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1.1. PURPOSE OF THE MANUAL



Read carefully this manual before servicing the equipment.

This manual has been drafted by the Manufacturer and it is integral part of the equipment.

This manual contains both the information relevant to the procedure of operating the equipment and the safety information.

Said information is aimed at the professional user (operator), who, in addition to a specific skill relevant to the driving of the tractor on which this equipment is fitted, must also have acquired a certain experience in the field for which this equipment has been designed and manufactured.

Furthermore, a generic mechanical experience and an agricultural mechanics skill are of the utmost importance to allow the user either to fit, adjust or service the equipment in safe conditions.

This manual defines the purpose for which the equipment has been designed and manufactured and contains all the information necessary to ensure a safe and correct operation.

Some important parts of the text have been highlighted and preceded by the symbols shown and defined below.



DANGER - WARNING: it shows an impending danger which might cause serious injury; give it the greatest attention.



CAUTION: it points out situations requiring a particular procedure to avoid accidents or damages to property.

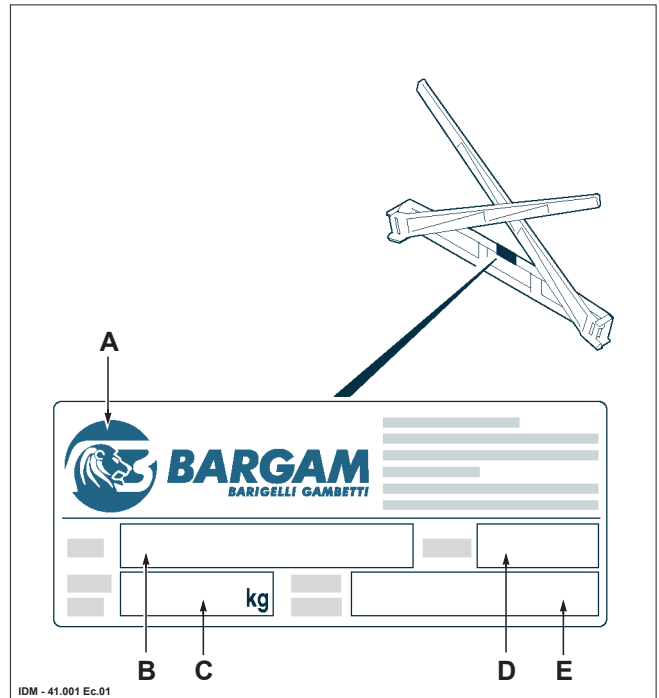


INFORMATION: Important technical information.

In pursuing a policy of constant development and updating of the product, the manufacturer might introduce changes to the equipment without any prior notice.

1.2. MANUFACTURER'S IDENTIFICATION AND EQUIPMENT

- A - Manufacturer identification.
- B - Model.
- C - Total weight
- D - Year of construction.
- E - Manufacturing order number.



1.3. LIST OF THE ANNEXES ENCLOSED

Information about units on which these equipments can be installed are listed in the sprayer manuals.

May the equipment you own be very different from the illustrations of this document, safety notices are valid anyway.

2.1. GENERAL DESCRIPTION OF THE SPRAYING BOOM

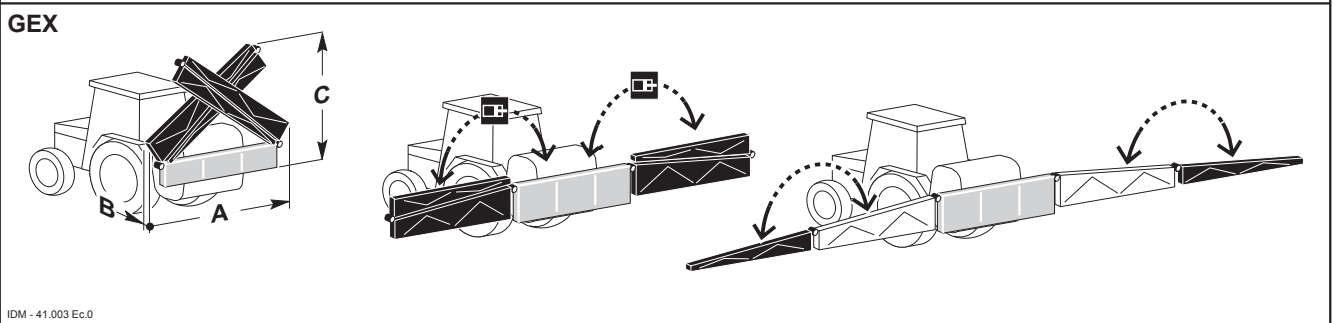
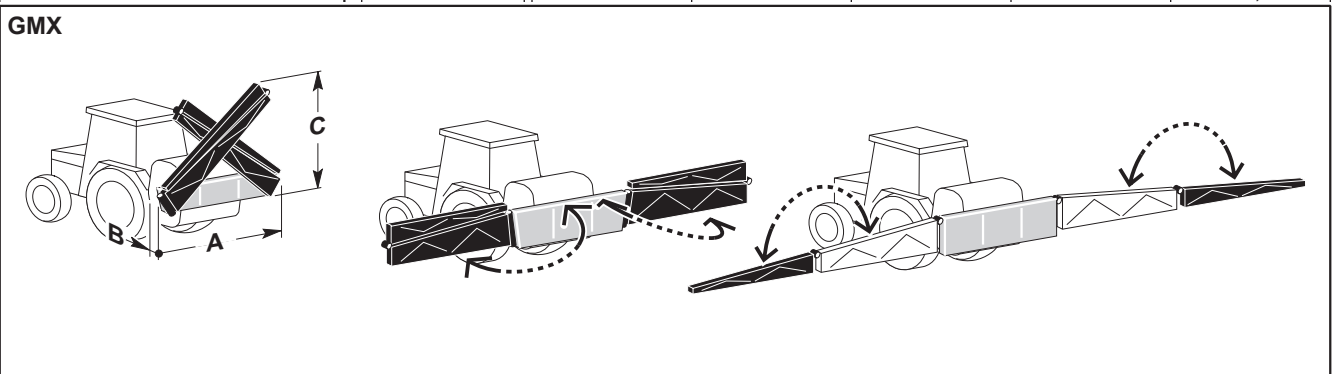
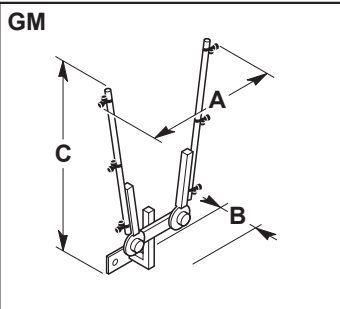
The spraying boom has been designed and manufactured for an agricultural use, more precisely to spray either the ground or the crops, through spraying nozzles.

It is divided into different sections which can be manually or hydraulically folded rearwards, in order to reduce dimensions while transferring.

This equipment must be directly installed on the sprayer.

