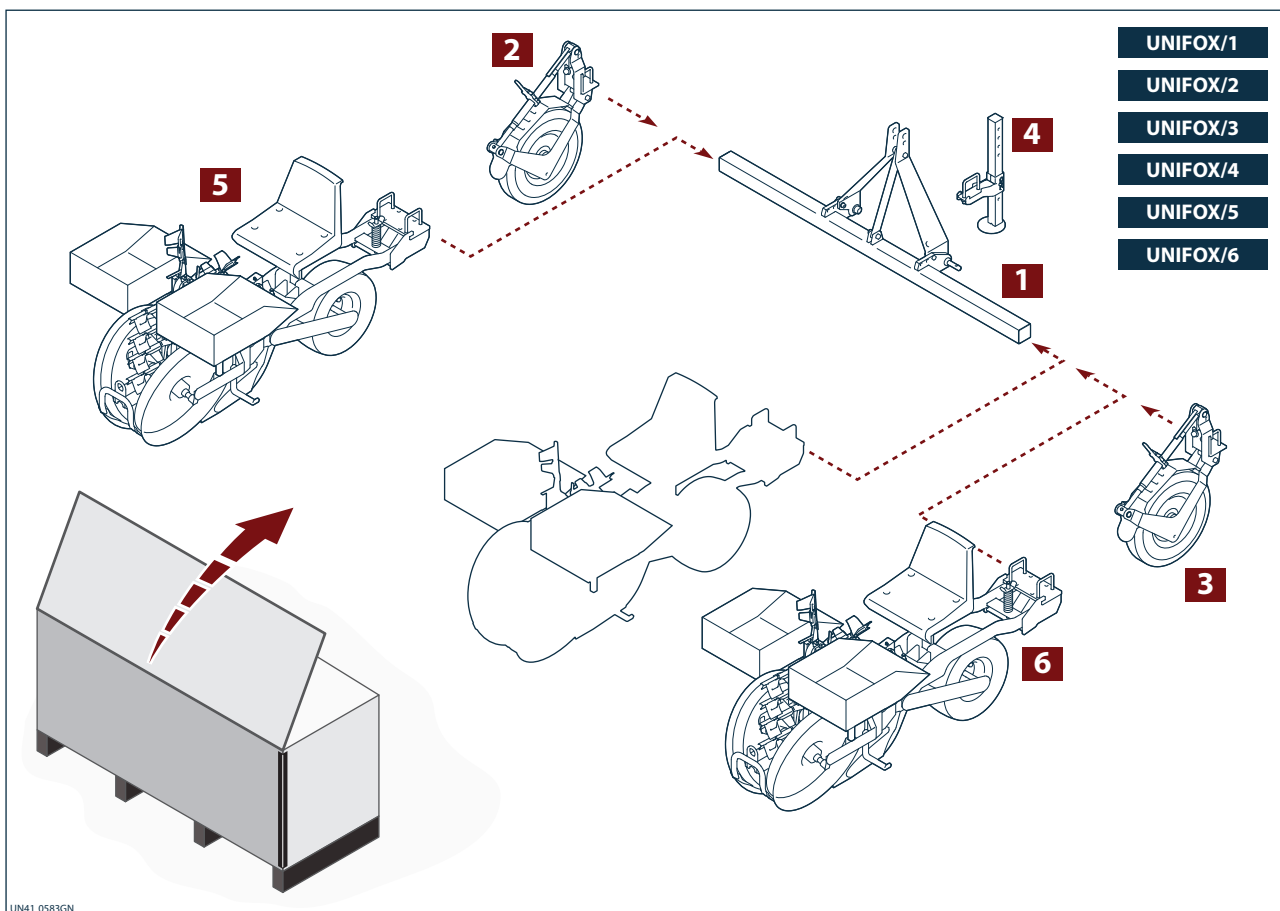
The packing materials must be appropriately disposed of or recycled in accordance with the laws in force.



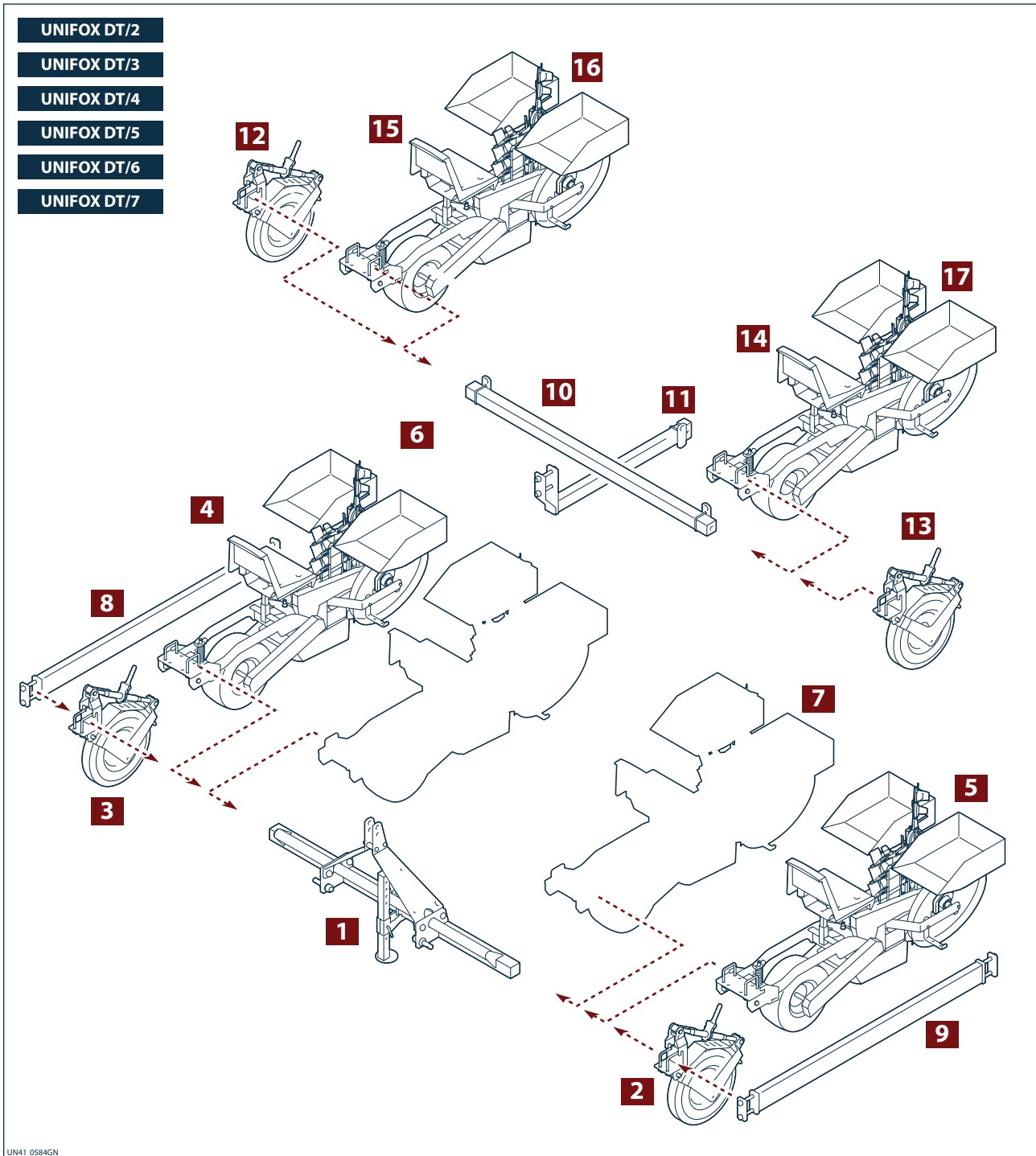
WARNING

The assembly of the work vehicle must be carried out at an authorised service centre or at company facilities equipped with appropriate equipment and suitably trained personnel, in order to guarantee safety during unpacking and installation.

The illustration provides a rough outline of the work vehicle assembly divided into two units.



The illustration provides a rough outline of the work vehicle assembly.



Safety advice for the adjustments

Maintenance and adjustment work must be carried out with the work vehicle on flat and compact ground, with the tractor engine off, parking brake

engaged, ignition key removed, and adopting all the necessary safety measures required to work safely.

