

MCINTOSH DOUBLE BALE FEEDER

User Manual

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Double Bale Feeder

GENERAL OPERATION AND MAINTENANCE INSTRUCTIONS

MANUFACTURED BY
McINTOSH BROTHERS
ENGINEERS LTD
PALMERSTON NORTH
NEW ZEALAND

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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 double bale feeder.

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

The machine should be greased daily for the first week and then weekly after that. (Detail A and B)

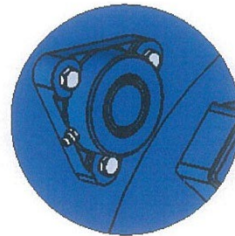
Greasing Point Positions

Detail A



Drive end

Detail B



3 positions

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, 58 PSI

Optional tyres 11.5 x 15.3 Tractor Tread, 58 PSI

400/60 x 15.3, 50 PSI

Wheel nut torque: 480 N-m

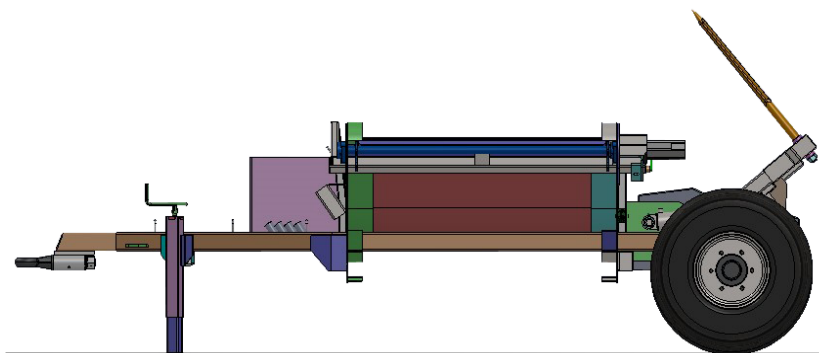
LIFTING ARMS

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



Both Rams – Closed Position

- 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**
- 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

SET UP

The ½ inch hoses drive the cradle and the 3/8 inch hoses operate the lifting arm.

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 hitting the front frame, you need to lift the forks a bit higher. If it is coming down with the back end of the bale hitting the cradle first, then put the forks in a bit lower in the bale.

It is easier to have the two 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 second bale. This solves a lot of problems. Leave a gap between the bales so you can cut the plastic off.

Before loading each bale, cut the plastic off the end of the bale, then back into it. 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 it best to remove the netting. For finer chop bales you may need it higher.

You can either cut the netting underneath and pull it off or get the end of the netting and pull it off while standing on the checker plate. Once the netting is off, you can lower the bale onto the cradle.

Another way is to cut the plastic and net off the top half of the bale, load the bale, pull out the forks, then remove the half of the plastic and net which is now on the top. Cut above the half way point of the bale otherwise it may fall apart before loading on the tray.

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 and then back up. Load the bales with a tractor flow of around 50 litres. With this flow rate you hold the hydraulic lever fully open until the bale is either in the cradle or 400mm above the cradle. This saves the problem of the second arm not tipping over at the highest point.

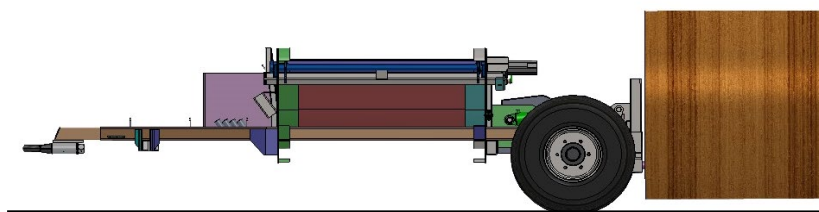
Once the bale is above the cradle you will not be able to lift it up again so with the first few bales try different heights to get the net off until you find the best position for you. The heaviest bale we have loaded weighed 1,300kg so there is heaps of power in the ram.

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.

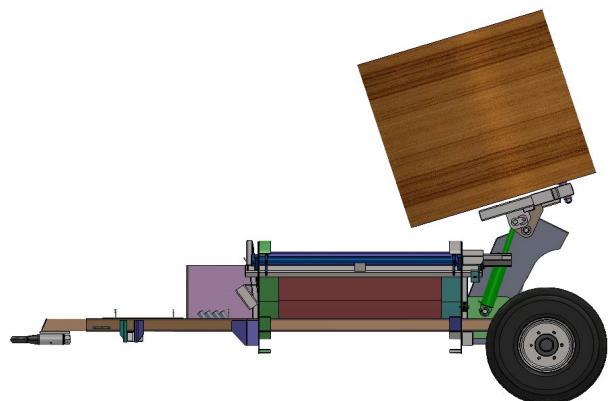
Remove the plastic and back into the second bale. Lift the bale to a good travelling height. If feeding out the first bale on steeper country, you may want to lower the second bale or even drop it off and reload once you've finished the first bale.

