



Model AFMG-52 AUTOMATIC FEED MIXER GRINDER OPERATING AND SERVICE MANUAL

STARTING WITH SERIAL NO. 52001

STARTING WITH SERIAL NO. 52101

(SIDE OPENING LID)

STARTING WITH SERIAL NO. 52345

(35 ° INLET/TRI DIRECTIONAL LID)



☆ **IMPORTANT NOTICE** ☆

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

Item No. 57037

Form No. AFMG52-232-6-17-18 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 relate 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.

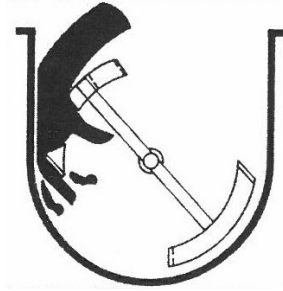
This Manual applies to machines with serial number 52001 and higher, to machines with tri-directional product mixer safety cover and 35 degree inlet, serial number 52345 and higher.

- NOTE -

A copy of this manual is included with each MODEL AFMG-52 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 PADDLE 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 Level, Non-Skid Surface in a Clean, Well-Lighted Work Area Away from Children and Visitors.
- **ALWAYS** Lock Machine Castors After Moving This Machine.
- **NEVER** Use This Machine For Non-Food Products.
- **NEVER** Operate Machine With Product Mixer Safety Cover Open or Removed or Magnetic 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 Grinder is Running.
- **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 Castors After Moving Machine to Operating Location.
- **NEVER** Bypass, Alter, or Modify This Equipment in Any Way From Its Original Condition.
- **NEVER** Operate Machine With Product Mixer Safety Cover Open or Removed or Magnetic Interlock 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. This machine is shipped with the adjustable legs fully retracted. The legs allow for a height adjustment from the floor to centerline of bowl 23⁹/₁₆” minimum to 33¹/₁₆” maximum.
4. This machine weighs approximately 750 pounds. To avoid accidents block up machine after raising to desired operating height.
5. The adjustable legs can now be unbolted and lowered to the floor using the following steps.
 - a. Unbolt leg and while holding leg turn leg adjusting stud (Item No. 54310) clockwise until castor rests on floor.
 - b. Be sure bolt holes line up. Replace bolts and tighten securely.
6. Install machine on a level, non-skid surface in a well-lighted work area away from children and visitors.
7. 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.**



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

MOTOR WIRING AND ELECTRICAL REQUIREMENTS

1. Interchange of current is made in motor outlet box. Leads are properly marked. Changing instructions are on the motor plate or motor outlet box.
2. All grinders are wired 220 volts unless otherwise specified. Be sure motor specifications (voltage, cycle, phase) match power supply line. Be sure line voltage is up to specification.
3. Electrical connections to be in accordance with safety codes and National Electrical Code.
4. Rated voltage of the unit shall be identical with full supply voltage.
5. Voltage drop on the supply line shall not exceed 10% of full supply voltage.
6. 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.
7. 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.
8. The size of the electrical wiring required from the power source to the mixer grinder with a 7½ HP grind motor is a **MINIMUM OF No. 10 WIRE**. With 10 HP grind motor **MINIMUM OF No. 8 WIRE** to be used.
9. The recommended amp service size for the mixer grinder with a **7½ HP, 400V grind motor is 40 Amp service**. With a **10 HP, 400V grind motor is 50 Amp service**.
10. The BIRO Manufacturing Company is not responsible for permanent wiring, connection or installation.

3-PHASE MOTOR SPECIFICATIONS AND OVERLOADS

MIXER MOTOR

BALDOR/DORRIS MOTOR	Voltage	Cycles	Overload	Amps	Item No.
1 HP/ .75kw	200	60	E-41	3.7	53900
1 HP/ .75kw	208	60	E-41	3.6	53900
1 HP/ .75kw	220	60	E-41	3.5	53900
1 HP/ .75kw	230	60	E-41	3.4	53900
1 HP/ .75kw	440	60	E-29	1.8	53922
1 HP/ .75kw	460	60	E-29	1.7	53922
1 HP/ .75kw	575	60	E-27	1.3	53997
1 HP/ .75kw	220	50	E-44	4.2	53924
1 HP/ .75kw	380	50	E-34	2.1	53926
1 HP/ .75kw	415	50	E-34	2.0	53926
BALDOR/DORRIS MOTOR	Voltage	Cycles	Overload	Amps	Item No.
1.5 HP/ 1.1kw	200	60	E-48	5.5	50669
1.5 HP/ 1.1kw	220	60	E-48	5.0	50669
1.5 HP/ 1.1kw	440	60	E-38	2.5	52740
1.5 HP/ 1.1kw	460	60	E-36	2.4	52739
1.5 HP/ 1.1kw	575	60	E-33	1.9	52729
1.5 HP/ 1.1kw	220	50	E-48	6.0	50669
1.5 HP/ 1.1kw	380	50	E-39	3.5	52732
1.5 HP/ 1.1kw	415	50	E-39	3.2	52732
NORD HIGH EFF. MOTOR	Voltage	Cycles	Overload	Amps	Item No.
1.75 HP/ 1.3kw	200	60	E-50	5.9	50668
1.75 HP/ 1.3kw	208	60	E-48	4.8	50669
1.75HP/ 1.3kw	220	60	E-48	4.6	50669
1.75 HP/ 1.3kw	230	60	E-46	4.2	52742
1.75 HP/ 1.3kw	440	60	E-36	2.7	52739
1.75 HP/ 1.3kw	460	60	E-34	2.1	53926
1.75 HP/ 1.3kw	550	60	E-34	2.2	53926
1.75 HP/ 1.3kw	575	60	E-34	2.1	53926
1.75 HP/ 1.3kw	200	50	E-48	7.1	50669
1.75 HP/ 1.3kw	380	50	E-36	2.5	52739
1.75 HP/ 1.3kw	415	50	E-34	2.3	53926

GRINDER MOTOR

BALDOR MOTOR	Voltage	Cycles	Overload	Amps	Item No.
7.5 HP/ 5.6kw	200	60	E-70	25	53925
7.5 HP/ 5.6kw	208	60	E-69	24	54219
7.5 HP/ 5.6kw	220	60	E-67	23	52609
7.5 HP/ 5.6kw	230	60	E-67	22	52609
7.5 HP/ 5.6kw	440	60	E-56	11.5	52743
7.5 HP/ 5.6kw	460	60	E-56	11	52743
7.5 HP/ 5.6kw	575	60	E-54	8.8	50705
7.5 HP/ 5.6kw	220	50	E-70	27.6	53925
7.5 HP/ 5.6kw	380	50	E-61	16	52744
7.5 HP/ 5.6kw	415	50	E-60	14.6	50667
BALDOR MOTOR	Voltage	Cycles	Overload	Amps	Item No.
10 HP/ 7.5kw	200	60	E-72	30	57028
10 HP/ 7.5kw	208	60	E-72	28.8	57028
10 HP/ 7.5kw	220	60	E-70	27.2	53925
10 HP/ 7.5kw	230	60	E-70	26	53925
10 HP/ 7.5kw	440	60	E-60	13.6	50667
10 HP/ 7.5kw	460	60	E-60	13	50667
10 HP/ 7.5kw	575	60	E-56	10.4	52743
10 HP/ 7.5kw	220	50	E-72	32.6	57028
10 HP/ 7.5kw	380	50	E-62	18.8	50704
10 HP/ 7.5kw	415	50	E-62	17.3	50704

**NOTE TO OWNER AND ELECTRICIAN:
IF THIS MACHINE IS NOT CORD AND
PLUG CONNECTED TO THE
ELECTRICAL SUPPLY SOURCE, THEN
IT SHOULD BE EQUIPPED WITH, OR
CONNECTED TO, A LOCKABLE,
MANUALLY-OPERATED DISCONNECT
SWITCH (OSHA 1010.147)**



10. Two sets of green and red pushbuttons are located on the front of the machine that activate the magnetic contactors that control the mix and grind motors. The magnetic interlock switch is mounted in the pushbutton box. It lines up with the magnet attached to the product mixer safety cover. When the safety cover is raised the machine will stop operation.
11. Push the green start button for grind. **CHECK THE ROTATION OF THE AUGER DRIVE SHAFT; ROTATION MUST BE COUNTER-CLOCKWISE** as indicated by the rotation decal located on the grinding bowl. **ROTATION MUST ONLY BE CHECKED WITH THE GRINDING AUGER REMOVED**, otherwise serious irreparable damage may occur to grinding components.
12. Push the green start button for mix. **CHECK THE ROTATION OF THE MIXING PADDLE; ROTATION MUST BE COUNTER-CLOCKWISE** as indicated by the rotation decal affixed to the mixer paddle front mounting hub. Backwards operation will not allow mixing paddle to feed product to the grinding auger efficiently.



13. If machine runs clockwise(backwards), it must be rewired to correct rotation, otherwise serious irreparable damage may occur to the grinding components. Both the auger and the mixing paddle must operate in the proper direction.
14. Check operation of optional footswitch if equipped. Plug footswitch cord into fitting at the bottom of the pushbutton control box. Move toggle selector 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.
15. Insert auger assembly into the grinding bowl and fully engage the auger into the drive shaft. Place knife (sharp edges out) then grinding plate into end of grinding bowl. The grinding plate slides over the knife drive pin, and is held from rotating during operation by three pins in the grinding bowl. Install the end 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.

16. Check placement of all warning labels and Manual. Machine is now ready for trained operators to process product.
17. Use meat deflector attached to grinding bowl to eliminate meat splatter.
18. Contact your local Distributor or BIRO directly if you have any questions or problems with the installation or operation of this machine.

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 Removed or Magnetic Interlock Switch By-Passed.
- **ALWAYS** Turn Off and Unplug Machine from Power Source and Perform Lockout/Tagout Procedure to This Machine **Before** Attempting to Unjam, Unclog, Cleaning or Servicing.
- **NEVER** Leave Machine Unattended While the Grinder is Running.
- **NEVER** Operate Without All Warning Labels Attached and Owner/Operator 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 200 Pounds), close Product Mixer Safety Cover.
 - b. Push both grind and mix green start buttons to feed first grind. It is recommended to use a breaker plate with a $\frac{3}{8}$ " diameter or larger holes.
 - c. Push both grind and mix red stop buttons when all product has been ground out.
3. SECOND GRIND
 - a. Fill Product Hopper (Maximum 200 Pounds), close Product Mixer Safety Cover.
 - b. Push the mix green start button only. During this mix operation seasonings may be added through the sight holes in the Product Mixer Safety Cover.
 - c. After the desired mix, push the green grind start button to operate grinding auger and grind out product.
 - d. Push both grind and mix red stop buttons when all product has been ground out.
4. Unplug machine from power source and perform lockout/tagout procedures.

CLEANING



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

- **ALWAYS** Turn Off, Unplug Machine From Power Source and Perform Lockout/Tagout Procedures 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 BIRO MIXER-GRINDER

1. Disconnect mixer grinder from power-source and perform lockout/tagout procedures.
2. Remove grinding bowl end ring, breaker plate, knife and grinding auger. Care is needed when handling the knife. Take care when handling the knife during cleaning.
3. Remove mixing paddle. Be sure front most paddle arm is pointing up. Loosen the thumb screw on the mixer paddle lock arm (Item No. 53852). While supporting the mixing paddle, remove the lock arm. Turn the mixing paddle clockwise, slide forward to disengage the drive shaft and lift from product hopper.



DO NOT POWER SPRAY DIRECTLY AT ELECTRICAL COMPONENTS

4. Machine is now ready to be cleaned using warm soapy water and rinsed with clean water. Clean all removed parts, grinding bowl end ring, breaker plate, knife, grinding auger, mixing paddle and mixer paddle lock arm. Machine may be cleaned by power spray washing, taking care not to spray directly at any electrical controls. Do not spray directly at switches, motors or electrical enclosure.
5. The grinding head can be removed for cleaning if desired. This is accomplished by removing the three nuts on the back flange of the grinding head.
6. 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.

CLEANING THE BOWL- RING AND WORM CARE OF TIN COATED PRODUCTS (DO'S AND DON'TS)

1. Do not use abrasive cleaning materials, such as brillo pads or metal scrapers. Tin is a soft metal and should be cleaned with a soft cloth and dried.
2. Do not use a cleaning agent containing a high percentage of free alkali or acid.
3. Do not use a detergent containing a high percentage of tri-sodium phosphate or meta-silicate. Tin is reactive to both.
4. Rinse well and dry thoroughly after washing to remove agents that may be reactive to tin.
5. If sterilizing agent containing chlorine is used, the tinned surface must be thoroughly rinsed. Chlorine is corrosive to tin.
6. Dry thoroughly after rinsing and store in a dry environment.
7. If water is exceptionally hard, drying will be necessary to prevent spotting.

MAINTENANCE



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

- **ALWAYS** Turn Off, Unplug Machine From Power Source and Perform Lockout/Tagout Procedure to this Machine **BEFORE** 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.

A. GRINDING BOWL INSTALLATION

1. Mount the grinding bowl on the three threaded studs on the front of the machine. Tighten in position with provided nuts.
2. Place the grinding auger in the grinding bowl and fully seat rear drive tang into auger drive shaft.
3. Install knife, breaker plate and end retaining ring.



ONLY HAND TIGHTEN RETAINING RING

4. When the bowl assembly is mounted and tight, there should be approximately 1/8" gap between the back inside wall of the grinding trough and the back of the auger. The bowl ring wrench is provided with each mixer grinder is used only for **REMOVAL** of the end retaining ring for cleaning purposes or for changing knife and breaker plate.

B. MIXING PADDLE INSTALLATION

1. Check that mixer paddle drive pin (Item No. 53516) in the mixer paddle drive shaft (Item No. 53955-N) is positioned vertically.
2. Holding the mixing paddle by the center shaft and with the front blade up carefully fit drive receiving collar onto the end of the drive shaft. Insert paddle lock arm assembly (Item No. 53852) into the front of the mixing tub and onto the front of the mixing paddle.
3. When fully seated, turn the lock arm counterclockwise so the protruding arm is behind the lock set screw bracket. Tighten the mixer paddle lock set screw (Item No. 53568).

C. LUBRICATION

1. **MOTORS:** This machine has pre-lubricated motor bearings. These bearings should be re-lubricated annually with a good grade of bearing grease, such as POLYREX EM (EXXON-MOBILE) or equivalent. Do not over-grease.
2. **BEARING HOUSING:** The main bearings are housed in an enclosed and sealed journal box. Re lubricate semi-annually with a good grade of bearing grease. Do not over-grease.

OPERATING AND MAINTENANCE INSTRUCTIONS

STARTING WITH SERIAL No. 57181

3. FOR NORD HELICAL-WORM GEAR AND MOTOR REDUCER ELECTRICAL CONNECTIONS

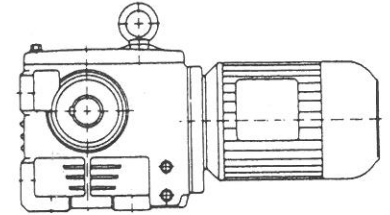
Check the motor nameplate to verify the phase, hertz and voltage agrees with the available power supply. Connection should conform to local codes. A connection diagram for the motor is located inside the conduit box and on the motor nameplate. The motor starter has an overload protector.



