

CROPLANDS

OPERATORS MANUAL
CROPLANDS
SPRAY BOOMS

HYDRALINK MHL 12 | HYDRALINK MHL15

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STOP

BEFORE COMMENCING
operation, **ENSURE** you read
& understand this manual, its
contents, and any additional
information supplied.



INTRODUCTION

GENERAL MANAGER'S WELCOME



Sean Mulvaney
General Manager

Congratulations on the purchase of your new Croplands sprayer.

Croplands has been in the business of building and selling spraying equipment since 1972. For over 49 years we have been supplying spray equipment to farmers, contractors, growers and all our customers involved in growing crops and in the control of pests and diseases.

Croplands is a wholly owned subsidiary of Nufarm Ltd, the largest supplier of crop protection chemicals in Australasia, and one of the fastest growing global suppliers world-wide.

At Croplands, we pride ourselves on our commitment to supplying machinery that is at the forefront of the industry's needs. We believe we can back up our products and through constant research and development, bring to you the best equipment you can find.

We welcome any feedback from you about our equipment.

On the back page, you will find our contact details, and locations where our staff can be reached during business hours.

After hours, you can email us and expect a reply the following morning.

Please read this manual in its entirety before you operate your sprayer. This will ensure you have a trouble-free start up.

We trust you will get years of good use from your Croplands Sprayer.

Yours Sincerely

Sean Mulvaney
General Manager

Croplands has taken steps to ensure this operator's manual is as current and as accurate as possible. Due to the ever-changing markets of cropping and farming, Croplands is constantly striving to be at the forefront of innovation and technology. While the information in this manual is considered accurate at the time of writing, Croplands reserves the right to change this information without notice. Croplands will not accept liability for any inaccuracy in this publication, or changes forthwith.

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BARGAM BOOM MANUAL 1-34

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SECTION 1

IMPORTANT INFORMATION

ABOUT THIS MANUAL

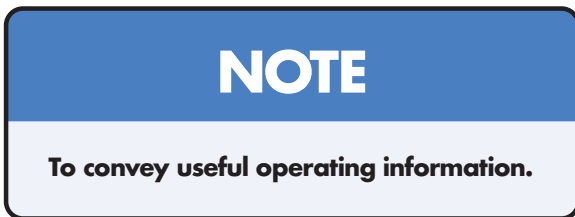
This manual provides assembly, setting up, operating and maintenance instructions for the MHL spray booms.

Some model types also have different options available. Some features explained in this manual may not be applicable to your boom.

Please pass on this manual with the sprayer or boom at the time of resale for use by the new owner.

This manual, GP-OMMHL-A, was first published in November 2021.

Check online as there may be more recent revisions of this manual. www.croplands.com.au



TERMINOLOGY

These terms/symbols used throughout this manual:

NOTE	This Note sign is in place to convey useful information and will help you to identify the best possible way to operate the machine.
CAUTION	This Caution sign shows the potential for incident. An incident may include damage to the machine itself, or possible injury to the operator.
WARNING	This warning sign shows the potential for risk or injury and highlights the need for steps to be taken to protect ones safety.
DANGER	This Danger sign will be used in areas where the highest risk is present. Always read the information on these signs and ensure you are taking steps to prevent risk or injury.

BEFORE OPERATING YOUR SPRAYER

Before attempting to use your sprayer, make sure you read all Operator Manuals for this sprayer including but not limited to:

This Operator's Manual, **and all other supplied manuals** for items such as Pumps, PTO etc.

And properly understand:

- All Safety Issues
- Assembly & installation instructions
- Calibration of the sprayer
- Sprayer operation
- Sprayer Maintenance

WARRANTY POLICY

Refer to your Croplands Warranty and Pre-delivery Booklet supplied with your spray boom.

Always make contact with your Croplands Dealer first and foremost for warranty matters.

CROPLANDS

SPRAYER SPECIFICATIONS WARRANTY & PRE-DELIVERY LINKAGE

WWW.CROPLANDS.COM.AU

STOP

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operation, **ENSURE** you read
& understand this manual, its
contents, and any additional
information supplied.



NOTE

For full conditions of warranty and warranty policy, please see the Warranty & Pre-Delivery booklet provided with this sprayer.

SECTION 2

SAFETY

SAFETY FIRST

Please read and understand all supplied manuals, guides and safety decals before operating this sprayer. This includes the **Croplands Operators Safety Manual** – as pictured here.

This manual is available on the Croplands Web site, or for printed versions contact Croplands customer support and ask for part number GP-SAFE-A (or later version if available).

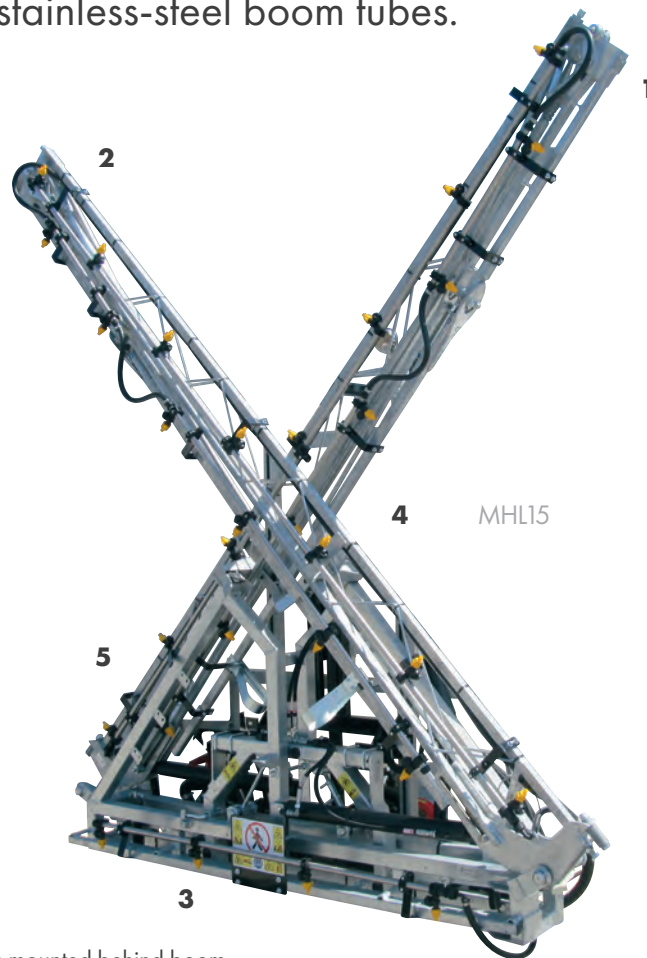


SECTION 3

PRODUCT IDENTIFICATION & SPECIFICATION

BOOMS HYDRAULIC

Ideal for small row cropping, vegetables or undulating farm country, Croplands hydraulic boom options feature heavy-duty galvanised steel construction and stainless-steel boom tubes.



HYDRALINK

1. Nozzles and nozzle bodies mounted behind boom
2. Tension breakaway on outer sections
3. Self-levelling centre section standard
4. Boom folds sequentially in cross-fold for transport
5. Using left/right hydraulic kit option, each side can be lifted independently, which also automatically locks the self-levelling system

UNIT

MHL12	Heavy-duty galvanised 12m full hydraulic-folding boom with 24 nozzles, twin ram with auto-folding tips, hydraulically plumbed to fold both sides together. Central self-locking self-leveller standard
MHL15	with heavy-duty galvanised 15m hydraulic-folding boom with 30 nozzles
MHL12-2-KIT	Second set of hydraulic hoses to allow left/right individual fold of MHL boom (text on your order)

IMPORTANT

This manual is an integral part of the machine and it must always come with it in case of sale and until it is dismantled.

MEC POLI 1600 CROPLANDS

user manual

ENGLISH

Serial number S14797T	Edition 07 - 2017
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PLEASE NOTE

The Hydralink MHL series booms are supplied to **Croplands** on an exclusive basis by BGroup / Bargam of Italy. Normally supplied with the Agripak Pro 1300 & 1600 sprayers. Reproduced here for alternative applications.

The following pages are 100% Bargam content for these booms.

No part of this publication may be reproduced without the permission in writing of the Manufacturer. The Manufacturer follows a continuous improvement policy and reserves the right to change this document without notice, provided that such changes do not imply risks to safety. © 2013



Spraying boom

user manual

Serial number

Edition 2
07 - 2013

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IMPORTANT SAFETY NOTE

The information published in this booklet regards the pointed out with relevant symbols in order to safeguard operational aspects of the operator unit installed on the people from risks. Remember that

prudence is irreplaceable. machine. It is however necessary that you carefully read the Safety is also in the hands of all the operators who interact general safety regulations published in Booklet 1 and those with the machine.

TECHNICAL INFORMATION

EQUIPMENT GENERAL DESCRIPTION

The spraying boom, from now on called equipment, was designed and built to be installed on a machine for spraying chemical products on tilled land and/or products.

parallel with the ground, even in the event the ground is uneven..

It is to be put on the height adjustment device and on the self-levelling device so that it remains perfectly

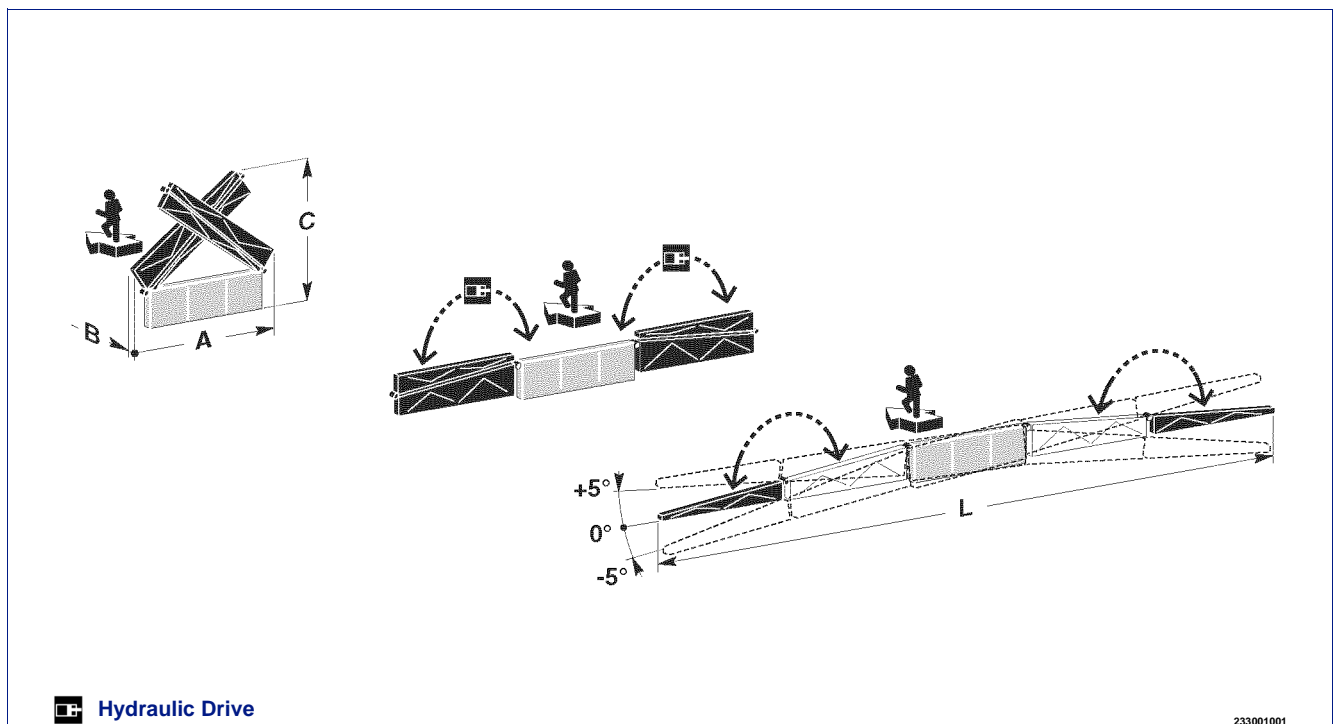
The equipment is divided into folding boom sections in order to adapt it to the spraying width and so as to reduce the space occupied during transfer.

TECHNICAL SPECIFICATIONS

Width (m) L	Size			(*) Weight (kg)	Qty. Jets (500 mm)
	A mm	B mm	C mm		
12	2450	500	2420	290	24
12,5	2450	500	2420	292	25
15	2520	500	2900	315	30

(*) Boom with self-levelling devices on maximum configuration.

Technical specification diagram



FITTINGS ON DEMAND

Integral protection kit that protects nozzles from impacts (ground, plants, etc.).

Self-levelling device hydraulic locking; as an alternative to the automatic locking, it blocks the equipment swinging.

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SAFETY DEVICES

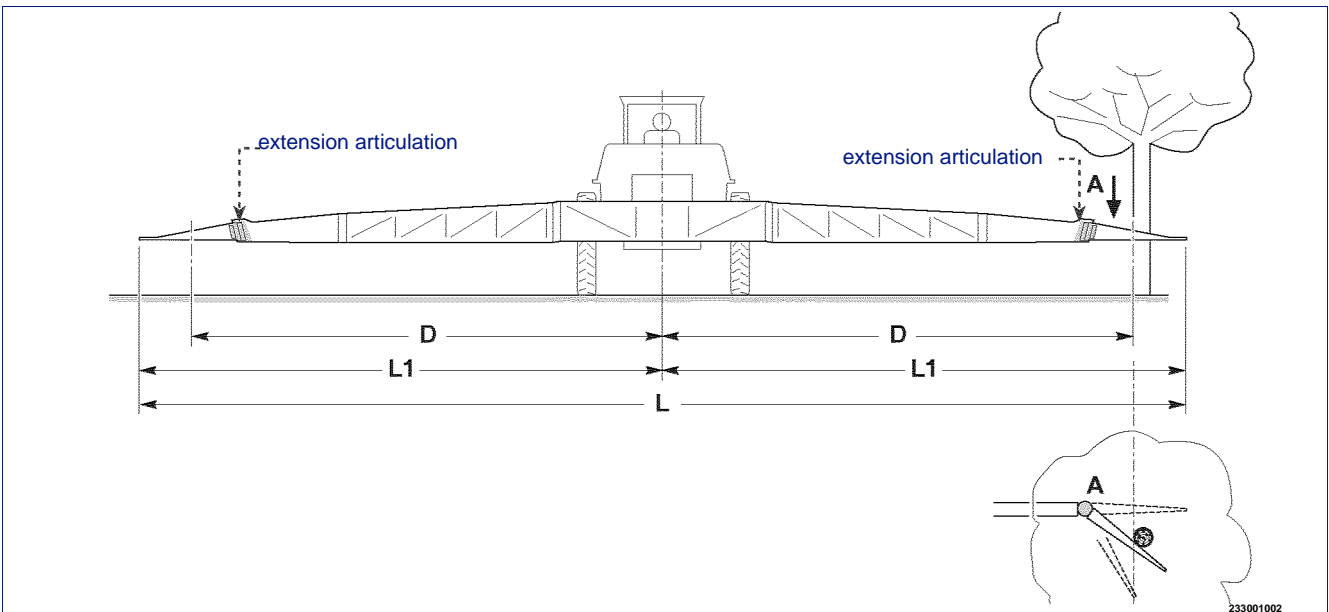
Stop valve (in case of hydraulic tilt): it allows to stop movements of the various boom sections during use and/or transport of the equipment and to prevent accidental movements in the event of an hydraulic hose failure.

Extension articulation: to allow the end of the extension to turn so as to get past obstacles. In order to get past the obstacle without damaging the equipment, it is necessary to keep a distance higher than the value (D) given in the table.

Safety distance table

Width (m) L	Width L1	Safety distance D
12	6	5,4
12,5	6,25	5,63
15	7,5	6,8

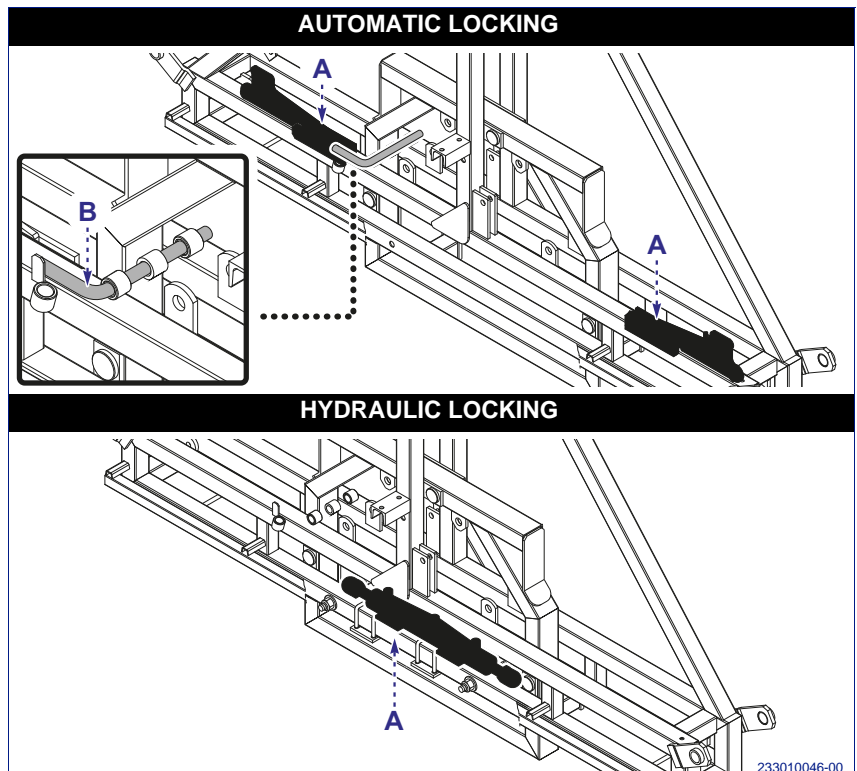
Safety distance diagram



Self-levelling device locking device (A): it locks the equipment swinging in the following steps.

- Transportation
- Boom folding and unfolding
- Boom folding on one side in order to avoid an obstacle
- Boom use with only one side unfolded
- Prolonged stopover or machine out of use

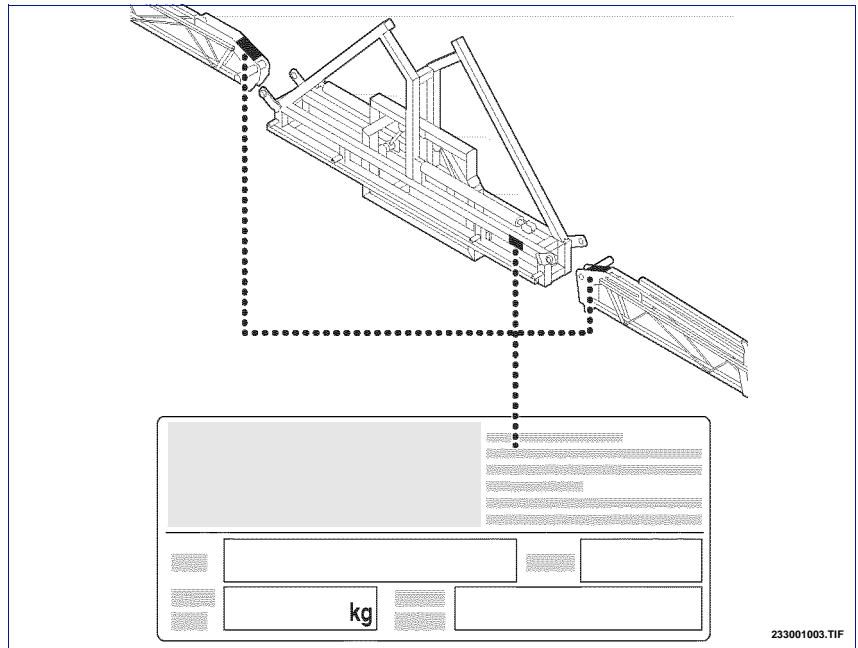
Locking pin (B) (only for automatic locking): it locks the self-levelling device when the equipment is transferred.



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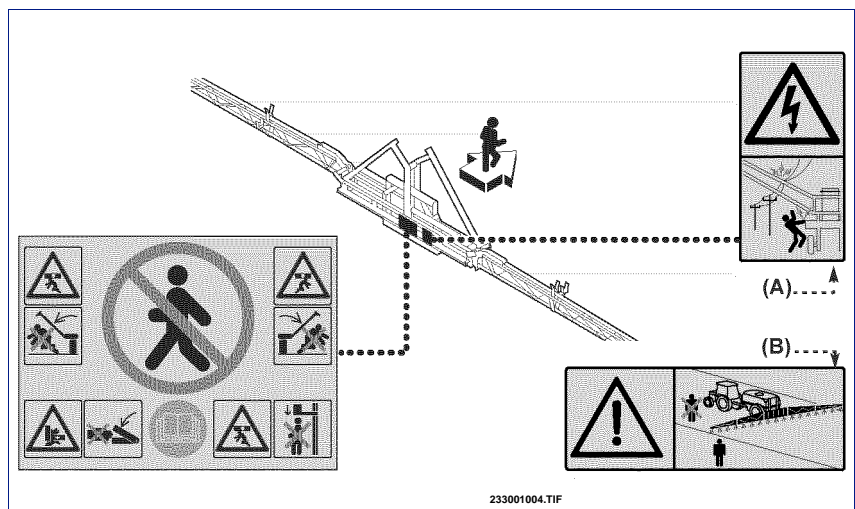
IDENTIFICATION PLATE POSITION

The figure points out the positions of the identification plates of the components.



POSITION OF SIGNALS

The figure shows the location of all safety plates, while their meaning is explained in booklet 1. The plates (A and B) supplied with the manual have to be placed inside the tractor cab, in a visible position.



INFORMATION ABOUT HANDLING AND INSTALLATION

HANDLING INSTRUCTIONS

Comply with the information provided by the manufacturer, found on the equipment and in the instruction

manual, when carrying out handling and loading operations.

