



**Artificial Breeding**  
Facilities Specifications  
and Guidelines

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# 1. Safe and efficient AB facilities are a sound investment

## A. Introduction

LIC has been proudly inseminating animals for NZ dairy herds for over 70 years and throughout this time farming, especially dairy, has undertaken some huge changes and advancements. Herd sizes have increased, larger and corporate farms have been replacing generational family blocks, and ongoing technology inventions to assist the farmer have impacted the way we farm. To stay abreast with farmer expectations and demands, the way we service AB on farms must meet a standard that is, not only safe for the technician, but will also give every animal presented the highest opportunity to get in calf during mating, arguably the most important time of the year.

## B. Previous Standards

In 2018 we introduced a National Facility Campaign to improve the standard that our technicians were working in. Balancing on top of a 44-gallon drum or walking behind cows to do AB is not safe. The Gold /Silver/Bronze/ Non-compliant rating certainly improved the AB work environment, but our techs are still getting hurt. For a technician to focus solely on the job and not to have to worry about risks and hazards such as tripping, falling and maneuvering around steel pipework and rubber-ware, the AB environment needs to be better suited to the work

## C. Health and safety



We all have a legal duty, so far as reasonably practicable, to ensure that no one is harmed while carrying out work on farm. LIC and farmers must work together to ensure hazards and risks are identified and safe work takes place on every occasion.

We want everyone to get home safe and well each night and by doing what's right every time we will do this.

## 2. AB facilities

### The Standards

- AB facilities must have a minimum 5% of herd size or a maximum of 20 animals loaded or readily available to be loaded into a race or onto a platform, with free, easy access by the technician/s to the animals.
- Animal entry and exit provides comfortable cow flow that provides a calm environment for the animal and people.
- The AB facility provides a ground level operating area where the animal is completely secured, regardless of breed and age of the animal. The technician footing is operating from a non-slip surface not lower than the animal's feet.
- Completely free of vertical poles or other such permanent or temporary features deemed a workplace hazard that obstruct or inhibit free access to all cows presented for AB
- The technician at all times must operate from behind a solid barrier and are not to be in the same space as any unrestrained animal/s.
- Multiple technicians can carry out insemination work at the same time i.e an AB supervisor can comfortably stand beside a technician/apprentice to check placements as part of our high-quality control measures. Additional technicians can assist on a synchrony.
- In the case of a single presentation cow system a supervisor or senior technician can easily perform an AB supervision. A single file vet race must have appropriate resource supplied (Customer must have a minimum of two people present) to ensure safe animal handling and necessary people required to load the race and release the animal after AB.
- When working within a rotary shed, the platform floor must also be non-slip and not lower than the animal's feet. There must be a safety rail on each end and at the back of the platform. The platform is located in a position that is free from all overhead obstructions and serves to ensure no-one can fall from the platform under any normal circumstance.
- The AB facility, loading bench and technician working area is within easy access of the AB facility and protected from all environmental effects, including pungent odours effecting semen survival.
- Minimum biosecurity measures are in place i.e. clean water, and scrubbing brush suitable for boot wash are easily accessed at point of entry/exit.

## 3. Designing a Dedicated AB facility

### A. Specifications

This race can be adapted for use in farm dairies and cattle yards at run-off locations. This is a guide only as there are many variables to consider like the size and breed of animal presented.

#### Getting the angle right.

Technicians insert their left hand into the animal to inseminate, therefore there is a preferred angle for an AB race.

The bail should be built so the cow's hind quarters, and the back rail are on the technician's left when facing the exit gate. This allows the technician to inseminate comfortably and correctly.

If the hind quarters and the back rail are closest to the technician's right shoulder when facing the exit gate, the technician's movement can be restricted, making insemination difficult.

The easiest way to visualise this is if you are standing behind the cow her head and body should be facing one o'clock not eleven o'clock.

#### Construction materials

The most durable construction material is galvanized piping. Timber can be effective provided it is solid enough to withstand the force from groups of animals against it.

#### Floor

Poured concrete is suitable flooring and must have adequate fall for drainage.

#### Race width

The width of the race is crucial. A width of approx. 1050mm will ensure that animals are unable to turn around and therefore avoid time-wasting and possible injury.

#### Race length

The race needs to allow 1000-1250mm per cow. The expected maximum number of cows submitted daily for AB provides a guide to the total length of the AB race. Ideally, 5% of the total herd size, or 20 animals should be able to fit in the AB race at one time.

If using these guidelines, only one race need be loaded for most days. However, more loadings of the race may be required if large groups are synchronized.

### Outside front fence

The top rail needs to be 1300mm above ground level. Intermediate rails should be added as circumstances require e.g. an open space beneath the top rail would encourage smaller animals to escape.

### Breast rail height

The top rail should be 850 -920mm above ground level depending on breed and class of stock and 340mm inside front fence. Intermediate rails between the top rail and ground level may be necessary in some situations e.g. an open space beneath the top rail would encourage smaller animals to escape.

### Bum rail

This should be approx 900mm above ground level but be very mindful when considering height at construction in relation to the size of your animals. There needs to be no impediment to the vulva of the animal.

