



MANUBAL

V40

V50

V500

W500

V7000

User Manual

**Read carefully before operating
the Manubal bale grab**

Dear user,

We thank you for placing your trust in our product and hope you will find your MX MANUBAL satisfactory in every way.

Taking a few minutes to read this manual will enable you to use the capabilities of your MX MANUBAL to the full, prolong its service life and ensure safe operation.

The MANUBAL user manual before you is an important document, please retain it in order to be able to refer to it if required. Make it available to any other users and hand it over to any new owner in the event of your MX MANUBAL being sold on.

The illustrations and technical data shown in this document might not match your MX MANUBAL bale grab exactly, operating conditions will nevertheless remain the same.

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1. SAFETY RULES

The tractor/loader or telescopic handler/MANUBAL bale grab combination must only be operated by trained and experienced personnel.

- **For your complete safety and that of others, strict compliance with the hitching and unhitching procedure for the MANUBAL bale grab is required (chapter 5 of this manual).**
- Only control the MANUBAL bale grab from the driver's seat. Keep operating the controls until movements stop.
- Do not leave the driver's seat without stopping all control movements.
- All personnel must be kept away from the area in which the loader or telescopic handler - MANUBAL bale grab combination is moving while it is in operation.
- **Never pass under a raised bale.** Never use the MANUBAL bale grab to push a bale.
- **Carrying or lifting personnel using the MANUBAL bale grab is forbidden.** Never stand or pass under the load.
- Before any operation, the user must ensure that the MANUBAL bale grab is in proper working order and can be used in complete safety. He must also check and ensure that the tractor-loader-MANUBAL bale grab combination is stable by fitting a counterweight to the back of the tractor. This should ensure that 20% of gross weight remains on the rear axle of the tractor for optimum safety while travelling and working.
- When travelling on the road it is imperative that the regulations governing use on the public highway be observed (size, implement markings, etc.) Protruding items such as tine ends must be protected or stowed (grab closed, lower tine kit retracted).
- Take great care when operating at height in order to avoid catching any items (electric power or telephone lines, guttering, roof trusses, etc.).
- Whenever the tractor or telescopic handler is stopped momentarily or for an extended period, the engine must be shut down and the MANUBAL bale grab lowered.
- When not in use, protruding items such as tine ends must be protected or stowed (grab closed, lower tine kit retracted).
- Check periodically to ensure that safety pins and bolts are in place. Do not replace them with any other items such as: nails, wire, etc.
- Any adjustment on the MANUBAL bale grab (ram position, tines in fixed or floating position, etc.) must be carried out after the MANUBAL bale grab has been lowered to the ground and the tractor or telescopic handler engine shut down (grab in lower setting for the MANUBAL V50 unit).
- Any work involving fault tracing (diagnostics) and/or disassembly of parts may only be undertaken by a skilled technician who will start with an assurance that the work will be carried out in complete safety for himself and his surroundings.



Caution !

- Check hoses for length and routing in all configurations (fully crowded, fully dumped, etc.) before first use.
- The MANUBAL bale grab is designed to withstand a maximum operating pressure of 210 bar. Above this pressure, the MANUBAL bale grab will require to be fitted with a pressure limiter.
- Any instance of a MANUBAL bale grab being fitted which ignores the recommendations in the MX price list in force on the date of purchase will void MX warranty on the entire supply.
- Any modification to any part of the MX supply (rams, grab, tines, crank, etc.) or use of a component installed on the MANUBAL bale grab which has not originated from MX will void MX warranty on the entire MX supply.
- Use only genuine MX spare parts. Do not modify your MANUBAL bale grab yourself or have it modified by anyone else, without first requesting written authorisation from MX. Failure to comply with these rules may render your MANUBAL bale grab hazardous. In the event of damage or injury, MX shall not be held responsible in any way.
- Warranty cover will cease immediately in the event of failure to observe the standards and instructions for use and maintenance of the MANUBAL bale grab as stipulated in the user manual.

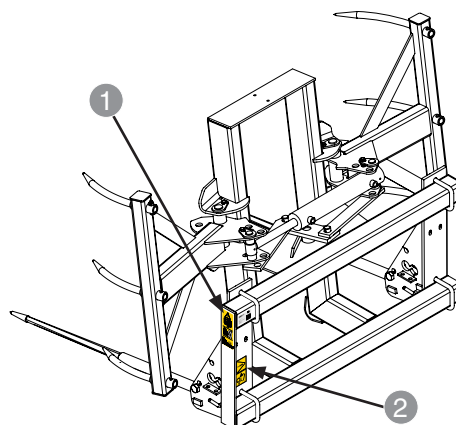
THE INSTALLER SHALL BE FULLY LIABLE FOR ANY FITMENT ON A LOADER OTHER THAN MX OR A TELESCOPIC HANDLER WHICH HAS NOT BEEN RECOMMENDED BY MX.

2. SAFETY STICKERS

Ensure the labels are clean and legible; replace them if damaged.

1. Location: MANUBAL frame carrier

- Familiarise yourself with the safety rules in the user manual before using or working on the unit.



2. Location: Lower tine kit carrier (optional) or on V7000 frame.

- Familiarise yourself with the safety rules in the user manual before using or working on the unit.



MX implements are designed to offer the operator of the prime mover to which they are fitted optimum angles for crowding and dumping at ground level.

Before handing over to the operator, the installer must check that there is no possibility of interference occurring between the implement which has been fitted and other components of the machine (tyres, mudguards, etc.), as a result of the maximum travel of the implement installed, when the telescopic handler boom positions the implement closest in to the machine.

