

ANIMAL BIOSCIENCES DEPARTMENT

Feed Mixing Facility Room 174

Standard Operating Procedure

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Purpose: Ensuring personnel using equipment are informed & understand the operating procedures.

Hours of operation (Mon to Fri 9:00 am to 4:15 pm)

1) Getting the PPE (personal protective equipment) safety box and keys

- once training has been received the PPE materials and keys can be signed out from Rm. 254 ABS

2) Returning the PPE safety box and keys

- the material is *signed out on a DAILY basis* - return everything to room 254 by no later than 4:30 pm

- sign the Amixer@ duo-tang that you have returned the materials and keys

- if there are any problems we need to be aware of - seek out either Linda or Manfred before leaving

Training, Fees, Designated individuals & Emergencies

- Posted inside facility, and at the entrance to the facility - emergency contacts

Dom Bureau's lab (Rm. 047 ext 56688)

Manfred Hansel (Rm. 254 ext 53700)

1) Training

- all individuals (includes helpers) **must receive training** (by the designated trainer) prior to use of the facility – remember there ***MUST be a minimum of TWO trained people*** in the room when the machines are running - training sessions are run as requested (with advance notice)

2) Fees to use the Facility - outside users (other departments/other universities)

- get coding / determine method of payment before proceeding

- start up fee / instructions \$75

- to use mixer \$150/ day for 1 mixer (Hobart)

- if using 2 mixers, the second mixer is \$100/ day

3) Misuse of the equipment/facilities

- misuse of the equipment or facilities, loss of PPE or keys, resulting in replacement and/or repair or clean up costs will be charged back to the supervisor of the individual using the facility

FAILURE TO FOLLOW THE RULES WILL REVOKE YOUR PRIVILEGES.

Safety

1) Location of exits and emergency equipment

A **Phone (DIAL 52000)**, **first aid kit**, as well as a **Yellow Emergency Phone** (connects directly to police) are located in the Main Hallway near the building exit (to your right as you leave facility). A fire extinguisher & eye wash unit is by the door. A washroom is around the corner to your left.

2) Safety Equipment provided

- ear protection (ear muffs & plugs), eye protection, respirator masks

Safety Equipment not provided

- safety shoes or boots, gloves, hair nets, lab coat or overalls

Use of ear protection, safety glasses, dust masks, lab coats & safety shoes/boots are required in this

facility.

3) Lock out procedures (applies to all Feed Mixers)

A key for the padlock is provided with the bin containing the protective safety equipment. Be sure the power is properly locked out before you leave (if you have problems, seek assistance.)

4) Housekeeping log - Inspections will occur periodically - cleaning as needed.

5) Noise level survey done for facility - Information available in binder with SOP=s and Manuals in room 174.

Standard Operating Procedures (SOP):

- Manuals are in a binder in facility (rm 174)

AMarion Mixer@

ALarge Hobart Mixer@ - 2 units

Definitions: Marion mixer is designed to mix no more than **500-550 pounds (250kg)** of ground feed products.

Hobart Mixer - used to mix small amounts of feed product (**25 kg max wet feed or 12.5 kg dry feed**)

Task Requirements:

NOTE – For use of ANY of the feed mixers – a minimum of 2 PERSONS IS REQUIRED ON SITE AT ALL TIMES for this activity. MANDATORY!!!!

