ERIEZ

GLOBAL LEADER IN SEPARATION TECHNOLOGIES

Installation, Operation & Maintenance Instructions

VIBRATORY FEEDER

MODEL 100B-HC

INTRODUCTION

This manual details the proper steps for installing, operating and maintaining the Eriez Vibratory Feeder.

Careful attention to these requirements will assure the most efficient and dependable performance of this equipment.

If there are any questions or comments about the manual, please call Eriez at +1-814-835-6000 for Vibratory Feeder assistance.

☒ Original instructions (English)

☐ Translated from the original instructions

General Description of the Product

The Eriez electromagnetic vibratory feeders are tuned two-mass systems that convey material across a tray. The B-HC feeders operate at either 50 Hz or 60 Hz depending upon the line frequency. The feeders consist of two masses coupled by tuning springs. The Eriez B-HC feeders utilize electro-permanent magnet driving force. When the coil is energized, the alternating current creates an AC magnetic field between the e-frame and the permanent magnet armature poles, producing a harmonic driving force between the e-frame and the poles, which drives the feeder. This motor design creates an equal and opposite driving force on both masses. B-HC feeders are used to convey products across the tray. The product is introduced to the feeder from a hopper or another conveyor.

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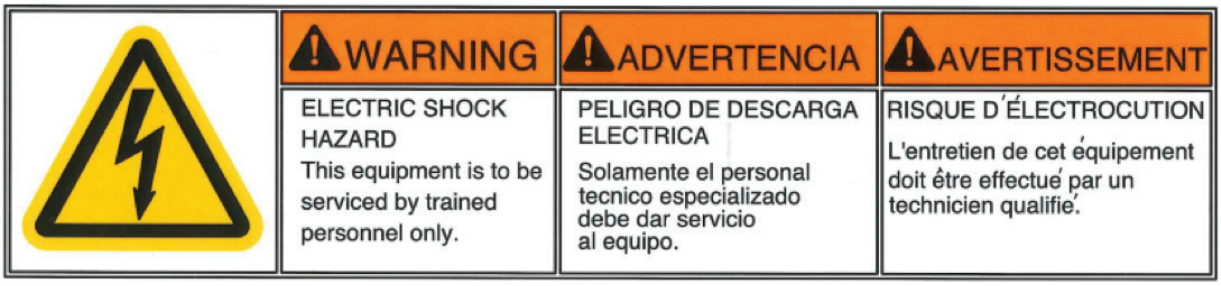
The following information can be found on the name tag installed on the feeder:

- Company name
- Feeder model number
- Feeder style
- Serial number for the feeder assembly
- Feeder rated voltage and frequency
- Feeder maximum current draw at rated voltage
- Feeder tuned tray stroke

Environmental Conditions

These feeders are designed to be operated both indoors and outdoors in non-hazardous locations.
IP Rating: IP65
Minimum Ambient Temperature: -28.9°C (-20˚F)
Maximum Ambient Temperature: 54.4°C (130˚F)
Maximum Humidity: 90%
Maximum Elevation: 1829m (6000 ft)

FEEDER SAFETY



This warning label indicates that hazardous voltage can be present and the machine should only be serviced by qualified personnel who are properly trained in isolating the electrical power prior to starting any service work.

This warning label indicates that high temperatures may be present on this surface which could cause a burn.

This warning label indicates that the user must read and understand the operator's manual and all other safety instructions before using this equipment.

CAUTION

Safety labels must be affixed to this product. Should the safety label(s) be damaged, dislodged or removed, contact Eriez for replacement.

Feeder Safety

- Feeder drive produces strong magnetic fields
- AC and DC magnetic fields are present during operation. These fields may cause harm to implantable medical devices.
- The armature of the feeder driver contains permanent magnets that produce a strong magnetic field that cannot be turned off. This field can attract ferrous items and pinch or entrap body parts. Only qualified personal should service the feeder drive.
- The customer must evaluate if hearing protection is required for nearby personnel operators. The study should be conducted with the actual material being conveyed by the feeder.
- The customer must evaluate any airborne dust hazards during feeder operation. Eriez can provide a tray with covers and dust boots to reduce airborne dust.
- A static charge can be produced with certain materials. It is the customer's responsibility to determine if static charges are a problem. Eriez can provide a feeder with a grounding strap to eliminate static.
- The operator must keep a safe distance from the moving parts of the feeder during operation. The feeder should not be operated with personnel sitting, laying or standing on the feeder.
- Caution must be used to clear any blockages of material. The operator must be at a safe distance not to be entrapped by uncontrolled material once blockage is removed.

ERIEZ

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HANDLING & TRANSPORTATION

Only qualified personnel should be rigging or installing the feeder on location.

Use proper handling equipment that is rated for the weight of the feeder.

Operators of forklifts and other lifting devices should follow proper and safe operational use.

Operators of hoist equipment should always follow proper rigging procedures.

Equipment should remain in its original shipping crate and packaging during transportation.

STORAGE

Prior to storage, equipment should be carefully inspected for shipping damage. Should damage have occurred, immediately contact freight carrier and Eriez Manufacturing.

Equipment should remain in its original shipping crate or packaging and be placed in a clean, dry area.

For electronic controllers, in addition to the above, a rust inhibitor should be placed inside the control enclosure.

Desiccant must be removed from control enclosure prior to wiring control.

Controls should not be stored in temperatures above 43°C (110°F).

INSTALLATION

General

Safety slings should be installed under feeder assembly to safeguard against the tray and driver tipping or falling during an extreme failure of the feeder or its suspension mounts. Only qualified personnel should be rigging or installing the feeder on location.

Mounting

Refer to *Eriez Vibratory Feeders Hopper Transition and Installation Guide* for additional information regarding appropriate hopper and other transitions for vibratory feeders.

These Eriez heavy duty feeders may be mounted in any of the following ways:

Suspension Mounting

Suspend front and rear of feeder from cables attached to the suspension bracket eyebolts ***(Parts 49 and 50 on Parts List)***. Refer to ***Table 1*** for suspension cable size. Safety cables are also recommended for suspension mounted feeders ***(See Figure 1)***.