PACKING AND UNPACKING

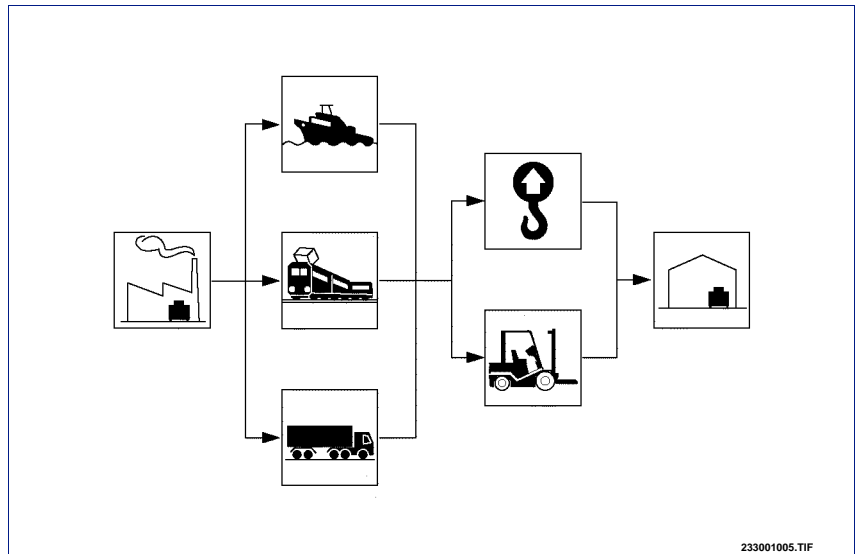
- The equipment is to be placed on a loading platform, protected and adequately secured. To make transport easier, it can be shipped with several components disassembled.

- When unpacking, check that all the components are intact and in the exact quantities.
 - The packing material is to be disposed of properly, in observance of the laws in force.

LOADING AND TRANSPORTATION

Depending on the destination, loading and transport can be carried out with different means. The diagram shows the most commonly used solutions.

Secure the means properly during transportation in order to prevent untimely shifting.



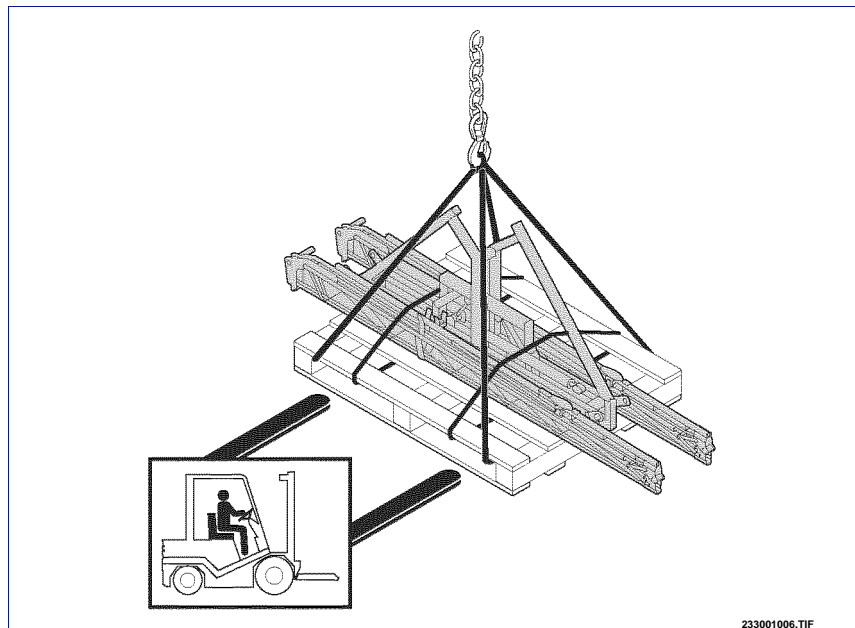
HANDLING AND LIFTING

The equipment can be handled with a lifting device with forks or hooks having a sufficient capacity. Position the lifting device as shown in the figure. Avoid sudden manoeuvres.



Danger - Warning

Lifting and handling operations must be carried out by using appropriate means and by skilled staff specialized in this kind of manoeuvres.



INSTALLATION INSTRUCTIONS

Whoever performs the installation must prepare satisfactory safety conditions in advance in order to ensure their own safety and that of the operators involved.

INSTALLATION OF DISASSEMBLED PARTS

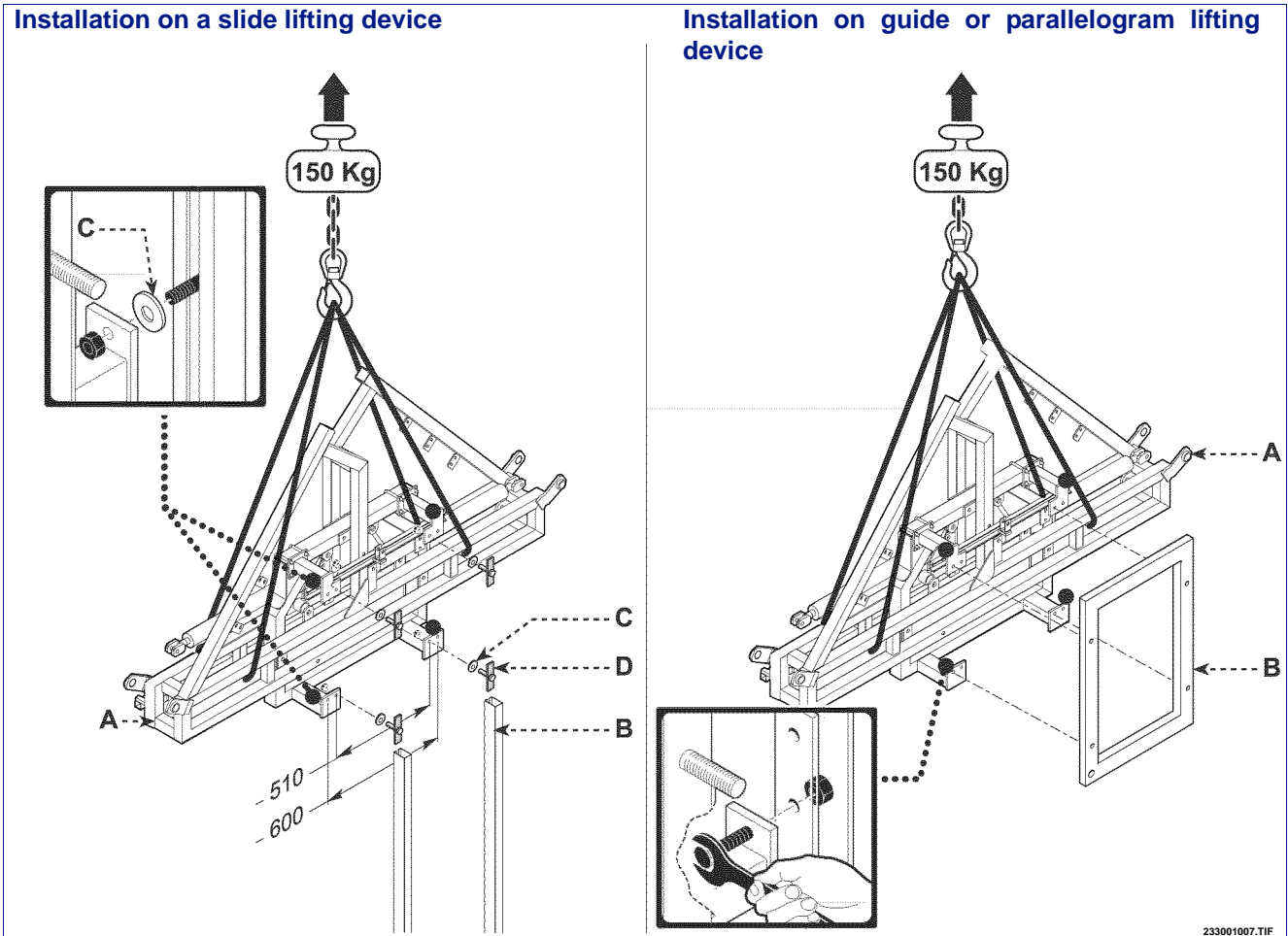
Follow the instructions given below so as to install and assemble the spraying boom properly.

EQUIPMENT INSTALLATION

Proceed as follows:

- 1 - Insert fastening plates (D) into guides (B).
- 2 - Insert nylon washers (C) into the screws outside guides (B).

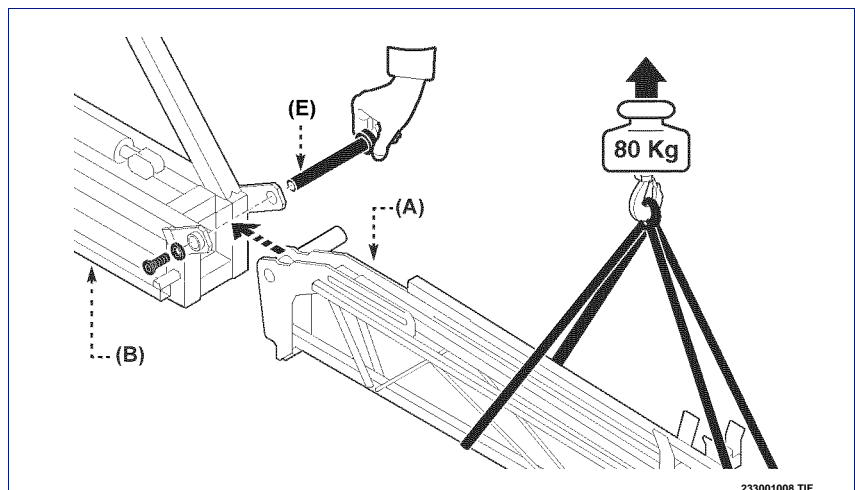
- 3 - Lift the middle frame (A) of the boom already mounted on the self-levelling device (see "Self-levelling Device" booklet) and fasten it to the sliding frame of the lifting device (B) or to the shock absorber, if required.



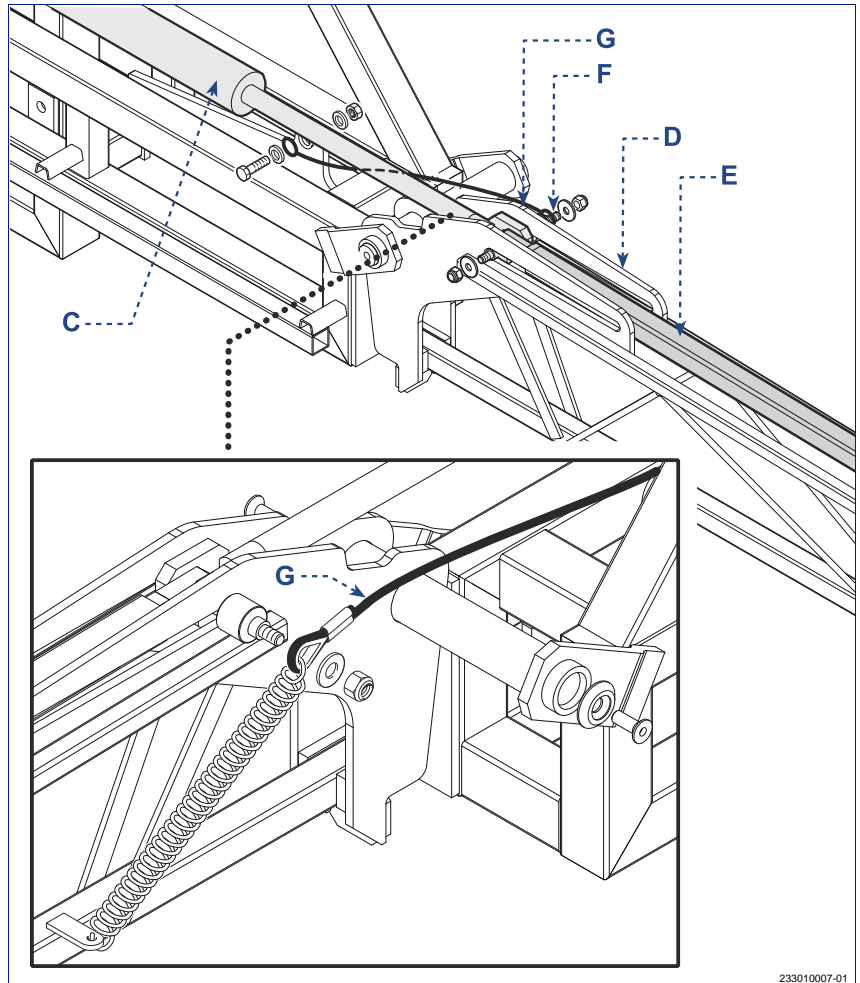
INSTALLATION OF ARM

Proceed as follows:

- 1 - Lift arm (A) and fasten it to central frame (B) by means of its pins (E) after lubricating the parts and their seats.



- 2 - Remove the rod of cylinder (C) and fasten it to arm (D) and tie-rod (E) by means of pins (F).
- 3 - Install cable (G) as shown in the figure.
- 4 - Install the opposite arm by following the same instructions.



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INSTALLATION OF THE HYDRAULIC SYSTEM

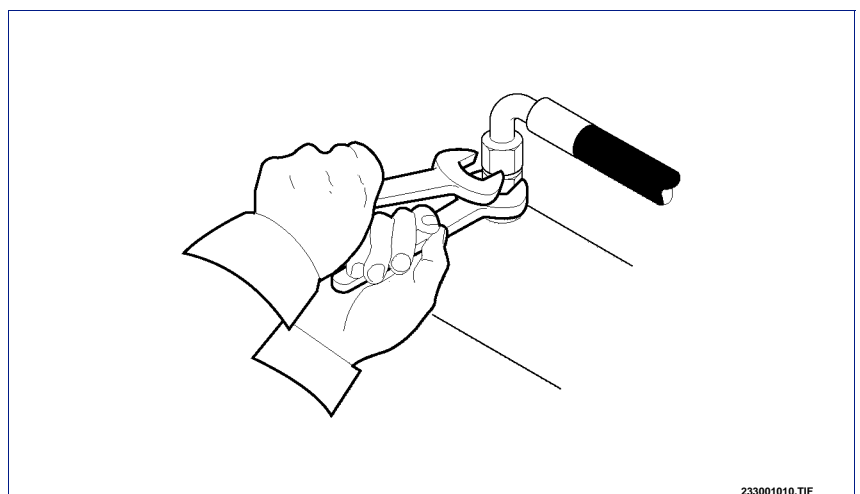
Proceed as follows:

- 1 - Connect the hoses to the cylinders (see the hydraulic diagram).



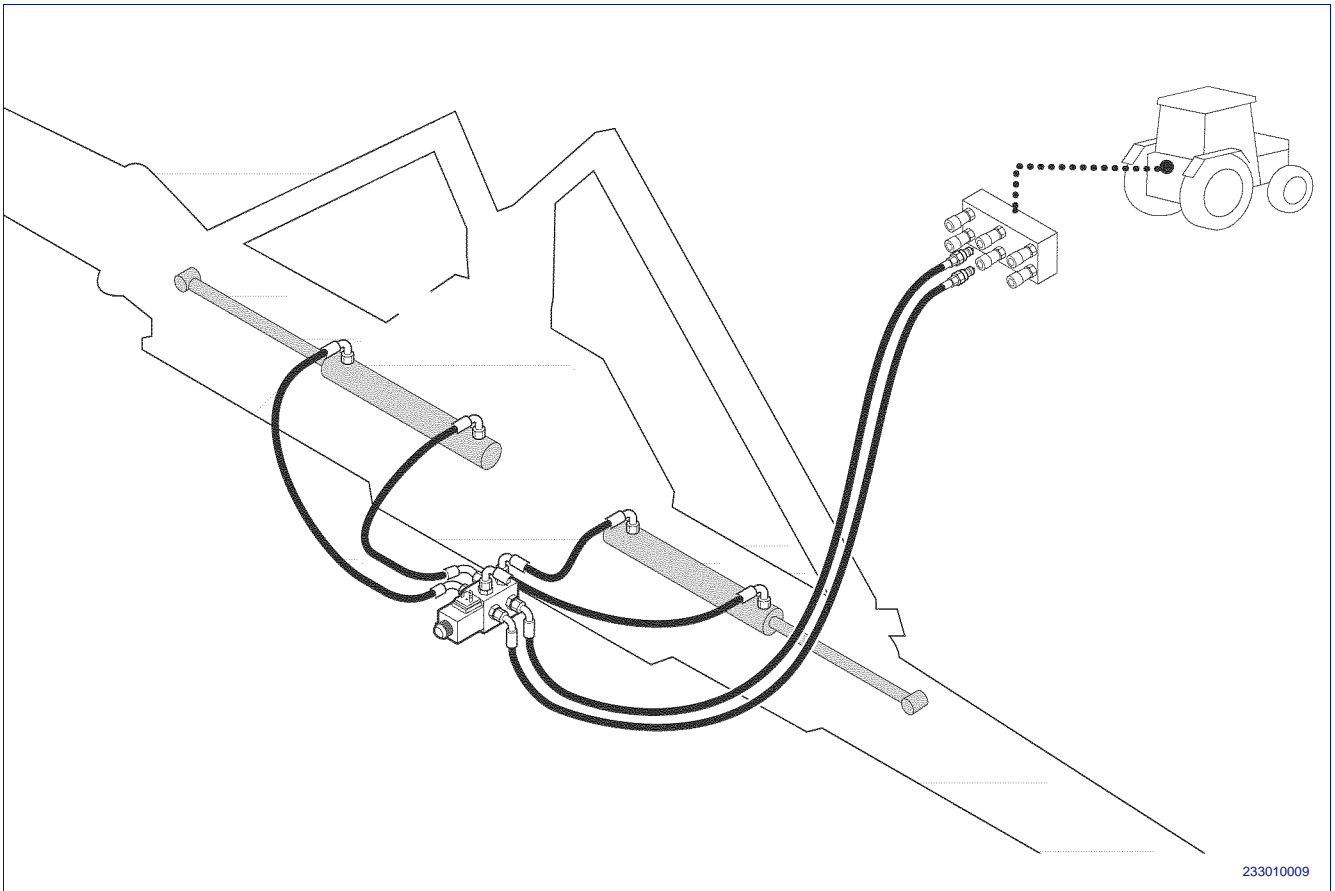
Important

Do not tighten the unions too much so as to damage the sealing taper fit.



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2-function hydraulic system (with electric switch and control panel)



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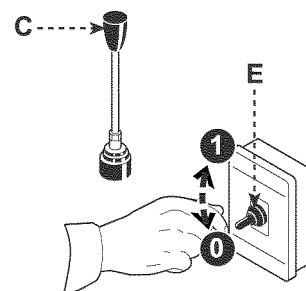
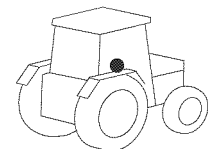
The control is performed from the control panel and is activated from the tractor's driver's seat.

The control panel must be installed in such a way that the driver can use it easily.

Electric switch with control panel

How to use the controls

- 1 - Select the function by means of switches **(E)**
 position 1 = Unfolding / folding of left arm
 position 0 = Unfolding / folding of right arm
- 2 - Activate the selected function by means of lever **(C)** of the tractor's control unit



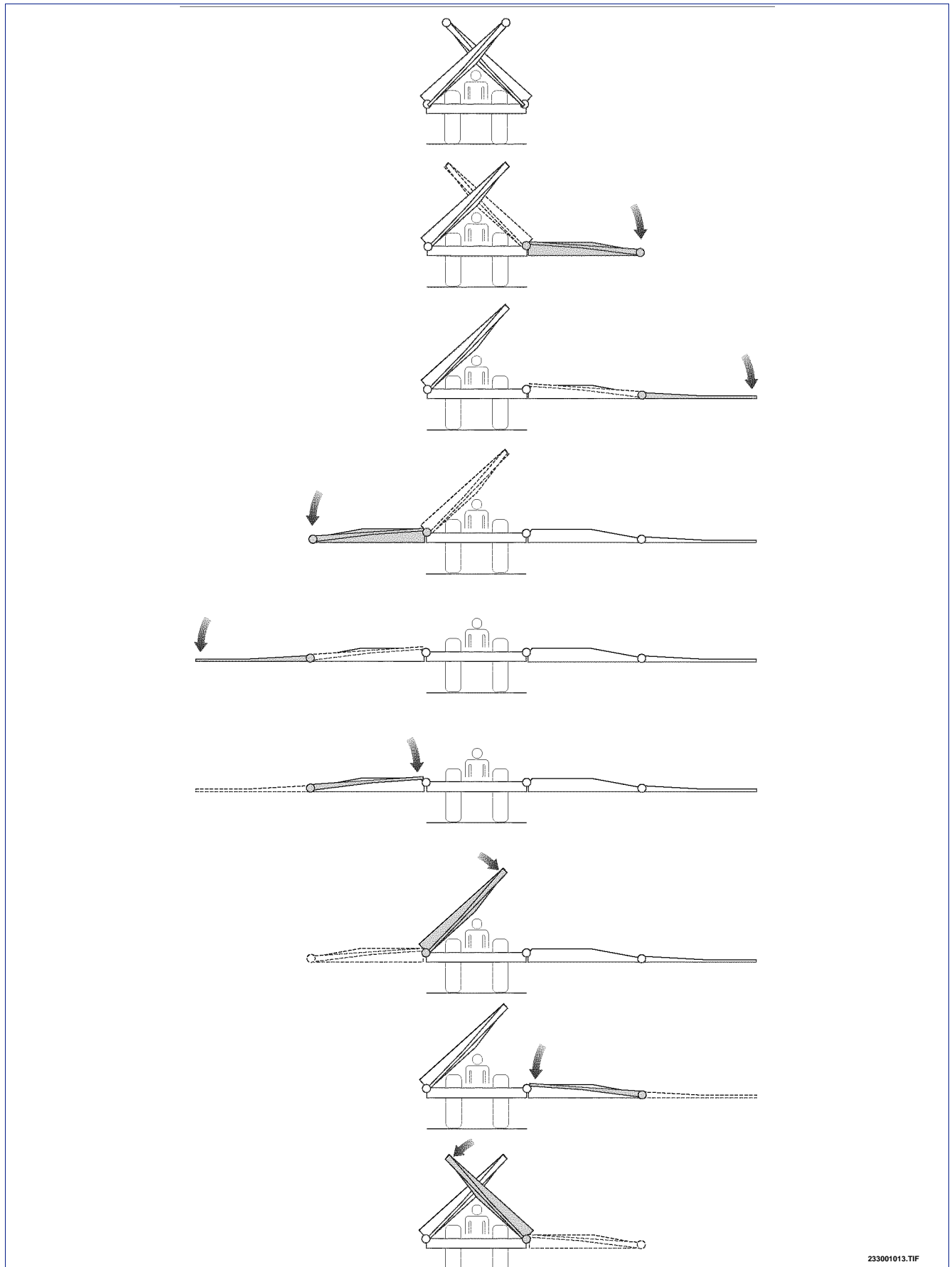
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Boom folding and unfolding

The figure indicates the procedure to follow when unfolding and folding the boom.

