

fantini

the best harvest since 1968

USE AND MAINTENANCE MANUAL

CORN HEADER L03 – LH3

FANTINI NORTH AMERICA

15526 90th Street NE
Drayton, ND 58225
P 1-800-454-3875
fantinina@hamiltonsystemsinc.com

Read this manual carefully and thoroughly before the use and maintenance operations of your header. Store the manual in a safe and secure place for future reference.

For any question related to this manual contact your distributor or visit the website:

www.fantini-na.com



This manual must be read, filled in and used according to the instructions provided here below by anyone, in the capacity of user and/or installer and/or maintenance technician, who interacts with the product. Any failure to carry out the above releases the producer from any responsibility whatsoever with regards to damages caused to property and/or to people by improper use of the machine.

Table of Contents

1.	Introduction.....	4
2.	General safety warnings.....	6
3.	Symbology.....	8
4.	General Information.....	9
5.	Reference standards.....	10
6.	List of Annexes.....	11
7.	Document recipients.....	11
8.	Personnel characteristics.....	11
9.	Product identification data.....	12
10.	Description of the machine.....	14
11.	Technical Glossary.....	15
12.	Technical Specifications.....	17
13.	Description of machine use.....	20
14.	Improper use of the machine.....	20
15.	Handling and transport.....	21
15.1.	Dimensions and Weights.....	21
15.2.	Position of the barycentre.....	21
15.3.	Lifting points.....	22
16.	Packing.....	25
16.1.	Disposal of packing material.....	26
17.	Installation and assembly.....	27
17.1.	Transmission connection.....	29
18.	Start up, adjustments and operation.....	31
19.	Residual Risks.....	42
20.	Maintenance: general tips.....	43
21.	Table of Recommended Maintenance Products.....	46
22.	Troubleshooting Table.....	47
23.	Storage.....	48
24.	Scrapping and disposal.....	48
25.	Diagrams.....	50
25.1.	Hydraulic diagram of folding circuit with hydraulic blades.....	50
25.2.	Wiring diagram of electrical blades operation.....	51
26.	Annex A - Standard Kit.....	52
26.1.	Assembly instructions.....	52
27.	Annex B - Premium kit.....	55
27.1.	Assembly instructions.....	55
27.3.	Assembly diagram on the rows for fixed and folding headers.....	61
28.	Annex C - Side Augers Kit.....	62
29.	Annex D – Kit of Rubbers.....	63
30.	Annex E – Compacting plates.....	63

1. Introduction



BEFORE STARTING ANY OPERATION ON THE PRODUCT, THE ASSIGNED OPERATORS AND TECHNICIANS SHOULD CAREFULLY READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL (AND IN ITS ANNEXES) AND FOLLOW THEM THOROUGHLY DURING USE AND EXECUTION OF THE OPERATIONS.

It is recommended to strictly follow the detailed instructions provided here below.

- Make sure that the manual in question explicitly refer to the purchased machine. In case any discrepancy is found between the manual and the product model to which it refers of any nature, contact the manufacturer immediately.
- Carefully read the warnings concerning safe use and maintenance, and the descriptive information. Fantini S.r.l. declines any and all responsibility for improper use of the machine, for damages caused following operations not envisaged in this manual or unreasonable operations.
- The operator, whether user or installer, must have this instructions manual available at all times. In case of loss or damage, even partial, of the manual, contact the manufacturer immediately to request a copy.
- The machine must be used only to meet the needs for which it was expressly designed; any other used is considered dangerous.
- Arrange for carrying out constant and thorough maintenance in order to always ensure a high safety of operation of the machine, entrusting the maintenance tasks to qualified technicians and always demanding the use of original spare parts. In fact, Fantini S.r.l. shall not consider itself liable for damages caused by the use of non-original spare parts.
- Fantini S.r.l. shall be responsible for the machine only in its original configuration defined during the design phase. Any operation that changes the structure and operating cycle of the machine must be expressly authorised only by the Technical Office of Fantini S.r.l.
- Fantini S.r.l. reserves itself the right to modify the project and make marketable improvements without being required to notify customers who already own similar models.
- This manual cannot be disclosed to third parties without the written authorisation of Fantini S.r.l.
- The manual must be carefully kept for the entire service life of the machine, until it is decommissioned or dismantled. In case the machine is sold or given to third parties, it is therefore necessary for the manual and all its annexes (wiring diagrams, hydraulic diagrams) to also be delivered together with the machine.
- The information contained in this manual is the exclusive property of Fantini S.r.l., which is the copyright holder. This information cannot be copied, distributed, used, recorded, filed away, reproduced, tampered with or transferred to third party with the company's express authorisation.

Certain of your satisfaction, please do not hesitate to contact us for any additional information you may need. **Fantini S.r.l.** wishes you a pleasant work day!

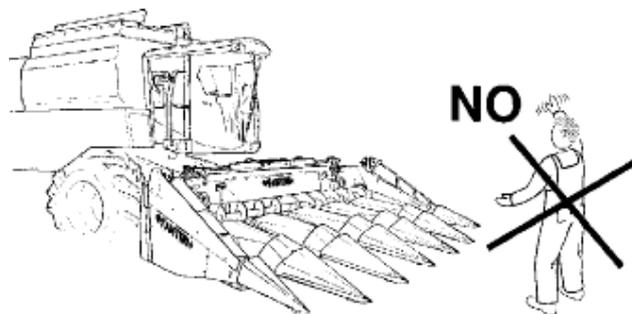


THE TERMS HEADER - BAR -MACHINE" ARE SYNONYMOUS IN THIS MANUAL AND REFER ESCLUSIVELY TO THE CORN HEADER..

2. General safety warnings



- The machine is equipped with all devices suited to ensure complete operator protection; however, total safety does not go very well with the disparate installation and utilisation needs, as well as with operational and work environment needs.
- It is therefore crucial that the Customer duly train the operators, highlighting, if necessary by means of signs or other means, the areas or the operations at risk (e.g., exposed augers, sharp blades, pipes under pressure, machine in movement, etc.). These signs must be kept clean and fully legible; the same holds true for the instrumentation, in particular the safety devices.
- Fantini s.r.l. shall not be responsible for the disposal of products needed to use the machine or to process the spent lubricant oil, rubber hoses, etc. Hence, the Customer shall be required to arrange, in compliance with the regulations in force in the country of installation, for the disposal of such substances potentially harmful for the environment.
- N.B. The same precautions must be adopted when dismantling the machine.
- Fantini s.r.l. hereby declines any and all responsibility for damages of any type that may result from inappropriate or reckless operations, carried out by unskilled personnel or by skilled personnel who worked on the machine in a manner that did not comply with the descriptions provided in this manual and in the enclosed documents. The company shall also not be liable for damages caused to people or property in case of incorrect machine installation.
- The operator must not wear clothes with long sleeves, belts or straps and shall always use or wear the personal protective equipment (gloves, helmet, etc.) made available by the company.
- The machine has sharp edges and pointed parts that cannot be eliminated; hence, it is advisable to avoid losing your balance and to pay close attention to the structures; the divider points are dangerous when exposed. DO NOT manoeuvre



them with people standing in the work area.

- Avoid standing underneath suspended loads of the combine, also in proximity of the side folding parts.
- The machine can work outdoors or in case of adverse weather conditions, but it cannot work if immersed in water.
- The electrical system on board the machine (only for machines equipped with electrical devices) complies with regulations in force and guarantees perfect safety and efficiency of the machine; in any event, the operators must report any malfunction or deterioration due to wear or ageing, so as to promptly restore proper safety conditions.

-
-
- Fantini s.r.l. shall not be liable for any damages caused by negligence or poor maintenance, nor for the systems installed upstream the machine, in other words related to the combine.
- Machine maintenance, cleaning and preparation must be carried out with the machine stopped.
- When the machine is moving it is a potential hazard; consequently, is advisable to approach the machine carefully and with caution, since even the noise emitted by the combine may generate dangerous situations.



-
- Any foreign body placed on moving parts which is not part of the machine, such as, in particular, keys, screwdrivers, bolts and so on must be removed prior to the start-up.
- During machine operation, it is **ABSOLUTELY FORBIDDEN** to remove product residue, clean or unclog the augers and any part of the machine.
- Fantini s.r.l. declines any and all responsibility in case the rules for proper installation are not complied with. It is also not liable for systems upstream or downstream the supplied machine itself; in particular, if particular, if the intended uses indicated in this manual (see FIELD OF APPLICATION) are not complied with.
- To ensure the best possible understanding, the illustrations contained in this Use and Maintenance manual show the various units without their protections installed. However, the machine must never be operated under these conditions!
- All protections must be assembled in their proper position. In case it becomes necessary to remove any one of them in order to carry out a repair jobs, it must be reassembled prior to starting the machine.
- The Customer is required to exclusively use original spare parts and to install them according to the intended use.
- The responsibilities arising from commercially available components fall upon the respective manufacturers.

3. Symbology

The following symbols are used in this manual

Symbol	Explanation
	This symbol indicates that the description contains important information that must be kept in mind in order to avoid causing damages to the machine or to the operator.
	The user and/or the operator must not proceed in any way if the action coincides with the one specified at the side of the prohibition sign.
	The user and/or the operator may proceed if the action coincides with the one specified at the side of the symbol for allowed use.
	The manual contains a suggestion that, albeit not mandatory, is strongly recommended for proper use, assembly and/or maintenance of the product.
	The user and/or operator must be equipped with all accident-prevention material in order to be able to proceed with the assembly, use and/or maintenance of the front hoist.
	This symbol indicates instructions or notes aimed at technical and expert personnel.
	This symbol indicates useful information for proper operation of the product.
	This symbol indicates operations that must not be carried out as they jeopardise proper functioning of the automation.
	This symbol is placed next to important information aimed at correct use of the machine.

4. General Information

This instruction manual refers to the following header:

TYPE OF MACHINE:	
SERIES AND TYPE:	
YEAR OF MANUFACTURE:	

This use and maintenance manual contains main information pertaining to:

- transport,
- lifting,
- installation,
- maintenance,
- storage,
- scrapping
- disposal of the headers.
-



THE OFFICIAL LANGUAGE CHOSEN BY THE MANUFACTURER AND USED TO PREPARE THIS MANUAL IS ITALIAN.

Based on the provisions contained in Machinery Directive 2006/42/EC, the original instructions in Italian will be enclosed, at the customer's specific request, to all translations for countries that will be using this machine.

Fantini S.r.l. shall not be liable in case of improper use of the machine, such as:

- Improper use of the header and/or use by unauthorized personnel
- Non-compliance with applicable regulations in terms of use;
- Incorrect installation
- Combine power supply defects
- Serious maintenance shortcomings
- Unauthorized modifications and/or interventions;
- Use of non-original spare parts or of spare parts not specific for the model;
- Total or partial nonobservance of the instructions;
- Exceptional events.

The purpose of this manual is to provide assistance to the user. It also represents a valid tool to guide the operator in the use of **Fantini S.r.l.** machines, to improve their performance, to work under conditions of safety and to guarantee optimal header maintenance.



PLEASE REMEMBER THAT THIS MANUAL MUST BE KEPT IN GOOD CONDITIONS FOR THE ENTIRE SERVICE LIFE OF THE MACHINE.



It is nevertheless necessary to consider the fact that this manual cannot make up for any technical or intellectual deficiency of the operators. It is desirable for said operators to possess the minimum skill requirements in the field of application of the product.

For obvious reasons, the operations described in this manual cannot be exhaustive. Therefore, we presume that the operators are prepared to deal with any situation.

5. Reference standards

The machine was designed and this manual was prepared in compliance with the provisions of Machinery Directive 2006/42/EC and in conformity to the standards listed here below:

- UNI EN 12100:2010: Safety of machinery. Basic concepts, general principles for design.
- UNI EN 14121-2:2013: Safety of machinery - Risk Assessment.
- UNI EN 4413:2012: Safety of machinery - Safety requirements pertaining to systems and their components for hydraulic fluid power and pneumatic transmissions. Hydraulic fluid power.
- UNI EN 349/2008: Safety of machinery - Minimum gaps to avoid crushing of parts of the human body.
- UNI EN 13857/2008: Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs.
- UNI EN ISO 4254-7:2010: Agricultural machinery
-



For the purpose of ensuring the safety of operators and maintenance workers and the intactness of the header, all provisions contained in the Consolidated Law 81/08 and in Directive 89/391/EC, as subsequently amended and supplemented, were complied with.

6. List of Annexes

This use and maintenance manual includes the following documentation:

- Wiring diagrams
- Spare parts catalogue
- EC declaration of conformity
- General safety manual

7. Document recipients

This document, and the relevant annexes, is meant for operators who perform different and specialized tasks, such as:

- Handling/transport
- Lifting
- Using
- Carrying out maintenance
- Repairing
- Demolishing

The operators' culture and specific experience are the most important requirements for guaranteeing the safety of both people and equipment. The Customer has to make sure that the operators have been duly trained and that they are capable of performing their task. For general safety prescriptions, please refer to the specific annex.

For any further clarification or instruction required, operators can liaise directly with **Fantini S.r.l.** or with the relevant authorized distributor. In any case, the operator is required to:

- be fully aware of what he is doing and possess the specific professional experience needed to carry out the manoeuvre;
- possess suitable skills and training;
- Does not intentionally behave so as to cause self-harm.

8. Personnel characteristics

Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers in the workplace, states that:

- The designated workers must possess the necessary skills and be equipped with the necessary equipment.
- Any external people or services that may be consulted must possess the necessary skills as well as the required professional and personal equipment.

Therefore, the personnel assigned to use the header must possess skills and experience suited to ensuring both their own safety and the safety of other people involved in the various operations. The staff operating this machine must receive a specific professional training.

In case the user and owner are not the same person, the latter shall make sure that the operator possesses the skills and training suited to his task.

The operator must specifically undergo a training session. This is not required for personnel with direct experience on the combine.

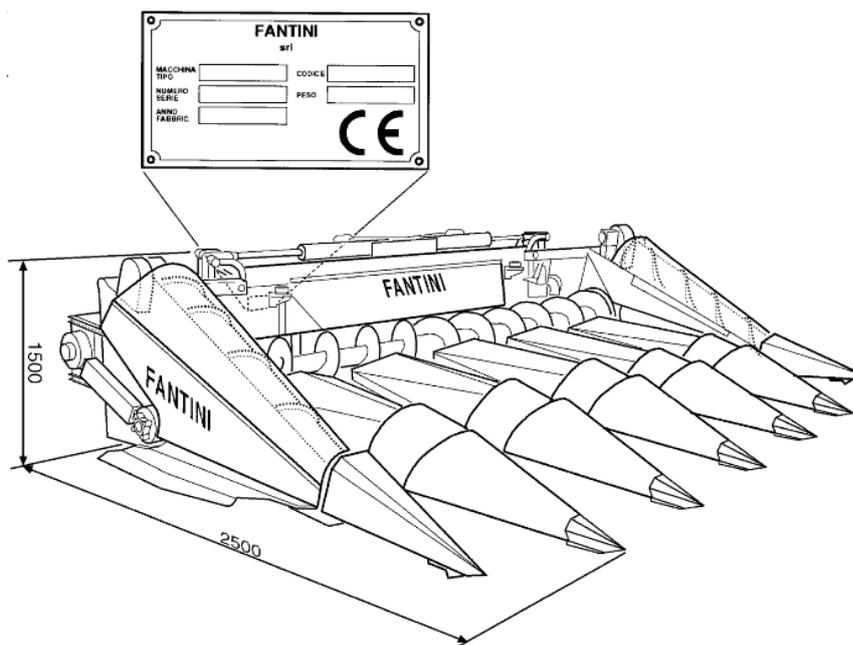
Fantini S.r.l. is available to supply any technical information, training and additional documentation that may ease the task of the operators.



DIRECTIVE 89/656/EEC ON THE MINIMUM HEALTH AND SAFETY REQUIREMENT FOR THE USE BY WORKERS OF PERSONAL PROTECTIVE EQUIPMENT (PPE), REQUIRES PERSONNEL TO USE APPROPRIATE PPE IN RELATION TO THE VARIOUS TYPES OF JOBS.

9. Product identification data

The identification data can be found on the plate positioned on the front side of the machine, as shown in the figure:



The content of the plate is explained as follows:



CE Marking: full compliance with the European Union norms in terms of safe product that can be legally placed on the market

- Machine model
- Serial number
- Year of manufacture
- Weight

Company name and full address of the manufacturer



IT IS ABSOLUTELY FORBIDDEN TO DAMAGE OR REMOVE THE ID PLATE.

10. Description of the machine



The Corn header made by Fantini S.r.l. is considered **Interchangeable equipment** according to Machinery Directive 2006/42/EC. It cannot work independently but only when attached to a combine harvester - a self-propelled machine used for agricultural harvesting purposes - from which it receives motion and all the commands.

The corn header is designed to work outdoors exposed to atmospheric agents (sun, rain, snow, frost, wind). It can work with the support slides in direct contact with the ground and also at night, since it is equipped with a lighting system that makes the entire work area visible.

The header can be activated from the control cab only.

Header use must be consistent with its technical-functional characteristics (see chapter 12 - Technical Specifications).

For road transport purposes, the fixed header can be placed on a carrier truck.

The folding header can circulate attached to a combine harvester as per Rules of the Road of the country involved.

During road transport with the header assembled, pay special attention to the rear ballast of the combine.

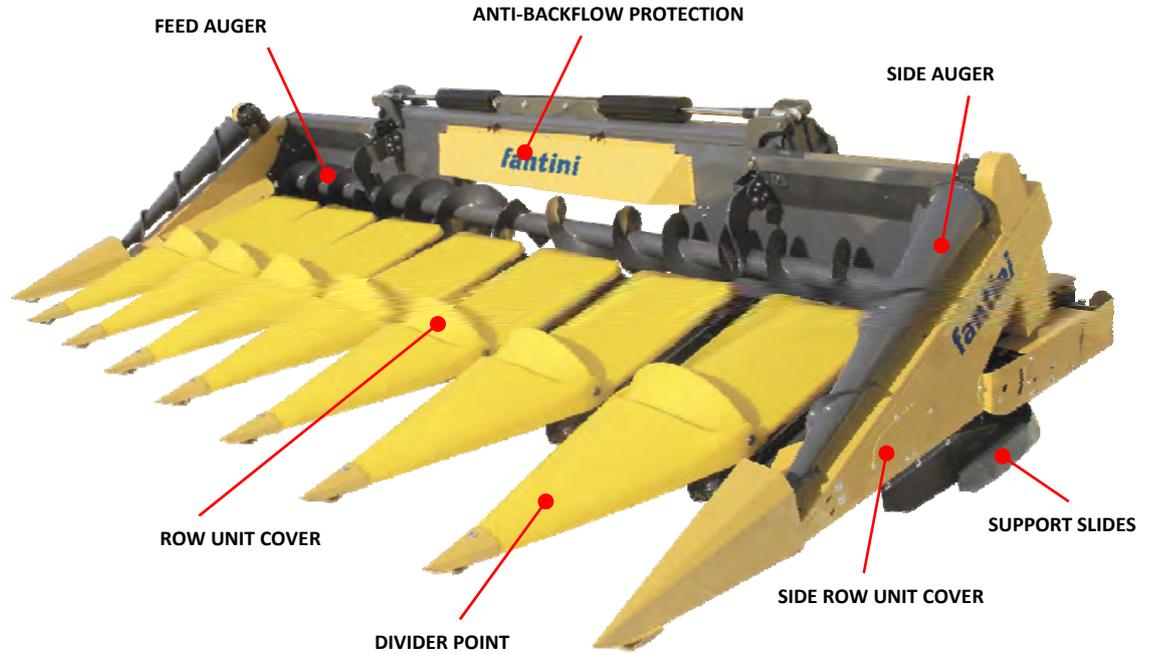
This makes it possible to maintain a suitable adherent mass to the rear axle (directional axle).