TABLE 1 Suspension Cable

Rear Suspensions	Max Safe Working Loads	Front Suspension	Max Safe Working Loads
13 mm cable (1/2")	1542 kg (1.7 ton)	13 mm cable (1/2")	907 kg (1.0 ton)

WARNING

Suspension mounting inherently involves risk of property damage or personal injury to equipment or personnel located under or near the machine, should a mounting cable fail. Suspension component specifications given in this manual are suggestions only, and final selection of suspension method is entirely the responsibility of the user. Select and use suspension cables with rated capacities (including reduction factors for clamps, etc.) that provide adequate safety factors when the weight of the equipment and all possible loading conditions and upsets are taken into account. Consult Eriez at +1-814-835-6000 if additional Eriez equipment information is needed to make this selection. As with all suspended equipment, access to the area under the machine should be restricted.

Figure 1
Suspension Mount Feeder

NOTE:

Do not suspend from eyebolts threaded horizontally into the tray or drive housing. Eyebolts loaded at right angles to their shanks may fail unexpectedly causing damage to equipment or personal injury.

Floor Mounting

Mount front and rear of feeder on the floor mounting accessories provided as an alternate to the suspension accessories. The mounting bases ***(Part 53 on Parts List)*** should be bolted to the floor or other mounting surface, and the unit, with the floor mounting springs ***(Parts 51 and 52)***, simply placed on the bases — *no fastening necessary* ***(See Figure 2).***

Figure 2
Floor Mount Feeder

Combined Suspension & Floor Mounting

Any combination of suspension and floor mounting means may be utilized. The details of any such combination will, of course, be dictated by the particular application. The instructions given above should be followed.

IMPORTANT NOTE:

Special Trays and Attachments

Eriez engineering service should always be consulted before undertaking the design or construction of special trays. Neither standard nor special trays as furnished by Eriez should be modified or attachments made without first consulting us. ***Unauthorized alterations void Eriez' warranty.***

INSTALLATION *(cont.)*

Electrical Connections

The Eriez Vibratory Feeder is designed to be operated from an AC source. It cannot be operated from a DC source. All wiring should conform to all applicable electrical codes and should be installed by a licensed electrician.

For safe operation, it is the customer's responsibility for proper controller installation, according to local safety codes. Only qualified personnel should install the control.

Figure 3
Eriez Feeder Control

TABLE 2 Control Data				
Voltage	Frequency	No. of Phases	Amps	Replacement Fuse When Using Eriez Control
380	50	1	30	35 A HS Class J
460	60	1	30	35 A HS Class J
415	50	1	18	25 A HS Class J
575	60	1	24	30 A HS Class J
230	50	1	36	45 A HS Class J
400	60	1	35	40 A HS Class J

Check the specifications of the power line to be certain that they are the same as those shown on the nameplate of the Feeder and Control.

To avoid being exposed to residual high voltages, the feeder must be hardwired to the control and the control must be hardwired to the power source.

The cable between the feeder and control must be of sufficient size for the current and voltage as indicated on the equipment name tag. A voltage drop through a cable of insufficient size for the required distance may result in reduced feeder displacement while operating.

The ground lead between the driver and control must be properly connected inside the control. The control ground must be properly connected to the main power circuit ground.

On multiple-drive feeders (two or more drives on one tray) all drives should be wired electrically in phase. The black wires from each power cord should be connected together and the white wires connected together. The black wires should be connected to the positive side of the single-phase input voltage and the white wires should be connected to the negative side.

Varying and unstable line frequency has an adverse effect on vibratory feeders because they are tuned mechanical devices, designed around either 50 or 60 cycle operating frequency. Shifts in the operating point due to changes in frequency (+or-1 cycle) cause higher than normal spring stress, striking and high line currents which can cause drive and tray failure. When operating from portable engine-driven power plants, be certain that the engine is up to speed and all other loads are started and at running speed before starting the feeder. The feeder should always be stopped first when the engine-driven power plant is shut down.

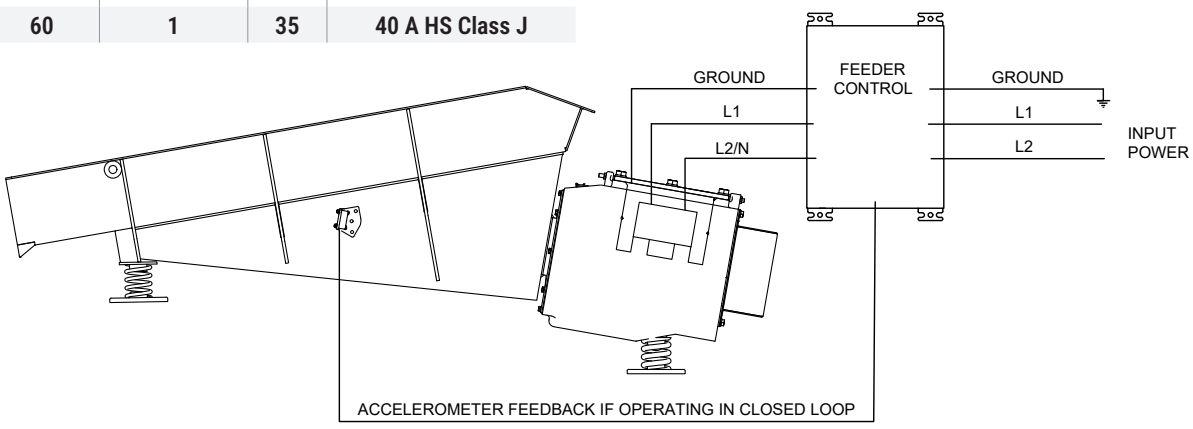


Figure 4
Feeder Wiring Diagram

INSTALLATION *(cont.)*

Feeder Control

To take full advantage of the feeder capacity, it is recommended to utilize a feedback accelerometer in closed loop control.

