

IDENTIFICATION

Owner:

.....

Adrees

.....

City

Machine Model

Serial Number

Manufacturing Year

Invoice N°

Date / /

Authorized Dealer



WARRANTY CERTIFICATE

1. JUSTINO DE MORAIS, IRMÃOS S/A – JUMIL, guarantees the agricultural equipments and its respective parts, of its manufacturing, hereinafter simply denominated **PRODUCT**, are free of workmanship defects, as in its construction as in the material quality.

2. The questions which are related to the Warranty Grant are ruled as per the following principles:

2.1. The constant warranty of this certificate will be valid:

a) By the 6 (six) months time counting from the date of the effective **PRODUCT** delivery to the agriculturist consumer;

b) Only for the **PRODUCT** that will be acquired, new, by the agriculturist consumer, directly from the Dealer or **JUMIL'S** Dealer, reserved and settled in the item 2.3.

2.2. Apart from the hypothesis in the sub-item, the Warranty to the consumer will be serviced by **JUMIL'S** dealer.

2.3. If the **PRODUCT** is sold to the farmer by a dealer who is not **JUMIL'S**, the right of Warranty will remain, but in this case, it must be made directly from **JUMIL**, in the terms of this Certificate.

2.4. The Warranty will not be granted if any damage to the **PRODUCT** or in its performance is caused by:

a) Negligence, imprudence or lack of operator's knowledge.

b) Non-observance of instructions and recommendations of use and maintenance cares, stated in this Instructions and Operator's Manual.

2.5. Likewise, the warranty shall not be granted if the **PRODUCT** undergoes suffer any transformation or modification after the sale, or if the purpose that destinies the product is altered.

2.6. The replaced or changed **PRODUCT** under this Warranty will be **JUMIL'S** Property, it must be returned to the customer after legal applicable requirements are fulfilled.

2.7. In the accomplishment of its constant evolution, **JUMIL** makes, permanently, to its products the improvements or modification, without having the obligation of making the same ones in products or models previously sold.

2.8- **JUMIL** will not be responsible by the indemnity of any harvest damage, due to inappropriate adjustment of Product devices, relative to the fertilizer or seed distribution

ÍNDEX

1 - INTRODUCTION	4
2 - PRESENTATION	5
3 - SAFETY STANDARDS	6
4 - TECHNICAL CHARACTERISTICS	8
5 - OPTIONAL	11
6 - PRODUCT COMPOSITION	11
7 - PRODUCT ASSEMBLING	12
7.1 - P.T.O. SHAFT ALIGNMENT	12
7.2 - OUTLET SPOUT ASSEMBLY	12
8 - PREPARE AND USAGE	13
8.1 - P.T.O. SHAFT COUPLING	13
8.1.1 - HOW TO ADJUST THE P.T.O. SHAFT TO THE TRACTOR AND THE MACHINE	16
8.2 - TRANSPORT	17
8.3 - BELT TENSIONING ADJUSTS	18
9 - ADJUSTMENTS	19
9.1 - CUT MECHANISMS (HARVEST BLADES)	19
9.2 - SAFETY PIN - JM50	19
9.3 - SAFETY PIN - JM50S	19
9.4 - CUTTING SIZE ADJUSTMENTS	20
9.5 - SHARPENING OF THE ROTOR BLADES	22
9.6 - BLADES ROTOR ADJUSTMENTS	22
10 - OPERATION	23
10.1 - THE CROP BEGINNING	23
10.2 - CUT FORAGE TRANSPORT	23
10.3 - TRANSMISSION CLAMP	23
11 - MAINTENANCE	24
11.1 - CLEANING	24
12 - LUBRICATION	25
12.1 - LUBRICATION AIMS	25
12.2 - SYMBOLS OF LUBRICATION	25
12.3 - LUBRICANT TABLE	25
12.4 - LUBRICATION POINTS	26
13 - INCIDENTS, POSSIBLE CAUSES AND SOLUTIONS	27
PARTS CATALOG	29

1 – INTRODUCTION

Congratulations, you have just purchased an equipment which is manufactured with the most modern process in technology and efficiency on the market, it is guaranteed by the well-known **JUMIL** Trade Mark.

This manual has the aim of instructing you in the correct use so that you can get the best performance and advantages the equipment has. For this reason, we recommend you to proceed with your attentive reading before working with the equipment.

Always keep it in a safe place in order to be easily checked whenever necessary.

JUMIL and its dealer network will always be at your service for information and technical explanations what is may be necessary for your product.

Phone: ++16 3660-1023

Fax: ++16 3660-1112

www.jumil.com.br

2 – PRESENTATION

JM50 and JM50S are compact forage harvesters. The machines project integrates all of the resources for you turn them robust, with great maintenance easiness and high income.

JM50 and JM50S cut and prick forages as the sugarcane, sorghum, corn and many other cultures as grass, planted in line.

Due its reduced weight, they spare the support wheel, reducing the costs of maintenance and enlarging its operational easiness.

The harvesters are adaptable to every kind of tractor with power above 80 HP.

They are composed by the structure sets, outlet spout and of the clamp three points, facilitating its assembly and transport.

When acquiring your JM50 and JM50S, read this operation Manual attentively, demand the warranty term from its reseller and check all the components that accompany them.

3 - SAFETY STANDARDS

When **JUMIL** manufactures its Agricultural Machines and Implements has the main objective to help the Man to develop a better LIVING STANDARD. However, in the use of these machines some cares must be RESPECTED:

DO NOT DESTRICT THE UNVIERSAL BIOLOGICAL EQUILIBRIUM WITH INCORRECT AGRICULTUEAL WORKS.

NOR ALLOW THE MACHINE TO DESTRICT IT. OBSERVE STRICTLY THE SAFETY STANDARDS. BE ATTENTIVE !

1) Always use the appropriate stairs and rails to get on or off the tractor.

2) When starting the motor, be correctly sat on tractor operator's seat and **ABSOLUTLY AWARE** of the complete knowledge of the use of tractor and equipment. Always use the tractor neutral gear, switch off the power takeoff and put the hydraulic command in a neutral position.

