

Grain Mill

Assembly, Operation, & Maintenance



Congratulations on your purchase, and thank you for selecting the Grain Mill from Blichmann Engineering™. We are confident that it will provide you years of service and many gallons of outstanding beer. This manual will familiarize you with the use, assembly, and the procedures for the product.

IMPORTANT INFORMATION

PLEASE READ AND THOROUGHLY UNDERSTAND THIS MANUAL PRIOR TO USE FOR IMPORTANT SAFETY INFORMATION!

WARNING: Sections labeled “Warning” can lead to serious injury or death if not followed. Please thoroughly read these sections and understand them completely before use. If you do not understand them or have any questions, contact your retailer or Blichmann Engineering (www.BlichmannEngineering.com) before use.

CAUTION: Sections labeled “Caution” can lead to equipment damage or unsatisfactory performance of the equipment. Please read these sections thoroughly. If you have any questions, contact your retailer or Blichmann Engineering (www.BlichmannEngineering.com) before use.

IMPORTANT: Sections labeled “Important” should specifically be followed to ensure satisfactory results with the product.

What’s In the Box?

GRAIN MILL	
DESCRIPTION	QTY.
M6x1 x 12 HHCS Gr 8.8 Steel Zinc	4
M6x1 x 30 HHCS Gr 8.8 Steel Zinc	4
M6 Steel Washer Zinc	8

SMALL STAND BE-001630-00	
DESCRIPTION	QTY
STAND TOP BOARD, SM	1
LEG MOUNT ANGLE, SIDE	2
LEG MOUNT ANGLE, F/R	2
LEG	4
LEG BRACE, SIDE	2
LEG BRACE, REAR	1
CARRIAGE BOLT	8
SHORT NECK CARRIAGE BOLT	36
WASHER M6 X 18OD	8
WASHER M6 X 12OD	36
NUT	44

LARGE STAND BE-001631-00	
DESCRIPTION	QTY
STAND TOP BOARD, LG	1
LEG MOUNT ANGLE, SIDE	2
LEG MOUNT ANGLE, F/R	2
LEG	4
LEG BRACE, SIDE	2
LEG BRACE, REAR	1
CARRIAGE BOLT	10
SHORT NECK CARRIAGE BOLT	36
WASHER M6 X 18OD	10
WASHER M6 X 12OD	36
NUT	46

LARGE HOPPER ASSEMBLY	
DESCRIPTION	QTY
Hopper Front/Back	2
Hopper Left/Right	2
Finger Guard	1
#10-24 SS Nylock Nut	20
Screw - 10-24 x 3/8" SS	20

SMALL HOPPER ASSEMBLY	
DESCRIPTION	QTY
Hopper Front/Back	2
Hopper Left/Right	2
Finger Guard	1
#10-24 SS Nylock Nut	16
Screw - 10-24 x 3/8" SS	16

Custom Mounting Solutions:

See the attached drawing for mounting your mill on a custom stand, cabinet, or grain handling system. The bolt pattern is the same for the top and bottom of the mill. Use M6x1 hardware for mounting the mill or custom hopper or grain handling equipment. Ensure there is at least 10mm (7/16") of the bolt engaged with the threads. For example, if you are mounting to 3/4" plywood (19mm), use at least 30mm long bolts. Temporary thread lock applied to threads is acceptable if preferred.

Sticker installation and instruction:

Place the included gap setting sticker on the adjustment side of the mill. There are 3 types of malt listed for you. The .055" gap is the setting that produces a proven "Normal" rating crush with fresh two row barley. See the calibration instructions for how to determine this gap setting. Document your preferred setting on the space provided for your records. Use the other open spaces for your own preferred gap setting for other grain.



Gap Calibration:

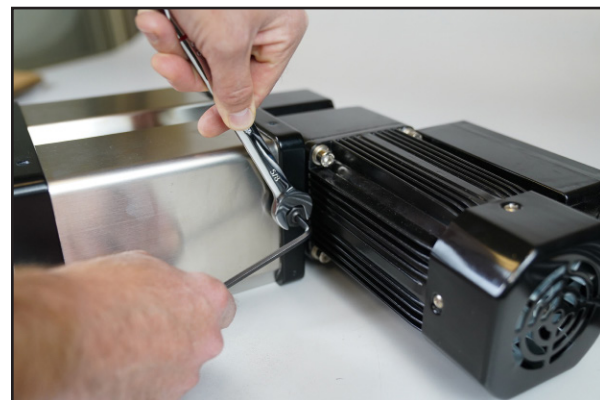
Warning: Moving parts can crush and cut. Do not operate the mill without hopper and guard installed. Unplug or lockout device before servicing.