1. Do not operate any feed mixer without prior instruction. If 6 months have elapsed since you last operated equipment in this facility, review instructions with trainer.
2. The dust collector does not need to be on to use the **Hobart mixers**. The **Marion Mixer WILL NOT operate** unless the dust collector is on. The ventilation baffle **MUST** be open to the mixer (you may need to close some of the grinder baffles but leave at least 2 OPEN in the room). A pole with a hook on the end is available to open and close the baffles or use the step stool..
3. Keep feet, hands, loose clothing, jewelry and long hair away from moving parts.
4. Wear proper safety equipment, safety shoes/boots, ear protection, a particle dust mask, gloves and safety glasses or goggles, when mixing feeds. **REQUIRED!**
5. Read the MSDS before starting to mix any chemicals into feeds.
Know the Potential **Health Effects**, **First Aid Measures**, and **Clean Up Measures** for spills.
6. Inspect the mixer to ensure that there is no visible damage to it or its components. Check that all guards and shields are in place.
7. Do not perform any maintenance on the mixers without proper authorization. Lock off power supply to the mixer, before servicing, performing maintenance or when the mixer is not in use.
8. Be familiar with all the controls before starting the task. Heed all operational instructions posted. If you are unsure of something, ask for help before proceeding.
9. **CLEAN UP** after yourself. Floors can be vacuumed and hosed down (keep the water at floor level and away from the grinders). Clean the safety ear muffs and eye wear.
10. **Housekeeping does NOT clean or empty garbage from this facility - so empty garbage.**
11. Return the Safety Equipment blue bin and keys to the appropriate location. You will be billed for

missing equipment or keys.

Trouble Shooting. If a malfunction occurs, IMMEDIATELY discontinue use (shut off the power with the stop button. Lock and tag out the power source.) Report the problem..

Description of Feed mixing task: MARION MIXER

NOTE - USE OF ANY OF THE FEED MIXERS - MINIMUM OF 2 PERSONS REQUIRED ON SITE AT ALL TIMES FOR THIS JOB - - FAILURE TO FOLLOW THE RULES, WILL REVOKE YOUR PRIVILEGES.

Can mix:

250 kg of feed (500 - 550 lb)

To achieve thorough mixing, mix for NO LESS than 20 minutes MINIMUM.

Before starting be sure trap door underneath is closed

- Closed = lever to the right (engages kill switch)
- Open = lever to the left

Mixer won't run unless plant grinder ventilation is on.

MARION MIXER - Inside of mixer can be swept out with broom and hosed out.

a) Feed is dumped into the top of the mixer (some edible oil may be used to reduce dust)

b) Close the lid

c) Turn mixer on at the labeled switch located on the wall

d) Mix for 20 minutes minimum

e) Stop mixer

f) Open trap door at the bottom of the mixer and collect some of the feed into a rubber bin - the contents of this are dumped back into the top of the mixer (some of the feed gets trapped where the door is and doesn't get well mixed)

g) The mixer is turned on again for another 10 minutes

h) The mixer is turned off and the mixed feed removed via the bottom trap door and caught into bins

You must thoroughly clean out the inside of the mixer when you are done!! No exceptions!!

Maintenance note – applies mostly to Hobart Mixers: Physics Workshop has some information regarding specs for building the current cages around the Hobart mixers, otherwise not many records – what is available in ABS is in tech manual filing cabinet – for significant repair issues seek Manfred Hansel's advice.

Description of the task: HOBART MIXERS (2 pages)

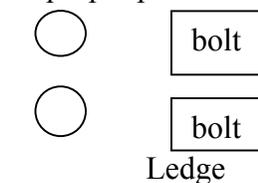
NOTE - USE OF ANY OF THE FEED MIXERS - MINIMUM OF 2 PERSONS REQUIRED ON SITE AT ALL TIMES FOR THIS JOB - FAILURE TO FOLLOW THE RULES, WILL REVOKE YOUR PRIVILEGES.

Can mix:

*25 kg of Aheavy@ feed or 12.5 kg of Alight@ weight feed - otherwise feed will fly everywhere.
If mixing Apremix@ do not mix for less than 20 minutes MINIMUM for thorough mixing*

HOBART MIXER Wash blades in the sink and the bowls washed or wiped out with paper towels.