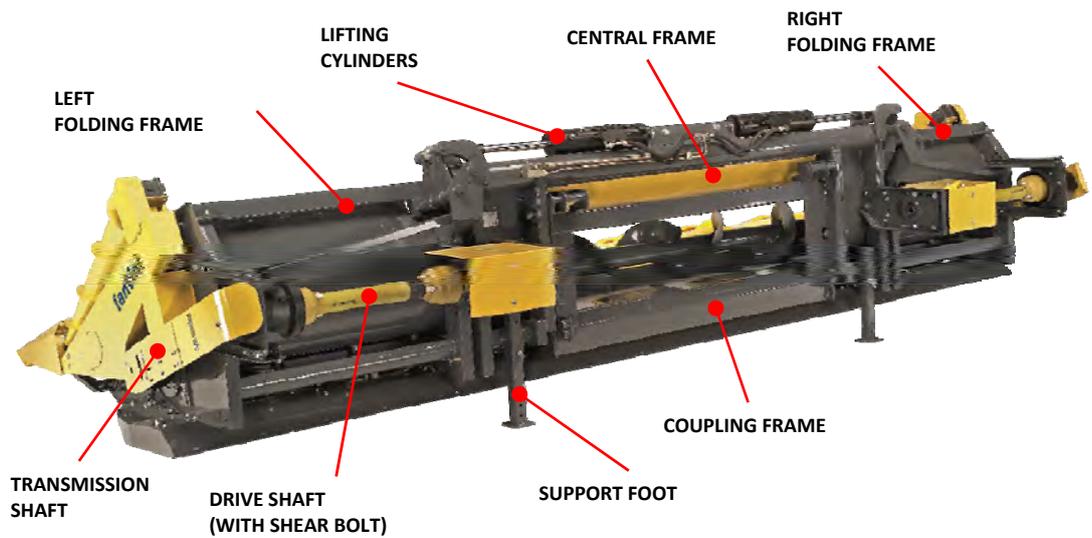
THE LIGHTS BAR, SUPPLIED BY FANTINI S.R.L. AS AN OPTION, IS MANDATORY WHEN TRANSPORTING THE HEADER ON THE ROAD.

11. Technical Glossary

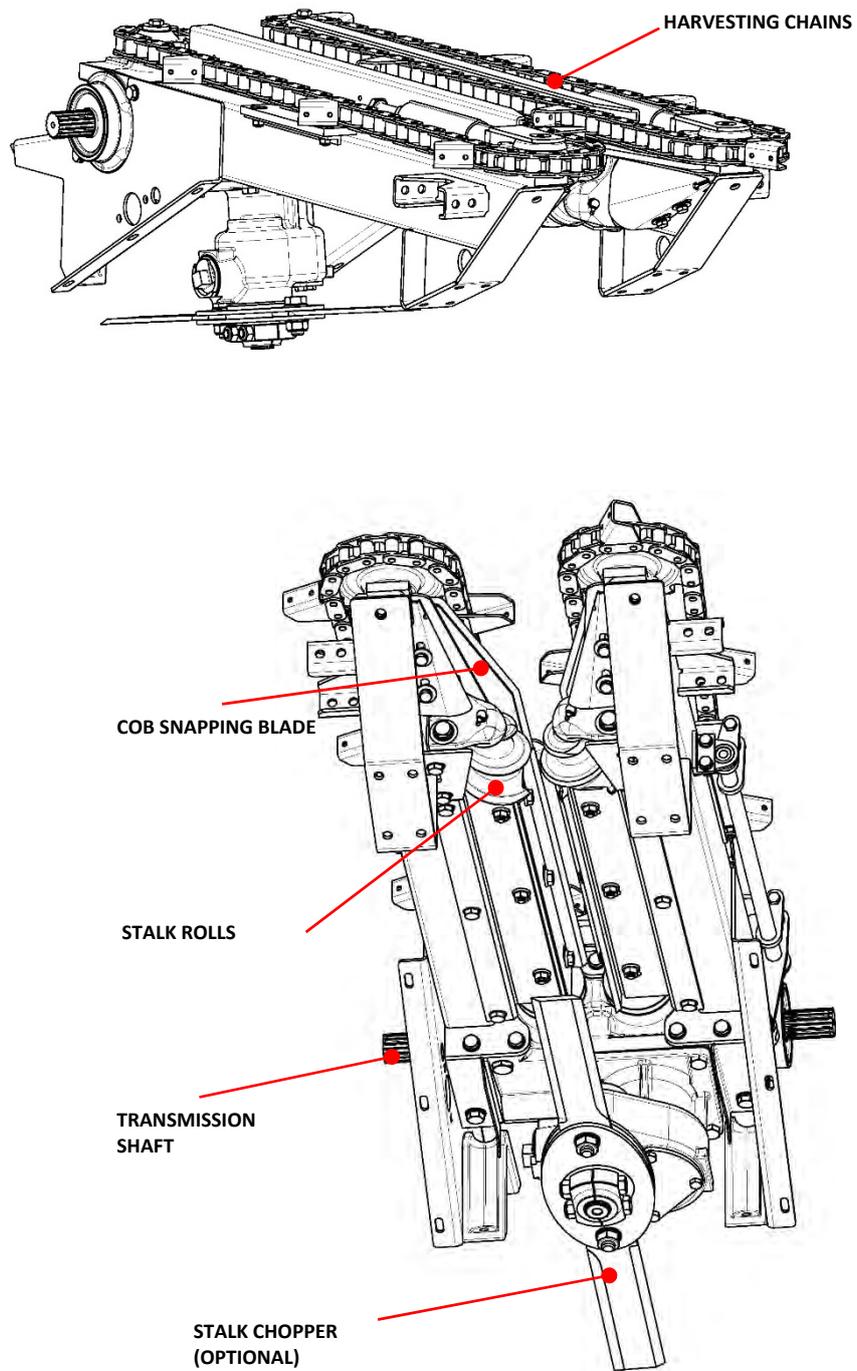
Front view.



Rear view



Row Unit



12. Technical Specifications

The corn header can be equipped with a variable number of rows from 4 to 12.

The distance between rows is defined as inter-row spacing, and can be 70, 75, 76 or 80 cm.

		L03	INTER-ROW SPACING (mm/inches)			
			700	750	760/30"	800
NUMBERS OF ROWS	4	Width (mm)	2950	3100	3130	3250
		Weight (Kg)	1400	1440	1460	1480
	5	Width (mm)	3650	3850	3890	4050
		Weight (Kg)	1670	1750	1770	1850
	6	Width (mm)	4350	4600	4650	4850
		Weight (Kg)	1950	2070	2100	2240
	8	Width (mm)	5750	6100	6170	6450
		Weight (Kg)	2500	2650	2685	2840
	12	Width (mm)	8650	9200	9310	9750
		Weight (Kg)	4080	4200	4250	4350

		LH3	INTER-ROW SPACING (mm/inches)			
			700	750	760/30"	800
NUMBERS OF ROWS	6	Width (mm)	4350	4600	4650	4850
		Width w/closed (mm)	3150	3150	3150	3150
		Weight (Kg)	2450	2500	2530	2550
	8	Width (mm)	5750	6100	6170	6450
		Width w/closed (mm)	3150	3450	3450	3450
		Weight (Kg)	2850	2900	2950	3050
	12	Width (mm)	8650	9200	9310	-
		Width w/closed (mm)	4510	4840	4840	-
		Weight (Kg)	4080	4200	4250	-

The weights indicated in the tables presume a machine outfitted with a transmission and without the coupling kit.

(*) The height indicated in the table presumes an external adjustment to 70 cm; if the adjustment is to 75, the height will become 3350 mm. For additional adjustments, please contact Fantini s.r.l.

Work speed:

- with dry corn not laid down and without stalk chopper 7 Km/h
- with dry corn not laid down and with stalk chopper 5 Km/h

(The speed is decreased in relation to the conditions of the product to be processed: if the corn is laid down, wet, frozen or in case of harvest not in the sense of sowing).

Power supply voltage (only for machines equipped with blades motor)

STANDARD electrical equipment(unless specified otherwise on the ID plates) 12 V

Maximum absorbed power 20 A

Minimum pressure (it increases on the hydraulic circuits) 140 bar

Maximum pressure (it increases on the hydraulic circuits) 180 bar

Temperature allowed in the work environment -20 °C ÷ 40 °C

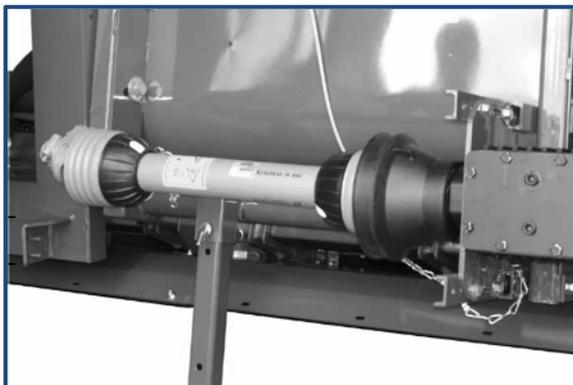
Noise

Level of acoustic pressure generated under good maintenance conditions 80 dBA

Number of operators required (only the operator of the working machine) # 1

Maximum production time allowed (without stops) 8 hours

Transmission



The header is activated by the combine by means of one or two drive shafts and oil-bath transmission boxes.

For both fixed and folding headers, the transmissions can be:

- single (on the left side only)
- double (on both sides)

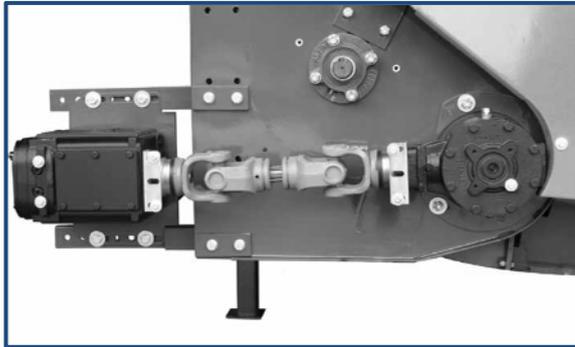
The drive can be made up of a box and fixed or variable ratio.



Fixed ratio transmission

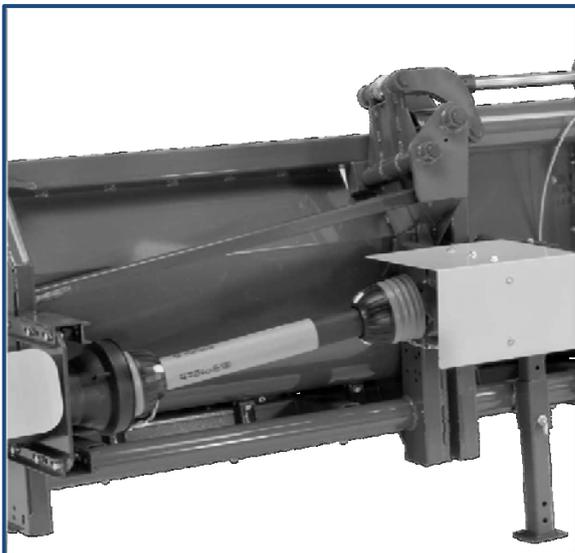
Consisting of rear male rear and front female transmission boxes. They can contain different ratios and vary both when the combine they are adapted to changes.

The boxes are joined together by means of a universal joint.



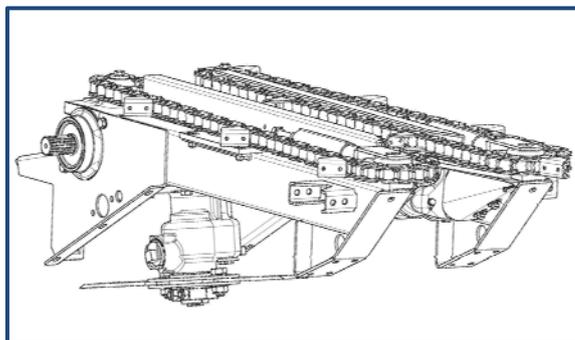
Variable-ratio transmission

Made of male rear transmission box with replaceable gears and female front transmission box. The male box offers the possibility to simply replacing a pair of cylindrical gears for the purpose of changing or adapting the rotation speed when the work conditions or the combine to which they are coupled changes. The boxes are joined together by means of a universal joint.



Internal transmission

It is installed only on folding headers. It does not allow the combine self-levelling system to be used, but the operator is allowed to bend the header without getting off to release the drive shafts.



Row Unit

The L3 row unit works through a harvesting system made of chains and rotating stalk rolls with opposing knives.

The transmission occurs by way of an oil-bath box with internal built-in clutch for each element.

Upon request, it can be fitted with a stalk chopper that can be removed built into the unit transmission box, with separate grease lubrication.

13. Description of machine use

The **Fantini S.r.l.** corn header can be equipped with different harvesting units suited for working on several corn rows at the same time.

Below is a description of the units and their operation:

Fixed version:

- The conveying points serve to accompany the stalk to the stalk rolls.
- By turning in the opposite direction, the stalk rolls pull the corn plants downward.
- When the corn cobs hit the cob snapping blades, the cobs fall off and are dragged by the harvesting chains into the auger that will in turn convey the product to the middle of the corn header to then deliver it to the combine;
- The cob snapping blades can be adjusted (opened or closed) electrically or hydraulically; the machine can be equipped with a special device;
- Underneath the conveying points, there are front slides that can work in contact with the soil; the row divider points can also work in contact with the soil, since they can move and adapt to irregular soil conditions.

Folding Version:

- The corn header is equipped on the side with folding units, which can be raised by means of hydraulic lifting cylinders connected to the main system of the combine. This device makes road transport of the corn header possible with no need to disconnect it from the combine;
- The side auger (OPTIONAL) is used to prevent the piling up of corn cobs on the sides, especially when working with laid down corn;
- The stalk chopper (OPTIONAL) is used to cut the stalks left on the ground; this device can be enabled or disabled.



14. Improper use of the machine

It is absolutely forbidden to use the corn header in a way other than the one described in this manual:

Furthermore, it is strictly **FORBIDDEN** to use the header for unintended purposes, such as:

- Immersed, even if partially (under water);
- With people standing in the work area;
- To push other vehicles;
- To harvest products other than corn cobs.
- Do not use the lifting capabilities of the side units (folding version), using the lifting cylinders 08 to lift foreign bodies (people, objects, etc.) which are not part of the machine.
-

15. Handling and transport

Machine transport, especially on roads, must be carried out using suitable means and methods suited to protect its components from violent collisions, humidity, vibrations, etc.



WHEN DRIVING ON A ROAD ON A COMBINE EQUIPPED WITH A FOLDING HEADER, YOU ARE REQUIRED TO STRICTLY COMPLY WITH THE TRAFFIC CODE REGULATIONS IN FORCE IN THE COUNTRY OF USE.

For lifting and transport operations, avail yourself exclusively of specialised personnel (crane slingers, etc.) equipped with appropriate lifting equipment suited to withstand the weight of the various components.

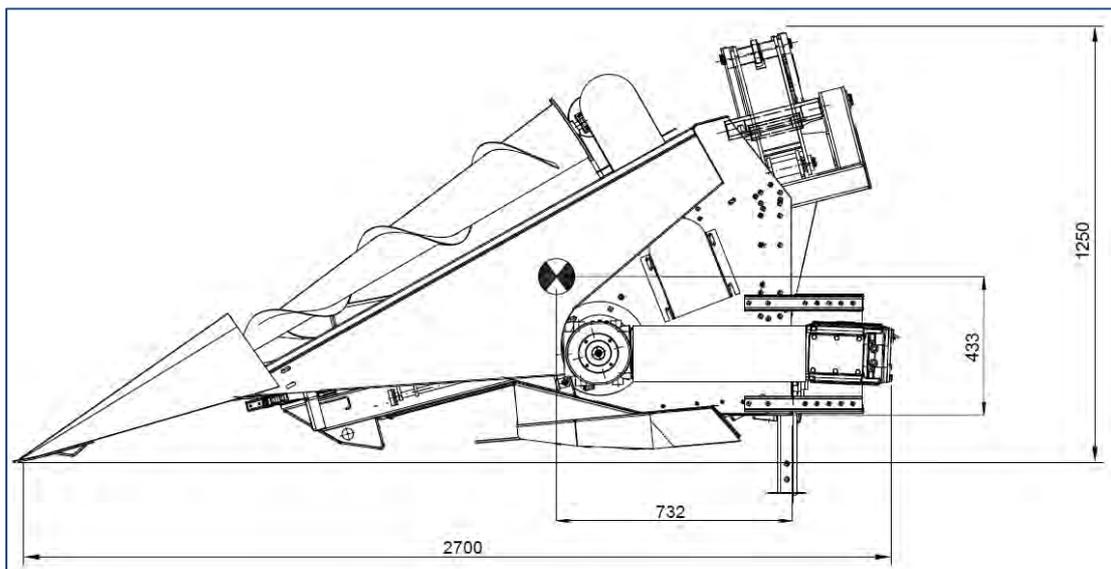


WHILE LIFTING MACHINES OR PARTS OF THEM, AVOID SUDDEN OR HAZARDOUS ROCKING THAT MAY CREATE DANGEROUS SITUATIONS FOR BOTH MACHINE AND PERSONNEL.

15.1. Dimensions and Weights

For information of a general nature on weights and dimensions, please refer to chapter 12 - *Technical Specifications*. The reference values are indicated on the CE identification plate illustrated in chapter 06 - *Markings*.

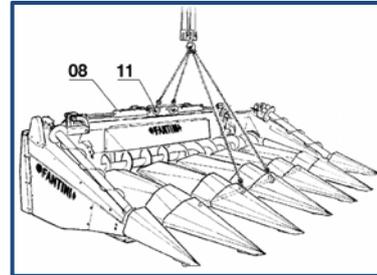
15.2. Position of the barycentre



THE POSITION OF THE BARYCENTRE CAN VARY DEPENDING ON THE TYPE OF TRANSMISSION INSTALLED.

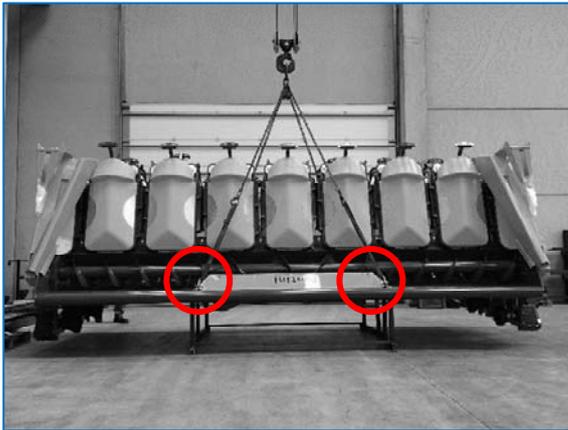
15.3. Lifting points

The machine is equipped with lifting points, identified by the following symbol:

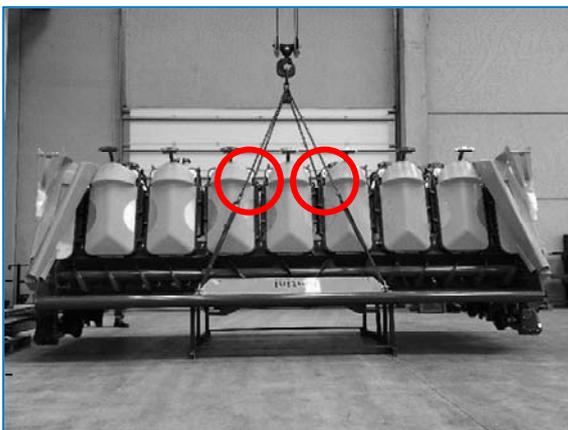


The lifting can be carried out with the header in the horizontal or vertical position.