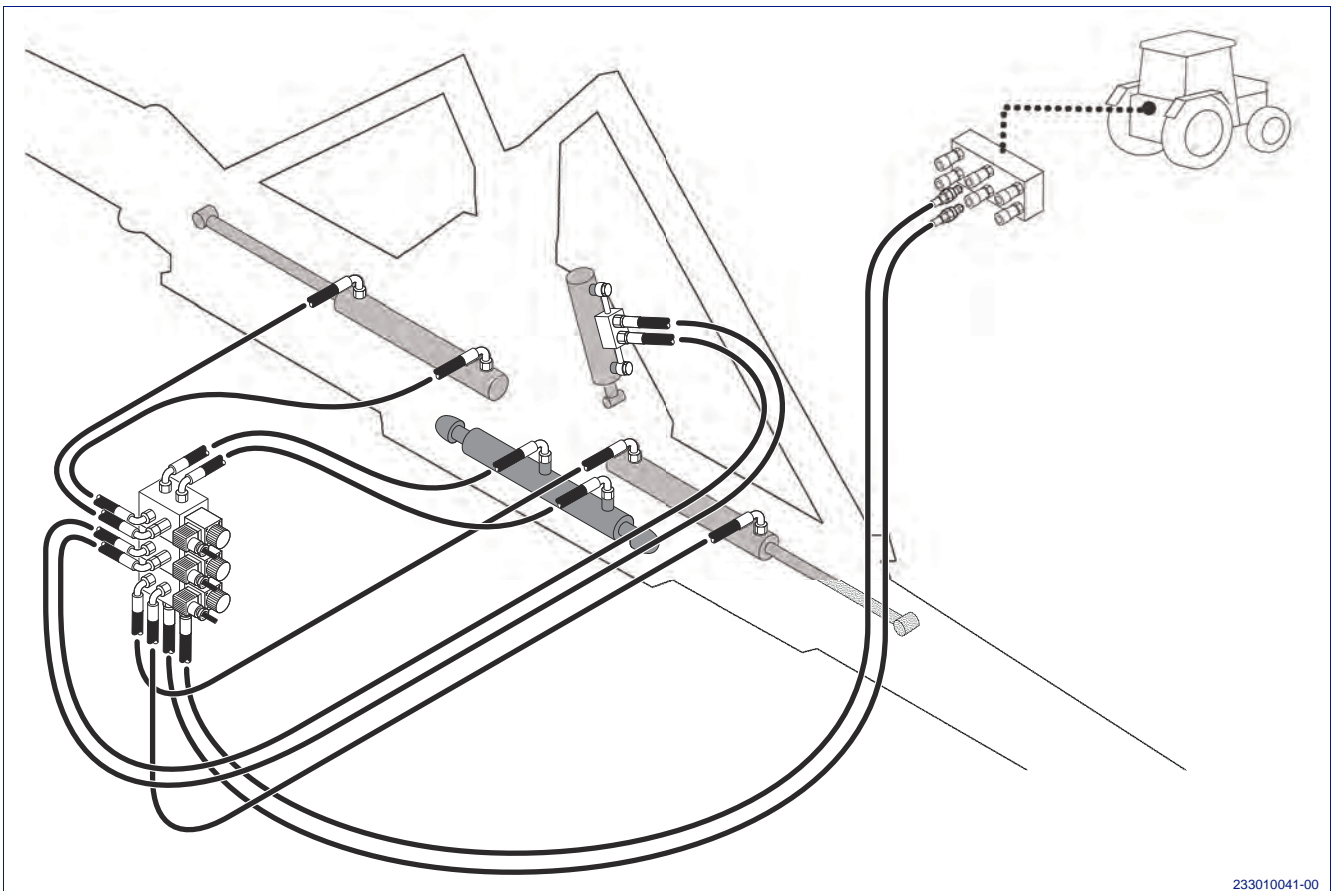
Please note: the two arms can be folded or unfolded independently of each other.



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4-function hydraulic system (with electric switch and control panel)



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The control is performed from the control panel and is activated from the tractor's driver's seat.

The control panel must be installed in such a way that the driver can use it easily.

Electric switch with control panel

How to use the controls

1 - Select the function by means of switches (**E**) and activate the selected function by means of lever (**C**) of the tractor's control unit.

-Boom locking

E1 pos. 0 / **E2** pos. 0 / **E3** pos. 0

-Correction of position

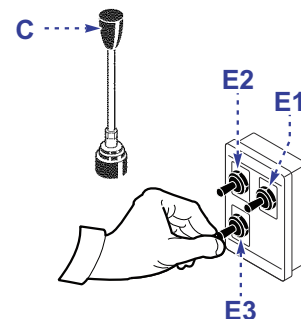
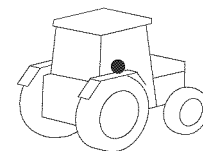
E1 pos. 1 / **E2** pos. 0 / **E3** pos. 0

-Unfolding / folding of left arm

E1 pos. 0 / **E2** pos. 1 / **E3** pos. 0

-Unfolding / folding of right arm

E1 pos. 0 / **E2** pos. 0 / **E3** pos. 1

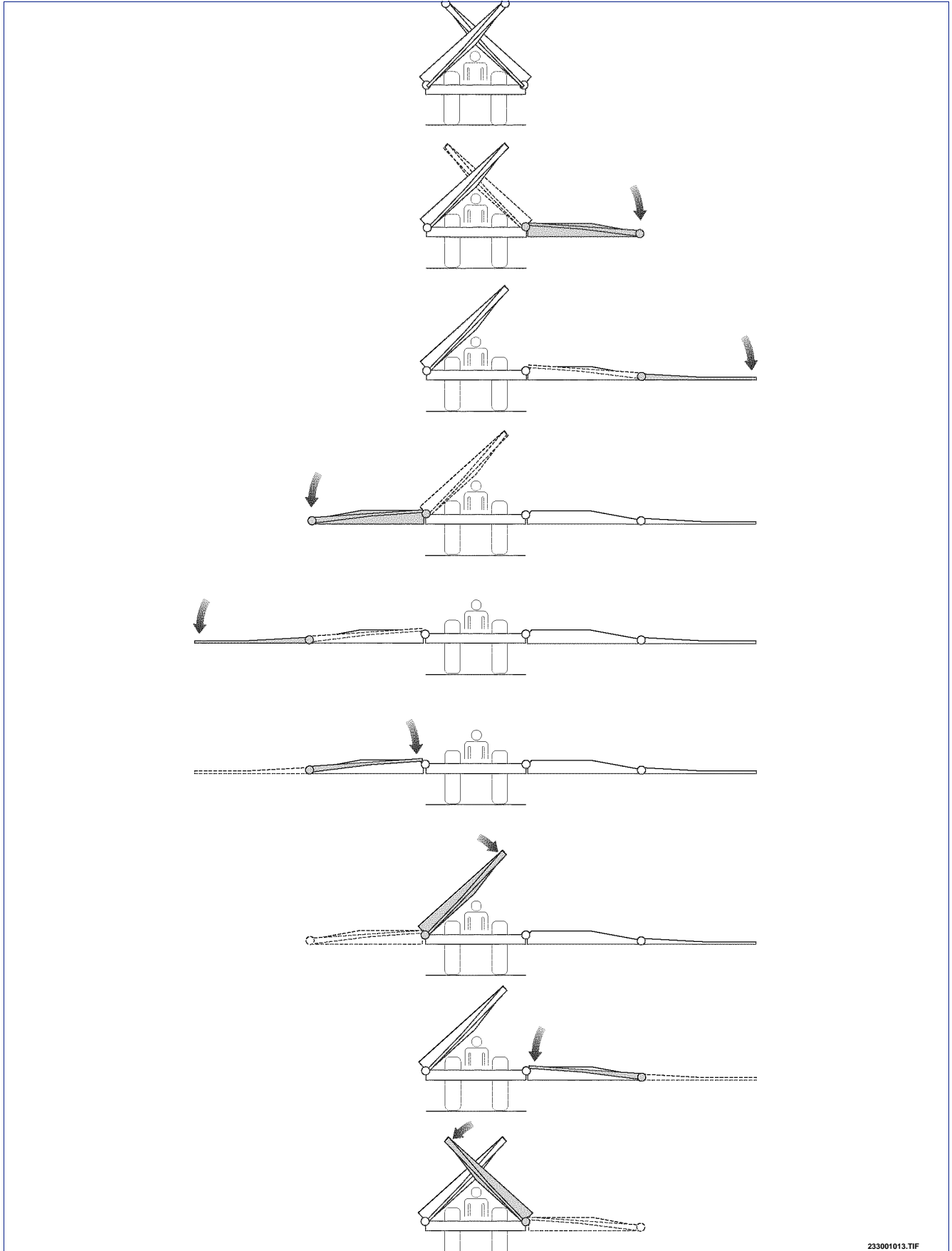


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Boom folding and unfolding

The figure indicates the procedure to follow when unfolding and folding the boom.

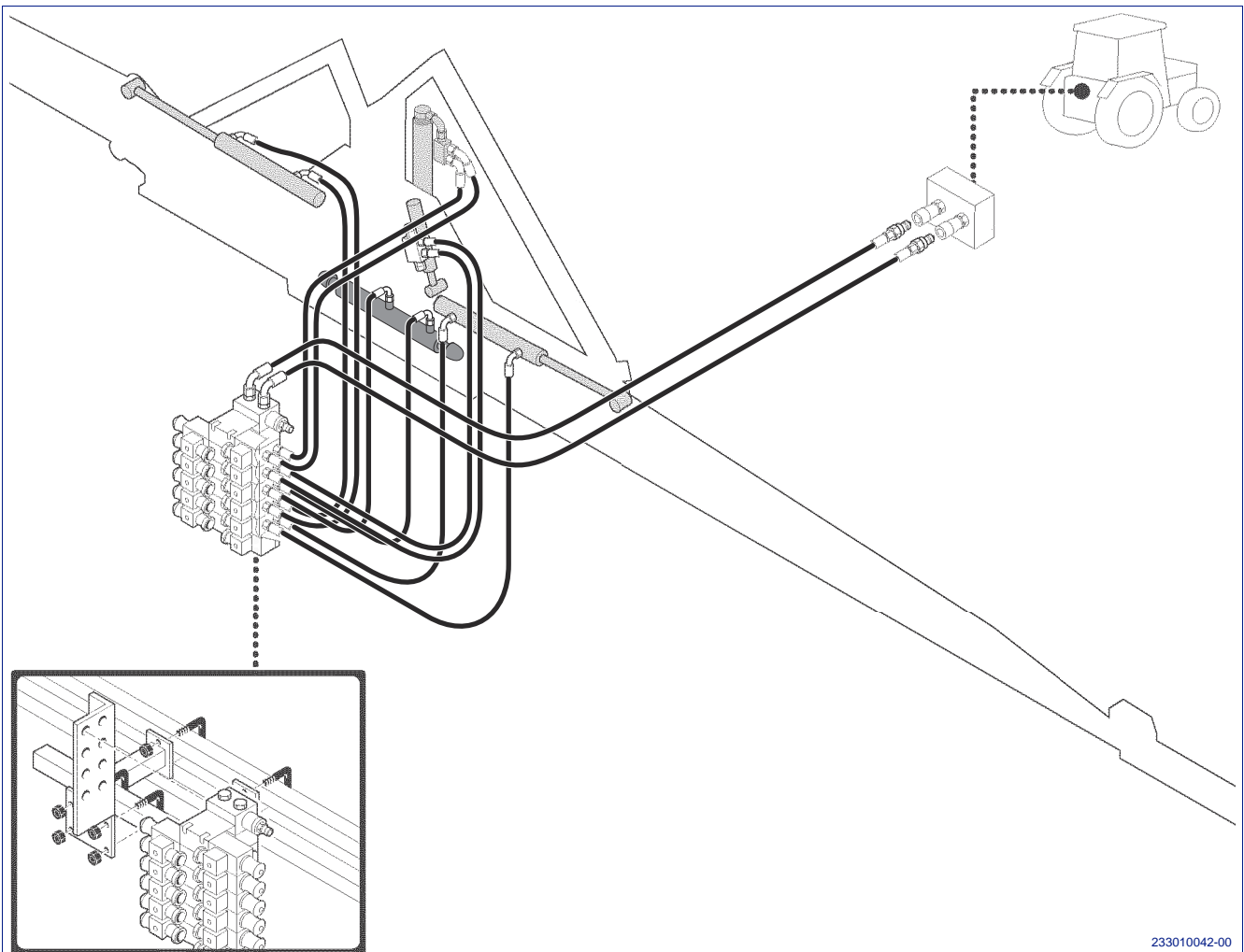
Please note: the two arms can be folded or unfolded independently of each other.



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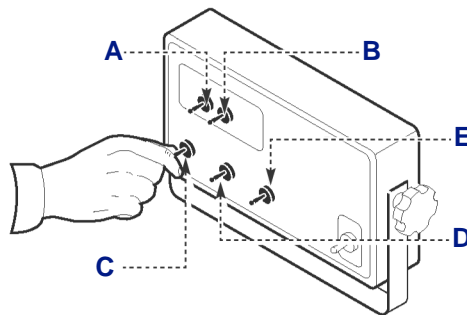
4-function hydraulic system (with double effect solenoid valves)



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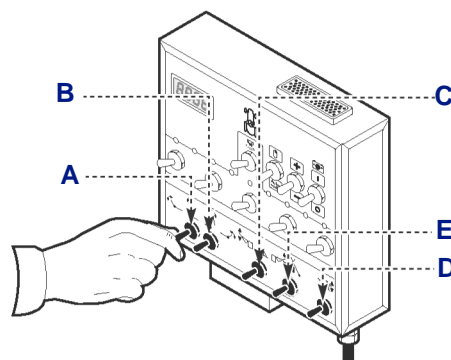
CGA CONTROL BOARD

- A) Unfolding of left arm
- B) Unfolding of right arm
- C) Lifting
- D) Hydraulic tilt adjustment
- E) Hydraulic locking



MÜLLER CONTROL BOARD

- A) Unfolding of left arm
- B) Unfolding of right arm
- C) Lifting
- D) Hydraulic tilt adjustment
- E) Hydraulic locking



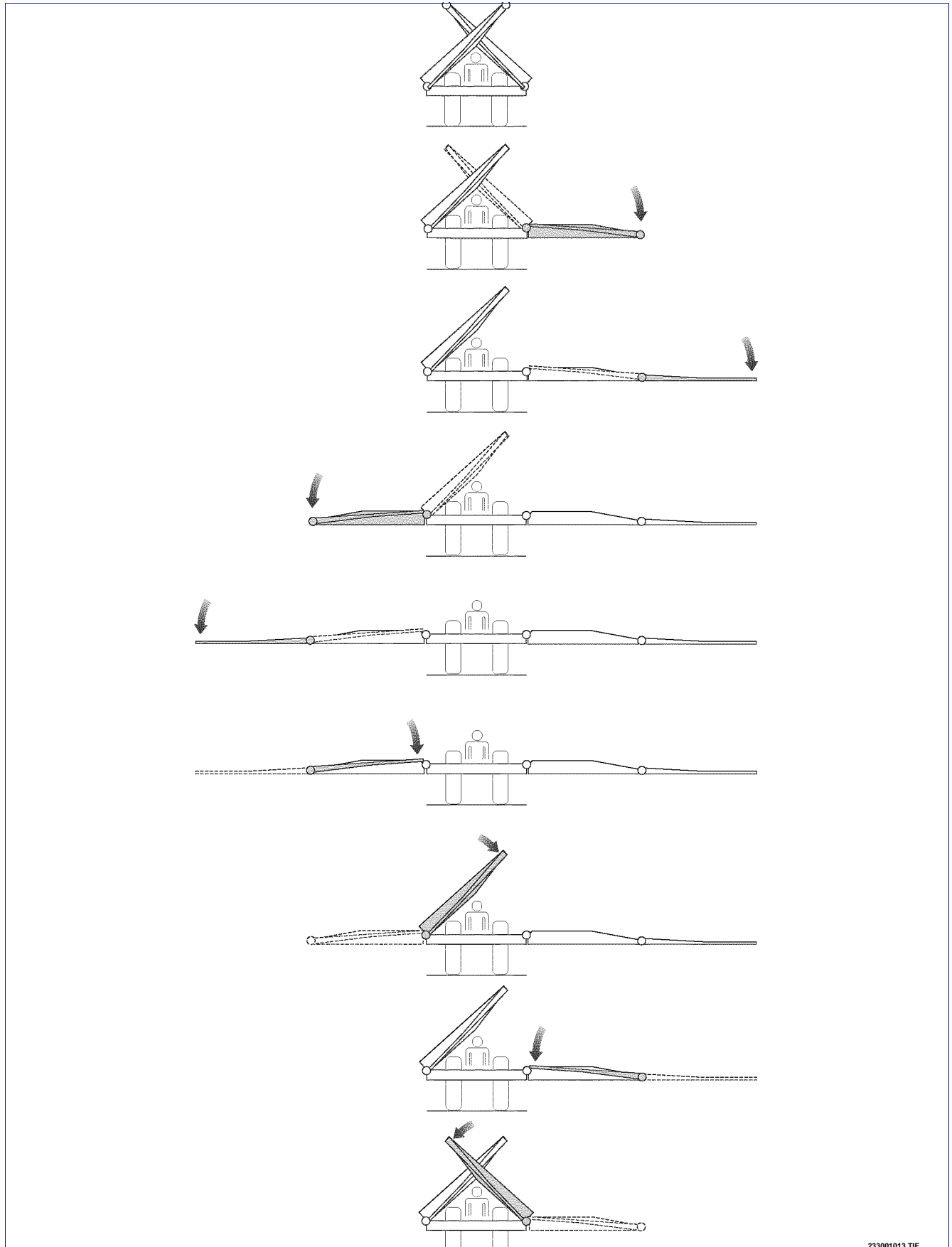
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Boom folding and unfolding

The figure indicates the procedure to follow when unfolding and folding the boom.

Please note: the two arms can be folded or unfolded independently of each other.



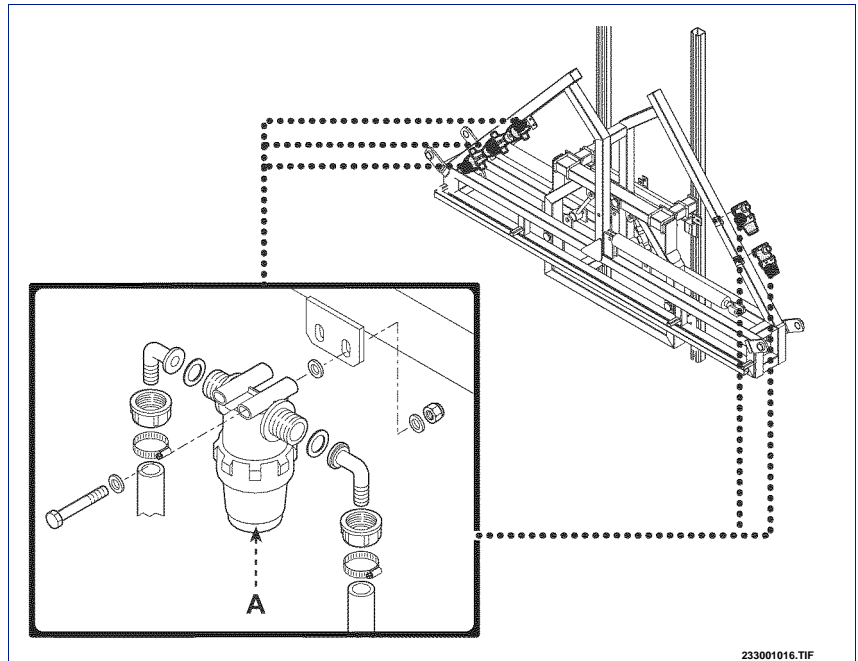
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INSTALLATION OF LINE FILTERS (IF REQUIRED) AND JETS

Proceed as follows:

- 1 - Install the line filters (A) as shown in the figure.

