HOBART

INSTRUCTION MANUAL

... with Replacement Parts

MODEL 4146 GRINDER

(INCLUDES MOTOR PARTS)

ML33607 (PAINTED) (R.H.)
ML33608 (PAINTED) (L.H.)

ML33609 (SST) (R.H.)
ML33610 (SST) (L.H.)

THIS MANUAL REPLACES AND SHOULD BE USED INSTEAD OF FORM 12957A (9-80)

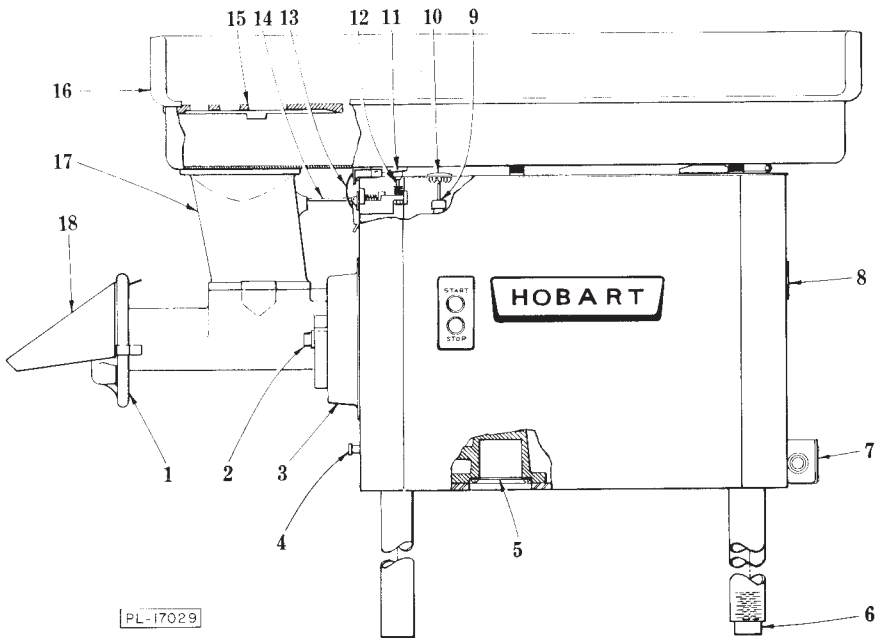
PRIOR ML'S COVERED IN THIS MANUAL:

ML19573 (PAINTED) (R.H.)
ML19574 (PAINTED) (L.H.)

ML19575 (SST) (R.H.)
ML19576 (SST) (L.H.)

A product of HOBART CORPORATION TROY, OHIO 45374

FORM 15437 (9-84)



Instructions for Operation and Care of MODEL 4146 GRINDER

INSTALLATION:

Remove top sheet to remove shipping bolts. Save these shipping bolts and lock washers. They are to be used later to attach legs.

Before making any electrical connections CHECK THE SPECIFICATIONS ON THE NAME PLATE (8) TO MAKE SURE THAT THEY AGREE WITH THOSE OF YOUR ELECTRICAL SERVICE.

Electrical connections should be made by qualified workmen who will observe all applicable Safety Codes and the National Electrical Code.

Volts	Ph.	Maximum Dual Element Fuse Size	Minimum Supply Conductor Ampacity	60°C Cu Wire Size
200	1	50 Amp.	40	#8
230	1	50 Amp.	40	#8
200	3	40 Amp.	30	#10
230	3	35 Amp.	30	#10
460	3	20 Amp.	15	#14

NOTE: More than 150 Ft. from Meter Service, wire size may be increased by one gauge.

The 4146 Grinder is equipped with a junction box (7) with tapped hole for 3/4" conduit. This box makes it possible to connect the electric service conductors and inspect the connections without disassembly of the housing or other parts of the machine. It is IMPORTANT to use the proper wire and fuse sizes, as called for previously and also on the tag attached to the machine. Multiphase motors must be so connected that the attachment drive runs counterclockwise facing the attachment hub.

The push button controls are protected by rubber caps. Standard mounting of the controls is on the right side of the grinder for right to left operation as illustrated above. For left side control mounting, replace the side panel (without switch holes) with a left hand side panel (with switch holes). Remove the right hand side panel and replace it with the side panel (without switch holes). Move and assemble the push button station and leads to the left side.

FILLING GEAR CASE:

The oil is drained from the gear case when this machine is packed for shipment and it MUST be replaced before this grinder is placed in operation. BEFORE POURING OIL IN TRANSMISSION CASE MAKE SURE THAT ATTACHMENT DRIVE RUNS COUNTERCLOCKWISE FACING ATTACHMENT HUB (SEE ROTATION LABEL ON ATTACHMENT TRIM CAP). Lift off the plug

button (10) on top of the housing and withdraw the dip stick (9). Check the oil drain plug (4) to make sure it is tight. Then using a funnel, pour in the oil from the can labeled "OIL for GEAR CASE." To check oil level: have the machine stopped and allow all oil to drain from the fill tube. Then wipe off the dip stick and check to the indicator line.

LEVELING:

The legs supplied with this grinder meet most installation requirements. Assemble the adjustable leg (6) (used for leveling purposes) to suit user's convenience. Attach legs, using shipping bolts and lock washers, referred to in installation section.

SAFETY INTERLOCK:

This grinder has a special interlock system that makes it inoperative with either the feed pan (16) lifted or removed, or the bowl (17) section of the cylinder removed. When either the bowl or the feed pan are not in position, the plungers (12 and 14) break the electrical circuit making the grinder inoperative.

GRINDER ATTACHMENT:

The grinding attachment is mounted to the attachment hub on two studs. It may be removed by loosening the two cylinder nuts (2) and revolving clockwise. A special wrench is provided to fit these nuts.

CAUTION: Never disassemble any part of a grinder without first turning off motor.

Always remove the adjusting ring (1) **BEFORE** attaching the grinder unit to the machine.

A heavy duty tapered roller bearing which is lubricated by the transmission oil takes the worm thrust. Double seals prevent entrance of moisture or loss of lubricant.

Before using the grinder attachment, take it apart and wash it thoroughly. The knife and plate need some preliminary lubrication; rub tallow over the cutting faces of these parts. When assembling the knife be sure to turn the cutting side out toward the perforated plate. See that the notches on the circumference of the plate fit over the pins in the cylinder.

Knives and plates must be sharp and true for proper cutting action. Rub a little tallow over newly-sharpened plates before use.

Keep the attachment in a clean and sanitary condition. If the machine is to be out of service for any length of time, take the attachment apart, wash and dry all parts. Coat with mineral oil.

CLEANING AND SANITIZING:

A. Materials Required:

A.1 Nylon bristled brush with 12" (approx.) handle.

A.2 A small plastic two compartment pail.

A.3 Scrap pail.

A.4 Clean cloths.

A.5 "Soilax" All Purpose Cleaner.

A.6 "Mikro-Klene" Iodophor Sanitizer.

A.7 Plastic spray bottle.

B. Procedure:

B.1 Add two ounces of "Soilax" to one gallon of hot water in wash side of two compartment pail.

B.2 Mix rinse solution by adding two teaspoons of "Mikro-Klene" in one gallon of cool water in rinse side of pail.

B.3 Make sure motor is turned "off".

B.4 Remove stomper, deflector, cylinder bowl, adjusting ring, grinder plate, grinder knife, and worm. Wash separately in sink.

B.5 Place empty scrap pail underneath discharge end of grinder cylinder to catch soil particles and excess cleaning solution.

B.6 Brush out large scraps of meat and waste.

B.7 Dip brush into "Soilax" All Purpose Cleaner solution in wash side of pail. Then beginning at the back and working toward the feed hole, liberally brush out the feed pan.

B.8 Brush clean the outside and inside of grinder cylinder, making sure to reach all areas inside.

B.9 Wipe off the outside of the unit.

B.10 Rinsing and sanitizing can be done in one of two ways:

(a) Go over the cleaned feed pan, cylinder and disassembled parts with a clean

cloth soaked in the "Mikro-Klene" solution.

(b) Rinse in fresh water and sanitize by applying the "Mikro-Klene" solution via the plastic spray bottle.

B.11 Allow all surfaces to drain dry and then reassemble. Do not wipe dry. Cover unit until next use.

