



# REPAIR PARTS CATALOG FOR SUNNEN® POWER STROKED PRECISION HONING MACHINE

**MODEL:**  
**MBC-1805**

THIS CATALOG COVERS THE  
ABOVE MODEL BEGINNING  
WITH SERIAL NO. 96110.



"SUNNEN AND THE SUNNEN LOGO ARE REGISTERED TRADEMARKS OF SUNNEN® PRODUCTS COMPANY."



**SUNNEN® PRODUCTS COMPANY**  
**7910 MANCHESTER AVENUE • ST. LOUIS, MO 63143, U.S.A. • PHONE: 314-781-2100**

**X-MBC-5046**

Like any machinery, this equipment may be dangerous if used improperly. Be sure to read and follow instructions for operation of equipment.

## INTRODUCTION

Illustrations show all major components in exploded detail. Item numbers on each illustration are keyed to the corresponding parts list, providing a descriptive identification of each part.

The parts lists include assemblies as well as detail parts. An item listed without a part number can be obtained as a component of the complete assembly of which it is a part.

Standard hardware items are listed with complete descriptions, such as Item 29 below. **These may be purchased at your local hardware store**, but it is important to replace an item with one having the same dimensions as the original. In some places brand names and part numbers are shown. These may change depending upon availability.

**Sunnen® Products Company reserves the right to make changes, without notice, to materials, specifications, colors, designs and accessories included with units.**

## HOW TO ORDER

When ordering replacement parts be sure to include the following information to ensure prompt shipment of correct parts:

1. The part number and description of each part desired, obtained from this parts catalog.
2. The quantity of each part desired.
3. The voltage, frequency and phase, when ordering electrical parts.
4. The model and serial number of the machine, obtained from the name plate, where there is any question concerning a part.

## HOW TO USE THIS PARTS LIST

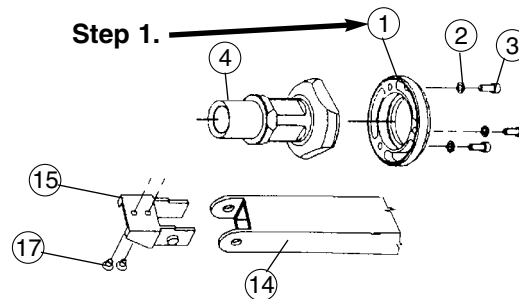
**Step 1.** – Locate desired part on illustration. Note item number.

**Step 2.** – Locate item number in the parts list.

**Step 3.** – If the item has a part number listed, order by part number and the description. A part number in light face type indicates that it is a component of the last preceding part number in bold face type.

**Step 4.** – If no number is listed, order the part number of the unit of which the desired part is a component.  
**ORDER ONLY BY PART NUMBER AND DESCRIPTION – NOT by item number.**

NOTE: In this manual, parts may be followed by “(For CE Machines)” or “(For Non-CE Machines)” to denote domestic machines from exported machines. The CE version is constructed to meet the requirements of the European market, and is available to any customer.



	ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
<b>Step 2.</b>	<b>1</b>	<b>MVH-4499A</b>	<b>1</b>	<b>....Spindle Cap includes</b>
	2	PHSM-405	3	.....Screw (M6 x 1 x 16 SHCS)
<b>Step 3.</b>	3	PHW-354	3	.....Washer (M6)
	4	<b>MVH-4422</b>	<b>1</b>	<b>....Inner Spindle Nose</b>
	<b>14</b>	<b>PEM-870A</b>	<b>1</b>	<b>....Cable Carrier includes</b>
	15	PEM-871	1	.....Cable Carrier Bracket
<b>Step 4.</b>	16	PEM-872	1	.....Cable Carrier Bracket
	17	<b>PHSM-600</b>	<b>1</b>	<b>....Screw (M3 x 0,5 x 5mm FHCS)</b>

## GENERAL INFORMATION

The Sunnen® equipment has been designed and engineered for a wide variety of parts within the capacity and limitation of the equipment. With proper care and maintenance this equipment will give years of service.

**READ THE FOLLOWING INSTRUCTIONS CAREFULLY AND THOROUGHLY BEFORE UNPACKING, INSPECTING, OR INSTALLING THIS EQUIPMENT.**

**IMPORTANT:** Read any supplemental instructions BEFORE installing this equipment. These supplemental instructions give you important information to assist you with the planning and installation of your SUNNEN® equipment.

Sunnen Technical Service Department is available to provide telephone assistance for installation, programming, & troubleshooting of your Sunnen equipment. All support is available during normal business hours, 8:00 AM to 4:30 PM Central Time.

Review all literature provided with your Sunnen equipment. This literature provides valuable information for proper installation, operation, and maintenance of your equipment. Troubleshooting information can also be found within the Instructions. If you cannot find what you need, call for technical support.

Where applicable, programming information for your Sunnen equipment is also included. Most answers can be found in the literature packaged with your equipment.

**Help us help you. When ordering parts, requesting information, or technical assistance about your equipment, please have the following information available:**

- Have ALL MANUALS on hand. The Customer Services Representative or Technician will refer to it.
- Have Model Number and Serial Number printed on your equipment Specification Nameplate.
- Where Applicable: Have Drive model and all nameplate data. Motor type, brand, and all nameplate data.

**For Troubleshooting, additional information may be required:**

- Power distribution information (type - delta, wye, power factor correction; other major switching devices used, voltage fluctuations)
- Installation Wiring (separation of power & control wire; wire type/class used, distance between drive and motor, grounding).
- Use of any optional devices/equipment between the Drive & motor (output chokes, etc.).

**For fast service on your orders call:**

Sunnen Automotive Customer Service toll free at: 1-800-772-2878

Sunnen Industrial Customer Service toll free at: 1-800-325-3670

Customers outside the USA, contact your local authorized Sunnen Distributor.

Additional information available at: <http://www.sunnen.com> or e-mail: [sunnen@sunnen.com](mailto:sunnen@sunnen.com)

**NOTE:** Sunnen reserves the right to change or revise specifications and product design in connection with any feature of our products contained herein. Such changes do not entitle the buyer to corresponding changes, improvements, additions, or replacements for equipment, supplies or accessories previously sold. Information contained herein is considered to be accurate based on available information at the time of printing. Should any discrepancy of information arise, Sunnen recommends that user verify the discrepancy with Sunnen before proceeding.

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## ESD PREVENTION REVIEW

Let's review the basics of a sound static control system and its effective implementation. First, in the three step plan:

1. Always ground yourself when handling sensitive components or assemblies.
2. Always use a conductive or shielded container during storage or transportation. These materials create a Faraday cage which will isolate the contents from static charges.
3. Open ESD safe containers only at a static safe work station.

At the static safe work station, follow these procedures before beginning any work:

- A. Put on your wrist strap or foot grounding devices.
- B. Check all grounding cords to make sure they are properly connected to ground, ensuring the effective dissipation of static charges.
- C. Make sure that your work surface is clean and clear of unnecessary materials, particularly common plastics.
- D. Anti-static bubble wrap has been included for use at the machine when an ESD safe workstation is not available.

You are now properly grounded and ready to begin work. Following these few simple rules and using a little common sense will go a long way toward helping you and your company in the battle against the hazards of static electricity. When you are working with ESD sensitive devices, make sure you:

**GROUND  
ISOLATE  
NEUTRALIZE**

## SUNNEN® LIMITED PRODUCT WARRANTY

SUNNEN® Products Company and its subsidiaries (SPC) warrant that all new SPC honing machines, gaging equipment, tooling, and related equipment will be free of defects in material and/or workmanship for a period of one year from the date of original shipment from SPC.

Upon prompt notification of a defect during the one-year period, SPC will repair, replace, or refund the purchase price, with respect to parts that prove to be defective (as defined above). Any equipment or tooling which is found to be defective from improper use will be returned at the customer's cost or repaired (if possible) at customer's request. Customer shall be charged current rates for all such repair.

Prior to returning any SPC product, an authorization (RMA#) and shipping instructions must be obtained from the Customer Service Department or items sent to SPC will be returned to the customer.

**Warranty Limitations and Exclusions** This Warranty does not apply to the following:

- Normal maintenance items subject to wear and tear: (belts, fuses, filters, etc).
- Damages resulting from but not limited to:
  - › Shipment to the customer (for items delivered to customer or customer's agent F.O.B., Shipping Point)
  - › Incorrect installation including improper lifting, dropping and/or placement
  - › Incorrect electric power (beyond +/- 10% of rated voltage) including intermittent or random voltage spikes or drops
  - › Incorrect air supply volume and/or pressure and/or contaminated air supply
  - › Electromagnetic or radio frequency interference from surrounding equipment (EMI, RFI)
  - › Storm, lightning, flood or fire damage
  - › Failure to perform regular maintenance as outlined in SPC manuals
  - › Improper machine setup or operation causing a crash to occur
  - › Misapplication of the equipment
  - › Use of non-SPC machines, tooling, abrasive, fixturing, coolant, repair parts, or filtration
  - › Incorrect software installation and/or misuse
  - › Non-authorized customer installed electronics and/or software
  - › Customer modifications to SPC software

THE LIMITED WARRANTY DESCRIBED HEREIN IS EXPRESSLY IN LIEU OF ALL ANY OTHER WARRANTIES. SPC MAKES NO REPRESENTATION OR WARRANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. SPC IS NOT RESPONSIBLE FOR THE IMPROPER USE OF ANY OF ITS PRODUCTS. SPC SHALL NOT BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO: LOSS OF USE, REVENUE, OR PROFIT. SPC ASSUMES NO LIABILITY FOR PURCHASED ITEMS PRODUCED BY OTHER MANUFACTURERS WHO EXTEND SEPARATE WARRANTIES. REGARDLESS OF ANY RIGHTS AFFORDED BY LAW TO BUYER, SPC'S LIABILITY, IF ANY, FOR ANY AND ALL CLAIMS FOR LOSS OR DAMAGES WITH RESPECT TO THE PRODUCTS, AND BUYER'S SOLE AND EXCLUSIVE REMEDY THEREFORE, SHALL IN ALL EVENTS BE LIMITED IN AMOUNT TO THE PURCHASE PRICE OF THAT PORTION OF THE PRODUCTS WITH RESPECT TO WHICH A VALID CLAIM IS MADE.

### Shipping Damages

Except in the case of F.O.B., Buyer's destination shipments, SPC will not be liable for any settlement claims for obvious and/or concealed shipping damages. The customer bears the responsibility to unpack all shipments immediately and inspect for damage. When obvious and/or concealed damage is found, the customer must immediately notify the carrier's agent to make an inspection and file a claim. The customer should retain the shipping container and packing material.

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Any alteration or reverse engineering of the software is expressly forbidden and is in violation of this agreement.

SPC reserves the right to update the software covered by this agreement at any time without prior notice and any such updates are covered by this agreement.

# **SAFETY INSTRUCTIONS**

## **READ FIRST**

This machine, like any equipment, may be dangerous if used improperly. Please read all warnings and instructions before attempting to use this machine.

Always disconnect power at main enclosure before servicing machine.<sup>1</sup>

Always wear eye protection when operating this machine.

NEVER open or remove any machine cover or protective guard with power "ON."  
Always disconnect power at main enclosure before servicing this equipment.<sup>1</sup>

DO NOT attempt any repair or maintenance procedure beyond those described in this book. Contact your Sunnen® Field Service Engineer or Technical Services Representative for repairs not covered in these instructions.

Due to the wide variety of machine configurations, all possibilities cannot be described in these instructions. Instructions for safe use and maintenance of optional equipment ordered through Sunnen, will be provided through separate documentation and/or training provided by your Sunnen Field Service Engineer or Technical Services Representative.

DO NOT attempt to defeat any safety device on this machine or on any of the optional equipment.

If specially built automation components are added to this system, be sure that safety is not compromised. If necessary, obtain special enlarged work area safety system from Sunnen Products Co.

 Indicates CE version ONLY.

<sup>1</sup> DO NOT touch electrical components until main input power has been turned off and *CHARGE* lamps are extinguished. WARNING: The capacitors are still charged and can be quite dangerous.

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# SECTION I - HONING MACHINE HEAD