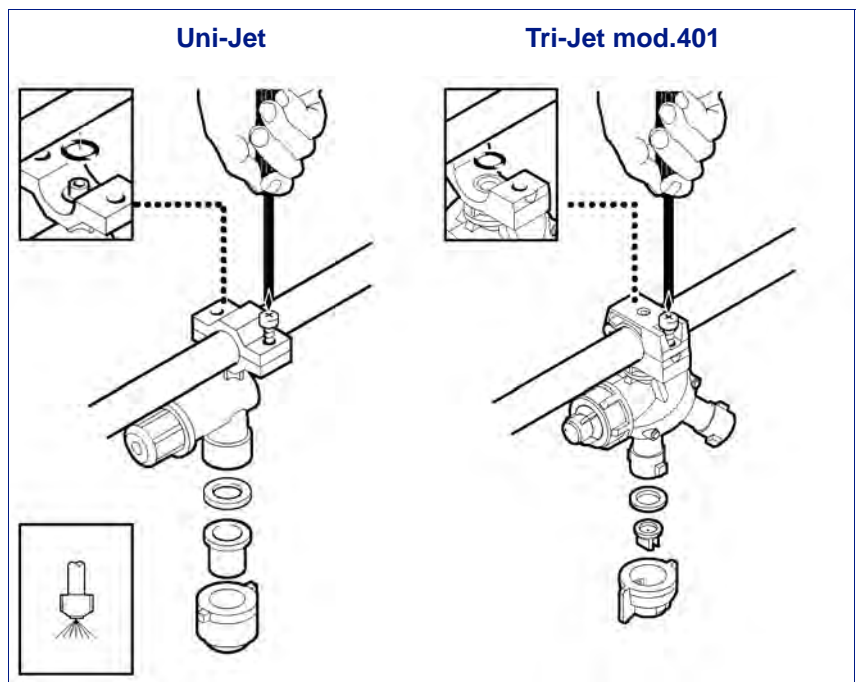


- 2 - Mount the jets (B) next to the outlet holes of the stainless steel pipes (C) (see the "Jet number diagram for each boom section (500 mm pitch)" diagram, page 16).

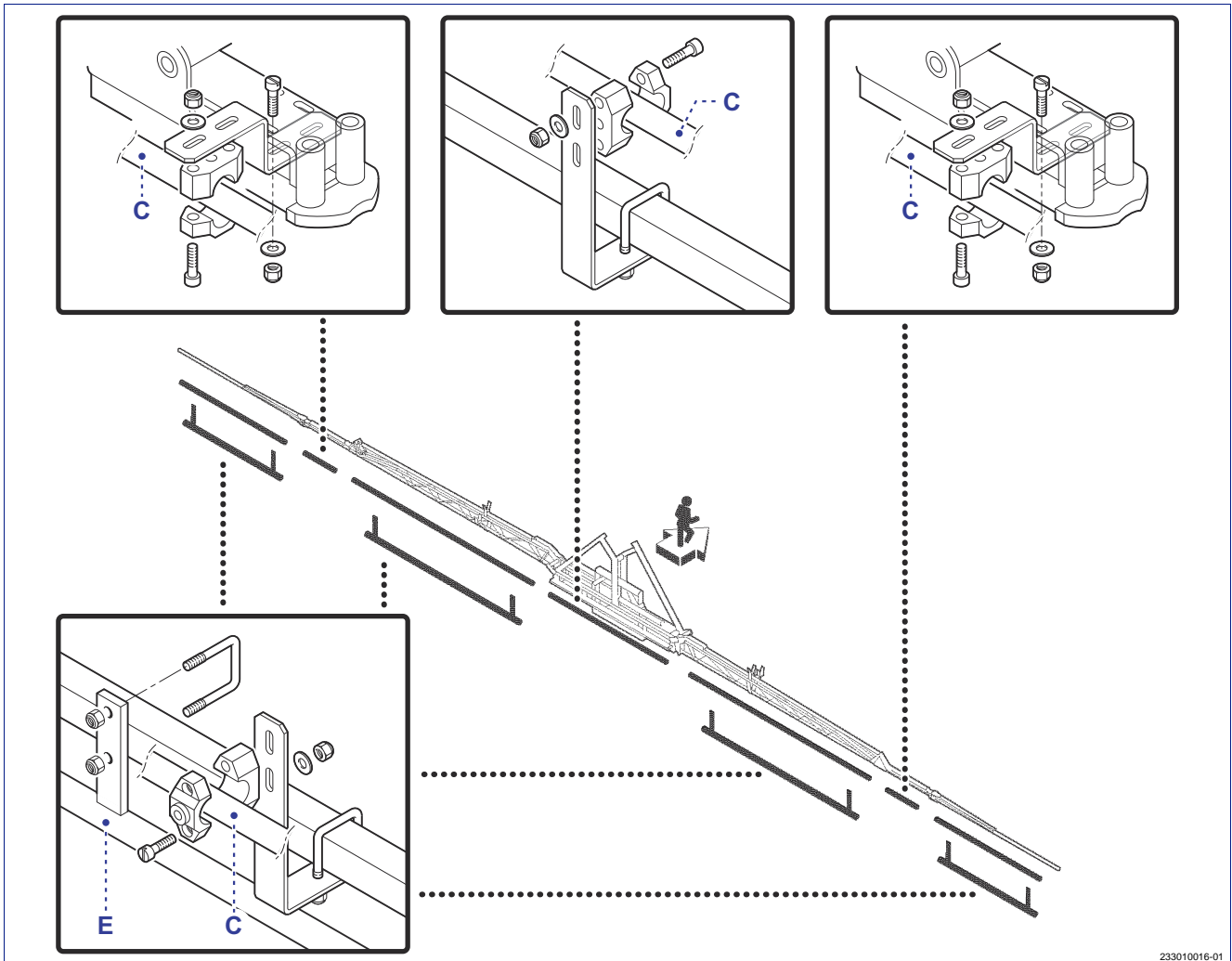


Important

Properly mount the seals (D).



- 3 - Fasten stainless steel pipes (C) and guards (E) (on request) to the spraying boom with the special supports.



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NUMBER OF JETS ON EACH BOOM SECTION

Position the nozzle holder hoses depending on the boom length (see diagram).

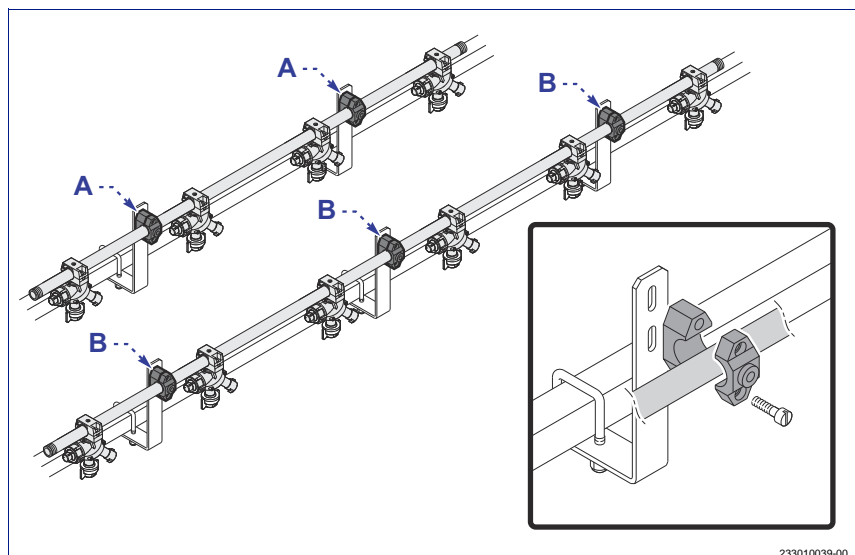
The diagram shows as well position and number of supports on each hose and installation instructions, depending on the number of supplies.

If the equipment is supplied disassembled, the diagram is enclosed with the small items of the boom.



Important

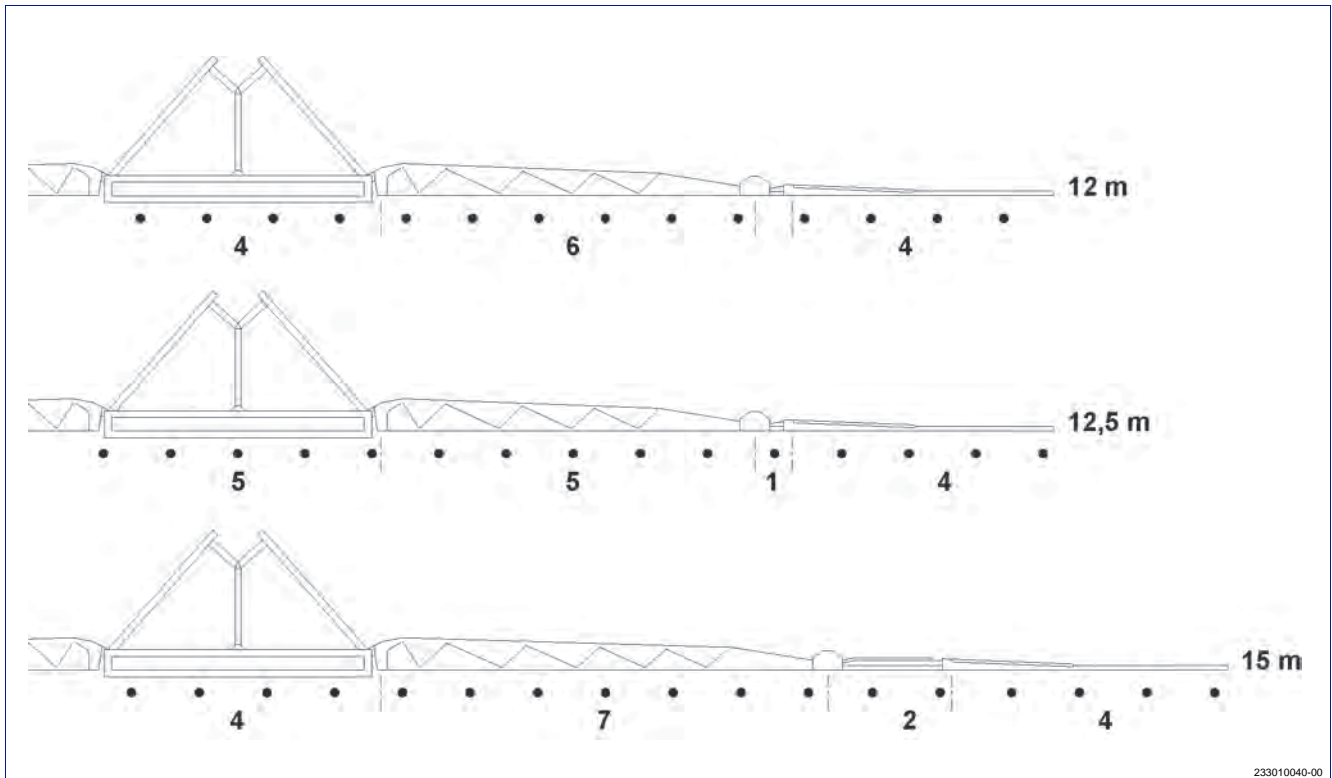
For hoses with up to four jets use two pairs of clamps (A); for hoses with more than four jets use three pairs of clamps (B).



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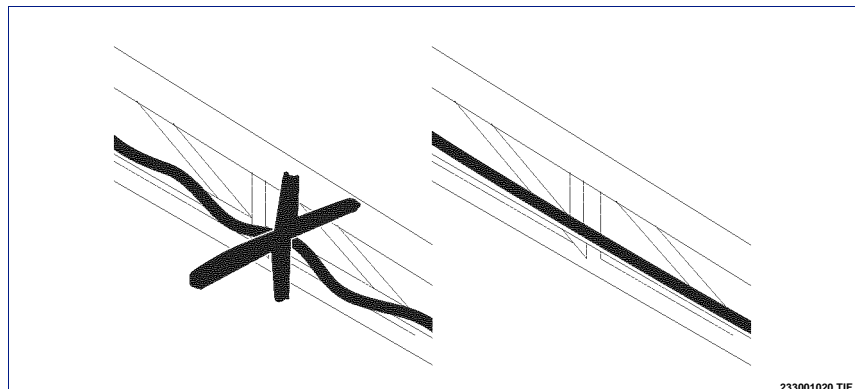
Jet number diagram for each boom section (500 mm pitch)



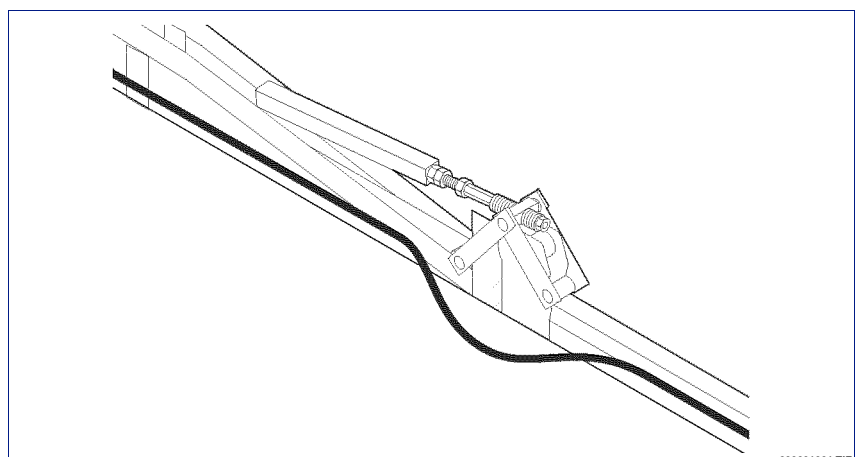
INSTALLATION OF WATER HOSES

Proceed as follows:

- 1 - Lay the hoses down on the boom linearly (see the figure).



- 2 - Leave sufficient length so as to not impede the movements at the articulation points of the boom.
- 3 - Connect the hoses (see "5-supply water connection diagram").

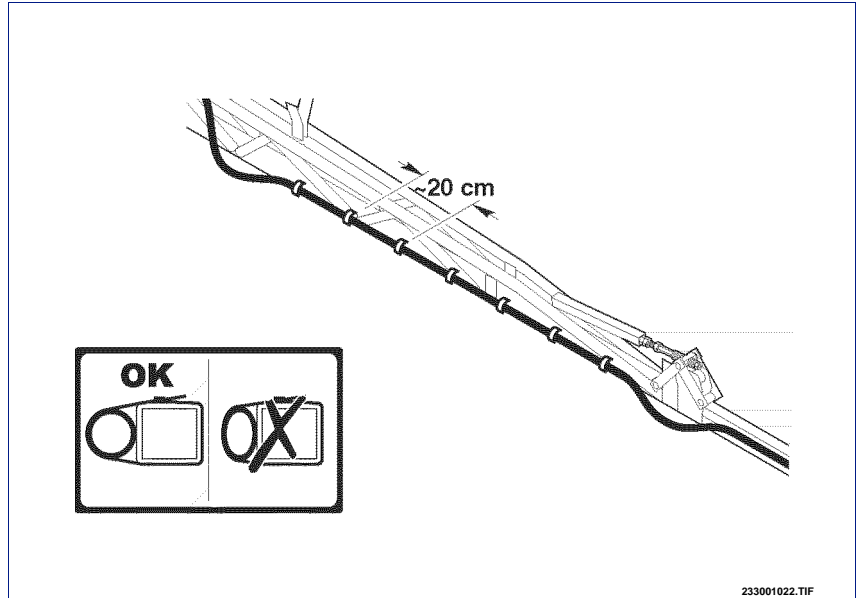


- 4 - Secure the hoses to the boom with clamps spaced out ~ 20 cm.

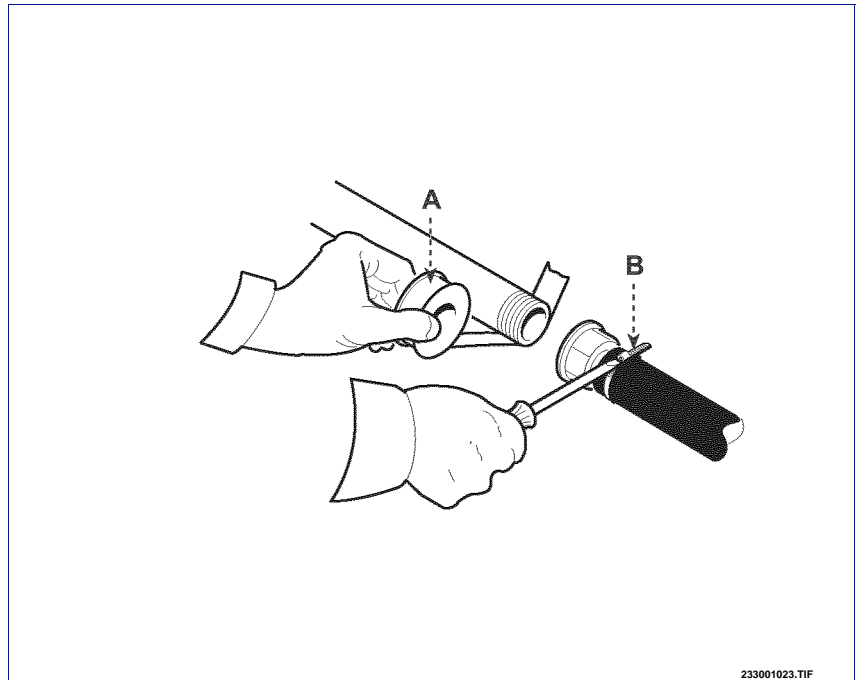


Important

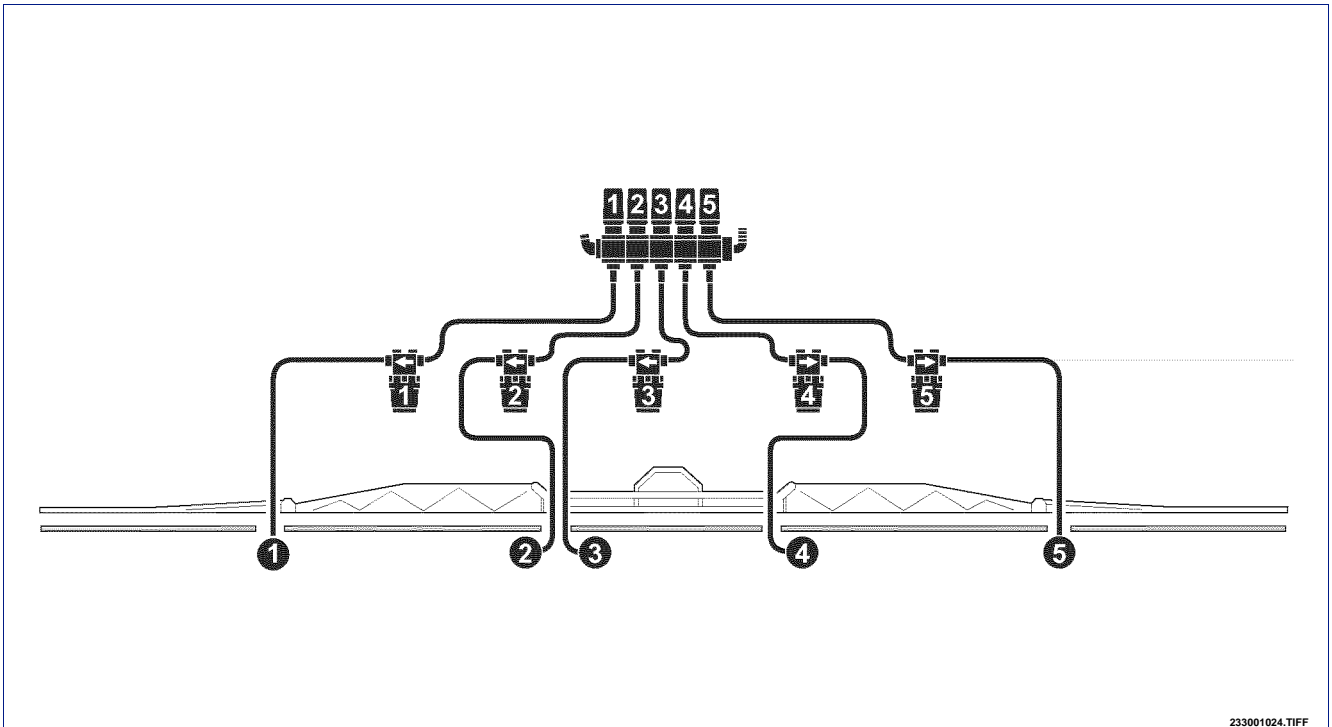
Do not tighten the clamps too much so as to avoid throttling.



- 5 - Use the Teflon seal (A) and tighten the stainless steel clamps (B) in order to ensure tightness in the joints.



5-supply water connection diagram

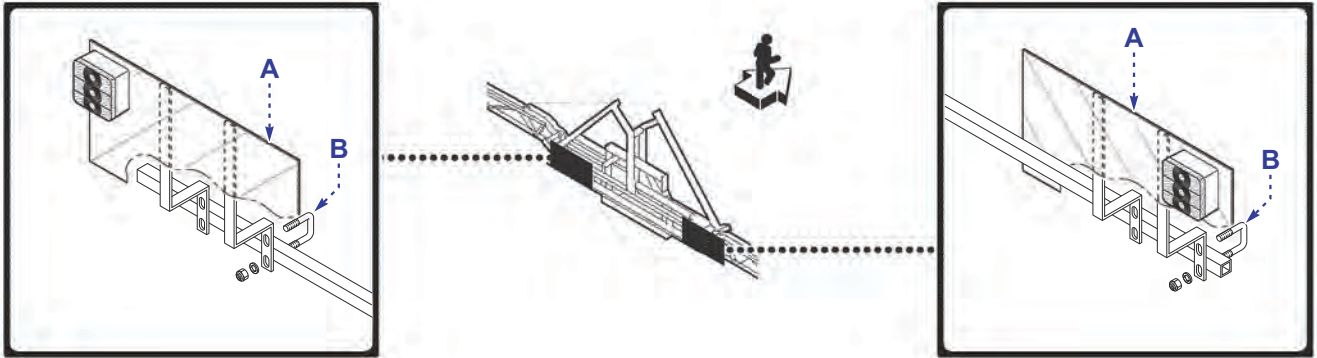


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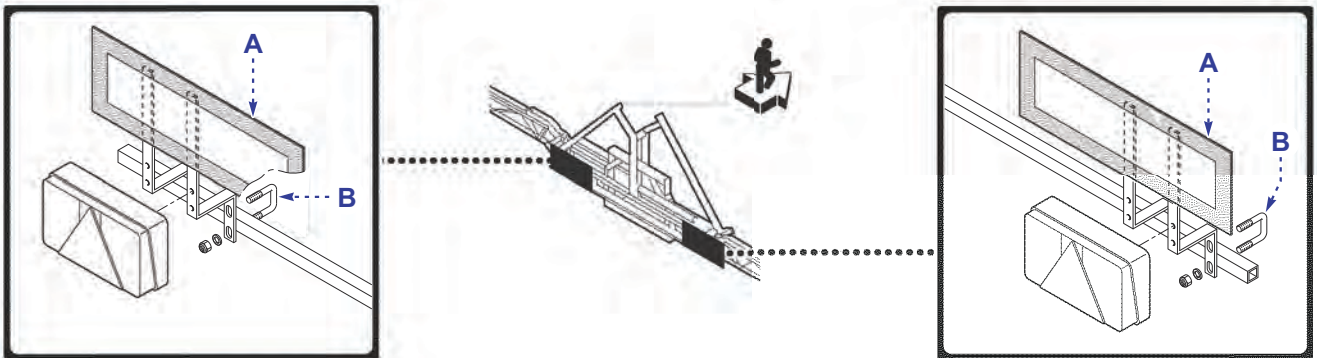
INSTALLATION OF REAR LIGHT KIT

- 1 - Install the rear light kit (A) and fasten it with U bolts (B).