NORD GEAR CORP.
800 Nord Drive
P.O. Box 376
Wauwaukee, WI 53597-0367

START-UP

All units are lubricated before shipment. The lubricant level should be checked with the unit mounted in its correct operating position. Lubricant should be added or removed to bring it to the correct level.



MAINTENANCE

a. MOTOR

During maintenance, inspect the fan guard and remove any accumulated debris from under or around the gear reducer. Motor bearings are greased and sealed for life. Motor requires no periodic maintenance.

b. GEAR REDUCER

All units are filled with Mobil SHC 636 from factory with ISO VG 680. This is a Polyglycol (PG) type synthetic lubricant. Units should be checked periodically for increase noise, surface temperature, vibration, shaft movement, and amperage draw. Gear reducer should have the lubricant changed every 20,000 hours or four years, whichever occurs first. For adverse operating conditions the interval should be shorter. **DO NOT MIX SYNTHETIC & MINERAL BASE OILS.** After the unit is drained of the used lubricant, it should be filled with approximately 2.85 Qts. of a compatible lubricant to the above specification. Once the unit is filled, the lubricant level should be verified.

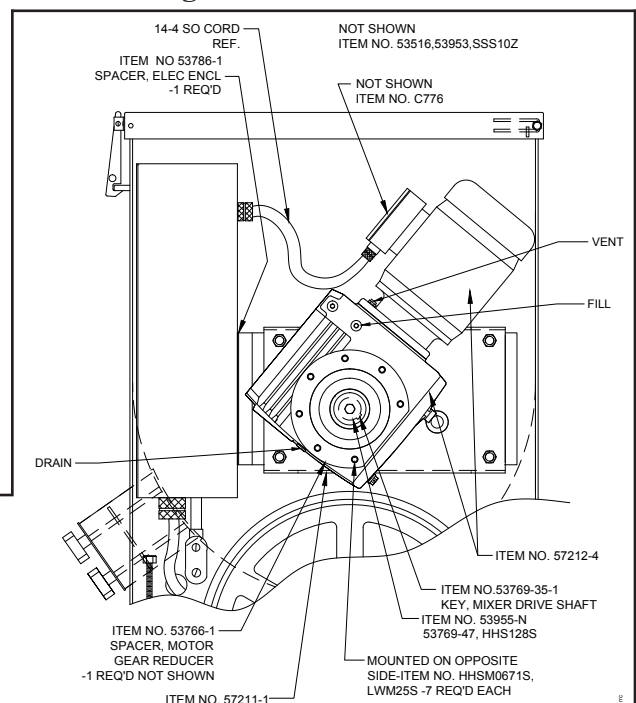
Please note the chart below for oil compatibility:

Oil Compatibility		
Polyglycol	Mineral	No
Polyalphaolefin	Polyglycol	No
Polyalphaolefin	Mineral	Yes

The listing below offers suggestions on the manufacturers of recommended lubricants. Use synthetic oil (Polyglycol-Base) between 14 - 175° with an ISO Viscosity Class of ISO VG 680.

Aral Degol GS 680	Klober Klubersynth GH 6-680
BP Enersyn SG-XP 680	Mobil SHC 636
Texaco Pinnacle 680	Tribol 800/680
	Shell Omala HD 680

Starting with Serial Number 57181



Item No.	Description
53516	Mixer paddle drive pin
53766-1	Spacer, motor gear reducer
53769-35-1	Key, mixer drive shaft
53769-47	Washer, mixer shaft washer
53786-1	Spacer, control box support
53953	Seal, mixer drive shaft
53955-N	Shaft, Nord mixer drive
57211-1	Mounting plate, Nord trans.
57212-4	Motor & reducer only- Nord 1¾HP, 208-440V-50/60-3Ph.
57212-5	Motor & reducer only- Nord 1¾HP, 575V-60-3Ph.
57212-6	Motor & reducer only- Nord 1¾HP, 200V-60-3Ph.
57212-4K	Conversion kit & plate- Nord 1¾HP, 208-440V-50/60-3Ph.
57212-5K	Conversion kit & plate- Nord 1¾HP, 575V-60-3Ph.

Item No.	Description
57212-6K	Conversion kit & plate- Nord 1¾HP, 200V-60-3Ph.
C776	Terminal ring, #10
HHS128S	Hex head screw, ½-13 x 1¾ SS
HHSM0671S	Hex head screw, M10 x 1.5 x 20mm SS
HN42S	Hex nut, ½-13 SS
LW30S	Lock washer, ½ SS
LWM25S	Lock washer, M10 SS
SSS10Z	Socket set screw, ¼-20 x ¼ SS

INSTRUCTIONS FOR MOUNTING NEW 1-PIECE NORD GEAR REDUCER/GEAR MOTOR

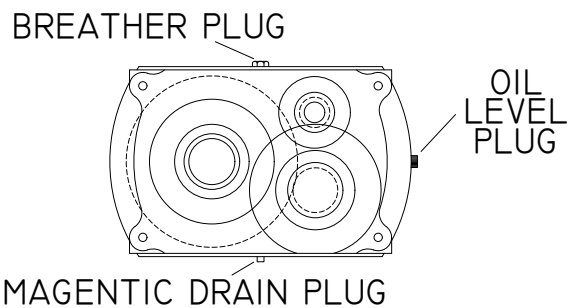
1. **Disconnect and unplug from main power source and perform lockout/tagout before attempting to service.**
2. Remove rear cover.
3. Remove junction box cover from 1HP motor, disconnect the lead wires from the mixer motor. Loosen the strain relief and pull the cord thru, attach blue ring terminals to black, white, red and green wires.
4. Remove the paddle assembly from the tub.
5. Remove Item No. SSS10Z, set screw from the end of the mixer drive shaft.
6. Remove Item No. 53516, mixer paddle drive pin from the shaft. Note the position of shims and replace at the same position with new installation.
7. Loosen the two fasteners to the transmission mounting angle and the two fasteners to the transmission and motor mounting bracket. With the help of another person, remove the hex nuts from the four mounting fasteners and remove the mixer transmission and motor assembly. Be careful not to damage tub mixer seal.
8. Attach the new transmission mounting plate, Item No. 57211, to the new gear motor. Use the 7-pc. M8 x 20 hex head cap screws and lock washers supplied (see drawing for reference). Install new mixer drive shaft, Item No. 53955-N with key into the hollow shaft of the gear unit. Secure with large flat washers, lock washer and hex bolt.
9. With another person, attach the mounting plate with the gear motor onto the existing mounting brackets sliding the mixer drive shaft through the mixer drive seal. Try not to damage the mixer seal. Note the shim position, and use the existing fasteners, ½-13 x 1½ hex cap screws, lock washer, and nuts to secure.
10. Insert the mixer paddle drive pin, Item No. 53516. Tighten the set screw, Item No. SSS10Z.
11. Place the mixer paddle assembly back in the hopper and onto the mixer drive shaft.
12. Assemble the lock arm assembly, Item No. 53852, onto the front of the hopper on the paddle assembly.
13. Be sure the transmission mounting plate is tight to the mounting brackets.
14. Does the lock arm assembly turn free with the paddle assembly? If there were shims on the old mixer transmission assembly to the mounting brackets, you will need to use them again to align the lock arm assembly with the paddle assembly.
15. Re-attach the electrical cord. Tighten the strain relief on the cord. Be sure all other electrical connections are tight.
CAUTION - BE SURE the motor is connected for the proper voltage - check the arrangement of the jumper straps in the motor junction box.
16. Plug in the mixer-grinder to power.
17. Check the rotation to the mixer paddle assembly. The direction of the mixer paddle assembly is counter-clockwise. If the rotation is clockwise, switch two of the three wires to the mixer motor. Check rotation again for the mixer paddle assembly. The rotation for the mixer paddle and the auger are both counter-clockwise.
18. Re-attach the motor junction box cover.
19. Attach rear cover.

KIT, Item #57212-4K consists of:

1 pc.	57212-4	NORD GEAR-MOTOR REDUCER, 1¼ HP	4 pcs.	HHS126S	HEX HEAD SCREW ½-13 x 1¼, SS
3 pcs.	50669	E-48, OVERLOAD HEATER ELEMENT	1 pc.	HHS128S	HEX HEAD SCREW ½-13 x 1¾, SS
1 pc.	57211-1	TRANSMISSION MOUNTING PLATE	4 pcs.	HN42S	HEX NUT, ½-13, SS
1 pc.	53955-N	MIXER DRIVE SHAFT FOR NORD	5 pcs.	LW30S	LOCK WASHER ½, SS
1 pc.	53953	MIXER DRIVE SHAFT SEAL	42"	35220	MOTOR CORD, 14 ga. x 4 WIRE TYPE SO
1 pc.	53953A-1	LOCTITE ADHESIVE FOR SHAFT SEAL	1 pcs.	53511	CORD GRIP CONNECTOR
1 pc.	53516	MIXER PADDLE DRIVE PIN	1 pcs.	1773-1	RING, TERMINAL #10, 16-14 AWG, INSULATED
1 pc.	SSS10Z	SET SCREW FOR DRIVE PIN, ¼-20 x ¼	7 pcs.	HHSM0671S	HEX HEAD SCREW, M10 x 1.5 x 20MM SS
1 pc.	53766-1	SPACER, MOTOR GEAR REDUCER	7 pcs.	LWM25S	LOCK WASHER, M10 SS
1 pc.	53769-35-1	KEY FOR MIXER DRIVE SHAFT			
1 pc.	53769-47	WASHER RETAINER FOR MIXER SHAFT			
1 pc.	53786-1	SPACER, CONTROL BOX SUPPORT			

**4. FOR DORRIS MIXER TRANSMISSION
(OBSOLETE -N/A) BEFORE SERIAL NO. 55665**

DORRIS MIXER TRANSMISSION: Oil in the mixer transmission should be changed after the first four (4) weeks of operation. This is to remove the “run in” oil and also any small metal shavings that may have been generated during the initial mating of the gears. After the first oil change, subsequent changes should be performed every six (6) months. After draining the oil, refill the unit to the “level” plug (1 qt.) at the center of the transmission with a petroleum based rust and oxidation (R&O) inhibited gear oil. Viscosity Range for 15-75° F (-9 - 24° C) is AGMA Lube No. 3 or ISO Grade 100.



**SUGGESTED POPULAR NAME BRANDS:
R & O GEAR OILS
(RUST & OXIDATION INHIBITED)**

TO CHANGE OIL:

- a. Unplug mixer/grinder from power source and perform lockout/tagout procedures.
- b. Remove rear drive cover.
- c. Remove breather plug from top of transmission and oil level plug from side of transmission.
- d. With a container in place to catch old oil, remove the magnetic drain plug from the bottom of the transmission.
- e. When all oil has drained, clean the drain plug and replace into the transmission.
- f. Refill transmission with approx. one (1) quart of the recommended gear oils or equivalent. Or until oil appears at bottom of oil level sight hole.
- g. Replace breather and oil level plugs.
- h. Carefully turn mixer transmission pulley by hand to lubricate internal gears.
- i. Reinstall rear drive cover.

COMPANY	ISO VISCOSITY GRADE 100 (AGMA3)
AMOCO	American Ind'l Oil 100
CHEVRON	Machine Oil R & O ISO 100
CITGO	Pacemaker Oil 100
CONOCO	Dectol R & O Oil 100
EXXON	Teresstic 100
MOBIL	DTE Heavy
PHILLIPS	Magnus Oil ISO VG 100
SHELL	Morlina Oil 100
SUN	Sunvis 9100
TEXACO	Regal Oil R & O 100

D. MIXER DRIVE BELT TENSION

1. Unplug mixer/grinder from power source and perform lockout/tagout procedures.
2. Remove rear drive cover.
3. Loosen the four bolts holding the 1HP motor to its mounting plate.
4. Slide 1HP motor away from mixer transmission.
5. When approximately ½” total belt flex has been attained, re-tighten motor bolts.
6. Reinstall rear drive cover.

E. MAIN DRIVE CHAIN AND SPROCKET LUBRICATION:

The main drive chain has been pre-lubricated at the factory to protect it against dirt and moisture. Chain life will vary appreciably depending upon its lubrication. The better the lubrication, the longer the chain life. Lubrication effectiveness will vary with the amount of lubricant and frequency of application. Ideally, a lubricant film should always be present between the working parts. Manually lubricate the chain as often as is needed (possibly once a week). **NEVER** exceed three months without lubricating.

Lubricating just outside of the chain does little good. Apply lubrication on the inside of the chain span so that it will work through the moving parts and joints by centrifugal force as the chain rotates and reach the area where one surface “scrubs” another.

MAIN DRIVE CHAIN AND SPROCKET LUBRICATION (continued):

Recommended types of chain lubricant are those with Molybdenum Disulphide or Graphite added. Also bonded lubricants such as Dow Corning Molykote 321R or equivalent are excellent for open chains. The lubricant should be of a viscosity whereby it will “flow” somewhat and penetrate the internal working surfaces. Thick stiff greases are of little value because they cannot work into moving parts of the chain.

- Unplug mixer/grinder from power source and perform lockout/tagout procedures.
- Remove rear drive cover.
- Spray or brush lubricant on inside of chain, slowly and carefully turning large sprocket by hand.
- Reinstall rear drive cover.

F. MAIN DRIVE CHAIN TENSION (See Diagram Below)

- Unplug mixer/grinder from power source and perform lockout/tagout procedures.
- Remove rear drive cover.
- Remove right and left side skirts.
- Loosen the four bolts that hold the motor to the frame of the machine.
- Loosen the lock nuts on the motor adjusting stud.
- To Loosen Chain Tension.** Turn motor adjusting studs counterclockwise. Grasp motor and pull toward adjusting stud. Be sure to turn both adjusting studs the same amount and evenly. Total chain flex should be $\frac{1}{8}$ to $\frac{3}{8}$ ". Be sure to keep motor shaft **parallel** with auger drive shaft.

To Tighten Chain Tension. Turn motor adjusting studs clockwise. Be sure to turn both adjusting studs the same amount and evenly. Total chain flex should be $\frac{1}{8}$ to $\frac{3}{8}$ ". Do not over tighten chain as this will put excessive and damaging pressure on the motor bearings. Be sure to keep motor shaft **parallel** with auger drive shaft.

- Re-tighten motor mounting bolts.
- Re-tighten motor adjusting stud lock nuts.
- Reinstall the right and left side skirts.
- Reinstall the rear drive cover.

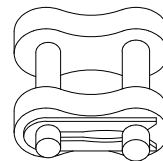
G. CHAIN REPLACEMENT

- Part No. H384-CL Service Replacement Chain is provided with a “Connecting Link” (Part No. H384-LINK) so that it can be separated to facilitate installation over the sprockets.