Customer bears responsibility for proper controller selection and installation for safe operation. It is the responsibility of the customer to use safety devices/relays to ensure that the feeder does not create a hazard by automatically restarting after a power failure.

The control being used to operate the feeder must utilize a soft start feature to start the feeder. Starting the feeder without a soft start will result in motor striking and motor damage.

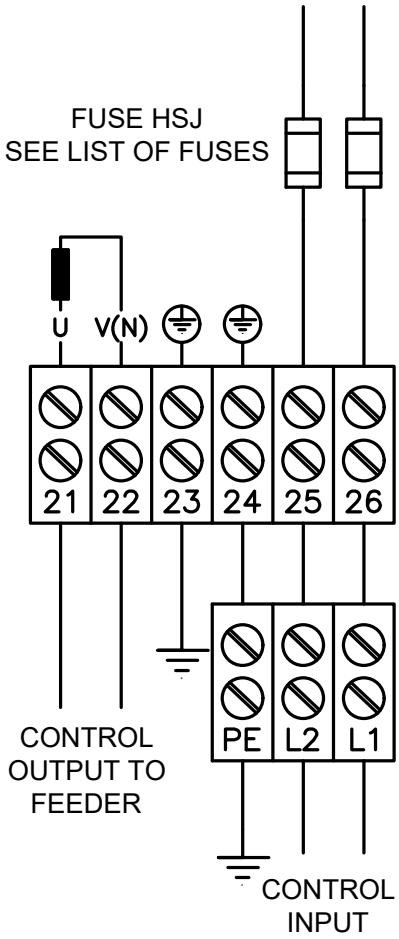


Figure 5
Eriez Supplied Control Wiring Diagram

OPERATION

To start the vibratory feeder after all connections have been made, turn the switch on the control to the "ON" position and adjust the feed rate by rotating the control knob. With the tray empty and the control knob set to maximum, start and stop the feeder several times. No motor striking should occur. If striking occurs, increase the soft start ramp up time in the control until the feeder no longer strikes at start up.
Do not operate the unit with any associated equipment touching any part of the unit.

No routine maintenance or lubrication is required, except that any accumulation of foreign matter should be periodically removed from the tray and between the tray and the body to prevent restriction of movement of the vibratory elements.

Adjustment (Tuning)

Eriez feeders, when shipped from the factory with a tray, are tuned and require no further adjustment. However, if the tray is to be attached in the field or replacement liners installed, etc. final tuning may be required. In this instance, the instructions outlined below should be followed: This unit is adjusted by changing the stiffness of the springing system. Spring stiffness adjustment consists of varying the number of springs ***(Parts 16-21 on Parts List)*** at the back of the unit or the thickness of individual springs. Access to the rear springs is gained by removing the cover ***(Part 3)*** at the back of the unit ***(See Figure 6)***. In tuning, the front springs need never be disturbed. In normal operation at full voltage with the unit fully warmed up, the displacement of the tray, measured at the back of the tray or the tray mounting brace is 2.16 – 2.29 mm (0.85" – 0.90") for a 100B-HC. Excessive displacement will result in noisy operation of the unit and may, if continued, cause damage to components.

CAUTION

(Please Read Carefully): Only those feeder trays approved by Eriez are acceptable under the limits of our warranty. Any modifications, alterations, or changes of any degree must be approved by the Eriez Manufacturing Co. This is a tuned device and the correct tray must be applied to the motor drive for which it is tuned.
NEVER OPERATE THE UNIT IN A STRIKING CONDITION!

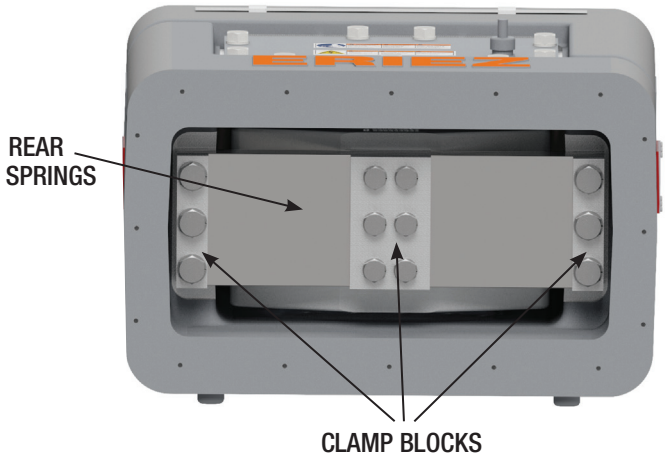


Figure 6
Rear Tuning Springs

Adjustment (Tuning) Guide

The following general rules should be kept in mind when making adjustments:

1. To **increase** the tray displacement, **decrease** the stiffness of the spring system.
2. To **decrease** the tray displacement, **increase** the stiffness of the spring system.

The above rules are true where the unit is operating on the normal side of its tuning curve. If increasing or decreasing the spring stiffness has an effect opposite to that noted in (1) or (2) above, it means that the mass of the tray and/or load has been great enough to throw the operating point to the reverse side of the curve, which is undesirable. In this event, the stiffness should be increased (or the tray-load mass reduced) until the behavior is in accordance with rules (1) and (2) above. The unit can then be properly tuned.

