

McHale 998



998 Square Bale Wrapper Operator Instructor Manual Issue 10

(Valid from Serial No. 251176 onwards)

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CLT00543_0

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McHale 998 Square Bale Wrapper

Thank you for buying this **McHale** machine, you have chosen wisely!
Given proper care and attention, you can expect it to provide you with
years of dependable service.

Warranty/Guarantee

Attention End User!

Please ensure your machine is fully registered with **McHale**,
by your dealer, at the time of delivery.
Failure by the dealer to register the machine will render your warranty void!
You can check the registration of your machine by visiting **www.mchale.net**.

It is important to quote the machine serial number when ordering spare parts or
requesting 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 manual,
please quote part number: CLT00543

Due to a policy of continuous product development and improvement, **McHale**
Engineering reserves the right to alter machine specifications without prior notice and/
or any obligation to make changes or additions to the equipment previously sold.

Please note that all specifications marked with an  in this manual only relate to
certain models or optional equipment. Also these specifications may not be available
in all countries.

It is vital to replace defective parts of the machine immediately and to use only genuine
McHale spare parts, as these are designed and manufactured to the same standard
as the original machine. Spare parts can be obtained from your **McHale** dealer.

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1

Introduction

The **McHale 998** Square Bale Wrapper is a completely new product. This product is designed to wrap, with plastic stretch film, rectangular section bales of forage for the purpose of storage as fodder for livestock. The design has been developed based on years of extensive research and development in the field of square bale wrappers. Given proper care and attention, the **McHale 998** will provide years of reliable and dependable performance.

Please do not assume that you know how to operate and maintain your machine before reading this manual carefully. In order to prevent misuse, damage and accidents, it is very important that everybody who will operate the **McHale 998** is a fully trained operator. They must read and fully understand all of the contents of this manual, before operating the machine, paying particular attention to the following:

- Safety instructions
- Functions
- Controls (hydraulic & electrical)

It is highly recommended to get acquainted with any new machinery slowly. Take time to learn and understand all of the features of the machine. Proficiency will increase as more experience is obtained.

If you have any questions in relation to the instructions in the manual, please contact your **McHale** dealer. It is highly recommended that training be sought from your local **McHale** dealer.

The operator is solely responsible for the safe use and maintenance of the machinery in accordance with this manual. Keep this manual safe and make sure it remains with the machine at all times.

2

Product Information

The **McHale 998** is protected against many dangers to itself while being operated from the electronic control box, in manual and fully automatic modes. However, it is of the utmost importance for the safety of the operator and for others, that the operator pays attention to all warnings and instructions given in this manual. In particular all safety devices, decals, guards and controls must be in place and in fully functioning condition. Never try to clear any malfunction when the tractor is switched on or while the machine is running. Keep the 'Danger Zone' (an area around the machine, detailed in "Danger zone" on page 15) free of all persons and animals at all times, while the machine is in operation. This manual must be read and fully understood by anyone who will operate the machine.

2.1 Designated use of the machine

The **McHale 998** is exclusively designed for normal use in agricultural applications. The machine has been designed to wrap rectangular bales of forage with plastic stretch film for the purpose of storing as fodder for livestock. This designation includes the movement of the machine, between fields by track or road, incidental to the wrapper's 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 owner's/operator's risk.

The designated use of the machine includes that:

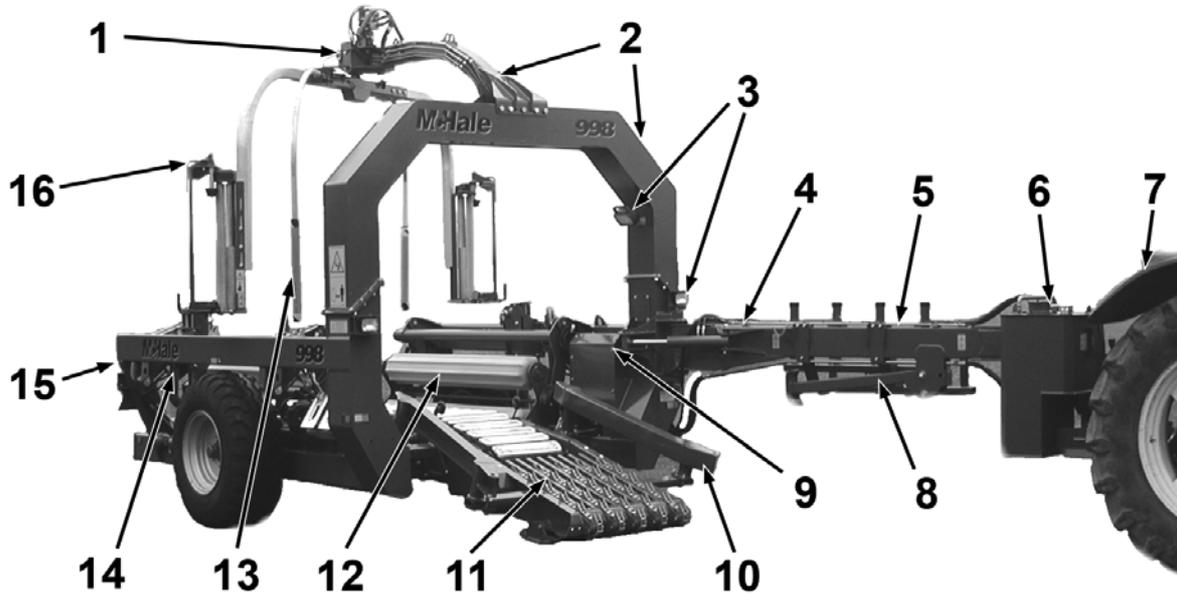
- The operating, maintenance and repair instructions given by the manufacturer will be strictly fulfilled.
- Exclusively persons who are familiar with it and instructed about the risks are entitled to operate, maintain and/or repair the machine.
- The relevant health and safety requirements, that may be in force in the country of use, will be strictly followed.
- No other equipment or accessories, other than released by **McHale**, are installed in the machine. The use of any other equipment or accessory is entirely at the owner/operator's risk. In such cases, unauthorised modifications/changes exclude any liability of the manufacturer.



WARNING: Loss of machine validity

By any alteration of safety equipment, the declaration of conformity and the CE sign loses its validity for this machine.

2.2 Front view



No.	Machine Function
1	Dispenser motor and brake unit
2	Overhead frame
3	Work lights
4	Transport lock bar
5	Drawbar
6	On-board hydraulic power pack
7	PTO shaft
8	Drawbar stand
9	Hydraulic control valve
10	Bale guides
11	Conveyor
12	Bale cradle
13	Dispenser trip arm
14	Cut and hold
15	Tail lights
16	Satellite dispenser arm

2.3 General dimensions & specifications

Units are given in both metric and UK imperial values, with the latter shown in brackets.

Transport length	7.3 m (24')
Transport width	2.99 m (9' 10")
Transport height	3.69 m (12' 1")
Transport weight (unladen)	3900 kg (8,600 lbs)
Tyre dimensions	400/70-20 Flotation +
Type pressure	1.75 bar (26 psi)
Maximum road speed	40 km/h (25 mph)
Brake system	Hydraulic brakes (Cemagref approved) Air brakes* (TUV approved)

Check with national road traffic regulations in the individual country!

2.4 Tractor attachment

Attachment	Cat 2 lower linkage SAE 6 spline PTO Shaft
PTO speed	600-800 rpm
Towing tractor requirements	60-70 KW (70-85 on hilly terrain)
Electrics	12 Volt DC
Lighting'	12 V/ 7 pin socket
Hydraulic systems	Self-contained load sensing
Minimum hydraulic pressure	180 bar (2610 psi)
Minimum hydraulic flow rate	60 lit/min (13.2 gal/min) @ 180 bar (2610 psi)
Maximum dispenser rotation speed	25 rpm

2.5 Machine specifications

Bale cross section		Width	Height
		800 mm (31.5")	700-1000 mm (27.5" - 39.5")
		900-1200 mm (35.5" - 47.2")	600-1400 mm (23.6" - 45")
Bale length		Between 1000 mm and 1800 mm long	
Plastic film	Film width	750 mm (29.5")	
	Film stretch	64% (55% optional)	
	Film layers	2 to 20 in steps of 2	
	Film storage	8 rolls (+ 2 rolls on dispenser)	
Dispenser rotary speed		25 rpm	

3

General Safety

3.1 Be aware of all safety information

Follow all safety precautions and practice safe operation of machinery at all times.

Warning, caution, note, and environmental messages:

When reading this manual, pay particular attention when you see the symbols below, i.e. warning, caution, note, and environmental. They will be used at various points in this manual and may also appear on safety decals on the machine. The purpose of these messages is to ensure that the most important information stands out from the rest of the text.



WARNING: This symbol indicates a potentially hazardous situation, that if not avoided could result in machinery damage, personal injury or even death.



CAUTION: This symbol indicates a potentially hazardous situation, that if not avoided could result in machinery damage or personal injury.



INFORMATION: This symbol is used to identify special instructions or procedures which, if not followed strictly, could result in machinery damage.



ENVIRONMENTAL: This symbol is used to remind you to respect the environment in relation to the correct disposal of waste material.

3.2 Follow all safety instructions



Using this manual, read all safety instructions and messages, and be aware of the meanings of all safety decals. If safety decals are damaged or missing due to wear and tear or component replacement, ensure that they are replaced by genuine **McHale** decals. Refer to section 4.7 in this manual (or spare parts book provided) to see the spare part codes for the relevant decals, which are available from your **McHale** dealer.

As with all machinery, learn all operations and use controls by reading this manual thoroughly. Do not attempt to let anyone operate this machine without being fully instructed.

3.3 Store all items carefully



Store all attachments, such as films rolls and any other stored items, in a secure and safe manner so as to prevent items from falling. Keep storage areas clear of bystanders and children.

3.4 Protective clothing



Always wear clothing and safety equipment that is fit for the job at hand, never wear loose clothing. In the event of loud noises, wear suitable protective hearing devices. Use of mobile phones or radio/music headphones are not recommended while operating machinery as these impair the operator's attention.

3.5 In case of emergencies



In the event of any accident, emergency equipment should be kept close at hand. A first aid kit and fire extinguisher along with emergency phone numbers should always be available to machine operators.

3.6 Stay clear of moving parts

Serious injury or death can result from entanglement of clothing or body parts with PTO shafts, drivelines, and other rotating parts.

Check for smooth operation of the conveyor, satellite-arms and all moving parts.

Keep all guards in place at all times, only wear close fitting clothing and ensure that tractor engine has stopped and key is removed before carrying out any adjustments, connections or cleaning of equipment.

3.7 In the event of a fire



In the event of a fire, the following is given only as a guideline procedure, assuming it is safe to do so, as it is the operator's decision to ascertain the seriousness and hence the solution to the situation.

1. Immediately move any bales from the machine and drive the tractor and wrapper away from the flammable material.
2. Shutdown the tractor and remove the key from the ignition.
3. Remove all hydraulic hosing and electrical looms from the machine.
4. With all connections removed, disengage the wrapper from the tractor.
5. Drive the tractor away from the wrapper.
6. Using a suitable fire extinguisher, attempt to put out the fire.



WARNING: Fire prevention

It is recommended that the wrapper be kept reasonably clean and free of build-ups of crop, lubricants, etc. This will help to reduce the risk of fires.

3.8 General safety warnings

Read and understand this operator manual before using the machine. If any of the instructions appear unclear do not hesitate to contact your **McHale** dealer.

Only competent persons who have read and fully understood this manual are qualified to operate this machine. The owner of this machine is obliged by law to ensure that every operator understands all of the functions, controls, working processes and safety warnings before operating the machine.

Safety devices

- All safety devices such as trip-arms, guards, protection parts and safety controls must be in place and in fully functioning condition. It is forbidden to operate this machine with defective or incomplete safety devices.

Danger zone

- The 'Danger Zone' is the area around the rotating machine (approx. 5 metres radius from the rotating centre axis), and a minimum of 10 metres to front and back of the machine to allow for safe bale transfer on and off the machine.



NOTE: "Danger Zone" can vary in size

The operator must be aware of the 'Danger Zone' which can vary in size, depending on operating conditions, i.e. hilly terrain.

- It is the operator's responsibility to ensure that there is no person in the 'Danger Zone' while operating the machine, especially during start up.

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- The only person who should be present is the machine operator and they should be seated in the tractor cab while the bale wrapper is in operation.

Before repair or reassembly

- Safe lifting gear of sufficient capacity must be used at all times. All chains and slings used must be in good condition.
- Extreme caution is required when fitting or adjusting the overhead frame, motor, and satellite dispenser arms.

Before operation

- The operator must ensure that the manufacturer's instructions for attaching and detaching the machine are followed. This includes the drawbar linkage and PTO attachment, the electric and hydraulic lines, in particular the lighting system.
- The operator must ensure that all covers are closed and all safety devices are in operating mode.
- The operator must ensure that there is no person in the 'Danger Zone'.
- Always be familiar with the health and safety requirements that may be in force in the country of use.

During operation

- While operating this machine on hilly or sloping ground the operator must take extra precautions, in particular the 'Danger Zone' is increased in such conditions as bales are more likely to roll away, causing a potential risk.
- Adjust driving speed to suit ground conditions. Allow for mounted machines reducing the front end weight of tractor.
- The operator must ensure that there is a minimum of 4 m clearance between the machine and any obstacle above, in particular electrical high voltage lines.
- Be careful when working with the cut and hold. Remember that the accumulators are under pressure.
- Avoid contact with the knife.
- Do not attempt to clamp plastic film in the cut and hold mechanism.
- Particular care must be taken, if the machine is left idle for any extended period, to ensure that all sensors and safety features are working correctly.
- Never operate machine with dispenser safety arms damaged or missing.



WARNING: Do not carry people or animals on the machine

The operator must ensure that no persons or animals are carried on the machine at any time or are hidden under the machine (on the tractor persons are only allowed to sit on the relevant seats).

Before travelling on public roads

- The owner of this machine is obliged by law to ensure that every operator has got a valid driving licence and is familiar with the road traffic regulations relating to the country of use.
- Always ensure that the electronic control box and hydraulic supply are switched off.
- Ensure lights (if fitted) are connected and working correctly.
- If plastic film is to be transported on the machine it must only be done so on the holders provided and secured, if necessary.
- Conveyor arm must be in the fully raised position and satellite dispenser arms inside width of machine.
- Drawbar transport lock must be fitted while travelling on the road.

Performing maintenance

- Maintenance and repair work on the **998** should always be carried out in accordance with this manual.
- Maintenance and repair work exceeding the content of this manual should only be carried out by qualified persons or your **McHale** dealer.
- When conducting maintenance work tie long hair behind your head. Do not wear a necktie, necklace, scarf or loose clothing when you work near the machine or moving parts. If these items were to get caught, severe injury could result.
- Before working on this machine, such as replacing film rolls, or altering any setting, the operator must ensure the following:
 - (a) The tractor has definitely stopped moving
 - (b) The hand brake is applied
 - (c) The engine is shut down
 - (d) The ignition key is removed
 - (e) PTO shaft is removed from PTO stub
 - (f) Electronic power supply and control box is disconnected
 - (g) Hydraulic oil supply is switched off

**It is forbidden to open any safety guards or to carry out any work on the machine, unless the above specified precautions have been carried out.*
- When conducting maintenance work always support the machine properly. Where possible, lower the attachment or implement to the ground before you work on the machine. If it is not possible to lower the machine or attachment to the ground, always securely support the machine or attachment. Do not work under a machine that is solely supported by a jack. Never support the machine with props that may break or crumble under continuous load.
- Never disable any electrical safety circuits, tamper with safety devices or carry out any unauthorised modification to the machine.
- Avoid heating near pressurised fluid lines, as pressurised lines can be accidentally damaged when heat goes beyond the immediate flame area.



WARNING: Dispenser arm rotation must never exceed 25 rpm

Never increase the speed of dispenser arm rotation.

During inspection

- If carrying out an inspection during machine operation within the 'Danger Zone' (**highly dangerous and NOT recommended!**), there should be a fully trained and competent second person operating both the tractor and wrapper controls. If at any time the second operator loses sight of the inspector, turn off all tractor power immediately! Such inspection should only be carried out if all guards are fully in place, the machine is on level ground and a safe distance is kept from any hazards on the machine.

4

Specific Safety Warnings

4.1 Electronic safety warnings

- This machine is equipped with electronic parts and components which comply to the EMC directive 2004/108/CE but still may be influenced by electromagnetic transmissions of other apparatus, such as welding machines, etc.
- Check electric cables regularly for signs of breakage or wear. If in doubt always replace (faulty safety circuits will cause risks).
- Do not modify any safety circuits.

4.2 Hydraulic safety warnings

- The maximum pressure in the hydraulic system of this machine should not exceed 210 bar.
- Always ensure the system is not under pressure before working on the machine. Oil under pressure can penetrate the skin and cause injury. Beware of pipes under accumulator pressure, depressurise lines by unthreading connections extremely slowly.
- Hydraulically actuated devices, such as conveyor, must be blocked mechanically against movement, before working on the machine.
- If any hoses are removed or replaced ensure they are marked and re-installed to the correct position during re-assembly.
- Check hoses regularly for signs of leakage or wear. Use a piece of card when checking for leaks. Fine jets of hydraulic fluid can penetrate the skin. Never use your fingers or face to check for leaks. If in doubt always replace. The recommended maximum working time of hoses should not exceed 5 years. Only use exact specification **McHale** genuine replacement parts.
- Do not work on hydraulic systems unless you are qualified to do so. This work should only be carried out by qualified persons or your **McHale** dealer.

4.3 Noise level

- The European Regulation 86/188/EEC directs employers and employees to control the noise level at work. The noise level at field work may differ according to the tractor, ground, crops and other environmental conditions.
- In normal conditions, whilst driving the **McHale 998**, the noise level to the driver's ear does not exceed 70 dB (A) with the rear screen of the tractor cabin open. The common noise level of the machine and the tractor is primarily influenced by the tractor noise (radio is an additional noise source). It is recommended to operate this machine with closed cabin windows.

4.4 Fire precautions

- Be aware that crops are easily inflammable.
- Do not smoke or make use of any open fire next to the machine.
- A functioning fire extinguisher should always be available on the tractor.
- The machine is to be kept clear of oil, grease, crops, string, plastic or any other flammable material at all times.
- Do not continue to work with overheated parts, cables or pipes, unless you have identified and eliminated the reason for overheating.

4.5 Special safety devices/instructions

- The owner of the machine is obliged by law to ensure that all safety devices are installed on the machine and are in good functioning condition.
- Always use protective gloves when replacing knife blades in the cut and hold.

4.7 Safety warnings & instructions explained

Danger areas which cannot be protected by any devices are marked by yellow safety decals. Therefore it has to be ensured that all safety warnings and instructions are understood and followed. If any of the decals are damaged or missing, they are available from your **McHale** dealer. The relevant part numbers are shown in brackets.