2.2. TECHNICAL SPECIFICATIONS

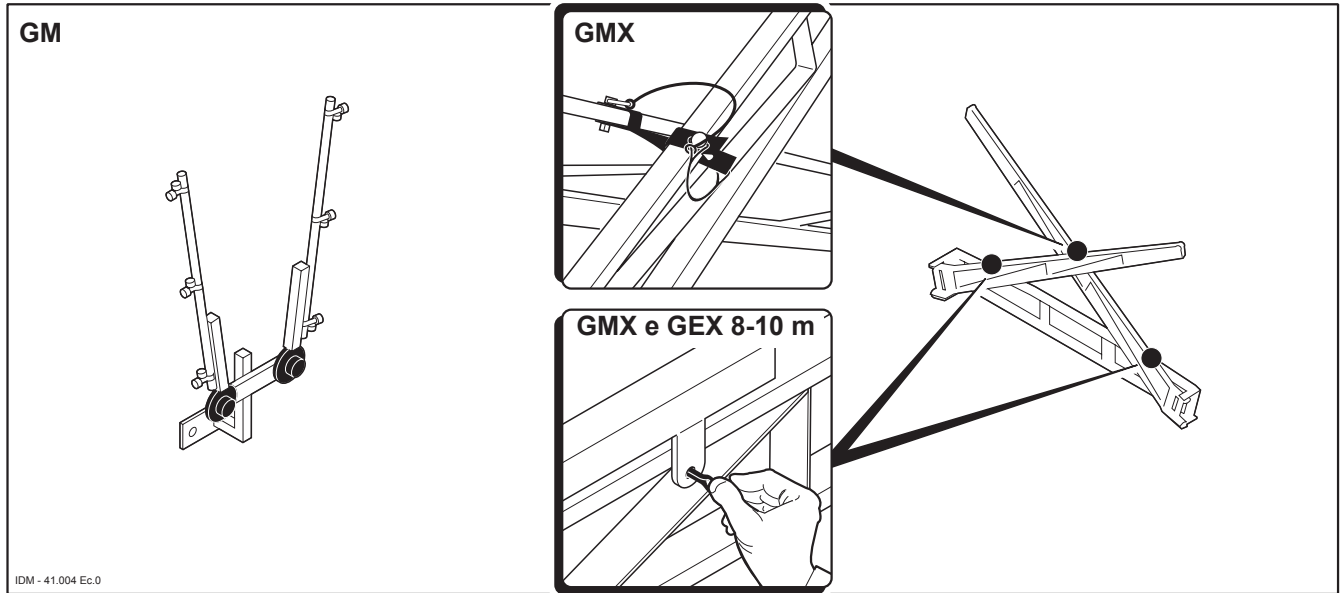
Series	Width m	Size			Weight Kg	
		A mm	B mm	C mm		
GM	3	500	200	1310	7,5	
	GMX	6	2051	268	1251	51
		8	2051	268	1311	57
GEX	10	2051	268	1311	59,5	
	GEX	6	2046	280	1529	84
		8	2059	280	1529	90
	10	2059	280	1529	92,5	



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2.3. SAFETY PLATES - POSITION AND DESCRIPTION

Spraying booms are equipped with locking devices preventing accidental section opening while transferring the equipment or working with partially closed boom.



3.1. GENERAL SAFETY REGULATIONS



Read carefully this operation and maintenance instruction manual before installing, starting, operating, adjusting and servicing the equipment.

- *Installation, maintenance, adjustment or any other servicing must be performed with the safety devices activated (if fitted), previously turning off the tractor and removing the ignition key.*
- *Non-authorized personnel shall not be allowed to repair or service the equipment.*
- *Unscheduled maintenance and repairs must be carried out in well equipped workshops.*
- *Any change introduced to the equipment must be previously authorised in writing by the manufacturer.*
- *Remove dangling clothes which might entangle into the **running parts**.*
- *As far as road circulation is concerned, the equipment must be supplied with the safety devices in compliance with the Motor Vehicle Regulation in force in the user's country.*
- *Should it be necessary to replace parts, always ask for **original spare parts**.*


4.1. TRANSPORTATION, PACKING AND UNPACKING

The equipment can be shipped:

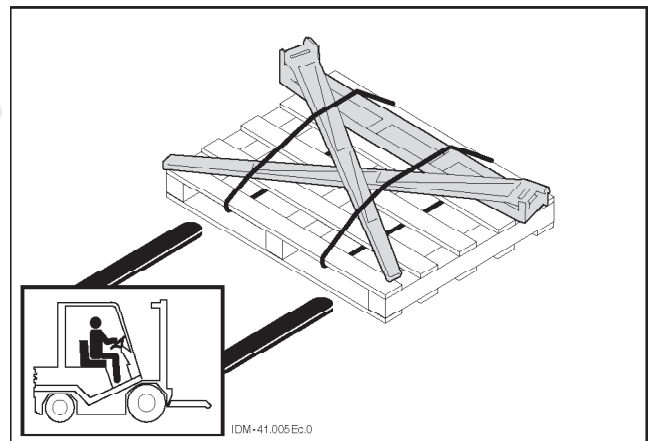
- by road,
- by train,
- by ship.

The equipment is fixed to a pallet through straps and protected by heat shrinkproof cellophane to be removed through suitable tools before being installed.

4.2. LOADING AND UNLOADING

 **DANGER - WARNING: Lifting and handling operations must be performed through suitable means and by skilled personnel.**

- Use a fork lift device to be positioned as shown in figure.
- Slowly lift and handle the equipment, avoiding any impact.



4.3. INSTALLATION OF DISASSEMBLED PARTS

Preamble

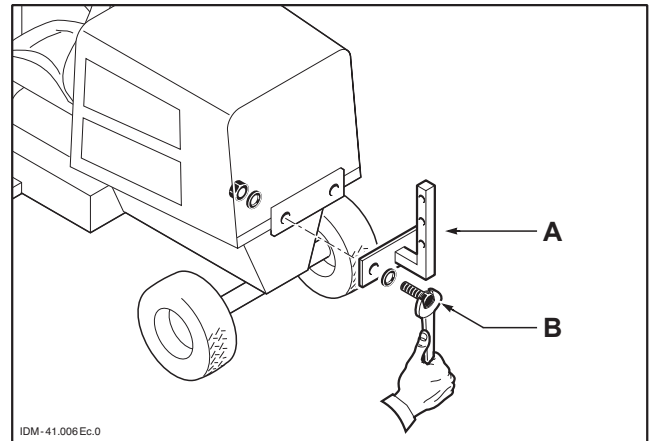
Spraying boom can be supplied partially disassembled for transport reasons.

To install and assemble correctly the spraying boom, keep to the following instructions.

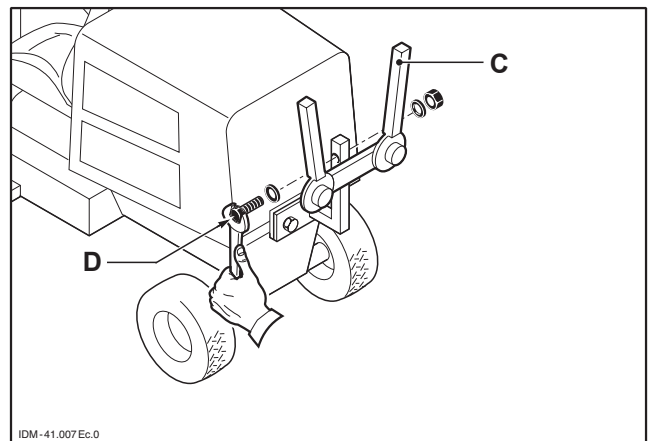
4.3.1 Spraying boom - installation

□ GM boom

- Fit the boom support **A** so that it corresponds to the hole on the frame.
- Fix the support by means of screws **B**.

