McHale Engineering Limited

998 SQUARE BALE WRAPPER

OPERATOR INSTRUCTION MANUAL
ISSUE 6

Serial No. 250161 → 250617

McHale Engineering Limited,
Ballinrobe,
County Mayo,
Ireland.
Tel. +353 94 9520300
Fax. +353 94 9520356
Email : sales@mchale.net
Website: www.mchale.net

I.SI EN ISO 9002

998 SQUARE BALE WRAPPER

OPERATOR INSTRUCTION MANUAL

Introduction

The **McHale 998 square bale wrapper** which you have purchased has been developed through years of constant research and development. Given proper care and attention the **998** will give years of reliable and dependable performance. However it is important that this operators manual is read and fully understood to achieve this, **before** the machine is operated. As part of this philosophy it is vital to use only **genuine McHale** replacement parts, as these are manufactured to the same standard as the original machine. These may be obtained through your **McHale** dealer.

If any part of this manual is not fully understood please contact your **McHale** dealer who will be able to answer any questions you may have. It is important to quote the machine serial number when requiring spare parts or technical assistance. Space is provided below to record machine details

Serial number:	
Year of manufacture:	
Date of delivery:	

If you require further copies of this instruction book
please quote part number: CLT00026

Due to a policy of continuous product development and improvement, McHale Engineering Ltd reserve the right to alter machine specification without prior notice.

Contents

This page is intentionally left blank.

1. Designated use of machine

The McHale 998 square bale wrapper is designed to wrap, with plastic stretch film, rectangular section bales of forage for the purpose of storage as fodder for livestock. This designation includes movement of machine, between fields by track or road, incidental to the wrappers main use.

The manufacturer will not be held responsible for any loss or damage resulting from machine applications other than those specified above. Any other use the machine may be put to, is entirely at the owners/operators risk.

2. Technical specifications

Transport length	7.30m (24')
Transport width	2.99m (9' 10")
Transport height	3.5m (11' 6") (at lowest machine height)
Weight (unladen)	3875 kg (8680 lbs.)
Tyre dimensions	16.0/70-20 12 ply
Attachment to tractor	Cat 2 lower linkage
	SAE 6 spline PTO shaft
PTO speed	600-800 RPM
Hydraulics	Self contained load sensing
Hydraulic requirements	1 single acting spool valve (Front conveyor lift)
	1 double acting spool valve (Drawbar)
Hydraulic tank capacity	130 litres (approx)
Film stretch	64% (55% optional)
Film layers	2,4,6,8,10 or 12
Electrics	12Volt DC

Options:

1) Remote control kit for static machine operation.

2) Round bale kit.

3. Safety warnings

1) General safety warnings

Important :- Only competent operators who have fully read and understood this manual should operate this machine or perform maintenance on this machine.

1) Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine.

2) Before operating the machine ensure you are familiar with the functions of the machine.

3) Before travelling on public highways always ensure you are familiar with the road traffic regulations relating to the country of use. This includes the use and fitment of lights and brakes.

4) Always follow manufacturers instructions when attaching/detaching machine from tractor.

5) Always be familiar with health and safety regulations that may be in force in the country of use.

6) Under no circumstances may people or animals be carried on the machine.

7) Always keep children and spectators well away from the danger area of the machine while it is in operation. The danger area is within **2 metres** of any part of the machine and no persons should be in that area while the machine is operating. The only person who should be present is the machine operator who should be seated in the tractor cab while the bale wrapper is in operation.

8) Always ensure guards and other safety devices are kept in good working order. Replace if necessary.

9) Always ensure that electronic control box and PTO are switched off while transporting the machine on the road.

10) All safety decals on the machine must be kept in good readable condition. If they are not or are missing, replacements are available from your **McHale** dealer.

11) Adjust driving speed to suit ground conditions.

12) Always maintain machine according to manufacturers recommendations.

13) Never operate machine with dispenser safety arms damaged or missing.

14) Never carry out any unauthorised modification to the machine.

15) Never increase speed of the dispenser rotation. Warning: Dispenser arm rotation must never exceed 25rpm.

16) Particular care to be taken if machine is left idle for any extended period, to ensure all sensors and safety features are working correctly.

17) Never disable any electrical safety circuits.

18) Always take extra precautions when using the machine on hilly or sloping ground.

2) Hydraulic safety warnings

1) Always ensure system is not under pressure before working on it.

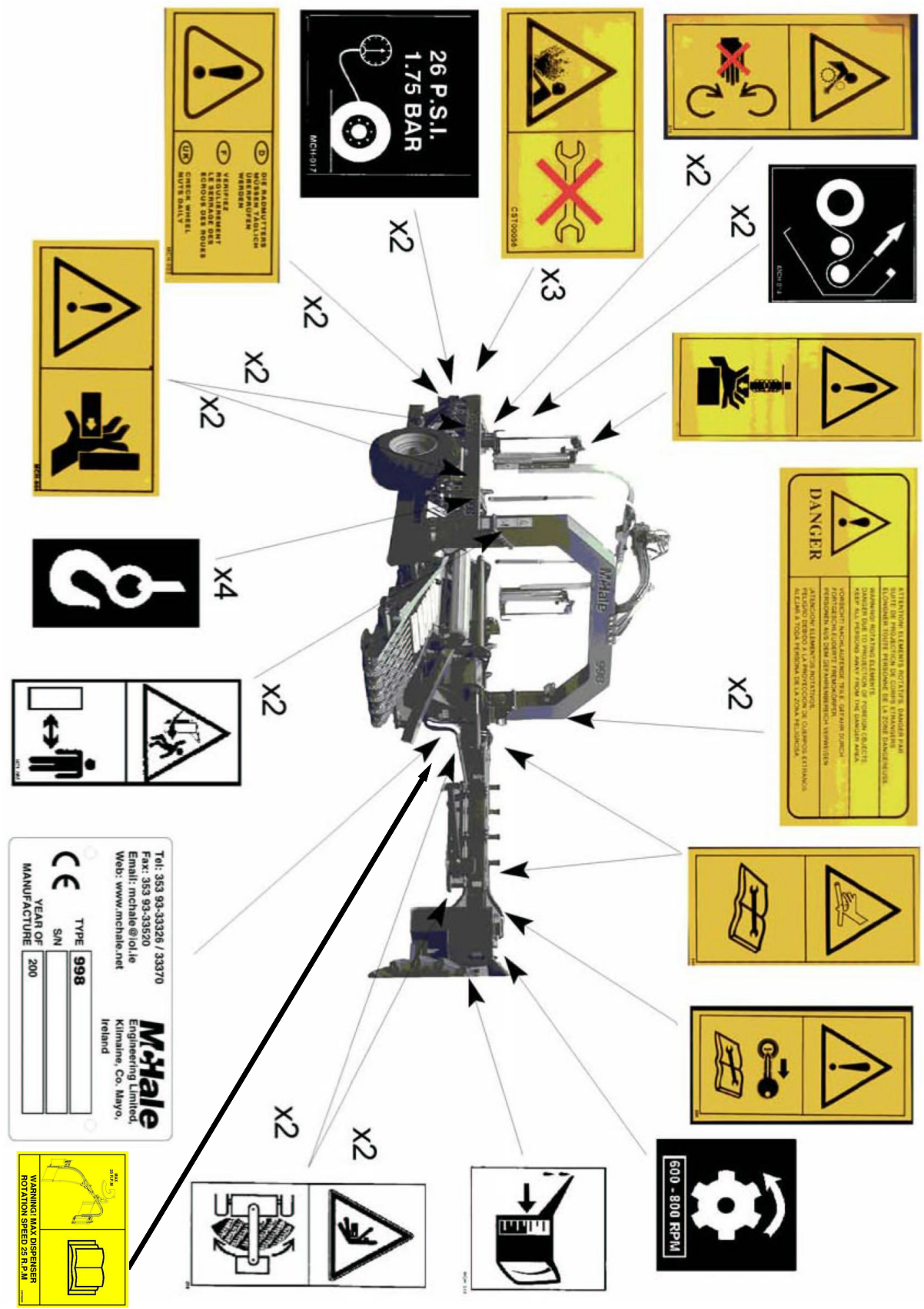
2) If any hoses are removed ensure they are marked and returned to the correct position during reassembly.

3) Check hoses regularly for signs of leakage or wear. If in doubt always replace.

4) As the cut and hold is kept closed by gas accumulator pressure it will be necessary to release this before working on this circuit. Otherwise injury may occur.

5) Do not work on hydraulic systems unless you have a working knowledge of them and feel confident to do so.

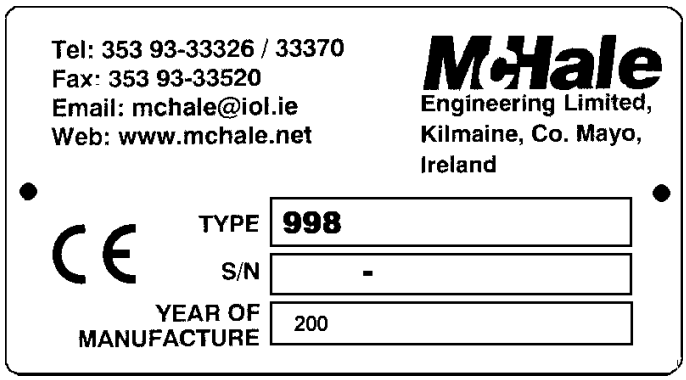
4. Safety/instruction decals



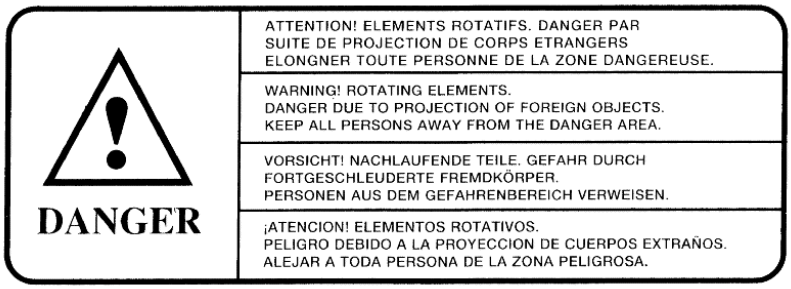
1) Description of safety warnings and instructions

All safety decals on the machine must be kept in good readable condition. If they are not or are missing, replacements are available from your McHale dealer.

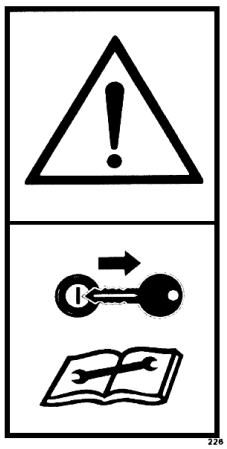
It is important that all safety warnings and instructions are understood and followed. The part numbers are shown in brackets.



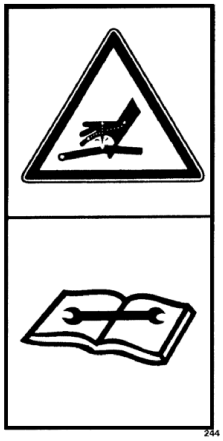
Machine Chassis plate



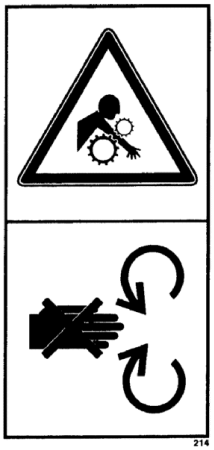
Danger of rotating parts, foreign objects.
Keep clear of machine while working.
(CST00014)



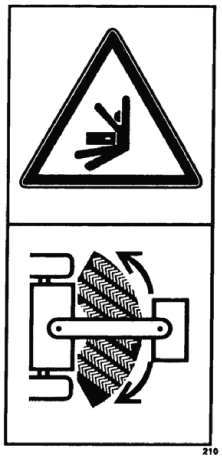
Stop tractor,remove ignition key and read instruction manual before working on the machine.
(CST00015)



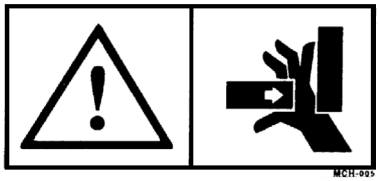
Read instruction manual before working on any part of the hydraulic system. Injury may be caused by systems under pressure.
(CST00016)



Keep hands clear of rotating rollers.
(CST00017)



Keep out of drawbar crush area.
(CST00018)

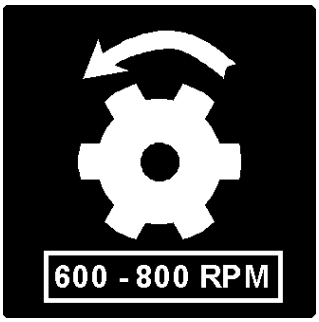


Keep hands out of crush area.
(CST00019)

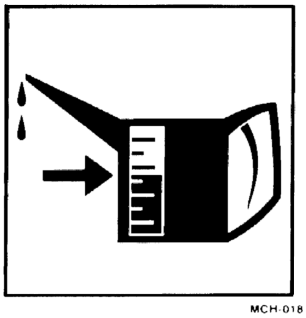
Check wheel nuts daily.
(CST00020)

Check tyre pressure.
(CST00021)

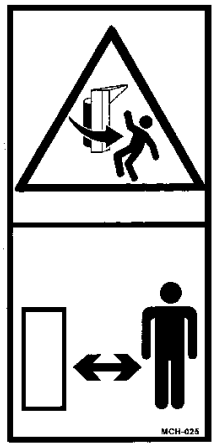
Diagram of plasic film path through Dispenser.
(CST00022)



PTO speed to be between 600 and 800 revolutions per minute.
(CST00023)

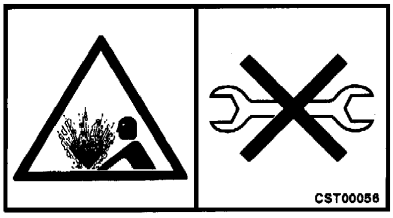


Check oil level
(CST00024)

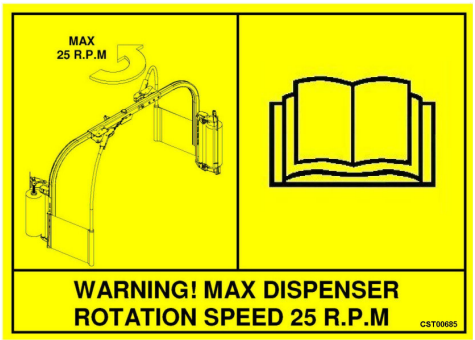


Keep clear of rotating Dispenser.
(CST00040)

Lift machine at these points.
(CST00032)



Do not dismantle. Risk
of pressure release.
(CST00056)



Warning! Never operate
dispenser above 25 R.P.M
(CST00685)

5. Machine operation

1) Tractor requirements:

The minimum recommended size of tractor for operating the wrapper comfortably would be a 60-70 kW. model. However if working in difficult conditions this will need to be increased.

The following items on the tractor are required for fitment of the bale wrapper.

a) Category 2 Lower Linkage

b) 1 3/8" SAE 6 spline PTO Shaft running at 600 - 800 R.P.M.

c) One (1) Double acting Spool Valve (Drawbar)

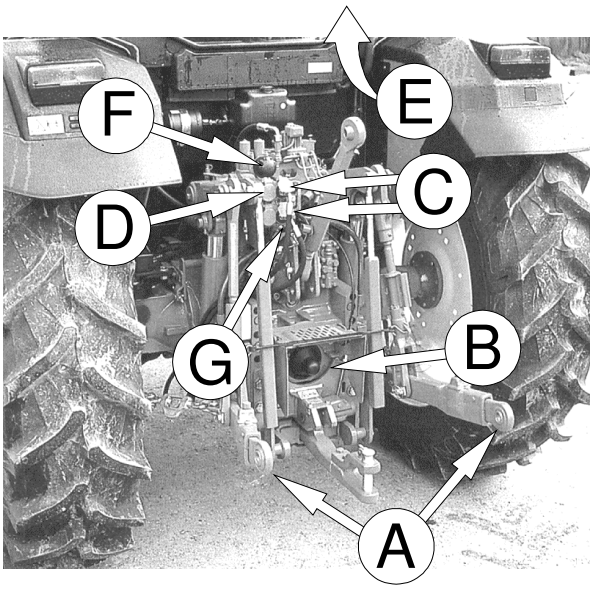
d) One (1) Single acting Spool Valve (Conveyor lift)

e) One (1) 12V electrical supply (Euro socket **or** supplied battery power cable)

f) One (1) 7 pin lighting socket

g) One (1) Hydraulic Brake Coupling **or**

Two (2) Air Brake Couplings



2) Attaching tractor to machine

Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine. Always follow manufacturers instructions when attaching/ detaching machine from tractor.

1) If using tractor quick couplers secure the lower link balls into the hitch bar using the pins provided. Otherwise remove pins from hitch bar.

2) Reverse tractor up to wrapper and attach lower links either hooking up the quick couplers or attaching directly with the pins provided.

3) Cut PTO shaft according to the PTO manufacturers recommendations attached to the shaft. This only applies to machines being fitted for the first time or if the tractor working the machine is changed.

4) Fit PTO shaft.

5) Plug the hydraulic pipe, with the tap, into a single acting spool valve. This lifts the front conveyor. The tap may now be turned on by lining the handle up with the pipes. Ensure there is nobody near the front conveyor before carrying this out.

6) Plug the remaining two hydraulic fittings into a double acting spool valve. These operate the drawbar hydraulic cylinder.

7) Plug the hydraulic/air brake pipe/pipes into the appropriate fittings on the tractor.

8) Plug the 7 pin lighting plug into the 7 pin socket on the tractor.

9) Place the electronic box in the tractor cab and secure to the glass in an appropriate place using the suction pad on the rear. Safety strap must be secured to prevent box from accidental damage. If there is no cab on the tractor secure as appropriate bearing in mind the box is **not waterproof**.

10) Screw 24pin socket on electronic box and 24 pin plug on machine together.

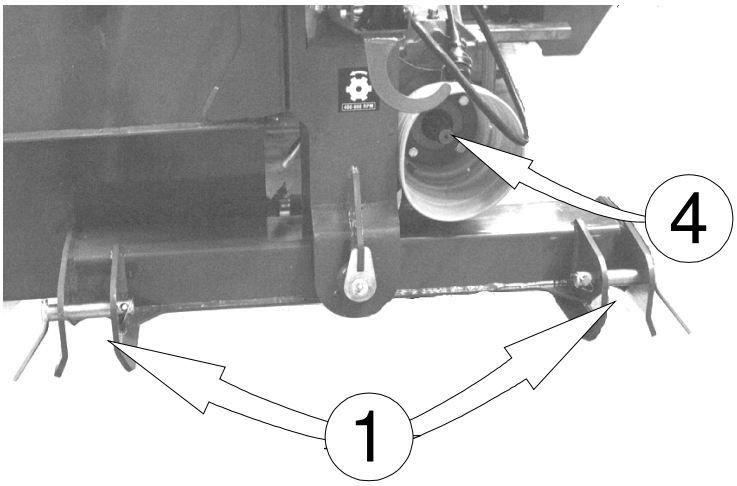
11) Connect control box to tractor euro socket **or** battery using the power cable provided. **There must be a good 12V supply to the control box.**

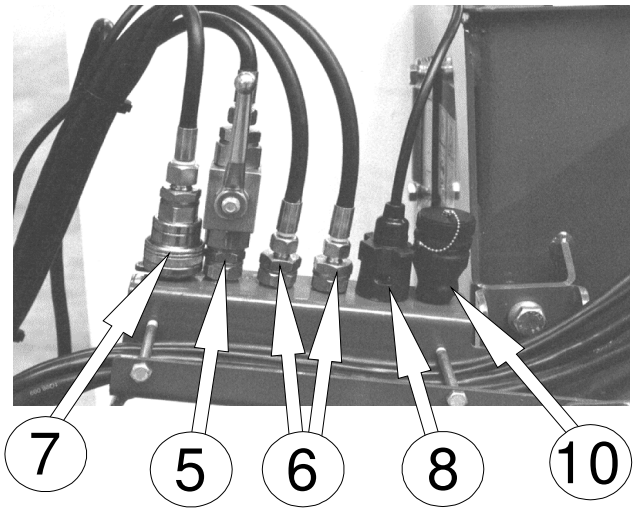
12) Raise machine on tractor linkage and swing parking stand into working position.