The decals featured on the **McHale 998** are displayed with their meanings below:

	<p>Danger of rotating parts, foreign objects Keep clear of machine while working (CST00014)</p>
	<p>Stop tractor, remove ignition key Read and understand the manual before working on or performing maintenance on the machine (CST00015)</p>
	<p>Beware of high-pressure hoses, even when the machine is switched off Also, read and understand the manual before working on any part of the hydraulic system (CST00016)</p>
	<p>Keep hands clear of rotation roller (CTS00017)</p>

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Keep hands out of crush area
(CST00019)



Check wheel nuts daily
(CST00020)



Check tyre pressure
(CST00021)



Diagram of plastic film path through dispenser.
(CST00022)



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

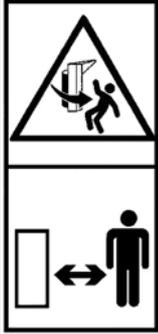


Check oil level
(CST00024)

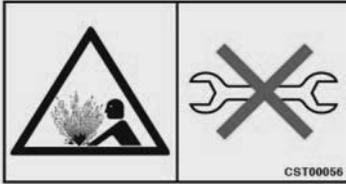


Lifting hook location
(CST00032)

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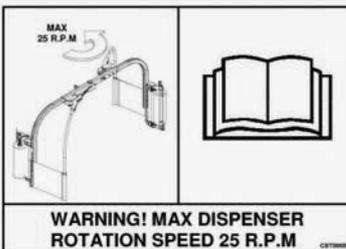
Keep clear of rotating dispenser
(CST00040)



Do not dismantle
High pressure always
(CST00056)



Keep out of drawbar crush area
(CST000141)



Warning! Never operate dispenser above 25 rpm
(CST00685)

Tel: 353 (0) 94-9520300
 Fax: 353 (0) 94-9520356
 Email: sales@mchale.net
 Web: www.mchale.net

McHale
 Castlobar Road,
 Ballinrobe
 Co. Mayo
 Ireland.

CE TYPE **998**
 S/N **-**
 YEAR OF MANUFACTURE **20**

998 chassis plate

4.8 Machine lifting guidelines



WARNING: Machine lifting

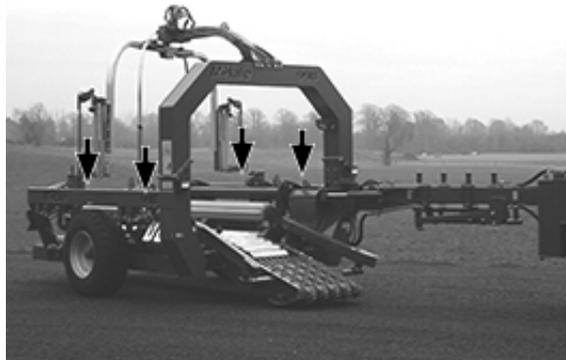
- Only use chains or strapping that are rated for a minimum load of two tonnes (2,000 kg) per chain or strap when using the four lift eye locations on the chassis, shown below.
- The crane or lifting device must be capable of lifting a minimum load of five tonnes (5,000 kg).
- Never go under a suspended machine or attempt to try and stop it if moving erratically, death or serious injury may result.
- Always be observant of people and objects around the suspended machine and do not allow the machine to impact heavily on the ground after suspension or movement.



RHS lift hook



RHS lift hook



Front View



LHS lift hook



LHS lift hook

5

Tractor Requirements & Preparation

5.1 Tractor requirements

The minimum recommended size of tractor for operating the **McHale 998** comfortably on flat ground is approximately 60-70 kw. On hilly ground or difficult conditions, an additional 10 to 15 kw is advisable.

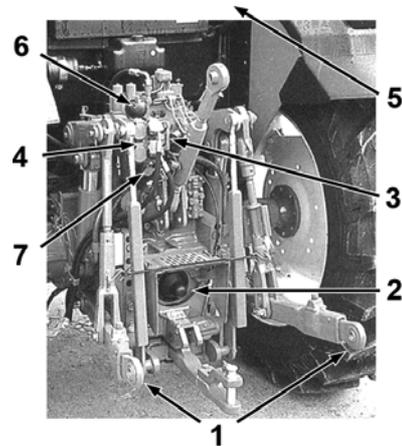


NOTE: Use good quality oil

Ensure that the tractor has clean, good quality oil, hydraulic/universal oil to avoid problems later on. Also, the hydraulic filters on the tractor should be changed regularly, according to the manufacturers service instructions. Avoid dirt getting into the hydraulic couplings.

The following items on the tractor are required for attachment of the bale wrapper to the tractor:

1. Category II lower linkage
2. One $\frac{3}{8}$ " SAE 6 spline PTO shaft running at 600-800 rpm
3. One $\frac{1}{2}$ " female quick release double acting spool valve for drawbar
4. One $\frac{1}{2}$ " female quick release single acting spool valve for conveyor lift
5. One 12 V/ 20 A euro socket or battery power cable
6. One 12 V/ 7 pin socket for lighting
7. One hydraulic brake coupling or two air brake couplings (depending on country of use)



5.2 Electronic control box installation

The electronic control box must be located inside the tractor cab in the operator's field of vision and within easy reach of the red emergency stop button. It is secured to the glass using the suction pad on the rear. Ensure that the cable to the machine is not under tension and not near sharp edges, etc. The electric power supply is obtained from the euro socket of the tractor.

Connect the supplied fused electric power lead to the tractor battery ensuring to route away from sharp edges and hot surfaces. The control box is not waterproof, it must be protected from rain. See "Electronic control box" on page 33.

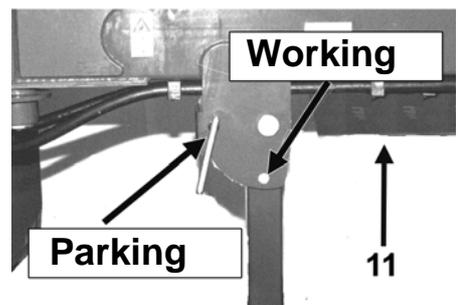
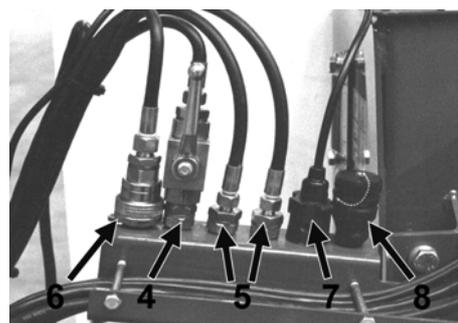


CAUTION: Electrical power supply

Do not use any other power supply for the electronic control system, otherwise damage may occur.

5.3 Attaching the drawbar to lower linkage

1. If you are 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 the tractor up to the wrapper and attach lower links by either hooking up the quick couplers or attaching directly with the pins provided.
3. Fit PTO shaft. Cut PTO shaft according to PTO manufacturer's recommendations attached to the shaft. This only applies to machines being fitted for the first time or if the tractor combination is changed.
4. 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.
5. Plug the remaining two hydraulic fittings into a double acting spool valve. These operate the drawbar hydraulic cylinder.
6. Plug the hydraulic/air brake pipe(s) into the appropriate fittings on the tractor.
7. Plug the 7 pin lighting plug into the 7 pin socket on the tractor.



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8. Screw the 24 pin socket on the electronic box and the 24 pin plug on the machine together. Ensure that the cable to the machine is not under tension and clear of sharp edges and hot surfaces.
9. Place the electronic control box in the tractor cab and secure it to the glass in an appropriate place, using the suction pad on the rear. The safety strap must be secured to protect the box from accidental damage. If there is no cab on the tractor secure as appropriate, bearing in mind the box is not waterproof.
10. Connect the control box to the tractor battery using the fused electric power cable provided (preferred option), or to the euro socket of the tractor, ensuring to route away from sharp edges and hot surfaces. There must be a good 12 V supply to the control box.
11. Raise the machine on the tractor linkage and swing the parking stand into the working position.
12. Adjust the tractor linkage so that the wrapper is parallel to the ground.
13. Check that all of the above functions operate correctly.

5.4 Lighting system

The 7 pin plug of the lighting system on the machine must be connected to the 7 pin socket on the tractor



NOTE: Check lighting system before travelling on the road

Before travelling on a public road, the operator must ensure that the complete (tractor and machine) lighting system is in a fully functioning condition.

5.5 998 setup and tractor hydraulic system



CAUTION: It is important to determine the correct hydraulic system on the tractor

Incorrect setup will cause serious damage to the tractor's hydraulic system or, at least, excessive heating of the oil.

Open centre

This is the most common system on smaller tractors (i.e. less than 60 kW) and on some bigger older tractors. In this system, all the oil flows through the control valve when the machine is idle. The tractor will have a fixed displacement pump, the output flow will be max. 60 l/min and is usually not adjustable.

Closed centre

This system is found on older John Deere models (i.e. pre 00 and 10 series) and on some other makes and particular models. In this system, no oil flows through the control valve when the machine is idle but it maintains maximum oil pressure in the feed line. The tractor will have a fixed displacement pump and the output flow is usually not adjustable.

Load-sensing with Power Beyond fitted

This is the preferred hydraulic system. This system is found on most, but not all, newer tractors. In this system, no oil flows through the control valve when the machine is idle but it maintains a low oil pressure in the feed line (approx 21 bar). The tractor will have a variable displacement pump and will always have some means of adjusting the oil flow on each auxiliary valve.

Ideal configuration

In its most ideal configuration, the tractor will have a Power Beyond connection, whereby the oil comes direct from the pump, by-passing the tractor auxiliary valves to a female ½" quick release connection, which becomes the main feed.

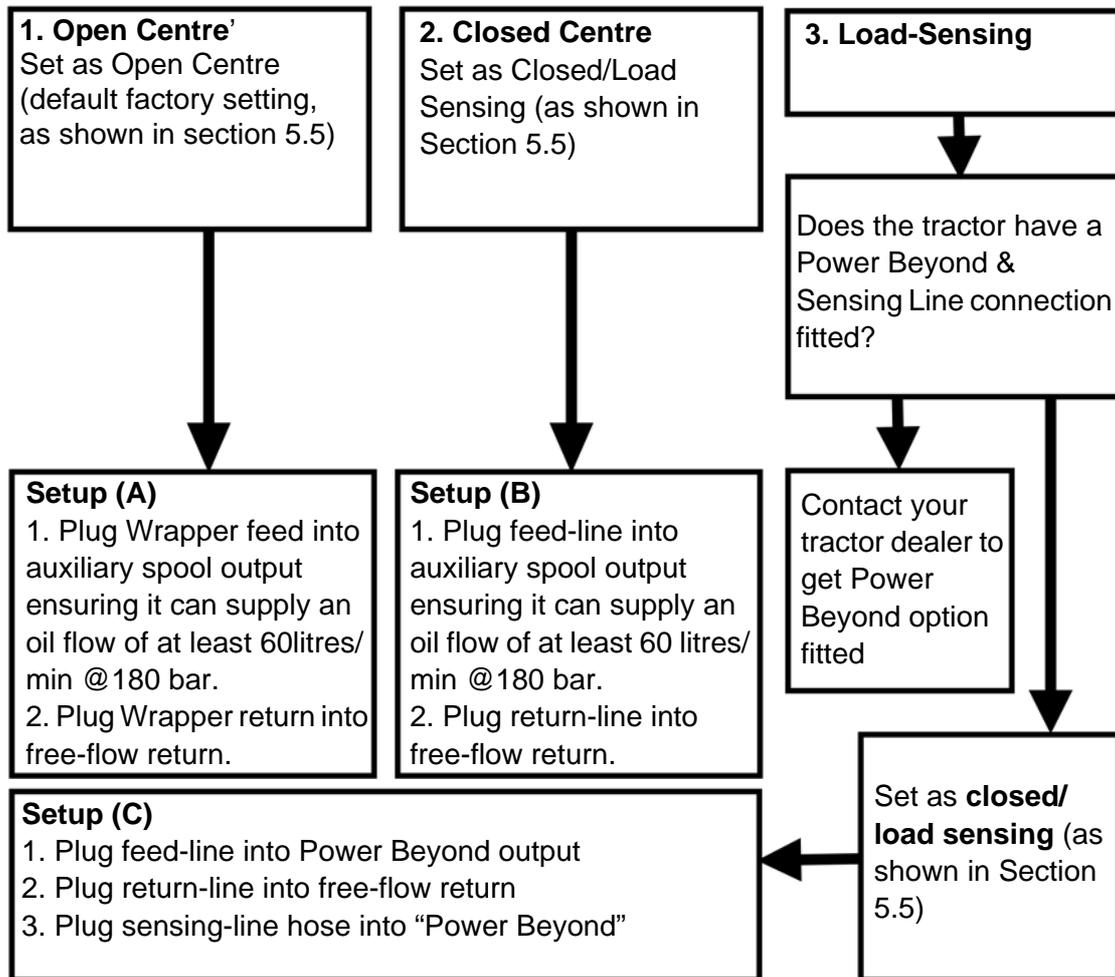
It will also have a third connection to the tractor, called the pilot sensing line, and this pipe sets the correct oil flow for the tractor to pump for each operation.

This is the most advanced and the most efficient hydraulic system available as the control valve now controls the amount and the pressure of oil required for each control valve operation and only the correct amount is pumped. This will save up to 20 kW PTO power on the tractor.

Although it is possible to operate the **998** with a load-sensing system via. the tractor auxiliary spools (i.e. continuous oil flow, where the control valve is set to open centre setup and flow is set to 60 l/min. from the tractor), **McHale** do not recommend operating in this setup as controlling the oil flow is too variable from one tractor to another and there is a 20 kW PTO power loss associated with the overheating of oil.

Once the correct tractor system is identified, see "Which hydraulic system is used?" on page 30, to select the best setup for the **998**.

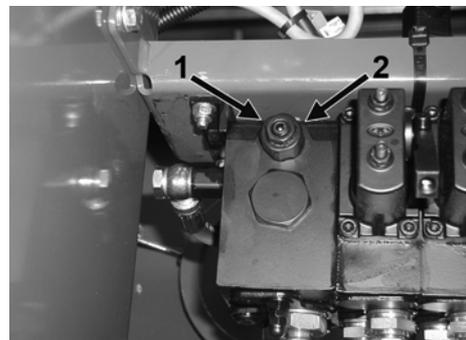
5.6 Which hydraulic system is used?



5.7 Hydraulic spool valve setup

Procedure to select open/closed centre valve configuration:

1. Using a 17 mm spanner, loosen locknut
2. With a 4 mm Allen Key, tighten or unscrew the bolt according to the following guidelines:
 - (a) Open centre (Factory Default): Screw in fully (Do not overtighten)
 - (b) Closed Centre/ load Sensing: Unscrew 5 full turns from the fully in position.
3. Re-tighten 17 mm locknut
Tightening Torque = 20 Nm



6

Bale & Film Requirements

6.1 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.

- Cross section: 800 mm wide, 700-1000 high
 900 - 1200 mm wide, 600 - 1400 mm high
- Length: Between 1000 mm and 1800 mm

6.2 Film requirements

Good quality silage depends on the use of top quality plastic film, in addition to well shaped, dense bales. Low quality film material will not produce good silage regardless of how well the machine wraps the bale. The film should be used and stored according to the instructions of the film manufacturer.

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.

Only 750 mm film is to be used, unless otherwise stated.

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.

The plastic film must be applied to the centre of the bale. If it is too low or too high adjust the dispenser height as appropriate. See "Dispenser height" on page 58.

The number of rotations of the wrapping arm is determined by the electronic control box settings, see "Square bales" on page 41, and by the bale size. Each bale is measured independently and the correct amount of rotations is applied accordingly. This is pre-set and not operator adjustable.



ENVIRONMENT: Recycling of film roll

Respect the environment! Never throw away or burn the waste film and the core tube. Always take waste materials to a recycling centre.

6.3 Care of the film roll

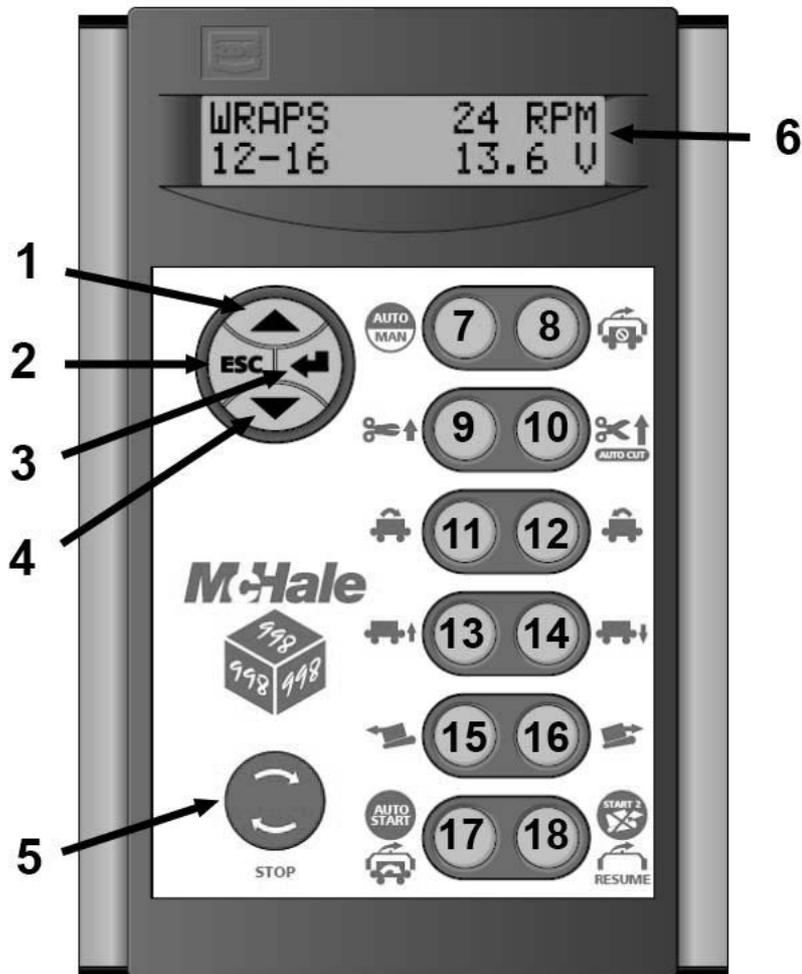
The film roll should be protected from damage, moisture, and prolonged exposure to the sun. Do not remove the protective cover until ready for use. Film damage can cause undesired film performance and affect bale weatherability.

