

## **STANDARD 4" AUGER (EZ216230) PARTS & INSTALLATION MANUAL**

102 Mill Street., PO BOX 412  
Welcome, MN 56181  
TEL: 507.728.8214  
FAX: 507.728.8215  
[WWW.EASY-AUTOMATION.COM](http://WWW.EASY-AUTOMATION.COM)

***EAI***

**EASY  
AUTOMATION  
INC.**



*EAI*

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102 MILL STREET, PO BOX 412 WELCOME, MN 56181

507-728-8214

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The purchase and use of Easy Automation products and services are subject to Easy Automation’s current Terms and Conditions which can be found at [www.easy-automation.com/terms](http://www.easy-automation.com/terms).



# INTRODUCTION

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## Section 1: Introduction

Easy Automation, Inc. (EAI) always strives to be the easy choice by providing top of the line industrial automation and process control. Creating innovative solutions from our customer's challenges allows us to create practical, quality products that are built upon years of experience. With a strong conviction of our values, our service-oriented approach ensures you and your company will always receive the best. With over 3,000 customer sites worldwide, our experienced staff has been using our industrial process automation equipment to automate feed mills and industrial processes since 1986, and we have extensive experience with retrofit projects as well as new ones. The success of our customers is our top priority, and our service after the sale is what sets us apart from the rest. Our industrial automation and process control services will provide the assistance you need.

EAI's automated batching equipment is practical, engineered to last, and customizable to fit your facility's individual needs. Having all of the production and engineering in-house makes it easy to order and get exactly what you want. Pairing EAI's equipment with EAI's controls makes for an extremely seamless integration. Each system can be configured differently as well as upgraded for increased capacity as your facility grows.

# CONTACT INFORMATION

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## Section 2: Contact Information

Email: [info@easy-automation.com](mailto:info@easy-automation.com)

Tel: 507-728-8214

Toll Free: 800-397-9736

Fax: 507-728-8213

Main Office

102 Mill Street

Welcome, MN 56181

Mankato Office

1961 Premier Drive Ste. 404

Mankato, MN 56001

Chanhassen Office

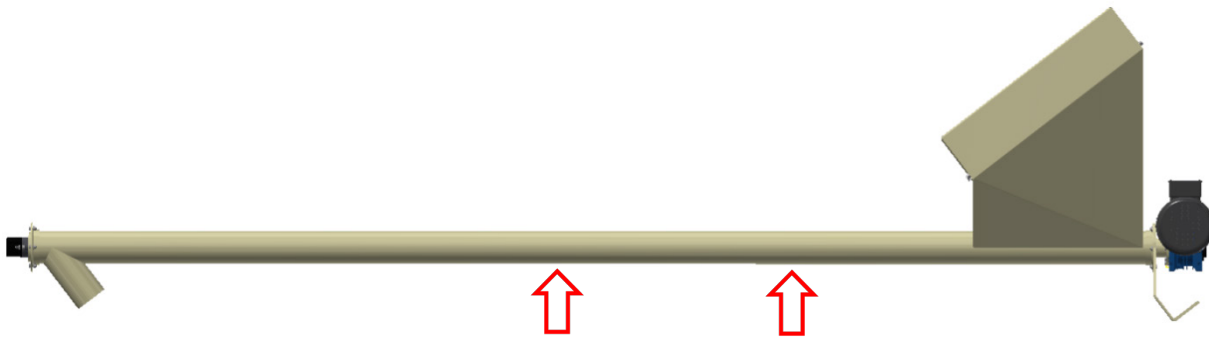
1715 Lake Drive West

Chanhassen, MN 55317

# INSTALLATION

## Section 3: Installation

1. Inspect the Scale Hopper after receiving it for any damage that could have occurred during shipment. Report any damage immediately to EAI and the freight carrier.
2. Remove all packaging. This may include, but is not limited to: plastic wrapping, metal banding, and lumber.