B.12 Rinse nylon brush thoroughly under running water. Next dip brush into "Mikro-Klene" solution and allow to drain dry in covered container or wrapped in freshly laundered towel. Cloth used for rinsing should be sent to laundry, or discarded. Wash out pails.

FEED PAN:

A heavy duty feed pan (16) (right or left-hand) is available in either tinned steel or stainless steel. The special high back permits the loading of large quantities of meat without spilling. The tilt-back feature allows cleaning or removal of the cylinder without taking the feed pan from the machine. To tilt the feed pan, unlatch the clamps (13) on the front of housing and lift the end of the pan. Lift the pan rest (11) to a vertical position, which then holds the pan in a tilted or raised position. The permanently attached guard (15) gives a maximum amount of safety by always being in position. The deflector (18) clips to the handwheel (1) and is easily removed.

MEAT GRINDING:

The guard and cylinder are especially designed to protect the operator. Chunks of meat, to a maximum size that will pass through the throat opening of the cylinder, can be fed under the guard.

When feeding the grinder, push meat under guard into the cylinder, using the feed stomper only to dislodge oversize pieces. This is the quickest method of feeding, for both hands can be used.

When running meat through the grinder a second time, more speed is attained by feeding small quantities at a time, than by trying to force large amounts with the feed stomper.

The fineness to which the product is cut depends upon the size of holes in the grinder plate that is used, NOT upon the tension given the adjusting wheel. If both the knife and plate are kept sharp, moderate tension will suffice.

LUBRICATION:

Very little attention is needed for the lubrication of this grinder. The fan end bearing of the motor is grease lubricated and sealed for life of the machine. The front motor bearing is lubricated from the transmission and will not need lubricating attention. Occasionally check the transmission lubrication level with the dip stick as described in the paragraph "Filling the Gear Case". To drain the oil from the case remove the plug (4). No additional lubrication is required.

HOUSING REMOVAL:

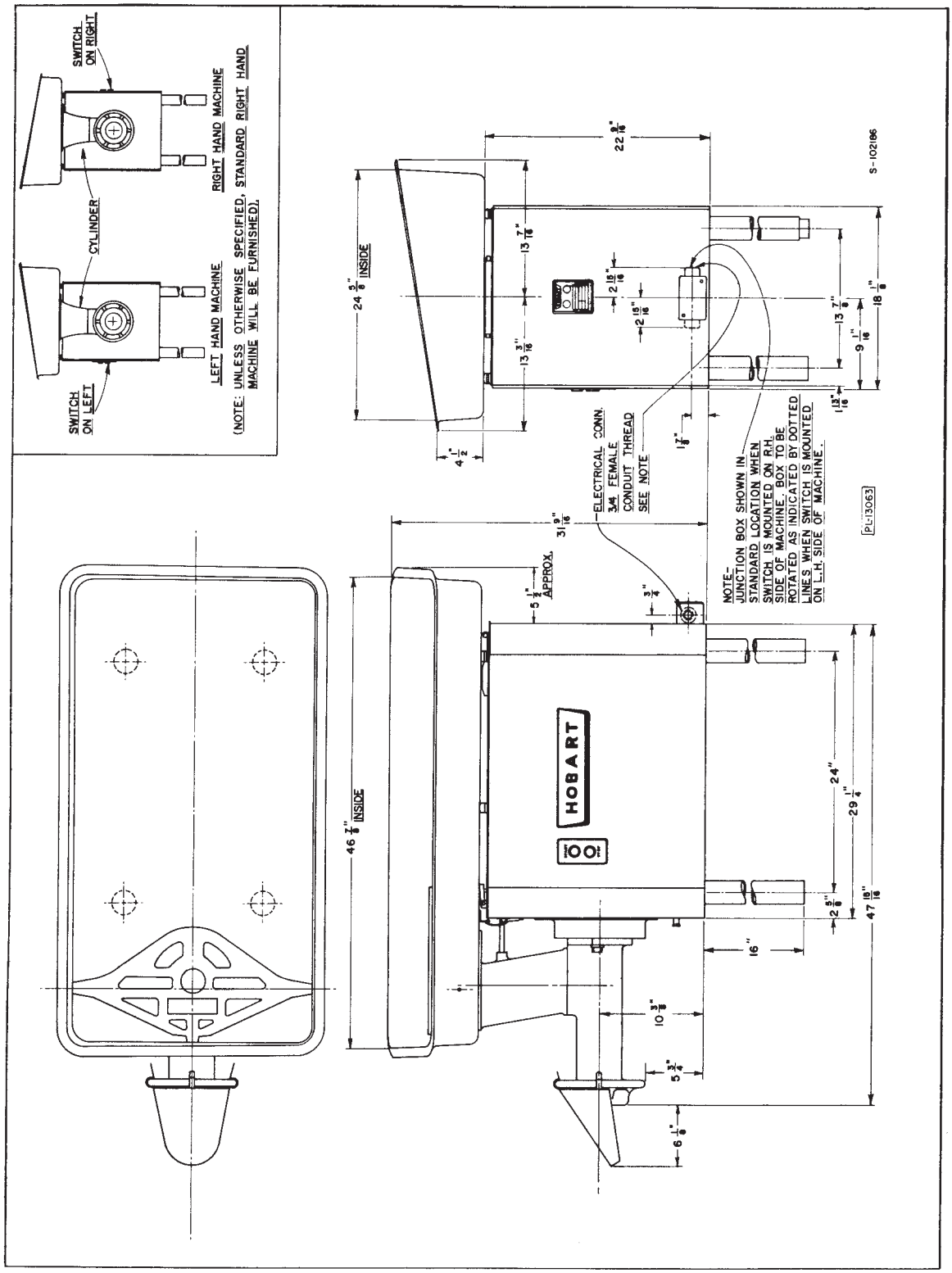
With the motor turned off, take off the feed pan and the grinder attachment. Next remove the retaining screws with washers and lift off the top cover. Remove the four screws that hold the trim cap (3) to the attachment hub. Disconnect the wires to the micro switch, the leads from the push button stations to the starting switch and the starting switch and lead lines at junction box. Reach inside the housing and disassemble the eight screws (2 each side & 2 each end) that hold the housing to the base. Slightly raise up the rear (to clear base), then slide the housing forward to clear the gear case and the oil drain tube from its grommet. The housing may now be lifted from the machine. The ends are retained to the sides by retaining screws in flanges.

AIR INTAKE:

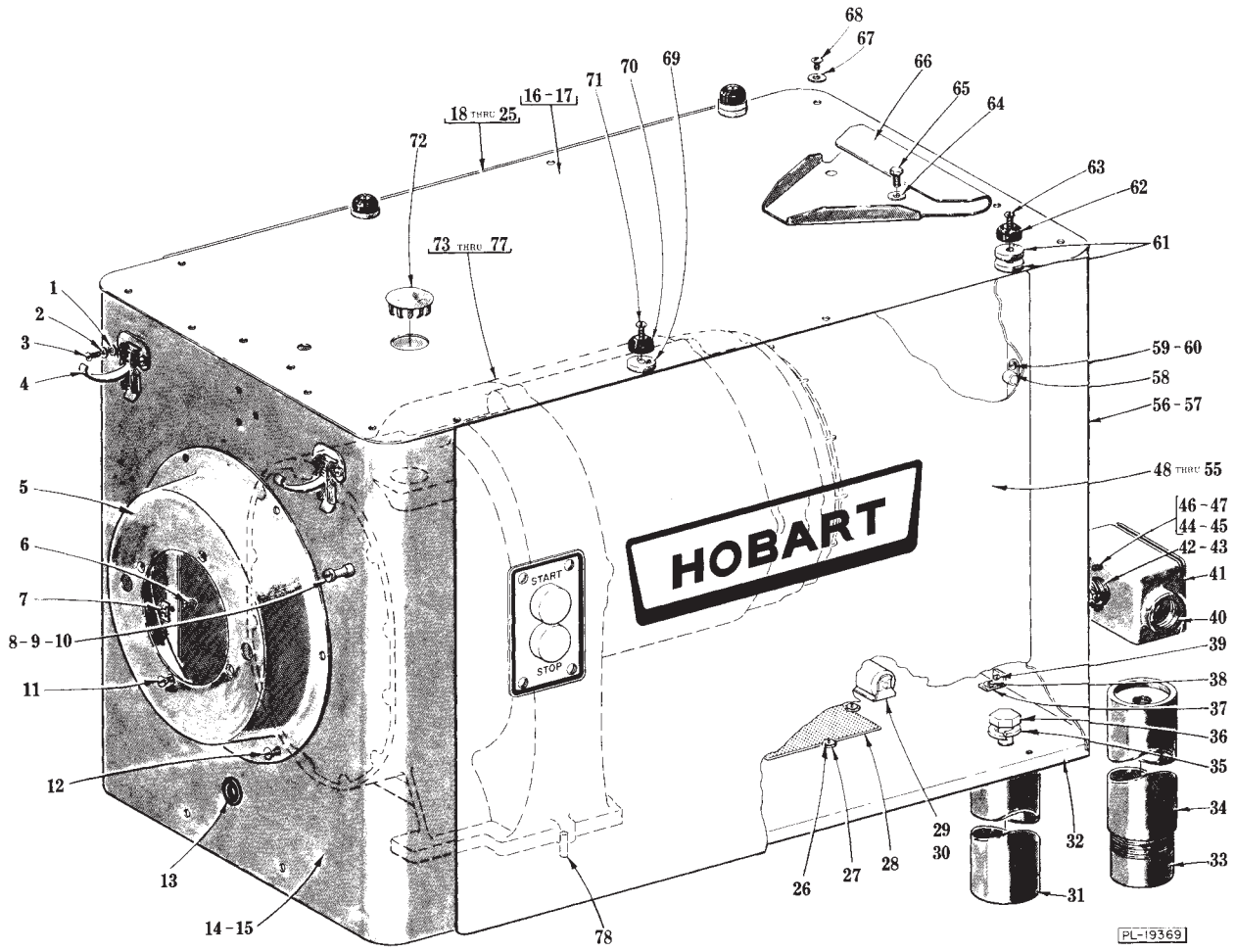
Under normal operating conditions the motor air intake screen (5) (located in the base of the grinder) will need little or no attention. However, in some installations where sawdust or other foreign materials are present in the air, this intake screen may become partially or completely covered and throttle the cooling air to the motor. Where an adverse dust condition does exist, periodically check the screen (using an adequate light) and wipe exposed side of screen clean with a rag or brush as required.

STARTER:

This grinder is equipped with a magnetic type starter which provides both overload and low voltage protection. Starter thermal elements are in relation to the electrical specifications of the motor. Any change in the electrical specifications of the motor would necessitate a change in the starter and thermal elements.



INSTALLATION DIAGRAM
(WITH STANDARD 4146 GRINDER ATTACHMENT)



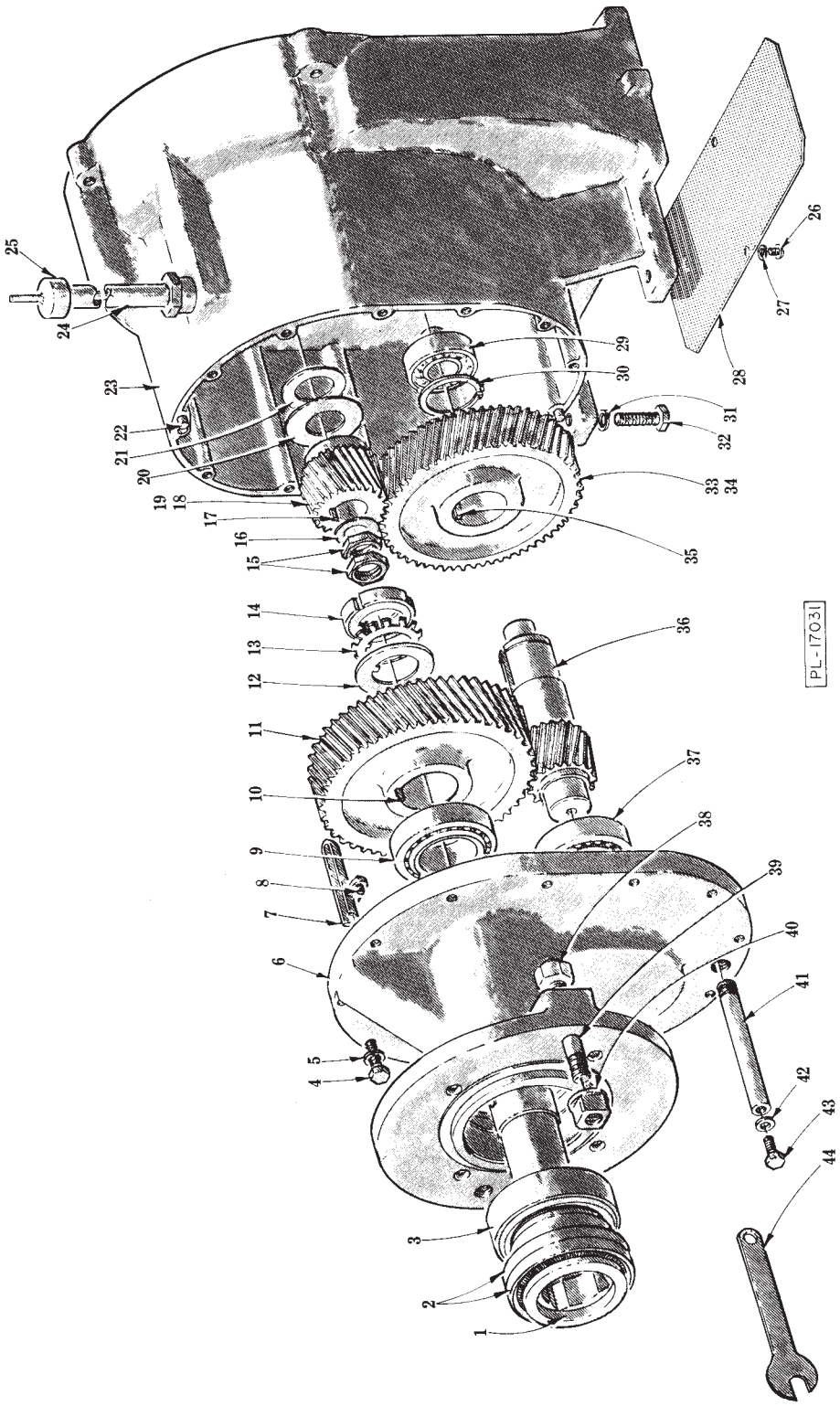
HOUSING UNIT

ILLUS. PL-19369	PART NO.	NAME OF PART	AMT.
1	WS-19-24	Washer	4
2	WL-8-13	Lock Washer - #10 Int. Shakeproof	4
3	SC-53-5	Mach. Screw - #10-24 x 3/8" Truss Hd	4
4	67319	Clamp - Pan	2
5	69791	Cap - Trim	1
6	SC-8-9	Mach. Screw - #10-24 x 3/8" Rd. Hd	13
7	69534	Speed Nut - Tinnerman	13
8	65159	Screw - Spanner Wrench Support	1
9	WL-6-22	Lock Washer - 5/16" Light	1
10	NS-15-11	Full Nut - 5/16"-18 Hex Fin	1

HOUSING UNIT (Cont.)

