

BIRO®

MODEL 922 OPERATION AND SERVICE MANUAL GINDER PARTS LIST GENERAL INSTRUCTIONS

Starting with Serial Number C9861001



IMPORTANT SAFETY NOTICE



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

TABLE OF CONTENTS

| | Page |
|--------------------------------------------------|-------|
| NOTICE TO OWNERS AND OPERATORS | 1 |
| SAFETY TIPS | 2 |
| INSTALLATION | 3 |
| UNCRATING AND SET UP | 3 |
| MOTOR WIRING AND ELECTRICAL REQUIREMENTS..... | 4 |
| ELECTRICAL CONTACTORS | 5 |
| WIRING DIAGRAMS | 5 & 6 |
| OPERATION | 7 |
| TO PROCESS PRODUCT | 7 |
| CLEANING | 8 |
| MAINTENANCE | 9 |
| HIGH TORQUE DRIVE SYSTEM | 9 |
| BEARINGS | 9 |
| TRAY AND CASE PARTS DIAGRAM | 10 |
| TRAY AND CASE PARTS LIST AND PARTS ORDERING..... | 11 |
| BOWL, FRAME AND MOTOR PARTS DIAGRAM..... | 12 |
| OPERATOR'S SIGNATURE PAGE..... | 13 |
| LIMITED WARRANTY | 14 |

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 WORM, 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 TIP section. Additional warnings are placed throughout the Manual. Warnings related to your personal safety are indicated by:



OR



Warnings related to possible damage 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 C9861001 and higher.

- NOTE-

“A copy of this manual is included with each MODEL 922 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 WORM 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 Electrical Connections 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.*

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

***NEVER** Operate Machine With Tray And/Or TrayGuard Removed or Magnetic Safety Switch By-Passed.*

***ALWAYS** Turn Off, Unplug 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 Parts Missing.*

***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.

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

NEVER Operate With Tray And/Or Tray Guard Removed or Manetic Safety Switch By-Passed.

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

UNCRATING AND SET UP

1. Read this Manual thoroughly before installation and operation. **Do not** proceed with installation and operation if you have any questions or do not understand anything in this Manual. Contact your local Distributor, or BIRO **first**.
2. Install machine on a level, solid, non-skid surface in a well-lighted work area away from children and visitors.
3. This machine is complete **except** for a knife and plate. The grinding bowl assembly is packed separately in the crate. Remove the grinding bowl assembly from the carton. Disassemble the grinding bowl. Assemble the grinding bowl only into the front of the grinder. Insert and screw in tight the bowl lock handle under the grinding bowl. Be sure that the back flange of the grinding bowl is tight against the front of the machine. Do not install grinding worm at this time.



4. Install the feed tray to the top of the grinder. After checking and making sure the power supply is correct, plug in your machine. **NEVER OPERATE MACHINE WITHOUT TRAY INSTALLED.** (Machine will not run with tray removed.)
5. Machine must be properly grounded. Use qualified electrician to install according to building codes.
6. Pushbuttons that activate the internal on/off switch are located on the front of the machine. The interlock safety switch is mounted inside the machine case toward the front and will break contact with the magnetic starter should the tray be removed.

7. Push the green "ON" button. **CHECK THE ROTATION OF THE WORM 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 WORM REMOVED**, otherwise serious irreparable damage may occur to grinding components. Push red "STOP" button.
8. If machine runs clockwise (backwards), it must be rewired to correct rotation, otherwise serious irreparable damage may occur to grinding components.
9. Insert worm assembly into grinding bowl, place knife (sharp edges out) onto the square end of the worm assembly. The breaker plate slides over the worm knife drive pin, and is held from rotating by a pin in the grinding bowl. Put on 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.

10. Check placement of all warning labels and Manual. Machine is now ready for trained operators to process product.
11. Contact your local Distributor or BIRO directly if you have any questions or problems with the installation or operation of this machine.

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. Electrical contactor mounted on machine frame must also be changed to match motor voltage.
- (2) All grinders are wired for the voltage as ordered. 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 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).