Ensure the unit is un-plugged, and the guard is removed before proceeding. Included with your grain mill is a calibration plate to be used for finding the proper gap setting that produces an ASBC "normal" grist crush. You will be able to produce a "normal" crush at 0.055" (1.4mm). The Blichmann mill operates with synchronized rollers with a large diameter which does not require a close gap to produce a desirable crush.

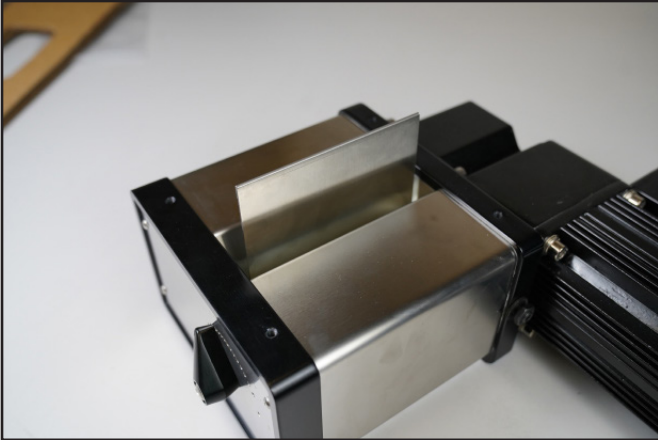
1. Set the adjustment knob to 18.



2. Loosen the jam nut in the back near the motor and un-screw the hex adjustment screw.



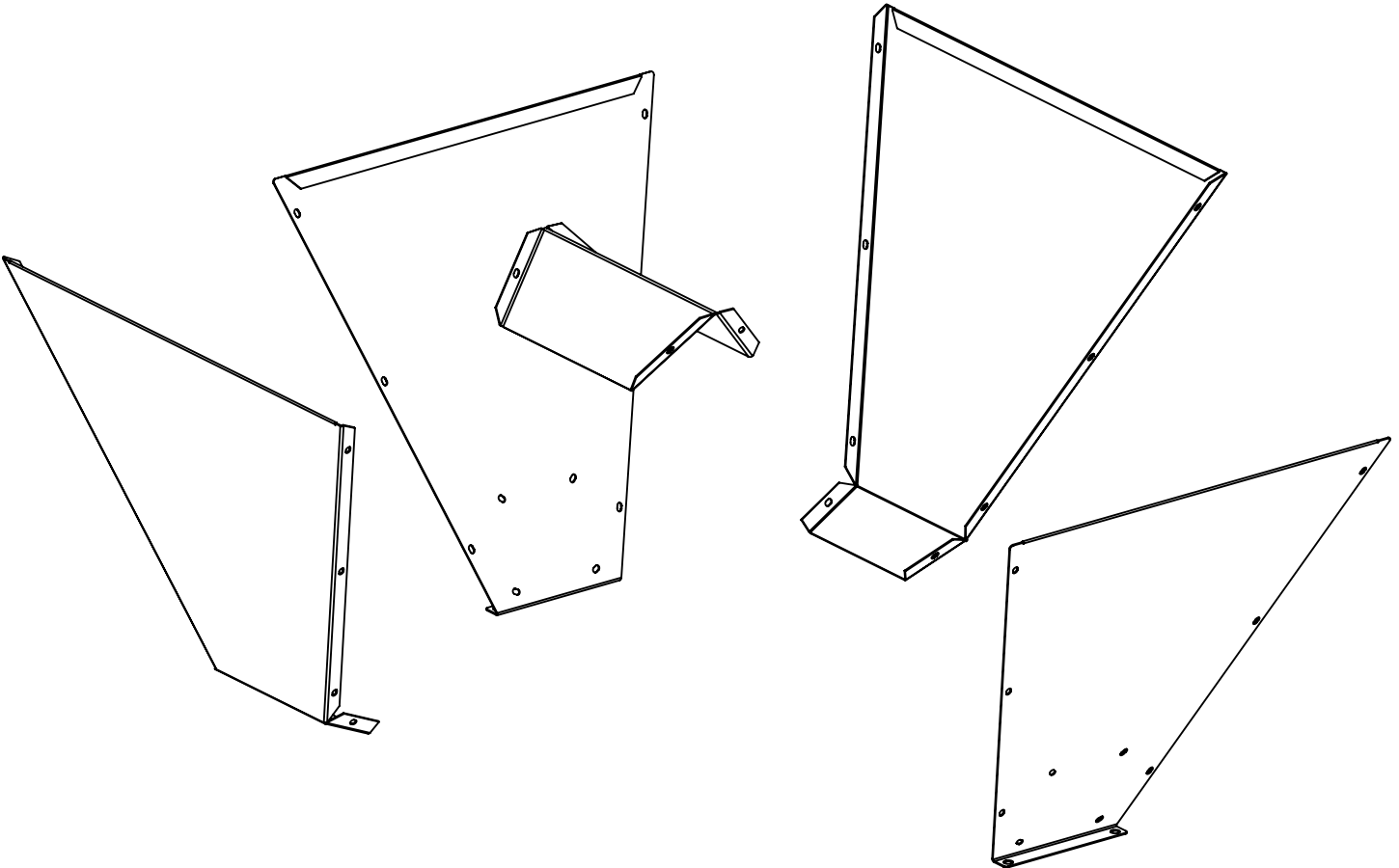
3. Insert the calibration plate between the rollers and rotate the adjustment knob counter-clockwise until the rollers lightly pinch the plate. Let the knob rest in the closest gap setting.
4. Document this number with permanent marker on the label provided.
5. Tighten the hex screw until the rollers on the back side of the mill make contact with the calibration plate. Tighten the lock nut, while keeping the hex screw in place, to secure the position of the roller. (Refer to the picture in step two)