Rear light kits for mounted units with rear-reflecting panels



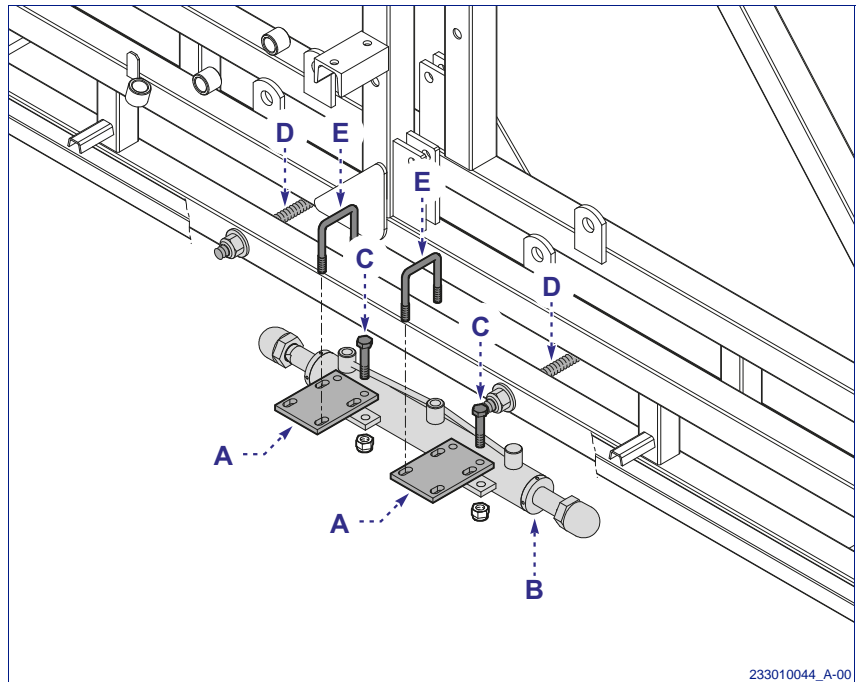
Rear light kits for trailed tanks with rear-reflecting panels



233010021-01

INSTALLATION OF THE LOCKING PISTON (ON REQUEST)

- 1 - Fix plates **(A)** to locking piston **(B)** by means of screws **(C)**.
- 2 - Position locking piston **(B)** in the middle of threaded bars **(D)** and fix plates **(A)** to the support boom by means of U-bolts **(E)**, as shown in the figure.



INFORMATION ABOUT ADJUSTMENTS

INSTRUCTIONS FOR ADJUSTMENTS

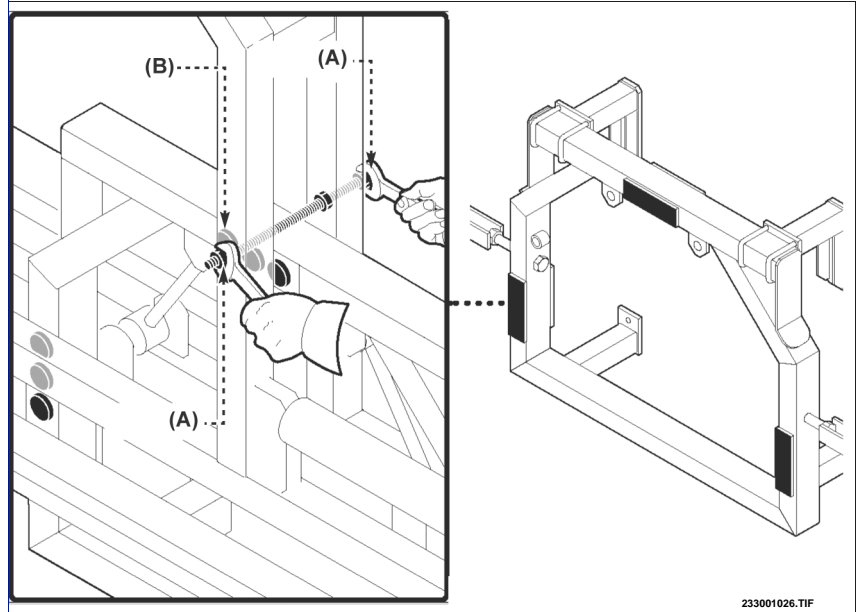
Whoever makes the adjustments must prepare satisfactory safety conditions in advance in order to ensure their own safety and that of the operators involved.

ADJUSTMENT OF THE SWINGING SLIDING SHOES

In order to ensure the correct swinging of the device, adjust play between surfaces according to the sliding shoes wear.

Proceed as follows:

- 1 - Use nuts **(A)** to bring nylon pads **(B)** closer.
- 2 - If the situation does not change despite all these operations, replace nylon pads **(B)**.



233001026.TIF

ADJUSTMENT OF THE AUTOMATIC BLOCKING DEVICE



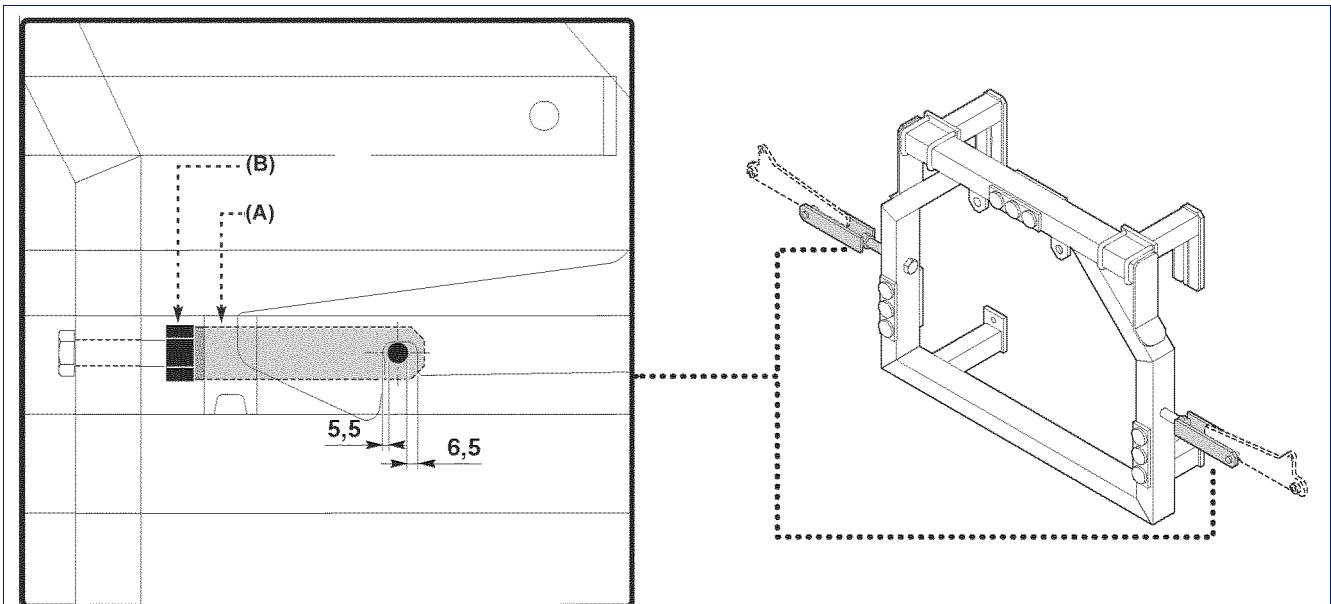
Important

For this adjustment the extension of the spraying boom must be folded (see page 7).

- 2 - Loosen nut **(A)**.
- 3 - Adjust the position of support **(B)** until the indicated levels are obtained (see picture).
- 4 - After completing this operation, tighten nut **(A)**.

Proceed as follows:

- 1 - Insert the blocking device (see page 3).

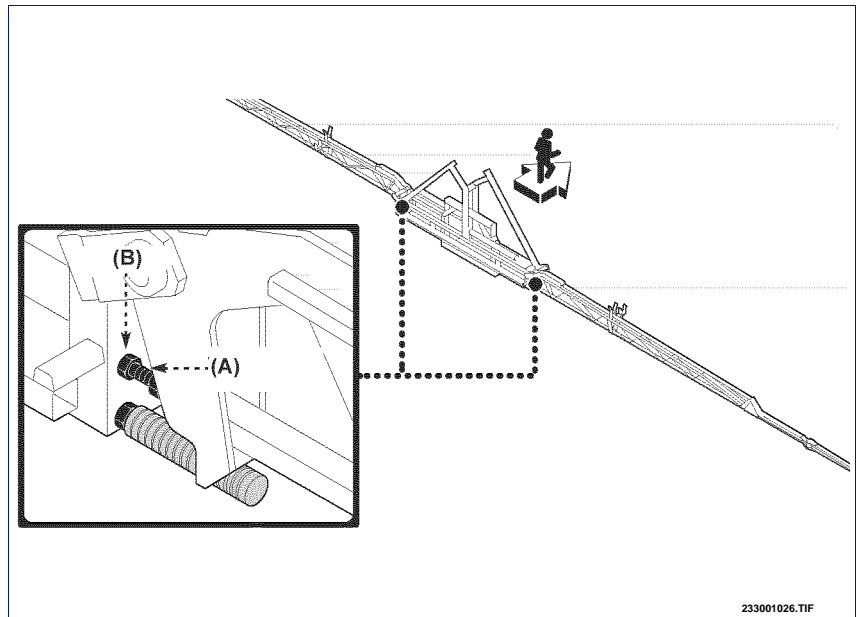


23301027.tif

ADJUSTMENT OF ARM ALIGNMENT

Proceed as follows:

- 1 - Unfold boom completely
- 2 - Loosen counter-nuts **(A)** and align the arms by means of screws **(B)**.
- 3 - Tighten counter-nuts **(A)**.
- 4 - Perform the same adjustment on the other arm.



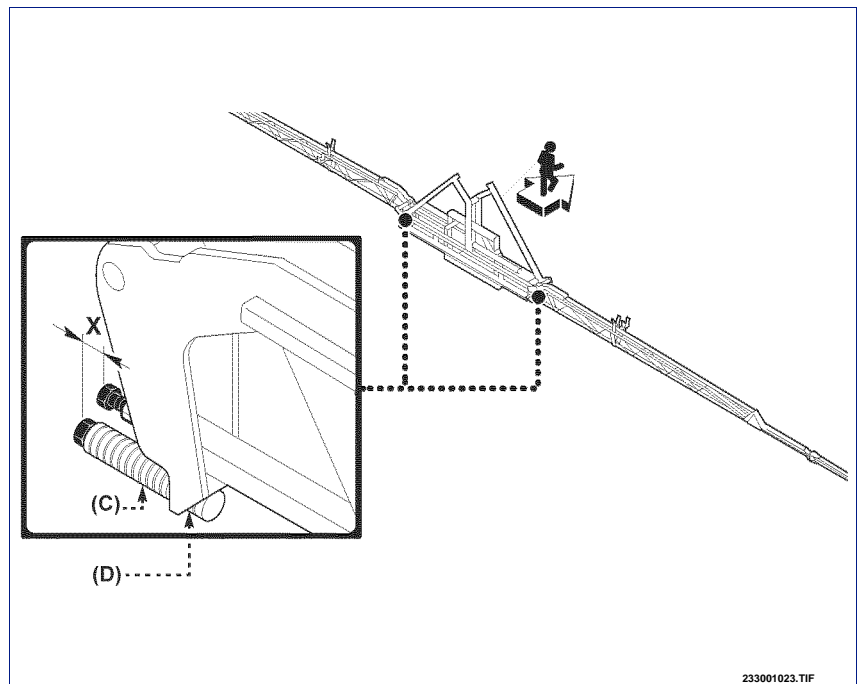
- 5 - When the boom is folded, make sure that distance **(X)** does not exceed 4 mm.



Important

If the desired adjustment cannot be obtained, move one or more springs from area **(C)** to **(D)**, or vice versa, according to needs.

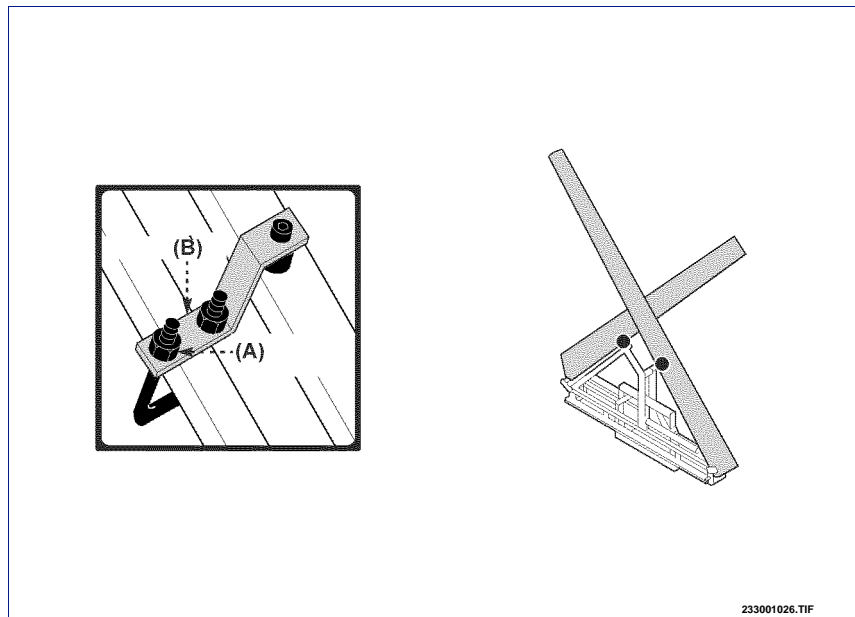
- 6 - Perform the same adjustment on the other arm.



BOOM FOLDING SUPPORT ADJUSTMENT

Proceed as follows:

- 1 - Fold the arms of the boom.
- 2 - Loosen nuts **(A)** and move support **(B)** to the desired position.
- 3 - After completing this adjustment, tighten nuts **(A)**.



INFORMATION ABOUT USE

RECOMMENDATIONS FOR USE WITH SELF-LEVELLING DEVICE AUTOMATIC LOCKING



Important

During operation, disconnect blocking device **(A)** of the self-levelling device in order to allow the spraying boom to swing, and keep it parallel to the ground, also in sloping and / or uneven areas.

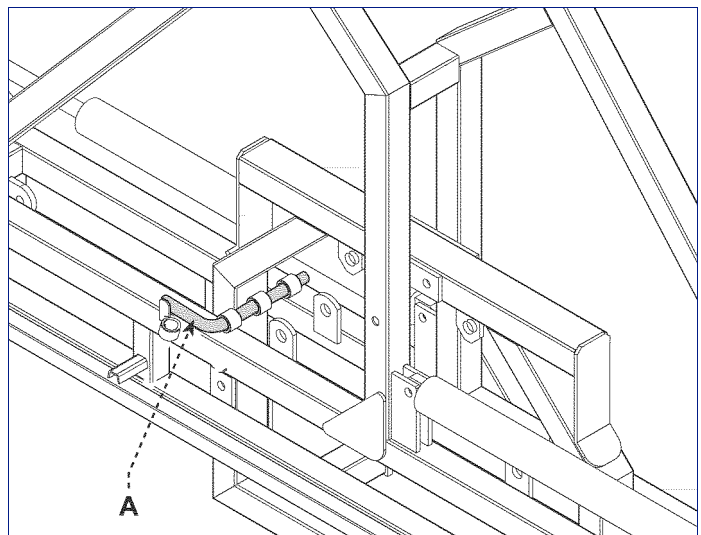


Important

Blocking device **(A)** must be used only when the equipment is moved with folded boom.

- Locking device **(A)** must be used only during transport while the boom is closed.

Please note: if the blocking operation is difficult, lightly swing the boom until the pin is inserted in its housing.



scribed in “Boom Unfolding and Folding”.

The information mentioned is not published in the manual if the equipment is installed on units belonging to other manufacturers.



Important

Information on hydraulic connections is to be found in the "Hydraulic system" diagram.

The boom unfolding and folding procedure, variable depending on the type of control installed, is de-

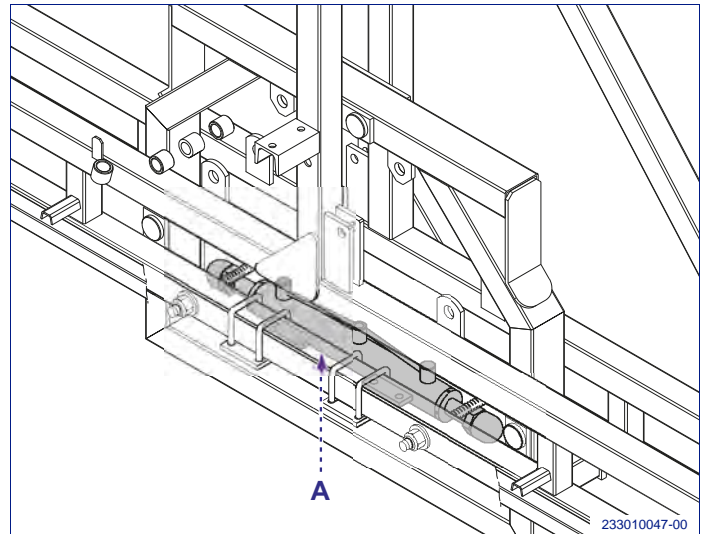
RECOMMENDATIONS FOR USE WITH SELF-LEVELLING DEVICE HYDRAULIC LOCKING

During operation, the blocking device **(A)** of the self-levelling device is automatically disconnect in order to allow the spraying boom to swing, and keep it parallel to the ground, also in sloping and / or uneven areas.

Important

During the phases of;

- Transportation
- BOOM FOLDING AND UNFOLDING
- Boom folding on one side in order to avoid an obstacle
- Boom use with only one side unfolded
- Prolonged stopover or machine out of use activate locking device **(A)** in order to block the equipment swinging.



Important

Information on hydraulic connections is to be found in the "Hydraulic system" diagram. The boom unfolding and folding procedure, variable depending on the type of control installed, is described in "Boom Unfolding and Folding". The information mentioned is not published in the manual if the equipment is installed on units belonging to other manufacturers.

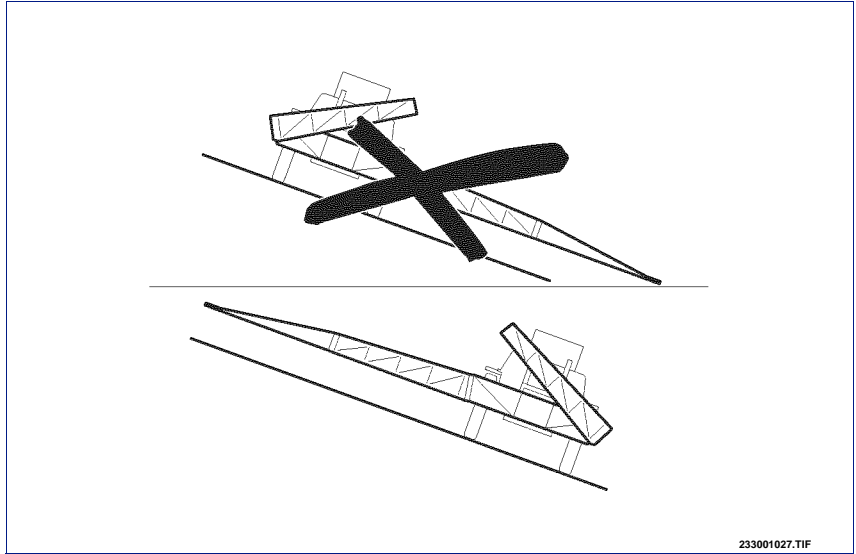
BOOM FOLDING AND UNFOLDING

Important

The environment and field conditions of the area where you plan to operate have to be checked every time the equipment is set up for spraying.

Evaluate the following requirements.

- Check whether or not there are electric lines and assess the risks of contact with the spraying boom.
- Check the gradient of the land so as to evaluate the most suitable conditions for operating in safety. Always bear in mind the maximum gradients allowed.
- In the event of spraying while moving crosswise to the slope, follow the instructions extremely carefully:
 - 1) **Boom unfolding stage: always unfold the one uphill first, and then the one downhill.**
 - 2) **Boom folding stage: always fold the one downhill first, and then the one uphill.**
- Never work if just the downhill arm is open.
- Keep the forward speed moderate (max. 8-10 km/h) to prevent the booms from swinging and to keep spraying even.



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Caution - Warning

Prevent strangers from approaching the working area when the machine is in use. Should it become necessary, stop it immediately and make the people found in the risk area move away.

Important

If it is windy, also stay below the maximum allowed limits (5 m/sec) so as to prevent the product from being dispersed in the surrounding environment. Keep the boom at a lower height and increase the volume of the droplets.