In the event of the aggregation of positional conditions of the implement and the boom leading to interference, the installer is to notify the operator and provide him with instructions on how to prevent such interference. **In general it is sufficient to operate with the boom extended by at least 0.5 m.**

MX cannot be held liable for any damage or accidents which might result from impacts caused by this.

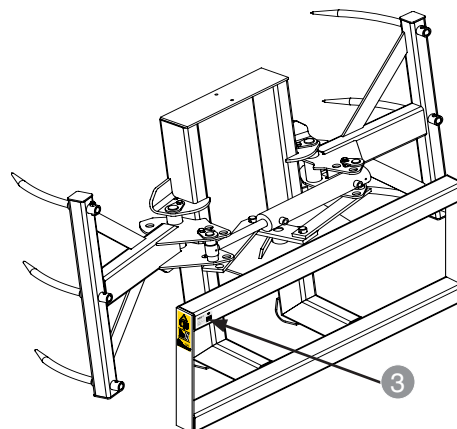
3. IDENTIFICATION PLATE

Identification details are to be passed on to your dealer with any request for spare parts or service work. Its location is shown below.

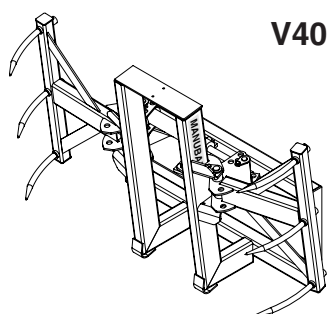
3. Location: MANUBAL frame carrier

- MANUBAL identification data plate

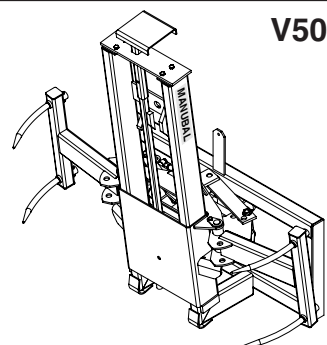
MX 		CE
19, rue de Rennes F - 35690 ACIGNÉ		
Désignation/ Designation		
Type / Model / Typ		
N° de série Serial number Seriennummer		
	Année / Year	
Poids à vide Unloaded weight / Leergewicht		kg
328462		