ELECTRICAL CONTACTORS

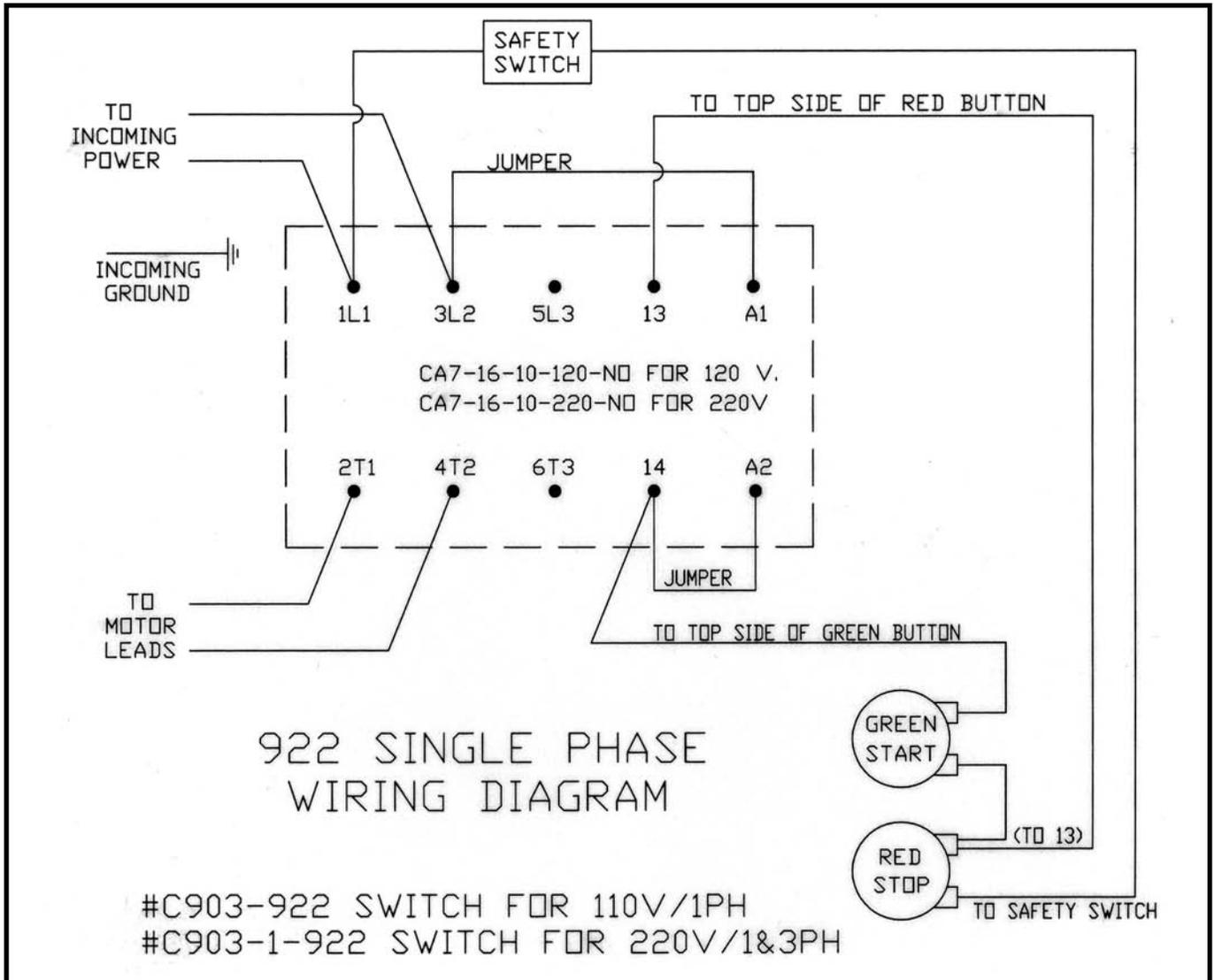
- (1) All 1 HP motors are dual voltage and can be changed according to wiring diagram on motor nameplate.
- (2) Be sure Contactor voltage matches voltage of motor.
- (3) Failure to use proper Contactor for motor voltage will cause irreparable damage to contactor.
- (4) Install proper plug on power cord for voltage used.

ELECTRICAL CONTACTORS

- (1) All 1 HP motors are dual voltage and can be changed according to wiring diagram on motor nameplate.
- (2) Be sure Contactor voltage matches voltage of motor.

