

# ***BIRO***®

## **MODELS 8-12 AND 8-22**

### **GRINDER PARTS LIST GENERAL INSTRUCTIONS**

**Starting with Serial No. 5200, No. C84001 with Chain Drive  
and No. C84859 with HTD Drive Belt**

**Note: This Catalog does not pertain to 8-12/8-22 with Plastic Gears**



*Biro Designed*

*Biro Built*



#### **IMPORTANT NOTICE**



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

## 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 Removed.

**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. There is a bowl shipping plug (stamped steel) placed in the output end of the grinding bowl to retain the grinding worm during shipment. **REMOVE THE BOWL SHIPPING PLUG AND THE GRINDING WORM.**



4. After checking and making sure the power supply is correct, plug in your machine. **NEVER OPERATE MACHINE WITHOUT TRAY INSTALLED.**
5. Machine must be properly grounded. Use qualified electrician to install according to building codes.
6. A toggle switch that activates the internal on/off switch is located on the front of the machine.



7. Lift the toggle handle up to "ON" position. **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 down to "OFF" position.

8. If machine runs clockwise (backwards), it must be rewired to correct rotation, otherwise serious irreparable damage may occur to grinding components.
9. Check that the grinding bowl is properly seated and that the bowl lock assembly is tight. 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 pins 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 AEG Contactor voltage matches voltage of motor.
 

A. Item No. C903 Contactor LS07-110V 1HP, 104-60-1 1HP, 115-60-1 1HP, 380/415/440-50/60-3 with C904 transformer	B. Item No. C903-1 Contactor LS07-220V 1HP, 220-50/60-3 1HP, 208/230-60-1 1HP, 240-50-1
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- (3) Failure to use proper AEG Contactor for motor voltage will cause irreparable damage to contactor.
- (4) Install proper plug on power cord for voltage used.

# 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.

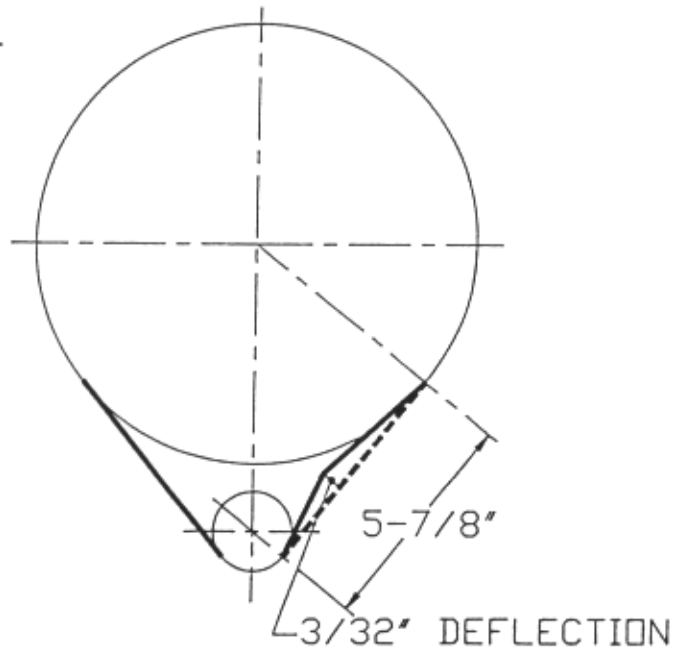
**USE ONLY GENUINE BIRO** Parts and Accessories Properly Installed.

### A. HIGH TORQUE DRIVE SYSTEM

The Model 8-12/8-22 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  $3\frac{3}{32}$ " 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.