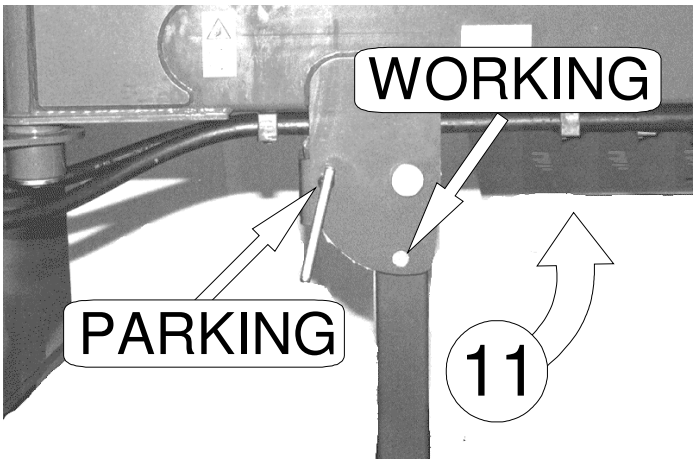
13) Move tractor linkage so that wrapper is parallel to the ground.

14) Check that all above functions operate correctly.

15)The machine is now ready to work.







3) Road transport

Before travelling on public highways always ensure you are familiar with the road traffic regulations relating to the country of use. This includes the use and fitment of lights and brakes. Always ensure that electronic control box and PTO are switched off while transporting the machine on the road.

The following must be checked, as a minimum requirement, before moving the machine on a public road.

1) Drawbar must be changed to transport position by closing the hydraulic cylinder and moving the safety stay to lock the hydraulic cylinder closed.

2) The front conveyor is raised to the top and the on/off tap is turned off by turning the handle at right angles to the hoses.

3) The dispensers must be swung around so that they are inside the transport width of the machine.

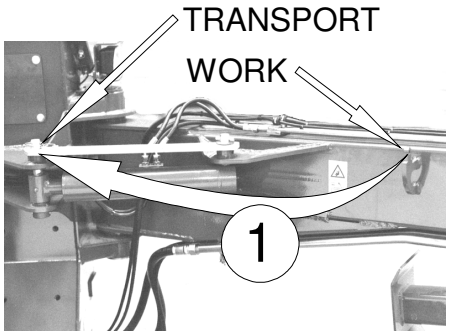
4) Ensure brakes are connected and working .

5) Ensure lights are connected and working correctly.

6) Ensure PTO is stopped on tractor and electronic control box is switched off.

7) If plastic film is to be transported on the machine it must only be done so on the holders provided and secured if necessary

8) The operator must ensure that any other regulations regarding road use are adhered to.



4) Preparing machine in field for wrapping

Only competent operators should operate this machine.
Under no circumstances may people or animals be carried on the machine.
Always keep children and spectators well away from the working area of the machine.

1) Remove drawbar transport lock and place in storage position. ***Do not*** operate the hydraulic cylinder with the transport lock in the transport position.

2) Swing out drawbar to working position using tractor spool valve.

3) Turn conveyor lift circuit tap to the on position (Handle in line with pipes).

4) Lower conveyor to the ground using tractor spool valve. The correct position for the conveyor is for the skid to be 0-30mm above ground level. A hydraulic accumulator is used to allow the conveyor to glide over the ground.

5) Engage tractor PTO and run machine.

6) Switch on electronic control box and set to “Manual”

7) Turn dispenser arm until it is at normal stopping position. Ensure dispenser safety arms are in good condition and in their working positions.

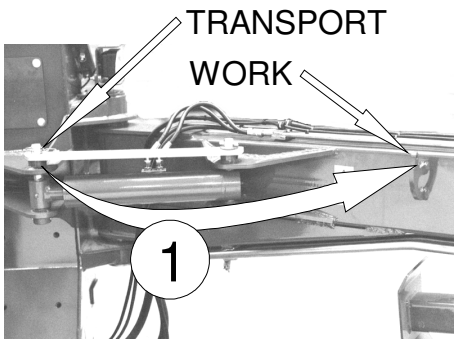
8) Switch off electronic control box, PTO and tractor. Remove tractor key.

9) Load plastic film into dispensers running it through the rollers as shown by diagram. Attach film to cut and hold by tying eye provided. See section 5) Loading plastic film.

10) Start tractor and run PTO at 600-800 RPM
Due to load sensing hydraulics, speeding up the PTO will not necessarily speed up all functions.

11) Switch on electronic control box and set to “Auto”.

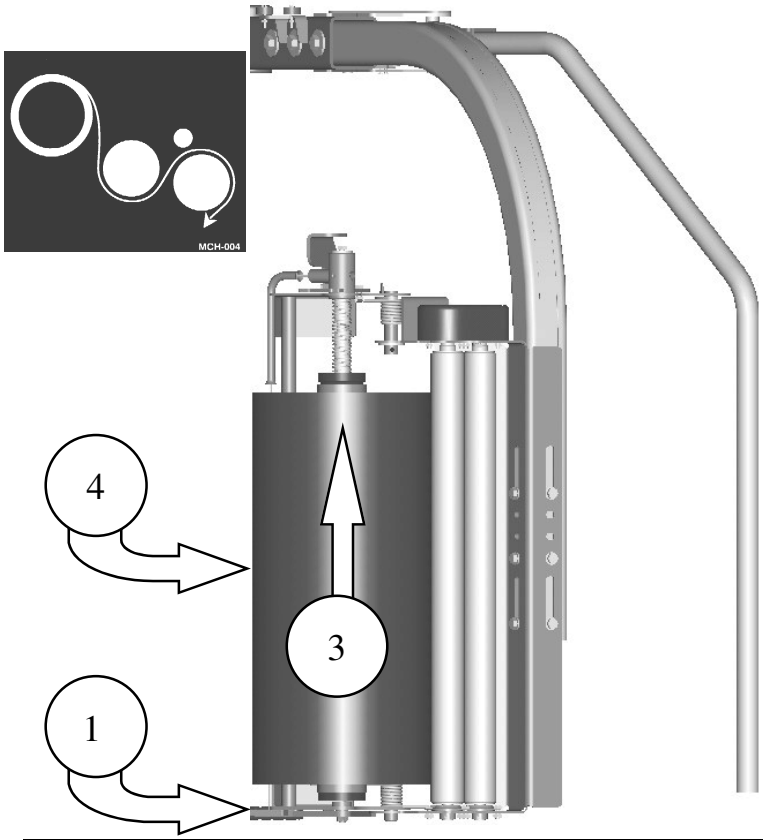
12)The machine is now ready to wrap.

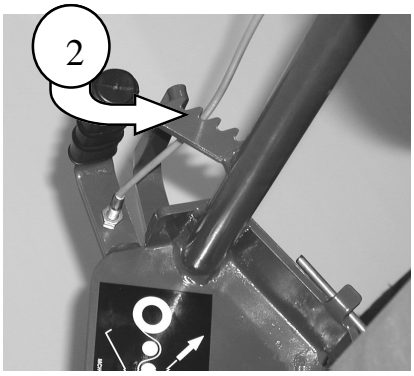


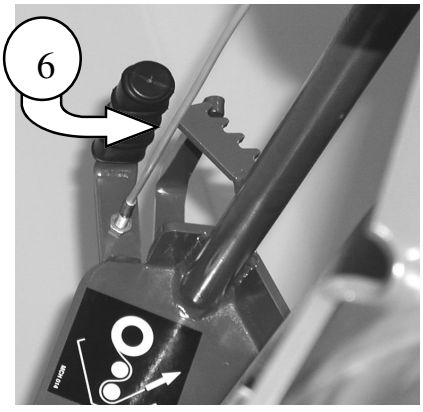
5) Loading plastic film

Always turn off the oil supply to the wrapper, apply the parking brake, and the dispenser trip arms put in the tripped position, before changing film rolls, or at any time the operator needs to go near the dispensers.

1) Push back handle until dispenser latches open.
2) Release film roll lock by locking the cable, in the notches provided, just enough, to release the roll lock for the old film roll to be removed and yet hold the top roll holder in the upwards position to allow fitting of new roll. (Usually works in the 2nd from outside notch)
3) To remove old roll, push upwards to latch top roll holder in the “up” position, and discard carefully.
4) Sit new roll onto bottom roll holder and centralise with top roll holder.
5) While still holding roll, pull cable to release top roll holder. The roll of plastic film is now held.
6) Re-engage the Film roll lock, by releasing the cable from the notch.
7) Thread the film through the dispenser rollers as per the threading diagram, taking care not to trap fingers between rollers.
8) Tie ends of plastic film together and lay across centre of table. ***Do not*** attempt to clamp plastic film in cut & hold itself.
9) Close dispenser by releasing the latch. The roll should now rest against one of the aluminium rollers.







6) Wrapping

Only competent operators should operate this machine.
Under no circumstances may people or animals be carried on the machine.
Always keep children and spectators well away from the working area of the machine.

The following is the recommended method for working the 998. It assumes the bales are well shaped for wrapping. However since it is impossible to allow for all differing conditions and terrain it may be necessary for the operator to vary this. ***However the safety of the operator and any bystanders is of utmost importance at all times.*** The electronic control box must be set up according to the bale size to be wrapped (See section 8).

1) Drive the tractor alongside the bale to be wrapped. It may take practice before the operator will be able to line up the bale to the conveyor accurately.

2) When the bale reaches the front of the conveyor press “Auto start” on the control box (box must be set to “Auto”). Drive forward to pick the bale from the ground. Normally it is possible to keep moving forward as the bale is being loaded. The cycle will now continue automatically as follows:

a) Bale travels along conveyor until correct position is sensed
b) Rollers lift bale up to wrapping height
c) Dispensers and rollers start rotating to wrap bale.
d) Cut and hold cuts plastic and holds it for the next cycle
e) The bale is levelled and lowered onto conveyor.

Auto mode note: For testing a wrapping sequence in auto square bale mode a bale must be present otherwise program will stop after 5 seconds. If no bale is present, the cradle will lift, the rollers will rotate to try and level the bale but then stop the cycle after 5 seconds when a bale is not found.

3) If there is another bale waiting on or in front of the conveyor ,“Auto start” may be pressed again to roll off the wrapped bale and start the cycle again. Otherwise the bale may be unloaded by operating the conveyor switch on the control box. Ensure the wrapped bale is completely off the machine before wrapping another.

4) While one bale is being wrapped another may be loaded onto the conveyor

(3) Press “Auto start”

ready for wrapping. To do this the bale is loaded by the “conveyor load” switch.

(4) Use “Conveyor load” switch

5) When changing the plastic film rolls always turn off the tractor, PTO and electronic control box. Always remove key from tractor.

6) If the wrapped bale is not properly covered before leaving the machine it is possible to rewrap the bale by pushing the “bale up” switch while still in “Auto” mode. This switch allows the automatic cycle to start without using the conveyor.This should only be done with the bale in the correct position along the conveyor.

This page is intentionally left blank.

6. Bale requirements

The bales to be wrapped should be well shaped, dense and of suitable quality for making silage. Substandard material will not produce good quality silage regardless of how well the bale is wrapped.

The 998 wrapper is designed to wrap many different sizes of bales which are given below.

* denotes that the 998 wrapper will wrap bales of this size.
# denotes the 998 wrapper will wrap bales of this size using the small bale kit.

Cross section: 1200mm wide, 700-1600mm high
800mm wide, 700-1000mm high

Length: Up to 1900mm long

Make	Model	Single Bale	Double Bale
Case	530	*	
	540	*	*
	550	*	
Claas	1100/1150	#	*
	1200/2200	*	*
Fiatagri	4860	*	
	4880	*	
John Deere	680	*	
	690	*	*
Krone	Bigpack 80-80	*	
	Bigpack 120-80	*	*
Massey Ferguson	185	*	
	187	*	*

Make	Model	Single Bale	Double Bale
Mengele	530	*	
	540	*	*
	550	*	
New Holland	710/BB920	#	*
	D1000	#	*
	1010/BB940	*	
	1210/BB960	*	
Welger	D4000	*	
	D6000/D6050	*	*

Bales of sizes 800 mm wide, 500-1400 mm high can be wrapped using small bale kit

7. Plastic film requirements

It is of utmost importance that top quality plastic film is used for wrapping bales. Always follow manufacturers recommendations on storage and use of the film.

It is recommended that a **minimum** of **six (6)** layers of film are applied to the bale. If the material being wrapped is of a hard or stemmy nature it may be necessary to apply **eight (8)** layers to ensure a good airtight package. The operator needs to ensure that the bale is correctly wrapped.

It is good practice to periodically check the bales after being wrapped for any torn, split or punctured plastic film. If the stubble in a particular field has a tendency to puncture the plastic film,it is strongly advised to wrap the bales at the stack, where there may be more control over ground conditions.

When wrapping square bales, the number of rotations of the wrapping arm is determined by the control box settings (as outlined on the following pages) and the bale size. Each bale is measured independently and the correct amount of rotations is applied accordingly. This is pre-set and is not operator adjustable.

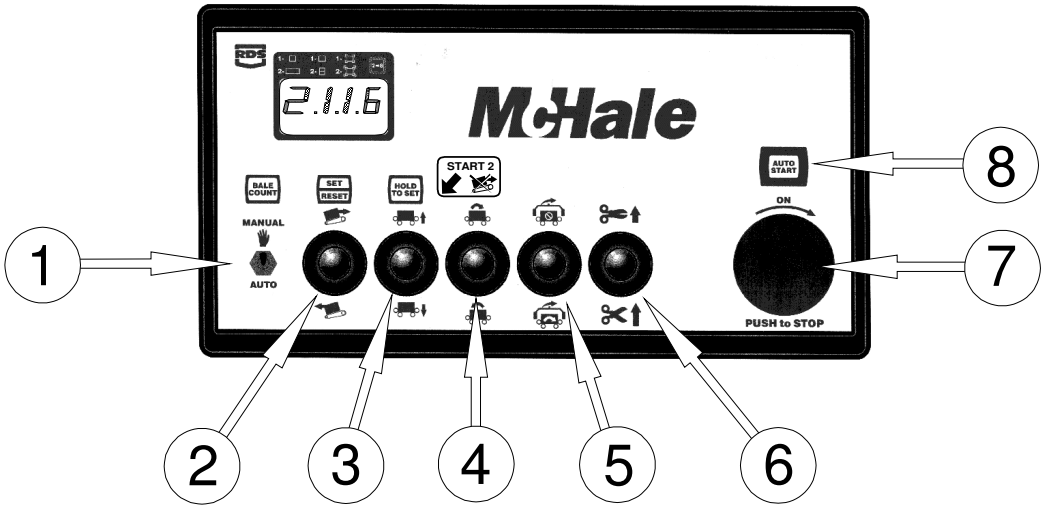
When wrapping round bales, see the instructions at the rear of the book for setting the film requirements. This adjustment **is not** pre-set and requires correct operator setting to ensure proper wrapping and needs to be checked regularly.

Only 750mm film to be used unless otherwise stated.

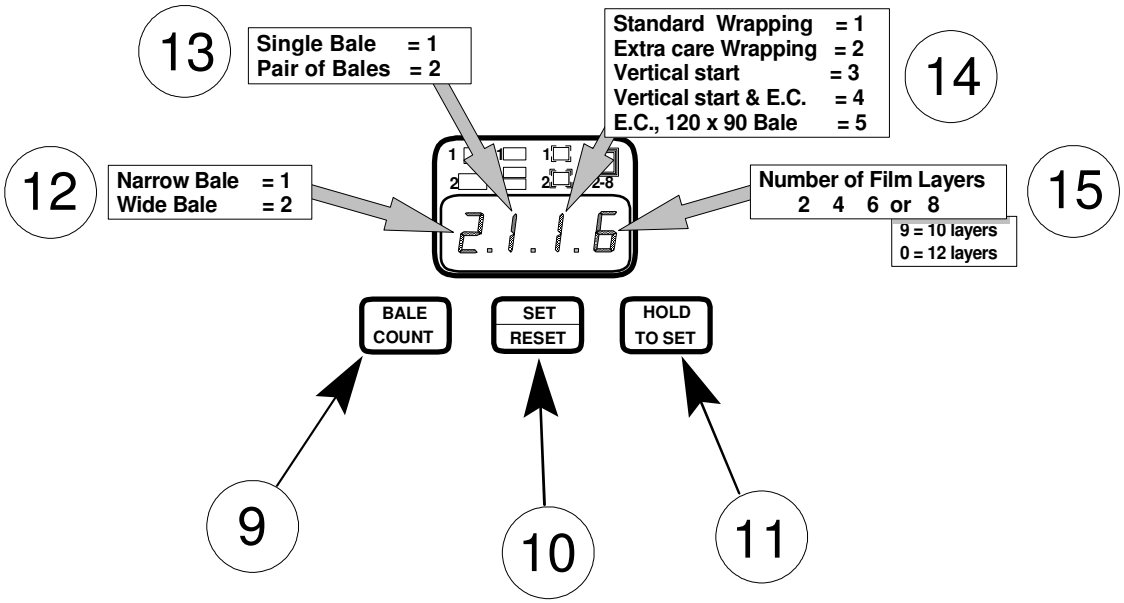
8. Electronic control box

The Electronic Control box is the main interface between the operator and the machine. While the machine is fully automatic, setting up is required before wrapping commences. It is also possible to work the machine manually through the switches on the box.

1) Control Box Functions



No.	Function	Operation
1	Manual/Auto switch	Manual or automatic working mode
2	Conveyor direction	Push up Move bale to rear Push down Move bale to front
3	Bale Lift	Push up Lift bale up Start auto cycle without conveyor Push down Lower bale down
4	Roller rotation	Push up Rotate bale forward Push down Rotate bale backwards
5	Dispenser rotation	Push up Rotate dispensers only Push down Rotate dispensers and rollers
6	Cut and hold	Push up Release plastic Push down Fully open
7	Stop button	Switches on/off electrical supply
8	Auto start	Press to start automatic cycle



No.	Function	Operation
9	Bale count	Reads bale counters
10	Set/reset	Setting control box
11	Hold to set	Setting control box
12	Left display	Wide (1200mm)/Narrow (800mm) Bale
13	Left middle display	Single/Double Bale
14	Right middle display	Standard/Extra care/on edge/on edge extra care
15	Right display	Number of Layers of plastic film (2,4,6,8,10,12)

Auto mode note: For testing a wrapping sequence in auto square bale mode a bale must be present otherwise program will stop after 5 seconds. If no bale is present, the cradle will lift, the rollers will rotate to try and level the bale but then stop the cycle after 5 seconds when a bale is not found.

Note;
The “Extra care” wrapping cycle applies extra film on certain places on rectangular bales (i.e. Claas Quadrant 1200) if so desired. This helps to wrap these type of bales evenly. The “on edge” options on item 14 allows wrapping of the bale to start and finish with the bale sitting on its side.

For 120 x 90 size bales select Option 5.

2) Changing bale settings

1) Press and hold the HOLD TO SET button. The first digit starts flashing

2) Still holding the HOLD TO SET button press and hold the SET/RESET button. The first digit will step from 1 to 2 and back to 1.

3) When the desired number shows for this digit release the SET/RESET button. The second digit will now start flashing.

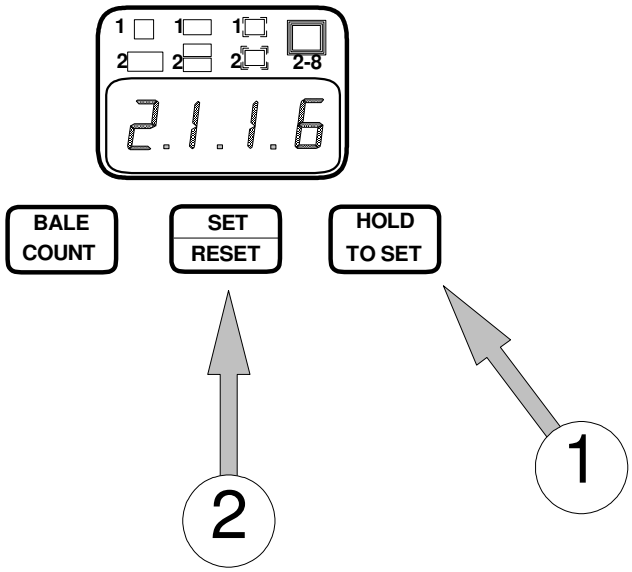
4) Press the SET/RESET button and the second digit will step from 1 to 2 and back to 1.

5) When the desired number is displayed release the SET/RESET button.

6) Digits three and four are programmed in a similar manner.

7) When all digits are programmed release HOLD TO SET.

8) The control box is now ready to work.



3) Changing machine settings

It is possible to change some of the machine settings through this process. There are three (3) settings as follows.

a) Bale position along conveyor. (0 (front) - 40 (rear))
b) Round bale factor. (Normally 10)
c) Cut & hold release duration (1-2 seconds)

Adjust as follows.

1) Push the red STOP switch.

2) Press and hold the HOLD TO SET button.

3) Release the STOP switch by turning.

