



QUICK CLEAN LUMP BREAKER INSTALLATION, OPERATION, and MAINTENANCE MANUAL

MODEL: _____

SERIAL NO.: _____

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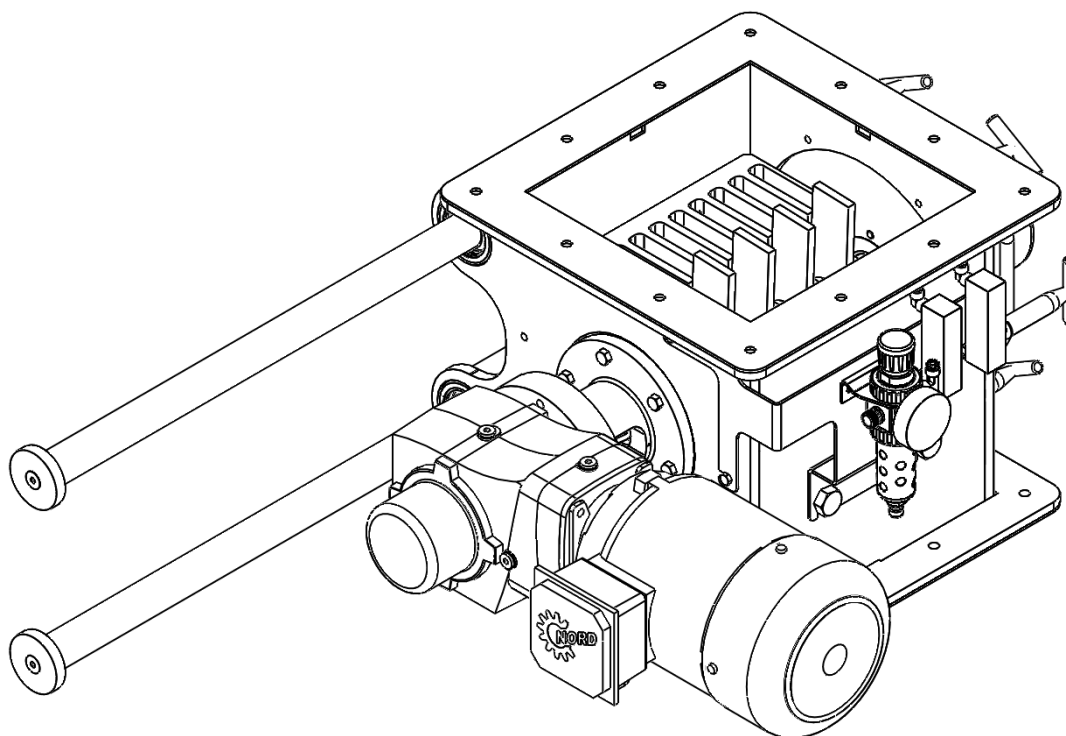


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Introduction

This manual contains complete instructions for the installation, operation, and maintenance of Prater equipment. Reliable operation, safety, and long service life of this equipment depends on three important considerations:

- A. The care exercised during installation.
- B. The quality and frequency of maintenance and periodic inspections.
- C. A commonsense approach to its operation.

Safety

Safety must be considered through all facets of the operation and maintenance on any mechanical device. Using proper tools and methods can prevent serious accidents which might result in serious injury to you or your fellow workers.

Proper operating procedures and safety precautions are listed throughout this manual. Study them carefully and follow the instructions; and insist that those working with you do the same. Almost all accidents are caused by someone's carelessness or negligence.

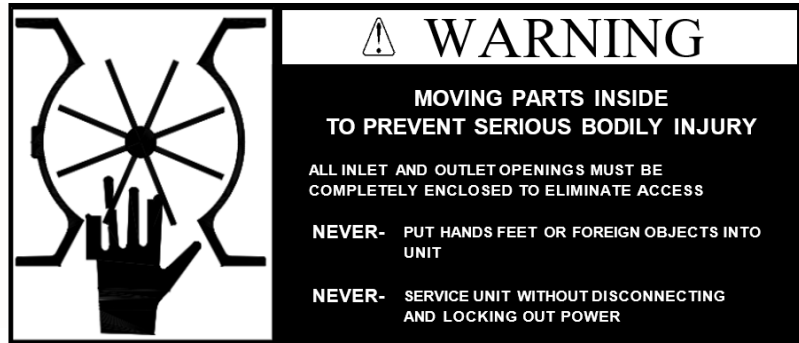
The precautions listed may not necessarily be all-inclusive and other precautions pertinent to your specific application and/or industry may not be addressed in this manual. In addition, nearly all employers are now subject to the Federal Occupational Safety and Health Act of 1970, as amended, which requires that an employer be kept abreast of the myriad of regulations, which will continue to be issued under its authority.

This equipment must be operated in accordance with the instructions and precautions in this manual and on the caution plates attached to the equipment. At all times only persons completely familiar with the instructions and precautions in this manual should operate this equipment.

FAILURE TO OBSERVE AND FOLLOW THE PRECAUTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR PROPERTY DAMAGE.

SAFETY CHECKLIST

- **ALWAYS** operate Quick Clean Lump Breaker in accordance with instructions in this manual.
- **DO NOT** open end plate while unit is in motion.
- **NEVER** work on unit and related components unless electric power and motor drive have been locked out and tagged. Follow local and national electrical codes.
- **DO NOT** use the Quick Clean Lump Breaker for processing of material other than specific application for which it was designed.
- **NEVER** poke or prod into the unit openings with a bar or stick.
- **KEEP** area around unit, drive and control station free of debris and obstacles.
- **NEVER** operate unit without guards and all safety devices in position and functioning.
- **ALWAYS** allow a unit to stop naturally. **DO NOT** attempt to artificially brake or slow motion of unit.
- **NEVER** put your hand near, on, or in the inlet or outlet of the airlock while it is operating or stalled.
- **ALWAYS** have a clear view of unit loading and unloading points and all safety devices.



Section

1

SECTION 1: SAFETY RULES

1.1 Safety Rules

Safety must be considered through all facets of operation and maintenance on any mechanical device. Using proper tools and methods will help prevent accidents and serious injury to you and your fellow workers.

Proper operating procedures and safety precautions are listed throughout this manual. Study them carefully and follow instructions; insist that those working with you do the same. Most accidents are caused by someone's carelessness or negligence.

Examples of the four types of safety notices (Danger, Warning, Caution and Notice) in this manual are listed below:



DANGER: Indicates an imminently hazardous situation in, which personal injury or death may occur.



WARNING: Indicates a potentially hazardous situation in, which personal injury or death may occur.



CAUTION: Indicates a situation where damage to the equipment could result.



NOTICE: Provides helpful information for proper operation of the Quick Clean Lump Breaker.

1.2 Safety Precautions

WARNING

OPERATORS must be instructed not to put hands, fingers or other foreign objects in the machine, and not to remove any cover, door, hatch or other protective device. Covers, doors, hatches and other protective devices are placed on this machine for the safety of the operator. Any attempt to defeat these devices could result in serious injury.

