

MCINTOSH MULTI BALE FEEDER

User Manual

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McIntosh Brothers Engineers Ltd

PO Box 4240

PALMERSTON NORTH

NEW ZEALAND

WARRANTY CONFIRMATION

Your bale feeder is guaranteed for a period of 12 months from date of entering service, provided that such equipment has not been subjected to improper usage and or excessive speed over rough terrain or any other conditions contrary to the manufacturer's specifications or recommendations.

The dealer has instructed me on the use of the bale feeder and maintenance requirements.

Serial # _____

Owners Information:

Signed _____

Owner _____

Date _____

Dealers Information:

Signed _____

Company _____

Sales Person _____

Date _____

Please return this completed form to;

McIntosh Brothers Engineers Ltd
PO Box 4240
PALMERSTON NORTH 4442
production@mcintosh.net.nz



Please note: It is recommended that the owner and dealer both retain a copy for their records.



MCINTOSH
FARM MACHINERY

Multi Bale Feeder

GENERAL OPERATION AND MAINTENANCE INSTRUCTIONS

MANUFACTURED BY
McINTOSH BROTHERS
ENGINEERS LTD
PALMERSTON NORTH
NEW ZEALAND

DISTRIBUTED BY

Safety must have **PRIORITY**

- **Maintain your machine in good working condition.**
- **Keep all guards and shields in place.**
- **Disconnect hydraulic supply lines when any maintenance, greasing or adjustments are undertaken.**
- **Keep hands, feet, and clothing away from power driven parts.**
- **Keep other people clear of machine when in use.**
- **Always shut down hydraulics when you leave the tractor seat.**
- **Do not allow people to travel on your bale feeder.**