## 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 TABLE TOP GRINDER**

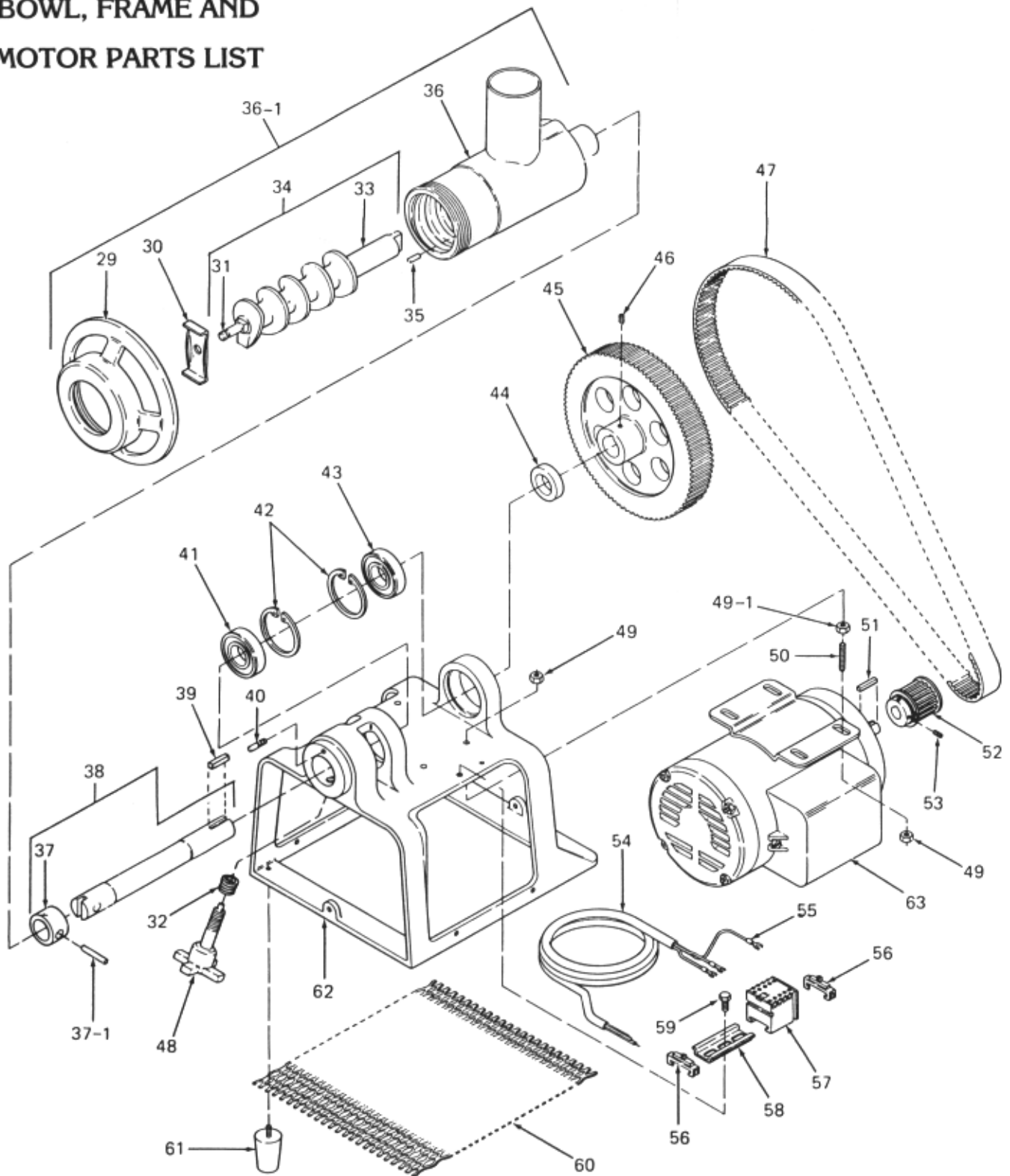
1. Disconnect grinder from power source and perform lockout/tagout procedures.
2. Remove grinding bowl end ring, breaker plate, knife and grinding worm and the grinding bowl.



#### **DO NOT SPRAY DIRECTLY AT ELECTRICAL COMPONENTS**

3. 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.
4. 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.

# BOWL, FRAME AND MOTOR PARTS LIST



## 8-12 MISC. PARTS C657-111 Owner/operating manual

For 8-12 Units from S/N 5200 to S/N 10222:

- Footnote "A":** Use #C12K Bowl with Tray Replacement Kit consisting of: #CC12 Bowl, #C612-1 Tray, #C670 Worm Drive Shaft, and #C606-1 Stomper.
- Footnote "B":** Use #C12KA Bowl Assembly with Tray and Stomper Replacement Kit consisting of: #CC12A Bowl Assembly, #C612-1 Tray and #C606-1 Stomper.

## 8-22 MISC. PARTS C657-111 Owner/operating manual

For 8-22 Units from S/N 5200 to S/N 10377:

- Footnote "C":** Use #C22K Bowl with Tray Replacement Kit consisting of: #CC22 Bowl, #C612-1 Tray, #C670 Worm Drive Shaft, and #C606-1 Stomper.
- Footnote "D":** Use #C22KA Bowl Assembly with Tray and Stomper Replacement Kit consisting of: #CC22A Bowl Assembly, #C612-1 Tray and #C606-1 Stomper.

