



Model MINI-22

Automatic Feed Mixer Grinder



☆ **IMPORTANT NOTICE** ☆
This Manual contains important
safety instructions which must be
strictly followed when using
this equipment.

MINI-22-374
No.: MINI-22-374-5-15-1-B

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NOTICE TO OWNERS AND OPERATORS

BIRO'S products are designed to process food products safely and efficiently. Unless the operator is properly trained and supervised, however, there is the possibility of a serious injury. It is the responsibility of the owner to assure that this machine is used properly and safely, strictly following the instructions contained in this Manual and any requirements of local law.

No one should use or service this machine without proper training and supervision. All operators should be thoroughly familiar with the procedures contained in this Manual. Even so, BIRO cannot anticipate every circumstance or environment in which its products will be used. You, the owner and operator, must remain alert to the hazards posed by the function of this equipment, particularly the ROTATING GRINDING AUGER and the ROTATING MIXING PADDLE, which can severely injure an inattentive operator amputating fingers and limbs. No one under eighteen (18) years of age should operate this equipment. If you are uncertain about a particular task, ask your supervisor.

This Manual contains a number of safe practices in the SAFETY TIPS section. Additional warnings are placed throughout the Manual. Warnings related to your personal safety are indicated by:



OR



Warnings related to possible damage to the equipment are indicated by:



BIRO also has provided warning labels on the equipment. If any warning label, instruction label or Manual becomes misplaced, damaged, or illegible, please contact your nearest Distributor or BIRO directly for a replacement.

Remember, however, this Manual or the warning labels do not replace the need to be alert and to use your common sense when using this equipment.

-NOTE-

**“A copy of this manual is included with each MODEL MINI-22 MIXER GRINDER.
The descriptions and illustrations contained in this manual are not binding.
The manufacturer reserves the right to introduce any modification without updating
the manual.”**

SAFETY TIPS



ROTATING GRINDING AUGER & ROTATING MIXING PADDLES TO AVOID SERIOUS PERSONAL INJURY

***NEVER** Touch This Machine without Training and Authorization by Your Supervisor.*

***NEVER** Place Hands into Machine Input or Output Openings.*

***NEVER** Open Machine During Operation.*

***ONLY** Use a Qualified Electrician to Install According to Local Building Codes: Machine **MUST** Be Properly Grounded.*

***ALWAYS** Connect to **Proper** Voltage & Phase.*

***ONLY** Install on a Level, Non-Skid Surface in a Clean, Well-Lighted Work Area Away from Children and Visitors.*

***ALWAYS** Lock Machine Casters After Moving This Machine.*

***NEVER** Use This Machine For Non-Food Products.*

***NEVER** Operate Machine With Product Mixer Safety Cover Opened, Removed, or Interlock Switch By-passed.*

***ALWAYS** Turn Off, Unplug Machine From Power Source and Perform Lockout/Tagout Procedure to this Machine **BEFORE** Attempting to Unjam or Unclog, Cleaning or Servicing.*

***NEVER** Leave Machine Unattended While Operating.*

***NEVER** Alter This Machine From its Original Form as Shipped From Factory. **DO NOT** Operate Machine With Missing Parts.*

***PROMPTLY REPLACE** Any Worn or Illegible Warning Labels.*

***ALWAYS** Read Operation and Service Manual **BEFORE** Operating, Cleaning, or Servicing.*

***USE ONLY** BIRO Parts and Accessories Properly Installed.*

INSTALLATION



TO AVOID SERIOUS PERSONAL INJURY, PROPERLY INSTALL EQUIPMENT IN ADEQUATE WORK AREA

ALWAYS Use Qualified Technician and Electrician for Installation.

*ALWAYS Connect to **Proper** Voltage & Phase.*

ALWAYS Install Equipment in Work Area with Adequate Light and Space Away from Children and Visitors.

***ONLY** Operate on a Solid, Level, Non-Skid Surface.*

ALWAYS Lock Machine Casters After Moving Machine.

NEVER Bypass, Alter, or Modify This Equipment in Any Way From Its Original Condition.

NEVER Operate Machine With Product Mixer Safety Cover Opened or Removed or Safety Switch By-Passed.

NEVER Operate Without all Warning Labels Attached and Owner/Operator Manual Available to the Operator.

UNCRATING AND SET UP

1. Read this Manual thoroughly before installation and operation. **Do not** proceed with installation and operation if you have any questions or do not understand anything in this Manual. Contact your local Distributor, or BIRO **first**.
2. Remove all banding, shipping carton, and all equipment from inside the tub. Then take machine off shipping pallet.
3. Install machine on a level, non-skid surface in a well-lighted work area away from children and visitors.
4. This machine is complete except for knife and plate. There is a bowl shipping plug (cardboard) placed in the output end of the grinding bowl to retain the grinding auger during shipment. **REMOVE THE BOWL SHIPPING PLUG AND THE GRINDING AUGER.**



5. After checking and making sure the power supply is correct, plug in your machine.
NEVER OPERATE MACHINE WITH PRODUCT SAFETY COVER OPEN.
(Machine will not run with cover open or hopper removed.)
6. Machine must be properly grounded. Use qualified electrician to install according to local building codes.

MOTOR WIRING AND ELECTRICAL REQUIREMENTS

1. **Single phase** grinders are wired 208/220 volts unless otherwise specified. Be sure motor variable frequency drives parameters are adjusted for correct line voltage. Be sure to read line voltage for correct parameter adjustment. See variable frequency drive manuals for parameter settings.
Three phase grinders are wired 208/220 volts unless otherwise specified. Be sure motor specifications (voltage, cycle, phase) match power supply line. Be sure voltage is up to specification.
2. Connect leads to machine in a manner that will be approved by local electrical inspectors.
3. Rated voltage of the unit shall be identical with full supply voltage.
4. Voltage drop on the supply line shall not exceed 10% of full supply voltage.
5. The feederline conductor size in the raceway from the branch circuit to the unit must be correct to assure adequate voltage under heavy starting and short overload conditions.
6. The feederline conductor shall only be used for the supply of one unit of the relevant horsepower. For connections of more than one unit on the same feederline, a local electrician will have to be consulted to determine the proper conductor size.
7. The size of the electrical wiring required from the power source to the **Single phase** mixer-grinder/chopper is a **MINIMUM OF No. 10 GAUGE WIRE**.
The size of the electrical wiring required from the power source to the **Three phase** mixer-grinder/chopper is a **MINIMUM OF No. 12 GAUGE WIRE**.
8. The BIRO Manufacturing Company is not responsible for permanent wiring, connection or installation.



PRE-OPERATION AND AUGER ROTATION CHECK

ROTATION MUST ONLY BE CHECKED WITH THE GRINDING AUGER REMOVED, otherwise serious irreparable damage may occur to grinding components.

1. Turn the hand/foot selector switch to the hand position. Push the green start button. CHECK THE ROTATION OF THE AUGER DRIVE SHAFT; ROTATION MUST BE COUNTER-CLOCKWISE as indicated by the rotation decal affixed to the grinding bowl.
2. If machine runs clockwise (backwards), it must be rewired to correct rotation, otherwise serious irreparable damage may occur to the grinding components.
3. Check operation of optional pneumatic footswitch provided as needed. Plug footswitch cord into female coupling located on the same side as the operation controls. Move selector switch to foot. The machine will operate with pressure on the footswitch treadle. Releasing the treadle stops the machine. The footswitch operates the mix and grind together.
4. Insert auger assembly into grinding bowl, place knife (sharp edges out) onto the square end of the auger assembly. The breaker plate slides over the worm knife drive pin, and is held from rotating by pins in the grinder bowl. Install the retaining ring.



