MODEL AFMG-48-II AUTOMATIC FEED MIXER GRINDER OPERATING AND SERVICE MANUAL

STARTING WITH SERIAL NO. 62001 (MARK II)

STARTING WITH SERIAL NO. 63401 (SIDE OPENING LID)

STARTING WITH SERIAL NO. 63592 (35° INLET/TRI DIRECTIONAL LID)

☆ IMPORTANT NOTICE ☆

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

AFMG-48
138-4-15-17

— NOTES —

TABLE OF CONTENTS

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 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 62001 and higher, to machines with tri-directional product mixer safety cover and 35 degree inlet, serial number 63592 and higher.

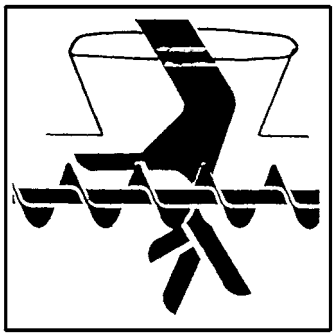
– NOTE –

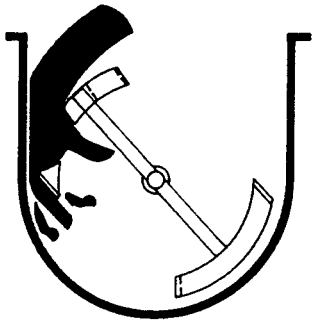
A copy of this manual is included with each AFMG-48 MIXER GRINDER.

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

WARNING





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 Opened 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 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

WARNING

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 With Product Mixer Safety Cover Opened 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 $24\frac{1}{16}$" minimum to $33\frac{9}{16}$" maximum.
4. This machine weighs approximately 700 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. 53985) clockwise until caster rests on floor.
   b. Be sure bolt holes line up. Replace bolts and tighten securely.
6. Install machine on a level, solid, 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 (stamped steel) 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.**

WARNING

8. After checking and making sure the power supply is correct, plug in your machine. **NEVER OPERATE THIS 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 7½HP grind motor is a **MINIMUM of No. 10 Wire**. With 10HP grind motor **MINIMUM of No. 8 WIRE** to be used.
9. The BIRO Manufacturing Company is not responsible for permanent wiring, connection or installation.

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).

3-PHASE MOTOR SPECIFICATIONS AND OVERLOADS

MIXER MOTORS

BALDOR/DORRIS MOTOR	Voltage	Cycles	Overload	Amps	Item No.
1HP/.75kw	200	60	E-41	3.7	53900
"	208	60	E-41	3.6	53900
"	220	60	E-41	3.5	53900
"	230	60	E-41	3.4	53900
"	440	60	E-29	1.8	53922
"	460	60	E-29	1.7	53922
"	575	60	E-27	1.3	53997
"	220	50	E-44	4.2	53924
"	380	50	E-34	2.1	53926
"	415	50	E-34	2.0	53926
BALDOR/DORRIS MOTOR	**Voltage**	**Cycles**	**Overload**	**Amps**	**Item No.**
1.5HP/1.1kw	200	60	E-48	5.5	50669
"	220	60	E-48	5.0	50669
"	440	60	E-38	2.5	52740
"	460	60	E-36	2.4	52739
"	575	60	E-33	1.9	52729
"	220	50	E-48	6.0	50669
"	380	50	E-39	3.5	52732
"	415	50	E-39	3.2	52732

NORD HIGH EFF. MOTOR	Voltage	Cycles	Overload	Amps	Item No.
1¾HP/1.3kw	200	60	E-50	5.9	50668
"	208	60	E-50	5.7	50668
"	220	60	E-50	5.4	50668
"	230	60	E-50	5.2	50668
"	440	60	E-36	2.7	52739
"	460	60	E-36	2.6	52739
"	550	60	E-34	2.2	53926
"	575	60	E-34	2.1	53926
"	200	50	E-48	7.1	50669
"	380	50	E-39	3.7	52732
"	415	50	E-41	3.4	53900

GRINDER MOTORS

BALDOR MOTOR	Voltage	Cycles	Overload	Amps	Item No.
7.5HP/5.6kw	200	60	E-70	25	53925
"	208	60	E-69	24	54219
"	220	60	E-67	23	52609
"	230	60	E-67	22	52609
"	440	60	E-56	11.5	52743
"	460	60	E-56	11	52743
"	575	60	E-54	8.8	50705
"	220	50	E-70	27.6	53925
"	380	50	E-61	16	52744
"	415	50	E-60	14.6	50667

10HP/7.5kw	200	60	E-72	30	57028
"	208	60	E-72	28.8	57028
"	220	60	E-70	27.2	53925
"	230	60	E-70	26	53925
"	440	60	E-60	13.6	50667
"	460	60	E-60	13	50667
"	575	60	E-56	10.4	52743
"	220	50	E-72	32.6	57028
"	380	50	E-62	18.8	50704
"	415	50	E-62	17.3	50704

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 affixed to 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 ROTATION OF THE MIXING PADDLE; ROTATION MUST BE COUNTER-CLOCKWISE** as indicated by the rotation decal located on the paddle front mounting hub. Backwards operation will not allow mixing paddle to feed product to the grinding auger.

13. If machine runs clockwise (backwards), it must be rewired to correct rotation, otherwise serious irreparable damage may occur to grinding components. Both the auger and the mixing paddle must operate in the same 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 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 grinding 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.

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

WARNING

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, Unplug Machine from Power Source and Perform Lockout/Tagout Procedure to This Machine Before Unjamming, Unclogging, Cleaning or Servicing.
- **NEVER** Leave Unattended While Operating.
- **NEVER** Operate Without All Warning Labels Attached and Owner/Operator Manual Available to the Operator.

A. TO PROCESS PRODUCT

1. Before starting 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 ⅜" 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 from power source and perform lockout/tagout procedures.

CLEANING

⚠ WARNING

ROTATING GRINDING AUGER & ROTATING MIXING PADDLE

TO AVOID SERIOUS PERSONAL INJURY

- **ALWAYS** Turn Off, Unplug 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.
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 counterclockwise, slide forward to disengage from drive shaft and lift from product hopper.

⚠ CAUTION

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. Machine may be cleaned by power spray washing, taking care to not spray directly at any electrical controls.
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 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 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

⚠ WARNING

ROTATING GRINDING AUGER & ROTATING MIXING PADDLE

TO AVOID SERIOUS PERSONAL INJURY

- **ALWAYS** Turn Off, Unplug from Power Source and Perform Lockout/Tagout Procedures 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.

⚠ CAUTION

ONLY HAND TIGHTEN RETAINING RING

4. When the bowl assembly is mounted and tight, there should be approximately ⅛" gap between the back inside wall of the grinding trough and the back of the auger. The bowl ring wrench which 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

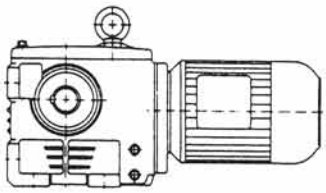
1. MOTORS: The mix and grind motors have pre-lubricated bearings. These bearings should be re-lubricated annually with a good grade of bearing grease. Do not over-grease.
2. BEARING HOUSING: The main bearings are housed in an enclosed and sealed journal box. Re-lubricate semi-annually with a good grade of bearing grease. Do not over-grease.

OPERATING AND MAINTENANCE INSTRUCTIONS

STARTING WITH SERIAL No. 66266

3. FOR NORD HELICAL – WORM GEAR AND MOTOR REDUCER

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



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 overload protector.

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 from factory with ISO VG680as. 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 1.48 Qts. of a compatible lubricant to the above specification. Once the unit is filled, the lubricant level should be verified at the Oil Level Plug.

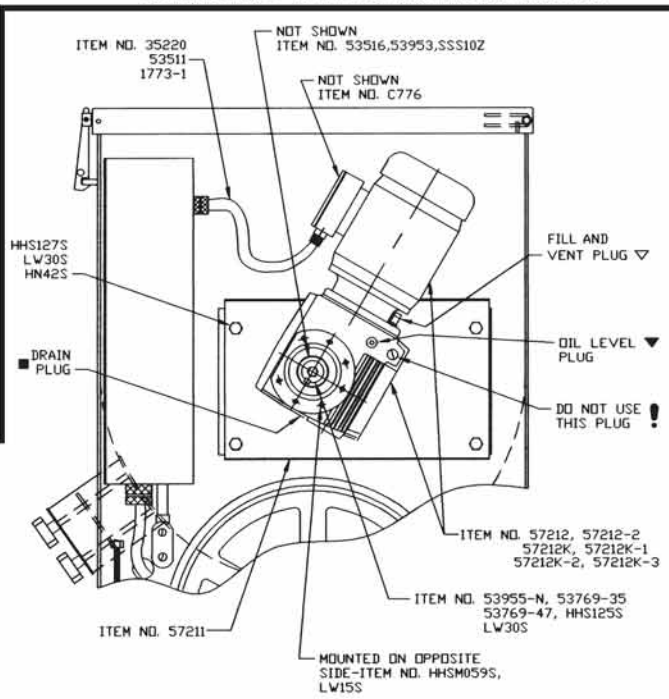
Please note the chart below for oil compatibility:

Oil Compatibility		
Polyglycol	Mineral	No
Polyalphaoelfin	Polyglycol	No
Polyalphaoelfin	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
BP Enersyn SG-XP 680
Texaco Pinnacle 680
Klober Klubersynth GH 6-680
Mobile Glycgoyle HE 680
Tribol 800/680
SHELL OMALA HD 680

STARTING WITH SERIAL No. 66266



Item No.	Description
1773-1	Lock Ring ½"
35220	Motor cord SO 14/4 × 41"
53511	Cord connector 14/4 AL.
53516	Mixer paddle drive pin
53769-35	Mixer drive shaft key
53769-47	Mixer shaft washer retainer
53953	Mixer drive shaft seal
53955-N	Mixer drive shaft
57211	Mounting plate
57212	Motor & reducer only – Nord 1¾HP, 208/460V-50/60-3Ph.
57212-2	Motor & reducer only – Nord 1¾HP, 550-575V-50/60-3Ph
57212K	Conversion kit & plate – Nord 1¾HP, 200-230V-50/60-3Ph
57212K-1	Conversion kit & plate – Nord 1¾HP, 380-415V-50/60-3Ph
57212K-2	Conversion kit & plate – Nord 1¾HP, 440-460V-50/60-3Ph
57212K-3	Conversion kit & plate – Nord 1¾HP, 550-575V-50/60-3Ph

Item No.	Description
57212K-208	Motor & reducer & shaft replacement w/o plate – Nord
57212K-380	Motor & reducer & shaft replacement w/o plate – Nord
57212K-440	Motor & reducer & shaft replacement w/o plate – Nord
57212K-575	Motor & reducer & shaft replacment w/o plate – Nord
C776	Terminal ring #10
HHS125S	Hex head screw, ½-13 × 1SS

Item No.	Description
HHS127S	Hex head screw, ½-13 × 1½SS
HHSM059S	Hex head screw, M8 × 1.25 × 20mm
HN42S	Hex nut, ½-13 SS
LW15S	Lock washer, 5/16 SS
LW30S	Lock washer, ½ SS
SSS10Z	Set screw, ¼-20 × ¼ SS

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

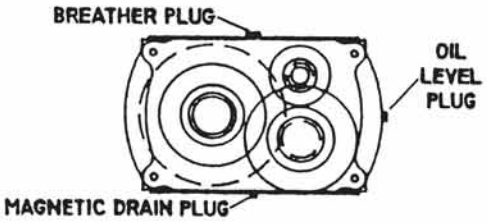
1. **Disconnect and unplug from main power source and perform lockout/tagout before attempting to service.**
2. Remove rear cover.
3. Remove junction box cover from 1HP motor, disconnect the lead wires from the mixer motor. Loosen the strain relief and pull the cord thru, attach blue ring terminals to 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 × 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 × 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. Reattach the motor junction box cover.
19. Attach rear cover.