**STARTING WITH SERIAL No. 5200, No. C84001 and No. C84859  
with HTD Drive Belt  
(This Catalog does not pertain to 8-12/8-22 with Plastic Gears)**

**NOTE: SPECIFY MODEL & SERIAL NUMBER WITH ORDERING PARTS**

MODEL 8-12 PARTS LIST (Bowl, Frame & Motor)			MODEL 8-22 PARTS LIST (Bowl, Frame & Motor)		
Fig. No.	Item No.	Description	Fig. No.	Item No.	Description
29	CR12	Bowl ring	29	CR22	Bowl ring
30	C653	Bowl shipping plug (812/822/922) (with new machine only)	30	C653	Bowl shipping plug (812/822/922) (with new machine only)
31	CK12	Knife drive pin	31	CK22	Knife drive pin
32	C662	Heli-coil insert, 1/2" (#8351 on)	32	C662	Heli-coil insert, 1/2" (#8351 on)
33	C670	Worm drive shaft (#10222 on)	33	C670	Worm drive shaft (#10377 on)
	C736	Worm drive shaft (before #10222)		C937	Worm drive shaft (before #10377)
34	CS12A	Worm assembly (#10222 on)	34	CS22A	Worm assembly (#10377 on)
	CS12A-OS	Worm assembly (before #10222)		CS22A-OS	Worm assembly (before #10377)
35	CP12	Bowl pin — 5/32 x 1 1/8	35	CP22	Bowl pin — 5/32 x 1 1/8
36	CC12	Safety bowl with pin (#10222 on)	36	CC22	Safety bowl with pin (#10377 on)
	C731	Safety bowl (before #10222) N/A (see footnote "A" previous page)		C932	Safety bowl (before #10377) N/A (see footnote "C" previous page)
36-1	CC12A	Safety bowl assembly (#10222 on)	36-1	CC22A	Bowl assembly (#10377 on)
	CA731	Safety bowl assembly (before #10222) N/A (see footnote "B" previous page)		CA932	Bowl assembly (before #10377) N/A (see footnote "D" previous page)
37	C609	Main drive shaft collar (#10222 on)	37	C609	Main drive shaft collar (#10377 on)
37-1	C622	Main drive shaft to collar pin, 3/16 x 1 1/2	37-1	C622	Main drive shaft to collar pin, 3/16 x 1 1/2
38	C610-1A	Main drive shaft assembly (#C-84859 on)	38	C610-1A	Main drive shaft assembly (#C-84859 on)
	C610A	Main drive shaft assembly (#10222 to #C-84858)		C610A	Main drive shaft assembly (#10377 to #C-84858)
39	C617	Main drive gear key (1/4 x 1/4 x 2)	39	C617	Main drive gear key (1/4 x 1/4 x 2)
40	C600	Bowl locator pin (5/16-18)	40	C600	Bowl locator pin (5/16-18)
41	C629	Main bearing, 2 required	41	C629	Main bearing, 2 required
42	C632	Bearing retaining ring, 2 required	42	C632	Bearing retaining ring, 2 required
43	C629	Main bearing, 2 required	43	C629	Main bearing, 2 required
44	C607-1	Main drive shaft spacer, 1/2" (C#-84859 on)	44	C607-1	Main drive shaft spacer, 1/2" (C#-84859 on)
	C607	Main drive shaft spacer (#10222 to #C-84858)		C607	Main drive shaft spacer (#10377 to #C-84858)
45	C919	Main drive sprocket, aluminum (60Hz/148 tooth) (#C-84859 on)	45	C919	Main drive sprocket, aluminum (60Hz/148 tooth) (#C-84859 on)
	C919-1	Main drive sprocket, aluminum (50Hz/123 tooth) (#C-84859 on)		C919-1	Main drive sprocket, aluminum (50Hz/123 tooth) (#C-84859 on)
	C619	Main drive gear (70 tooth - 1" CG) (before #C-84859)		C619	Main drive gear (70 tooth - 1" CG) (before #C-84859)
46	H405	5/16-18 x 3/8 socket set screw, 2 required (#C-84859 on)	46	H405	5/16-18 x 3/8 socket set screw, 2 required (#C-84859 on)