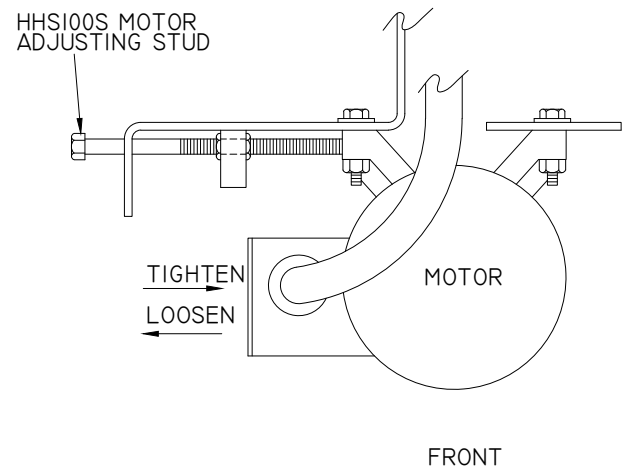
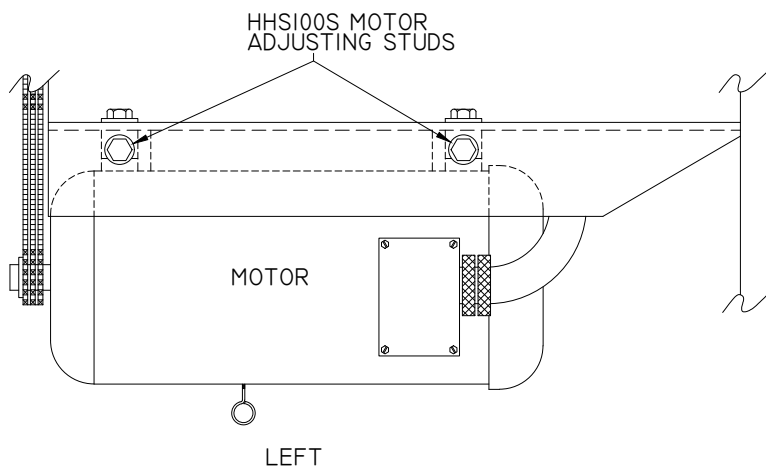
Upon assembly, be sure the connecting link is installed so the spring clip is orientated with its opening facing “opposite” the direction of the chain travel (See Diagram at right).

**AFTER INSTALLATION
THE CHAIN SHOULD BE
TENSIONED TO
APPROXIMATELY
 $\frac{1}{8}$ TO $\frac{3}{8}$ FLEX**

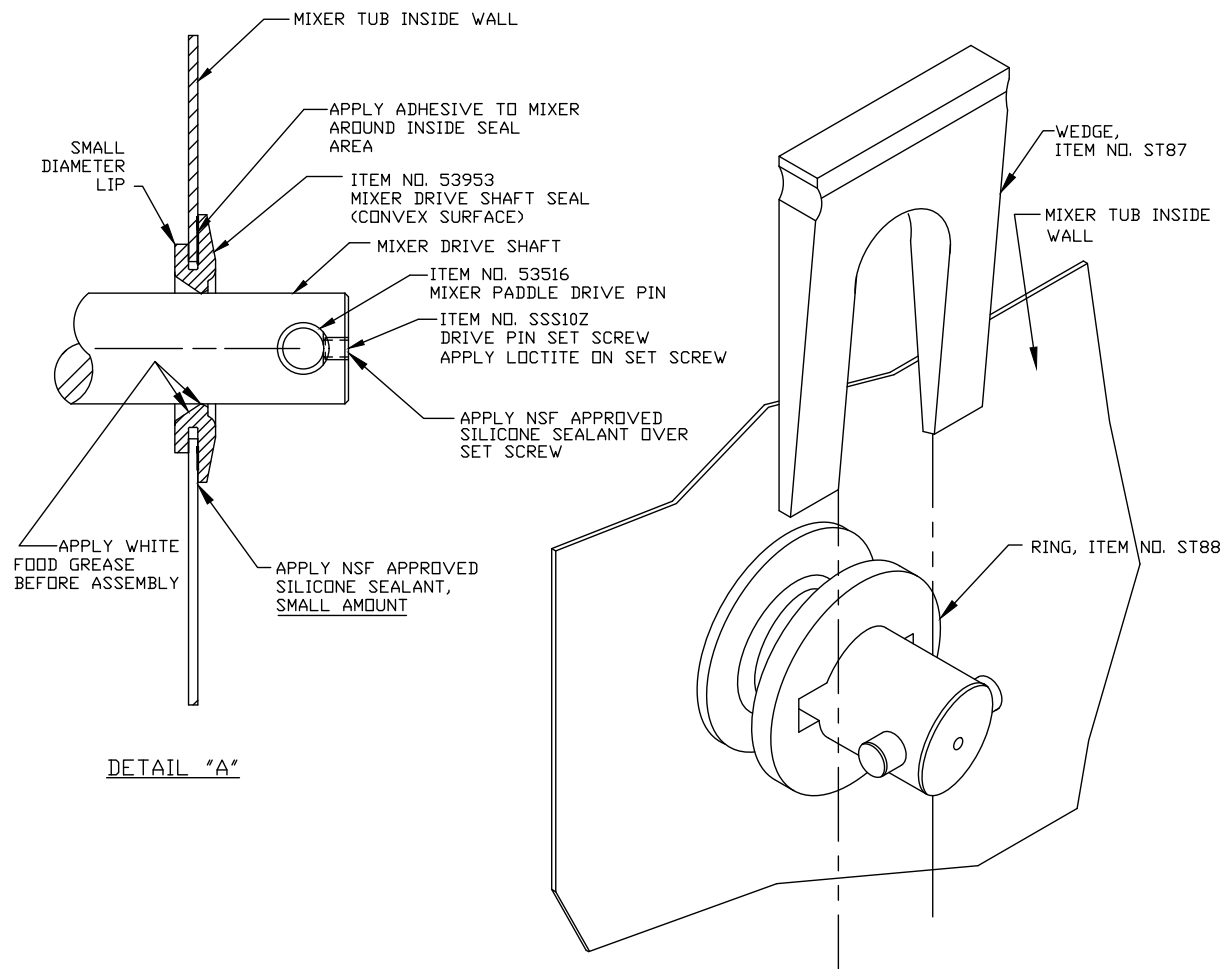
SPRING CLIP



CHAIN DIRECTION



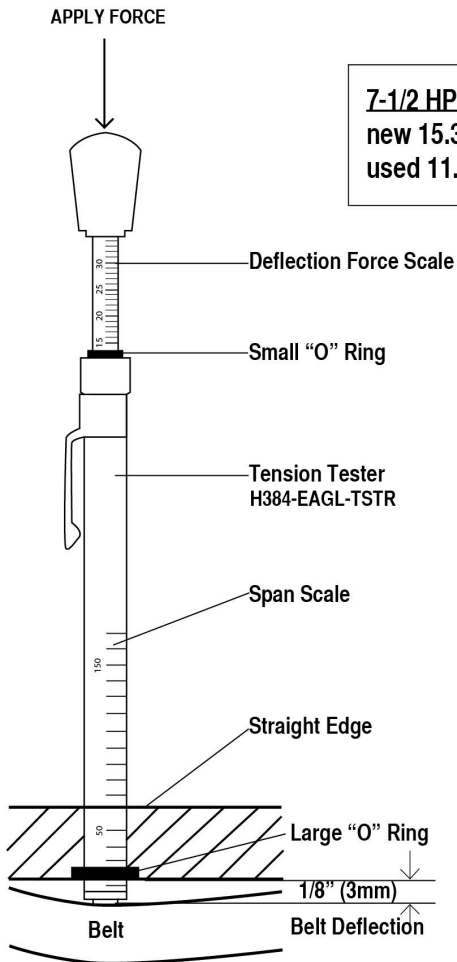
H. MIXER DRIVE SHAFT SEAL REPLACEMENT



Assembly Instructions for Mixer Drive Shaft Seal

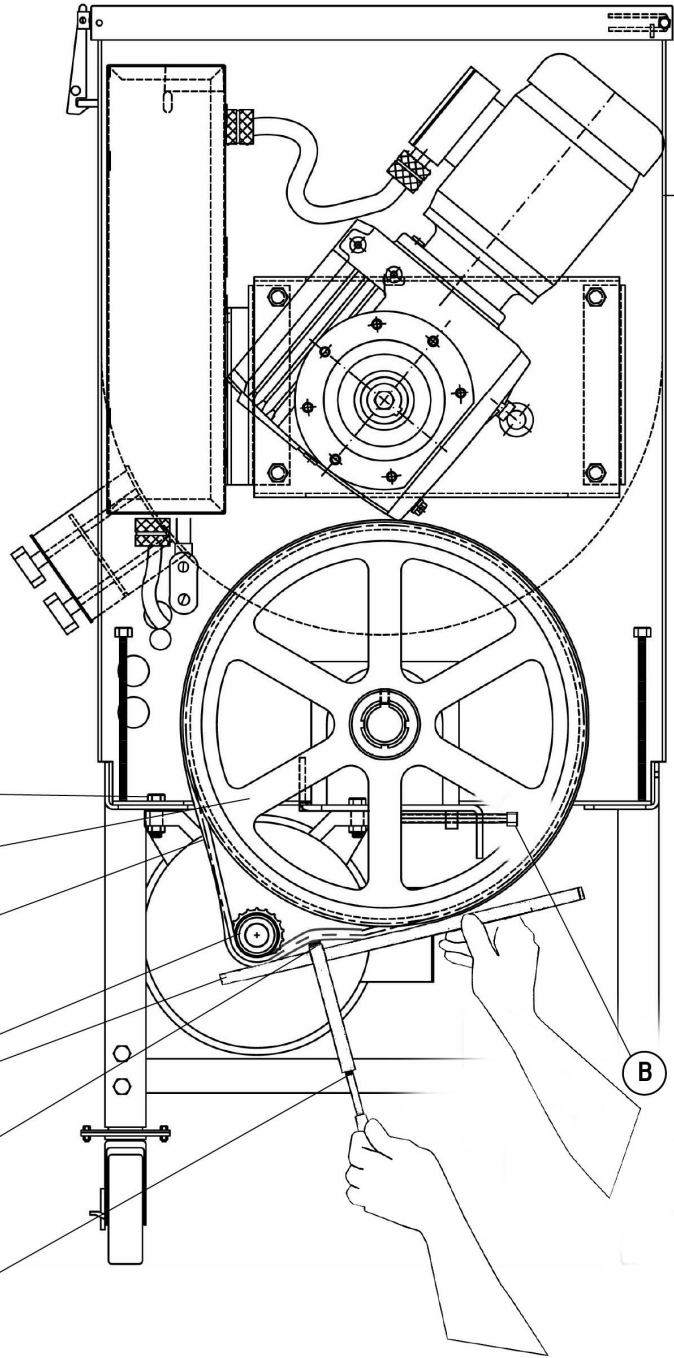
1. Remove the Set Screw, Item No. SSS10Z from the end of the Mixer Drive Shaft.
2. Remove Mixer Paddle Drive Pin, Item No. 53516.
3. Remove old Seal. Remove old silicone, clean and dry Tub around Seal area.
4. Apply white Food safe Grease to the new Seal Lip on the inside diameter. See Detail "A" for location.
5. Assemble new Mixer Drive Shaft Seal. See Detail "A".
6. Fold smaller diameter lip of the seal into tub hole. Rotate mixer drive shaft seal clockwise. Make sure the smaller diameter is completely outside the tub.
7. Check the Mixer Drive Seal for fit. Be sure the Seal makes contact all around the Mixer Drive Shaft.
8. Install the Mixer Paddle Drive Pin and tighten the Set Screw, Item No. SSS10Z. Apply food approved Silicone Sealant over the Set Screw.
9. The Tub and Seal must be clean and dry. Use Rubbing Alcohol. Apply Biro Item No. 53953A-1 adhesive, only use half the tube, .05 ounce around the inside of the Mixer Shaft Seal and inside of the Tub wall. Wipe away excess adhesive. Adhesive working life, 20 seconds.
10. Slide Ring, Item No. ST88 onto the Mixer Drive Shaft, concave side toward the Seal. Use the Wedge, Item No. ST87 between Ring and Mixer Paddle Drive Pin to apply even pressure against the Seal. Do not over pressurize.
11. Wait, allow for 10 minutes set up time. Remove Wedge and Ring.
12. Apply a small amount of NSF approved silicone sealant, Biro Item No. 400 around the outside edge of the Seal. Wipe away excess silicone sealant. The 3 fluid ounce tube of Sealant contains enough to complete 30 Assemblies.
13. Allow the Adhesives to cure for 24 hours before running the Mixer/Grinder.

OPTIONAL EAGLE BELT DRIVE SYSTEM



FORCE TABLE # 1-7

7-1/2 HP (5.6 kw) new 15.3 lb (6.9 Kg) used 11.2 lb (5.1 Kg)	10HP (7.5 kw) new 21.1 lb (9.6 Kg) used 14.6 lb (6.6 Kg)
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- (A)
- 53727-EAGL
DRIVEN SPROCKET
- H384-EAGL
DRIVEBELT 1440
- H382-EAGL-26
MOTOR PINION SPROCKET
- Straight Edge
- Large "O" Ring
- Small "O" Ring

“EAGLE” DRIVE BELT

Tensioning Instructions

1. Place a straight edge on top of the belt and across both sprockets as shown in the diagram.
2. Set the large O-Ring at the 1st Graduation ($\frac{1}{8}$ ” line) on the Tension Tester, Item No. H384-EAGLE-TSTR.
3. Set the small O-Ring on the deflection force scale to zero.
4. Place the tension tester squarely on the belt at the center of the belt span (See Diagram).
5. Apply a force to the plunger until the large O-Ring is even with the bottom of the straight edge which has been placed across both sprockets ($\frac{1}{8}$ ” belt deflection).
6. Remove the tension tester and read the force recorded from the bottom of the small O-Ring on the deflection force scale.
7. The force should be equal to the value indicated in the force table #1-7 depending on the “HP” of the grinder, and if the belt is “new” or “used”.
8. If the force values do not equal those shown in table #1-7, increase the tension as follows:
 - a. Loosen the four (4) motor mounting bolts (A) slightly.
 - b. Advance the jacking screws (B) $\frac{1}{4}$ turn each (be sure to advance both screws an equal amount).
 - c. Re-tighten the motor mounting bolts.
 - d. Re-check the belt tension according to the above procedure.

Do not rely on “feel” for the proper belt tension as this typically results in belts that are under-tensioned.