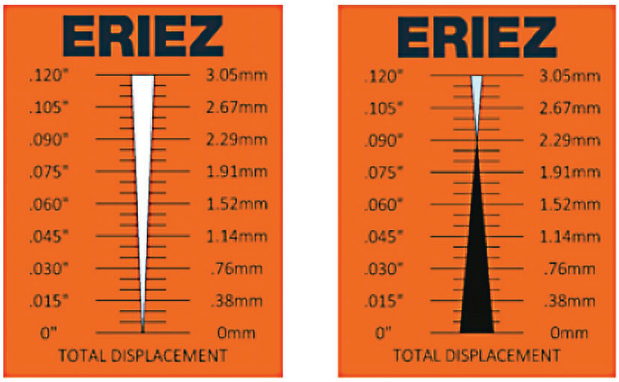
Normally, spring thicknesses of 13, 11, 10, 8, 6, and 5 mm (1/2", 7/16", 3/8", 5/16", 1/4", and 3/16") are used. To serve as a guide in tuning, the following spring stiffness figures should be used: 11 mm (7/16") thick spring is approximately 69% as stiff as a 13 mm (1/2"); 10 mm (3/8") thick spring is approximately 65% as stiff as a 11 mm (7/16"); 8 mm (5/16") thick spring is approximately 60% as stiff as a 10 mm (3/8"); 6 mm (1/4") thick spring is approximately 53% as stiff as a 8 mm (5/16"); 5 mm (3/16") thick spring is approximately 44% as stiff as a 6 mm (1/4") thick spring.

Example: to slightly increase the deflection of a unit, a 6 mm (1/4") thick spring could be removed and replaced with two 5 mm (3/16") thick springs. Or, to slightly decrease the deflection of a unit, two 5 mm (3/16") thick springs could be removed and replaced with one 6 mm (1/4") thick spring. These combinations must be determined by the existing springs on the rear spring stack.

OPERATION *(cont.)*

How To Measure Displacement

With the unit operating, observe where the fine gray lines on the displacement sticker meet. This point will be higher or lower as the displacement changes. Opposite the point where they meet, read amount of displacement.



Displacement Label at 0 mm

Displacement Label at 2.29 mm (0.090")

Figure 7
Displacement Sticker

Tuning with New Tray

In the adjustment of the unit, the following steps should be followed:

1. Attach the tray ***(Part 55 on Parts List)*** and draw all bolts tight. Make sure the inner tray clamp ***(Part 5)*** and tray surfaces in contact with the inner tray clamp are clean and free of dirt, oil, rust, etc. prior to mounting tray. Torque 20 mm bolts ***(Part 42)*** per Table 3. Check motor air gap ***(See Steps 8 and 9 under Coil Replacement.)***
2. Energize the unit at the voltage and frequency shown on nameplate.
3. If a control box is used, turn potentiometer from 0% to 100% slowly and observe the unit in operation.
   a) If a hammering noise is in evidence, the tray displacement is excessive.
   To produce normal quiet operation, increase the stiffness of the rear spring stack by substituting a spring of greater thickness for one or more of the rear springs, or by adding additional springs until the displacement is approximately 2.16 – 2.29 mm (0.85" – 0.90") Additional springs may be purchased from Eriez ***(See Parts List Items 16-21)***.
   b) If the displacement so measured is considerably less than 2.16 – 2.29 mm (0.85" – 0.90"), decrease the spring stiffness by substituting springs of lesser thickness. If the displacement is much more than 2.16 – 2.29 mm (0.85" – 0.90"), increase the spring stiffness by substituting springs of greater thickness.

In changing tuning springs, put the clamp blocks ***(Parts 12 and 13 on Parts List)*** back on the same way they came off ***(See Figure 13)*** to ensure smooth clamping surfaces against the springs. All clamping bolts ***(Parts 30-34 and 36-40)*** should have a thread engagement of not less than one and one-half times the bolt diameter and should be drawn very tight ***(See Bolt Torque Information in Table 3)***.
If "bottoming" of bolts should occur, washers of sufficient thickness to prevent "bottoming" should be used under the bolt heads.

To insure proper clamping pressure, threads should be lightly coated with a molybdenum disulfide anti-seize compound.

KEEP COMPOUND OFF OF CLAMPING SURFACES.

TABLE 3 Bolt Torques by Item Number

Item Number	Description	Torque	
		N-M	Ft-lbs
30-34	Bolt Hex HD M24-3 Plated Class 8.8	678	500
36-40	Bolt Hex HD M20-2.5 Plated Class 8.8	366	270
41	Bolt Hex HD M20-2.5x70 mm Plated Class 8.8	298	220
42 (Electrical Ass'y)	Bolt Hex HD M20-2.5x50 mm Plated Class 8.8	380	280
42 (Tray)		325	240

REPAIRS

CAUTION

The 100B-HC armature assembly should only be removed by an Eriez on site technician or sent back to Eriez for repair due to the strong magnetic force produced from the RE Magnets. Failure to follow this procedure can result in serious bodily injury or armature assembly failure.

CAUTION - STRONG MAGNET

This equipment includes one or more extremely powerful magnetic circuits. The magnetic field may be much stronger than the Earth's background field at a distance several times the largest dimension of the equipment.

- If you use a heart pacemaker or similar device you must never approach the equipment because your device may malfunction in the magnetic field, with consequences up to and including death.
- To avoid serious pinch-type injuries caused by objects attracted to the magnet, keep all steel and iron objects well away from the equipment. Do not allow hands, fingers, or other body parts to be caught between the equipment and nearby steel or iron objects.
- Keep credit cards, computer disks, and other magnetic storage devices away from the equipment because magnetically stored information may be corrupted by the magnetic field.
- Keep electronic devices, such as computers or monitors, away from the equipment because exposure to the magnetic field may result in malfunction or permanent damage to such devices.

Contact Eriez if you have a question regarding these precautions.

REPAIRS *(cont.)*

Coil Replacement

The electrical assembly in a vibratory feeder may require replacement due to operation at over-voltage, or normal aging of the unit. Re-assembly will require checking and possible re-centering of the air gap between the E-frame and the permanent magnet elements. The air gap is directly accessible from the outside of the unit as described below.

The following procedure should be followed in removing and replacing the electrical assembly ***(See Figures 8 & 9)***.

