

Reporoa Herdflow High Lift Gate

Operations & Maintenance Manual

Updated 2018



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Introduction

Thank you for purchasing a Repora Herdflow High Lift Gate. Your gate has been designed to safely automate the management of your herd along with the cleaning (if this option is chosen) &/or wetting of the collecting yard before, during &/or after milking.

This manual is designed to: ensure you operate your Repora Herdflow High Lift Gate efficiently and effectively; to maximise the life of the gate and to minimise the stress on your herd and your operators. It provides operational guidelines, maintenance requirements, fault finding and emergency procedures if you lose electricity.

WARNINGS!!!

⚡ Electrical ⚡

Do not open any control boxes. Call your Electrician.

🔧 Mechanical 🔧

Keep hands a clothing well away from all rollers and wheels where they contact the “I” beam

Check the Gate Lifting Ropes at Least Monthly

General Operation Guidelines

These guidelines are designed to help your – The Operator – training so that you are then in a position to train the herd.

In order to train the cows take small “bites” of cows (< 100 cows) at the beginning so that the cows learn to respect the gate and then respond to the noise prompt. This may be slower at the start but will reward in the long run with better cow flow. There is no point in trying to push 500 cows at once as the ones at the front will have no idea what is going on unless they have been trained to the sound prompt first.

Your new Repora Herdflow High Lift Gate is **NOT** for “Bulldozing” cows in to the cow shed. If you use it as a battering ram you will injure the cows and eventually damage or destroy the backing gate. Protection in the form of a breech sensor (optional) and pulse forward are installed into the gate to protect the animals from injury (lameness, crushing) or as an insurance policy in case the gate is inadvertently left on. The Breech Sensor is the emergency stop only.

Most the time when using the gate for encouraging cows to move forward use the Pulse Forward button.

How to Operate the Reporoa Herdflow High Lift Gate

Depending on the options you have chosen there are up to 3 sets of buttons and a touch screen to control your gate:

- The control panel on the gate – buttons and touch screen - main switch



- The “cups on” position or pit in the case of a herringbone



To raise gate: push up button, gate will rise to up position if no stop is pushed.

To lower gate : If the gate is at top limit the gate will lower to set point, pause then lower while reversing slowly to bottom limit. If gate is not at top limit, the gate will travel without stopping to bottom limit.

Forward: Push forward button, gate will ramp up to low speed. If you hold the forward button for 2 seconds the gate will ramp up to high speed, if repeated the speed will ramp down. The gate will stop via breech switch, stop buttons, pull switch and forward limit. The gate will not travel forward while gate is lowering but can if the gate is rising.

Pulse Forward: Push the Pulse button, the gate will ramp up to low speed and travel for set time then stop until button is pressed again. Gate will stop via breech switch, stop buttons and front limit.

Pull switch: Pull the pull switch, gate will lower if not at bottom limit then proceed forward until pull switch has been activated again. Gate will stop via breech switch and stop buttons.

Synchronize: (For rotary cow sheds). Push Synchronize button, gate will lower if not at bottom limit. Function will count passing bails until set point has been reached then proceed forward for timed amount then stop. Breech switch will stop current timed motion but not function. Synchronize is reset by stop buttons.

Reverse: Push reverse button, gate will ramp up to low speed. If you hold the reverse button for 2 seconds the gate will ramp up to high speed, if repeated the speed will ramp down. The gate will stop via stop buttons, pull switch and reverse limit. If the gate is down the gate will only reverse for 5 seconds. The gate will travel in reverse while the gate is lowering or rising.

Wash: Push Wash button, gate will proceed with wash function automatically predetermined in set up and will stop automatically. If the stop button is pushed during wash the wash will pause, pushing the Wash button again continues wash. If no Gull wing setting (washes the yard in 2 directions) has been set, you can push and hold the wash button for 4 seconds and the gate will wash from where it is. Pushing wash button twice will allow the gate to wash the yard a second time.

Sprinkle Mode in Gate Up Position: If the gate is travelling forward or reverse and the gate is at the up limit, press and hold the up button for 4 seconds and the water solenoid will open allowing you to wet yard or cows.

Sprinkle Mode in Gate Down Position: While gate is being used to herd the cows forward (wash booms in up position) push and hold wash button for 4 seconds and the gate will wet the yard each time (pulse forward) and/or as it moves forward or in reverse to keep the yard wet as it does its job.

Maintenance Requirements

● Lubrication: Grease Nipples - Monthly

- Bearings which support drive axles on drive units.
- If fitted – dung buster support slider pipes.
- If fitted – dung buster lift pipe support bushes.