With rotocut bales you may need to be higher so the net doesn't fall on the teeth.

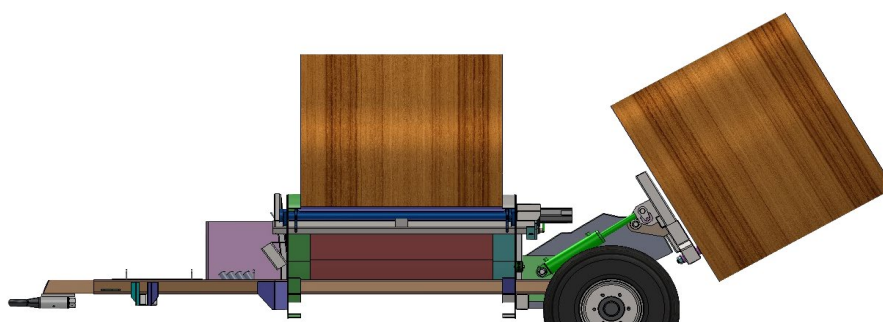
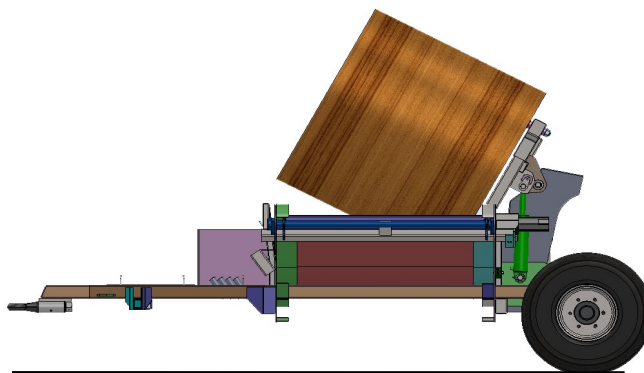
When travelling with no bale on the forks, have them in the up position so that you do not back them into anything or anyone trips over them.



Start Position - Loading



Loading



FEEDING OUT

As our Bale Feeders will operate from either side, there is no need to concern yourself 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.

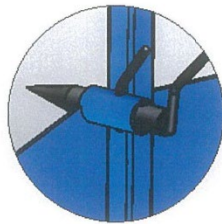
We recommend a maximum of 50 litres of oil. If you put a bigger oil flow through the motor and swap the direction of the feeder very quickly, you may damage the motor. At a faster flow, you will also create far greater wear and tear on the machine.

AGGRESSION PINS

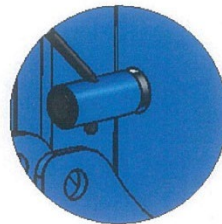
These are supplied to assist breaking out a hay bale which is hard to get started, has a very hard centre or a moldy wrapped bale. They **are not used in normal operation**. If required, insert pins in the ends of the bale as the pin holes allow. Restart your machine and the aggression pins will break into the bale and allow it to unwind.

Aggression Pin Positions

Detail C



Detail D

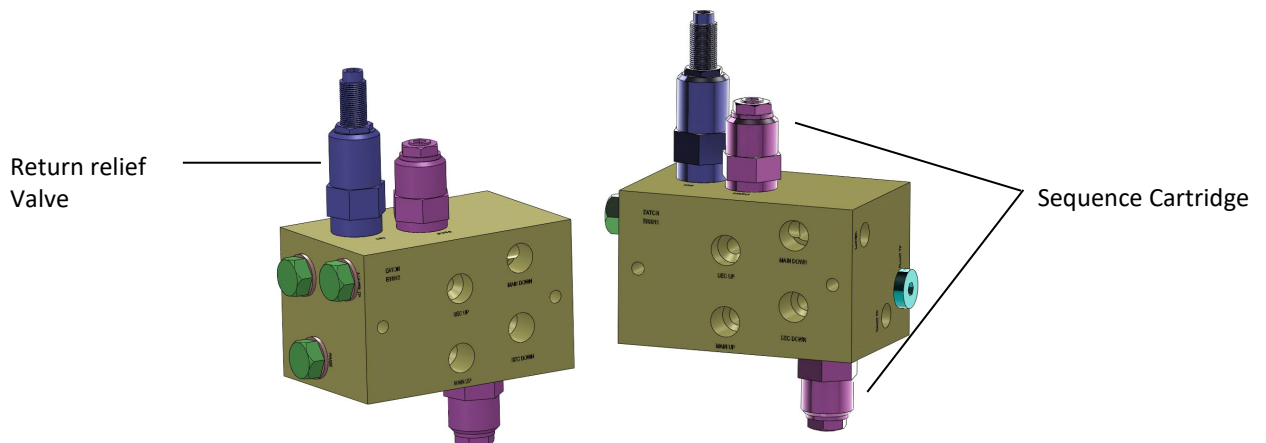


Sequence Cartridges

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.