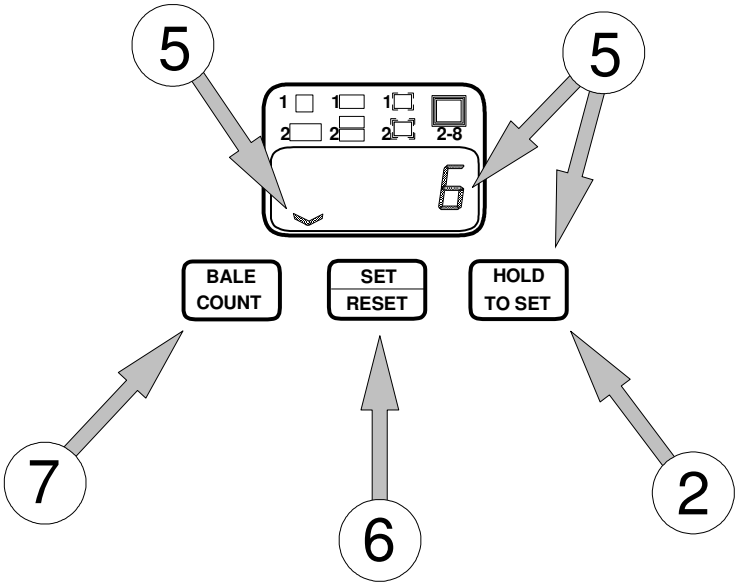
4) Release the HOLD TO SET button.

5) The display will show a chevron and a number (setting **a)** shown). The position of the chevron determines which setting is being shown. To move to the next setting press HOLD TO SET.

6) To increase the value of the setting press the SET RESET button.

7) To decrease the value press the BALE COUNT button.

8) When the desired settings are shown press the red STOP button to store the settings in the electronic memory.



4) Bale count

The electronic control box contains two bale counters. One of these may be reset so it can count number of bales per day, per field or per farm. The other counter cannot be reset and counts the total number of bales the machine has wrapped. The counters may be read as follows:

Resettable count

1) Press and hold the BALE COUNT button.

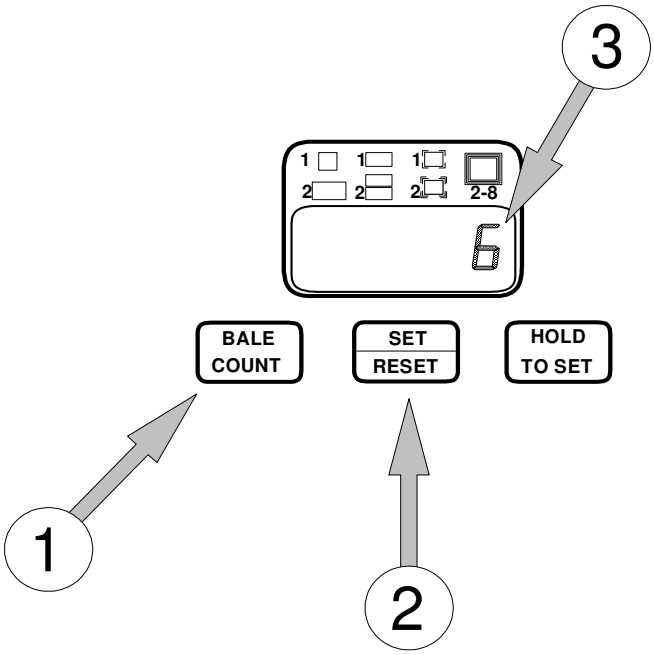
2) The number of bales wrapped since the counter was last reset is shown.

3) To reset press the SET/RESET button.

Total count

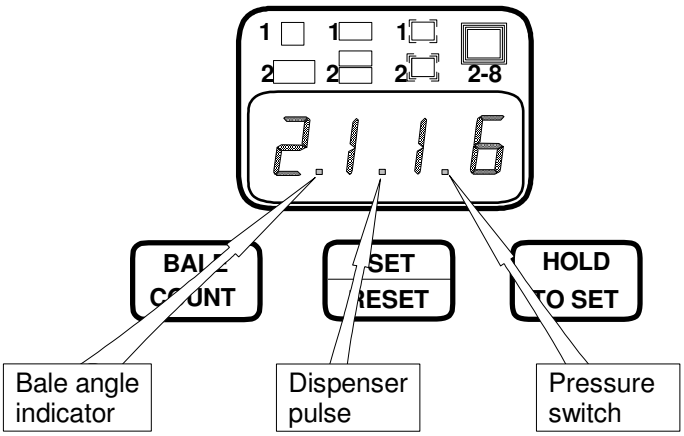
1) Press and hold the BALE COUNT button for approximately 8 seconds. Four bars will now be shown in the display.

2) The total number of bales will now be shown. This counter cannot be reset.



5) Test indicators on the display

The three decimal points on the display are used to show the status of the bale angle detector, the dispenser sensor and the pressure switch signal.



TESTING

Bale angle indicator

This shows that the control box is receiving a signal from the comparator which in turn indicates the potentiometers are working.

If a square bale is available switch the control box to “MANUAL”, raise the bale on the rollers, push the center switch upwards to rotate the bale in a clockwise direction, as the bale rotates the direction indicator should flash on and off. For the first 45 degrees of rotation the indicator should be on, (the comparator LED will be red) the next 45 degrees of rotation the indicator should be off (the comparator LED will be green) and so on while the bale is rotating.

If a square bale is not available switch the control box to “MANUAL”, raise the rollers by operating the bale up switch and switch off the tractor. Rocking the roller cradles should now cause the indicator to switch on and off and the comparator LED to change colour.

Coarse adjustment of the potentiometers is achieved by rotating the roller cradles upwards to the horizontal position where a small movement of either the left or the right cradle should cause the indicator and comparator LED to change state. Fine adjustment can be done when there is a bale on the machine as described in section 9-13.

Dispenser pulse

This indicates that the sensor and magnets which monitor the position of the rotating dispensers are working correctly. To test; switch the control box to “MANUAL”, rotate the dispensers by pushing up the “wrapping switch” and the indicator should blink twice per rotation of the dispensers. Failure of the dispenser sensor is usually indicated in an automatic cycle by the dispensers rotating but the bale failing to move.

Pressure switch

To test; while in “MANUAL” operate the “bale up” switch to raise the rollers, then press and hold the “bale down” switch to lower the rollers, when the rollers reach the bottom the pressure switch indicator should indicate. The indicator should be off when the machine is idle.

9. Machine adjustments

Only competent operators should operate this machine. Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine. Always maintain machine according to manufacturers recommendations.

From time to time it may become necessary to carry out adjustments to the machine, whether to improve machine performance or allow for general wear and tear. Such adjustments are part of the machine design. The following chapter gives details of how to go through the various adjustments. Some of these are field adjustments while others will be performed during machine maintenance.

1) Front conveyor skid
2) Bale guides
3) Rear unloading roller
4) Machine height
5) Dispenser height
6) Cut & hold knife
7) Cut & hold horizontal movement
8) Cut & hold height
9) Cut & hold rail
10) Dispenser arm sensor
11) Trip arm switch
12) How to test trip arm operation.
13) Cradle down sensor
14) Bale levelling device
15) Bale load sensor
16) Main conveyor chain
17) Front pick up chain
18) Front conveyor drive chain
19) Roller drive motor chain
20) Roller drive chains
21) Main conveyor drive chain

1) Front conveyor skid

The skid on the front conveyor is height adjustable to allow for differing operating conditions or if the machine height is changed. To adjust this height go through the following procedure.

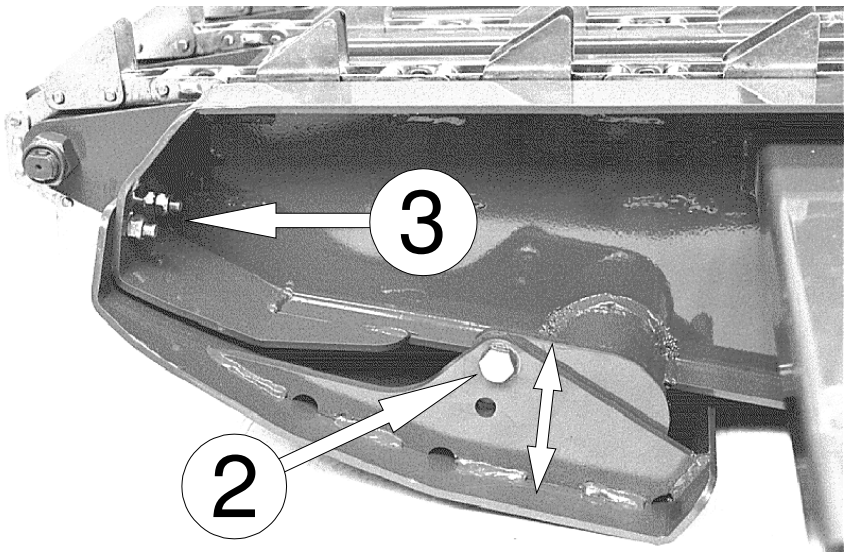
1) Ensure Conveyor is fully raised and supported.

2) Remove two (2) M14 nuts and bolts on skid.

3) Move skid to new position. It may be necessary to loosen the front bolts (4xM12) to achieve this. (Factory setting shown)

4) Insert two (2) M14 bolts into appropriate holes and tighten nyloc nuts.

5) Retighten front bolts if they have been loosened.



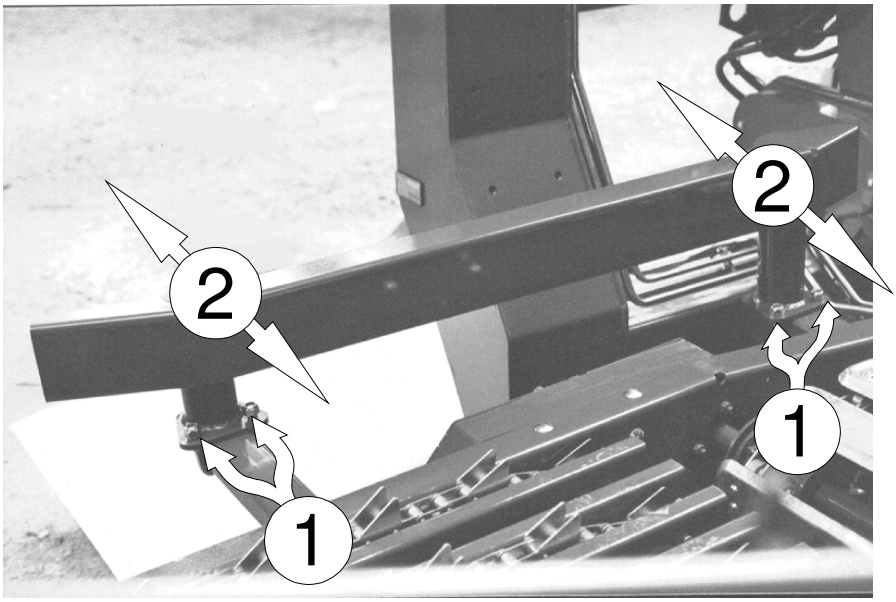
2) Bale guides

The front conveyor is fitted with two (2) adjustable bale guides, one (1) on the left hand side and one (1) on the right hand side. The distance between the two guides is adjusted to allow for different widths of bales. It is important that the guides are set for the correct bale width to ensure that the bale centralises on the main conveyor. As a guide, the bale guides should be set 100mm-200mm wider than the bale at their narrowest point. They may be set as follows.

1) Loosen eight (8) M16 nyloc nuts on “U” bolts.

2) Move guides to desired position ensuring that they are equal both sides.

3) Tighten the eight (8) M16 nyloc nuts.



3) Rear unloading roller

The rear unloading roller is fitted with adjustment to allow various sizes and lengths of bales to roll off the machine gently. Normally it will not need adjustment, however it may be adjusted as follows.

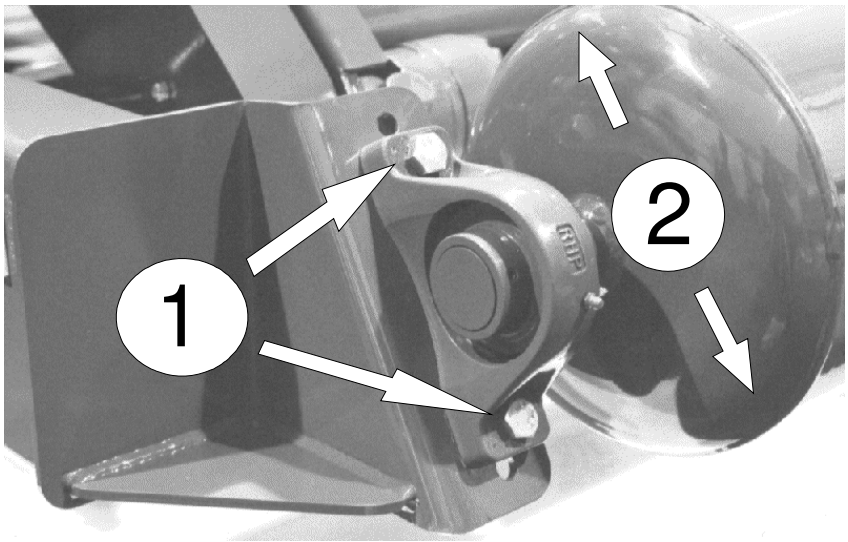
1) Remove two (2) M14 nuts and bolts on one side ensuring roller is fully supported.

2) Move roller to desired position. (Factory setting shown)

3) Insert the two (2) M14 bolts and replace the nuts fingertight.

4) Repeat steps 1) to 3) for the opposite end of the roller.

5) Fully tighten the four (4) nyloc nuts.



4) Machine height

The height of the machine from the ground may be increased/decreased if desired. It is achieved as follows:

1) Jack up and support machine ensuring machine cannot move.

2) Remove six (6) wheel nuts and remove wheel.

3) Support stub axle and remove six (6) M20 nuts and bolts.

4) Move stub axle to desired location. (Factory set as shown)

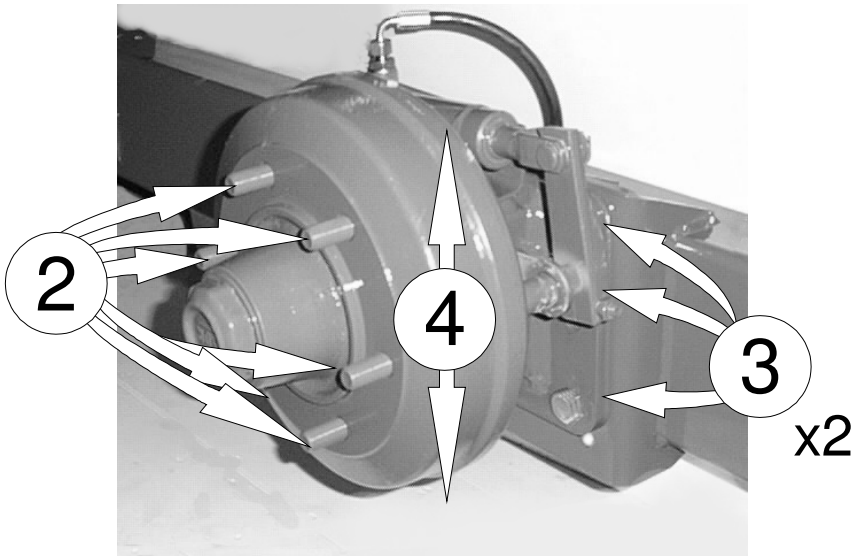
5) Insert the six (6) M20 bolts and tighten the nyloc nuts

6) Replace wheel and tighten six (6) wheel nuts.

7) Remove supports and jack.

8) Repeat for other wheel.

Note:
It may be necessary to adjust the front conveyor skid.



5) Dispenser height

The plastic film needs to be applied around the centre of the bale to ensure optimum coverage. To adjust this the dispenser may need to be adjusted up or down as necessary. **Do not adjust too low as the dispenser may touch the Cut & Hold.**

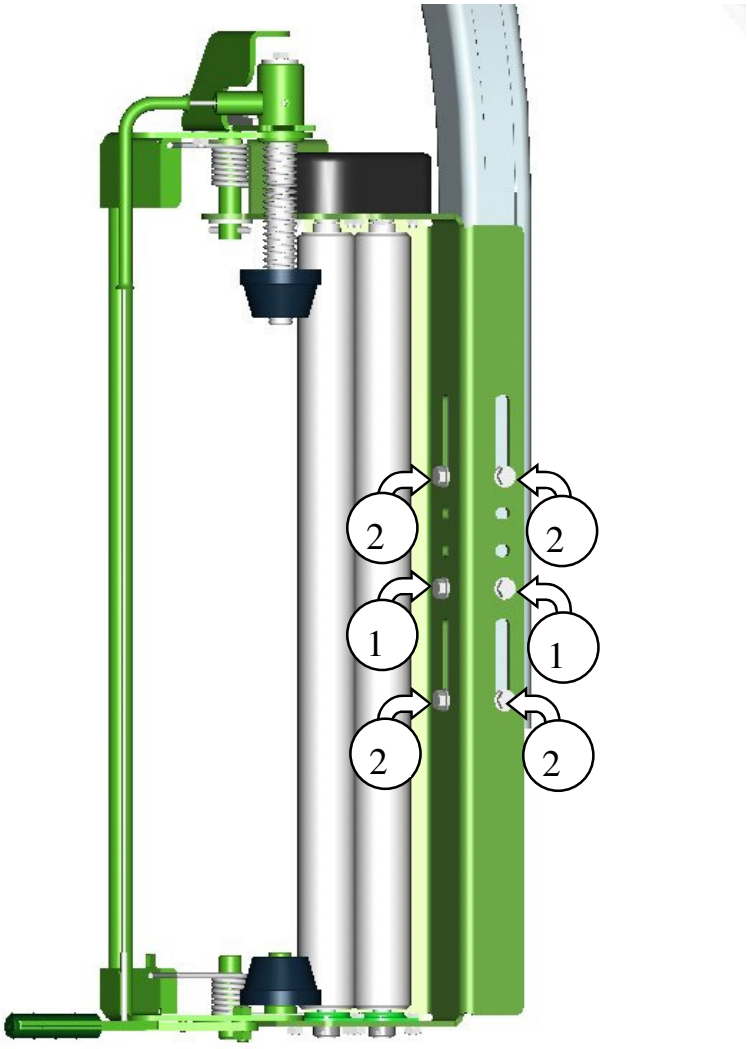
1) Remove the two centre bolts and washers.

2) Open the top two bolts and the bottom two bolts back a few threads. Do not remove these bolts, as they support the weight of the dispenser unit.

3) There are three height positions for the dispenser unit. Move the dispenser up or down as required. Insert the centre bolt when the required height has been selected.

4) Tighten all bolts fully.

5) Rotate dispensers slowly to ensure they do not touch any other part of the machine



6) Cut and hold knife

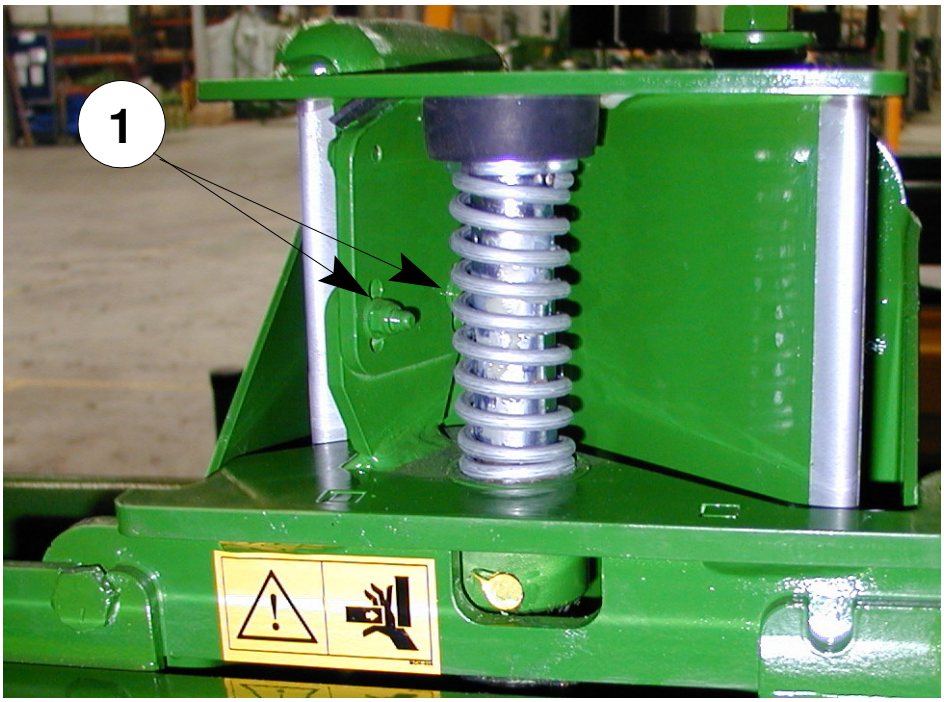
The cut and hold knife may be adjusted up and down if desired as follows. The height of the knife should not be adjusted to make up for blunt knives. They must be replaced.

1) Remove two (2) M6 nyloc nuts and bolts.

2) Move knife plate to new position. (Factory set in middle position)

3) Insert the two (2) M6 bolts and tighten nyloc nuts.

4) Repeat for other cut & hold.