	C641	1/4-20 x 1/4 set screw (before #C-84859)		C641	1/4-20 x 1/4 set screw (before #C-84859)
47	C921	HTD drive belt (60Hz) #800-5M-30 (#C-84859 on)	47	C921	HTD drive belt (60Hz) #800-5M-30 (#C-84859 on)
	C921-1	HTD drive belt (50Hz) #710-5M-30 (#C-84859 on)		C921-1	HTD drive belt (50Hz) #710-5M-30 (#C-84859 on)
	C621	Drive chain (1" width x 3/8 pitch x 78 links) (#5200 to #C-84858)		C621	Drive chain (1" width x 3/8 pitch x 78 links) (#5200 to #C-84858)
48	C601A	Bowl lock handle assembly, 1/2" (#8351 on)	48	C601A	Bowl lock handle assembly, 1/2" (#8351 on)
	C601B	Bowl lock handle assembly, 3/8" (#5200 to #8350)		C601B	Bowl lock handle assembly, 3/8" (#5200 to #8350)
49	H370	5/16-18 Hex head nut, motor mount, 8 required	49	H370	5/16-18 Hex head nut, motor mount, 8 required
49-1	C664	5/16-18 Heavy jam nut motor mount (50 cycle)	49-1	C664	5/16-18 Heavy jam nut motor mount (50 cycle)
	H664-1	5/16-18 Heavy hex nut motor mount (60 cycle)		H664-1	5/16-18 Heavy hex nut motor mount (60 cycle)
50	C638	Motor mount to frame studs (5/16-18 x 1 3/8)	50	C638	Motor mount to frame studs (5/16-18 x 1 3/8)
51	C931	3/16 x 3/16 x 1 3/8 Motor shaft key	51	C931	3/16 x 3/16 x 1 3/8 Motor shaft key
52	C920A	Motor sprocket, aluminum (50-60 cycle/28 tooth) (#C84859 on)	52	C920A	Motor sprocket, aluminum (50-60 cycle/28 tooth) (#C84859 on)
	C620	Motor pinion gear (60 cycle/13 tooth) (before #C-48459)		C620	Motor pinion gear (60 cycle/13 tooth) (before #C-48459)
	C620-1	Motor pinion gear (50 cycle/15 tooth) (before #C-48459)		C620-1	Motor pinion gear (50 cycle/15 tooth) (before #C-48459)
53	C920D	8-32 x 1/4 Socket set screw, 2 required	53	C920D	8-32 x 1/4 Socket set screw, 2 required
54	C684	#18 Ga. x 3 wire (UL & CSA) 1 & 3 phase (switch to contactor) (#C-84859 on)	54	C684	#18 Ga. x 3 wire (UL & CSA) 1 & 3 phase (switch to contactor) (#C-84859 on)
	C645	Main cord, 3 phase (14/4 SO)		C645	Main cord, 3 phase (14/4 SO)
	C645-1	Main cord. 1 phase (14/3 SO)		C645-1	Main cord. 1 phase (14/3 SO)
55	C683	Connector to McGill switch	55	C683	Connector to McGill switch
56	C981	Din rail clip, 2 required	56	C981	Din rail clip, 2 required
57	C903	110 volt contactor (AEG #LS07) 1 phase	57	C903	110 volt contactor (AEG #LS07) 1 phase
	C903-1	220 volt contactor (AEG #LS07) 1 & 3 phase		C903-1	220 volt contactor (AEG #LS07) 1 & 3 phase
	C676	10-24 x 3/8 Rd. head grounding screw		C676	10-24 x 3/8 Rd. head grounding screw
58	C981-1	Din rail	58	C981-1	Din rail
59	H369	5/16-18 x 3/4 Hex H.D. Bolt	59	H369	5/16-18 x 3/4 Hex H.D. Bolt
60	C654	Safety screen	60	C654	Safety screen
61	C615	Rubber foot, 4 required	61	C615	Rubber foot, 4 required
62	C614	Frame, aluminum (#5200 on)	62	C614	Frame, aluminum (#5200 on)
63	C930-2	1 HP (220/440 — 50/60-3) Bal	63	C930-2	1 HP (220/440 — 50/60-3) Bal
	C930-3	1 HP (104/208 — 60-1) Bal		C930-3	1 HP (104/208 — 60-1) Bal
	C930-4	1 HP (115/230 — 60-1) Bal		C930-4	1 HP (115/230 — 60-1) Bal
	C930-5	1 HP (240 — 50-1) Bal		C930-5	1 HP (240 — 50-1) Bal