3) Do not use the tractor in closed rooms as the smoke from the exhaust pipes are toxic gases.

4) When maneuvering the tractor to be hitched to machine or implements, make sure there is enough room and there is nobody around, make the maneuvers in **SLOW GEAR** and be prepared to brake it in an emergency.

5) When using equipments **DRIVEN BY THE POWER TAKEOFF** (to hitch, to unhitch or to adjust) **STOP THE POWER TAKEOFF, STOP THE MOTOR AND REMOVE THE KEY FROM THE IGNITION. BE ATTENTIVE !**

6) When using loose clothes, always take care, do not get closer of the moving parts, your clothes can touch them and cause accidents.

7) Do not make any adjustment when the machine is being operated.

8) When working with implements or machines. **IT IS STRICTLY FORBIDDEN THE TRANSPORT OF ANY OTHER PERSON BEYOND THE OPERATOR, AS ON THE TRACTOR AS ON THE IMPLEMENT**, in case there is a seat or appropriate platform for this finality.

9) When working in steep areas, work with a total attention, always keep the necessary stability, in case of a lack of equilibrium, reduce the acceleration and keep the equipment on the soil then turn the tractor wheels to a descendant position.

10) On down the hills, always keep the tractor in geared position, the same you would us to go up.

11) When transporting the machine hitched to the tractor or turning it at the crop corners, we recommend you to take care, by reducing the speed to prevent force on the toolbar or drawbar.

12) Unless in specific occasion, the brake pedals must be connected on another (not independently).

13) If after hitching the implement to the hydraulic three points lift, and you realize its front is too light and it can go up, add necessary weights on its front.

14) When leaving the tractor, put the gear in neutral position, lower the implements which are raised, put the hydraulic command system in a neutral position and action on the stop brake.

15) When the tractor is not used for a long period, besides the previous procedures, stop the tractor motor and use the first gear if you are on a steep road and rear gear if you are going down the hill.

16) ALWAYS FOLLOW CAREFULLY THE SAFTE STANDARDS MADE BY THE TRACTOR'S MANUFACTURER.

17) A MAXIMUM CARE WHEN USING SEEDS WITH CHEMICAL TREATMENT, YOU MAY ASK FOR AN AGRONOMIST ASSISTANCE. DO NOT MANIPULATE CHEMICAL TREATED SEED WITH BARED-HANDS.

17.1) ALWAYS WASH YOUR HANDS AND BODY EXPOSED PARTS WITH A LOT OF WATER AND SOAP, AT THE END OF EVERY WORK SHIFT, MAINLY BEFORE EATING, DRINKING OPR SMOKING.

17.2) Do not throw rest of treated seeds and/or pesticide next to drinkable water well, stream, river and lakes.

17.3) Do not re-use empty container and flasks.

17.4) Always keep the genuine package and always closed and in a dry, air place and of a difficult access to children, irresponsible people and animals.

17.5) Avoid contact with the skin.

17.6) Before using pesticides, READ THE LABLE AND FOLLOW INSTRUCTIONS.

18) when driving the machine on roads, observe the following additional instructions:

a) if the machine is equipped with row markers, the row marker arms must be raise and held with their corresponding disc to inside position.

b) The equipments with an inferior or over 3m width can be transported on roads since they have suitable signs.

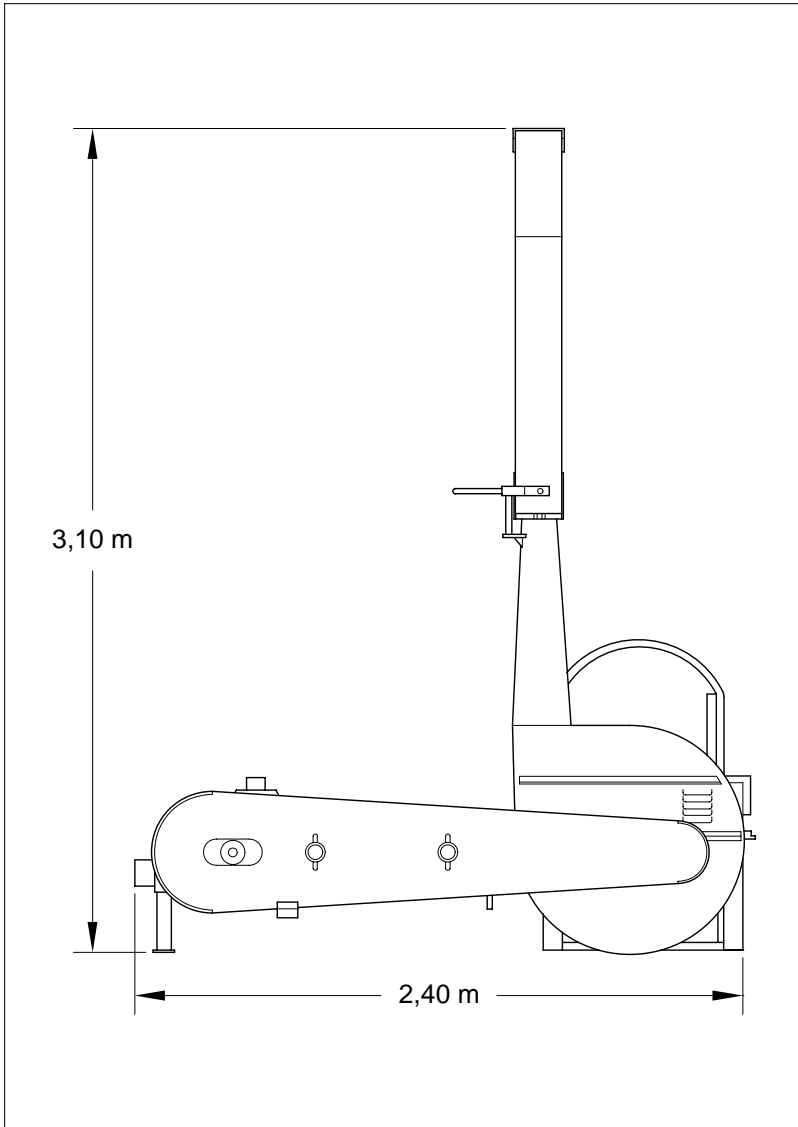
c) The equipments which cover the tractor rear signing lights must have alternative read signal light.