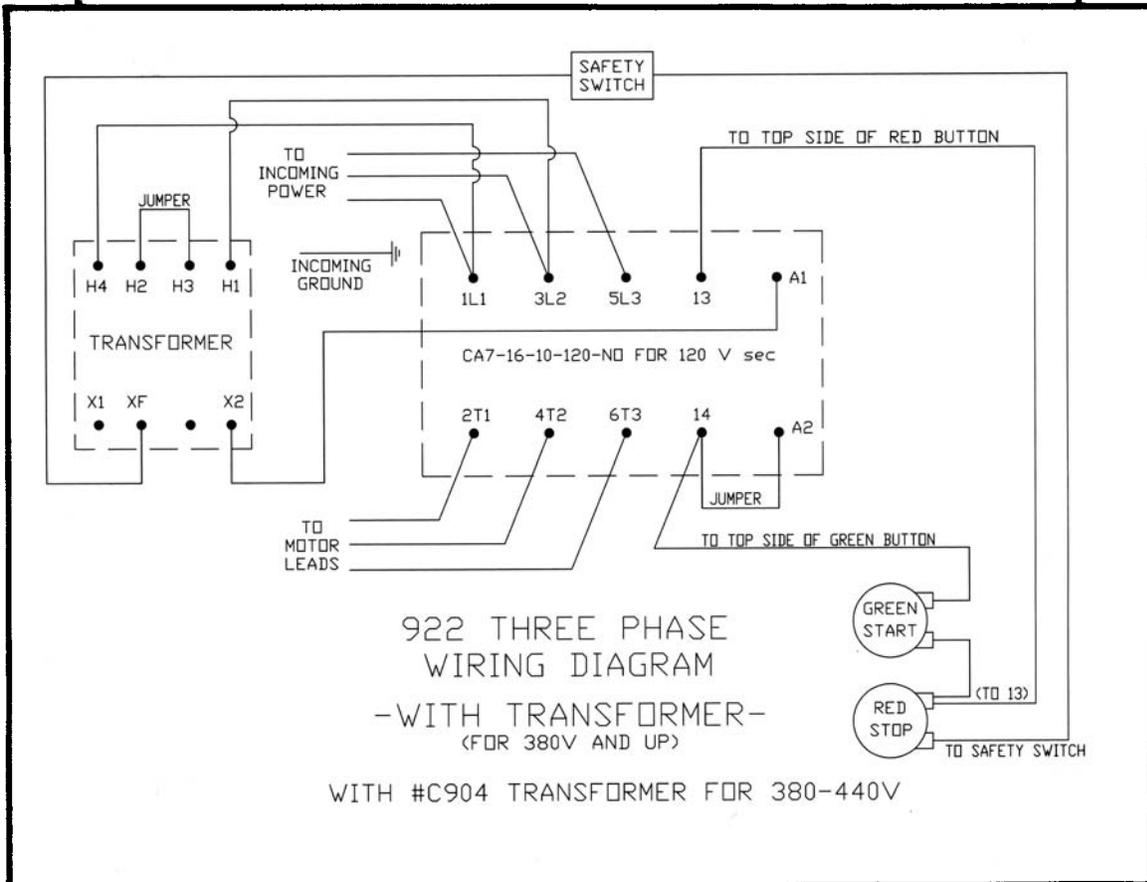
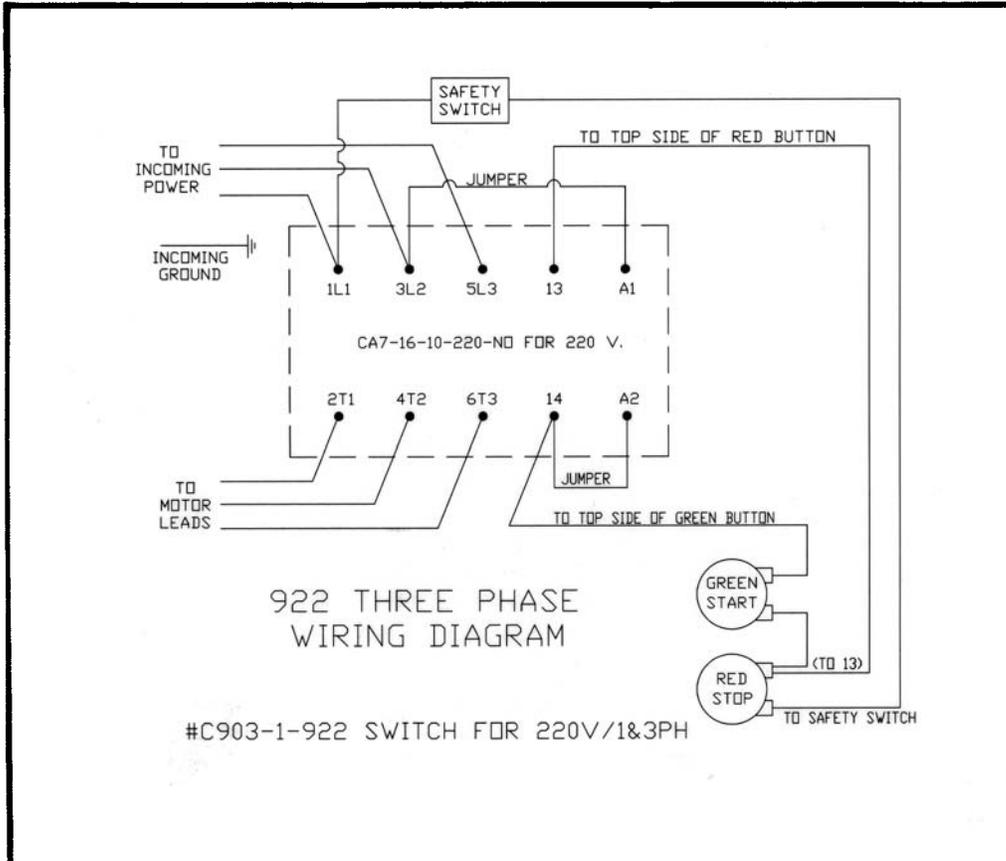
| | |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| A. Item No. C903-922 Contactor 1HP, 104-60-1 1HP, 115-60-1 1HP, 380/415/440-50/60-3 with C904 transformer | B. Item No. C903-1-922 Contactor 1HP, 220-50/60-3 1HP, 208/230-60-1 1HP, 240-50-1 1½HP, 230-60-1 |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
- (3) FAILURE TO USE PROPER CONTACTOR FOR MOTOR VOLTAGE WILL CAUSE IRREPARABLE DAMAGE TO CONTACTOR.
- (4) Install proper plug on power cord for voltage used.