7

Electronic Control System

7.1 Electronic control box (software version EX305056 or later)

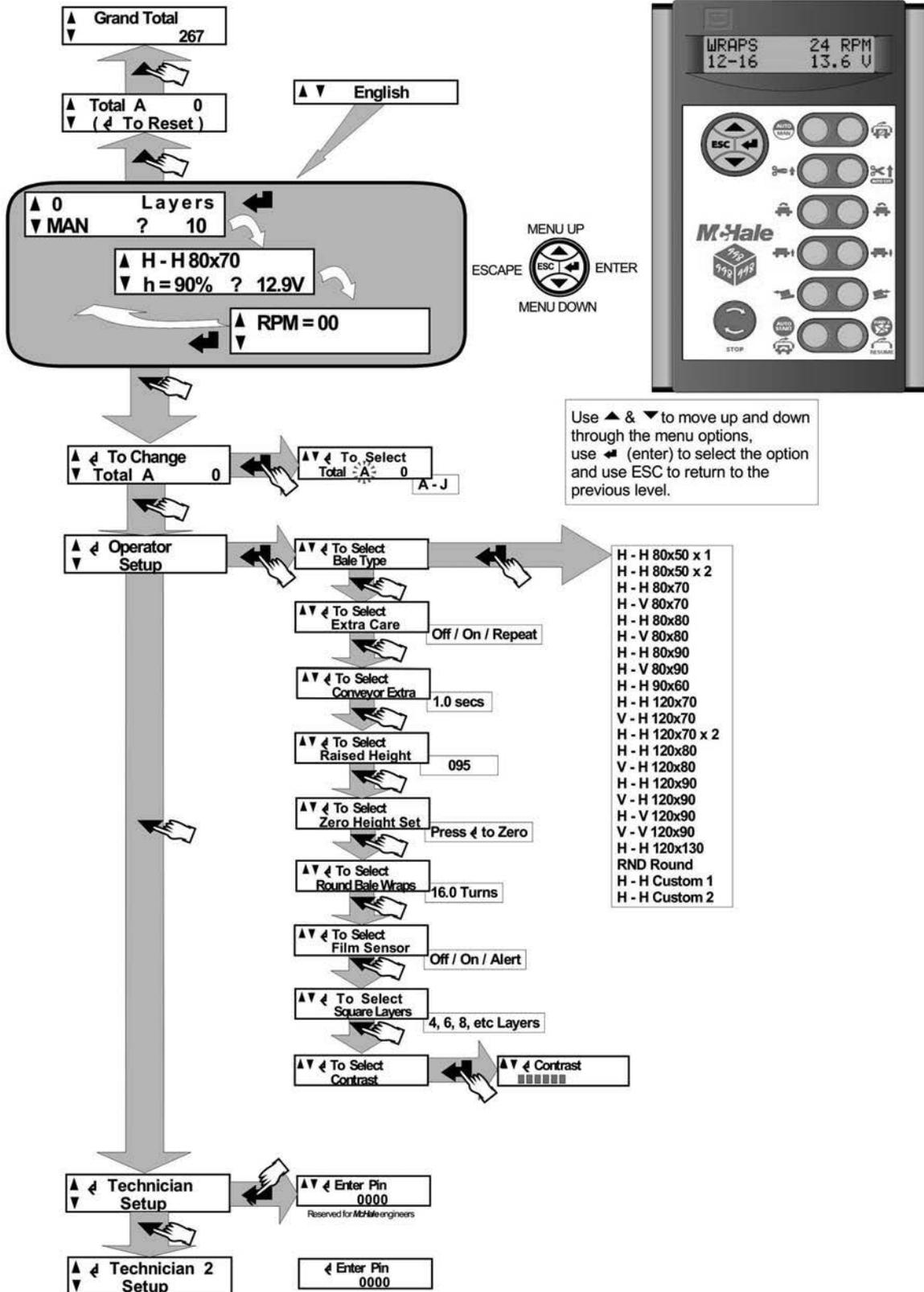
The electronic control box is the main interface between the operator and the machine. While the machine is fully automatic, setting up is required before wrapping commences. It is also possible to work the machine manually through the buttons on the control box.



7.2 Electronic control box functions

No.	Function	
1	Display up	
2	Escape back to main display, or cancel error	
3	Enter	
4	Display down	
5	Stop button - twist clockwise to restart the controller	
6	Display	
	Manual	Automatic
7	Select automatic	Select manual
8	No function	Slow bale rotation to half speed/ stop rotation
9	Release plastic from cut and hold	No function
10	Cut and hold plastic	Hold for two seconds to auto cut and hold
11	Rotate bale forward	No function
12	Rotate bale reverse	No function
13	Bale cradle up	No function
14	Bale cradle down	No function
15	Move bale to front (conveyor)	Move bale to front
16	Move bale to rear (conveyor)	Move bale to rear
17	Rotate dispensers and bale	Auto start (from front conveyor)
18	Rotate dispensers (no bale rotation)	Auto start 2 (with bale in position) Resume (an interrupted cycle)

7.3 Electronic control box setup



7.4 Electronic control box features

7.4.1 Automatic operation

Before commencing operation, all the parameters explained in this section must be set up. The control unit can then be switched into Auto mode by pressing button 7. "AUTO" will then be displayed on the screen and most of the other button functions will be disabled. The automatic cycle can be started in two ways:

- Pressing button 17 will start the conveyor running. The operator drives into the bale and it will be picked up. The conveyor will automatically stop when the bale is in the correct position for the cradle to lift it into wrapping position (if no bale is picked up the conveyor will run continuously).
- Pressing button 18 will start the cradles rising to lift the bale into the correct wrapping position. This means that the bale must be manually positioned in the correct position on the conveyor beforehand. If no bale is present, the cradle will lift, the rollers will rotate to try to level the bale but will stop the cycle after five seconds if a bale is not found. "NO BALE" will be displayed on the screen.

During wrapping, buttons 15 and 16 can be used to start loading the next bale. Button 8 can be pressed to slow/pause the bale rotating to manually apply more film to one part of the bale. Press and hold once to slow the bale rollers to half speed. Press and hold a second time to stop bale roller rotation completely. Release to resume normal speed.

7.4.2 Manual operation

When the control unit is first switched on Manual mode is the default selection. MAN will be displayed in the bottom left of the screen. This is no reason to ever wrap a bale in Manual, except if there was a faulty sensor that would not allow the Auto cycle to run. All functions can be operated individually using buttons 7-18 to wrap the bale. The procedure for cutting the film is as follows:

1. Select Auto (button 7).
2. Press and hold button 10 for two seconds to start the Auto cut sequence. The satellite will turn once and the cut and hold will open to cut the film.
3. Press button 7 again to return to Manual and eject the bale.

Alternatively:

1. Press button 10 to fully open the cut and holds.
2. Release button 10 and press button 17/18 within one second to rotate the dispensers the last quarter turn. The cut and hold will still be kept open even though button 10 is not pressed anymore.
3. Release button 17/18 and the cut and hold will close and cut the film.

7.4.3 Working display

When the electronic control box is first switched on it displays “Expert Series”, followed by the program version number, followed by the selected language. The working language can be changed at this point if necessary. The language is changed by pressing the Display Up (button 1) or Display Down (button 4) to scroll to the desired language when the default language “English” is displayed.

After a short delay the working display (screen 1 of 3) appears. There are three different working screens. Press Enter (button 3) to toggle between the three screens.

Main working screen

The main screen shows the subtotal on the top left and machine status (manual or automatic) on the bottom left. The right of the screen shows the word “Layers” and the film layers setting underneath.

Second working screen

This screen shows the bale orientation and size on top. The bottom left displays cradle height in percentage and the bottom right displays control unit supply voltage.

Third working screen

This screen shows the satellite rpm during the automatic cycle.



WARNING: Satellite speed

Satellite speed should not exceed 25 rpm, see section 12.13

7.4.4 Counters

The Expert Series electronic control box contains the following counters:

- **Ten different bale counters (A - J)**, which can be reset. These bale counters can be used to measure the amount of bales wrapped for various customers by using a different counter for each customer.
- **Grand Total Counter**, which cannot be reset. Every bale that is wrapped by the machine is added to this counter.

Select & set a bale counter (A-J)

1. From the working display, press the Display Down (button 4) once to see the To Change Total display.
2. Press Enter (button 3) to move to the To Select Total display.
3. Select desired counter (A -J) using Display up and Display Down (buttons 1 & 4).
4. When you reach your desired counter, press Enter (button 3) to select it.
5. Press Display Up (button 1) or ESC (button 2) once to return to the working display.

Reset the current bale counter (A-J)

1. Press Display Up (button 1) once, from the main working screen.
2. The current bale counter total will be displayed.
3. Press Enter (button 3) to reset it.
4. Press Display Down (button 4) or ESC (button 2) once to return to the working display.

View the grand total bale counter

1. To view the grand total bale counter, press Display Up (button 1) twice, from the main working screen.
2. The grand total counter will be displayed.

7.4.5 Voltage monitor

The Expert Series electronic control box monitors its operating voltage and displays it during wrapping. If the voltage falls below a safe level “LOW BATT” is flashed on the display. The usual causes of low voltage are:

- A bad battery
- A defective charging circuit
- Loose or corroded connections
- Fuses or a faulty power lead to the control box

7.4.6 Operator setup

To enter the Operator Setup menu:

1. Press Display Down (button 4) twice from the main working screen.
2. Press Enter (button 3) once to move to the Operator Setup screen:
 - Bale Type
 - Extra Care
 - Conveyor Extra
 - Raised Height
 - Zero Height Set
 - Round Bale Wraps
 - Film Sensor
 - Square Layers
 - Contrast
3. Use Display up and Display Down (buttons 1 & 4) to select an item, then press Enter (button 3) to adjust the current selection/setting.

Bale type

Use this setting to select a bale type from the menu to match the dimensions of the bale being wrapped. The letters before and after the different bale types represent the start and finish orientation of the bale (i.e. H-V Horizontal start and Vertical finish).

There are two custom bale options and a round bale option. The custom bale option allows the operator to define all the bale parameters to their own requirements, see

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“Custom bale” on page 43.

To change bale type:

1. Press Display Down (button 4) twice.
2. Press Enter (button 3) twice to move to and select the Bale Type screen.
3. Use Display Up and Display Down (buttons 1 & 4) to select the appropriate setting press Enter (button 3) to save the new setting.

Extra care

This wrapping cycle is used to apply extra film on certain places on rectangular bales if desired. This helps to wrap these bales evenly. Extra Care can be set to Off, On, or Repeat. In the On setting, extra care is applied on the bale once. In the Repeat setting, each extra care is repeated every time the bale rotates one revolution.

To access the Extra Care setting:

1. Press Display Down (button 4) twice.
2. Press Enter (button 3) once.
3. Press Display Down (button 4) once and Enter (button 3) once to select the Extra Care screen.
4. Use Display up and Display Down (buttons 1 & 4) to select the appropriate setting press Enter (button 3) to save the new setting.

Conveyor extra

This setting sets the time the bale takes to move past the bale sensor. The time increases for shorter bales and decreases for longer bales.

To access the Conveyor Extra settings:

1. Press Display Down (button 4) twice.
2. Press Enter (button 3) once.
3. Press Display Down (button 4) twice and Enter (button 3) once to select the Conveyor Extra screen.
4. Use Display up and Display Down (buttons 1 & 4) to select the appropriate setting press Enter (button 3) to save the new setting.

Raised height

This setting is used to select the height the bale is raised for wrapping. Each bale has a suitable preset option but this may need adjusting for some conditions.

To access the Raised Height settings:

1. Press Display Down (button 4) twice.
2. Press Enter (button 3) once.
3. Press Display Down (button 4) three times and Enter (button 3) once to select the Raised Height screen.
4. Use Display up and Display Down (buttons 1 & 4) to select the appropriate setting press Enter (button 3) to save the new setting.

Zero height set

This setting calibrates the height sensor.

To access the Zero Height Set function:

1. Set the control box to manual.
2. Press the Cradle Down (button 14) until the cradles are fully down.
3. Press Display Down (button 4) twice.
4. Press Enter (button 3) once.
5. Press Display Down (button 4) four times.
6. Press Enter (button 3) to zero the height sensor.
7. Press ESC (button 2) to return to the working display.

If the height reading on the secondary display is not matching the bales raised height then a zero height reset may be required. A small percentage of over-shoot is possible with light bales.

Round bale wraps

To access round bale wrap settings:

1. Press Display Down (button 4) twice, from the main working screen, to display the Operator Setup screen.
2. Press Enter (button 3).
3. Press Display Down (button 4) five times to select the Round Bale Wraps screen.
4. Use Display up and Display Down (buttons 1 & 4) to select the correct setting, press Enter (button 3) to save the setting. Return to the working display by pressing ESC (button 2) or Display Up (button 1) twice.

Film sensor

The film sensor monitors the passage of film through the dispenser rollers. If one roll empties, the control box will display the message "1 Dispenser Only" and an alarm will sound; the bale rotation goes into half speed mode, so that the correct film coverage and wrapping of the bale can be completed.

If the second roll empties, the dispensers will rotate slowly and stop at the loading position, the bale will reverse to where the film has broken and the control box will display the message "Out Of Film" and wait.

To restart the cycle, press Resume (button 18) and wait.



NOTE: Film sensor can be switched off if desired

Film sensors are normally turned "On", but can be switched "Off" from the Operator Setup menu, if film sensing is not desired or if there is a problem with a sensor.

To set the sensor On/Off:

1. Press Display Down (button 4) twice.
2. Press Enter (button 3) once.
3. Press Display Down (button 4) and press Enter (button 3) once.

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4. Use Display up and Display Down (buttons 1 and 4) to adjust the setting i.e. On/Off.
5. Press Enter (button 3) to save the new setting.

Square bales

To access square bale wrap settings:

1. Press Display Down (button 4) twice, from the main working screen, to display the Operator Setup screen.
2. Press Enter (button 3).
3. Press Display Down (button 4) seven times to select the Square Layers screen.
4. Use Display up and Display Down (buttons 1 & 4) to select the correct setting and press Enter (button 3). Return to the working display by pressing ESC (button 2) or Display Up (button 1) twice.

Contrast

Extreme temperatures may affect the contrast of the display. This is adjustable from the Contrast menu.

To access this menu:

1. Press Display Down (button 4) twice, from the main working screen, to display the Operator Setup screen
2. Press Enter (button 3)
3. Press Display Down (button 4) eight times to select the Contrast screen
4. Use Display Up and Display Down (buttons 1 & 4) to make changes to the contrast level, press Enter (button 3). To return to the working display by pressing ESC (button 2) or Display Up (button 1) twice.

7.4.7 Technician menu

The technician menu is reserved for **McHale** engineers only. A pin code needs to be entered to access this menu.

7.4.8 Technician 2 menu

Normally, this menu is reserved for **McHale** engineers only. However, if the operator changes the Bale Type to Custom Bale, this Technician 2 setup is automatically renamed as Custom Bale setup and is no longer pin code protected. This custom menu is detailed in section 7.7.

7.5 Remote option

Infrared remote

Connect the receiver to the serial port on the electronic control box and select Auto mode (button 7). The cycle can be started by pointing the infrared remote at the receiver and pressing the Auto Start button. The Emergency Stop button will stop the cycle at any time. The other two buttons will rotate the table in forward and reverse.



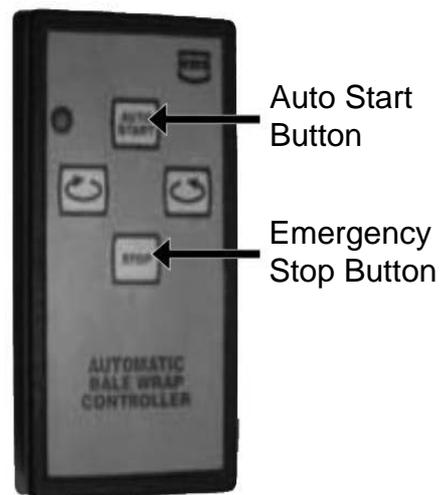
Remote - connected



Remote - disconnected



Infrared receiver



Infrared remote

7.6 Bale angle indicator

This is a small bar in the middle of the screen. As the square bale is wrapping, this bar will change angle to represent the bale position to the nearest 45 degrees.

This shows that the control box is receiving a signal from the computer, which in turn indicates that the bale angle sensors are working.

Coarse adjustment of the bale angle sensors 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, see "Bale levelling device" on page 63.

7.7 Custom bale (software version EX305056 +)

Custom bale setup

There are two custom bales in the Bale Type menu. The operator can define the setup of each of these bales. When a custom bale is selected the Operator Setup menu remains the same as any other bale options but the Technician 2 menu, which is reserved for **McHale** engineers is replaced with custom bale setup. The adjustable factors in the custom bale setup are as follows:

- Orientation type
 - Horizontal rev
 - Vertical delay
 - Pre wrap pulses
 - EC1 after duration
 - EC delay 1
 - Duration 1
 - Half speed valve
 - Rotate bale time
 - Fwd after wrap
 - Fwd after level
 - Ramp down delay
 - Vertical finish delay
- } - Extra care

Orientation type

The start and finish orientation of the bale is define using a **H** for horizontal and a **V** for vertical. There are four options for square bales: H - H, H - V, V - H and V - V. There is also a round bale option called RND Round.

Horizontal rev

Horizontal reverse is the rotating back of the bale for a selected period of time after the bale has levelled but before the dispensers start to rotate. The wrapping cycle then starts from this position. This can aid in preventing the plastic film slipping over the lower corner of the bale on the first rotation of the dispenser.

Vertical delay

Vertical delay is used when a bale is wrapped on a vertical start orientation (V - H or V - V). This setting is the amount of time that the bale will rotate from horizontal towards the vertical position. This is normally set at maximum time so that the bale will always get to the vertical position, but the time can be reduced so that the bale will stop and wrapping can start just before vertical This function has a similar effect as “Horizontal Rev” just that it is only used on vertical start bales.

Pre-wrap pulses

A number of dispenser rotations can be applied before the bale starts to rotate. This is most commonly used when wrapping double stacks of bales. One or two dispenser

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rotations before the bale starts to rotate will secure the top bale from slipping out of line with the lower bale when it is rotating through the first ninety degrees.

Extra care

There are 8 extra cares, one for each corner of the bale as it rotates through 360 degrees. Each extra care has three adjustable factors. The first factor is EC1 After Trans, which short for Extra Care 1 After Transition. The second is factor EC Delay 1, which is the delay after the selected transition (corner) in seconds before the extra care starts. The third factor for extra care is Duration 1, which is the duration of extra care applied to the bale in seconds. The bale roller rotation will slow to half speed for this length of time (see section 7.8).

Half speed valve

The half speed valve rotates the bale at half the normal wrapping speed. This is set to ON when wrapping using 500 mm plastic film. This will give the correct over lap when the valve is set to suit 500 mm plastic film however the default setting for the valve is set for one dispenser only on 750 mm plastic film.