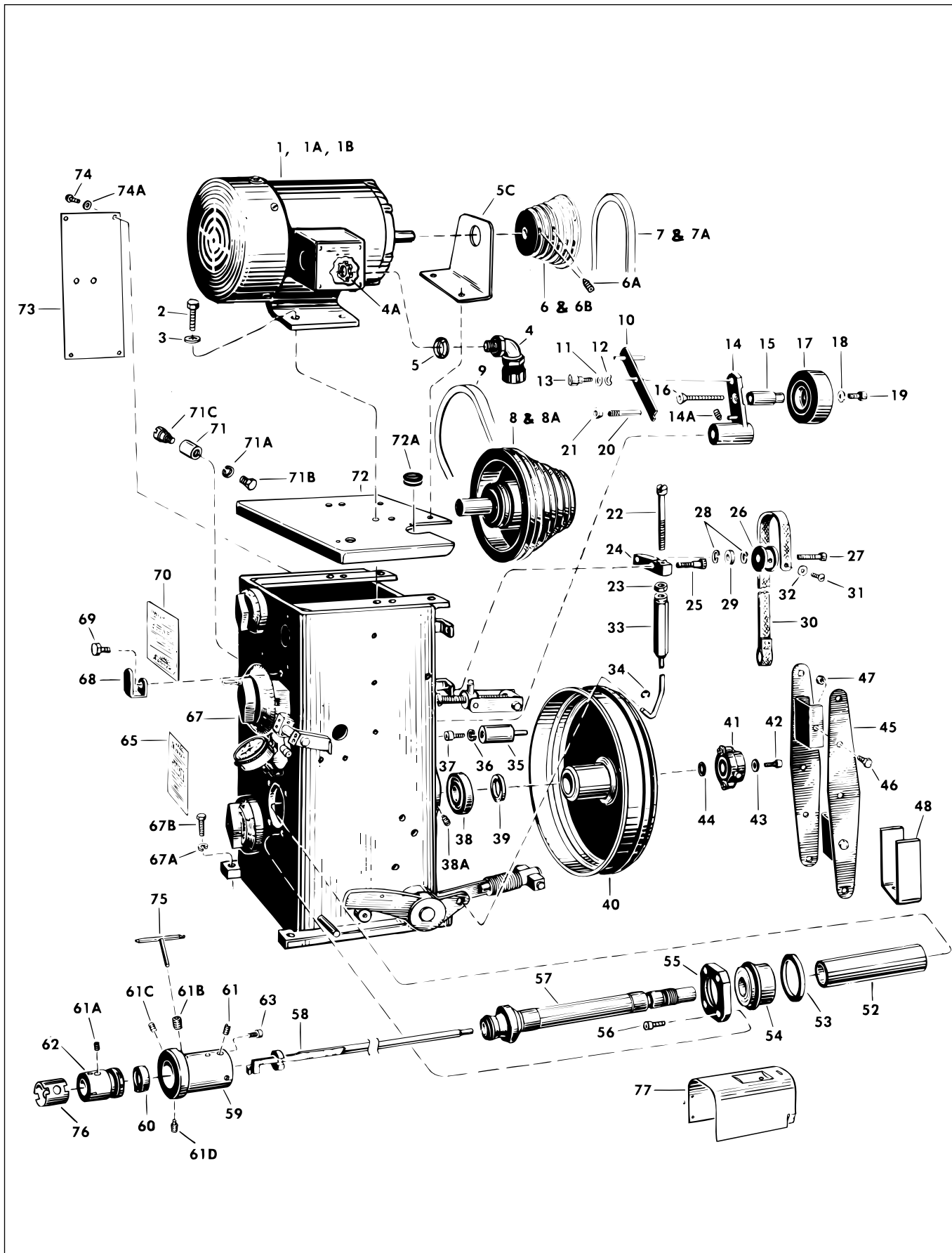


FIGURE A - HONING MACHINE HEAD & MOTOR ASSEMBLY



PARTS LIST COVERING FIGURE "A"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>PMO-580A</b>	1	....*Motor (1HP, 208/230/460V, 60Hz, 3Ph, 1745 RPM, 7/8 Dia. Shaft)
1	<b>PMO-579A</b>	1	....*Motor (1HP, 380/400V, 50Hz, 3Ph, 1450 RPM, 7/8 Dia. Shaft)
1	<b>PMO-580H</b>	1	....*Motor (1HP, 220/440V, 50Hz, 3Ph, 1450 RPM, 7/8 Dia. Shaft)
2	<b>KN-567</b>	4	....Screw (5/16-18 x 1 Hex Hd. Cap)
3	<b>KN-568</b>	4	....Washer (5/16 Plain)
4	<b>PEC-103</b>	1	....Connector <i>includes</i> 4A and 5
5C	<b>MBB-2606A</b>	1	....Guard
6	<b>MBB-1826A</b>	1	....Motor Pulley (60 Hz Machines) <i>with</i>
6A	LBN-340	2	.....Set Screw (1/4-20 x 3/8 Soc. Cup Pt.)
6B	<b>MBB-1846A</b>	1	....Motor Pulley (50 Hz Machines) <i>with</i>
6A	LBN-340	2	.....Set Screw (1/4-20 x 3/8 Soc. Cup Pt.)
7	<b>MBB-1830A</b>	1	...."V" Belt (60 Hz Machines)
7A	<b>MBB-1833A</b>	1	...."V" Belt (50 Hz Machines)
8	<b>MBB-1815A</b>	1	....Countershaft Pulley (60 Hz Machines) <i>with</i> Bearing
8A	<b>MBB-1835A</b>	1	....Countershaft Pulley (50 Hz Machines) <i>with</i> Bearing
9	<b>MBB-1840A</b>	1	...."V" Belt
	<b>MBB-1850A</b>	1	....Idler Assembly <i>includes</i>
10	MBB-1870A	1	.....Idler Release Assembly <i>with</i>
11	UN-18	1	.....Washer (5/16 Fiber)
12	PHW-120	1	.....Spring Washer
13	PHS-686	1	.....Shoulder Screw (5/16 x 3/8 with 1/4-20 x 7/16 Thd.)
14	MBB-1855A	1	.....Idler Arm <i>with</i>
14A	KN-523	2	.....Set Screw (5/16-18 x 1/2 Soc. Plain Cup Pt.)
15	MBB-1867A	1	.....Shoulder Bushing <i>with</i>
16	PHS-637	1	.....Screw (5/16-18 x 1-1/4 Soc. Flat Hd. Cap)
17	MBB-1860A	1	.....Idler Pulley Assembly <i>with</i>
18	KN-568	1	.....Washer (5/16 Plain)
19	LBB-891	1	.....Screw (5/16-18 x 3/4 Soc. Hd. Cap)
N/S	PHW-119	1	.....Washer (5/16 Lock)
20	<b>MBB-1874A</b>	1	....Stud <i>with</i>
21	DL-36	1	.....Nut (3/8-16 Hex)
22	<b>MBB-968A</b>	1	....Brake Adjusting Screw <i>with</i>
23	LBN-431	1	.....Nut (1/4-20 Hex)
24	<b>MBB-978A</b>	1	....Brake Lever <i>with</i>
25	MBB-977	1	.....Shoulder Screw (5/16 x 5/8 with 1/4-20 x 7/16 Thd.)
N/S	PHN-121	1	.....Locknut (1/4-20 Hex)
26	<b>MBB-973C</b>	1	....Brake Cam <i>with</i>
27	PHS-630	1	.....Screw (5/16-18 x 1-1/4 Soc. Hd. Cap)
28	MBB-972	2	.....Washer (5/16 Serrated Lock)
29	MBB-1821	1	.....Spacer
30	<b>MBB-1823A</b>	1	....Brake Strap <i>with</i>
31	MSN-277	1	.....Screw (10-32 x 3/8 Rd. Hd.)
32	MBH-396	1	.....Washer (Bent)
33	<b>MBB-985A</b>	1	....Brake Rod Assembly <i>with</i>
34	MBB-976A	1	.....Retaining Ring
35	<b>MBB-2441A</b>	1	....Brake Anchor <i>with</i>
36	MAN-1223	1	.....Washer (3/8 Lock)
37	PHS-605	1	.....Screw (3/8-16 x 1 Soc Hd. Cap)
38	<b>PBR-57A</b>	1	....Bearing
38A	<b>PHS-128</b>	1	....Set Screw (10-32 x 1/4 Soc. Nylon Tip)

N/S indicates Not Shown

\*Specify brand name of motor, voltage and hertz if other than as listed.

(Parts continued on next page)

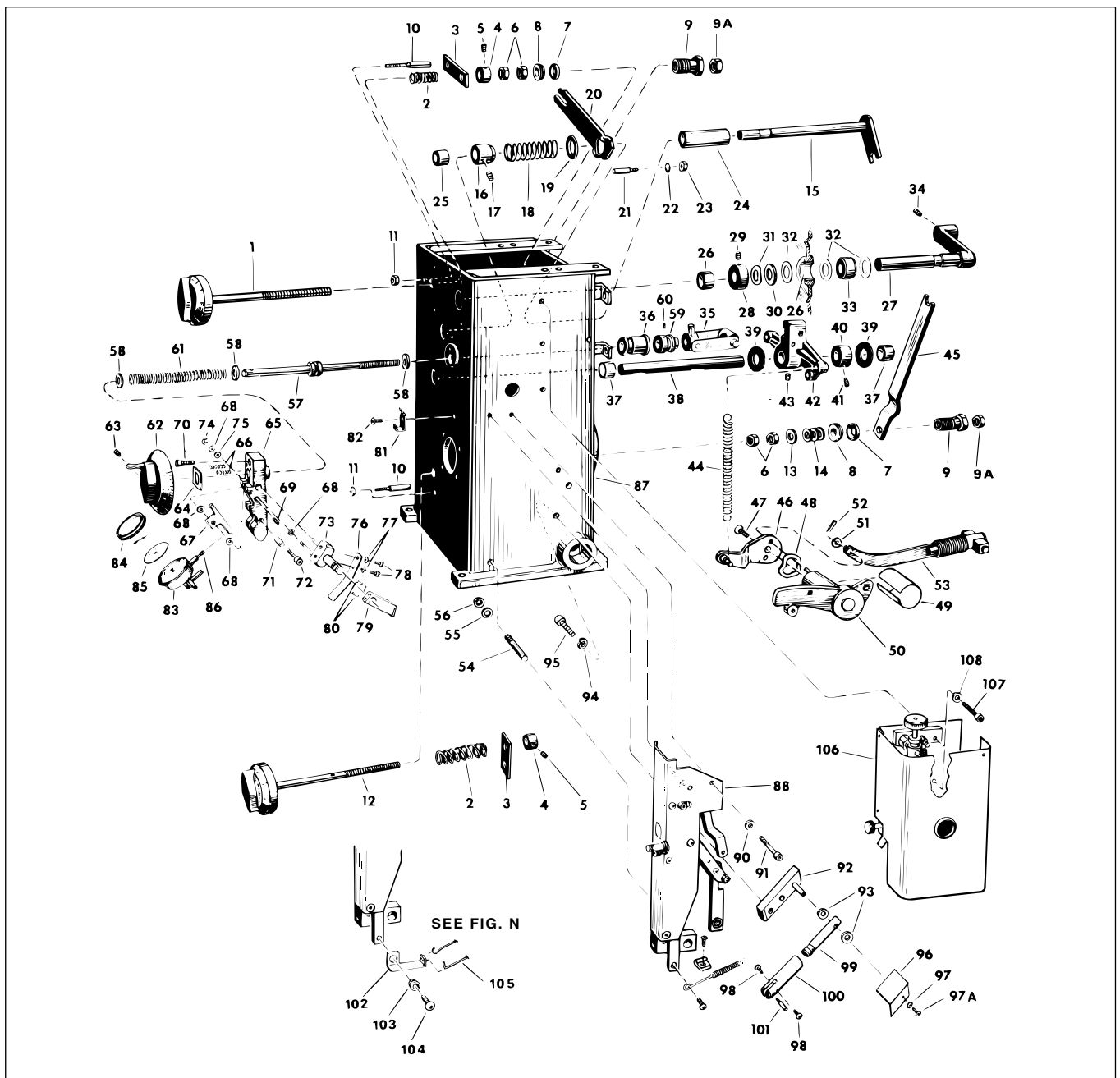
# SECTION I

## HONING MACHINE HEAD

### PARTS LIST COVERING FIGURE "A" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
39	<b>MBB-2529A</b>	1	....Spacer
40	<b>MBB-1807A</b>	1	....Spindle Pulley
41	<b>MBB-365A</b>	1	....Thrust Assembly <i>with</i>
42	MBB-646	1	.....Screw (3/8-16 x 3/4 Soc. Hd. Cap)
43	MBB-647	1	.....Washer (3/8)
44	MBB-359A	1	.....Washer (.555 Special)
45	<b>LBN-385A</b>	2	....Feed Arm Assembly (Pkg. of 2) <i>with</i>
46	LBN-386	4	.....Screw (5/16-18 x 1/2 Hex Hd. Cap)
47	KN-172	4	.....Nut (5/16-18 Hex)
48	<b>MB-3089A</b>	1	....Feed Arm Stabilizer <i>with</i> Attaching Hardware
52	<b>MBB-3491A</b>	1	....Bearing Spacer
53	<b>MBB-2498A</b>	1	....Bearing Sleeve
54	<b>PBR-147A</b>	1	....Bearing <i>with</i> Snap Ring
55	<b>MBB-2497A</b>	1	....Bearing Retainer <i>with</i>
56	PHS-582	4	.....Screw (1/4-20 x 3/4 Soc. Hd. Cap)
57	<b>MBB-3495A</b>	1	....Spindle
58	<b>MBH-649A</b>	1	....Feed Rod Assembly <i>with</i>
42	MBB-646	1	.....Screw (3/8-16 x 3/4 Soc. Hd. Cap)
43	MBB-647	1	.....Washer (3/8 Special)
44	MBB-359A	1	.....Washer (.555 Special)
- -	<b>MBC-345A</b>	1	....Adjustable Spindle Nose Complete <i>includes</i>
59	MBC-346A	1	.....Spindle Nose Shell
60	MBB-642A	1	.....Drive Plate <i>with</i>
61A	MBB-332A	1	.....Set Screw (1/4-20 x 3/8 Soc. Full Dog Pt.)
61	MBC-353A	4	.....Set Screw (5/16-24 x 5/8 Soc. Flat Pt.) (Pkg. of 4)
61B	PHS-165A	1	.....Set Screw (1/2-20 x 1/2 Soc. Flat Pt.)
61C	MBC-354A	4	.....Set Screw (5/16-40 x .480 Soc. Ground Flat Pt.) (Pkg. of 4)
61D	PHS-164A	1	.....Set Screw (1/4-20 x 1/2 Soc. Full Dog Pt. / Nylok)
62	MBC-347A	1	.....Adjustable Nose
63	AG-128A	2	.....Screw (1/4-20 x 3/4 Soc. Hd. Cap) (Pkg. of 2)
65	<b>PNP-329A</b>	1	....Heavy Pressure Dial Overlay
67	<b>MBB-2320</b>	1	....Housing
67A	<b>MAN-1223</b>	4	....Washer (3/8 Plain)
67B	<b>KN-416</b>	4	....Screw (3/8-16 x 1-1/4 Hex Hd. Cap)
68	<b>MBB-2563A</b>	1	....Dial Pointer <i>with</i>
69	MAN-612	1	.....Screw (1/4-20 x 3/8 Hex Hd. Cap)
70	<b>PNP-328A</b>	1	....Feed Dial Overlay
71	<b>PHM-306A</b>	1	....Belt Cover Latch Pin <i>with</i>
71A	PHW-119	1	.....Washer (5/16 Lock)
71B	KN-567	1	.....Screw (5/16-18 x 3/4 Hex Hd. Cap)
71C	PHS-775	1	.....Screw (5/16-18 Lock)
72	<b>KKN-943A</b>	1	....Top Cover
72A	<b>PHM-728A</b>	1	....Grommet
73	<b>MBB-2528A</b>	1	....Cover <i>with</i>
74	PHS-506	4	.....Screw (10-32 x 1/4 Button Hd. Cap)
74A	LBA-451	4	.....Washer
75	<b>LBN-462A</b>	1	....Mandrel Wrench
76	<b>LN-570A</b>	1	....Concentric Sleeve - <i>Optional</i> (Not Supplied with Machine)
77	<b>MBC-356A</b>	1	....Spindle Nose Cover

N/S indicates Not Shown



**FIGURE B - HONING MACHINE HEAD ASSEMBLY**

**PARTS LIST COVERING FIGURE "B"**

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>MBB-2485A</b>	1	....Pressure Dial Assembly, Upper <i>with</i>
2	EL-11	1	.....Spring
3	LBA-437	1	.....Plate
4	LBN-450C	1	.....Set Collar <i>with</i>
5	LBN-369	1	.....Set Screw (1/4-20 x 1/4 Soc. Cup Pt.)
6	LBA-150	2	.....Nut (3/8-24 Hex)
7	LBA-445A	1	.....Spherical Socket <i>with</i>
8	MB-908	1	.....Spherical Washer
9	LBA-456A	1	.....Thread Nut <i>with</i>

N/S indicates Not Shown

(Parts continued on next page)