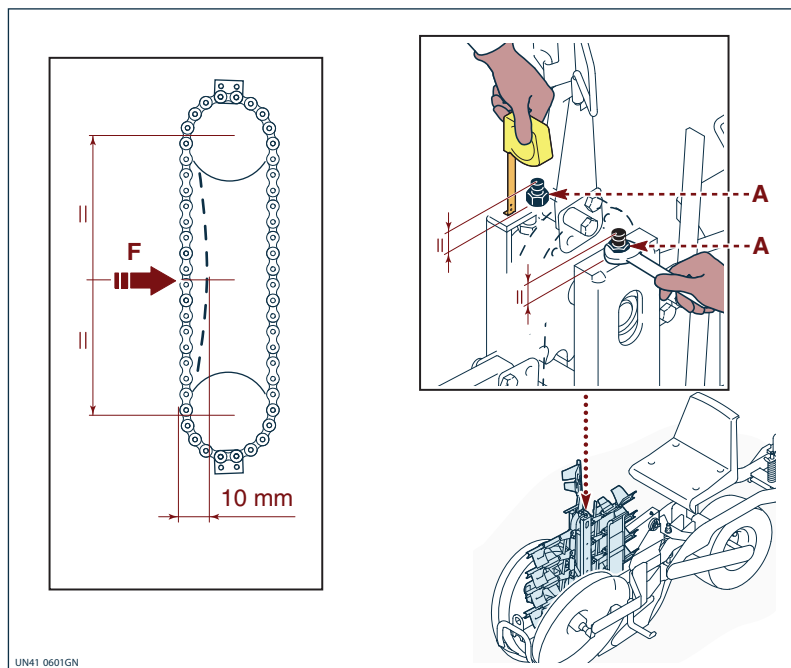
Adjustment of dispenser chain tension

For this operation, proceed as outlined below.

- 1) Actuate the nuts (**A**) alternatively using equal force.

To check the chain tension, apply a force (**F**) equal to 55 Nm (see figure).

The applied force (**F**) must result in the chain being bent for approx. 10 mm.



UN41 0601GN

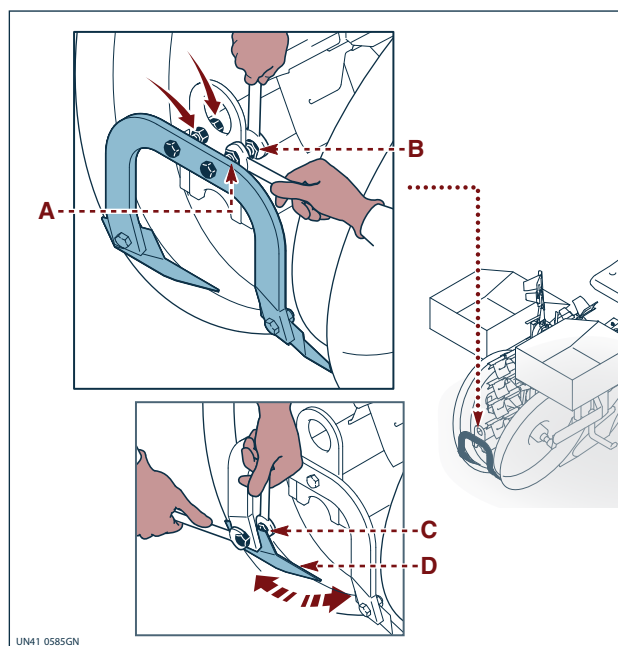
Adjusting the packing wheel scraper

The scraper is used to clean the packing wheels, removing any soil and debris that has built up.

For this operation, proceed as outlined below.

- 1) Loosen the nuts (**A**).
- 2) Actuate the nuts (**B**) to adjust the distance between the scraper and the packing wheels.
- 3) Tighten the nuts (**A**).
- 4) Loosen the nut (**C**).
- 5) Bring the blade (**D**) into alignment with the packing wheels profile.
- 6) Tighten the nut (**C**).
- 7) Repeat the same procedure to adjust the other blade.

Carry out the same operations to adjust the scrapers of the other planting units installed.



UN41 0585GN

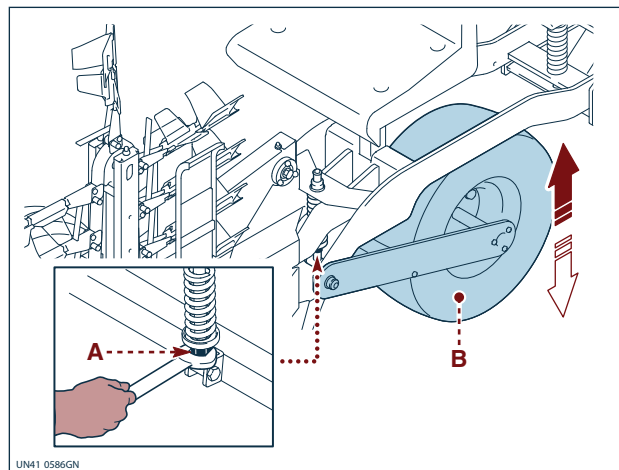
- 12) Tighten the screw (A).
- 13) Position the other seedling holder in the same way.

Repeat the same procedure to replace the ploughshares of the other transplanting units.

Adjusting the driving wheel load

To adjust the load of the wheel on the ground, proceed as outlined below.

- Tighten the nut (A) to increase the load of the driving wheel (B) on the ground.
- Unscrew the nut to reduce the load of the driving wheel on the ground.



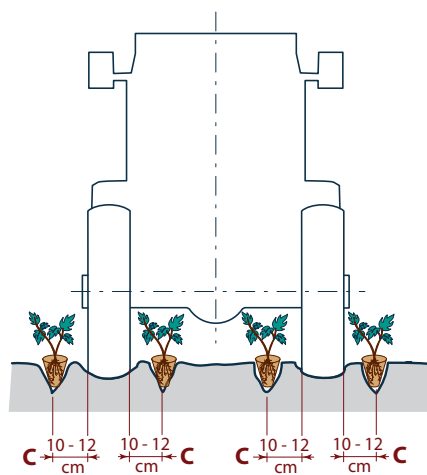
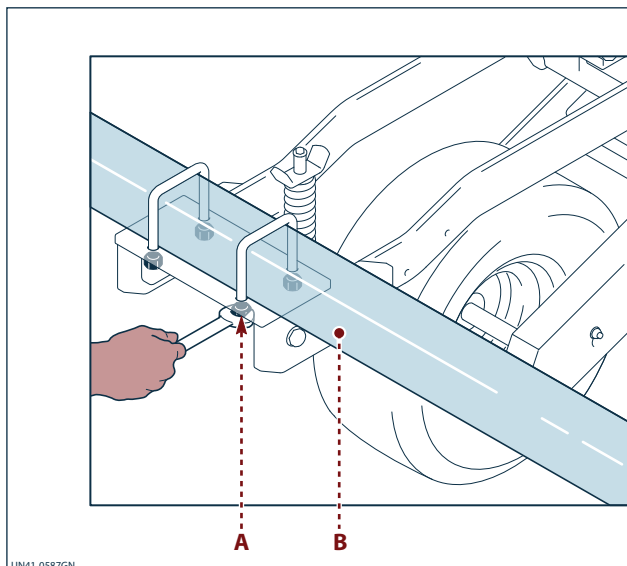
Adjusting the row spacing


WARNING

Secure the work vehicle in position (lifted off the ground) with external means (trestles, etc.). Do not stand under the hoisted machine unless it is suitably secured in position.

Adjust the gap between the planting units to obtain the row spacing required (for distances envisaged, see "Technical characteristics" for model concerned).

Keep the minimum distance stated on the illustration between the seedlings and the tractor wheels.



For adjustments, proceed as outlined below.

- 1) Lift the work vehicle slightly off the ground.
- 2) Loosen the nuts (A).
- 3) Slide the planting unit along the frame (B) until the required planting spacing is obtained.

- 4) Tighten the nuts (A).

To plant the seedlings in bare ground, adjust the planting units so that the seedlings are kept (C) cm 10 - 12 away from tractor wheel.

Adjusting the plant spacing

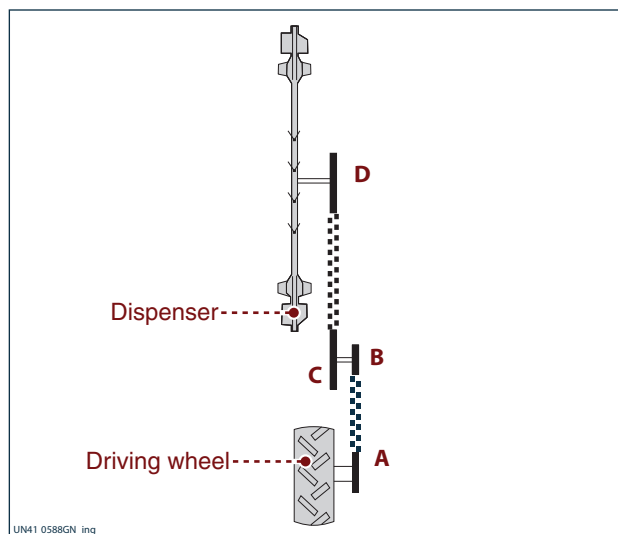
The distance between one seedling and the next is determined by the number of teeth of the pinions installed and the number of grippers fitted to the dispenser.