**HUMAN ERROR IS THE MAJOR FACTOR IN
ACCIDENTS**

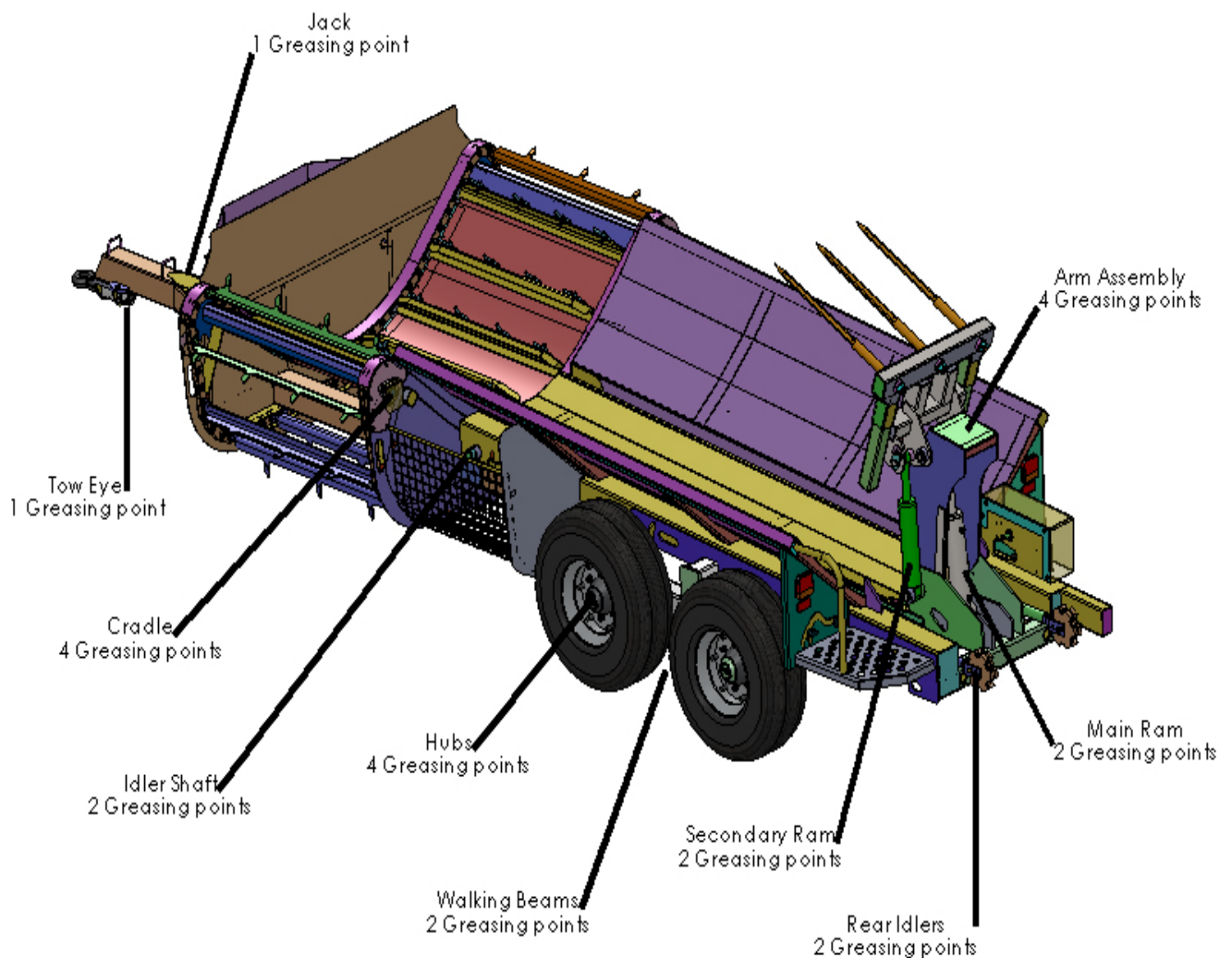
MAINTENANCE

GREASING

The following is the number of greasing points on our multi bale feeder.

Multi bale feeder unit grease nipples: 4 Cradles, 8 Lifting Arms, 1 Swivel, 1 Jack, 4 Hubs, 2 Walking Beams, 2 Drive Shafts, 2 Rear Idlers

The machine should be greased daily for the first week and then weekly after that using the greasing points as below:



CHAIN

The roller chain needs no adjustment.

Periodically oil the chains and check the bolts holding the slats to the roller chain.

TYRES

Standard tyre 11.5 x 15.3, 69 PSI
Optional tyres 11.5 x 15.3 Tractor Tread, 58 PSI
400/60 x 15.3, 50 PSI
Wheel nut torque: M18 – 200 ft/lbs or 270Nm

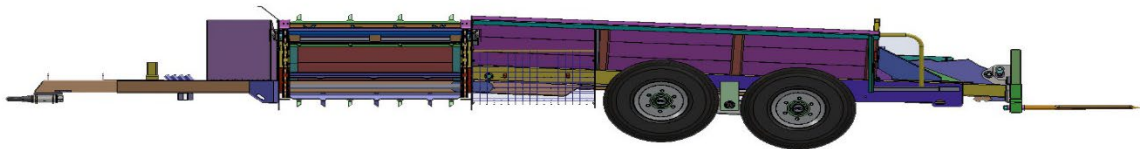
LIFTING ARMS

Greasing the lifting arms is very important to keep the machinery working correctly.

If you find the second arm does not come back fully to the loading position, put some more grease into it. That will fix it the majority of the time.

If you find you cannot stop the bale from falling into the cradle, the most common problem is air in the circuit. Bleed air out of the valve block and rams, then try again.

STORAGE AT END OF SEASON



- When the season is over, always clean off any feed material and wash machine.
- Fully grease.
- **Apply a covering of oil to the chains prior to storage otherwise some links may seize up while not in use**
- Adjust the floor chains.
- Have both rams in the closed positions and if any of the chrome shaft is showing, put grease onto that area. If the rams are not closed, rust spots may appear on the chrome shaft which will damage the seals. In the closed position, the smaller ram will still have 75-80mm of shaft out. When the rams are used regularly they are lubricated by the oil in the ram. It is when they are not used is when the damage occurs. This applies to any rams on farm machinery.
- Check tyre pressure before you use it again.

WHEN INSPECTIONS AND ADJUSTMENTS ARE BEING MADE, HYDRAULIC POWER MUST BE DISCONNECTED

OPERATING INSTRUCTIONS

The bale feeder need two sets of remotes to operate. One set operates the transfer bed moving the back frame forwards and backwards. You can move this at any time.

The second set of remotes operates the roller chain cradle and loading arm.

There is a diverter valve on the back of the machine that switches the hydraulic oil from the cradle to the loading frame.

When the transfer frame is at the very back of the transfer bed the loading frame will work. If it is right back and the loading frame is not working there may be some material stopping the frame from touching the stops. You will need to remove this to get the loading frame working.