Rotate bale time

This time is set for round bales that have a flat bottom. If the bale finishes wrapping with this flat near the bottom of the bale it can cause the bale to roll off centre on the conveyor. The plastic film can be damaged if it catches the rollers as it is unloaded. Set the time to suit the bales being wrapped so the flat spot is not near the bottom. The following two pages show the default settings for each bale type, these should be used as a reference when setting up a custom bale.

Fwd after wrap

This function can be used to rotate the bale forwards after wrapping before it is lowered onto the conveyor. This can help the film to stick better in dusty conditions or it can just be used to get the bale to be lowered onto the conveyor in the desired orientation. 0, 90, 180, 270 or 360 degrees can be selected.

Fwd After Level

This time setting determines the final stopping position of the bale on the rollers at the end of wrapping. When set to zero, the bale will stop completely level. The setting can be increased to let the bale rotate slightly past the level position for extra film coverage.

Ramp Down Delay

This time setting determines when the satellite ramp down at the end of wrapping will initiate. When set to zero the ramp down will start when the bale is 45 degrees before the end of wrapping. Small bales need a short time setting and bigger bales need a longer time. Take care not to use too low a setting, otherwise wrapping may finish before the bale has reached the last level position and therefore may not have sufficient film coverage.

Vertical Finish Delay

This setting is used to set a time delay between the Cut + Hold closing and the rollers rotating to level the bale at the end of wrapping. No delay is normally required. The only exception being when wrapping very wide bales that finish vertically, as these have a tendency to put extra pressure on the film as the bale levels.

7.8 Extra care

There are eight extra care options in each custom bale. In the Operator Setup menu, extra care can be set to ON, OFF, or REPEAT. If set to OFF, no extra care is applied to the bale. If set to ON, then each extra care defined is applied to the bale once. Setting extra care to repeat will apply each defined extra care to the bale every eight transitions until the wrapping cycle is complete. Eight transitions is the application of four layers of plastic film.

Extra care can be defined by the operator on the two custom bales. Select one of the two custom bales from the Bale Type menu in operator setup.

To define an extra care, select the transition that you want the extra care to start after:

1. Select an extra care that has not already been defined in the custom setup.
2. Set the EC After Trans to the number of transitions that the extra care is to start.
3. The extra care will only start after this transition if it is required earlier than set EC After Trans to an earlier transition.

EC delay is the period of time between the transition selected and the start of the extra care. Set this time to get the extra care applied exactly when required.

The duration is the last setting required to define the extra care. This is the period of time that extra care is applied for.

The default extra care settings, see section 7.9, are to be used as a reference when defining a custom bale with extra care. Figure 7.a shows the bale transitions up to transition eight, but any transition after eight can also be selected.

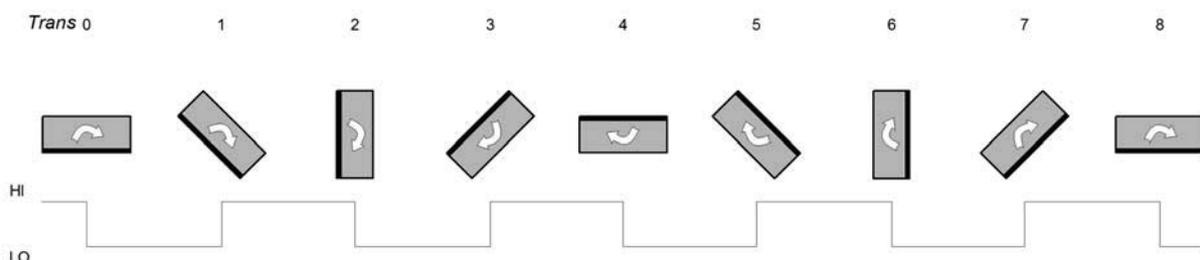


Figure 7.a - Extra care

7.9 Extra care settings

Function	Range	Default													
		80x50x1	80x50x2	80x70	80x70	80x80	80x80	80x80	80x80	80x90	80x90	90x60			
Bale Type 1 or 2 x H cm x V cm															
Orientation type	H-H;V-H;H-V														
Defines start and finish bale position	V-V; Round	H-H	H-H	H-V	H-H	H-H	H-H	H-V	H-H	H-H	H-H	H-V	H-H	H-H	H-H
Height bale raised: Bale height 0-100%	0-100	95	95	95	95	95	95	95	95	95	95	95	95	95	95
Horizontal reverse: Reverse bale before start	0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vertical delay: Delay wrap start after 45° Vertical start only	0 - 9.9 secs	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Pre-wrap pulses: hold bale at start	0 - 10 pulses	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EC1 after transition no.*	0 - 99 trans.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EC Delay 1*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 1*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EC2 after transition no.*	0 - 99 trans.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
EC Delay 2*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 2*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EC3 after transition no.*	0 - 99 trans.	3	3	3	3	3	3	3	3	3	3	3	3	3	3
EC Delay 3*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 3*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EC4 after transition no.*	0 - 99 trans.	4	4	4	4	4	4	4	4	4	4	4	4	4	4
EC Delay 4*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 4*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Function	Range	Default											
		5	5	5	5	5	5	5	5	5	5		
EC5 after transition no.*	0 - 99 trans.	5	5	5	5	5	5	5	5	5	5	5	5
EC Delay 5*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 5*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0
EC6 after transition no.*	0 - 99 trans.	6	6	6	6	6	6	6	6	6	6	6	6
EC Delay 6*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 6*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0
EC7 after transition no.*	0 - 99 trans.	7	7	7	7	7	7	7	7	7	7	7	7
EC Delay 7*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 7*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0
EC8 after transition no.*	0 - 99 trans.	8	8	8	8	8	8	8	8	8	8	8	8
EC Delay 8*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 8*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0
Half Speed Valve	Y/N	YES	NO										
Forward after wrap: rotate bale after wrapping	Degrees	0	0	0	0	0	0	0	0	0	0	0	0
Fwd after level: bale rotation past level at the end	2	2	2	2	2	2	2	2	2	2	2	2	2
Ramp down delay: Delay after last 45° before ramp down	1	1	1	1	1	1	1	1	1	1	1	1	1
Vertical finish: delay between C&H close and bale levelling	0	0	0	0	0	0	0	0	0	0	0	0	0

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Function	Range	Default												
		120x70	120x70	120x70x2	120x80	120x80	120x80	120x90	120x90	120x90	120x90	120x130		
Bale Type 1 or 2 x H cm x V cm		120x70	120x70	120x70x2	120x80	120x80	120x80	120x90	120x90	120x90	120x90	120x90	120x90	120x130
Orientation type	H-H;V-H;H-V													
Defines start and finish bale position	V-V; Round	H-H	V-H	H-H	H-H	V-H	H-H	H-H	V-H	H-V	H-H	V-V	H-H	H-H
Height bale raised: Bale height 0-100%	0-100	84	84	84	84	84	84	80	80	80	80	80	75	75
Horizontal reverse: Reverse bale before start	0-5	0	0	0	0	0	0	0	0	0	0	0	0	0
Vertical delay: Delay wrap start after 45° Vertical start only	0 - 9.9 secs	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Pre-wrap pulses: hold bale at start	0 - 10 pulses	1	1	1	1	1	1	1	1	1	1	1	1	1
EC1 after transition no.*	0 - 99 trans.	1	1	1	1	1	1	1	1	1	1	1	1	1
EC Delay 1*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 1*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0	0
EC2 after transition no.*	0 - 99 trans.	2	2	2	2	2	2	2	2	2	2	2	2	2
EC Delay 2*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 2*	0 - 9.9 secs	0	1.5	0	0	1.7	0	0	2	0	0	2	0	0
EC3 after transition no.*	0 - 99 trans.	3	3	3	3	3	3	3	3	3	3	3	3	3
EC Delay 3*	0 - 9.9 secs	0.5	0.1	0.5	0.5	0.1	0.5	0.5	0.1	0.5	0.5	0.1	0.5	0.5
Duration 3*	0 - 9.9 secs	0	1.5	0	0	1.5	0	0	1.5	0	0	1.5	0	0
EC4 after transition no.*	0 - 99 trans.	4	4	4	4	4	4	4	4	4	4	4	4	4
EC Delay 4*	0 - 9.9 secs	0.5	0.1	1	1	1	1	1	1	1	1	1	1	0.5
Duration 4*	0 - 9.9 secs	1.5	1.5	2	1.7	1.5	2	2	1.5	2	2	1.5	2	1
5	0 - 99 trans.	5	5	5	5	5	5	5	5	5	5	5	5	5

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Function	Range	Default																
		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
EC Delay 5*	0 - 9.9 secs	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Duration 5*	0 - 9.9 secs	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EC6 after transition no.*	0 - 99 trans.	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
EC Delay 6*	0 - 9.9 secs	0.1	0.5	1	0.5	1	0.5	1	0.5	1	0.5	1	0.5	1	0.5	1	0.5	0.1
Duration 6*	0 - 9.9 secs	1.5	0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1
EC7 after transition no.*	0 - 99 trans.	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
EC Delay 7*	0 - 9.9 secs	0.1	0.5	0.1	0.1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Duration 7*	0 - 9.9 secs	1.5	0	2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1
EC8 after transition no.*	0 - 99 trans.	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
EC Delay 8*	0 - 9.9 secs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Duration 8*	0 - 9.9 secs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Half Speed Valve	Y/N	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Forward after wrap	Degrees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fwd after level: bale rotation past level at the end	0.99 secs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ramp down delay: Delay after last 45° before ramp down	0.99 secs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Vertical finish: delay between C&H close and bale levelling	0.99 secs	0	1.5	0	0	1.5	1.5	0	0	1.5	1.5	0	0	1.5	1.5	1.5	1.5	0

8

Wrapper Operation



WARNING: Keep out of the “Danger Zone”

Keep all persons, especially children, outside of the “Danger Zone” during all machine operations! See “Danger zone” on page 15.



WARNING: Do not carry people or animals on the machine

The operator must ensure that no persons or animals are carried on the machine at any time or are hidden under the machine (on the tractor persons are only allowed to sit on the relevant seats).

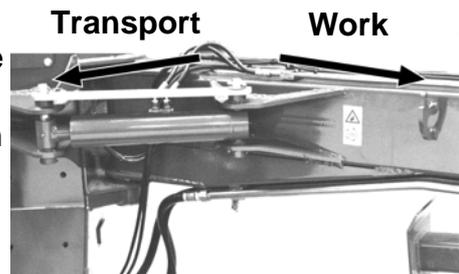


ENVIRONMENT: Recycling of the plastic film

Respect the environment! Never dump or burn waste plastic film. It's toxic! Always take waste materials to a recycling centre.

8.1 Preparing the machine for wrapping

1. Remove the drawbar transport lock and place in the work position. Do not operate the hydraulic cylinder with the transport lock in the transport position.
2. Swing out the drawbar to the working position using the tractor spool valve.
3. Turn conveyor lift circuit tap to the 'ON' position (i.e. lever in line with hose)
4. Lower the conveyor to the ground using the tractor spool valve. The correct position for the conveyor is for the skid to be 0-30 mm above ground level. A hydraulic accumulator is used to allow the conveyor to glide over the ground.
5. Switch on the electronic control box and set to Manual.
6. Turn the dispenser arm until it is at the normal stopping position. Ensure that the dispenser safety trip-arms are in good condition and in their working positions.
7. Switch off the electronic control box, PTO, and tractor. Remove the key from the ignition.
8. Load plastic film into both dispensers and run it through the rollers as shown in section 8.2. Tie the ends of the plastic film together and lay across the centre of the table. Do not attempt to clamp plastic film in cut and hold itself.



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9. Start the tractor. Then, engage tractor PTO at 600-800 rpm in order to run machine. Due to load sensing hydraulics, speeding up the PTO will not necessarily speed up all of the functions.
10. Switch on the electronic control box and set it to Auto.
11. The machine is now ready to wrap.

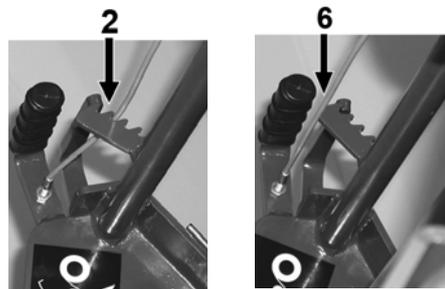
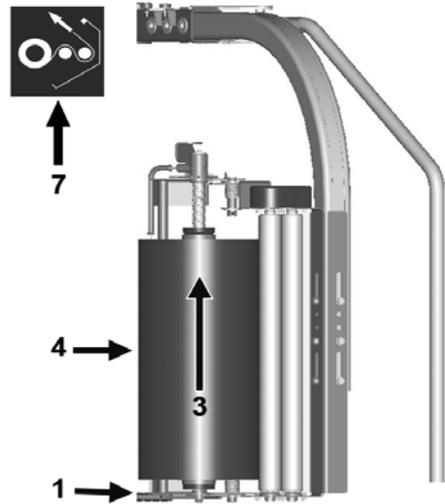
8.2 Loading plastic film



WARNING: Turn off power source before loading plastic film rolls

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

1. Push back the handle until the dispenser latches open.
2. Release the 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 while still holding the top roll holder in the upwards position to allow you to fit the new rolls (Usually this works when the cable is locked in the second-from-outside notch).
3. To remove the old roll, push upwards to latch top roll holder in the Up position and then discard responsibly.
4. Sit new roll onto the bottom roll holder and centralise with the top roll holder.
5. While still holding the roll, pull the cable to release the top roll holder. The roll of plastic film is now held.
6. Re-engage the film lock by releasing the cable from the notch.
7. Thread the film through the dispenser rollers as per the threading diagram. Take care not to trap fingers between rollers.
8. Tie the ends of the plastic film together and lay them across the centre of the table. Never attempt to clasp plastic film in the cut and hold itself.
9. Close the dispenser by releasing the latch. The film-roll should now rest against one of the aluminium rollers.



8.3 Wrapping



WARNING: Ensure the area is clear before operating the wrapper

Always ensure there is no person or wrapped bales in the way of the wrapper before operating it again.

The following is the recommended method for working the **998** wrapper. It assumes the bales are well shaped for wrapping. However since it is impossible to allow for differing conditions and terrain it may be necessary for the operator to vary this.

The safety of the operator and any bystanders is of the utmost importance at all times. The electronic control box must be set up according to the bale size to be wrapped, see “Electronic Control System” on page 33.

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, ensure the electronic control box is set to Auto and press Auto Start (button 17).
3. Drive forward to pick up the bale from the ground. Normally, it is possible to keep moving forward as the bale is being loaded. The cycle will continue automatically as described below:
 - (a) The bale travels along the conveyor until the correct position is sensed
 - (b) The rollers lift the bale up to wrapping height
 - (c) The dispensers and rollers start rotating to wrap the bale
 - (d) The cut and hold cuts the plastic and holds it for the next cycle
 - (e) The bale is levelled and lowered onto the conveyor.



NOTE: Auto mode

For testing a wrapping sequence in Auto square bale mode a bale must be present or the program will stop after five seconds. If there is no bale present, the cradle will lift, the rollers will rotate to try to level the bale and then stop after five seconds if the bale is not found. “NO BALE” will appear on the display screen.

4. If there is another bale waiting on or in front of the conveyor, Auto Start (Button 17) 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 that the wrapped bale is completely off the machine before wrapping another.
5. The wrapped bale should be moved immediately before the next bale is placed on the wrapper table for wrapping.
6. While one bale is being wrapped another may be loaded onto the conveyor ready for wrapping. To do this, the bale is loaded by the Conveyor Load switch, see figure 8.b.
7. When changing the plastic film rolls always turn off the tractor, PTO and electronic control box. Always shut down the tractor and remove the key.
8. 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 then allows the automatic cycle to start without using the

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conveyor. This should be done with the bale in the correct position along the conveyor.



Figure 8.a - Press "Auto Start"



Figure 8.b - Use "Conveyor Load" switch

9

Road Traffic Safety & Operation

9.1 Before travelling on any public roadway



NOTE: Check lighting system before travelling on the road

Before travelling on a public road, the operator must ensure that the complete (tractor and machine) lighting system is in fully functioning condition.



WARNING: Complete a full inspection before travelling on the road

Ensure that a full inspection is completed every time before attempting to go on to a public roadway, always think and practice safety!

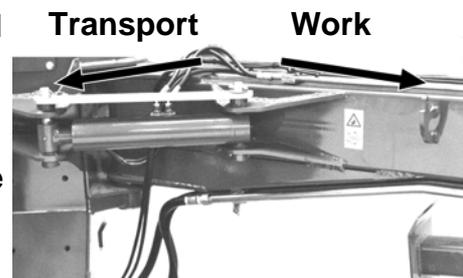


NOTE: Control box and PTO

Before travelling on a public road, always make sure that the electronic control box and PTO are switched off.

The following should be inspected every time, before travelling on a public road:

- All bales, wrapped or unwrapped, should be unloaded from the machine.
- Drawbar must be changed to transport position by closing the hydraulic cylinder and moving the safety lock stay to lock the hydraulic cylinder closed.
- The front conveyor is raised to the top and the On/Off tap is closed by turning the handle at right angles to the hose(s).
- The dispensers must be swung around so that they are inside the transport width of the machine.
- Ensure that the tyres are set to the correct pressure as per safety decals and according to the specifications, as outlined in Section “General dimensions & specifications” on page 11.
- The PTO shaft must be fixed safely to the tractor PTO stub shaft.



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- The lighting system of the machine must be connected to the tractor and must be in a fully functioning condition.
- The electronic control box must be switched off or disconnected from the power supply, see section “Electronic control box functions” on page 34.
- The hydraulic supply must be turned off and protected from accidental activation by disconnecting the hydraulic feed line. Support all loose lines in a safe manner.
- Attention must be paid to the maximum travel speed-limit (40 km/hr) printed on the chassis plate, on the left hand side of the machine. Other speed limits that may be printed, on the drawbar plate or axle plate, for example are not relevant.
- If plastic film is to be transported on the machine it must only be done so on the holders provided and secured, if necessary.
- The brake system of the machine (hydraulic or pressurised air) must be connected to the tractor. Do not travel, with air brakes, until the required pressure is shown on the indicator of the tractor panel.
- Ensure that all the national road traffic regulations relating to the country are fulfilled i.e. the use of safety chains may be mandatory in certain countries.

10

Field Operation & Wrapper Adjustments

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 or initial setup. All of these adjustments should be checked thoroughly before the machine goes to work for the first time. The wrapper should be parallel to the ground when working.



WARNING: Be aware of the sharpness of knives.

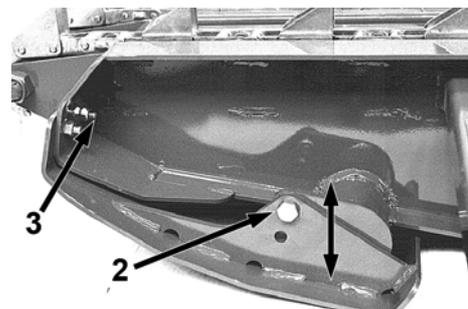
To avoid injury, handle with care and always wear protective clothing and gloves.