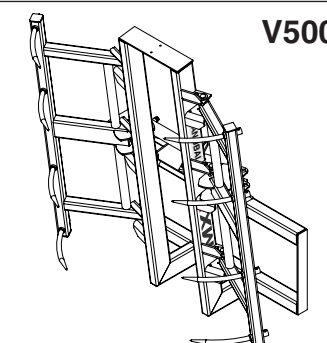
4. DESCRIPTION



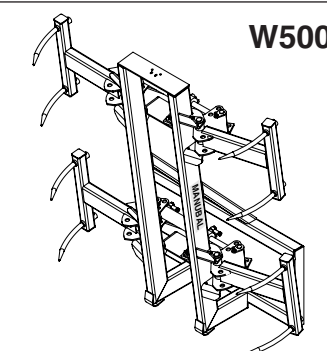
V40



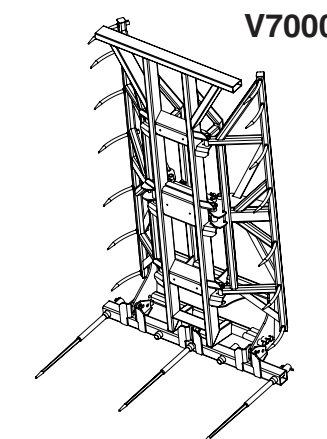
V50



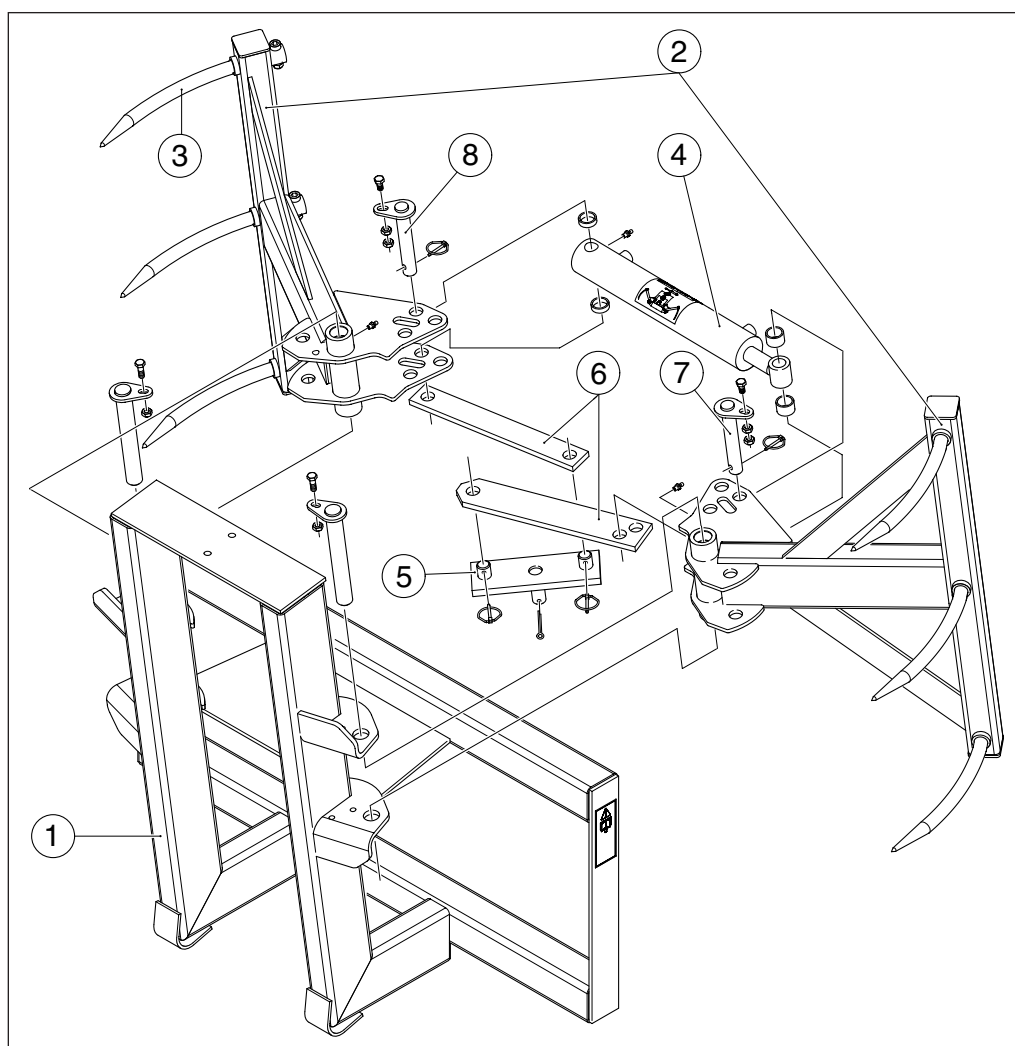
V500



W500



V7000

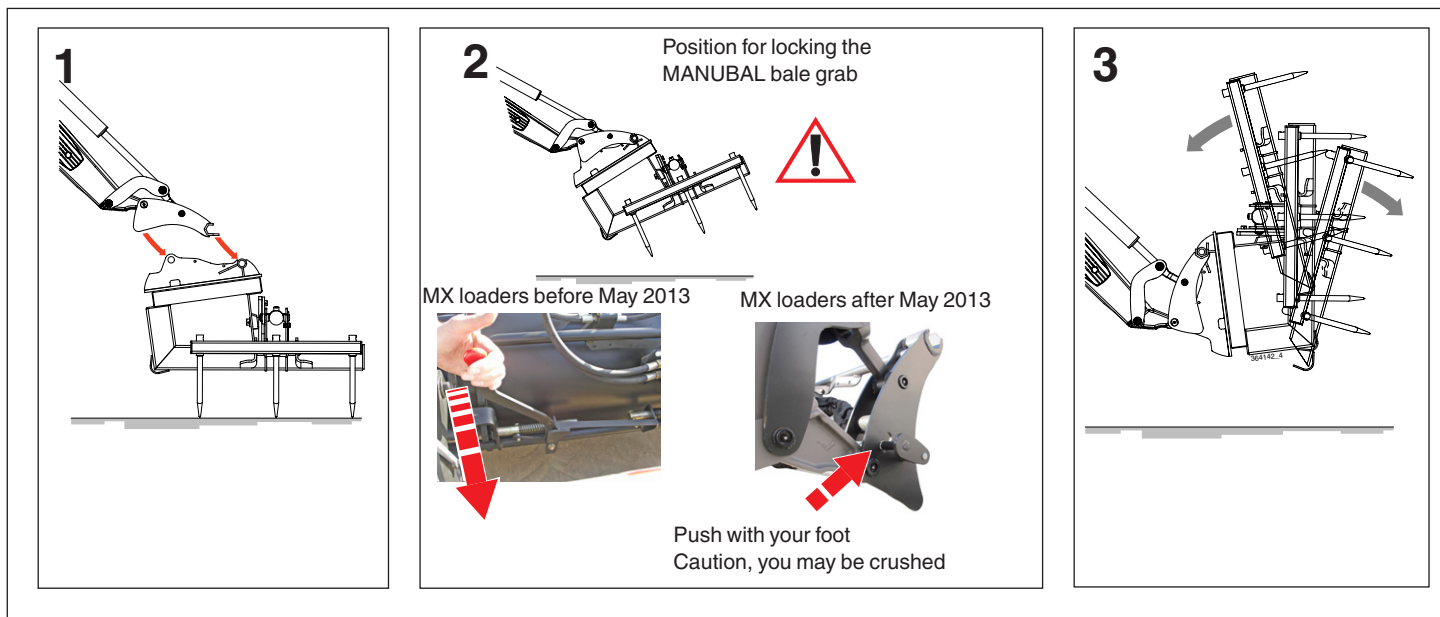


1. Vertical mast
2. Grab
3. Tine
4. Ram
5. Synchronising crank
6. Synchronising link
7. Rod-end ram pin
8. Cylinder-end ram pin

5. HITCHING/UNHITCHING THE MANUBAL BALE GRAB

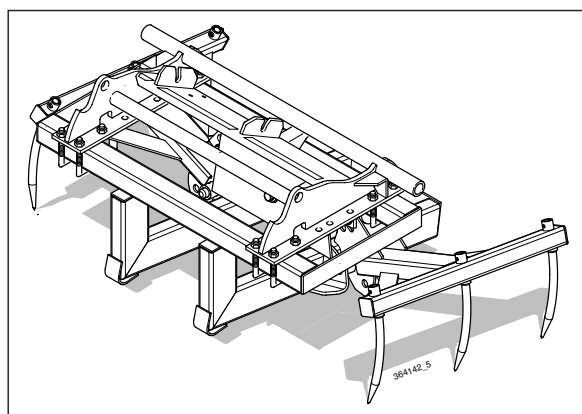
5.1 HITCHING THE MANUBAL BALE GRAB

- 5.1.1 Hook the self-centring V notches into the MANUBAL hitch bar Fig. 1 (for telescopic handlers, refer to the manufacturer's user manual).
- 5.1.2 Position yourself on the right-hand side and lock manually Fig. 2.
- 5.1.3 Crowd back to check that the MANUBAL is being held correctly Fig. 3.
- 5.1.4 Operate each moving component to its fullest extent in each direction to check the hydraulic system is free from leaks and the hoses are routed correctly.