It pays to check if there is material around this area when at the back of the machine when cutting the plastic or net. This problem is more common when feeding square bales. To operate the cradle the frame needs to be moved forward 50mm.

When pushing the bales forward over the cradle slats, have the yellow slat in the top right hand position as marked on the bale feeder frames. When pushing any bale forward the yellow slat needs to be in this position. This enables the bale to be pushed over the star wheels to the front of the cradle. If you try and push the bales over the fixed teeth you will only get the bale about two thirds of the way on before the front digs in and back lifts. You will need to turn the cradle to get it the rest of the way either in the paddock while feeding or in the loading area if you still need to load more bales onto the transfer bed.

The front basket is there for the plastic and the side basket for the net.

LOADING THE BALE

Lower the forks as low as they go. In this position they are set up for a standard 4 - 5 foot bale.

If feeding out 6 foot bales lift the forks at the tyne end 100 - 150mm. Once you have loaded a few bales you will get the right area, it does not need to be exact. If the bale is coming over and the front of the bale is landing first, put the forks in lower. If the forks are as low as they can go it is not a problem, just load that way. If the bale is coming down with the back end of the bale hitting the cradle first then put the forks in a bit higher into the bale.

It is easier to have the bales lined up first before loading the first bale. Once you have placed the first bale into the cradle you cannot see the forks when backing into the second bale so all you have to do is back straight back into the other bales which solves a lot of problems. Leave a gap between each bale to cut the plastic off.

Before loading the bales, cut the plastic off all the bales. Then back into the first bale, lift the bale over until approximately 400mm above the cradle. This distance can vary as it depends on the bale and what height you find is the best to remove the netting. For finer chop bales you may need it higher.

Cut the netting underneath and pull it off. Once the netting is off, you can lower the bale onto the cradle. Move this bale forward to the middle position, then move the sliding frame back to the rear position. If the frame does not go right back you will not move the diverter valve and the loading frame will not work.

Load the next bale, cut the net off and push the two bales forward. Reverse the moving frame to the rear again and repeat. Spear the last bale and lift to around 45 degrees. Move the moving frame forward 50-100mm so the oil flow is now transferred from the loading frame to the cradle.

Another way is to cut the plastic and net off the top half of the bales. Load the bales then remove the half of the plastic and net which is the now on the top. Leave just over half the plastic on the bale otherwise it may fall apart when flipping over.

When loading a bale, flip it right over in one movement. If you stop the bale at its full height the second ram may not have enough power to flip the bale over and you will have to go down again and then up. Load the bales with the tractor running, using as few revs as possible. With a slow flow you will have more control. Once the bale is above the cradle you will not be able to lift it up again so with the first few bales try different heights to get the net off until you find the best

position for you. The heaviest bale we have loaded weighed 1,300kg so there is a lot of power in the ram.

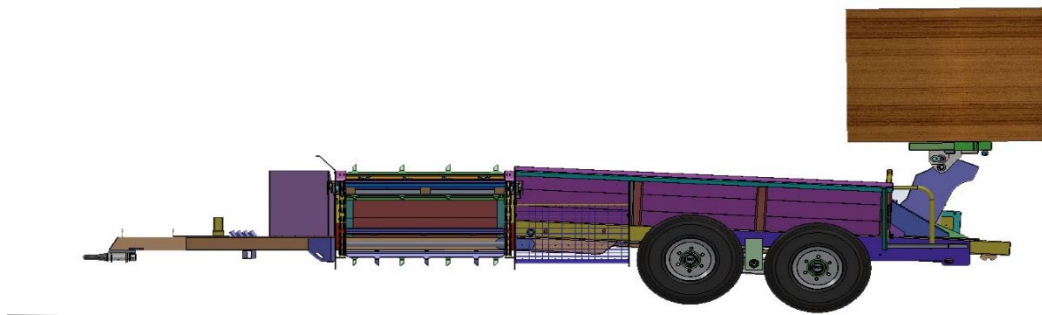
To get the forks out of the bale, reverse the oil flow and the main ram will lower down while the smaller ram will go into a float action. Once the main ram fully retracts, the smaller ram will then rotate the forks until they are down to the load position again. If the forks do come back to the flat position there may not be enough grease in the pivot pin.

When travelling with no bale on the forks have them in the up position so that you do not back them into anything or anyone trips over them.