10.1 Front conveyor skid

The height of the skid on the front conveyor may be adjusted to allow for the use of different operating conditions or if the machine height is changed.

The height may be changed as follows:

1. Ensure conveyor is securely chocked and supported.
2. Remove 2x M14 nuts and bolts on skid.
3. Move the skid to the new location. It may be necessary to loosen the front bolts (4 x M12) to achieve this position (factory setting shown).
4. Insert 2xM14 bolts into the appropriate holes and tighten nyloc nuts.
5. Retighten front bolts if they have been loosened.

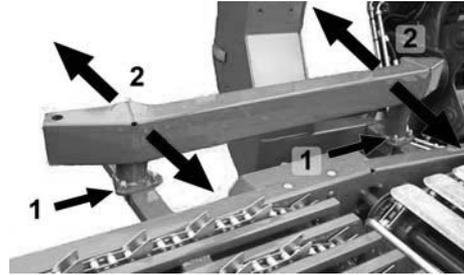


10.2 Bale guides

The front conveyor is fitted with 2x adjustable bale guides, one on the left hand side and one on the right hand side. The distance between the two guides can be 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 centralizes on the main conveyor. As a guide, the bale guides should be set to 100-200 mm wider than the bale at their narrowest point.

They may be set as follows:

1. Loosen 8x M16 nyloc nuts on U bolts.
2. Move guides to desired position, ensuring that they are equal on both sides.
3. Tighten the 8x M16 nyloc nuts.



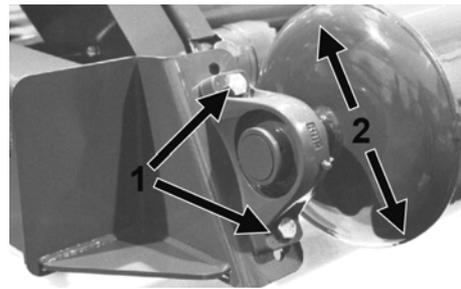
10.3 Rear unloading roller

The rear unloading roller is adjustable to allow various sizes and lengths of bales to roll off the machine gently. Normally it will not need adjustment.

However, if necessary, it may be adjusted as follows:

Remove 2x M14 nuts and bolts on one side, ensure that the roller is fully supported.

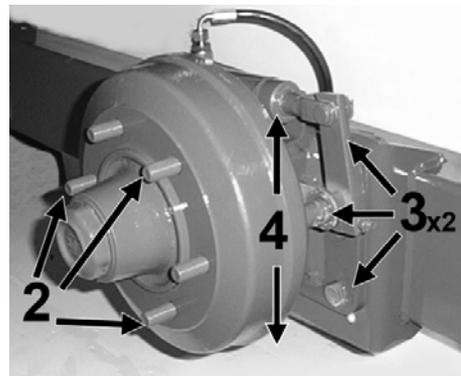
1. Move the roller to the desired position (factory setting shown).
2. Insert 2x M14 bolts and replace the nuts fingertight.
3. Repeat steps 1 to 3 for the opposite end of the roller.
4. Fully tighten the 4x nyloc nuts.



10.4 Machine height

The height of the machine from the ground may be increased/decreased if desired through the following steps:

1. Jack up and support the machine, ensuring that the machine is secure and it cannot move.
2. Remove 6x wheel nuts and remove wheel
3. Support stub axle and remove 6x M20 nuts and bolts
4. Move stub axle to desired location (factory setting shown).
5. Insert 6x M20 bolts and tighten the nyloc nuts.



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6. Replace the wheel and tighten the 6x wheel nuts.
7. Remove the supports and the jack.
8. Repeat steps 1 to 6 for the other wheel.



NOTE: May be necessary to adjust the front conveyor skid

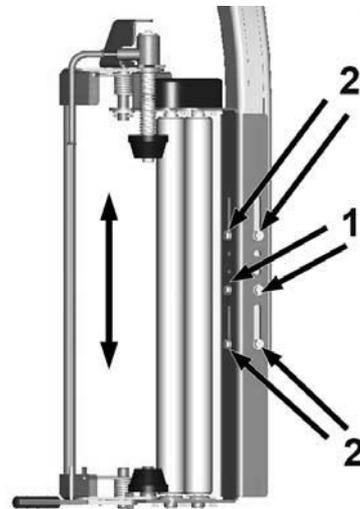
It may be necessary to adjust the front conveyor skid after adjusting the machine height.

10.5 Dispenser height

The plastic film needs to be applied around the centre of the bale to ensure optimum coverage. To achieve 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 and hold.

The dispenser height may be adjusted as follows:

1. Remove the 2x centre bolts and washers.
2. Open the 2x top bolts and 2x bottom 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 desired height has been selected.
4. Tighten all bolts fully.
5. Rotate dispensers slowly to ensure that they do not touch any other part of the machine.



10.6 Cut and hold knife



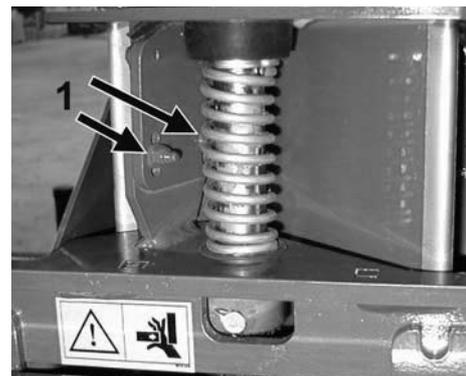
WARNING: Be aware of the sharpness of knives.

To avoid injury, handle with care and always wear protective clothing and gloves.

The height of the knife should not be adjusted to make up for blunt knives. Blunt knives must be replaced.

The cut and hold knife may be adjusted up and down as follows:

1. Remove the 2x M6 nyloc nuts and bolts.
2. Move the knife plate to a new position (Factory set in middle position).



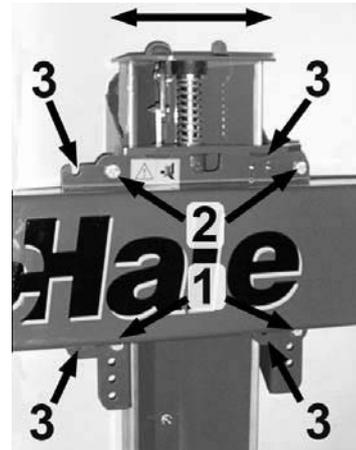
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3. Insert the 2x M6 bolts and tighten the nyloc nuts.
4. Repeat steps 1 to 3 for the other cut and hold.

10.7 Cut and hold horizontal position

The cut and hold can be adjusted in two positions as follows:

1. Remove 2x M12 nyloc nuts and bolts on bottom of cut and hold.
2. Loosen 2x M12 nyloc nuts on top of the cut and hold but do not remove them.
3. Move cut and hold into the new position.
4. Insert the 2x bottom M12 bolts and tighten the nyloc nuts.
5. Tighten the top 2x nyloc nuts.
6. Repeat for other cut and hold.

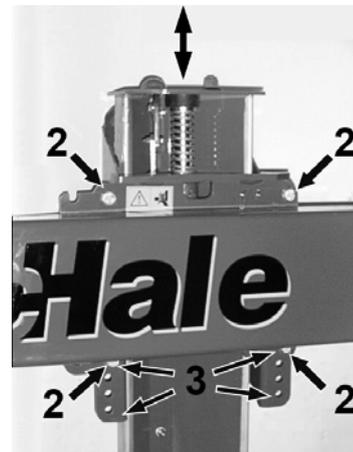


10.8 Cut and hold height

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 the factory setting it is necessary to acquire 2x M12x25 setscrews and nyloc nuts as two of the existing M12 setscrew and nyloc nuts are used to hold the plunger bracket.

The cut and hold can be adjusted as follows:

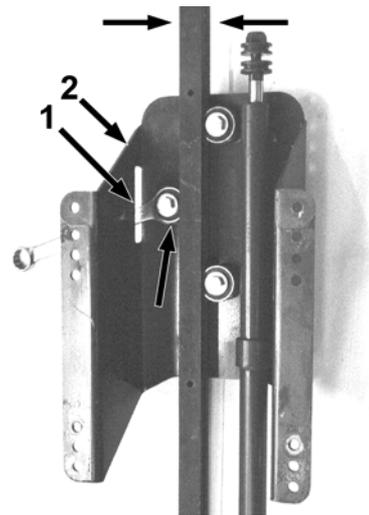
1. Support cut and hold.
2. Loosen the top 2x M12 nyloc nuts and setscrews and remove the bottom 2x M12 nyloc nuts and setscrew (retrieve spacers). Retighten the top two M12 nyloc nuts and setscrews.
3. Move cut and hold to new position (factory setting shown).
4. Insert the 4x appropriate M12 bolts 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 further adjustment is required, remove the 4x M12 setscrews and nyloc nuts and move to the new position. Refit the 4x setscrews and nyloc nuts.
6. Repeat steps 1 to 5 for the other cut and hold.



10.9 Cut and hold rail

Through use, the moving part of the cut and hold may become worn. This may be adjusted to ensure the optimum performance as follows:

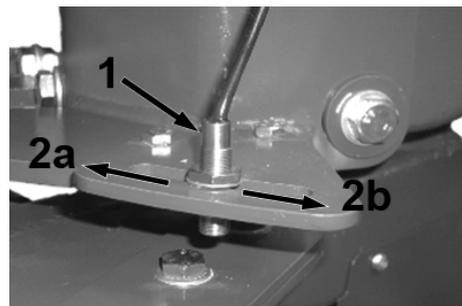
1. Insert a 24 mm open ended spanner into the slot until it engages with the hexagon on the adjuster.
2. Loosen the M12 nyloc nut on the adjuster slightly.
3. Turn the adjuster with the 24 mm spanner until the resistance increases greatly.
4. Holding the adjuster with the 24 mm spanner, tighten the M12 nyloc nut.



10.10 Dispenser arm sensor

The Stop sensor for the dispenser arm may be adjusted to change the stopping point of the arm as follows:

1. Holding the sensor by hand, loosen the nut on the sensor.
2. Move the sensor to the position that is required
 - (a) Move to the left to get dispenser to stop sooner.
 - (b) Move to the right to get dispenser to stop later.



NOTE: Do not overtighten the nut

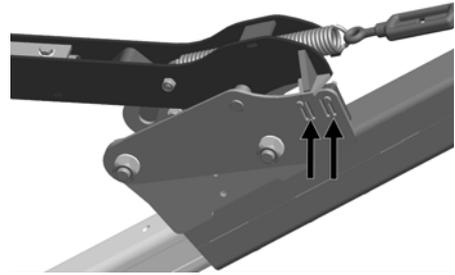
This will damage the sensor. The sensor should have approx. 10 mm clearance between its top and any rotating parts.

10.11 Trip arm switch

The trip arm switch needs to be properly adjusted if it is replaced or moved for any reason.

The trip arm switch can be adjusted as follows:

1. Loosen the 2x M5 nyloc nuts just enough to be able to move the switch.
2. Ensure that the arm is in working position.
3. Move the switch against the tab until the plunger is protruding 1-2 mm outside the main switch body.



NOTE: Do not bypass the circuit in any way.

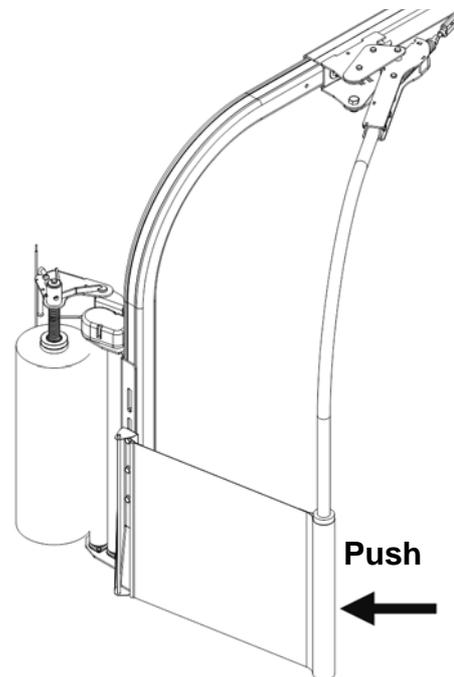
The switch must be set correctly to ensure the proper functioning of the trip arm.

10.12 Testing trip arm operation

The trip arm safety feature needs to be checked periodically in accordance with the machine maintenance schedule. See “Dispenser trip arms” on page 81.

10.12.1 Check the force required to trip the trip arm

1. Ensure that the tractor is stopped, hand brake is applied, engine is stopped, and the ignition key is removed.
2. Manually, with one hand, push the trip arm into the tripped position using small to medium force (approx. less than 5 kg). If any difficulty or stiffness is encountered see “Dispenser trip arms” on page 81.
3. Repeat check on the second dispenser trip arm.



10.12.2 Check the trip arm safety switch operation

1. Ensure that the tractor is stopped, hand brake applied, engine stopped and ignition key removed.
2. Push only one of the trip arms into the tripped position.
3. Ensure that all persons are well clear of the machine. Start up machine, go to manual mode and try to operate the dispenser.
4. There must be no dispenser movement.
5. Turn off the machine and tractor and repeat the procedure for the second dispenser.



WARNING: There must be no dispenser movement while an arm is tripped

If there is any dispenser movement while an arm is tripped there is a serious safety issue with the switch. Do not operate the machine. Contact a **McHale** authorised dealer for further assistance.

10.12.3 Check that wrapping arm does not exceed 25 rpm

See section 12.13 to adjust.



WARNING: Dispenser arm rotation speed must not exceed 25 rpm

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.

Check the wrapping arm stopping performance

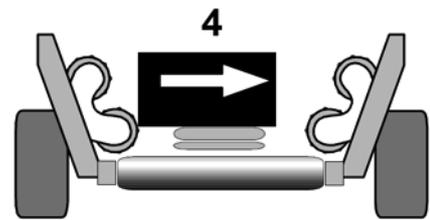
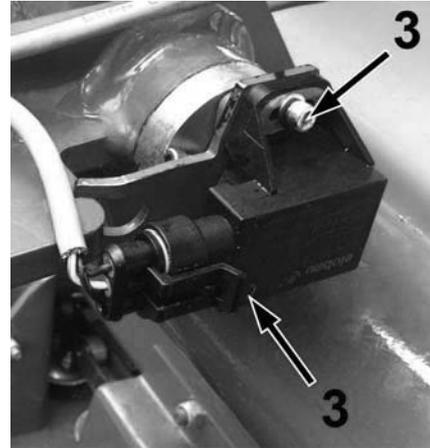
1. In manual mode, run the wrapper at full speed (i.e. press the rotation button twice) with two new film rolls fitted on the dispenser.
2. Upon releasing the rotation switch, the arm rotation should stop immediately.
3. If there is any run-on, check the setting of the over-centre valve, see section 12.14.

Repeat the test, if there is still run-on do not operate the machine. Contact your **McHale** dealer for assistance.

10.13 Bale levelling device

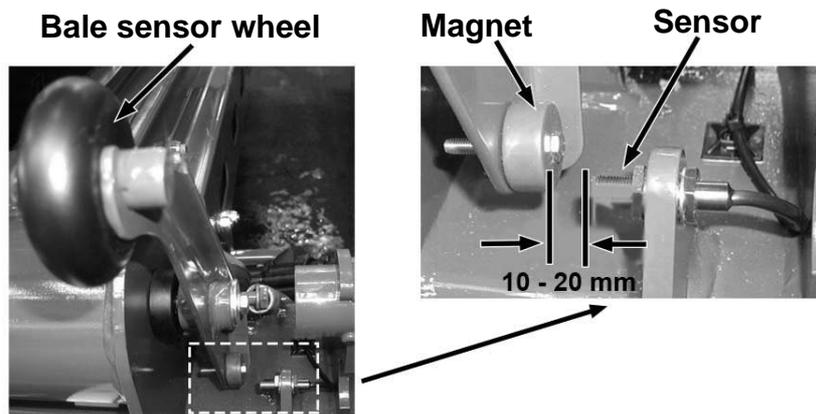
The machine is fitted with a patented levelling device to level the bale after wrapping before it is dropped onto the conveyor. The bales should be well shaped for this to work correctly. Do not adjust if a badly shaped bale does not level correctly. If a well shaped bale does not level properly it is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

1. Check the 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 angle sensor needs to be adjusted. Discharge the bale and lift the rollers to the top of their stroke and support. Ensure that the tractor and machine are turned off and that the ignition key is removed.
3. Locate the left-hand angle sensor, which is located near the front of the left hand rollers, when viewed from the back. Slightly loosen the 2x M4 socket head bolts that hold the sensor to the mounting plate.
4. If the bale is sitting to the left of the machine, rotate the sensor anti-clockwise slightly. If the bale is to the right of the machine, rotate the sensor clockwise slightly. Extra adjustment can be achieved by adjusting the sensor on the right side of the 998 in a similar manner.
5. Retighten the M4 socket head bolts.
6. Retest the machine with a bale to check its operation.



10.14 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, 10-20 mm.





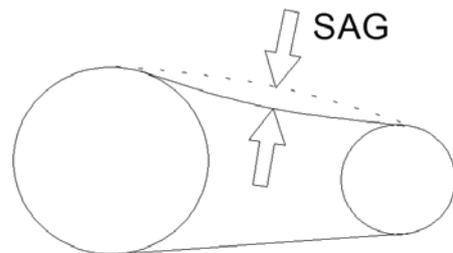
NOTE: This sensor is factory set between 10 and 20 mm

It should only be adjusted if a new sensor was fitted or if the sensor to magnet distance is deemed inadequate. See above diagrams.

10.15 Chain adjustments

It is important for the efficient operation of the machine that all drive chains are kept correctly tensioned. The following is a general guide to chain adjustment.

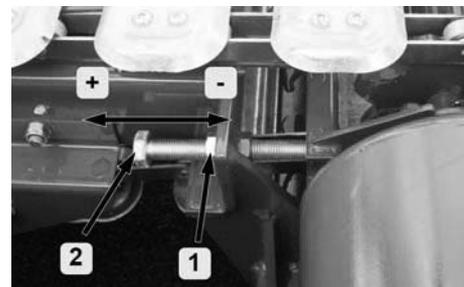
The sag is measured at the midpoint of the chain between the sprockets. Always ensure one side of the chain is tight so that the correct reading is obtained. Even though some drives differ in detail the basic adjustments stay the same.