DANGER

ELECTRICAL SERVICE to the machine must be locked out while any repairs or adjustments are being made or while any cover, door, hatch or other protective device is not in place.

The precautions listed in this manual may not be all-inclusive and others might occur to you which are particular to your operation or industry. In addition, nearly all employers are now subject to the Federal Occupational Safety and Health Act of 1970, as amended, which requires that an employer be kept abreast of the myriad of regulations which will continue to be issued under its authority.

The Quick Clean Lump Breaker must always be operated in accordance with the instructions and precautions in this manual and on the caution labels attached to the equipment. Only workers completely familiar with the instructions and precautions in this manual should be permitted to operate the unit. The operator should thoroughly understand these instructions and precautions before attempting to operate this equipment.

On page 2 is a checklist of safety precautions and proper operating procedures. Failure to observe and follow the precautions may result in serious personal injury or property damage.

NOTICE

THE safety label placements shown in Figure 1-2 are typical placement locations. Locations may vary and/or additional labels may be present as per the model and application of your Quick Clean Lump Breaker.

1.3 Quick Clean Lump Breaker Safety Labels

Figure 1-1 shows the safety labels used on the Quick Clean Lump Breaker. These labels are important for worker information and must not be removed from the unit.



Figure 1-1: Quick Clean Lump Breaker Safety Labels

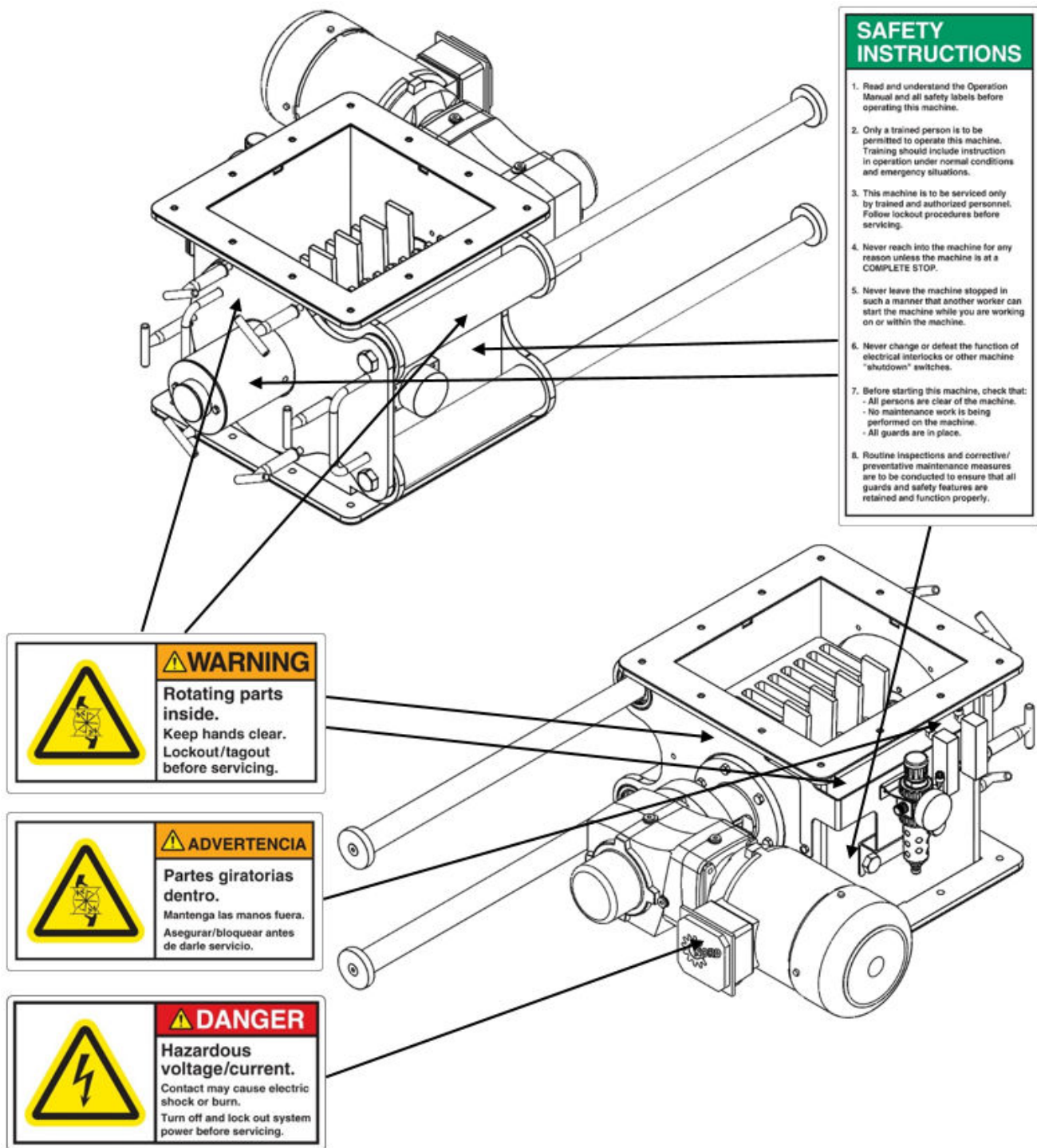


Figure 1-2: Quick Clean Lump Breaker Safety Label Placement

1.4 Quick Clean Lump Breaker Pinch Points

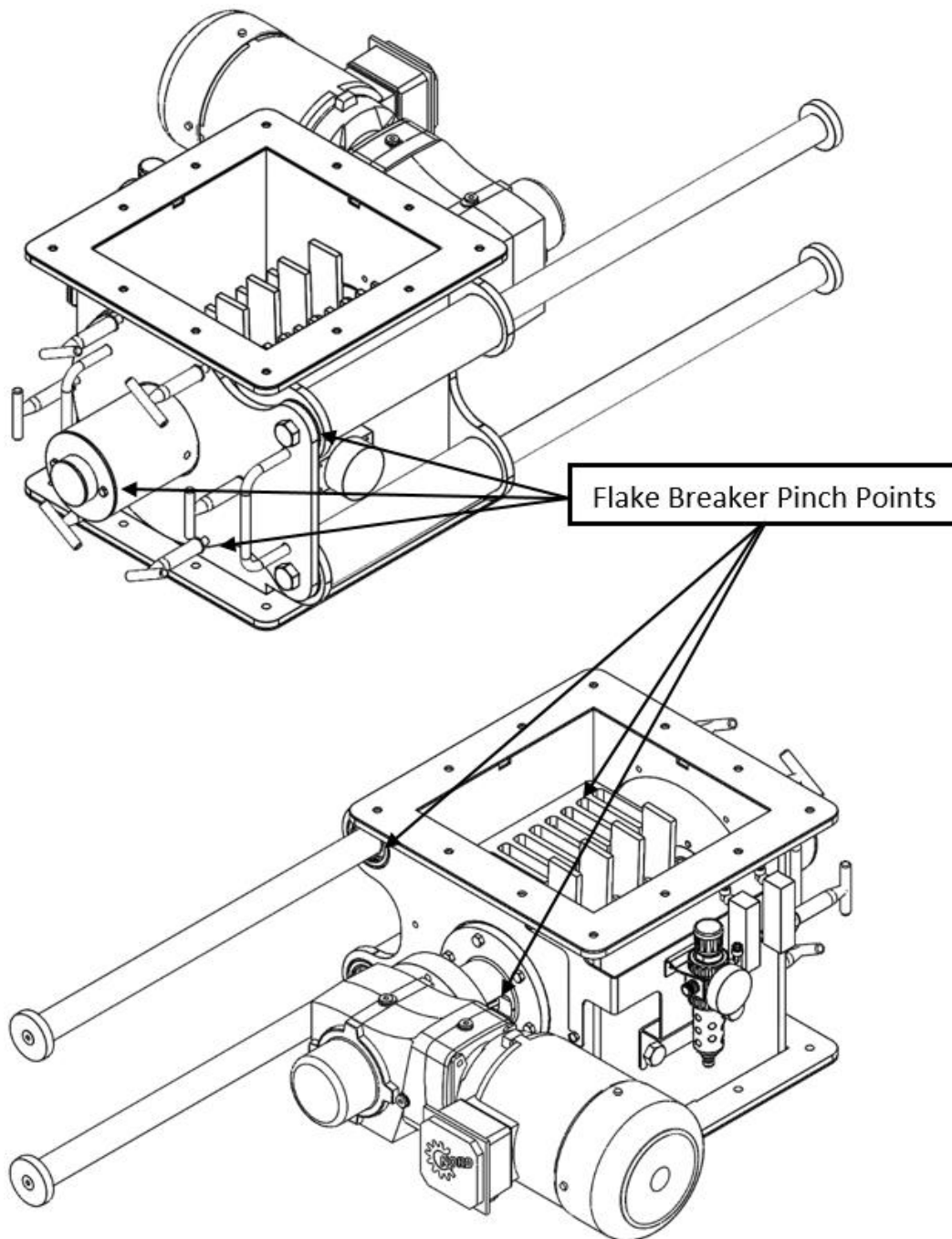


Figure 1-3: Quick Clean Lump Breaker Pinch Points



THE Quick Clean Lump Breaker contains several points where care is needed to avoid bodily injury when opening or closing the Quick Clean Lump Breaker. Failure to do so may result in serious bodily injury.

Section

2

SECTION 2: INTRODUCTION

2.1 Manual Overview

This manual describes the installation requirements, procedures, and routine maintenance of Prater's Quick Clean Lump Breaker. Refer to this manual before beginning and during installation. Keep the manual available for future reference. Exploded views are located in the rear of the manual. The procedures throughout this manual refer to these exploded views.

Reliable operation, personnel safety, and long service life of this equipment depend on three important considerations:

- The care exercised during installation.
- The frequency/quality of maintenance and periodic inspections.
- A commonsense approach to the Quick Clean Lump Breaker operation.

To keep operating costs down and profits up, carefully follow the instructions listed for installation, operation, safety, and maintenance.

2.2 Receiving the Unit

When your shipment arrives, thoroughly inspect the Quick Clean Lump Breaker and all related equipment. In the event of shipping damage, note the problem on the bill of lading or freight bill and make sure you obtain the driver's signature for a possible claim against the delivering carrier.

NOTICE

THE RECEIVER is responsible for inspection and filing claims against the carrier for any damage to the Quick Clean Lump Breaker in

2.3 Before Installation

Be sure the installation crew or millwrights are aware of installation requirements. If they have any questions or are unsure of proper procedures, clarify the matter to avoid improper installation. **Section 3** of this manual covers important steps to ensure safe, vibration-free installation. Personnel responsible for installation should be familiar with these procedures.