● Catenary Wire – Monthly

- Rub a little grease over the wire to ensure orange Ezi-rollers run freely
- Grease first 10 rollers

● Main Gate Lifting Ropes

CHECK MONTHLY REPLACE EVERY 24 MONTHS

The ropes do wear out. Check for fraying over whole length of rope including where it attaches to the winch drum. This rope does also wear internally so should be replaced at least every 2 years.

Wash-boom Lifting Ropes

Check for fraying. Replace as necessary.

Electrical

Ensure cable hangs in consistent loops. If broken off nylon rollers replace roller immediately to prevent cable catching on anything.

Check all cables for damage and ensure all electrical glands are tight

Servicing

Arrange for your Reporoa Herdflow Agent to carry out an **ANNUAL SERVICE**.

Fault Finding

1. Gate Stops

Gate will not move forwards or backwards. There could be a mechanical reason or an electrical reason for this.

a. Mechanical

- i. Frost Slippage – in sever frosty conditions there may be slippage – particularly during the first run along the length of the yard. We suggest that if frosty conditions are expected park the gate at the highest point of the yard the night before and in the morning run the gate downhill for its first run. We have available an anti-skid paint which has ground up glass particles impregnated into the paint and is quick drying. Apply this paint on the drive side of the “I” beam. If the problem persists your gate can be fitted with an additional 2 drives making the gate 4 wheel drive. This is recommended for 14 metre wide gates.
- ii. Gate Out of Alignment - while your Reporoa Herdflow High Lift Gate is expected to get out of alignment and self correct, occasionally it may stay out of alignment and bind up on the “I” beam because the idle wheel housing is catching on the “I” beam preventing the gate from moving – in which case the electric motors may go out on overload. The following are reasons why it may go out of alignment: Catenary Wire jumped off Wire Pusher pulley and jamming between pulley and the housing (put catenary back on to pulley wheel); bearing on side Idler Wheels collapsed; support wheel bearing collapsed or drive wheel bearing collapsed; object jammed under front or rear Support Wheels (remove object). Ensure that the electric drive motors and gearboxes are operating. On older gates which run in a channel: 1. Check the wheel centers are equal across front drive wheels & across the rear idler wheels. 2. Ensure the front drive wheel & the rear idler wheel are in line. Run a straight edge across these wheels to ensure they are in line.

b. Electrical

Touch Screen: Check the touch screen to see if it identifies a fault. If so call Tailored Controls on the cell phone number on the control box. They will talk you through the problem.

- i. **Power Cut** – If the gate is inoperable because of a power cut and it is in the down position and cows are trapped in front of it either: use front end loader to lift the gate or take fan covers off the back of the Lift motors. Wind fans until gate is in up position. Alternatively take fan off with screw driver and attach battery drill to motor shaft. Slowly wind with low gear ratio on drill.
- ii. **Gate Stops or Confused** – gate may be confused as to where it is located or the direction it should be going in. Go to the manual position on the touch screen and if necessary move the gate at least 1 metre inside the proximity sensor plates. Then push the Fault Reset button on “Drive Status 2” page of the touch screen.
- iii. **Water in Buttons** – contact your electrical service provider.
- iv. **Sensors Faulty** – (breech sensor may be faulty or not reading gate dropper when in down position – gate will not run forward) no light on sensor or fault showing on touch screen. Contact your electrical provider.
- v. **Gate Up/Down Limit Faulty** – Contact your electrical provider to check TER switch.
- vi. **Fault Message on Touch Screen** – reset as per instructions in electrical manual.

2. Yard Wash

- c. **Washbooms not resting evenly on concrete** – ensure there is approximately 100mm of slack lifting rope when booms in down position. Check this over the whole length of yard. Adjust on lifting collars (Allen Key).
- d. **Washbooms not sitting evenly in up position** – if boom/s hanging down unevenly when in up position they may be damaged by cows.

3. Trailer Cable Faults

- a. **Orange Ezi-rollers catching** – Ezi-rollers should travel smoothly along catenary wire. Apply a little grease each month to ensure they run freely.

- b. Orange Ezi-rollers Broken** – Ensure cable loops are hanging evenly and not twisted. Replace any broken Ezi-rollers.
- c. Wire Pusher Arm bent** – straighten - can be caused by:
 - i. **Ezi Rollers not running freely** (see above)
 - ii. **Gate over runs either end Proximity Sensor** – this will cause Wire Pusher arm to come in to contact with the Catenary Wire Carrier. Ensure Proximity Sensor and Sensor Plate are still in correct position. Check that light is on in sensor &/or no fault showing on touch screen. Replace sensor if necessary. See service electrician.
 - iii. **Catanary Wire Jammed Against Pulley** - Catanary Wire jumped off wire pusher pulley and jamming between pulley and the housing. Put back on pulley.
- d. Broken Trailer Cable – check cause:**
 - i. Cable caught on gate or some other obstacle.
 - ii. Ezi-roller jammed causing cable to stretch and break or tear away from termination.