A series of pinions may be fitted to ensure the required plant spacing is obtained.

The pinions must be replaced on all the planting units fitted.

The charts state the possible distances - in relation to the grippers fitted on the dispenser - between one seedling and the next according to the available pinion range.

To mount the pinions, see the section on "Replace the driving wheel pinions" on page 32.



Set - up of the dispenser fitted with a single gripper					
Plant spacing distance		A	B	C	D
cm	inches	(z)	(z)	(z)	(z)
700	275-5/8"	12	20	16	16
640	252"	15	23	16	16
600	236-1/4"	14	20	16	16
570	224-3/8"	14	19	16	16
540	212-5/8"	17	22	16	16
500	196-7/8"	19	23	16	16
475	187"	20	23	16	16
440	173-1/4"	19	20	16	16
420	165-3/8"	20	20	16	16
380	149-5/8"	22	20	16	16
350	137-3/4"	23	19	16	16
320	126"	21	16	16	16

Set - up of the dispenser fitted with 2 grippers					
Plant spacing distance		A	B	C	D
cm	inches	(z)	(z)	(z)	(z)
350	137-3/4"	12	20	16	16
320	126"	15	23	16	16
300	118-1/8"	16	23	16	16
285	112-1/4"	17	23	16	16
270	106-1/4"	17	22	16	16
250	98-1/2"	19	23	16	16
240	94-1/2"	19	22	16	16
220	86-5/8"	20	21	16	16
210	82-3/4"	21	21	16	16
190	74-7/8"	21	19	16	16
175	68-7/8"	19	16	16	16
160	63"	21	16	16	16

Set - up of the dispenser fitted with 5 grippers					
Plant spacing distance		A	B	C	D
cm	inches	(z)	(z)	(z)	(z)
140	55-1/8"	14	23	16	16
128	50-3/8"	15	23	16	16
120	47-1/4"	16	23	16	16
114	44-7/8"	16	22	16	16
108	42-1/2"	17	22	16	16
100	39-3/8"	15	18	16	16
95	37-3/8"	17	19	16	16
88	34-5/8"	21	22	16	16
84	33-1/8"	21	21	16	16
76	30"	22	20	16	16
70	27-1/2"	23	19	16	16
64	25-3/16"	21	16	16	16

Set - up of the dispenser fitted with 10 grippers					
Plant spacing distance		A	B	C	D
cm	inches	(z)	(z)	(z)	(z)
78	30-3/4"	12	22	16	16
69	27-1/8"	14	23	16	16
62	24-3/8"	15	22	16	16
55	21-5/8"	17	22	16	16
49	19-5/16"	19	22	16	16
43	17"	21	21	16	16
39	15-5/16"	22	20	16	16
35	13-3/4"	23	19	16	16
31	12-3/8"	23	17	16	16
27	10-5/8"	22	14	16	16
23	9-1/16"	22	12	16	16
---	---	---	---	---	---

(z) = N. teeth on the pinion

(z) = N. teeth on the pinion

Set - up of the dispenser fitted with 15 grippers					
Plant spacing distance		A	B	C	D
cm	inches	(z)	(z)	(z)	(z)
52	20-1/2"	12	22	16	16
46	18-1/8"	13	21	16	16
42	16-1/2"	14	21	16	16
37	14-5/8"	16	21	16	16
33	13"	18	21	16	16
29	11-7/16"	20	21	16	16
26	10-1/4"	21	20	16	16
24	9-1/2"	21	18	16	16
21	8-1/4"	21	16	16	16
18	7-1/8"	21	13	16	16

(z) = N. teeth on the pinion

Set - up of the dispenser fitted with 20 grippers					
Plant spacing distance		A	B	C	D
cm	inches	(z)	(z)	(z)	(z)
39	15-5/16"	12	22	16	16
34	13-3/8"	14	23	16	16
31	12-3/8"	15	22	16	16
28	11"	17	23	16	16
25	9-7/8"	19	23	16	16
22	8-5/8"	19	20	16	16
20	7-7/8"	20	19	16	16
18	7-1/8"	22	19	16	16
16	6-1/4"	23	18	16	16
13	5-1/8"	23	14	16	16

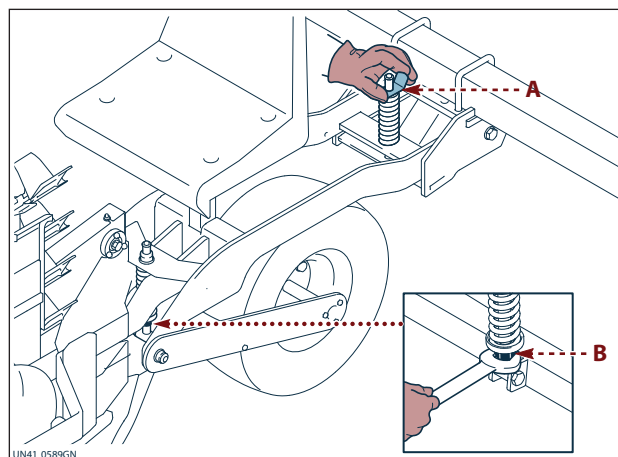
(z) = N. teeth on the pinion

Adjusting the planting unit load

The weight (load) to be applied to the packing wheels is obtained by the combined action of the handwheel (A) and nut (B).

For adjustments, proceed as outlined below.

Alternatively turn the handwheel (A) clockwise or anti-clockwise and tighten or loosen the nut (B) to exercise the ideal weight on the packing wheels.



Safety advice concerning use

To prevent the risk of injury, read the safety instructions given in section "3" carefully.

This ensures the machine can only be used by fit and healthy personnel, who are suitably trained and authorised, and hold the appropriate category driving licence for a tractor.

The tractor driver is responsible for assessing the hazards associated with envisaged environmental conditions, e.g., specific ground conditions (loose soil, slippery, sloping ground, etc..) which require special precautions, and it is up to the driver to take the necessary measures to eliminate or reduce these hazards.

Make sure nobody and no animals are in the machine work and manoeuvring area.

Before transiting on public roads, check that the tractor/work vehicle assembly complies with highway code regulations.

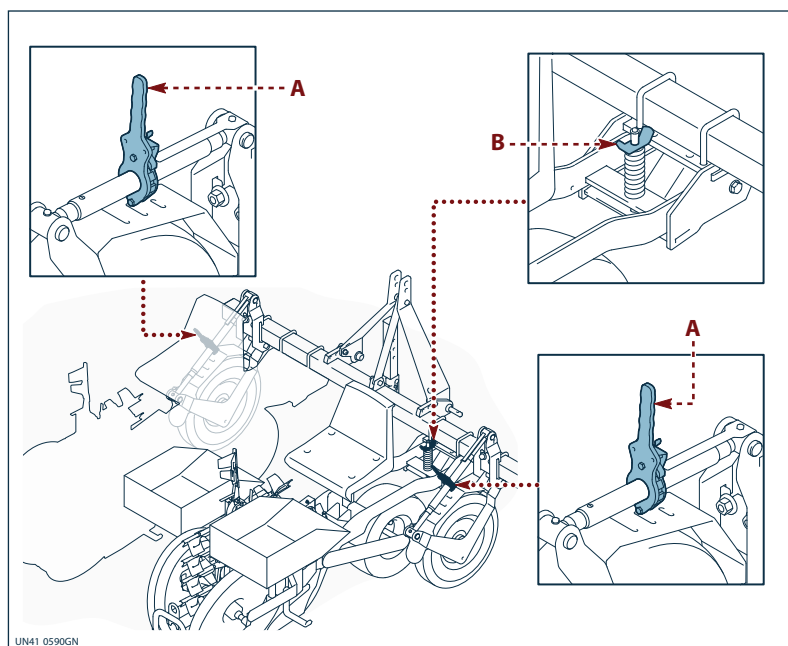
Check that the tractor exhaust gas is not emitted in the direction of the work vehicle's operators.

To prevent serious personal injury, particularly to children, never leave the tractor with the key in the ignition and the machine off the ground.

Description of the controls

A) Lever: this is used to adjust the set up of the dispenser(s) so that the seedlings are planted in the ground up-right.

B) Handwheel: this adjusts the weight on the packing wheels (see page 21).