In preparing for your installation, make sure you provide all appropriate safety devices. Prater Industries, Inc. does not install your machine. It is your responsibility to provide lockout switches, guards, and other safety devices and safety procedures to protect the machine operator or maintenance personnel.

NOTICE

IF the Quick Clean Lump Breaker is to be installed in an enclosed room it is important to allow adequate ventilation to provide proper air volume to the Quick Clean Lump Breaker. Inadequate air volume will severely restrict throughput of the system and may cause other

2.4 Before Operation

Make sure operating personnel are well trained in procedures for operating and maintaining the Quick Clean Lump Breaker. In particular, make sure they understand the essential safety precautions described in **Section 1** of this manual.

2.5 Quick Clean Lump Breaker Applications

Prater Quick Clean Lump Breakers are used in a wide range of industrial and agricultural applications. A variety of construction materials as well as blades, pulleys and screens are available to meet virtually any material reducing needs.

When ordering parts or requesting information or service from Prater be sure to state the unit serial number.

2.6 Operating Principle

Prater Quick Clean Lump Breakers are manufactured with quality materials and workmanship and, if given reasonable care, will perform perfectly with minimum maintenance. Each part has been machined to close tolerance to assure the best possible fit between all components as well as interchangeability.

During operation, coarse material is gravity fed into the Quick Clean Lump Breaker through the top of the inlet at the top of the unit. Inside the grinding chamber is one electric motor driven shaft. This shaft is equipped with replaceable breaker blades. As the shafts rotate, the breaker blades and fixed blades break up coarse materials.

At the bottom of the grinding chamber (below the shaft) is an optional sizing screen. Once the material is reduced to the desired size it passes from the grinding chamber through the holes in the screen and gravity discharged out the bottom of the unit. Screens can be easily changed or eliminated to accommodate a desired material size.

2.7 Unit Design

Prater Lump Breakers unique design include:

- Fabricated, heavy duty housing
- Heavy cast housing and endplates for added rigidity (Cast Iron, Ductile Iron, or Stainless Steel)
- Custom designed rotors and blades for every application
- Heavy duty outboard bearing design for prolonged bearing life and to permit access to seals
- Double sealed and lubricated for life bearings
- Stub shaft design for easily removable rotor
- Endplate design that has been drilled and tapped for air purge seals, if purchased
- Endplate design that incorporates bearing retainer and packing gland
- Multiple packing design for improved sealing
- Food Grade Teflon, high temperature and air purge seals available
- Linear rail system for easy access to the rotor, blades and housing for servicing and cleaning
- Removable hand knobs for quick endplate and rotor removal

Section

3

SECTION 3: QUICK CLEAN LUMP BREAKER INSTALLATION

3.1 Introduction

Proper installation of the Prater Quick Clean Lump Breaker is critical for efficient and productive operation. The proper site preparation and placement of the Quick Clean Lump Breaker and related equipment will ensure that the unit operates safely and to its fullest capacity.