5.2 UNHITCHING THE MANUBAL BALE GRAB

- 5.2.1 Remove the MANUBAL unit with the grab open (ram rod retracted).
- 5.2.2 Release the hydraulic pressure and unhitch.



CAUTION: for MANUBAL bale grabs fitted with lower tines, these should be in the park position (see chapters 8 and 10).

6. GRAB OPENING / CLOSING ADJUSTMENT

The extent of opening and closing of the grab can be adjusted to match the type of bale being handled.

6.1 ROUND BALES

This setting enables 0.90m to 1.80m diameter bales to be picked up.

6.1.1 Position the MANUBAL bale grab upright.

6.1.2 Open the grab halfway. Lower the MANUBAL bale grab to the ground. Stop the engine.

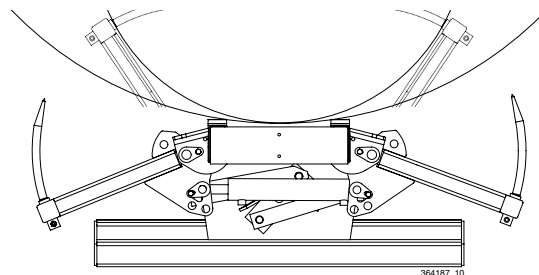
6.1.3 Remove the clip from the rod-end ram pin and remove the pin.
Note: the screw on the pin flat acts to prevent rotation and need not be removed.

6.1.4 Position the ram opposite the hole for the round bale setting. See table below.

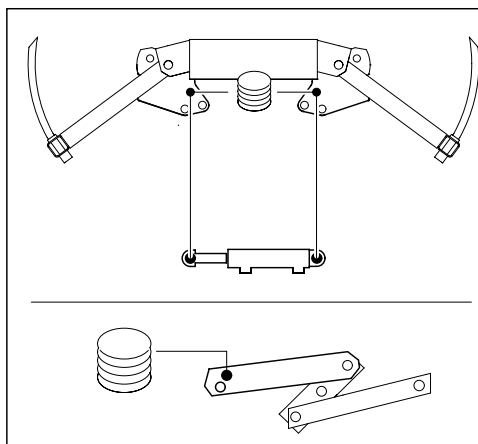
6.1.5 Insert the pin as well as the synchronising link in the appropriate hole.

6.1.6 Refit the clip.

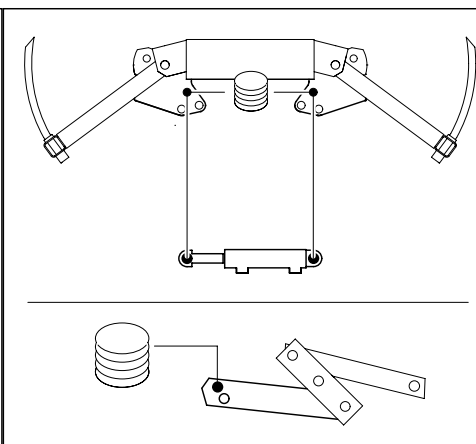
6.1.7 Repeat operations 6.1.3 to 6.1.6 for the cylinder-end ram pin.



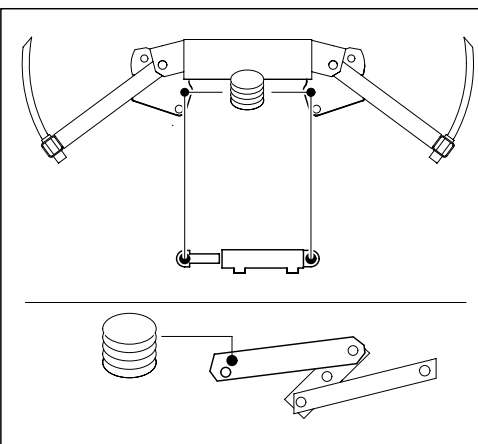
MANUBAL V40 - W500



MANUBAL V50



MANUBAL V500 - V7000



6.2 RECTANGULAR BALE

With the grab open, the tines do not extend beyond the vertical mast. Rectangular bale pick-up is more effective.

6.2.1 Position the MANUBAL bale grab upright.

6.2.2 Open the grab halfway. Lower the MANUBAL bale grab to the ground. Stop the engine.

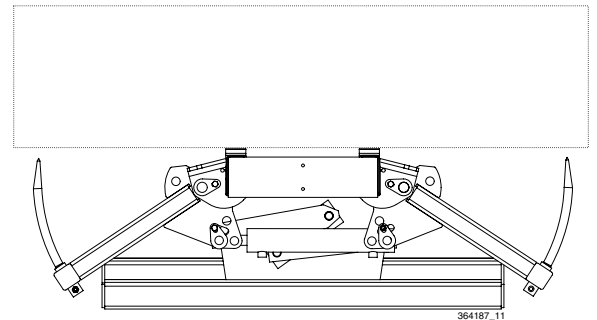
6.2.3 Remove the clip from the rod-end ram pin and remove the pin.
Note: the screw on the pin flat acts to prevent rotation and need not be removed.