7) Cut and hold horizontal position

The cut and hold is adjustable in two positions.

1) Remove two (2) M12 nyloc nuts and bolts on bottom of cut and hold.

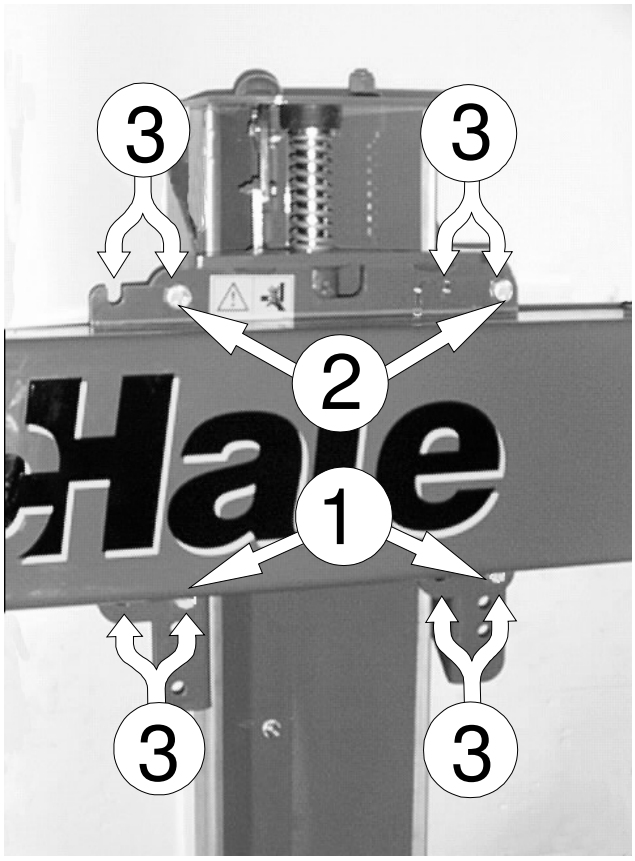
2) Loosen two (2) M12 nyloc nuts on top of cut and hold but do not remove.

3) Move cut and hold to new position. (Factory setting shown)

4) Insert the two (2) bottom M12 bolts and tighten the nyloc nuts.

5) Tighten the top two (2) nyloc nuts.

6) Repeat for other cut & hold.



8) Cut and hold height

The cut and hold may also be adjusted vertically if so desired, especially if the dispenser height has been adjusted. If the unit is to be changed from factory setting it is necessary to acquire two (2) M12X25 setscrews and nyloc nuts as two of the existing M12 setscrews and nylocs are used to hold the plunger bracket

1) Support cut and hold.

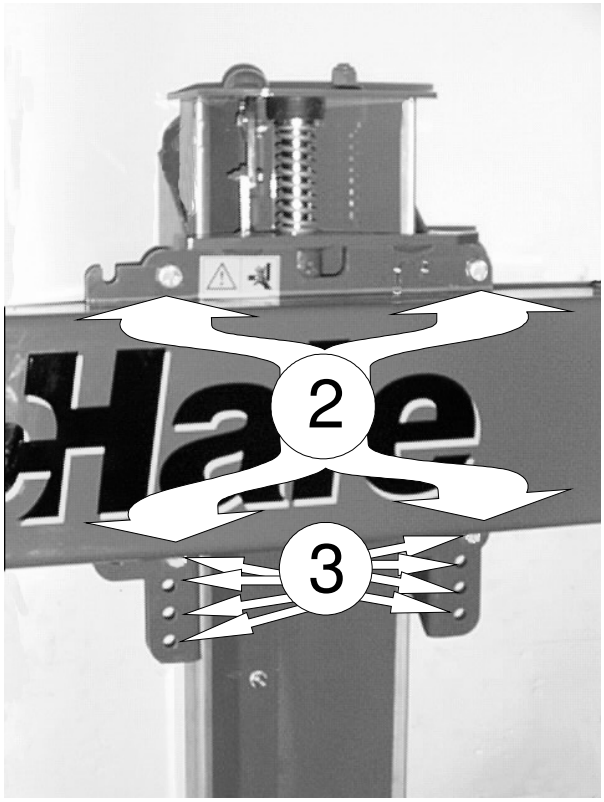
2) Loosen the top two (2) M12 nyloc nuts and setscrews and remove bottom two (2) M12 nyloc nuts and setscrews (retreive spacers). Retighten the top two M12 nyloc nuts and setscrews.

3) Move cut and hold to new position. (Factory setting shown).

4) Insert the four (4) appropriate M12 bolts and tighten nyloc nuts. The spacers that were used on the bottom setscrews must now be used as a washer between the backplate and the nyloc nut.

5) If it is required to adjust further just remove the four (4) M12 setscrews and nyloc nuts and move to the new position. refit the four (M12 setscrews and nyloc nuts.

6) Repeat for the other cut and hold.



9) Cut and hold rail

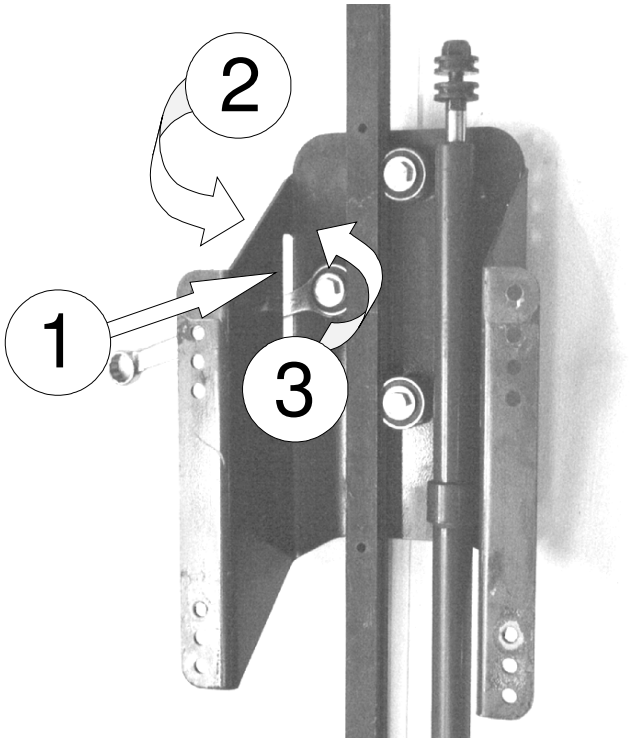
After much use the moving part of the cut and hold may develop wear. This may be adjusted, to ensure optimum working of the cut and hold, as follows. (Parts removed for clarity)

1) Insert 24mm open ended spanner into slot until it engages with hexagon on adjuster.

2) Loosen M12 nyloc nut on adjuster slightly. (Just enough to turn adjuster)

3) Turn adjuster, with 24mm spanner, until the resistance to turning increases greatly.

4) Holding the adjuster with the 24mm spanner, tighten the M12 nyloc nut.



10) Dispenser arm sensor

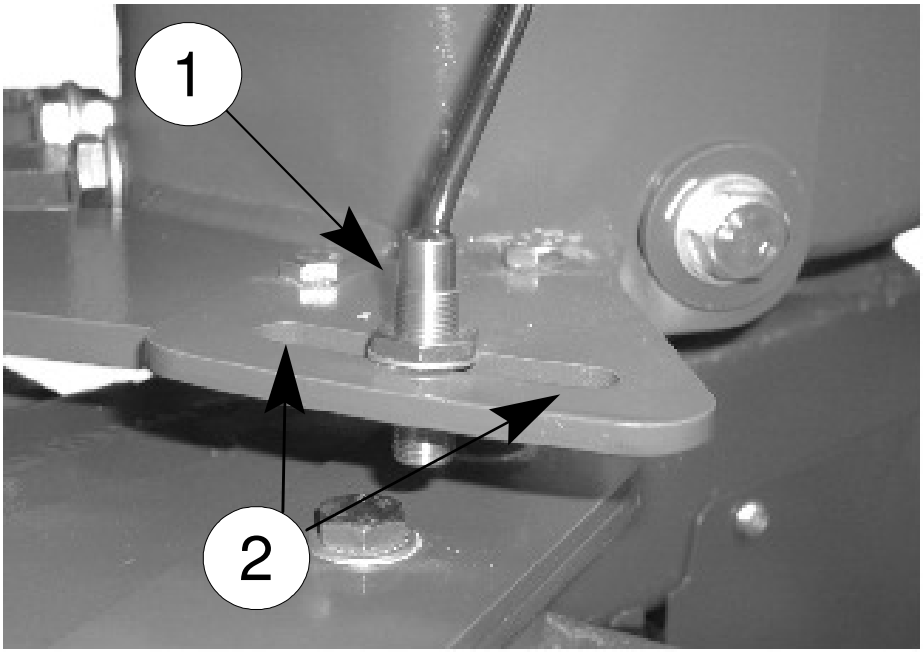
The stop sensor for the dispenser arm may be adjusted to change the stopping point of the arm.

1) Holding the sensor by hand, loosen the nut on the sensor.

2) Move the sensor to position required as follows:
Move to left to get dispenser to stop sooner.
Move to right to get dispenser to stop later.

3) Retighten nut finger tight. Turn 1/4 of a turn by spanner.

Note: **Do not** overtighten nut as this will damage the sensor.
Sensor should have approx 10mm clearance between its top and any rotating parts.



11) Trip arm switch

The trip arm switch will need to be properly adjusted if it ever needs replacement or has been moved for any reason. This may be adjusted as follows:

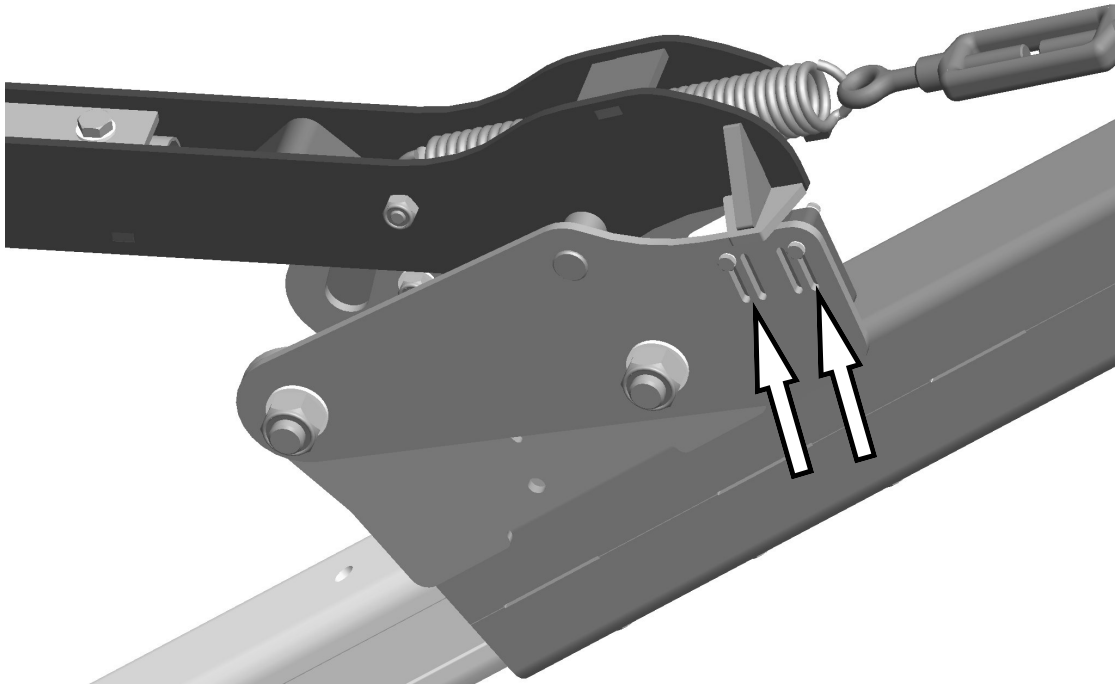
1) Loosen two (2) M5 nyloc nuts just enough to move switch.

2) Ensure arm is in working position.

3) Move switch against tab until plunger is protruding 1-2mm outside the main switch body.

4) Tighten the two (2) M5 nyloc nuts.

Note: Switch must be set correctly to ensure proper functioning of trip arm. **Do not** bypass circuit in any way.

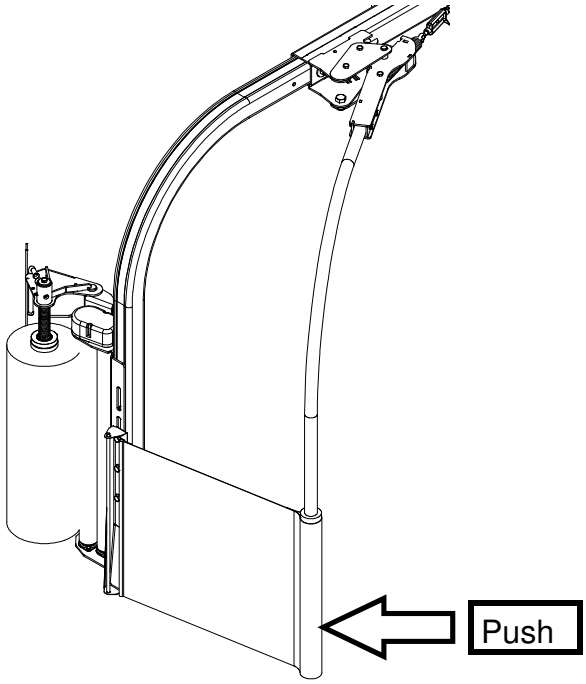


12) How to test trip arm operation.

The trip arm safety feature needs to be checked periodically in accordance with the machine maintenance schedule see page 60.

1.) To check the force required to trip the trip arm.

1. Ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed.
2. Manually with one hand try to push the trip arm into the tripped position. The arm should go into the tripped position using only small to medium force (approx. less than 5kg). If any difficulty or stiffness is encountered refer to trip arm maintenance see page 74.
3. Repeat check on 2nd dispenser.



2.) To check trip arm safety switch operation.

1. . Ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed.

2. Push only one of the trip arms into the tripped position.

3. Ensure all persons are well clear of machine, start up machine go into manual mode and try to operate the dispenser.

4. There must be no dispenser movement.

5. Turn off machine and tractor and repeat procedure for 2nd dispenser.

Warning: If there is any dispenser movement while an arm is tripped there is a serious safety issue with the switch. The machine must not be operated and a McHale authorised dealer should be contacted for further assistance.

3.) Check that wrapping arm rpm does not exceed 25rpm.

1. See page 76 to adjust.

WARNING: The dispenser must never be operated above a maximum of 25 rpm, otherwise the dispenser arm kinetic energy is above what the trip arm design is capable of stopping in an emergency situation.

4.) To check wrapping arm stopping performance.

1. In manual mode, run wrapper at full speed (i.e. press the rotation button 2 times) with 2 new film rolls fitted on the dispenser. Upon releasing of the rotation switch, the arm rotation should stop immediately. If there is any run-on, then the setting of the over-centre valve needs to be checked, see page 77 in maintenance section. Repeat the test, and if there is still run-on then do not operate the machine and contact your McHale dealer for assistance.

13) Roller lift height

The roller height may be adjusted by moving magnets on a quadrant at the front of the left hand roller.

1) Undo wingnut holding on magnet

2) Move magnet to new location.

3) Replace wingnut and tighten.

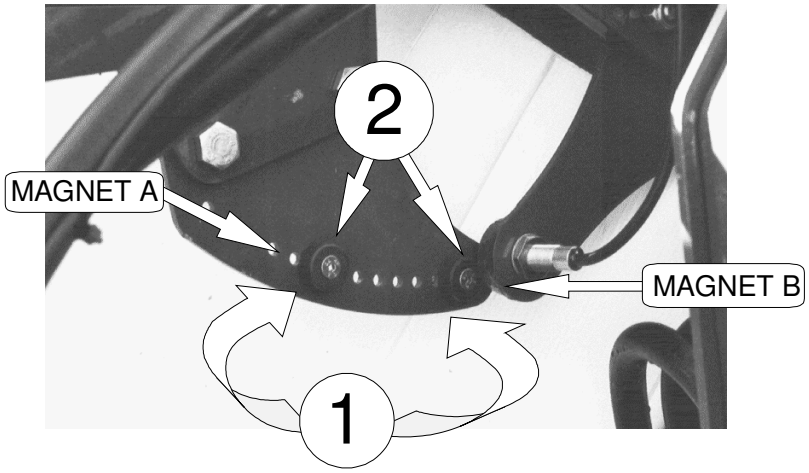
4) Check plastic film is being applied to bale correctly (around centre of bale).

Note on which magnet to adjust:

The following is how the height regulation system works

Double bale:	Sees magnet A and stops
Single wide bale:	Sees magnets A and B and stops
Single narrow bale	Sees magnets A and B and stops at full ram extension.

There must be at least four unused holes between the two magnets.



14) Bale levelling device

The machine is fitted with a patented levelling device to level the bale after wrapping before dropping it onto the conveyor. The bales should be well shaped for this to work correctly. Do not adjust if a badly shaped bale does not level correctly. If the bale does not level properly it is possible to adjust it as follows:

1) Check position of the bale on the main conveyor to see how central it is.

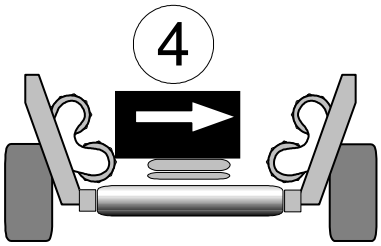
2) If the bale is sitting to one side of the machine the potentiometer needs to be adjusted. Discharge the bale and lift the rollers to the the top of their stroke and **support**. Ensure tractor and machine are **turned off** and tractor **key removed**.

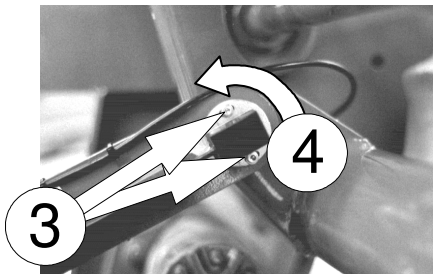
3) Locate the left hand potentiometer which is located near the front of the lefthand rollers. Slightly loosen the two (2) M4 hex head screws (3mm hex head key)

4) If the bale is to the left of the machine, adjust the slotted plate anticlockwise slightly. Retighten the M4 hex head screws.

5) Retest machine with a bale to check operation.

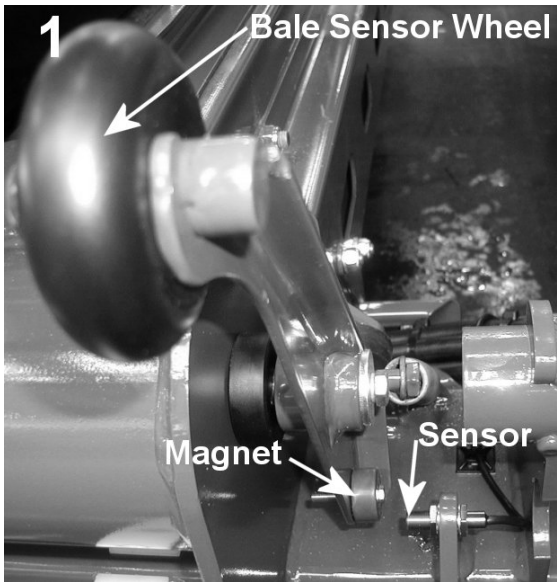
6) If the bale is to the right of the machine, adjust the slotted plate clockwise slightly.

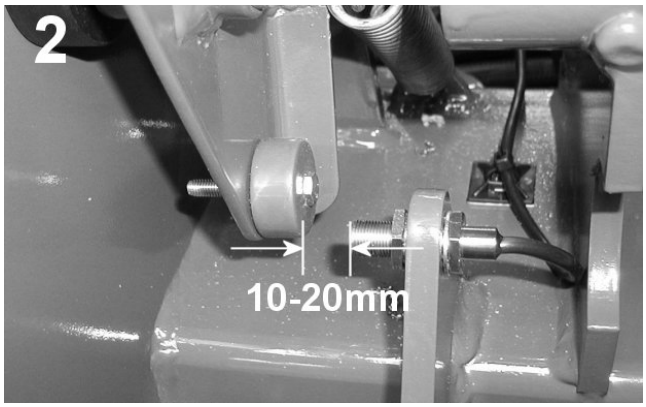




15) Bale load sensor

The bale load sensor is used for sensing when a bale is carried past a certain point on the conveyor belt. As the bale passes over the bale sensor wheels, the arm carrying the magnet sweeps past the sensor and the conveyor stops after a set period of time. The sensor is axially adjustable and is shown below with the optimum distance, from the magnet, being 10 to 20 mm as shown. ***Note:*** This sensor is factory set and should only be adjusted if a new sensor was fitted or if the sensor to magnet distance is deemed inadequate, this mechanism is shown in figures 1 and 2 below.