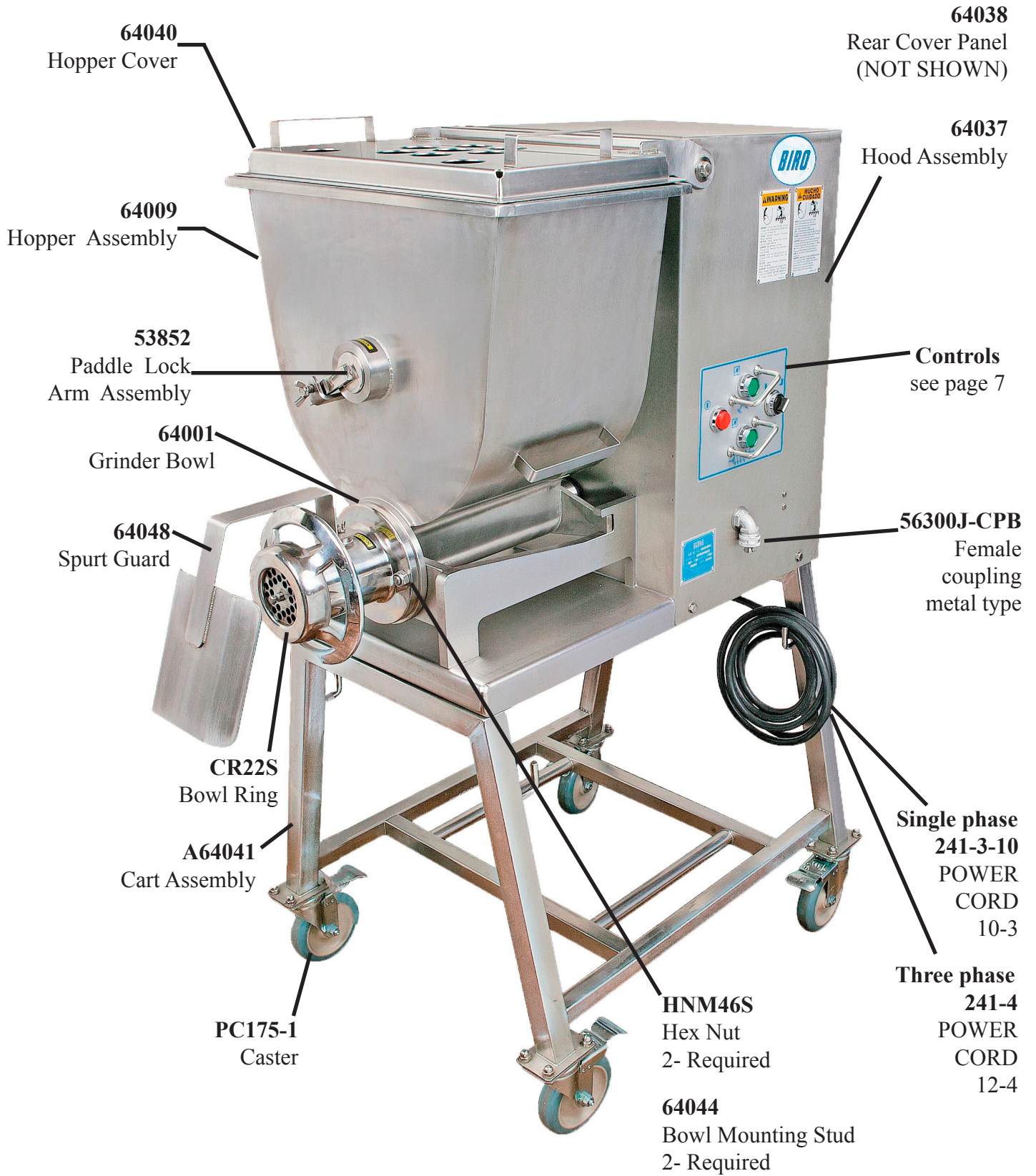
ONLY HAND TIGHTEN RETAINING RING

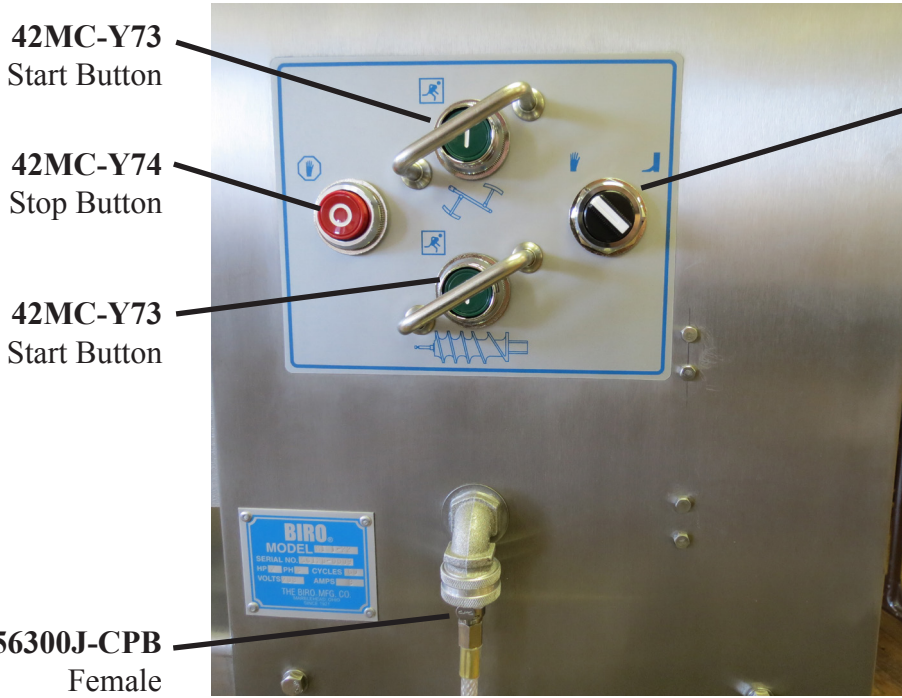
For best results, use knife and plate as a set. Do not operate machine for any period of time without product in the grinding bowl. This will cause heating and dulling of the knife and plate.

5. Check placement of all warning labels and be sure anyone who is to operate this MINI-22 MIXER GRINDER has read and fully understands the operators manual. Machine is now ready for trained operators to process product.
6. Use meat deflector attached to grinding bowl to eliminate meat splatter.
7. Contact your local distributor if you have any questions or problems with the installation or operation of this machine.