Measure the performance of the mash and make small adjustments to the gap setting if needed. This can improve efficiency without sacrificing sparge and recirculation rates.

Hopper Assembly:

Assemble the hopper with the hardware included.



Stand Assembly:

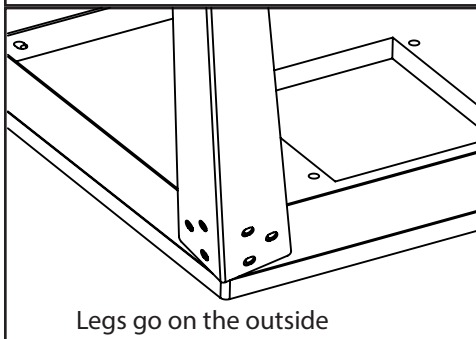
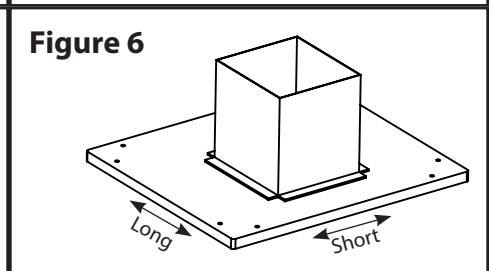
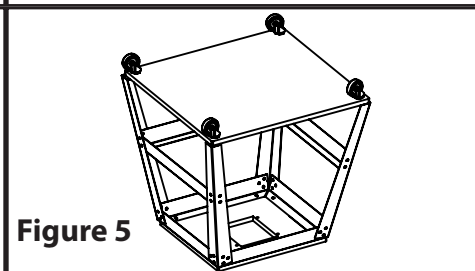
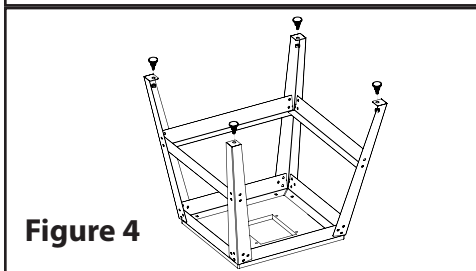
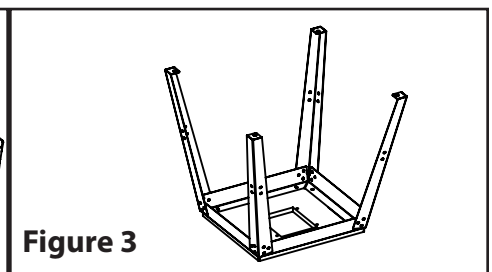
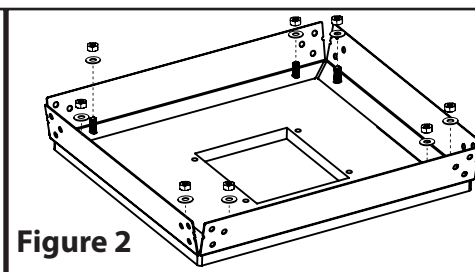
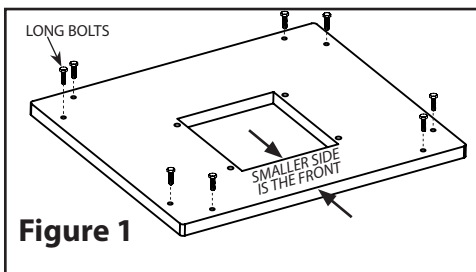
The Mill has an optional stand available in two different sizes. Each are assembled in the same order. Only tighten fasteners finger tight until the entire assembly is put together. Adjust the straightness of the stand and then tighten each fastener no more than 1/8 turn past tight.