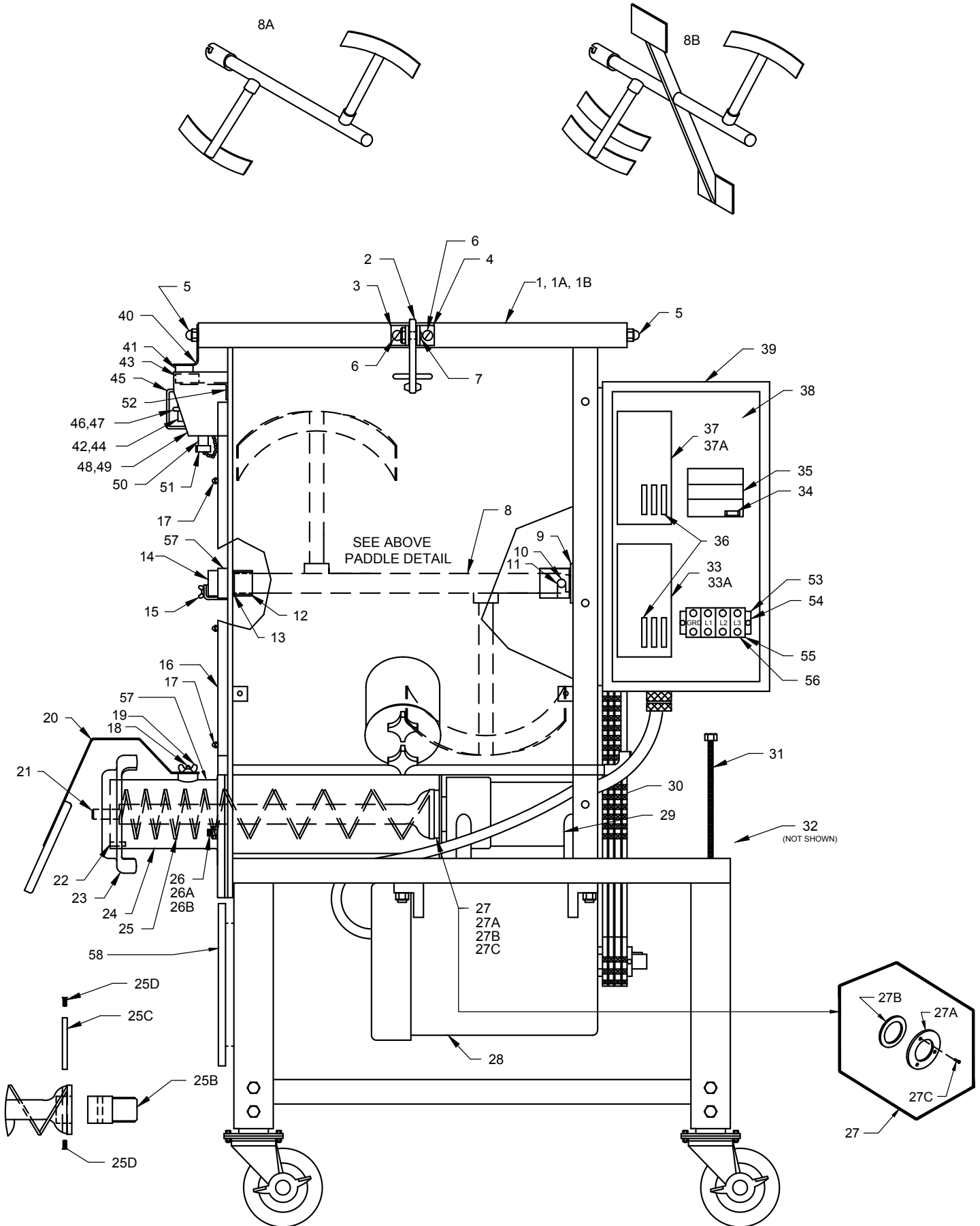
Loose belts will fail due to “ratcheting” (jumping a tooth), tooth shearing, and breakage.

I. REPLACING ELECTRICAL SUPPLY CORD:

Always turn off, unplug machine from power source and perform lockout/tagout procedures to this machine. Remove rear drive cover. Remove electrical control cover. Remove the supply cord leads from the terminal strip, Ground, L1, L2, and L3. Loosen the strain relief for the supply cord. Remove the cord clamp from the frame. Pull the supply cord down through the strain relief out from the machine.

Use recommended electrical wire size connecting to the electrical supply source. Use 12’ (3650mm) of cord, strip back the cord to expose the insulated wires. Strip each insulated wire back $\frac{3}{8}$ ” (9.5mm). Push the strip end of the cord through the cord clamp and the strain relief. Attach the stripped ends into the terminal strip, Ground, L1, L2, and L3. Tighten the terminal strip connections. Tighten the strain relief and clamp to the cord.

AFMG-52 SIDE VIEW PARTS DIAGRAM



BIRO MODEL AFMG-52 MIXER GRINDER PARTS LIST

Fig.	Item No.	Description	Fig.	Item No.	Description
1	57154	Product mixer safety cover, tri directional #52345 on		HHS055S	Hex head screw, $\frac{5}{16}$ -18 x $\frac{3}{4}$, SS
1A	53547	Lid with chute opening		HN07S	Hex nut, 10-24, SS
1B	53543	Conveyor chute		HN15S	Hex nut, $\frac{1}{4}$ -20, SS
2	56072	Safety cover latch		HN20S	Hex nut, $\frac{5}{16}$ -18, SS
3	56073	Safety cover latch mounting bracket, L.H.		LW10S	Lock washer, $\frac{1}{4}$, SS
4	56074	Safety cover latch mounting bracket, R.H.	33	LWET05S	Lock washer, #10 ext. tooth, SS
5	AN20S	Acorn nut, $\frac{3}{8}$ -16 (2 req.)		53478	Starter w/ 110V coil, Furnas size 1, 14DP32AF81, 7 $\frac{1}{2}$ HP
6	RHS24S	Round head screw, $\frac{1}{4}$ -20 x $\frac{1}{2}$ SS (2 req.)		55046	Starter w/ 24V coil, Furnas size 1, 14DP32AJ81, 7 $\frac{1}{2}$ HP
	HNNL15S	Hex nut, nylok, $\frac{1}{4}$ -20 SS (2 req.)		75DF14	Contact kit, Furnas 1 pole only (size 1), 7 $\frac{1}{2}$ HP
7	RHS31S	Round head screw, $\frac{1}{4}$ -20 x 1 SS		57027	Starter w/ 110V coil, Furnas size 1 $\frac{3}{4}$, 14EP32AF81, 10 HP
	HNNL15S	Hex nut, nylok, $\frac{1}{4}$ -20 SS		57027CE	Starter w/ 24V coil, Furnas size 1 $\frac{3}{4}$, 14EP32AJ81, 10 HP
8A	53456	Mixer paddle assembly, 1 st grind, optional		75EF14	Contact kit, Furnas 1 pole only (size 1 $\frac{3}{4}$), 10 HP
8B	53918	Mixer paddle assembly, 2 nd grind, standard	33A	34478	Holding coil - 120V/240V
9	53953	Mixer drive shaft seal		55047	Holding coil - 24V
10	53516	Mixer paddle drive pin	34	53851	Fuse, FNM-1 AMP, 250V time-delay
11	SSS10Z	Drive pin set screw	35	53914-1	Transformer, 460/230 to 115V
12	53594	Radial bearing for 53852 assembly		53731	Transformer, 575 to 115V
13	53517	Thrust bearing for 53852 assembly		PC141-1	Transformer replacement
14	53852	Lock arm assembly w/ bearings	36		200/208/220/240/277/380 to 24V
15	53568	Mixer paddle lock wing bolt	37	53477	See electrical diagram, page 4
16	57047	Wireway cover, #52101 on		55045	Starter w/ 110V coil, Furnas size 00, 14BP32AF81, 1 $\frac{3}{4}$ HP
17	1116	Acorn nut, 10-32 (3 req.)		75BF14	Starter w/ 24V coil, Furnas size 00, 14BG32AJ81, 1 HP
18	SSS45S	Meat guard mounting stud			Contact kit, Furnas 1 pole only (size 00), 1 HP
19	WN20S	Wing nut	37A	34478	Holding coil - 120V/240V
20	52392	Meat guard splash shield		55047	Holding coil - 24V
21	HK52/56	Knife drive pin	38	53633	Starter box cover
22	HP52	Bowl plate pin (3 req.)	39	53860	Starter box
23	HR52	Bowl ring	40	52181	Obsolete, use Item No. 52181-1
24	57023-CTN	Bowl w/ plate pins	41	52181-1	Magnet w/ mounting bracket
25	57022-CTN	Auger assembly		55053	Magnetic safety switch (24 volt) old style units only (not CE)
25B	54278B	Square drive auger adapter	42	42MC-Y73	Green start control
25C	54278C	Auger shear pin	43	H442-1	Magni switch, 250V - 575V
25D	FHS36S	Shear pin flat head screw, $\frac{1}{4}$ -20 x 1		53872	Safety switch mounting bracket
26	53413	Bowl mounting stud - short (1 req.)	44	42MC-Y74	Red stop control
26A	53413-2	Bowl mounting stud - long (2 req.)	45	50655-2	Switch guard
26B	HNF42S	Hex flange nut, $\frac{1}{2}$ -13 bowl mounting nut (3 req.)		HN20S	Hex nut, $\frac{5}{16}$ -18, SS
27	57159K	Auger drive shaft seal kit	46	54320K	Lock washer, $\frac{5}{16}$, SS
27A	57160	Seal retainer, SS	47	53898	Toggle switch, hand/foot, w/ boot
27B	57159	Auger drive shaft seal	48	53869CEK	Toggle switch boot, full length
27C	FHS26S	Flat head screw, 10-32 x $\frac{3}{4}$, SS	49	53870	Legend plate, w/int'l. symbols, int'l. kit
28	53475-200	Motor, 7 $\frac{1}{2}$ HP, 200/400-60-3	50	52655	Legend plate gasket, use 53869CEK
	53475	Motor, 7 $\frac{1}{2}$ HP, 208/460-60-3	51	52662	Female receptacle, 5 pole, for footswitch
	53475-50	Motor, 7 $\frac{1}{2}$ HP, 208/380-415-50-3	52	53872	Protective cap assembly
	53941	Motor, 7 $\frac{1}{2}$ HP, 575-60-3	53	35376	Safety switch mounting bracket
	53475-1	Baldor 7 $\frac{1}{2}$ HP bearings, both ends 206KDD	54	35241	End anchor, terminal block
	53475-2	Doerr 7 $\frac{1}{2}$ HP bearing, opposite of shaft 206KDD	55	35375	Mounting channel
	53475-3	Doerr 7 $\frac{1}{2}$ HP bearing, shaft end 206KDD	56	35374	End barrier
	57025-200	Motor, 10 HP, 200/400-60-3	57	53783	Terminal block
	57025	Motor, 10 HP, 208-230/460-50/60-3	58	57157	Decal, rotation
	57025-5	Motor, 10 HP, 575-60-3		HHS025S	Front splash shield
	57092	Motor, 10 HP, 220/380-50-3		HN15S	Hex head screw, $\frac{1}{4}$ -20 x $\frac{1}{2}$, SS
29	53886	Journal box assembly		LW10S	Hex nut, $\frac{1}{4}$ -20, SS
	HHS153S	Hex head screw, $\frac{5}{8}$ -18 x 1 $\frac{1}{2}$, SS (4 ea.)			Lock washer, $\frac{1}{4}$, SS
	LW35S	Lock washer, $\frac{5}{8}$ -18, SS (4 ea.)		NOT SHOWN	
30	H384-CL	Roller chain w/ link		57073	Power cord, 10', 8-4
31	54310	Adjusting stud		54268	Power cord, 10', 10-4
32	55092	Rear drive cover w/ handles		2563	Legend plate hex screw
	55092-COSK	Rear drive cover COS kit		53965	10-32 x $\frac{1}{2}$, SS
	55092-COS	Rear drive cover w/ handles & magnet			Optional, Leg extension kit w/ brace
	14688	4-point knob, AL			
	14688-COS	Locking knob, AL, (8 req.)			
	57219	Screw -COS rear drive cover (8 req.)			
	FW06S	Flat washer, $\frac{1}{4}$, SS			
	FW16S	Flat washer, $\frac{5}{16}$, SS			
	HHS025S	Hex head screw, $\frac{1}{4}$ -20 x $\frac{1}{2}$, SS			
	HHS049S	Hex head screw, $\frac{5}{16}$ -18 x $\frac{1}{2}$, SS			
	HHS050S	Hex head screw, $\frac{5}{16}$ -18 x $\frac{5}{8}$, SS			

**AFMG-52 MIXER GRINDER
PARTS LIST WITH NORD
GEAR TRANSMISSION
STARTING WITH
SERIAL No. 57181**

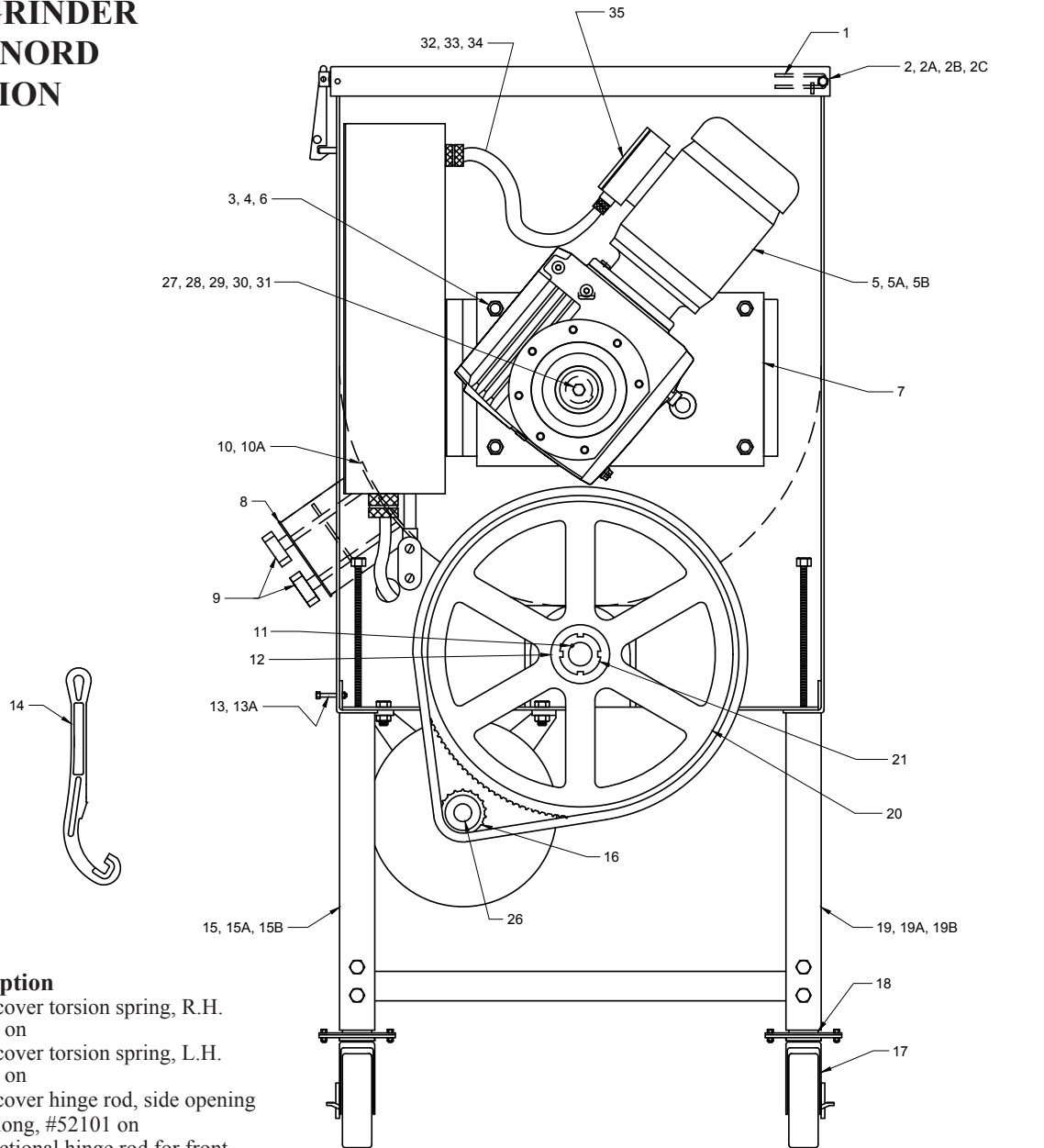
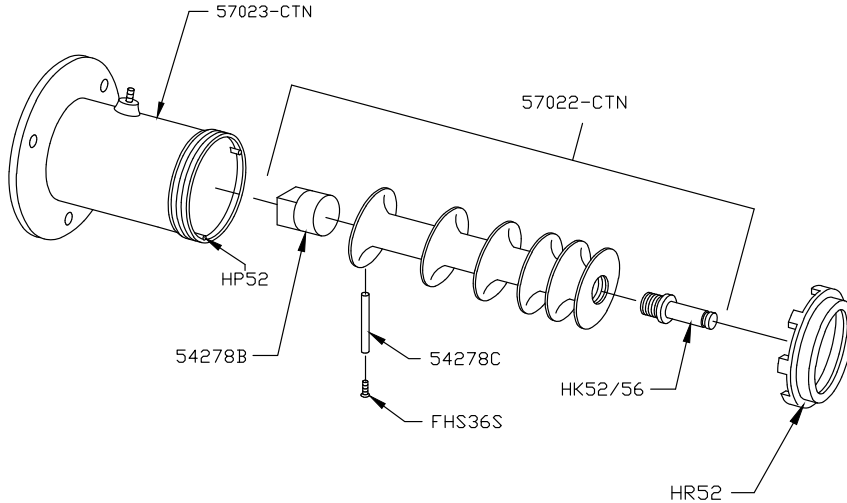