Hitching and unhitching the work vehicle to and from the tractor

WARNING

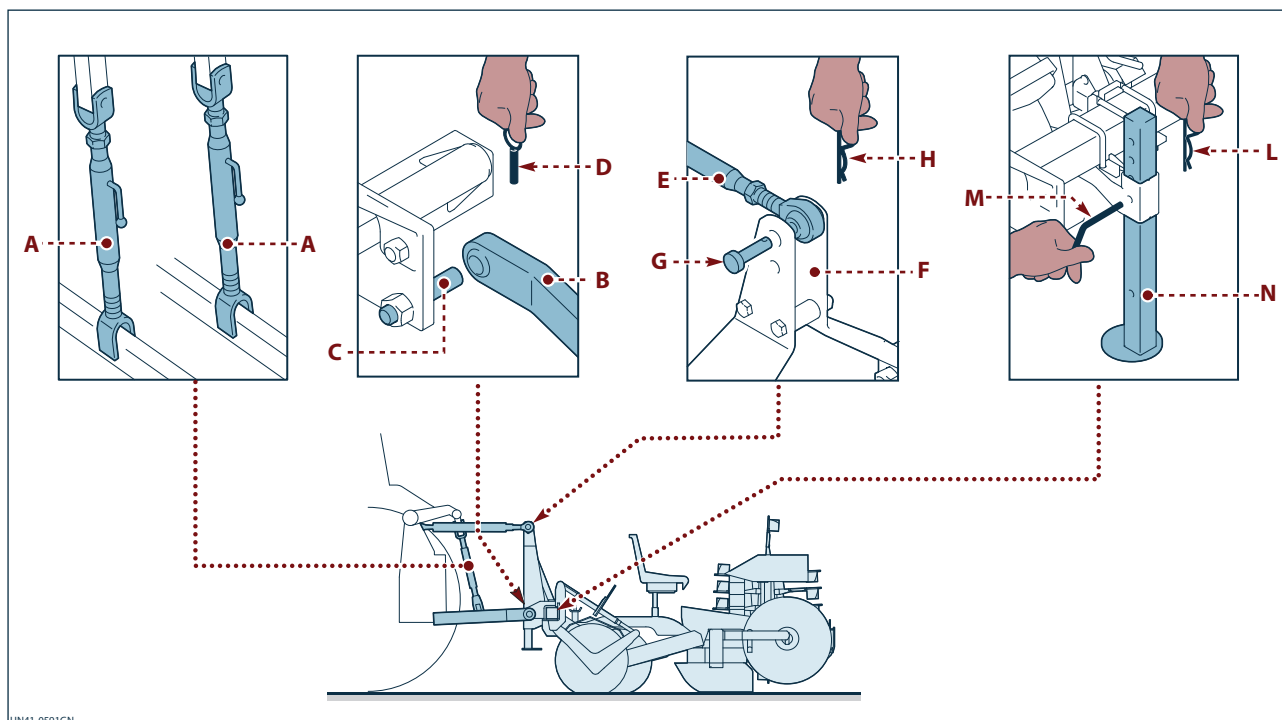
Hitching the work vehicle up to the tractor is one of the riskiest moments as it could require the involvement of several people at once, carrying out synchronised manoeuvres between the tractor driver and the operators on the ground, which - if badly organised - could result in accidents.


WARNING

The work vehicle must only ever be coupled to a tractor with an appropriate power rating which is equipped with a lift that complies with the regulations in force, observing the maximum weight limit on the rear axle and the gross vehicle weight (see tractor user manual).

Assess whether ballast is required at the front of the tractor to prevent it rearing up and losing stability during driving.

Check that the work vehicle coupling to the tractor at the third point of the hitch is securely locked so that it cannot work loose.



- For hitching, proceed as outlined below.

- 1) Position the work vehicle on flat, solid ground in a risk-free area.
- 2) Start moving the tractor to move the three-point hitch up to the lift frame.
- 3) Align the arms of the lifting unit with the coupling points on the work vehicle.
- 4) Switch off the tractor engine, remove the ignition key, and store in a safe place.
- 5) Turn the tie rods (**A**) to adjust the height of the lift arms (**B**) (see tractor instruction manual).
- 6) Insert the pins (**C**) into the lift arms and fit in the lock pins (**D**).
- 7) Turn the tie-rod (**E**) to adjust the space between the tie-rod and the upper coupling (**F**) on the support frame.
- 8) Insert the pin (**G**) and the lock pin (**H**).
- 9) Remove the safety lock pin (**L**), slide out pin (**M**), and lift the resting foot (**N**) off the ground.
- 10) Adjust the tie-rod (**E**) so that the work vehicle is parallel with the ground.

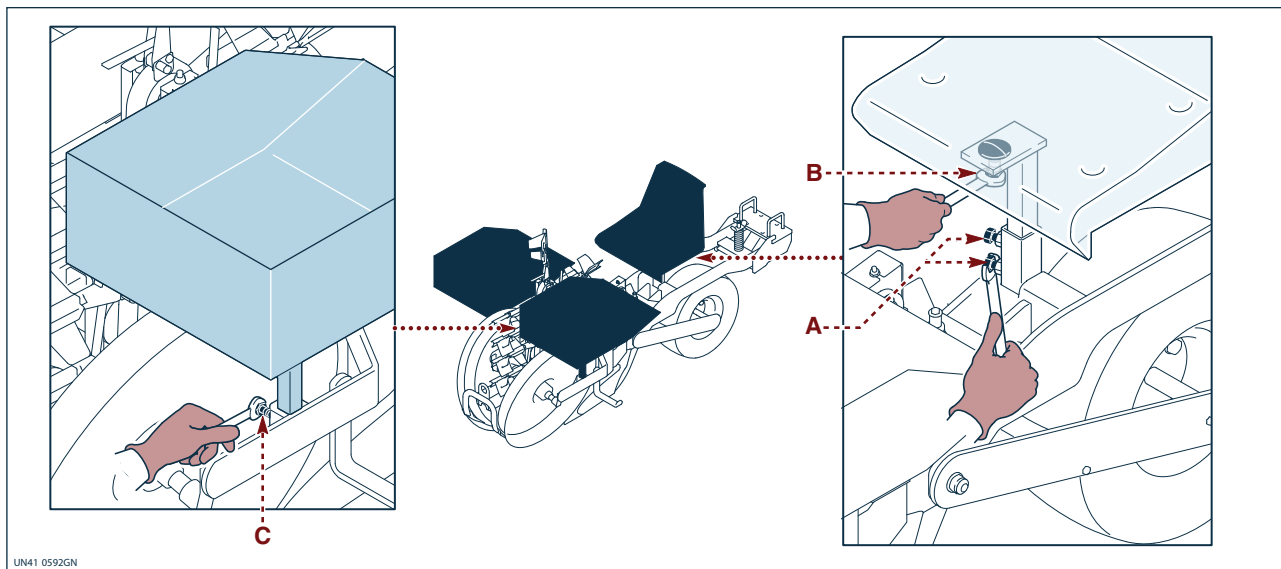
- For unhitching, proceed as outlined below.

- 1) Select an area with flat, solid ground to park the work vehicle.
- 2) Using the tractor's controls, lower the work vehicle to the ground.
- 3) Lower the resting foot (**N**), insert pin (**M**) and lock pin (**L**).
- 4) Switch off the tractor engine, remove the ignition key, and store in a safe place.
- 5) Take out the lock pin (**H**) and remove the pin (**G**).
- 6) Slide out the lock pins (**D**) and remove the lift arms (**B**) from the work vehicle's coupling points.

Arrangement of the seat and seedling holder

Poor work posture will tire the operator and could lead to mistakes being made; therefore, before starting work,

adjust the seat and secure it in the position that offers maximum comfort.



Proceed as outlined below.

- 1) Loosen the screws (A) and adjust the seat height.
- 2) Tighten the screws (A) to secure the seat in the right position.
- 3) Loosen the nut (B) to move the seat lengthways in relation to the vehicle.
- 4) Tighten the nut (B) to secure the seat in the right position.
- 5) Loosen the screw (C).
- 6) Set the seedling container into the appropriate position.
- 7) Tighten the screw (C).

Changing the dispenser chain

According to the plant spacing required, it may be necessary to install a chain fitted with a different number of grippers with respect to those already installed.

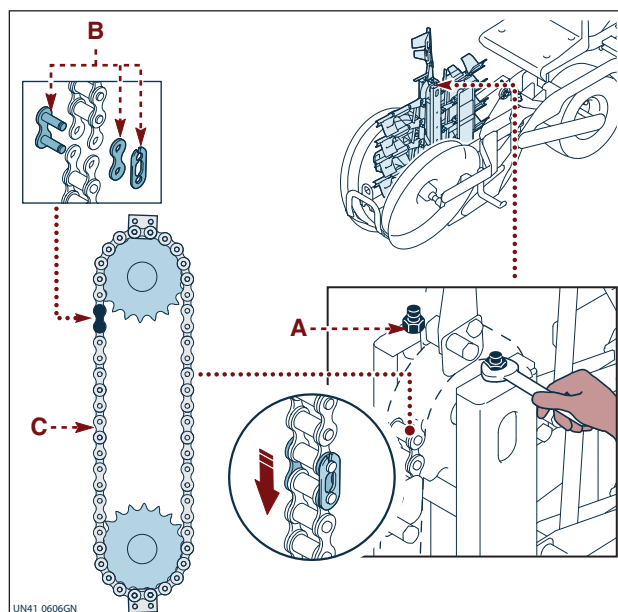
Carry out the operations described.