WIRING DIAGRAMS



**MOTOR CONNECTION FOR
#C930-4 BALDOR MOTOR 220V/1PH/60HZ
1 to T1 / 4-5 to T2 / 2-3-8 TOGETHER**

WIRING DIAGRAMS



OPERATION



ROTATING GRINDING WORM 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 Tray And/Or Tray Guard Removed or Magnetic Safety Switch By-Passed.*

***ALWAYS** Turn Off, Unplug 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 grinder, have meat stomper within easy reach and container for receiving ground product at output end of grinding bowl.
2. Push the green "ON" button. Look down grinder bowl and make certain grinding worm is turning in the proper direction (counter-clockwise).
3. Carefully push unground product to top opening of grinding bowl and let drop to grinding worm. Product will then be ground out.



DO NOT REACH DOWN BOWL OPENING

4. Use meat stomper to assist any product that should "bridge up" in grinding bowl opening.
5. When finished grinding push the red "OFF" button and unplug grinder from power source and perform lockout/tagout procedures.

CLEANING



ROTATING GRINDING WORM TO AVOID PERSONAL INJURY

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

ONLY Use Recommended Cleaning Equipment, Materials and Procedures.

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

ALWAYS Thoroughly Clean Equipment at Least Daily.

CLEANING THE BIRO MODEL 922 GRINDER

1. Disconnect grinder from power source and perform lockout/tagout procedures.
2. Remove the feed tray.
3. Remove grinding bowl end ring, breaker plate, knife and grinding worm and the grinding bowl.