KIT, Item #57212K consists of:

1 pc.	57212	NORD GEAR-MOTOR REDUCER, 1¾HP
3 pcs.	50668	E50 OVERLOAD HEATER ELEMENTS
1 pc.	57211	TRANSMISSION MOUNTING PLATE
1 pc.	53955-N	MIXER DRIVE SHAFT FOR NORD
1 pc.	53953	MIXER DRIVE SHAFT SEAL
1 pc.	53953A-1	LOCTITE ADHESIVE FOR SHAFT SEAL
1 pc.	53516	MIXER PADDLE DRIVE PIN
1 pc.	SSS10Z	SET SCREW FOR DRIVE PIN ¼-20 × ¼
1 pc.	53769-35	KEY FOR MIXER DRIVE SHAFT
1 pc.	53769-47	WASHER RETAINER FOR MIXER SHAFT
1 pc.	HHS125S	HEX HEAD SCREW ½-13 × 1 SS
1 pc.	LW 30S	LOCK WASHER ½ SS
41"	35220	MOTOR CORD, 14 ga. ×4 WIRE, TYPE SO
2 pcs.	53511	CORD CONNECTOR
4 pcs.	1773-1	RING, TERMINAL #10, 16-14AWG, insulated
7 pcs.	HHSM059S	HEX HEAD SCREW, M8 × 1.25 × 20MM SS
7 pcs.	LW15S	LOCK WASHER 5/16 SS

4. **FOR DORRIS MIXER TRANSMISSION (OBSOLETE - N/A) BEFORE WITH SERIAL No. 66266**

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 degrees F (-9 – 24 degrees C) is AGMA Lube No. 3 or ISO Grade 100.



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.

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

COMPANY	ISO VISCOSITY GRADE 100 (AGMA3)
AMOCO	American Ind'l Oil 100
CHEVRON	Machine Oil $ & 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, retighten 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 the 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 SPROCKETS 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.

a. Unplug mixer/grinder from power source and perform lockout/tagout procedures.

b. Remove rear drive cover.

c. Spray or brush lubricant on inside of chain, slowly and carefully turning large sprocket by hand.

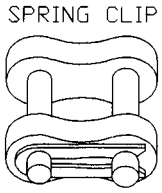
d. Reinstall rear drive cover.

F. MAIN DRIVE CHAIN TENSION (See Diagram Below)

1. Unplug mixer/grinder from power source and perform lockout/tagout procedures.
2. Remove rear drive cover.
3. Remove right and left side skirts.
4. Loosen the four bolts that hold the motor to the frame of the machine.
5. Loosen the lock nuts on the motor adjusting stud.
6. **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 ⅛" to ⅜". 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 ⅛" to ⅜". Do not overtighten chain as this will put excessive and damaging pressure on the motor bearings. Be sure to keep motor shaft **parallel** with auger drive shaft.
7. Retighten motor mounting bolts.
8. Retighten motor adjusting stud lock nuts.
9. Reinstall the right and left side skirts.
10. Reinstall the rear drive cover.

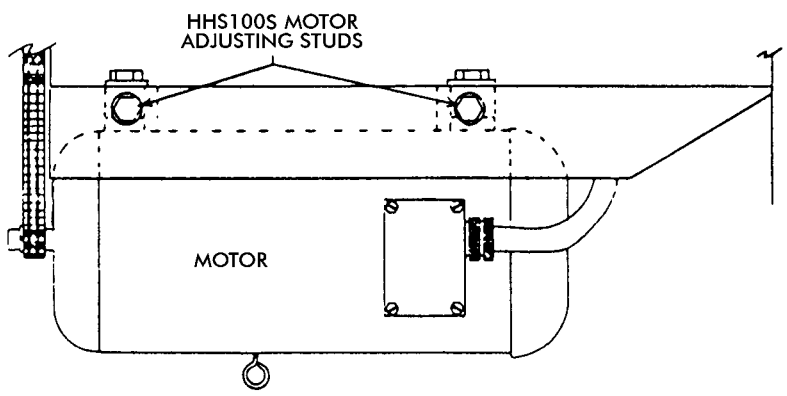
AFTER INSTALLATION THE CHAIN SHOULD BE TENSIONED TO APPROXIMATELY ⅛ to ⅜ FLEX

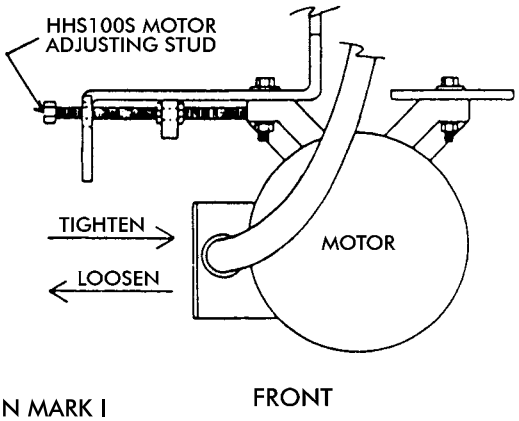


G. CHAIN REPLACEMENT

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

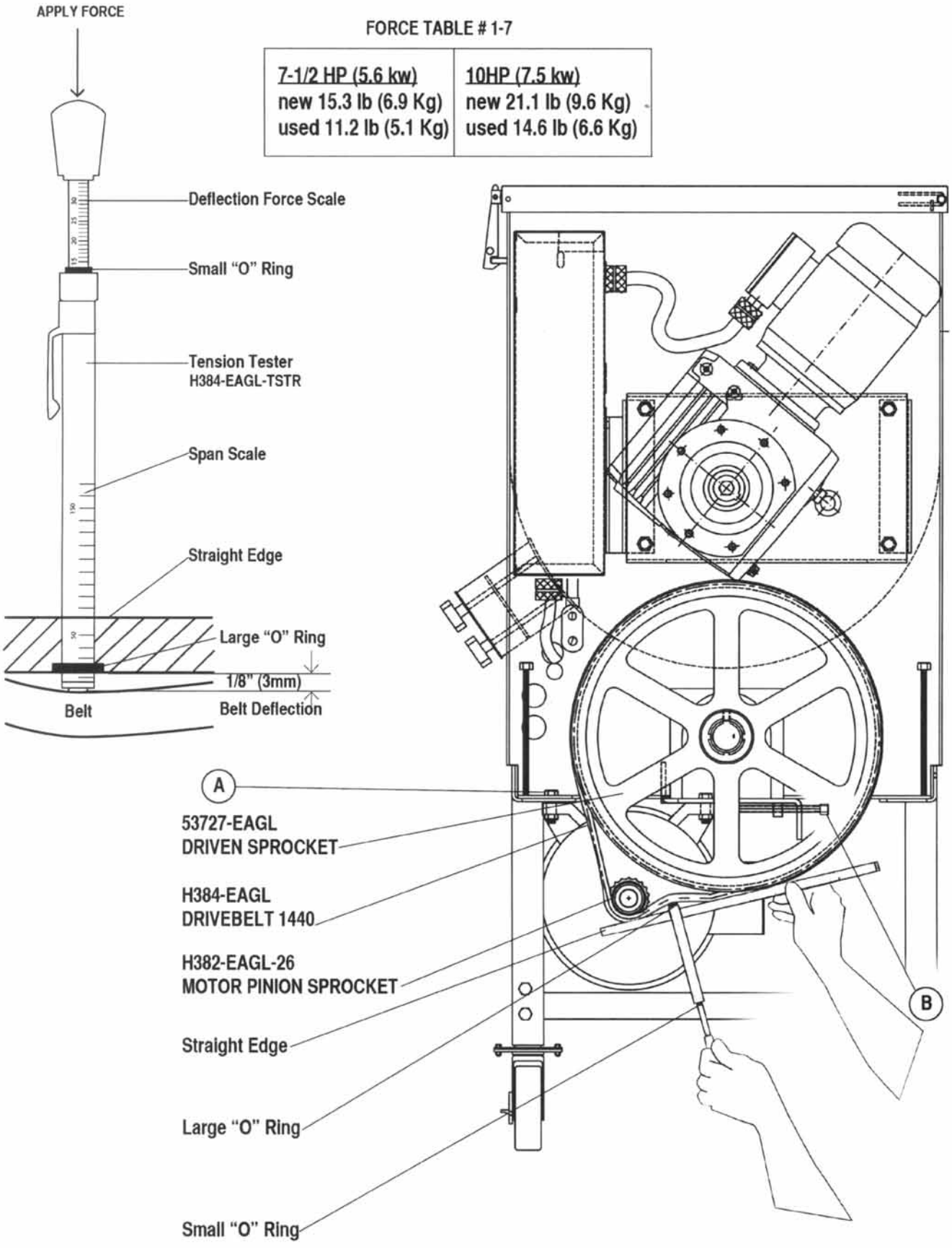
   Upon assembly, be sure the connecting link is installed so the spring clip is orientated with its opening facing "opposite" the direction of the chain travel **(See Diagram).** ➔





*ITEM NO. 16694 USED ON MARK I
*ITEM NO. HHS100S USED ON MARK II

OPTIONAL EAGLE BELT DRIVE SYSTEM



"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 (1/8" line) on the Tension Tester, Item No. #H384-EAGL-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 (1/8" belt deflection).

6. Remove the tension tester and read the force recorded from the bottom of the small O-Ring on the force scale.

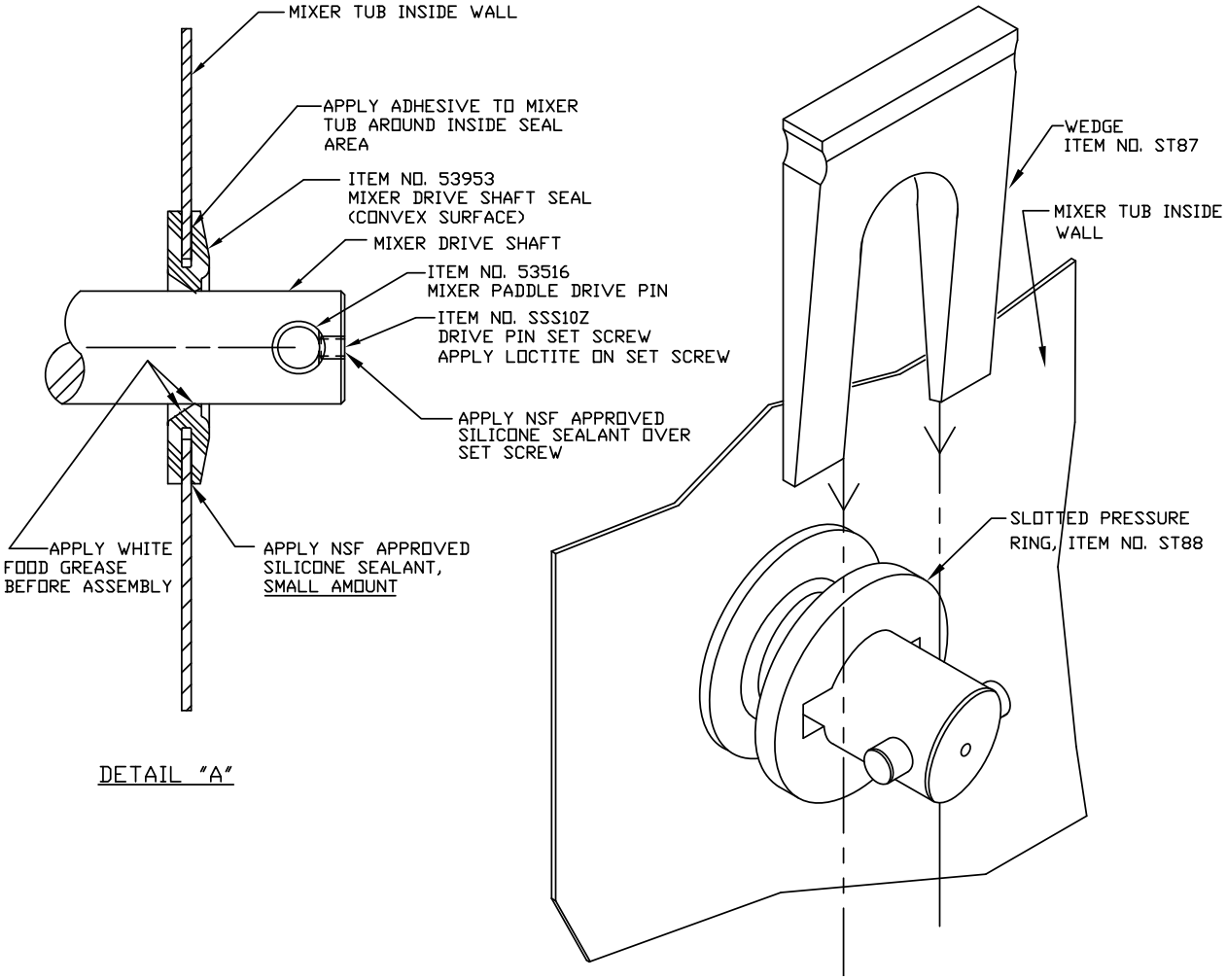
7. The force should be equal to the value indicated in the force table #1-7 depending on the "HP" of the grinder, and if the belt is "new" or "used."

8. If the force values do not equal those shown in table #1-7, increase the tension as follows:

   a. Loosen the 4 motor mounting bolts (A) slightly.
   b. Advance the jacking screws (B) ¼ turn each (be sure to advance both screws an **equal** amount).
   c. Retighten 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.