### Back bar

There must be a back bar between the breast rail and back rail to eliminate the last animal turning. The back bar must be firmly secured at both ends.

### Exit gate

The exit gate should be 1700mm long and 1300mm high. The gate must be hinged at the post supporting the back rail and close on the outside front fence.

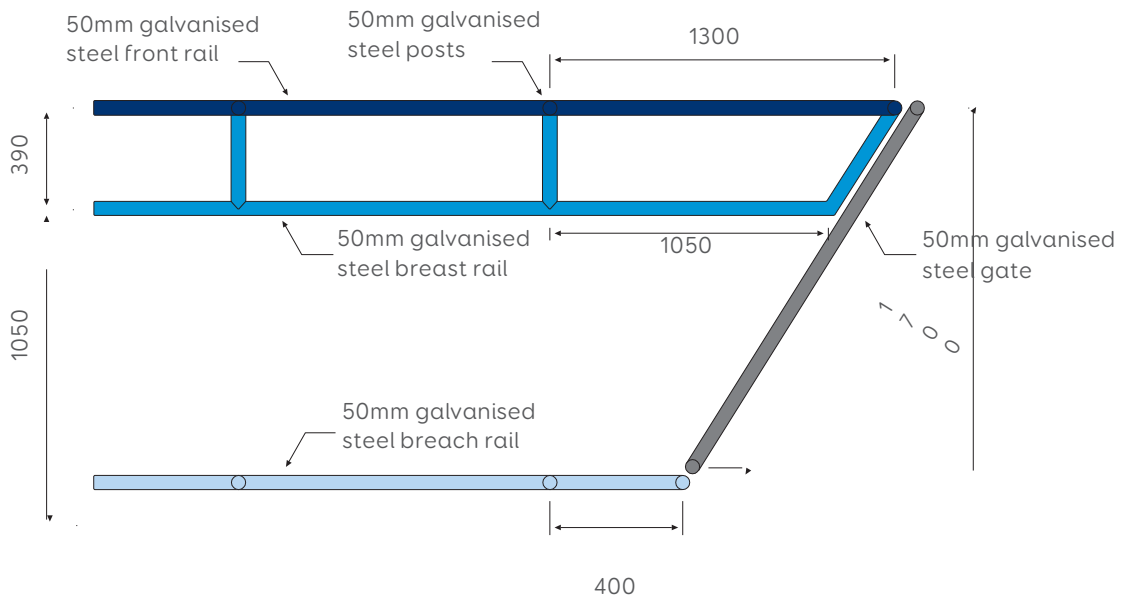
### Covered Roof

The technician must have a close covered area to load inseminators protected from all weather

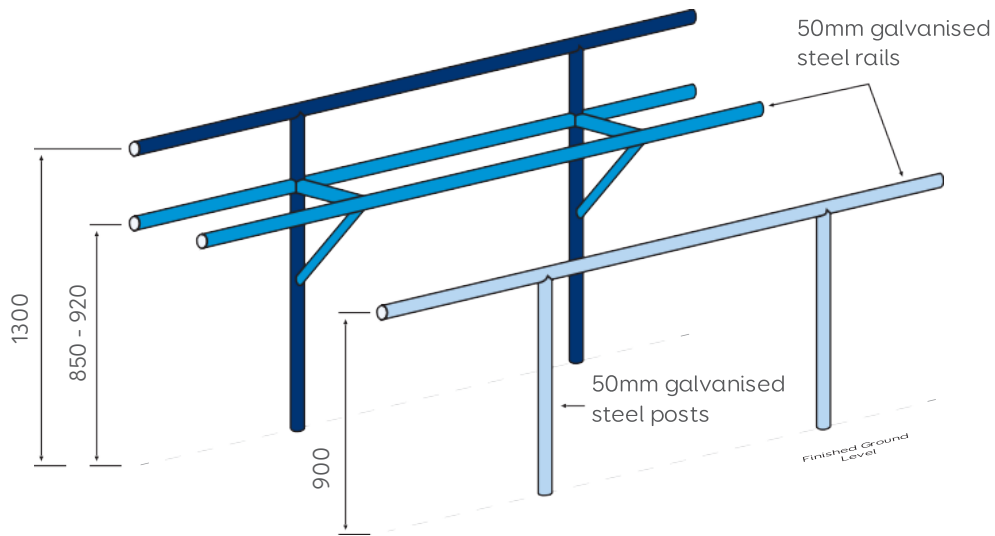


# Guide for a basic Dedicated AB race

## Top View



## Side View



### Legend

- 50mm galvanised steel front rail
- 50mm galvanised steel breach rail
- 50mm galvanised steel breast rail
- 50mm galvanised steel gate



## 4. Designing rotary dairy AB facilities



The entry and exit bridges of many rotary dairies are suitable for AB, provided they meet the conditions for safe and efficient facilities as described in the second section of this handbook.

If all cows to be inseminated are loaded onto the rotary platform before insemination starts, this will provide a safer and more efficient work area for AB Technicians.

Cows can be held within the bail during insemination by using metal chains with hooks at the ends to fit the width of the bail, or a temporarily fixed bar at the entry/exit bridge.