Fig.	Item No.	Description
1	56221	Safety cover torsion spring, R.H. #52101 on
	56222	Safety cover torsion spring, L.H. #52101 on
2	57050	Safety cover hinge rod, side opening 25 ⁹ / ₁₆ " long, #52101 on
2A	57153	Tri directional hinge rod for front opening, #52345 on 27 ³ / ₄
2B	56045	Hinge rod spacer (2 req'd)
2C	AN20S	Acorn nut ³ / ₈ -16, SS (2 req'd)
3	HHS126S	Hex head screw ¹ / ₂ -13 x 1 ¹ / ₄ , SS
4	LW30S	Lock washer ¹ / ₂ , SS
5	57212-4	Motor & reducer only - Nord 1 ³ / ₄ HP 208-230/380-415-460-50/60-3ph
5A	57212-5	Motor & reducer only - Nord 1 ³ / ₄ HP 575-60-3ph
5B	57212-6	Motor & reducer only - Nord 1 ³ / ₄ HP 200-60-3ph
6	HN42S	Hex nut ¹ / ₂ -13, SS
7	57211-1	Mounting plate
8	54303	Outer disc, double rod, #52001 on
9	14688	Lock knob (2 req'd)
10	57133	Side entrance seal, double rod, 35° inlet, #52345 on
10A	54302	Side entrance seal, double rod, 90° inlet, #52001 to #52344
11	53891	Auger drive shaft key
12	53894	Auger drive shaft lockwasher
13	53715-1	Ring wrench hanger
13A	HN15S	Hex nut ¹ / ₄ -20, SS
14	H340	Ring wrench
15	55093	Right side skirt 35° inlet, #52345 on
15A	55094	Right side skirt - no hole
15B	55095	Right side skirt, 90° inlet, #52001 to #52344
16	H382-1	Motor pinion, 22 tooth
	H382	Motor pinion, 19 tooth
17	PC175-1	Swivel caster w/ total lock (4 req.) -new style
	53952	Swivel caster w/ lock (4 req.) -old style
18	53944-1	Standard leg, 9 ¹ / ₂ " adjusting- new style caster pad
	53944	Standard leg, 9 ¹ / ₂ " adjusting- old style caster pad
	53944-5K	Foot leg pad bumper kit (4 ea.)
19	55096	Left side skirt, 35° inlet
19A	55097	Left side skirt - no hole
19B	55098	Left side skirt, 90° inlet
20	53727	Main sprocket, 141 tooth
21	53895	Auger drive shaft locknut
26	C617	Motor shaft key ¹ / ₄ x ¹ / ₄ x 1 ¹ / ₈
27	53955-N	Mixer drive shaft
28	53769-35-1	Mixer drive shaft key
29	53769-47	Mixer shaft washer retainer
30	HHS128S	Hex head screw ¹ / ₂ -13 x 1 ³ / ₄ , SS
31	LW30S	Lock washer ¹ / ₂ SS
32	35220	Motor cord SO 14/4 x 42"
33	224-9	Cord grip connector
34	241-LN	Lock nut ¹ / ₂ "
35	C776	Terminal ring #10 (NOT SHOWN)

STANDARD "ENTERPRISE" BOWL ASSEMBLY
(SINGLE KNIFE & SINGLE PLATE)

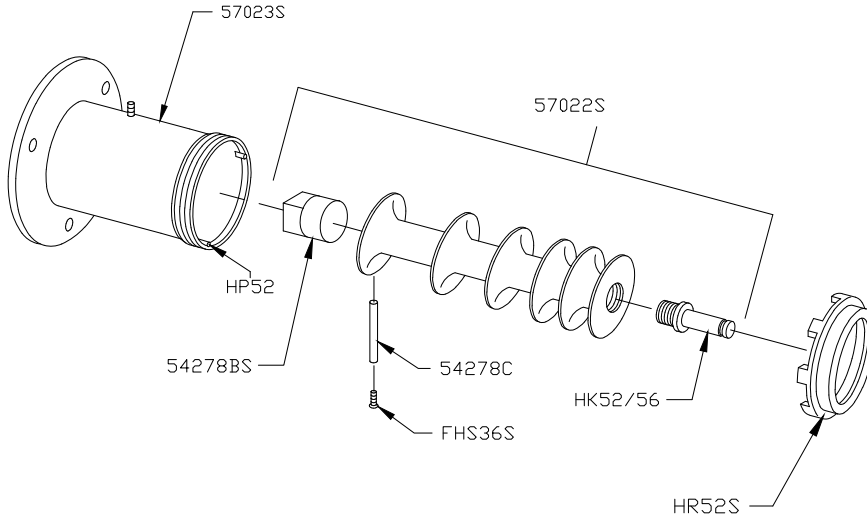


Item No.	Description
54278B	Square drive auger adapter
54278C	Auger shear pin
57022-CTN	Auger assembly complete
57023-CTN	Bowl with plate pins
FHS36S	Shear pin fasteners 1/4-20 x 1, SS
HK52/56	Knife drive pin, coarse thread
HP52	Bowl plate pin (3 req.)
HR52	Bowl ring

OPTIONAL "ENTERPRISE" SIZE 52
SINGLE KNIFE & SINGLE PLATE

Item No.	Description
MC52-17	Knife, 4 blade
MC52-18-125	Plate, 1/8" Holes (3.5 mm)
MC52-18-156	Plate, 5/32" Holes (4.0 mm)
MC52-18-187	Plate, 3/16" Holes (5.0 mm)
MC52-18-375	Plate, 3/8" Holes (9.0 mm)

OPTIONAL STAINLESS STEEL "ENTERPRISE" BOWL ASSEMBLY
(SINGLE KNIFE & SINGLE PLATE)

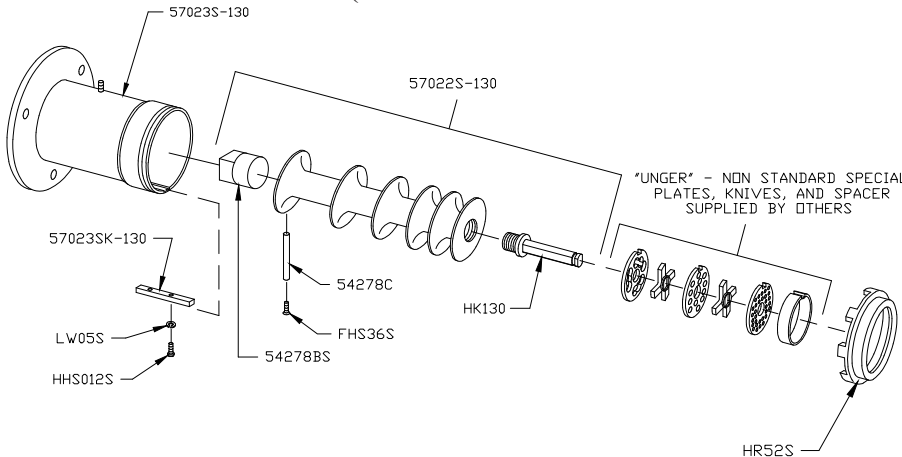


Item No.	Description
54278BS	Square drive auger adapter, SS
54278C	Auger shear pin
57022S	Auger assembly complete, SS
57023S	Bowl with plate pins, SS
FHS36S	Shear pin fasteners 1/4-20 x 1, SS
HK52/56	Knife drive pin, coarse thread
HP52	Bowl plate pin (3 req.)
HR52S	Bowl ring, SS

OPTIONAL "ENTERPRISE" SIZE 52
SINGLE KNIFE & SINGLE PLATE

Item No.	Description
MC52-17	Knife, 4 blade
MC52-18-125	Plate, 1/8" Holes (3.5 mm)
MC52-18-156	Plate, 5/32" Holes (4.0 mm)
MC52-18-187	Plate, 3/16" Holes (5.0 mm)
MC52-18-375	Plate, 3/8" Holes (9.0 mm)

OPTIONAL STAINLESS STEEL "UNGER" BOWL ASSEMBLY
(NON-STANDARD MULTI KNIVES & PLATES)



130mm UNGER

Item No.	Description
54278BS	Square drive auger adapter, SS
54278C	Auger shear pin
57022S-130	Auger assembly, SS, 130mm Unger
57023S-130	Bowl, SS, 130mm Unger
57023SK-130	Key, 130mm Unger
FHS36S	Shear pin fastener 1/4-20 x 1, SS
HHS012S	Hex head screw, 10-32 x 1/2, SS
HK130	Knife drive pin, 130mm Unger
HR52S	Bowl ring, SS
LW05S	Lock washer #10, SS

NOTE:

THE UNGER SYSTEM IS NON-STANDARD, IT UTILIZES MULTIPLE KNIVES & PLATES AT A TIME. WHEREAS A STANDARD SYSTEM USES ONE OF EACH. PROVIDE SERIAL NUMBER WHEN ORDERING.

**PRODUCT MIXER SAFETY COVER UP TO S/N 52100
FRONT OPENING ONLY**

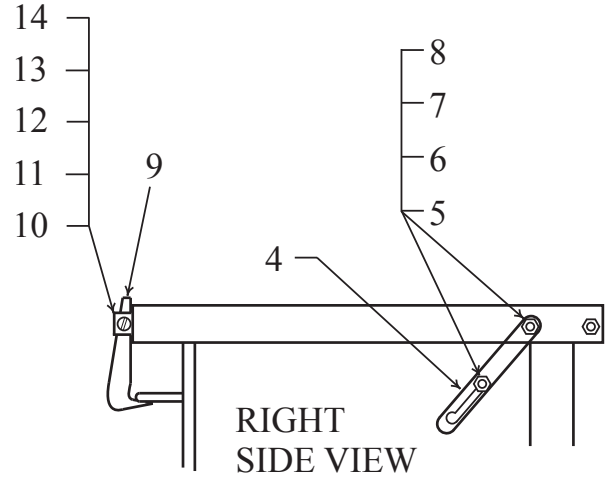
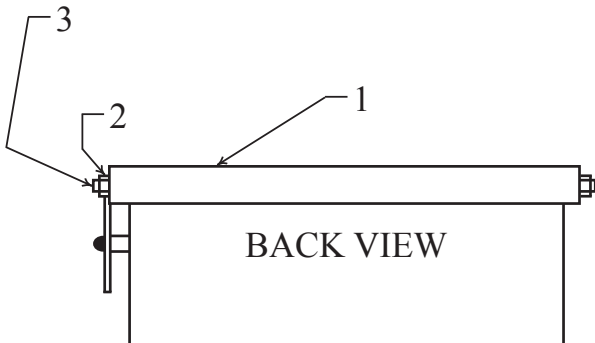


Fig.	Item No.	Description
1	53446	Lid assembly, up to #52100
2	HN30S	Hex nut 3/8-16, SS (2 ea.)
3	51563	Lid hinge pin, up to #52100
4	53530	Lid lock arm, up to #52100
5	2503	Nylon washer .125 thick (2 ea.)
6	AN15S	Acorn nut 1/4-20, SS (2 ea.)
7	HHS035S	Hex head screw 1/4-20 x 5/8, SS (2 ea.)

Fig.	Item No.	Description
8	FW06S	Flat washer 1/4, SS (2 ea.)
9	56072	Safety cover latch
10	56073	Latch mounting bracket, L.H.
11	56074	Latch mounting bracket, R.H.
12	RHS24S	Round head screw 1/4-20 x 1/2, SS (2 ea.)
13	HNNL15S	Hex nut 1/4-20 nylok (3 ea.)
14	RHS31S	Round head screw 1/4-20 x 1, SS (1 ea.)