Assembly Instructions for Mixer Drive Shaft Seal Replacement



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. Remove Mixer Transmission by removing 7 (13mm) bolts threaded into the back of the transmission.
5. Assemble new Mixer Drive Shaft Seal. See detail “A.”
6. Apply white Food safe Grease to the new Seal Lip on the inside diameter. See Detail “A” for location.
7. Reinstall the Mixer Transmission.
8. Check the Mixer Drive Seal for fit. Be sure the Seal makes contact all around the Mixer Drive Shaft.
9. Install the Mixer Paddle Drive Pin and tighten the Set Screw, Item No. SSS10Z. Apply food approved Silicone Sealant over the Set Screw.
10. 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.
11. 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.
12. Wait, allow for 10 minute set up time. Remove Wedge and Ring.
13. 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.
14. Allow the Adhesives to cure for 24 hours before running the Mixer/Grinder.

AFMG-48 MIXER GRINDER PARTS LIST WITH NORD GEAR TRANSMISSION STARTING WITH SERIAL No. 66266

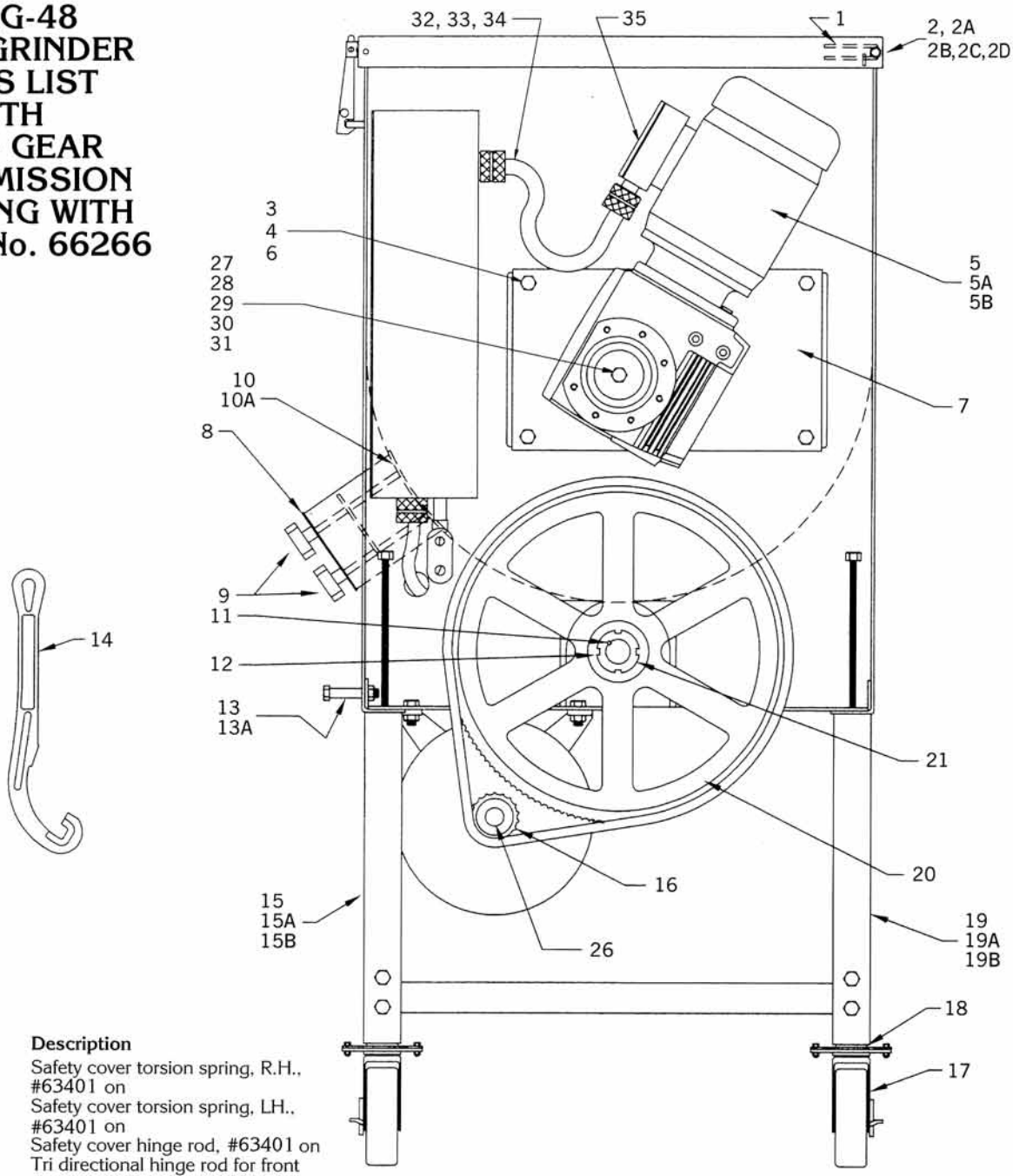
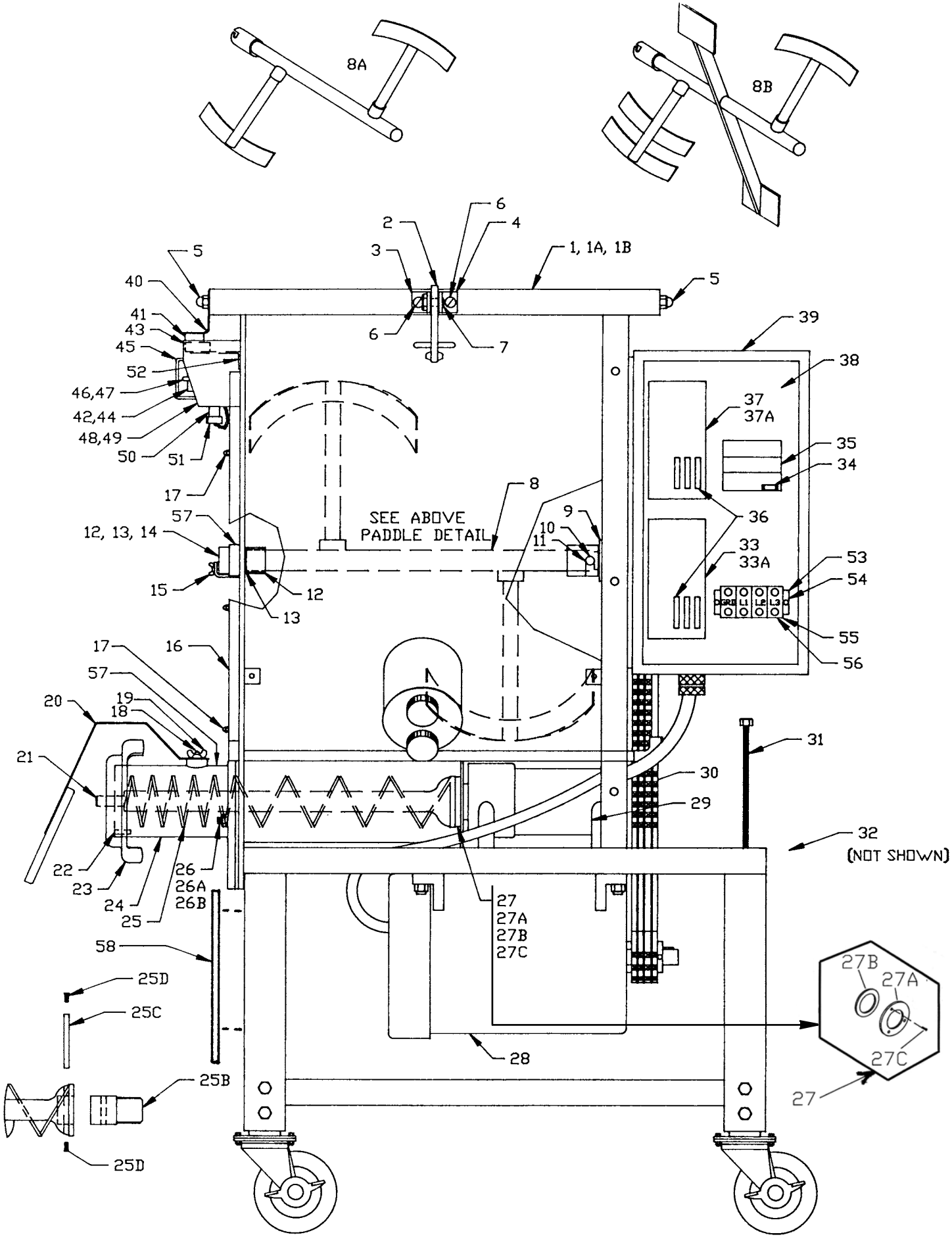


Fig.	Item No.	Description
1	56221	Safety cover torsion spring, R.H., #63401 on
	56222	Safety cover torsion spring, LH., #63401 on
2	57050	Safety cover hinge rod, #63401 on
2A	57153	Tri directional hinge rod for front opening, #63440 on 27¾ long
2B	56045	Hinge rod spacer (2 req'd)
2C	AN20S	Acorn nut ⅜-16, SS (2 req'd)
2D	57050	Safety cover hinge rod for side lid opening 25⁹⁄₁₆ long
3	HHS127S	Hex head screw, ½-13 × 1½ SS
4	LW30S	Lock washer, ½ SS
5	57212	Motor & reducer only – Nord 1¾HP, 208-220-230/380-415-460/50-60/3Ph
5A	57212-1	Motor & reducer only – Nord 1¾HP, 200/60-3Ph
5B	57212-2	Motor & reducer only – Nord 1¾HP, 550-575V-50/60-3Ph
6	HN42S	Hex nut, .-13 SS
7	57211	Mounting plate
8	54303	Outer disc, double rod, #62001 on
9	14688	Lock knob, (2 req.)
10	57133	Side entrance seal, double rod, 35° inlet, #63592 on
10A	54302	Side entrance seal, double rod, 90° inlet, #62001 to #63591
11	53891	Auger drive shaft key
12	53894	Auger drive shaft lockwasher
13	53715-1	Ring wrench hanger
13A	HN15S	Hex nut ¼-20, SS
14	52357	Ring wrench (order H340)
15	55093	Right side skirt, 35° inlet, #63592 on
15A	55094	Right side skirt – no hole
15B	55095	Right side skirt, 90° inlet, #52001 to #52344
16	53580	Sprocket, 22 tooth, (order H382-1)
	H382	Sprocket, 19 tooth (replacement only)
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, 9½" adjusting – new style caster pad
	53944	Standard leg, 9½" 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
21	53895	Auger drive shaft locknut
26	C617	Motor shaft key ¼ × ¼ × 2"
27	53955-N	Mixer drive shaft
28	53769-35	Mixer drive shaft key
29	53769-47	Mixer shaft washer retainer
30	HHS125S	Hex head screw, ½-13 × 1 SS
31	LW30S	Lock washer, ½ SS
32	35220	Motor cord SO 14/4 × 41"
33	53511	Cord connector 14/4 AL
34	1773-1	Lock ring ½"
35	C776	Terminal ring #10