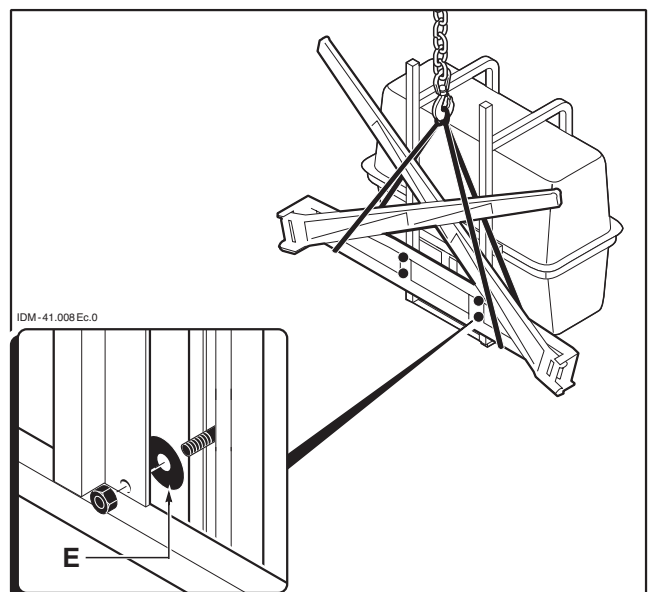


- Insert the boom structure **C** into the support and lock it by means of screw **D**.



□ GEX and GMX boom

- Lift the boom as the figure shows and install it on the sprayer frame.
- Fix the boom by means of the relevant nuts by placing the nylon shim **E** as the figure shows.



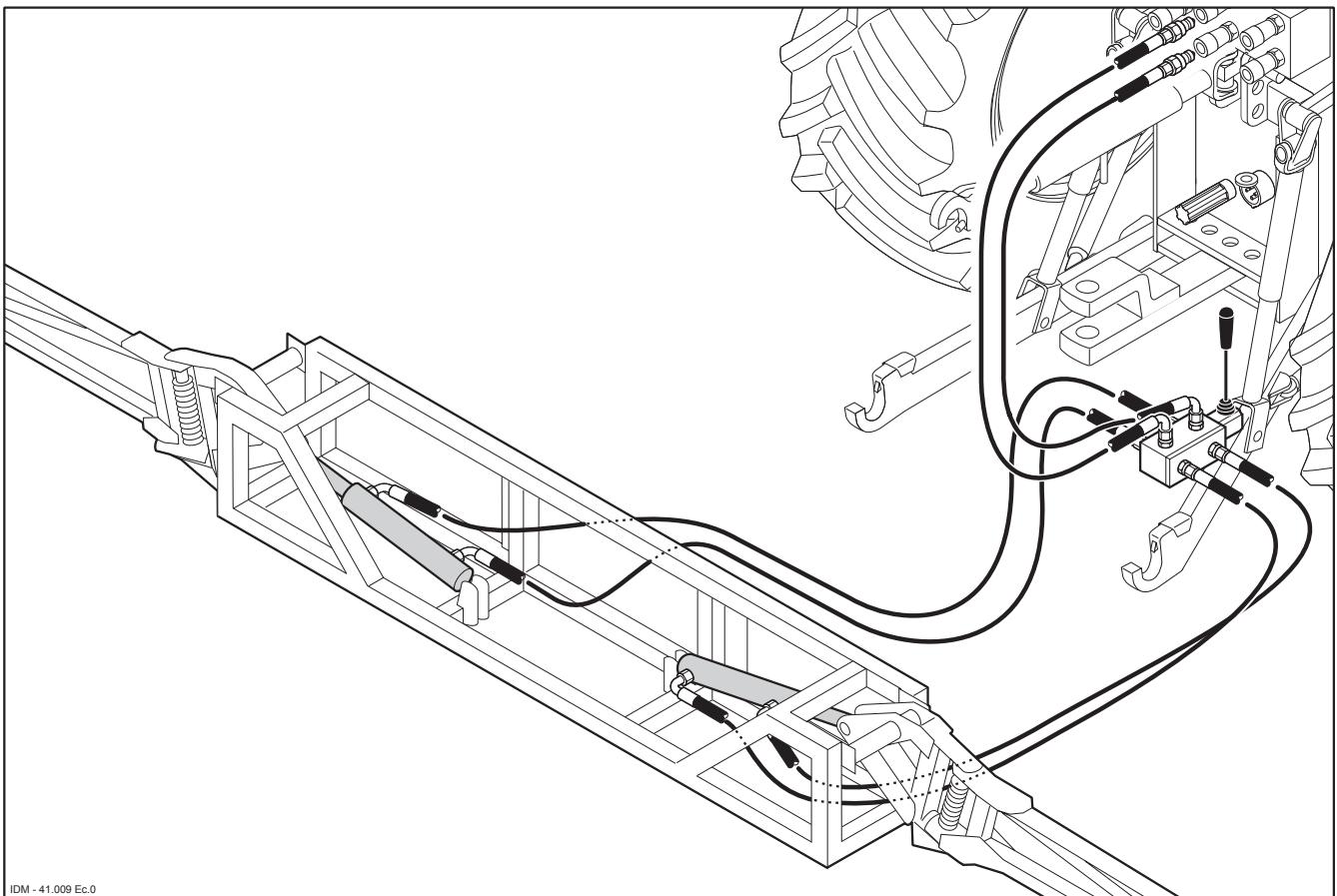
4.3.2 Hydraulic system - Connection (only for GEX booms)

The hydraulic connection depends both on tractor model and control system fitted on the equipment (manual control unit on the tractor, manual or electric control unit on the equipment).

The connection diagram of the different models is shown in the figures below:

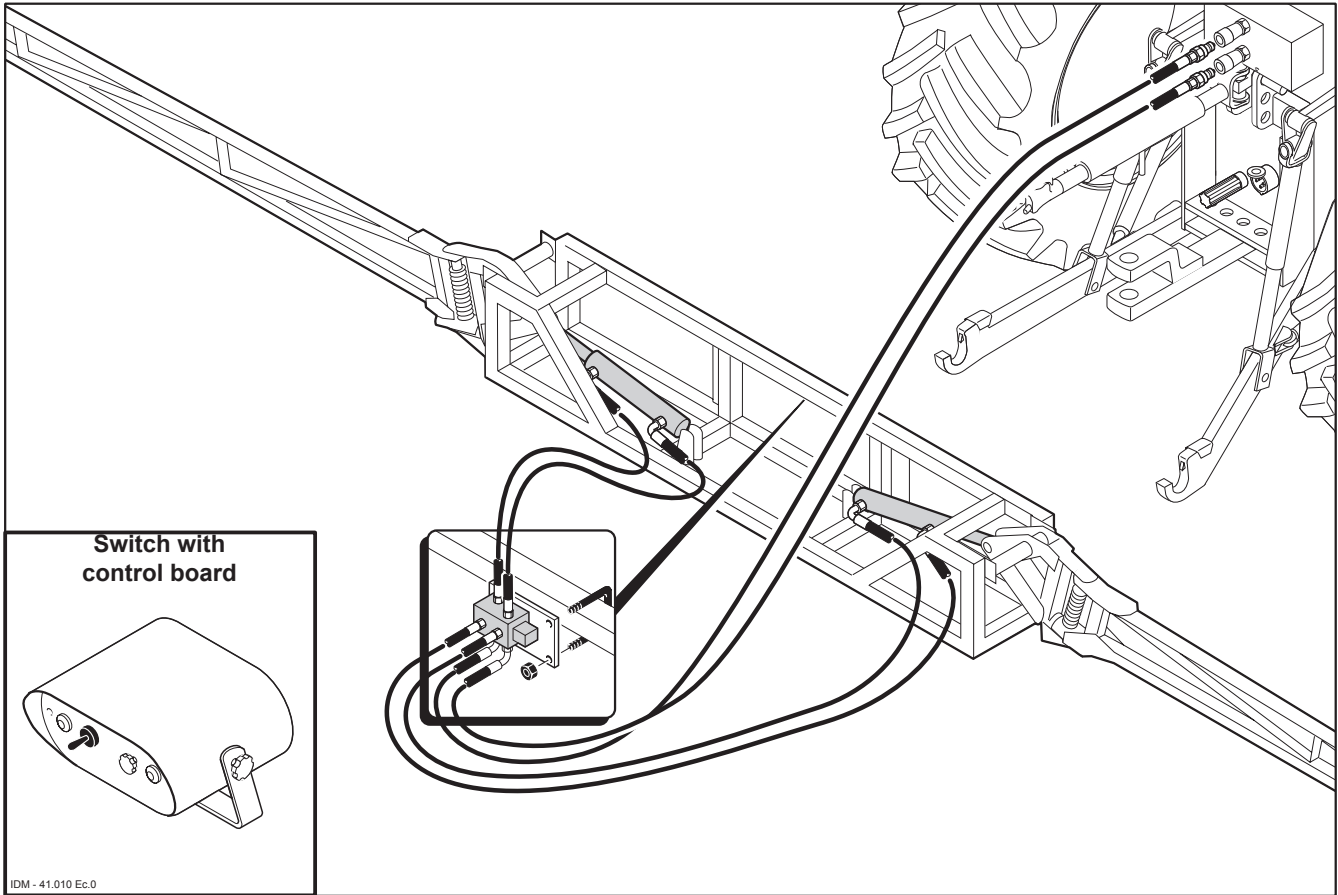
- Connection to tractor control unit by means of manual diverter.
- Connection to tractor control unit by means of switch.

Connection to the manual tractor control unit through manual control



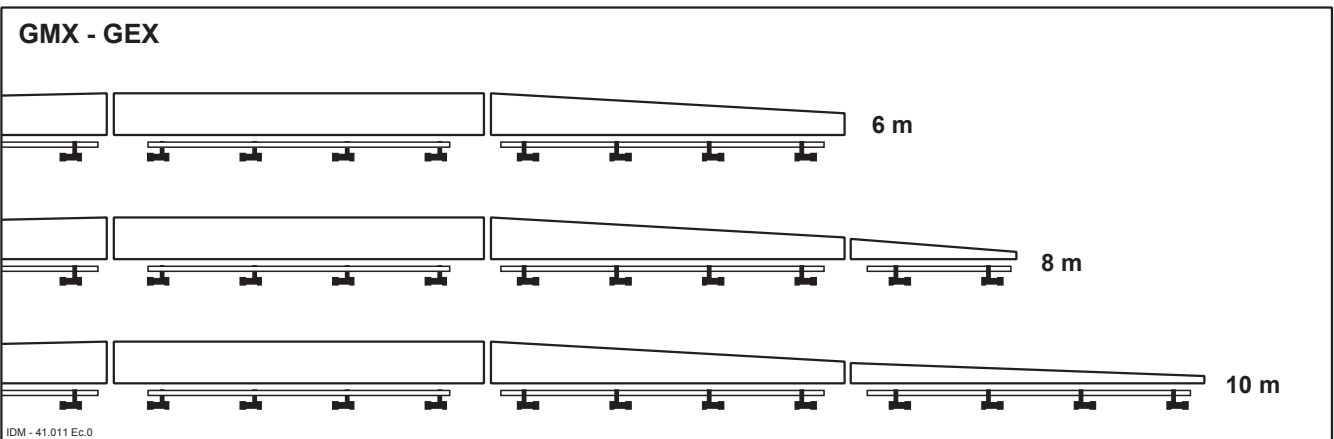
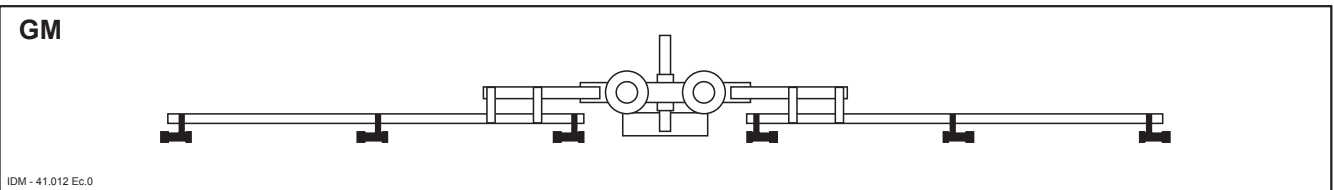
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- Connection to tractor control unit by means of switch.

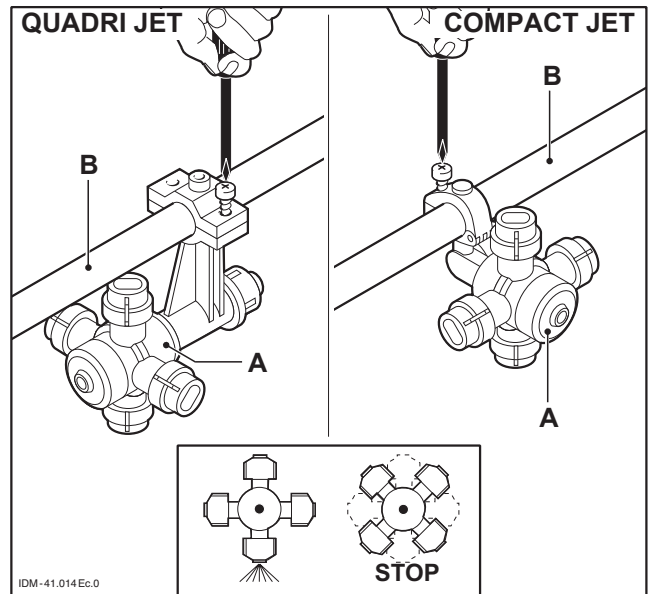


4.3.3 Water system installation

- Check the assembly position of the jet nozzle bodies (Four-way jet only), according to the boom length, as shown in figure.