OPERATOR'S NOTES

PARTS LOCATION





42MC-Y73
Start Button

42MC-Y74
Stop Button

42MC-Y73
Start Button

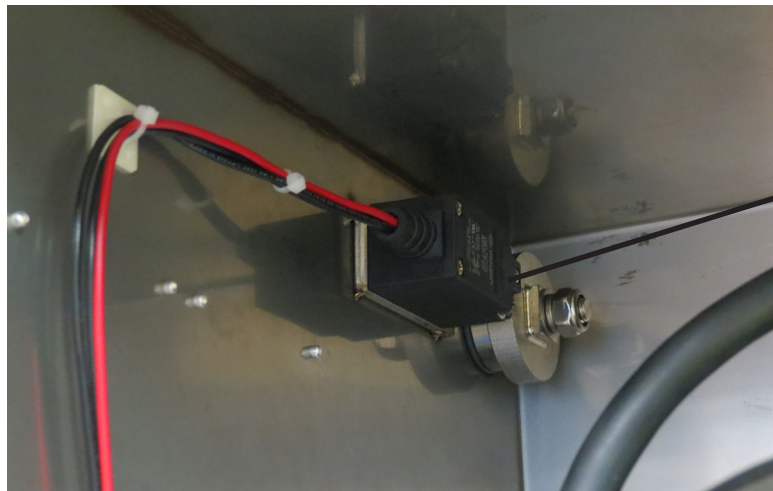
56300J-CPB
Female
coupling
metal type

*Hand/Foot
Selector Switch
Phase Specific*

64029 (Single Ph)
Hand/Foot
Selector Switch

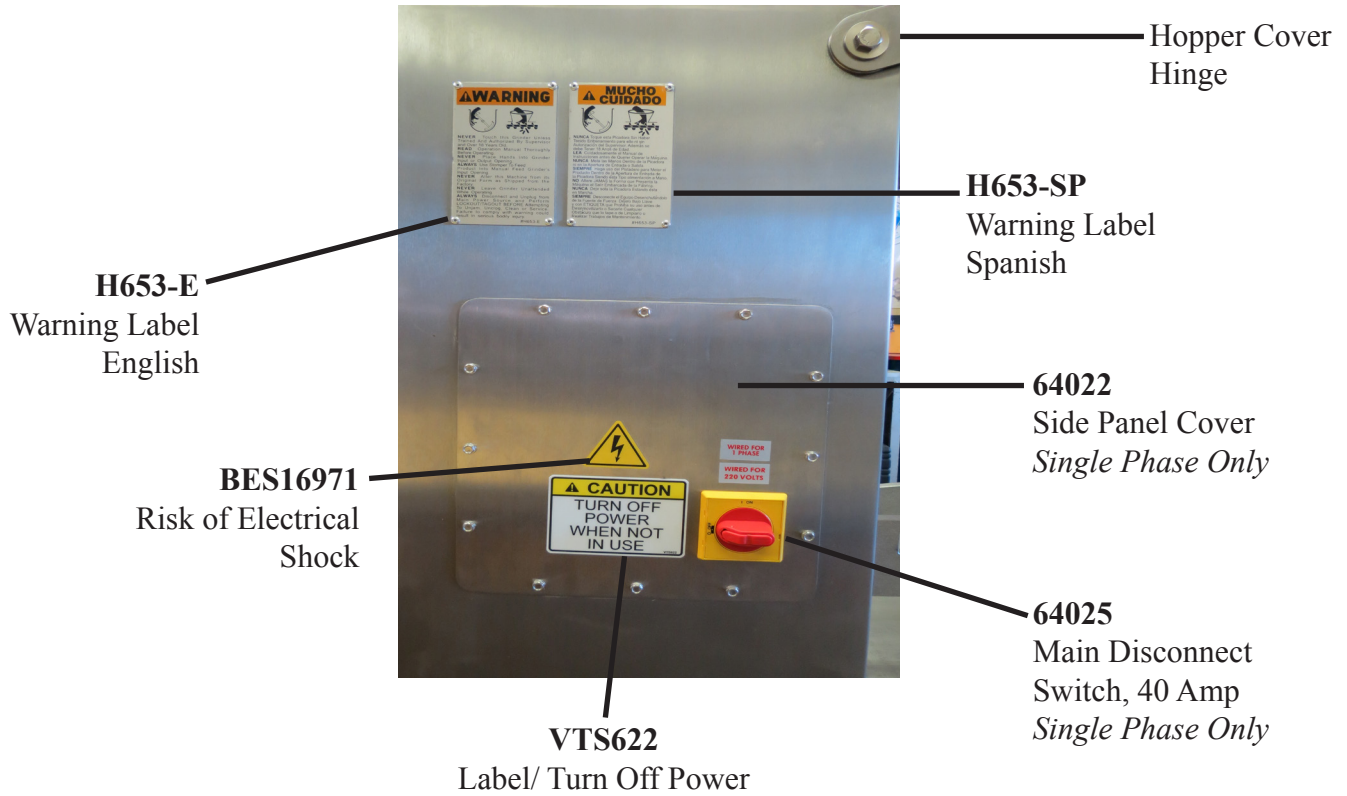
EMG90668 (Three PH)
Hand/Foot
Selector Switch