DO NOT 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. 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 WORM TO AVOID SERIOUS PERSONAL INJURY

ALWAYS Turn Off, Unplug 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 Labels.

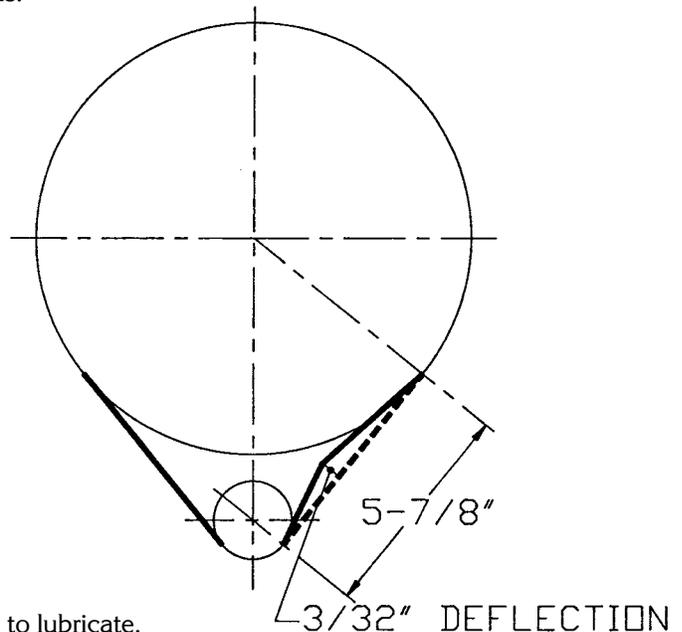
USE ONLY GENUINE BIRO Parts and Accessories Properly Installed.

A. HIGH TORQUE DRIVE SYSTEM

The Model 922 is driven by a High Torque Drive system for power transmissions.
“No Lubrication” is required (in fact) be sure no lubricant comes in contact with the sprockets or belt.

To insure a long life to the drive components:

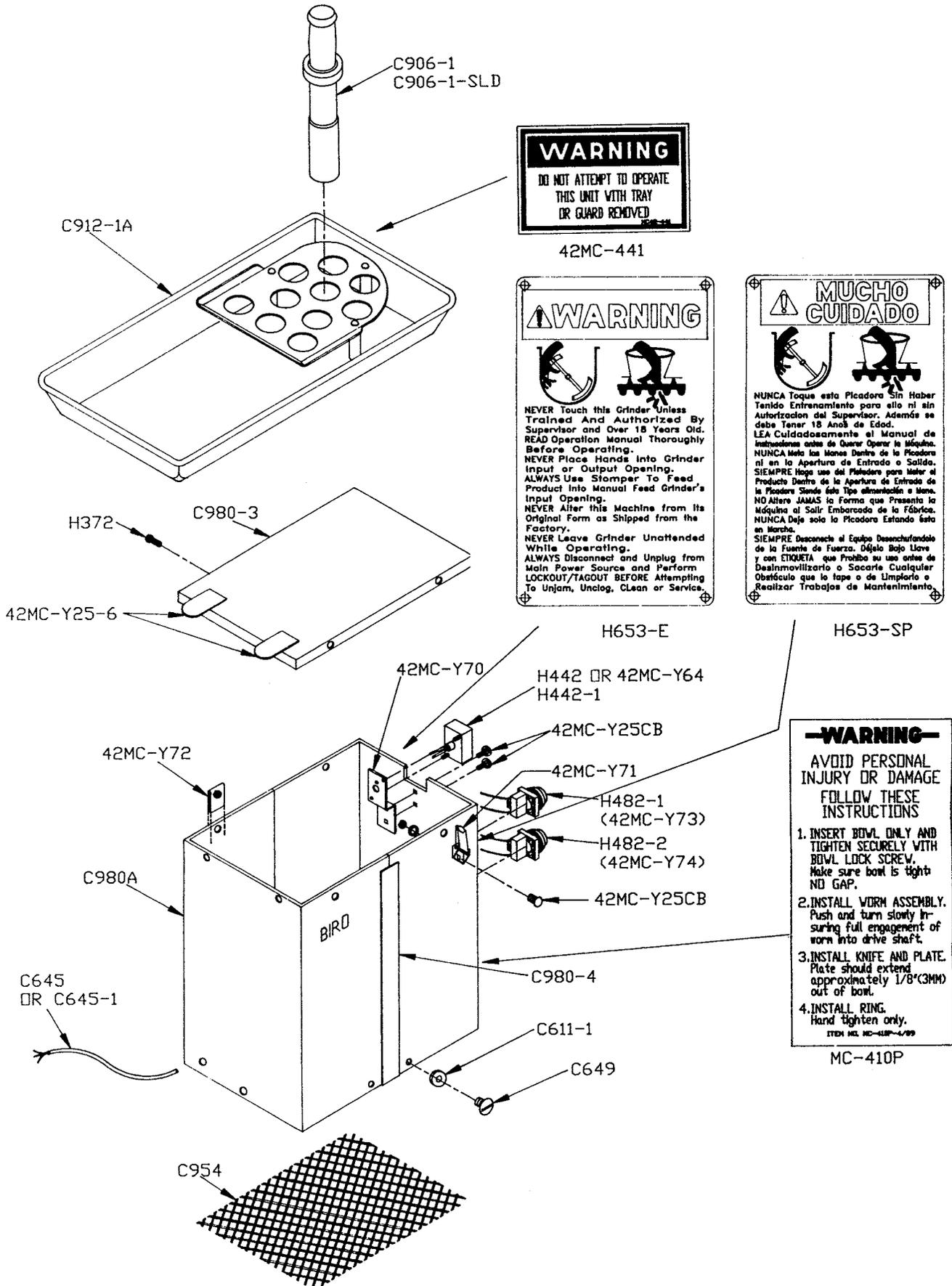
1. Be sure the motor shaft and main drive shaft are parallel.
2. Be sure sprockets are in alignment.
3. Proper HTD belt tension is $\frac{3}{32}$ " on one side.
Tension should be checked every six (6) months.