AFMG-48 SIDE VIEW PARTS DIAGRAM



BIRO MODEL AFMG-48-II MIXER GRINDER PARTS LIST

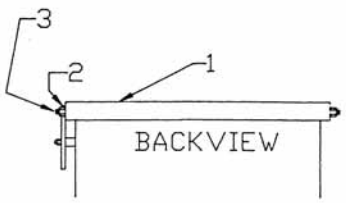
Fig.	Item No.	Description
1	57154	Product mixer safety cover, tri directional, #63592 on
1A	53547	Lid with chute opening
1B	53543	Conveyor chute
2	56072	Safety cover latch
3	56073	Safety cover latch mounting bracket, L.H.
4	56074	Safety cover latch mounting bracket, R.H.
5	AN20S	Acorn nut, ⅜-16 (2 req.)
6	RHS24S	Round head screw, ¼-20 × ½ (2 req.)
	HNNL15S	Hex nut, nylok, ¼-20 (2 req.)
7	RHS31S	Round head screw, ¼-20 × 1
	HNNL15S	Hex nut, nylok, ¼-20
8A	53456	Mixer paddle assembly, 1st grind, optional
8B	53918	Mixer paddle assembly, 2nd grind, standard
9	53953	Mixer drive shaft seal
10	53516	Mixer paddle drive pin
11	SSS10Z	Drive pin set screw
12	53594	Bearing for 53520 assembly
13	53517-1	Thrust bearing
14	53852	Lock arm assembly w/brgs.
15	53568	Mixer paddle lock set screw
16	57047	Wireway cover, #63401 on
17	1116	Acorn nut, 10-32 (3 req.)
18	SSS45S	Meatguard mounting stud
19	WN20S	Wing nut
20	52392	Meat guard splash shield
21	HK48	Knife drive pin
22	HP48	Bowl plate pin (3 req.)
23	HR42/48	Bowl ring
24	52106-CTN	Bowl w/plate pins
25	54278-CTN	Auger assembly
25B	54278B	Square drive auger adapter
25C	54278C	Auger shear pin
25D	FHS33S	Shear pin flat head screw, ¼-20 × ½
26	53413	Bowl mounting stud – short (1 req.)
	HNF42S	Hex flange nut, ½-13, (2 req.)
26A	53413-2	Bowl mounting stud – long (2 req.)
26B	HNF42S	Flange hex nut ½-13 bowl mounting nut (3 req.)
27	57159K	Auger drive shaft seal kit
27A	57160	Seal retainer, SS
27B	57159	Auger drive shaft seal, double lip
27C	FHS26S	Flat head screw 10-32 × ¾, SS
28	53475-200	Motor, 7½HP, 200/400-60-3
	53475	Motor, 7½HP, 208/460-60-3
	53475-50	Motor, 7½HP, 208/380-50-3
	53941	Motor, 7½HP, 575-60-3
	53475-1	Baldor 7½HP, bearing both ends – 206KDD
	53475-2	Doerr 7½HP, bearing, opp. shaft – 206KDD
	53475-3	Doerr 7½HP, bearing, shaft end – 207KDD
	57025-200	Motor, 10HP, 200/400-60-3
	57025	Motor, 10HP, 208/460-50/60-3
	57025-5	Motor, 10HP, 575-60-3
	57092	Motor, 10HP, 220/380-50-3
29	53886	Journal box assembly
	HHS153S	Hex head screw 5/8-18x1-1/2SS (4ea.)
	LW35S	Lock washer 5/8 SS (4ea.)
30	H384-CL	Roller chain
31	54310	Adjusting stud
32	55092	Rear drive cover w/handles
	55092-COSK	Rear drive cover COS kit
	55092-COS	Rear drive cover w/handles & magnet
	14688	4-point knob, AL
	14688-COS	Locking knob, AL
	57219	Screw – COS rear drive cover
	FW05S	Flat washer ¼, SS
	FW16S	Flat washer 5/16, SS
	HHS025S	Hex head screw ¼-20 × ½, SS
	HHS049S	Hex head screw 5/16-18 × ½, SS
	HHS050S	Hex head screw 5/16-18 × 5/8, SS

Fig.	Item No.	Description
	HHS055S	Hex head screw 5/16-18 × ¾, SS
	HN07S	Hex nut 10-24, SS
	HN15S	Hex nut ¼-20, SS
	HN20S	Hex nut 5/16-18, SS
	LW10S	Lock washer ¼, SS
	LWE10P	Lock washer #10 ext tooth, SS
33	53478	Starter w/110V coil, Furnas size 1, 14DP32AF81, 7½HP
	55046	Starter w/24V coil, Furnas size 1, 14DP32AJ71, 7½HP
	75DF14	Contact kit, Furnas 1 pole only (size 1) 7½HP
	57027	Starter w/110V coil, Furnas size 1¾, 14EP32AF81, 10HP
	57027CE	Starter w/24V coil, Furnas size 1¾, 14EP32AJ71, 10HP
	75EF14	Contact kit, Furnas 1 pole only (size 1¾) 10HP
33A	34478	Holding coil – 120V/240V
	55047	Holding coil – 24V
34	53851	Fuse, FNM-1 AMP, 250V timedelay
35	53914	Transformer, 230/460 to 115V
	53731	Transformer, 575 to 115V
	PC141-1	Transformer replacement, 200/208/220/240/277/380 to 24V
36		See electrical diagram, page 4
37	53477	Starter w/110V coil, Furnas size 00, 14BP32AF81, 1¾HP
	55045	Starter w/24V coil, Furnas size 00, 14BG32AJ71, 1HP
	75BF14	Contact kit, Furnas 1 pole only (size 00) 1HP
37A	34478	Holding coil – 120V/240V
	55047	Holding coil – 24V
38	53633	Starter box cover
39	53860	Starter box
40	52181-1	Magnetic switch bracket for magnet
41	52181-1	Magnet w/mounting brkt. (110 volt)
	PC166	Magnetic safety switch (24 volt) old style units only (not CE)
42	42MC-Y73	Green start button
43	H442-1	Magni switch, 3 amp
	53872	Safety switch mounting bracket
44	42MC-Y74	Red stop button
45	50655-1	Switch guard
	H462-1	Switch guard ferrule
	HN20S	Hex nut 5/16-18 SS
	LW15S	Lock washer 5/16 SS
46	54320K	Toggle switch,hand/foot, w/boot
47	54321	Toggle switch waterproof half boot
48	53869CEK	Legend plate, w/int'l. symbols, int'l kit
49	53870	Legend plate gasket
50	52655	Female receptacle, 5 pole, for footswitch
51	52662	Protective cap assembly
52	53872	Safety switch bracket
53	35376	End anchor
54	35241	Mounting channel
55	35375	End barrier
56	35374	Terminal block
57	53783	Decal, rotation
58	57156	Front splash shield
	HHS025S	Hex head screw ¼-20 × ½, SS
	HN15S	Hex nut ¼-20, SS
	LW10S	Lock washer ¼, SS

NOT SHOWN

	57073	Power cord, 10', 8-4
	54268	Power cord, 10', 10-4
	2563	Legend plate hex screw 10-32 × ½, SS
	53965	Optional leg ext. kit with brace

PRODUCT MIXER SAFETY COVER UP TO S/N 63400 FRONT OPENING ONLY



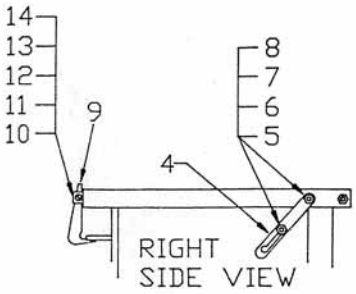
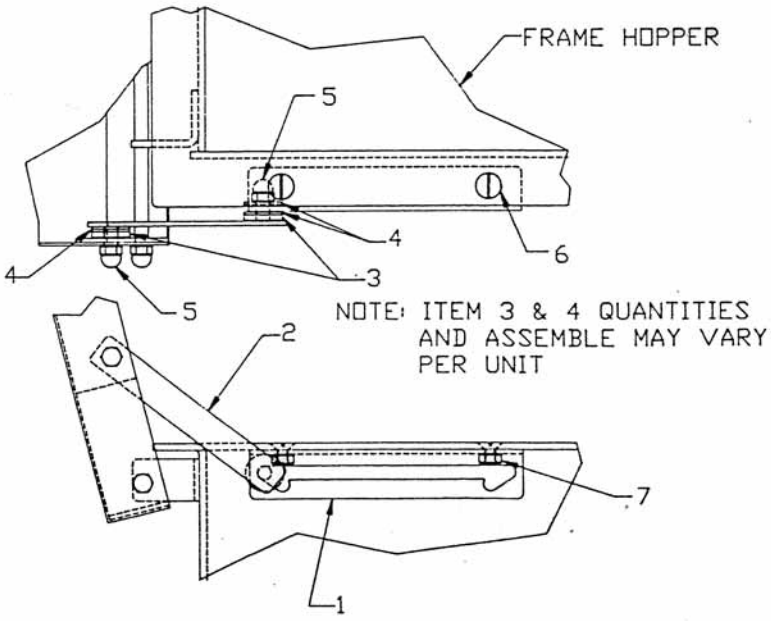


Fig.	Item No.	Description
1	**53446**	Lid assembly to #63400
2	**HN30S**	Hex nut, ⅜-16, SS (2 ea.)
3	**51563**	Lid hinge pin to #63400 (2 ea.)
4	**53530**	Lid lock arm to #63400
5	**53533**	Lid lock spacers to #63400 (2 ea.)
6	**AN15S**	Acorn nut, ¼-20, SS (2 ea.)
7	**HHS035S**	Hex head screw, ¼-20 × ⅝, SS (2 ea.)
8	**FW05S**	Flat washer, ¼, SS (2 ea.)
9	**56072**	Safety cover latch
10	**56073**	Latch mounting bracket, LH
11	**56074**	Latch mounting bracket, RH
12	**RHS24S**	Round head screw, ¼-20 × ½, SS (2 ea.)
13	**HNNL15S**	Hex nut, ¼-20 nylok (3 ea.)
14	**RHS31S**	Round head screw, ¼-20 × 1, SS (1 ea.)

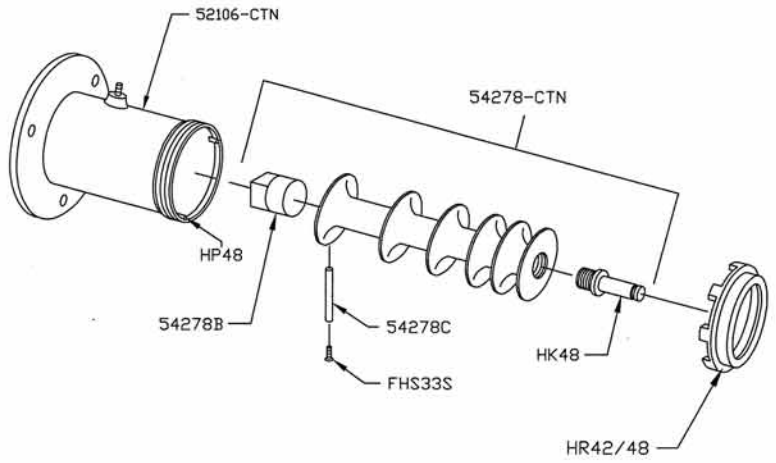


PRODUCT MIXER SAFETY COVER LID LOCK FEATURE S/N 63697 ON

RETROFITS ON S/N 63401 TO S/N 63696

Fig.	Item No.	Description
	55081	Lid lock retrofit kit S/N 63401 to 63696
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	**AN17S**	Acorn nut, 5/16-18, SS (2 ea.)
6	**FHS33S**	Flat head screw, ¼-20 × ½, SS (2 ea.)
7	**HN15S**	Hex nut, ¼-20, SS (2 ea.)

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

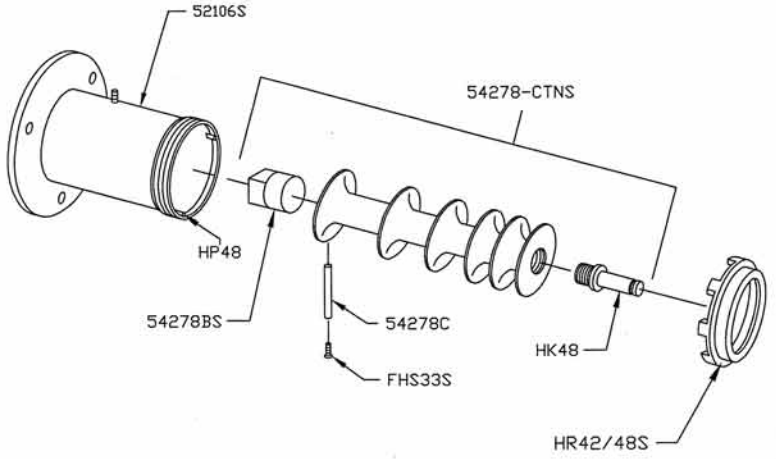


ITEM NO.	DESCRIPTION
54278B	Square Drive Auger Adapter
54278C	Auger Shear Pin
54278-CTN	Auger Assembly
52106-CTN	Bowl w/Plate Pins
FHS33S	Shear Pin Fastener ¼-20 x ½, SS
HK48	Knife Drive Pin
HP48	Bowl Plate Pin (3 req.)
HR42/48	Bowl Ring

OPTIONAL "ENTERPRISE" SIZE 32
SINGLE KNIFE & SINGLE PLATE

ITEM NO.	DESCRIPTION
MC32-17	Knife, 4 Blade
MC32-18-125	Plate, 1/8" Holes (3.5 mm)
MC32-18-156	Plate, 5/32" Holes (4.0 mm)
MC32-18-187	Plate, 3/16" Holes (5.0 mm)
MC32-18-375	Plate, 3/8" Holes (9.0 mm)