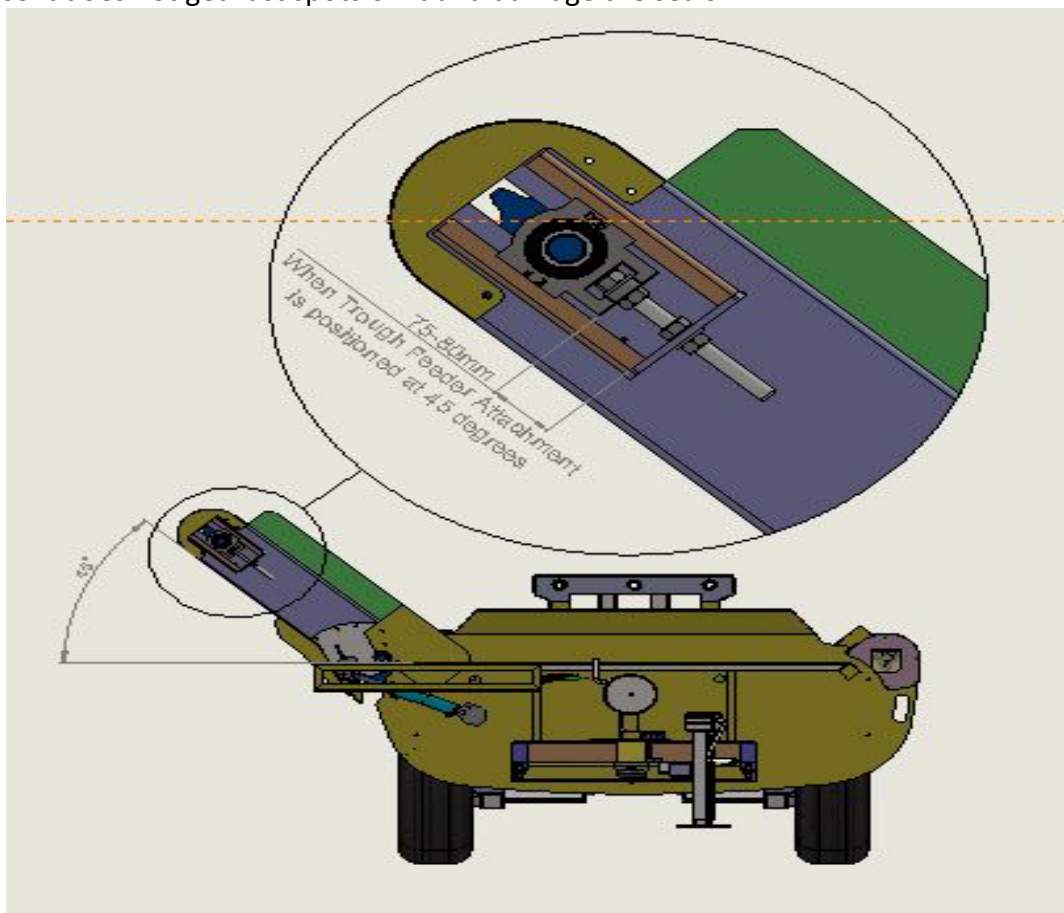
- Lack of grease in pins.

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.

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.

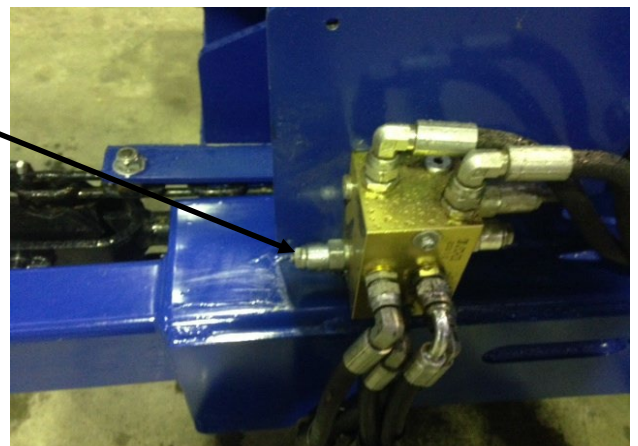
On Double Bale Feeders, the valve assembly is mounted on the rear left hand side near the wheel.

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

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.