10.15.1 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:

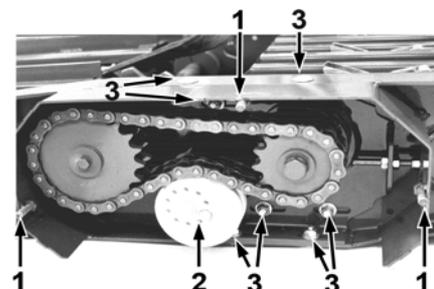
1. Loosen the M20 nut.
2. Turn the adjuster until the chain sag measures 25-30 mm in the centre.
3. Tighten the M20 nut to lock the adjuster.
4. It is important that both adjusters are adjusted equally. Failure to do so could result in damage to the machine.



10.15.2 Front pick up chain

The five front pick-up chains can be adjusted as follows:

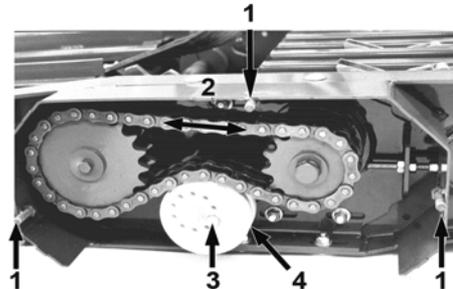
1. Remove the chain guard after opening 3x M12 retaining nuts.
2. It may be necessary to loosen the drive chain tensioner by removing the M10 bolt that is holding it.
3. Slightly loosen the 7x M12 nyloc nuts holding the bearing plates.
4. Screw the M12 adjuster bolt holding the appropriate nut to get the 10-15 mm sag in the chain.
5. Repeat steps 3 and 4 for the other side, ensure that both are adjusted evenly.
6. Tighten the 14x M12 nyloc nuts holding the bearings.
7. Recheck the chain tension.
8. Adjust the drive chain tension.
9. Replace the chain guard and tighten the 3x M12 nyloc nuts.



10.15.3 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 front pick up chains have been adjusted. This can be achieved as follows:

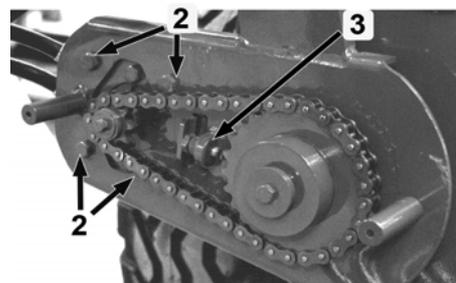
1. Remove 3x M12 nyloc nuts holding on the chain guard and remove the guard.
2. Ensure that the top of the drive chain is tight.
3. Remove the M10 adjuster bolt.
4. Turn the adjuster until there is a 3-6 mm sag in the chain.
5. Insert the M10 bolt into the appropriate hole in the adjuster and tighten.
6. Replace the chain guard and tighten the 3x M12 nyloc nuts.



10.15.4 Roller drive motor chain

The roller drive motor chain can be adjusted as follows:

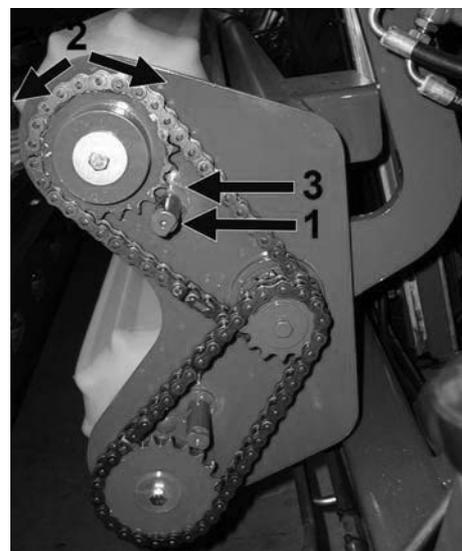
1. Remove 2x M8 setscrews holding on the chain guard and remove guard.
2. Loosen 4x M12 nyloc nuts, which hold on the adjusting plate, slightly.
3. Loosen the M12 locking nut on the adjusting setscrew. Adjust the setscrew until there is a 10-12 mm sag in the chain.
4. Tighten M12 locking nut.
5. Tighten the 4x M12 nyloc nuts holding the adjusting plate.
6. Replace the chain guard and tighten the 2x M8 setscrews.



10.15.5 Roller drive chains

The roller drive chains may be adjusted by as follows:

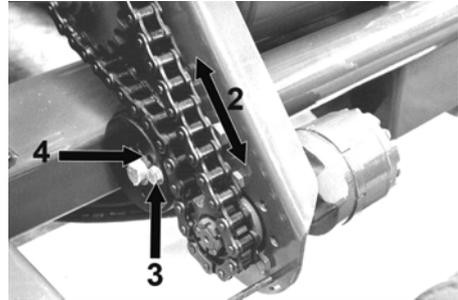
1. Remove 2x M8 setscrews holding on the chain guard and remove guard.
2. Slightly loosen the 3x M10 nyloc nuts that hold on the bearing.
3. Turn the cam adjuster against the bearing using a 17 mm spanner on the two machined flats until there is an 8-10 mm sag in the chain.
4. Tighten the 3 x M10 nyloc nuts on the bearing.
5. Replace the chain guard and tighten the 2x M8 setscrews.



10.15.6 Main conveyor drive chain

The main conveyor drive chain may be adjusted as follows:

1. Remove 2x M8 nyloc nuts that hold on the guard and remove the guard.
2. Ensure that the top of the drive chain is tight.
3. Remove the M10 adjuster bolt.
4. Turn the adjuster until there is a 4-8 mm sag in the chain.
5. Insert the M10 bolt into the appropriate hole. It may be necessary to line up the holes with something smaller in diameter than the bolt.
6. Replace the chain guard and tighten the 2x M8 nyloc nuts.



11

Accessories & Optional Equipment

11.1 Accessories & optional equipment

Certain accessories and optional equipment may or may not be available in all countries, depending on varying circumstances. The following key symbols help to explain what is sold as standard and what is optional equipment, or may not be available on the **McHale 998**. They are only correct at the time of print and may vary.

Key symbols	
Standard equipment	●
Optional equipment	⊙

11.2 Brake options

Hydraulic brakes ●

This system utilises one hose for connection to the tractor's hydraulic brake coupling. This is the most common system on the machine.

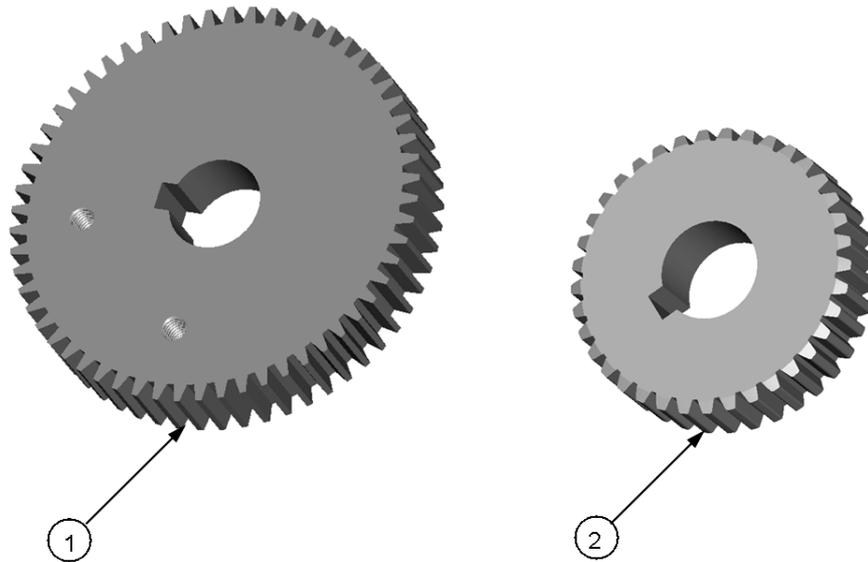
Air brakes ⊙

This system utilises two air brake couplings, the use of which may be mandatory in certain countries. Always obey local road regulations!

11.3 Remote control kit ⊙

The remote control kit is used for static wrapping.

11.4 Dispenser gear options



64% Gear option ●

Item	Part Code	Description	Qty
	ADP00020	Kit dispenser gears 64%	1
1	CMH00056	Gear spur 1.5 m 59t dispenser	1
2	CMH00096	Gear spur 1.5 m 36t dispenser	1

55% Gear option (Hot climates) ○

Item	Part Code	Description	Qty
	ADP00019	Kit dispenser gears 55%	1
1	CMH00057	Gear spur 1.5 m 58t dispenser	1
2	CMH00174	Gear spur 1.5 m 37t dispenser	1

11.5 Unloading conveyor

The unloading roller table is mounted on the rear of the machine and is used to gently transfer the wrapped bale back down to ground level. It can be swung into an upright position when transporting the machine from place to place



12

Machine Maintenance

To maintain the **McHale 998** in good working order it is necessary to carry out preventative maintenance regularly. The following section gives details of how this may be carried out and how often it will be required.



WARNING: Wear proper safety gear & follow all instructions

Ensure to wear proper safety gear at all times when working with the machine, such as gloves, eye protection, etc. and follow all safety decals and instructions.



ENVIRONMENT: Health and safety rules re. environmental damage

It is vitally important to observe health and safety rules in order to avoid unnecessary environmental damage or danger to anybody near the machine. This especially applies to the responsible disposal of oil. Never spill pollutants (oil, grease, filters, etc.) on the ground, never pour them down the drain and never discard them where they can pollute the environment. Always take waste materials to a recycling centre.

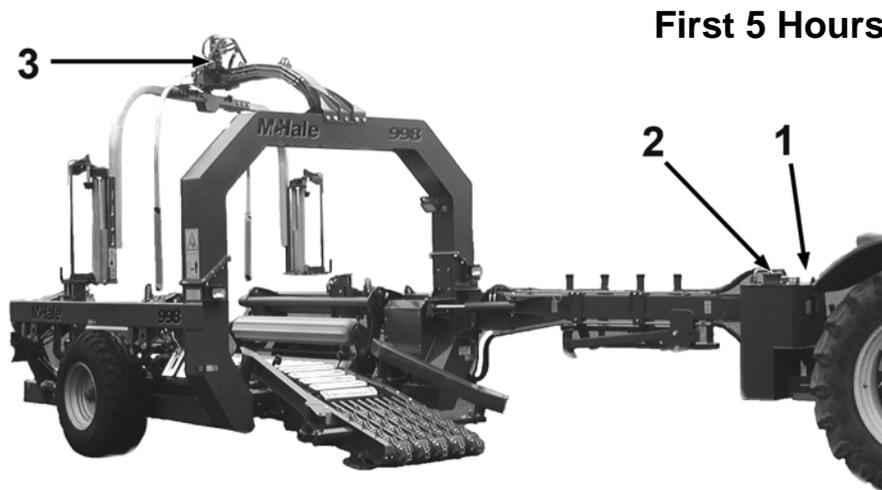
12.1 Maintenance intervals

The following intervals should be adhered to, in order to ensure a long and efficient life for the machine and maximum safety of personnel. They assume constant working during the wrapping season.

McHale 998 Square Bale Wrapper

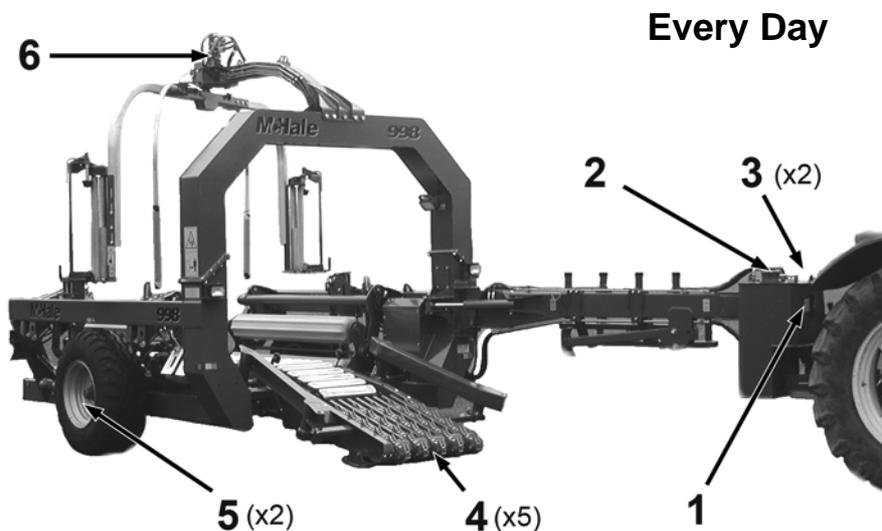
First 5 working hours

1. Change filter oil
2. Change pump gearbox oil
3. Change dispenser drive gearbox oil



Every day

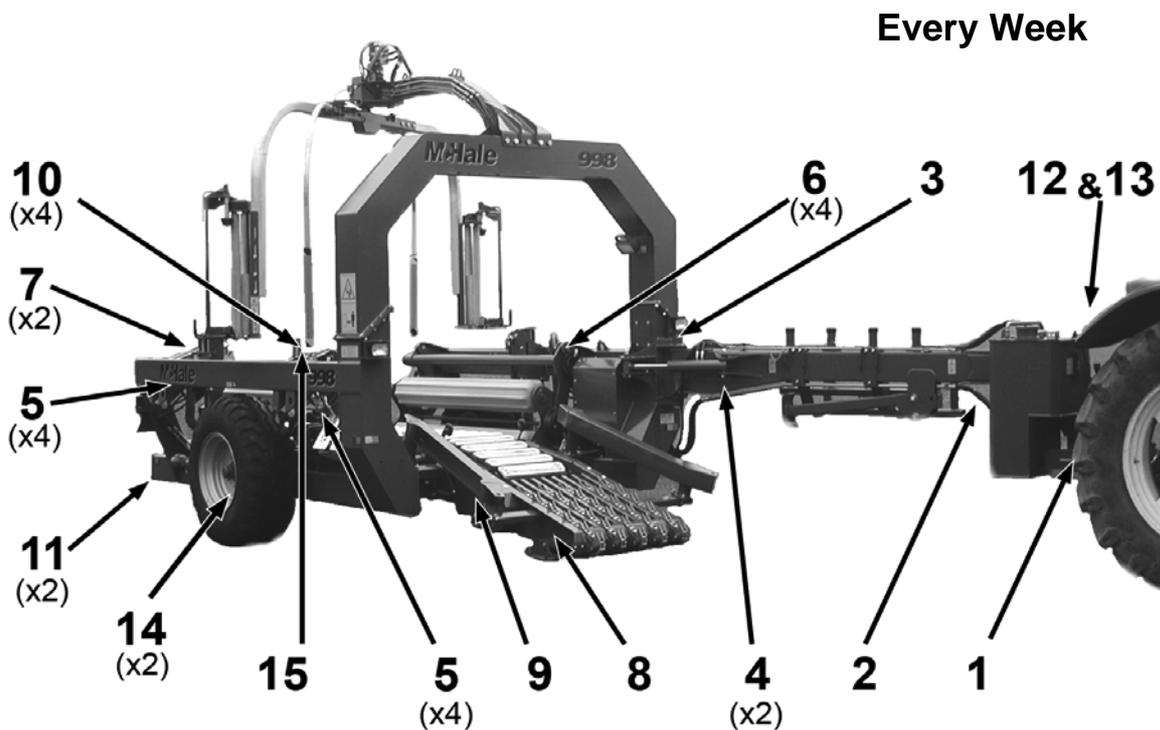
1. Check hydraulic oil level
2. Check pump gearbox oil level
3. Grease PTO shaft joints
4. Grease front conveyor sprockets
5. Check wheel-nuts
6. Check dispenser drive gearbox oil level
7. Check all guards and safety related components
8. Check for any oil leaks or damaged pipes
9. Check dispenser trip arm function, see "Testing trip arm operation" on page 61 and "Dispenser trip arms" on page 81.



McHale 998 Square Bale Wrapper

Every week

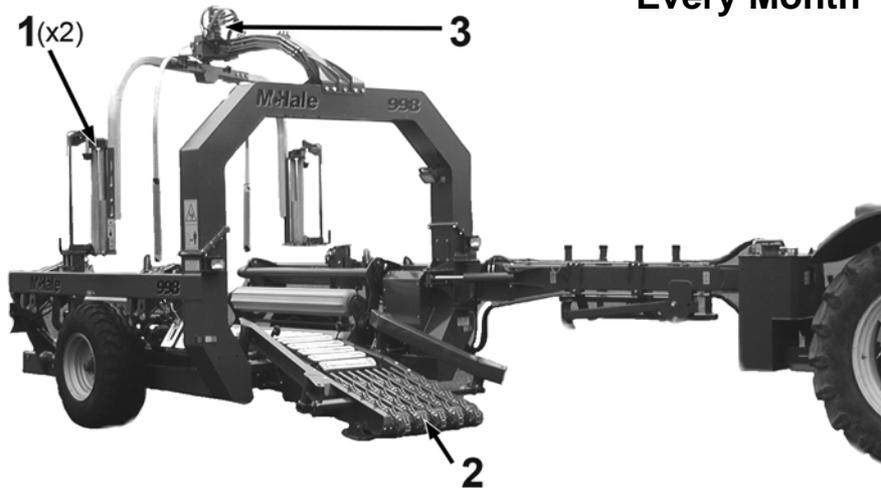
1. Grease drawbar front horizontal pivot
2. Grease drawbar front vertical pivot
3. Grease drawbar rear vertical pivot
4. Grease drawbar hydraulic cylinder ends
5. Grease lifting hydraulic cylinders ends
6. Grease roller cradle pivots
7. Grease cut and hold plunger
8. Grease rear of front conveyor bearings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



McHale 998 Square Bale Wrapper

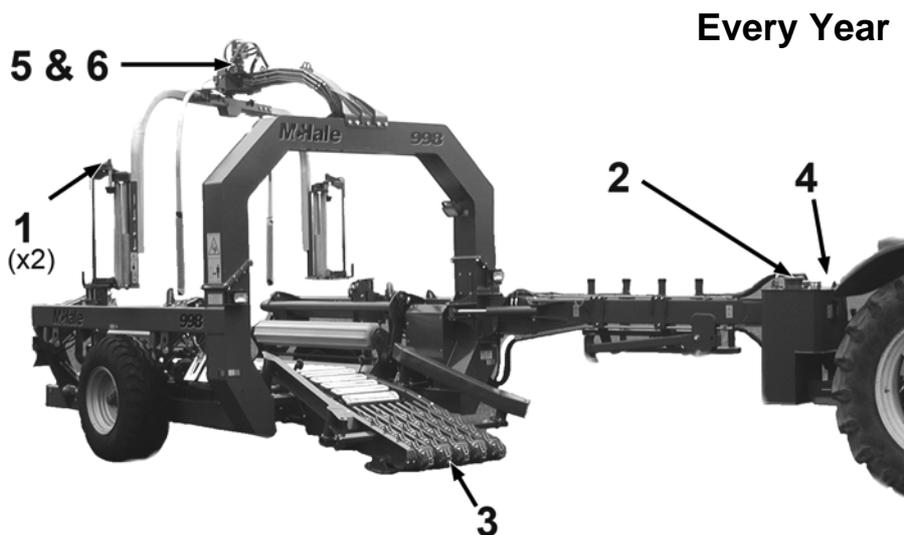
Every month

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



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



Every 2 years

- Change hydraulic oil



CAUTION: Hydraulic hoses to be replaced every 5 years

Check hoses regularly for signs of leakage or wear.