Fixed version



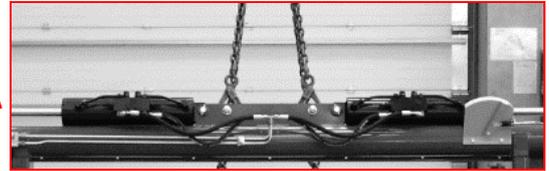
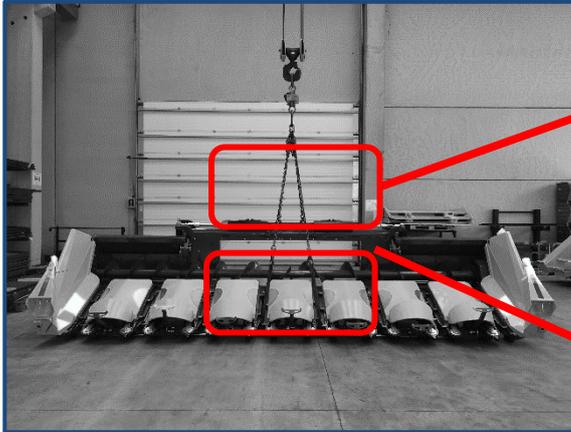
2 rear lifting points located on the vertical wall and accessible from the front;



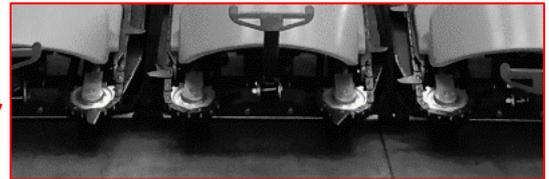
2 front lifting points located between the row divider points (to be used for lifting in the horizontal position)

2 lifting points located underneath the row divider points (to be used for lifting in the vertical position)

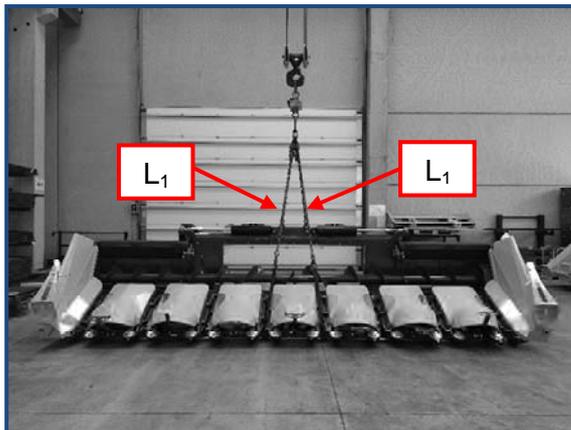
Folding version



- 2 rear lifting points located between the two folding cylinders



- 2 front lifting points located on an additional bar supplied as standard equipment, which needs to be secured to the bottom side of the header and used for the positioning of belts or chains.



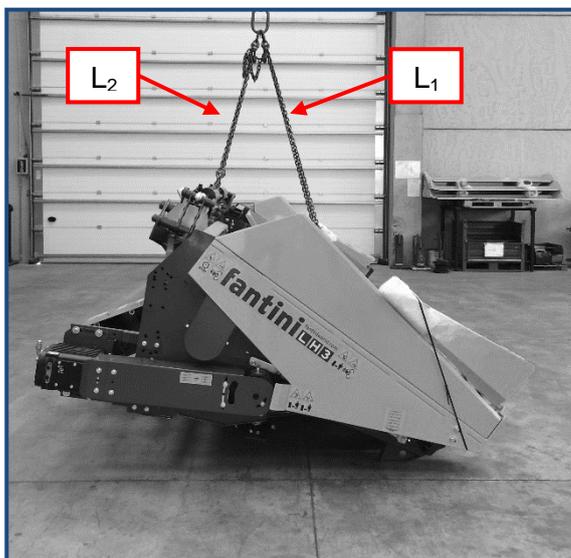
Lifting in horizontal position

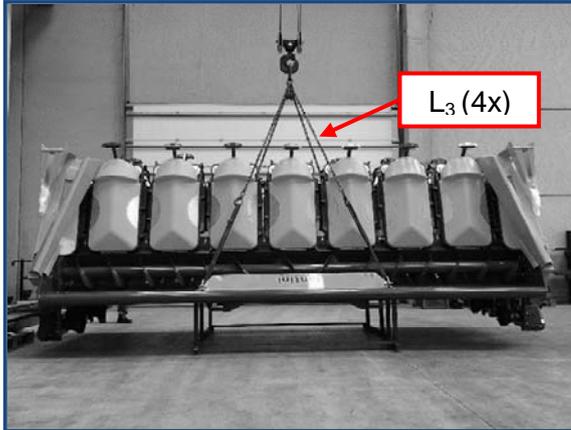
For the lifting in horizontal position, anchor the machine to the special rings and arrange the lifting components according to the diagram shown in the figure.

The minimum recommended length for the lifting belts or chains is:

L1 = 2700 mm

L2 = 1400 mm





Lifting in the vertical position

For the lifting in vertical position, anchor the machine to the two rings located on the vertical wall and to the two rings located on the bottom side, according to the diagram illustrated in the figure.

The minimum recommended length for the lifting belts or chains is:

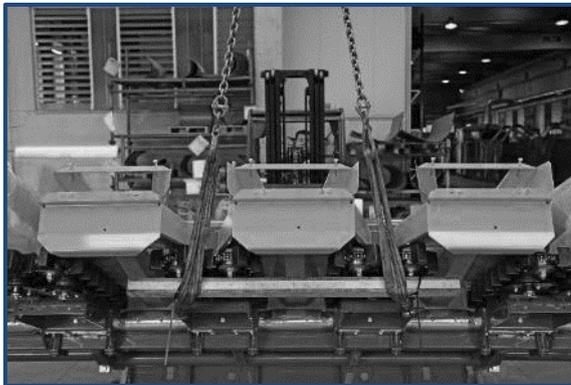
$$L_3 = 2950 \text{ mm}$$



Folding

In order to fold the head, the combined use of two pieces of lifting equipment is needed, of which at least one must be a forklift truck (it is recommended to use a bridge crane plus a forklift truck).

Position the header in the vertical position, resting it on the steel supports supplied as standard equipment.



Sling the top part of the header as shown in the figure, securing the belts to the bottom rings by means of eye bolts or shackles.

The combined use of chains and belts is recommended.



Use the tips of the forks of the forklift truck to fold the header, lifting it from one side.



Avoid or limit any sliding of the header, controlling its movement with the tips of the forks.

Do not stand in the manoeuvring area: an uncontrolled sliding of the header may cause serious damage to people and/or things.



DO NOT STAND UNDER SUSPENDED LOADS.

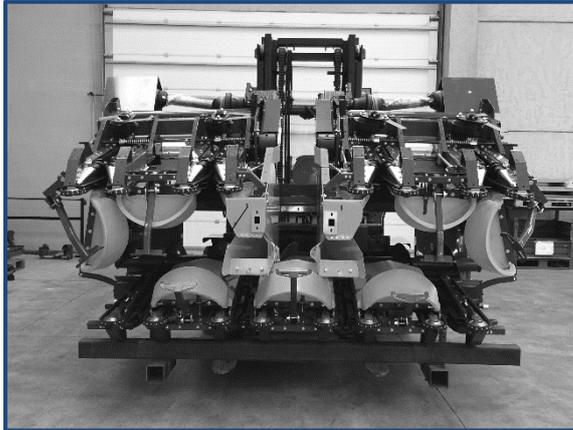
16. Packing



The corn header can be equipped with an iron support for transport in the vertical position.



The folding version can be supplied with plates, bars or other supports to facilitate the transport.



It is recommended to keep these supports for future use or transport.



THE PACKING MATERIALS (WOOD, NAILS, PAPER, CELLOPHANE, METAL PARTS, ADHESIVE TAPE, STRAPS, ROPES, ETC.) MAY CUT AND/OR HURT THE WORKER, IF NOT PROPERLY HANDLED. THEREFORE THEY MUST BE REMOVED WITH THE USE OF PROPER TOOLS AND NOT BE LEFT AT THE DISPOSAL OF VULNERABLE PEOPLE (SUCH AS CHILDREN). THE SAME APPLIES WHEN HANDLING TOOLS FOR PACKING REMOVAL (SCISSORS, HAMMERS, PINCERS, KNIVES, ETC.).

In any case, it is strongly recommended to wear appropriate personal protective equipment (PPE).

16.1. Disposal of packing material

The packing materials can be disposed together with regular waste materials, such as paper, wood, polyethylene, etc.

Part	Composition material	Recycling/disposal codes
Packaging	Polyethylene low density and various plastics	
Nails etc.	Iron	
Packaging	Cardboard	
Packaging	Wood	



THE CUSTOMER IS FULLY RESPONSIBLE FOR THE DISPOSAL OF PACKING MATERIALS. FANTINI S.R.L. SHALL NOT BE LIABLE FOR ANY COST ASSOCIATED WITH THE ABOVE WASTE DISPOSAL.

17. Installation and assembly

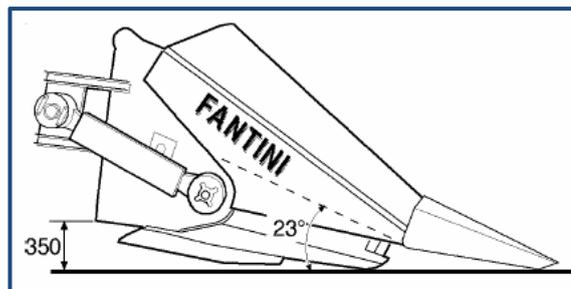
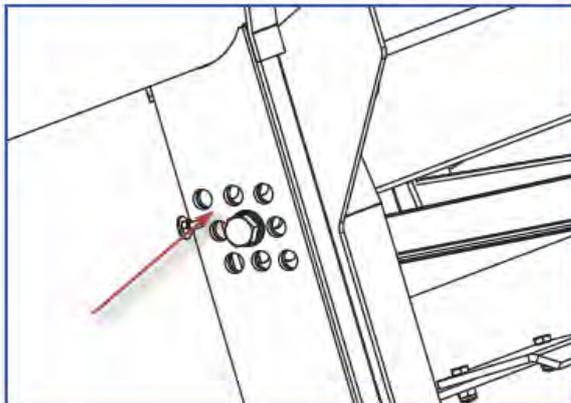
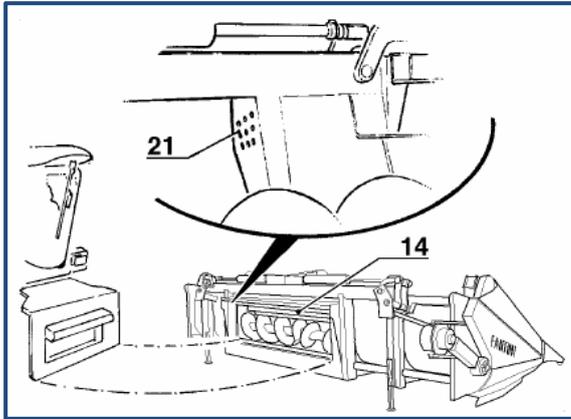
The installation must be carried out exclusively by specialized and expert personnel (see chapter 7 - Personnel characteristics), who are required to:

- Be familiar with the contents of this manual and refer to the TECHNICAL SPECIFICATIONS of the machine (see chapter 12);
- Verify the intactness of all components
- Report any defects or deterioration that may jeopardise the original safety of the product.
- Make sure that the supply voltage is the same as the one indicated on the plates affixed to the machine and/or in the enclosed wiring diagrams (only for machines equipped with blades motor 07); in this case, the electrical connections consists exclusively in inserting the plug into the relative socket.
- Avoid any temporary repairs. Repairs must be carried out using original spare parts only.

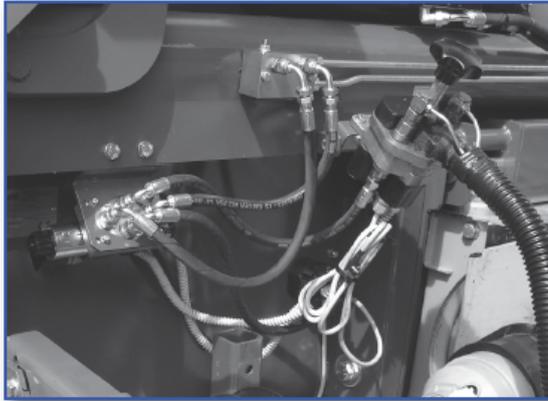
Operation of the corn header is possible only in combination with a combine. This is the reason why it is necessary to carry out the appropriate mechanical, hydraulic and electrical connections, making sure:

- Check the combine specifications and refer to its use and maintenance manual.
- In case you find any discrepancies between the information contained in the combine manual and in this manual, refrain from proceeding with the installation and contact Fantini s.r.l. or your local dealer;
- Contact Fantini S.r.l. or your area dealer for any technical operation not specifically described in any of the two manuals (combine and corn header).
- Make sure the combine harvester is equipped with:
 - Emergency stop control as per the 2006/42/CEE directives and directives on road circulation of agricultural machinery;
 - A motion reversal device, to be used in case the feed augers blockage, positioned near the operator's;
 - Acoustic signalling device that sounds before the start of the header;
 - Device that automatically stops the header if the operator leaves the control cab;
 - Protection device for machine controls to avoid any accidental start up;
 - Loading channel (combine feeding compartment) and transmission system suitable for bar assembly.

Assembly procedure:



- Measure the width of loading channel 14 of the combine and compare it with the width of the lead sheet metal assembled on the corn header;
- In some cases, the deck plates assembled on pivoting channels are not equipped with lead sheet metal; if the measurements are compatible but the sheet metal is wider, simply disassemble it, adapt it by cutting it along its sides as necessary and reassemble it;
- In some cases, you need to eliminate the sheet metal to prevent the product from coming out of the combine channel.
- For proper positioning of the corn header, you need to first of all place it on sufficiently flat ground.
- Use the holes shown in the figure and choose the best one for the fixing, so as to obtain the heights illustrated in the figure. Afterwards, realign the main transmission.
- Position the corn header in the horizontal position; the header is usually arranged with side parts folded (only in the folding versions);
- Check the distance from the ground and arrange so that the height of the sheet metal (bottom edge of the loading mount) coincides with the height from the ground of the combine channel; if the combine travel is not sufficient for the alignment, use the adjustable support feet. Once the corn header is installed, the feet must be completely retracted.
- Approach the header with the combine; connect the header to the combine harvester, using the upper hooks. Then lift it gently and attach the lower hooks. The attachment kits can be of different types. The header is equipped with hooks suited to the type of combine specified at the time of the order;



Folding version

- Carry out the hydraulic connections;
- Operate the hydraulic controls to fold the side parts; make sure that there are no obstacles or people in the work area;
- Connect the lights bar and disconnect the lights of the combine harvester.



PRIOR TO PUTTING THE HYDRAULIC CIRCUIT IN PRESSURE, ANY TRANSPORT AND INSTALLATION SUPPORTS MUST BE REMOVED.

Disassembly procedure



The corn header must be disassembled from the combine by following the assembly instructions in reverse.

Proceed as follows:

- Rest the front part of the bar on the ground;
- Release the channel in the bottom part;
- Pull out the feet;
- Rest the rear part;
- Release the top part of the corn header from the combine channel.

17.1. Transmission connection

Transmission with PTO drive shaft

Operation of the units is entrusted to transmissions with drive shafts and oil-bath boxes.

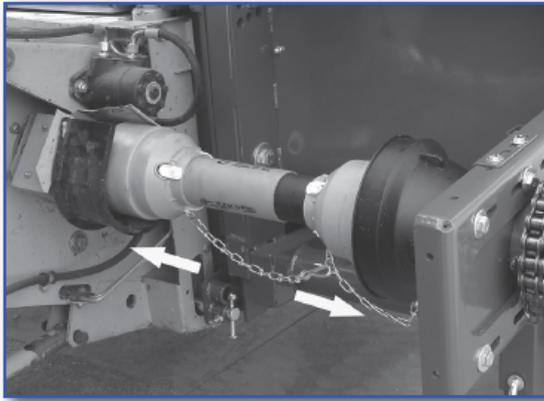
The transmissions can be

- single (on the left side only)
- double (on both sides)

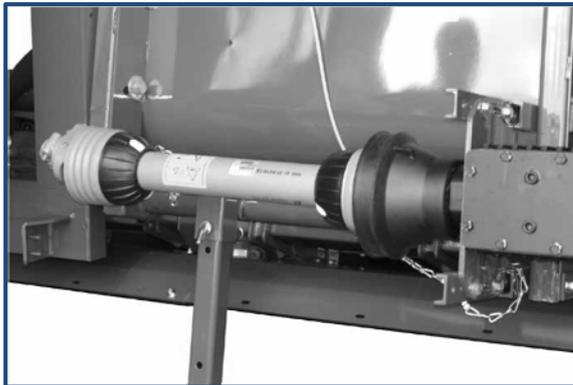
For both fixed and folding headers

The drive can be made up of a box and fixed or variable ratio.

Connection procedure

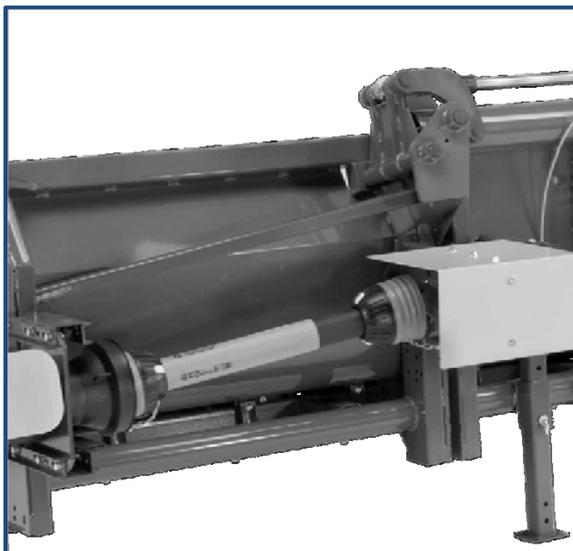


- Verify that the length of the PTO drive shafts is correct; the telescopic pipes must overlap for at least 1/3 of their length;
- If the drive shaft is too long, the telescopic pipes must be adapted, cutting them in such a way that the previous condition is complied with
- If the drive shaft is very short, you need to check and/or adjust the alignment of the two splined parts;
- Couple the drive shaft to both the corn header and to the combine; if the drive shaft is fitted with a safety system (shear bolt or clutch), it must be positioned on the side of the corn header.
- Connect the protection chains of the drive shaft to a fixed part.



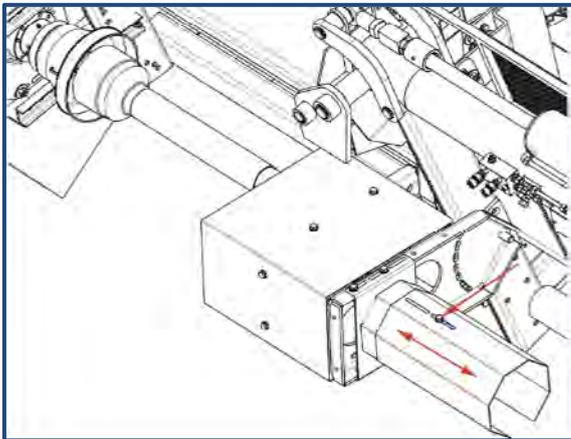
Fixed version:

- Adapt the length of the PTO drive shaft, paying attention to the proper alignment between the header transmission and the combine harvester transmission, moving the transmission box by means of the support plate.



Folding version:

- Follow the procedure described above for all machines equipped with external transmission.
- For all the machines equipped with internal transmission, align the header transmission with the combine harvester transmission by acting on the support plates. If necessary, shorten the splined shaft in order to assemble the joint.
- In some cases, it might be necessary to use an adapted drive shaft.



-
-
-
- Loosen the screw as in picture and slide the protection. Replace the protection as required.
-
- Re-assemble the protection casing and the universal joint protections.



THE MAXIMUM ANGLE OF INCLINATION OF THE UNIVERSAL JOINTS IS 15°.



MOVEMENT OF THE HEADER FOR CORN HARVESTING OCCURS THROUGH THE COMBINE CONTROLS.



IT IS ABSOLUTELY NECESSARY TO ALWAYS ASSEMBLE THE JOINT PROTECTIONS.

18. Start up, adjustments and operation

The corn header is not an independent machine; it receives motion and controls from a working machine (combine harvester).

Hence, you need to consult the combine manual for the header operation.



Folding version

During road transport operations, you need to limit the footprint of the corn header folding the side parts and assembling the lights bar 17.

Start-up must be carried out with the combine running at a low rpm, so as to avoid any jerking of the transmission, then increasing gradually until the desired number of rpm is reached.

Once the start-up phase is finished, you can drive into the field: proceed to adjust the height from the ground, in relation to soil conditions and the product to be harvested.

The correct height is achieved using the combine commands, by either lifting or lowering the duct.

The work speed (see chapter 12 - Technical Specifications) are selected in relation to soil conditions and the product to be harvested.

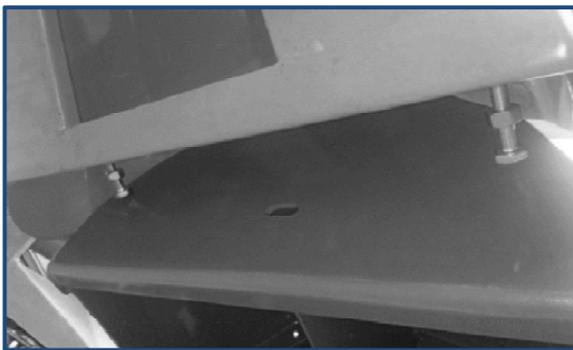


Adjustment of plastic row divider points

The row divider points must all be adjusted at the same height from the ground; they can be hinged at the bottom and there is an eccentric underneath that makes it possible to raise and lower the point.