# SECTION I

## HONING MACHINE HEAD

### PARTS LIST COVERING FIGURE "B" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
9A	PHN-147	1	.....Jam Nut (3/8-24 Hex)
10	LBA-438C	1	.....Pin <i>with</i>
11	MSA-63	1	.....Nut (10-32 Hex)
12	<b>MBB-2475A</b>	1	<b>....Pressure Dial Assembly, Lower</b> <i>with</i>
2	EL-11	1	.....Spring
3	LBA-437	1	.....Plate
4	LBN-450C	1	.....Set Collar <i>with</i>
5	LBN-369	1	.....Set Screw (1/4-20 x 1/4 Soc. Cup Pt.)
6	LBA-150	2	.....Nut (3/8-24 Hex)
13	MSA-151	1	.....Washer (3/8 Hardened)
14	LBA-453A	1	.....Spring
7	LBA-445A	1	.....Spherical Socket <i>with</i>
8	MB-908	1	.....Spherical Washer
9	LBA-456A	1	.....Thread Nut <i>with</i>
9A	PHN-147	1	.....Jam Nut (3/8-24 Hex)
10	LBA-438C	1	.....Pin <i>with</i>
11	MSA-63	1	.....Nut (10-32 Hex)
15	<b>MBB-2525A</b>	1	<b>....Pressure Rod Assembly</b> <i>with</i>
16	MBB-938	1	.....Spring Collar
17	MSN-345	1	.....Set Screw (5/16-18 x 5/16 Soc. Cup Pt.)
18	MBB-946A	1	.....Spring <i>with</i>
19	MBB-939	1	.....Washer (Special)
20	<b>MBB-947C</b>	1	<b>....Lever</b> <i>with</i>
21	MBB-2487A	1	.....Lever Pivot <i>with</i>
22	PHW-118	1	.....Washer (1/4 Lock)
23	LBN-431	1	.....Nut (1/4-20 Hex)
24	<b>MBB-885A</b>	1	<b>....Spring Support Assembly</b>
25	<b>PBR-54A</b>	1	<b>....Bearing</b>
26	<b>PBR-34A</b>	2	<b>....Bearing</b> (Pkg. of 2)
27	<b>MBB-2920A</b>	1	<b>....Arm &amp; Shaft Assembly</b> <i>with</i>
28	MBB-866A	1	.....Set Collar <i>with</i>
29	PHS-106	1	.....Set Screw (1/4-28 x 5/16 Soc. Cup Pt.)
30	MBB-858	1	.....Washer (Special)
31	MBB-859	1	.....Spring Washer
32	MBB-867A	3	.....Thrust Bearing, Nylon (Pkg. of 3)
33	MBB-1897A	1	.....Spacer
34	MBB-312	1	.....Set Screw (3/8-16 x 1/2 Soc. Cup Pt.)
35	<b>LBA-381A</b>	1	<b>....Adjusting Nut Assembly</b>
36	<b>LBA-367C</b>	1	<b>....Sleeve</b>
37	<b>PBR-53A</b>	2	<b>....Bearing</b> (Pkg. of 2)
38	<b>MBB-1859A</b>	1	<b>....Idler Shaft</b>
39	<b>MBB-1858A</b>	2	<b>....Thrust Bearing</b> (Pkg. of 1)
40	<b>LBN-337A</b>	1	<b>....Set Collar</b> <i>with</i>
41	KN-456	1	.....Set Screw (1/4-20 x 3/8 Soc. Cup Pt.)
42	<b>MBB-2912A</b>	1	<b>....Idler Tension Arm</b> <i>with</i>
43	LBN-485	1	.....Set Screw (3/8-16 x 5/8 Soc. Cup Pt.)
44	<b>PSP-303A</b>	1	<b>....Spring</b>
45	<b>LBA-446A</b>	1	<b>....Lever</b>
46	<b>MBB-2915A</b>	1	<b>....Crank Arm Lever</b> <i>with</i>
47	PHS-612	1	.....Screw (1/4-28 x 3/4 Soc. Flat Hd. Cap)
48	PHW-145A	1	.....Washer (Spring)
49	<b>MBB-2464A</b>	1	<b>....Bearing Insert</b>
50	<b>MBB-2460A</b>	1	<b>....Stub Crank Arm Assembly</b> <i>with</i>
51	CK-3187	1	.....Washer (1/4 Plain)
52	LBN-408	1	.....Cotter Pin (1/16 x 1/2 Long)
53	<b>LBA-395A</b>	1	<b>....Feed Arm Link Assembly</b>
54	<b>LBN-406A</b>	1	<b>....Stop Pin</b> <i>with</i>

N/S indicates Not Shown

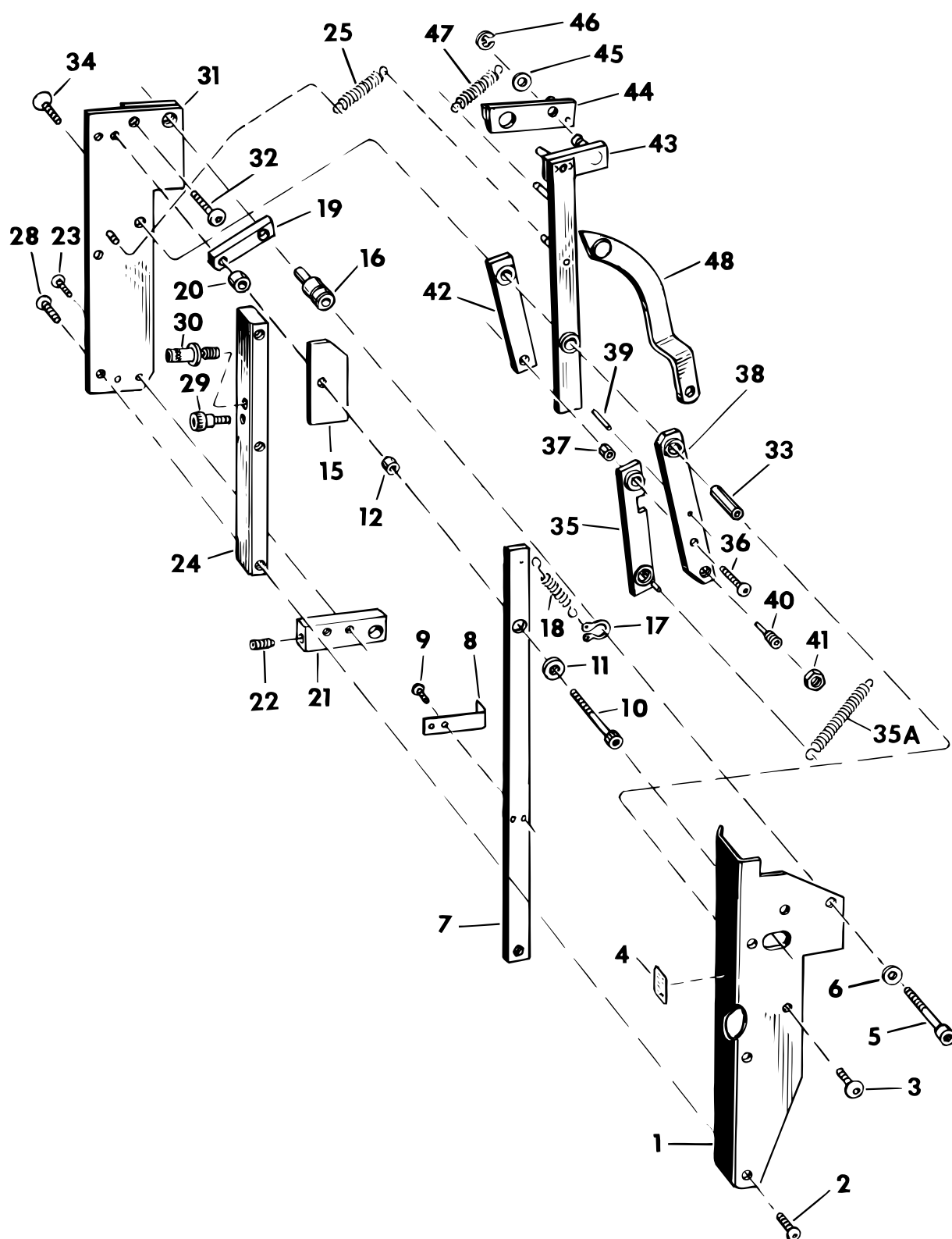
(Parts continued on next page)

PARTS LIST COVERING FIGURE "B" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
55	KN-568	1	.....Washer (5/16 Plain)
56	LBN-408	1	.....Nut (5/16-18 Hex)
57	<b>MBB-2405A</b>	1	.... <b>Feed Screw</b> <i>with</i>
59	MBB-986A	1	.....Set Collar <i>with</i>
60	LBN-369	1	.....Set Screw (1/4-20 x 1/4 Soc. Cup Pt.)
58	LBN-379	1	.....Fiber Washer
61	<b>PSP-105A</b>	1	.... <b>Spring</b> <i>with</i>
58	LBN-379	2	.....Fiber Washer
62	<b>LBN-372A</b>	1	.... <b>Dial Assembly</b> <i>with</i>
63	LBN-369	1	.....Set Screw (1/4-20 x 1/4 Soc. Cup Pt.)
64	<b>MBB-719A</b>	1	.... <b>Plate</b>
65	<b>MBB-2895A</b>	1	.... <b>Body Assembly</b> <i>with</i>
66	MBB-718A	2	.....Spring (Pkg. of 3)
67	MBB-716	1	.....Rocker
68	PG-587	2	.....Washer
69	PHS-122	1	.....Set Screw (1/4-20 x 1/2 Soc. Flat Pt.)
70	PHS-583	1	.....Screw (1/4-20 x 1 Soc. Hd. Cap)
71	<b>KKN-1116A</b>	1	.... <b>Follower Spring Stop</b> <i>with</i>
72	PHS-579	1	.....Screw (10-32 x 1-1/4 Soc. Hd. Cap)
73	<b>KKN-1110A</b>	1	.... <b>Follower Block Assembly</b> <i>with</i>
74	PHR-326	1	.....Retaining Ring
68	PG-587	2	.....Washer
75	PHW-132	1	.....Spring Washer
76	KKN-1114A	1	.....Follower Spring Set (2 Pieces) <i>with</i>
77	PG-505	2	.....Washer
78	PG-984	2	.....Screw (4-40 x 5/16 Self Tapping Binding Hd.)
79	<b>KKN-1120A</b>	1	.... <b>Trigger Assembly</b> <i>with</i>
80	PHS-120	2	.....Set Screw (8-32 x 1/2 Soc. Oval Pt.)
81	<b>KKN-1139A</b>	1	.... <b>Spindle Nose Cover Clip</b> <i>with</i>
82	MSN-277	1	.....Screw (10-32 x 3/8 Rd. Hd.)
83	<b>MBB-707A</b>	1	.... <b>Dial Indicator &amp; Pin Assembly</b> <i>includes</i>
84	MBB-708TA	1	....Dial Indicator Bezel & Crystal
85	MBB-709TA	1	.....Dial Indicator Face
86	MBB-705A	1	.....Cushion Indicator Tip
87	<b>MBB-2320</b>	1	.... <b>Housing</b>
88	- - -	1	.... <b>Automatic Shutoff</b> (See Fig. "C")
90	MSN-189	1	.....Washer (1/4 Plain)
91	PHS-584	1	.....Screw (1/4-20 x 1-1/2 Soc. Hd. Cap)
92	<b>KKN-1165A</b>	1	.... <b>Base Assembly</b> <i>with</i>
93	KKN-1169	2	.....Spacer Washer
94	PHW-119	2	.....Washer (5/16 Lock)
95	LBB-891	2	.....Screw (5/16-18 x 3/4 Soc. Hd. Cap)
96	KKN-1171	1	.....Cover
97	LBS-451	1	.....Washer
97A	AG-178	1	.....Screw (10-32 x 3/8 Soc. Hd. Cap)
99	<b>KKN-1155A</b>	1	.... <b>Piston Assembly</b> <i>with</i>
100	KKN-1161	1	.....Cylinder
N/S	POR-107A	1	....."O" Ring
101	<b>KKN-1163A</b>	1	.... <b>Pivot Cross Pin</b> <i>with</i>
98	PHS-532	2	.....Screw (10-32 x 1/4 Button Hd. Cap)
102	<b>ASC-377A</b>	1	.... <b>Cable Pull</b> <i>with</i>
103	ASC-378	1	.....Bushing
104	PHS-532	1	.....Screw (10-32 x 1/4 Button Hd. Cap)
105	<b>ASC-358A</b>	1	.... <b>Cable Kit</b>
106	- - -	1	.... <b>Stone Saver Assembly</b> (See Fig. "D")
107	<b>PHS-582A</b>	2	.... <b>Screw</b> (1/4-20 x 3/4 Soc. Hd. Cap) (Pkg. of 2) <i>with</i>
108	PHW-118	2	.....Washer (1/4 Lock)