- 1) Loosen the nuts (A) to slacken off the chain.
- 2) Remove the joining link (B).
- 3) Remove the chain (C).
- 4) Fit the chain on the pinions along with the required number of grippers.
- 5) Fit the joining link (B).

NOTICE

Fit the chain with the joining link positioned as shown in the figure.

- 6) Tension the chain (see "Adjusting the dispenser chain tension").



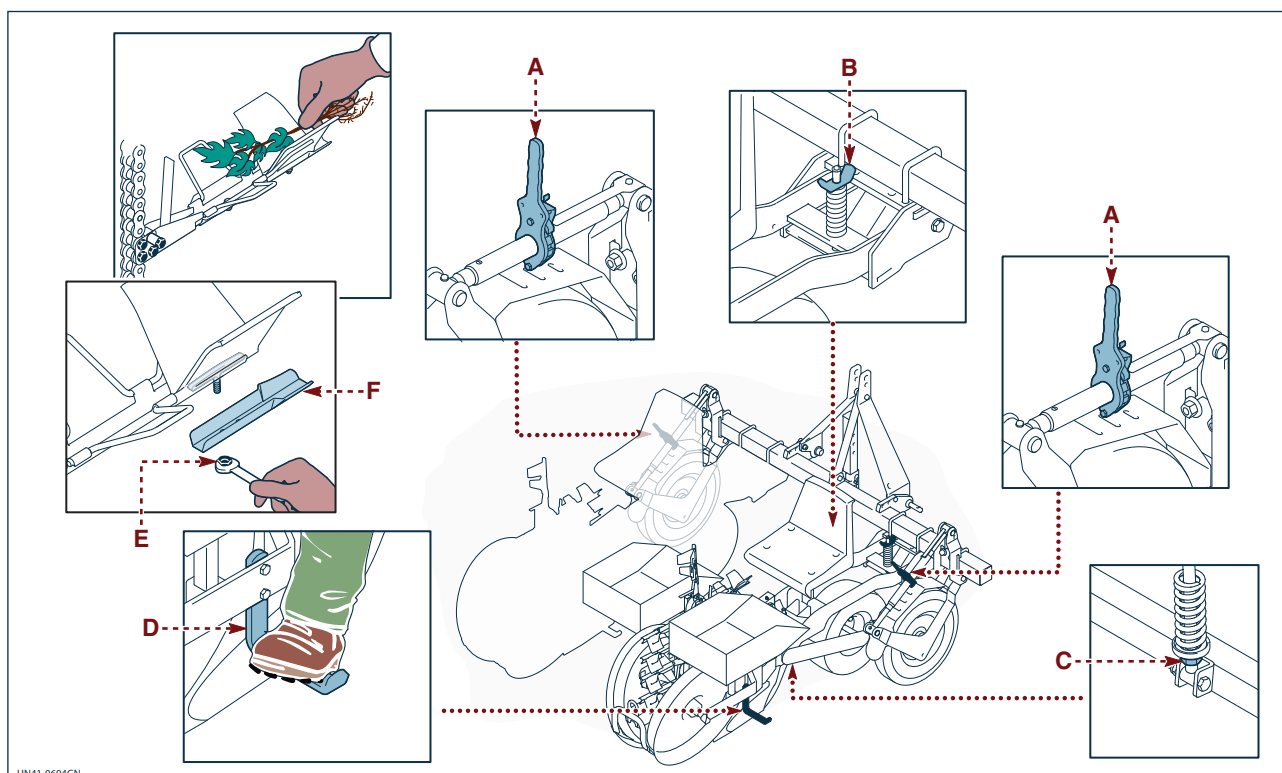
Planting procedure

The seedlings must be planted in soil which has been finely tilled with a harrow or hoeing machine and lightly compacted on the surface.

We recommend dampening the root ball well (without causing dripping) to help the seedling take root.

Do not work on extremely spongy spoil, or extremely compact soil, nor on very wet ground, as these conditions would all affect planting quality negatively.

During planting, the work vehicle's driving wheels must grip the ground at all times and the tractor lift must be fully lowered.



- Preliminary operations

Before starting the planting, the following operations must be carried out.

- 1) Check that the plant spacing is correct (see "Adjusting the plant spacing" - page 20).
- 2) Check that the row spacing is correct (see "Adjusting the row spacing" - page 19).
- 3) Turn the levers **(A)** in the same direction to set the planting units parallel to the ground.
- 4) Use, alternatively, the handwheel **(B)** and the nut **(C)** to adjust the load of the packing wheels (see "Adjusting the planting unit load" - page 21).
- 5) Use the nut **(C)** to apply the load of the driving wheel to the ground (see "Adjusting the driving wheel load" - page 19).
- 6) Load the seedlings into the holders.

- Planting operations

- 1) To prevent overloads on the ploughshare, the tractor driver must lower the work vehicle with the tractor moving forwards at low speed. Do not reverse the tractor with the work vehicle on the ground as this could damage the ploughshare.
- 2) Stop the tractor and let the operators get on the work vehicle.
- 3) In the planting stage, the operators on the work vehicle must adopt a correct posture (with their feet resting on the footboard **(D)**) and must agree - together with the tractor driver - on the most effective speed of travel.
- 4) Place the seedling on the grippers with the root/root ball facing outwards (see figure).
- 5) Move forwards with the tractor before starting the planting.
- 6) Check the proper planting depth (see "Planting depth adjustment" - page 18).
- 7) Consider whether the gripper closure needs to be adjusted (see "Adjustment of gripper closing angle" page 18).
- 8) The operators on the work vehicle must check the

planting quality constantly. In the event of anomalies, stop the tractor moving forwards and adopt corrective measures (see "Information on adjustments" and "Troubleshooting"- pages 17 and 29).

NOTICE

In case of reduced plant spacing, we recommend disassembling the extension (F) to prevent the overturning of the newly-planted seedling.

Follow the instructions provided herein to disassemble the extension.

- 1) Unscrew the nut (E).
- 2) Remove the extension (F).
- 3) Tighten the nut (E).
- 4) Repeat the same procedure to remove the other extensions.

Night-time work or poor visibility conditions

Working at night or in poor visibility conditions increases the risks arising from machine use; in these conditions,

proper lighting must be provided to ensure safe work.

Transporting the work vehicle

WARNING

For work vehicle loading/unloading, use lifting equipment with a suitable capacity for the load to be lifted.

Use all possible caution when lifting to avoid damaging the work vehicle and causing injuries to persons involved in operations.

Strap up the unit at the lifting points envisaged by the manufacturer.

See the strap-up points and lifting procedures in the sections titled "Lifting (UNIFOX)" on page 13 or "Lifting (UNIFOX DT)" on page 14.

Anchor the work unit to the means of transport with ropes and secure the wheels with wedges.

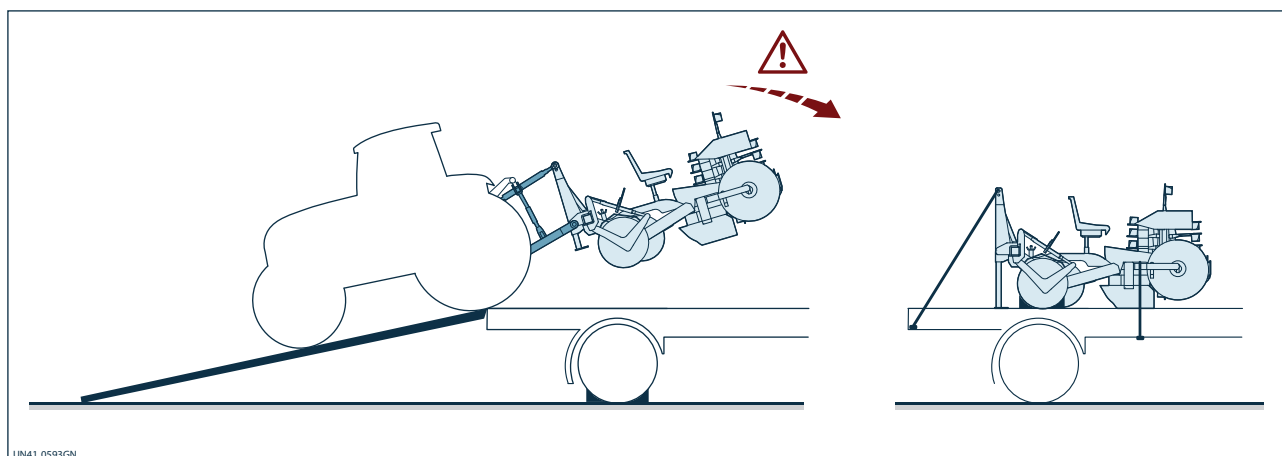
Units which are narrower than the maximum width allowed by the Highway Code can be loaded, coupled to the tractor, onto suitable means of transport using loading ramps.