Shelter from direct sunlight and bad weather must be provided for the AB Technician and the semen.

If the entry and exit bridge is unsuitable for AB, then a separate AB platform is required for AB Technicians. The following platform designs provide for a safe and efficient work area.





## EXTERNAL ROTARY DAIRY 1

### A. Separate external AB platform

The AB platform must be the same height as the milking platform and shaped to follow the contour of the rotary platform with the gap between the AB platform and the rotary milking platform no greater than 100mm. The milking platform should have either animal friendly nonslip flooring or an edge around the platform to prevent an animals foot sliding off and creating the potential for a technician's arm to get caught against the bum rail and to prevent injury to the hind legs of animals if they slide down.

The AB platform must have stable steps with handrails for access, and appropriate safety rails surrounding the platform along edges.



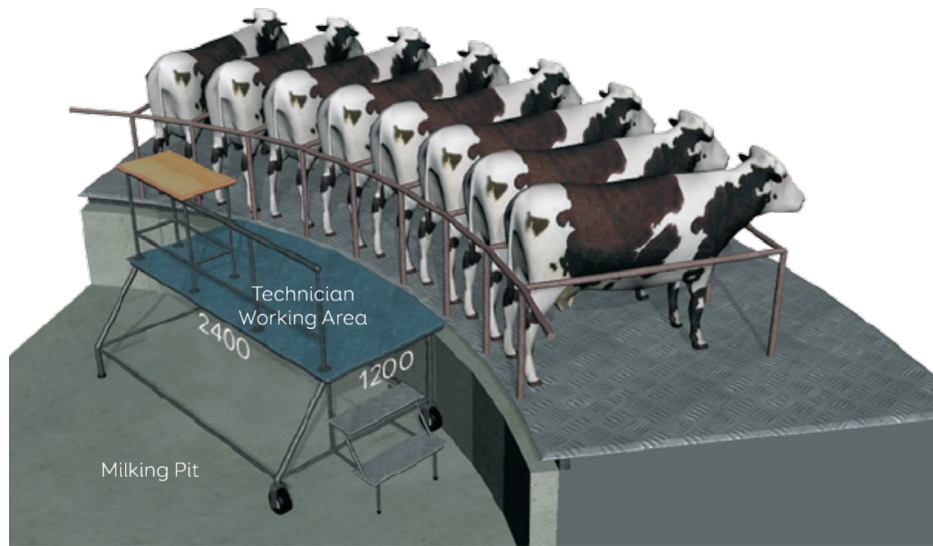
## EXTERNAL ROTARY DAIRY 2

### B. External AB platform hinged from wall

This is a similar concept to the previous example but hinged at the dairy wall and supported by chains from the wall or from the roof, to allow it to be folded away when not in use. The shelf or bench work area can also be hinged and supported by a chain.

The AB platform must be the same height as the milking platform and shaped to follow the contour of the rotary platform with the gap between the AB platform and the rotary milking platform no greater than 100mm. The milking platform should have either animal friendly nonslip flooring or an edge around the platform to prevent an animals foot sliding off and creating the potential for a technician's arm to get caught against the bum rail and to prevent injury to the hind legs of animals if they slide down.

Clear access to the AB platform and it must have appropriate safety rails surrounding the platform edges.



## INTERNAL ROTARY DAIRY

### C. Separate internal AB platform

The AB platform is located on the inside of the rotary milking platform.

The AB platform must be the same height as the milking platform and shaped to follow the contour of the rotary platform with the gap between the AB platform and the rotary milking platform no greater than 100mm. The milking platform should have either animal friendly nonslip flooring or an edge around the platform to prevent an animals foot sliding off and creating the potential for a technician's arm to get caught against the bum rail and to prevent injury to the hind legs of animals if they slide down.

Clear access to the AB platform and it must have appropriate safety rails surrounding the platform edges.

## 5. Designing a basic single-file AB race suitable for cows and yearlings

If designing a race for the primary purpose of Artificial Breeding it is recommended to consider a herringbone set up as described later in this booklet. They are much more time efficient and offer the ability for multiple technicians to work if synchronisation programs are adopted.

### Construction Material

The most durable is galvanised piping. Timber can be effective provided it is solid.

### Roof

The loading preparation area must be protected from the weather and sunlight.

### Floor

Poured concrete is the most suitable flooring for the technician working area provided it is well kept and prevented from becoming slippery.

### Race Width

600 - 800mm internal width.

### Race length

Minimum race length should be 2000 mm but can be longer.

### Side entry gate requirement

A side entry gate allowing the technician to step in behind the animal presented for AB is required. The gate must lock across the path of any other animal waiting for service and trying to move forward.

### Back Bar

Must be provided to ensure safe separation from the animals. 900mm high and multiple locking locations should be present to suitably contain animals of different size. The bar must be long enough to ensure it does not slip out if animal movement is considerable.



## 6. Contacts at LIC



### **We are here to help you**

If you require further assistance with upgrading your AB facilities, please contact your Regional AB Operations Manager- phone numbers are listed on our website [www.lic.co.nz](http://www.lic.co.nz) or ring AB Field Support 0800 454 222.

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