Transport position. Use the pipe supplied as standard equipment to block rotation of the plastic point



Adjustment of metal row divider points.

The row divider points must all be adjusted at the same height from the ground; they can be hinged at the top and are adjusted by means of the adjusting screws.



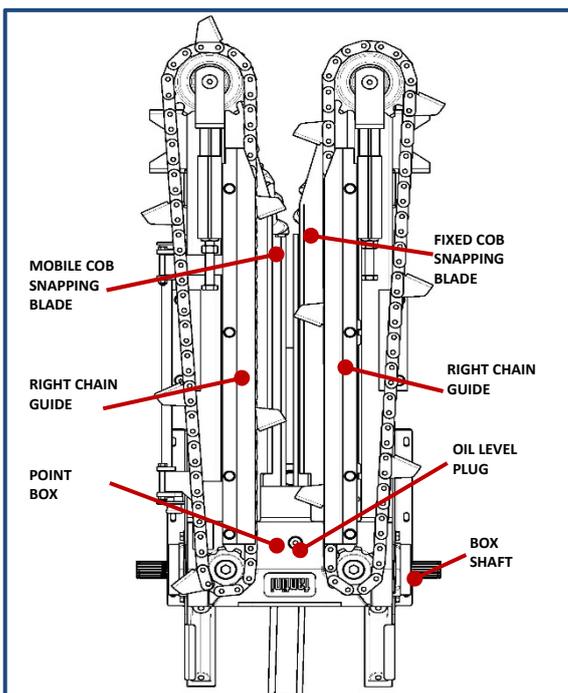
Transport position.



Adjusting the cob snapping blades

The adjustment is carried out by moving the left blade by means of the command of an electrical or hydraulic actuator (optional). The opening dimension is displayed by the special indicator visible from the cab.

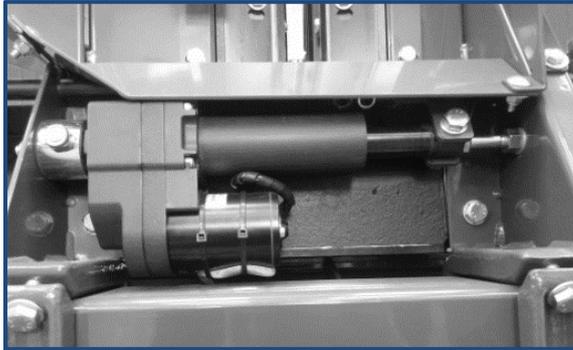
The scale provides a logical indication, not the actual measurement of the opening between the blades.



Setting the default opening

The electric blades are assembled with a default opening of 27 mm. Hence the fixed blade is at 13.5 mm from the centre, both in the front and in the rear. Upon request, the blades can be assembled with a 27-mm opening in the front and 32-mm in the rear.

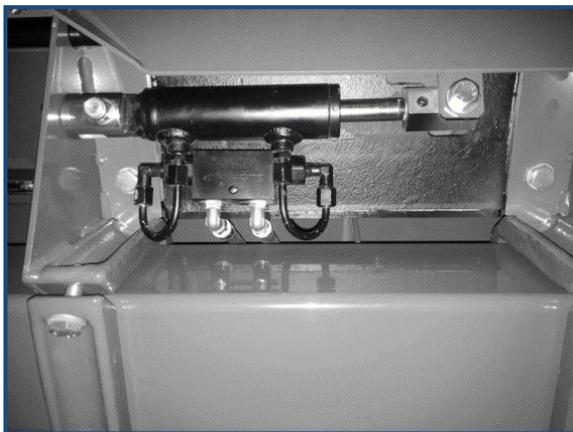
The adjustment can be carried out both electrically and hydraulically on machines equipped with special device (OPTIONAL).



Electrical operation

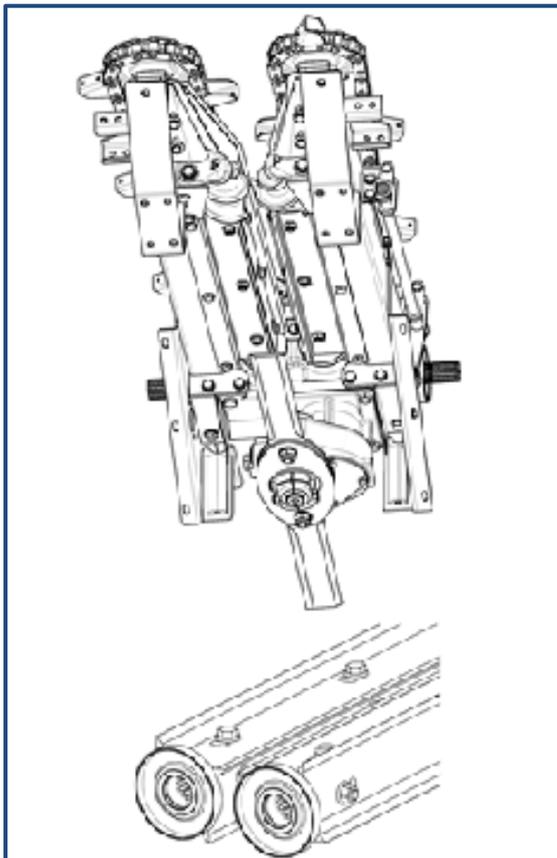
Through an electrical actuator operated by a power supply box and control to be positioned in the cab. Upon request, electro-hydraulic interfaces can be supplied for the connection and operation through the combine controls.

The actuator power absorption is very high (25 A). It is recommended to connect to a service with a fuse of at least 30 A.



Hydraulic operation.

Through a hydraulic cylinder operated from the cab. The operation entails use of the hydraulic system of the combine. Upon request, electro-hydraulic interfaces can be supplied for connection and operation through the combine controls.



Adjusting the stalk rolls

The function of the stalk rolls is to improve the cutting and lead for the incoming product.

For their disassembly/assembly, we recommend:

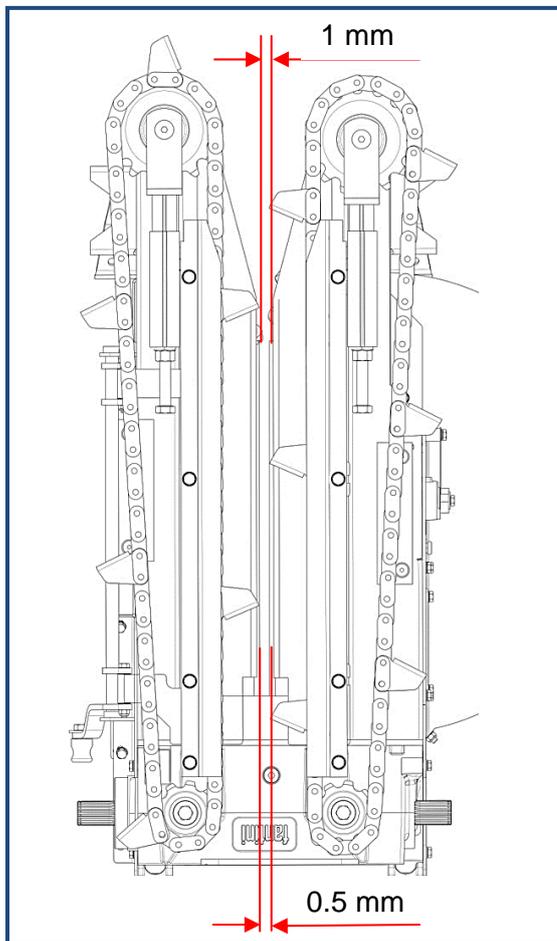
- handling the rolls using suitable PPE, given the significant weight and the cutting effect of the knives;
- do not move the blocking screw and adjustment of the supports;
- mark the rolls to quickly identify them during the assembly phase; mark the rolls to quickly identify them during the assembly phase;

Disassembly:

- remove the protections;
- unscrew the fixing screws of the front supports;
- pull out the rolls from the splined operation shafts;

Assembly:

- make sure the OR seal is not worn;



- fill the splices with molybdenum disulfide grease;
- screw the supports back in (tightening torque: 13.5 daNm);
- check the timing between the knives
- check the adjustment of the counter-knives by turning the rolls by hand;

Knives-rolls work distance.

- the ideal condition for the rolls is
- 1 mm in the front part (infeed)
- 0.5 mm in the rear part;

The blades of the rolls have to graze the fixed counter-knives that allow cleaning of the rolls

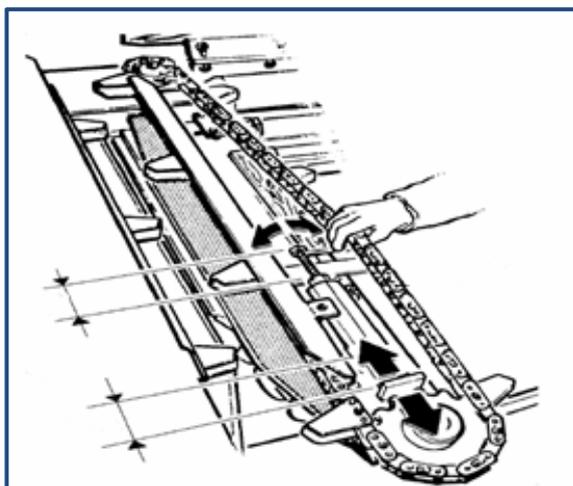
Replacing the knives

Replace the knives when they show signs of wear and/or reduced capacity.

In case the knives are replaced, it is recommended to also change the screws and the nuts, and to use original spare parts only.

Tightening torque: 9 daNm

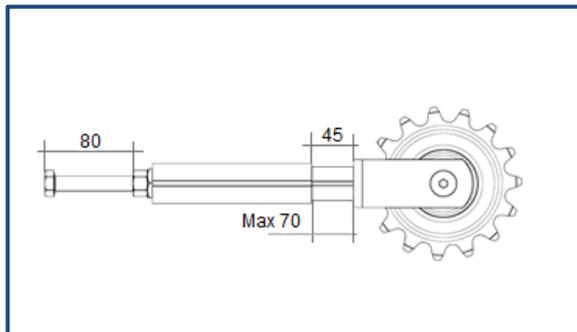
BE CAREFUL TO AVOID CONTAMINATING THE PARTS WITH DIRT OR IMPURITIES.



Adjusting the tension of the harvesting chains

The harvesting chains must be tensioned by means of the special stretcher:

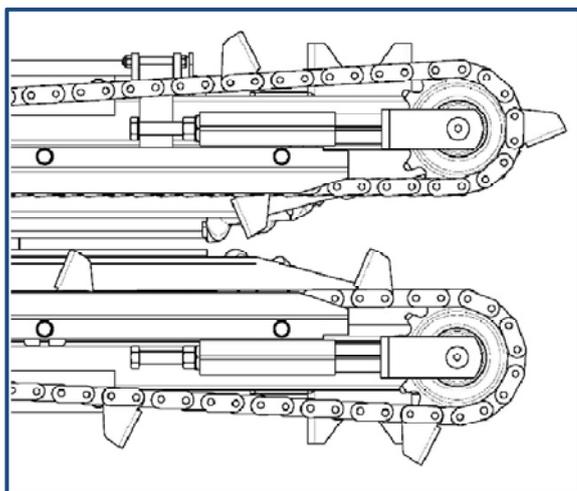
- loosen the blocking nut;
- screw in the thrust screw of the internal spring;
- check the applied tension;
- block the stretcher by screwing in the blocking nut;



Refer to the figure at the side to avoid excess wear and lengthening of the harvesting chains.



IN CASE THE STRETCHER JUTS OUT FOR MORE THAN 70 MM, THE CHAIN NEEDS TO BE REPLACED.



Replacing the harvesting chains

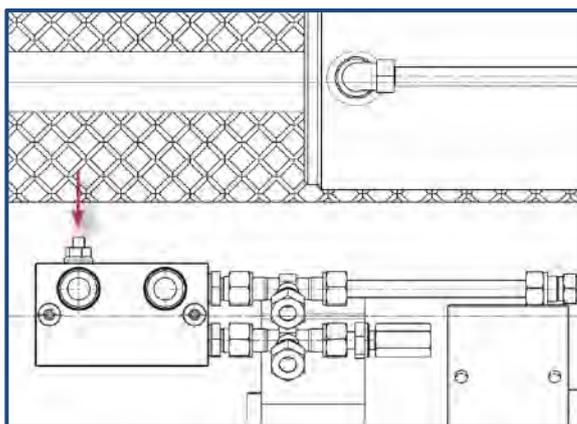
- loosen the blocking nut;
- unscrew the screw until the pipe inside the stretcher is allowed to retract completely;
- remove the chain;
- assemble the new chains, being careful to keep the teeth staggered;
- Adjusting the new chain:
- Screw 80 mm.
- Pipe 45 mm.



IT IS RECOMMENDED TO CARRY OUT THE TIGHTENING IN COMPLIANCE WITH THE INSTRUCTIONS PROVIDED HEREIN, UNDER PENALTY OF FORFEITURE OF THE WARRANTY ON CHAINS, STRETCHERS AND ROW UNIT BOX.

Adjusting the opening/closing speed of the folding elements

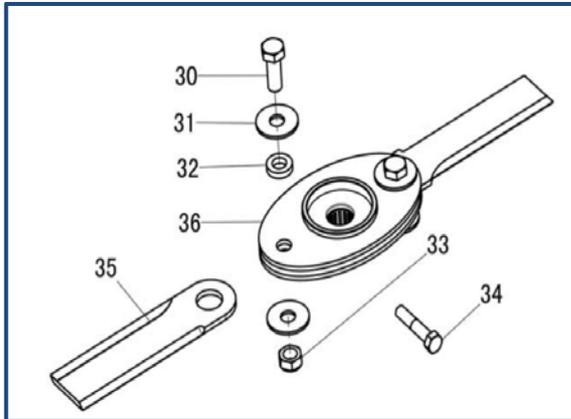
(Folding version)



The opening/closing speed of the header can be adjusted by means of the adjusting screw (see figure).

Loosen the blocking nut. Unscrew or screw to adjust. Tighten the blocking nut keeping the screw at the regulation reached. It is recommended to carry out this operation using hydraulic oil at the operating pressure (40 – 60 °C)

Replacing the stalk chopper knives



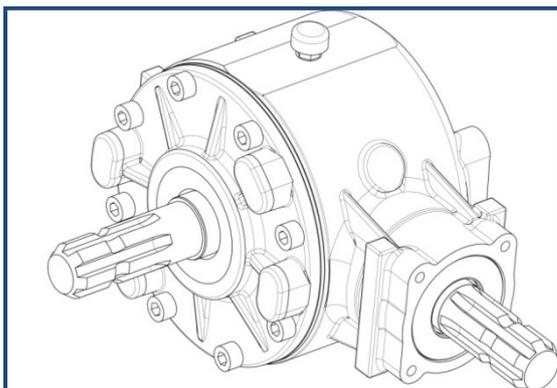
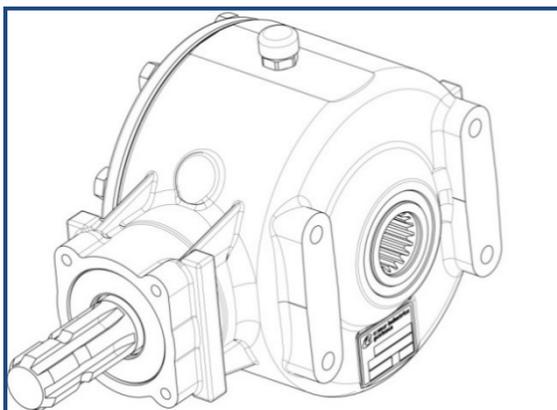
The stalk chopper knives are equipped with double blade, so it is possible to rotate them when the first side becomes blunt. Beyond a certain degree of wear, the knife is no longer efficient, so it is advisable to replace it.

- Unscrew the bolts (30) that hold the knife.
- Remove the blunt knife and assemble new ones.



**IT IS RECOMMENDED TO REPLACE BOTH KNIVES.
THE HIGH ROTATION SPEED REQUIRES AN EXTREMELY BALANCED SYSTEM.
WE RECOMMEND ALSO REPLACING, ALONG WITH THE KNIFE, THE CEMENTED WASHERS (32) AND THE FIXING SCREWS AND BOLTS (30, 33, 34)**

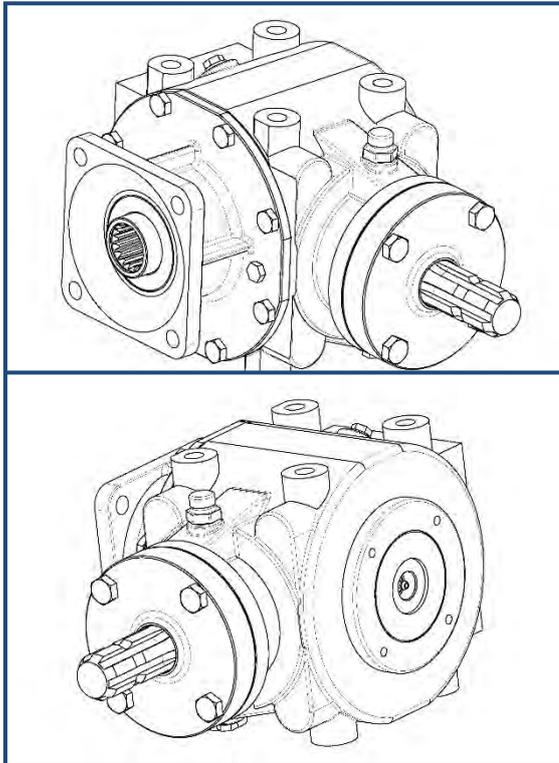
Transmission



Male/Female transmission TYPE T-304

The transmission box works with lubricant oil

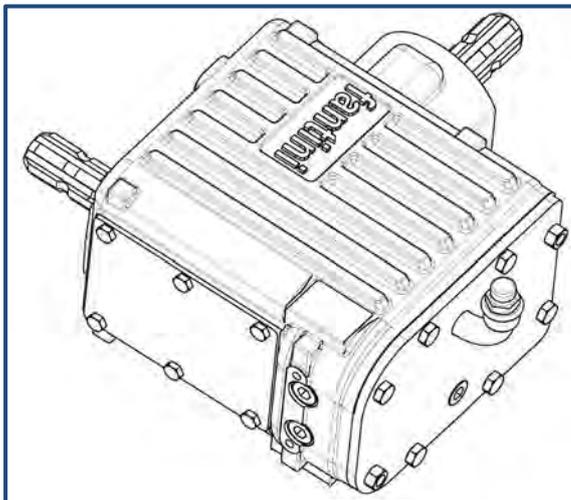
- The first oil change is recommended after **50 work hours**; the subsequent ones after 600 hours and/or at least once a year.
- The emptying out of the oil must be carried out with the header still hot, in order to prevent any impurities from depositing on the bottom of the box.
- Oil quantity: 1 litre
- Recommended oil type: SAE 90 EP (ISO VG 220)
- Fantini s.r.l. recommends the use of oil for gears with "EP" additives
- Grease the infeed axis at least once a year
- Tighten the oil level filling plug to 3 daNm. max.
- Tighten the M10 screws to 5-6.4 daNm



Female transmission TYPE T-312

The transmission box works with lubricant oil

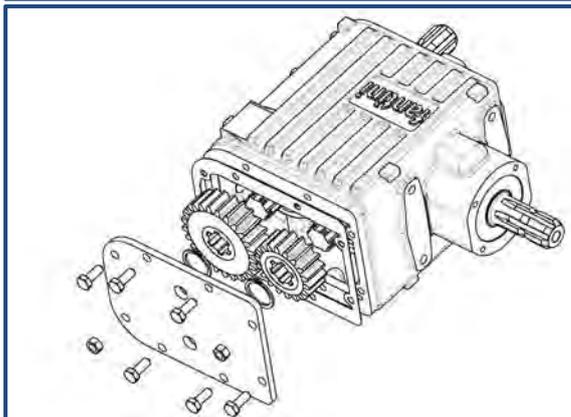
- The first oil change is recommended after **50 work hours**; the subsequent ones after 600 hours and/or at least once a year.
- The emptying out of the oil must be carried out with the header still hot, in order to prevent any impurities from depositing on the bottom of the box.
- Oil quantity: 1.5 litres
- Recommended oil type: SAE 90 EP (ISO VG 220)
- Fantini s.r.l. recommends the use of oil for gears with "EP" additives
- Grease the infeed axis at least once a year
- Tighten the oil level filling plug to 3 daNm. max.
- Tighten the M10 screws to 5-6.4 daNm
- Tighten the M12 screws to 8.5-10.9 daNm

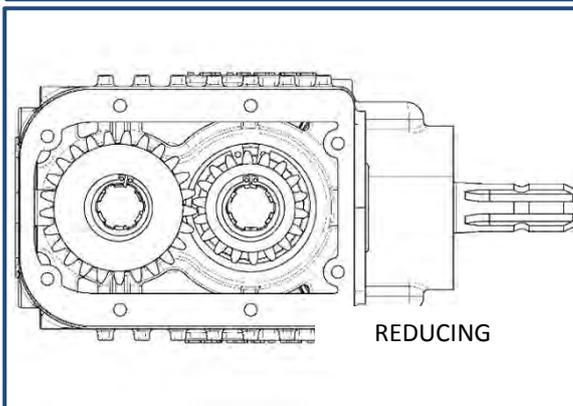
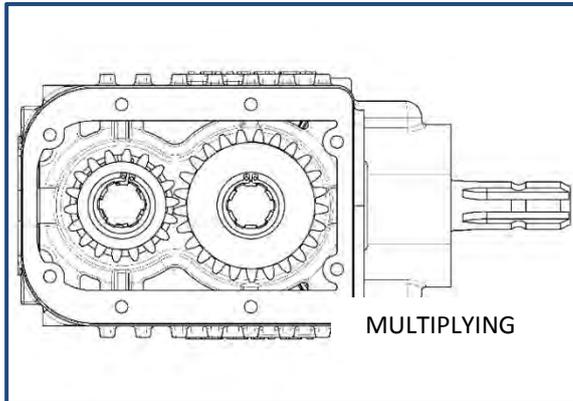


Variable-ratio transmission

The transmission box works with lubricant oil

- The first oil change is recommended after **50 work hours**; the subsequent ones after 600 hours and/or at least once a year.
- The emptying out of the oil must be carried out with the header still hot, in order to prevent any impurities from depositing on the bottom of the box.
- Oil quantity: from 2.7 to 3.2 litres, based on the working position.
- Recommended oil type: SAE 90 EP (ISO VG 220)
- Fantini s.r.l. recommends the use of oil for gears with "EP" additives
- Tightening torque of oil level filling plug:
 - 3 daNm. max.
- Tightening of M10 screws: 5-6.4 daNm
- Tightening of M8 screws: 2.5-3.2 daNm





Varying the transmission box ratios

Proceed as follows to change the ratios inside the box:

- open the rear cover;
- remove the two Seeger rings;
- pull out the two gears from the splined shafts;
- assemble the new ratios;
- reassemble the Seeger rings;
- close the box.