ILLUS. PL-19369	PART NO.	NAME OF PART	AMT.
11	SC-22-19	Mach. Screw - #10-24 x ½" Flat Hd	4
12	SC-53-5	Mach. Screw - #10-24 x ⅜" Truss Hd	6
13	69492	Grommet	1
14	68975-5	Front Sheet & Nuts Assy. (Painted Mach.)	1
15	68975-8	Front Sheet & Nuts Assy. (SST Mach.)	1
16	68973-1	Top Sheet & Weld Nut Assy. (Painted Mach.)	1
17	68973-3	Top Sheet & Weld Nut Assy. (SST Mach.)	1
18	291943-5	L.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (Painted Mach.) (60 Hz.)	1
19	291943-6	L.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (SST Mach.) (60 Hz.)	1
20	291943-7	L.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (Painted Mach.) (50 Hz.)	1
21	291943-8	L.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (SST Mach.) (50 Hz.)	1
22	291943-9	Side Panel & Logo Plate Assy. (W/O Switch Opening) (Painted Mach.) (60 Hz.)	1
23	291943-10	Side Panel & Logo Plate Assy. (W/O Switch Opening (SST Mach.) (60 Hz.)	1
24	291943-11	Side Panel & Logo Plate Assy. (W/O Switch Opening) (Painted Mach.) (50 Hz.)	1
25	291943-12	Side Panel & Logo Plate Assy. (W/O Switch Opening) (SST Mach.) (50 Hz.)	1
26	SC-60-21	Mach. Screw - #10-24 x ¼" Rd. Hd	6
27	WS-2-51	Washer	6
28	68900	Screen - Air Outlet	1
29	66621-2	Bracket - Capacitor	2
30	SC-14-57	Mach. Screw - #10-24 x ½" Flat Hd	4
31	68932-1	Leg & Expansion Plug Assy. (16" Std.)	3
32	68956	Plate - Base	1
33	68929	Foot - Adjustable Leg	1
34	74862-1	Adjustable Leg & Foot Assy. (Incls. item #33) (16" Std.)	1
35	WL-4-18	Lock Washer - ⅝" Light	4
36	SC-62-25	Cap Screw - ⅝"-11 x 2-¼" Hex Hd	4
37	68978	Bracket - Housing Support	8
38	SC-9-25	Mach. Screw - #10-24 x ⅝" Rd. Hd	8
39	SC-53-44	Mach. Screw - ¼"-20 x 5/16" Truss Hd	8
40	69853	Box - Junction	1
41	FE-4-21	Cover - Junction Box (Incls. Gasket & Screws)	1
42	FE-2-33	Connector - Straight (¾" Male Thd. x ¾" Flex. Cnd.)	1
43	FE-7-12	Lock Nut - ¾"	1
44	118544-1	Lug - Solderless	1
45	SC-60-87	Mach. Screw - #10-32 x ¾" Rd. Hd	1
46	WL-7-12	Lock Washer - #10 Ext. Shakeproof	2
47	NS-9-30	Mach. Nut - #10-32 Hex	1
48	291943-1	R.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (Painted Mach.) (60 Hz.)	1
49	291943-2	R.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (SST Mach.) (60 Hz.)	1
50	291943-3	R.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (Painted Mach.) (50 Hz.)	1
51	291943-4	R.H. Side Panel & Logo Plate Assy. (W/Switch Opening) (SST Mach.) (50 Hz.)	1
52	291943-9	Side Panel & Logo Plate Assy. (W/O Switch Opening) (Painted Mach.) (60 Hz.)	1
53	291943-10	Side Panel & Logo Plate Assy. (W/O Switch Opening) (SST Mach.) (60 Hz.)	1
54	291943-11	Side Panel & Logo Plate Assy. (W/O Switch Opening) (Painted Mach.) (50 Hz.)	1
55	291943-12	Side Panel & Logo Plate Assy. (W/O Switch Opening) (SST Mach.) (50 Hz.)	1
56	103381-1	Rear Sheet, Starter Brkt. & Nut Assy. (Painted Mach.)	1
57	103381-3	Rear Sheet, Starter Brkt. & Nut Assy. (SST Mach.)	1
58	78752-4	Clamp - Wiring (Switch Leads)	3
59	SC-9-25	Mach. Screw - #10-24 x ⅝" Rd. Hd	3
60	69534	Speed Nut - Tinnerman	3
61	63934	Washer - Shim	4
62	19105-2	Bumper	2
63	SC-21-27	Mach. Screw - #10-24 x 1" Rd. Hd	2
64	WS-3-49	Washer	2
65	SC-41-5	Cap Screw - ¼"-20 x ⅝" Hex Hd	2
66	64896-1	Bracket - Housing Hinge	1
67	WS-19-39	Washer - Trim	12
68	SC-53-2	Mach. Screw - #10-24 x ½" Truss Hd	12
69	63934	Washer - Shim	2
70	19105-2	Bumper	2
71	SC-21-27	Mach. Screw - #10-24 x 1" Rd. Hd	2
72	PB-2-27	Plug Button	1
73	278393-1	Motor (200 V., 60 Hz., 1 Ph.)	1
74	278393-2	Motor (230 V., 60 Hz., 1 Ph.)	1
75	278355-1	Motor (200/400 V., 60 Hz., 3 Ph.)	1
76	278355-2	Motor (230/460 V., 60 Hz., 3 Ph.)	1
77	278355-3	Motor (230/400 V., 50 Hz., 3 Ph.)	1
78	11800-117	Dowel	2

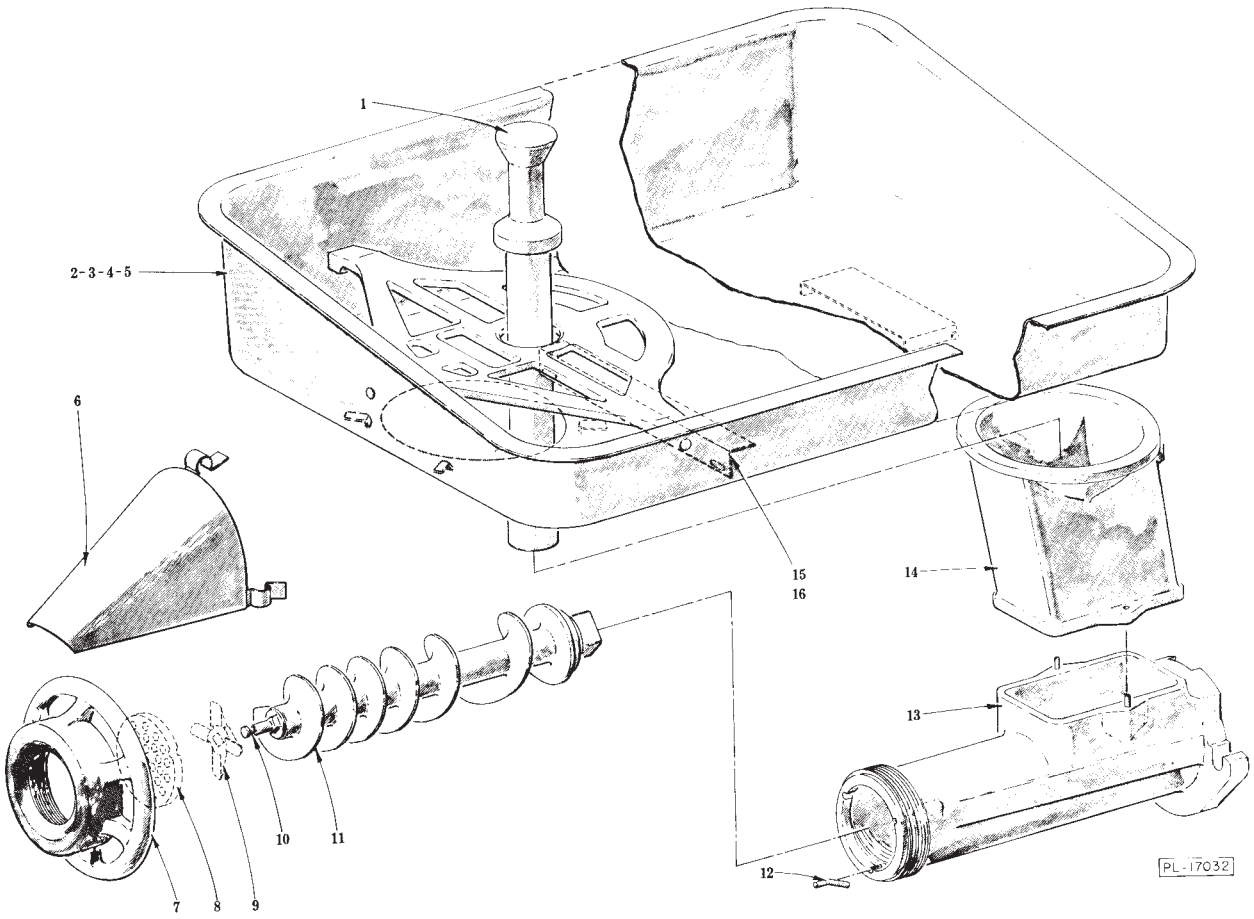
* To replace a Single Voltage 3 Phase Motor, order the appropriate Dual Voltage Motor plus Lead Wires 87526-624, 87526-625 & 87526-626.