The following are important considerations in Quick Clean Lump Breaker installations:

1. **Location:** Make sure the operating location will provide strong, vibration-free base support and allow easy access to all parts of the Quick Clean Lump Breaker. Ideally it should have several feet of clearance all around it and sufficient room to service the rotor and housing internal components. The Quick Clean Lump Breaker should never be located where it is independently supporting equipment or a hopper above or below it.
2. **Leveling:** The Quick Clean Lump Breaker must be mounted horizontally on a flat surface, which has sufficient strength to prevent deflections and be large enough to incorporate the full base of the Quick Clean Lump Breaker. **Sections 3.2** and **3.3** explain how to check for proper leveling and prevention of vibration damage during operation.

3.2 Location

There are two essential considerations for the Quick Clean Lump Breaker location: the foundation below the machine and the free clearance around it.

3.2.1 Foundation

The Quick Clean Lump Breaker must be supported on a flat, vibration free location. It is recommended that all Quick Clean Lump Breakers use a gasket between the mounting surfaces to prevent any leakage of product or air.

3.2.2 Clearance

There should be a sufficient open space in all directions around the Quick Clean Lump Breaker to allow access for maintenance operations. No excessive weight can be resting on or supported from the Quick Clean Lump Breaker.

3.3 Leveling

The base of the unit must be level to prevent vibrations that will accelerate wear on the unit or cause possible damage to the Quick Clean Lump Breaker. Before tightening fasteners, check leveling at the corners of the Quick Clean Lump Breaker:

1. Insert shims for proper alignment.
2. Recheck level at corners of the Quick Clean Lump Breaker.
3. Once proper level has been achieved, tighten all fasteners.

3.4 Vibration

The Quick Clean Lump Breaker is constructed to run without noticeable vibration. Vibration indicates a problem that must be found and corrected immediately. Left uncorrected, vibration could damage the unit or cause structural damage to connected components.

There are several conditions that cause vibration including:

- Uneven base (**See Section 3.2**)
- Loose motor fasteners
- Defective motor or shaft bearings (**See Section 6**)

- Other equipment transferring vibration thru contact with the Quick Clean Lump Breaker
- Foreign material in the Quick Clean Lump Breaker
- Worn, missing, or broken breaker blades or screen (**See Section 5**)
- Deviation from the recommended balanced breaker blade set-up
- Material buildup on the shaft.

3.5 Drive

The Quick Clean Lump Breaker comes supplied with a direct drive motor installed to achieve the correct rotor RPM.

3.6 Feeding

A uniform, constant feeding process is essential for the best performance of the Quick Clean Lump Breaker. If the feeding process is not gravity, a volumetric feeder is recommended.

3.7 Electrical Requirements

Install connections to meet all national and local electrical codes. Consult with your local power company before installation.

NOTICE

THE NATIONAL ELECTRICAL CODE requires a manually operable disconnect switch located within sight of the motor, or a controller disconnecting means capable of being locked if not within sight of the motor.

Effective October 31, 1989, OSHA requires that all energy disconnect devices be capable of accepting a lock-out/tag-out device. This requirement is mandatory for any new equipment being installed or for replacement, repair, or modification of older equipment. The employer must:

- Produce a written program explaining the procedure.
- Conduct and annual inspection to verify compliance.
- Provide documented employee training in these procedures.

The Prater Quick Clean Lump Breaker may be started “across the line” if such a procedure is acceptable to your local power company. In order to limit overload on the power supply, larger motors may require reduced voltage starters to “soft start” motors in many areas.

NOTICE

WE RECOMMEND the use of a heavy duty rated VFD or electronic soft start. Direct on line (DOL) starters can produce excessive torque, which can cause damage to the unit components or complete unit failure.

3.7.1 Electrical Interlocking

As a general guide, the last piece of process equipment is started first with subsequent starts working up the line to the Quick Clean Lump Breaker.

3.7.2 Safety/Proximity Switch

If supplied, follow provided wiring diagram.

3.8 Unit Check

After installation is complete, carefully inspect all work before installation crew leaves to see that all instructions have been properly followed.

Section

4

SECTION 4: QUICK CLEAN LUMP BREAKER OPERATION

4.1 Introduction

Pre-run inspections and safety checks throughout this section ensure that the Quick Clean Lump Breaker is in proper operating condition. Other aspects of operation covered in this section include start-up and shut down sequences and motor rotation.



ELECTRICAL SERVICE to the machine must be locked out while any repairs or adjustments are being made or while any cover, door, hatch, or other protective device is not in place.

4.2 Safety Check-Up

Before starting the Quick Clean Lump Breaker check the following:

- The inside of the unit for foreign material, i.e. nuts, bolts, wire, rags, paper, wood, etc.
- That all guards are mounted and secure.
- That all inspection doors are closed and secured.
- That all electrical starting equipment, meters, disconnect switches, and other control devices are clearly visible readily accessible to the operator.
- All chutes to and from the Quick Clean Lump Breaker are constructed so that no one can reach into the unit while operating and no material can fly out and hit someone.

4.3 Starting Check List

This checklist should be followed during the initial installation and after any shut down period or maintenance procedure.

1. Check inside the Quick Clean Lump Breaker and remove any foreign material that may have accumulated during shipment, installation, or maintenance.
2. Check rotor for correct direction of rotation relative to material feeding.
3. Tighten and secure all endplate T-handle bolts (6).
4. Set up and check compressed air supply if unit is air purged.
5. Make sure no tension from surrounding equipment is placed on unit housing.
6. The initial start should be without product.
7. Feed material into Quick Clean Lump Breaker while unit is in operation.



ALWAYS wear safety glasses when operating this machine.

4.4 Start-Up Sequence

This start-up sequence is intended as a general guide. The start-up sequence you use will depend on your specific operation and any unique characteristics of your installation.



A TIME DELAY is always required between the start-up of the Quick Clean Lump Breaker and start-up of the feeder to allow the Quick Clean Lump Breaker to reach full operating speed before product is

1. Check the motor as it starts for proper rotation and proper amperage.
2. Check interlocks to make sure they are working and in proper sequence.

3. Begin product feed into the system at a low rate (always less than 50% of rated capacity).
4. Check product for desired fineness.
5. Slowly increase feed to its maximum load condition (amperage). The maximum load for your motor is stamped on the motor nameplate. Use the amperage listed for the voltage you are using.
6. Recheck the fineness of the material and the capacity after reaching the maximum load condition.



DO NOT OPEN Quick Clean Lump Breaker or attempt any form of inspection until the unit has come to a complete stop and the electrical disconnect has been locked into the open position.

4.5 Shutdown Sequence

A typical Quick Clean Lump Breaker shutdown sequence will simply be the reverse of the start-up sequence. Check that you do not have special considerations in your installation that require different procedures.

Section

5

SECTION 5: MAINTENANCE

5.1 Introduction

The Quick Clean Lump Breaker is designed to operate with minimal maintenance. Routine inspections and regular maintenance will identify any worn or broken parts before they become a problem. Worn or broken parts are damaging to the Quick Clean Lump Breaker and its output. When operated without vibration or foreign materials entering the grinding chamber, only those parts subject to the heaviest wear (breaker blades and screens) will require maintenance.