**BE CAREFUL TO AVOID RUINING THE SEAL GASKET FITTED BETWEEN THE COVER AND THE BOX.
SPARE GASKETS ARE AVAILABLE.
COMPLY WITH THE RECOMMENDED TIGHTENING TORQUES.**



TORQUE		REDUCING RATIO	MULTIPLYING RATIO
18	25	0,72	1,39
18	24	0,75	1,33
19	25	0,76	1,32
19	24	0,79	1,26
20	23	0,87	1,15
20	22	0,91	1,10
21	22	0,95	1,05
21	21	1,00	1,00

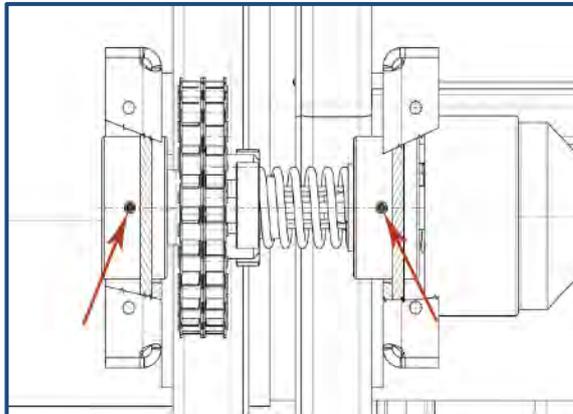
Assembling the variable box cylindrical gears

The following ratios can be supplied:

The gears can be assembled both multiplying and reducing.



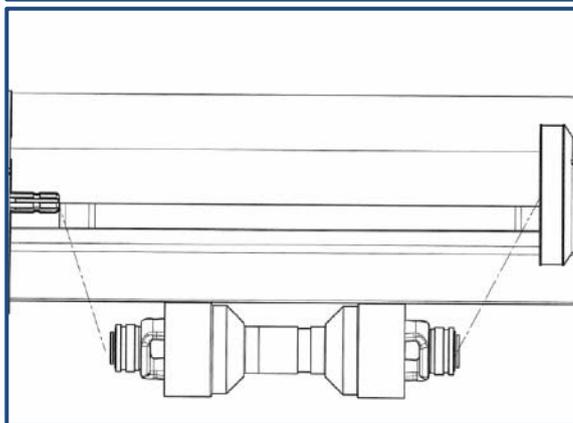
THE GEARS THAT MAKE UP THE PAIRS ARE NOT INTERCHANGEABLE ONE WITH THE OTHER. THE 18-TOOTH GEAR OF THE 18/25 TORQUE IS DIFFERENT FROM THE 18/24 TORQUE.



Lubrication of main transmission joints supports (folding version)

Grease by means of the special greaser shown in the figure.

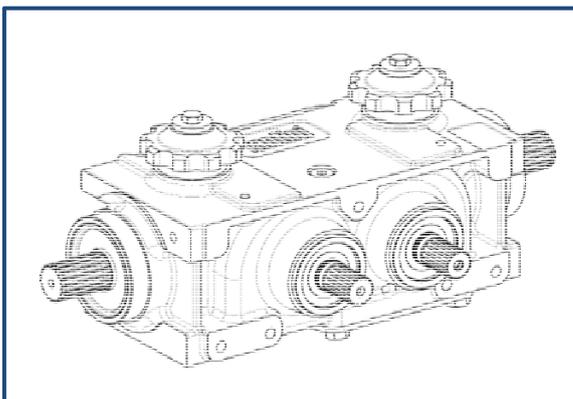
Grease to be used: multifunctional lithium.



Greasing the drive shafts

The header can be equipped with one, two or more PTO drive shafts or universal joints that have to be regularly greased. For use and maintenance refer to the producer manuals.

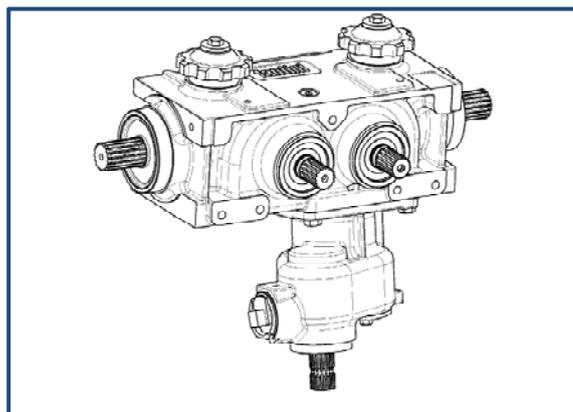
Row Units - Transmission



Row units box with / without stalk chopper

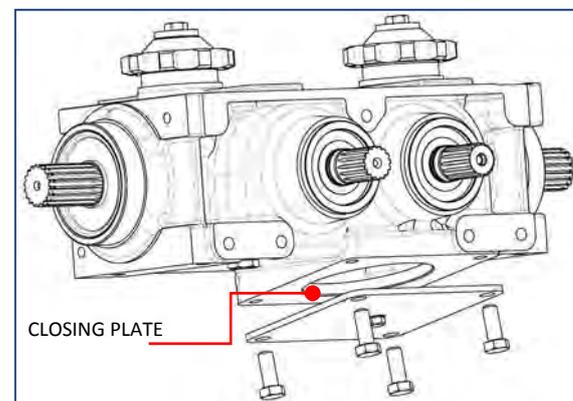
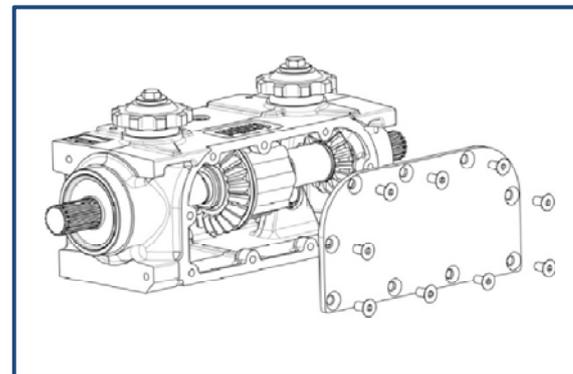
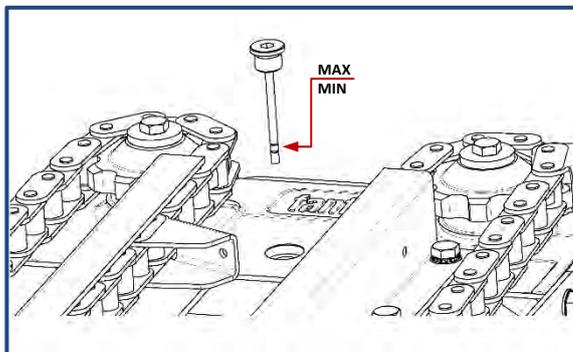
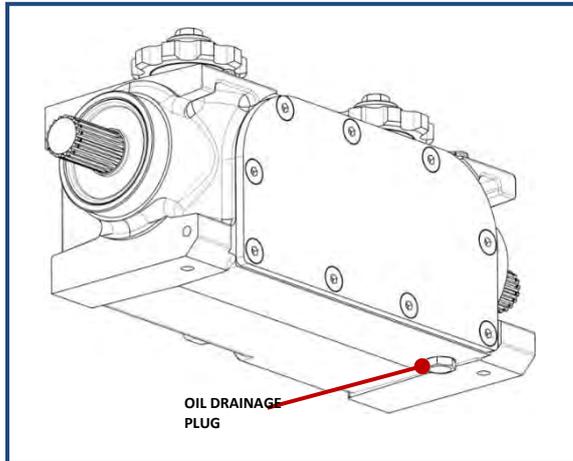
The transmission box of the harvesting row units works with lubricant oil. It can be equipped with a stalk chopper by means of an additional built-in box. This box works with separate grease lubrication.

Periodically check to makes sure that there are no oil leaks and that the gearbox reaches the planned oil level during the idle phase.



Tightening plugs and screws:

- Tightening the countersunk screws of the cover: 7÷9 daNm.
- Tightening the stalk chopper screws: 8.5÷10.9 daNm.



Checking and changing the oil

The first oil change is recommended after **50 work hours**; the subsequent ones after 600 hours and/or at least once a year.

The emptying out of the oil must be carried out with the header still hot, in order to prevent any impurities from depositing on the bottom of the box.

Check the oil level by means of the special dipstick of the level filling plug.

- Oil quantity with box tilted in the work position: 1.8 litres (inclination 23°)
- Recommended oil type: SAE 90 EP (ISO VG 220). Fantini s.r.l. recommends the use of oil for gears with "EP" additives
- Tightening the oil level filling plug: 3 daNm. max.
- Tightening the drainage plug daNm. max. oil: 1 daNm max
-

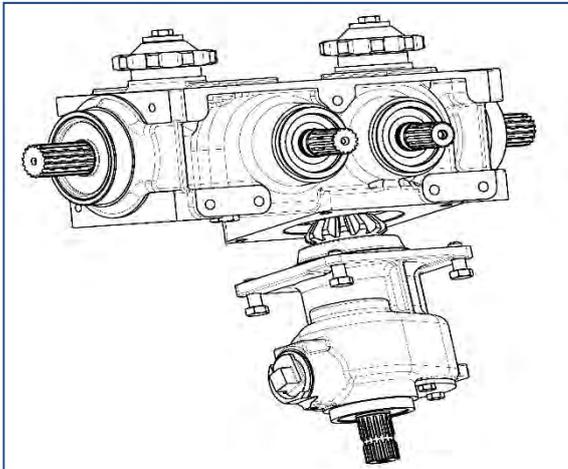
Torque limiter

Each box is fitted with a safety torque limiter. Located inside the box, it guarantees protection of the components by blocking the stalk rolls and the stalk chopper.

Caution: block the machine and eliminate the cause of the block as soon as the torque limiter is activated. Prolonged operation of the torque limiter causes it to overheat and the consequent deterioration of its performance.

Installing the stalk chopper

- Remove the closing plate
- thoroughly clean the contact surfaces
- apply silicone seal for gaskets
- assemble the stalk chopper box already greased with the product GADUS S2 V220 D2 - quantity 0.5 kg.
- Tightening of the M12 screws of the stalk chopper to 8.5÷10.9 daNm.



Use without the stalk chopper

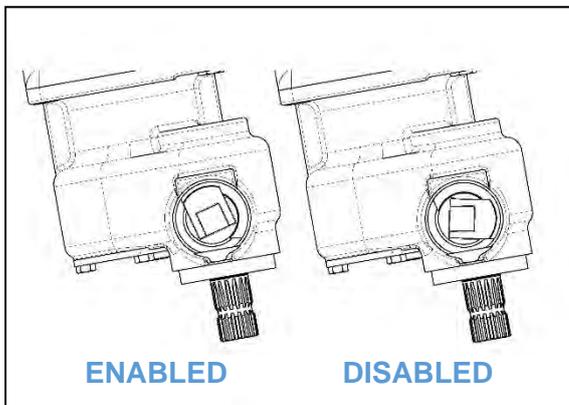
If not requested, the harvesting operations can be carried out without using the stalk chopper. The disabling must be carried out for each harvesting unit.

Disabling the stalk chopper

Turn the device in a clockwise direction using a 19-mm spanner (not supplied).

Enabling the stalk chopper

Bring the device back to its original position by rotating it in a counter clockwise direction. Make sure the stalk chopper is enabled by manually rotating the disc.



19. Residual Risks

Residual risks are all those risks or dangers that cannot be eliminated through design and/or the use of appropriate safety measures. These risks can also include not clearly visible dangers.

Example of residual risks:

- **The divider points**, since they are pointed, sharp and very dangerous in the lowered position and when raised off the ground. It is necessary to remember that the divider points are mobile and that during the opening of the folding header they move from one side to the other;
- **The harvesting chains**, since they can drag anything they manage to capture inside the machine (various objects, body parts, etc.) and crush it;
- **The stalk rolls**, since they are sharp and, by turning in opposite directions, they have a high cutting potential with violent effects on anything that gets inside them;

- **The main feed auger**, since it can drag and crush even large-sized bodies, such as people or animals. Therefore, you must never touch it or walk on top of it until you have made sure that the moving parts are stopped;
- **The header as a whole and the side folding row units (folding header)**, since they can crush any object or person that is nearby during the opening phases. The lever system area (folding) is also extremely dangerous due to the closing/opening of the frame.
- **Protection covers and divider points**, since they are resistant but are not capable of withstanding weights that exceed 150 Kg. During the work phase, they are clean, shiny, damp and slippery; therefore it is **MANDATORILY FORBIDDEN** to walk on them.

20. Maintenance: general tips

Fantini S.r.l. declines any and all responsibility in the following cases:

- the maintenance cycles described in this manual and in the enclosed documentation are not complied with;
- maintenance jobs are carried out by unqualified workers;
- the appropriate procedures are not followed;
- lubricants with characteristics that are incompatible with the prescribed ones are used;
- inadequate repairs are carried out without using original spare parts and/or suitable tools



ALL MAINTENANCE OPERATIONS MUST BE CARRIED OUT WITH THE PTO DISABLED, THE COMBINE ENGINE SWITCHED OFF AND THE IGNITION KEY REMOVED FROM THE CONTROL PANEL.

In case you need to work under the header while it is still coupled to the combine, make sure that the safety block of the lifting cylinders of the loading channel is properly inserted. Alternatively, use support systems capable of withstanding the weight of the header.



ALWAYS USE THE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE).

Please remember that the machine is potentially dangerous even when not in use: carefully read the annex on general safety.

Scheduled Maintenance	Frequency
Check the tension of the transmission chains.	8 h
Grease the main PTO drive shaft or universal joint.	8 h
Grease the transmission supports of folding headers with internal transmission	8 h
Make sure there are no oil leaks that might cause damages on asphalt roads or pollute the soil. The hydraulic oil must be checked at the beginning of each production run; it must not be foamy or contain any water.	24 h
<p>The row unit <i>gearboxes</i> contain lubricant oil type SAE 90 EP. Periodically check to make sure there are no leaks. The first oil change is recommended after 50 work hours; the subsequent ones after 600 hours and/or at least once a year. The emptying must be carried out with the machine still hot.</p> <p>Quantity:</p> <ul style="list-style-type: none"> - ROW UNIT BOX: 1.8 l - MALE/FEMALE TRANSMISSION TYPE T-304: 1 l - FEMALE TRANSMISSION TYPE T-312: 1.5 l - VARIABLE-RATIO TRANSMISSION: 2.7 / 3.2 l 	50 / 600 h

Scheduled Maintenance	Frequency
<p>Check the tension of the harvesting chains every 24 work hours. If one of the problems listed below occurs, the chains must be replaced:</p> <ul style="list-style-type: none"> - high clearance between roll and pin - extremely oxidized chains - extremely worn blocks or belts <p>The assembly of new chains must be carried out in such a way that, once the direction of the blocks is checked, they are assembled in a staggered manner: in other words, the right chain blocks positioned between the left chain blocks.</p>	24 h
<p>The harvesting chains do not usually require lubrication. However, to ensure a longer service life and easier cleaning, it is recommended to lubricate them every 24 work hours using suitable anti-dust sprays. Teflon spray.</p>	24 h
<p>On a daily basis, clean the affixed signs, the and the augers, removing any product residue. It is also possible to lubricate parts of the header using special anti-dust sprays. Teflon spray.</p>	24 h
<p>Every 24 work hours carry out the greasing of those components equipped with appropriate greasers, as well as of the joints, the drive shafts and of the clutches.</p> <p>If necessary, consult the Tables of the spare-parts catalogues; the recommended lubricant is: multi-functional lithium grease.</p>	24 h
<p>Check the oil level of the transmission boxes and of the stalk rolls (Oil type SAE 90)</p>	100 h
<ul style="list-style-type: none"> - Check the intactness of the hydraulic system piping - Check the power supply cables and the protective sheaths (on machines with electric blades adjustment) - Check the level of grease in the transmission boxes 01 of the stalk choppers. - Check the adjustment of the flutes of the cob snapping blades 04 and of the stalk choppers blades - Check the conveying points 02 - Check the level of the transmission boxes of the harvesting chains 05 	250 h
<p>Folding version: The side parts of the feed auger and of the divider points are activated by an special transmission equipped with sliding joints. Carry out a daily lubrication with lubricant oil type Teflon spray.</p> <p>This operation is carried out manually by sliding the joint back and forth a few times.</p>	Every day
<p>At the beginning of the work season, at the start of the production run change the oil in the side transmission boxes. (Oil type SAE 90)</p>	Start of production run
<p>Folding header: the lifting cylinders must be serviced at least once every two years; the servicing consists in replacing all the gaskets.</p>	At least every 2 years



A WORK SEASON CORRESPONDS ON AVERAGE TO USING THE HEADER FOR APPROXIMATELY 2000 HOURS PER YEAR.

21. Table of Recommended Maintenance Products

Product	Name
GREASE Multifunctional lithium	GREASE L2
GREASE Lithium and molybdenum disulfide	MOLYTEX EP-2
OIL Oil for hydrostatic systems	HD 46
OIL Oil for heavily loaded gears	SAE 90 EP * (ISO VG 220)
SPRAY Anti-dust Teflon spray	Teflon spray

***We recommend the use of oils with EP additives**



ANY ADJUSTMENT, CLEANING, RELEASE, ETC. MUST BE CARRIED OUT WITH THE PTO DISABLED, THE ENGINE OF THE WORKING MACHINE TURNED OFF, AND THE KEY OF THE COMBINE CONTROL PANEL REMOVED.



PLEASE REMEMBER THAT THE MACHINE IS POTENTIALLY DANGEROUS EVEN WHEN NOT IN USE: CAREFULLY READ THE ANNEX ON GENERAL SAFETY.