NOT SHOWN
56304
Pneumatic
Foot Switch Assembly
see page 12



64026
Lid Limit Switch

Mini-22 Single Phase



H653-E
Warning Label
English

Hopper Cover
Hinge

H653-SP
Warning Label
Spanish

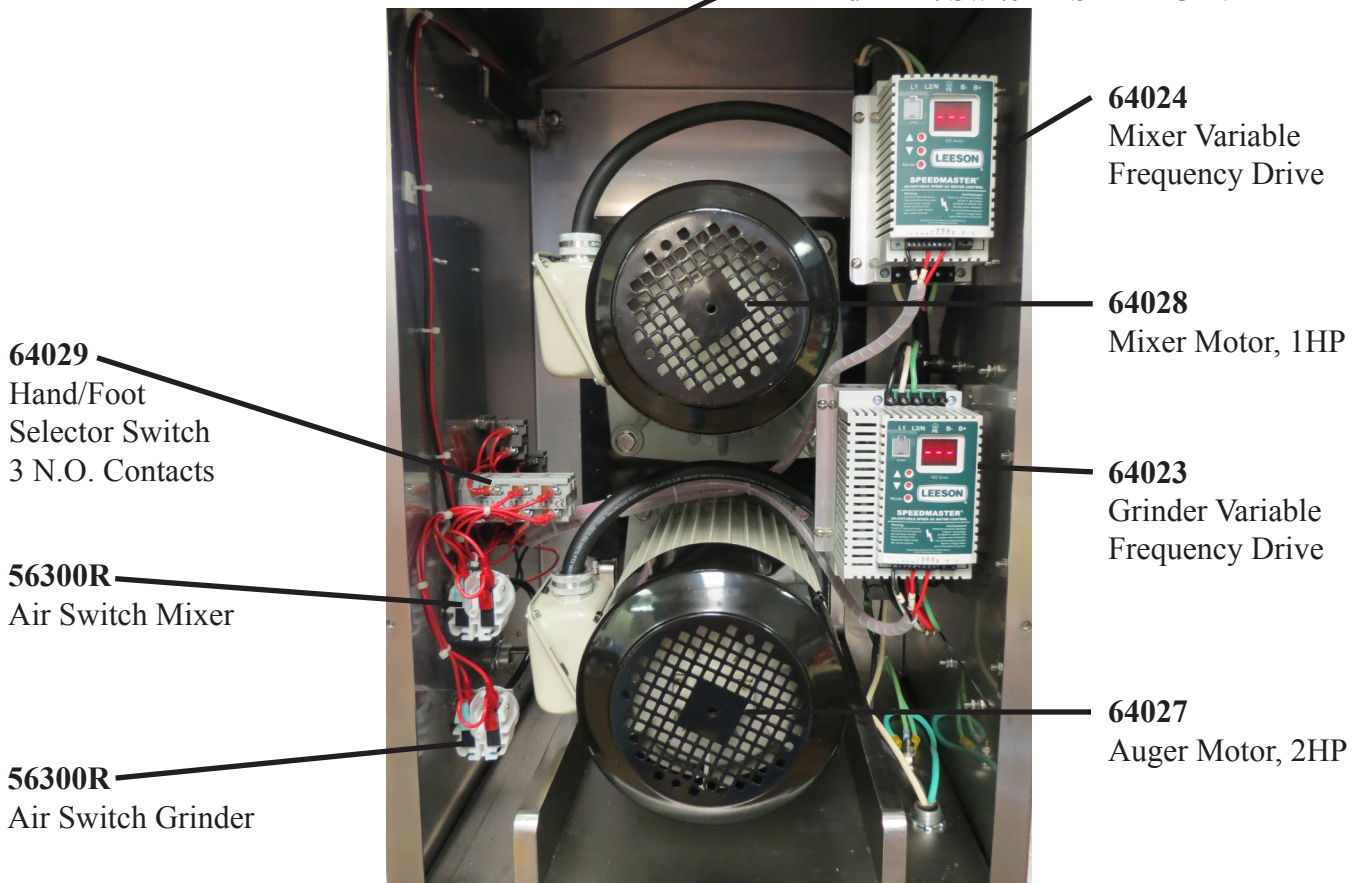
BES16971
Risk of Electrical
Shock

64022
Side Panel Cover
Single Phase Only

VTS622
Label/ Turn Off Power

64025
Main Disconnect
Switch, 40 Amp
Single Phase Only

64026
Lid Limit Switch - *SEE PAGE 7*



64029
Hand/Foot
Selector Switch
3 N.O. Contacts

64024
Mixer Variable
Frequency Drive

56300R
Air Switch Mixer

64028
Mixer Motor, 1HP

64023
Grinder Variable
Frequency Drive

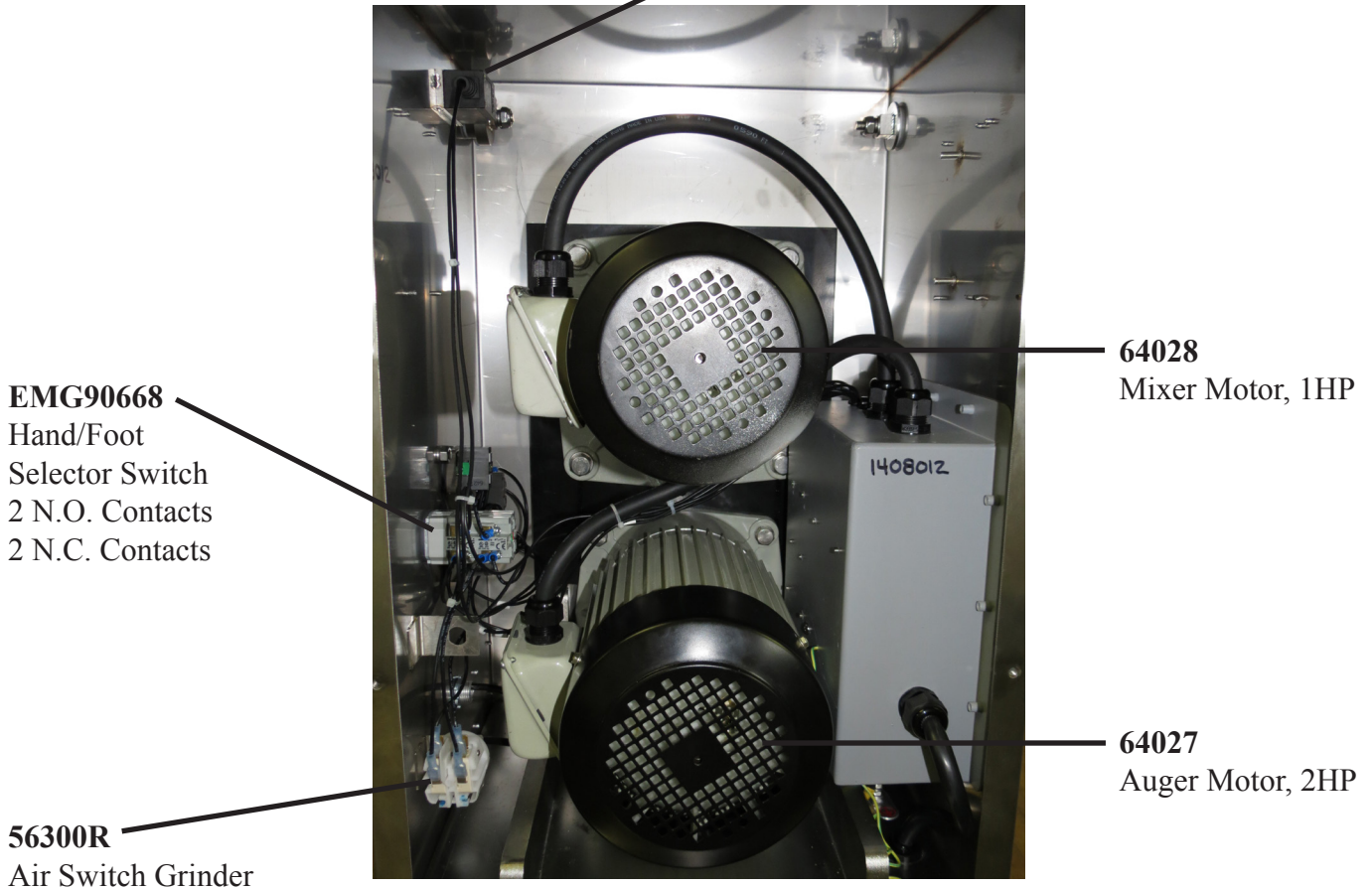
56300R
Air Switch Grinder

64027
Auger Motor, 2HP

**Mini-22
Three Phase**

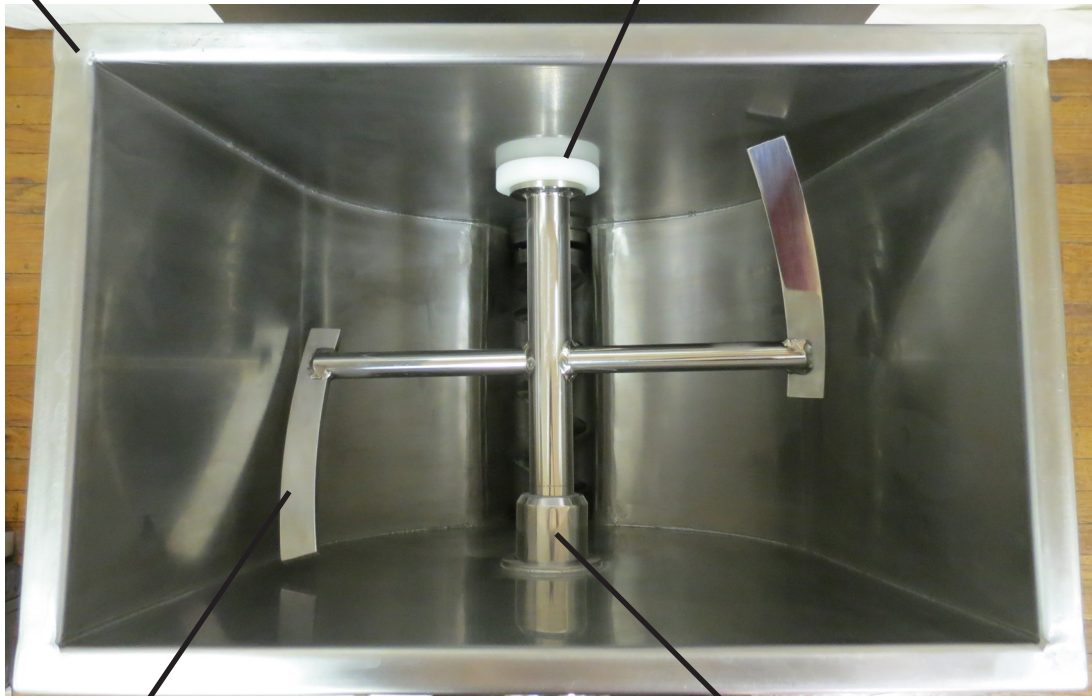


64026
Lid Limit Switch - *SEE PAGE 7*



64009
Hopper

63136
Paddle Spacer



63073-2
Curved Mixing
Paddle (Shown)