DO NOT OPEN Quick Clean Lump Breaker or attempt any form of inspection until the unit has come to a complete stop and the electrical disconnect has been locked into the open position.

5.2 Routine Inspection

Rotating equipment requires regular routine preventative maintenance procedures. Regular inspection of the breaker blades should be carried out particularly where abrasive materials are being processed. Wear patterns on the breaker blades will vary depending upon operating conditions. Visual inspection will show the necessity for change.

5.3 Quick Clean Lump Breaker Endplate Removal

This procedure should be followed during cleaning and servicing procedure of the Quick Clean Lump Breaker.



DO NOT OPEN Quick Clean Lump Breaker or attempt any form of inspection until the unit has come to a complete stop and the electrical disconnect has been locked into the open position.

1. Turn off the Quick Clean Lump Breaker and allow rotor to come to a stop.
2. Lock out electrical power to the Quick Clean Lump Breaker.
3. Remove the T-handle bolts (**Figure 7-1 [12]**) which secure the end plate (**Figure 7-1 [7]**) to the housing.
4. Remove end cap bolts (**Figure 7-1 [25]**) and remove the end cap (**Figure 7-1 [24]**).
5. Align stub shaft machine mark in the window by the motor (**Figure 7-3**), which will also align machine marks vertical and horizontal on end of rotor shaft, if present (**Figure 7-4**).
6. Using the pull handle(s), firmly pull the rotor out of the housing (**Figure 7-5**) and perform required cleaning or maintenance of the rotor and housing.
7. When maintenance is finished, realign rotor by realigning machine marks vertical and horizontal on end of rotor shaft if present (**Figure 7-4**) or position the rotor blades vertical and horizontal (**Figure 7-5**). Lubricate end of shaft.
8. Slowly insert rotor into housing until contact is made. Some rotation of the rotor shaft may be needed if end plate is not close enough to the housing to install T-handle bolts.
9. Fasten the 6 T-handle bolts until the endplate is completely seated into the Lump Breaker housing.
10. Reattach end cap.

5.4 Bearing Removal

5.4.1 Bearings

The bearings (**Figure 7-1 [16, 19]**) of Quick Clean Lump Breakers are lubricated and sealed at the factory, requiring no further lubrication for the life of the Quick Clean Lump Breaker. If bearing failure occurs contact the Prater Customer Service Department at 1-800-323-5735 for replacements.

5.5 Screens

The screen controls the particle size of the final product. Inspect the screen frequently in order to maintain the desired output. The screen may require re-rolling or replacement if it is showing signs of wear. Worn screens could potentially cause:

- Lower capacity
- Increased power costs
- Coarser product output

To check for signs of wear, visually inspect the output of the product as well as the screen itself. Look for:

- Coarse final product
- Reduced or lowered capacity
- Worn edges of the screen holes
- Oval shaped or elongated screen holes

Excessive wear can be caused by:

- Extremely abrasive product
- Extremely fine product
- Excessively high feed rate
- Foreign material in breaker chamber

5.5.1 Screen Replacement

When the sizing screen has become worn, replacement it can be quickly and conveniently replaced by following the simple instructions listed below while referring to **Figure 7-1**.



DO NOT OPEN Quick Clean Lump Breaker or attempt any form of inspection until the unit has come to a complete stop and the electrical disconnect has been locked into the open position.

1. Turn off the Quick Clean Lump Breaker and allow rotor to come to a complete stop.
2. Lock out electrical power to the Quick Clean Lump Breaker.
3. Remove the endplate (**Figure 7-1 [7]**) by referring to **Section 5.3** of this manual.
4. Remove the sizing screen (**Figure 7-1 [36]**) from the grinding chamber.
5. Seat new screen in grinding chamber.
6. Replace endplate assembly (**Figure 7-1 [7]**).

5.6 Replacement Parts

For replacement parts or spare parts kits, contact the Prater Customer Service Department at 1-800-323-5735. Please have the serial number of your unit available to ensure the correct part numbers and quantities are ordered.

Section

6

SECTION 6: TROUBLESHOOTING

6.1 Introduction

This section is offered as a general guide to analyzing problems. If after reviewing this section you have not identified your problem, contact the Prater Customer Service Department at 1-800-323-5735 for further assistance.

6.2 Start-Up Problems

Prater equipment is made of high-quality materials and assembled by skilled workers who take pride in their work. However, even on the best equipment there can still be start-up or operational problems. If trouble occurs, please check the following.



DO NOT OPEN Quick Clean Lump Breaker or attempt any form of inspection until the unit has come to a complete stop and the electrical disconnect has been locked into the open position.

1. Check the power source for sufficient power as specified on the nameplate. Check the wiring connections and the motor protection devices, i.e. fuses, circuit breakers and overload elements. Replace fuses if blown and reset the circuit breakers or overload elements if tripped.
2. The motor may be burned out. If it is, it will need to be replaced or repaired.
3. Check for proper assembly of the drive belts and sheaves. The belts may be disconnected or broken.

4. Check for jamming of the rotor. If jammed, the unit may need to be disassembled and cleaned.
Do not attempt this until the unit has been locked out.
5. The bearings or seals may need to be replaced.

6.3 Troubleshooting Chart

Symptom	Possible Cause	Suggested Solution
Final product is too coarse	1. Improper screen size	1. Install proper screens
	2. Worn or damaged screens	2. Rotate or replace screens
	3. Feed rate too high	3. Adjust to proper feed rate
	4. Worn bars	4. Rotate or replace bars
	5. Improperly installed screens	5. Install screens properly
	6. Feed product change a. Moisture b. Size c. Fat content d. Chemical differences	6. Inspect feed product and adjust system as required
Final product is too fine	1. Improper screen size	1. Install proper screens
	2. Screens blinding a. Hygroscopic material b. Heat sensitive material c. High moisture d. High fat content	2. Clear screens and check feed product. Contact Prater Customer Service if further assistance is required.
Low capacity	1. Screens worn a. Abrasive product b. Fibrous product c. Tramp materials	1. Rotate or replace screens
	2. Screen size too small	2. Install proper screens

Symptom	Possible Cause	Suggested Solution
Low capacity (continued)	3. Non-uniform feed causing fluctuating motor amperage of more than 10%	3. Correct feed must be smooth and non-pulsating
Excessive vibration	1. Missing, broken, or worn bars	1. Replace damaged or broken bars, replace all bars if worn
	2. Material build-up on rotor	2. Clear rotor of obstruction
	3. Foreign materials in grinding chamber	3. Remove foreign material – inspect magnet and collection system
	4. Mill or motor shaft bent	4. Replace shaft and related parts
	5. Bad bearings	5. Replace bearings
	6. Coupling misalignment	6. Readjust coupling
	7. Loose base bolts	7. Tighten bolts to original torques
	8. Weak base structure	8. Provide adequate base structure
Excessive wear	1. Product very abrasive	1. Contact Prater Customer Service
	2. Product too fine	2. Contact Prater Customer Service
	3. Feed rate too high	3. Adjust feed rate to proper level
	4. Product contaminated with foreign matter	4. Clean product
Bearing failure	1. Improper alignment	1. Align properly
	2. High vibration	2. Correct vibration problem