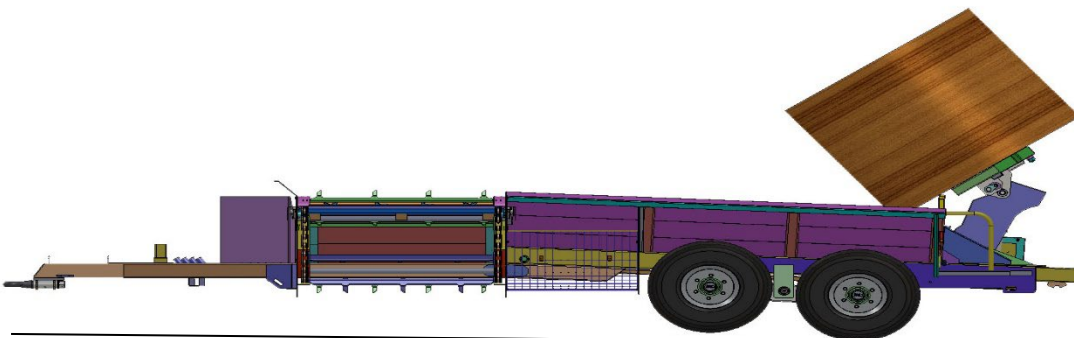
Start Position



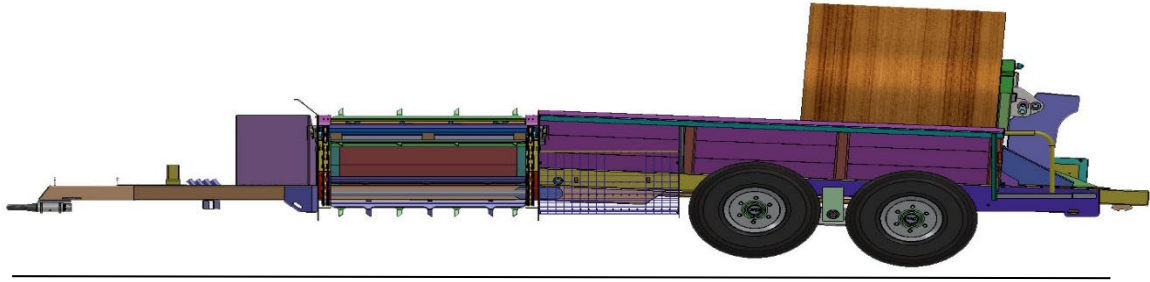
Loading



Hold to cut net off

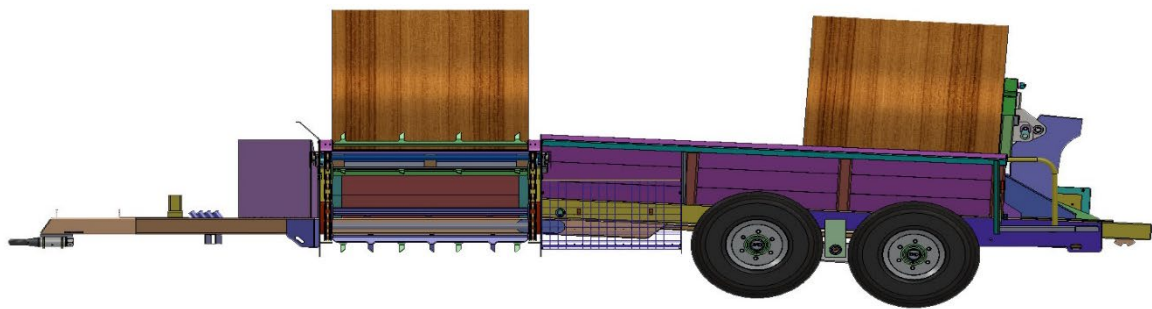


Loaded 1



Loaded 2

You can push the first bale either to the front or middle position when loading the second bale



Travel Position



FEEDING OUT

As our Bale Feeders will operate from either side, there is no need to concern yourself of which way you place the bale in the cradle.

While feeding out, if the bale is hard to start or while it is unrolling the bale slows down, put more revs on the tractor to speed up the bale feeder. Slow the revs down once the bale is feeding easier, aggression pins can help.

We recommend a maximum of 50 litres of oil. If you put a bigger oil flow through the motor and swap the direction of the feeder very quickly, you may damage the motor. At a faster flow, you will also create far greater wear and tear on the machine. You can also split the o-rings in the valves which can cause the bale to drop when travelling.