53852
Lock Arm Bushing

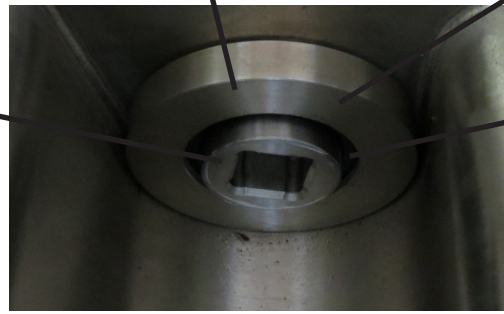
63073
Round Mixing
Paddle (Available)

HHSM015S
Hex Head Screw
3- Req'd
(not shown)

64013
Retaining Ring

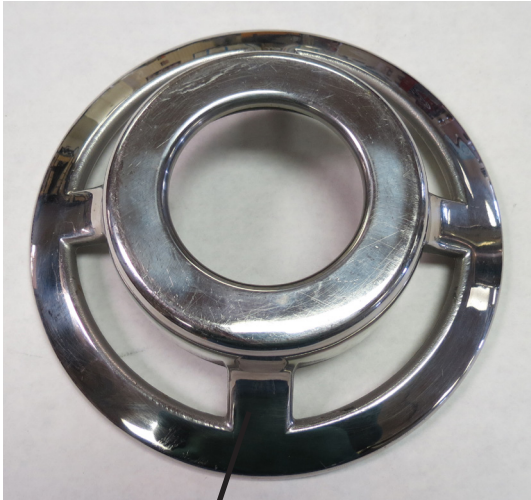
64015
Auger Drive Shaft

64014
Auger Drive Seal

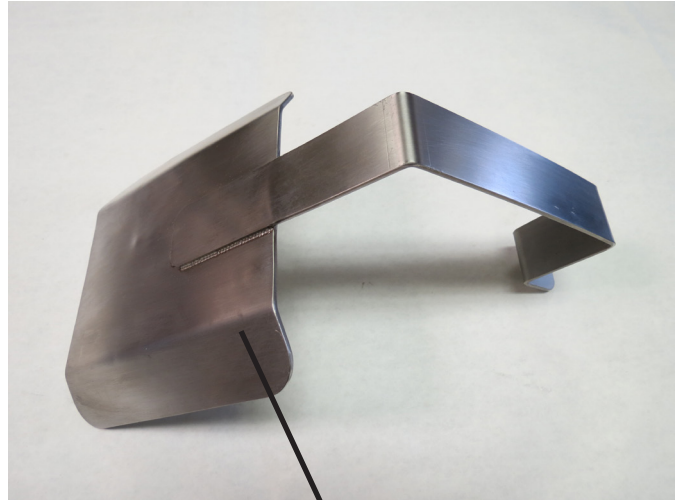


A64002
Auger Assembly Complete

CK22
Knife Drive Pin



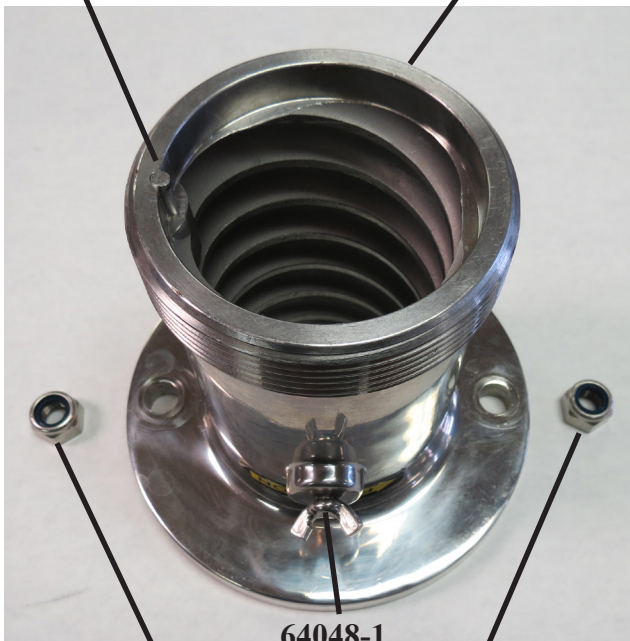
CR22S
Bowl Ring
Note- Hand tighten only



64048
Spurt Guard

CP22
Bowl Pin

64001
Grinder Bowl

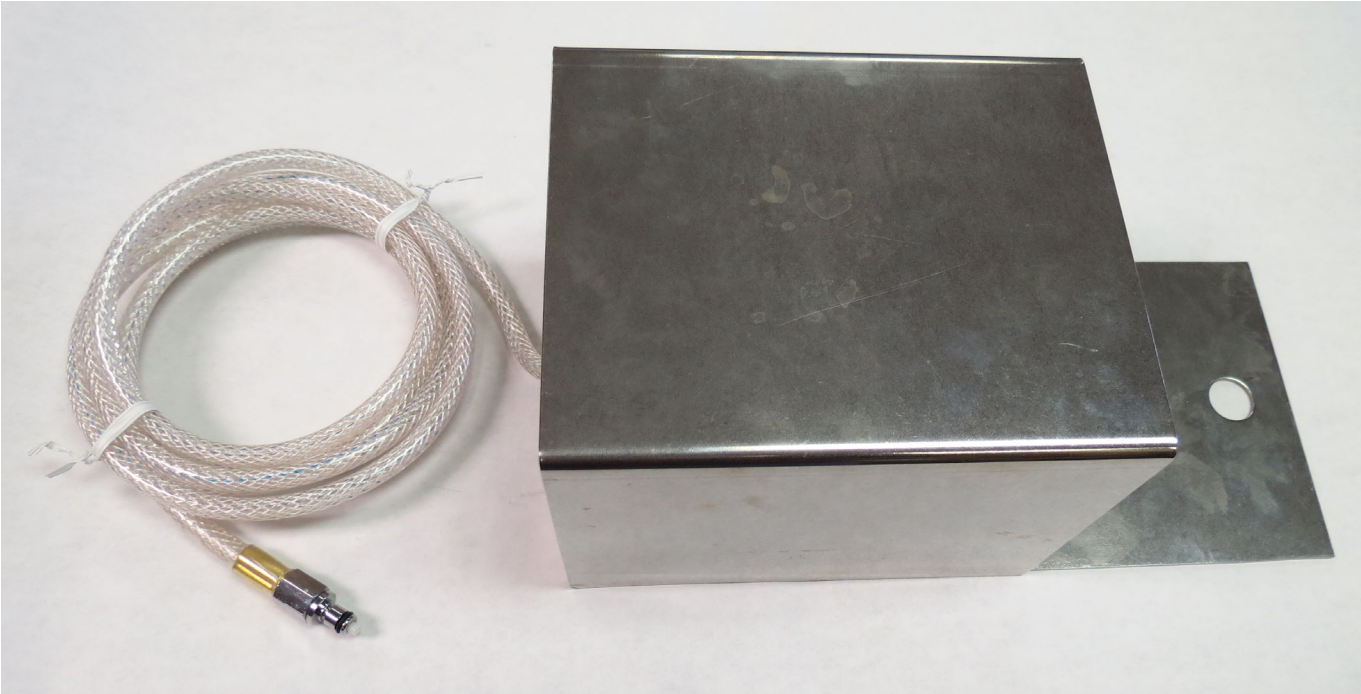


64048-1
Spurt Guard,
Thumb Screw
HNM46S
Hex Nut
2- Required
Uses 19mm Wrench

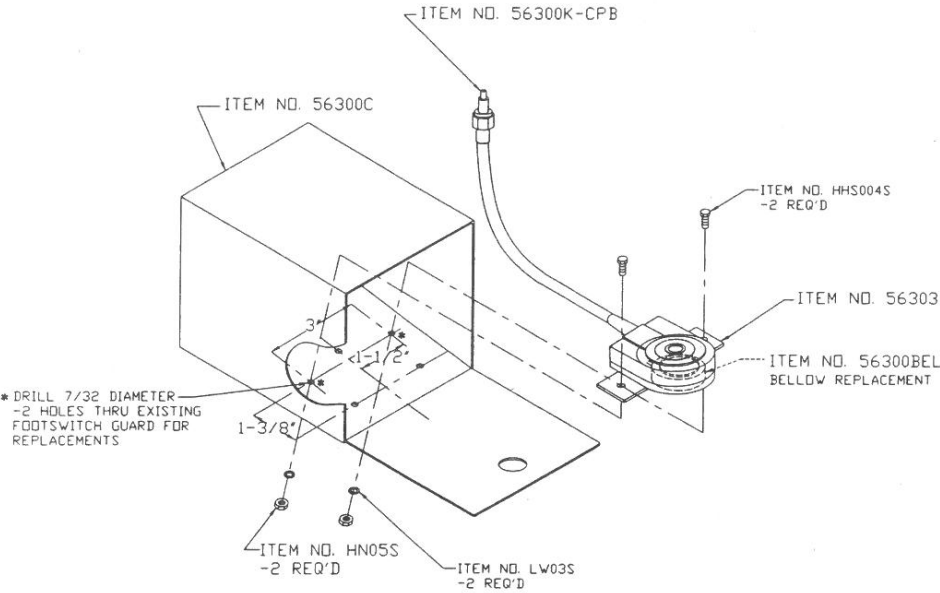
64036
19mm Wrench
For Bowl Fasteners



56304
Pneumatic Footswitch Assembly



**OPTIONAL PNEUMATIC
FOOT SWITCH
#56304**



PART NO.	DESCRIPTION
56300BEL	Bellow, Replacement
56300C	Guard Only
56300K-CPB	CPB Coupling Metal Body-Male
56303	Foot Switch w/Male Coupling
56304	Foot Switch Assembly w/6' tube, Coupling & Guard
HHS004S	Hex Head Screw, #8 - 32 x 3/8
HN05S	Hex Nut #8 - 32
LW03S	Lock Washer #8

OPERATION



ROTATING GRINDING AUGER & ROTATING MIXING PADDLE

TO AVOID SERIOUS PERSONAL INJURY

ONLY Properly Trained Personnel Should Use This Equipment.

NEVER Place Hands Into Machine Input or Output Openings.

NEVER Open Machine During Operation.

DO NOT Wear Gloves While Operating.

DO NOT Tamper With, Bypass, Alter, Or Modify This Equipment in Any Way from Its Original Condition.

NEVER Operate Machine With Product Mixer Safety Cover Opened or Hopper Removed or Safety Switch By-Passed.

ALWAYS Turn Off and Unplug Machine from Power Source and Perform Lockout/Tagout Procedure to This Machine Before Unjamming, Unclogging, Cleaning or Servicing, or When Not in Use.

NEVER Leave Machine Unattended while Operating.

NEVER Operate Without All Warning Labels Attached and Operating Manual Available to the Operator.

A. TO PROCESS PRODUCT

1. Before starting the mixer-grinder, have a container for receiving ground product at the output end of the grinding bowl.
2. FIRST GRIND
 - a. Fill product hopper (maximum 45 pounds), and close Product Mixer Safety Cover.
 - b. With the hand/foot selector switch in hand position, push the green mixer start button. Next press green grinder start button. It is recommended to use a breaker plate with a 3/8" diameter or larger holes.
 - c. When all product has been ground out press red stop button.
3. SECOND GRIND - *If required, change breaker plate.*
 - a. Fill product hopper (maximum 45 pounds), and close Product Mixer Safety Cover.