N/S indicates Not Shown

**SECTION I**  
**HONING MACHINE HEAD**



**FIGURE C - AUTOMATIC SHUTOFF**

PARTS LIST COVERING FIGURE "C"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>KKN-964A</b>	1	.... <b>Cover</b> <i>with</i>
2	PHS-506	3	.....Screw (10-32 x 3/8 Button Hd. Cap)
3	PHS-580	1	.....Screw (1/4-28 x 3/8 Button Hd. Cap)
4	PNP-333A	1	.....Instruction Label
5	<b>PHS-584</b>	1	.... <b>Screw</b> (1/4-20 x 1-1/2 Soc. Hd. Cap)
6	<b>MSN-189</b>	1	.... <b>Washer</b> (1/4 Plain)
7	<b>KKN-2041A</b>	1	.... <b>Manual Trip Lever</b> <i>with</i>
8	KKN-1079A	1	.....Lock Out Spring <i>with</i>
9	PHS-751	2	.....Screw (4-40 x 1/4 Self Tapping Binding Hd.)
10	PHS-579	1	.....Screw (10-32 x 1-1/4 Soc Hd. Cap)
11	PG-587	1	.....Washer
12	KKN-1069A	1	.....Manual Trip Pivot
15	<b>KKN-1068A</b>	1	.... <b>Retaining Plate</b>
16	<b>KKN-1062A</b>	1	.... <b>Switch Box Spacer</b> <i>with</i>
17	PHR-307	1	.....Retaining Ring
18	<b>KKN-1078A</b>	1	.... <b>Spring</b>
19	<b>KKN-1061A</b>	1	.... <b>Guide Rail</b>
20	<b>KKN-1064A</b>	1	.... <b>Spacer</b>
21	<b>KKN-1019A</b>	1	.... <b>Lower Mount</b> <i>with</i>
22	LBN-309	1	.....Set Screw (1/4-20 x 1/2 Soc. Cup Pt.)
23	LN-1656	2	.....Screw (10-32 x 5/8 Soc. Flat Hd. Cap)
24	<b>KKN-1021A</b>	1	.... <b>Front Bar</b> <i>with</i>
28	PHS-506	3	.....Screw (10-32 x 3/8 Button Hd. Cap)
25	<b>PSP-304A</b>	1	.... <b>Spring</b>
29	<b>PHS-594A</b>	1	.... <b>Shoulder Screw</b> (5/16 x 1/4 with 1/4-20 x 7/16 Thd.)
30	<b>KKN-1024A</b>	1	.... <b>Lockout Screw</b>
31	<b>KKN-1015A</b>	1	.... <b>Base</b>
32	<b>PHS-611</b>	1	.... <b>Screw</b> (1/4-20 x 5/8 But. Hd. Cap)
33	<b>KKN-1022A</b>	1	.... <b>Main Bearing Shaft</b> <i>with</i>
34	PHS-626	1	.....Screw (1/4-28 x 11/16 Flat Hd. Soc. Cap)
--	<b>KKN-1050A</b>	1	.... <b>Toggle Set</b> <i>includes</i>
35	KKN-1030A	1	.....Toggle Link Assembly, Lower <i>with</i>
35A	PSP-312A	1	.....Spring
36	PHS-603	1	.....Screw (10-32 x 3/4 Button Hd. Cap)
37	KKN-1059A	1	.....Inner Race
--	KKN-1055A	1	.....Toggle Link Assembly, Outer <i>includes</i>
38	KKN-1056	1	.....Toggle Link, Outer
39	LN-78	1	.....Groove Pin
40	KKN-1057A	1	.....Cam Screw
41	MSA-63	1	.....Nut (10-32 Hex)
42	KKN-1025A	1	.....Toggle Link Assembly, Inner
--	<b>KKN-1040A</b>	1	.... <b>Auto Trip Assembly</b> <i>includes</i>
43	KKN-1035A	1	.....Auto Trip Lever Assembly
44	KKN-1045A	1	.....Trip Catch Assembly
45	PG-587	1	.....Washer
46	PG-2252	1	.....Retaining Ring
47	PSP-301A	1	.....Spring
48	<b>KKN-1080A</b>	1	.... <b>Cocking Lever</b>

N/S indicates Not Shown

# SECTION I

## HONING MACHINE HEAD

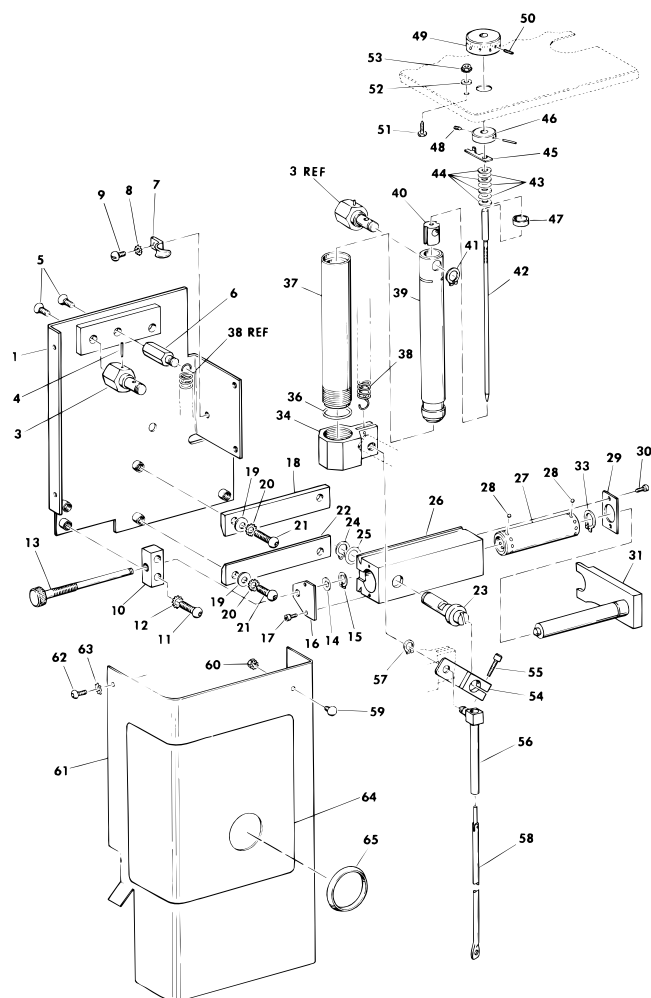


FIGURE D - STONE SAVER ASSEMBLY

### PARTS LIST COVERING FIGURE "D"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>KKN-860A</b>	1	.... <b>Sub Base Assembly</b> with Threaded Inserts
3	<b>KKN-895A</b>	1	.... <b>Piston Pivot</b> with
4	PHP-567	1	.....Groov-Pin
5	PHS-612	1	.....Screw (1/4-28 x 3/4 Soc. Flat Hd. Cap)
6	<b>KKN-924A</b>	1	.... <b>Spring Anchor</b> with
5	PHS-612	1	.....Screw (1/4-28 x 3/4 Soc. Flat Hd. Cap)
7	<b>PEM-336A</b>	1	.... <b>Clamp</b> with
8	LBA-451	1	.....Washer (#10 Shakeproof)
9	PHS-552	1	.....Screw (10-32 x 1/2 Rd. Hd.)
10	<b>KKN-889A</b>	1	.... <b>Adjusting Screw Block</b> with
11	PHS-683	2	.....Screw (10-32 x 5/8 Button Hd. Cap)
12	LBA-451	2	.....Washer (#10 Shakeproof)
13	<b>KKN-893A</b>	1	.... <b>Adjusting Screw</b> with
14	PHW-163	1	.....Washer (1/4 Spring)
15	PHR-308	1	.....Retaining Ring
16	<b>KKN-894A</b>	1	.... <b>Retaining Cap</b> with
17	PHS-578	2	.....Screw (6-32 x 3/8 Soc. Hd. Cap)

N/S indicates Not Shown

(Parts continued on next page)



PARTS LIST COVERING FIGURE "D" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
18	<b>KKN-887A</b>	1	.... <b>Top Clamp</b> <i>with</i>
19	PG-587	2	.....Washer (#10 Plain)
20	LBA-451	2	.....Washer (#10 Shakeproof)
21	PHS-506	2	.....Screw (10-32 x 3/8 Button Hd. Cap)
22	<b>KKN-886A</b>	1	.... <b>Bottom Clamp</b> <i>with</i>
19	PG-587	2	.....Washer (#10 Plain)
20	LBA-451	2	.....Washer (#10 Shakeproof)
21	PHS-506	2	.....Screw (10-32 x 3/8 Button Hd. Cap)
23	<b>KKN-872A</b>	1	.... <b>Cam</b> <i>with</i>
24	PHR-307	1	.....Retaining Ring
25	TN-54	1	.....Spring Washer
26	<b>KKN-871A</b>	1	.... <b>Cross Slide</b>
27	<b>KKN-883A</b>	1	.... <b>Ball Carrier</b> <i>with</i>
28	AG-438D	16	.....Gage Ball (Pkg. of 16)
29	<b>KKN-882A</b>	1	.... <b>End Plate</b> <i>with</i>
30	PHS-713	2	.....Screw (5-40 x 3/16 Soc. Hd. Cap)
31	<b>KKN-875A</b>	1	.... <b>Fork &amp; Rod</b> <i>with</i>
33	PHR-307A	1	.....Retaining Ring
34	KKN-915A	1	.....Cylinder & Pin <i>with</i>
36	CRG-939A	1	....."O" Ring
37	<b>KKN-912A</b>	1	.... <b>Cylinder</b>
38	<b>PSP-307A</b>	1	.... <b>Spring</b>
39	<b>KKN-905A</b>	1	.... <b>Piston</b>
40	<b>KKN-909A</b>	1	.... <b>Piston Nut</b>
41	<b>PHR-305A</b>	1	.... <b>Retaining Ring</b>
42	<b>KKN-927A</b>	1	.... <b>Metering Screw</b>
43	<b>PHW-171</b>	4	.... <b>Washer</b> (1/4 Spring)
44	<b>MBB-982</b>	3	.... <b>Washer</b> (1/4 Plain)
45	<b>KKN-929A</b>	1	.... <b>Metering Stop</b>
46	<b>KKN-930A</b>	1	.... <b>Stop Collar &amp; Pin</b> <i>with</i>
48	LN-1545	1	.....Set Screw (8-32 x 1/4 Soc. Cup Pt.)
47	<b>KKN-908A</b>	1	.... <b>Spring Clip</b>
49	<b>KKN-949A</b>	1	.... <b>Metering Knob</b> <i>with</i>
50	LN-1545	1	.....Set Screw (8-32 x 1/4 Soc. Cup Pt.)
51	<b>KKN-944A</b>	1	.... <b>Pointer</b> <i>with</i>
52	PG-587A	1	.....Washer (#10 Plain)
53	PHN-134A	1	.....Nut & Lockwasher
54	<b>KKN-918A</b>	1	.... <b>Cam Lever</b> <i>with</i>
55	MSN-177C	1	.....Screw (10-32 x 5/8 Soc. Hd. Cap)
56	<b>KKN-920A</b>	1	.... <b>Pull Rod Pivot</b> <i>with</i>
57	PHR-302	1	.....Retaining Ring
58	<b>KKN-935A</b>	1	.... <b>Pull Rod</b>
59	<b>PHM-727A</b>	1	.... <b>Stud Bumper</b> <i>with</i>
60	PHN-117	1	.....Nut & Lockwasher
61	<b>KKN-952A</b>	1	.... <b>Cover</b> <i>with</i>
62	PHS-506	4	.....Screw (10-32 x 3/8 Button Hd. Cap)
63	LBA-451	4	.....Washer (#10 Shakeproof)
64	PNP-332A	1	.....Stonesaver Overlay
65	KKN-953A	1	.....Hole Plug