16) Main conveyor chain

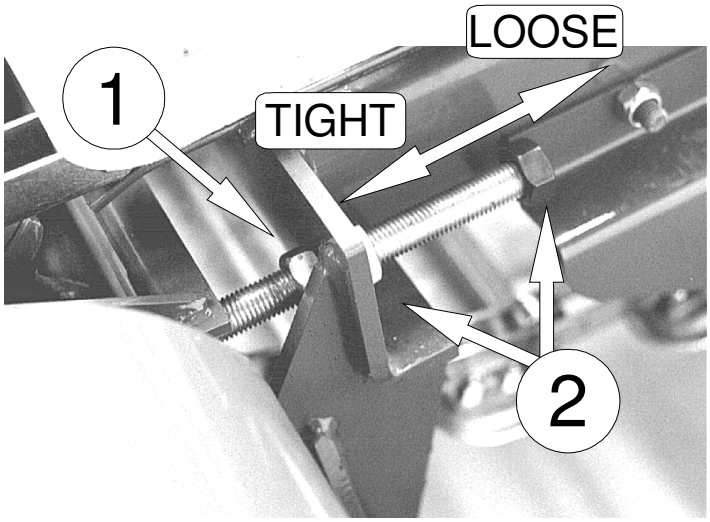
As a result of general wear and tear the main slatted conveyor will become loose after a time. However it is possible to adjust this as follows:

1) Loosen M20 nut.

2) Hold the other M20 nut with a spanner while turning the adjuster until the chain can be lifted 25-30mm in the centre.

3) Tighten the first M20 nut to lock the adjuster.

4) It is important that both adjusters are adjusted equally. Failure to do so could result in damage to the machine.



17) Front pick up chain

The five front pick up chains are adjusted as a unit as follows.

1) Remove three (3) M12 nyloc nuts from chain guard and remove guard.

2) It may be necessary to loosen the drive chain tensioner by removing the M10 bolt holding it.

3) Slightly loosen the seven (7) M12 nyloc nuts holding the bearing plates.

4) Screw the M12 adjuster bolt , holding the appropriate nut to get the 10-15mm sag in the chain.

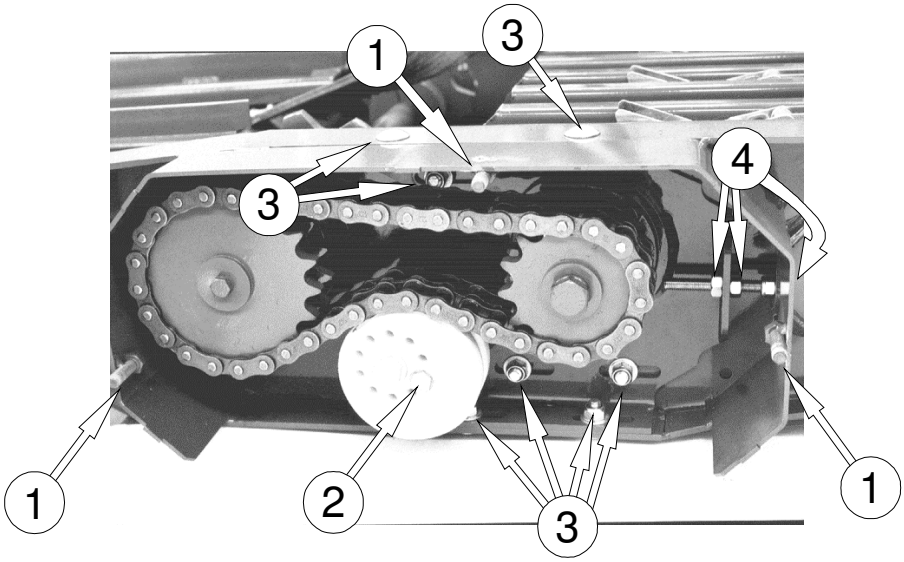
5) Repeat steps 3) and 4) for the other side ensuring that both are adjusted evenly .

6) Tighten the fourteen (14) M12 nyloc nuts holding the bearings.

7) Recheck chain tension.

8) Adjust drive chain tension.

9) Replace guards



18) Front conveyor drive chain

The front conveyor drive chain may be adjusted if the chain becomes slack from general wear and tear or if the the front pick up chains have been adjusted.

1) Remove three (3) M12 nyloc nuts holding on the chain guard and remove guard.

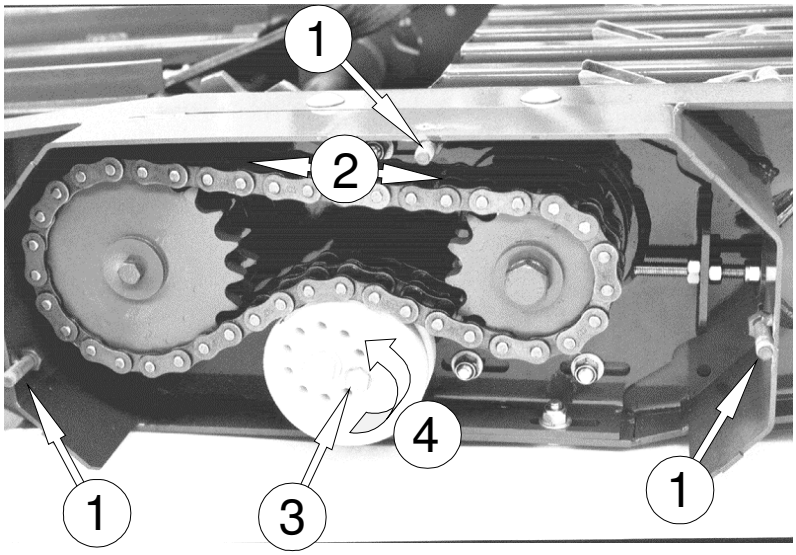
2) Ensure top of drive chain is tight.

3) Remove the M10 adjuster bolt.

4) Turn the adjuster until there is 3-6mm sag in chain.

5) Insert M10 bolt into appropriate hole in adjuster and tighten.

6) Replace chain guard and tighten the three (3) M12 nyloc nuts.



19) Roller drive motor chain

This may be adjusted as follows:

1) Remove two (2) M8 setscrews holding on the chain guard and remove guard.

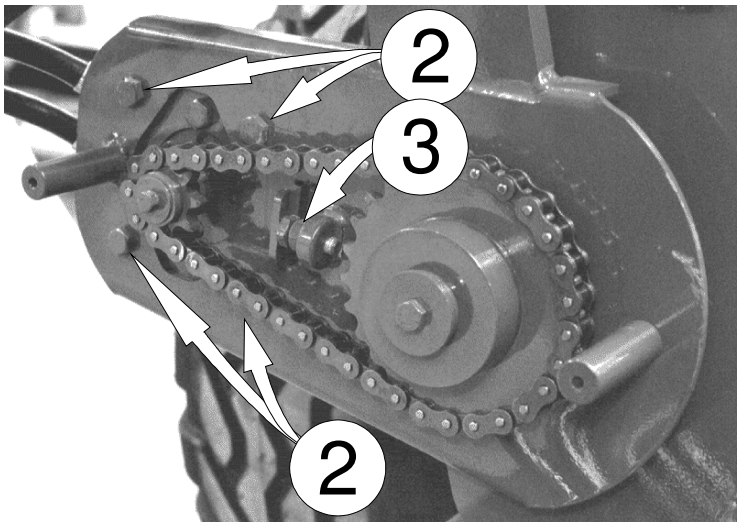
2) Loosen four (4) M12 nyloc nuts slightly holding adjusting plate on.

3) Loosen M12 locking nut on adjusting setscrew. Adjust setscrew until there is 10-12mm sag in the chain.

4) Tighten M12 locking nut

5) Tighten the four (4) M12 nyloc nuts holding the adjusting plate.

6) Replace chain guard and tighten the two (2) M8 setscrews.



20) Roller drive chains

These may be adjusted as follows:

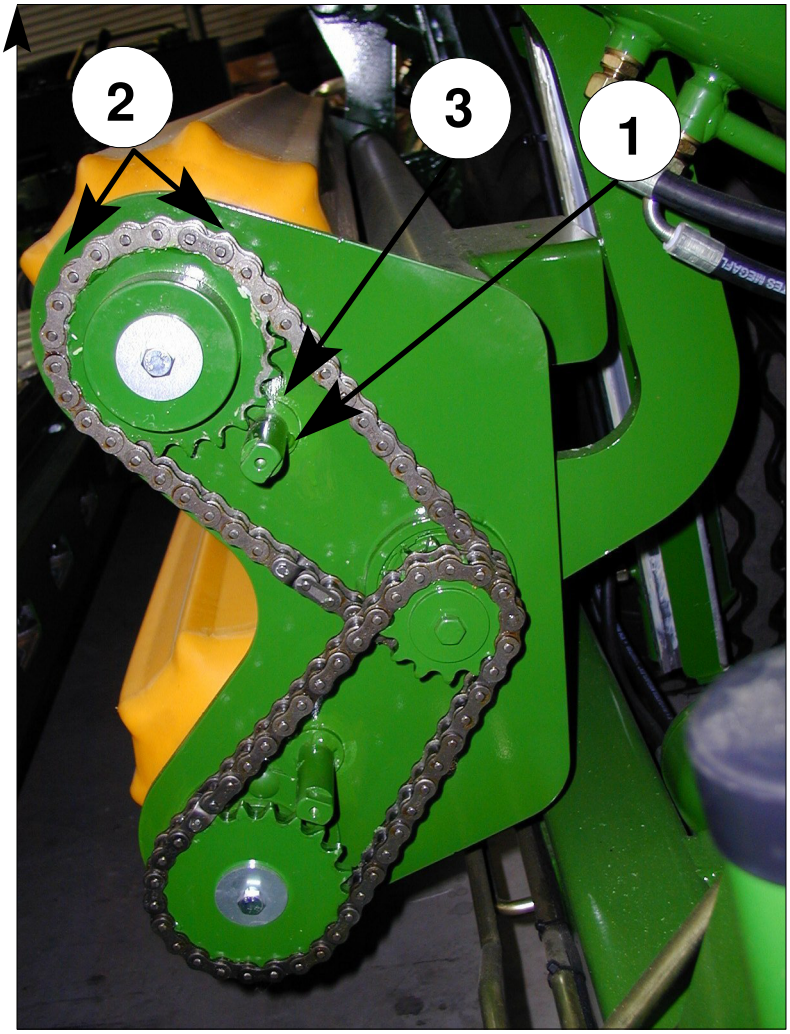
1) Remove two (2) M8 setscrews holding on chain guard and remove guard.

2) Slightly loosen three (3) M10 nyloc nuts, holding on bearing.

3) Turn cam adjuster against bearing, using 17mm spanner on the two machined flats until there is 8-10mm sag in the chain.

4) Tighten the three (3) nyloc nuts on the bearing.

5) Replace chain guard and tighten the two (2) M8 setscrews.



21) Main conveyor drive chain

This may be adjusted as follows:

1) Remove two (2) M8 nyloc nuts holding on guard and remove guard.

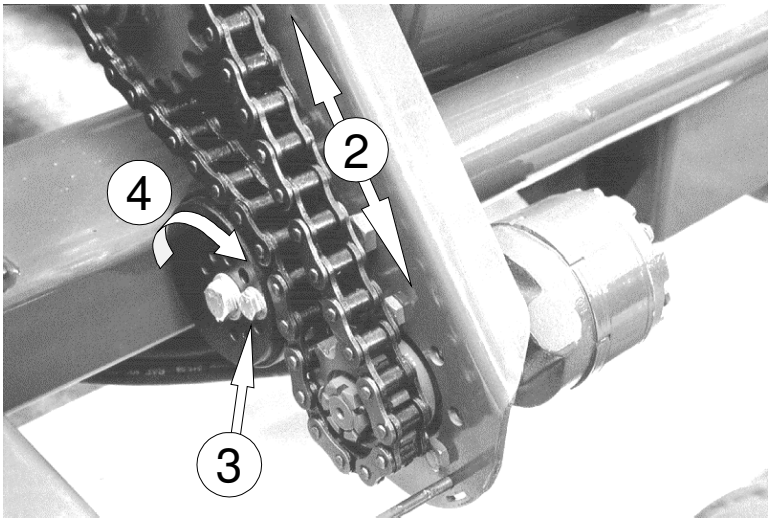
2) Ensure top of drive chain is tight.

3) Remove the M10 adjuster bolt.

4) Turn the adjuster until there is 4-8mm sag in chain.

5) Insert M10 bolt into appropriate hole. It may be necessary to line up holes with something smaller in diameter than the bolt.

6) Replace chain guard and tighten the two (2) M8 nyloc nuts.



10. Machine Maintenance

To maintain the machine in good working order it is necessary to carry out preventative maintenance from time to time. The following section gives details of how this may be carried out and how often it is required.

It is vitally important to observe health and safety rules where necessary to avoid unnecessary enviromental damage or danger to anybody near the machine. This especially applies to disposal of oil, filters etc.

Items such as chain adjustments are to be carried out when necessary (ie. when chains become loose etc). They may be found under machine adjustments.

1) Maintenance intervals.
2) Hydraulic oil level/replacement.
3) Hydraulic oil filter replacement.
4) PTO shaft.
5) Pump gearbox.
6) Cut & hold knife changing.
7) Spare film roll holder.
8) Dispenser gearbox oil level.
9) Dispenser brake oil level.
10) Dispenser pivot points.
11) Dispenser trip arms.
12) Dispenser arm rotation speed.
13) Setting of over-centre valve on the arm rotation assembly.

1) Maintenance Intervals

The following intervals should be adhered to, to ensure long and efficient life of the machine. They assume constant working during the wrapping season.

1) First 50 working hours
    1) Change oil filter
    2) Change pump gearbox oil
    3) Change dispenser drive gearbox oil

2) Every day
    1) Check hydraulic oil level
    2) Check pump gearbox oil level
    3) Grease PTO shaft joints (2)
    4) Grease front conveyor sprockets (5)
    5) Check wheelnuts
    6) Check dispenser drive gearbox oil level
    7) Check all guards and safety related components
    8) Check for any oil leaks and damaged pipes.
    9) Check dispenser trip arm function. (see page 49)

3) Every week
    1) Grease drawbar front horizontal pivot (1)
    2) Grease drawbar front vertical pivot (1)
    3) Grease drawbar rear vertical pivot (1)
    4) Grease drawbar hydraulic cylinder ends (2)
    5) Grease lifting hydraulic cylinders ends (8)
    6) Grease roller cradle pivots (4)
    7) Grease cut and hold plunger (2)
    8) Grease rear of front conveyor bearings (2)
    9) Grease front of main conveyor bearings (3)
    10) Grease rear of main conveyor bearings (4)
    11) Grease rear unloading roller bearings (2)
    12) Grease PTO cover (2)
    13) Grease PTO shaft tube profiles
    14) Check tyre pressure (26 PSI,1.75 bar)
    15) Grease slotted links (2)

4) Every month

1) Grease dispenser top roll holder shaft (2)
2) Grease bale position arm bearings (2)
3) Check all chain tensions
4) Check oil level in brake unit

5) Every year

1) Clean and lubricate dispenser gears.
2) Change hydraulic oil filter.
3) Remove front conveyor chains, clean and soak in oil.
4) Change pump gearbox oil.
5) Change brake unit oil.
6) Change dispenser drive gearbox oil.

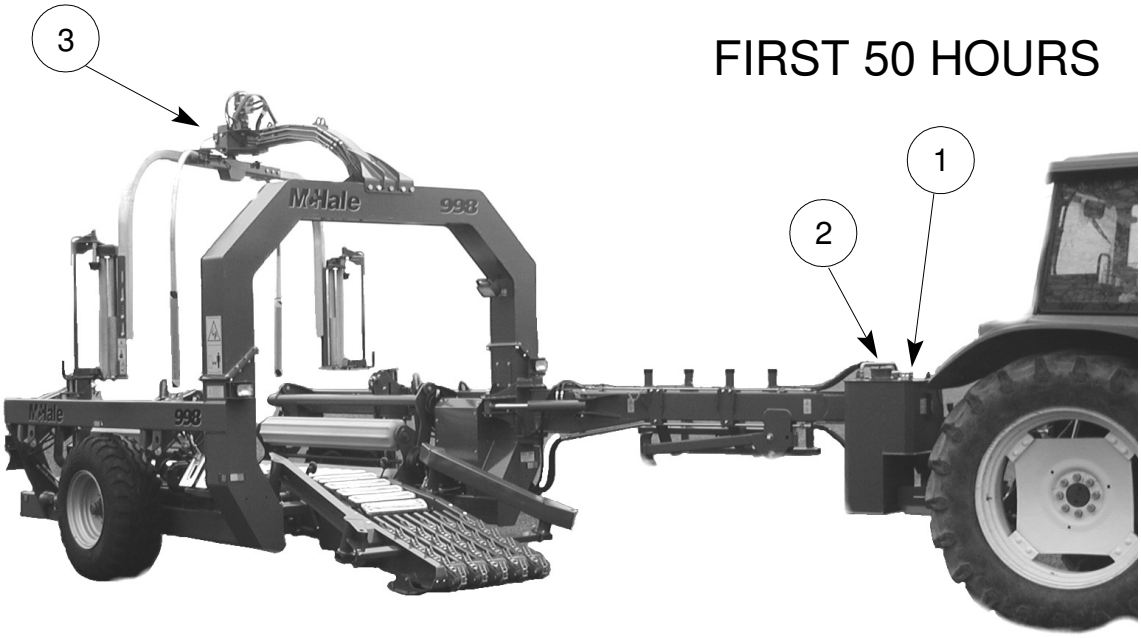
6) Every two years

1) Change hydraulic oil.

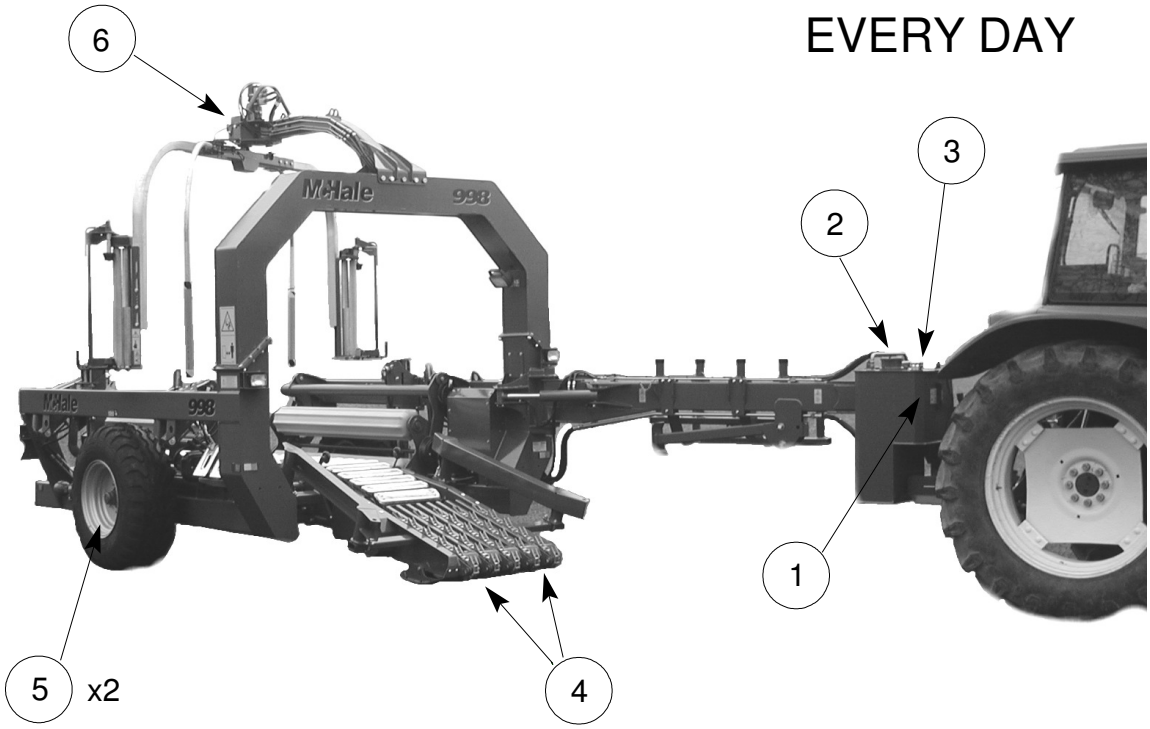
It may become necessary from time to time to clean the dispenser rollers as they pick up the “tack” from the plastic film.

At the end of the wrapping season the machine should be washed and cleaned. Any damaged paintwork should be touched up. Any maintenance or repairs should be carried out at this stage. The electronic control box is **not waterproof** so must always be stored in a dry environment.