 - b. With the hand/foot selector switch in hand position, push the green mixer start button. During the mix operation seasonings may be added through the sight holes in the hopper cover.
 - c. After the desired mix, press green grinder start button.
 - d. When all product has been ground out press red stop button.
4. When grinding process is complete, unplug machine from power source and perform lockout/tagout procedures. Proceed to cleaning.

DO's

- Always keep knife & plate as matched set.
- Always keep the knife & plate sharp.
- Always check for straightness by laying the knife on the plate before inserting in machine.
- Always install the knife & plate in correct sequence, knife 1st, then plate.
- Always keep knives & plates lubricated in storage and when starting machine.
- Always use coolant when sharpening plates.
- Always inspect the plates making sure all holes are clear - that there are no cracks.

DONT's

- Never, never mix different knives to different plates.
- Never, never over tighten the bowl retaining ring on the machine.
- Never, never run the grinder without product. Product is a natural lubricant. Heat can build up so fast that cold product could crack the plate.
- Never, never hit the plate against anything to clean the holes.
- Never, never throw the knives & plates.

CLEANING



BEFORE CLEANING OR SERVICING

ALWAYS Turn Off and Unplug Machine from Power Source and Perform Lockout/Tagout Procedure to This Machine ***Before*** Cleaning or Servicing.

ONLY Use Recommended Cleaning Equipment, Materials, and Procedures.

NEVER Spray Water or Other Liquid Substances Directly at Motor, Power Switch or any Other Electrical Components.

ALWAYS Thoroughly Clean Equipment at Least Daily.

CLEANING THE MINI-22 MIXER GRINDER

1. Disconnect mixer grinder from power source and perform lockout/tagout procedures.
2. Remove end ring, breaker plate, knife and grinding auger.
3. Remove mixing paddle, bowl and hopper from the machine (see page 15 for procedures).
4. Machine is now ready to be cleaned using warm soapy water and rinsed with clean water. Machine may be cleaned by power spray washing, taking care not to spray directly at any electrical controls.
5. After machine has been cleaned and allowed to air dry, all exposed metal surfaces should be coated with a good food grade light oil or grease.

REMOVAL/INSTALLATION INSTRUCTIONS

PADDLE REMOVAL:

Open hopper cover, loosen the paddle lock thumb screw(thumb screw located at front of hopper). While holding mixing paddle, turn lock arm clockwise, and remove lock arm from hopper. Next remove paddle drive end from square drive. Then remove paddle from hopper.