6.2.4 Position the ram opposite the hole for the rectangular bale setting. See table below.

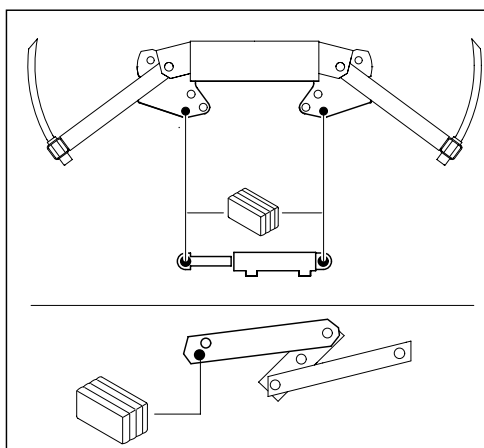
6.2.5 Insert the pin as well as the synchronising link in the appropriate hole.

6.2.6 Refit the clip.

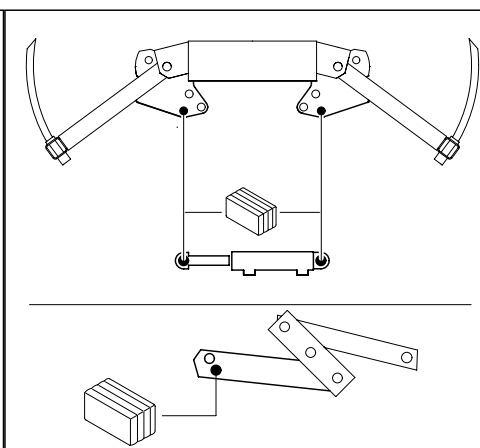
6.2.7 Repeat operations 6.2.3 to 6.2.6 for the cylinder-end ram pin.



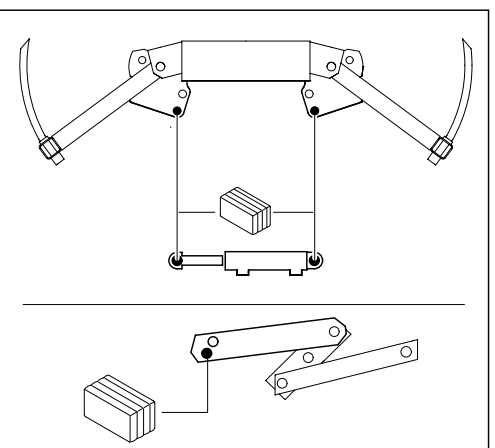
MANUBAL V40 - W500



MANUBAL V50



MANUBAL V500 - V7000



7. WRAPPED BALE GRAB KIT

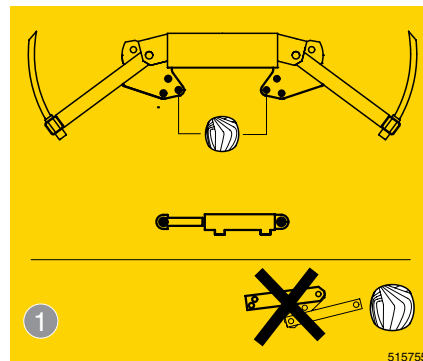
This kit converts your MANUBAL unit into a round wrapped bale grab*. The conversion is very simple and is accomplished in just a few seconds.

Wrapped bale grab opening / closing adjustment

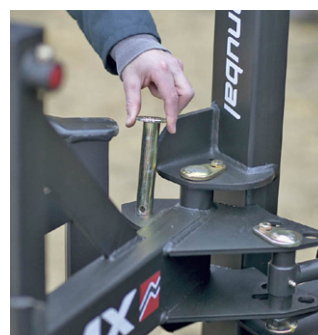
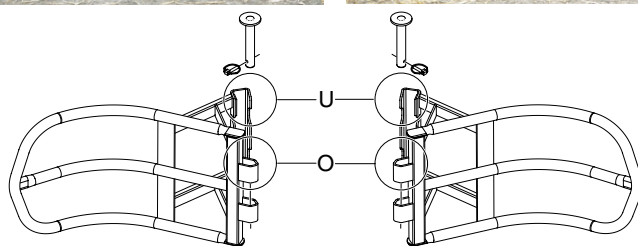
The adjustment is carried out using the holes provided for round wrapped bales.

- 7.1 Position the MANUBAL bale grab upright.
- 7.2 Open the grab halfway. Lower the MANUBAL bale grab to the ground. Stop the engine.
- 7.3 Remove the clip from the rod-end ram pin and remove the pin.
Note: the screw on the pin flat acts to prevent rotation and need not be removed.
- 7.4 Position the ram opposite the hole for the wrapped bale setting. See drawing ①.

CAUTION: the synchronising links should be removed from the MANUBAL bale grab when it is used for wrapped bales, which allows the 2 grab arms to float. This enhances effectiveness and safety when stacking bales contiguously.



- 7.5 Insert the pin in the appropriate hole.
- 7.6 Refit the clip.
- 7.7 Repeat operations 7.3 to 7.6 for the cylinder-end ram pin.
- 7.8 Position the first side of the wrapped bale grab kit (**U-section**) against the grab tine carrier.
- 7.9 Position the other side of the wrapped bale grab kit (**O-section**) opposite the hole provided for this purpose in the MANUBAL grab.
- 7.10 Insert the pin and the clip supplied in the kit.
- 7.11 Repeat operations 7.8 to 7.10 for the other kit.
Note: the kit is not handed as regards assembly. It is identical for the left and right-hand sides.