1. Remove the bolts securing the electrical assembly plate to the body casing.
2. Back off the adjusting screws that position the electrical assembly plate.
3. Pry and lift the electrical assembly from the body casing, using a sling or some other safe method of lifting. ***(See Figure 9)***.
4. Replace defective electrical assembly ***(Part 28 on Parts List)***.
5. In replacing the electrical assembly, insert it into its original position in the body casing. **DO NOT FORCE THE ASSEMBLY INTO PLACE.** When properly aligned, the assembly will go in easily, although there will be a distinct pull exerted by the permanent magnets in the armature. To overcome this pull, it may be necessary to guide the plate with a pry bar, meanwhile applying pressure to the top of the plate.
6. Start the electrical assembly plate bolts into the body casing, tighten bolts and back off 1/4 – 1/2 turn.
7. Tighten the adjusting screws that position the electrical assembly plate.
8. Remove the nameplate from the side of the body casing to gain access to air gap ***(See Figure 10)***.
9. Working through the opening in the side of the body casing ***(Figure 10)*** and using a non-magnetic feeler gauge furnished with each unit, ***(Part 22)*** approximately 3 mm (100") thick, check the air gaps between the E-Frame legs and the armature pole pieces ***(See Figure 11)***. These gaps should be uniform in width and parallel and as nearly alike as possible. If they are not, they should be adjusted by shifting the electrical assembly plate with the front or rear adjustment screws. In checking the gaps, the internal parts will be easier to see if the rear cover ***(Part 3)*** is removed.
10. Tighten the electrical assembly plate bolts and replace the cover nameplate, and rear cover.

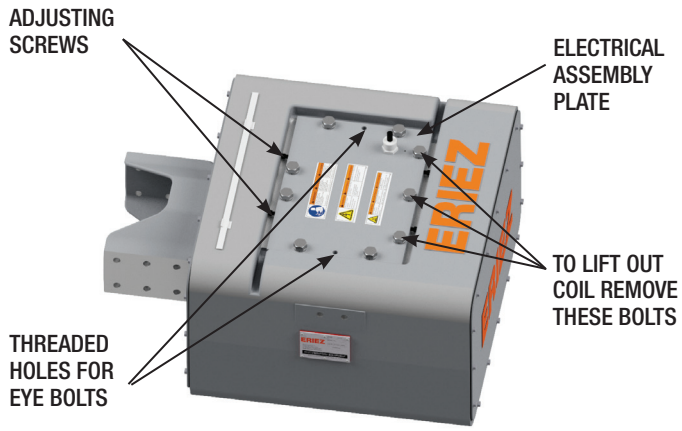


Figure 8 - Electrical Assembly Bolts

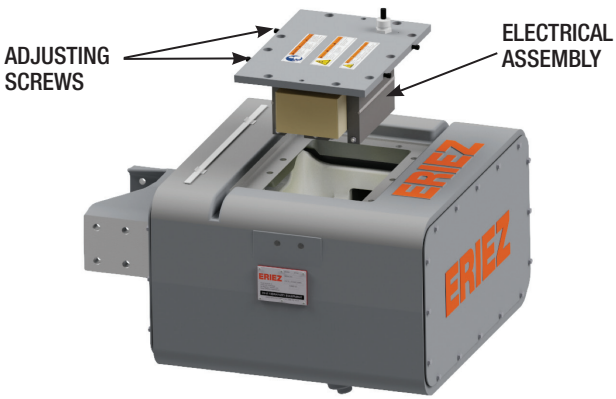


Figure 9 - Electrical Assembly Removal

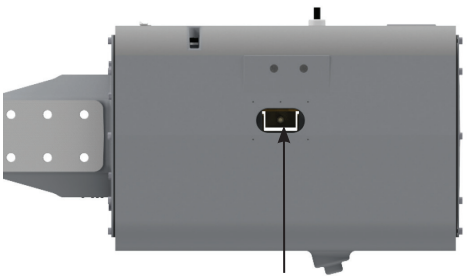


Figure 10 - Access Port

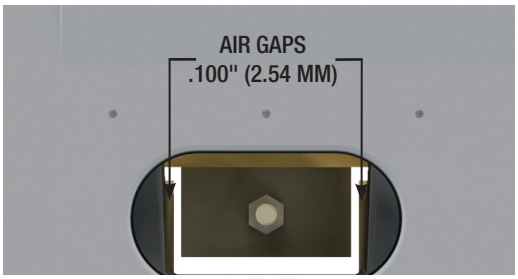


Figure 11 - Motor Gap

REPAIRS *(cont.)*

Spring Change or Replacement

Although the metallic leaf springs have outstanding life characteristics, failure may eventually occur, especially if the displacement is greater than normal. The symptoms of such failure are:

1. Erratic behavior of the unit,
2. Greatly reduced displacement
3. Greatly increased and perhaps uncontrollable displacement

If spring failure is suspected, the front and rear spring stacks should be removed, checked, and replaced one stack at a time. Replace broken or cracked springs with springs of equal thickness.

NOTE: *Fractures in springs are not always visible. Tapping springs to obtain a distinctive ring ensures no fractures present. If sound is dull, replace spring, as it has fractures.*

Replacement of Front Springs

1. Remove diaphragm clamps and rubber diaphragm from front of unit — ***Parts 7, 8 and 9 on Parts List (See Figure 12).***
2. Remove tray clamp attached to armature ***(Part 5).***
3. Remove spring bolts, spring clamps, spacers, and springs.
4. Replace springs and reassemble unit by reversing above procedure.
5. Torque all spring bolts per ***Table 3***.
6. Torque tray clamp bolts per ***Table 3***.