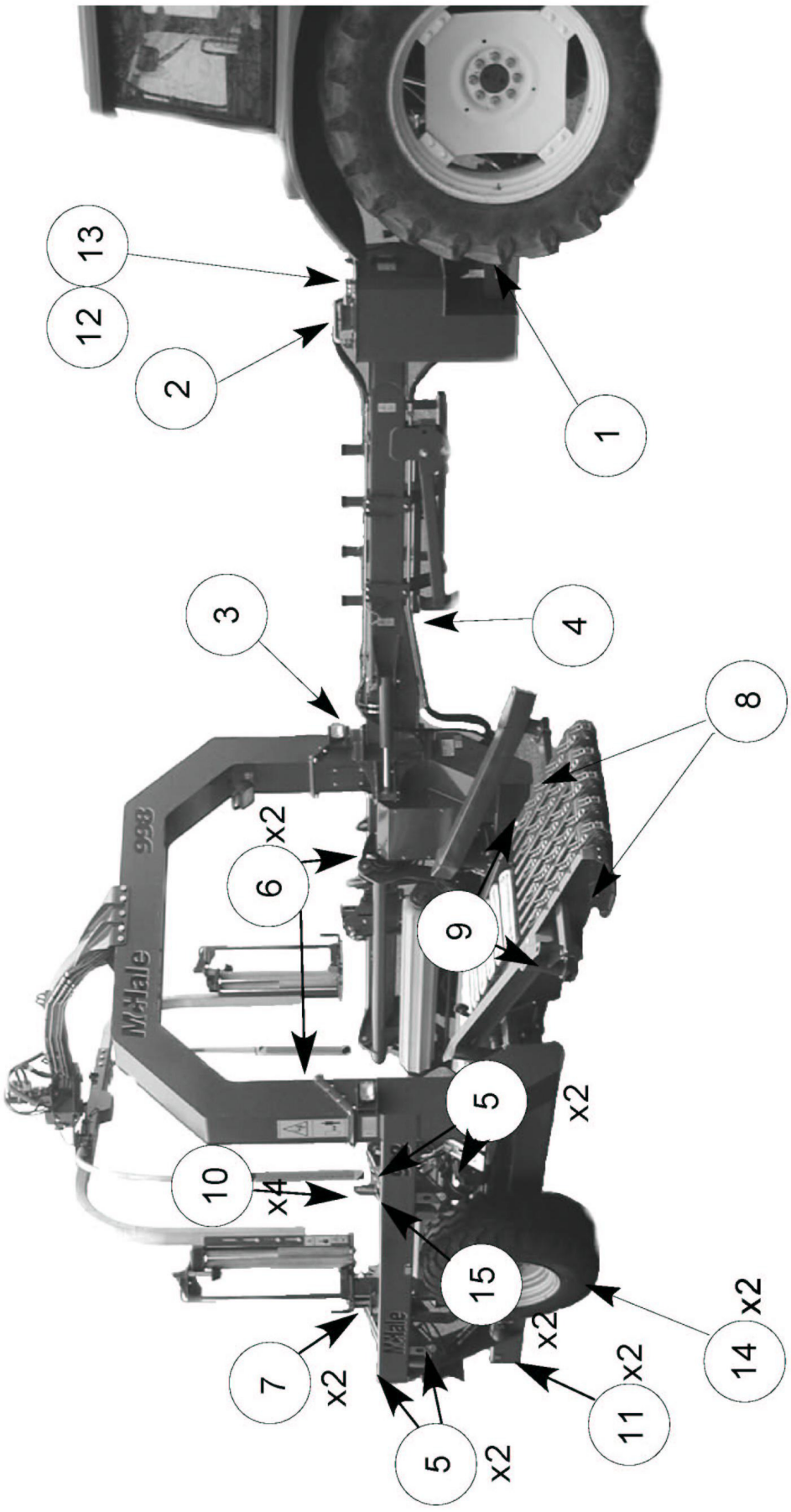
FIRST 50 HOURS



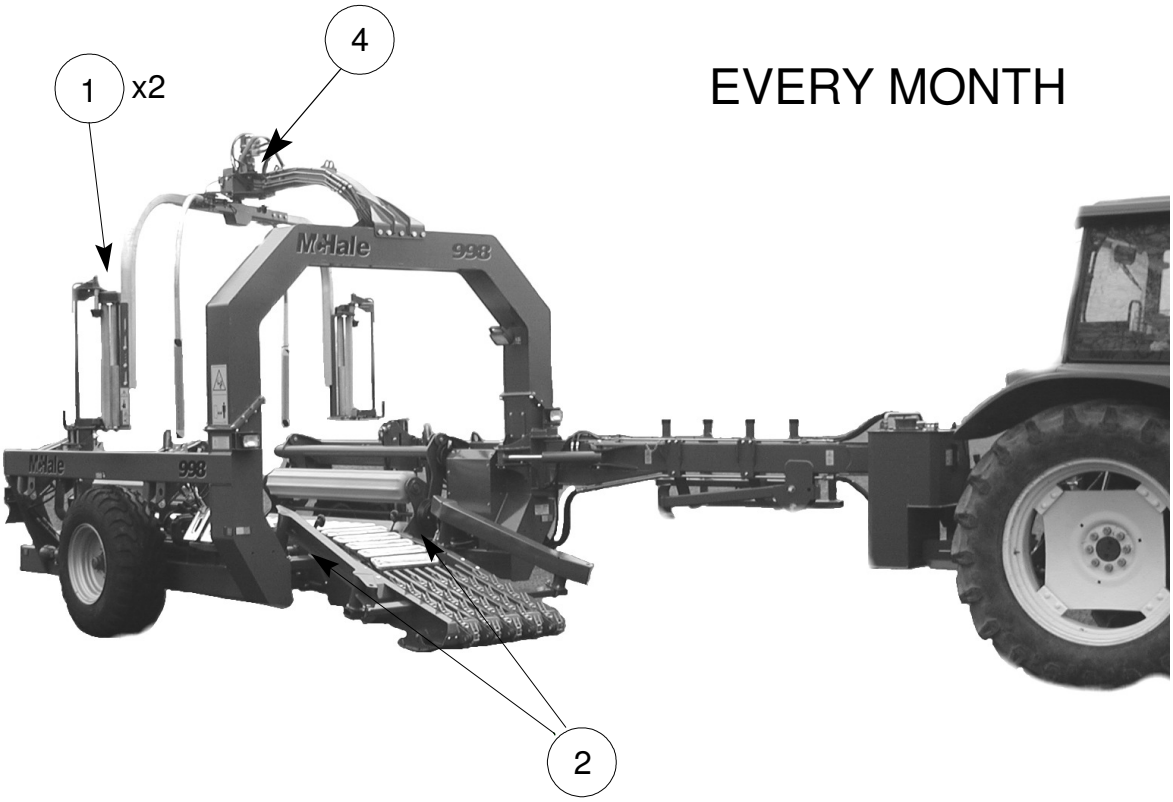
EVERY DAY



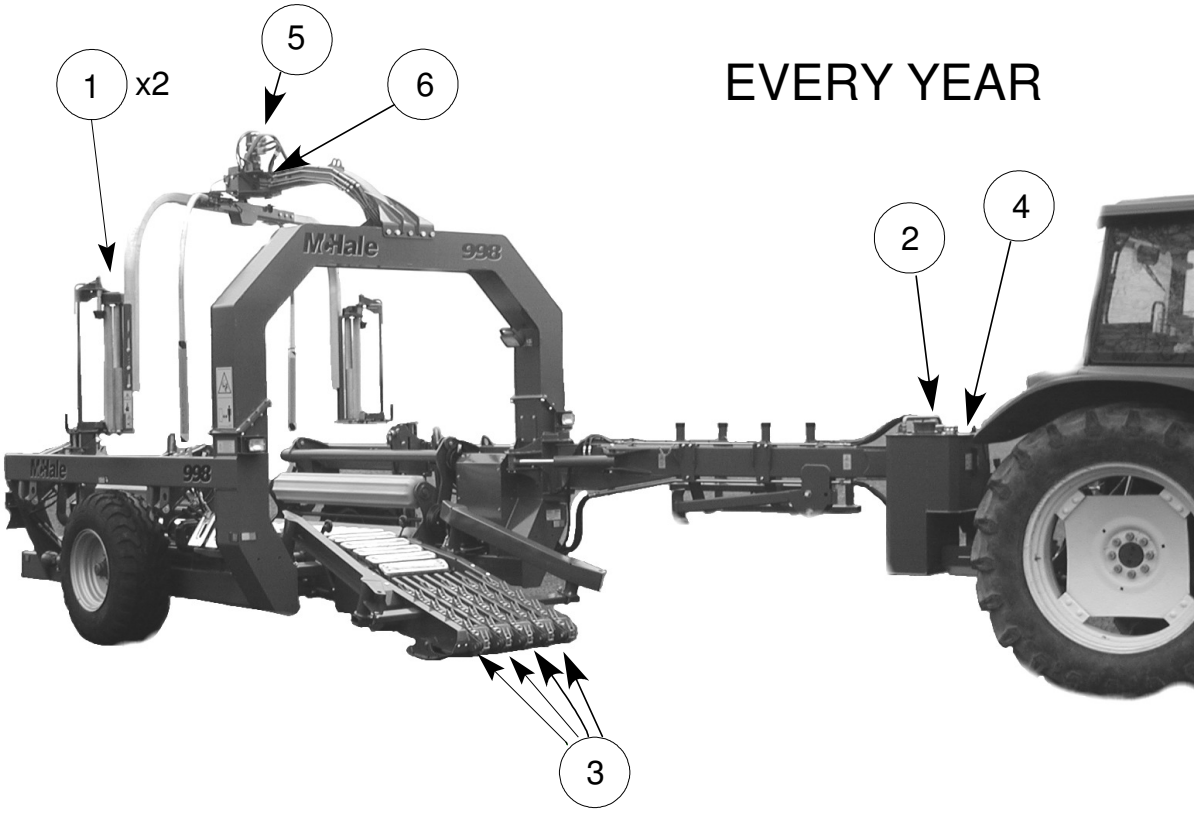
EVERY WEEK



EVERY MONTH



EVERY YEAR



2) Hydraulic oil level/replacement

Always ensure system is not under pressure before working on it. Do not work on hydraulic systems unless you have a working knowledge of them and feel confident to do so.

The hydraulic oil level needs to be visually checked once a day. It is best achieved before machine start up. This level needs to be kept between the upper and lower limits on the level sight gauge. It is recommended to completely replace the oil after every 1000 hours use or every two years which ever comes earlier. Replacement is as follows.

1) Place a suitable sized container under the oil tank. (tank capacity 130 litres approx.)

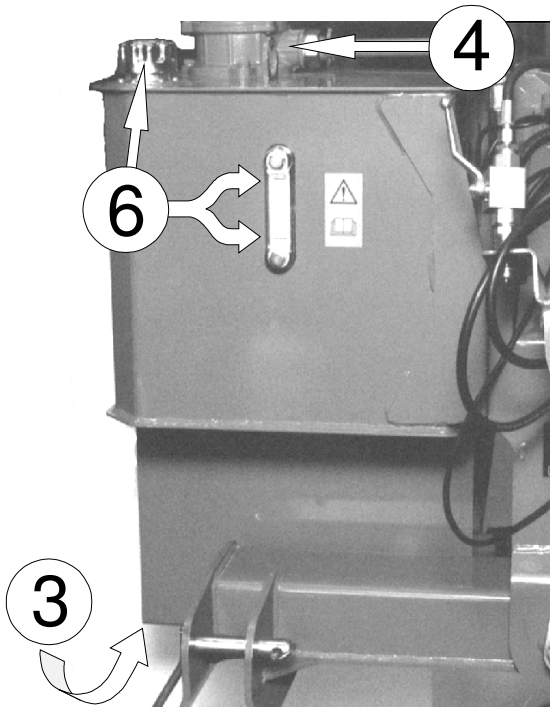
2) Ensure tank is sloping towards drainplug by tilting machine slightly if required.

3) Remove drain plug. It is best if the oil is warm to aid draining.

4) The oil filter should also be replaced at this stage.

5) Once oil is fully drained replace the drain plug.

6) Refill tank through filler (130 litres approx.) until oil is at top level on sight gauge.



7) Run machine working all functions to ensure there is no air in the system.

8) Stop machine and allow oil to settle. Check that oil level is within the limits on the sight gauge. Refill if necessary.

Note:
It may be necessary to prime pump after changing the oil. This may be achieved by loosening the pump pressure pipe (Top rear pipe) and turning the pump by hand until oil flows out without air. The pressure pipe can now be tightened.

3) Hydraulic oil filter replacement

The hydraulic oil filter needs replacement after the first 50 hours of work and thereafter every 500 hours or yearly, whichever comes first. A new filter is available from your McHALE dealer (part number CHY00030). It may be changed as follows.

1) Remove three (3) M10 setscrews holding on top of filter housing. This is held under spring pressure so will need to be kept pressed down.

2) Remove top of housing and spring.

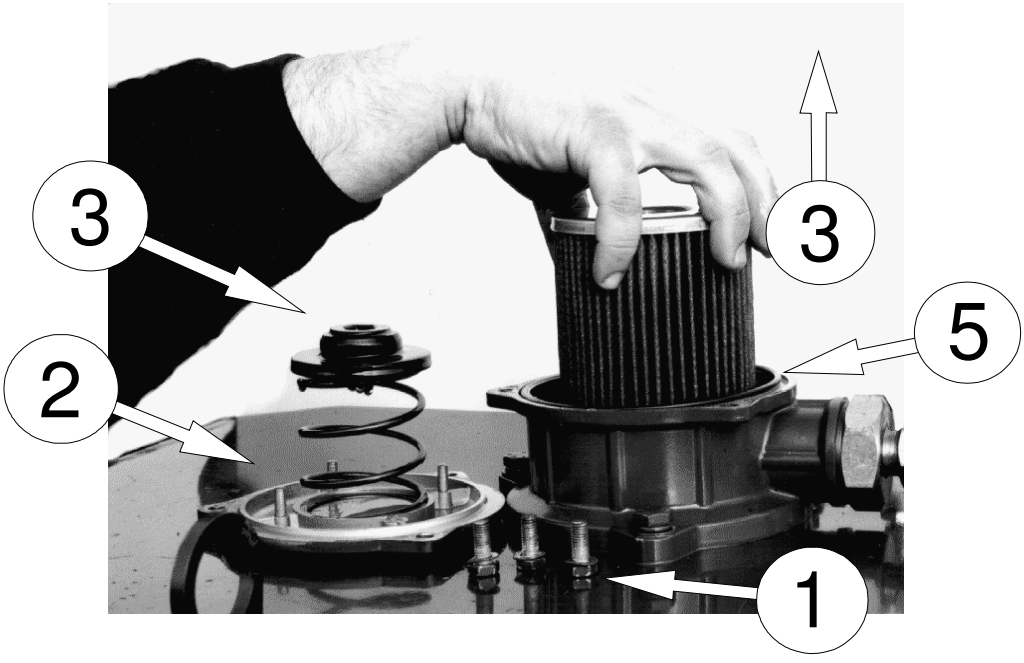
3) Lift filter out of housing and discard safely. The pressed steel filter housing will lift up with the filter so must be separated leaving the housing in the tank. The bypass valve on top of the filter is discarded with it.

4) Fit new filter into housing ensuring it is securely fitted to pressed steel housing.

5) Replace top of filter housing ensuring “O” ring is correctly seated and not damaged.

6) Tighten the three (3) M10 setscrews.

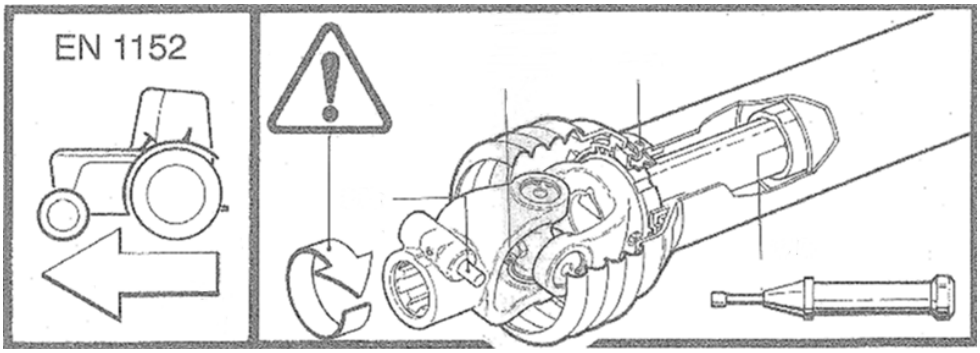
7) Run machine to ensure everything is running correctly.



4) PTO shaft

It is very important that safety guidelines are adhered to especially with regard to guarding of the shaft for the safety of all who may be near the machine.

The PTO Shaft is a vital link in driving the hydraulic pump on the machine. Therefore it is important to follow the PTO manufacturers guidelines on maintenance and repair. These guidelines are fixed to the PTO shaft when new. They must be removed and read and then stored with this instruction book for future reference. If they are missing from the machine contact your McHale dealer to obtain another copy.



Grease points for the PTO shaft

5) Pump gearbox

Always ensure system is not under pressure before working on it. Do not work on hydraulic systems unless you have a working knowledge of them and feel confident to do so.

The hydraulic pump is fitted with a 1:3 step up gearbox. The level of oil in the gearbox needs to be checked daily which is easily accomplished through the level sight gauge on the side of the gearbox. It is recommended that the oil is changed after the first 50 hours of use and thereafter every year. The oil is changed as follows:

1) Ensure gearbox oil is warm to aid draining.

2) Place suitable container under the drain stud.

3) Remove filler/breather cap (A)

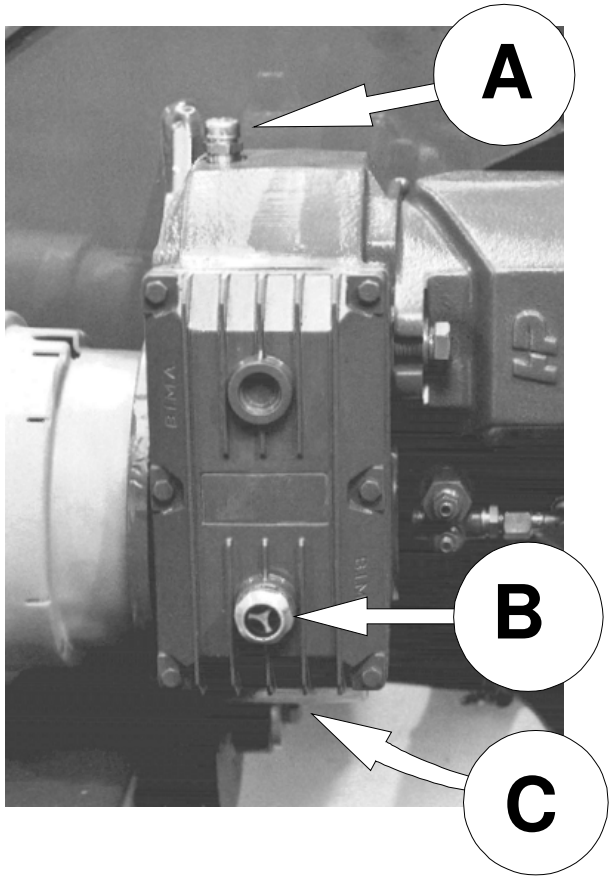
4) Remove the drain stud. (C)

5) Once drained replace drain stud (C) and dispose of oilsafely.

6) Fill gearbox with EP80 gearoil until oil can be seen on the sight gauge. (B)

7)Replace filler/breather cap (A) and run machine for 2-3 minutes.

8) Stop machine and allow oil to settle. Check oil level again and refill if necessary.



6) Cut and hold knife changing

Only competent operators should operate this machine.
Be aware of the sharpness of the knives. To avoid injury, handle with care.

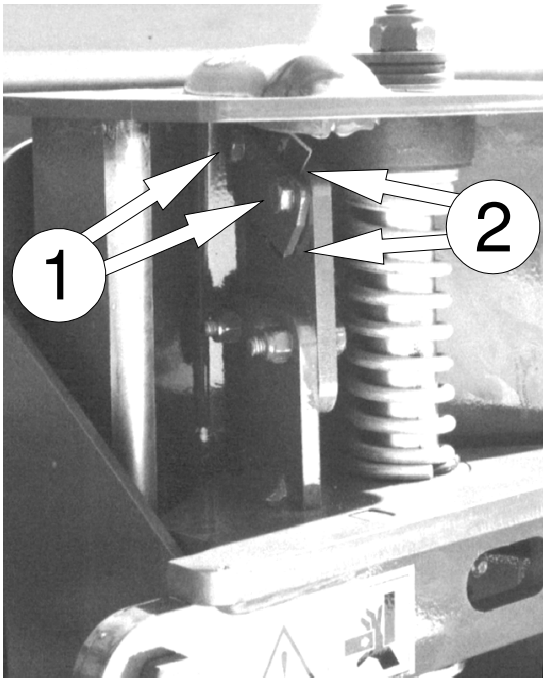
The condition of the cut and hold knife is important to the operation of the cut and hold mechanism. It is therefore important that the knife is kept sharp. It is advisable to change the knife when it becomes blunt, as follows. New knives may be obtained under part number CKN00011. Because of the nature of knives ensure precautions are taken to avoid injury.