GEAR CASE AND DRIVE UNIT

GEAR CASE AND DRIVE UNIT

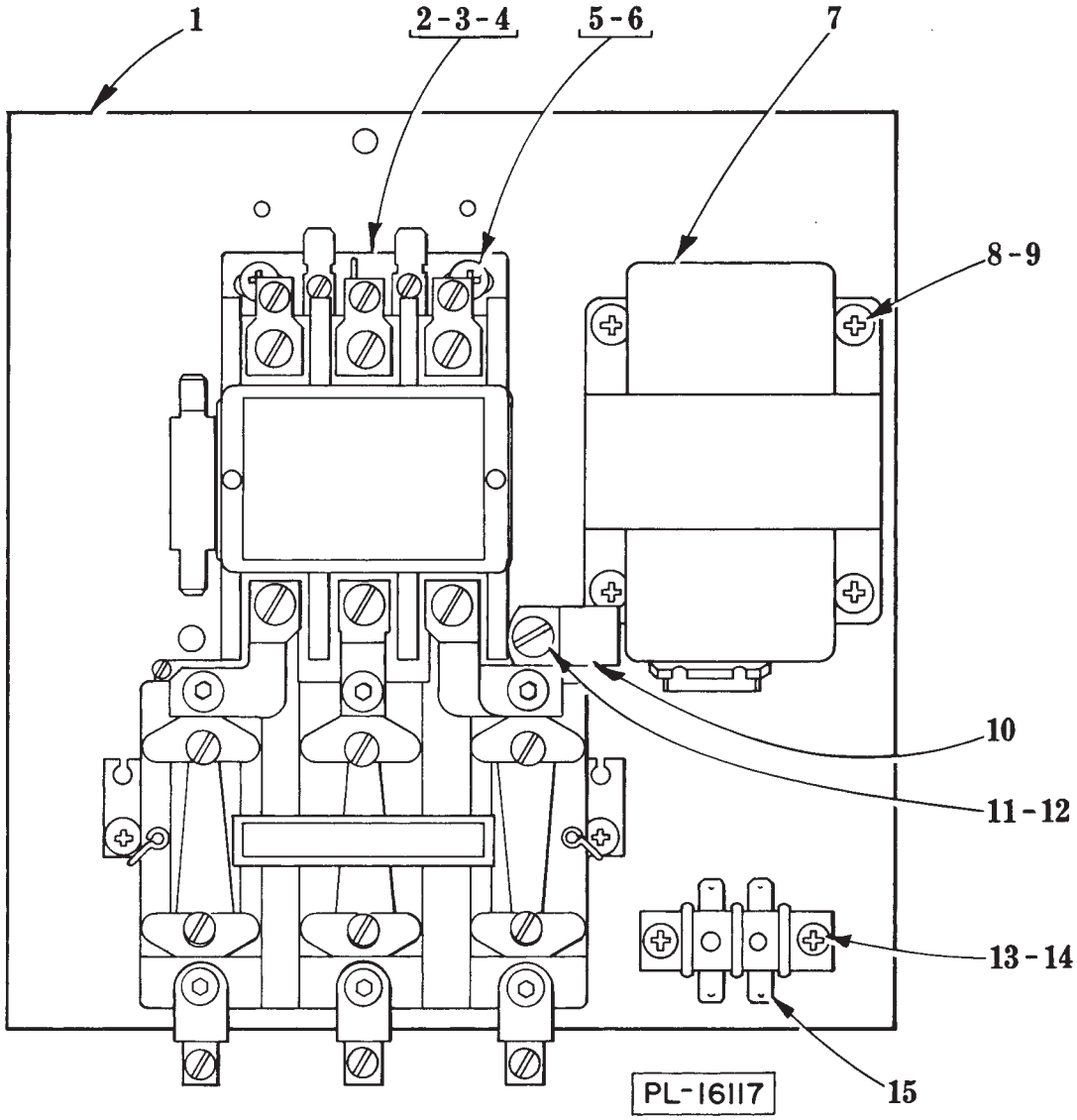
ILLUS. PL-17031	PART NO.	NAME OF PART	AMT.
1	69794	Shaft - Square Drive	1
2	69490	Seal - Square Drive	2
3	BR-2-21	Roller Bearing - Cup & Cone Assy	1
4	SC-62-24	Cap Screw - 5/16"-18 x 1-1/2" Hex Hd	12
5	WL-3-45	Lock Washer - 5/16" Extra Heavy	12
6	118682	Hub - Attachment	1
7	116775	Conveyor - Oil	1
8	SC-69-2	Mach. Screw - #10-32 x 5/8" Phil. Pan Hd. "Nylok"	1
9	BR-2-20	Roller Bearing - Cup & Cone Assy	1
10	109070-20	Key	1
11	69833	Gear - Drive (56T)	1
12	123431	Washer - Tongue	1
13	WL-17-9	Lock Washer - Timken #TW107	1
14	NS-34-8	Lock Nut - ND #N-07	1
15	6566	Lock Nut	2
16	WS-11-24	Washer	1
17	109070-17	Key	1
18	85812-1	Gear - Motor Pinion (24T) (60 Hz.)	1
19	85812-3	Gear - Motor Pinion (27T) (50 Hz.)	1
20	72536	Flinger - Oil	1
21	72537	Spacer - Oil Flinger	1
22	11800-239	Dowel	2
23	85852-1	Case - Gear	1
24	68987-1	Tube & Bushing Assy	1
25	69477-1	Dip Stick & Fill Cap Assy	1
26	SC-60-21	Mach. Screw - #10-24 x 1/4" Rd. Hd	2
27	WL-3-20	Lock Washer - #10 Light	2
28	120471	Screen - Air Inlet	1
29	BB-18-33	Ball Bearing - Fafnir #205K	1
30	RR-6-14	Retaining Ring	1
31	WL-4-2	Lock Washer - 3/8" Light	4
32	SC-62-22	Cap Screw - 3/8"-16 x 1-1/4" Hex Hd	4
33	68954-1	Gear - Main Drive (65T) (60 Hz.)	1
34	68954-3	Gear - Main Drive (62T) (50 Hz.)	1
35	109070-21	Key - Hardened	1
36	68951	Pinion - Countershaft (19T)	1
37	BB-7-21	Ball Bearing - Fafnir #207K	1
38	NS-13-43	Full Nut - 5/8"-11 Hex Fin	2
39	72981-2	Stud - Cylinder (4" Lg.)	2
40	69862	Nut - Cylinder	2
41	69431	Pipe - Oil Drain	1
42	WS-21-20	Washer - Nylon	1
43	SC-36-93	Cap Screw - 7/16"-20 x 3/4" Hex Hd	1
44	69863	Wrench - Cylinder Nut	1



GRINDER UNIT (NSF)

ILLUS. PL-17032	PART NO.	NAME OF PART	AMT.
1	89272-18	Stomper - Feed (Plastic)	1
2	101219-1	Feed Pan Assy. (Steel) (Opening in L.H. End for Mach. with R.H. Switch Paneling)	1
3	101219-2	Feed Pan Assy. (SST) (Opening in L.H. End for Mach. with R.H. Switch Paneling)	1
4	101222-1	Feed Pan Assy. (Steel) (Opening in R.H. End for Mach. with L.H. Switch Paneling) (Not Shown)	1
5	101222-2	Feed Pan Assy. (SST) (Opening in R.H. End for Mach. with L.H. Switch Paneling) (Not Shown)	1
6	80748	Meat Deflector Assy	1
7	77680	Ring - Adjusting (Handwheel Type)	1
*8	— — —	Plate	1
*9	— — —	Knife	1
10	110576	Stud - Plate	1
11	111823	Worm Assy. (Incls. item #10)	1
12	105806	Pin - Plate	3
13	101574-1	Cylinder Assy. Unit (Incls. item #12)	1
14	101121	Bowl - Cylinder	1
**15	69456-1	Bracket - Feed Pan Clamp (Steel)	1
**16	69456-2	Bracket - Feed Pan Clamp (SST)	1