Replacement of Rear Springs

1. Remove rear sheet metal cover.
2. Remove rear spring bolts, spring clamps, spacers, and springs ***(See Figure 13).***
3. Replace springs and reassemble entire unit by reversing above procedure.
4. Torque all spring bolts per ***Table 3.***

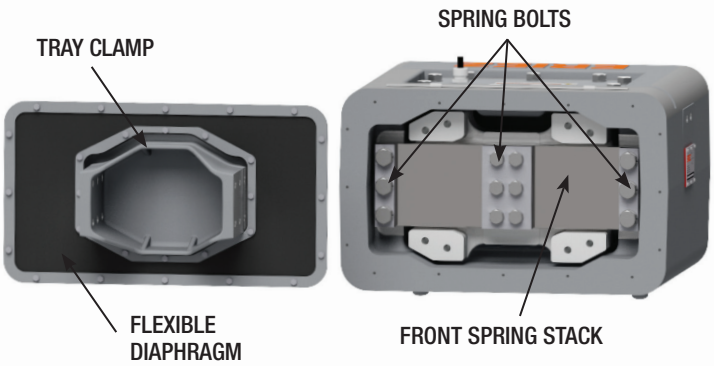


Figure 12

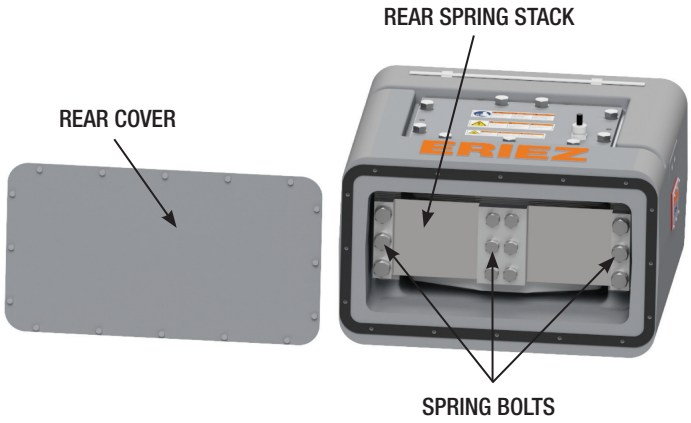


Figure 13

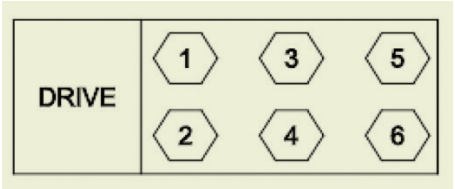


Figure 14

Torque Procedure for Tray Bolts

1. Apply a thin coating of NEVER-SEEZ to the internal threads of the tray clamp ***(Item 5)***.
   Keep the mounting surface free of NEVER-SEEZ.
2. Install bolts with flat washers ***(Items 42 and 44)*** into threaded hole in the tray mount.
3. Torque bolts ***(Item 42)*** to 325 N-M (240 FT-LBS) using the numbered pattern above ***(See Figure 14).***
4. Repeat the pattern a second time to ensure all bolts are at proper torque.
5. After 1 hour of run time, re-torque using the same pattern to 325 N-M (240 FT-LBS).

DRIVE SEALING PROCEDURE

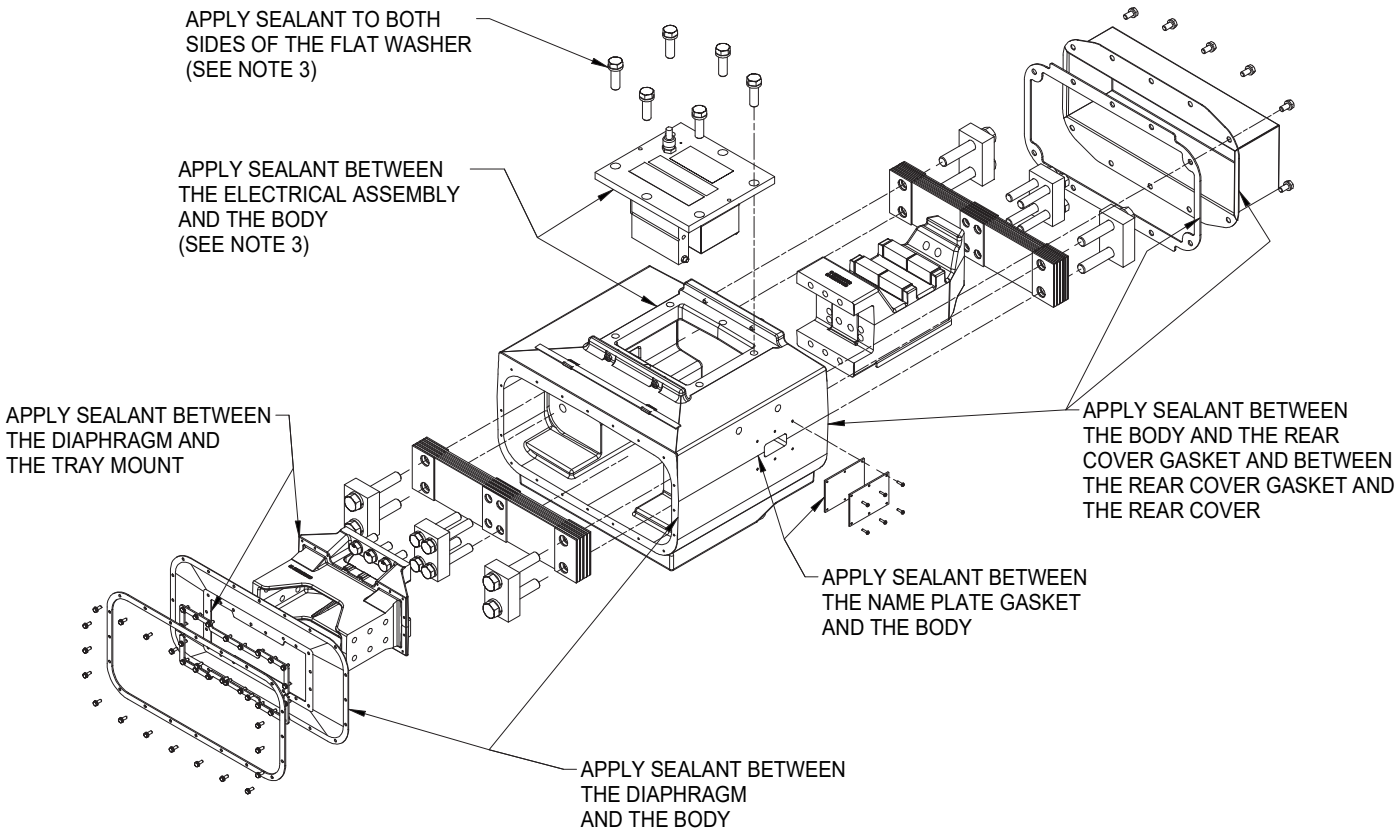


Figure 15
Drive Sealing

The drive must be sealed to maintain an IP65 rating.
Dow 732 sealant is recommended.