N/S indicates Not Shown

## SECTION II - HONING MACHINE BASE

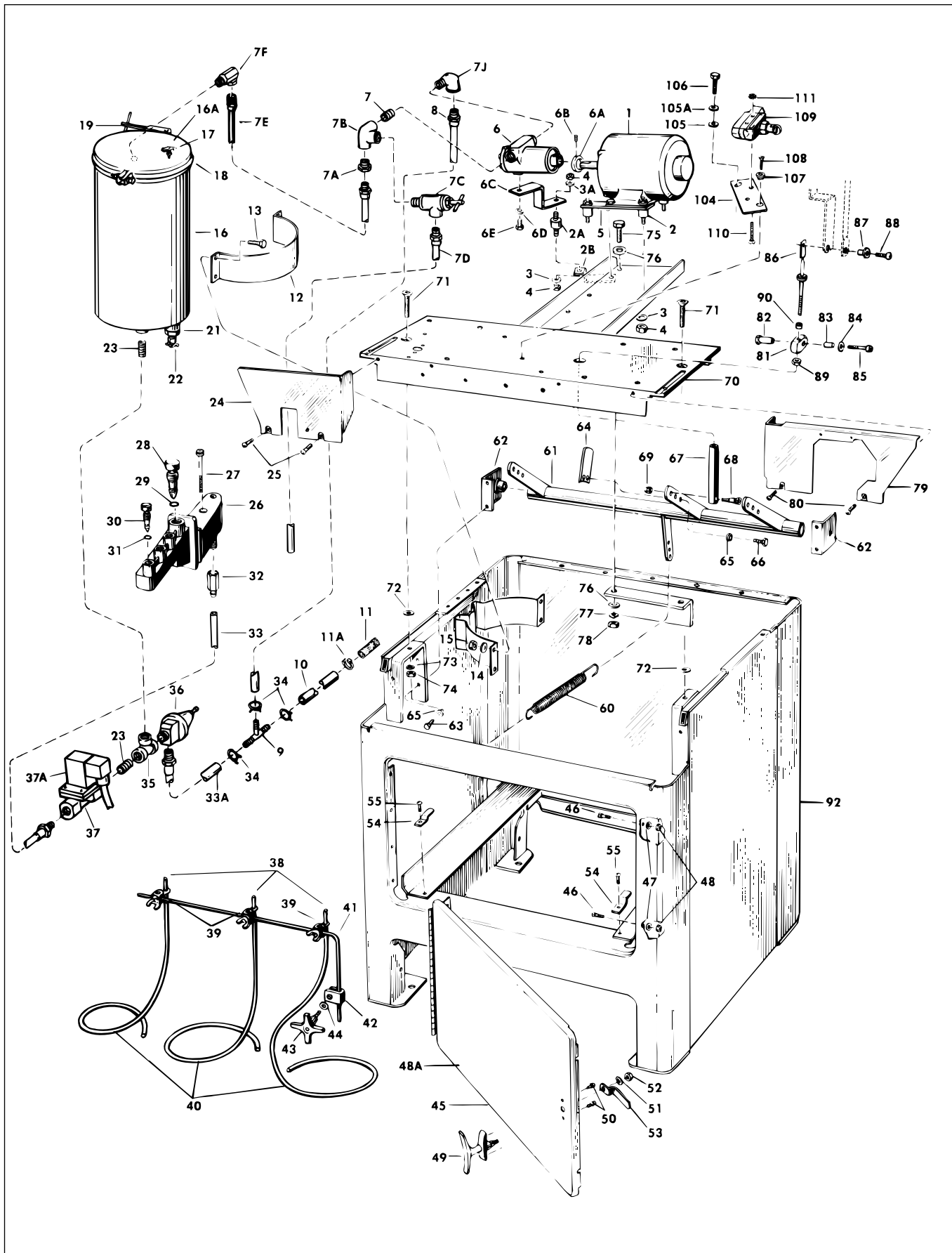


FIGURE E - BASE, FILTER, PUMP, & COOLANT ASSEMBLY

PARTS LIST COVERING FIGURE "E"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>PMO-345A</b>	1	.... <b>Motor</b> (1/2 H.P., 208/230/460 Volt, 60 Hz, 3 Ph.)
1	<b>PMO-347A</b>	1	.... <b>Motor</b> (1/2 H.P., 380/400 Volt, 50 Hz, 3 Ph.)
1	<b>PMO-345H</b>	1	.... <b>Motor</b> (1/2 H.P., 220/440 Volt, 50 Hz, 3 Ph.)
2	<b>PF-224A</b>	1	.... <b>Flex Bolt Mounting Set</b> <i>with</i>
3	PHW-119	8	.....Washer (5/16 Plain)
4	KN-172	8	Nut (5/16-18 Hex)
2A	<b>PF-224D</b>	1	.... <b>Flex Bolt Mounting</b> <i>with</i>
3	- - -	1	.....Washer (5/16 Plain)
3A	PHW-119	1	.....Washer (5/16 Lock)
4	KN-172	2	.....Nut (5/16-18 Hex)
2B	<b>CH-371A</b>	1	.... <b>Pump Bracket</b>
5	<b>MB-3297A</b>	1	.... <b>Motor Base</b> <i>with</i>
N/S	KN-568	4	.....Washer (5/16 Plain)
N/S	KN-172	2	.....Nut (5/16-18 Hex)
6	<b>PF-500A</b>	1	.... <b>Pump</b> <i>with</i>
6A	PF-501	1	.....Collar
6B	PHS-164A	1	.....Set Screw (1/4-20 x 1/2 Full Dog Point with insert)
6C	<b>PF-502A</b>	1	.... <b>Bracket</b> <i>with</i>
6D	PHW-119	1	.....Washer (5/16 Lock)
6E	LBN-386	1	.....Screw (5/16-18 x 1/2 Hex Hd. Cap)
N/S	<b>PF-505A</b>	1	.... <b>Mechanical Seal</b> (PF-500A Pump)
N/S	<b>PF-506A</b>	1	.... <b>Bearing</b> (PF-500A Pump)
N/S	<b>PF-507A</b>	1	.... <b>Gasket Set</b> (PF-500A Pump)
7	<b>PPP-147A</b>	1	.... <b>Close Nipple</b>
7A	<b>PPP-161A</b>	1	.... <b>Adapter</b>
7B	<b>PPP-171A</b>	1	.... <b>Side Outlet Elbow</b>
7C	<b>PF-171A</b>	1	.... <b>Relief Valve</b>
7D	<b>PPP-29A</b>	1	.... <b>Hose Assembly</b>
7E	<b>PPP-22A</b>	1	.... <b>Hose Assembly</b>
7F	<b>PPP-116A</b>	1	.... <b>Adapter</b>
7J	<b>PPP-169A</b>	1	.... <b>Street Elbow</b>
8	<b>PPP-41A</b>	1	.... <b>Hose Assembly</b>
9	<b>PPP-207A</b>	1	.... <b>Tee</b>
10	<b>PPP-42A</b>	1	.... <b>Hose</b>
11	<b>PF-317A</b>	1	.... <b>Intake Strainer</b> <i>with</i>
11A	PEM-315	1	.....Clamp
12	<b>PF-162C</b>	1	.... <b>Mounting Bracket</b> <i>with</i>
13	MAN-1028	4	.....Screw (1/4-20 x 3/4 Hex Hd. Cap)
14	PHW-118	4	.....Washer (1/4 Lock)
15	LBN-431	4	.....Nut (1/4-20 Hex)
16	<b>PF-240A</b>	1	.... <b>Filter Container Assembly</b> <i>with</i>
16A	PF-243A	1	.....Cover
N/S	PF-244A	1	.....Gasket
N/S	PF-247A	1	.....Spring
17	PF-246A	1	.....Air Vent
18	PF-260A	1	.....Clamp Assembly <i>with</i>
19	PF-270A	1	.....Tee Handle Assembly
N/S	<b>PF-105-4</b>	1	.... <b>Filter Element</b> (Pkg. of 4)
21	<b>PF-257A</b>	1	.... <b>Standpipe</b> <i>with</i>
N/S	PF-258A	1	.....Washer (Fiber) (Pkg. of 2)

N/S indicates Not Shown

(Parts continued on next page)

## SECTION II

### HONING MACHINE BASE

#### PARTS LIST COVERING FIGURE "E" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
22	<b>PF-259A</b>	1	.... <b>Draincock</b>
23	<b>PPP-351</b>	1	.... <b>Close Nipple</b> (1/2 NPT Black Iron)
24	<b>MB-2267A</b>	1	.... <b>Rear Splash Guard - Left</b> <i>with</i>
25	CRG-404	2	.....Screw (1/4-20 x 3/8 Rd.Hd.)
26	<b>MB-2165A</b>	1	.... <b>Valve Body Assembly</b> <i>with</i>
27	PHS-599	1	.....Screw (1/4-20 x 2 Soc. Hd. Cap)
28	MB-2177A	1	.....Inlet Stem <i>with</i>
29	MB-2184A	1	....."O" Ring
30	MB-2176A	3	.....Outlet Stem (Pkg. of 1) <i>with</i>
31	MB-2182A	3	....."O" Ring (Pkg. of 3)
32	<b>MBB-1630A</b>	1	.... <b>Check Valve</b>
33	<b>PPP-41A</b>	1	.... <b>Hose Assembly</b>
33A	<b>PPP-27A</b>	1	.... <b>Hose Assembly</b>
34	<b>PEM-340</b>	3	.... <b>Clamp</b>
35	<b>PPP-148A</b>	1	.... <b>Tee</b> (1/2 x 1/2 x 1/2)
36	<b>PPP-533</b>	1	.... <b>Relief Valve</b>
37	<b>PES-338A</b>	1	.... <b>Solenoid Valve</b>
37A	<b>PES-338-1A</b>	1	.... <b>Solenoid</b>
38	<b>MB-2185A</b>	3	.... <b>Jet Assembly</b> (Pkg. of 1) <i>with</i>
39	MB-2194A	3	.....Jet Clamp (Pkg. of 1)
N/S	PHN-116	3	.....Wing Nut
40	<b>MB-2193A</b>	3	.... <b>Flexible Tube Feeder</b> <i>with</i> Clamp (Pkg. of 1)
41	<b>MB-2202A</b>	1	.... <b>Support Rod Clamp</b>
42	<b>MB-2203A</b>	1	.... <b>Support Rod Clamp</b>
43	<b>MB-2205A</b>	1	.... <b>Wing Hand Screw Assembly</b> <i>with</i>
44	KN-538	1	.....Washer (1/2 Plain)
45	<b>MB-2210A</b>	1	.... <b>Door &amp; Hinge</b> <i>with</i>
N/S	PHP-101	4	.....Screw (10-32 x 1/2 Flat Hd.)
46	P-144	2	.....Screw (10-32 x 1/2 Soc. Hd. Cap)
47	LBA-451	6	.....Washer (#10 Shakeproof)
48	MSA-63	6	.....Nut (10-32 Hex)
49	<b>PF-288A</b>	1	.... <b>Handle</b> <i>with</i>
50	PHSM-629	2	.....Screw (8-32 x 1/4 Rd. Hd.)
51	PHW-327	1	.....Washer (3/8 Shakeproof)
52	LBA-451	1	.....Nut (3/8-24 Hex. Jam)
53	MB-2214A	1	.....Cam
54	<b>MB-2299A</b>	2	.... <b>Reservoir Retainer</b> (Pkg. of 1) <i>with</i>
55	CRG-404	2	.....Screw (1/4-20 x 3/8 Rd. Hd.)
60	<b>MB-2143A</b>	1	.... <b>Clutch Return Spring</b>
61	<b>MB-2135A</b>	1	.... <b>Clutch Tube</b>
62	<b>MB-2140A</b>	2	.... <b>Bearing &amp; Bracket Assembly</b> (Pkg. of 1) <i>with</i>
63	MAN-1028	4	.....Screw (1/4-20 x 3/4 Hex Hd. Cap)
65	PHW-118	4	.....Washer (1/4 Lock)
64	<b>MB-2132A</b>	1	.... <b>Pedal Stop</b> <i>with</i>
65	PHW-118	2	.....Washer (1/4 Lock)
66	MSA-219	2	.....Screw (1/4-20 x 3/4 Hex Hd. Cap)
67	<b>KKN-1124A</b>	1	.... <b>Clutch Nut</b> <i>with</i>
68	MBB-977	1	.....Shoulder Screw (5/16 x 5/8 with 1/4-20 x 7/16 Thd.)
69	PHN-121	1	.....Nut (1/4-20 Hex Lock)
70	<b>MB-3095A</b>	1	.... <b>Top Plate</b> <i>with</i>

N/S indicates Not Shown

(Parts continued on next page)

PARTS LIST COVERING FIGURE "E" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
71	PHS-567	2	.....Screw (3/8-16 x 1-1/2 Flat Hd. Soc. Cap)
72	LBN-452	2	.....Washer (3/8 Plain)
73	MAN-1223	2	.....Washer (3/8 Lock)
74	KN-383	2	.....Nut (3/8-16 Hex)
75	PHS-644	2	.....Screw (5/16-18 x 1 Hex Hd. Cap)
76	KN-568	4	.....Washer (5/16 Plain)
77	PHW-119	2	.....Washer (5/16 Lock)
78	KN-172	2	.....Nut (5/16-18 Hex)
79	<b>KKN-1149A</b>	1	.... <b>Rear Splash Guard - Right</b> <i>with</i>
80	CRG-404	2	.....Screw (1/4-20 x 3/8 Rd. Hd.)
81	<b>MB-2148C</b>	1	.... <b>Pivot Block</b> <i>with</i>
82	KKN-1132A	1	.....Lower Bearing Nut
83	KKN-1131A	1	.....Sleeve <i>with</i>
84	MSN-189	1	.....Washer
85	PHS-619	1	.....Screw (1/4-20 x 1-3/4 Soc. Hd. Cap)
86	<b>KKN-1125C</b>	1	.... <b>Pull Rod &amp; Collar</b> <i>with</i>
87	KKN-348A	1	.....Cam Rod Bushing
88	PHS-614	1	.....Screw (10-32 x 1/2 Button Hd. Cap)
89	PHN-122	1	.....Nut (5/16-24 Hex Jam)
90	KKN-1123A	1	.....Bumper
92	<b>MB-3075</b>	1	.... <b>Base Shell</b>
104	<b>MBB-3132A</b>	1	.... <b>Switch Plate</b> <i>with</i>
105	LBN-401	1	.....Washer (1/4 Plain)
105A	PHW-118	1	.....Washer (1/4 Lock)
106	MAN-1028	1	.....Screw (1/4-20 x 3/4 Hex Hd. Cap)
107	MBB-3138A	1	.....Pivot Bushing <i>with</i>
108	LN-1676	1	.....Screw (1/4-20 x 7/8 Flat Hd. Soc.Cap)
109	<b>PES-155A</b>	1	.... <b>Switch</b> <i>with</i>
110	PHS-695	2	.....Screw (6-32 x 1-1/2 Flat Hd.)
111	PHN-117	2	.....Nut (6-32 Hex)