1. Insert and press fit the 8 long the carriage bolts into outside holes of the top board and lay the board down with the screw threads facing up. **(Figure 1)**
2. Install the four leg mount angles with the large washers and nuts. **(Figure 2)**
3. Install the legs and attach the 3 leg braces. The front of the board is the edge closest to the hole. Don't install a leg brace on the front of the stand, see diagram for designation. If using the feet attach the feet to the legs now. **(Figure 3)(Figure 4)**
4. If you are using a caster kit, attach the large board to the stand using the casters and hardware. Lock the caster to keep the stud from spinning during installation. **(Figure 5)**

Tools Required:
10mm Combination Wrench
17mm wrench (Casters)
9/16" wrench (Feet)

Do not install chute until the mill is installed

5. Install the canvas grain chute as shown. Note that one edge is longer than the other. **(Figure 6)**



Operation:

Warning: Moving parts can crush and cut. Do not operate the mill without hopper and finger guard installed. Unplug or lockout device before servicing.

Adjust the gap setting knob to the desired setting. Fill the hopper and select "FWD". You may stop the mill at any time and restart as required.

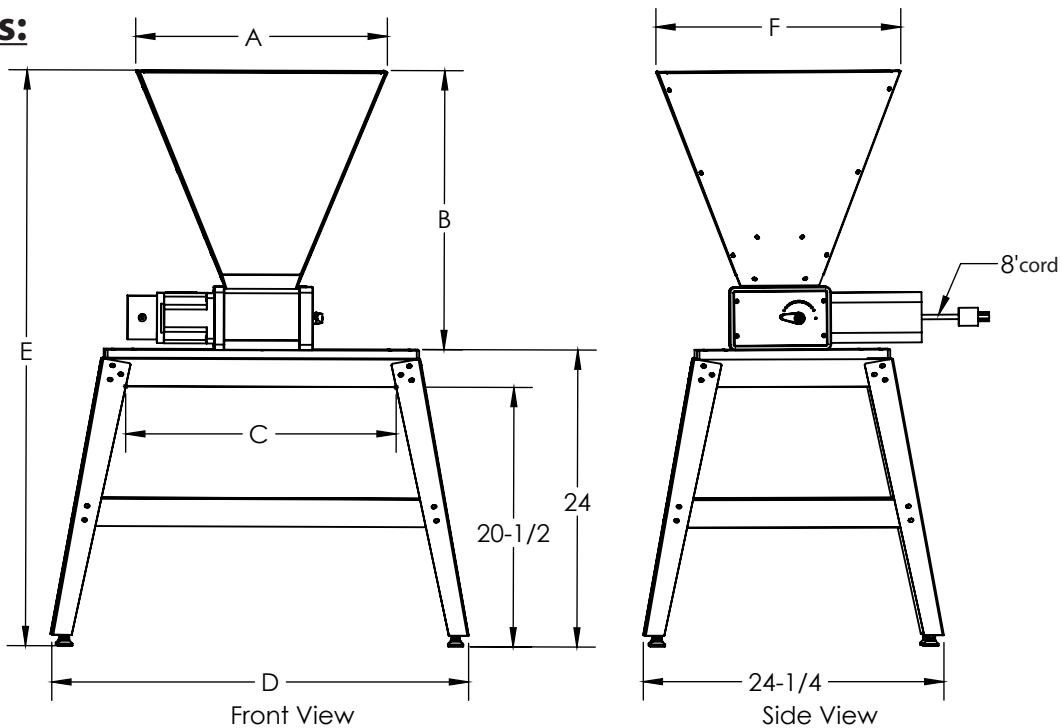
Caution: Do not reverse direction of the mill without letting the mill come to a complete stop. This may damage the gear drive over time. Always let the mill come to a complete stop before changing directions from forward to reverse or reverse to forward.