PADDLE INSTALLATION:

Install paddle drive end into square drive. Holding mixing paddle, align paddle shaft to the lock arm. Slide lock arm into hopper onto the shaft. Turn counterclockwise to lock position. Tighten thumb screw.

BOWL/HOPPER REMOVAL:

Remove ring, breaker plate and knife. Auger can now be pulled out from grinding bowl. Using 19mm wrench, loosen both hex nuts from bowl flange. Remove bowl by pulling away from hopper studs. Remove hopper from frame by pulling from front of machine.

BOWL/HOPPER INSTALLATION:

Install hopper onto frame, slide back into position. Install bowl onto the hopper studs, install and tighten hex nuts to secure bowl. Slide the auger into bowl, install knife, breaker plate and ring.

Note: Ring is to be hand tightened only.

MAINTENANCE



ROTATING GRINDING AUGER & ROTATING MIXING PADDLE

TO AVOID SERIOUS PERSONAL INJURY

***ALWAYS** Turn Off and Unplug Machine from Power Source and Perform Lockout/Tagout Procedure to This Machine **Before** Cleaning or Servicing.*

***NEVER** Touch This Machine Without Training and Authorization By Your Supervisor.*

***NEVER** Place Hands Into Machine Input or Output Openings.*

***NEVER** Bypass, Alter or Modify This Equipment in Any Way From Its Original Condition.*

***PROMPTLY REPLACE** Any Worn or Illegible Warning Labels.*

***USE ONLY GENUINE BIRO** Parts and accessories Properly Installed.*

GENERAL:

Check all fasteners for tightness. Replace any missing fasteners.

Check all tags and labels. They must be legible. Replace if required.

Check casters. They must roll freely and lock in place. Replace if required.

Check lid alignment. It should sit evenly on top edge of hopper. Correct if required.

Open and close lid. There should be some resistance, lid should lower slowly.

Check removable hopper appearance. Fix any damage if required.

Check seal and seal retainer located on removable hopper. Correct if required.

Check mixing paddle for damage. Be sure it does not rub inside of hopper. Correct or replace if required.

Check bowl, auger, knife drive pin and ring for any damage. Replace if required.

Check control switches they must be in good working order. Replace if required.

Check pneumatic footswitch for damage. Fix or replace if required.

MOTOR GEAR DRIVES:

Both the mixer and grinder motor gear drives are totally enclosed. They are lubricated and sealed from the manufacturer. They do not require any maintenance or lubrication changes.



ELECTRICAL MAINTENANCE

***ALWAYS** Use Qualified Technician and Electrician for Maintenance.*

***ALWAYS** Turn Off and Unplug Machine from Power Source and Perform Lockout/Tagout Procedure to This Machine **Before** Cleaning or Servicing.*

ELECTRICAL COMPONENTS:

Check all electrical connections for tightness.

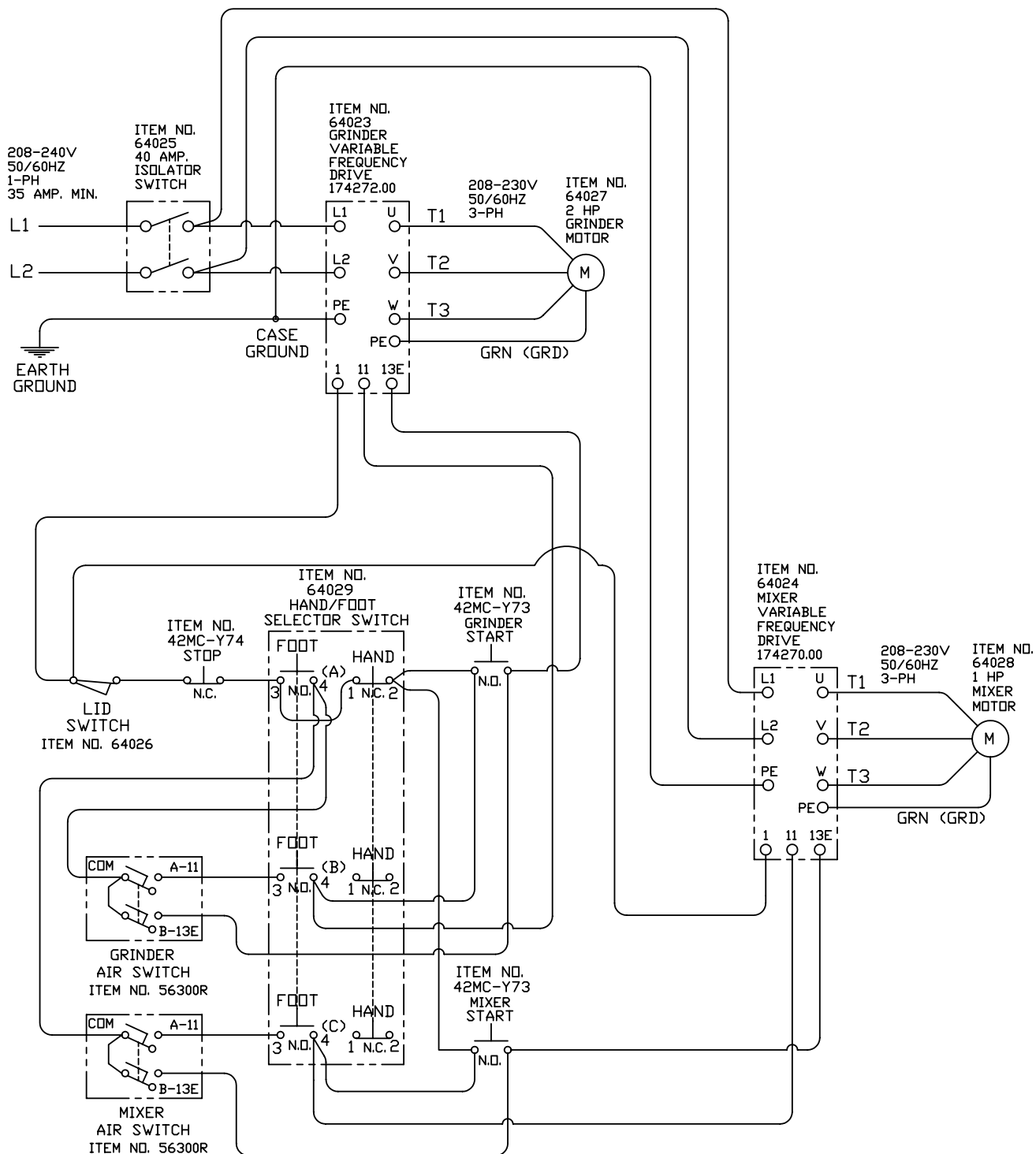
Check power cord for any damage. Repair or replace if required.

Check all control switches for tightness.