# TRAY AND CASE PARTS LIST

H653-E

**▲WARNING**



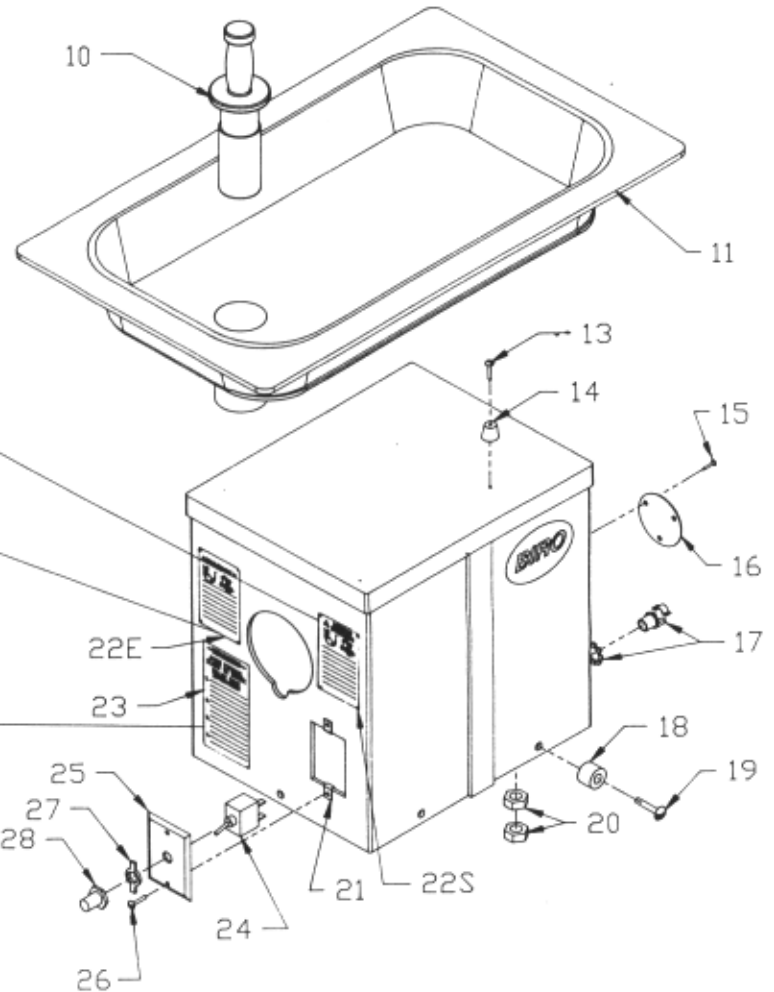
NEVER Touch this Grinder Unless Trained And Authorized By Supervisor and Over 18 Years Old. READ Operation Manual Thoroughly Before Operating.  
NEVER Place Hands into Grinder Input or Output Opening.  
ALWAYS Use Stomper To Feed Product into Manual Feed Grinder's Input Opening.  
NEVER Alter this Machine 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, Unplug, Clean or Service.

H653-SP

**▲ MUCHO CUIDADO**



NUNCA Toque este Molinero Sin Haber Tanto Entrenamiento para ello ni sin Autorización del Supervisor. Además se debe Tener 18 Años de Edad. LEA Cuidadosamente el Manual de Instrucciones antes de Querer Operar la Máquina. NUNCA Meta las Manos dentro de la Placadora ni en la Abertura de Entrada o Salida. SIEMPRE Haga uso del Pistonera para Meter el Producto dentro de la Abertura de Entrada de la Placadora Siempre Solo Tipo Alimentación a Mano. NO Altere JAMÁS la Forma que Presenta la Máquina al Salir Unicamente de la Fábrica. NUNCA Deje solo la Placadora Cuando este en Marcha. SIEMPRE Desconecte el Equipo Desconectándole de la Fuente de Fuerza. Déjale Bajo Llave y use ETOQUETA que Prohíba su uso antes de Desmontar o Sacarlo. Cualquiera Cualquiera que lo haga o de Usarlo o Realizar Trabajos de Mantenimiento.