**PRODUCT MIXER SAFETY COVER
LID LOCK FEATURE
S/N 54248 ON**

RETROFITS ON S/N 52100 TO S/N 54247

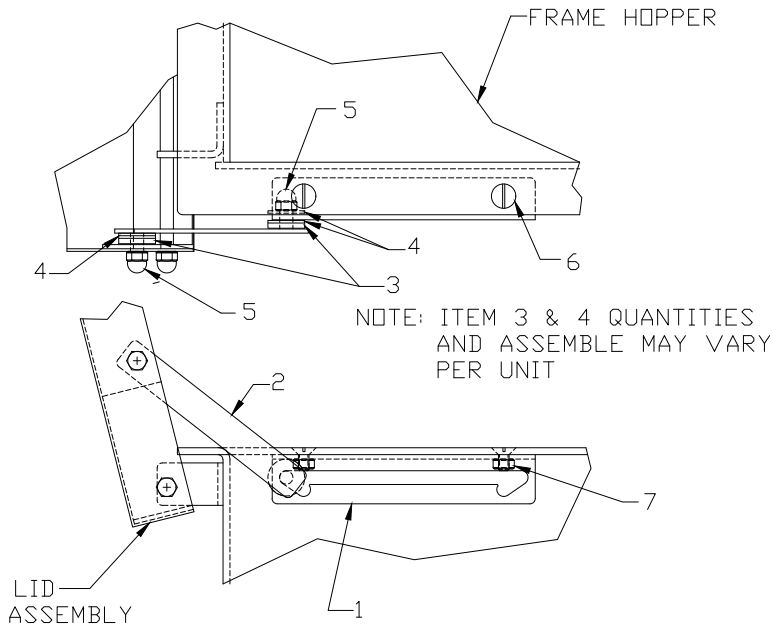
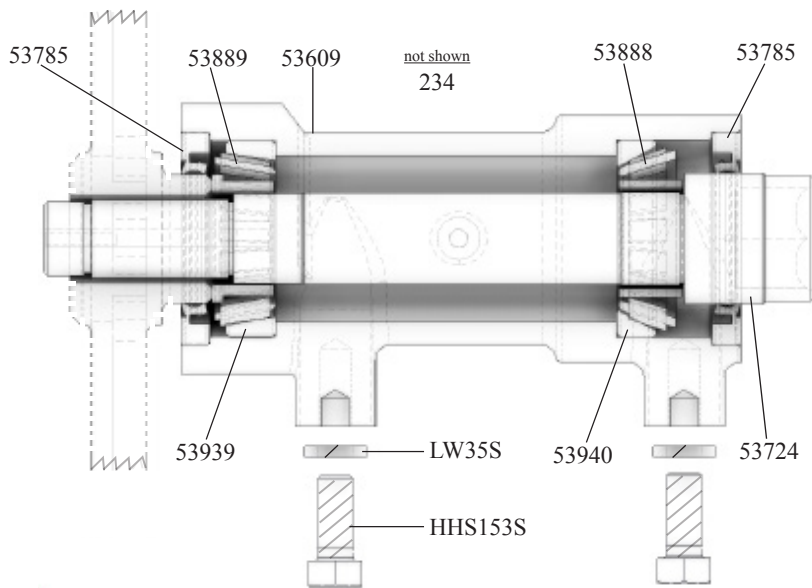
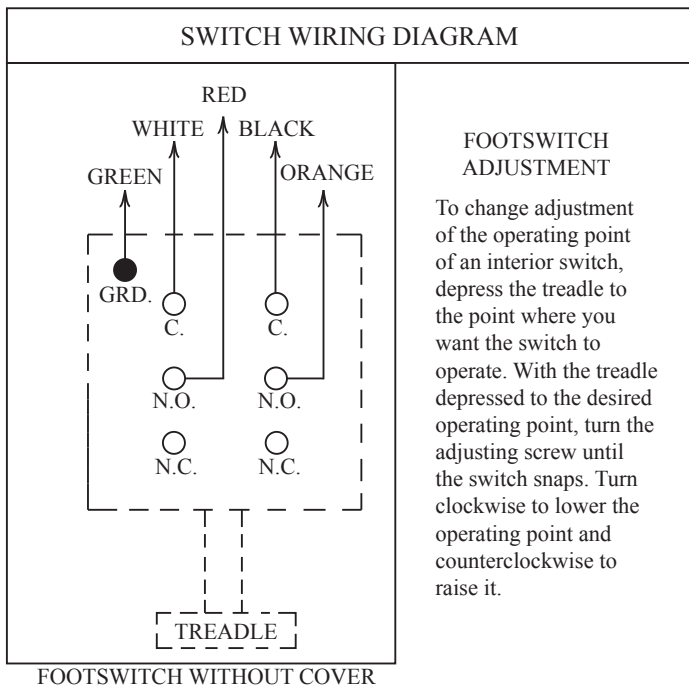


Fig.	Item No.	Description
	55081	Lid lock retrofit kit S/N 52100 to 54247
1	55059	Lid lock
2	55061	Lever arm assembly
3	2503	Nylon washer .125 thick (2 ea.)
4	2504	Nylon washer .060 thick (4 ea.)
5	272-8	Acorn nut 5/16-18, SS (2 ea.)
6	FHS33S	Flat head screw 1/4-20 x 1/2, SS (2 ea.)
7	HN15S	Hex nut 1/4-20, SS (2 ea.)

ITEM No. 53886 JOURNAL BOX ASSEMBLY



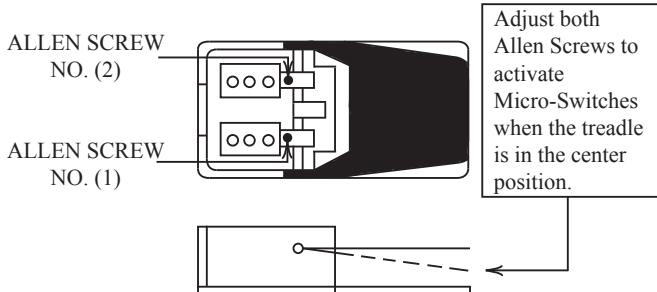
Item No.	Description
53886	Journal box assembly
53609	Journal box housing
53724	Auger drive shaft
53785	Journal box seal (2 ea.)
53888, 53940	Front bearing cup/cone assembly Use H310A
53889, 53939	Rear bearing cup/cone assembly Use H311A
234	Grease fitting 1/8" NPT
LW35S	Lock washer 5/8", SS (4 ea.)
HHS153S	Hex head screw 5/8-18 x 1 1/2", SS (4 ea.)



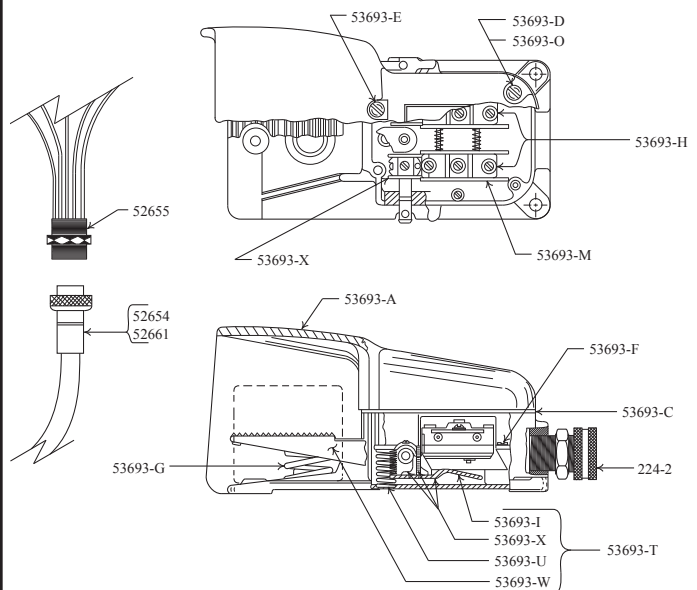
FOOTSWITCH ADJUSTMENT

To change adjustment of the operating point of an interior switch, depress the treadle to the point where you want the switch to operate. With the treadle depressed to the desired operating point, turn the adjusting screw until the switch snaps. Turn clockwise to lower the operating point and counterclockwise to raise it.

FOOTSWITCH WITHOUT COVER



Adjust both Allen Screws to activate Micro-Switches when the treadle is in the center position.



FOOTSWITCH PARTS LIST

224-2	Cord connector, wt, straight, 3/4"
52654	Male plug w/6' cord, 5 pole
52655	Female receptacle, 5 pole
52661	Male plug w/12' cord, 5 pole
52668	Footswitch w/12' cord and plug
53693	Footswitch
53693-A	Cover guard
53693-C	Cover gasket
53693-D	Cover screw -short
53693-E	Cover screw -long
53693-F	Ground screw
53693-G	Treadle spring
53693-H	Internal assembly complete
53693-I	Actuator
53693-M	Micro switch BA-2R62-A4
53693-O	Washer
53693-T	Treadle w/ actuator & return spring
53693-U	Auxillary treadle return spring
53693-W	Treadle
53693-X	One actuator & actuator spring assembly
53979-1	Cord, 8' w/out footswitch
54213	Footswitch w/ 6' cord & plug

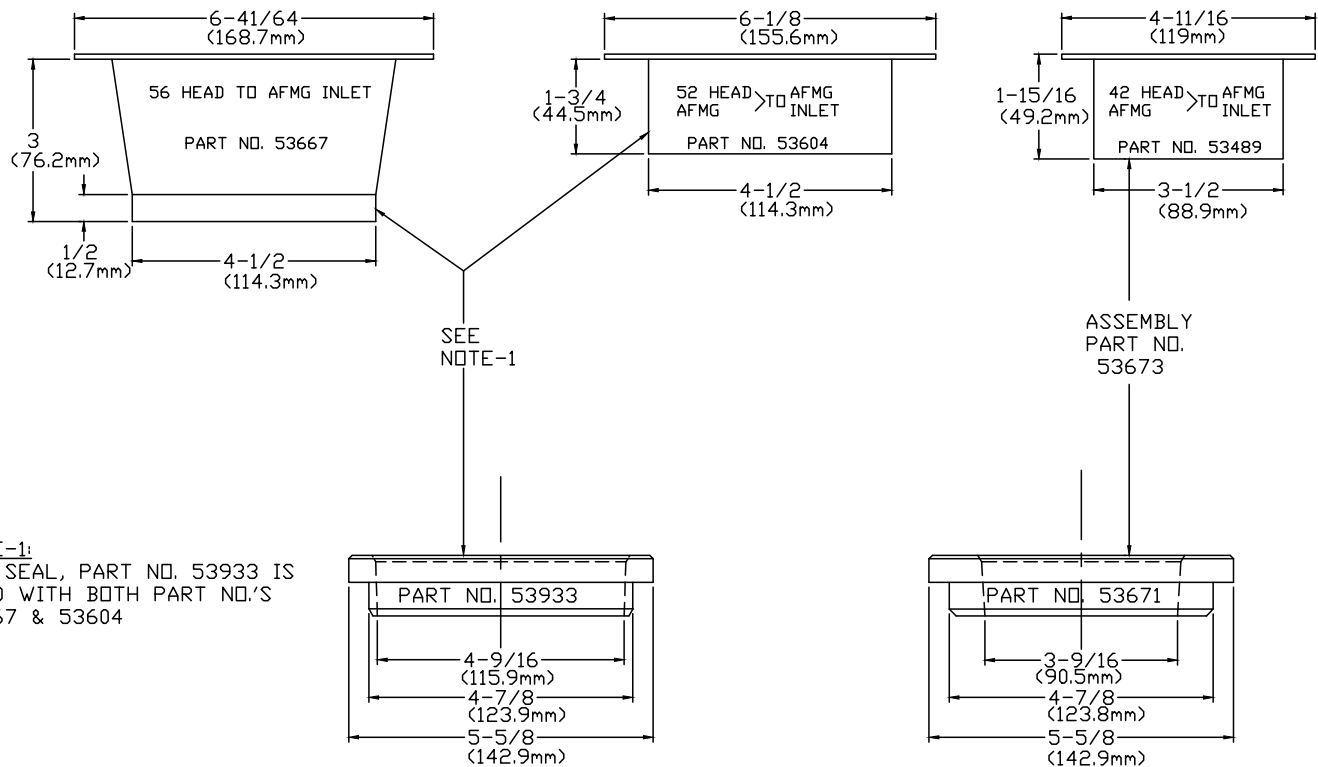
ITEMS REQUIRED

FOR TANDEM OPERATION

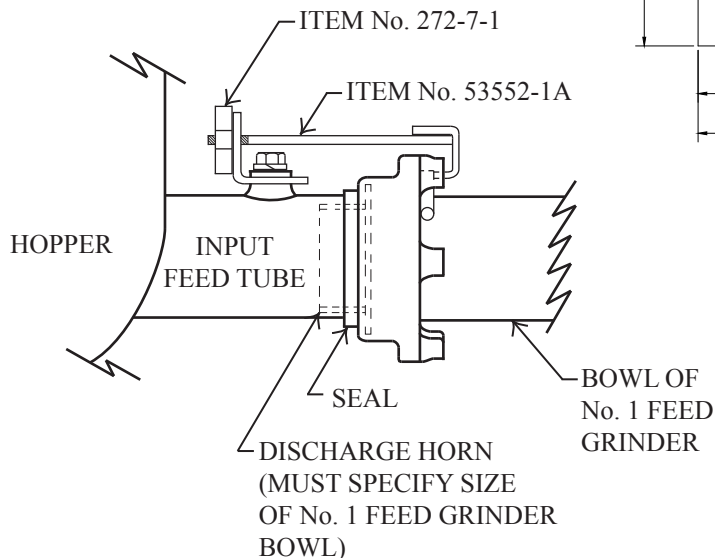
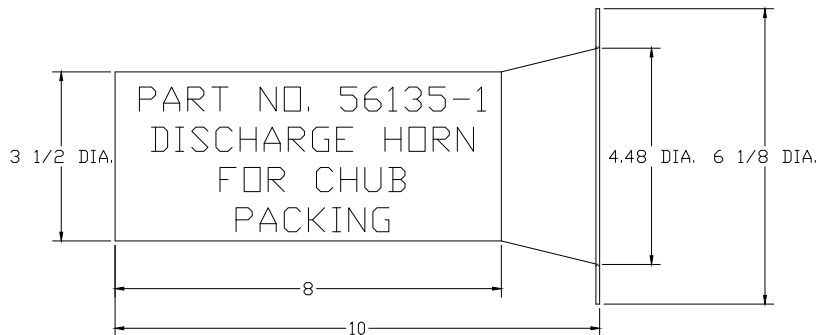
USED ON ALL UNITS UP TO SERIAL No. 52344