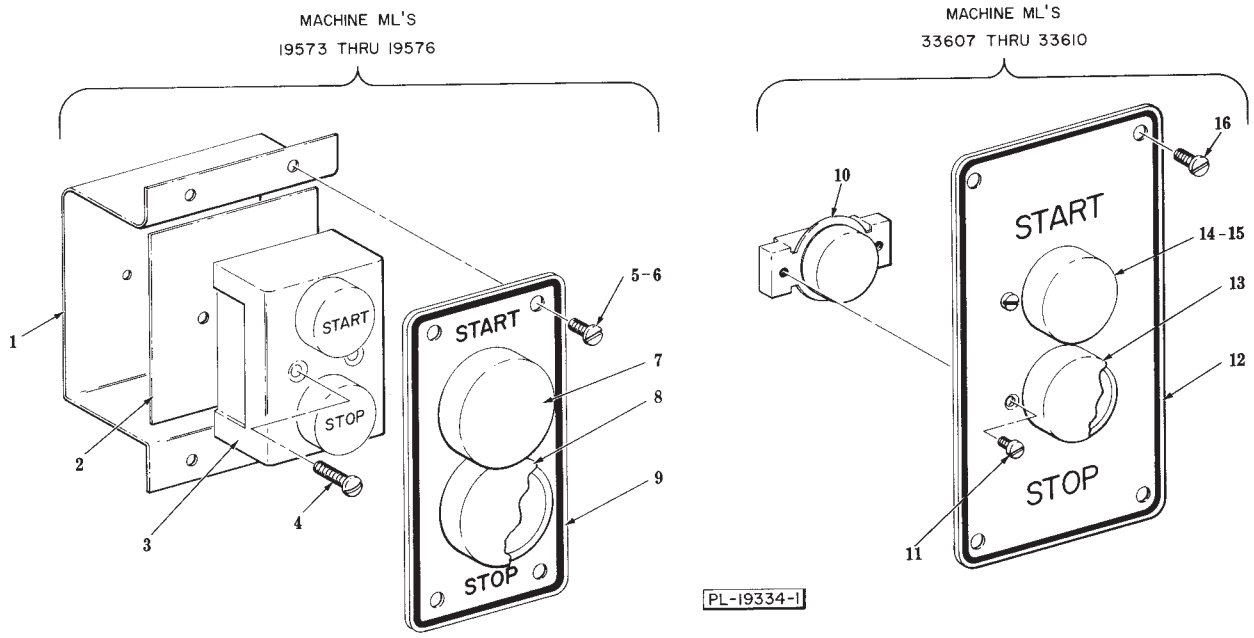
*Sharp, high quality knives and plates should be purchased or rented for this grinder.
**Welded Parts.



CONTROL PANEL UNIT

ILLUS. PL-16117	PART NO.	NAME OF PART	AMT.
1	123245	Control Panel	1
2	123248-2	Starter - Magnetic (Less Elements) (3 Ph.)	1
3	87712-36-2	Starter - Magnetic (Less Elements) (1 Ph.)	1
4	*	Heater Element	AR
5	SD-15-20	Self-Tapping Screw - #10-32 x 3/8" Phil. Pan Hd. "Taptite"	4
6	WL-14-7	Lock Washer - #10 Ext. Shakeproof	4
**7	123449-2	Transformer	1
**8	SD-15-20	Self-Tapping Screw - #10-32 x 3/8" Phil. Pan Hd. "Taptite"	4
**9	WL-14-7	Lock Washer - #10 Ext. Shakeproof	4
**10	78752-2	Clamp - Wiring	1
11	SC-7-68	Mach. Screw - #8-32 x 5/8" Rd. Hd	3
12	WL-3-14	Lock Washer - #8 Light	3
**13	SD-9-17	Self-Tapping Screw - #8-32 x 5/8" Phil. Pan Hd., Type F	2
**14	WL-6-2	Lock Washer - #8 Medium	2
**15	117256	Terminal Block	1

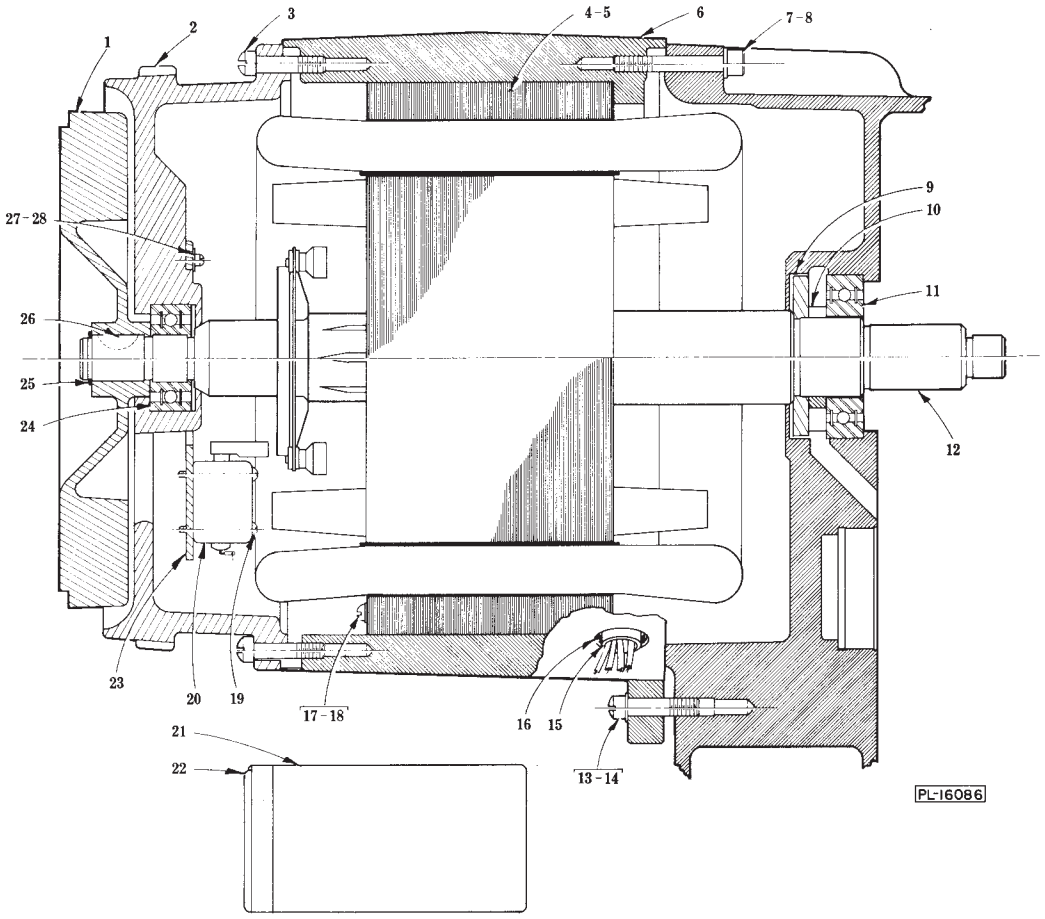
*Give Elec. Spec., Mach. Model & Motor Type.
**Use with voltage above 250.