22. Troubleshooting Table

Problem	Cause	Solution
Blockage of some harvesting units and consequent activation of the clutches located inside the boxes	Presence of a foreign object (iron rod, stone, pole, etc.)	Remove the foreign object
	Loosening of the levelling blades or of the stalk rolls blades.	Adjust the position of the blades and restore proper tightening.
	Some material is wrapped on the stalk rolls	Remove the material from the rolls
	The clutch is no longer calibrated	Replace the pawls and/or the springs
	The safety bolt of the drive shaft is broken	Replace it with a bolt with the same resistance class
Machine blocked due to main clutch activated (on the drive shaft where foreseen)	Foreign object inside the main auger (iron rod, stone, pole, etc.), or main auger filled up with product and clogged;	Remove the foreign object
	Breaking of one of the harvesting chains, with the consequent blockage of the auger;	Repair or replace the chain
	Breaking of one of the shear bolts of the clutch;	Replace the broken shear bolt
	Malfuction or blockage of the stalk chopper (if installed)	Free the blades of the stalk chopper
	Transmission box broken internally	Repair the damaged box
The plant is not properly milked, with consequent accumulation of scrap in the auger	Cob snapping blades too narrow	Adjust the blades either manually or electrically
	The knives of the stalk rolls are blunt	Sharpen the knives
	Stalk rolls too open	Adjust the distance between the rolls
	The levelling blades do not clean the stalk rolls properly	Adjust the position of the levelling blades
The stalks are no longer chopped since the stalk choppers are not turning	Breakage of one of the tabs of the gears	Replace the tab
	Crooked blades in collision	Release or replace the blades

23. Storage

Should the machine need to be stowed or stored for a long period of time, it is recommended to proceed as follows:

- Verify the suitability of the floor/ground where the machine will be placed.
- Clean the machine with jets of compressed air;
- Remove the protective casing for a general inspection and replace any parts which are worn out;
- Remove all the chains and verify their wear conditions. Place them inside a container filled with diesel oil or used oil in order to protect them from oxidation;
- Store the machine indoors and do not expose it to atmospheric agents



IT IS RECOMMENDED TO REFRAIN FROM USING HIGH-PRESSURE WASHING PUMPS OR TO AIM THE JET AT SEALING PARTS AS THIS MAY DAMAGE THE OIL SEAL GASKETS AND OTHER PROTECTIONS.

24. Scrapping and disposal

In case the machine is dismantled, comply with the regulations in force in the country of use and, in particular, dispose of polluting materials such as oil, grease and plastic in compliance with the specific laws on the subject.

The following table contains the recycling codes of the main materials and represents a useful guide.

Part	Composition material	Codes recycling / disposal
Frame and feed augers	Electro-welded steel	
Paints	Synthetic varnish/ Polyester	
Row unit cover	High density Polyethylene	
Adapters	Steel/Cast iron	
Pinions	Steel/Cast iron	
Stretchers	Nylon/Teflon	
Chains	Steel	
Chain slides	Nylon / Wood	 

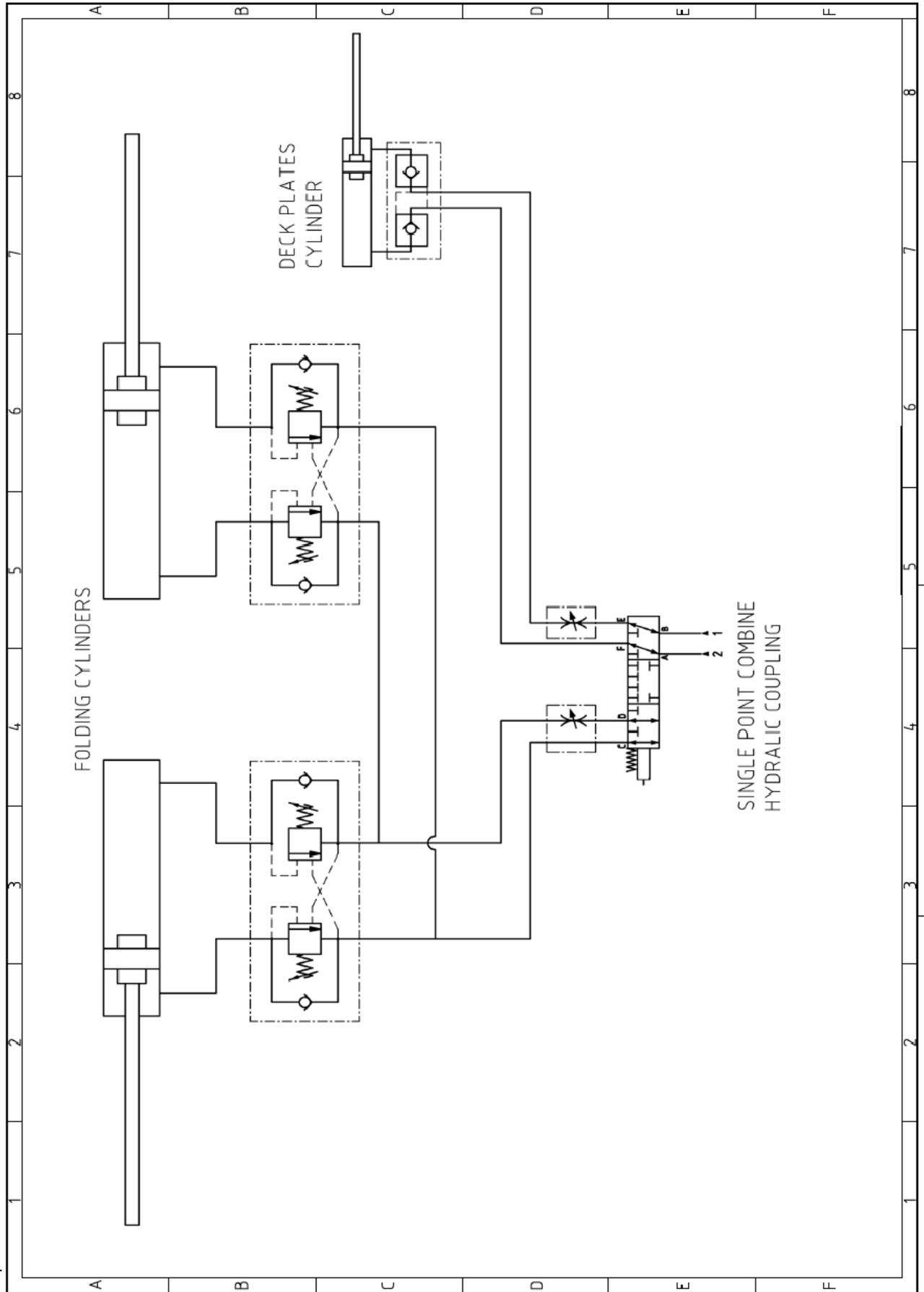
Part	Composition material	Codes recycling / disposal
Supports	Cast iron / Steel	
Bearings	Steel	
Gaskets	Rubber / Teflon	
Electric wires	Copper / Rubber	
Flexible pipes (low pressure)	Nylon	
Flexible pipes (high pressure)	Steel/Rubber	
Lights/Rear reflectors	Glass/Polycarbonate	



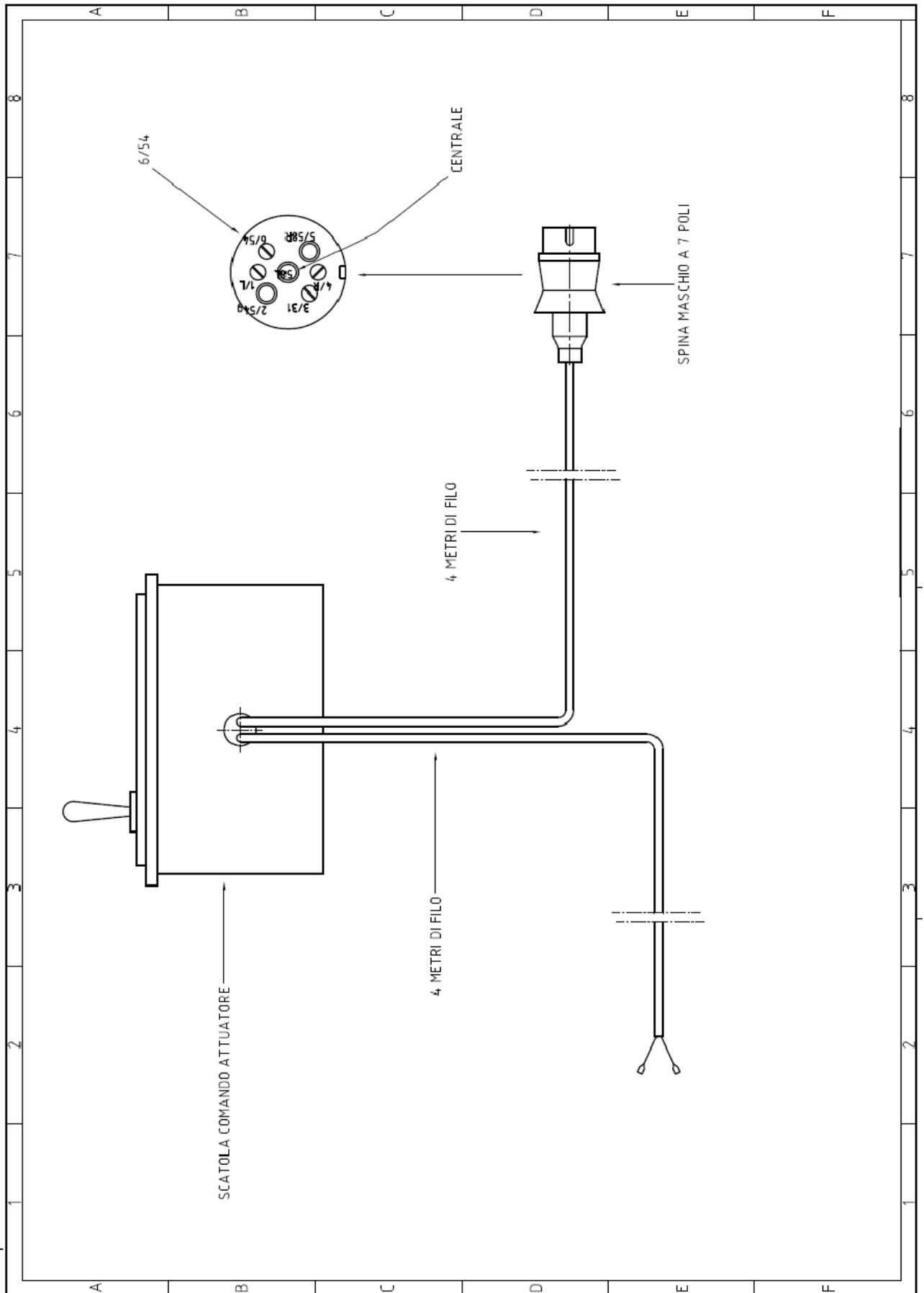
FANTINI S.R.L. SHALL BE IN NO WAY RESPONSIBLE OR INCUR ANY COSTS FOR THE DISPOSAL OF MATERIALS.

25. Diagrams

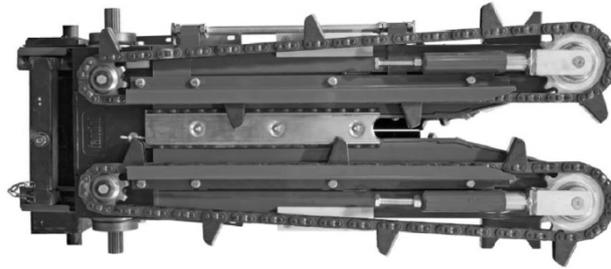
25.1. Hydraulic diagram of folding circuit with hydraulic blades



25.2. Wiring diagram of electrical blades operation



26. Annex A - Standard Kit



For each harvesting element, the kit contain the following materials

- Hex socket screw M8X30 UNI 7380 = 3 pcs
- Contact washer M8 = 3 pcs
- Cutting blade = 1 piece
- Cutting blade fixing plate = 1 piece

26.1. Assembly instructions



Adjust the cob snapping blades so that you can pass through with the Sunflower Kit



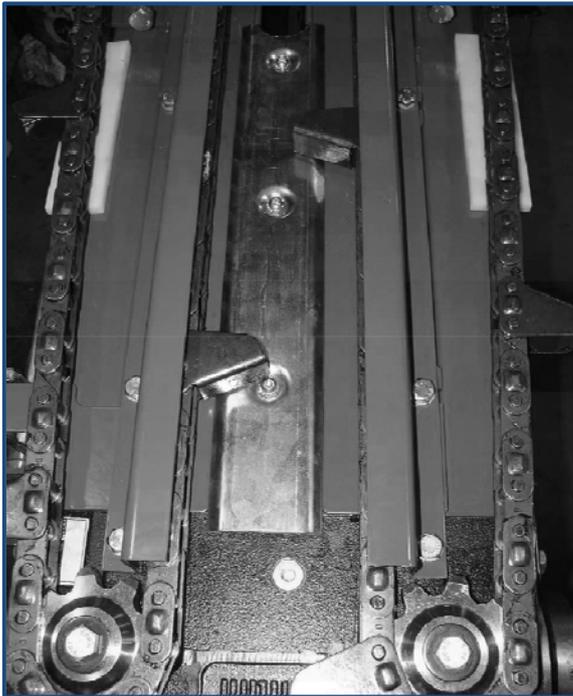
Secure the two sheet metals without tightening the screws so as to leave a gap between them



Insert the sunflower kit between the two cob snapping blades

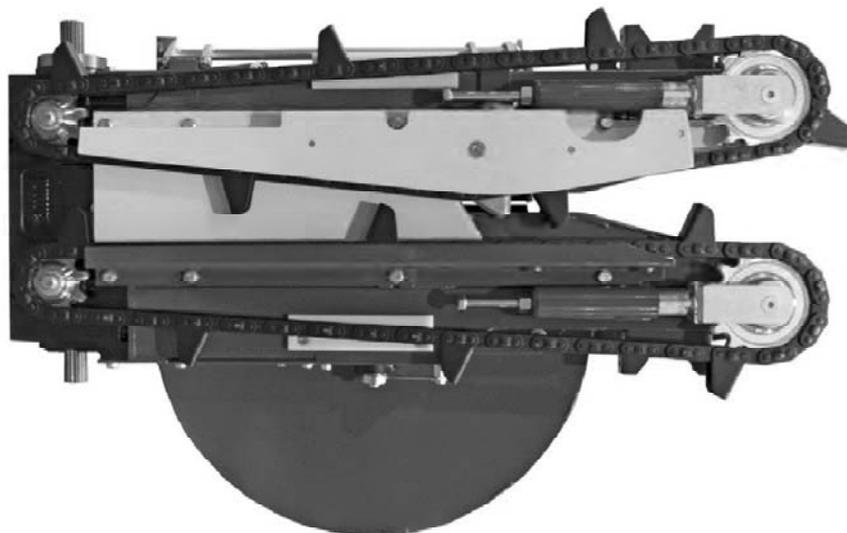


Slide the Sunflower Kit on the blades until the end of travel.



Tighten the screws.

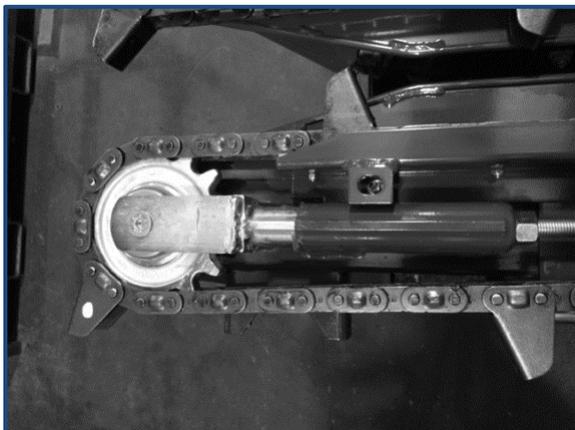
27. Annex B - Premium kit



For each harvesting element the kit, in both the RH and LH version, includes the following components:

- Shim for pusher spring 20 mm = 1
- Shims for M10 screws 8.5 mm = 3
- Hex head screw 10x25 = 1
- Washer for M10 screw = 1
- Plate for assembly of iron covers = 1
- Plate for assembly of side covers = 1

27.1. Assembly instructions



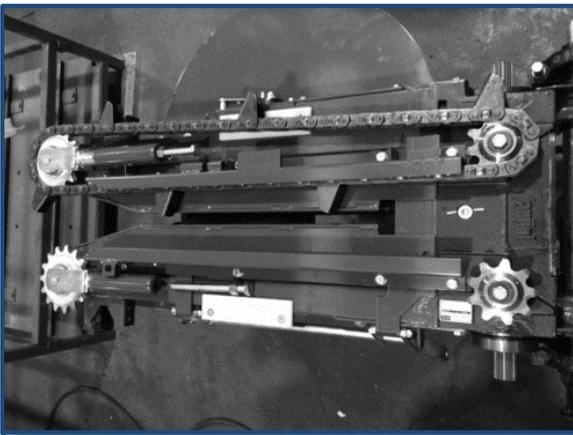
1- PREPARATION

Prior to starting the assembly, it is recommended to mark the position of the chain in order to maintain the phase

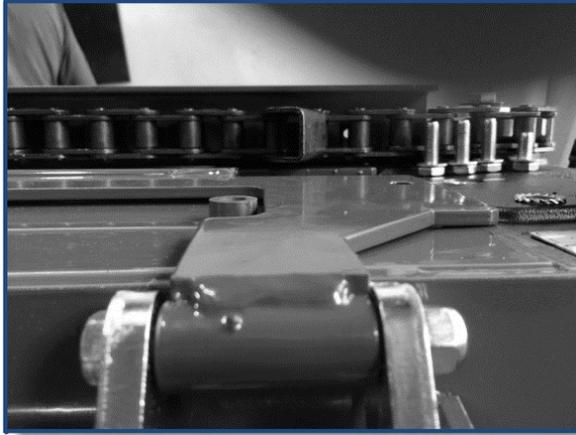


2- REMOVING THE HARVESTING CHAIN

Remove the pusher tension screw and pull out the chain



Disassemble the Z-shaped iron



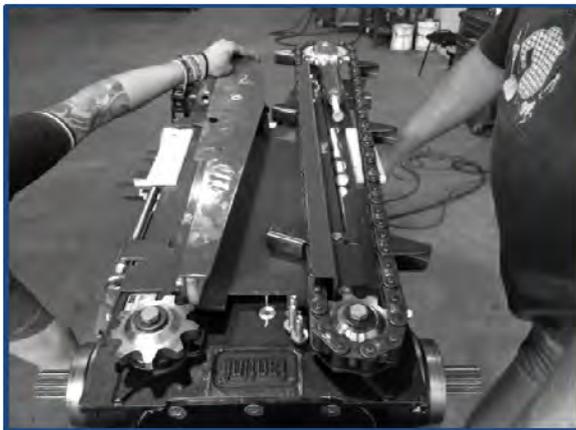
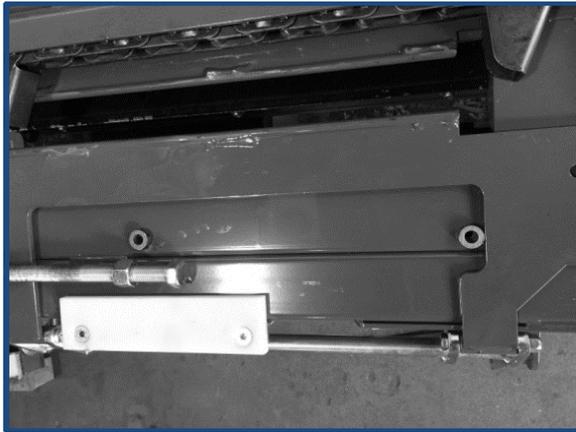
3-ASSEMBLY

Replace the various shims, positioned under the Z-shaped iron (LH side), with the 8.5-mm shims supplied as standard equipment.

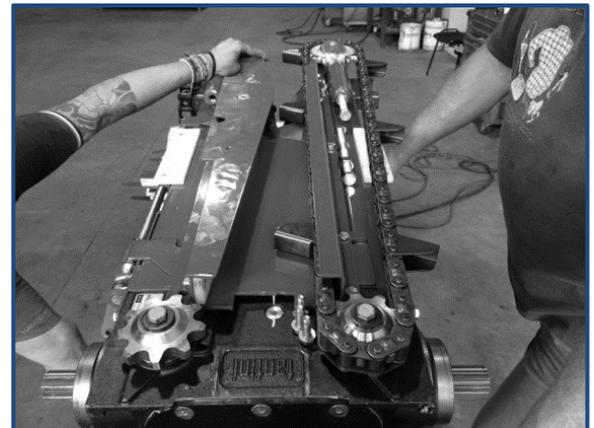
Replace the washer DIN 6798. under the last screw of the box with the washer for M10 supplied as standard equipment.