BIRO MANUAL TO BIRO AFMG-52
 BIRO AFMG-52 TO BIRO AFMG-48
 BIRO AFMG-52 TO BIRO AFMG-52

PLEASE NOTE - THESE ARE DESIGNED TO WORK ON BIRO EQUIPMENT ONLY



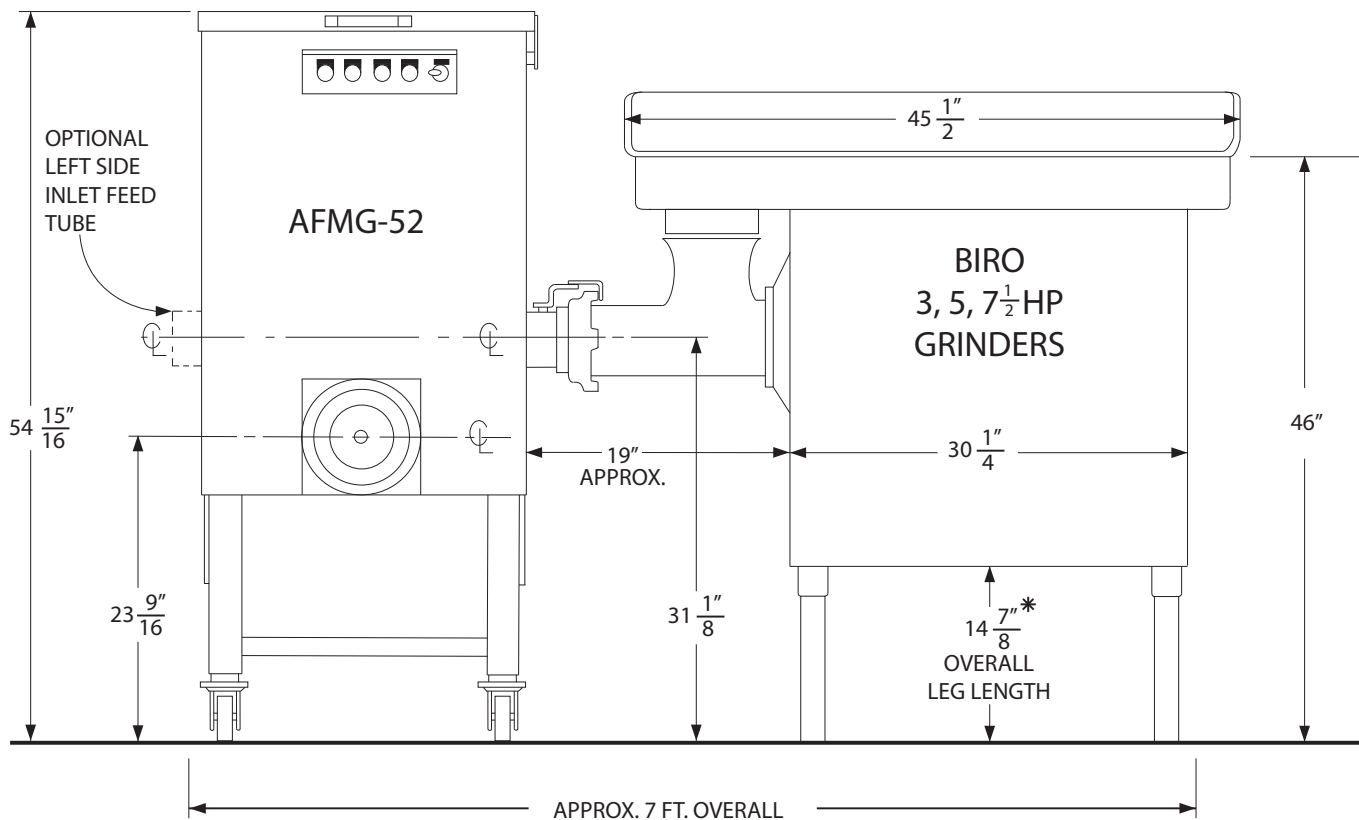
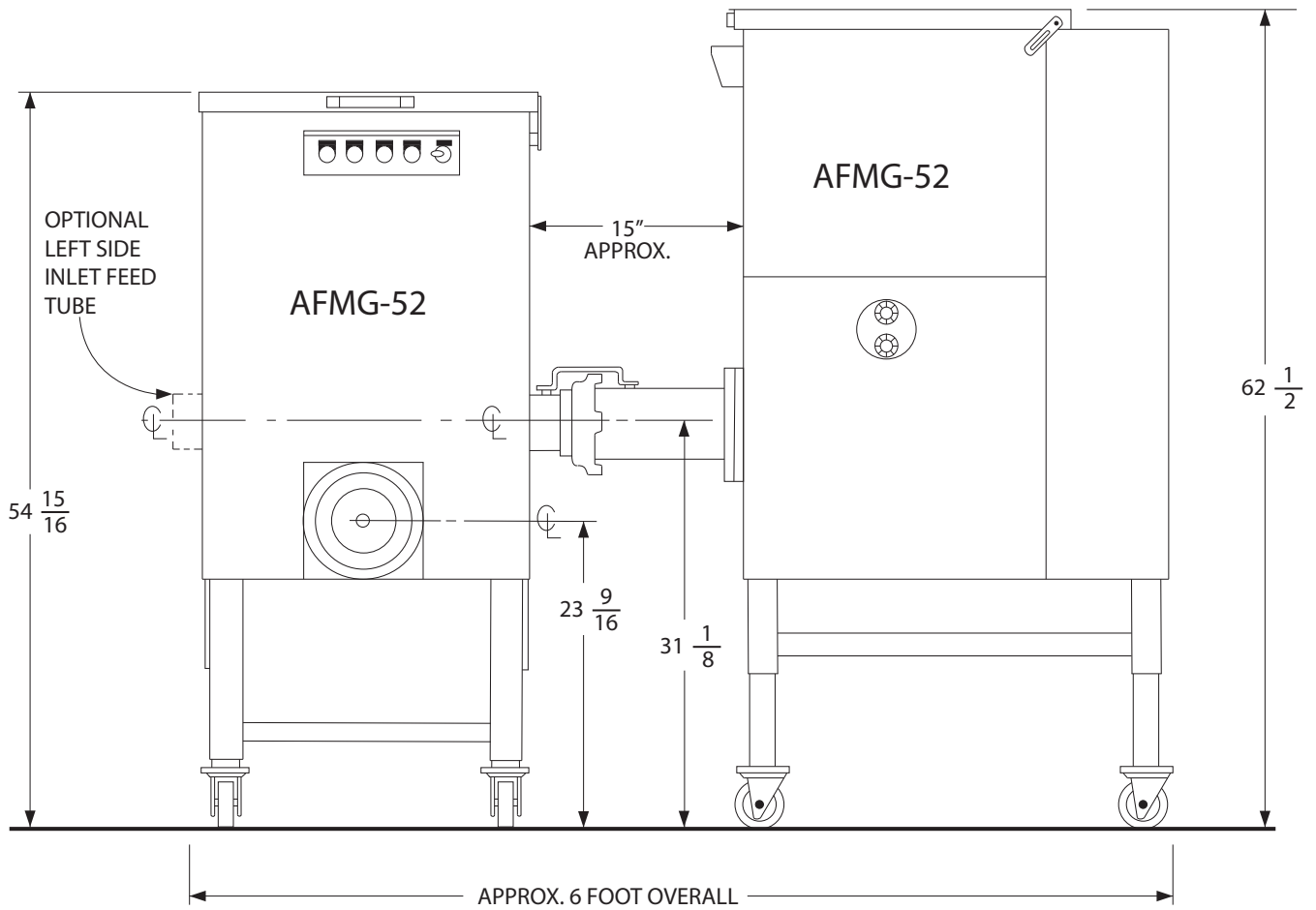
NOTE-1:
 THE SEAL, PART NO. 53933 IS USED WITH BOTH PART NO.'S 53667 & 53604



TANDEM OPERATION PART LIST

- 272-7-1 Knob, 3 point, 5/16-18
- 53489 Discharge horn less seal
From 24/42/46/48 to 24/48/52 inlet
- 57044 Connecting bracket, AFMG-52 to AFMG-48 and AFMG-52 to AFMG-52
- 53552-1A Connecting bracket assembly, less seal/horn
- 53604 Discharge horn less seal, 52 to 24/48/52 inlet
- 53667 Discharge horn less seal, 56 to 24/48/52 inlet
- 53671 Seal only, 24/42/46/48 to 24/48/52 inlet
- 53673 Discharge horn assembly 48-52 w/seal includes 53489 & 53671
- 53933 Seal only, 52/56 to 24/48/52 inlet
- 56135-1 Chub packing discharge horn 52 to 3 1/2 dia.

TANDEM OPERATION ILLUSTRATION FOR 90° INLET



* MODEL 1056 & 1556 OVERALL LEG LENGTH - 10 $\frac{5}{8}$

**ITEMS REQUIRED
FOR TANDEM OPERATION**
STARTING WITH SERIAL No. 52345

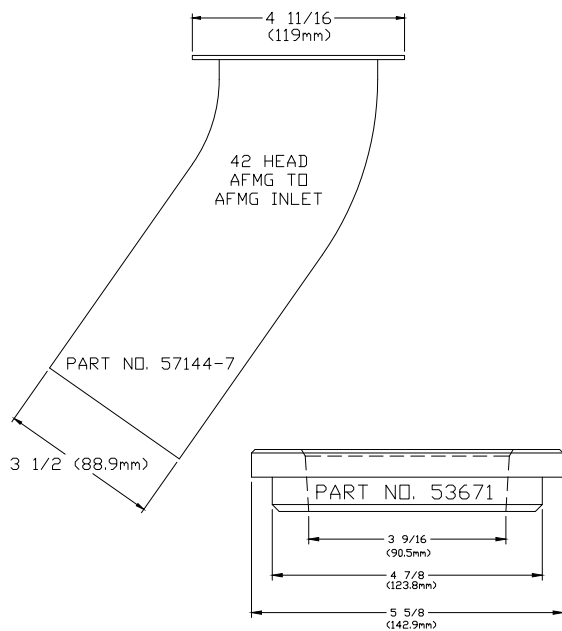
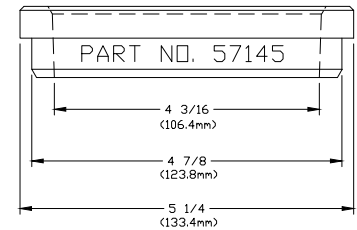
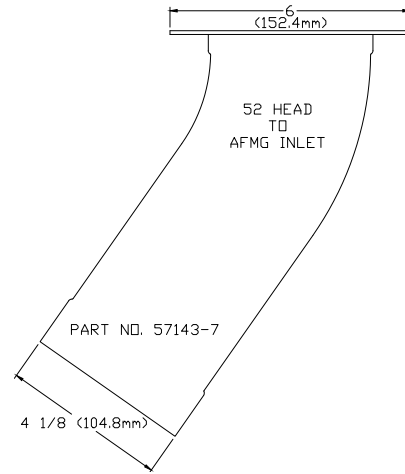
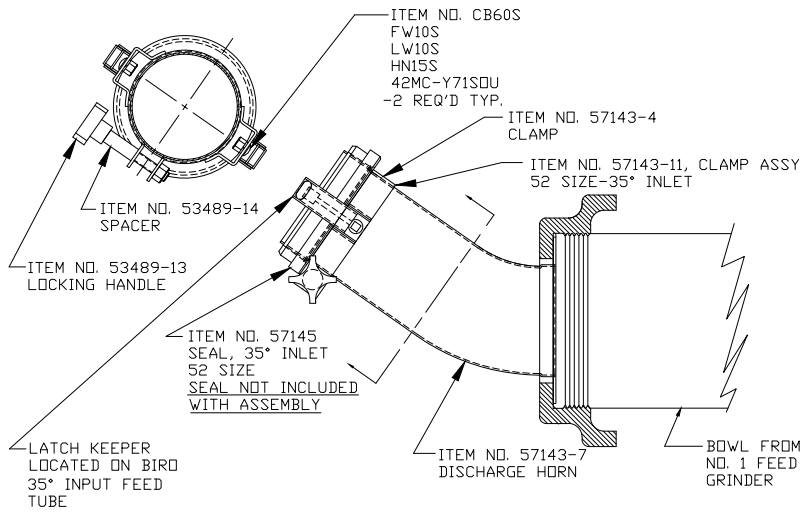
BIRO MANUAL TO BIRO AFMG-52
BIRO AFMG-52 TO BIRO AFMG-48
BIRO AFMG-52 TO BIRO AFMG-52

PLEASE NOTE - THESE ARE DESIGNED
TO WORK ON BIRO EQUIPMENT ONLY

52 SIZE DISCHARGE HORN ASSEMBLY

Item No. 57143 Includes Clamp Assembly

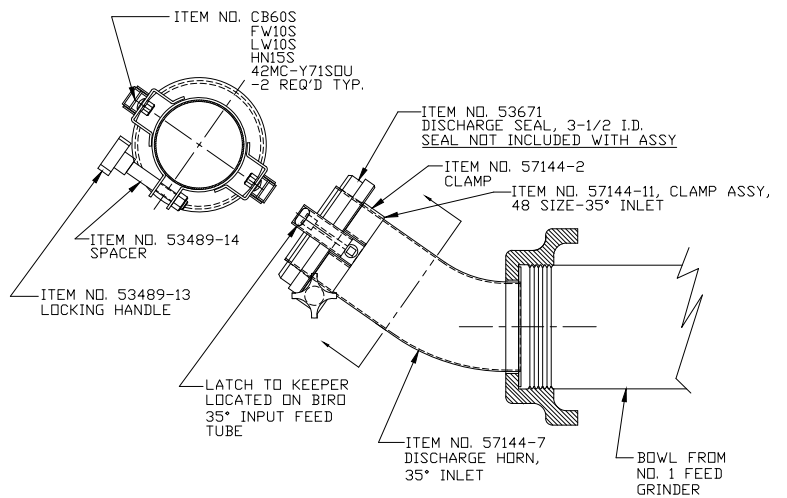
Item No. 57143-11



48 SIZE DISCHARGE HORN ASSEMBLY

Item No. 57144 Includes Clamp Assembly

Item No. 57144-11



CONNECTION INSTRUCTIONS FOR TANDEM OPERATIONS

AFMG-48 or AFMG-52 INTO AFMG-48 or AFMG-52 Heavy Horsepower Grinder INTO AFMG-48 or AFMG-52

Step 1. Remove Lock Knobs, Item No. 14688; Outer disc, Item No. 54303 and Side Entrance Seal, Item No. 57133 from the inlet tube of the Second Grind Machine. Clean out the tube if necessary.



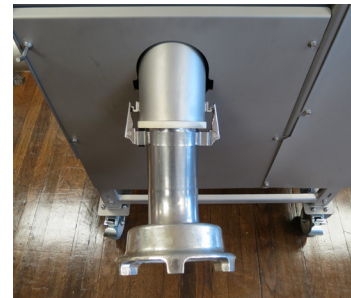
Step 2. Install the Inlet Tube Seal Item No. 53671 or 57145 into the inlet tube of the Second Grind Machine until fully seated.



Step 3. Remove the Ring from the First Grind Machine, Item No. HR42/48 or HR52. Insert the Discharge Horn, Item No. 57144-7 or 57143-7 into the ring. (DO NOT reinstall the ring on the First Grind Machine at this time.) Slide the Clamp Assembly, Item No. 57144-11 or 57143-11 onto the Discharge Horn.

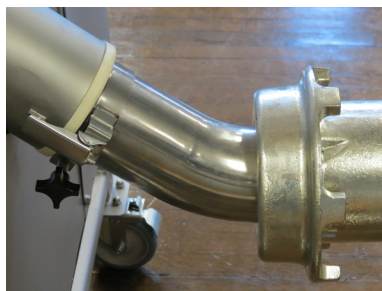


Step 4. Insert the Discharge Horn with Ring and Clamp Assembly into the Seal, pushing it fully against the inlet tube internal fins. Attach the lock latches to the tabs on the side of the inlet tube and lock down. Tighten the lock knob on the Clamp Assembly.

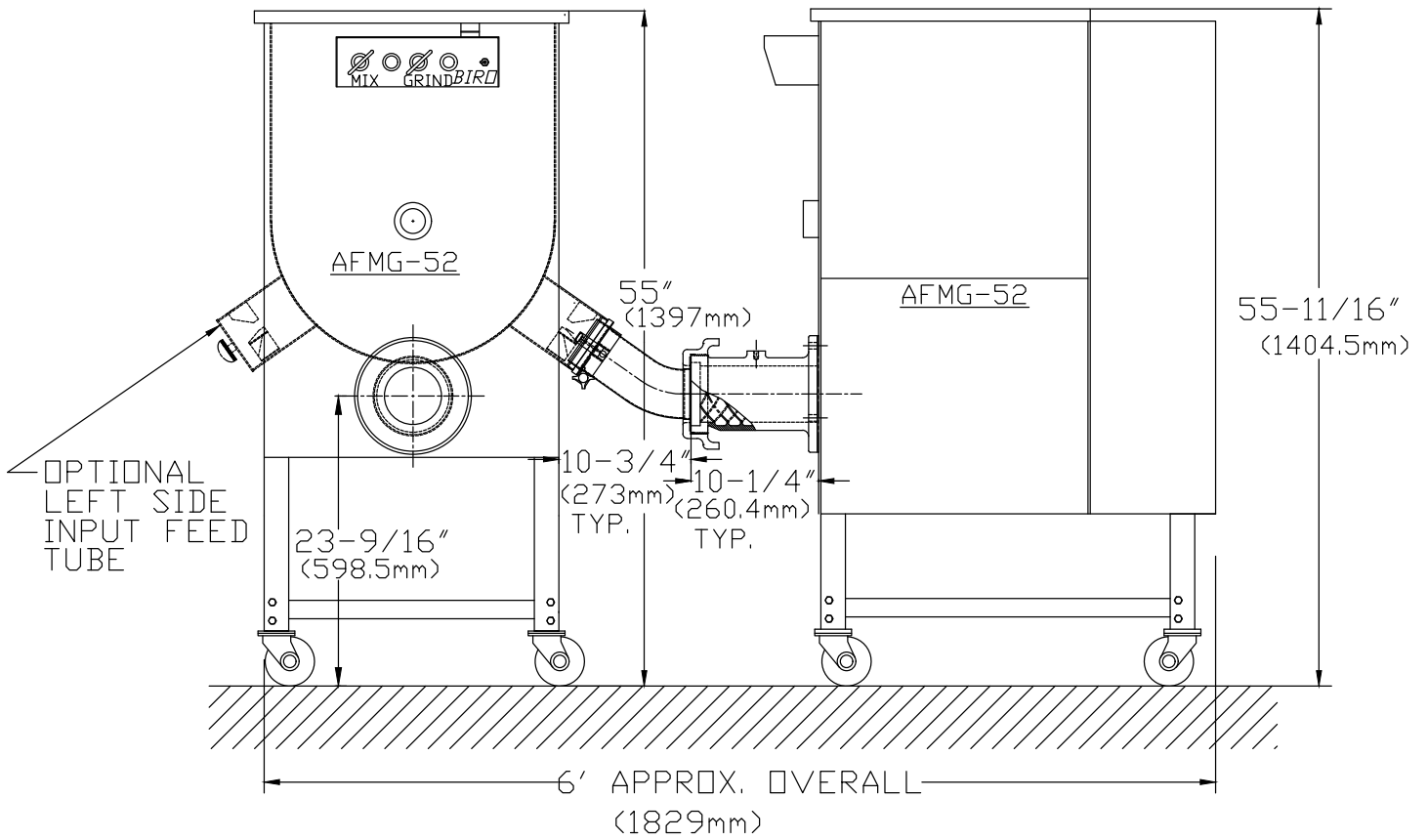


Step 5. Move the Discharge Horn of the Second Grind Machine up to the Bowl of the First Grind Machine. With the Auger, Knife and Grinding Plate installed in the First Grind Machine, thread the Ring onto the First Grind Machine Bowl.