Symptom	Possible Cause	Suggested Solution
Product kicking back or being thrown out of inlet	1. Unit running backwards	1. Change drive direction so top of each roll runs toward other roll
	2. Feed inlet not centered between breaker rolls	2. Move inlet to center on area between the rolls. Cover any open area outside the feed chute / spout.
Product not flowing	1. Material build-up on rotor	1. Clear rotor of obstruction
	2. Incorrect Lump Breaker RPM	2. Adjust to correct Lump Breaker RPM
	3. Screen <ul style="list-style-type: none"> a. Blinding b. Wear 	3. Screen <ul style="list-style-type: none"> a. Clean b. Replace or rotate

6.4 Unusual Drive Motor Noise

If the Quick Clean Lump Breaker drive is making an unusual noise during operation, check the following:

1. Check for proper alignment and seating of the rotor shaft inside the stub shaft.

6.5 Unusual Quick Clean Lump Breaker Noise

If an unusual noise is heard during the operation of the Quick Clean Lump Breaker, check the following:

1. Check the motor's amp draw to determine if material build-up inside the grinding chamber is overloading the motor. If the build-up is excessive, clean the grinding chamber after locking out power to the unit.
2. The rotor may be rubbing on the fixed blades. Make sure the rotor is centered in the housing so that it does not rub the endplates or fixed blades.

3. Check for external loads on the inlet and outlet flanges. The Quick Clean Lump Breaker is not to be used as a support for loads other than the drive assembly and line adapters.

6.6 High Temperature

Motors operating under rated load (amp draw) and ambient conditions, as specified on the nameplate, may feel warm when touched. If overheating is suspected, check the following:

1. Check for proper operation of the Quick Clean Lump Breaker bearings.
2. Check for excessive material build-up in the grinding chamber. See **Unusual Quick Clean Lump Breaker Noise**.
3. Verify that the electrical overload elements are properly sized per the full load amp specification on the motor nameplate. Oversized elements will not protect the motor from overload.
4. Check for proper ventilation around the motor. Material or dust build-up on the exterior of the motor may hamper ventilation.
5. Check for proper rotor rotation.

6.7 Bearing Failure or Malfunction

Disassemble the bearing(s) from the LUMP Breaker and check the following:

1. Check for wear, dirt or material in the bearings. If there is damage, replace the bearings.

6.8 Leaking Air Purge Seals

If air loss from the air purge seals are noticed, check the following:

1. Check to ensure that a compressed air supply has been installed to the Quick Clean Lump Breaker. If the process requires purge air, never operate the Quick Clean Lump Breaker without purge air; as the air purge seals could be damaged and need to be replaced.

2. Check for proper operations and adjustment. The air should be set 3 – 5 PSI above the conveying system operation pressure. If the air is set too low, material will not be properly cleaned from the air purge diffusers and will damage the seals. The seals should be replaced.

6.9 Quick Clean Lump Breaker Data

If problems cannot be diagnosed by using the troubleshooting chart, contact the Prater Customer Service Department at 1-800-323-5735 for further assistance. Before calling for assistance, collect the data listed below. This information is essential in establishing the cause of problems conditions and determining solutions.

1. Serial number and size of Quick Clean Lump Breaker
2. Perforations of screen
3. Motor horsepower
4. Idle amperage
5. Amperage with product load
6. Capacity at full load
7. Fineness analysis of feed and ground product – anticipated and actual – moisture content
8. Problem – requirements of product
9. RPM of Quick Clean Lump Breaker

Section

7

SECTION 7: PARTS LIST

7.1 Quick Clean Lump Breaker Parts List

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1	HOUSING	24	BEARING CAP
2	FIXED BLADE	25	BEARING CAP HEX BOLT
3	FIXED BLADE HEX BOLT	26	STUB SHAFT
4	LINEAR BEARING	27	MOTOR **
5	LINEAR BEARING SEAL	28	MOTOR HEX BOLT
6	LINEAR BEARING RETAINING RING	29	LOCK NUT
7	INSPECTION DOOR	30	LOCK WASHER
8	LINEAR RAIL	31	ROTOR BLADE
9	LINEAR RAIL BOLT	32	ROTOR SPACER
10	RAIL STOP	33	ROTOR SHAFT
11	FLAT HEAD CAP SCREW	34	LIMIT SWITCH
12	T-HANDLE	35	LIMIT SWITCH MOUNTING PAD
13	MOTOR MOUNT	36	SIZING SCREEN *
14	MOTOR MOUNT HEX BOLT	37	GASKET
15	SHAFT SEAL RETAINING RING	38	AIR PURGE BRACKET*
16	SHAFT SEAL	39	REGULATOR*
17	INNER SHAFT BEARING	40	REGULATOR BRACKET *
18	SHAFT SLEEVE	41	NPT REGULATOR CONNECTION*
19	OUTER SHAFT BEARING	42	PRESSURE GAUGE*
20	SHAFT RETAINING RING	43	T-CONNECTOR*
21	BEARING BLOCK	44	FLOW METER*
22	BEARING RETAINING RING	45	FLOW METER ELBOW CONNECTION*
23	BEARING BLOCK CAP SCREWS		

* denotes optional equipment (process dependent)