The "REV" selection is only required to clear the mill in the event of debris or a gap setting is adjusted too narrow. If the mill stops running, turn off the mill, unplug the device, and remove all the grain from the hopper. Verify that there is no debris wedged in the mill and adjust the gap to the widest setting (18). Verify that mill operates without any grain, reset the gap setting to the desired crush setting and continue to mill grain.

Toolless Gap Adjustments:

With the mill set to the off position, pull the Knob until the pin clears the selection plate. Rotate the knob Clockwise for a wider gap setting and counterclockwise for a narrower setting. Each setting on the position plate adjusts the gap approximately 0.005" (.13mm). The wider spacing between some settings on the position plate adjust the gap the same distance because of the behavior of an eccentric adjustment system.

Dimensions:

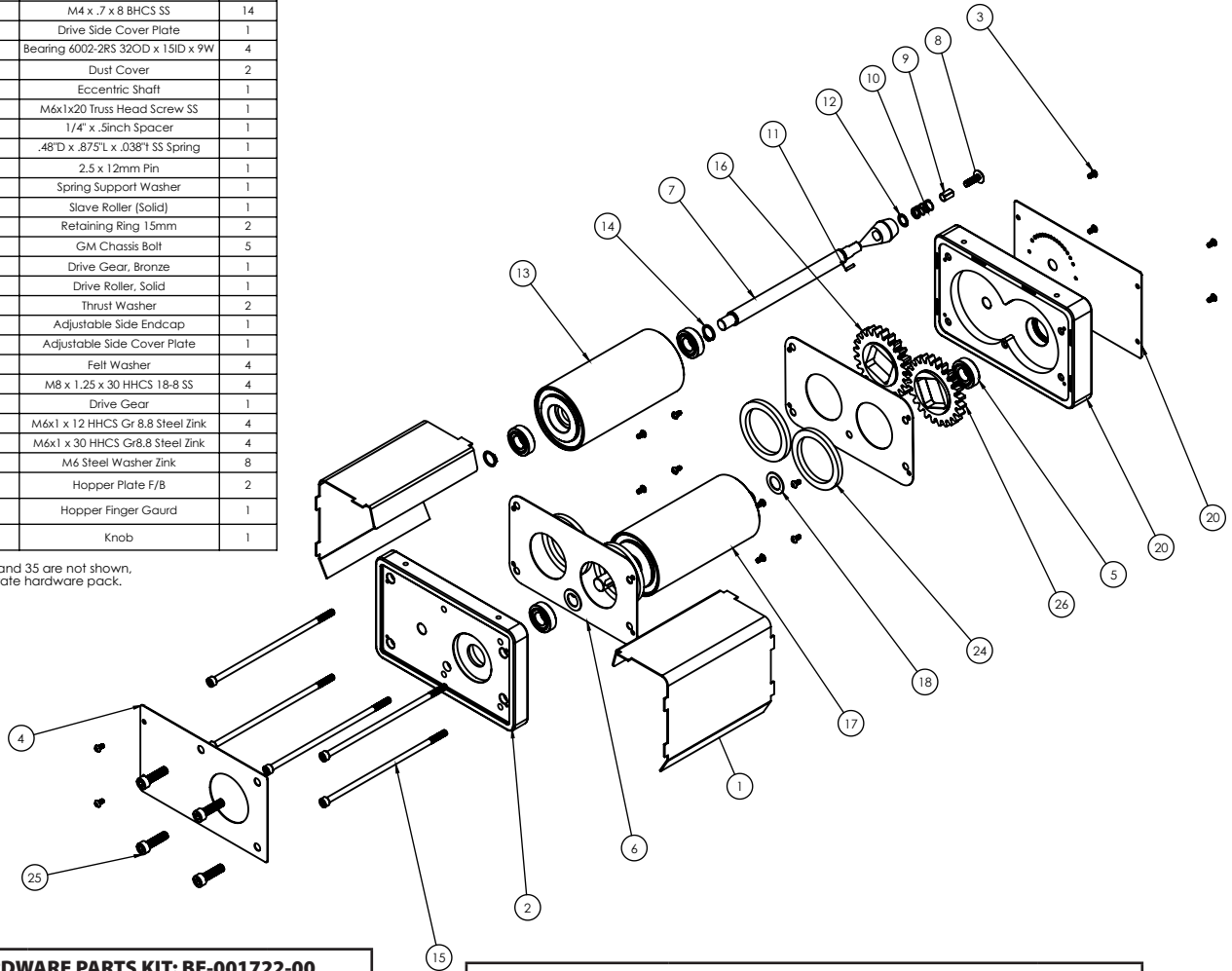


	Large Stand		Small Stand		
	60 lb Hopper	17 lb Hopper	60 lb Hopper	17 lb Hopper	
A	20-1/4	14-1/4	20-1/4	14-1/4	A
B	20-3/4	15-1/2	20-3/4	15-1/2	B
C	22	22	14-1/4	14-1/4	C
D	34-1/4	34-1/4	26-1/2	26-1/2	D
E	46-3/4	39-1/2	46-3/4	39-1/2	E
F	20	14-1/2	20	14-1/2	F

Grain Mill Replacement Parts