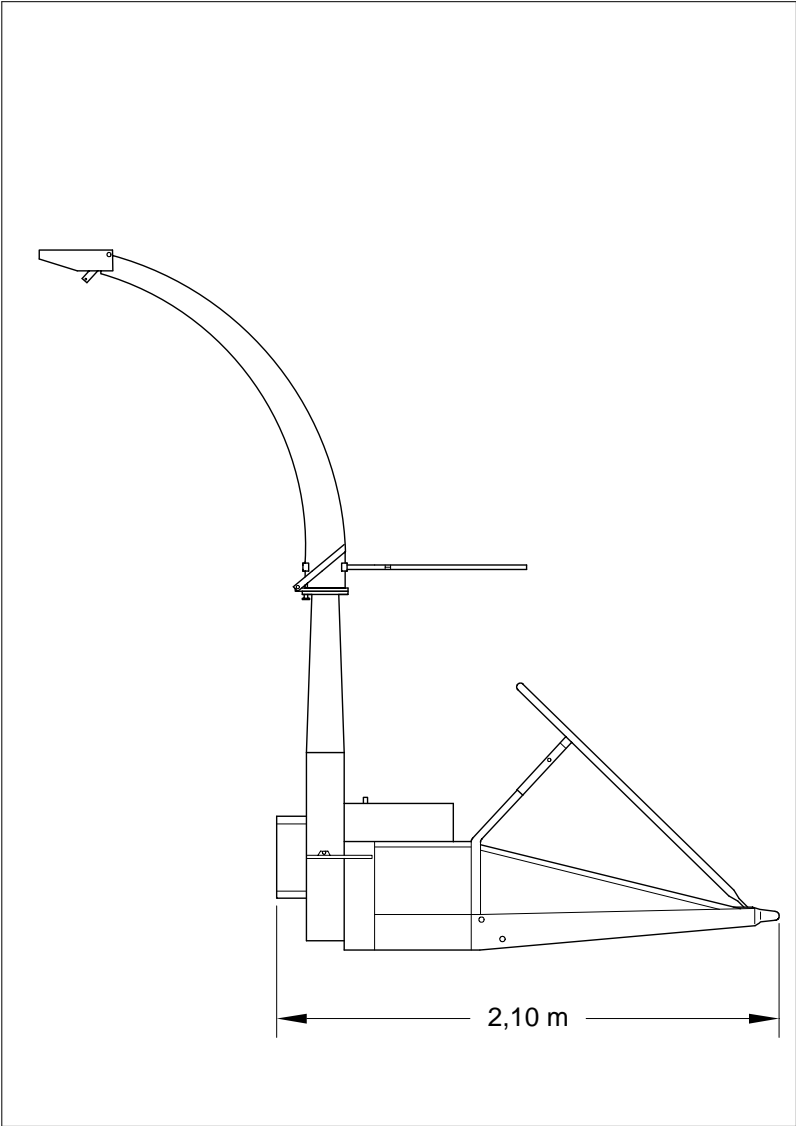
ATTENTION

When receiving your JUMIL equipment, check attentively its components which are delivered with the equipment and read carefully the warranty certificate in the first page of instruction manual.

4 - TECHNICAL CHARACTERISTICS

Models	JM50, JM50S
Capacity	20 t/h
JM50 weigh	530 kg
JM50S weigh	550 kg
Length	2,10m
Height	3,20m
Width	2,40m
Cutting size JM50	between 4 and 14 mm
Cutting size JM50S	between 3 and 18mm
Drive	Tractor
Power required	Above 80 HP
RPM Required	540 RPM
Medium speed of work	5 km/h (maxim)
Number of cutting blades	12
Number of harvesting blades	14

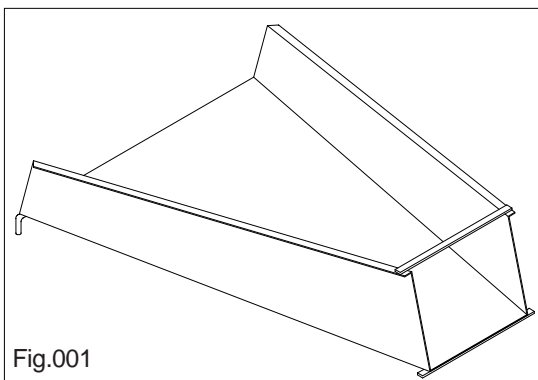




5 - OPTIONAL

As optional, the JM 50 and JM 50s possess an inlet spout 21.04.004-4 to work with parked machine (fig.001).

This spout is not advised for crop.



6 - PRODUCT COMPOSITION

Check carefully the following items that accompany the equipment:

DESCRIPTION	PART N°
1/4" HEX ALLEN KEYS	42.00.776-3
SAFETY PIN	42.07.738-9
400 MM COMPLETE P.T.O SHAFT SET	42.07.743-5
ROTOR COACH WRENCH	42.09.958-7
FIXING ROTOR KEY	42.09.996-0

7 - PRODUCT ASSEMBLING

7.1 - P.T.O. Shaft Alignment

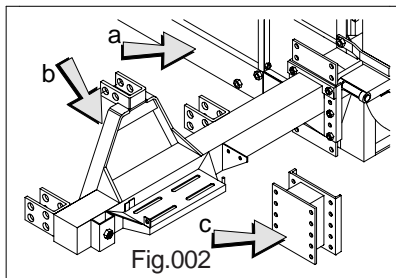
Your forage harvester possess 5 height tunings among the chassi (Fig.002“a”) and the three point support (Fig.002“b”); according to the height of P.T.O., the correct hole is used for the P.T.O. shaft to work in the horizontal position.

Put the three point tuning support (Fig.002“b”) in the structure chassi (Fig.002“a”) and fasten the screws.

For Tractors with back gage of larger dimension recommended using Optional Extension, (Fig.002“c”).