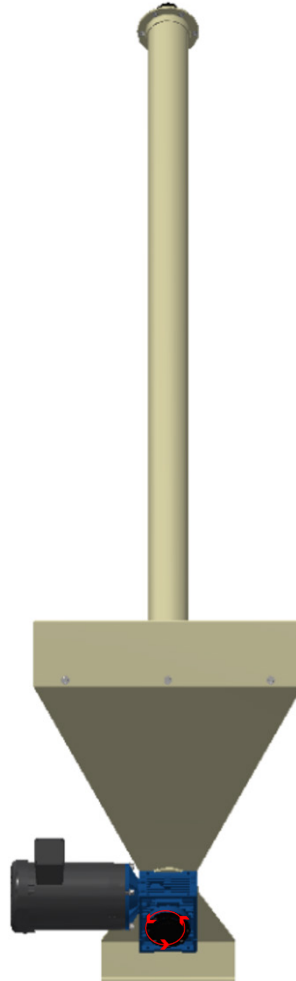
**FIGURE 1: Appropriate Lifting Locations on the Auger**

3. Use care when unloading and locating the machine in your facility. Lifting with a forklift is acceptable if care is taken to avoid hitting the motor/gearbox (Figure 1). Lifting with spreader bars is also acceptable if a forklift or similar machinery is unavailable. Avoid sudden jarring or dropping. The approximate dry weight of the auger is 175 lbs. for reference to assist in determining the appropriate machinery to use when unloading the Scale Hopper.
4. The auger should be anchored on solid footings. Consult a local licensed professional to determine the requirements if you're not certain.
5. Parts may have come loose during shipping. Make sure all parts of the auger are tightened and in working order.
6. Wire the auger.
  - All wiring must be performed by a qualified electrician. If problems develop with electrical components, please contact the EAI service department.
  - Ensure the appropriate electrical components (wire, contactors, etc.) are being used for the volt and amp ratings of the equipment.
7. Run a small amount of inexpensive product (corn for example) through the auger to clear any debris left behind from the factory (metal shavings, screws, nuts, silicone, etc.).
8. Run test batches through the system while closely monitoring to ensure it is operating properly.

# START UP CHECKLIST

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## Section 4: Start Up Checklist



**FIGURE 2: Direction of Rotation of the Auger**

- Is the auger turning in the counterclockwise (CCW) direction when viewed from the motor/reducer end (Figure 2)?
- Have you run a test batch to ensure everything is working properly?

# MAINTENANCE

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## Section 5: Maintenance

- There is a bearing at the discharge end of the auger that will need to be greased periodically. EAI recommends greasing this bearing once every four (4) months with the manufacturer's recommended grease. This interval depends on usage and environmental conditions. Please reference the manufacturer's maintenance schedule in Appendix A for further information.
- Periodically inspect for any oil leaks on the gearboxes, and replace or repair as necessary. Both replacement and alternative ratio gearboxes are available for purchase through EAI.
- Weekly - Inspect the interior of the hopper for material buildup. Product may accumulate near the auger inlet and should be removed to prevent excessive buildup.
- Periodically walk around the auger and make note of any odd noises or excessive dust accumulation. Product accumulation may occur with sticky materials, during periods of higher humidity, and at other times.
- Verify that lock collars on bearings are tight and in place



# SAFETY

## Section 6: Safety

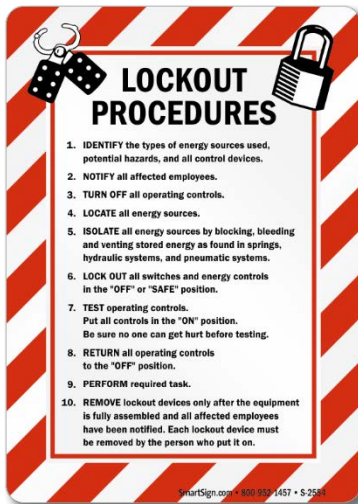
- Moving parts of the system automatically start/stop. Be sure to always disconnect and lockout the power before inspecting or working on the auger. Do not place your hands inside the hopper before performing the lockout/tagout procedure.

### CAUTION

Use caution when adding product to the hoppers and disconnect and lockout the power to the system before attempting to remove any foreign object that falls in (pieces of packaging, utility knives, etc.).

### WARNING

The auger should only be operated or serviced by trained personnel.



EZ215651



EZ207549



EZ100778



EZ200087

# SAFETY



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	EZ100778	DANGER, AUTOMATIC START/STOP
2	1	EZ200087	WARNING, EXPOSED SCREW
3	1	EZ207549	LABEL, GREASE EVERY 4 MONTHS

# TROUBLESHOOTING

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## Section 7: Troubleshooting

1. A screeching or grinding noise is coming from the auger.
  - This is usually caused by a foreign object coming into contact with the auger screw (bolt, utility knife, hand tools, etc.) and may have caused damage. It will be necessary to empty the auger of its contents and remove the motor, gearbox, and auger screw to assess the damage.
2. The auger is not moving product.
  - This could be caused by a variety of problems. First, check if the product is bridging in the bin. A damaged auger screw, worn motor, or worn gearbox could also be the culprit. Also, the wiring circuit to the motor may have been compromised, so it's best to check the voltage coming to the motor to be sure it's receiving power before removing parts from the auger.
3. Product sticks to the hopper walls:
  - A vibrator can be attached to the hopper to enhance clean out of material that is sticky or does not flow well.
  - The recommended vibrator is EZ201894 - VIBCO VS-130 (PNEUMATIC, 40 PSI SEALED, 10 MM BALL)
4. Auger is tripping a breaker.
  - If there are multiple of the same auger, try switching product between augers to see if issue persists in the second auger.
  - Remove the auger screw and clean off the flighting and auger tube.