4. Breech Switch Too Sensitive/Not Sensitive Enough

- a.** Adjust sensor position on slider arm.

5. Gate Not Lifting Evenly - check lifting ropes

- a.** For fraying or broken rope
- b.** Knots failed (use bowline knot only)
- c. CHECK ROPES MONTHLY – REPLACE EVERY 2 YEARS**

6. Gate Will Not Lower

a. The TER switch (the box with the yellow lid) located on the drive side next to the lift motor may be faulty. This will be shown as a "time out " fault on the touch screen. The TER switch will likely need to be replaced. Contact your electrical provider.

- b.** One or both of the lift motors may be burnt out or faulty. Replace.

7. Gate not Hanging Vertically when Down or Horizontal when in Up Position

- a.** Contact your service electrician to check and adjust TER switch.

Reporoa High Lift works service schedule - 12 Monthly

Company Name:

Location:

Date:

Ref No:

Permit to work requirement: **Yes No**

Job Number / Name:

Approved By:

Reporoa Highlift works service schedule

Notes

Grease all greasing points (a small amount - 1 to 2 pumps each month) - Dungbuster sliders - Support wheels if they have grease points & drive wheel axles if they have grease points etc.

Pass ☐ Fail ☐ NA ☐

Check lift ropes; The rope end must be tied to the gate with a BOWLINE knot only. Replace rope if damaged.

Pass ☐ Fail ☐ NA ☐

Check lift winch gearbox, tighten hold down bolts if required, check for oil leaks & drum for misalignment.

Pass ☐ Fail ☐ NA ☐

Check & adjust TER switch if required gate should have clearance from frame & winch drum when lifted & hang straight when down but still be supported by ropes while hanging straight.

Pass ☐ Fail ☐ NA ☐

Check electrical wiring, connection on sensors/limit switches, trailing cable & look for marks or tears on cables. Report any issues

Pass ☐ Fail ☐ NA ☐

Check prox sensors/limit switches on forward/reverse & gate breach (if fitted) are working with rollers rolling & adjusted properly.

Pass ☐ Fail ☐ NA ☐

Check ezi rollers for wear & not cutting into back or fronts of ezi roller bodies, grease 10 closest to gate, change if worn.

Pass ☐ Fail ☐ NA ☐

Check wire pusher nylon roller is in good condition.

Pass ☐ Fail ☐ NA ☐

Check rope pulleys; Pulleys must be in good working order with the roller turning freely & the lock pin should be in tight. Replace pulleys if faulty & remove pin from new unit & grease bush before fitting.

Pass ☐ Fail ☐ N/A ☐

Ensure catenary wire fixings are in good condition & wire tension is correct with electrical cable well clear of ground.

Pass ☐ Fail ☐ NA ☐

Check top idle wheels & shafts; check wheels for wear, check bearings or bushes & grease if able to, ensure wheel is running true to 'I' beam or channel and cover is fitted properly.

Pass ☐ Fail ☐ NA ☐

Check drive wheels gearboxes & shafts; check wheels for wear, inspect gearbox for oil leaks, check keys & keyways for wear & retaining bolts are fitted, ensure wheels are running true to 'I' beam or channel and cover is fitted properly.

Pass ☐ Fail ☐ NA ☐

Remove side guide wheels if installed & check wheels & bearings for wear, re-fit & coat bolts & shafts with coppercoat if replacing bearings or wheels.

Pass ☐ Fail ☐ NA ☐

Check oil in all gearboxes and change if necessary note some gearboxes are seal units & can't be check or refilled. (use correct special oil)

Pass ☐ Fail ☐ NA ☐

Check that gate is located evenly over "I"beam or channel & runs true. Run a full cycle & check sensors/limit switches work at front & back of yard, listen for any rubbing or gearbox noise (note check wash cycle at same time which is in check box below)

Pass ☐ Fail ☐ NA ☐

Check dung buster - blade wear, clean filter, check 3x wash hose connections to gate. Run through full wash cycle to see if solenoid valve opens & closes @ front & back of yard, sensors/limit switches work & gate lifts at end of cycle.

Pass ☐ Fail ☐ NA ☐

Check main gate & structure for cracks & damage, check welds & repair any cracks then gusset if required. If gate is having crabbing issues check gate frame for square by measuring dieangles (if wires are internal get sparky to remove before welding)

Pass ☐ Fail ☐ NA ☐

Check main beam dropper pivots for cracks & they have their retaining R-clip installed. If cracked they need welding. (Note don't melt any internal wires, if wires are internal get sparky to remove before welding)

Pass ☐ Fail ☐ NA ☐

Check "I" beam or channel rails for cracks on joins & weld any cracks if found.

Pass ☐ Fail ☐ NA ☐