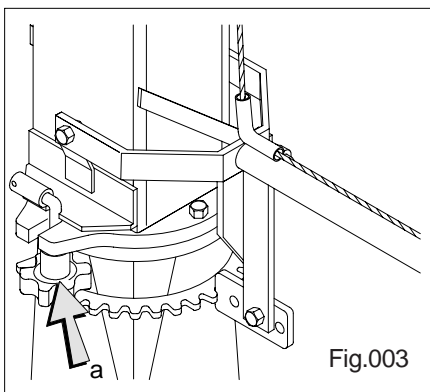
When requested, extension goes with the detached components inside of the Packing Box.

In the assembly of the Chassis we requested to proceed according to instructions of the illustration above, set the extension (Fig.002“c”), between the Chassis and the Support of the three point fastening through the Screws.

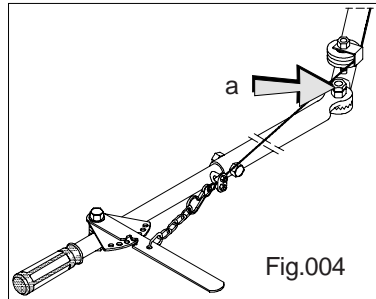


7.2 - Outlet Spout Assembly

For assembling the outlet spout set you should articulate the spout back until that the same is fitting on the pipe flange, later fasten through the gauntlet (Fig.003“a”).



To put the tuning lever in a better work position, loosen the screw from the articulation (Fig.004“a”), put the arm in a position that the tractor operator can articulate the spout for an uniform distribution of products in the cart.

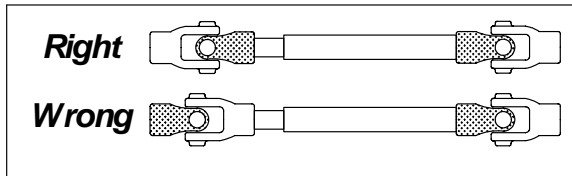


8 - PREPARE AND USAGE

8.1 - P.T.O. Shaft Coupling

Couple P.T.O. shaft assuring that the fast lock pins are fit perfectly (locked).

For assembly of the parts, to observe so that the internal and external forks are always aligned in the same plan, otherwise the P.T.O. shaft will be subject ace vibration, provoking premature wear and tear of the crosshead.



When changing the machine of tractor model, verify the previous instructions again.

⚠ ATTENTION

The non-observance of the detail can cause damages in the rear bearing of the machine or in the own P.T.O. shaft.

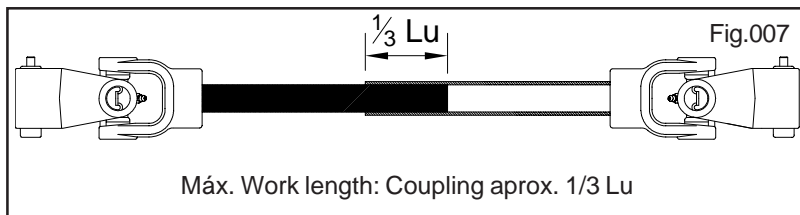
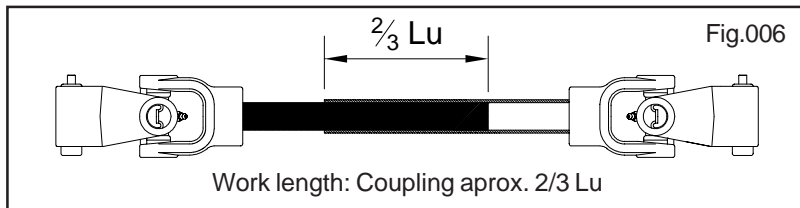
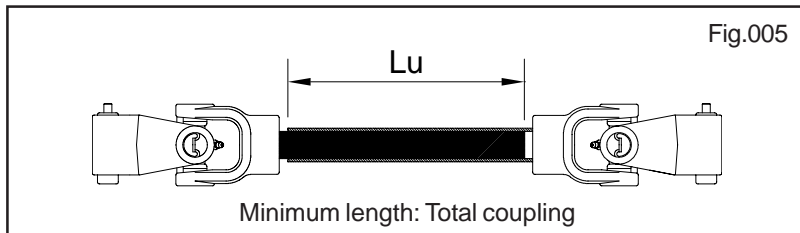
I - Make the connection of the P.T.O. shaft movement ALWAYS with the tractor motor in slow march, AND ONLY AFTER accelerate progressively until the work regime - 540 or 1000 rpm in P.T.O.

II - Before turning off P.T.O. shaft, REDUCE the motor acceleration for slow march.

The non-execution of those recommendations can cause serious damages to the transmission.

The P.T.O. shaft length should be among them foreseen by the ISO Norm, and it can be certain according to following outlines.