Position and screw in the Kit

Replace the fixing screw on the box with the longer hex head screw 10x25 supplied as standard equipment.

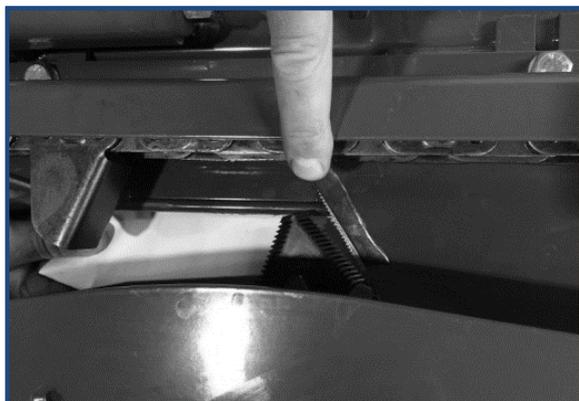


LH



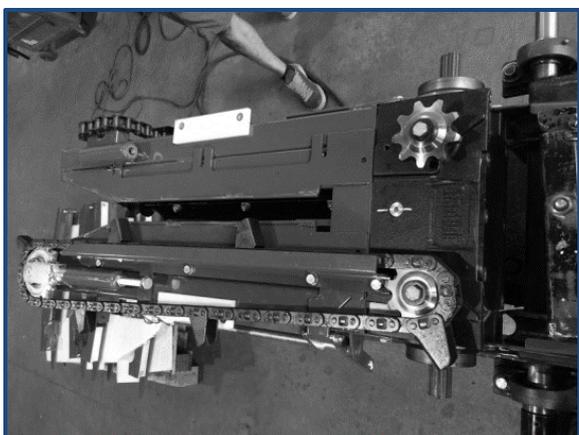
SIDE KIT

Loosen the screws of the Z-shaped iron on the RH side and position the cob snapping lade blade flush with the cutting section, as shown in the picture.



RH SIDE KIT

Open the left cob snapping blade until the end of its travel



Open the right cob snapping blade until the end of its travel

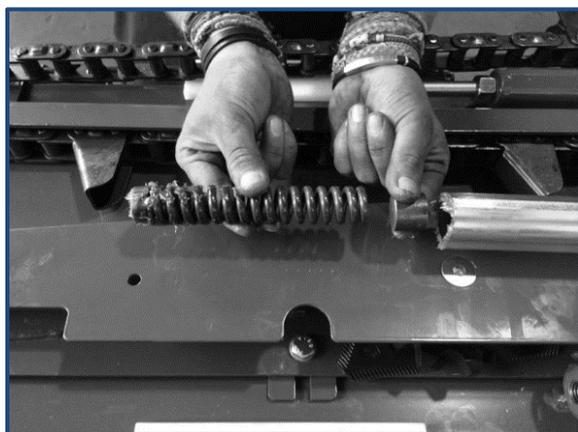
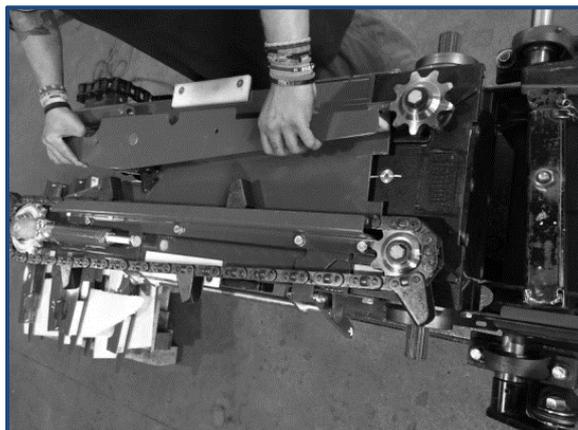


If necessary, cut the right cob snapping blade as shown in the picture



Position and screw in the Kit

Replace the fixing screw on the box with the longer hex head screw 10x25 supplied as standard equipment.



4 - REASSEMBLING THE HARVESTING CHAIN

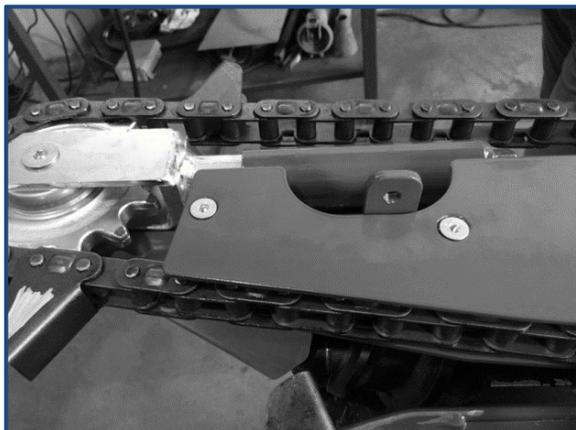
Remove the spring and insert the 20-mm shim supplied as standard equipment



Remove the chain (in the marked phase)



Tighten the pusher up to a measure of 115 mm, see picture.



5 - ASSEMBLY OF VARIABLE PARTS

Assembly for it in RH and LH position



Assembly for RH or LH kits with metal covers

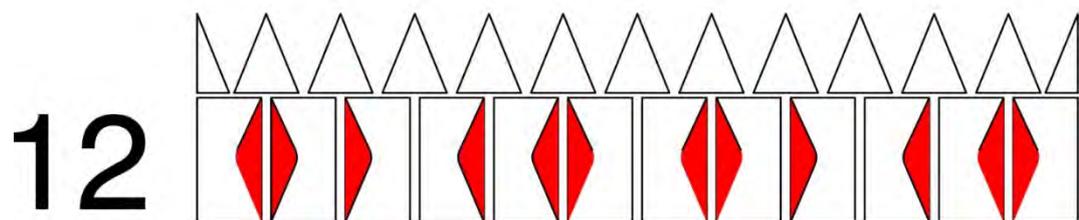
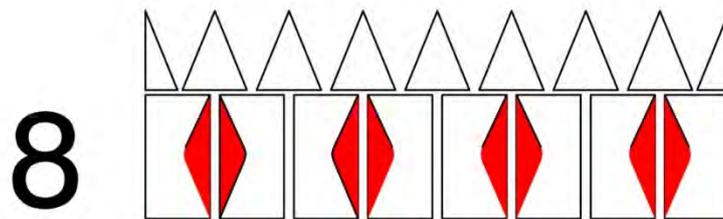
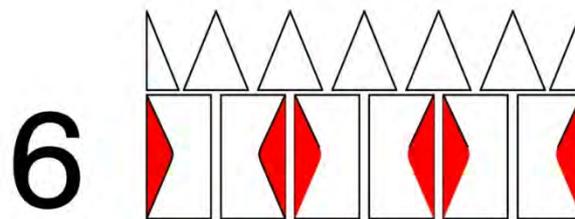
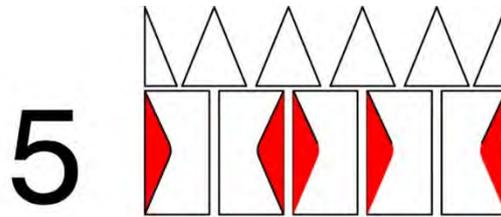


Assembly for RH or LH kits with plastic covers

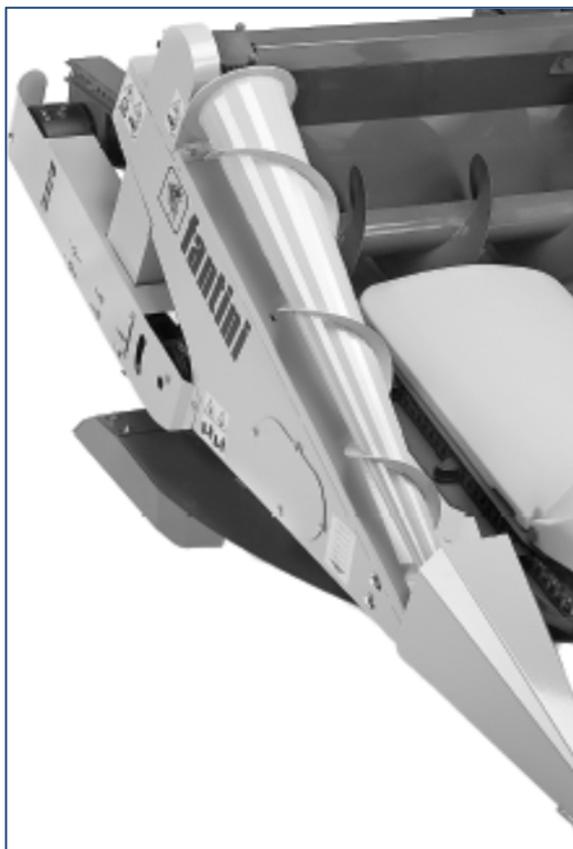


IT IS RECOMMENDED TO CHECK THE ASSEMBLY BY MANUALLY ROTATING OR STARTING VERY SLOWLY THE HEADER.

27.2. Assembly diagram on the rows for fixed and folding headers



28. Annex C - Side Augers Kit

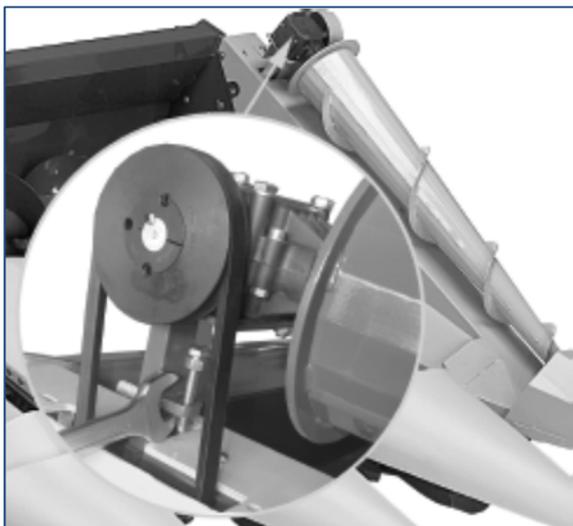


Tapered side auger - single or double

Thanks to an intervention point that is very close to the ground and to a low penetration angle, it is crucial when harvesting laid down product.

The belt drive, in addition to operating the auger in a regular and continuous manner, makes the application simple, light and long-lasting.

It can also be supplied in a kit and easily assembled by unskilled personnel.



Side auger – Belt adjustment

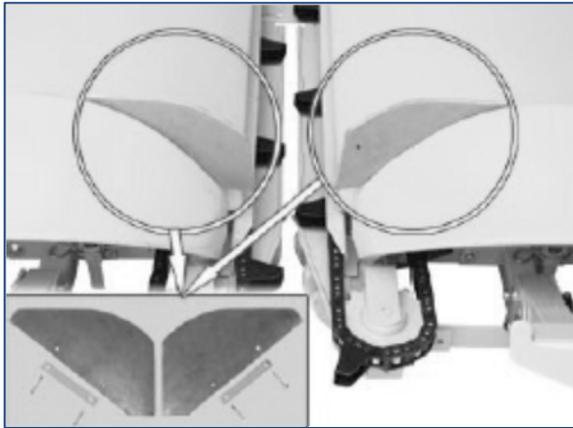
The easy access makes it possible to adjust the belt in the field as well.



Liftable side auger

The side cover can be easily lifted in order to facilitate maintenance and cleaning of the header.

29. Annex D – Kit of Rubbers



This Kit, easily installed on the front part of the covers, avoids the cobs. It is particularly suited for the threshing of hilly fields where threshing machine also has to work downhill.

30. Annex E – Compacting plates



The two plates can be installed on the headers equipped with stalk choppers in order to avoid wearing down the threshing machine tyres. Without the plates, the chopped corn stalk, since it is hard and pointed, can wear down and break the tyre.

They are not used when the threshing machine tyres travel between two rows of corn.

GENERAL SAFETY MANUAL

CORN HEADER

Table of Contents

Introduction	66
A. General Concepts.....	66
B. Description and operation.....	66
C. Safe use - General precautions.....	66
D. Operations to be carried out and risk assessment	68
D.1. Preparing the header	68
D.2. Adjustments.....	71
D.3. Using the header in the field.....	71
D.4. Arrangement for road circulation and transport	72
D.5. Cleaning and maintenance	74
E. Standard requirements	75
E.1. CE marking.....	75
E.2. ID Plate.....	76
E.3. Pictorials	76
E.4. Adhesive labels positioning diagram	79
E.5. Use and Maintenance Instruction Manual.....	80
E.6. EC Declaration of Conformity	80
E.7. Reference standards	82

Introduction

This document contains information about technical aspects and safety requirements pertaining to corn headers.

A. General Concepts

The corn headers made by Fantini S.r.l. are designed to be coupled to any make of combine by means of a special kit.

B. Description and operation

The combines, self-propelled machines exclusively used for agricultural jobs, are moving harvesters intended for grain crops.

The corn header made by **Fantini S.r.l.** does not work independently, in other words its use is subject to coupling to a combine, from which it receives motion and all commands.

The header must be used in a way that complies with its capabilities (see chapter 11 - Technical Specifications - of the Use and Maintenance Manual).

C. Safe use - General precautions

Due to their dangerousness, the machines must be driven exclusively by skilled and duly trained personnel.

During machine use, you need to comply with all provision on worker health and safety contained in the Consolidated Law 81/08.

Before starting any operation on the header, Fantini S.r.l. vividly suggest to consult the Use and Maintenance Instruction Manual and to strictly comply with the guidelines provided.

Fantini S.r.l. also recommend to pay attention to the safety warning images and pictorials placed on the header in the vicinity of residual risks.

Table 1 describes general precautions that must be observed while operating with a corn header.

Table 1 - General precautions
When the header is delivered, verify that it is in perfect conditions and that it has not been damaged during transport. Should any unpleasant event have occurred, contact the manufacturer or the local distributor immediately.
Do not remove, modify or tamper with parts of the header for any reason whatsoever. Read this manual carefully before any operation on the machine.
Before using the header, make sure that all protection devices are properly placed and in good conditions. Should the protections be damaged, replace them immediately, as described in the Instructions Manual. Alternatively, contact your local distributor.
Use original spare-parts only.
Before using the header, familiarize yourself with the control devices and their functions.
Before driving on public roads, double-check that the header complies with the provisions of the traffic code.
Wear suitable clothing, for example garments that cannot become entangled in moving parts. Wear also personal protective equipments (PPE) prescribed by the manufacturer.
Keep people and animals away from the manoeuvring and work area.
Prohibit any parking of vehicles or means within the range of motion of the machine while it is working, and make sure that everyone keeps at a safe distance.
Keep the header clean and remove any foreign material (debris, soil, oil residue, etc) as these may damage its functioning.
Before operating on the moving parts of the header, stop the engine of the combine, remove the key from the control panel and check the stability of the equipment.
It is strictly forbidden to transport people, animals or goods on the header.
Periodically check the proper tightening of all screws and nuts. If necessary, arrange for their replacement. Carry out regular maintenance and, if necessary, replace the stickers concerning safety (pictorials). See the specific paragraph (page 53)

D. Operations to be carried out and risk assessment

The machine utilisation phases are described here below, along with the possible risks and the relative preventive measures.

Machine utilisation phases

- Preparing the machine:
 - Coupling to the combine
 - Connection of the motion transmission
 - Detachment of the machine
- Adjustments
- Using the header in the field;
- Handling and transport
- Cleaning and maintenance

D.1. Preparing the header

D.1.1. Coupling to the combine

The corn header is adapted to the combine by means of the specific coupling kit.

Verify the blocking of the coupling kit.

Risks	Directives	Solutions
Crushing during the attachment caused by instability of the header.	Consolidated Law 81/08 Machinery Directive 2006/42/EC ISO 11684:1995	The header must be installed in order to avoid rocking or vibrations, that may harm the stability of the combine-header. Operate with the PTO disabled, the engine switched off and ignition key removed from the combine control panel. Equip the header with suitable warning signs affixed in the vicinity of the dangerous areas. Use suitable PPE. Operate according to the indications provided in the instructions manual.
	UNI EN 4254 - 1 Machinery Directive 2006/42/EC	The header is equipped with appropriate lock devices to avoid overturning and sudden unexpected movements during the attachment. The device must be assembled so as to secure the header to the combine.

Risks	Directives	Solutions
Risks resulting from hydraulic systems	Machinery Directive 2006/42/EC UNI EN 4413:2012	The electric and hydraulic couplings of the header and the oil collector of the combine are equipped with an identification code in order to avoid any mistake or confusion during the connection.
		All branches of the hydraulic circuit are protected by means of safety valves. No leak (internal or external) can give rise to a hazard. The system is designed and constructed in such a way to make components accessible and to allow adjustment operations to be carried out in safety conditions.
		The hydraulic systems possess the required resistance and suitability for their intended use.
		The hydraulic pipes are protected in order to avoid spills in case of break. The header is equipped with appropriate devices, to support all the hydraulic pipes, when it is not attached to a self-propelled vehicle.

D.1.2. Connection to the motion transmission

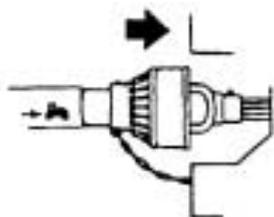
The combine-header motion transmission takes place with the use of a PTO drive shaft connected to the power take-off.

The PTO drive shaft (provided with CE marking and EC declaration of conformity) must be correctly fixed to the power take-off (one side of the face bolt must face the header, the other side must face the combine).

Moreover:

- Retention devices (chains) must be attached at the appropriate places in order to avoid rotation of the protections (fig. 2);
- while working, the telescopic pipes should overlap for at least 1/3 of their length (fig. 3);
- the coupling angles must stay within the values provided by the manufacturer.

In any case, the drive shaft must be suited to the combine/header coupling. All operations on the drive shaft must be carried out in compliance with the indications contained in the instructions manual.



Risks	Directives	Solutions
Entanglement, dragging, wrapping caused by incomplete PTO drive shaft protection.	Machinery Directive 2006/42/EC UNI EN 5674 UNI EN 4254-1	Assemble suitable casings and protections along the entire length of the shaft and of the universal joints.
		Blocking and guards/protective devices must be in good conditions.
		The guard on the header side must overlap the guard of the PTO drive shaft (off-centre) for at least 50 mm, in order to avoid contact with moving parts. The header must be equipped with appropriate coupling devices to avoid the rotation of PTO drive shaft. When the header is not coupled to the combine, it must be equipped with a support for the PTO drive shaft (this support cannot be the coupling point mentioned above).

D.1.3. Detachment of the machine

The detachment of the header from the combine, should be performed placing the machine on a compact, flat surface with the power off and the exit openings closed.

Risks	Directives	Solutions
Crushing during detachment caused by instability of the header. Entrapment between header and combine.	Consolidated Law 81/08 Machinery Directive 2006/42/EC UNI EN 4254	If necessary, provide the header with appropriate supports in order to avoid the overturning. Except for the wheels, the support devices must limit the contact pressure with the ground to 400 kPa (maximum).
		The machine is specifically designed to stay stable (when not attached to a combine), on a hard surface with an inclination of about 8.5° in all directions.
		The header is equipped with appropriate safety warning labels positioned in the vicinity of hazard zones. Comply with the directions given in the instruction manual.

D.2. Adjustments

The header can be adjusted manually from the ground or automatically from the driver seat.

When the adjustments are performed manually, comply with the following directives.

Risks	Directives	Solutions
Crushing, entrapment between header and combine due to a fall or movement of the machine.	Consolidated Law 81/08	Operate with the engine turned off and the control panel key removed from the combine. Equip the header with suitable warning signs affixed in the vicinity of the dangerous areas. Use suitable PPE. Equip the machine with an instructions manual and operate as prescribed in said manual. All controls must be clearly visible, identifiable and, if necessary, bearing a suitable marking. They also have to be conveniently placed outside of hazard zones.
	Machinery Directive 2006/42/EC	
	ISO 11684:1995	

D.3. Using the header in the field

During use, the sunflower header may be subject to different types of risk. Table 2 shows some precautions to adopt in the different working phases.