ADJUSTMENT OF TILT

Equipment tilt can be modified according to the different ground slopes.

Proceed as follows:

Disengage locking device

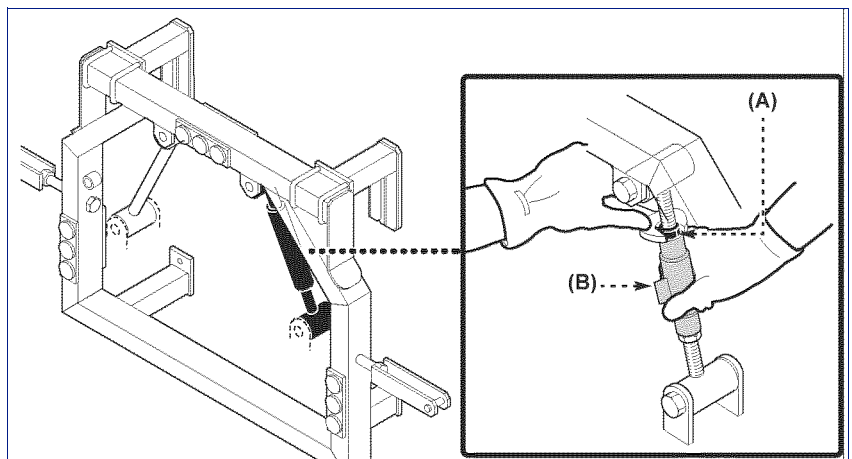
Tilt with adjustable connecting rod

Loosen the lock nut (A) and rotate the register (B) to adjust the tilt.

Tighten the lock nut (A) when the operation is completed.

Tilting with electric or hydraulic control

Use the special control

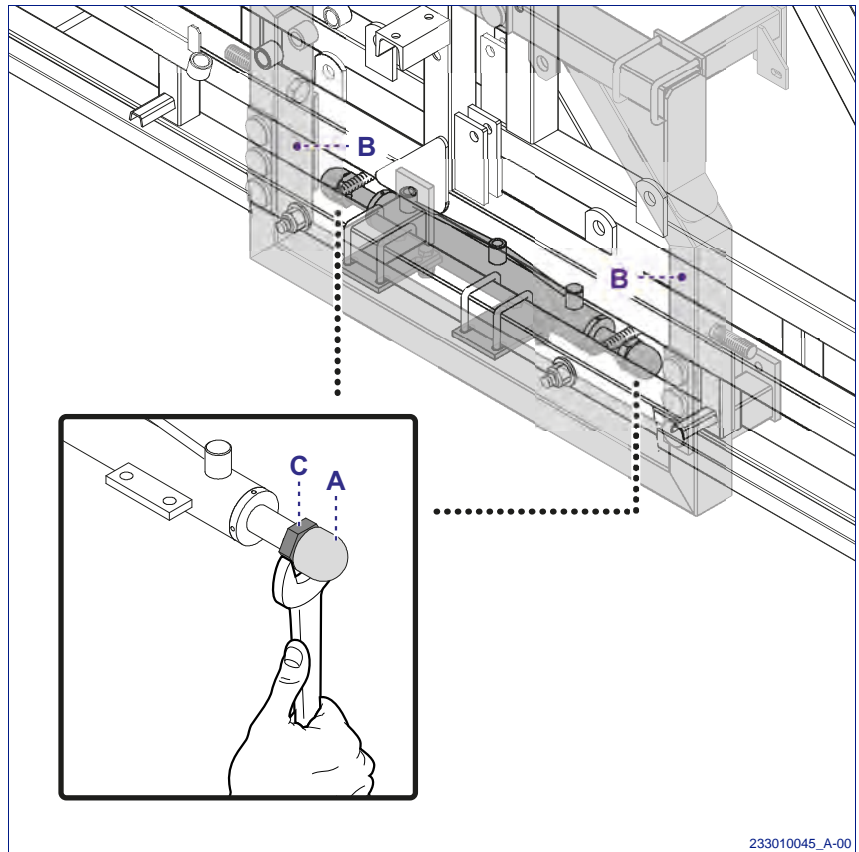


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ADJUST THE HYDRAULIC LOCKING DEVICE

Proceed as follows:

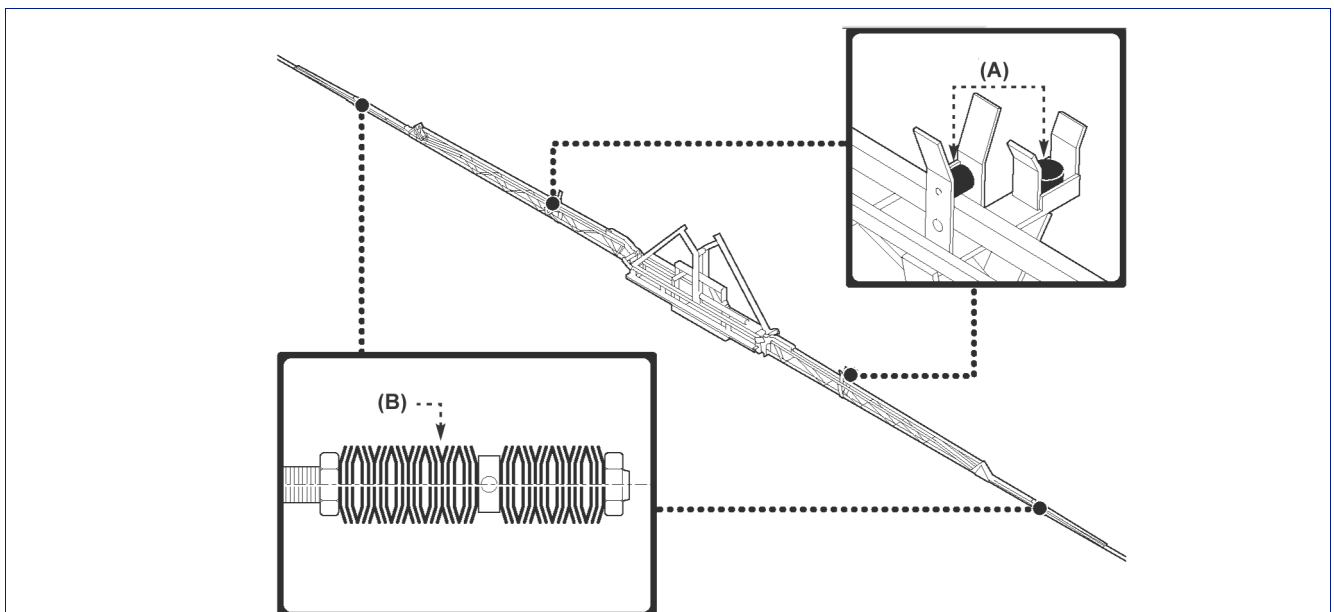
- 1 - Activate the locking device.
- 2 - Make sure that buffers **(A)** press correctly on uprights **(B)**.
- 3 - If necessary, loosen lock nuts **(C)** and adjust buffers **(A)** until they strike uprights **(B)**.
- 4 - Tighten lock nuts **(C)** once the operation is completed.



INFORMATION ABOUT MAINTENANCE

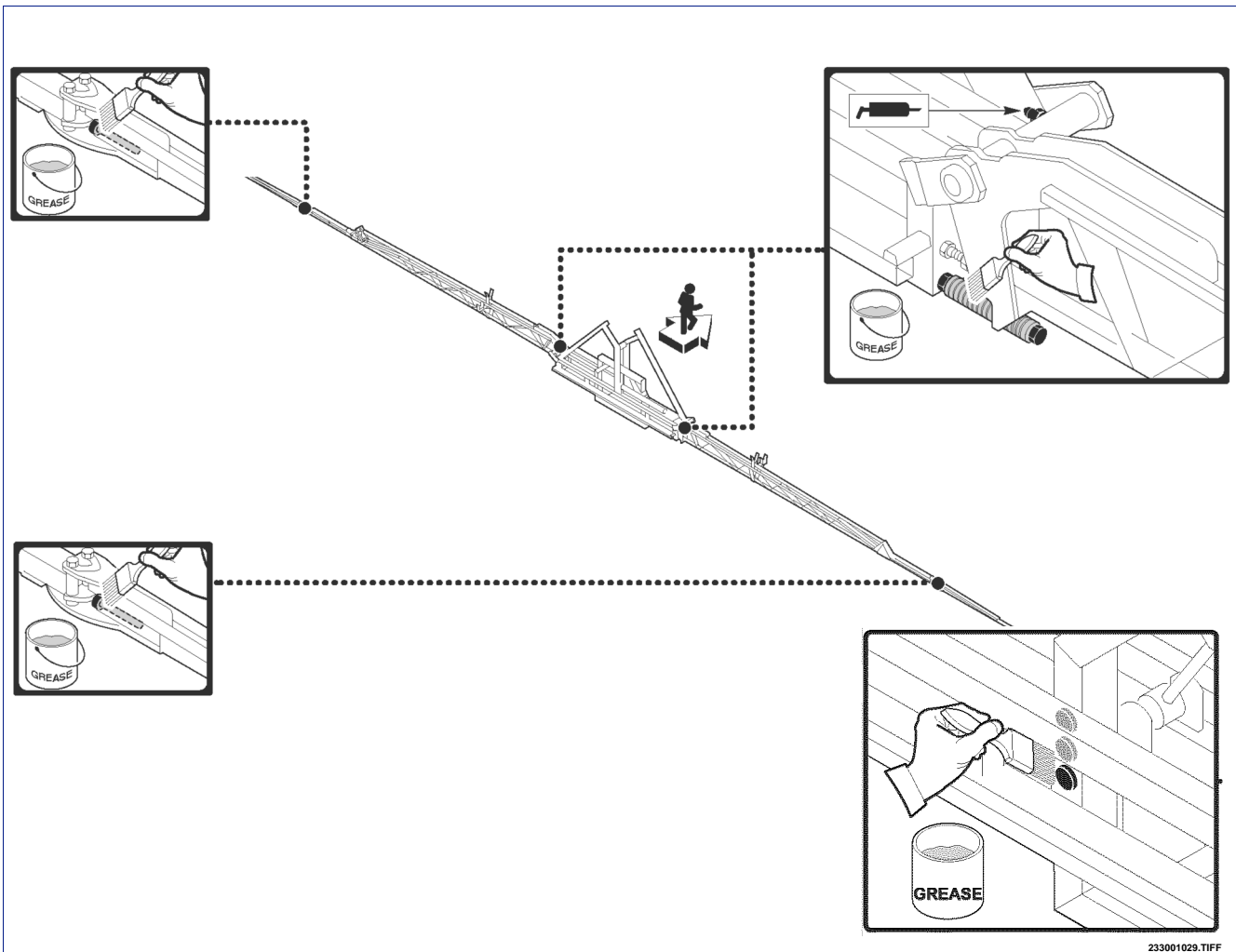
MAINTENANCE SCHEDULE TABLE

Interval	Component	Type of intervention	Operation	Reference
Each working day and with each interval higher than one hour	Jets and nozzles	Clean and rinse the water supply	Make the clean water come out of the nozzles	
	Jets and nozzles	Check operation	Clean and replace if necessary	See "Cleaning nozzles", page 28
Each working day	Jets, nozzles antidrip valve	Check installation	Install properly	
	Complete equipment	Clean and wash	Use a clean jet of water	
	Complete equipment	Check the greased parts	Grease if necessary	See "Lubrication points diagram" page 28
Every 40 hours	Complete equipment	Check the condition and tightness of the screws	Tighten and replace if necessary	
	Complete equipment	Check the painted surfaces	Touch up the parts the paint has come off of if necessary	
	Boom limit stop bumper (A) (see figure below)	Check its condition	Replace if necessary	
	Endpiece articulation springs	Check its effectiveness	Replace if necessary	See "Replacement of spring and terminal joint pin" page 31
	Belleville springs (B) corrector of position	Check its effectiveness	Replace if necessary	See "Replacement of corrector of position spring" page 32
	Sliding surfaces.	Check play between surfaces	Adjust if necessary	
		Check the sliding shoes wear.	Replace if necessary	
	Locking device	Check its effectiveness	Adjust if necessary	



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LUBRICATION POINTS DIAGRAM



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Use *PERSIAN POLIGREASE 2* grease

CLEANING NOZZLES

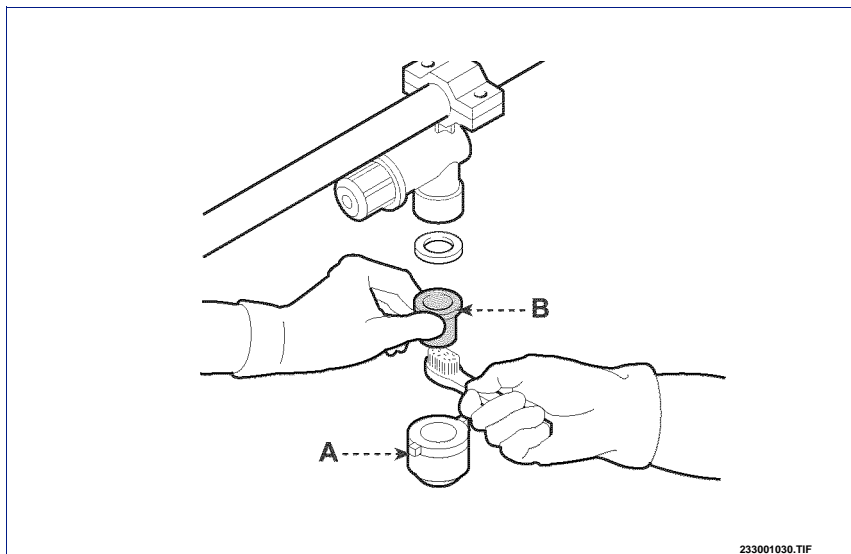
Wear protective gloves for this operation.

- 1 - Disassemble the bayonet (A) and nozzle (B).
- 2 - Clean the nozzle with a jet of air and a small soft-bristle brush.



Important

Do not use pointed or sharp objects so as to not damage the hole of the nozzle.



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LONG PERIOD OF INACTIVITY

If the equipment is not used for a long time, adopt the procedures given below.

- 1 - Perform the scheduled maintenance (see page 27).
- 2 - Perform the general cleaning (see page 28).
- 3 - Put in antifreeze fluid or completely empty the hoses in order to prevent the components (pump, control unit, filters, hoses, etc.) from breaking in the event of severe temperatures.

- 4 - Disconnect the hoses from the pressure gauges.
- 5 - Grease all the components provided with a grease nipple.
- 6 - Place the equipment in a sheltered place accessible only to the operators.

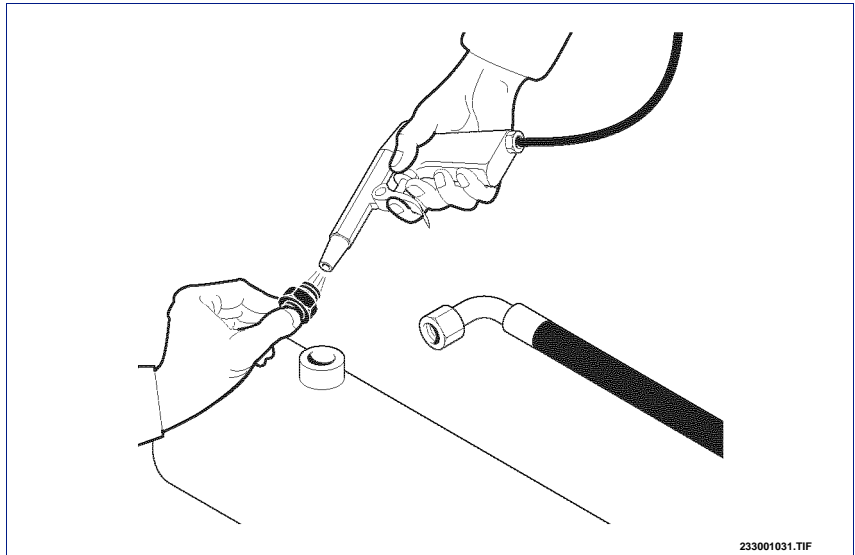
TROUBLESHOOTING

TROUBLES, CAUSES, REMEDIES

Trouble: the boom unfolds halfway and then stops.

Cause: impurities in the calibrated joints of the jacks.

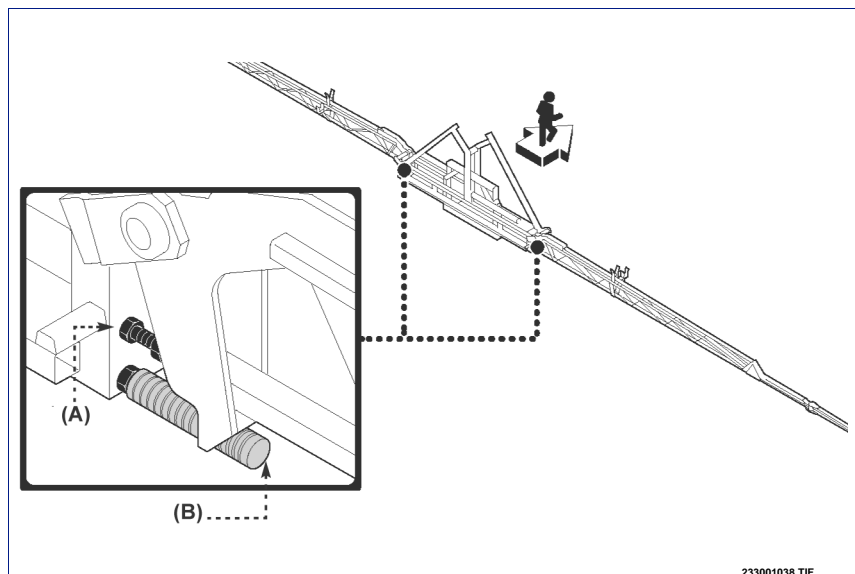
Cures: disassemble the joints and clean them.



Trouble: the boom is not aligned when unfolded.

Cause: unfolding cylinder not adjusted.

Cures: adjust the alignment of the arms (see "Adjustment of arm alignment")



Trouble: when the boom is unfolded and / or folded, the complete extension moves in relation with the primary arm

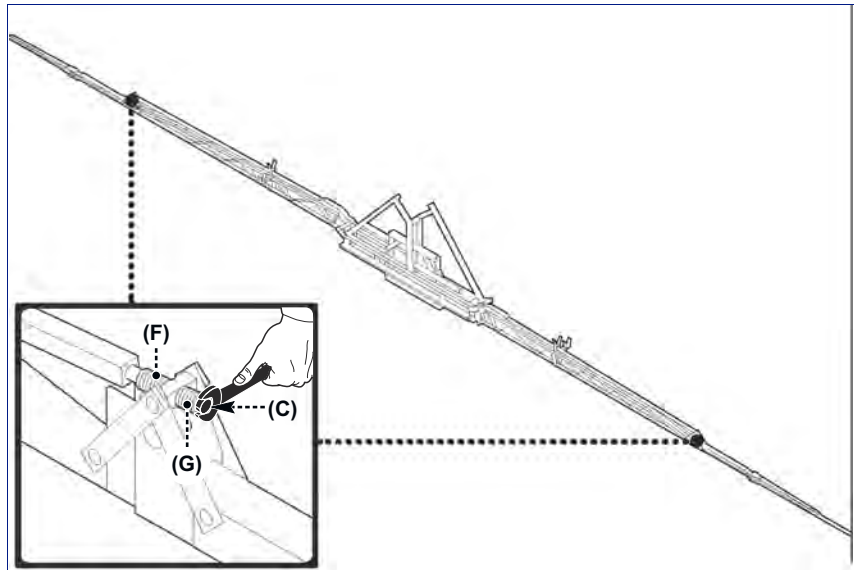
Cause: anomaly in the adjustment of tie-rods.

Cures: adjust the tie-rods through the nut (C) so that the arms stop against the adjusting screws



Important

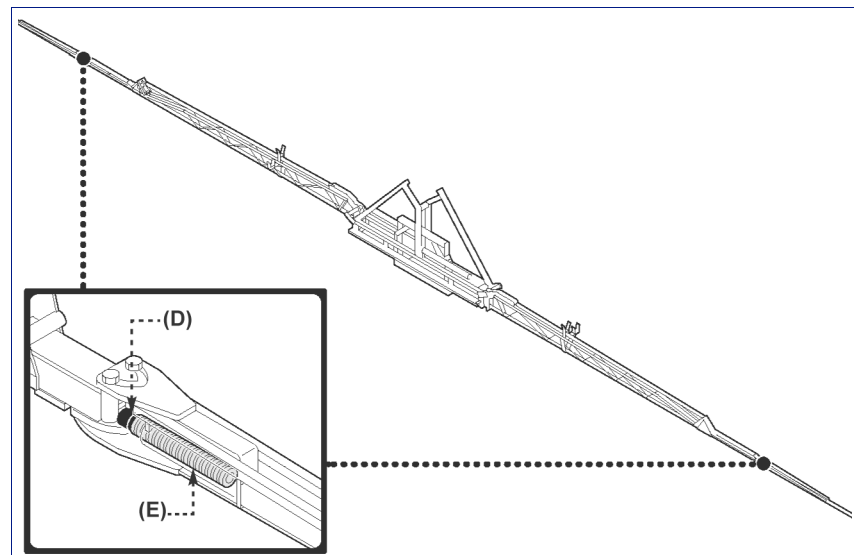
If the desired adjustment cannot be obtained, move one or more springs from area (F) to (G), or vice versa, according to needs.



Trouble: the endpiece extension is not steady enough with the boom unfolded.

Cause: the articulation is loose.

Cures: replace pin (D) and / or spring (E) (see "Replacement of spring and terminal joint pin").