Lu = Useful Length

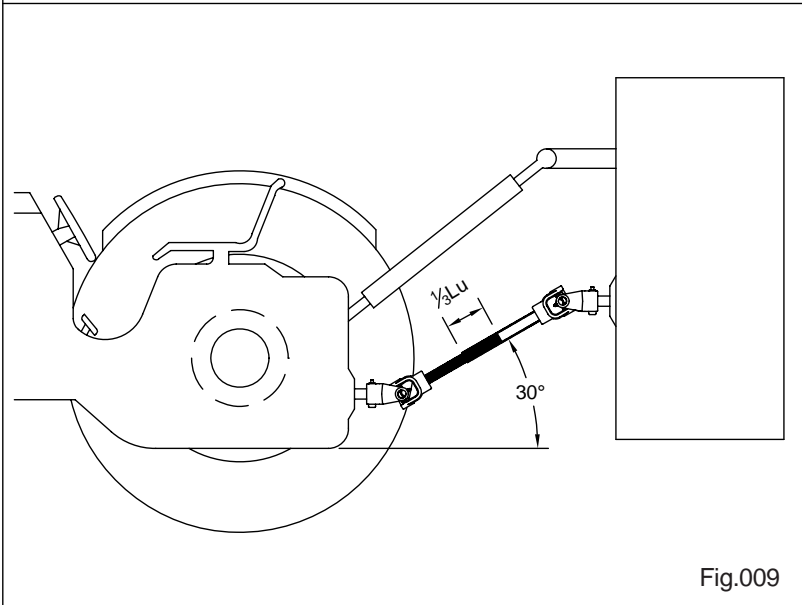
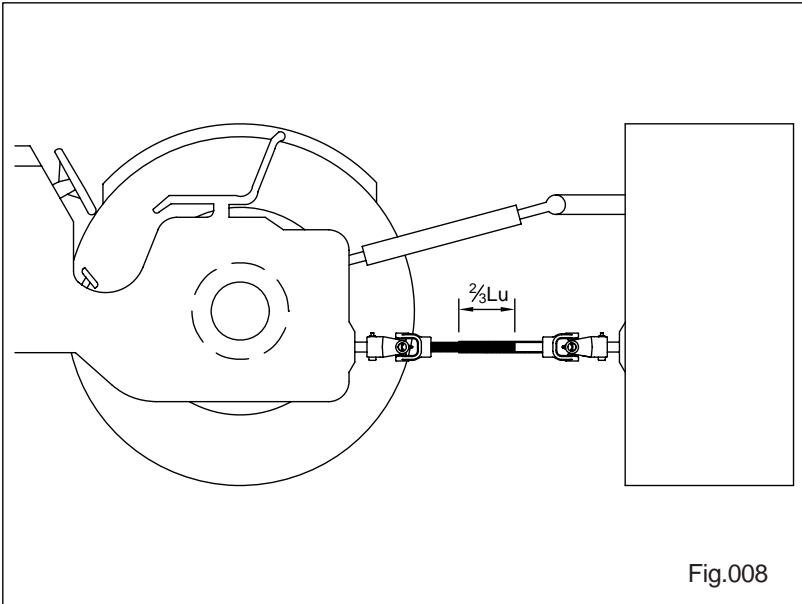


The implement possesses the three-point linkage system. With the machine in work position you have the smallest work length and same angles visibly.

With the implement lifted up (30th Max.) you have the maximum work length, and the increase of the articulating angles.

ATTENTION

When lifting up the machine to the maximum, the rotation should be interrupted, disconnecting P.T.O shaft.

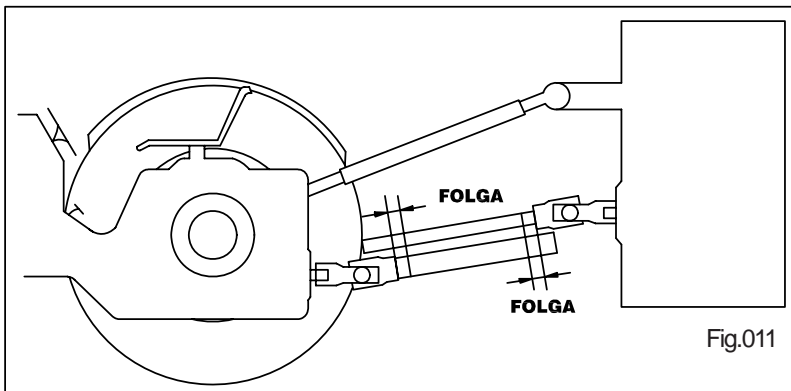
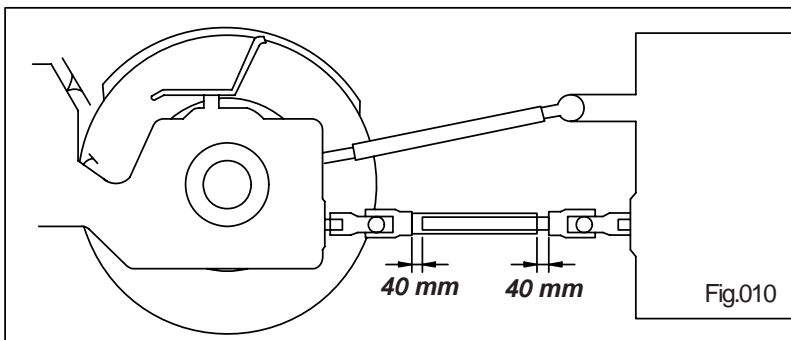


8.1.1 - How to adjust the P.T.O. shaft to the tractor and the machine

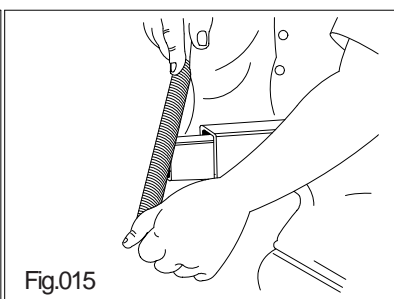
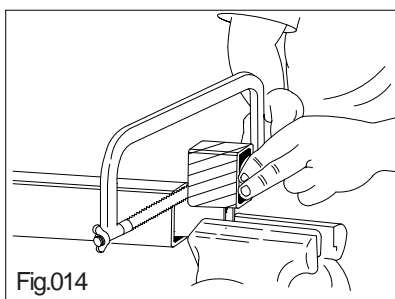
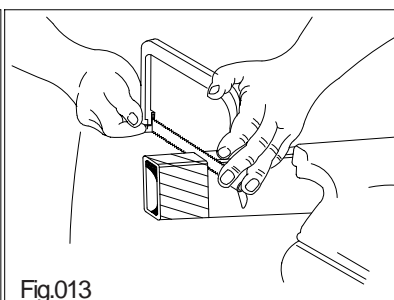
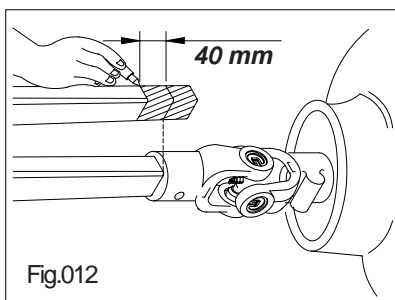
For a good operation of the P.T.O. shaft, we recommended to follow the instructions below, before beginning the work:

1 - With the mounted machine in the tractor, displace the shafts of the pipe from the P.T.O. shaft. Through the respective pressure buttons, arrest the corresponding tips in the tractor and in the machine.