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

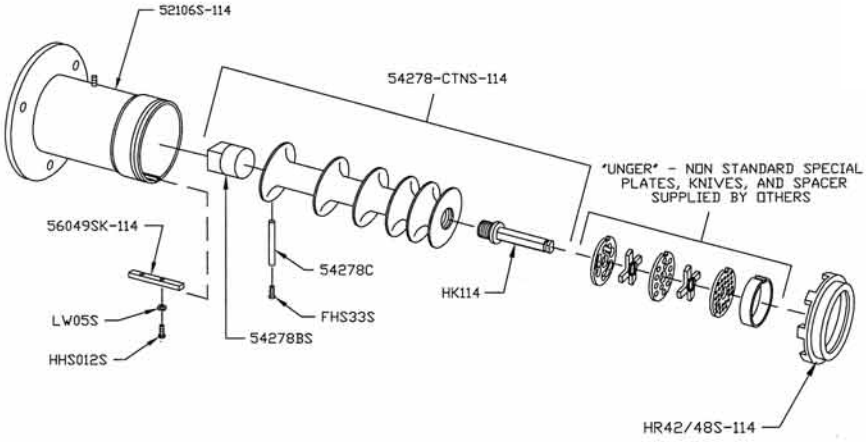


ITEM NO.	DESCRIPTION
54278BS	Square Drive Auger Adapter, SS
54278C	Auger Shear Pin
54278-CTNS	Auger Assembly, SS
52106S	Bowl w/Plate Pins, SS
FHS33S	Shear Pin Fastener ¼-20 x ½, SS
HK48	Knife Drive Pin
HP48	Bowl Plate Pin (3 req.)
HR42/48S	Bowl Ring, SS

OPTIONAL "ENTERPRISE" SIZE 32
SINGLE KNIFE & SINGLE PLATE

ITEM NO.	DESCRIPTION
MC32-17	Knife, 4 Blade
MC32-18-125	Plate, 1/8" Holes (3.5 mm)
MC32-18-156	Plate, 5/32" Holes (4.0 mm)
MC32-18-187	Plate, 3/16" Holes (5.0 mm)
MC32-18-375	Plate, 3/8" Holes (9.0 mm)

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

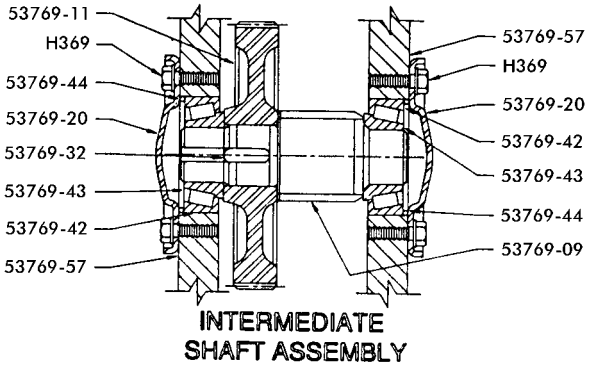


114mm UNGER

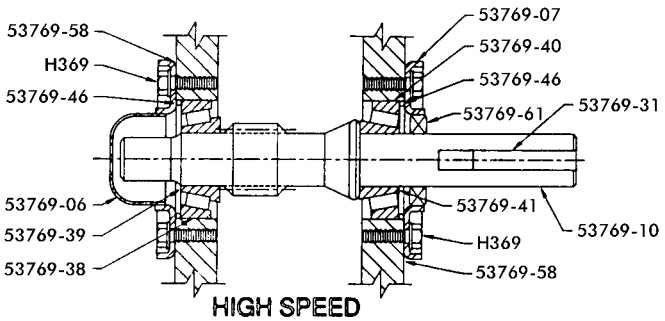
ITEM NO.	DESCRIPTION
54278BS	Square Drive Auger Adapter, SS
54278C	Auger Shear Pin
54278-CTNS-114	Auger Assembly, SS 114mm Unger
52106S-114	Bowl, SS 114mm Unger
56049SK-114	Key, 114mm Unger
FHS33S	Shear Pin Fastener ¼-20 x ½, SS
HHS012S	Hex Head Screw, 10-32 x ½, SS
HK114	Knife Drive Pin, 114mm Unger
HR42/48S-114	Bowl Ring, SS
LW05S	Lock Washer, #10,SS

DORRIS MIXER TRANSMISSION PARTS LIST

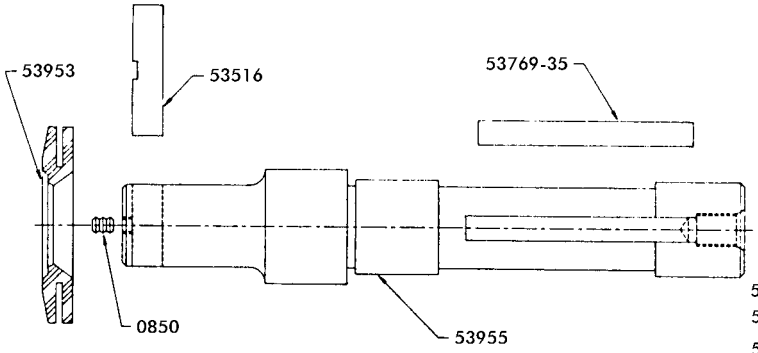
H369	Hex head screw $\frac{5}{16}$-18 × $\frac{3}{4}$
LW30S	Lockwasher, SS $\frac{1}{2}$"
0850	Setscrew $\frac{1}{4}$-20 × $\frac{1}{4}$" long
1084	Hex head cap screw $\frac{1}{2}$-13 × $1\frac{1}{4}$ long
1103	Set screw $\frac{1}{4}$-20 × $\frac{3}{8}$" long
SSS30	Set screw $\frac{3}{8}$-24 × $\frac{3}{4}$" long
53516	Mixer drive pin
53769	Mixer paddle transmission
53769-01	Transmission housing
53769-03	Cover plate
53769-05	Low speed open cap
53769-06	High speed closed cap
53769-07	High speed open cap
53769-08	Low speed shaft
53769-09	Intermediate pinion gear
53769-10	High speed pinion gear
53769-11	Intermediate gear
53769-12	Low speed gear
53769-20	Intermediate closed cap
53769-31	High speed shaft key
53769-32	Intermediate gear key
53769-33	Low speed gear key
53769-35	Low speed shaft key
53769-36	Low speed Timken cup
53769-37	Low speed Timken cone
53769-38	High speed Timken cup (closed end)
53769-39	High speed Timken cone (closed end)
53769-40	High speed Timken cup (open end)
53769-41	High speed Timken cone (open end)
53769-42	Intermediate Timken cup
53769-43	Intermediate Timken cone
53769-44	Intermediate spacer ring
53769-45	Low speed spacer ring
53769-46	High speed spacer ring
53769-47	Puller shaft seal
53769-57	Intermediate shims
53769-58	High speed shims
53769-59	Low speed shims
53769-60	Cover plate gasket
53769-61	High speed oil seal
53769-62	Low speed oil seal
53769-63	Hex screw (intermediate cap)
53769-64	Hex screw (high speed cap)
53769-69	Hex screw (low speed cap)
53769-71	Hex screw (cover)
53769-74	Breather plug
53769-75	Magnetic drain plug
53769-96	Grease fitting
53953	Mixer drive shaft seal
53955	Mixer drive shaft



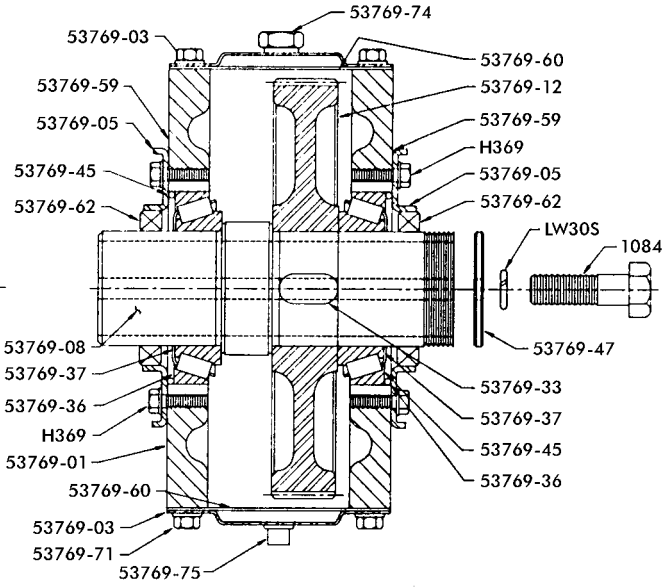
INTERMEDIATE SHAFT ASSEMBLY



HIGH SPEED SHAFT ASSEMBLY

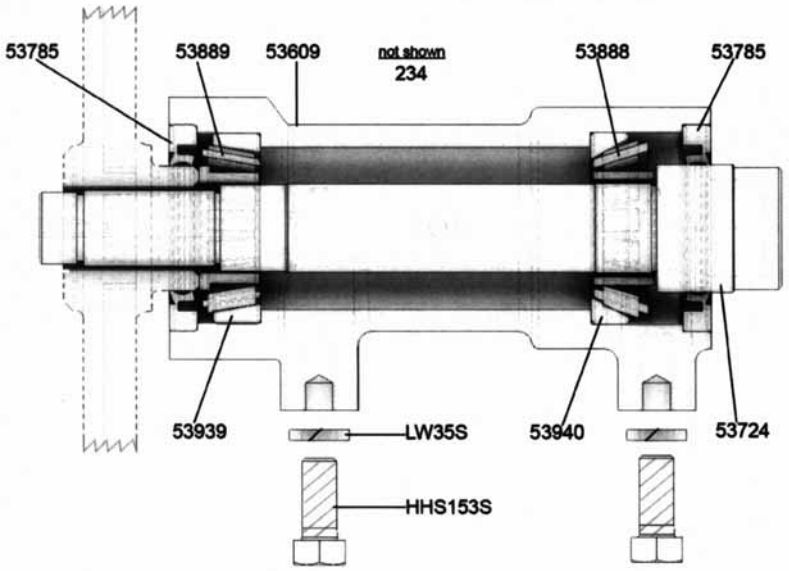


MIXER TRANSMISSION
PART NUMBER 53769



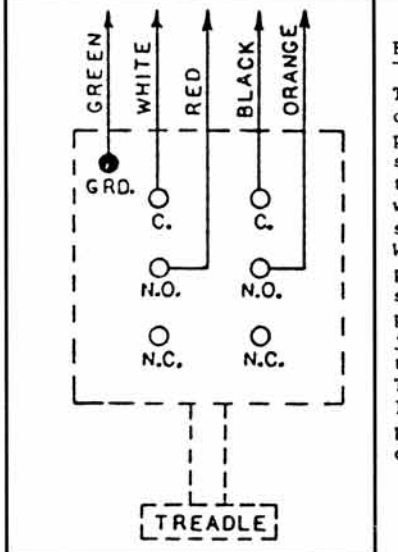
LOW SPEED SHAFT ASSEMBLY

No. 53886 JOURNAL BOX ASSEMBLY



Item No.	Description
53886	Journal box assembly complete
53609	Journal box housing, #62001 on
53724	Auger drive shaft, #62001 on
53785	Journal box seal (2 ea.)
53888,53940	Front bearing cup/cone assembly Order H310A
53889,53939	Rear bearing cup/cone assembly Order H311A
234	Grease fitting 1/8 NPT
LW35S	Lock washer 5/8 SS (4 ea.)
HHS153S	Hex head screw 5/8-18x1-1/2SS (4 ea.)

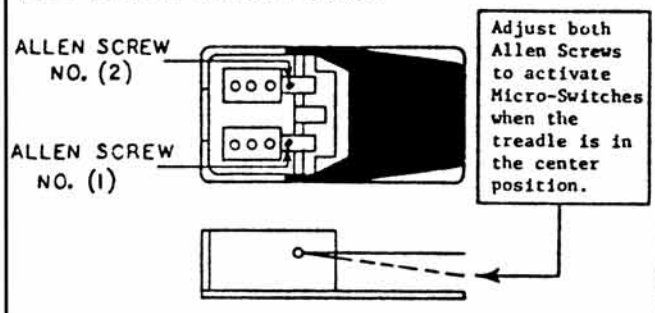
FOOT SWITCH WIRING DIAGRAM

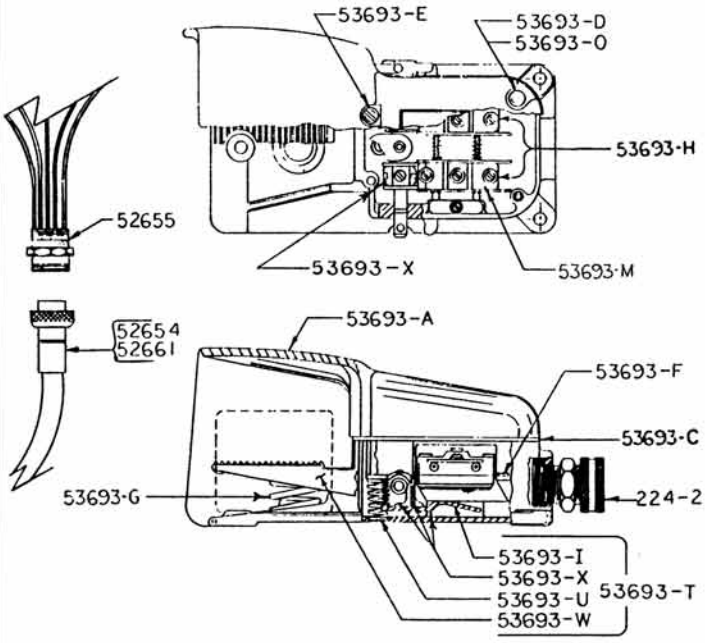


FOOT SWITCH ADJUSTMENT

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 counter clockwise to raise it.