AGGRESSION PINS

These are supplied to assist breaking out a hay bale which is hard to get started or a very hard centre or a moldy wrapped bale. They **are not used in normal operation**. If required, insert pins

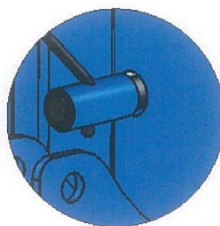
in the ends of the bale as the pin holes allow. Restart your machine and the aggression pins will break into the bale and allow it to unwind.

Aggression Pin Positions

Detail C



Detail D

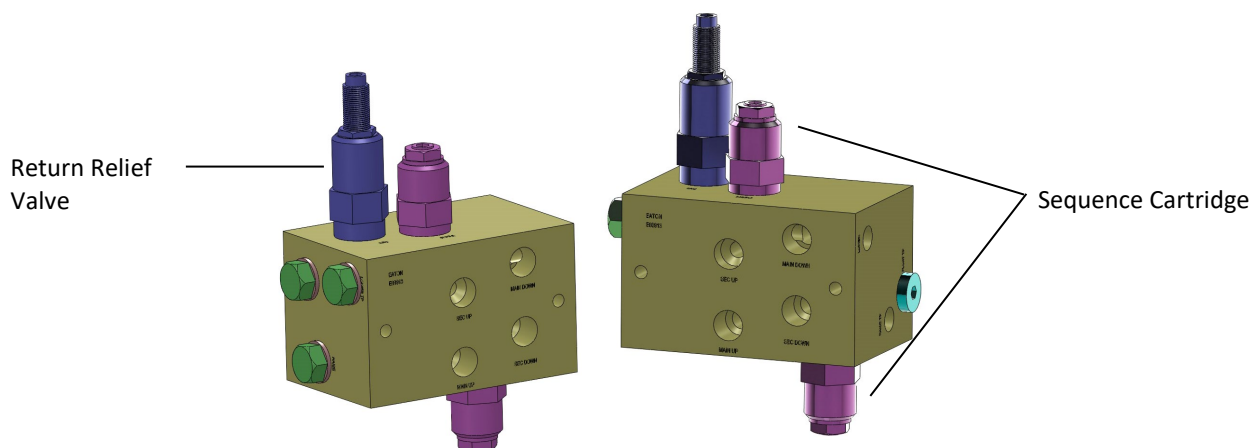


Sequence Cartridges

These are set at 2 ½ turns out. The purpose of these is to have the main left ram operating first before the smaller tip ram. If these are out too far, the second ram may operate before the main ram is fully out.

Return Relief Valve

Set all the way out, this valve is set at 50 PSI and will only go to 300 PSI when fully out. The purpose of this valve is to let the small ram go into float when pulling the forks out of the bale. If it is screwed in too much, it will try and lift the bale when pulling out. This is just enough pressure in it to flip the forks over to load again.



FAULTS WITH LOADING ARMS

Forks do not fold down parallel to ground to load bale.

- Lack of grease in pins.