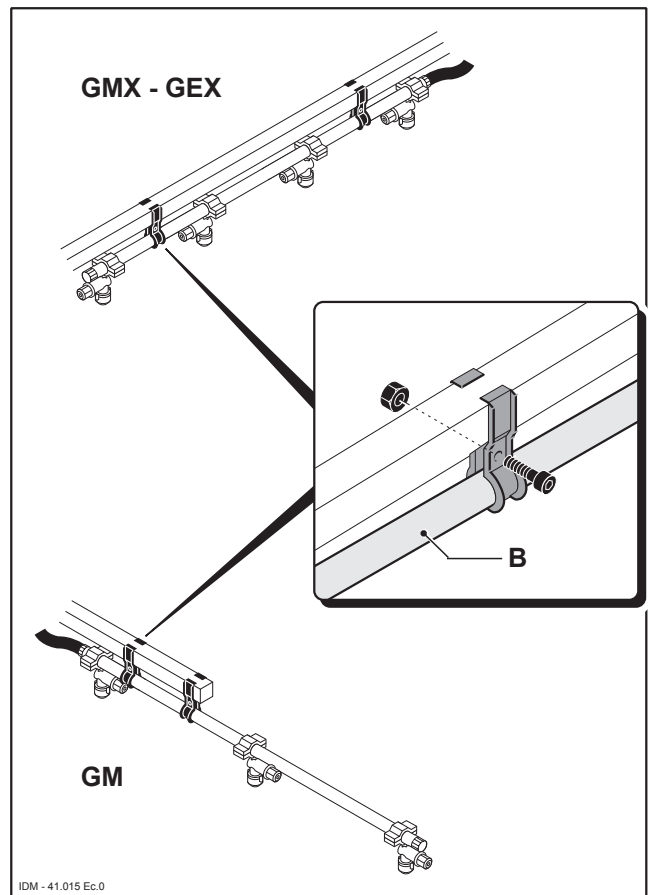


- Fit jet nozzle bodies **A** into pipes **B**.

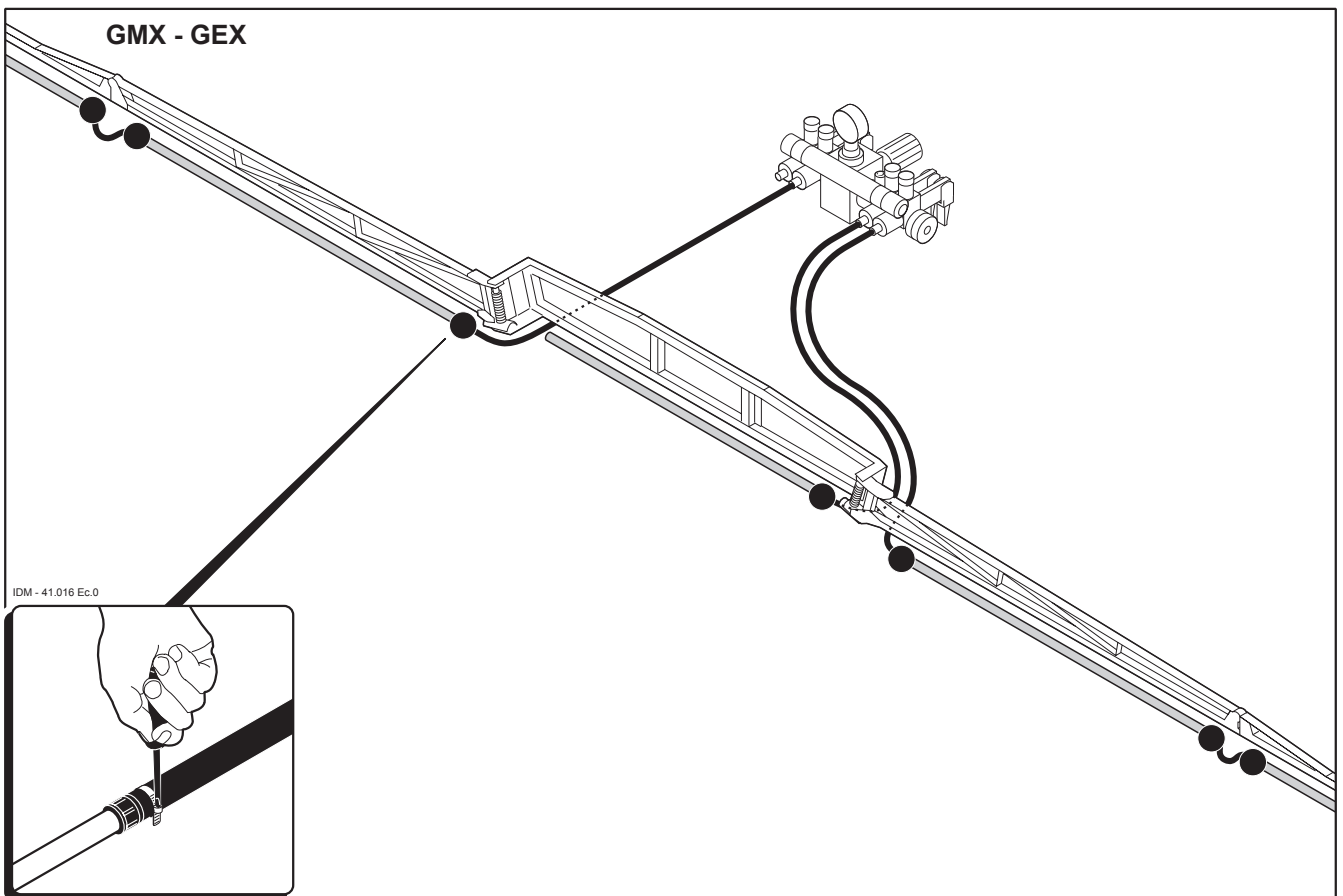
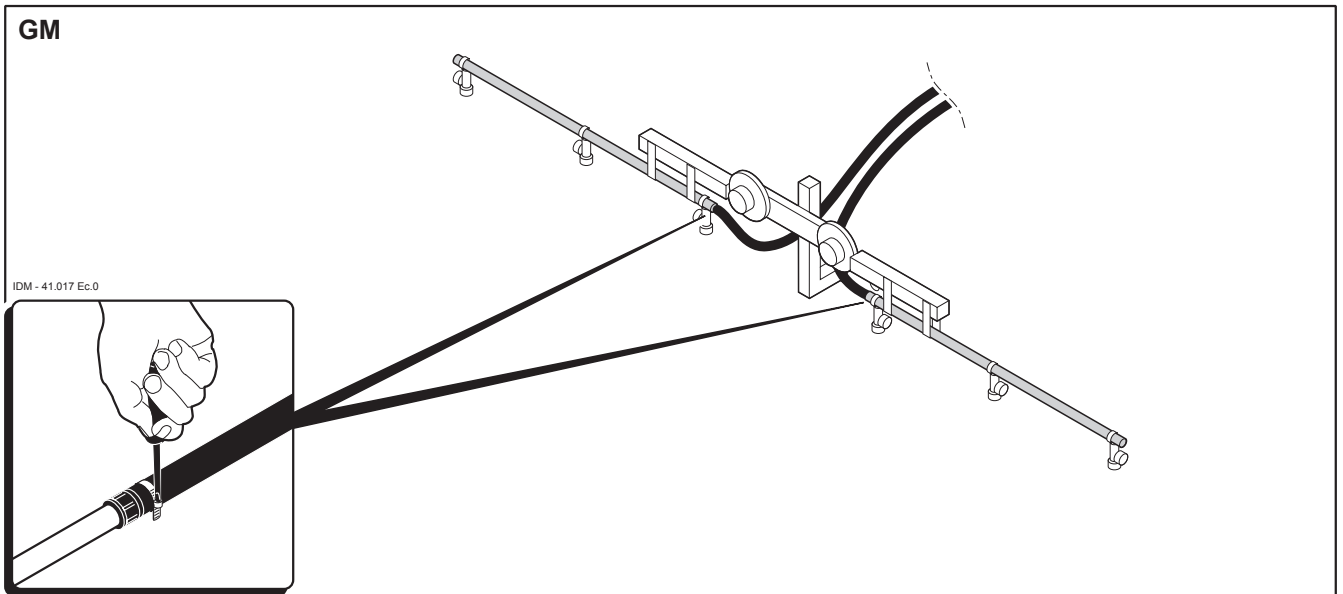