* Option available on MANUBAL V40, V50, W500.

8. LOWER TINE KIT

The lower tine kit* is recommended for handling rectangular bales. It also makes your MANUBAL bale grab even more effective when picking up round or rectangular bales in the field.

8.1 Three lower tine kit configurations

8.1.1 Configuration 1 : fixed tines. Traditional configuration.



8.1.2 Configuration 2: floating tines.

Several benefits:

- It eases withdrawal of the tines when setting a bale down. All it needs is to tilt the MANUBAL bale grab forward with the vertical mast and the tines will withdraw.
- It prevents unnecessary pressure from being exerted on the bales when stacking and also the loader from dropping abruptly once the tines are clear.
- Its 2 independently floating tines mean effective stacking, even on sloping ground.
- It reduces dragging on the ground thus reducing wear.



8.1.3 Configuration 3: fold-up tines for road use (only on MX loaders).

This configuration enables the benefits of configuration 2 (floating tines) to be enjoyed at the same time as being able to fold up the tines when travelling on the road. All this requires is to crowd the MANUBAL bale grab back and to raise the loader. The tines fold up automatically.

CAUTION:

Check that the overall height of the assembly is completely safe for travelling.
Do not close the grab while the MANUBAL bale grab is tilted.



* Option available on MANUBAL V40, V50, V500, W500

8.2 Park position

When the lower tine kit is not being used the tines can be stowed away in the MANUBAL bale grab without affecting its operation.

8.2.1 Place the MANUBAL bale grab on the ground with the grab closed and stop the engine.

8.2.2 Remove the clip then the pin from the tine.

8.2.3 Remove the tine from its location and slide it into the carrier.

8.2.4 Refit the pin and the clip.

8.2.5 Repeat the procedure for the 2nd tine.

CAUTION: do not bump into the ends of the grab tines as injury may result. For greater safety, this operation should be completed with the grab closed.



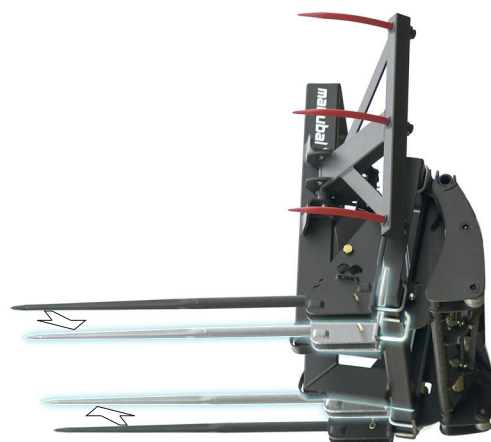
8.3 Adjusting tine spacing

Spacing between tines may be adjustable according to bale size.

8.3.1 Slacken off the nuts on the tine carrier clamp.

8.3.2 Slide the carrier along the frame.

8.3.3 Retighten the clamp observing the correct tightening torque (174 Nm).



Additional lower tine on MANUBAL V500, a 3rd tine is available as an option.



9. MANUBAL V50: changing grab setting

The MANUBAL V50 has 2 vertical grab settings (lower setting and raised setting). This enables 5 round bales to be stacked using the raised setting. A specific feature of the MANUBAL V50 is that the switch from the lower setting to the raised setting (and vice versa) may be operated without leaving the cab and without an additional hydraulic function on the loader.

9.1 Pick up a bale.

9.2 Set the MANUBAL V50 horizontal.

9.3 Move the tractor forward towards the stack that is being built up in order to operate the pusher, this unlocks the grab **1**.

9.4 Tilt the MANUBAL V50 forward in order to cause the grab to slide under the force of gravity, this locks the grab in the raised setting **2**.

9.5 Crowd the MANUBAL V50 back and set the bale down on top of the stack **3**.



To return the grab to the lower setting.

9.6 Set the MANUBAL V50 horizontal.

9.7 Operate the pusher against a stacked bale, this unlocks the grab.

9.8 Crowd the MANUBAL V50 back in order to cause the grab to slide under the force of gravity, this locks the grab in the lower setting.

CAUTION: keep all personnel away from the area in which the loader - MANUBAL V50 combination is moving while it is in operation.

10. MANUBAL W500: 2nd bale sensor adjustment

The MANUBAL W500 has 2 grabs that operate alternately. Picking up 2 bales is achieved without any repeat action.

10.1 Operating

10.1.1 Pick up a bale using the lower grab ①.



10.1.2 Move forward up to the second bale.
Lower the loader in order for the probe to contact the bale ②.



10.1.3 Without releasing the first bale, pick up the second bale by closing the upper grab ③.



10.2 Adjusting the detector

The 2nd bale sensor is adjustable for sensitivity.

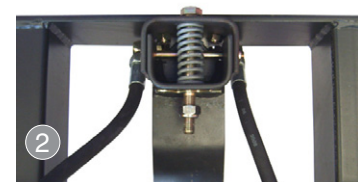
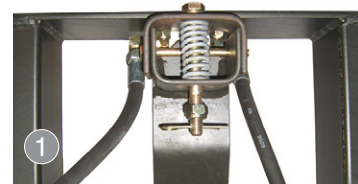
- Slacken off the 2 screws ①.
- Adjust the hydraulic block by altering its position.
- Retighten the 2 screws.



10.3 Overriding the sensor

The 2 grabs can be operated synchronised together. To do this the sensor needs to be overridden.

- Operate the probe to its fullest extent ①.
- Remove the clip and insert it in the upper hole in the drilled screw ②.