NOTE: EAI's standard 4-inch auger configuration is 11.5 ft length at an angle of 37.5 degrees. We recognize this standard is not conducive to every facility layout and auger specs may need to alter from the standard configuration. Ingredients have their own unique properties that can vary depending on a variety of factors. Because of the possible variability, we provide augers that are suitable for most ingredients and uses in the feed industry. When changes are made to our standard 4-inch auger configuration, there is increased variability and predictability of how the custom design may interact with various ingredients. EAI does our best to work out details and use cases during the sales process, but as ingredients and other variabilities change, the efficacy of the customized auger may also change.

# WARRANTY

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## Section 8: Warranty

### EAI One-Year Limited Warranty

Easy Automation warrants that this auger and all its mechanical and electrical components will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. If the product proves defective during the warranty period, Easy Automation Inc., at its option, will:

- Replace the damaged or broken component with a comparable new component or,
- Repair the component.

Easy Automation must be notified prior to the expiration of the warranty period regarding the broken component. The component will only be replaced or repaired if it is determined that the product was not broken due to misuse, improper use, or inadequate maintenance and care.

This warranty covers the component(s) only. Easy Automation is not responsible for any costs associated with replacement of the component(s). Easy Automation may require that the damaged or broken components be returned to Easy Automation.

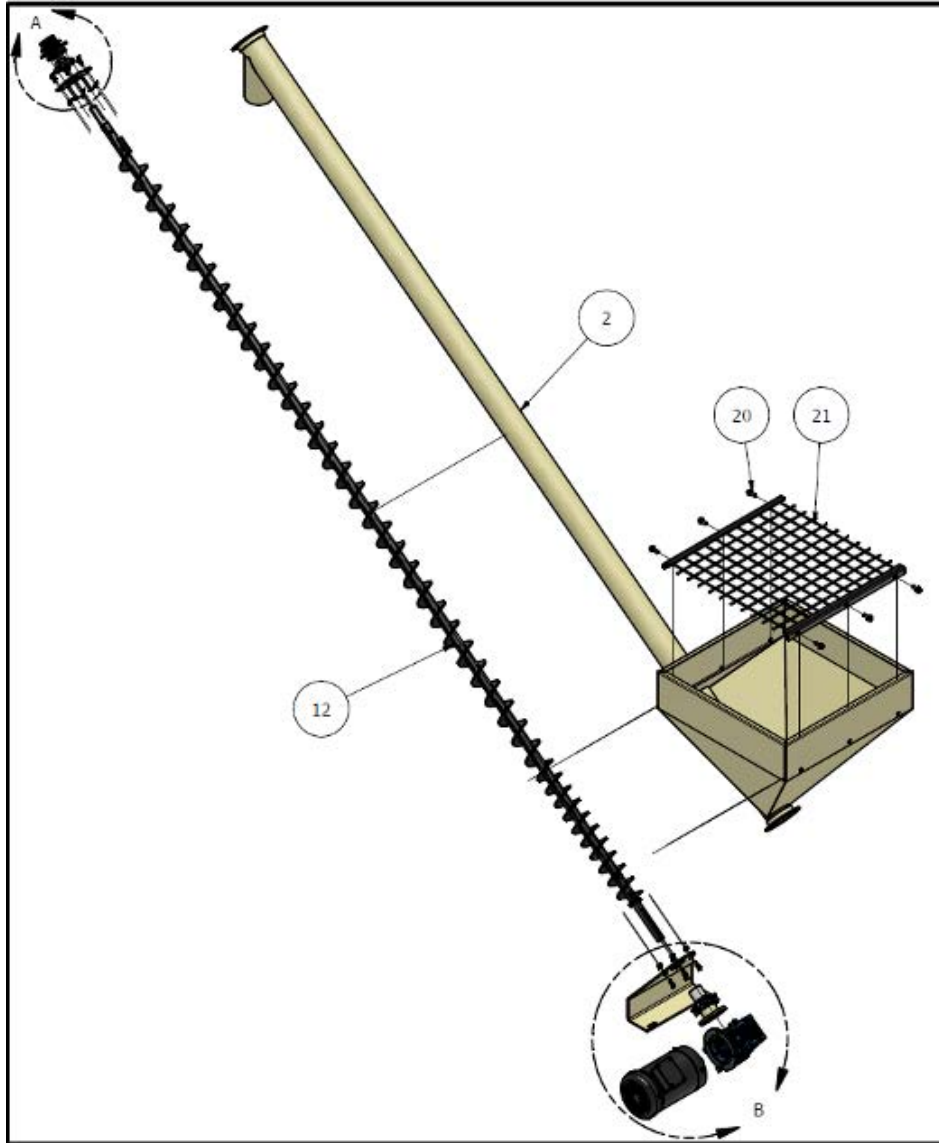
Easy Automation will cover any shipping and handling costs of the replacement component(s) as well as any return shipping costs for items that need to be sent back to Easy Automation.