- Fasten pipes **B** to the spraying boom through the relevant clamps.

i **INFORMATION:** Use two clamps for four-hole pipes and three clamps for pipes with more than four holes.



- Connect the water hoses as shown in the figures below.

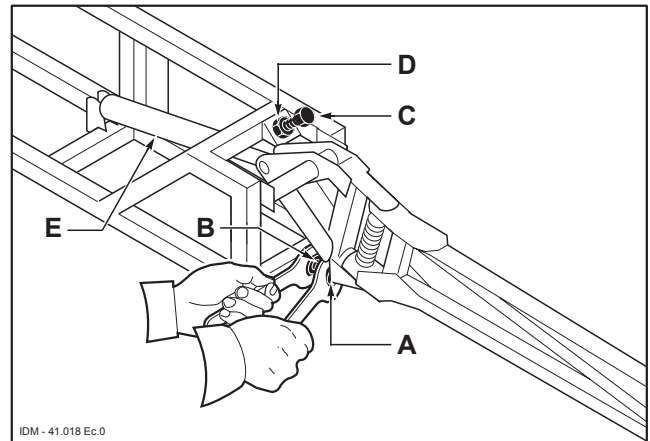


5.1. ARMS - ALIGNMENT (ONLY FOR GEX BOOM)

- *Unloose lock nut **B** and adjust screws **A** until you get alignment of the arms with central frame.*
- *Tighten the lock nut **B** after adjustment.*

In this phase, also check if stop bolt **C** is correctly tightened. To do this, proceed as written below:

- *unloose lock nut **D** and tighten screw **C**;*
- *close the arm by moving cylinder **E** to its limit stop;*
- *unloose screw **C** up to its limit stop on the arm.*
- *tighten the lock nut **D** after adjustment.*



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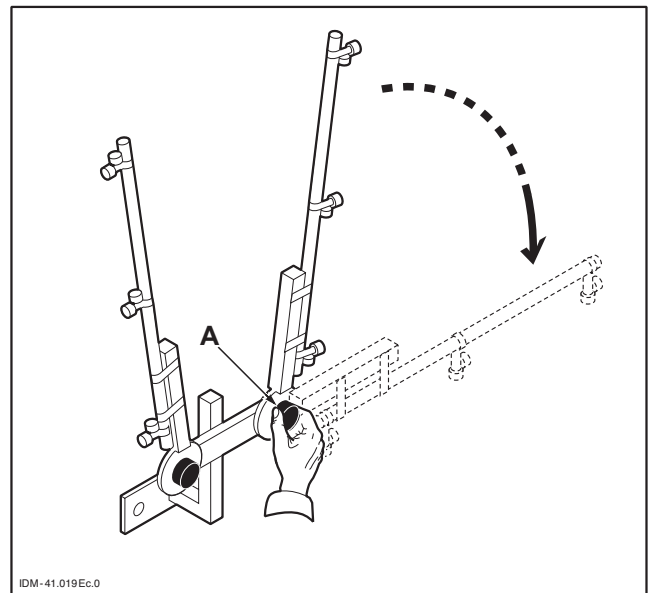
6.1. DESCRIPTION OF CONTROLS

Spraying booms can be manually operated according to models, as explained in the following chapters.

6.1.1 GM spraying boom opening and closing

For safety reasons, before carrying out boom opening and closing perform the following operations:

- stop the tractor engine, engage the parking brake and remove the ignition key;
- loosen knob **A** and adjust the relevant boom;
- tight the knob after the adjustment;
- repeat the same with the opposite boom.



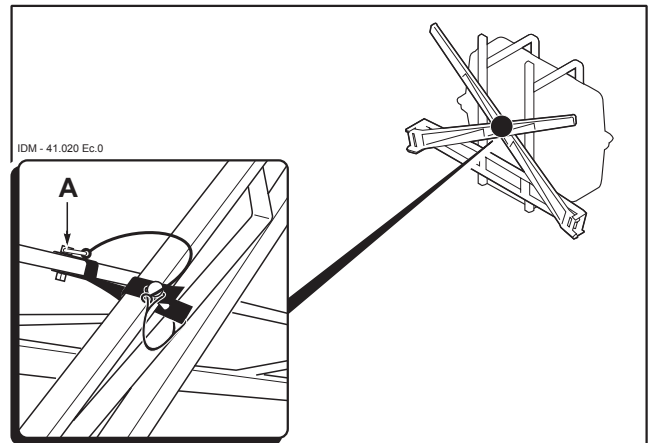
6.1.2 GMX spraying boom unfolding and folding

For safety reasons, before carrying out boom unfolding and folding, perform the following operations:

- lower the tractor elevator (only for booms installed on mounted sprayer booms);
- stop the tractor engine, engage the parking brake and remove the ignition key.

□ Spraying boom unfolding

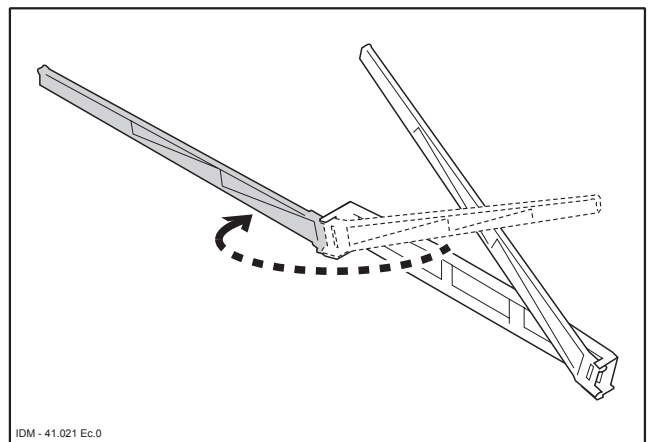
- Disengage spraying boom locking **A**.