N/S indicates Not Shown

## SECTION II

### HONING MACHINE BASE

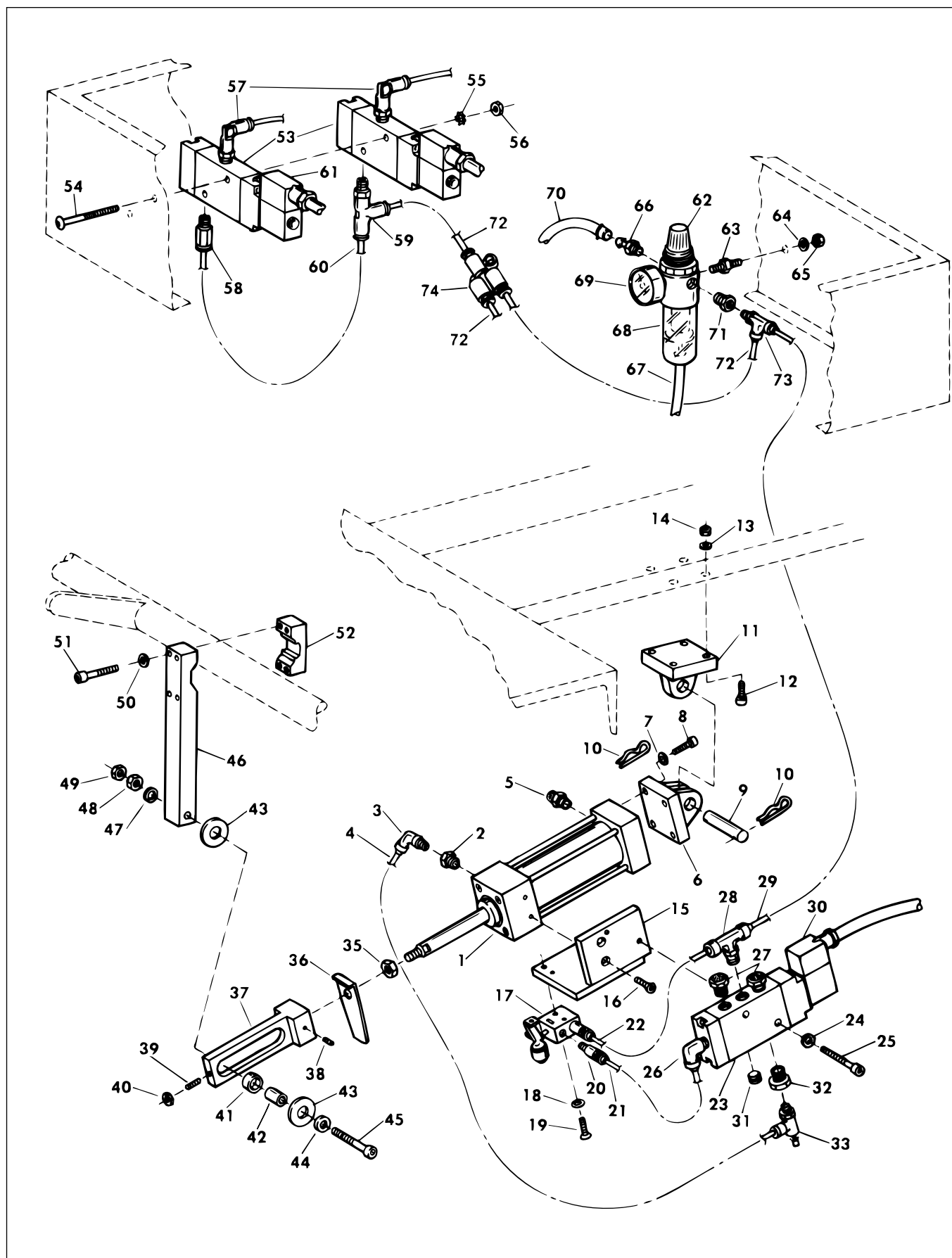


FIGURE F - AIR ACTUATED PEDAL DEPRESSOR

PARTS LIST COVERING FIGURE "F"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>MBC-506A</b>	1	....Cylinder
2	<b>PPP-242A</b>	1	....Reducer Bushing
3	<b>PPP-294A</b>	1	....Swivel Elbow
4	<b>78156A</b>	*	....Tubing (5/32 O.D. Natural)
5	<b>PPP-40A</b>	1	....Sintered Breather
--	<b>MBC-507C</b>	1	....Mounting Kit <i>includes</i>
6	---	1	.....Bracket
7	---	4	.....Washer
8	PHS-1062	4	.....Screw
9	---	1	.....Clevis Pin
10	---	2	.....Hair Pin
11	<b>MBC-537C</b>	1	....Eye Bracket <i>with</i>
12	PHS-582	4	.....Screw (1/4-20 x 3/4 Hex. Soc. Hd. Cap)
13	PHW-118	4	.....Washer (1/4 Lock)
14	LBN-431	4	.....Nut
15	<b>MBC-528A</b>	1	....Valve Bracket <i>with</i>
16	PG-719	2	.....Screw (1/4-20 x 1/2 Flat Hd. Soc. Cap)
17	<b>PES-330A</b>	1	....Directional Valve <i>with</i>
18	PHW-156	2	.....Washer (#8 Shakeproof)
19	PHS-735	2	.....Screw (8-32 x 7/8 Hex Soc. Button Hd. Cap)
20	<b>PPP-297A</b>	2	....Connector (Pkg. of 1)
21	<b>78156A</b>	*	....Tubing (5/32 O.D. Natural)
22	<b>78156A</b>	*	....Tubing (5/32 O.D. Natural)
23	<b>MBC-529A</b>	1	....Air Valve <i>with</i>
24	KN-46	2	.....Washer (#10 Lock)
25	PG-762	2	.....Screw (10-32 x 1-1/8 Hex. Hd. Cap)
26	<b>PPP-439A</b>	1	....Swivel Elbow
27	<b>PPP-323A</b>	2	....Low Profile Breather (Pkg. of 2)
28	<b>PPP-316A</b>	1	....Male Swivel Branch Tee
29	<b>78156A</b>	*	....Tubing (5/32 O.D. Natural)
30	<b>MBC-614</b>	1	....Solenoid Cable Assembly
31	<b>PPP-127A</b>	1	....Pipe Plug
32	<b>PPPM-402A</b>	1	....Adapter
33	<b>PFC-116A</b>	1	....Flow Control Valve
35	<b>PHN-103</b>	1	....Nut (1/2-20 Hex. Jam)
36	<b>MBC-544A</b>	1	....Spring
37	<b>MBC-524A</b>	1	....Rod End <i>with</i>
38	PHS-170	1	.....Set Screw (1/4-20 x 1/4 Hex. Soc. Cone Pt.)
39	KKN-26	1	.....Set Screw (1/4-20 x 5/8 Hex. Soc. Flat Pt.)
40	<b>LBN-431</b>	1	....Nut (1/4-20 Hex)
41	<b>MBC-547A</b>	1	....Bushing
42	<b>MBC-546A</b>	1	....Sleeve
43	<b>PHW-174</b>	2	....Washer (1-1/8 Plain)
44	<b>P-165</b>	1	....Washer (9/16 Plain)
45	<b>PHS-657</b>	1	....Screw (5/16-18 x 2-1/4 Hex. Soc. Hd. Cap)
46	<b>MBC-298A</b>	1	....Clamp
47	<b>PHW-119</b>	1	....Washer (5/16 Lock)
48	<b>KN-172</b>	1	....Nut (5/16-18 Hex)
49	<b>LBN-408</b>	1	....Nut (5/16-18 Hex. Jam)
50	<b>PHW-118</b>	4	....Washer (1/4 Lock)

N/S indicates Not Shown

\*Material sold by the foot only.

(Parts continued on next page)

## SECTION II

### HONING MACHINE BASE

#### PARTS LIST COVERING FIGURE "F" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
51	<b>PHS-762</b>	4	.... <b>Screw</b> (1/4-20 x 1-3/4 Hex. Hd. Cap)
52	<b>MBC-297A</b>	1	.... <b>Upper Clamp</b>
53	<b>ASC-776A</b>	2	.... <b>Air Valve</b> (Pkg. of 1) <i>with</i>
54	PHSM-523	2	.....Screw (M4 x .07 x 55mm Slot Hd. Machine)
55	LBA-451	2	.....Washer (#6 Lock)
56	PHNM-402	2	.....Nut (M4 x .07 Hex)
57	<b>PPP-439A</b>	2	.... <b>Male Elbow</b> (Pkg. of 1)
58	<b>PPP-440A</b>	1	.... <b>Straight Fitting</b>
59	<b>PPPM-406A</b>	1	.... <b>Male Run Tee</b>
60	<b>78161A</b>	*	.... <b>Tubing</b> (5/32 O.D. Orange)
61	<b>PEM-320A</b>	2	.... <b>Solenoid Connector</b> (Pkg. of 1)
62	<b>MBC-515A</b>	1	.... <b>Filter Regulator Assembly</b> <i>includes</i>
63	MBC-532A	1	.....Stud
64	PHW-119	1	.....Washer (5/16 Lock)
65	LBN-408	1	.....Nut (5/16-18 Hex. Jam)
66	PPP-190A	1	.....Hose Barb
67	HS-226A	1	.....Tubing (3/8 O.D.)
68	MBC-531A	1	.....Filter Regulator
69	MBC-531-1A	1	.....Gauge
70	- - -	1	.... <b>Air Hose</b> (Supplied By Customer)
71	<b>PPP-242A</b>	1	.... <b>Reducing Bushing</b> (1/4 Male to 1/8 Female)
72	<b>78161A</b>	*	.... <b>Tubing</b> (5/32 O.D. Orange)
73	<b>PPPM-406A</b>	1	.... <b>Male Swivel Run Tee</b>
74	<b>PPP-479A</b>	1	.... <b>Union "Y" Fitting</b> (For "CE" Machines)

N/S indicates Not Shown

\*Material sold by the foot only.



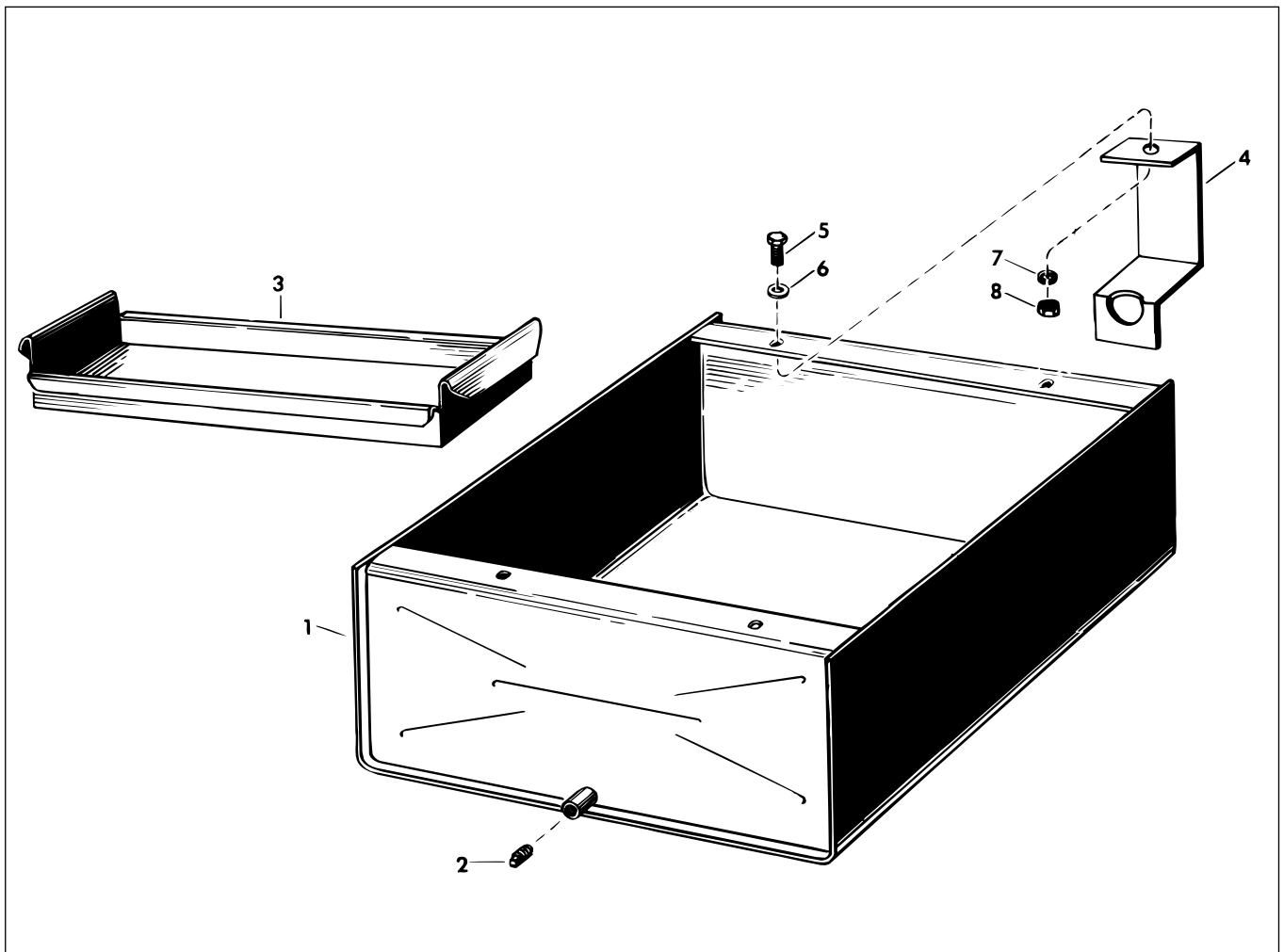


FIGURE G - COOLANT RESERVOIR UNIT

PARTS LIST COVERING FIGURE "G"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>MB-3275A</b>	1	.... <b>Oil Reservoir</b> with
2	MB-2281A	1	.....Pipe Plug (3/8 NPT)
3	<b>MB-3262A</b>	1	.... <b>Settlement Tray</b>
4	<b>PF-397A</b>	1	.... <b>Hose Bracket</b> with
5	PHS-693	1	.....Screw (1/4-20 x 5/8 Hex. Hd. Cap)
6	MSN-189	1	.....Washer (1/4 Plain)
7	PHW-118	1	.....Washer (1/4 Lock)
8	LBN-431	1	.....Nut (1/4-20 Hex.)