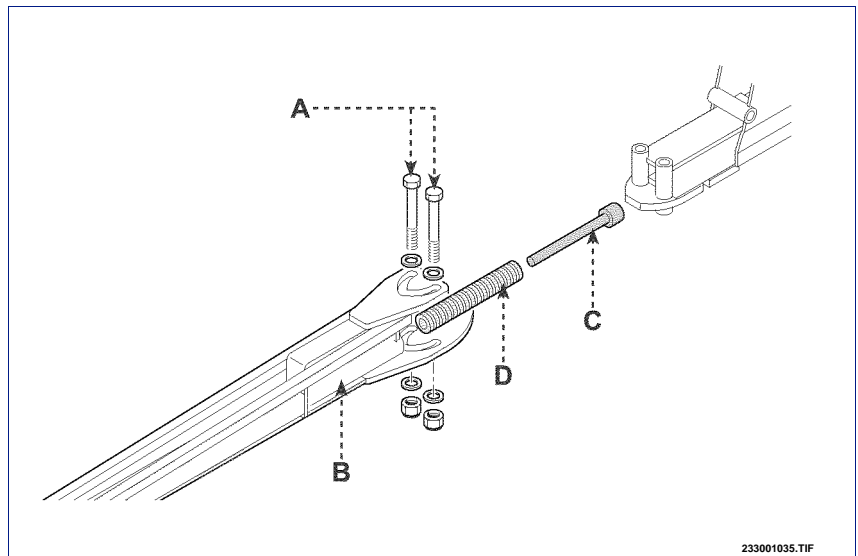


INFORMATION ABOUT REPLACEMENTS

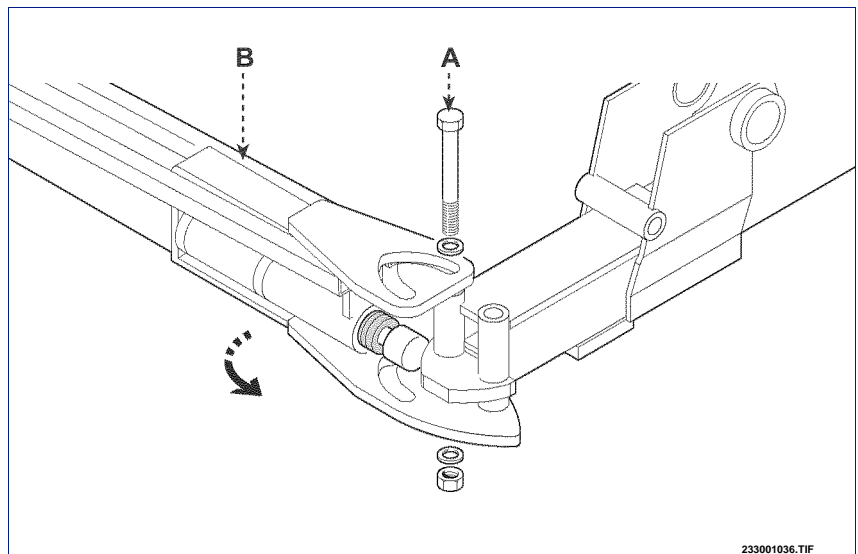
REPLACEMENT OF SPRING AND TERMINAL JOINT PIN

Proceed as follows:

- 1 - Unscrew screws (A) and remove terminal joint (B).
- 2 - Remove pin (C) and spring (D).
- 3 - Insert the new spring and pin (C).



- 4 - When terminal joint (B) is rotated by 90° in relation with the primary arm, insert first screw (A).
- 5 - Align the terminal joint and the primary arm and insert second screw (A).

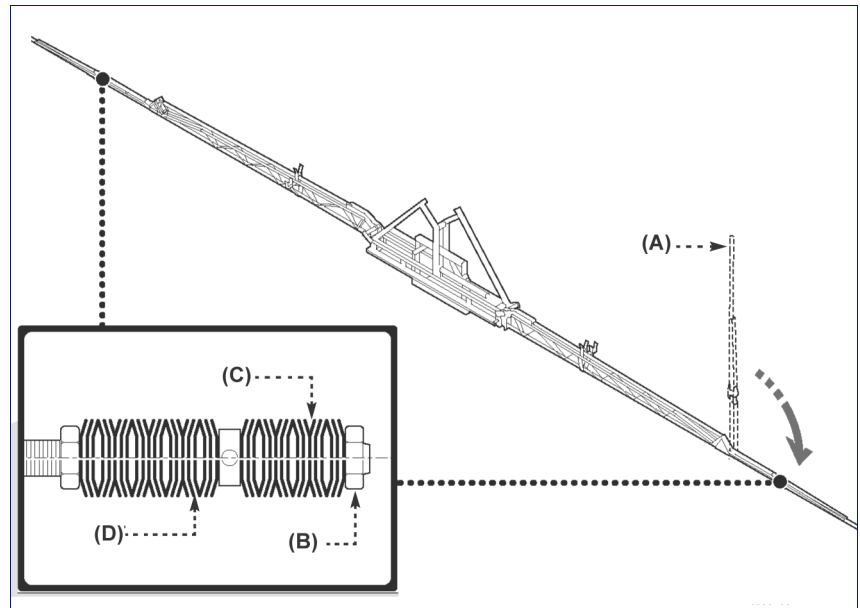


i Important
 Screws (A) must not be tightened because the terminal joint must be free to rotate.

REPLACEMENT OF CORRECTOR OF POSITION SPRING

Proceed as follows:

- 1 - Unscrew nut **(B)** and remove Belleville springs **(C)**.
 - 2 - Unscrew screw **(E)** and remove cylinder **(F)**
 - 3 - Remove Belleville springs **(D)**.
 - 4 - Replace and divide the springs (see figure).
- C)** 18 triple pack springs
D) 24 triple pack springs
- 5 - Reposition the cylinder, tighten screw **(E)** and nut **(B)** so that 2 threads protrude.



DISPOSING OF THE EQUIPMENT



Important

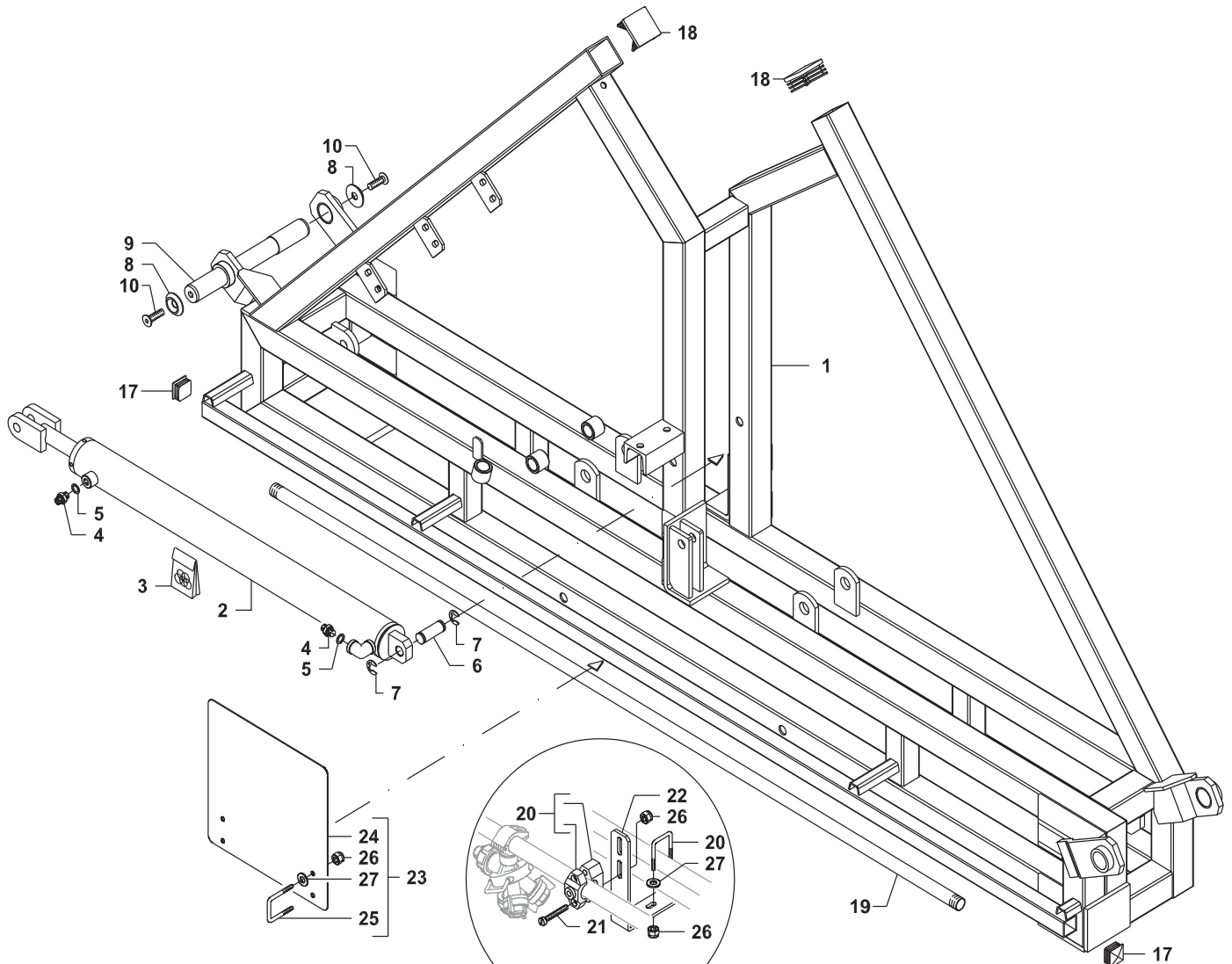
This intervention has to be carried out by skilled technicians and in accordance with the current safety regulations.

Do not disperse in the environment non-biodegradable products, lubricating oils and non-ferrous components (rubber, PVC, resins, etc.). Dispose of them according to the local regulations in force.

SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

MHL12 PARTS IDENTIFICATION



1	BG026966	
2	BG011047	
3	GG996000192	
4	GG570500008Z	
5	BB50243113	
6	GG500100010Z	
7	GG919800021X	
8	GG500400004Z	

9	GG500100032	
10	GG900710025Z	
17	GG950130030	
18	GG950150050	
19	GG550401500	4 fori/holes
19	GG550501500	5 fori/holes
20	GGA00425130	
21	BB50112041	

22	BG028332	
23	GG999900004Z	
24	GG999900467	
25	GG201800065V	
26	GG500500004Z	
27	GG905300006	
28	GG907106018Z	

NOTE

PLEASE ADD
PREFIX **GB** TO REFLECT
CROPLANDS PART NUMBER

NOTE

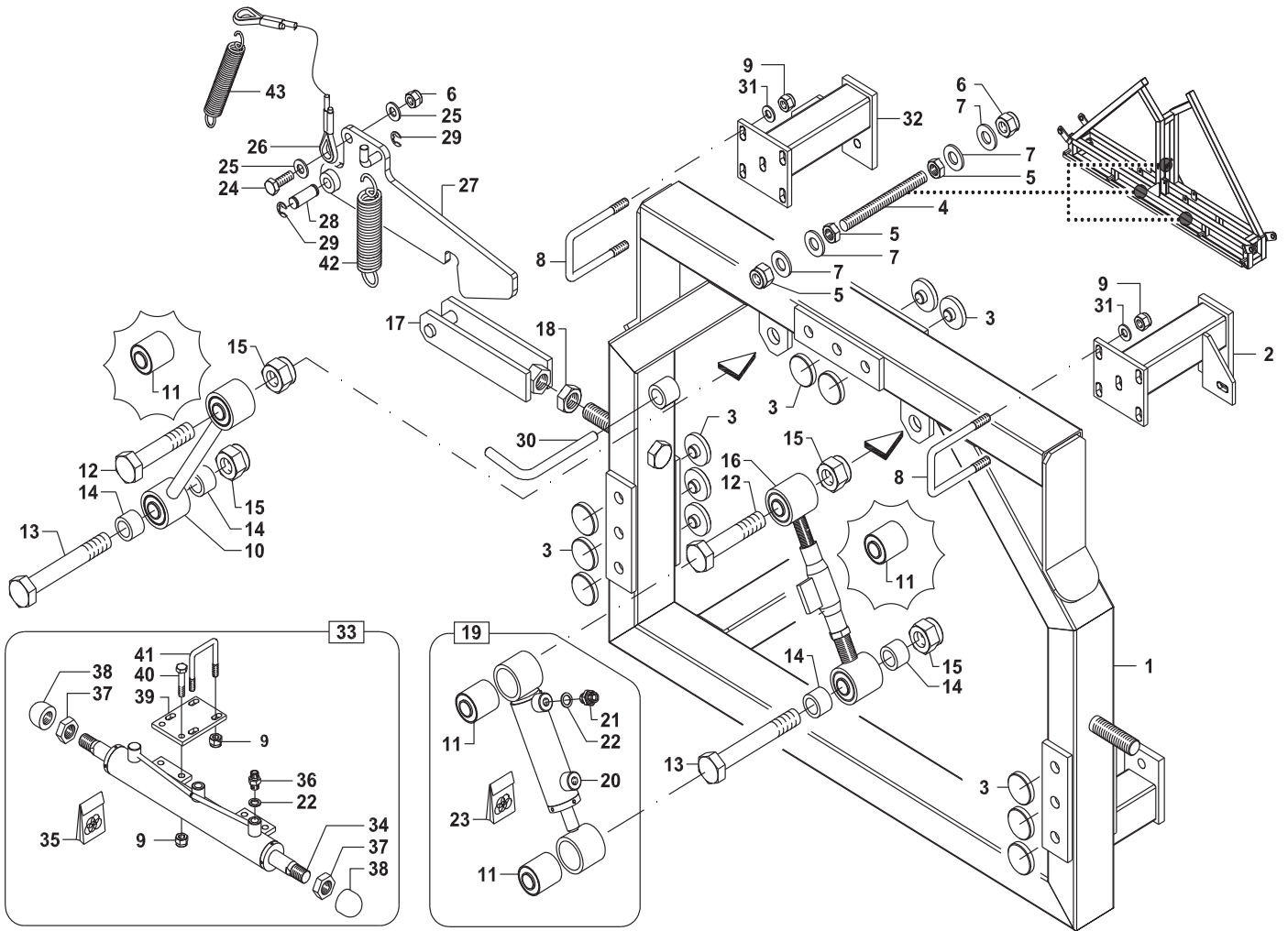
Drawings are for illustration purpose only - refer to sprayer for actual plumbing. Parts listed are indicative of the sprayer type.

Items in italics or without a part number are non stocked items and may need to be specially ordered.

For further parts information refer to: www.croplands.com.au

SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS



1	BG027484
2	BG027485
3	GG950200020
4	GG500100040Z
5	GG905100014Z
6	GG905400014
7	GG907114042Z
8	GG500500006Z
9	GG905300010
10	GG993805002Z
11	GG950300003

12	GG900320080Z
13	GG900320120Z
14	GG500200016Z
15	GG905400020
16	GG993805003Z
17	17 BG013330
18	GG905200020Z
19	GG997000006
20	GG701632002V
21	GG570500006Z
22	BB50243113

23	GG996000203
24	GG900114040Z
25	GG907014028Z
26	BG013329
27	BG013286
28	GG500100011Z
29	GG919800021X
30	BG015799
31	GG907010021Z
32	BG028289
33	GG993809002

34	GG702540009V
35	GG996000178
36	GG570500011Z
37	GG905200022Z
38	GG50110007
39	GG501100002V
40	GG900110030Z
41	GG500500002Z
42	BG011809
43	BG020395

NOTE

PLEASE ADD
PREFIX **GB** TO REFLECT
CROPLANDS PART NUMBER

NOTE

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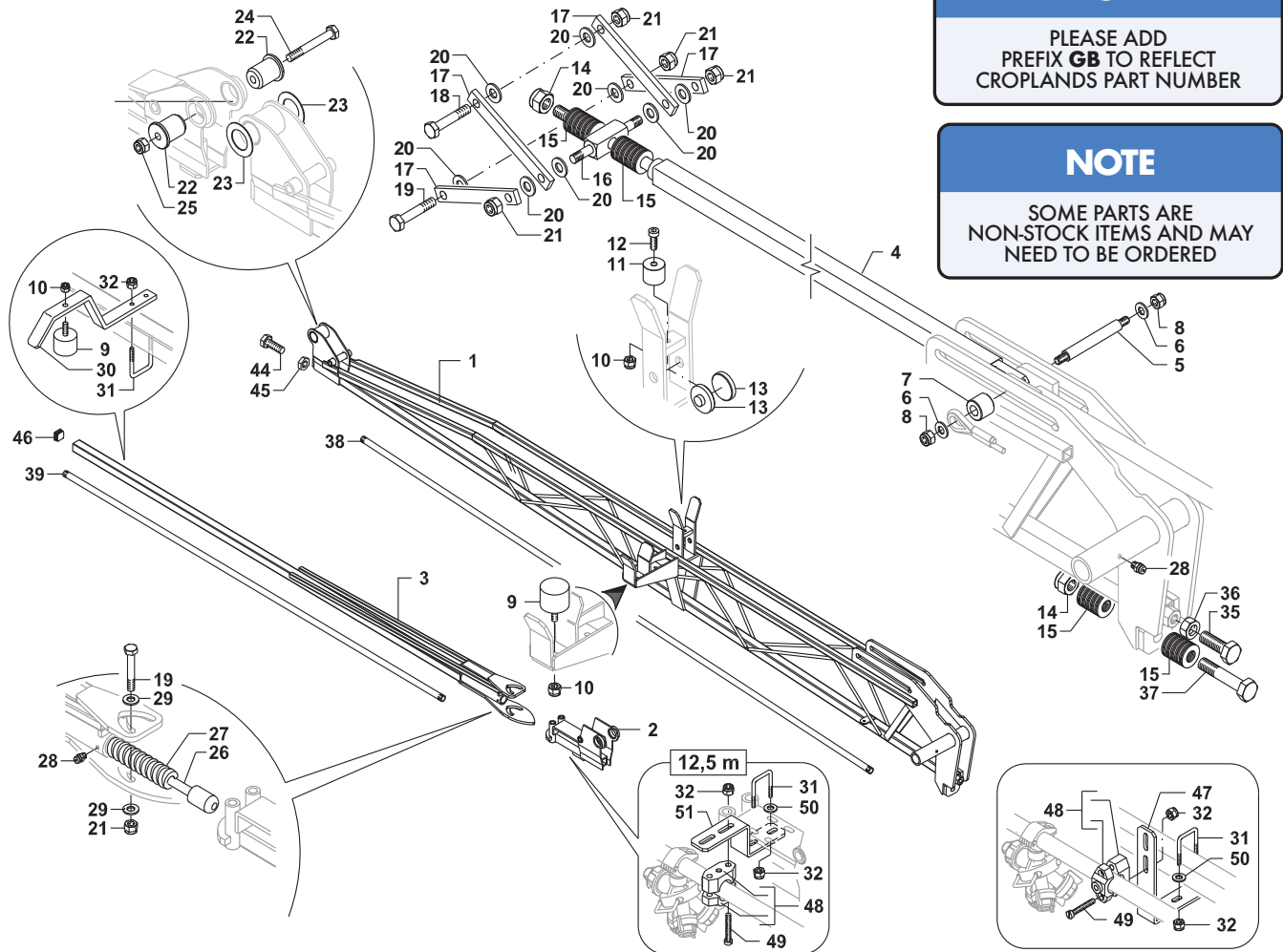
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SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

MHL12 PARTS IDENTIFICATION



NOTE
PLEASE ADD
PREFIX **GB** TO REFLECT
CROPLANDS PART NUMBER

NOTE
SOME PARTS ARE
NON-STOCK ITEMS AND MAY
NEED TO BE ORDERED

1	BG027660	
2	BG020197	
3	BG007852	
4	BG011077	
5	BG013332	
6	GG907111030Z	
7	BG013331	
8	GG905300010	
9	GG950200001	
10	GG905400008	
11	GG950200002	
12	GG900508012Z	
13	GG950200020	
14	GG905400016	
15	GG911634920	
16	16 GG161200061Z	
17	GG171500026Z	
18	GG500512096Z	
19	GG500512116Z	
20	GG911225915	
21	GG905400012	

22	GG500200005Z	
23	GG500400011	
24	GG900310100Z	
25	GG905400010	
26	GG161200075Z	
27	GG919900045V	
28	GG919800020	
29	GG907012025Z	
30	BG027895	
31	GG500500004Z	
32	GG905300006	
35	GG900116050Z	
36	GG905100016Z	
37	GG900316110Z	
38	GG550501500	12,5 m
38	GG550601500	12 m
39	GG550501500	12,5 m
39	GG550401500	12 m
40	GG500600002Z	