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BE-500305-02	Side Chassis	2
2	BE-500297-05	Drive Side End Cap	1
3	BE-500316-01	M4 x .7 x 8 BHCS SS	14
4	BE-500298-01	Drive Side Cover Plate	1
5	BE-500307-00	Bearing 6002-2RS 32OD x 15ID x 9W	4
6	BE-500304-04	Dust Cover	2
7	BE-500310-04	Eccentric Shaft	1
8	BE-500314-01	M6x1x20 Truss Head Screw SS	1
9	BE-500312-00	1/4" x .5inch Spacer	1
10	BE-500311-01	.48"D x .875"L x .038" SS Spring	1
11	BE-500315-02	2.5 x 12mm Pin	1
12	BE-500340-00	Spring Support Washer	1
13	BE-500325-03	Slave Roller (Solid)	1
14	BE-500309-00	Retaining Ring 15mm	2
15	BE-500306-00	GM Chassis Bolt	5
16	BE-500418-00	Drive Gear, Bronze	1
17	BE-500324-04	Drive Roller, Solid	1
18	BE-500308-01	Thrust Washer	2
20	BE-500301-06	Adjustable Side Endcap	1
20	BE-500302-02	Adjustable Side Cover Plate	1
24	BE-500372-00	Felt Washer	4
25	BE-500323-01	M8 x 1.25 x 30 HHCS 18-8 SS	4
26	BE-500303-03	Drive Gear	1
27	BE-500410-00	M6x1 x 12 HHCS Gr 8.8 Steel Zink	4
28	BE-500411-00	M6x1 x 30 HHCS Gr8.8 Steel Zink	4
29	BE-500412-00	M6 Steel Washer Zink	8
30	BE-001330-04	Hopper Plate F/B	2
31	BE-001414-00	Hopper Finger Gaurd	1
32	BE-500313-03	Knob	1

Note: Item Number 33, 34, and 35 are not shown, but are included in a separate hardware pack.