** motor is available in both right angle or inline positions

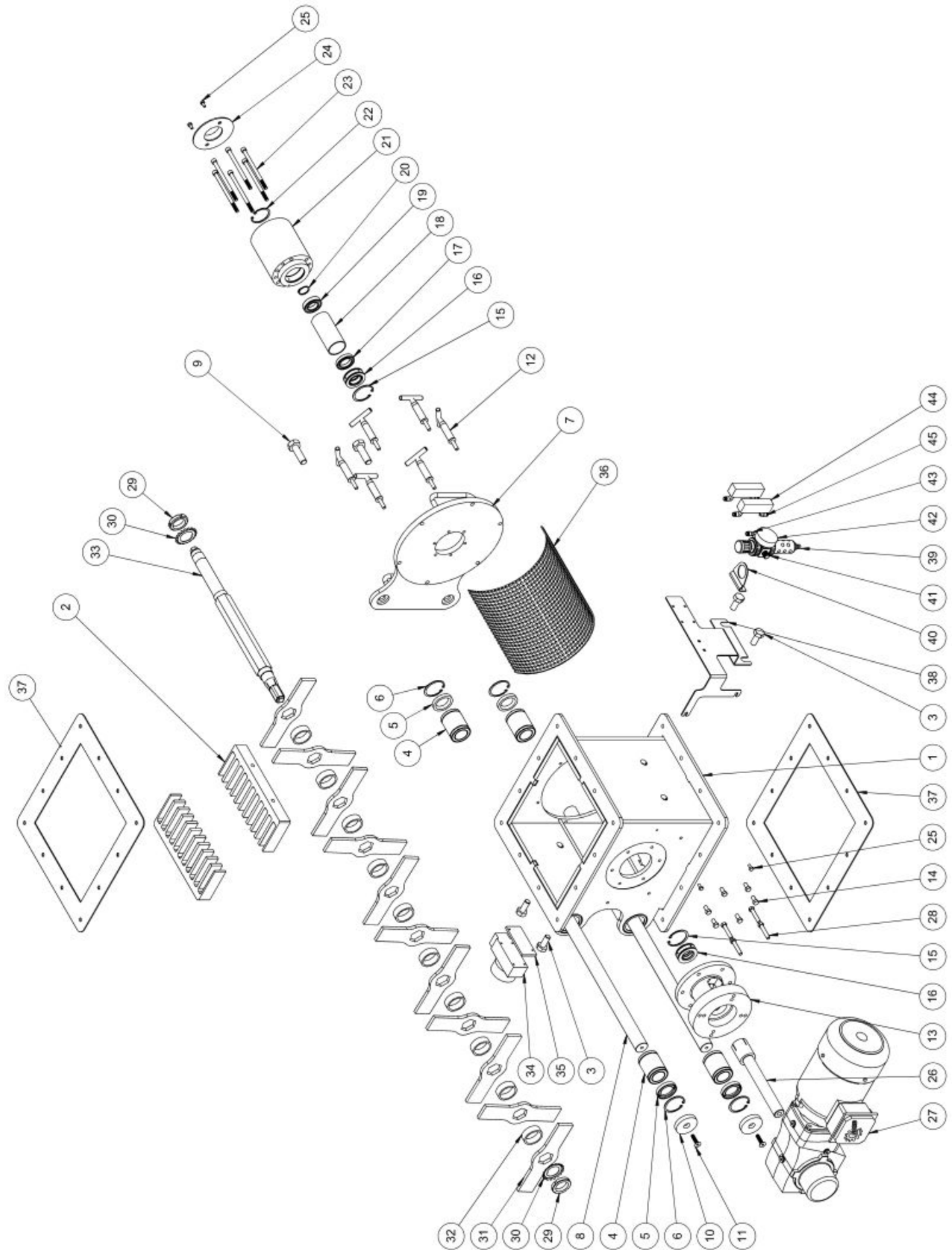


Figure 7-1: Quick Clean Lump Breaker Exploded View

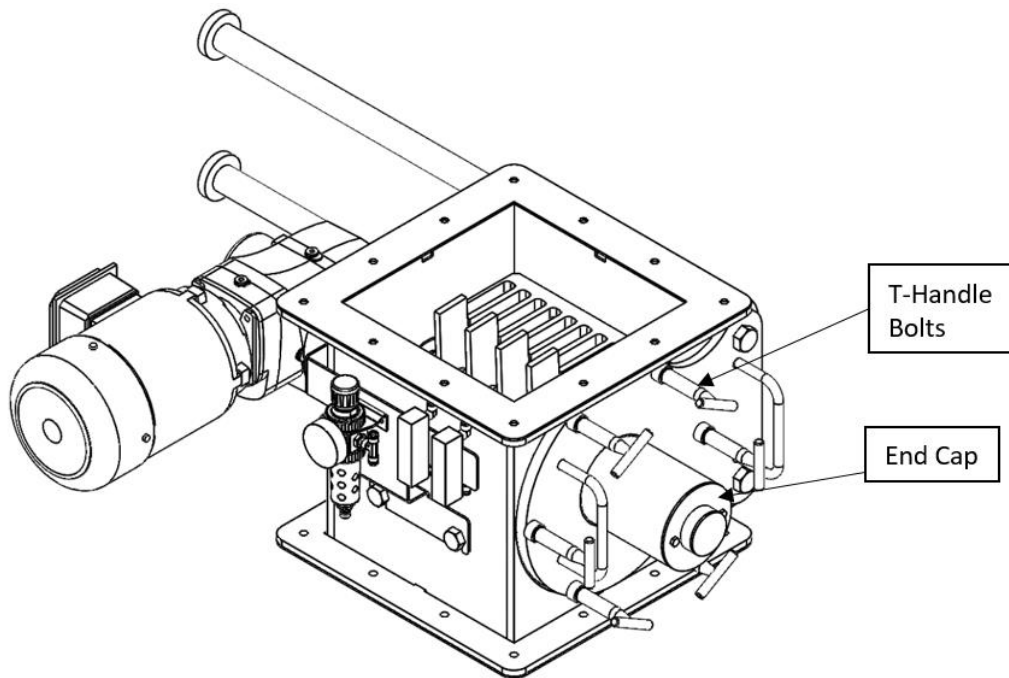


Figure 7-2: Closed View