CAUTION: if the MANUBAL bale grab is supplied with independent controls for the 2 grabs there will be no 2nd bale sensor.

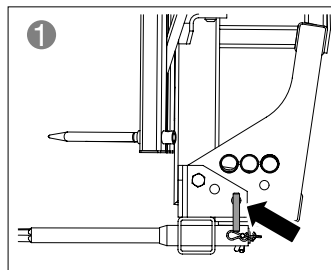
11. MANUBAL V7000: Using the lower tines

The MANUBAL V7000 features 3 lower tines particularly suited to handling rectangular bales. Its tines may be fixed, floating or folding.

11.1 Three configurations

11.1.1 Configuration 1: fixed tines.

Traditional configuration

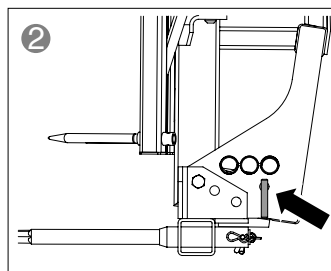


11.1.2 Configuration 2 : floating tines.

Several benefits:

- It eases withdrawal of the tines when setting a bale down. All it needs is to tilt the MANUBAL bale grab forward with the vertical mast and the tines will withdraw.
- It prevents unnecessary pressure from being exerted on the bales when stacking and above all the telescopic handler boom dropping abruptly once the tines are clear.
- It reduces dragging on the ground and thus reducing wear.

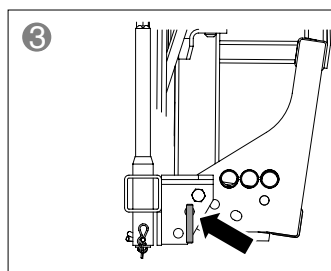
CAUTION: do not close the grab while the MANUBAL bale grab is tilted.



11.1.3 Configuration 3 : fold-up tines for road use.

1. Open the grab to its fullest extent (ram in rectangular bale setting, see chapter 6.2). Stop the engine.
2. Remove clips and pins.
3. Fold up the tines and carrier assembly.
4. While holding this position, refit the pins and clips in the holes provided for this purpose.

CAUTION: do not close the grab with the tines folded up.



11.2 Park position

When the lower tines are not being used, they can be stowed away in the MANUBAL bale grab without affecting its operation.

11.2.1 Place the MANUBAL bale grab on the ground with the grab closed and stop the engine.

11.2.2 Remove the clip then the pin from the tine.

11.2.3 Remove the tine from its location and slide it into the carrier.

11.2.4 Refit the pin and the clip.

11.2.5 Repeat the procedure for the 2nd and 3rd tine.



CAUTION: do not bump into the ends of the grab tines as injury may result. For greater safety, this operation should be completed with the grab closed.

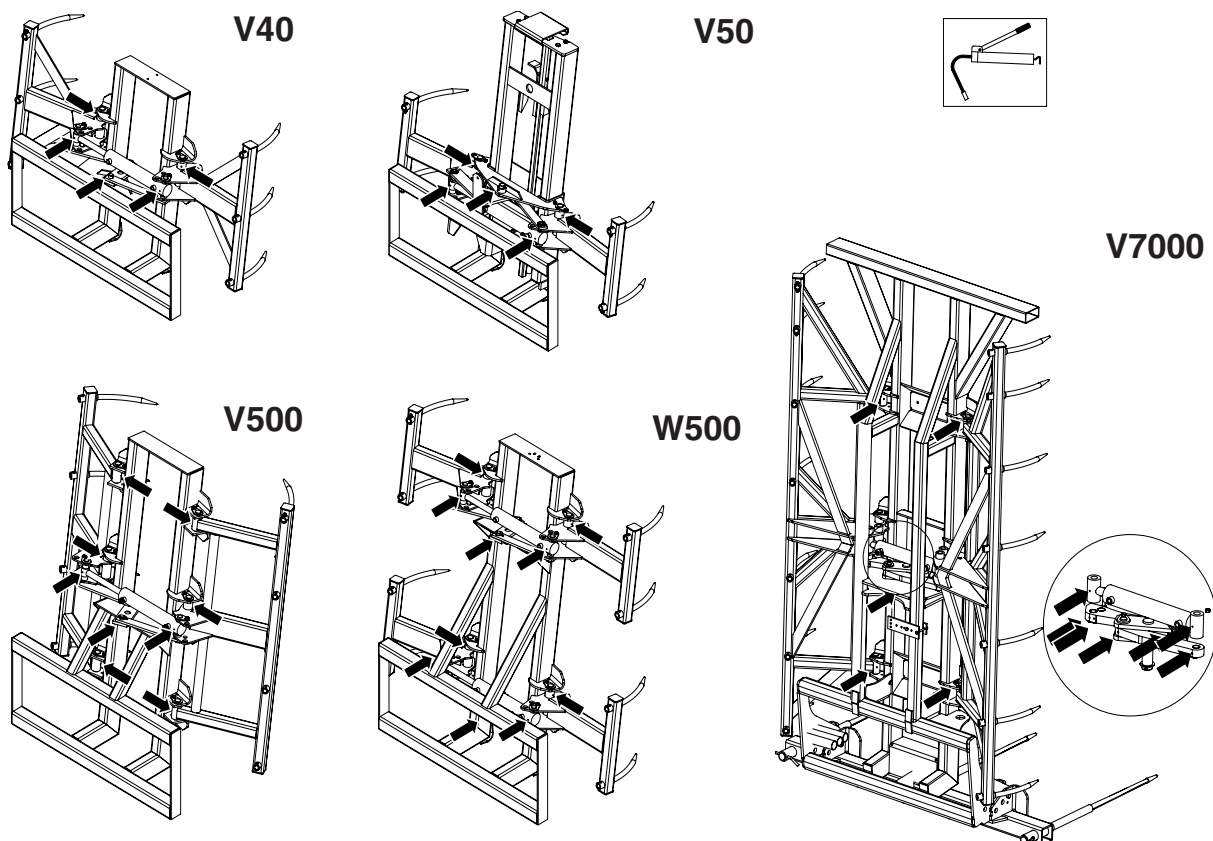
Additional tine on MANUBAL V7000, a 4th and 5th tine are available as an option.