FOOT SWITCH WITHOUT COVER





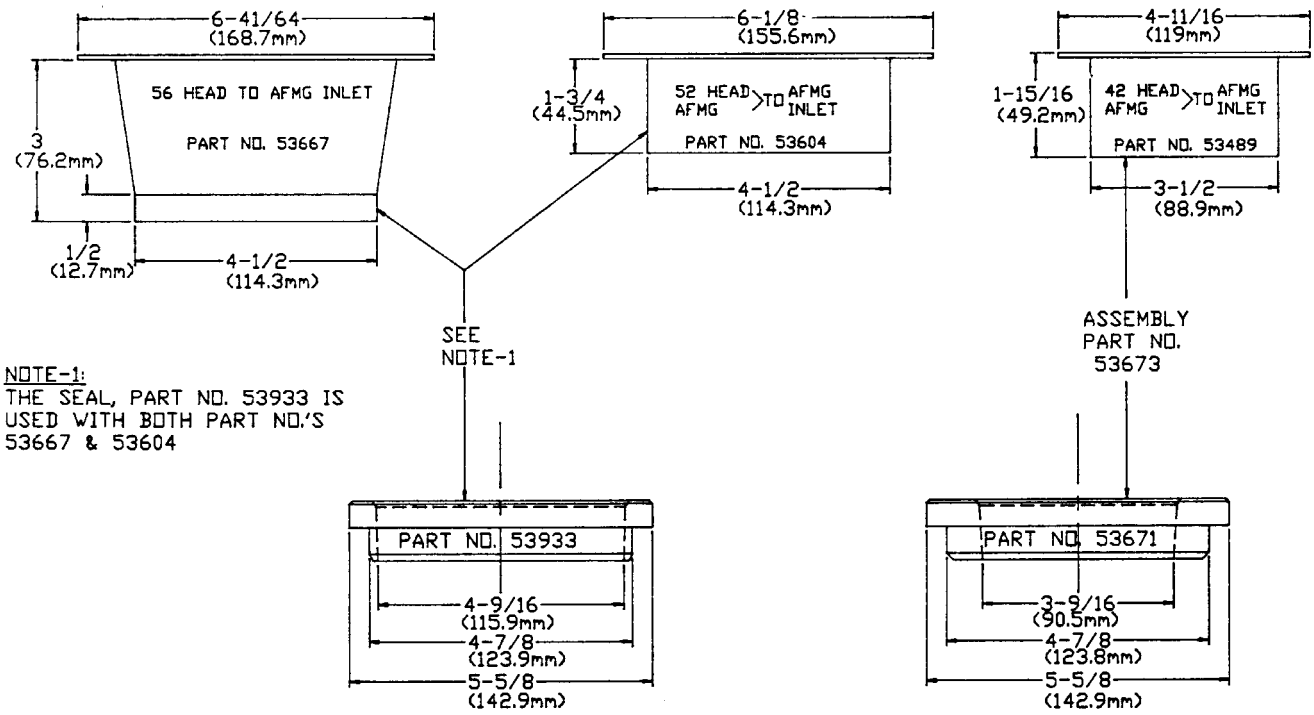
FOOTSWITCH PARTS LIST

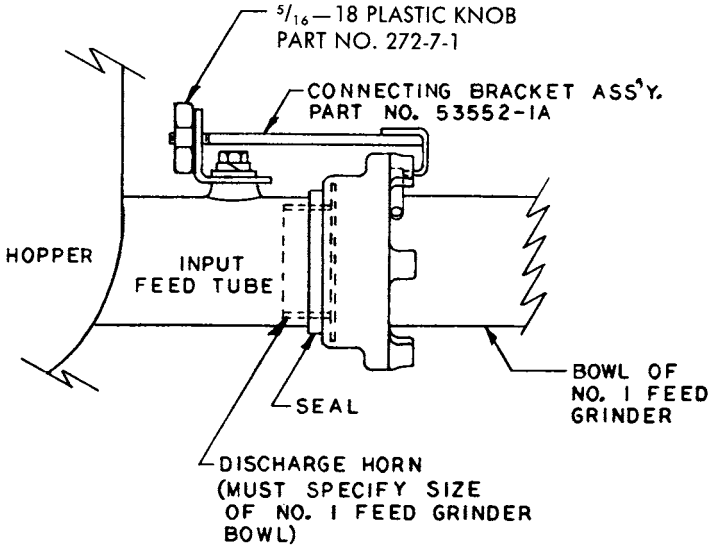
224-2	Cord connector, wt, straight, ¾"
52654	Male plug w/6' cord, 5 wire
52655	Female receptacle, 5 pole
52661	Male plug w/12' cord, 5 wire
52668	Footswitch w/12' cord and plug
53693	Footswitch
53693-A	Cover guard
53693-C	Cover gasket
53693-D	Cover screw – short
53693-E	Cover screw – long
53693-F	Ground 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	Auxiliary treadle return spring
53693-W	Treadle
53693-X	One actuator & actuator spring assembly
53979-1	Cord 8' w/o foot switch
54213	Foot switch w/ 6' cord & plug

ITEMS REQUIRED
FOR TANDEM OPERATION
USED ON ALL UNITS THROUGH 63591

{ BIRO MANUAL TO BIRO AFMG52
BIRO AFMG52 TO BIRO AFMG48
BIRO AFMG52 TO BIRO AFMG52

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



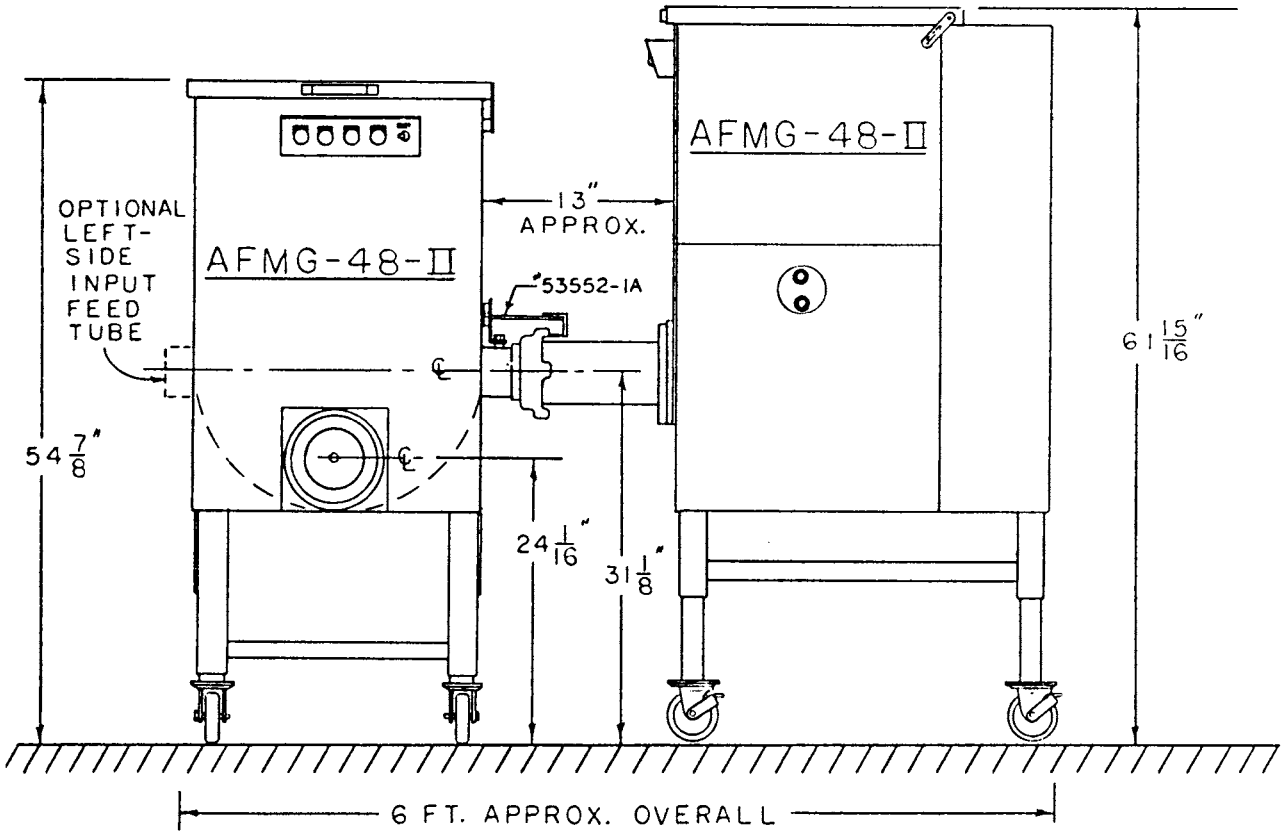


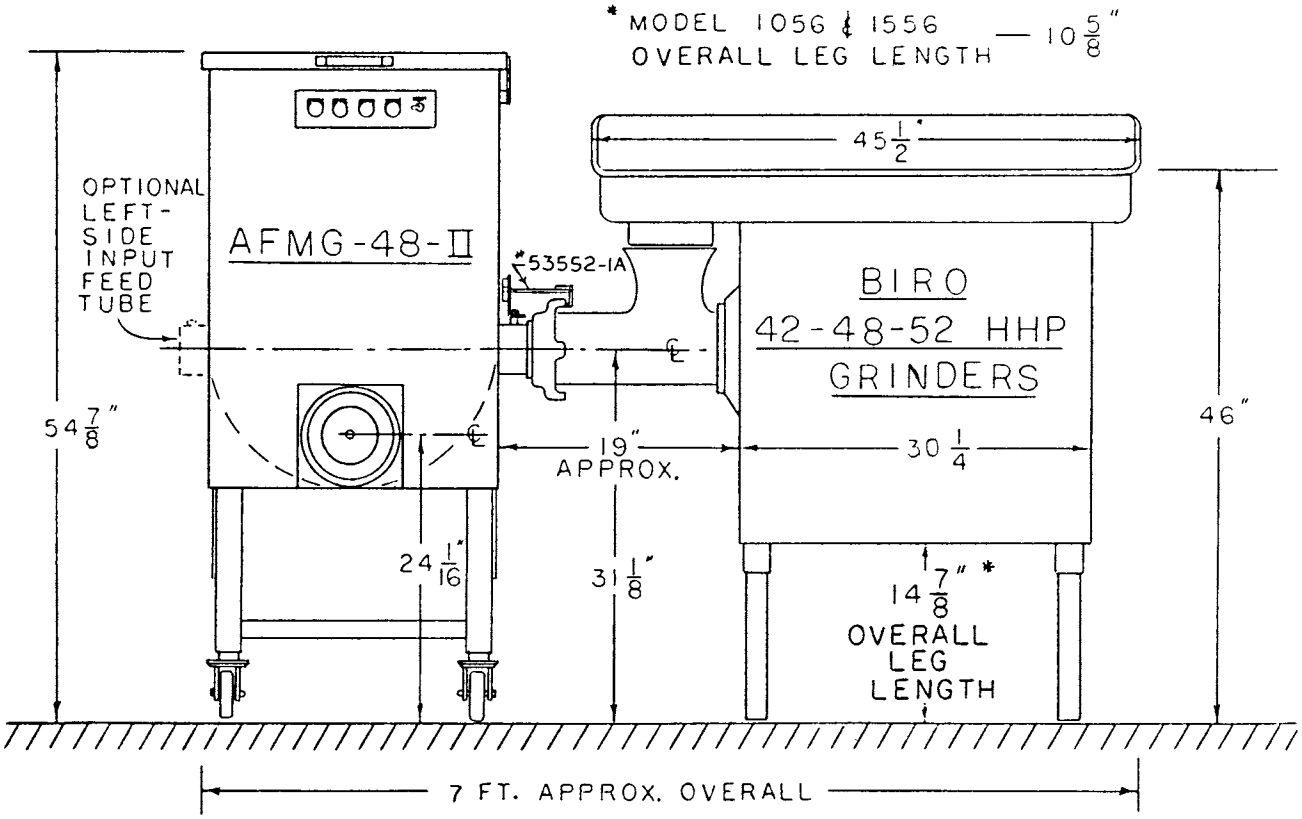
TANDEM OPERATION PARTS LIST

272-7-1	5/16-18 plastic knob – 3 pt.
53489	Dscg. Horn 24/42/46/48 to 24/48/52 inlet less seal
57044	Connec. brkt. AFMG52 to AFMG48
57044	Connec. brkt. AFMG52 to AFMG52
53552-1A	Connecting brkt. assem. man/auto
53604	Dscg. horn 52 to 24/48/52 inlet
53667	Dscg. horn 56 to 24/48/52 inlet
53671	Seal only 24/42/46/48 to 24/48/52 inlet
53673	Disc. horn 48-52 w/seal
53933	Seal only 52/56 to 24/48/52 inlet