1. Apply a 6 mm (1/4 inch) bead of sealant to all identified surfaces unless noted otherwise.
2. The sealant should be applied just prior to assembly. Do not let the sealant cure before completing assembly.
3. The electrical assembly and armature must be gapped and fasteners torqued per the torque table prior to the sealant curing.
4. Torque all fasteners per the specified torque.
5. Wipe off any excess of sealant once parts are assembled.

TROUBLESHOOTING

1. Feeder Not Operating

a. Check fuses.
b. Check input voltage.
c. Check output voltage and current (amps).
d. If voltage is going to feeder coil, check coil for open or ground.

2. Slow Output of Feeder

a. Check current on feeder at 100% voltage with the tray empty. If current is higher than nameplate reading, check for broken tuning springs.
b. Check for broken tray mounting bolts.
c. Check for cracked welds and cracks in the tray.
d. Check for worn tray or liner.
e. If tray is enclosed, the booting to the inlet and outlet must be flexible, as not to restrict tray movement.
f. Check air gap.

3. Feeder Is Noisy (metal-to-metal striking sound)

a. Check for broken isolation coil springs (suspended or floor mount).
b. Check if the tray is rubbing on a hopper, chute work or anything else in the area.
c. Check air gap per manual.
d. Check current on feeder at 100% voltage with the tray empty. If the current is higher than the nameplate reading, then check for broken tuning springs.

PREVENTATIVE MAINTENANCE

1. Check suspension, and keep feeder clear of hopper and all other objects.
2. Check for build-up of product in the tray. Remove any build-up.
3. Check deflection.
4. Check current on feeder (should be within nameplate rating).
5. Check liners in tray for wear and loose bolts. If liner is to be replaced, use same thickness material.
6. Inspect power cord. Do not operate feeder if power cord is damaged.

PARTS LIST

NOTE: *1) Refer to sticker on tray for model and serial number, consult Eriez.*

Item Number	Item Name	Quantity	Drawing Number	Group Number	Part Number
1	100B DRIVE ASSEMBLY 460/60 VAC	1	202307160	1	202307160G1
	100B DRIVE ASSEMBLY 575/60 VAC			2	202307160G2
	100B DRIVE ASSEMBLY 230/50 VAC			3	20230716OG3
	100B DRIVE ASSEMBLY 400/60 VAC			4	202307160G4
	100B DRIVE ASSEMBLY 380/50 VAC			5	202307160G5
	100B DRIVE ASSEMBLY 415/50 VAC			6	202307160G6
2	BODY MACHINING	1	202306950		483112
3	REAR COVER	1	202400427		202400427G1
4	REAR COVER GASKET	1	202400429		483620
5	TRAY CLAMP MACHINING	1	202306350		483111
6	NAME PLATE GASKET	2	202203520		481016
7	DIAPHRAGM	1	202400411		483621
8	DIAPHRAGM OUTER CLAMP	1	202400396		202400396G1
9	DIAPHRAGM INNER CLAMP	1	202400393		202400393G1
10	IDENTIFICATION NAMEPLATE	1	202203523		481020
11	100B-HC LOGO PLATE	1	202400530		483624
12	INNER SPRING CLAMP BAR	2	202307092		483622
13	OUTER SPRING CLAMP BAR	4	202307093		483623
14	INNER SPRING SPACER	AS REQ'D	202307094		202307094G1
15	OUTER SPRING SPACER	AS REQ'D	202307095		202307095G1
16	STEEL SPRING, 13 mm (1/2")	AS REQ'D	202307085	1	483630
17	STEEL SPRING, 11 mm (7/16")	AS REQ'D	202307085	2	483631
18	STEEL SPRING, 10 mm (3/8")	AS REQ'D	202307085	3	483632
19	STEEL SPRING, 8 mm (5/16")	AS REQ'D	202307085	4	483633
20	STEEL SPRING, 6 mm (1/4")	AS REQ'D	202307085	5	483634
21	STEEL SPRING, 5 mm (3/16")	AS REQ'D	202307085	6	483635
22	GAP GAGE	1	202404475		202404475G1
23	DECAL WARNING SHOCK HAZARD	1	201005042		456970
24	DECAL READ INSTRUCTION MANUAL	3	201004007		456858
25	DECAL WARNING BURN HAZARD	1	201004486		456916
26	DECAL TRAY MODIFICATION WARNING	1	202402390		483101
27	ERIEZ LOGO	1	202306863	3	202306863G3
28	ELECTRICAL ASSEMBLY 380/50, 460/60 VAC	1	202400321	1	202400321G1
	ELECTRICAL ASSEMBLY 415/50, 575/60 VAC			2	202400321G2
	ELECTRICAL ASSEMBLY 230/50 VAC			3	202400321G3
	ELECTRICAL ASSEMBLY 400/60 VAC			4	202400321G4
29	ARMATURE AND MAGNET ASSEMBLY	1	202400479		202400479G1
30	BOLT HEX HD M24-3X140 mm PLATED CLASS 8.8	AS REQ'D	N/A		232776
31	BOLT HEX HD M24-3X130 mm PLATED CLASS 8.8	AS REQ'D	N/A		232778
32	BOLT HEX HD M24-3X120 mm PLATED CLASS 8.8	AS REQ'D	N/A		232777
33	BOLT HEX HD M24-3X110 mm PLATED CLASS 8.8	AS REQ'D	N/A		232759
34	BOLT HEX HD M24-3X100 mm PLATED CLASS 8.8	AS REQ'D	N/A		232732
35	WASHER LOCK M24 PLATED	12	N/A		436555
36	BOLT HEX HD M20-2.5X130 mm PLATED CLASS 8.8	AS REQ'D	N/A		231064
37	BOLT HEX HD M20-2.5X120 mm PLATED CLASS 8.8	AS REQ'D	N/A		468940
38	BOLT HEX HD M20-2.5X110 mm PLATED CLASS 8.8	AS REQ'D	N/A		468939
39	BOLT HEX HD M20-2.5X100 mm PLATED CLASS 8.8	AS REQ'D	N/A		226139
40	BOLT HEX HD M20-2.5X90 mm PLATED CLASS 8.8	AS REQ'D	N/A		226138
41	BOLT HEX HD M20-2.5X70 mm PLATED CLASS 8.8	8	N/A		433902
42	BOLT HEX HD M20-2.5X50 mm PLATED CLASS 8.8	21	N/A		232793
43	WASHER LOCK M20 PLATED	20	N/A		226141
44	WASHER FLAT M20 PLATED	21	N/A		435579
45	BOLT HEX HD M8-1.25X20 mm PLATED CLASS 8.8	44	N/A		468825
46	WASHER LOCK M8 PLATED	44	N/A		431550
47	SCREW SELF TAP MS M4-0.7 X 16 mm PAN HD PLATED	12	N/A		232735
48	CLAMP FLAT CABLE FCC-A-C8, PANDUIT	2	N/A		813633
49	SUSPENSION MOUNTING ASSEMBLY, TRAY	2	202307851	2	202307851G2
50	SUSPENSION MOUNTING ASSEMBLY, DRIVE	2	202307851	4	202307851G4
51	FLOOR MOUNTING SPRING, TRAY	1	1N-61703	1	143014
52	FLOOR MOUNTING SPRING, DRIVE	2	1N-62904	1	143016
53	FLOOR MOUNTING SPRING BASE	3	1N-59628		385120
54	ACCELEROMETER	1	N/A		476355
55	TRAY	1	SEE NOTE 1		