MC-410P

**-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



**STARTING WITH SERIAL No. 5200, No. C84001 and No. C84859**  
**with HTD Drive Belt**  
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**NOTE: SPECIFY MODEL & SERIAL NUMBER WITH ORDERING PARTS**

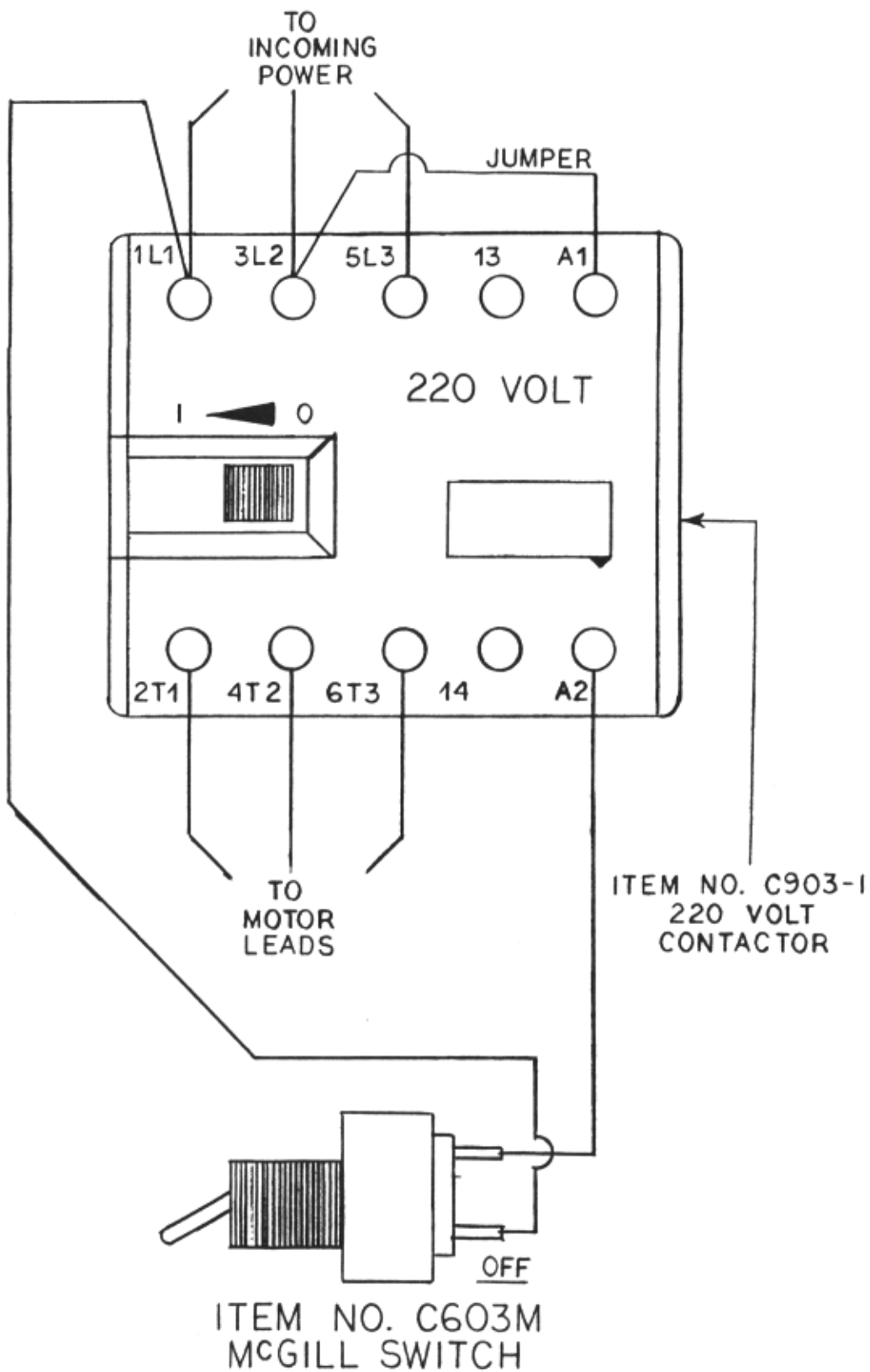
**MODEL 8-12 PARTS LIST**  
**(Tray and Case)**