SWITCH UNIT

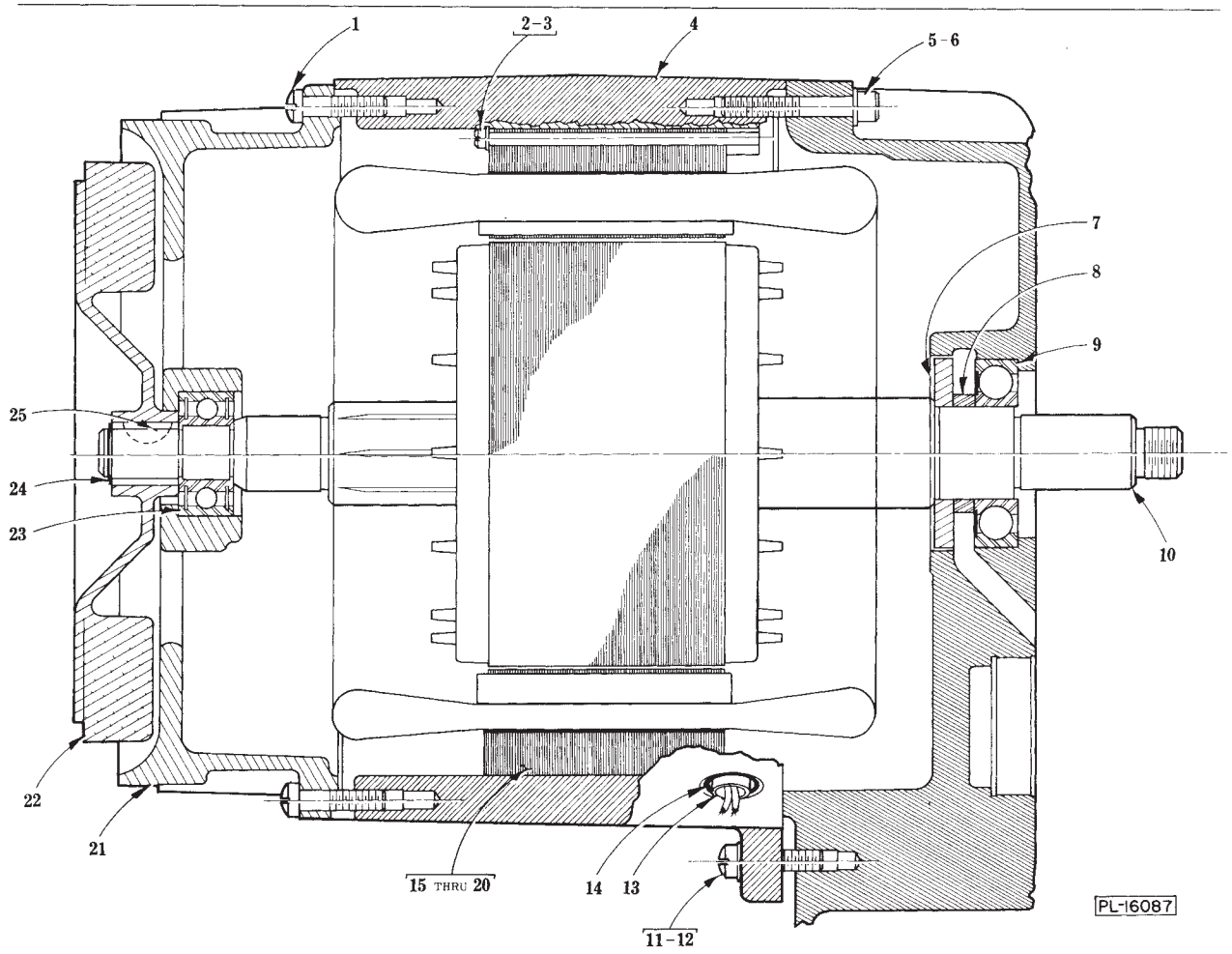
ILLUS. PL-19334-1	PART NO.	NAME OF PART	AMT.
1	68985	Bracket - Push Button Station	1
2	69485	Insulation - Push Button Station	1
*3	— — —	Station - Push Button	1
4	SC-12-74	Mach. Screw - #10-32 x ¾" Fil. Hd	2
5	SC-53-35	Mach. Screw - #8-32 x ⅜" Truss Hd	4
6	65998	Speed Nut - Tinnerman	4
7	68984-1	Cap - Push Button (Black)	1
8	68984-2	Cap - Push Button (Red)	1
*9	— — —	Plate - Push Button	1
10	87711-183-2	Switch - Stop	1
11	SC-13-12	Mach. Screw - #6-32 x ¼" Fl. Hd	4
12	291727	Switch Plate	1
13	102467-2	Cap - Push Button (Red)	1
14	102467-1	Cap - Push Button (Black)	1
15	87711-183-1	Switch - Start	1
16	SC-53-35	Mach. Screw - #8-32 x ⅜" Truss Hd	4

*Items #3 & 9 have been discontinued, order Service Kit 291919 to convert to new style. Use new switch plate as a template to drill holes in old panel.



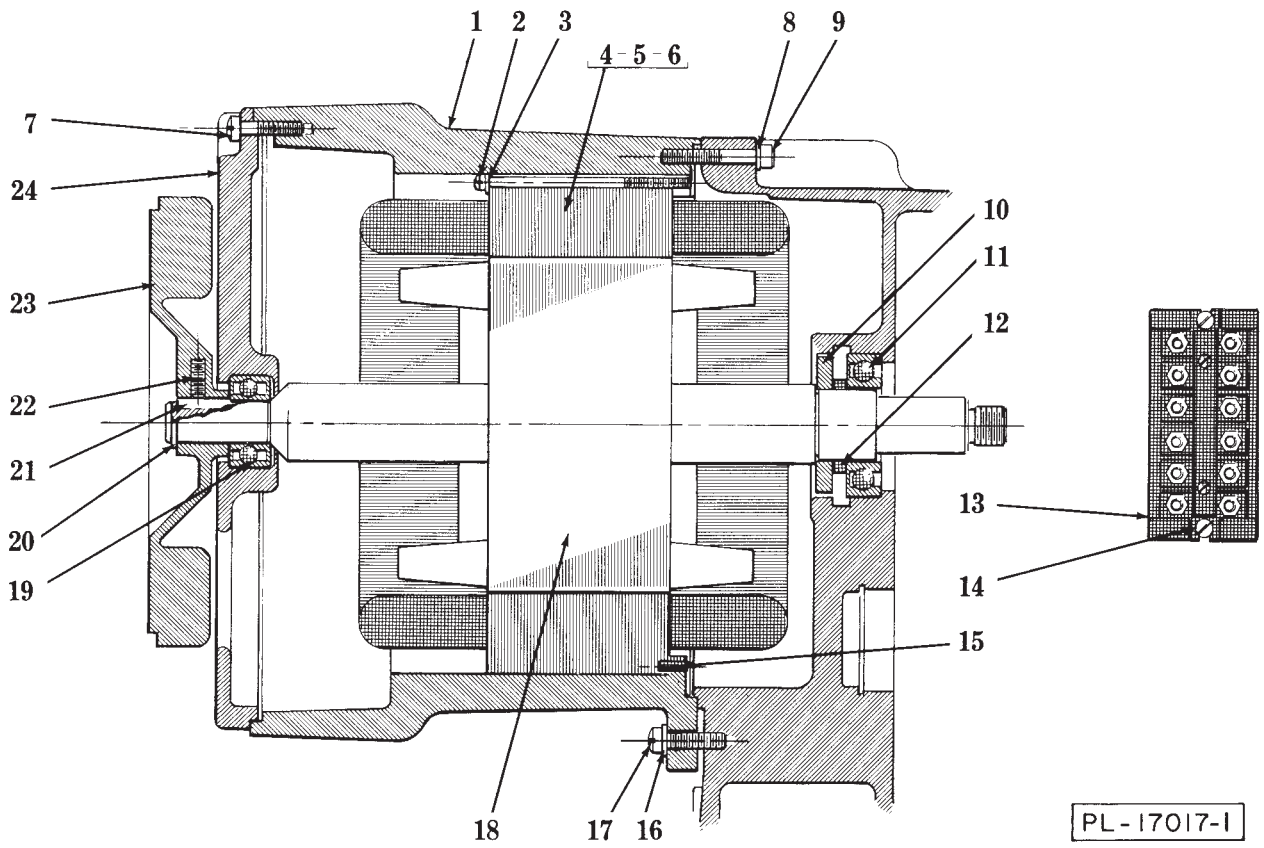
MOTOR UNIT (1 PH.)

ILLUS. PL-16086	PART NO.	NAME OF PART	AMT.
1	— — —	Fan - Ventilating (Discontinued, order 275183 & two SC-47-12)	1
2	119466	Bracket - Bearing	1
3	SC-11-98	Mach. Screw - 5/16"-18 x 1-1/4" Fil. Hd	4
4	65477-133-1	Stator Assy. (200 V., 60 Hz., 1 Ph.)	1
5	65477-133-2	Stator Assy. (230 V., 60 Hz., 1 Ph.)	1
6	69969-1	Field Ring	1
7	SC-40-74	Cap Screw - 5/16"-18 x 2" Soc. Fil. Hd	3
8	WL-3-43	Lock Washer - 5/16" Light	3
9	83715	Deflector - Grease	1
10	68968	Spacer - Bearing	1
11	BB-20-15	Ball Bearing - Fafnir #207KD	1
12	22275-221	Rotor Assy	1
13	WL-3-43	Lock Washer - 5/16" Light	1
14	SC-11-98	Mach. Screw - 5/16"-18 x 1-1/4" Fil. Hd	1
15	69632-1	Sleeve	1
16	6651	Bushing - Insert	1
17	WS-2-15	Washer	8
18	SC-11-56	Mach. Screw - #10-32 x 4-3/4" Fil. Hd	8
19	SC-9-85	Mach. Screw - #6-32 x 1-1/4" Rd. Hd	4
20	117548	Switch - Stationary	1
21	70487-17	Capacitor	2
22	70486-4	End Cap - Capacitor	2
23	119476	Plate - Switch	1
24	BB-16-37	Ball Bearing - Fafnir #W204 PPC 1	1
25	RR-4-6	Retaining Ring	1
26	KW-3-10	Key - Woodruff	1
27	WL-3-14	Lock Washer - #8 Light	3
28	SC-12-49	Mach. Screw - #8-32 x 3/8" Fil. Hd	3