N/S indicates Not Shown

**SECTION II**  
HONING MACHINE BASE

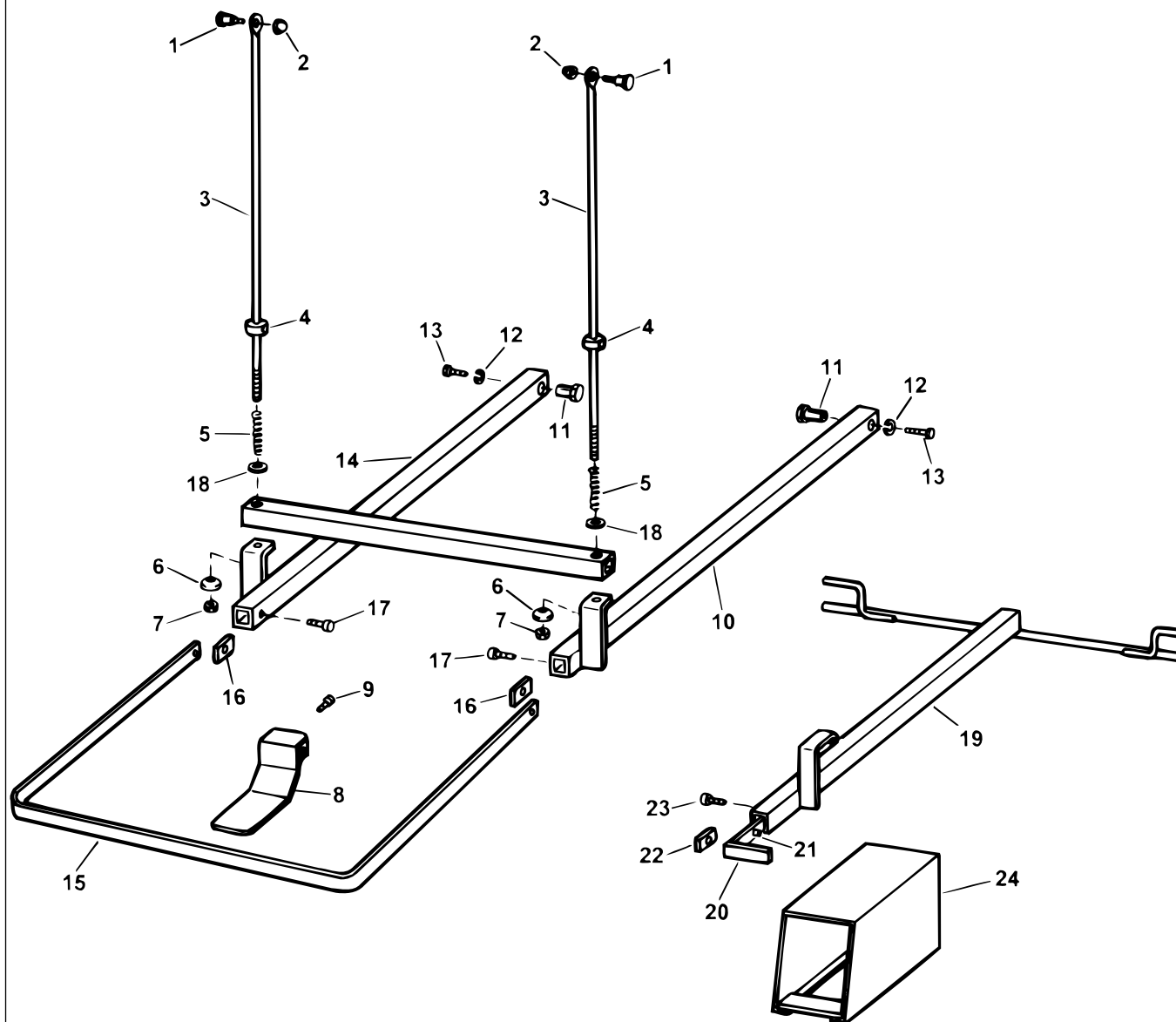


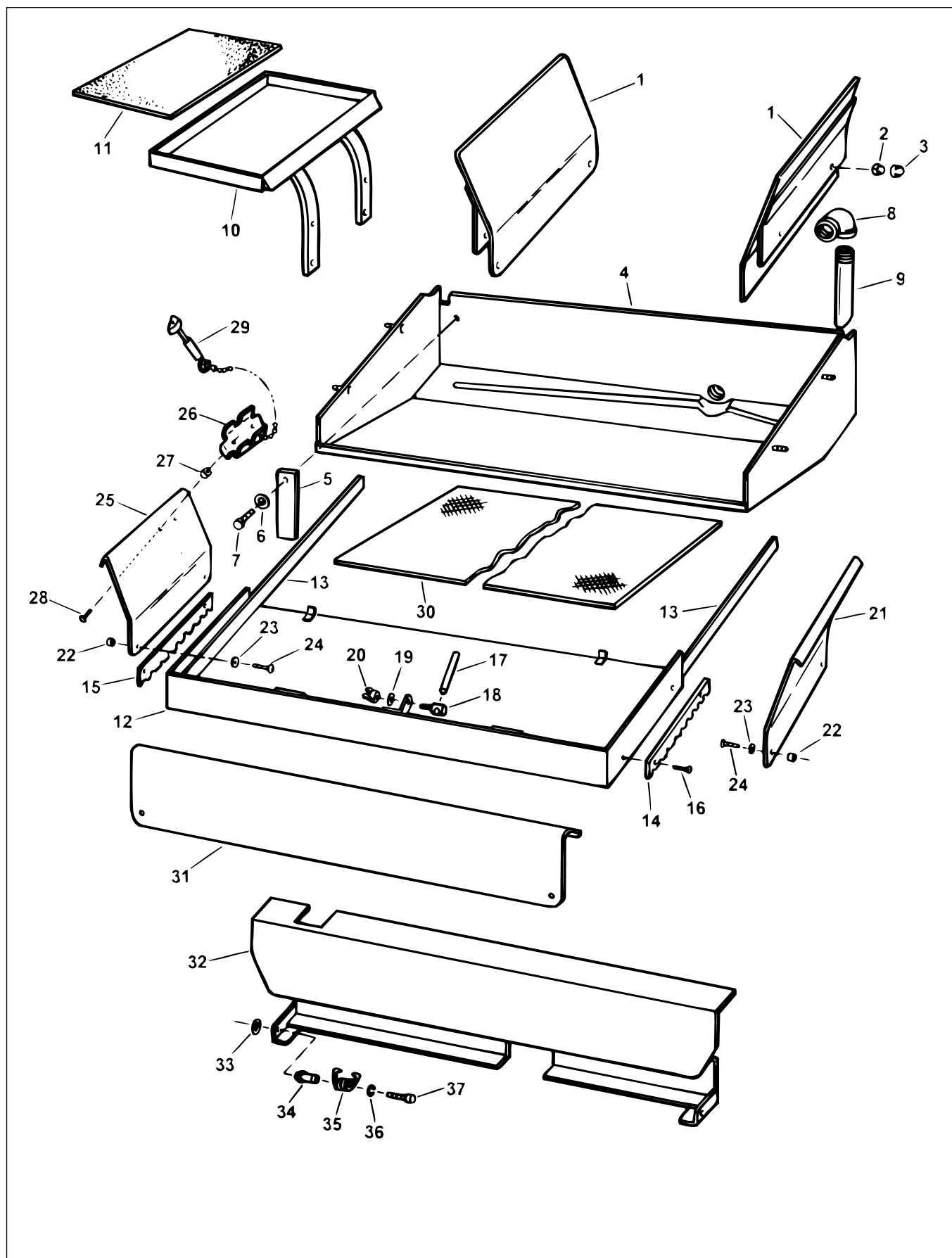
FIGURE H - FOOT PEDAL UNIT

PARTS LIST COVERING FIGURE "H"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>PHS-594A</b>	2	.... <b>Shoulder Screw</b> (5/16 x 1/4 with 1/4-20 x 7/16 Thd.)(Pkg. of 1) <i>with</i>
2	PHN-121	1	.....Nut (1/4-20 Hex)
3	<b>MB-2123A</b>	2	.... <b>Pedal Link Assembly</b> (Pkg. of 1) <i>with</i>
4	LBN-450C	1	.....Set Collar (Pkg. of 1) <i>with</i>
N/S	LBN-369	1	.....Set Screw (1/4-20 x 1/4 Soc. Cup Point)
5	PSP-308	1	.....Spring
6	MB-908	1	.....Spherical Washer
7	MB-907	1	.....Nut (3/8-16 Hex. Self Locking)
8	<b>MB-2295A</b>	1	.... <b>Tread Assembly</b> <i>with</i>
9	KKN-37	1	.....Screw (5/16-18 x 1/2 Soc. Hd. Cap)
10	<b>MB-3110A</b>	1	.... <b>Foot Pedal Assembly - Right</b> <i>with</i>
11	MB-2117A	1	.....Pedal Bushing
12	MAN-1223	1	.....Washer (3/8 Lock)
13	MAN-922	1	.....Screw (3/8-16 x 3/4 Hex. Hd. Cap)
14	<b>MB-3115A</b>	1	.... <b>Foot Pedal Assembly - Left</b> <i>with</i>
11	MB-2117	1	.....Pedal Bushing
12	MAN-1223	1	.....Washer (3/8 Lock)
13	MAN-922	1	.....Screw (3/8-16 x 3/4 Hex. Hd. Cap)
--	---		<b><i>FOLLOWING PARTS ARE FOR NON "CE" MACHINES</i></b>
15	<b>MB-2122A</b>	1	.... <b>"U" Bar</b>
16	<b>MB-2118</b>	2	.... <b>Clamp Nut</b>
17	<b>MBB-971</b>	2	.... <b>Screw</b> (5/16-18 x 1 Soc. Hd. Cap)
18	<b>LBN-452</b>	2	.... <b>Washer</b> (3/8 Plain)
--	---		<b><i>FOLLOWING PARTS ARE FOR "CE" MACHINES</i></b>
19	<b>MBC-710</b>	1	.... <b>Pedal Assembly</b>
20	<b>MBC-720A</b>	1	.... <b>Pedal Extension Assembly</b>
21	<b>PHP-415</b>	1	.... <b>Spring Pin</b>
22	<b>MB-2118</b>	1	.... <b>Clamp Block</b>
23	<b>MBB-971</b>	1	.... <b>Screw</b> (5/16-18 x 1 Soc. Hd. Cap)
24	<b>MBC-725</b>	1	.... <b>Pedal Cover Assembly</b>
25	<b>MBC-728</b>	1	.... <b>Pedal Yoke</b>

N/S indicates Not Shown

**SECTION II**  
**HONING MACHINE BASE**



**FIGURE I - DRIP TRAY & ACCESSORIES**

PARTS LIST COVERING FIGURE "I"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>MB-2230A</b>	2	.... <b>Stationary Spalsh Guard</b> (Pkg. of 1) <i>with</i>
2	PHN-124	4	.....Nut (1/4-20 Hex. Acorn)
3	<b>MBB-856A</b>	1	.... <b>Neoprene Bumper</b>
4	<b>MB-2220A</b>	1	.... <b>Stationary Drip Tray</b> <i>with</i>
5	MB-2224	2	.....Reinforcing Block
6	KN-99	2	.....Washer (3/8 Plain)
7	KN-422	2	.....Screw (3/8-16 x 1 Hex. Hd. Cap)
8	<b>MAN-1079A</b>	1	.... <b>Elbow</b>
9	<b>MB-2228A</b>	1	.... <b>Pipe Extension</b>
10	<b>MB-2405A</b>	1	.... <b>Work Tray</b>
11	<b>MB-2418A</b>	1	.... <b>Tray Pad</b>
12	<b>MB-2235A</b>	1	.... <b>Movable Tray Assembly</b> <i>with</i>
13	MB-2248A	2	.....Guide Rod (Pkg. of 2)
14	MB-2253	1	.....Detent Rail - Right
15	MB-2254	1	.....Detent Rail - Left
16	KN-972	4	.....Screw (10-24 x 3/8 Flat Hd. I.M.S.)
17	<b>MB-2208A</b>	1	.... <b>Rear Support Rod</b> <i>with</i>
18	MB-2207	1	.....Rear Support Clamp
19	KN-568	1	.....Washer (5/16 Plain)
20	PHN-116	1	.....Wing Nut (5/16-24)
21	<b>MB-2249A</b>	1	.... <b>Movable Splash Guard</b> <i>with</i>
22	MB-2251	1	.....Spacer
23	CRG-868	1	.....Washer (3/16 Plain)
24	PHS-601	1	.....Screw (10-24 x 5/8 Button Hd. Cap)
25	<b>MB-2258A</b>	1	.... <b>Movable Splash Guard</b> <i>with</i>
22	MB-2251	1	.....Spacer
23	CRG-868	1	.....Washer (3/16 Plain)
24	PHS-601	1	.....Screw (10-24 x 5/8 Button Hd. Cap)
26	<b>MB-2256A</b>	1	.... <b>Accessory Holder</b> <i>with</i>
27	MB-2257	2	.....Spacer
28	PG-724	2	.....Screw (10-32 x 3/4 Flat Hd. Soc. Cap)
29	<b>MAN-700</b>	1	.... <b>Diamond Dresser</b>
--	---		<b><i>FOLLOWING PARTS ARE FOR NON "CE" MACHINES</i></b>
30	<b>MB-2328C</b>	1	.... <b>Anti-Splash Pads</b> (Upper and Lower)
31	<b>MB-2252A</b>	1	.... <b>Front Splash Guard</b>
23	<b>CRG-868</b>	1	.... <b>Washer</b>
24	<b>PHS-601</b>	1	.... <b>Screw</b> (10-24 x 5/8 Button Hd. Cap)
--	---		<b><i>FOLLOWING PARTS ARE FOR "CE" MACHINES</i></b>
30	<b>MBC-706A</b>	1	.... <b>Anti-Splash Pad</b> (Upper)
N/S	<b>MB-2328C</b>	1	.... <b>Anti-Splash Pad</b> (Lower) (Pkg. of 2)
32	<b>MBC-730</b>	1	.... <b>Splash Gate</b>
33	<b>GGN-109A</b>	2	.... <b>Washer</b> (Nylon) (Pkg. of 1)
34	<b>MBC-736</b>	2	.... <b>Spring Post</b>
35	<b>MBC-702A</b>	2	.... <b>Torsion Spring</b> (Pkg. of 1)
36	<b>PHR-335</b>	2	.... <b>Retaining Ring</b>
37	<b>PHS-1014</b>	2	.... <b>Screw</b> (10-32 x 1-3/4 Soc. Hd. Cap)

N/S indicates Not Shown

**FIGURE J - POWER STROKING ATTACHMENT**



PARTS LIST COVERING FIGURE "J"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>PMO-381A</b>	1	....* <b>Motor</b> w/Brake (1/2HP, 208/230/460V, 60Hz, 3Ph, 1725 RPM, 5/8 Dia. Shaft)
1	<b>PMO-382A</b>	1	....* <b>Motor</b> w/Brake (1/2HP, 220/380/400V, 50Hz, 3Ph, 1450 RPM, 5/8 Dia. Shaft)
1	<b>PMO-383A</b>	1	....* <b>Motor</b> w/Brake (1/2HP, 220/440V, 50Hz, 3 Ph, 1425 RPM, 5/8 Dia. Shaft)
1A	<b>MBC-381A</b>	1	.... <b>Brake Assembly</b> (208/230/460V, 60Hz) <i>includes</i> Coil Kit
1A	<b>MBC-382A</b>	1	.... <b>Brake Assembly</b> (220/380/400V, 50Hz) <i>includes</i> Coil Kit
1A	<b>MBC-383A</b>	1	.... <b>Brake Assembly</b> (220/440V, 50Hz) <i>includes</i> Coil Kit
1B	<b>CV-241A</b>	1	.... <b>Coil Kit</b> (208/230/460V, 60Hz)
1B	<b>CV-243A</b>	1	.... <b>Coil Kit</b> (220/380/400V, 50Hz)
1B	<b>CV-246A</b>	1	.... <b>Coil Kit</b> (220/440V, 50Hz)
2	<b>KN-567</b>	4	.... <b>Screw</b> (5/16-18 x 3/4 Hex Hd. Cap)
3	<b>KN-568</b>	4	.... <b>Washer</b> (5/16 Plain)
4	<b>PHW-119</b>	4	.... <b>Washer</b> (5/16 Lock)
5	<b>KN-172</b>	4	.... <b>Nut</b> (5/16-18 Hex)
8	<b>KKN-338A</b>	1	.... <b>Motor Pulley</b> (60 Hz Machine) <i>with</i>
N/S	LBN-340	1	.....Set Screw (1/4-20 x 1/2 Soc. Full Dog Pt.)
8A	<b>KKN-438A</b>	1	.... <b>Motor Pulley</b> (50 Hz Machines) <i>with</i>
N/S	LBN-340	1	.....Set Screw (1/4-20 x 1/2 Soc. Full Dog Pt.)
25	<b>KKN-454A</b>	1	.... <b>Lower Brace</b> <i>with</i>
23	PHS-506	1	.....Screw (10-32 x 1/4 Button Hd. Cap)
31	<b>KKN-168A</b>	1	.... <b>Shaft Cover</b> <i>with</i>
32	KKN-167	1	.....Caplug
10	PHS-506	6	.....Screw (10-32 x 3/8 Button Hd. Cap)
33	<b>KKN-1855A</b>	1	.... <b>Frame Assembly</b>
34	<b>KKN-1858A</b>	1	.... <b>Pivot Stud</b> <i>with</i>
35	MAN-1223	1	.....Washer (3/8 Lock)
36	PHS-605	1	.....Screw (3/8-16 x 1 Soc. Hd. Cap)
37	<b>KKN-1975A</b>	1	.... <b>Pivot Assembly</b> <i>with</i>
38	- - -	2	.....Bearing (Not Recommended to be sold separately)
39	PHW-182	3	.....Thrust Washer
10	PHS-506	1	.....Screw (10-32 x 3/8 Button Hd. Cap)
41	KKN-1976A	1	.....Wedge <i>with</i>
43	KKN-1878	3	.....Set Screw (Special)
44	KKN-374A	1	.....Spring (Pkg. of 1)
45	KKN-371A	1	.....Lift Pin
46	KKN-372A	1	.....Spring
47	<b>KKN-378A</b>	1	.... <b>Pivot Support</b> <i>with</i>
47A	PHW-127	1	.....Washer (1/4 Lock)
47B	MSN-189	1	.....Washer (1/4 Plain)
47C	PG-36	1	.....Screw (1/4-28 x 5/8 Hex Hd. Cap)
48	- - -	1	.... <b>Cross Arm Assembly</b> (See Fig. M)
49	<b>PHS-589A</b>	1	.... <b>Screw</b> (1/2-20 x 2-1/2 Soc. Hd. Cap) <i>with</i>
50	KN-538	1	.....Washer (1/2 Plain)
51	<b>PHS-572A</b>	1	.... <b>Screw</b> (1/4-20 x 5/8 Nylok Button Hd. Cap) <i>with</i>
52	LBN-401	1	.....Washer (1/4 Plain)
N/S	PHW-118	1	.....Washer (1/4 Lock)
53	<b>KKN-1870A</b>	1	.... <b>Drive Head Assembly</b> <i>with</i>
54	PHS-627	1	.....Screw (5/16-24 x 1 Soc. Hd. Cap)
54A	KKN-334	1	.....Washer
55	<b>KKN-340A</b>	1	.... <b>Lever Assembly</b> <i>with</i>
56	PHS-613	1	.....Screw (3/8-16 x 1 Flat Hd. Cap)