Fig. No.	Item No.	Description
10	C606-1	Stomper, 2" (#10222 on)
	C606-1-SLD	Stomper, Solid
11	C612-1	Tray SS 2 1/8" neck dia. (#10222 on)
12	C681A	Case Assembly, Stainless steel (#C-84859 on) replacement for C616, C616-1 & C680A
	C680A	Case Assembly, stainless (replaced by C681A)
	C616	Case, blue poly (replaced by C681A)
	C616-1	Case Assembly, stainless (replaced by C681A)
13	C643	10-24 x 3/4 rd. hd. screw
14	C613	Tray bumper (2 required)
15	H374-1	Model & serial number plate pop rivet (1/8" dia.)
16	H333	Model & serial number plate (serial number required upon order)
17	C628	Cord connector, 7315V Appleton
18	C611-1	Rubber grommet for SS case (#10222 on)
	C611	Rubber grommet for poly case (#5200 to #C84001)
19	C649	5/16-18 x 3/4 rd. hd. screw
20	H377-1	10-24 hex nut
21	C682	6-32 "U" type retaining nut
22E	H653-E	Warning label, English
22S	H653-SP	Warning label, Spanish
23	MC-410P	Bowl installation label
24	C603M	Toggle switch, 1 & 3 phase (#3190-0003 McGill) (#C-84859 on)
	C603	Toggle switch, 1 phase (#7402K4 Cutler Hammer) (Before #C-84859)
	C603-1	Toggle switch, 1 phase (#7810U Arrow Hart) (before #C-84859)
	C624	Switch box, 1 phase (before #C-84859)
	C624-1	Switch box, 3 phase (before #C-84859)
	C663	1/2" insulated bushing on switch box (before #C-84859)
25	C604-2	Switch plate, SS (P & S, S-11) (#C-84859 on)
	C604	Switch plate, SS, 1 phase (before #C-84859)
	C604-1	Switch plate, SS, 3 phase (before #C-84859)
26	C644	6-32 x 1 flat hd. screw
27	C666	On-off switch plate
28	C665	Rubber switch boot

**MODEL 8-22 PARTS LIST**  
**(Tray and Case)**

Fig. No.	Item No.	Description
10	C606-1	Stomper, 2" (#10377 on)
	C606-1-SLD	Stomper, Solid
11	C612-1	Tray SS 2 1/8" neck dia. (#10377 on)
12	C681A	Case Assembly, Stainless steel (#C-84859 on) replacement for C616, C616-1 & C680A
	C680A	Case Assembly, stainless (replaced by C681A)
	C616	Case, blue poly (replaced by C681A)
	C616-1	Case Assembly, stainless (replaced by C681A)
13	C643	10-24 x 3/4 rd. hd. screw
14	C613	Tray bumper (2 required)
15	H374-1	Model & serial number plate pop rivet (1/8" dia.)
16	H333	Model & serial number plate (serial number required upon order)
17	C628	Cord connector, 7315V Appleton
18	C611-1	Rubber grommet for SS case (#10377 on)
	C611	Rubber grommet for poly case (#5200 to #C84001)
19	C649	5/16-18 x 3/4 rd. hd. screw
20	H377-1	10-24 hex nut
21	C682	6-32 "U" type retaining nut
22E	H653-E	Warning label, English
22S	H653-SP	Warning label, Spanish
23	MC-410P	Bowl installation label
24	C603M	Toggle switch, 1 & 3 phase (#3190-0003 McGill) (#C-84859 on)
	C603	Toggle switch, 1 phase (#7402K4 Cutler Hammer) (Before #C-84859)
	C603-1	Toggle switch, 1 phase (#7810U Arrow Hart) (before #C-84859)
	C624	Switch box, 1 phase (before #C-84859)
	C624-1	Switch box, 3 phase (before #C-84859)
	C663	1/2" insulated bushing on switch box (before #C-84859)
25	C604-2	Switch plate, SS (P & S, S-11) (#C-84859 on)
	C604	Switch plate, SS, 1 phase (before #C-84859)
	C604-1	Switch plate, SS, 3 phase (before #C-84859)
26	C644	6-32 x 1 flat hd. screw
27	C666	On-off switch plate
28	C665	Rubber switch boot





220 VOLT/3 PHASE  
WIRING DIAGRAM

## LIMITED WARRANTY:

**WARRANTY:** The BIRO Manufacturing Company warrants that Model 8-12 and 8-22 Grinders 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 inspection/demonstration advised on the returned Warranty registration card, or eighteen (18) months from original factory shipping 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, ring, worm, 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 switch gear 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 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 agency from whom you purchased the machine.
2. Consult the yellow pages of the phone directory for the nearest authorized dealer.
3. Or call BIRO Service Department (419) 798-4451 who will put you in contact with the nearest service agency.