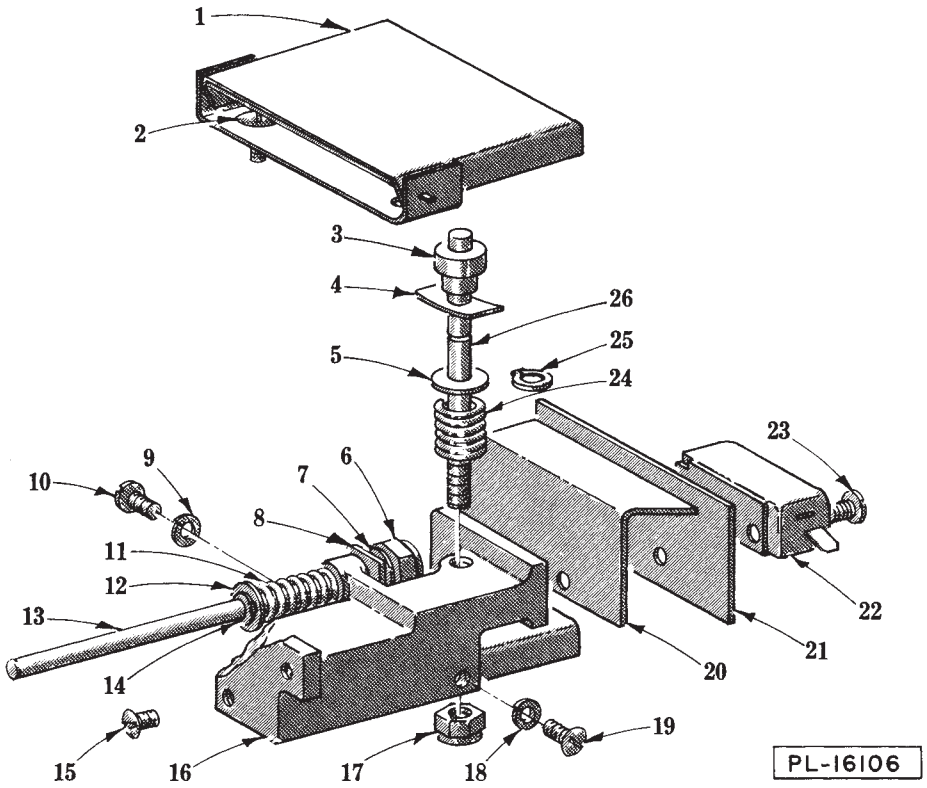
MOTOR UNIT (3 PH. — SINGLE VOLTAGE)

ILLUS. PL-16087	PART NO.	NAME OF PART	AMT.
1	SC-11-98	Mach. Screw - 5/16"-18 x 1-1/4" Fil. Hd	4
2	SC-12-62	Mach. Screw - #10-32 x 4" Fil. Hd	8
3	WS-2-15	Washer	8
4	69969-1	Ring - Field	1
5	SC-40-74	Cap Screw - 5/16"-18 x 2" Soc. Fil. Hd	3
6	WL-3-43	Lock Washer - 5/16" Light	3
7	83715	Deflector - Grease	1
8	68968	Spacer - Bearing	1
9	BB-20-15	Ball Bearing - Fafnir #207KD	1
10	15747-260	Rotor Assy	1
11	WL-3-43	Lock Washer - 5/16" Light	1
12	SC-11-98	Mach. Screw - 5/16"-18 x 1-1/4" Fil. Hd	1
13	69632-1	Sleeve	1
14	6651	Bushing - Insert	1
15	65478-45-1	Stator Assy. (200 V., 60 Hz., 3 Ph.)	1
16	65478-45-2	Stator Assy. (230 V., 60 Hz., 3 Ph.)	1
17	65478-45-3	Stator Assy. (460 V., 60 Hz., 3 Ph.)	1
18	65478-45-4	Stator Assy. (220 V., 50 Hz., 3 Ph.)	1
19	65478-45-5	Stator Assy. (380 V., 50 Hz., 3 Ph.)	1
20	65478-45-6	Stator Assy. (575 V., 60 Hz., 3 Ph.)	1
21	78483	Bracket - Bearing	1
22	64383	Fan - Ventilating	1
23	BB-16-37	Ball Bearing - Fafnir #W204 PPC 1	1
24	RR-4-6	Retaining Ring	1
25	KW-3-10	Key - Woodruff	1



MOTOR UNIT (3 PH. — DUAL VOLTAGE)

ILLUS. PL-17017-1	PART NO.	NAME OF PART	AMT.
1	275156-2	Ring - Field	1
2	SC-12-62	Mach. Screw - #10-32 x 4″ Fil. Hd	4
3	WL-3-20	Lock Washer - #10 Light	4
4	65478-162-1	Stator Assy. (200/400 V., 60 Hz., 3 Ph.)	1
5	65478-162-2	Stator Assy. (230/460 V., 60 Hz., 3 Ph.)	1
6	65478-163-1	Stator Assy. (230/400 V., 50 Hz., 3 Ph.)	1
7	SC-11-98	Mach. Screw - 5/16″-18 x 1-1/4″ Fil. Hd	3
8	WL-3-43	Lock Washer - 5/16″ Light	3
9	SC-40-74	Cap Screw - 5/16″-18 x 2″ Soc. Fil. Hd	3
10	83715	Deflector - Grease	1
11	BB-20-15	Ball Bearing - Fafnir #207KD	1
12	68968	Spacer - Bearing	1
13	275192	Block - Terminal	1
14	SC-12-36	Mach. Screw - #10-24 x 3/4″ Fil. Hd	2
15	RP-6-3	Roll Pin - 1/8″ x 3/4″ Lg	4
16	WL-3-43	Lock Washer - 5/16″ Light	1
17	SC-11-98	Mach. Screw - 5/16″-18 x 1-1/4″ Fil. Hd	1
18	15747-302	Rotor Assy	1
19	BB-16-37	Ball Bearing - Fafnir #W204PPCI	1
20	RR-4-6	Retaining Ring	1
21	109070-2	Key - Hardened	1
22	SC-47-12	Set Screw - 1/4″-20 x 3/8″ Soc. Hdls., Kn. Cup Pt	2
23	275183	Fan - Ventilating	1
24	275151	Bracket - Bearing	1



SAFETY SWITCH UNIT

ILLUS. PL-16106	PART NO.	NAME OF PART	AMT.
1	68966-2	Pan Rest Assy	1
2	SC-53-5	Mach. Screw - #10-24 x 3/8° Truss Hd	2
3	69574	Bushing - Safety Switch Plunger	1
4	69575	Speed Nut (Holds Bushing to Top)	1
5	WS-3-49	Washer	1
6	NS-31-19	Stop Nut - 1/4"-20 "Elastic"	1
7	WS-17-10	Washer	1
8	69406	Bracket - Switch Actuating	1
9	WL-6-6	Lock Washer - #10 Light	1
10	SC-21-23	Mach. Screw - #10-24 x 1/2" Rd. Hd	1
11	7433-2	Spring	1
12	WS-17-9	Washer	1
13	70575-3	Plunger - Cylinder	1
14	RR-6-23	Retaining Ring	1
15	SC-53-5	Mach. Screw - #10-24 x 3/8" Truss Hd	3
16	68986	Bracket - Safety Switch	1
17	NS-31-19	Stop Nut - 1/4"-20 "Elastic"	1
18	WL-6-6	Lock Washer - #10 Light	1
19	SC-21-23	Mach. Screw - #10-24 x 1/2" Rd. Hd	1
20	69483	Shield - Switch Drip	1
21	69679	Barrier - Safety Switch	1
22	87711-72-1	Switch - Safety	1
23	SC-60-39	Mach. Screw - #6-32 x 7/8" Rd. Hd	2
24	7433-2	Spring	1
25	RR-6-22	Retaining Ring	1
26	70574-1	Plunger - Pan	1
	69407-4	Safety Switch Assy. (Incls. items #5 thru 14 & 16 thru 26)	1