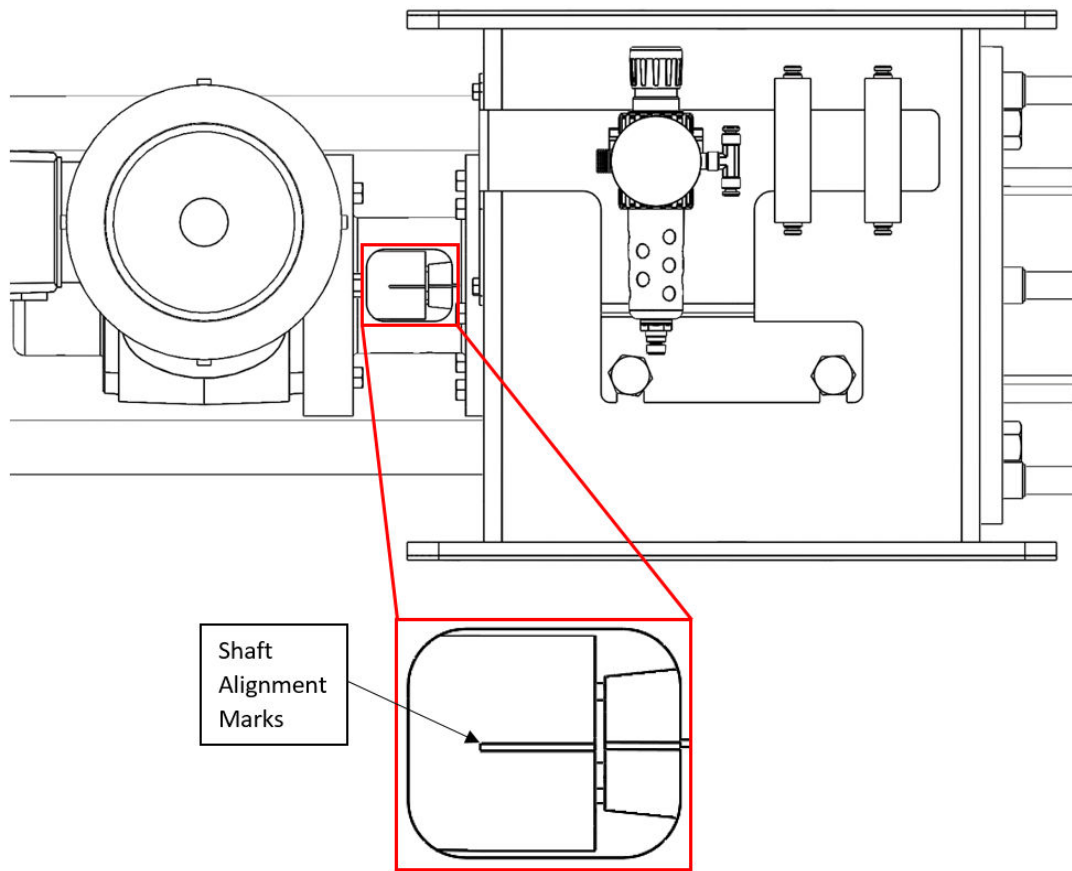


Figure 7-3: Stub Shaft Alignment Mark

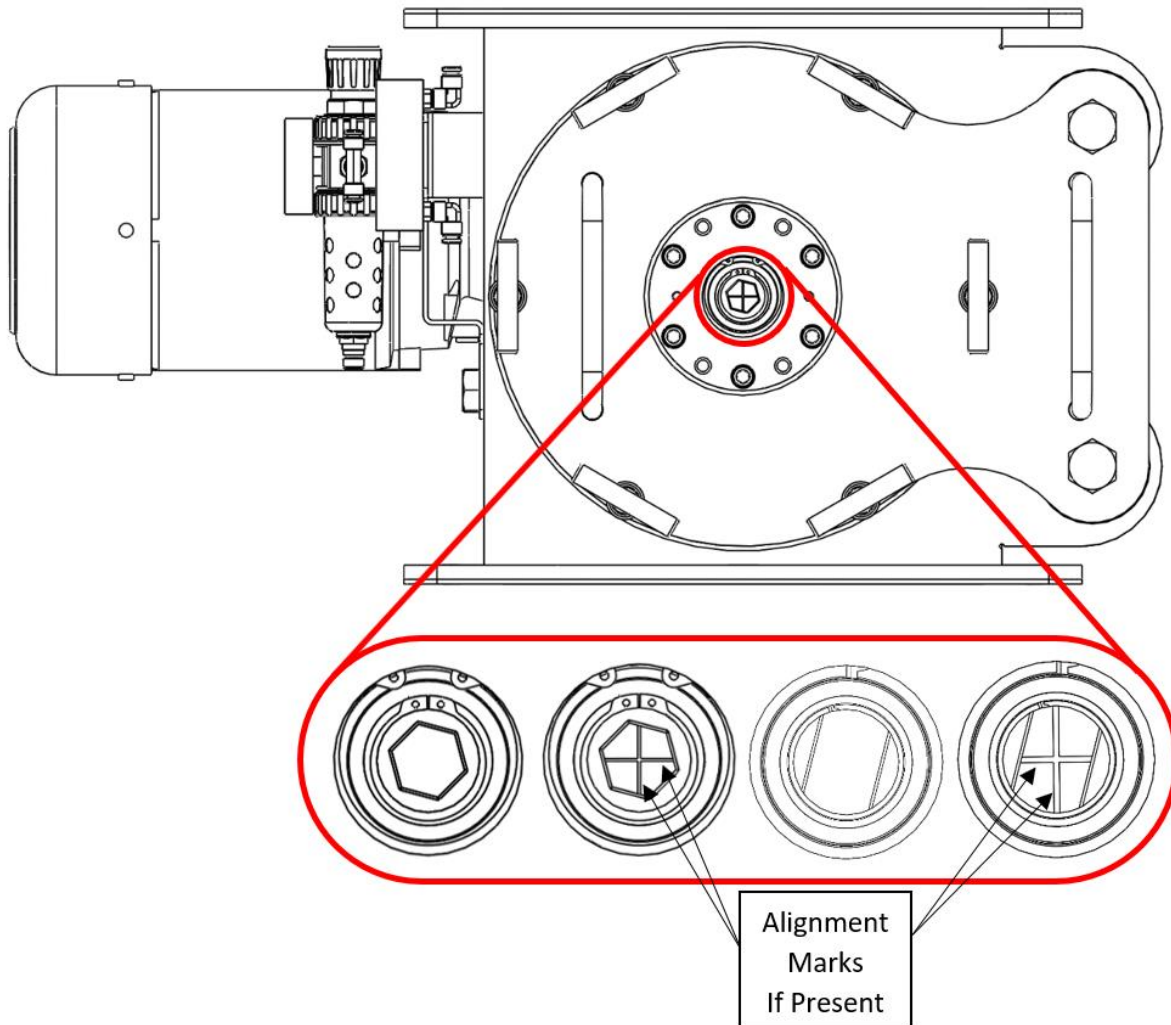


Figure 7-4: End of Rotor Shaft

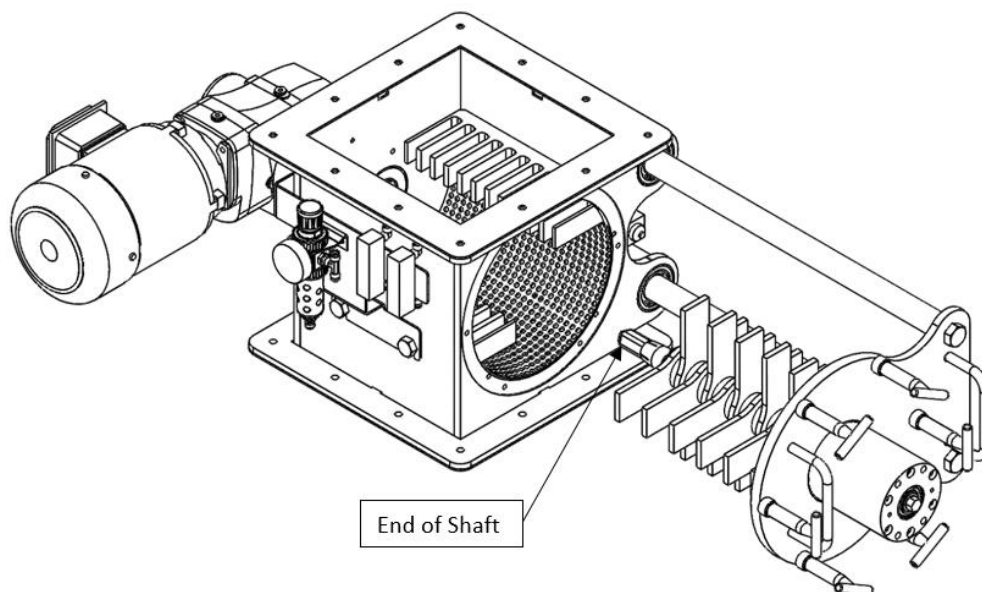


Figure 7-5: Open View