B. BEARINGS

1. The main bearings are sealed for life. No need to lubricate.
2. Lubricate the motor bearings once a year with bearing grease.

TRAY AND CASE PARTS



WARNING
DO NOT ATTEMPT TO OPERATE
THIS UNIT WITH TRAY
OR GUARD REMOVED

42MC-441

WARNING

NEVER Touch this Grinder Unless Trained And Authorized By Supervisor and Over 18 Years Old. READ Operation Manual Thoroughly Before Operating. NEVER Place Hands into Grinder Input or Output Opening. ALWAYS Use Stomper To Feed Product Into Manual Feed Grinder's Input Opening. NEVER Alter this Machine from its Original Form as Shipped from the Factory. NEVER Leave Grinder Unattended While Operating. ALWAYS Disconnect and Unplug from Main Power Source and Perform LOCKOUT/TAGOUT BEFORE Attempting To Unjam, Unclog, Clean or Service.

MUCHO CUIDADO

NUNCA Toque esta Plicadora Sin Haber Tenido Entrenamiento para ello ni sin Autorizacion del Supervisor. Ademas se debe Tener 18 Anos de Edad. LEA Cuidadosamente el Manual de Instrucciones antes de Querer Operar la Máquina. NUNCA Meta las Manos Dentro de la Plicadora ni en la Apertura de Entrada o Salida. SIEMPRE Haga uso del Plicador para Meter el Producto Dentro de la Apertura de Entrada de la Plicadora Siempre de esta Forma: alimentación a Mano. NO Altere JAMAS la Forma que Presenta la Máquina al Salir Embarcado de la Fábrica. NUNCA Deje solo la Plicadora Estando esta en Marcha. SIEMPRE Desconecte el Equipo Desenchufandolo de la Fuente de Fuerza. Déjelo Bajo Llave y con ETIQUETA que Prohíbe su uso antes de Desarmovilizarlo o Sacarlo Cualquiera Obstrucción que lo tape o de Limpieza o Realizar Trabajos de Mantenimiento.

WARNING

AVOID PERSONAL INJURY OR DAMAGE FOLLOW THESE INSTRUCTIONS

1. INSERT BOWL ONLY AND TIGHTEN SECURELY WITH BOWL LOCK SCREW. Make sure bowl is tight NO GAP.
2. INSTALL WORM ASSEMBLY. Push and turn slowly insuring full engagement of worm into drive shaft.
3. INSTALL KNIFE AND PLATE. Plate should extend approximately 1/8"(3MM) out of bowl.
4. INSTALL RING. Hand tighten only.