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

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 it must be always be stored in a dry environment (See “Storage” on page 85). All exposed hydraulic cylinder rods should be greased.

12.2 Tightening torque values

It is important that the correct torques for fasteners are adhered to. Below are tables of recommended torques for these. These are to be used unless torques are otherwise specified. These values are for general use only. Check tightness of all fasteners periodically. (All torques are in Newton Metres - Nm.)

Nuts and bolts		Black, Phosphated 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 x 1.25	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 cadmium or copper plated bolts and nuts a torque value must be used that is 25% lower than the value stated above			

12.3 Hydraulic oil level/replacement



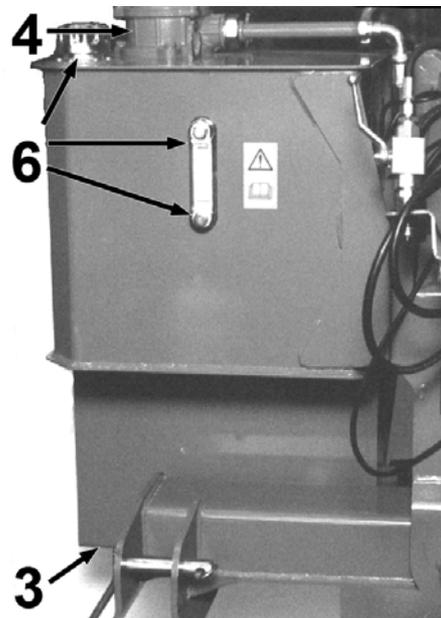
WARNING: Always ensure that the system is not under pressure before working on it

Do not work on the 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 better to do this 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 of use or every two years, whichever comes first.

The oil can be replaced as follows:

1. Place a suitable sized container under the oil tank (tank capacity 130 litres approx.).
2. Ensure tank is sloping towards drain-plug 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.



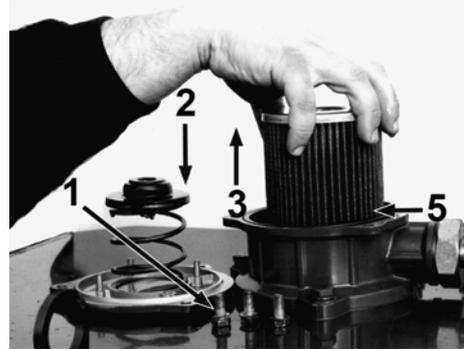
NOTE: It may be necessary to prime pump after changing the oil

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.

12.4 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 can be changed as follows:

1. Remove three 3x 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 3x M10 setscrews.
7. Run machine to ensure everything is running correctly.



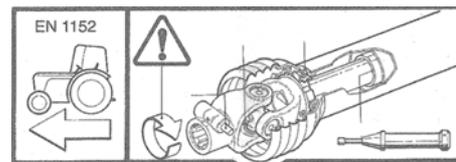
12.5 PTO shaft



WARNING: Safety guidelines

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.

12.6 Pump gearbox



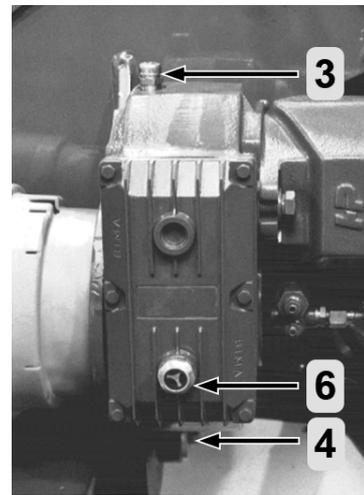
WARNING: Always ensure that the system is not under pressure before working on it

Do not work on the 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 the filler/breather cap.
4. Remove the drain stud.
5. Once drained, replace drain stud and dispose of the oil safely.
6. Fill gearbox with EP80 gear oil until oil can be seen on the sight gauge.
7. Replace filler/breather cap and run machine for 2-3 minutes.
8. Stop machine and allow oil to settle. Check oil level again and refill if necessary.



12.7 Cut and hold knife changing

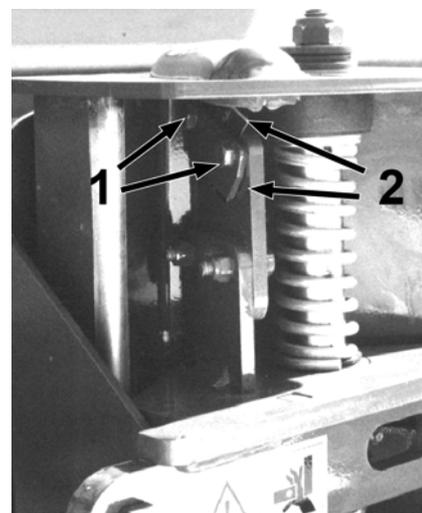


WARNING: Be aware of the sharpness of knives.

To avoid injury, handle with care and always wear protective clothing and gloves.

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. The knives can be changed as follows:

1. Loosen the 2x M6 setscrews that hold the knife clamp.
2. Remove the working knife, noting that there is a spare knife held by the bottom of the knife clamp.



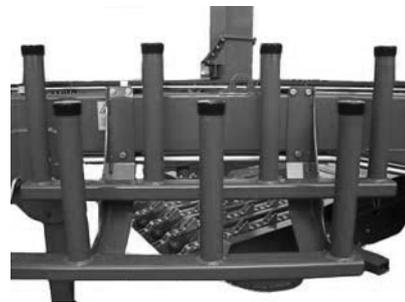
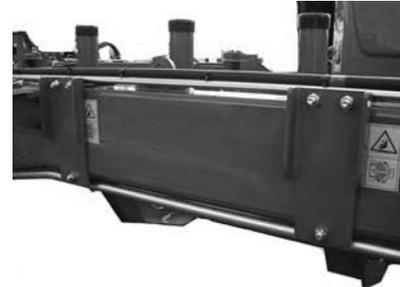
McHale 998 Square Bale Wrapper

3. Place the spare knife in the working position and put a new spare knife underneath, if available.
4. Tighten the two 2x M6 setscrews.

12.8 Fitting the spare film roll holder

The spare film roll holder can be changed as follows:

1. Loosen the 2x M8 setscrews on the drawbar that hold the steel piping in place.
2. By means of a crane or lifting apparatus lift the roll holder bracket up against the drawbar as shown below.
3. Using the brackets and the 6x 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.



12.9 Dispenser gearbox oil level

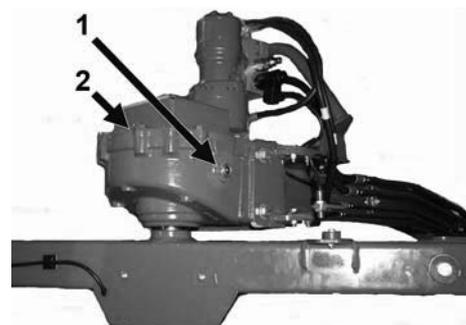


WARNING: Before working on this machine

Always ensure that the tractor is shut down, the hand brake applied and the ignition key removed.

The oil can be topped up as follows:

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.



12.10 Dispenser brake oil level

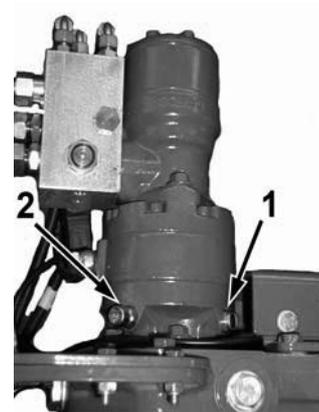


WARNING: Before working on this machine

Always ensure that the tractor is shut down, the hand brake applied and the ignition key removed..

The oil can be topped up as follows:

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.



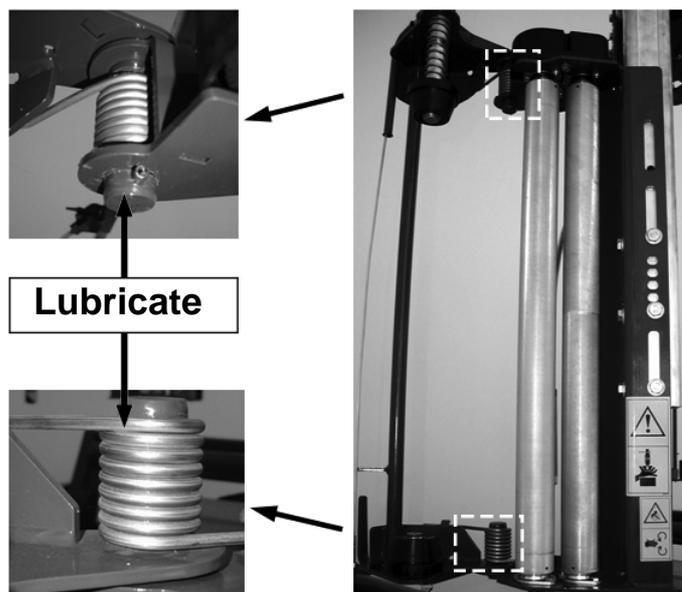
12.11 Dispenser pivot points



WARNING: Before working on this machine

Always ensure that the tractor is shut down, the hand brake applied and the ignition key removed.

The dispenser pivot points, shown below 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 the aluminium rollers for free rotation as any blockage in rotation of these rollers will cause plastic breakage.

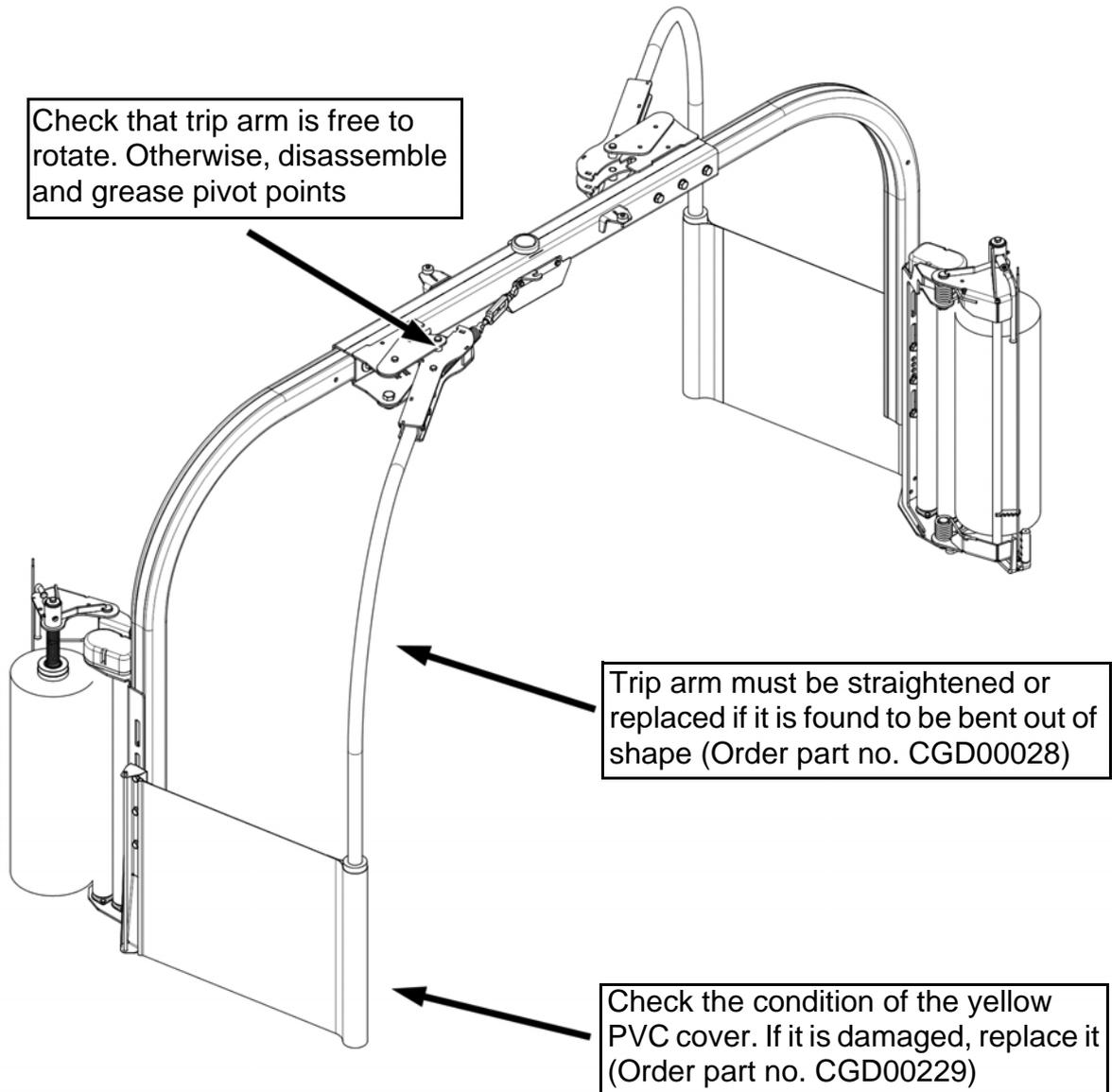


12.12 Dispenser trip arms



WARNING: Before working on this machine

Always ensure that the tractor is shut down, the hand brake applied and the ignition key removed.



12.13 Adjusting dispenser arm rotation speed



WARNING: Before working on this machine

Always ensure that the tractor is shut down, the hand brake applied and the ignition key removed.



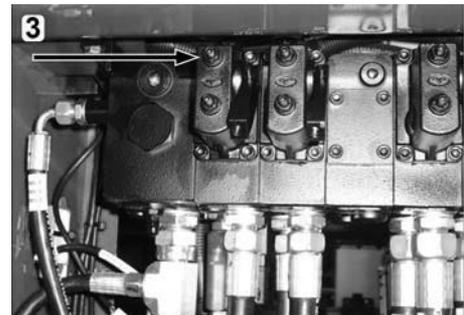
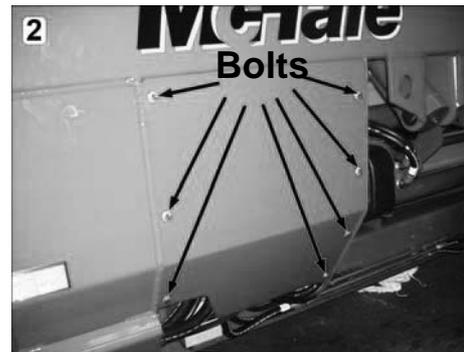
WARNING: Maximum speed

The dispenser must never be operated above a maximum of 25 rpm.

From the tractor cab, engage the tractor hydraulics (or PTO at working speed, 600-800 rpm, if hydraulic power pack is fitted), operate the arm rotation in Manual mode. Check the speed of the arm rotation. The correct speed is 23 rpm.

The correct speed can be achieved as follows:

1. Turn off the tractor and PTO before making any adjustments on the machine.
2. Using a 13 mm spanner, unscrew all of the bolts that hold the valve guard as shown.
3. The first valve section operates the dispenser arm, and the upper setting screw sets the flow/speed of the arm. Using a 10 mm spanner, loosen the sealing/locking nut as shown.
4. Using a 3 mm Allen key, turn clockwise to reduce the speed. In practice the adjustment required is very small, usually max 1/4 turn clockwise. Tighten the locking nut. Re-check the arm speed. Repeat until the correct arm speed of 23 rpm is achieved.
5. Replace the valve cover.



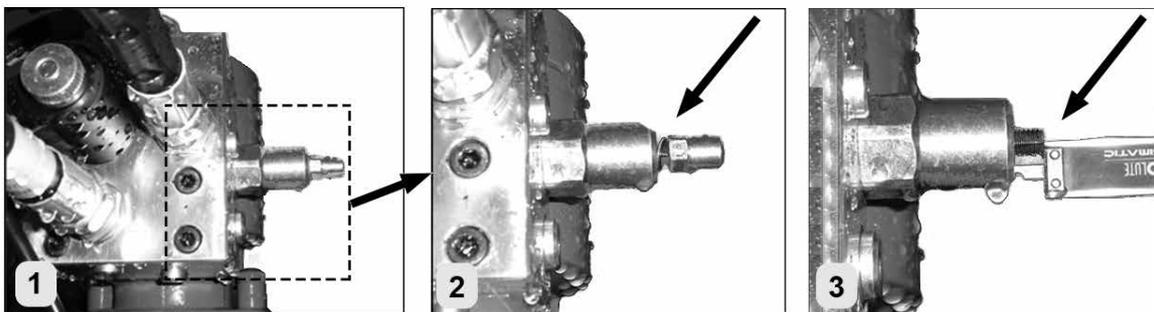
12.14 Setting of over-centre valve on the arm rotation valve assembly



WARNING: Before working on this machine

Always ensure that the tractor is shut down, the hand brake applied and the ignition key removed.

1. Locate the over-centre valve of the dispenser arm rotation valve assembly.
2. Using a 13 mm spanner, remove this cap-nut and the copper washer.
3. Using a 4 mm Allen key, set the distance shown to 6.5 mm.
4. Refit the copper washer and the cap-nut.



12.15 Cut and hold accumulator pressure



WARNING: Only competent operators should carry out this task

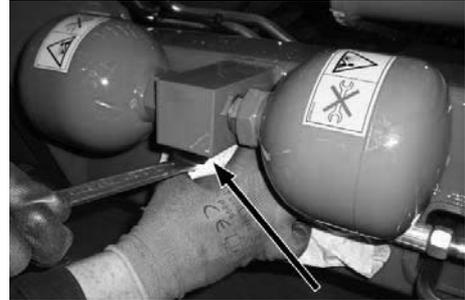
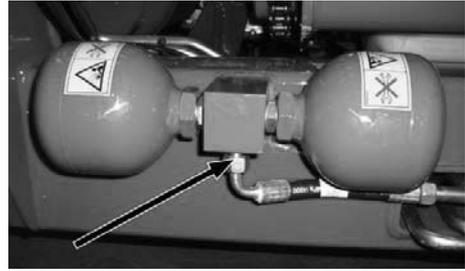
It is very important that care is taken in carrying out the following procedure to protect both the operator and any personnel that may be nearby. If you are unsure how to carry out this procedure please entrust the job to your **McHale** dealer.