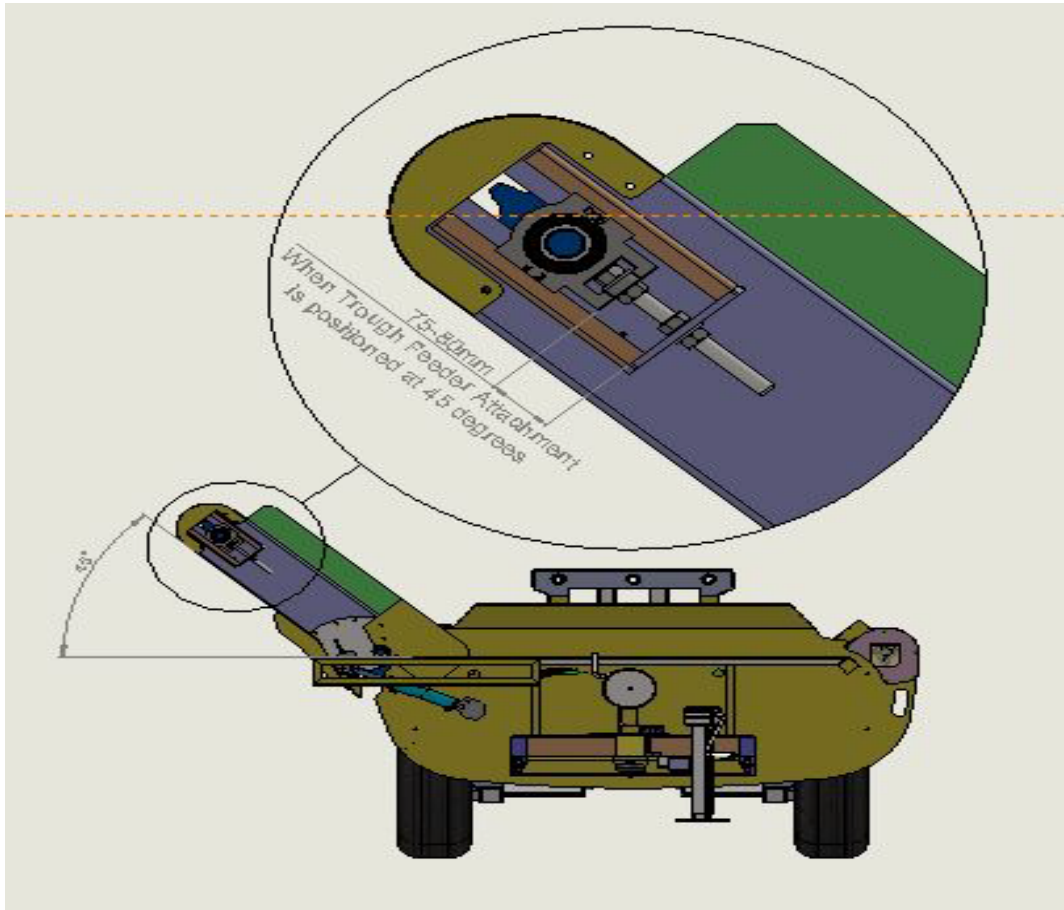
Bale drops into cradle/cannot hold it up to take plastic off.

- Air in small ram. Bleed ram.
- Faulty sequence valve. Take valve out and check, replace.
- Forks creep down when travelling with a bale on – check the valves in the aluminum block and check the o-rings are not split. If one is split, replace o-ring. This is caused by excessive oil flow. Cut flow back to maximum of 50 litres.

TROUGH BALE FEEDER

- Load with the arm down.
- Travel with the arm up until you want to start feeding.
- You can lift the arm up to 45 degrees to feed with. The chains will still turn even straight

- up but it is hard on the machine
- If adjusting chains, have the arm up on a 45 degree angle where the chains are at their tightest point: **DO NOT adjust when the arm is down.**
- Store the machine with arm down and the ram closed otherwise grease the ram if it is out so it does not get rust spots on it and damage the seals.



Service Information

This notice is to provide assistance and give information for issues that may occur with some McIntosh Equipment.

In Field valve adjustments for Rear Bale Forks

On Multi Bale Feeders, the lift rams sequencing valve is located underneath the blue cover located on the rear right hand side. You will need to remove the cover to expose the valve assembly.

On Double Bale Feeders, the valve assembly is mounted on the rear left hand side near the wheel.

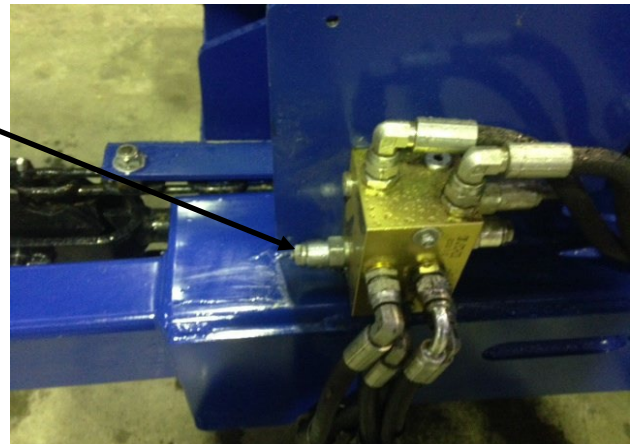
The sequencing valve assembly has 3 valves fitted to the block. There are 2 adjustable throttle valves that control the tip over and return speed of the bale forks. The 3rd valve is an adjustable relief valve that controls the pressure of the forks when returning to the loading position. Sometimes you will be required to adjust these valves to suit the types of bales, oil flow of the tractor and the customers needs. When adjusting these valves,

we recommend you only adjust one valve at one time, then test the operation again. We also recommend that when adjusting the valves, screw them in or out 1/2 a turn at a time and retest. This can make a big difference depending on the oil flow and the weight of the bale.