2 – Overlap one in the other and make in each one a mark that will delimit the exceeded that should be cut. Besides that mark, it should consider a rest of 40 mm (Fig.010).



3 - After the determination of the places where the cuts will be made, shorten the internal and external protecting tubes equally. Shorten the profiles slippery intern and external in the same length of the protecting pipes. Remove all the tips and barb, and polish the slippery profiles.



⚠ ATTENTION

The P.T.O. shaft size should be verified and/or been adjusted if necessary, whenever it changes of model and/or tractor mark. The non-execution, it can cause serious damages to the machine and/or to the P.T.O. shaft.

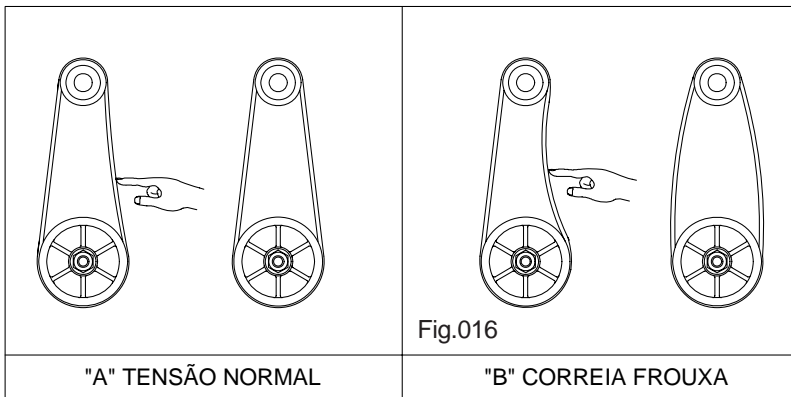
8.2 - Transport

For transport, articulate the outlet spout and arrest it in the end of the support of three-point.

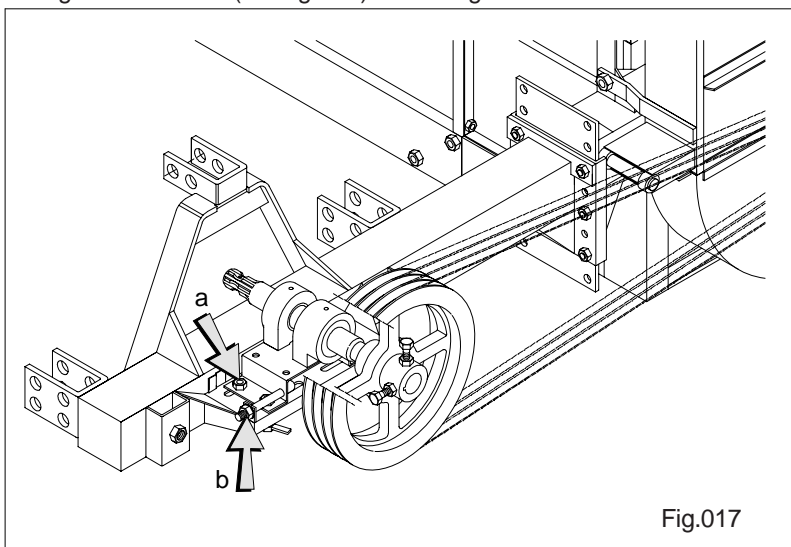
When the machine is uncoupled of the tractor, use base support.

8.3 - Belt tensioning adjusts

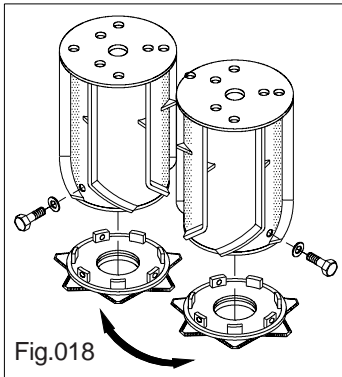
It is of extreme importance that after approximately 10 initial hours of work and consequently of 50 in 50 hours, the belt tensioning is verified. If the belt tensioning is accordingly the illustration ("B"fig.016), it will be necessary to do the correction of the same as ("A"fig.016).



To adjust the belt tensioning you should release four screws ("A" Fig.017), which arrests the base of the larger pulley, and tension the belt through the stretcher ("b" Fig.017) according to illustration 016.



9 - ADJUSTMENTS

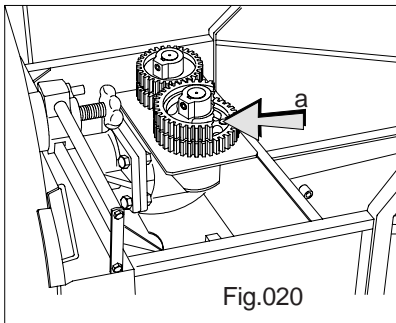
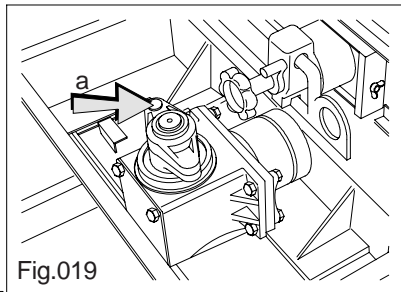


9.1 - Cut mechanisms (Harvest blades)

Happening wear and tear in the harvest blades, invert the harvest subsets. Pass the subset on the right side for the left and the left for the right.

9.2 - Safety pin - JM50

In the gearbox bearing has a safety pin (Fig 019" a"). If the equipment receives a strange body or an overload, this pin breaks up, paralyzing the rollers and like this protecting them. To continue it is only to clean the machine and change the safety pin.



9.3 - Safety pin - JM50S

In the right lower gear of the gearbox has a safety pin (Fig 020" a"). In case the equipment receives a strange body or an overload, this pin breaks up, paralyzing the rollers and like this protecting them. To continue you should clean the machine and to change the safety pin.