1) Loosen the two (2) M6 setscrews holding the knife clamp.

2) Remove working knife noting that there is a spare knife held by the bottom of the knife clamp.

3) Place spare knife in working position and put a new spare knife underneath if available.

4) Tighten the two (2) M6 setscrews



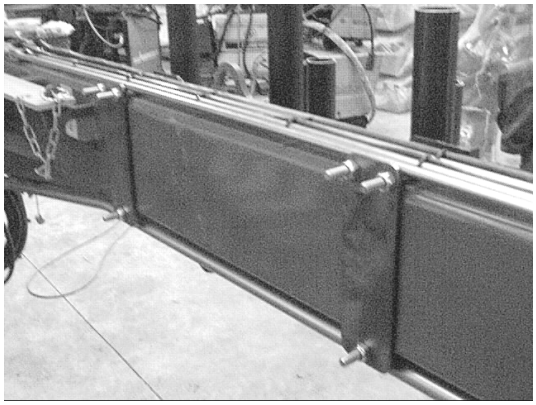
7) Fitting spare film roll holder

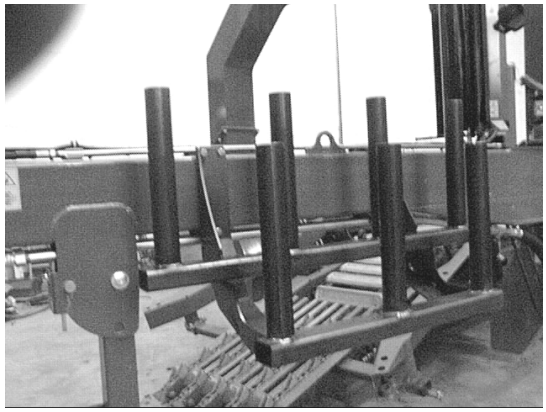
1) Loosen the (2) 8mm setscrews on the drawbar which hold the steel piping in place.

2) By means of a crane or a lifting apparatus lift the roll holder bracket up against the drawbar as shown below.

3) Using the brackets and the (6) bolts provided attach the film holder bracket as shown. The bolts must slide under the steel piping.

4) Affix the rubber strap provided between the bolts and the steel piping that is on the top of the drawbar. Then proceed to tighten down the steel piping into place.





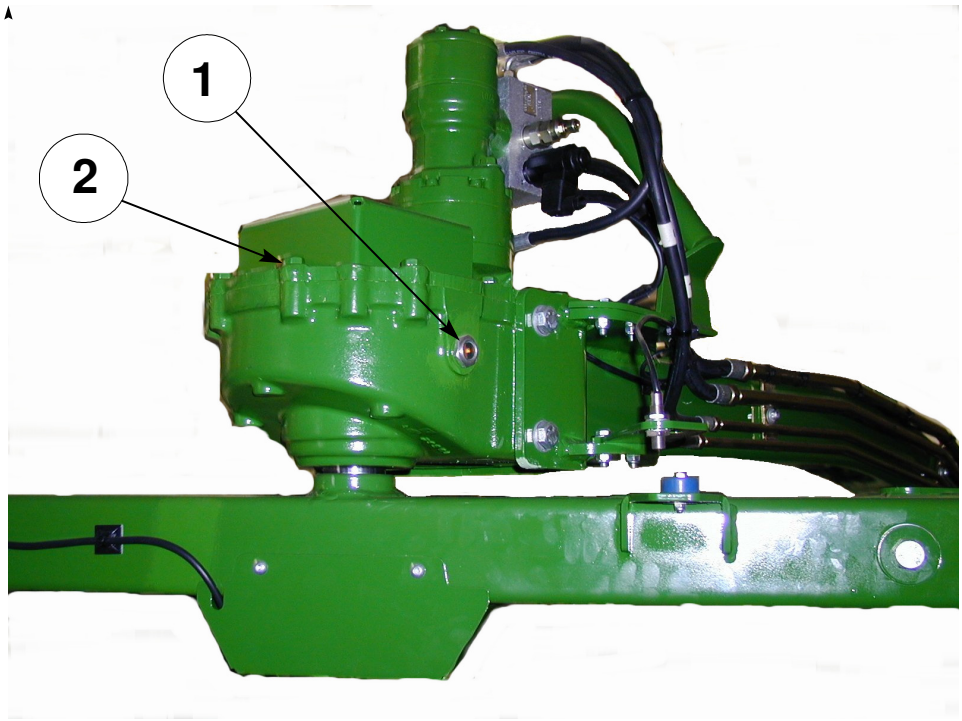
8) Dispenser gearbox oil level

Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine.

1. Check oil level in dispenser gearbox using sight glass on side of gearbox housing.

2. If there is no oil level showing in the sight glass then top up oil level by undoing the breather cap shown.

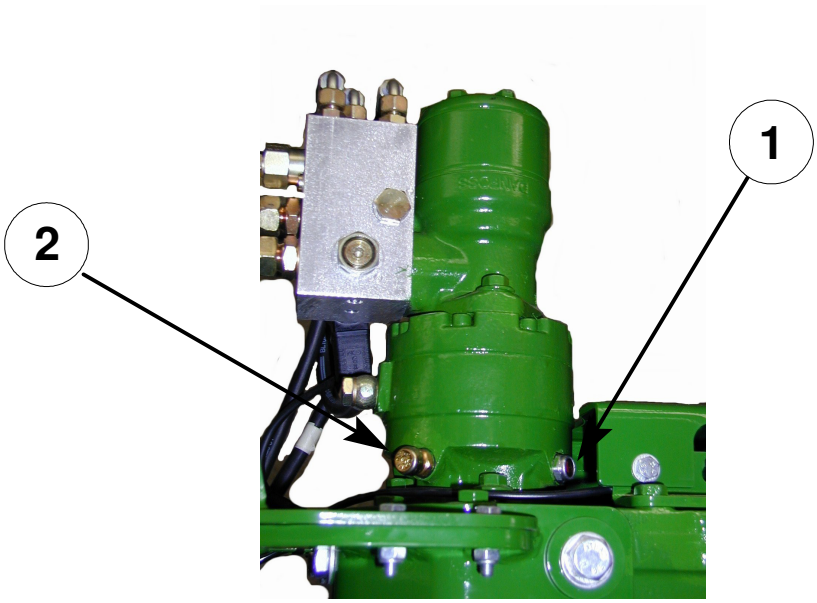
3. Fill until oil level is half way up the sight glass.



9) Dispenser brake oil level

Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine.

1. Check oil level in brake unit using the sight glass in brake unit housing.
2. If there is no oil level showing in the sight glass then top up oil level by undoing the breather cap shown.
3. Fill until oil level is half way up the sight glass.



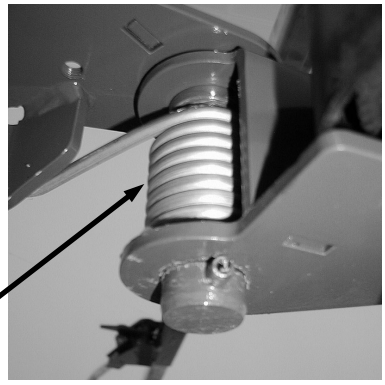
10) Dispenser pivot points.

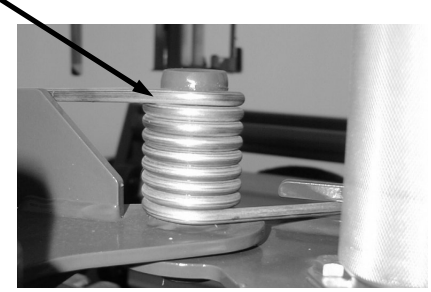
Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine.

The dispenser pivot points, shown below (right) must be lubricated with grease at the beginning of the season and after every 1000 bales wrapped. This is to ensure proper application of plastic to the bale and to prevent plastic damage and therefore breakage. Also inspect aluminium rollers for free rotation as any blockage in rotation of these rollers will cause plastic breakage.

Aluminium Rollers

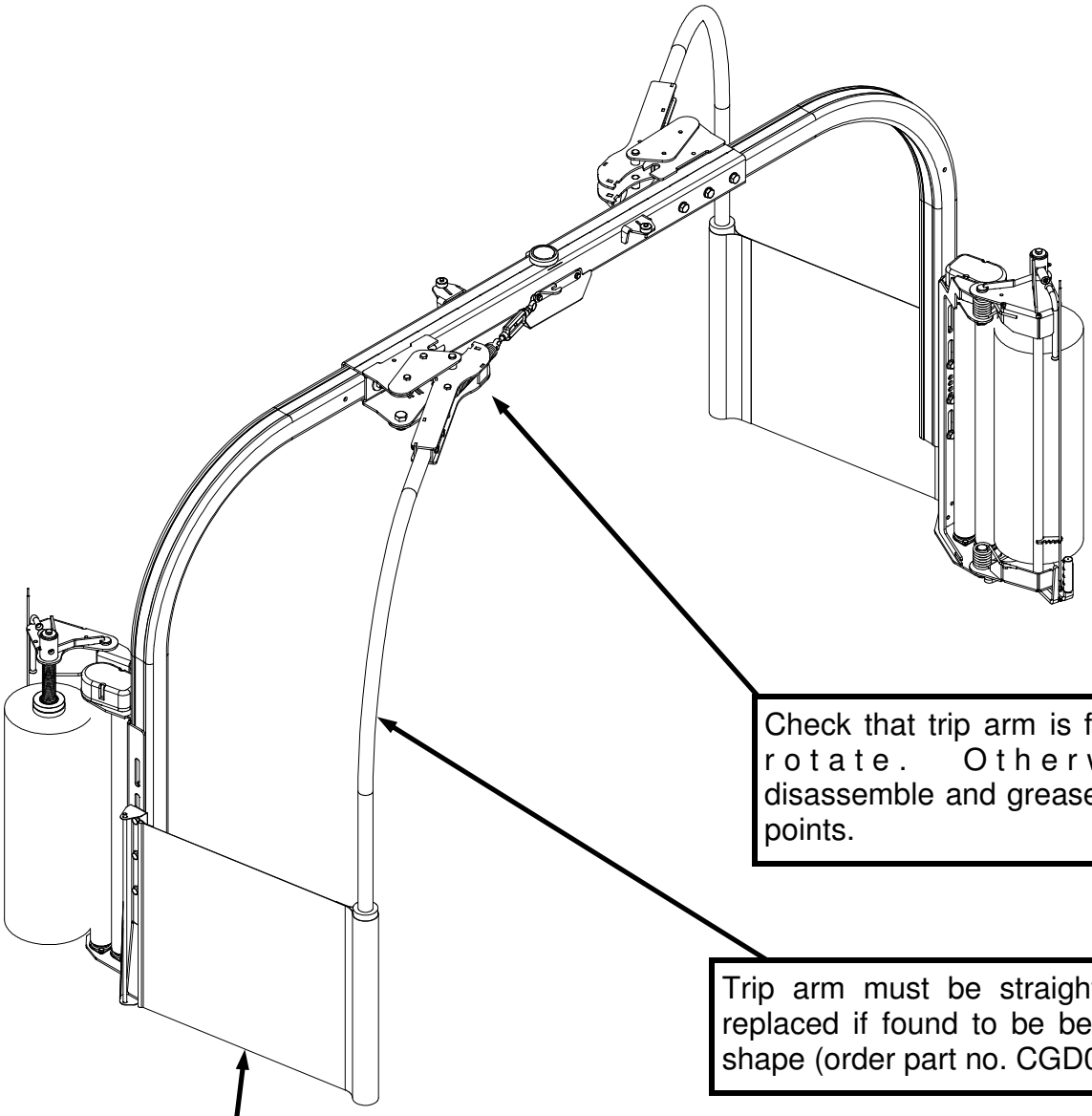
Pivot points to be greased:





11) Dispenser trip arms.

Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine.



Check that trip arm is free to rotate. Otherwise disassemble and grease pivot points.

Trip arm must be straightened or replaced if found to be bent out of shape (order part no. CGD00028).

Check condition of yellow pvc cover. If damaged replace (order part no. CGD00229).

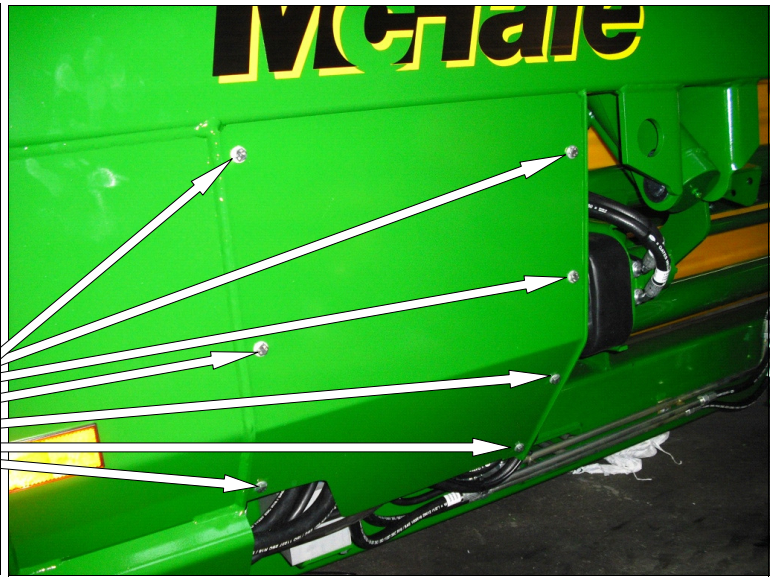
12) Dispenser arm rotation speed

Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine.

From the tractor cab and with the tractor pto at working speed, 600-800 rpm, operate the arm rotation in Manual mode. Check the speed of the arm rotation. The correct speed is 23 rpm. If higher, see below for details to achieve the correct speed.

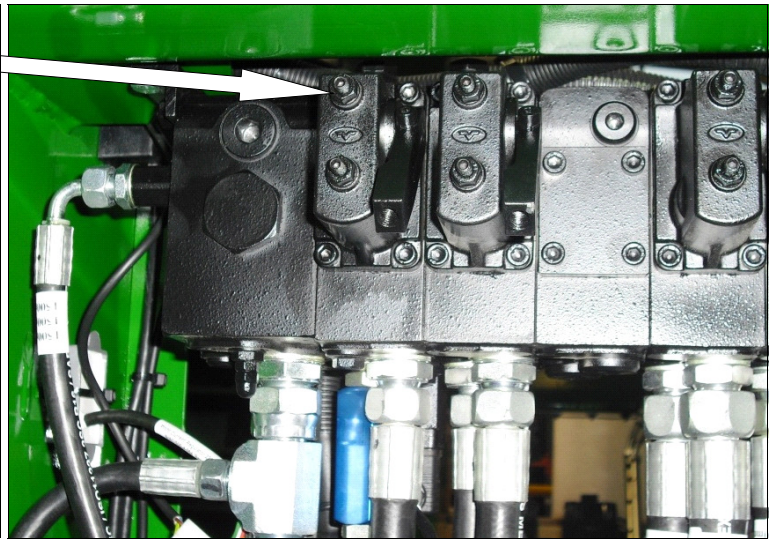
Turn off tractor and pto, before doing any adjustments on the machine.

Using a 13mm spanner, unscrew all the bolts holding the valve guard, as shown.

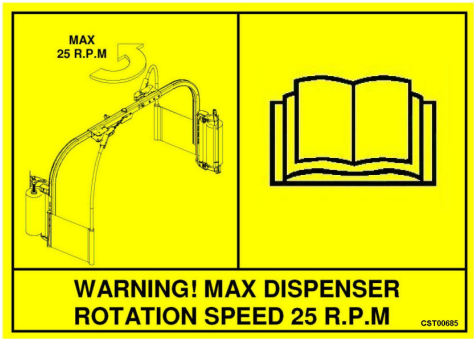


2. The 1st valve section operates the dispenser arm, and the upper setting screw sets the flow/speed of arm. Using a 10mm spanner, loosen the sealing/locking nut shown.
Using a 3mm Allen tool, turn clockwise to reduce the speed. In practice the adjustment required is very small, usually max. of 1/4 turn clockwise. Tighten the locking nut. Re-check the arm speed, and repeat until the correct arm speed of 23rpm is achieved.

Replace the valve cover.



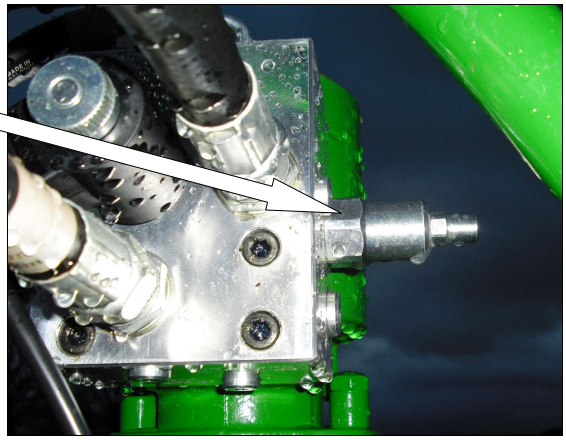
WARNING: The dispenser must never be operated above a maximum of 25 revolutions per minute.



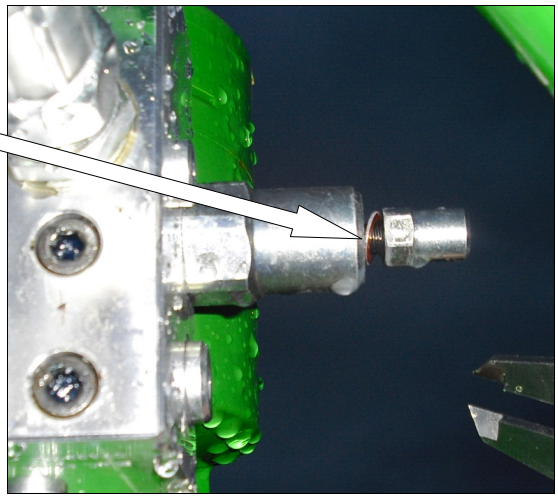
13) Setting of over-centre valve on the arm rotation valve assembly

Always ensure tractor is stopped, handbrake applied, engine stopped and ignition key removed before working on machine.

1. Locate the over-centre valve of the dispenser arm rotation valve assembly.

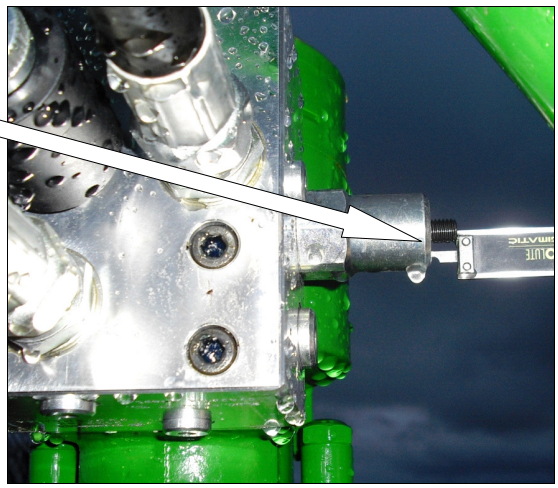


2. Using a 13mm spanner, remove this covering nut and the copper washer.



3. Using a 4mm Allen Key, set the distance shown to 6.5mm.

Refit the copper washer and the covering nut.



11. Appendix 1—Troubleshooting

The following tables give common problems that may occur while operating the machine and solutions to solve them. McHale suggests that the operator carry out a simple visual inspection of the machine to check for possible hydraulic leaks, loose or damaged cables and/or any other visibly damaged components. The machine must be run at a minimum of 600 rpm and a maximum of 800 rpm.

Also ensure that the control box is receiving a supply voltage of at least 12V and a recommended voltage of 13V.

If you are unsure of how to carry out any of the remedies listed, entrust the job to your McHale dealer.

Table 1:
The following table, table 1, refers to problems that may occur while using the 998 square bale wrapper in both “AUTO” and “MANUAL” modes. ***Note:*** Not all operations that are shown below are controlled by the control box. Each problem is shown by it’s main operation. Use table 2 on page 72 & 73 to check for possible causes and remedies.