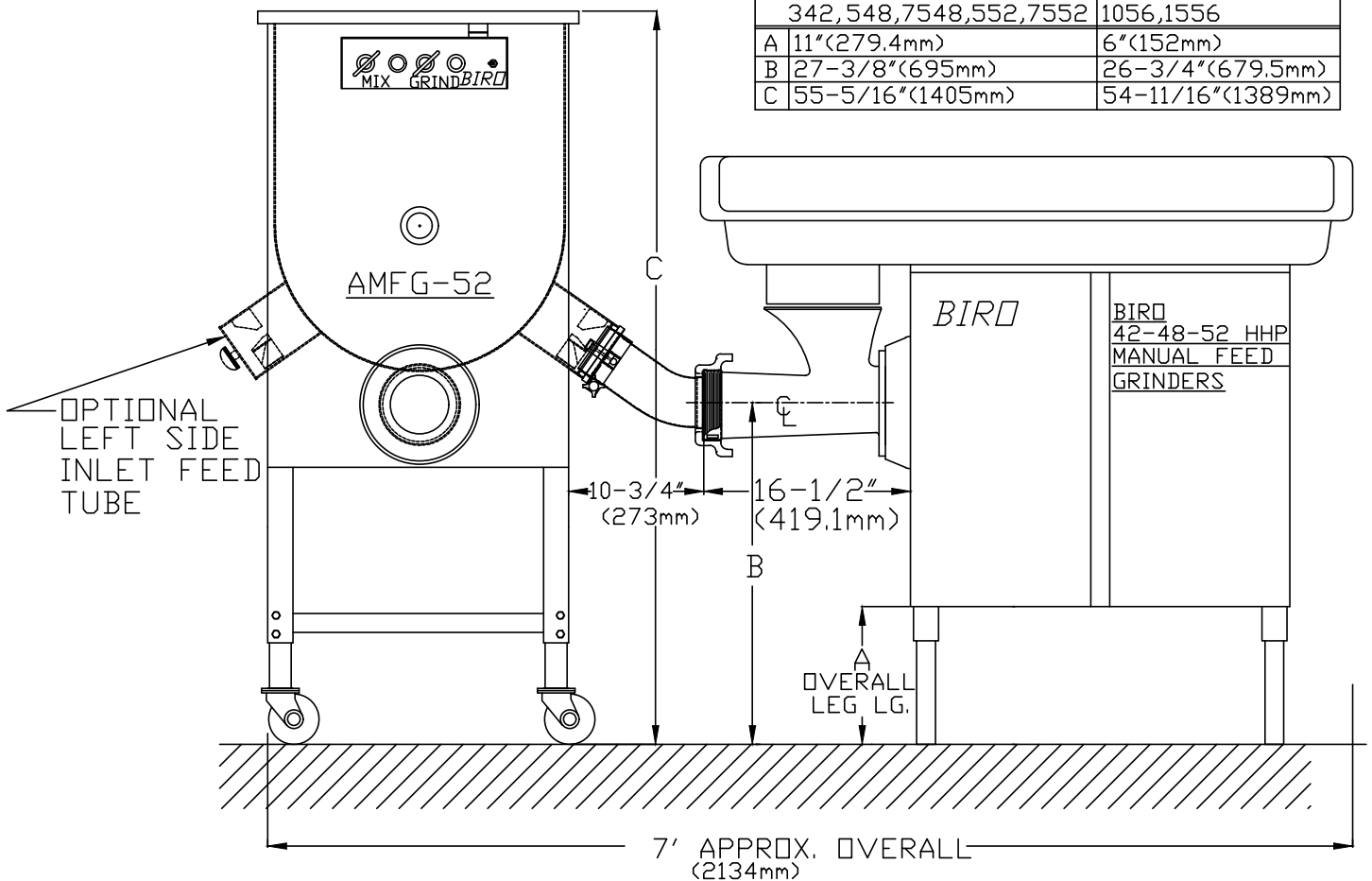
RING SHOULD BE HAND TIGHTENED ONLY: USE NO TOOLS.



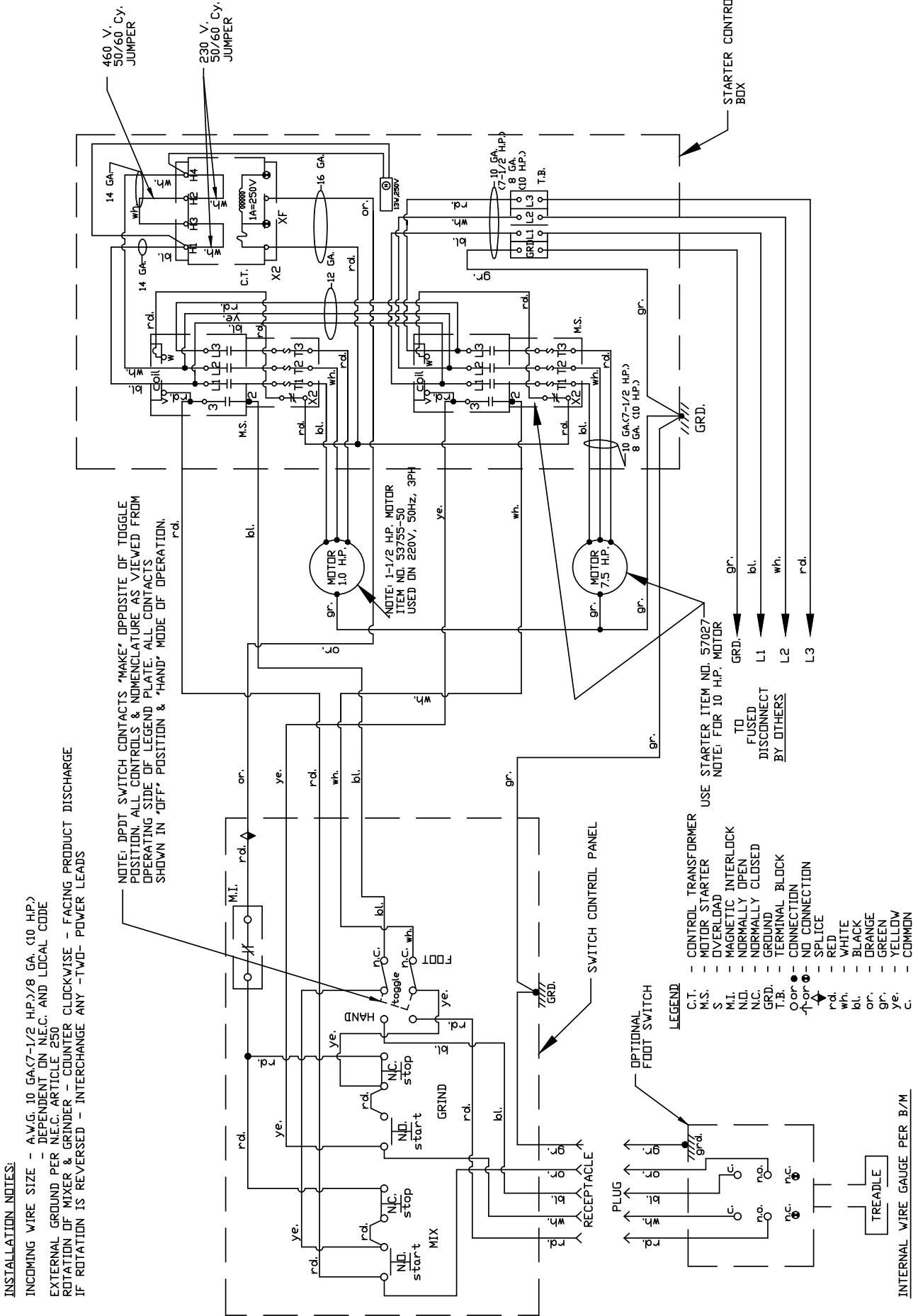
TANDEM OPERATION ILLUSTRATION FOR 35° INLET



MODEL HHP	
342,548,7548,552,7552	1056,1556
A 11" (279.4mm)	6" (152mm)
B 27-3/8" (695mm)	26-3/4" (679.5mm)
C 55-5/16" (1405mm)	54-11/16" (1389mm)



WIRING DIAGRAM



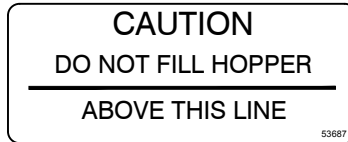
SAFETY LABEL LOCATIONS

CAUTION

KEEP HANDS OUT OF HOPPER



#653PS



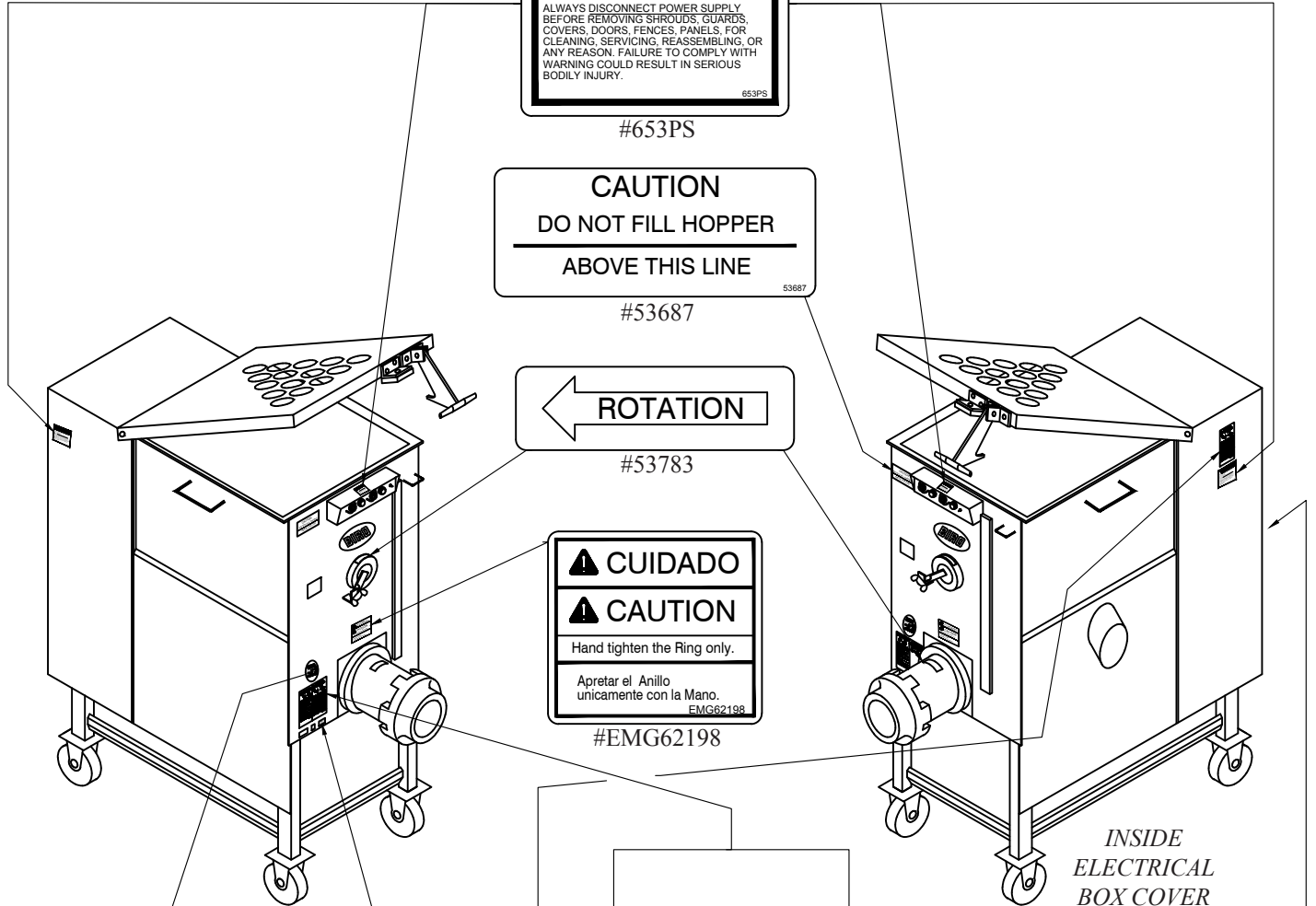
#53687



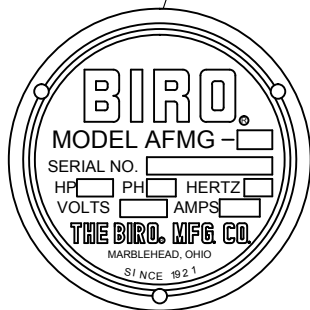
#53783



#EMG62198



INSIDE ELECTRICAL BOX COVER



#52999-4

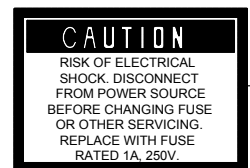
WIRED FOR 220 VOLTS
SPECIFY VOLTAGE



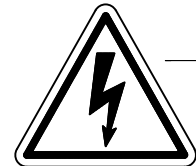
#H653-E



#H653-SP



#56315



#BES16971

LIMITED WARRANTY

WARRANTY: The BIRO Manufacturing Company warrants that the BIRO AFMG-52 Mixer Grinder/Chopper 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: wearable parts in the grinding system such as the bowl, bowl pin, ring, worm, drive shaft, knife drive pin, plate and knife. 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 switch components 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 for 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 the 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 in your area.

BIRO MANUFACTURING COMPANY

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Ph: 419-798-4451

Fax: 419-798-9106

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