WARNING

Thoroughly clean the ramps and loading platform before boarding the vehicle.

Position the ramps on the transport means and fix them in a stable way to the truck bed using the fastening devices (pins, screws, chain etc.).

Where the ramps meet the truck bed there is a dangerous bump so move the machine very carefully over this point.



Proceed as outlined below.

- 1) Start the tractor and lift the work vehicle as far off the ground as is permitted.
- 2) Get into the means of transport from the tractor's driving seat.
- 3) Lower the work vehicle onto the truck bed.
- 4) Off the tractor engine and engage the parking brake.
- 5) Anchor the work unit -tractor assembly to the means of transport with ropes and secure the wheels with wedges.
- 6) Affix the relative signalling signs to any parts jutting out from the means of transport.

Transit on public roads

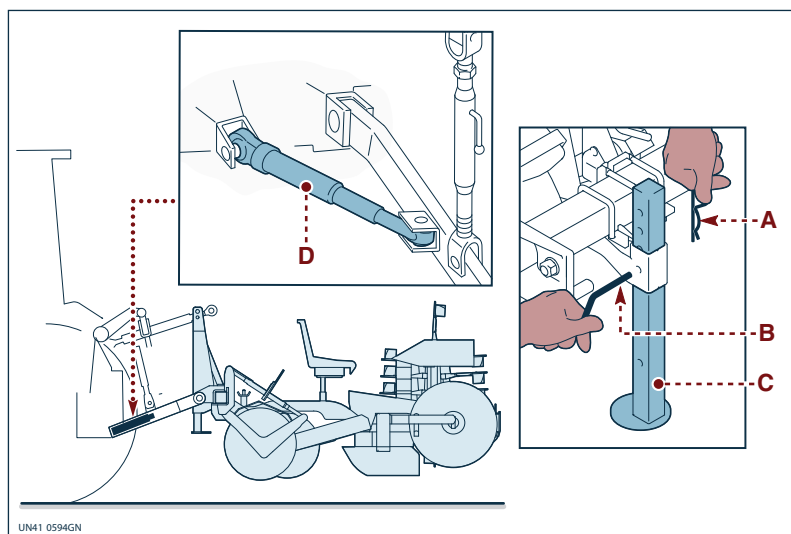
WARNING

It is prohibited to carry people and/or things on the work vehicle.

Before using the machinery on the road, remove the seedlings from their respective holders and thoroughly clean working parts and tyres to remove all traces of soil.

When transporting the work vehicle/tractor assembly, the regulations of the highway code must always be complied with.

Remove the safety lock pin (A), slide out pin (B), and lift the resting foot (C) off the ground.



Slide the pin (B) and the lock pin (A) into place to block the foot raised above ground level.

Obligatorily, the three-point hitch must be secured with the relative bars (D) to prevent the work vehicle swinging against the tractor and the speed of travel must be adjusted to prevent loss of control of the tractor.

Prolonged disuse of the work vehicle

If the work vehicle is not due to be used for long periods, proceed as follows.

- 1) Clean the machine thoroughly, taking care to remove any chemical or fertiliser residues (see "Cleaning the work vehicle").
- 2) Check the condition of the all the machine's parts and replace any that are worn or damaged.
- 3) Check that the screws are correctly tightened.
- 4) Grease to all the unpainted parts.

- 5) Grease the parts that require lubrication (see "Lubrication points diagram").

- 6) Park the machine carefully on flat ground in a dry area protected from the weather.

Leave enough room around the work vehicle for the hitching up and unhitching manoeuvres.

Lower the resting foot to the ground to guarantee work vehicle stability.

Safety advice for maintenance

Maintenance work must be carried out with the work vehicle on flat, compact ground, with the tractor engine off, parking brake engaged, and ignition key removed, and adopting all the necessary safety measures required to work safely.

Any maintenance operations that can be carried out on the business premises come under the ordinary maintenance envisaged in the instruction manual.

Special maintenance operations (non included in this handbook) require a specialised workshop on the premises which meets the requirements specified by the relative laws in force (appropriate equipment suitably trained staff etc.); if you do not have a compliant workshop, contact an authorised one.

Maintenance interval schedule

To guarantee constant, efficient and safe machine operation, ensure all the maintenance envisaged by the

manufacturer is carried out.

Maintenance schedule

Maintenance intervals			
Frequency	Component	Type of work	Manual reference
Every hour	Dispenser	Cleaning	
	Ploughshare	Cleaning	Cleaning the ploughshare
Every day	Lift frame	Integrity check	
	Safety devices	Inspection	Guards
	Warning and hazard plates	Inspection	Information and safety signs
Every 50 hours	Machine components	Greasing	Lubrication diagram
	Nuts and bolts	Tightening	Check of nuts and bolts tightening torque
Every 150 hours	Tyres	Pressure check	Tyre check

Tyre check

Check the tyres for wear and if they feature tears or signs of ageing, they must be replaced.

Check and if necessary restore the tyre pressure (see the "Technical characteristics" table).

Check of nuts and bolts tightening torque

Check the tightening torque of all nuts and bolts. If bolts are loose, tighten them according to the correct

torque values (see "Nuts and bolts tightening torque table").

Cleaning the work vehicle

Clean the work vehicle with a high-pressure water jet and, if necessary, with approved detergents. The liquid used for washing could be hazardous for the environment due to the presence of pollutants such as detergents, oils, etc., therefore do not simply dump the

wastewater; dispose of it in suitable areas equipped with separation devices for the pollutants. Dry with compressed air and lubricate the components shown (see "Lubrication diagram").

Troubleshooting

The following list contains a number of common problems that may arise during work, together with the ways to solve them.

Problem	Likely cause	Solution
The seedling planted is too close to the surface or too deep	Incorrect planting depth	Make the relative adjustment (see "Adjusting the planting depth")
	The seedling is not positioned properly	Adjust the planting unit load (see "Adjusting the planting unit load")
The soil has not been properly compacted on top of the seedlings	The planting unit load is not appropriate	Adjust the planting unit load (see "Adjusting the planting unit load")
The planted seedling is tilted or lying overturned on the ground	The extension brushes against the seedlings	Disassemble the extension (see "Planting procedures")
	Incorrect planting depth	Make the relative adjustment (see "Adjusting the planting depth")
	The planting unit load is not appropriate	Adjust the planting unit load (see "Adjusting the planting unit load")
	The seedling is not correctly held by the gripper	Place the seedling correctly on the gripper (see "Planting depth adjustment")