PARTS LIST

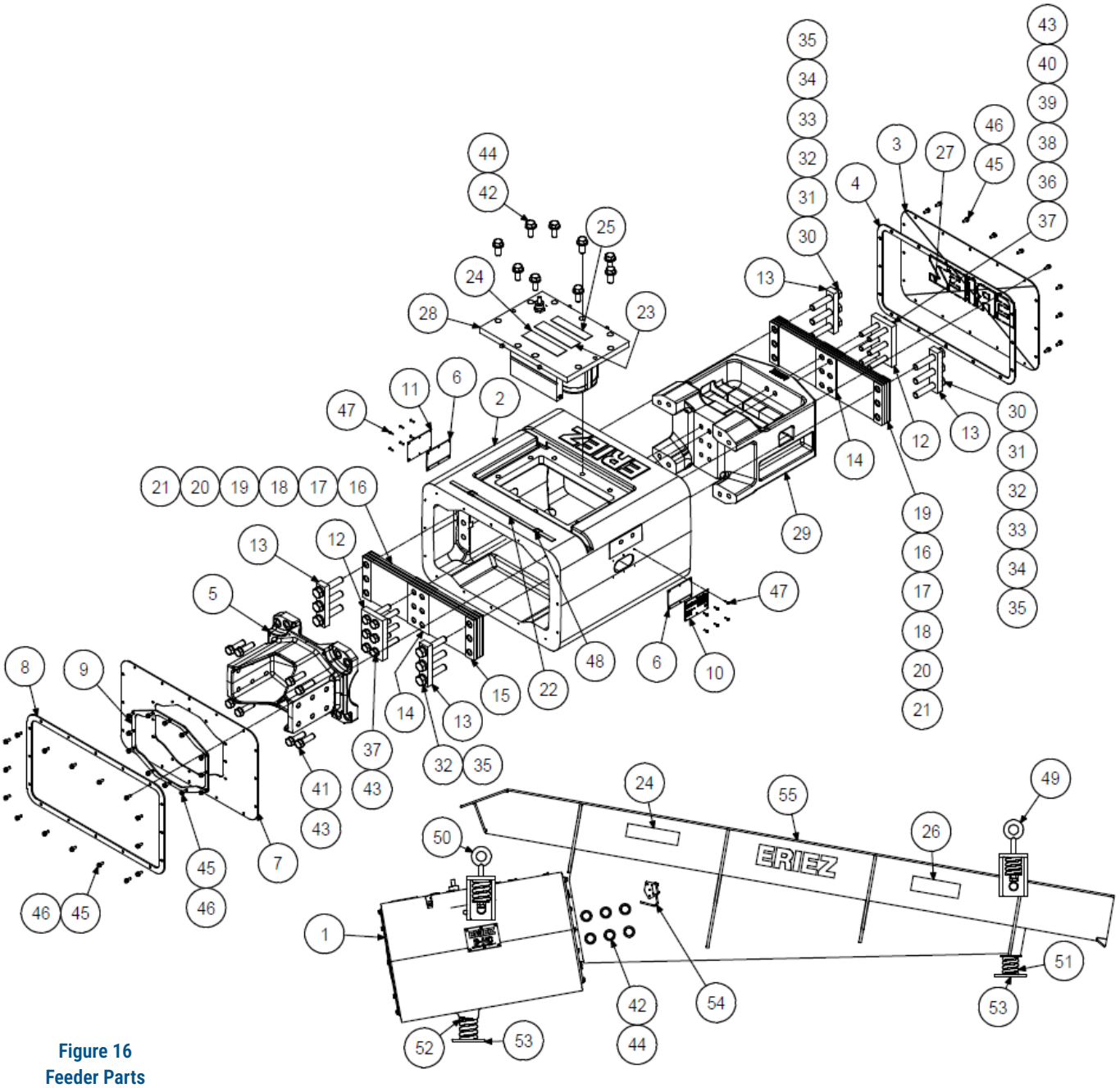


Figure 16
Feeder Parts

ERIEZ

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