TANDEM OPERATION ILLUSTRATION FOR 90° INLET

FROM S/N 62001 TO S/N 63591





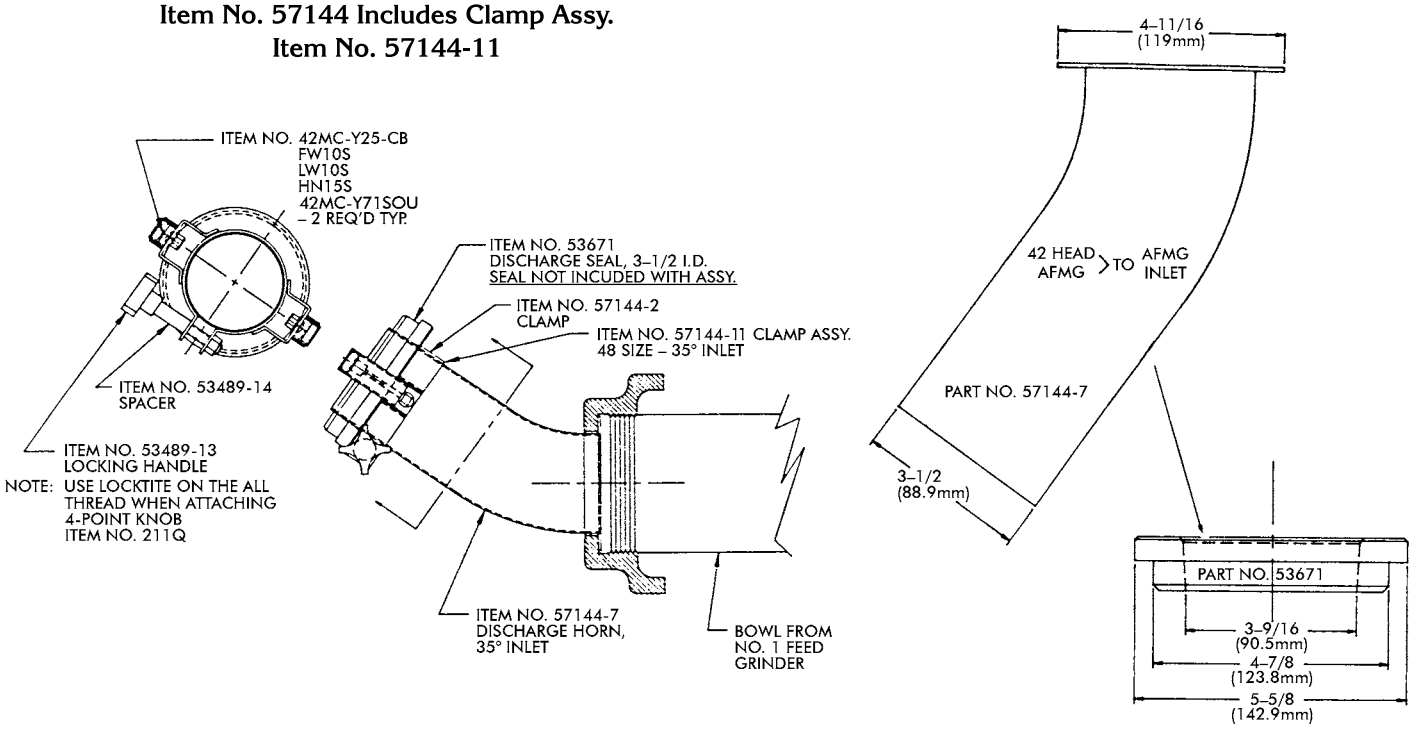
ITEMS REQUIRED
FOR 35° TANDEM OPERATION
STARTING WITH SERIAL No. 63592

{ BIRO MANUAL TO BIRO AFMG52
BIRO AFMG52 TO BIRO AFMG48
BIRO AFMG52 TO BIRO AFMG52

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

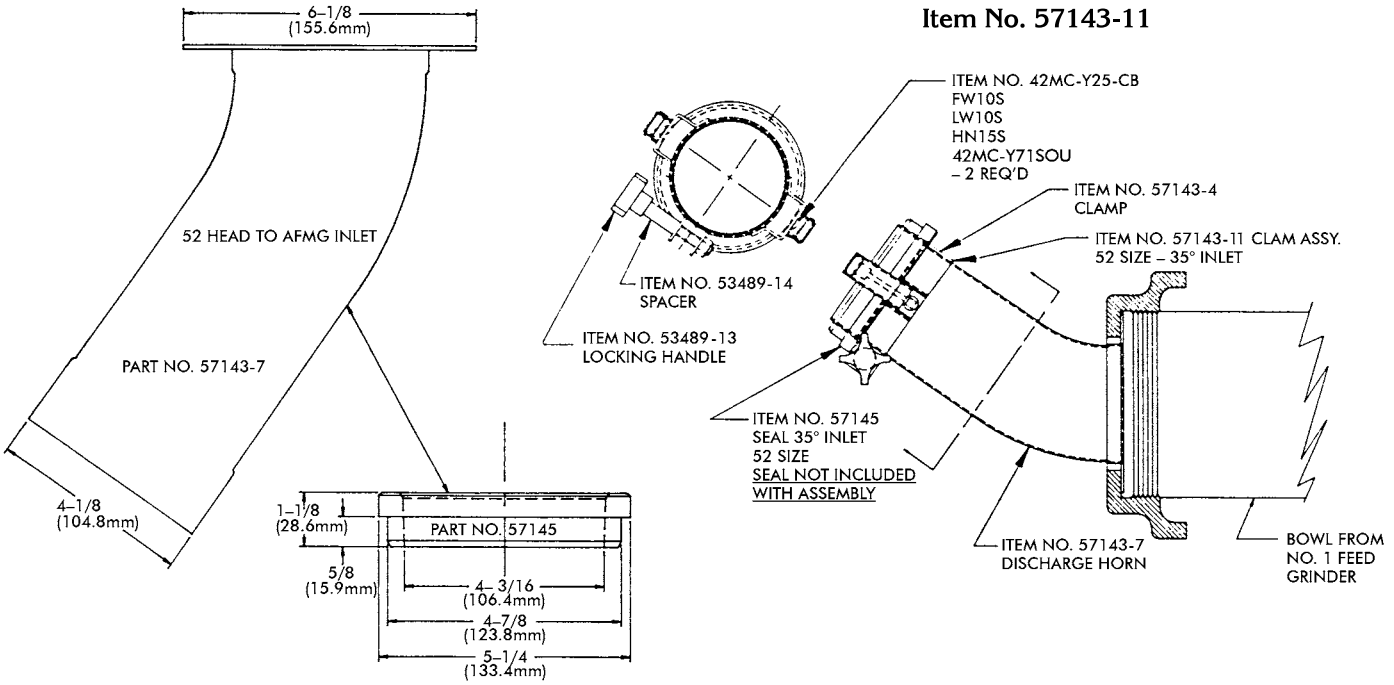
48 SIZE DISCHARGE HORN ASSEMBLY

Item No. 57144 Includes Clamp Assy.
Item No. 57144-11



52 SIZE DISCHARGE HORN ASSEMBLY

Item No. 57143 Includes Clamp Assy.
Item No. 57143-11



CONNECTION INSTRUCTIONS

TANDEM OPERATIONS
AFMG-48 or ARFMG-52 INTO AFMG-48 or AFMG-52
Heavy Horsepower Grinder INTO AFMG-48 or AFMG-52

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

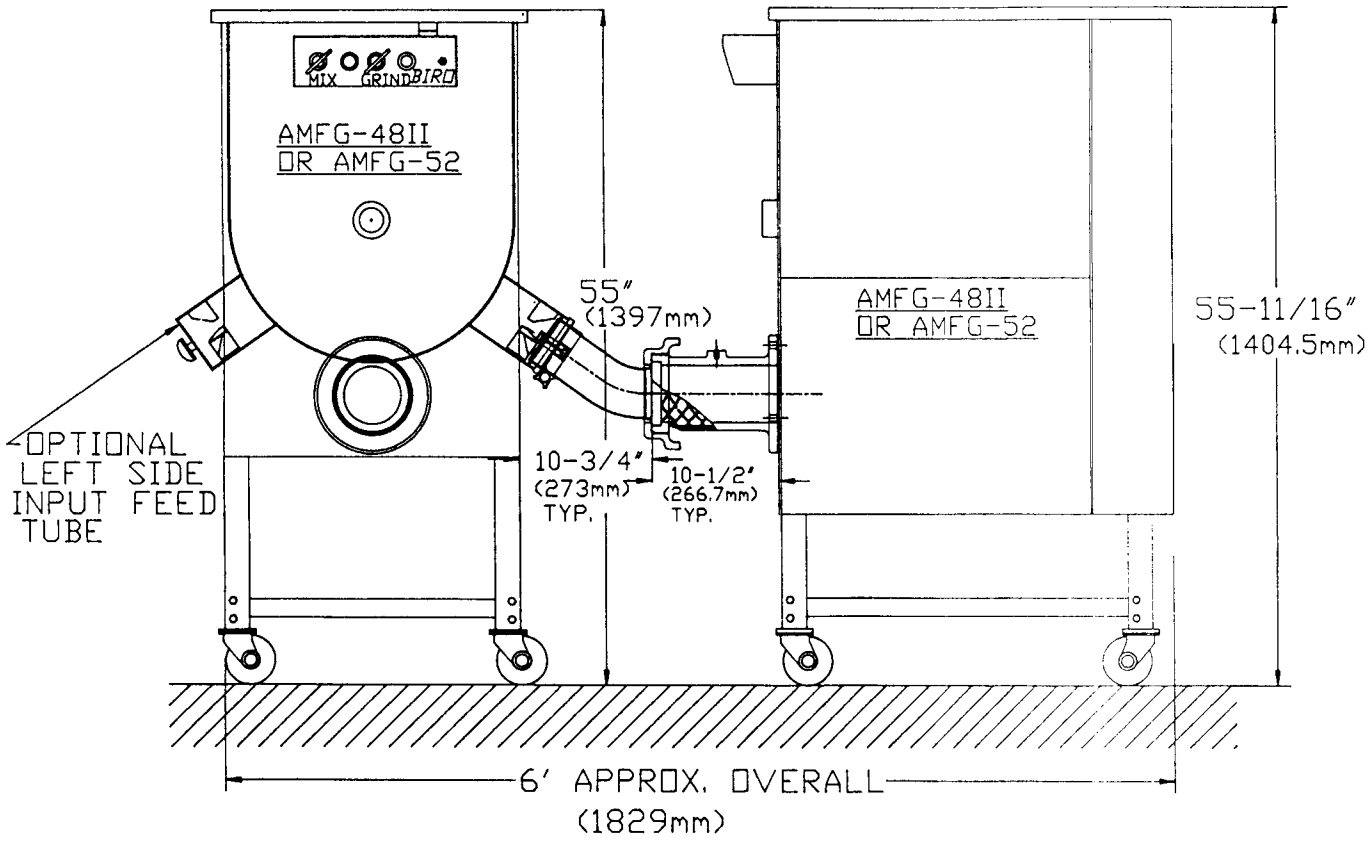
Step 2. Install the Inlet Tube Seal Item No. 53671 or 57145 into the inlet tube of the Second Grind Machine until fully seated.

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.