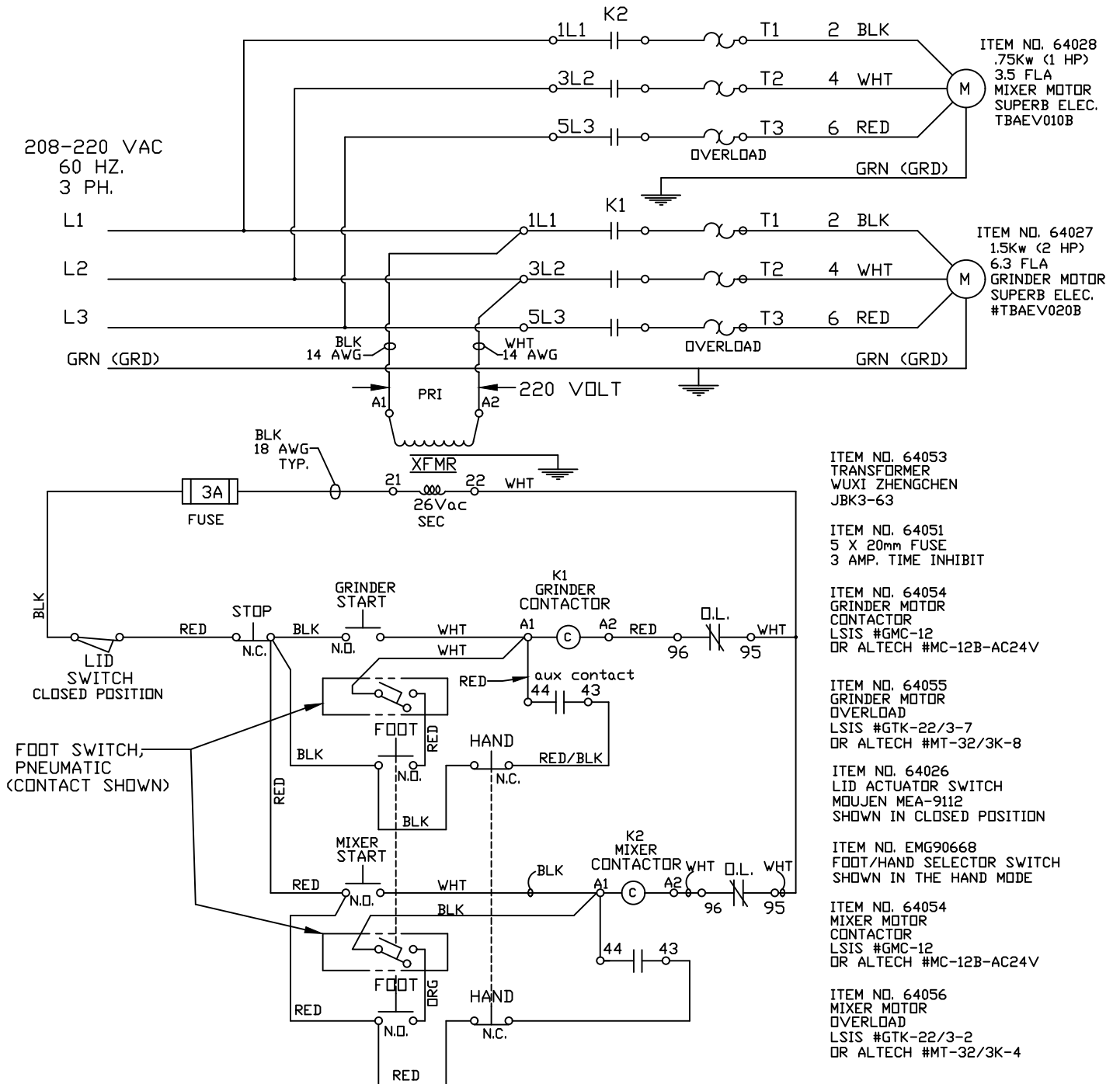
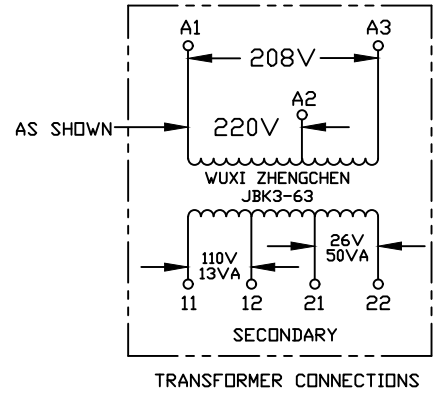
Check lid limit switch for proper operation and tightness.

If any access panels have been removed, they must be re-sealed with an NSF listed sealant.

ELECTRICAL SCHEMATIC MINI-22
 VARIABLE FREQUENCY DRIVES
 WITH PNEUMATIC FOOT SWITCH
 208-240 VAC
 SINGLE PHASE INPUT
 208-230 VAC
 THREE PHASE OUTPUT



ELECTRICAL SCHEMATIC MINI-22
 STARTING WITH S/N 73003
 WITH PNEUMATIC FOOT SWITCH
 THREE PHASE



OPERATOR'S NOTES

OPERATOR'S SIGNATURE PAGE

WARNING READ AND UNDERSTAND THIS ENTIRE MANUAL BEFORE SIGNING BELOW
--

MY SIGNATURE ATTESTS THAT I HAVE COMPLETELY READ AND UNDERSTAND THIS MANUAL. I REALIZE THAT THIS MACHINE, IF OPERATED CARELESSLY, CAN CAUSE SERIOUS INJURY TO MYSELF AND OTHERS.

NAME (PRINT)	SIGNATURE	SUPERVISOR'S INITIALS	DATE

LIMITED WARRANTY:

WARRANTY: The Biro Manufacturing Company warrants that the Biro MINI-22 Grinder will be free from defects in material and workmanship under normal use and with recommended service. BIRO will replace defective parts, which are covered by this limited warranty, provided that the defective parts are authorized for return, shipping charges prepaid, to a designated factory for inspection and/or testing.

DURATION OF WARRANTY: The warranty period for all parts covered by this limited warranty is one (1) year from date of inspection/demonstration as advised on the returned Warranty registration card, or eighteen (18) months from original factory shipping date, whichever date occurs first, except as noted below.

PARTS NOT COVERED BY WARRANTY: The following are **not** covered by this limited warranty: wear-able parts in the grinding system such as bowl, ring, worm, drive shaft, knife drive pin, bowl pin, knife and plate. This limited warranty does not apply to machines sold as used, rebuilt, modified, or altered from the original construction in which the machine was shipped from the factory. (Water contaminated electrical systems are not covered under this limited warranty.) BIRO is not responsible for electrical connection of equipment, adjustments to the switch controls or any other electrical requirements, which must be performed only by a certified electrician. BIRO is not responsible for service charges or labor required to replace any part covered by this limited warranty or any damages resulting from misuse, abuse, lack of proper or recommended service.

EXCLUSION OF WARRANTIES AND LIMITATION OF REMEDIES: BIRO gives no warranties other than those expressly stated in this limited warranty. THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR PROCESSING OF FOOD PRODUCTS, AND ALL OTHER IMPLIED WARRANTIES ARE SPECIFICALLY EXCLUDED. BIRO IS NOT LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, EXPENSES, OR LOSSES. THE REMEDIES PROVIDED IN THIS BIRO LIMITED WARRANTY ARE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES AGAINST BIRO.

REGISTRATION CARDS: You must sign, date and complete warranty registration card supplied with each machine. The warranty card must be returned to the Biro Manufacturing Company for proper registration. If no warranty card is returned to BIRO, the warranty period will begin from the date the machine was originally shipped from the factory.

HOW TO GET SERVICE:

1. Contact the entity from whom you purchased the machine; or
2. Consult the yellow pages of the phone directory for the nearest authorized dealer; or
3. Contact BIRO Mfg. Company for the authorized service entity (250 plus worldwide) in your area.

BIRO MANUFACTURING COMPANY

1114 Main St

Marblehead, OH 43440 U.S.A.

Ph: 419-798-4451: Fax: 419-798-9106

E-mail: service@birosaw.com

Web: <http://www.birosaw.com>

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No.: MINI-22-374-5-15-1-B