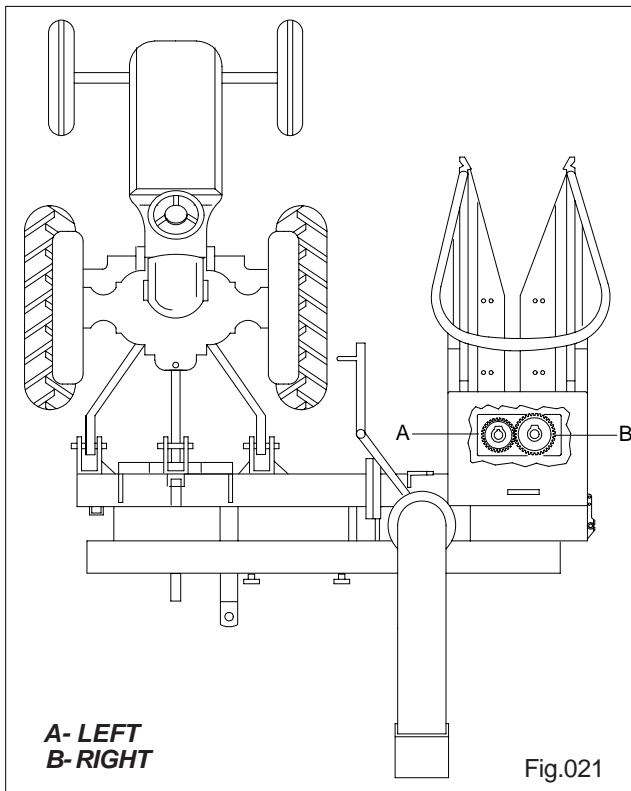
9.4 - Cutting size adjustments


JM50 S comes endowed with a gearbox, which makes possible to obtain 6 different cutting sizes, between 3,5,8,11,14 and 18 mm.

To accomplish these tunings, the machine operation should be stopped and observe the right and left side, looking behind the equipment, according to illustration 021.

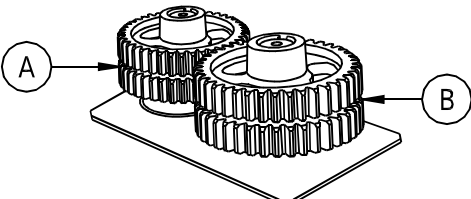
The gears come marked with numbers, (3,4,5,6,7 and 8). Just the gear groups of the upper part should be changed, loosening the allen screw of the gears base.

The gears 1 and 2 of the lower base are constant, not needing changes them to obtain the tunings of cuts.





ADVICE



CUTTING SIZE REGULATION

CUTTING	POSITION "A"	POSITION "B"
3 mm	GEAR "7"	GEAR "8"
5 mm	GEAR "3"	GEAR "4"
8 mm	GEAR "5"	GEAR "6"
11 mm	GEAR "6"	GEAR "5"
14 mm	GEAR "4"	GEAR "3"
18 mm	GEAR "8"	GEAR "7"

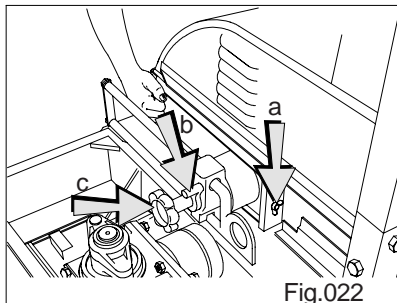
 **IMPORTANT**

When the larger gear is on the left side (side of the tractor), it is obtained a finest product cut.

9.5 - Sharpening of the Rotor Blades

JM50 and JM50S, have a blades sharp set; the sharpening should be made to each 500 picked ton.

Remove the butterfly nut ("a"Fig.022), afterwards pull the cover protection (fig.022), loosen the counternut ("b"Fig.022), work the machine, the tractor should be with 1.000 to 1.200 RPM.



Approximate the grinder rotating the gauntlet ("c"Fig.022) slowly until the grinder lean in the blades and press the counternut again ("b"Fig.022).

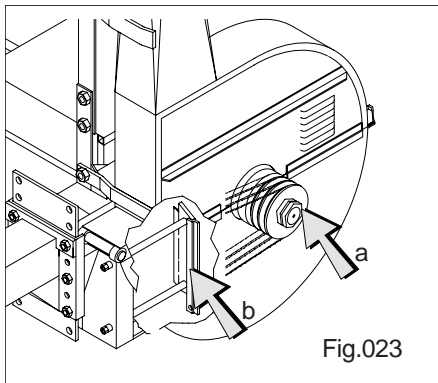
The sharpening should be made with the movement of coming and going more or less 5 times, from the blade sharp set that runs on a guide for time.

Finished the sharpening, return the grinder rotating the gauntlet ("c"Fig.022) in the contrary sense until it leans in the protection and press the counternut again ("b"Fig.022), put the protection cover in the position fastening with the Wing Nut.

9.6 - Blades Rotor Adjustments

Happening the wear and tear of the blades and counterblades, it is necessary an adjustment in the rotor.

Using the two rotor keys that proceed with the machine in the toolbox, loosen the counternut (Fig 023"a") and press the nut, approximating the rotor blades to the counterblades (Fig 023"b"), obeying a distance from 0,5 1 mm among the same ones.



10 - OPERATION

10.1 - The crop beginning

a) for a good acting of the machine, use whenever is possible tractors with double clutch. In the case of using tractor with simple clutch, enter in the forage cut always with the machine switched on in normal speed of work. Never stop the loaded machine; leave the row working.

b) whenever it begins the work, regulate the correct rotation of the tractor, in other words, 540 rpm in P.T.O. in order to avoid overloading.

c) to begin first with tractor in reduced march, change of march in agreement with the good machine acting.

d) don't force the machine when using tractor with high potency, for this you can obstruct the machine friction.

e) don't lift the machine excessively when in operation, because it can cause damages in the P.T.O. shaft.

f) when changing the cut street, always turn off the machine, because the land irregularity can cause damages in the gearbox.