The cut and hold is held closed by a hydraulic accumulator which is primed as the cut & hold is opened. If for whatever reason the pressure drops it will prime again the next time the cut and hold is opened. Anytime work is being carried out on the cut and hold system, the hydraulic pressure from the accumulator should be released.

The cut and hold accumulator pressure can be released as follows:

McHale 998 Square Bale Wrapper

1. Place a spanner on the hydraulic fitting as shown, but do not turn it.
2. Wrap the spanner and fitting with a cloth to stop oil spray, then unscrew the fitting a half turn. This should allow the oil to leak out and reduce the pressure. If no oil leaks, turn the spanner a quarter turn at a time until it bleeds off oil pressure.
3. Tighten the hydraulic fitting once the oil pressure has been relieved.
4. Once the cut and hold is operated again, the accumulator will be charged automatically to the correct pressure. Test the cut and hold to ensure that it is opening and closing correctly.



13

Storage

13.1 End of season

- Carefully clean the wrapper sections inside and out. Dirt and foreign objects are likely to draw moisture and cause rusting of steel components. In the case of using a high pressure washer, do not point pressurized water at or near electrical components, pivots points, valves or bearings. **McHale** recommend that the machine be blown down with an air line as opposed to a pressure washer in order to protect the overall paint work on the machine.
- On electronic control machines, remove the control box from the tractor and store in a dry, safe environment.
- Lubricate all pivot points and apply a thin layer of grease to all adjustment bolt threads and exposed ram rods.
- Any components from which paint has become worn should be touched up or coated with grease to prevent rusting.
- Remove all dirt from all chains and blow dry using compressed air.

13.2 Start of season

- Fully review this operators instruction manual.
- Lubricate all pivot points.
- Tighten all bolts, nuts and setscrews (See “Tightening torque values” on page 75).
- Check oil level in dispenser gearbox using sight glass on side of gearbox housing.
- Check air pressure of both tyres.
- On electronic control machines, connect the control box and inspect it for the correct operation of all functions (“Electronic control box functions” on page 34).
- Inspect and modify, if necessary, all machine adjustments (“Field Operation & Wrapper Adjustments” on page 56).
- Check film wrapping adjustments and replace cut and hold knife. Ensure to wear protective clothing whenever working in this area!
- Inspect aluminium dispenser rollers for a build up of tack/glue, clean off using kerosene or diesel oil and wipe rollers dry.

14

Trouble Shooting

14.1 Trouble shooting overview

This section has been compiled by **McHale** service personnel in conjunction with **McHale** importers and dealers.

It outlines some common problems which can occur and acts as a quick reference section or check list to resolve the problem. It is important to note that it outlines the common problems and to this effect it is not exhaustive.

Should you experience additional problems which you need help with; please do not hesitate to contact your **McHale** dealer.

14.2 Drawbar operation

Symptom	Reason	Solution
Drawbar will not operate	Incompatibility of tractor's hydraulic system or settings with the 998 wrapper	Reset to open-centre or closed-centre/load sensing. See sections 5.5, 5.6, 5.7
	Inadequate hydraulic flow rate	Ensure adequate hydraulic flow rate of 60 l/min
	No oil feed	Ensure that the hydraulic lines/couplings are connected properly and that the hydraulics are activated. Check the tractor manual for hydraulic connections
	No oil return	

14.3 Conveyor chain operation

Symptom	Reason	Solution
Conveyor chain fails to run	Incompatibility of tractor's hydraulic system or settings with the 998 wrapper	Reset to open-centre or closed-centre/load sensing. See sections 5.5, 5.6, 5.7
	Inadequate hydraulic flow rate	Ensure adequate hydraulic flow rate of 60 l/min
	No oil feed	Ensure that the hydraulic lines/couplings are connected properly and hydraulics activated. Check the tractor manual for hydraulic connections
	No oil return	
	Electrical power supply fault (e.g. loose connections, poor battery and/or charging system)	Ensure that a 12 to 13 V DC power supply is available and check all electrical connections
	Stop Button has been pressed on the control box	Turn the knob clockwise to power the control box on
	No PTO connection	With tractor turned off and key removed, ensure that the PTO shaft is connected securely.
	PTO speed set incorrectly	Ensure that the PTO speed is kept between 600-800 rpm
Conveyor chain runs too slowly in both directions	Incompatibility of tractor's hydraulic system or settings with the 998 wrapper	Reset to open-centre or closed-centre/load sensing. See sections 5.5, 5.6, 5.7
	Inadequate hydraulic flow rate	Ensure adequate hydraulic flow rate of 60 l/min
	PTO speed set incorrectly	Ensure that the PTO speed is kept between 600-800 rpm
Conveyor fails to run with dispensers operating	Incompatibility of tractor's hydraulic system or settings with the 998 wrapper	Reset to open-centre or closed-sensor/load sensing. See sections 5.5, 5.6, 5.7
	Inadequate hydraulic flow rate	Ensure adequate hydraulic flow rate of 60 l/min
	PTO speed set incorrectly	Ensure that the PTO speed is kept between 600-800 rpm

14.4 Front conveyor lift operation

Symptom	Reason	Solution
Conveyor fails to lift	Incompatibility of tractor's hydraulic system or settings with the 998 wrapper	Reset to open-centre or closed-centre/load sensing. See sections 5.5, 5.6, 5.7
	Inadequate hydraulic flow rate	Ensure adequate hydraulic flow rate of 60 l/min
	No oil field	Ensure that the hydraulic lines/couplings are connected properly and hydraulics are activated. Check the tractor manual for hydraulic connections
	No oil return	

14.5 Cradle bale lift operation

Symptom	Reason	Solution
Cradle fails to lift the bale	Cradle height bale angle sensor needs to be zeroed	Set the zero height on the control box
	Cradle height bale angle sensor is damaged	Replace cradle height bale angle sensor
	Bale load sensor/magnet is damaged	Replace sensor/blue magnet
Cradle continues to try to lift the bale	Cradle height bale angle sensor needs to be zeroed	Set the zero height on the control box
	Cradle height bale angle sensor is damaged	Replace cradle height bale angle sensor

14.6 Cradle roller operation

Symptom	Reason	Solution
Rollers fail to rotate	One or both safety arms have been activated (the arm is pressing against the aluminium box section) Stop work immediately	Reposition the safety arms into the working position and push and hold the Resume button on the control box, while in Auto mode, to continue
	Dispenser arm sensor/ magnet damage	Replace broken/damaged sensor or magnet. If there are no visible signs of damage, move the sensor downwards, closer to the magnets
	Dispenser arm sensor - magnet distance is too great	
Rollers fail to level the bale	Bale levelling device set wrong	Adjust the bale levelling device as per section 10.13. Replace damaged components
	Levelling device wiring damaged	
Rollers continue to rotate once the bale is loaded	Levelling device wiring damaged	Adjust the bale levelling device as per section 10.13. Replace the damaged components

14.7 Dispenser operation

Symptom	Reason	Solution
Dispensers fail to rotate	One or both safety arms have been activated (the arm is pressing against the aluminium box section) Stop work immediately	Reposition the safety arms into the working position and push and hold the Resume button on the control box, while in Auto mode, to continue
	Stop Button has been pressed on the control box	Turn the knob clockwise to power the control box on
	Keyway has sheared	Replace keyway between motor and brake unit
Dispensers come to an abrupt halt	One or both safety arms have been activated (the arm is pressing against the aluminium box section) Stop work immediately	Reposition the safety arms into the working position and push and hold the Resume button on the control box, while in Auto mode, to continue

McHale 998 Square Bale Wrapper

Symptom	Reason	Solution
Dispenser roller lock fails to engage in the Up position	Film roller release cable has become too loose	Adjust nuts at the bottom of the cable until the roller engages in the up position, see section 8.2 for cable position adjustment
Plastic not stretching properly	Build-up of tack/glue on the dispenser rollers	Clean off with kerosene
	Torsion springs have become too weak on the dispenser	Replace the springs
Plastic breaking easily	Dispenser pivot points sticking due to poor lubrication	Grease pivot points
Dispenser stops rotating just as cut and hold opens	Electrical power supply fault (e.g. loose connections, poor battery and/or charging system)	Ensure that a 12 to 13 V DC power supply is available and check all electrical connections

14.8 Cut and hold operation

Symptom	Reason	Solution
Ram fails to open	Electrical power supply fault (e.g. loose connections, poor battery and/or charging system)	Ensure that a 12 to 13 V DC power supply is available and check all electrical connections
Ram opens but will not open fully	Incompatibility of tractor's hydraulic system or settings with the 998 wrapper	Reset to open-centre or closed-sensor/load sensing. See sections 5.5, 5.6, 5.7
	Inadequate hydraulic flow rate	Ensure adequate hydraulic flow rate of 60 l/min
	Cut and hold accumulator pressure is too high	Reset the accumulator pressure. See section 12.15
	PTO speed set incorrectly	Ensure that the PTO speed is kept between 600-800 rpm
Film is not being cut properly	Blade has gone blunt	Carefully replace the blade, see 12.7
Cut and hold fails to hold plastic film	Dispenser 'arm position' sensor is misaligned	Refer to section 10.10

14.9 'Auto' control box operation

Symptom	Reason	Solution
Auto start will not run once pressed	Incompatibility of tractor's hydraulic system or settings with the 998 wrapper	Reset to open-centre or closed-centre/load sensing. See sections 5.5, 5.6, 5.7
	Inadequate hydraulic flow rate	Ensure adequate hydraulic flow rate of 60 l/min
	Electrical power supply fault (e.g. loose connections, poor battery and/or charging system)	Ensure that a 12 to 13 V DC power supply is available and check all electrical connections
	Stop Button has been pressed on the control box	Turn the knob clockwise to power the control box on
	The incorrect cycle is selected	Press the AUTO/MAN button until Auto is displayed on the screen
Auto start is pressed and the bale is sent off the back of the machine	Bale load sensor/magnet has been damaged	Replace sensor/blue magnet
Auto start is pressed, the conveyor runs but nothing else happens	Bale load sensor/magnet has been damaged	Replace sensor/blue magnet
	No bale loaded on the conveyor	For the sequence to run fully, there must be a bale loaded on the machine

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Symptom	Reason	Solution
Auto start without conveyor will not run	Electrical power supply fault (e.g. loose connections, poor battery and/or charging system)	Ensure that a 12 to 13 V DC power supply is available and check all electrical connections
	One or both safety arms have been activated (the arm is pressing against the aluminium box section) Stop work immediately	Reposition the safety arms into the working position and push and hold the Resume button on the control box, while in Auto mode, to continue
	Stop Button has been pressed on the control box	Turn the knob clockwise to power the control box on
	The incorrect cycle is selected	Press the AUTO/MAN button until Auto is displayed on the screen
	Bale load sensor/magnet has been damaged	Replace sensor/blue magnet
	Dispenser arm sensor/magnet damage	Replace broken/damaged sensor or magnet. If there is no visible sign of damage, move the sensor downwards closer to the magnet
	Dispenser arm sensor-magnet distance too great	
	The bale is not fully loaded onto the wrapper	If the bale is sitting on the arms for the load sensor, Auto start without the conveyor will not work. The bale must be moved further rear-wards with the conveyor
Auto start will not run the full cycle	Electrical power supply fault (e.g. loose connections, poor battery and/or charging system)	Ensure that a 12 to 13 V DC power supply is available and check all electrical connections
	One or both safety arms have been activated (the arm is pressing against the aluminium box section) Stop work immediately	Reposition the safety arms into the working position and push and hold the Resume button on the control box, while in Auto mode, to continue
	Stop Button has been pressed on the control box	Turn the knob clockwise to power the control box on
	No bale loaded on the conveyor	For the sequence to run fully, there must be a bale loaded on the conveyor

McHale 998 Square Bale Wrapper

Symptom	Reason	Solution
'Out of Film' error is displayed on the electronic control box	The roll of plastic is empty or broken	Replace or re-attach
	There is a problem with the film sensors or the receiver	The red light on the receiver should flash when the aluminium rollers on the dispensers are turned (electronic control box must be on)
'1 Dispenser Only' error is displayed on the electronic control box	The roll of plastic is empty or broken	Replace or re-attach
	There is a problem with the film sensors or the receiver	The red light on the receiver should flash when the aluminium rollers in the dispensers are turned (electronic control box must be on)
'Safety Arm' error is displayed on the electronic control box	One or both safety arms have been activated (the arm is pressing against the aluminium box section)	Reposition the safety arms into the working position and push and hold the Resume button on the control box, while in Auto mode, to continue
	Stop work immediately	

15

Certification & Warranty

15.1 Declaration of Conformity

The Declaration of Conformity is provided by **McHale**. It certifies the new machine under all the relevant provisions of the EC Machinery Directive and the National Laws and Regulations adopting this directive.

The declaration gives a description of the machine and its function, along with the model and serial number details. See the Declaration of Conformity on the next page.

By any alteration of the machine, the Declaration of Conformity, as well as the CE sign on the machine, loses its validity.

15.2 PDI form

The PDI (pre-delivery inspection) form is filled out on the commissioning of every new machine, by the **McHale** dealer. The following checks are completed and signed off:

- All parts and accessories are provided to the customer, with the machine
- Machine is reassembled correctly
- Tyre pressure is correct
- Hydraulics, electrics and lighting are working
- New owner has been instructed on how to operate & maintain the machine

The PDI is included in the operator manual, please see page 96.

15.3 Change of ownership pre-checks

The PDI (pre-delivery inspection) form that is filled out on the commissioning of every new machine, should also be used during the transfer of ownership of a **McHale** machine. The same check list must be completed and any areas requiring attention addressed before the re-sale of the machine should occur. Pay particular attention to all safety related areas. Take time to familiarise the new owner with machine operation, maintenance and all its safety features.

15.4 Limited Warranty

Limited Warranty conditions are supplied with each **McHale** product. They cover the terms & conditions associated with abnormal failure under normal working conditions. Please see page 97 for more detail.

Declaration of Conformity



EC MACHINERY DIRECTIVE: 2006/42/EC DECLARATION OF CONFORMITY

We hereby certify that the machinery stipulated below complies with all the relevant provisions of the EC Machinery Directive and the National Laws and Regulations adopting this Directive. Modifications to the machine, without prior approval from the undersigned, will render this declaration null and void.

Machine description and function: Square Bale Wrapper for wrapping bales of agricultural fodder with agricultural bale film wrap.

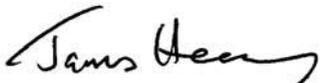
Model: **998** Serial Number: _____

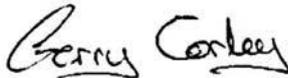
Name of Manufacturer: **McHale Engineering**
Address: Ballinrobe, Co. Mayo. Rep. of Ireland

Is in conformity with the provisions of the following other EC directives:
2004/108/CE - EMC for the control unit

Technical file compiled by: James Heaney
c/o **McHale Engineering**
Ballinrobe, Co. Mayo. Rep. of Ireland

Harmonized standards applied:
EN ISO 12100: Safety of machinery - Basic concepts, general principles for design
Part 1: Basic terminology, methodology
Part 2: Technical principles and specifications
EN ISO 4254 Part 1: Agricultural Machinery - Safety and general requirements

Signed: 
Date: **Place:** Ballinrobe, Co. Mayo, Rep. of Ireland
Name: James Heaney
Position: Design Office Manager

Signed: 
Date: **Place:** Ballinrobe, Co. Mayo, Rep. of Ireland
Name: Gerry Corley
Position: Quality Manager

Pre-delivery inspection form

CLT00465



**PRE-DELIVERY INSPECTION (PDI)
998 Square Bale Wrapper**

Castlebar Road, Ballinrobe, Co. Mayo
Tel: +353 (94) 95 20300 Fax: +353 (94) 95 20356
E-mail: sales@mchale.net Web: www.mchale.net

DEALER:.....

Model: 998 Square Bale Wrapper

Full Address:.....

Serial No:.....

.....

Date Delivered:.....

Fitter:.....

Date Inspected:.....

CUSTOMER:.....

Full Address:.....

Tel:.....

.....

Mobile:.....

.....

E-mail:.....

ENSURE THAT THE TRACTOR IS OF THE CORRECT SPECIFICATION FOR THIS MACHINE
REFER TO THE OPERATOR INSTRUCTOR MANUAL BEFORE MAKING ANY ADJUSTMENTS!

1. Check that all accessories are with the Owner/ Operator. Check Operator Instruction Manual and Parts List.		10. Check oil-level & ensure machine runs smoothly with PTO at 600rpm. [Units with Hydraulic power-pack]	
2. Ensure machine is re-assembled correctly. (Refer to all assembly instructions supplied)		11. Check that dispenser trip arms work.	
3. Ensure that the wheels are correctly fitted (i.e. valve to the outside). Torque wheel nuts correctly.		12. Check dispenser rotation speed. Warning: Max 25 rpm.	
4. Check for correct tyre-type, tread and pressure. (Tyre inflation pressure is 1.75 BAR or 26psi)		13. Ensure that the plastic is applied to the centre of the bale. Adjust bale height to suit.	
5. Hitch machine to tractor linkage.(Connect PTO shaft. 998's with On-board hydraulic power-pack only)		14. Check that dispensers are running smoothly & free from damage or grit.	
6. Adjust linkage to ensure wrapper is parallel to the ground. Set transportation bar and ensure all pins are secure. Attach 7pin plug for lighting system.		15. Run the automatic programme on the control unit. A bale must be in position to do this	
7. Connect hydraulic hosing to tractor and ensure proper hydraulic setup. Note: Ensure free flow return to tank on units without hydraulic power pack.		16. The operator must be fully aware of all hazards, controls (electric & hydraulic), all functions & safety devices of both the machine and the tractor.	
8. Ensure control-unit power supply is 12v direct from battery otherwise the machine may malfunction.		17. Ensure that the owner/operator reads the operator instruction manual and understands fully all safety & operating aspects of the machine as described. .	
9. Ensure that the control-unit is on the correct program to suit the bale being wrapped. Check all manual functions from control unit.		18. Instruct operator on machine maintenance i.e. Check chain tensions, adjustments, tyre pressure and wheel nuts, also areas to be greased daily along with other routine functions.	

I am satisfied that the above checks have been carried out, and that the machine is complete with all accessories and manuals.

Signed:.....

(Dealer)

Date:.....

Signed:.....

(Owner)

Date:.....

This machine must be registered on www.mchale.net by the dealer in order to qualify for Warranty!

A signed copy of this form is to be retained by both the Dealer and the Customer.

McHale Limited Warranty

McHale Engineering, 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.

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.

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 PTO shafts, chains, tyres, bearings, belts, blades, knives, tines, tine bars, slip clutches, nylon chain runners and slides, etc. that are not covered under the Limited Warranty.

McHale 998 Square Bale Wrapper

The importer will be responsible for the following costs:

- All warranty labour charges.

The warranty is dependent on the strict observance of the following:

- The machine has been put in service by the **McHale** 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.

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.