Easy Automation will not reimburse any on-site repair costs without prior approval in writing by the Easy Automation Service Department.

To the extent allowed by local law, except for the obligations specifically set forth in this warranty, in no event shall Easy Automation Inc. be liable for any indirect, special, incidental, or consequential damages (including loss of revenue or profits).

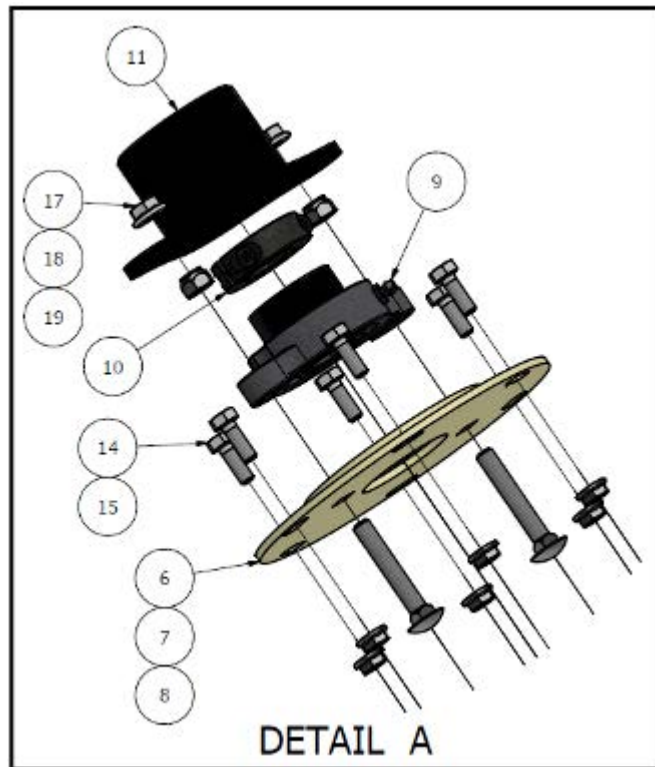
# SPARE PARTS

## Section 9: Spare Parts

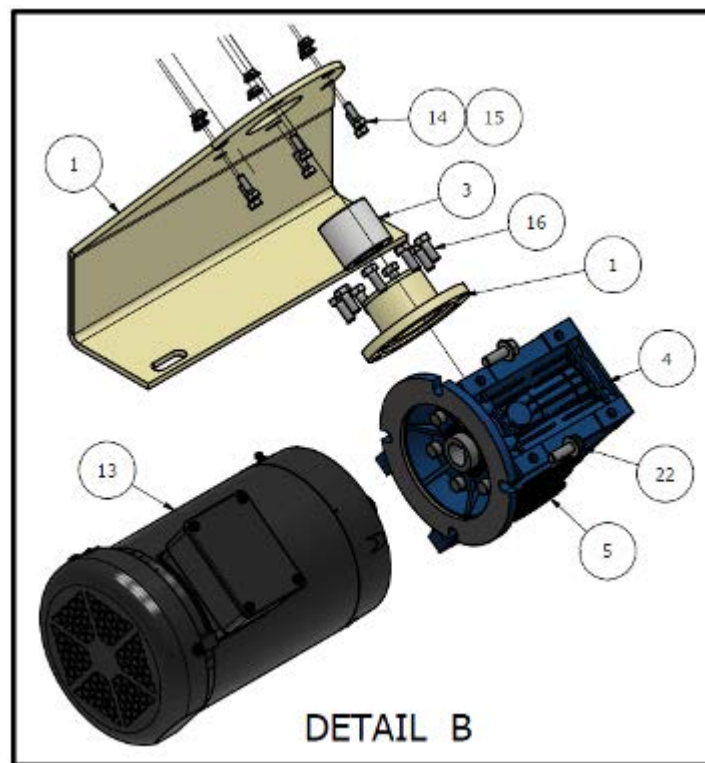


**FIGURE 3: EZ216230 Auger**

ITEM	QTY	PART NUMBER	DESCRIPTION
2	1	EZ216230-1000	AUGER WELDMENT, 37.5 DEGREE
12	1	EZ216230-3000	ASSEMBLY, AUGER SCREW, 4 IN X 11.5 FT X 37.5° STANDARD AUGER
20	6	EZ211447	BOLT, HEX HEAD SERRATED FLANGE, 3/8-16 UNC X 1, 18-8 SS
21	1	EZ214948	HOPPER GRATE, 26X26, 304 SS



**FIGURE 4: Bearing End**



**FIGURE 5: Motor / Gearbox End**

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	EZ216230-2000	MOUNTING ADAPTER, MOTOVARIO 63 SERIES TO 4" FLANGE RING, 37.5 DEGREE
3	1	EZ205515	BEARING/SEAL, "PUCK", MOTOVARIO GEAR BOX (63 SERIES WITH EAI MOUNT)
4	1	EZ202136	GEAR BOX, 'MOTOVARIO 63' 10:1 RATIO, 140TC NEMA FLANGE, 1 1/8' BORE
5	1	EZ202291	GEAR BOX, "MOTOVARIO" PROTECTIVE COVER, 63 SERIES
6	1	EZ212182	SPACER, BEARING (A36 MS, 1/4")
7	1	EZ212181	BEARING/SEAL, ACETAL, 4" AUGER
8	1	EZ212151	BEARING MOUNT PLATE 4"
9	1	EZ205538	BEARING, FLANGE, 2 BOLT, SET SCREW LOCKING 1" SHAFT DIA
10	1	EZ203466	SHAFT COLLAR, 1", TWO-PIECE
11	1	EZ213140	GUARD, 1IN BEARINGS, 2 & 4 BOLT
13	1	EZ211556	MOTOR, 2 HP, 3 PHASE 145TC 1755 RPM 208-230/460V 60HZ C-FACE
14	12	EZ101243	BOLT, HEX HEAD GR 5 ZINC PLATED 1/4-20 UNC X 3/4
15	12	EZ200846	NUT, FLANGE, SERRATED EDGE 1/4-20 UNC ZINC