1. Follow the Aelectrical operating directions@ posted (also provided here in greater detail).
 - **Insert key** into selector switch on the wall and turn to **Aon@ position**
 - **One light** should be illuminated in the window of the control panel
 - The mixer is electrically de-energized.
 - **Open mechanical door latch**
 - **Attempt to open the gate**
 - If successful **install bowl, ladle and feed stuff (see specific directions #3 below)**
 - If gate is held closed by gate switch, turn thumbwheel of gate switch in clockwise direction until gate is released.
2. Re the gate lockout mechanism - should initially find the gate unlocked,
 - **Counter-clockwise** turn of the thumbwheel on top of the gate **locks** the gate,
 - See item # 4 below for locking the gate
 - **Clockwise unlocks** the gate.
3. **Place the mixing bowl into the bowl holder on the mixer.**
 - If using the smaller bowl, there is a spacer collar required first before attaching the bowl.
 - Small bowl will accommodate 12 to 15 kg dry material, and liquid to within 2 inches of the top of the bowl.
 - Large bowl needs to be removed from the cart it sits on in order to fit on the mixer.
 - Grasp the handles on the bowl with the tab of the bowl pointing away from you. This aligns the bowl for proper placement on the mixer.



- **VERY IMPORTANT** - The tab on the bowl fits UNDER the ledge. The tab fits into the slot on the mixer and the tabs below the handles will fit down on the mixer and can be locked in place. **[The tab on the bowl MUST fit properly, with the 2 pins slipping into the holes on each side of the bowl.]**

- The two handles can be adjusted to clamp bowl into position
- Attach the appropriate paddle.

- **Add feed to the bowl AFTER** the bowl and paddle are attached to the mixer

4. **Close the gate.** Turn thumbwheel switch counter-clockwise until gate is held by gate switch.
5. Close the mechanical **door latch**.
6. Slowly turn **thumbwheel switch counterclockwise** until all **5 lights** are illuminated in the window of the control panel.
7. To start the mixer, **press the Start push button** on the mixer.
8. Controls operate like a standard transmission, clutch and 4 gears (1 to 4). With the **clutch lever** in the stop position (ie Aneutral@, straight up and down), select a speed with the speed lever. Normal operation is **speed #1**. Anything higher is too fast for dry feed. There are four speeds - faster as you move from #1 to #4. #2 speed used for liquids (less resistance).
9. **Engage the clutch lever** by positioning it to the run position.



10. **Select a time:**
 - Anything less than 20 min will not do a thorough job of mixing,
 - Caution set at Ahold@ and mixer will run until the motor burns out – DON'T.
11. **With the paddle slowly rotating, raise the bowl** by pushing the raise lever (to the right) and holding until the bowl reaches the mixing height. (When you hear a change in sound, like gears jumping- STOP immediately)
12. **Allow the mixer time to mix.** Do not attempt to open gate while mixer is in operation. Mixer will automatically de-energize. If this occurs, only 1 light will be illuminated, repeat steps #4 to #7.
13. After mixing complete, **disengage the clutch lever** by positioning it in the top/neutral position.
14. **Lower the bowl** by pulling the raise lever (left) and holding it until the bowl reaches the bottom. You will feel it change when it gets to the bottom. **Press the stop pushbutton.**

Make sure to leave enough room to tip the bowl under the mixing paddle.
15. IF REQUIRED - To clean the paddle of excess feed, change the speed selector up one position. Engage and disengage the clutch from stop to run and back to stop again quickly once or twice.
16. Move the speed selector back to the number 1 position. Engage the clutch selector to the run position. Stop the mixer by pushing the stop pushbutton. When the paddle stops turning, move the clutch lever to the stop/neutral position.
18. Follow the Aelectrical operating directions@ to open the gate..
 - Turn **thumbwheel switch clockwise until only 1 light is illuminated** in the window of the control panel. Gate will now be released.
 - **Open gate. Unlock the bowl** from the mixer and **remove the bowl.**
 - Close gate & the mechanical door latch - BUT leave the thumbwheel in current position.
 - Turn the **selector switch to Aoff@**, and remove the key.

Hobart Floor Standing Mixer Schematic

Animal Biosciences Department Rm. 174

Controls operate like a standard transmission, clutch and gear.

Small bowl will accommodate 12 to 15 kg dry material, and liquid to within 2 inches of the top of the bowl.

Large bowl needs to be removed from it's cart to fit on mixer. Note the "hook" on the bowl.

Gears (Clutch): Goes faster as you move from #1 through #4.

#1 for most dry material (20 min for a good mix)

#2 for most liquids

Timer: generally always use on at least 15 to 20 minutes.