ITEM NO. MC-410P-4/99

MC-410P

TRAY AND CASE PARTS LIST

NOTE: SPECIFY MODEL & SERIAL NUMBER WITH ORDERING PARTS

| | |
|------------|------------------------------------------------------------------------|
| C611-1 | Rubber Grommet |
| C627-1 | Voltage wiring (decal) |
| C645 | Cord for 3 Phase, 14/4 SO |
| C645-1 | Cord for 1 Phase, 14/3 SO |
| C649 | Case to base screw, 1/6-18 x 3/4 |
| C906-1 | Stomper |
| C906-1-SLD | Solid stomper |
| C908 | Tray attachment pin |
| C912-1A | Tray assembly w/guard & magnet, complete – Latch type |
| C913-1 | Tray attachment bracket – Latch Type |
| C938SFT | Tray guard only (not sold separately) ORDER C938SFTA |
| C938SFTA | Tray guard assembly w/spacers & fasteners, must be welded by installer |
| C954 | Safety screen |
| C957-213 | General instruction manual (not shown) |
| C977 | SS standoff for tray guard |
| C980-3 | Case cover |
| C980-4 | Case side strip (not sold separately) ORDER C980A |
| C983-1 | “Start” legend plate |
| C983-2 | “Stop” legend plate |
| HN15S | Hex nut, 1/4-20, SS |
| H333 | Model and Serial Number plate, (S/N required) |
| H372 | Hex head cap screw, 1/4-20 x 1/2 |
| H374-1 | Aluminum pop rivet for S/N plate |
| H442 | Magnet safety interlock switch, to 230V, same as 42MC-Y64 |
| H442-1 | Magnet safety interlock switch, 230V to 600V |
| H482-1 | Green push button assembly |
| H482-2 | Red push button assembly |
| LW10S | Lock washer, 1/4, SS |
| MC-410P | Bowl instructions |
| 16163A | Hold down clip, welded |
| 42MC-441 | Warning label |
| 42MC-Y20-8 | Magnet, (not sold separately) |
| 42MC-Y25-6 | Tray locator and rear hold down |
| 42MC-Y25CB | Carriage bolt, 1/4-20 x 1/2 |
| 42MC-Y64 | Magnetic safety interlock switch, to 230 volt |
| 42MC-Y70 | Safety switch bracket |
| 42MC-Y71 | Hold down latch |
| 42MC-Y72 | Self retaining nut |
| 42MC-Y73 | Green start push button assembly |
| 42MC-Y74 | Red stop push button assembly |
| 42MC-Y75 | “Start” legend plate |
| 42MC-Y76 | “Stop” legend plate |
| H653-E | Warning label, English |
| H653-SP | Warning label, Spanish |

ASSEMBLIES

| | |
|---------|-------------------------------------------------------------------|
| C912A | Tray assembly w/ guard & magnet complete – spring type, old style |
| C912-1A | Tray assembly w/ guard & magnet complete – latch type |
| C980A | Case assembly |

LIMITED WARRANTY:

WARRANTY: The BIRO Manufacturing Company warrants that Model 922 Grinder will be free from defects in material and workmanship under normal use and with recommended service. BIRO will replace defective parts, which are covered by this limited warranty, provided that the defective parts are authorized for return, shipping charges prepaid, to a designated factory for inspection and/or testing.

DURATION OF WARRANTY: The warranty period for all parts covered by this limited warranty is one (1) year from date of Inspection/Demonstration advised on the returned Warranty Registration card, or eighteen (18) months from original factory ship date, whichever 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, worm drive shaft, ring, worm, 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 switch components or any other electrical requirements, which must be performed only by a certified electrician. BIRO is also 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. Co. for the authorized service entity (250 plus worldwide) in your area.

THE BIRO MANUFACTURING COMPANY

1114 Main Street
Marblehead, Ohio 43440-2099
Ph. 419-798-4451
Fax 419-798-9106
E-mail: service@birosaw.com
Web: <http://www.birosaw.com>