16	8	EZ207663	BOLT, HEX HEAD M8 X 1.25 X 20MM ZINC PLATED
17	2	EZ213278	BOLT, CARRIAGE, 5/16-18 X 2 GR5
18	2	EZ101888	NUT, NYLOCK 5/16-18 SS
19	2	EZ102526	NUT, FLANGE, SERRATED EDGE 5/16-18 UNC ZINC
22	4	EZ200644	BOLT, HEX FLANGE, 3/8-16X1 GR5

Additional Parts:  
Paint, Spray Can, Off-White - EZ100889



# APPENDIX A - LUBRICATION

## Section 10: Appendix A

Source: Browning Engineering

### Lubrication

### Ball Bearings



### Ball Bearing Lubrication

Table 42 Ball Bearing Grease

Thickener	Lithium Complex
Oil	Petroleum
Thickness	NLGI 2
Operating Temperature	-20 F to 200 F Intermittent to 250 F

Consult EPT Mounted Bearing Tech Support for current grease specification.

Grease compatibility is critical. Relubricate with a grease that is compatible with grease supplied from the factory. Consult your grease supplier for compatibility.

### Frequency of Lubrication

Frequency of lubrication depends upon operating conditions. The following chart gives the frequency of relubrication based upon continuous operation for various operating conditions and can be used as a guide for determining when Browning ball bearings should be relubricated.

### Recommended Relubrication Schedule

Table 43 Ball Bearings

Speed	Temperature	Cleanliness	Greasing Interval
100 RPM	-20 F to 125 F	Clean	4-10 months
500 RPM	-20 F to 150 F	Clean	1-4 months
1000 RPM	-20 F to 200 F	Clean	1 week to 1 month
1500 RPM	-20 F to 200 F	Clean	Biweekly
1500 to Maximum Catalog Rating	Up to 150 F	Dirty	Daily to 1 week
	150 F to 200 F	Dirty	Daily to 1 week
	-20 F to 200 F	Very Dirty	Daily to 1 week
	-20 F to 200 F	Extreme Conditions	Daily to 1 week





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