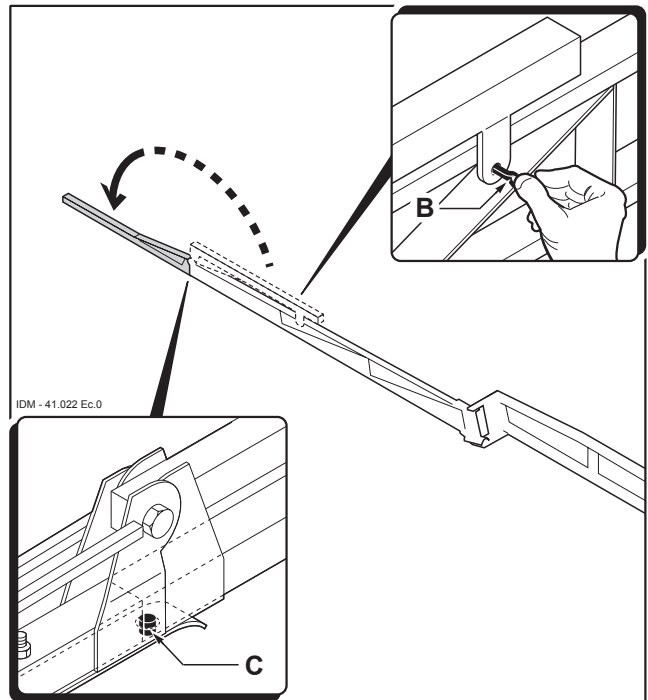
CAUTION: grip the spraying boom by the points marked in the plate.



- Rotate the link arm as the figure shows.

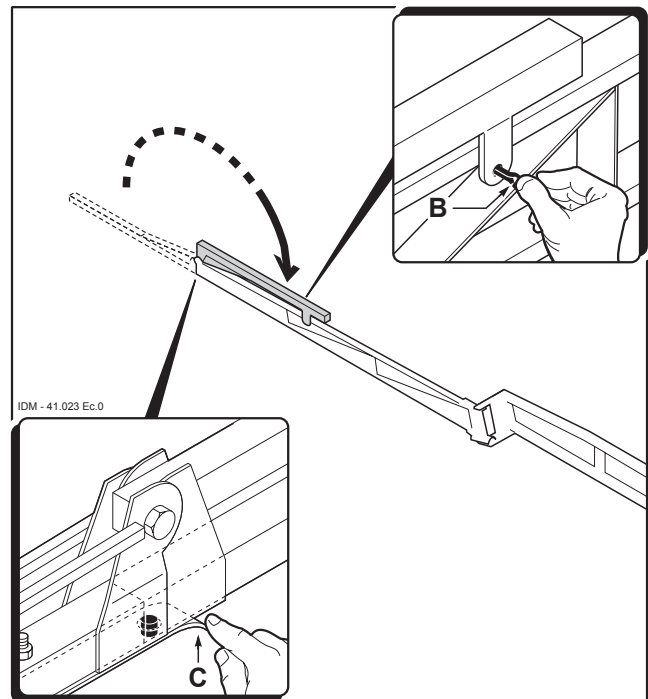


- *Unfold the extension (for 8 m and 10 m booms only) after disengaging locking **B**. At the limit stop, be sure that pawl **C** fits the hole.*
- *Do the same to unfold the right part of the boom.*



□ **Spraying boom folding**

- *Repeat the operations described for unfolding contrariwise.*
- *To fold extensions in 8 m and 10 m models, press the locking strip **C** downwards.*
- *Fit safety devices **B**.*



6.1.3 GEX spraying boom unfolding and folding

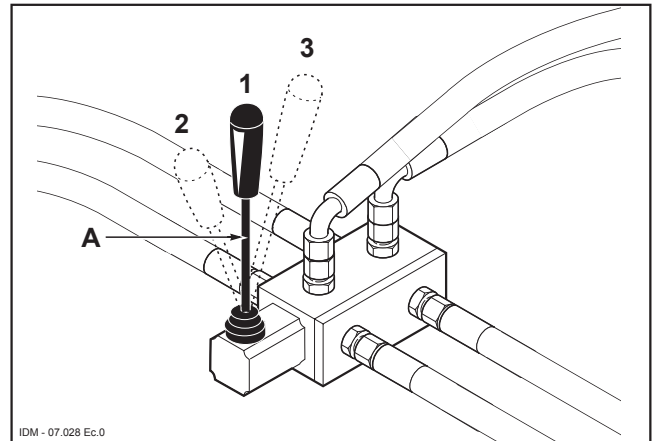
Hydraulic unfolding spraying boom can be activated by means of two different controls according to model:

- Manual hydraulic control unit.
- Electric control unit.

□ Manual hydraulic tractor control unit with manual control

This control allows an independent or simultaneous arm unfolding.

- **Select the control through lever A.**
Position 1: simultaneous arm activation.
Position 2: left arm activation.
Position 3: right arm activation.
- **Boom sections selected can be operated through the tractor control unit lever.**



□ Manual hydraulic tractor control unit with switch

- **Operate the tractor lever connected with the boom system, previously selecting the parts to activate through the switch described below.**

A - Red warning light

Switches on when switch B is turned to "ON".

B - Arm or extension activation switch.

"ON": activates the right and left arm.

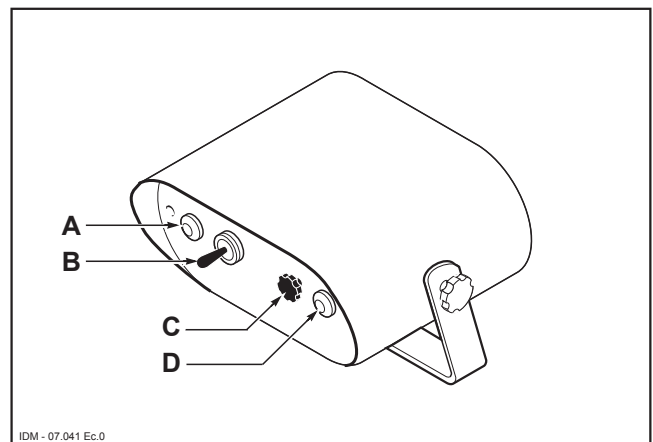
"OFF": activates the right and left extension.

C - Fuse

Protects the switch against overload.

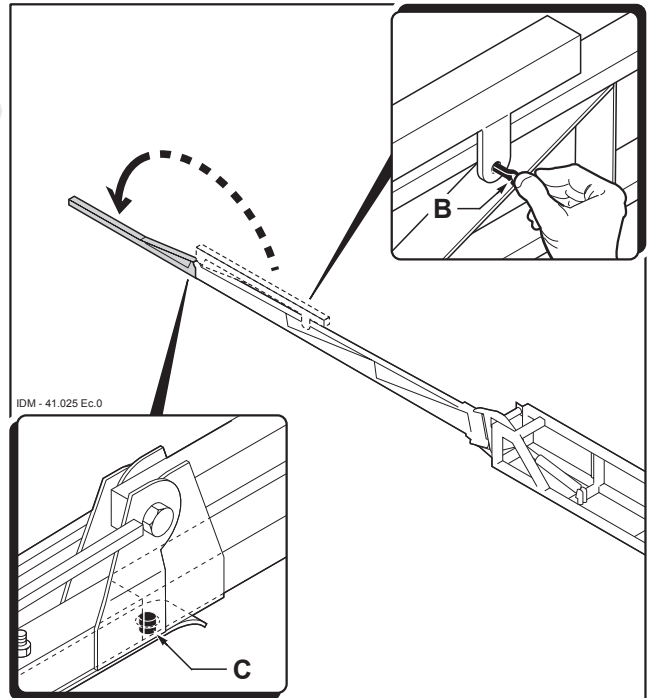
D - Warning light

Switches on when the control board is powered.