Table 2 - Precautions to adopt in the working phases
Proceed with cautions during transfers, in particular on uneven ground.
Should unusual bumps or vibrations occur, stop the combine immediately and search for the cause.
Make sure there are no one standing around the machine or in its vicinity. Pay particular attention to young children and pets. It is recommended that third persons stay some tens of meters away from the header.
Before switching on the combine engine, ensure that all the protections are properly positioned in their intended places.
Choose a suitable operating speed that suits ground condition and that is in conformity with the directions given in the instruction manual.
The dust generated from the use of the header may cause breathing difficulties to the operator. It is strictly recommended to keep cab doors and windows closed while working. In the absence of the cab, it is recommended to adopt respirator masks and adequate clothing able to cover the body as much as possible in order to avoid skin rashes.
Sunflower plants may reach considerable heights. While working, pay special attention to the possible presence of people and pets.
In case of engine flooding, proceed with repair operations ensuring that the engine is switched off.

D.3.1. Protection against accidental contact with tools

Before starting to work, replace in their original position the protections that have been removed.

Operators should wear suitable protective clothing (not resistant or swirling), such as tight working coveralls with elastic at wrist and ankle.

Risks	Directives	Solutions
Crushing, shearing or entrapment caused by contact with moving parts.	Consolidated Law 81/08 Machinery Directive 2006/42/EC UNI EN 12100 UNI EN 14121	<p>The moving parts of the machinery must be designed and constructed in such a way as to prevent risks of contact which could lead to accidents. Where risks persist, the moving parts must be fitted with guards or protective devices.</p> <p>Any residual risk is adequately shown by pictorials.</p>

D.3.2. Hurling of materials

During use, the corn header may accidentally hurl material.

Risks	Directives	Solutions
Hazardous objects projected in the direction of the operator's work area.	Consolidated Law 81/08 ISO 11684:1995 Machinery Directive 2006/42/EC	<p>The combine must be equipped with proper shields or protective devices to protect workers and operators against the risk of being hit.</p> <p>The corn header is equipped with appropriate pictorials to remind the operators on the ground to keep an adequate safe distance</p>

D.4. Arrangement for road circulation and transport

According to the Traffic Code, corn headers are considered an integral part of the combine. For any further information about road circulation and use of the combine under conditions of safety, please refer to specific directives on the subject.

The rules of behaviour to follow on public roads are obviously the same ones prescribed for all vehicles; it is also advisable to comply with said rules even when travelling inside the farms.

The combine with header is a complex vehicle subject to significant oscillations and jolts that can be a cause of hazards, especially during bends and when travelling on narrow roads.

Even the folding headers, when folded, may stick out of the roadway.

When the header is coupled to the combine, it may alter its stability and cause difficulties while driving and during the work phases.

Therefore, it is crucial to carefully comply with the following basic cautionary rules:

- Before starting any operation, verify the blocking of the header transported by the combine harvester;
- In order to facilitate their transport, folding headers must be equipped with mechanical and/or hydraulic clamping devices, removable guards and panels used to indicate lateral footprints in order to allow it to be transported;
- Transporting the machine with no driver visibility is only allowed if duly guided by assisting personnel on the ground that provide information about the itinerary;
- Pay attention to warning signs and comply with their indications;
- Reduce the speed:
 - in proximity of crossings, private driveways, entrances to public premises, railway and pedestrian crossings
 - when turning, especially with blind corner
 - along ramps or gangways
 - with wet or poor adherence roads
 - when the ground is irregular, with hollows, holes, obstacles or significant slopes.

Risks	Directives	Solutions
Crushing caused by moving parts of the machine.	Consolidated Law 81/08 UNI EN 4254 Machinery Directive 2006/42/EC	The mechanism and the operating parts of the header must be protected or equipped with safety devices.
		Stabilizers or similar devices must be possibly blocked in the transport position. The driver/operator should be able to visually check if the stabilizers are in the transport position.
		Moving parts of folding headers stop automatically in case of breakage of hydraulic items.

D.5. Cleaning and maintenance

Cleaning and maintenance operations include the removal of processing residue, the greasing of moving parts, etc.

These operations must be carried out according to the indications provided in the instructions manual. When required, use personal protection equipment (shoes, gloves, etc.)

During long periods of non-use, it is recommended to park and store the header in an indoor and dry area. Position the machine on a flat surface and use the special support “foot”.

Table 3 shows the main safety precautions to adopt during cleaning and maintenance operations, as well as during the other utilisation phases of the header.

Table 3 - Precautions to be adopted during cleaning and maintenance operations
To carry out any operation, operators should wear suitable protective close-fitting clothing. Never wear dangling items such as scarves or bracelets.
Avoid clothes that can easily get entangled in juts or in moving parts.
Keep the working area clean, dry and free from burdens in order to guarantee complete freedom of movement to the maintenance operator. Use appropriate means (crane, jack) to lift parts of the header. Keep in mind that an operator can lift or move manually a weight of 30 kg maximum.
As concerns operations on the hydraulic circuits, make sure that the system is not under pressure. In case of an operation aimed at detecting possible leaks with the system under pressure, use suitable personal protective equipment such as shields, glasses, gloves.
In case of grease or oil dispersal, collect it by using special absorbing materials and store them in suitable containers pending their disposal.
After a long period of inactivity of the machine, make sure that the safety devices have been properly inserted. Reassemble the safety devices that have been removed for warehousing purposes.
WARNING: in order to avoid damages to the plastic and/or metallic guards of the bearings, refrain from using high pressure pumps (cleaners) to clean the header.

Below is a list of the main risks related to cleaning and maintenance operations.

Risks	Directives	Solutions
Risks arising from maintenance operations.	<p>Consolidated Law 81/08</p> <p>ISO 11684:1995</p> <p>UNI EN 4254</p>	<p>It is forbidden to carry out any repairs or adjustments of moving parts. Workers must be informed of the above by means of clearly visible warning signs. Any repair and maintenance operation should be carried out with the machine power and engine switched off. Use appropriate personal protective equipments (PPE).</p>
	<p>Machinery Directive 2006/42/EC</p>	<p>For safety reasons, carry out repair and maintenance jobs of parts located underneath the header, by using mechanical supports or other clamping devices in order to avoid any sudden and unintentional falls of the machine.</p>

E. Standard requirements

The CE marking is required for all companies that wish to market their products in Europe: it is a mandatory certificate of conformity for all products governed by European Directives and intended for the European Community market.

The CE marking is a certificate of conformity to strict European regulations on the subject of safety, the requirements of which are binding for all products placed on the market within the EU.

The Machinery Directive 2006/42/EC governs the safety of machines and machinery in Europe and covers all kinds of systems, including moving systems and consequently plants, machines for handling people and safety components.

E.1. CE marking



The CE marking guarantees that the machines were built in compliance with Machinery Directive 2006/42/EC and related standards.

E.2. ID Plate

Corn headers must be equipped with ID plates. The marking must comply with the provisions of standard EN 12100-2010. The identification plate of the machine has to indicate the following information in a visible, legible and indelible manner:

- Manufacturer's name and address;
- Year of manufacture;
- Machine type and series;
- Serial number, if any;

The above mentioned information, except for the serial number, must also be provided in the instruction manual of the header.

E.3. Pictorials

Moreover, the headers must be equipped with warning signals near any dangerous points, for the purpose of drawing the operator's attention to residual risks.

These warnings should draw the operator's attention to the following aspects: Risks caused by the rotation of tools during work;

- Risks caused by the rotation of tools during work;
- Risks caused by the projection of objects from the combine harvester;
- Risks caused by switching the header from the transport position to the work position and vice versa.
-

Below are the pictorials (ISO 11684) affixed to the header.

	<p>Carefully read and comply with the indications contained in the operating and maintenance manual provided by the manufacturer and carry out routine maintenance.</p>
	<p>Risk of entanglement and dragging. Do not use PTO drive shaft or power take-off without guards or with guards kept in bad condition. Respect the sense of rotation and the number of revolutions.</p>

	<p>Risk of pinching between fixed and moving parts of the header.</p> <p>Risk of pinching in the augers mechanism.</p>		<p>Be careful when dealing with inertia of moving components.</p> <p>In case you need to work on the machine, the augers must be stopped, the engine switched off and the ignition key removed.</p>
	<p>Risk of crashing caused by fall of parts lifted off the floor.</p> <p>During maintenance stay clear of the lifted header if hinge fixing devices are not installed.</p>		<p>Remove the ignition key and read the use and maintenance manual prior to working on the machine.</p>
	<p>Risk of projected fluids under pressure</p> <p>Carry out ordinary maintenance and replacement of hydraulic pipes, according to the directions given in use and maintenance manual.</p>		<p>Risk of contact between feet and sharp rotating parts.</p> <p>Keep a sufficient safety</p>
	<p>Risk of dragging and contact with transmission belts and gears.</p> <p>Do not remove the guards or the protections. Restore them once the adjustment and maintenance operations are finished.</p>		<p>Risk of dragging and contact with transmission belts and gears.</p> <p>Do not remove casings and shields; recondition them after adjustments and maintenance.</p>

	<p>Risk of crushing during coupling and release phases of tools or parts of machines.</p> <p>Avoid standing in the connection area.</p>
---	---

	<p>Risk of gripping and/or dragging caused by motion transmission parts.</p>
--	--

	<p>General risk of falling and/or slipping.</p>
--	---

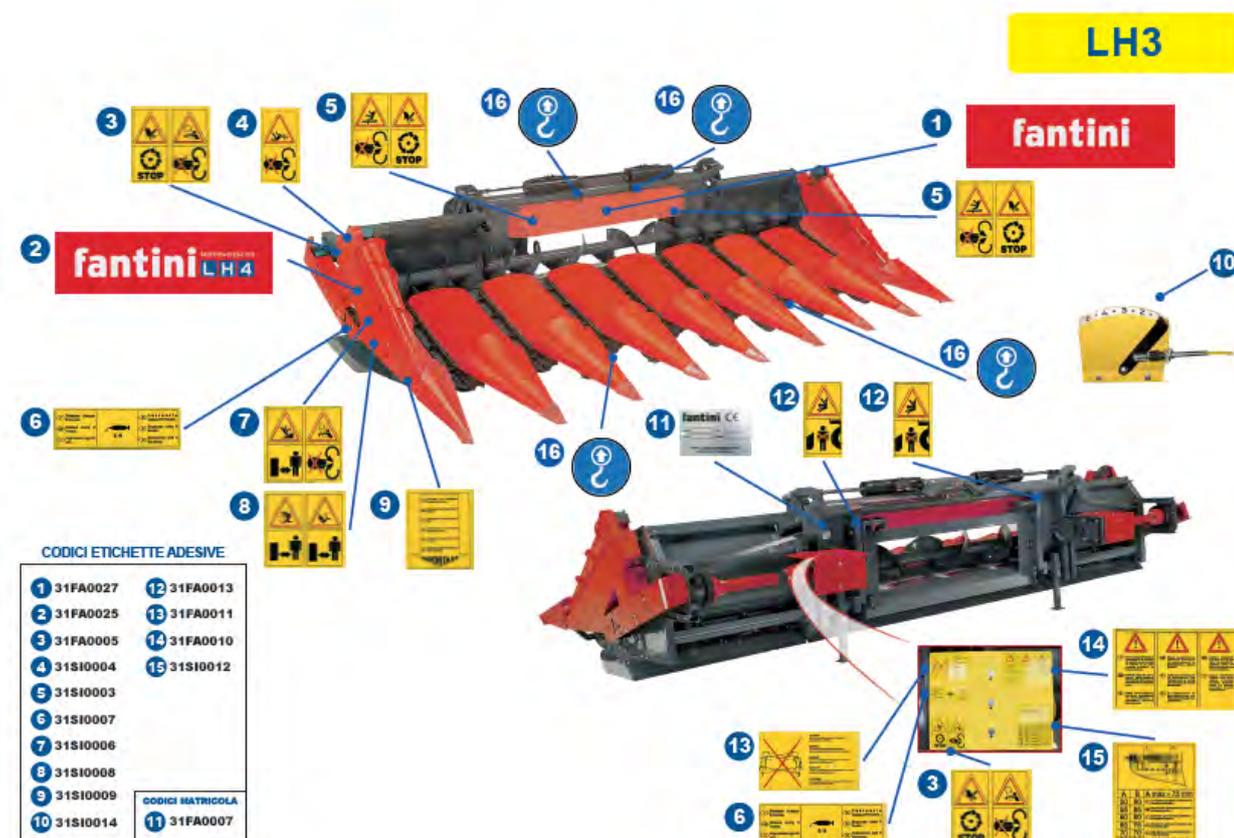
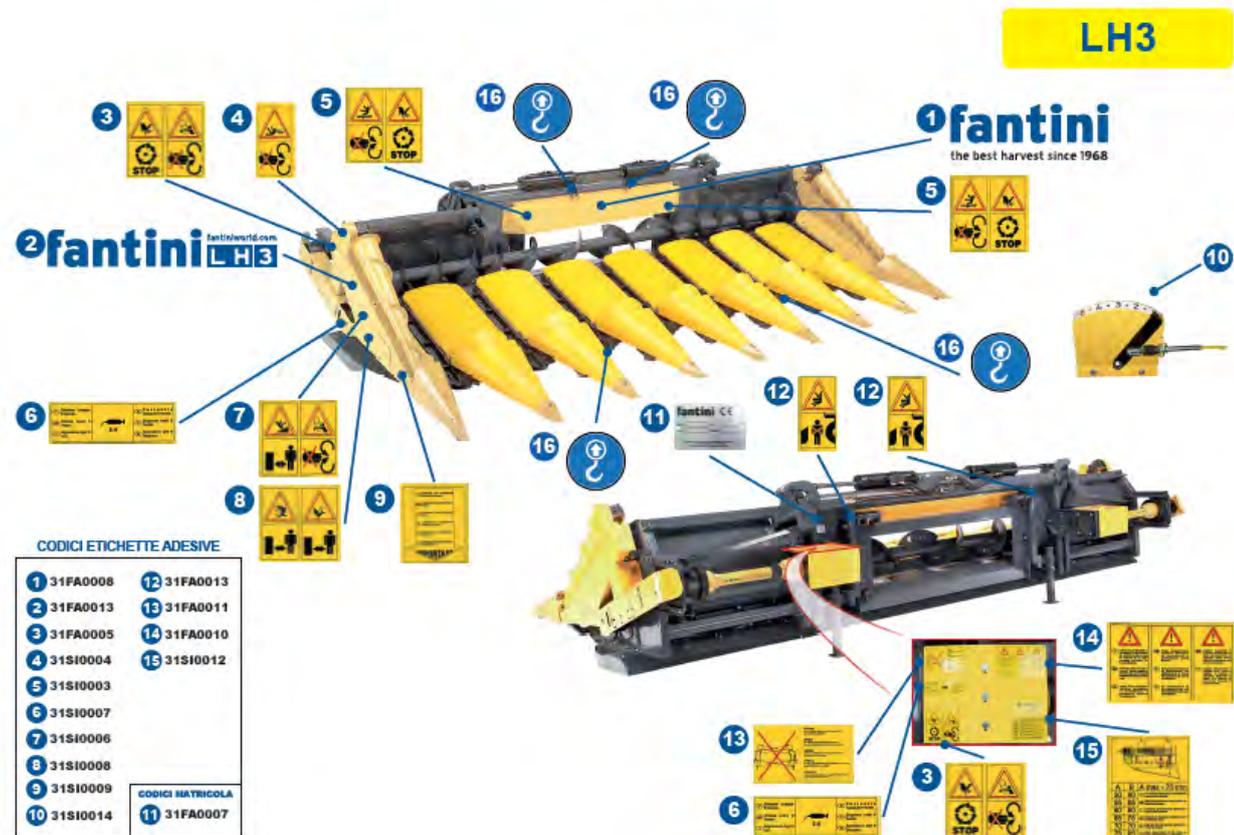
	<p>Risk of gripping and/or dragging caused by motion transmission parts.</p>
---	--

	<p>Risk of hazardous flying objects.</p> <p>Keep a sufficient safety distance. Keep machine guards in good state.</p>
---	---

Personal Protection Equipment (PPE) pictorials

					
<p>Body protection must be worn</p>	<p>Hand protection must be worn</p>	<p>Footwear protection must be worn</p>	<p>Hearing protection must be worn</p>	<p>Hard hat protection must be worn</p>	<p>Respirator must be worn (in case that combine cab has no protection)</p>

E.4. Adhesive labels positioning diagram



E.5. Use and Maintenance Instruction Manual

The Use and Maintenance Instruction Manual must provide exhaustive information about ordinary maintenance operations and use of the header in safety conditions (Italian Consolidated Law 81/08; UNI EN 4254). It also covers the following aspects:

- Risks arising from combining or assembling different equipments;
- Requirement to mount alternative guards when the usual protection devices are removed;
- Instructions on proper combine/header connection;
- Requirement to use a PTO drive shaft equipped with a guard in good conditions;
- Risks arising from tool rotation;
- Risks arising from material being projected by the machine;
- Risks arising from the inertial rotation of tools after switching off the combine power;
- Prohibition to climb on the header while it is working or during its transport;
- Requirement to make sure that all people keep at a safe distance;
- Risk arising from working under a header that has not been properly secured;
- Requirement to switch off the engine of the combine before starting any adjustment, maintenance and cleaning operation;
- Risk arising from the possible ejection of worn or damaged knives;
- Need to provide detailed information on the method and frequency for tool replacements, along with details about the products that must be used;
- Instructions relating to adjustment and checks of the work modes;
- Instructions on how to park the header properly so as to ensure its stability.
-

E.6. EC Declaration of Conformity

By means of EC - Declaration of Conformity, the manufacturer or his authorized representative, established within the Community, declares that the header complies with EC regulations in terms of safety standards and operators health requirements prescribed by the Directive 2006/42/CE. In addition to the Manufacturer's identifying data, this document must also contain provisions with which the machine complies.

The CE declaration of conformity must be delivered to the customer along with the machine, and must accompany it for its entire service life.

Below is a sample of the document:



EC Declaration in conformity with the directive 2006/42/CE

Medole,

We,

FANTINI S.r.l.

Office: Via Brigoni, 2/4/6 46046 MEDOLE(MN) - Italia

Tel.: 0376868202 - Fax: 0376899004

Reg. Business: n°01519320202 - Court of Mantova

Reg. Firm: n° 164241 - C.C.I.A.A. (Chamber of Commerce, Industry, Artisanry and Agriculture) of Mantova

Tax code and VAT n° 01519320202

We hereby declare that the machine with serial number

Serial NR.

Model:

Trade name: Fantini

Product description:

Authorized person to compile the relevant technical record: Mr Nicola Bonacini, Via Brigoni, 2/4/6 - 46046 MEDOLE (MN) - Italia.

meets the 'ESSENTIAL HEALTH AND SAFETY REQUIREMENTS' of EC Directive 2006/42.

In order to guarantee correct interpretation of the 'ESSENTIAL HEALTH AND SAFETY REQUIREMENTS' of the EC Directives, we observed the following standards:

UNI EN 12100:2010: Safety of machinery - General principles for design

UNI EN 14121-2:2013: Safety Of Machinery - Risk Assessment

UNI EN 4413:2012: Hydraulic Fluid Power - General Rules And Safety Requirements For Systems And Their Components

UNI EN 349/2008: Safety of machinery. Minimum gaps to avoid crushing of parts of the human body

UNI EN 13857/2008: Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs

UNI EN ISO 4254-7:2010: Agricultural Machinery

The machine is not manufactured to function alone, but must be attached to a combine harvester or a forage harvester from which it will be operated.

It is prohibited to start the machine before the machine to which it is attached has been declared to be in accordance to the 2006/42/CE.

FANTINI S.r.l.
C.E.O.
NICOLA BONACINI

E.7. Reference standards

- Consolidated Law 81/08; 106/09 as subsequently amended and supplemented "Consolidated Law on workplace safety".
- Machine Directive 2006/42/EC: it establishes the basis requirements for machine manufacturers, concerning safety of the products placed on the market.
- ISO 11684:1995: Pictorials for operator safety and protection.
- UNI EN 4254: Agricultural machinery "Safety".
- UNI EN 4413: Hydraulic fluid powers. Safety requirements for systems and their parts.
- UNI EN 5674: PTO drive shaft protections.
- UNI EN 12100: Safety of machinery.
- UNI EN 14121: Safety of machinery.

fantini

the best harvest since 1968

FANTINI NORTH AMERICA

15526 90th Street NE

Drayton, ND 58225

P 1-800-454-3875

fantinina@hamiltonsystemsinc.com

www.fantina.com