ROLLER HARDWARE PARTS KIT: BE-001722-00		
ITEM NUMBER	DESCRIPTION	QTY
BE-500307-00	BEARING	4
BE-500308-00	TRUST WASHER	2
BE-500372-00	FELT WASHERS	4
BE-500309-00	RETAINING RING	2

KNOB AND HARDWARE PARTS KIT: BE-001723-00		
ITEM NUMBER	DESCRIPTION	QTY
BE-500313-03	KNOB W/PIN INSTALLED	1
BE-500315-02	PIN	1
BE-500340-00	SPRING SUPPORT WASHER	1
BE-500311-01	SPRING	1
BE-500312-00	SPACER	1
BE-500314-01	TRUSS SCREW	1

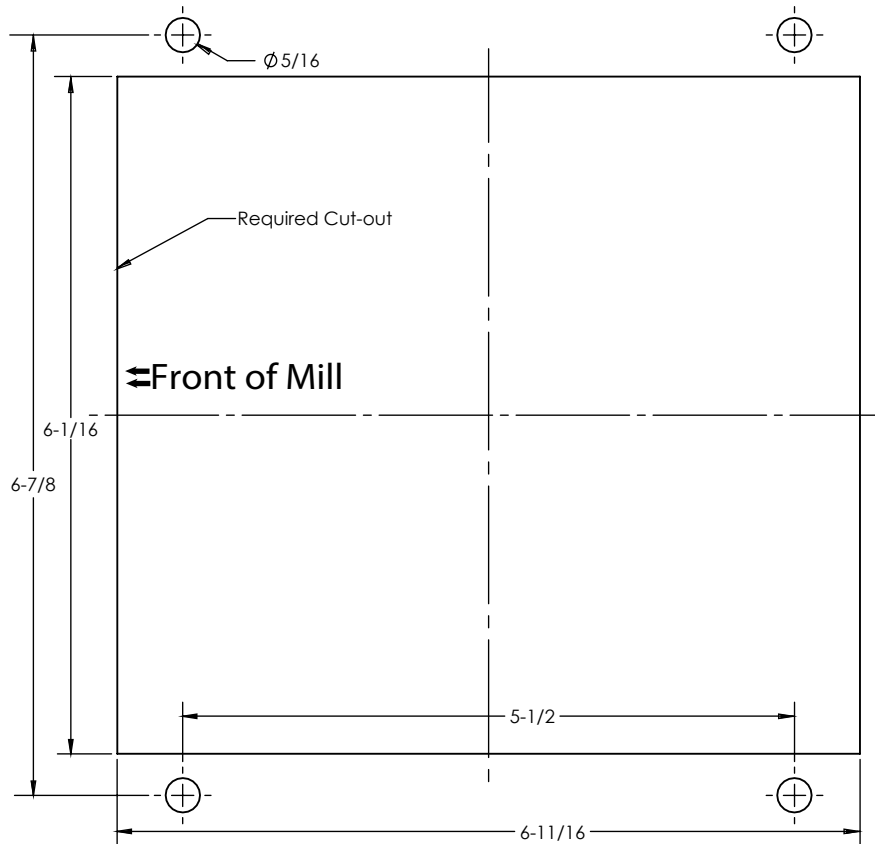
GEAR SET PARTS KIT: BE-001723-00		
ITEM NUMBER	DESCRIPTION	QTY
BE-500418-00	DRIVE GEAR, BRONZE	1
BE-500303-03	DRIVE GEAR, STEEL	1
BE-001721-00	GEAR FACE GLIDE	1

ASSY HARDWARE PARTS KIT: BE-001725-00		
ITEM NUMBER	DESCRIPTION	QTY
BE-500316-01	M4 X .7 X 8 BHCS SS COVER SCREWS	14
BE-500306-00	CHASSIS BOLT	5
BE-500323-01	M8 X 1.25 X 30 HHCS MOTOR SCREW	4

MOUNTING HARDWARE PARTS KIT: BE-001726-00		
ITEM NUMBER	DESCRIPTION	QTY
BE-500410-00	M6X1 X 12 HHCS GR 8.8 STEEL ZINK	4
BE-500411-00	M6X1 X 30 HHCS GR 8.8 STEEL ZINK	4
BE-500412-00	M8 X 1.25 X 30 HHCS MOTOR SCREW	8

MOTOR ELECTRONICS PARTS KIT: BE-001727-00		
ITEM NUMBER	DESCRIPTION	QTY
NA	MOTOR SWITCH 3PDT ON-OFF-ON	1
NA	START SWITCH	1
NA	CAPACITOR 100 uF	1
NA	CAPACITOR 40 uF	

