

# Tuning and Maintenance Instructions

## Vibratory Feeders

### Air Gap

Check the air gap between the coil and the armature. The gap should always be even across the face of the coil.

### Checking the Tuning (With a Non-Compensating Controller)

Check the tuning by turning on the unit and adjusting the control so the parts just start to move in the feeder.

Check that all springs are separated by spacers, top and bottom, in each rack of springs. Break one bolt loose on one rack of springs while you observe the parts in the feeder.

- If the feeder speeds up and continues to do so as you further loosen the bolt, the feeder is over tuned and the resonance frequency will have to be dropped by removing a spring or lowering a clamp on 8", 10", or 15" Base drives. This is the most common tuning problem as the springs tend to work harden over time.
- If the feeder slows down, the drive is under tuned and a spring(s) will have to be added.
- On the 8", 10", and 15" Base units the clamp(s) can be raised but only to the top of the posts. Raise or lower these clamps in small increments as the forces of the leaf springs increase or decrease by the cube of the length. The unit is properly tuned, when the feeder speeds up as you initially break the bolt loose and then slows down as you continue to loosen the bolt.

Precise Tuning Frequency may be measured using an "Amplitude Feed Back" Controller.

### Spring Force

**Rule of Thumb-** The "stiffness" of a given spring for a feeder can be compared to other springs by using Mazza's Rule of *The Square of the Numerator*.

Estimating replacement springs required of a different thickness can be determined by the following method.

- Measure the thickness of the broken leaf spring in sixteenths of an inch.
- Square the numerator of that fraction
- Measure the springs available to replace the broken spring.
- Add the squares of the numerators to match as close as possible, the squared numerator of the broken spring. For instance, if the broken spring is 3/8" thick you would convert the fraction 6/16" and square the numerator,  $6 \times 6 = 36$ , so the value of the broken spring would be 36. Two 1/4" springs ( $4/16"$ ) or  $2 \times (4 \times 4) = 32$  and one 1/8" ( $2/16"$ )  $2 \times 2 = 4$  equal the value of the 3/8 spring.

## Checking the Tuning

The Tuning on a **Bowl** **must** be checked by means of an "Amplitude Feed Back" controller.  
The following Procedure should be used to carry out this task.

If the tuning is high, usually due to spring's work hardening, remove the necessary spring(s). If the tuning is low, usually due to a broken spring or springs, replace or add the necessary spring(s).

Currently the best procedure is to tune our feeders' to the following frequency ranges.

- Tune rectified units on a 60 cycle power line to 57 to 64 Hertz.
- Tune rectified units on a 50 cycle power line to 47 to 54 Hertz.
- Tune straight AC units on a 60 cycle power line to 115 to 126 Hertz.
- Tune straight AC units on a 50 cycle power line to 95 to 106 Hertz.

## General Maintenance

1. The bowl should be kept reasonably clean and in good repair.
  - **Bowls with spray on coatings: (Truck bed style coatings, urethane, Teflon, etc.)**
    - General cleaning of dirt and dust should be done with a window cleaner type of solution and a soft clean cloth.
    - Oily or greasy dirt should be cleaned with a general non-butyl degreaser and a soft cloth.
  - **Bowls with glued in linings: (Red urethane, rubber, etc.)**
    - General cleaning of dirt and dust should be done with a window cleaner type of solution and a soft clean cloth.
    - Oily or greasy dirt should be cleaned with a general non-butyl degreaser and a soft cloth.
    - Butyl degreasers should not be used as it may affect the adhesive.
  - **Bowls that are Stainless Steel Non-Coated:**
    - General cleaning of dirt and dust should be done with a window cleaner type of solution and a soft clean cloth.
    - Oily or greasy dirt should be cleaned with a general non-butyl degreaser and a soft cloth.
    - Once oily build up is removed, wipe down with alcohol to remove any remaining oily residue.
  - **Bowls with Brushlon Lining:**
    - Remove all the parts from the bowl and use a vacuum Cleaner to remove foreign debris from the Bowl.

**Caution: Do not use flammable cleaning solvents in the presence of Sparks or Open Flames.**

2. In harsh environments over time, Metal Dust Particles may collect in the Coil's "Air Gap", impeding the bowls performance. This can be cleaned periodically by the use of compressed air, make sure the power is off and the bowl is not running.

**Caution: This should be done by qualified personnel only, wearing proper safety equipment.**

For additional information on equipment preventative maintenance see the support page on our website.

Questions can also be submitted to [support@moorfeed.com](mailto:support@moorfeed.com) or call us at (317) 545-7171.

## **Standard First Year Warranty**

- 1. Setup and installation assistance is not covered under this warranty.**
- 2. Moorfeed warranty covers labor, expense, and materials for a service call as a result of:**
  - Faulty workmanship and/or materials
  - Not meeting performance specifications as mutually agreed upon in writing
- 3. Moorfeed warranty does not cover service costs when:**
  - A part's condition, geometry, or tolerances have changed from the parts supplied during the manufacturing of the feeder system, such as:
    - Additives on parts:
      - Oil
      - Coolant
      - Silicone
      - Silicone impregnated parts
      - Mold release
      - Grease
      - Any other substance that was not present at the time of quoting or during the manufacturing process
    - Part Geometry or Tolerance:
      - Any internal or external change
      - Excessive burrs
      - Flashing
      - Mold strings
      - Mold protrusion
      - Bent / twisted (out of tolerance)
      - Short shots
      - Foreign matter
  - Equipment is altered by anyone other than Moorfeed personnel, without the approval of a Moorfeed representative:
    - Bending air jets
    - Cutting, grinding, filing
    - Adjusting timer settings
    - Shimming covers
    - Modifying OEM components
    - Lengthening tracks
    - Shortening tracks
    - Relocating photo eyes
  - Environmental conditions that affect system performance:
    - Extreme temperature fluctuations or extreme temperatures
      - Changes in temperature greater than 50° f in a 24 hour period
      - Temperatures below 32° f or above 120° f
    - Oily atmosphere
  - Air pressure, voltage and frequency are not constantly maintained at the specified levels.
  - Improper setup:
    - Must have proper electrical and pneumatic connections
    - System must be level
    - Have substantial mounting
    - Proper air gaps between transfer points
    - Isolated from external vibration
  - Improper interface with equipment provided by others.
  - Moorfeed service technician incurs "Stand-By" time.  
(Time, which through no fault of their own, a Moorfeed service technician cannot perform work on our equipment.)
- 4. Any purchased component is subject to the manufacturer's warranty and is transferrable by Moorfeed**
- 5. Moorfeed does not cover travel or expenses on equipment shipped and installed outside of the continental United States.**

**For service, contact the customer service department at (317) 545-7171 or [support@moorfeed.com](mailto:support@moorfeed.com). Be sure to have the equipments serial number available for reference.**

**Warranty period begins 30 days from shipment of equipment from our plant.**

Moorfeed Corporation

Phone: (317) 545-7171 | Fax: (317) 375-1906 | [www.moorfeed.com](http://www.moorfeed.com)