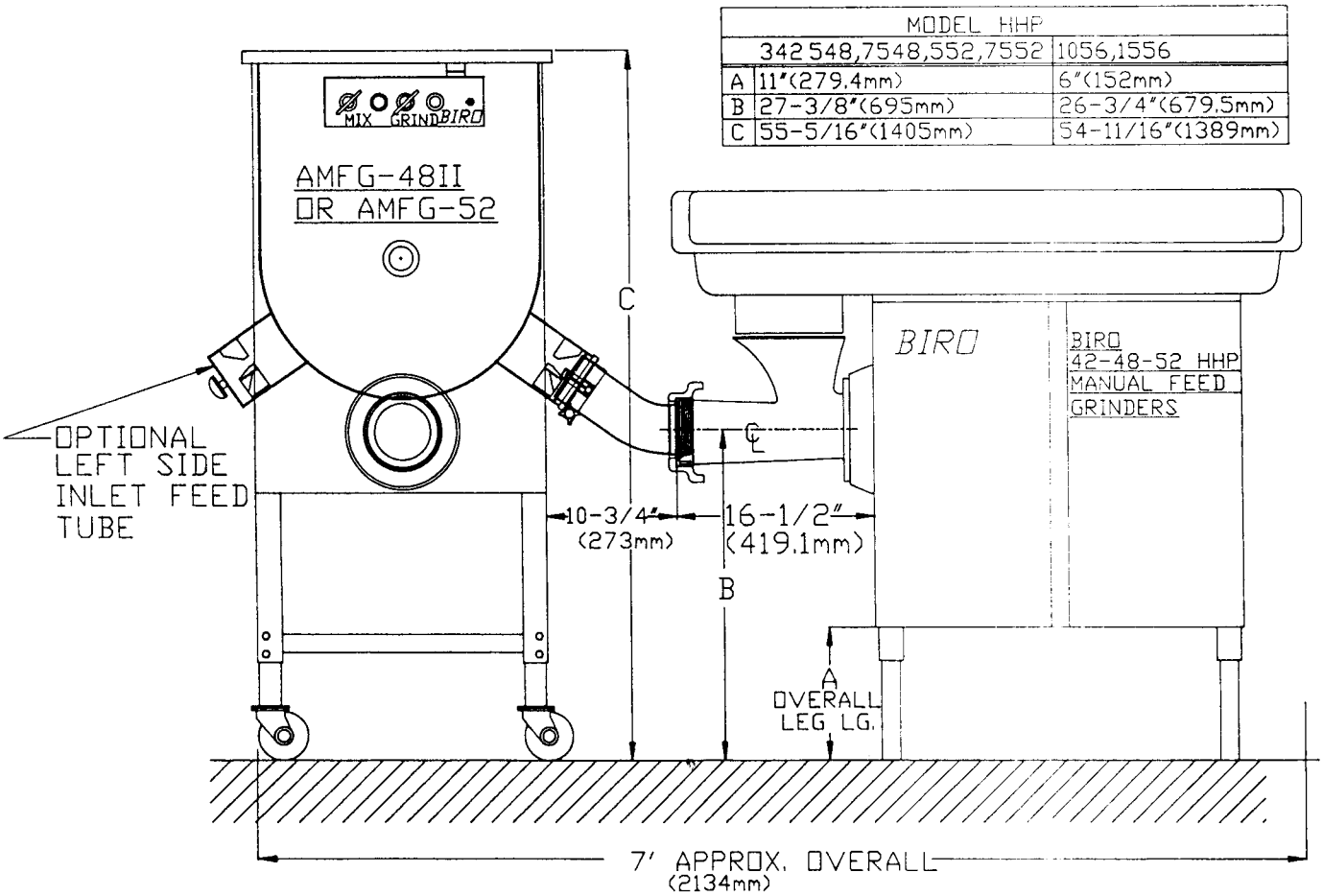
Step 4. Insert the Discharge Horn with Ring and Clamp Assembly into the Seal, pushing it fully against the inlet tube internal fins. Attach the lock latches to the tabs on the side of the inlet tube and lock down. Tighten the lock knob on the Clamp Assembly.

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
S/N 63592 ON



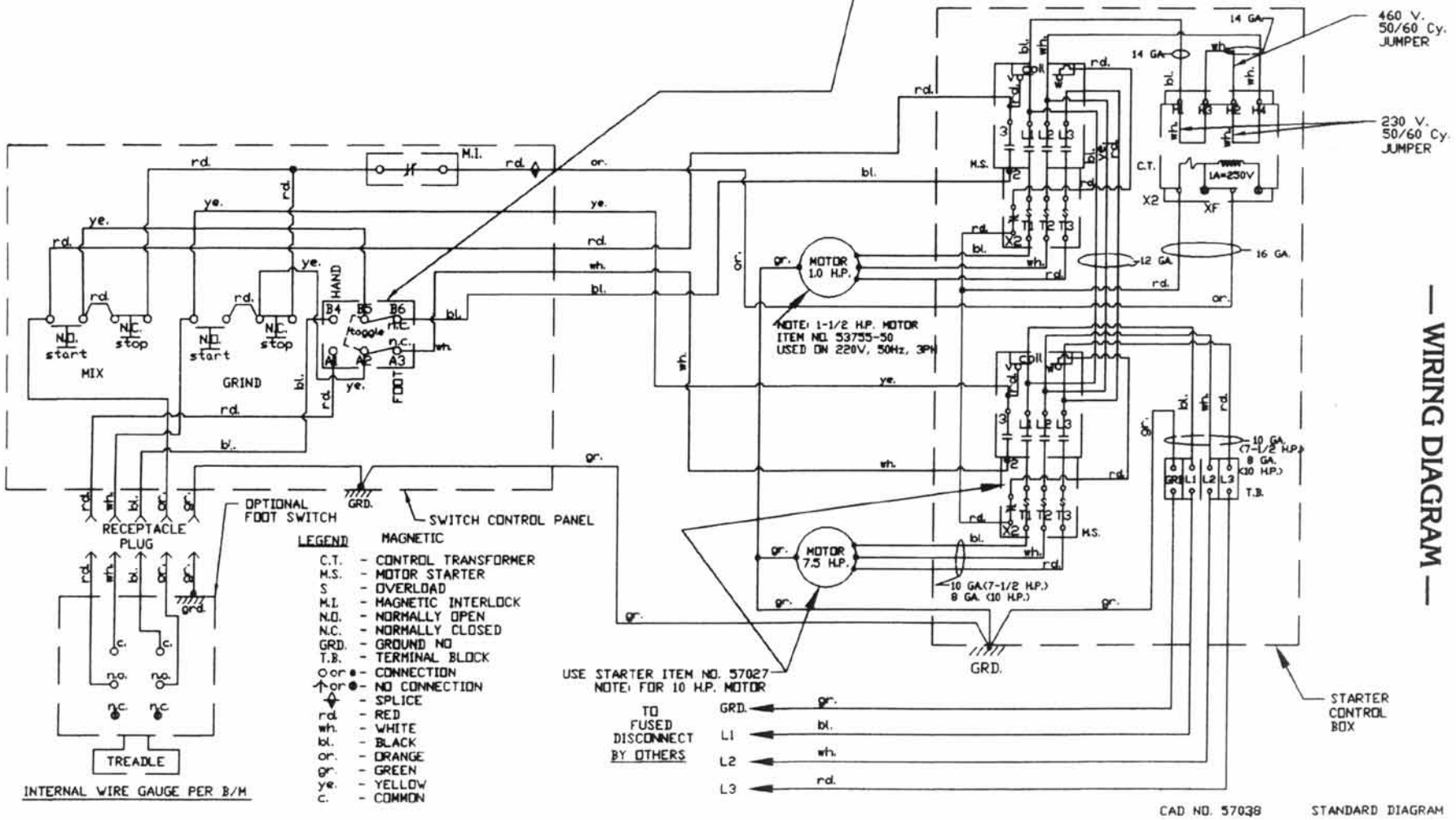
MODEL HHP		
	342 548,7548,552,7552	1056,1556
A	11″(279.4mm)	6″(152mm)
B	27-3/8″(695mm)	26-3/4″(679.5mm)
C	55-5/16″(1405mm)	54-11/16″(1389mm)



INSTALLATION NOTES:

INCOMING WIRE SIZE - A.W.G. 10 GA.(7-1/2 H.P.)/8 GA. (10 H.P.)
- DEPENDENT ON N.E.C. AND LOCAL CODE
EXTERNAL GROUND PER N.E.C. ARTICLE 250
ROTATION OF MIXER & GRINDER - COUNTER CLOCKWISE
- FACING PRODUCT DISCHARGE IF ROTATION IS REVERSED -
INTERCHANGE ANY -TWO- POWER LEADS

NOTE: DPDT SWITCH CONTACTS 'MAKE' OPPOSITE OF TOGGLE POSITION. ALL CONTROLS & NOMENCLATURE AS VIEWED FROM OPERATING SIDE OF LEGEND PLATE. ALL CONTACTS SHOWN IN 'OFF' POSITION & 'HAND' MODE OF OPERATION.

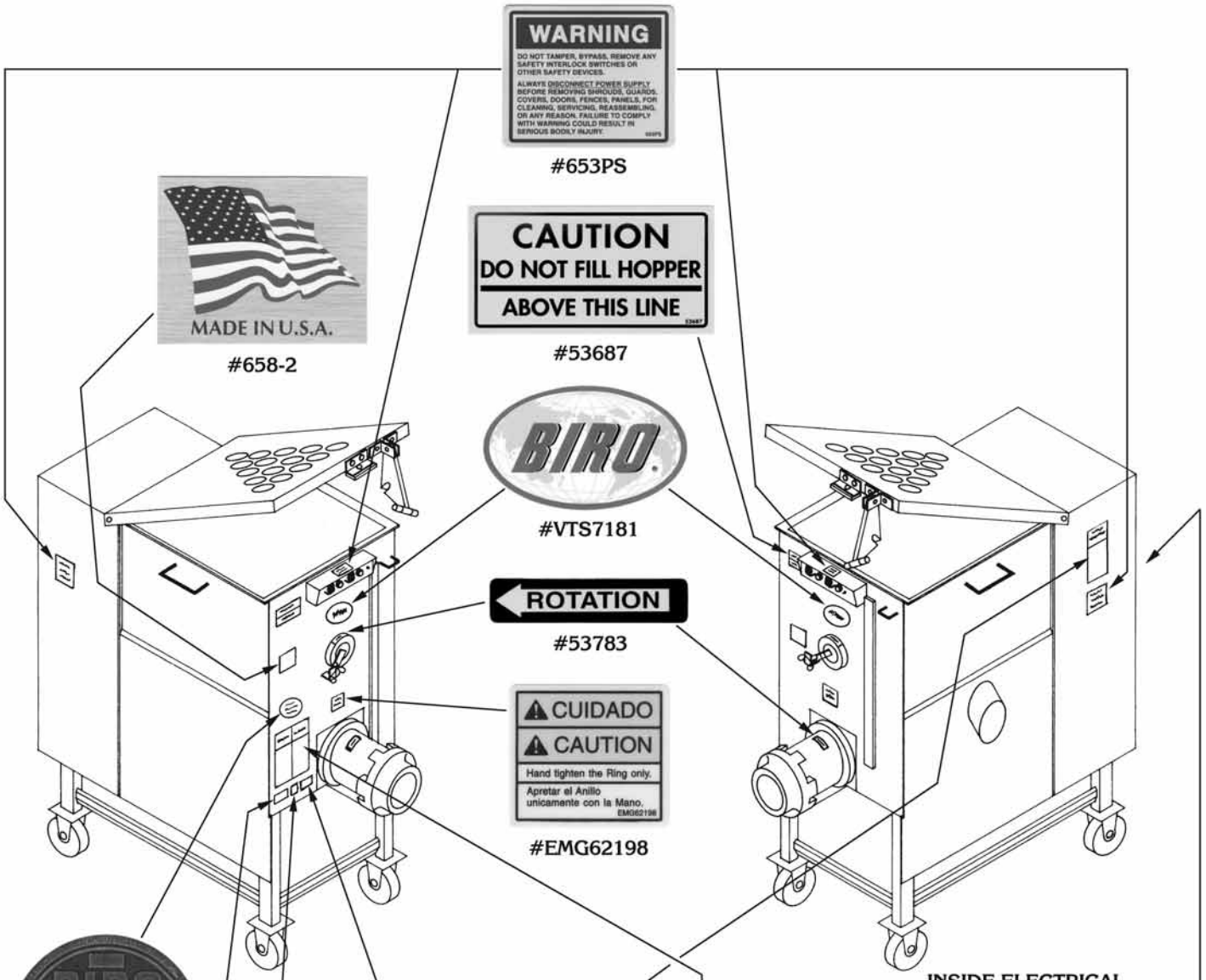


CAD NO. 57038 STANDARD DIAGRAM

— WIRING DIAGRAM —

SAFETY LABEL LOCATIONS

CAUTION
KEEP HANDS OUT OF HOPPER



#653PS

#658-2

#53687

#VTS7181

#53783

#EMG62198

INSIDE ELECTRICAL BOX COVER

#56315

#52999-2

VOLTAGE LABEL

#T3123

#51649

#H653-E

#H653-SP

#BES16971

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

— NOTES —

— NOTES —

LIMITED WARRANTY

WARRANTY: The Biro Manufacturing Company warrants that the BIRO AFMG-48-II 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 bowl, ring, worm, drive shaft, and knife drive pin. 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 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 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.

THE BIRO MANUFACTURING COMPANY

1114 Main Street
Marblehead, Ohio
Ph. 419-798-4451
Fax 419-798-9106
E-mail: service@biro saw.com
Web: http://www.birosaw.com

ITEM NO: 53913
PTCT AFMG 48-138-4-15-17 PPD