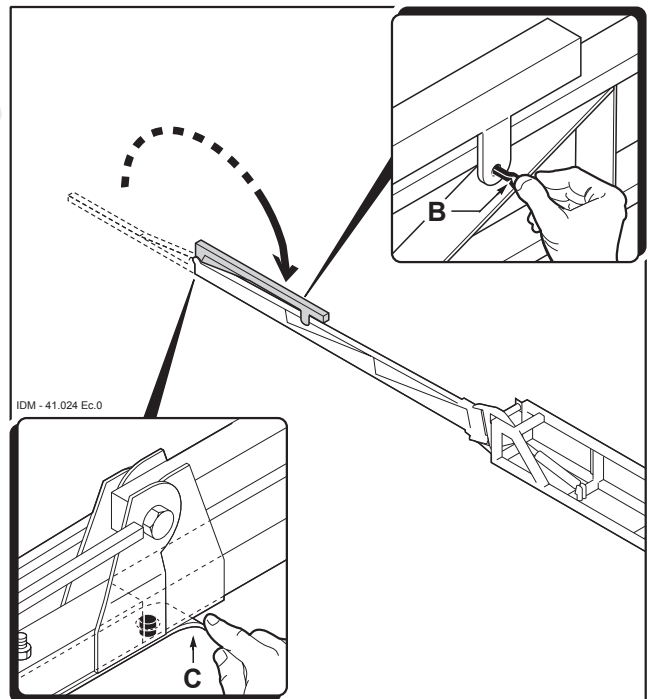


If the spraying boom is equipped with extensions, proceed as follows.

- *Unfold the extension after disengaging locking **B**.
At the limit stop, be sure that pawl **C** fits the hole.*



- *To fold extensions, press the locking strip **C** downwards and fit safety devices **B**.*



A careful and constant maintenance ensures a good working and a long life of the equipment.

7.1. DAILY MAINTENANCE

□ **Cleaning the equipment:**

at the end of each working day or whenever the equipment is stopped for a period of time exceeding one hour, rinse it, let the water flow from the nozzles (see spraying boom manuals) and clean the equipment through a strong water jet.

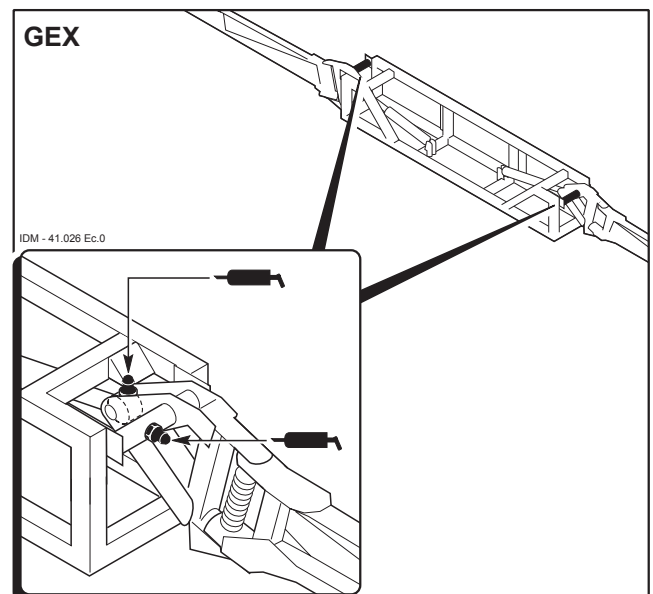
□ **Nozzle body and nozzles check:**

make sure nozzles are fastened to the nozzle bodies which, in their turn, must be fastened to the piping; furthermore, make also sure the antidrip valve is well tightened.

As far as threaded nozzle bodies are concerned, make sure the nozzle slot angle is turned of 5° with respect to the piping, otherwise reset the value.

7.2. ROUTINE MAINTENANCE - EVERY 40 HOURS

- *Check the efficiency and tightening of bolts.*
- *Retouch damaged painted components.*
- *Grease the boom points shown in figure.*



7.3. UNSCHEDULED MAINTENANCE

- *Nozzles cleaning:*



CAUTION: always wear protective gloves.

- *To remove any clogging from nozzles, clean them with a compressed air jet or with a soft bristle brush.*
- *Never use sharpened or pointed tools.*

7.4. WINTER STOP

Before the equipment is put away for the winter stop, it must be cleaned and serviced, as described in 7.1., 7.2. and 7.3.

If the circuits have not been protected with antifreezing fluid, empty the piping, nozzle bodies and nozzles to prevent ice from damaging the circuit components when severe temperature arises.

8.1. TROUBLES, CAUSES, CURES

Troubles

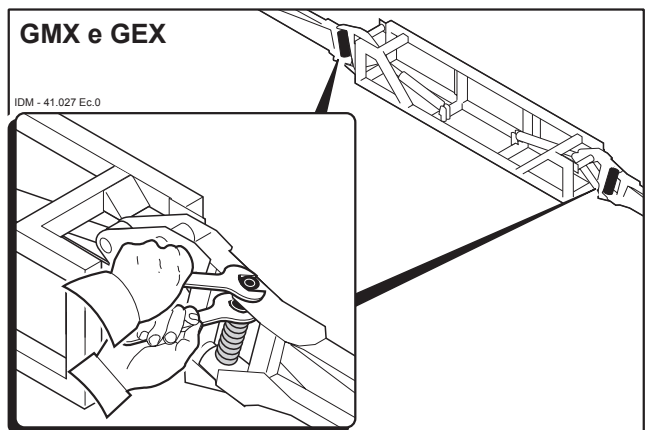
If the arm moves when starting or stopping

Causes

Slackened articulation

Cures

Compress the spring



Troubles

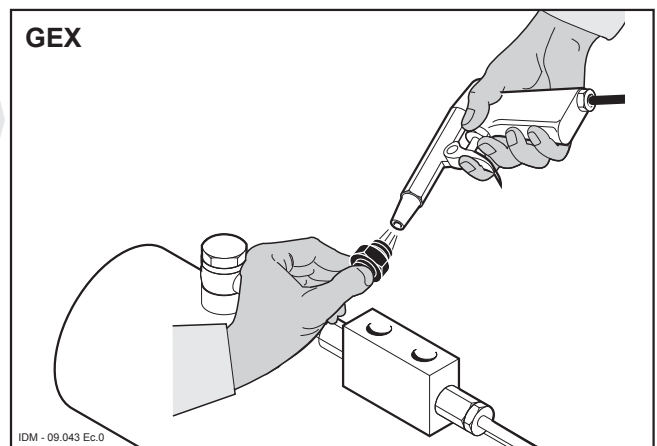
The boom unfolds halfway and then stops

Causes

Foreign bodies in the calibrated joints fitted on the rams

Cures

Disassemble the joints and clean them



Troubles

When unfolding, the boom fails to line up

Causes

Stop bolt not adjusted

Cures

Adjust the bolt up to obtain the alignment