12. MAINTENANCE / STORAGE

12.1 Maintenance

- Lubricate pivot points regularly. See lubrication points below.
- Ensure hydraulic connections are cleaned each time before they are connected.
- See to it that straw or hay residues do not jam up the pivot points.
- Check the MANUBAL bale grab to ensure that it is in proper working order throughout and that screws, clips and pins are in place before any use.
- Check the condition of the wear bushes and replace them before they are fully worn.

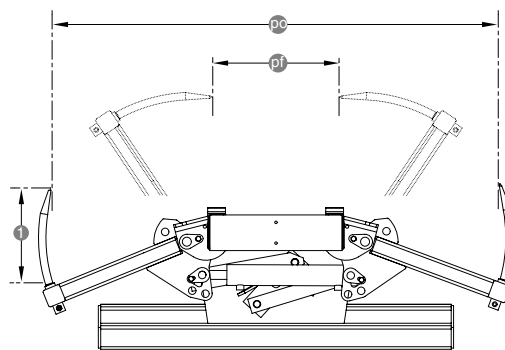
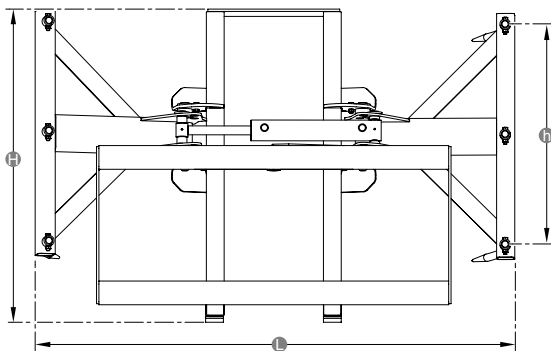
Lubrication points:



12.2 Storage

- Unhitch the MANUBAL bale grab with the grab opened (ram rod retracted).
- Lubricate pivot points.
- Coat the tines with oil.

13. TECHNICAL SPECIFICATIONS



		MANUBAL V40	MANUBAL V50	MANUBAL V500	MANUBAL W500	MANUBAL V7000
Performance	Stacking height	4 bales H 1.20 m	5 bales H 1.20 m	5 bales H 1.20 m	5 bales H 1.20 m	6 bales H 1.20 m
	Number of bales picked up	Up to 2 bales H 1.20 m	1 bale H 1.20 m	2 bales H 1.20 m	2 bales H 1.20 m (with 2 independent grabs)	3 bales H 1.20 m
	Bale diameter	from 0.90 to 1.80 m				
	Number of tines on grab	6	4	8	2 x 4	14
Dimensions	Overall height (H)	1.070 mm	1.580 mm	1.800 mm	1.800 mm	3.000 mm
	Grab height (h)	750 mm	450 mm	1,450 mm	450 mm	2.550 mm
	Width (L)	1.625 mm	1.625 mm	1.625 mm	1.625 mm	1.800 mm
	Distance between tips grab closed (pf)	In round bale setting: 420 mm In rectangular bale setting: 1.020 mm				
	Distance between tips grab opened (po)	In round bale setting: 1.510 mm In rectangular bale setting: 1.570 mm				
	Tine diameter	25 mm				
Weight	Tine working length (1)	340 mm				
		200 kg	230 kg	250 kg	280 kg	740 kg
Wrapped grab kit*	Wrapped bale diameter	1 to 1.60 m	1 to 1.60 m	-	1 to 1.60 m	-
	Wrapped bale weight	Up to 800 kg	Up to 800 kg	-	Up to 800 kg	-
Lower tines**	Number of tines	2	2	2 / 3***	2	3 / 4*** / 5***
	Tine working length (1)	950 mm				
	Tine diameter	40 mm				
	Tine spacing	from 0.60 to 1.10 m	from 0.60 to 1.10 m	from 0.60 to 1.10 m	from 0.60 to 1.10 m	1.70 m, ext.
Recommendations	Loader / telescopic handler	Loader and telescopic handler	Loader	Loader and telescopic handler	Loader and telescopic handler	Loader and telescopic handler
	Min. pivot height	3.45 m	3.85 m	3.60 m	3.60 m	3.60 m
	Loader model	as from MX T406	as from MX T408	as from MX T410	as from MX T410	MX T417 MX T418

* Optional on MANUBAL V40, V50, W500

** Optional on MANUBAL V40, V50, V500, W500

*** Optional on MANUBAL V500, V7000

EC DECLARATION OF CONFORMITY C€

The manufacturer:

MX
19, Rue de Rennes
F - 35690 Acigné

Hereby declares that the following equipment:

V40, V50, V500, W500, V7000 Manubal

Comply with EC directive 2006/42 of the Council of European Parliament and of the council of 17th of May 2009 relating to machines.

Acigné, 28th of October 2013

A handwritten signature in black ink, appearing to be 'Loïc Mailleux', written over a horizontal line.

Loïc Mailleux
Technical Director



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