Operation	**Problem**
Drawbar operation.	Drawbar will not operate, see 3a and 3b.
Conveyor belt operation.	A). Conveyor belt fails to run, see 1, 2, 5 & 7. B). Conveyor runs too slowly in both directions, see 2. C). Conveyor fails to run when dispensers are operating, see 2.
Front conveyor lift operation.	Conveyor fails to lift, see 3a.
Cradle bale lift operation.	A). Cradle fails to lift bale, see 18. B). Cradle lifts on one side only, see 4a. C). Cradle continues to try and lift bale, see 17a, 17b & 17c.
Cradle roller operation.	A). Rollers fail to rotate, see 20a & 20b. B). Rollers fail to level the bale, see 4a & 4b. C). Rollers continue to rotate once bale is loaded, see 4b.
Dispenser operation.	A). Dispensers fail to rotate, see 6, 7, 8, 20a & 20b. B). Dispensers come to an abrupt halt, see 6. C). Dispenser roller lock fails to engage in the “up” position, see 9. D). Plastic not stretching properly, see 10 & 11. E). Plastic breaking easily, see 23.
Cut and hold operation.	A). Ram fails to open, see 5. B). Ram opens, but will not open fully, see 2. C). Film is not being cut properly, see 21. D). Cut & hold fails to hold plastic film, see 22.
“AUTO” control box operation.	A). Auto start will not run once pressed, see 1, 2, 5, 7, & 12. B). Auto start is pressed and bale is sent off the back of the machine, see 18. C). Auto start is pressed, the conveyor runs, but nothing else happens, see 19. C). Auto start without conveyor will not run, see 5, 6, 7, 12 & 20. D). Auto start will not run the full cycle, see 5, 6, 7 & 19.
“MANUAL” control box operation.	Conveyor does not work in “MANUAL” mode, see 24.
Remote operation.	Remote control receiver not accepting signal, see 13, 14, 15 & 16.

Table 2:

The following table, table 2 is to be used in conjunction with table 1. The below table refers to possible causes of problems and remedies to these problems.

	Possible Cause	**Remedy**
1	No Pto connection.	With tractor turned off and key removed, ensure that the pto shaft is connected securely.
2	Pto speed set incorrectly.	Ensure that pto speed is kept between a speed of 600-800 rpm.
3	a). No oil feed. b). No oil return.	Ensure that hydraulic line is connected and check the quick release coupling. Check tractor manual for hydraulic connections.
4	a). Bale levelling device set wrong. b). Levelling device wiring damaged.	Adjust bale levelling device as per section 9-13. Replace damaged component.
5	Electrical power supply fault, e.g. loose connections, poor battery and/or charging system.	Ensure that a 13V DC power supply is available and check all electrical connections.
6	One or both safety arms have been activated (arm is pressing against aluminium box section), **stop work immediately**.	Reposition safety arm(s) into the working position and push up the bale lift button on the control box, while in AUTO mode to continue.
7	“STOP” button has been pressed on control box.	Turn knob in the clockwise direction to turn the control box on.
8	Keyway has sheared.	Replace keyway between motor and brake unit.
9	Film roller release cable has become too loose.	Adjust nuts at bottom of cable until roller engages in the “up” position, see section 5-5 for cable position adjustment.
10	Build up of tack/glue on dispenser rollers.	Clean off with kerosene.
11	Torsion springs gone too weak on dispenser.	Replace springs.
12	The incorrect cycle is selected.	Press the “AUTO/MAN” button downwards to the “AUTO” position.
13	Sunlight shining directly into the receiver.	Turn away or shade from sunlight.
14	Batteries exhausted on handpiece.	Replace batteries.
15	Not pressing start button for long enough.	Press button for 2-3 seconds.
16	Operating through tinted glass.	Operate where glass cannot come in the way.
17	a). Roller lift height magnets set too closely. b). Sensor to magnet distance too great. c). Roller lift height magnet/sensor damage.	Leave at least 4 unused holes between magnets, sensor should be set flush with sensor guard ring or replace damaged components, see section 9-12.
18	Bale load sensor/magnet has been damaged.	Replace sensor or blue magnet, see section 9-14.
19	No bale loaded on conveyor.	For the sequence to run fully, there must be a bale loaded on the machine.
20	a). Dispenser arm sensor/magnet damage. b). Dispenser arm sensor-magnet distance too great.	Replace broken/damaged sensor or magnet. If no visible signs of damage move sensor “downwards”, closer to the magnets.

Table 2: *(continued…)*

	Possible Cause	**Remedy**
21	Blade has gone blunt.	Carefully replace blade, see section 9-6.
22	Dispenser “arm position” sensor is misaligned.	Refer to section 9-10 for sensor adjustment.
23	Dispenser pivot points sticking due to poor Lubrication.	See section 10-10.

12. Appendix 2 - Recommended lubricants

The following lubricants are recommended for use on the 998 square bale wrapper

Hydraulic oil	ISO HV 46 or higher
Pump gearbox oil	EP 80 gear oil
Grease	Multi purpose grease
Dispenser gears	Open gear grease
PTO shaft tubes	Graphited grease
Rotation Arm Gearbox	EP 80 gear oil

13. Appendix 3 - Fasteners/fittings torques

It is important that the correct torques for fasteners and fittings are adhered to . Below are tables of recommended torques for these. These are to be used unless torques are otherwise specified.

All torques are in Nm.

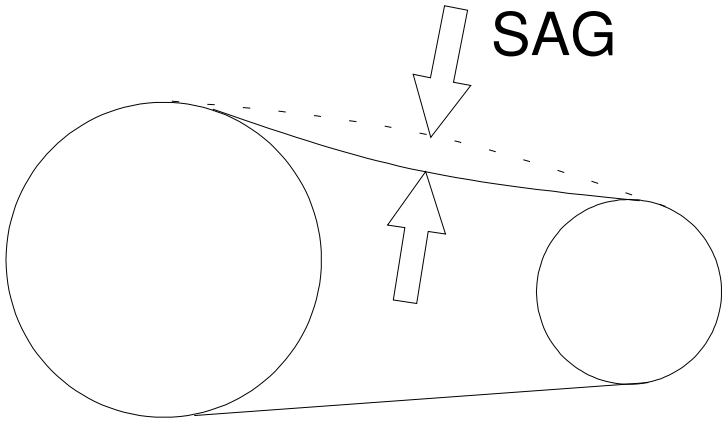
Nuts and bolts		**Black, Phosphatised or Galvanized**		
Grade marking		8.8	10.9	12.9
	Dimensions	**Metric standard thread**		
Hex. bolts	M4	2.7	3.8	4.6
Din 931	M5	5.5	8	9.5
Din 933	M6	10	14	16
	M8	23	33	40
Socket head	M10	45	63	75
cap screws	M12	78	110	130
Din 912	M14	122	175	210
	M16	195	270	325
Hex. nuts	M18	260	370	440
Din 934	M20	370	525	630
	M22	510	720	870
	M24	640	900	1080
	M27	980	1400	1650
	M30	1260	1800	2160
	Dimensions	**Metric fine thread**		
Hex. bolts	M8 X 1	25	35	42
Din 960,	M10 X1.25	48	67	80
Din 961	M12 X 1.25	88	125	150
	M12 X 1.5	82	113	140
Hex. nuts	M14 X 1.5	135	190	225
Din 934	M16 X 1.5	210	290	345
	M18 X 1.5	300	415	505
	M20 X 1.5	415	585	700
	M22 X 1.5	560	785	945
	M24 X 2	720	1000	1200
	M27 X 2	1050	1500	1800
	M30 X 2	1450	2050	2500

NOTE:	**For cadmiated or copper plated bolts and nuts a torque value must be used**
	that is 25% lower than the value stated above.

14. Appendix 4 - Chain adjustments

It is important for the efficient operation of the wrapper that all drive chains are kept correctly tensioned. The following is a general guide to chain adjustment. For more specific information see the appropriate section under adjustments.

The sag is measured at the midpoint of the chain between the sprockets. Always ensure one side of the chain is tight so that the correct reading is obtained Even though some drives differ in detail the basic adjustments stay the same.



15. Appendix 5 - Limited Warranty

McHale Limited Warranty

McHale Engineering Ltd, Ballinrobe, Co. Mayo, Ireland (hereinafter called "the company") warrants to the original retail purchaser that new products sold and registered with the company, shall be, at the time of delivery, free from defects in material and workmanship, and that such equipment is covered under Limited Warranty providing the machine is used and serviced in accordance with the recommendations in the Operator's manual.

This Limited Warranty covers the equipment for 10,000 bales, or a period of one year starting from the date the equipment is commissioned, whichever comes first.

The online submission of the pre-delivery inspection (PDI) form by the dealer (Importer) is taken as evidence of the delivery of the machine to the original retail purchaser. This is compulsory, and is required to record the machine in the McHale warranty system.

- **1.1 These conditions are subject to the following exceptions;**
  - Parts of the machine which are not of McHale manufacture, such as tyres, PTO shafts, slip clutches, hydraulic cylinders, etc. are not covered by this limited warranty, but are subject to the warranty of the original manufacturer. Warranty claims applying to these types of parts must be submitted in the same way as if they were parts manufactured by McHale. However, compensation will be paid in accordance with the warranty agreement of the manufacturer concerned.
  - This limited warranty does not apply to failure through normal wear and tear, to damage resulting from negligence or from lack of inspection, from misuse, from lack of maintenance and/or if the machine has been involved in an accident, lent out or used for purposes other than those for which it was intended by the company.
  - This Limited Warranty will not apply to any product that has been altered or modified in any way without the express permission of the company, or if parts not approved by McHale are used in repair.
  - The company take no responsibility for any additional costs, including loss of oil and/or consumables incurred during the failure and repair of a product
  - The company cannot be held responsible for any claims or injuries to the owner or to the third party, nor to any resulting responsibility.
  - Also, on no account can the company be held liable for incidental or consequential damages (including loss of anticipated profits) or for any impairment due to failure, a latent defect or a breakdown of a machine.

- **1.2 The customer will be responsible for the following costs;**
  - Normal maintenance such as greasing, maintenance of oil levels, minor adjustments, etc. as specified in the Operator's manual.
  - Labour charges other than originally agreed, incurred in the removal and replacement of components.
  - Dealer's travel time and travel costs to and from the machine.
  - Parts defined as normal wear items such as, but not limited to belts, blades, knives, tines, tine bars, slip clutches, nylon chain runners and slides, etc. that are not covered under the Limited Warranty.

- **1.3 The importer will be responsible for the following costs;**
  - All warranty labour charges.

- **1.4 The limited Warranty is dependent on the strict observance of the following conditions:**
  - The machine has been put in service by the dealer according to our instructions.
  - The online pre-delivery inspection (PDI) form has been correctly completed by the dealer.
  - A printed version of the PDI form has been signed and dated by the original retail purchaser. This copy is to be stored by the dealer and made available to McHale when requested.
  - The warranty claim is submitted using the McHale online claims system.
  - The warranty claim must be submitted by the original retailing McHale dealer only.
  - The decision of the Company in all cases is final.
  - Damaged parts should be held by the dealer until credit has been given, or a returns request has been issued.
  - Parts must be returned to McHale with the McHale claim number written clearly on each individual part. These parts must be free from dirt and oil. If a part is returned in an unfit state, the claim will be refused.
  - If damaged parts have been returned to the company and warranty is refused, the dealer is allowed a period of one month from the date of receiving our notification to request the return of the damaged parts to the dealer site.

- **1.5 Further conditions: limits of application and responsibility**
  - This Limited Warranty cannot be assigned or transferred to anyone without the prior written consent of the Company.
  - McHale Dealers have no right or authority to assume any obligation or take any decision on the Company's behalf, whether expressly or tacitly.
  - Technical assistance given by the company or its agents for repairing or operating equipment does not lead to any responsibility on the Company's behalf and cannot under any circumstances bring novation or derogation to the conditions of the present Limited Warranty.
  - The Company reserves the right to incorporate changes in its machines without prior notice and without obligation to apply these changes to machines previously manufactured.
  - The present Limited Warranty excludes any other responsibility, whether legal or conventional, express or implied, and there are no warranties extending beyond those defined herein.

16. Optional Extra's

The following contains procedures and diagrams on how to attach the optional extra's to the 998 Bale Wrapper.

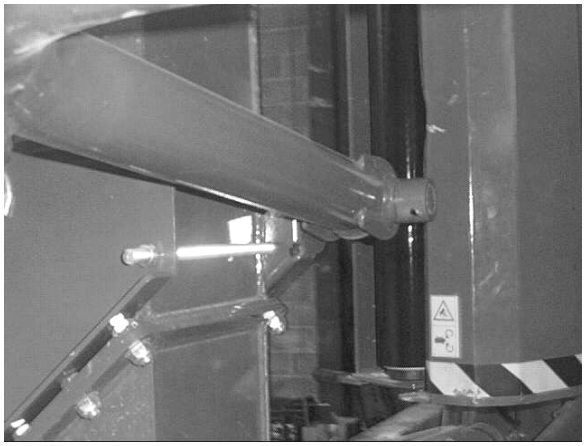
The optional extra's are as follows:

1. Round bale kit.

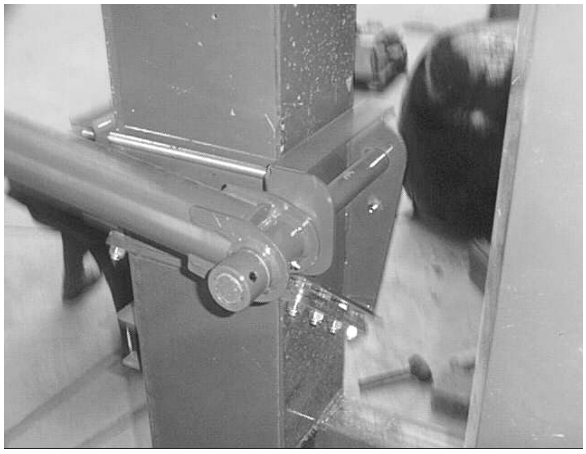
Round Bale Kit

The following is the procedure & pictures on how to attach the ***Round Bale Kit*** to the 998 Wrapper.

1) The two brackets must firstly be attached to the arch of the machine using the M16 bolts supplied. The bracket with the pivot pin must be mounted on the back of the arch as in the pictures. Both brackets must rest on the existing M16 bolts that attach the arch to the machine.



2) On the end of the top link there is a pin with (2) 6mm brackets welded onto it. This pin is to be slid into the 80 x 50 Box section that is on the conveyor and welded securely in place. The top link is to be pivoted on this pin.



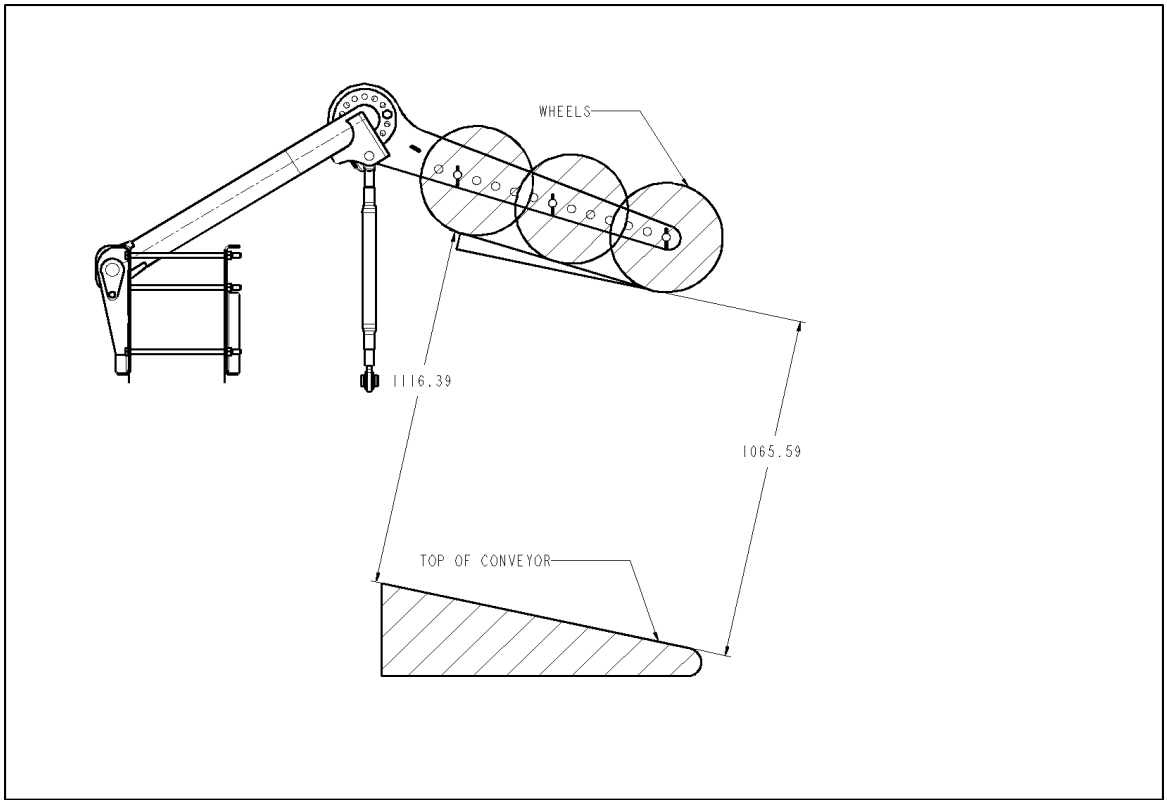
3) There is also a 6mm-support bracket that is not painted green. This bracket is to be welded as a support plate on top of the 80 x 50 box section on the conveyor & between the top of the conveyor.

4) For transport reasons the middle wheel is not assembled. This wheel is to be positioned in the 4th hole from the front of the assembly.

5) The 12mm roll pin that holds the locating bushing on the 40mm pin will have to be removed. Using a loader or crane raise the attachment and position it onto the 40mm pin, using the bushing and roll pin to secure it in position.

6) Adjust the top link or crane so that the eye of the top link is secured into the pin on the conveyor Box section. The round bale kit is now attached to the machine.

The wheels will have to be adjusted as per the drawing supplied. This is achieved by removing the (2) M16 bolts on the circular plates and adjusting according to the dimensions on the drawing.



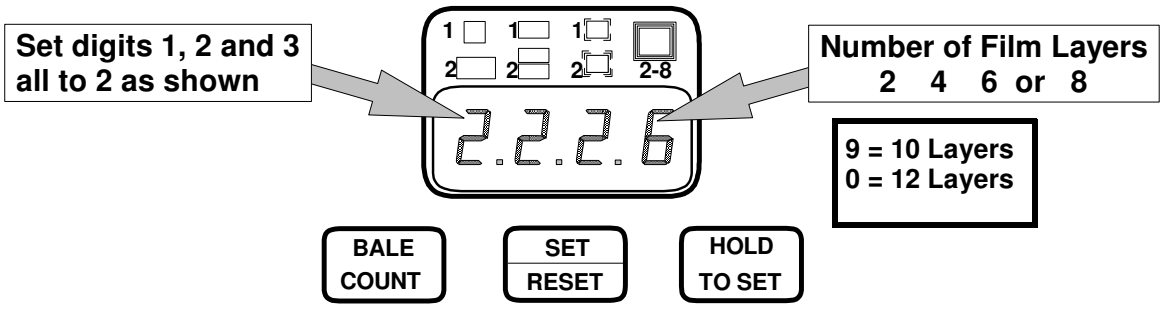
Round bale option control box settings.

Setting the control box for round bale wrapping.

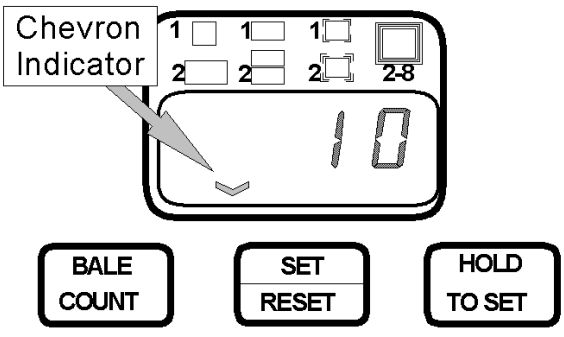
To wrap round bales on the 998 machine, the round bale loading kit must be fitted and the control box must be correctly adjusted. The first three digits on the display must be set to 2, this puts the machine into round bale mode; digit four is set to the desired number of film layers.

Round bale factor.

It is most important that this be set correctly to ensure proper bale wrapping. Set the number of **film layers to 2, load a bale, wrap the bale and check that the bale has two layers of film on its full circumference**. If the bale is not fully covered, increase the round bale factor, McHale recommend a round bale factor of 10 for 1.2m (4ft) diameter bales, however this must be checked on a bale. If the bale size varies, this must be set again. When the round bale factor is correctly set, selecting the number of film layers will apply the proper amount of film to the bale.



Setting the round bale factor.



Switch off the control box by pushing the red STOP button.
Push and hold the HOLD TO SET button.
Release the red STOP button by turning.
Release HOLD TO SET button.

The chevron will be in the first position; bale position on conveyor.
Press and release HOLD TO SET.
The chevron will move to the second position; round bale factor.
Adjust using either BALE COUNT or SET/RESET.
Pushing HOLD TO SET again advances the chevron and displays the cut and hold release duration.
When the desired settings are displayed push STOP to store.

Bale height.

The plastic film must pass over the centre line of the bale; the easiest way to adjust this is to remove the lower position magnet (magnet A, section 12 Operators manual) and allow the rollers to raise the bale to the higher position, the upper magnet (B) may then be adjusted if necessary.

17. Notes