ECCENTRIC SHAFT PARTS KIT: BE-001728-00		
ITEM NUMBER	DESCRIPTION	QTY
BE-500310-04	ECCENTRIC SHAFT	1
BE-500309-00	RETAINING RING	2



Blichmann Engineering Product Warranty

A. Limited Warranty

1. Blichmann Engineering warrants to the original purchaser that this product will be free from manufacturing defects in material and workmanship for a period of one (1) year from the date of purchase by the customer. Proof of purchase is required. Blichmann Engineering's obligation to repair or replace defective materials or workmanship is the sole obligation of Blichmann Engineering under this limited warranty.
2. The limited warranty covers only those defects that arise as a result of normal use of the product and does not cover any other problems, including, but not limited to, those that arise as a result of:
 - a. Improper maintenance or modification;
 - b. Damage due to incorrect voltage or improper wiring by customer;
 - c. Operation outside of the product's specifications;
 - d. Carelessness or neglect to operate the product in accordance with instructions provided with the product;
 - e. Damaging the tamper label on the product;
 - f. Damage by over-tightening the fasteners;
 - g. Failure to follow cleaning and / or maintenance procedures; or
 - h. Exceeding published operational temperatures.
3. Blichmann Engineering reserves the right to request delivery of the defective component for inspection before processing the warranty claim. If Blichmann Engineering receives, during the applicable warranty period, notice of a defect in any component that is covered by the warranty, Blichmann Engineering shall either repair or replace the defective component with a new or rebuilt component at Blichmann Engineering's option.
4. Blichmann Engineering must be notified within seven (7) days of the delivery date of any shipping damage. Customer is responsible for shipping damage outside of this time period. Approval for return must be provided by Blichmann Engineering prior to any return. Customer is responsible for keeping all original packaging material for warranty returns. Blichmann Engineering is not responsible for damage from improperly packaged warranty returns, and these repair costs will be the sole responsibility of the customer. Shipping costs for warrantee returns are covered only for the contiguous United States.
5. Blichmann Engineering's limited warranty is valid in any country where the product is distributed.

B. Limitations of Warranty

1. Any implied warranty that is found to arise by way of state or federal law, including any implied warranty of merchantability or any implied warranty of fitness, is limited in duration to the terms of this limited warranty and is limited in scope of coverage to this warranty. Blichmann Engineering disclaims any express or implied warranty, including any implied warranty of fitness for a particular purpose or merchantability, on items excluded from coverage as set forth in this limited warranty.
2. Blichmann Engineering makes no warranty of any nature beyond that contained in this limited warranty. No one has authority to enlarge, amend, or modify this limited warranty, and Blichmann Engineering does not authorize anyone to create any other obligation for it regarding this product.
3. Blichmann Engineering is not responsible for any representation, promise, or warranty made by any independent dealer or other person beyond what is expressly stated in this limited warranty. Any selling or servicing dealer is not Blichmann Engineering's agent, but an independent entity.

C. Limitations of Liability

1. The remedies provided in this warranty are the customer's sole and exclusive remedies.
2. Except for the obligations specifically set forth in this warranty, in no event shall Blichmann Engineering be liable for direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory and whether or not advised of the possibility of such damages.
3. This warranty does not cover, and in no event shall Blichmann Engineering be liable for, travel, lodging, or any other expense incurred due to manufacturing defects in material and workmanship, or any other reason.
4. Any performance of repairs after the warranty coverage period has expired or performance of repairs regarding anything excluded from coverage after this limited warranty shall be considered good-will repairs and they will not alter the terms of this limited warranty, or extend any warranty coverage period.
5. Venue for any legal proceedings relating to or arising out of this warranty shall be in Tippecanoe County, Indiana, United States, which courts will have exclusive jurisdiction.

D. Local Law

1. This warranty gives the customer specific legal rights. The customer may also have other rights that vary from state to state in the United States or other countries.
2. To the extent that this warranty is inconsistent with local law, it shall be deemed modified, only to the extent necessary to be consistent with such local law.

This product uses food grade materials anywhere the product touches the beverage.

Warning: This product contains or may contain chemical(s) known to the State of California to cause cancer, birth defects, or other reproductive harm.