10.2 - Cut Forage Transport

It can be done by cart (**JM3000, JM6000 and JM10000**) coupled through the support (Fig 024"b") behind the machine. Also cart can be used towed by other tractor or cage truck. In the two cases, on the left side of the machine.

10.3 - Transmission clamp

To unload the forage trailer, is not necessary to uncouple the machine of the tractor. It is enough to couple the P.T.O. shaft into the trailer in transmission shaft of the machine (Fig 024"a"), and work it.

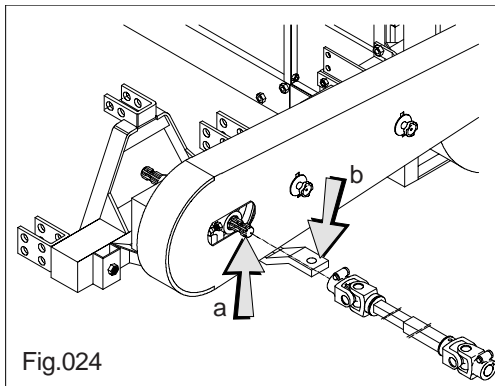


Fig.024

11 - MAINTENANCE

11.1 - Cleaning

To maintain the machine always clean, avoiding that debris of green material that causes rust stay in the machine. Opening the implement and washing the interior, always taking care for not leaving any debris, after having done the cleaning sprays the **JM50 JM50S** with castor oil plant, observing for not using burned oil.

Having accomplished all of the maintenance repairs, store the jm50 jm50s in appropriate place, out of the contact of the weather actions.

12 - LUBRICATION

12.1 - Lubrication aims

The lubrication is the best warranty of good operation and acting of the equipment. This practice prolongs the useful life of the movable pieces and help in the economy of the maintenance costs.

Before beginning the work, be certified that the equipment is appropriately lubricated, following the orientations of the Lubrication Plan.

In this Lubrication Plan, we considered the equipment working in normal work conditions; in severe services we recommended to reduce the lubrication intervals

ATTENTION

Before beginning the lubrication, clean the fitting grease and substitute the damaged ones.

12.2 - Symbols of Lubrication



Lubricate with lithium NLGI-2 soap grease in intervals of the recommended hours.

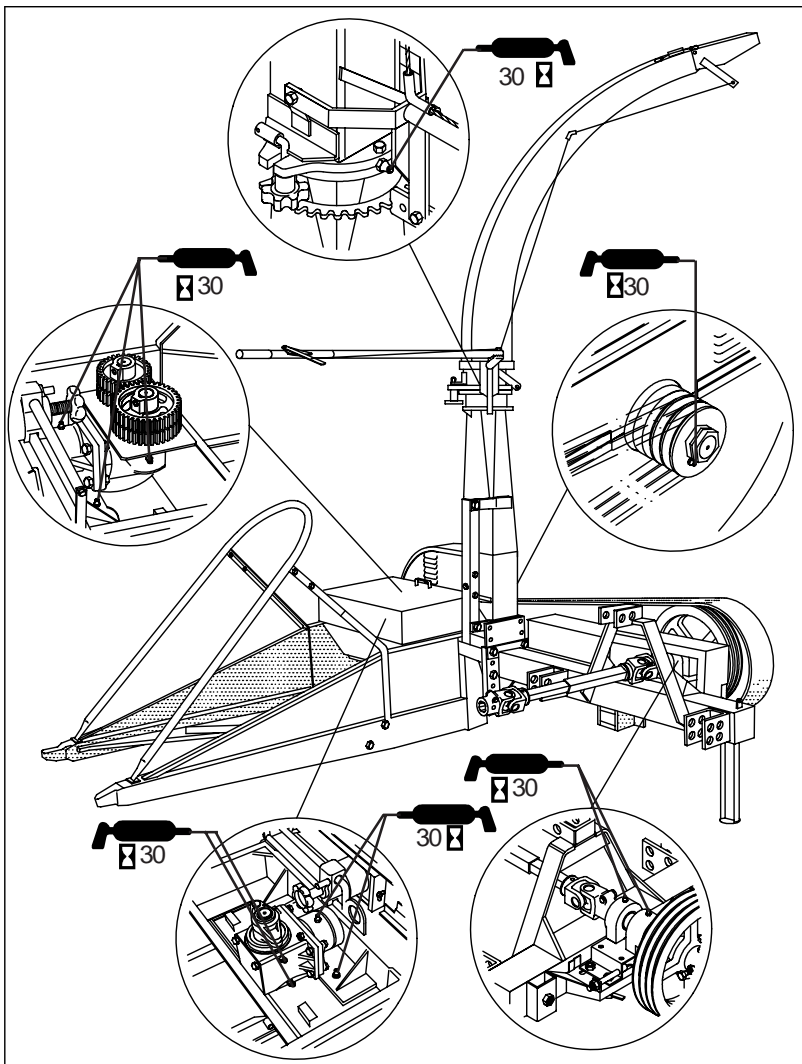


Lubrication intervals in worked hours

12.3 - Lubricant Table

RECOMMENDED LUBRICATION	EQUIVALENCE							
	PETROBRÁS	CASTROL	SHELL	TEXACO	IPIRANGA	BARDAHL	ESSO	MOBIL OIL
GREASE CONTAINING LITHIUM SOAP NLGI-2	LUBRAX GMA-2	LM-2	ALVANIA EP-2	MARFAK MP-2	ISAFLEX 2	MAXLUB APG-2EP	ESSO MULTI 2	MOBIL GREASE TT

12.4 - Lubrication Points



13 - INCIDENTS, POSSIBLE CAUSES AND SOLUTIONS** ATTENTION**

Before requesting the technical services verify the items to below:

The feeding stopped	
Possible Causes	Solution
1 - Broken safety pin	1 - Substitute

Overload	
Possible Causes	Solution
1 - Low tractor rotation 2 - Sliding belt	1 – P.T.O. 540 2 - Adjust the belt according to the instructions manual

Irregular Cutting	
Possible Causes	Solution
1 - Worn-out counter blade 2 - Counter blade very far away from the cut blade	1 - Change counterblades 2 - Regulate according to the manual or change the cut blade