Nuts and bolts tightening torques chart

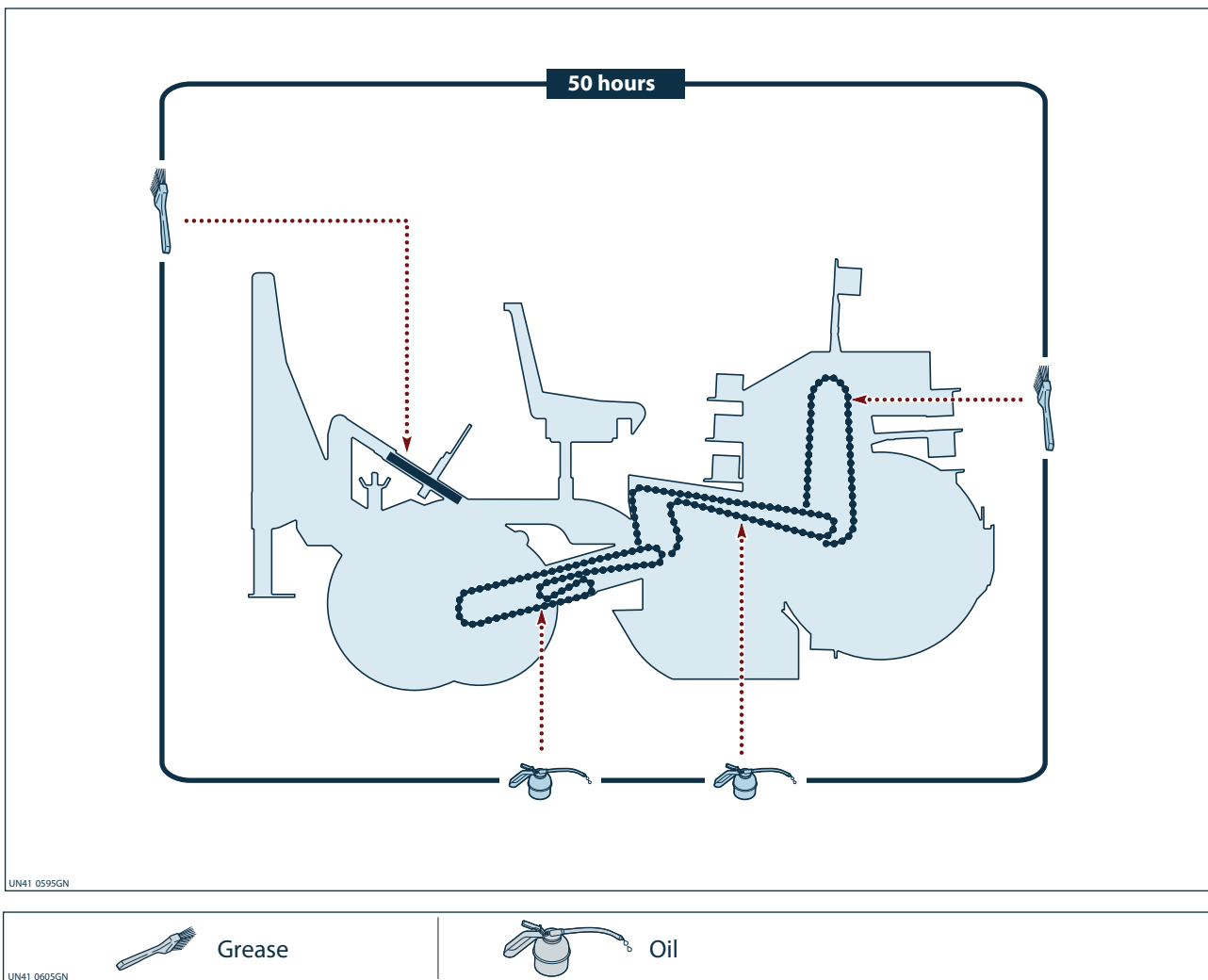
Nuts and bolts tightening torques				
Thread diameter	Thread pitch (mm)	Resistance class 8.8 (Nm)	Resistance class 10.9 (Nm)	Resistance class 12.9 (Nm)
M 4	0,7	2.7	3.8	4.6
M 5	0,8	5.5	8.0	9.5
M 6	1	9.5	13.0	16.0
M 8	1,25	23.0	32.0	39.0
M 10	1,5	46.0	64.0	77.0
M 12	1,75	80.0	110.0	135.0
M 14	2	125.0	180.0	215.0
M 16	2	195.0	275.0	330.0
M 18	2,5	270.0	390.0	455.0
M 20	2,5	385.0	540.0	650.0
M 22	2,5	510.0	720.0	870.0
M 24	3	660.0	930.0	1100.0
M 27	3	980.0	1400.0	1650.0

Lubrication diagram

Lubricate the parts shown at the times and in the ways specified.

Before lubricating, clean the components concerned and the greasing nipples to prevent contamination of the lubricant.

Use universal grease for traction in farming and industrial machinery, which is water-repellent with a 180° drop point.



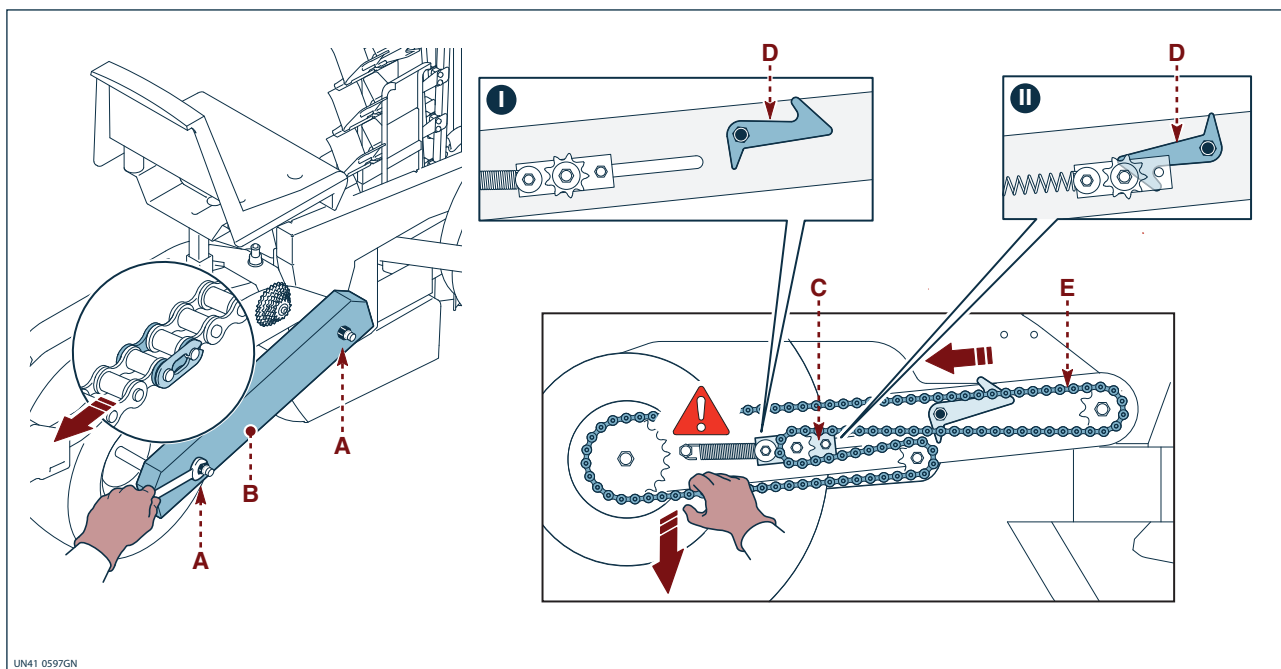
Safety advice in case of replacements

When replacing worn or damaged parts, original spares must always be used.

Special maintenance operations (non included in this handbook) require a specialised workshop on

the premises which meets the requirements specified by the relative laws in force (appropriate equipment suitably trained staff etc.); if you do not have a compliant workshop, contact an authorised one.

Replacing the driving wheel chain



For this operation, proceed as outlined below.

- 1) Loosen the nuts (A) and remove the casing (B).
- 2) Turn the engagement device (D) to position (II) to lock the chain tensioner (C).
- 3) Pull the chain downwards.
- 4) Remove the chain (E).



CAUTION

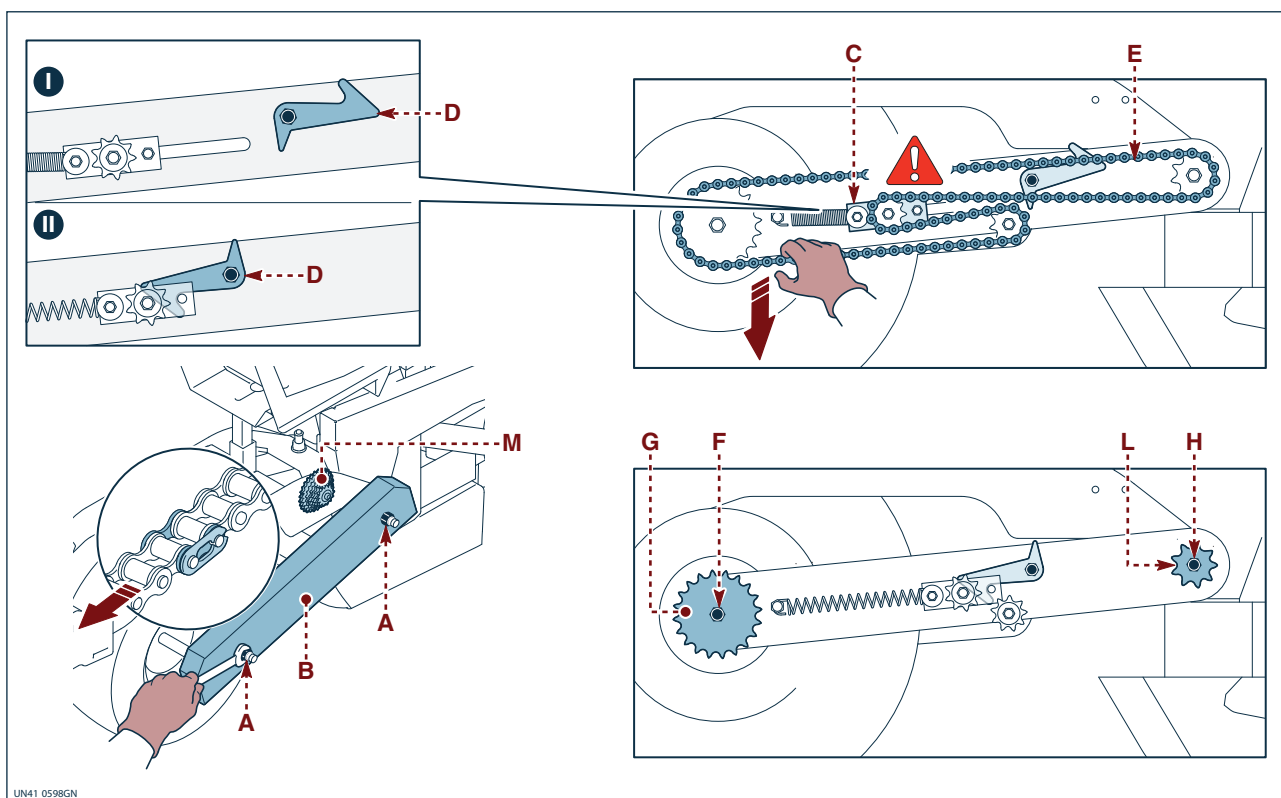
The tensioner could move unexpectedly, causing injury to the hands.