If problems occurs, we recommend that you set the valves back to the standard factory settings and re-test the system again.

Problem: Fork assembly will not return to fully dropped (loading) position or rear forks creep down when carrying a Bale.

Return sequencing
valve located here



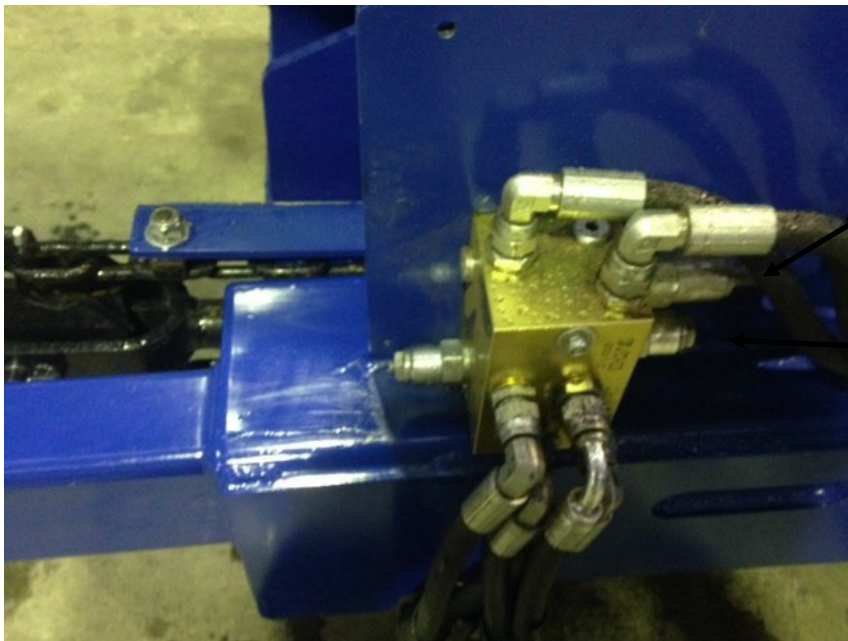
Standard Factory settings 3.5 to 4 turns out

If the fork assembly is not returning to the load position during operation, screw the return valve out a half a turn at a time until the operation works correctly. Normally this valve is set at 3.5 to 4 turns out. If this valve is screwed too far out, the main lift ram can drop when carrying a bale.

If this occurs, screw the valve in until the ram holds the bale. Always tighten the lock nut to stop the oil from leaking. Problem: Fork assembly won't tip over into feeding chamber or falls in too fast

Problem: Fork assembly won't tip over into feeding chamber or falls in too fast

If the fork assembly will not tip the bale into the feeding chamber, this normally means the tip over sequencing valve is screwed too far in. Undo the lock nut and turn the valve out a 1/4 of a turn at a time until the operation works correctly. Normally this valve is set at 2.5 to 3 turns out. If this valve is screwed too far out, this will cause the fork assembly to drop in too quickly and hard to hold the bale over the feeding chamber. If this occurs, screw the valve in until you find a speed that is acceptable. Always tighten the lock nut to stop the oil from leaking.



Retract pressure relief valve located here

Tip over ram sequencing valve located here

Standard Factory setting

Problem: Bale tries to come back out when returning the fork assembly back to the loading position.

There can be several reasons for this to happen. Firstly check the oil flow coming from the tractor. These machines are designed to operate with oil flows of around 40—65 litres per minute. A higher oil flow can result in a build up of back pressure and cause the forks to try and lift the bale back out when returning. Lower the oil flow and try again before adjusting the return relief valve. If the problem still occurs, unscrew the relief valve to lower the retract pressure. In most cases, the valve is almost fully screwed out. If this pressure is too low, this can cause the fork assembly to not fully return to the loading position.

On Multi Bale Feeders, this problem can also occur with tightly formed or dry bales. In these cases we recommend you remove the middle tine and operate with only the two outside tines fitted. We suggest you try this first before adjusting the relief valve.

Problem: Fork Arm Dropping Bale into Cradle

Take out the two smaller sequencing valve cartridges and check that the o-rings and backing rings are not cracked or broken. Replace them if they are.

This can be caused by too much oil flow above 50 litres per minute.