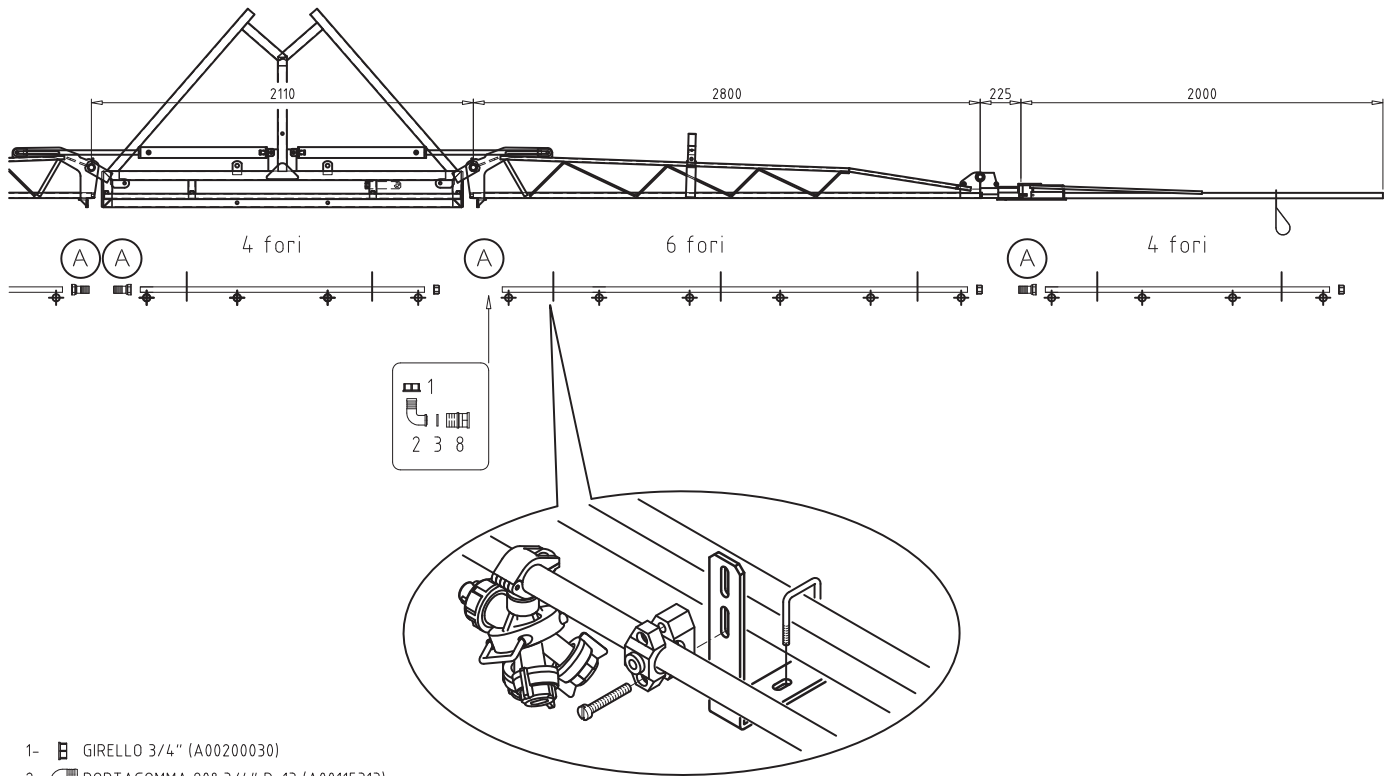
41	GG900508022Z	
42	GG906000008Z	
43	GG999900004Z	
44	GG900114040Z	
45	GG905100014Z	
46	GG950130030	
47	BG028332	
48	GGA00425130	
49	BB50112041	
50	GG907106018Z	
51	BG026979	

NOTE
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actual plumbing. Parts listed are indicative of the sprayer type.
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items and may need to be specially ordered.
For further parts information refer to: www.croplands.com.au

BG013720

SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS



- 1- GIRELLO 3/4" (A00200030)
- 2- PORTAGOMMA 90° 3/4" D=13 (A00115313)
- 3- GUARNIZIONE PIANA 3/4" (A00G4.0013)
- 7- KIT PORTAGOMMA D=13 (999900035)
- 8- RIDUZIONE M 3/4" - F 1/2" (A002452032S)
- KIT TAPPO NYLON F1/2" (999900008)
- KIT FASCIA DI PROTEZIONE

NOTE

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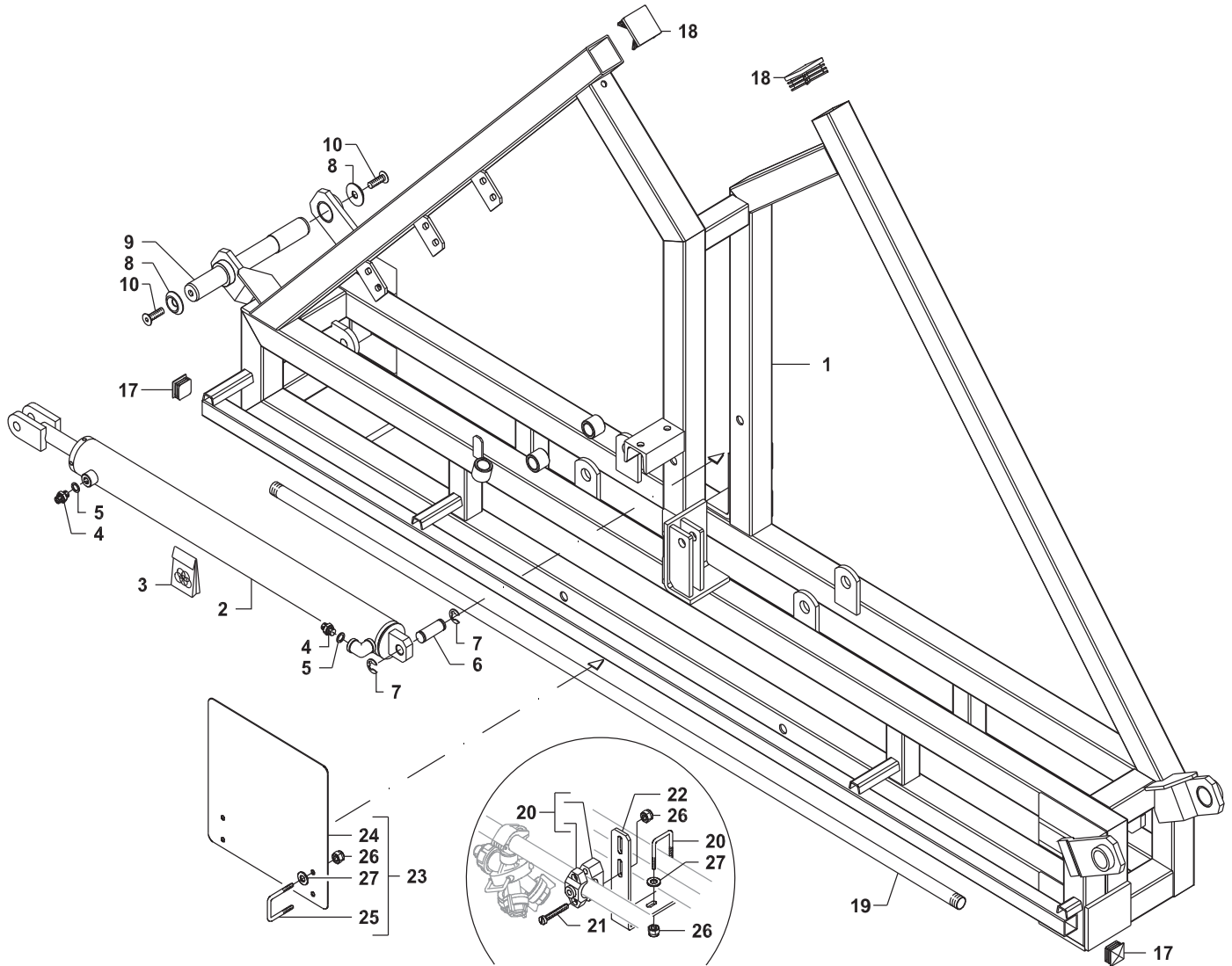
Items in italics or without a part number are non stocked items and may need to be specially ordered.

For further parts information refer to: www.croplands.com.au

SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

MHL15 PARTS IDENTIFICATION



1	BG026966	
2	BG011047	
3	GG996000192	
4	GG570500008Z	
5	BB50243113	
6	GG500100010Z	
7	GG919800021X	
8	GG500400004Z	

9	GG500100032	
10	GG900710025Z	
17	GG950130030	
18	GG950150050	
19	GG550401500	4 fori/holes
19	GG550501500	5 fori/holes
20	GGA00425130	
21	BB50112041	

22	BG028332	
23	GG999900004Z	
24	GG999900467	
25	GG201800065V	
26	GG500500004Z	
27	GG905300006	
28	GG907106018Z	

NOTE

PLEASE ADD
PREFIX **GB** TO REFLECT
CROPLANDS PART NUMBER

NOTE

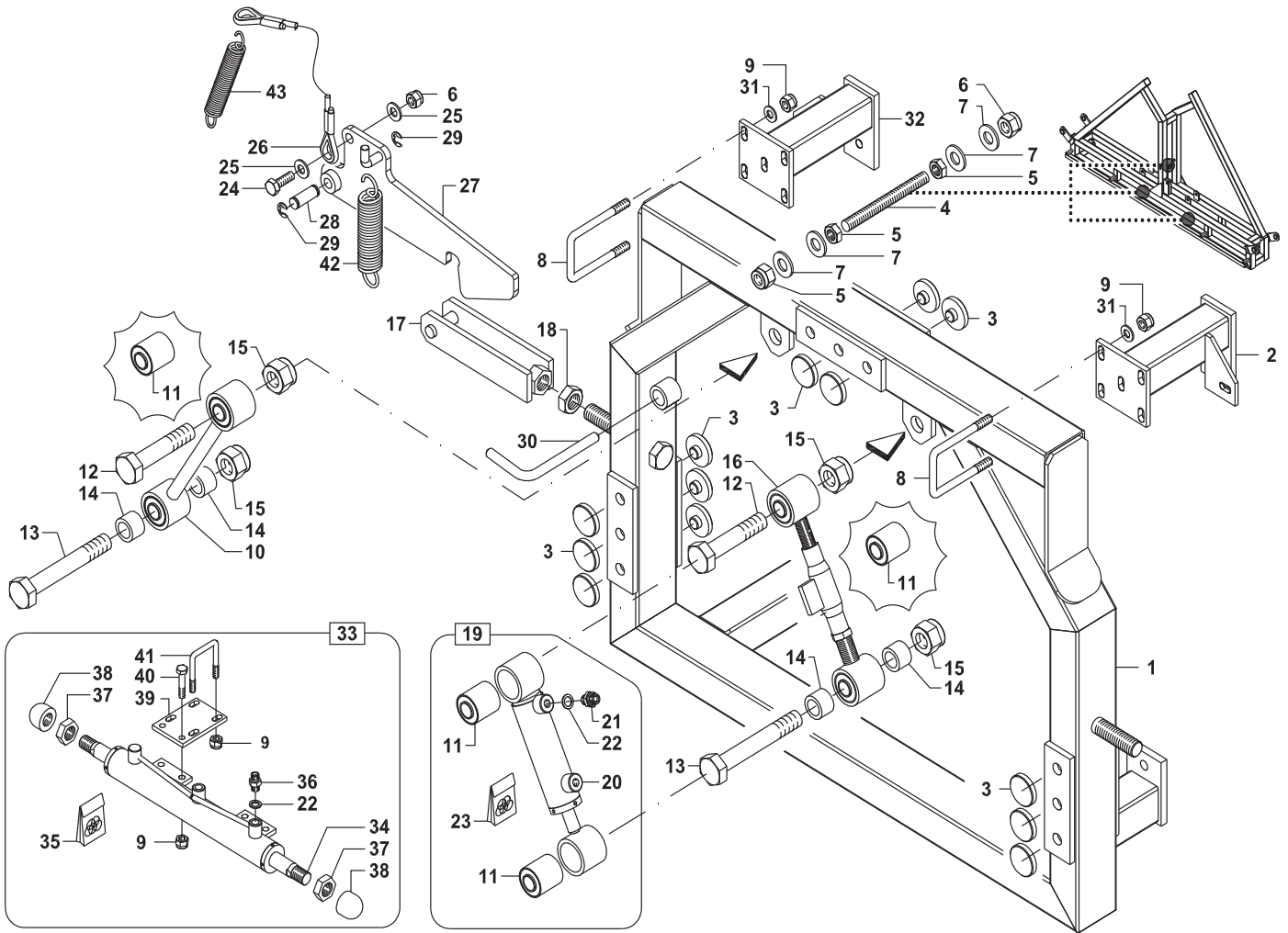
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For further parts information refer to: www.croplands.com.au

SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS



1	BG027484
2	BG027485
3	GG950200020
4	GG500100040Z
5	GG905100014Z
6	GG905400014
7	GG907114042Z
8	GG500500006Z
9	GG905300010
10	GG993805002Z
11	GG950300003

12	GG900320080Z
13	GG900320120Z
14	GG500200016Z
15	GG905400020
16	GG993805003Z
17	BG013330
18	GG905200020Z
19	GG997000006
20	GG701632002V
21	GG570500006Z
22	BB50243113

23	GG996000203
24	GG900114040Z
25	GG907014028Z
26	BG013329
27	BG013286
28	GG500100011Z
29	GG919800021X
30	BG015799
31	GG907010021Z
32	BG028289
33	GG993809002

34	GG702540009V
35	GG996000178
36	GG570500011Z
37	GG905200022Z
38	GG50110007
39	GG501100002V
40	GG900110030Z
41	GG500500002Z
42	BG011809
43	BG020395

NOTE

PLEASE ADD
PREFIX **GB** TO REFLECT
CROPLANDS PART NUMBER

NOTE

Drawings are for illustration purpose only - refer to sprayer for actual plumbing. Parts listed are indicative of the sprayer type.

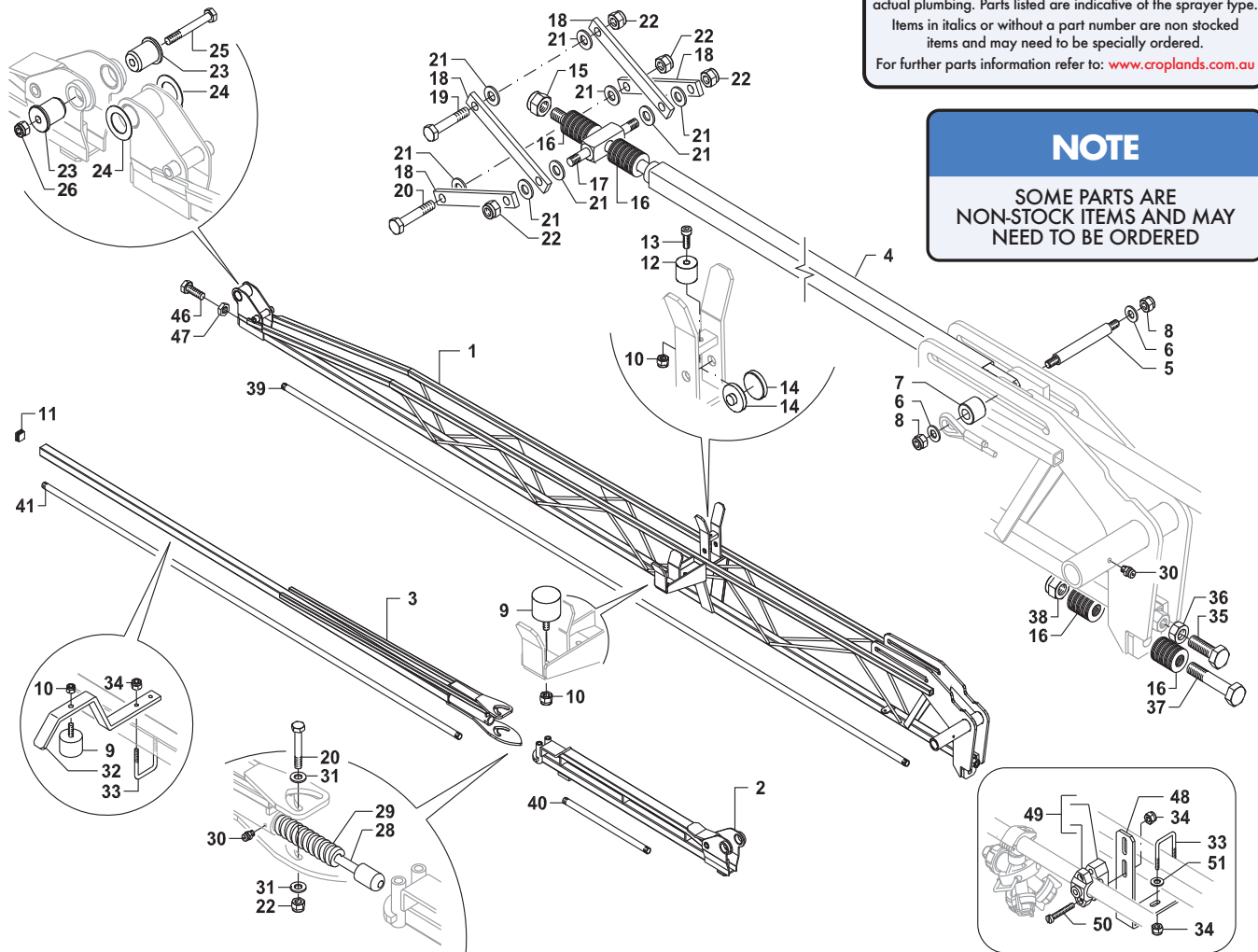
Items in italics or without a part number are non stocked items and may need to be specially ordered.

For further parts information refer to: www.croplands.com.au

SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

MHL15 PARTS IDENTIFICATION



NOTE

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NOTE

SOME PARTS ARE NON-STOCK ITEMS AND MAY NEED TO BE ORDERED

1	BG026972	
2	BG011072	
3	BG007852	
4	BG011821	
5	BG013332	
6	GG907111030Z	
7	BG013331	
8	GG905300010	
9	GG950200001	
10	GG905400008	
11	GG950130030	
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15	GG905400016	
16	GG911634920	
17	GG161200061Z	

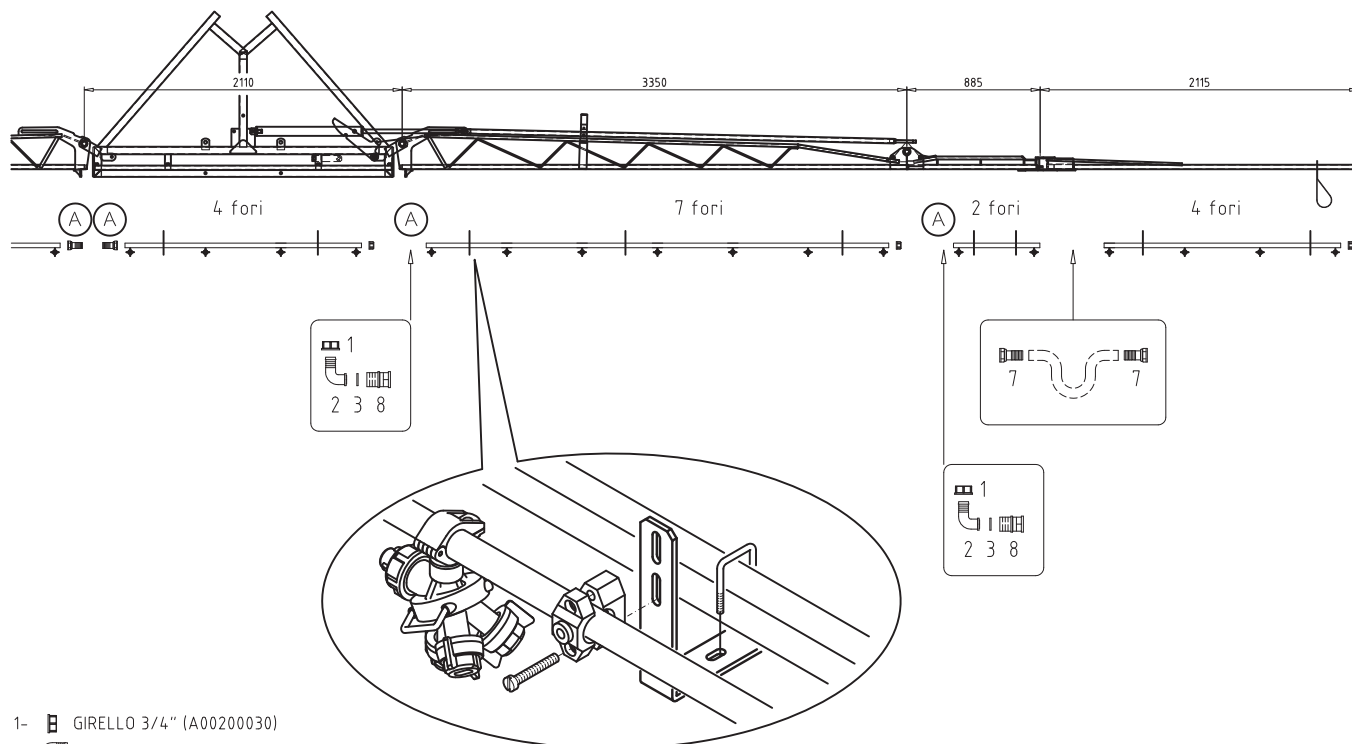
18	GG171500026Z	
19	GG500512096Z	
20	GG500512116Z	
21	GG911225915	
22	GG905400012	
23	GG500200005Z	
24	GG500400011	
25	GG900310100Z	
26	GG905400010	
28	GG161200075Z	
29	GG919900045V	
30	GG919800020	
31	GG907012025Z	
32	BG027895	
33	GG500500004Z	
34	GG905300006	
35	GG900116050Z	

36	GG905200016Z	
37	GG900316110Z	
38	GG905400016	
39	GG550701500	7 fori / holes
40	GG550110005	1 foro / hole
41	GG550501500	5 fori / holes
42	GG500600002Z	
43	GG900508022Z	
44	GG906000008Z	
45	GG999900004Z	
46	GG900114040Z	
47	GG905100014Z	
48	BG028332	
49	GGA00425130	
50	BB50112041	
51	GG907106018Z	

BG013722

SECTION 4

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS



- 1- GIRELLO 3/4" (A00200030)
- 2- PORTAGOMMA 90° 3/4" D=13 (A00115313)
- 3- GUARNIZIONE PIANA 3/4" (A00G4.0013)
- 7- KIT PORTAGOMMA D=13 (999900035)
- 8- RIDUZIONE M 3/4" - F 1/2" (A002452032S)
- KIT TAPPO NYLON F1/2" (999900008)
- KIT FASCIA DI PROTEZIONE

NOTE

Drawings are for illustration purpose only - refer to sprayer for actual plumbing. Parts listed are indicative of the sprayer type.

Items in italics or without a part number are non stocked items and may need to be specially ordered.

For further parts information refer to: www.croplands.com.au

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Your nearest Croplands Dealer can be found in the dealer section on the Croplands website.