Proceed with the utmost caution.

- 5) Fit a new chain.
- 6) Pull the chain downwards.
- 7) Turn the engagement device (D) to position (I) to release the chain tensioner (C).
- 8) Slowly release the chain to tension it.
- 9) Fit the casing (B) and tighten the nuts ((A).

NOTICE

Fit the chain with the joining link positioned as shown in the figure.

Replace the driving wheel pinions


For this operation, proceed as outlined below.

- 1) Loosen the nuts (A) and remove the casing (B).
- 2) Turn the engagement device (D) to position (II) to lock the chain tensioner (C).
- 3) Pull the chain downwards.
- 4) Remove the chain (E).


CAUTION

The tensioner could move unexpectedly, causing injury to the hands.

Proceed with the utmost caution.

- 5) Unscrew the screw (F) and remove the pinion (G).
- 6) Unscrew the screw (H) and remove the pinion (L).

- 7) From the range of pinions (M), select the most suitable pinion to obtain the required plant spacing (see page 20).
- 8) Fit the new pinions and tighten the screws (F - H) respectively.
- 9) Fit the chain on the pinions and the tensioner.

NOTICE

Fit the chain with the joining link positioned as shown in the figure.

- 10) Pull the chain downwards
- 11) Turn the engagement device (D) to position (I) to release the chain tensioner (C).
- 12) Slowly release the chain to tension it.
- 13) Fit the casings (B) and tighten the nuts (A).

Replacing the dispenser drive chain

For this operation, proceed as outlined below.

- 1) Loosen the nuts (**A**).
- 2) Remove the casing (**B**).
- 3) Move the tensioner (**C**) and remove the chain (**D**).



CAUTION

The tensioner could move unexpectedly, causing injury to the hands.

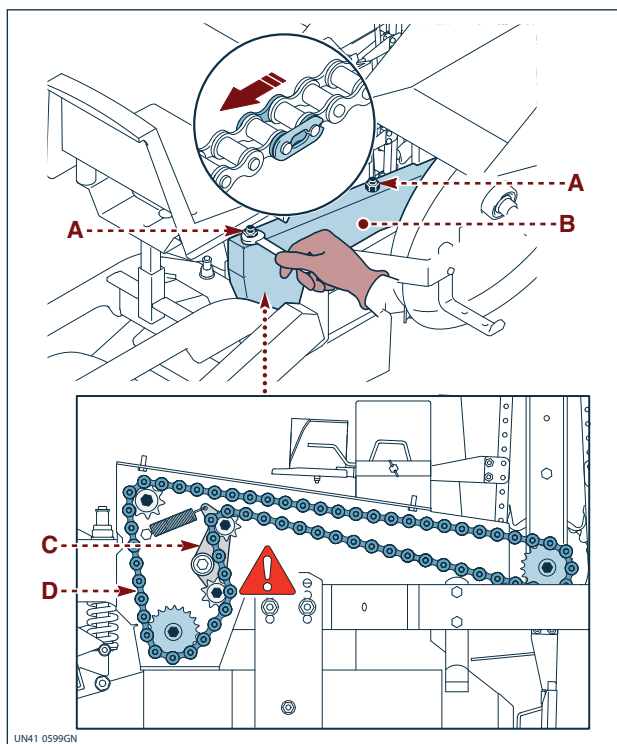
Proceed with the utmost caution.

- 4) Fit the chain on the pinions and the tensioner.

NOTICE

Fit the chain with the joining link positioned as shown in the figure.

- 5) Position the casing (**B**).
- 6) Tighten the nuts (**A**).

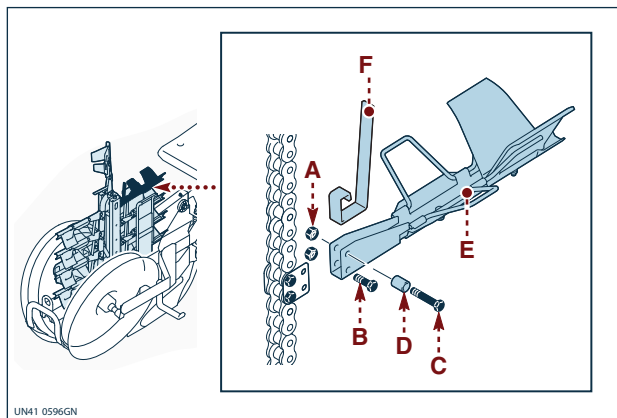


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Replacing the gripper

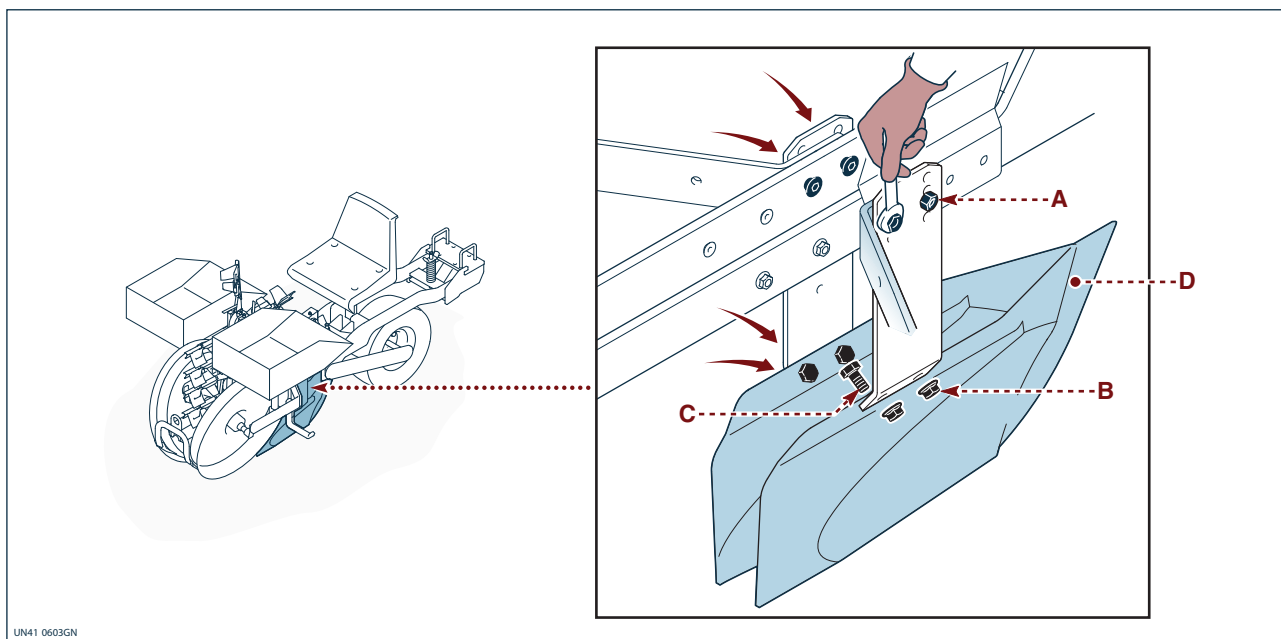
Carry out the operations described.

- 1) Unscrew the nuts (**A**).
- 2) Remove the screw (**B**).
- 3) Remove the screw (**C**).
- 4) Remove the bushing (**D**).
- 5) Remove the gripper (**E**).
- 6) Remove the lever (**F**).
- 7) Set the new gripper into place.
- 8) Position the lever (**F**).
- 9) Position the bushing (**D**).
- 10) Insert the screw (**C**).
- 11) Insert the screw (**B**).
- 12) Tighten the nuts (**A**).



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Replacing the ploughshare



Carry out the operations described.

- 1) Loosen the nuts (**A**).
- 2) Unscrew the nuts (**B**).
- 3) Remove the screws (**C**).
- 4) Repeat the same procedure on the other side of the ploughshare.
- 5) Remove the ploughshare (**D**).
- 6) Set the new ploughshare into place.
- 7) Insert the screws (**C**).
- 8) Tighten the nuts (**B**).
- 9) Tighten the nuts (**A**).

Scrapping the work vehicle

Scrapping operations must be handled by specialised personnel with suitable skills for the job. The components removed must be sorted according to

the type of materials they contain and in compliance with the laws in force concerning "waste collection, sorting and disposal".



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