N/S indicates Not Shown

(Parts continued on next page)

**SECTION III**  
POWER STROKER

PARTS LIST COVERING FIGURE "J" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
57	- - -	1	.... <b>Tube &amp; Shaft Assembly</b> (See Fig. L)
58	<b>PHS-607</b>	4	.... <b>Screw</b> (3/8-16 x 1-3/4 Hex Hd. Cap)
35	<b>MAN-1223</b>	4	.... <b>Washer</b> (3/8 Lock)
59	<b>PHS-811</b>	2	.... <b>Screw</b> (3/8-16 x 3/4 Flat Hd.)
60	- - -	1	.... <b>Arm Assembly</b> (See Fig. K)
64	<b>KKN-364A</b>	1	.... <b>End Washer</b>
65	<b>KKN-363A</b>	1	.... <b>Thrust Spacer</b>
66	<b>KKN-362A</b>	1	.... <b>Thrust Disk</b>
67	<b>KKN-366A</b>	1	.... <b>Bearing Retainer</b> <i>with</i>
70A	<b>KKN-384A</b>	1	.....Thumb Screw
71	<b>KKN-361A</b>	1	.... <b>Spacer</b>
72	<b>KKN-367A</b>	1	.... <b>Knob</b> <i>with</i>
73	DL-36	1	.....Nut (3/8-16 Hex Jam)
73A	<b>KKN-387A</b>	1	.....Thumb Screw
74	<b>PHS-584A</b>	4	.... <b>Screw</b> (1/4-20 x 1-1/2 Soc. Hd. Cap) (Pkg. of 4)
75	<b>KKN-355A</b>	1	.... <b>Adjustment Tube</b> <i>with</i>
76	POR-112	1	....."O" Ring (.670 I.D. x 29/32 O.D. x .118)
77	<b>KKN-354A</b>	1	.... <b>Adjustment Rod</b>
78	<b>KKN-1665A</b>	1	.... <b>Torque Bar Assembly</b> <i>with</i>
35	MAN-1223	2	.....Washer (3/8 Lock)
79	KN-416	2	.....Screw (3/8-16 x 1-1/4 Hex Hd. Cap)
80	<b>KKN-108A</b>	1	.... <b>Guide Cover</b> <i>with</i>
81	PHS-583	1	.....Screw (1/4-20 x 1 Soc. Hd. Cap)
91	<b>KKN-382A</b>	1	.... <b>Link Rod</b>
92	<b>KKN-346A</b>	1	.... <b>Handle</b> <i>with</i>
93	<b>KKN-440A</b>	1	.....Clutch Knob
6	PHN-124	1	.....Nut (1/4-20 Hex Acorn)
94	MBB-977	1	.....Shoulder Screw (5/16 x 5/8 with 1/4-20 x 7/16 Thd.)
95	P-165	2	.....Washer (5/16 Plain)
96	PHW-120	1	.....Spring Washer (5/16 Shakeproof)
97	<b>KKN-348A</b>	1	.... <b>Cam Rod Bushing</b> <i>with</i>
97A	LBA-451	1	.....Washer (#10 Shakeproof)
98	PHS-614	1	.....Screw (10-32 x 1/2 Button Hd. Cap)
99	<b>KKN-383A</b>	1	.... <b>Rod End</b> <i>with</i>
100	PHN-106	1	.....Nut (1/4-28 Hex Jam)
101	PHS-640	1	.....Screw (1/4-28 x 3/4 Soc. Hd. Cap)
102	SN-13	1	.....Spacer
103	<b>KKN-331A</b>	1	.... <b>Cam</b> <i>with</i>
104	<b>KKN-332A</b>	1	.....Bushing
105	PHS-612	1	.....Screw (1/4-28 x 3/4 Flat Hd. Cap)
106	<b>KKN-315A</b>	1	.... <b>Switch Rod Assembly</b>
108	<b>KKN-318A</b>	2	.... <b>Switch Rod Bearing</b> (Pkg. of 1) <i>with</i>
109	PHS-603	2	.....Screw (10-32 x 3/4 Button Hd. Cap)
97A	LBA-451	2	.....Washer (#10 Shakeproof)
110	<b>PES-155A</b>	1	.... <b>Switch</b> (For Non "CE" Machines) <i>with</i> Attaching Hardware
112	<b>PEC-112A</b>	1	.... <b>Cable Connector</b> (For Non "CE" Machines)
113	- - -	1	.... <b>Cable Assembly</b> (For Non "CE" Machines)
115	<b>PEM-331A</b>	2	.... <b>Cable Clamp</b> (For Non "CE" Machines) (Pkg. of 2) <i>with</i>
10	PHS-506	2	.....Screw (10-32 x 3/8 Button Hd. Cap)
116	<b>KKN-325A</b>	1	.... <b>Motor Base Assembly</b> <i>with</i>

N/S indicates Not Shown

(Parts continued on next page)

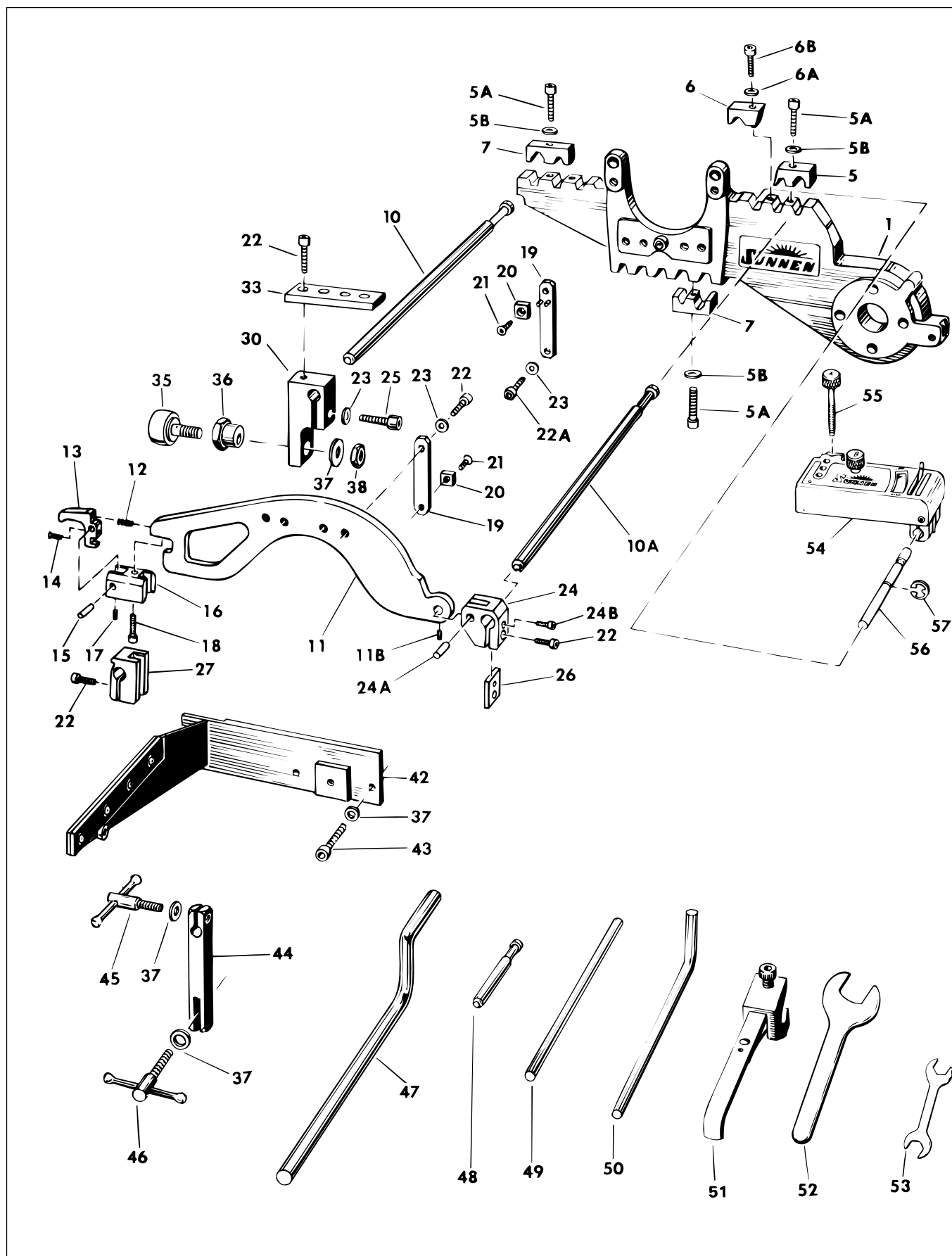


PARTS LIST COVERING FIGURE "J" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
117	KKN-447A	1	.....Tension Knob
6	PHN-124	1	.....Nut (1/4-20 Hex Acorn)
118	KKN-343	1	.....Motor Pivot
119	PHR-308	2	.....Retaining Ring
120	<b>KKN-444A</b>	1	.... <b>Belt</b>
121	<b>CRF-1833A</b>	1	.... <b>Gear Reducer</b> <i>with</i>
122	KKN-1832	1	.....Key (1/4 Sq. x 1-3/8 Long)
123	KN-422	4	.....Screw (3/8-16 x 1 Hex Hd. Cap)
35	MAN-1223	4	.....Washer (3/8 Lock)
124	<b>KKN-1834A</b>	1	.... <b>Gear Box Pulley</b> (60 Hz Machine) <i>with</i>
N/S	LBN-340	1	.....Set Screw (1/-20 x 1/2 Soc. Full Dog Pt.)
124A	<b>KKN-1844A</b>	1	.... <b>Gear Box Pulley</b> (50 Hz Machine) <i>with</i>
N/S	LBN-340	1	.....Set Screw (1/4-20 x 1/2 Soc. Full Dog Pt.)
N/S	<b>KKN-1836A</b>	1	.... <b>High Speed Oil Seal</b>
N/S	<b>KKN-1837A</b>	2	.... <b>Slow Speed Oil Seal</b> (Pkg. of 2)
N/S	<b>KKN-1838A</b>	1	.... <b>Bearing Set</b> (High Speed Shaft)
N/S	<b>KKN-1839A</b>	1	.... <b>Bearing Set</b> (Low Speed Shaft)
N/S	<b>KKN-1840A</b>	1	.... <b>Gasket Set</b>

N/S indicates Not Shown

**SECTION III**  
**POWER STROKER**



**FIGURE K - ARM ASSEMBLY**

PARTS LIST COVERING FIGURE "K"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>KKN-141D</b>	1	.... <b>Arm</b>
5	<b>MBC-483A</b>	1	.... <b>Clamp</b>
5A	<b>PHS-571A</b>	3	.... <b>Screw</b> (Pkg. of 1) <i>with</i>
5B	LBN-401	1	.....Washer (1/4 Plain)
6	<b>MBC-484A</b>	1	.... <b>Clamp</b> <i>with</i>
6A	PHW-170	1	.....Washer (1/4 Plain)
6B	PHS-571	1	.....Screw (1/4-20 x 1-1/4 Soc. Hd. Cap)
7	<b>KKN-154A</b>	2	.... <b>Clamp</b> (Pkg. of 1)
10	<b>KKN-743A</b>	1	.... <b>Rod</b> (12")
10A	<b>KKN-777A</b>	1	.... <b>Rod</b> (12")
11	<b>KKN-756A</b>	1	.... <b>Gate</b> <i>with</i>
11B	PHS-117	1	.....Set Screw (10-32 x 5/16 Cup Point)
12	<b>PSP-143A</b>	1	.... <b>Spring</b>
13	<b>KKN-763A</b>	1	.... <b>Latch</b> <i>with</i>
14	PHS-172	1	.....Set Screw (10-32 x 1/2 Oval Point)
15	KKN-763	1	.....Latch Pin
16	<b>KKN-757A</b>	1	.... <b>Latch Block</b> <i>with</i>
17	KN-180	1	.....Set Screw (10-32 x 1/4 Flat Point)
18	AG-128	1	.....Screw (10-32 x 3/4 Soc. Hd. Cap)
- -	<b>KKN-720A</b>	2	.... <b>Finger Assembly</b> (Pkg. of 2) <i>includes</i>
19	KKN-721A	2	.....Finger with Pin (Pkg. of 2)
20	KKN-613A	2	.....Carbide Pad Set (Pkg. of 2) <i>with</i>
21	PHS-629	2	.....Screw (8-32 x 5/16 Flat Hd. Soc. Cap)
22	LBB-891	2	.....Screw (5/16-18 x 3/4 Soc. Hd. Cap)
22A	PHS-766	2	.....Screw (5/16-18 x 1-1/4 Soc. Hd. Cap)
23	P-165	2	.....Washer (5/16 Plain)
N/S	<b>KKN-723A*</b>	1	.... <b>Finger Set</b> - <i>Optional</i> (Not Supplied with Machine)
24	<b>KKN-767A</b>	1	.... <b>Pivot Block</b> <i>with</i>
22	LBB-891	1	.....Screw (5/16-18 x 3/4 Soc. Hd. Cap)
24A	KKN-768	1	.....Pivot Pin
24B	PHS-764	1	.....Screw (1/4-28 x 1/2 Soc. Hd. Cap)
26	<b>KKN-769A</b>	1	.... <b>Key</b>
27	<b>KKN-773A</b>	1	.... <b>Stop Block</b> <i>with</i>
22	LBB-891	1	.....Screw (5/16-18 x 3/4 Soc. Hd. Cap)
30	<b>KKN-735A</b>	1	.... <b>Torque Bracket Assembly</b> <i>with</i>
23	P-165	1	.....Washer (5/16 Plain)
25	MBB-971	1	.....Screw (5/16-18 x 1 Soc. Hd. Cap)
33	KKN-738A	1	.....Torque Cap
22	LBB-891	1	.....Screw (5/16-18 x 3/4 Soc. Hd. Cap)
35	PBR-33A	1	.....Bearing <i>with</i>
37	KKN-538	1	.....Washer (1/2 Plain)
38	KKN-158	1	.....Locknut (1/2-20 Special)
36	CRF-464A	1	.....Eccentric
42	<b>CRF-420A</b>	1	.... <b>Heavy Work Support</b> <i>with</i>
N/S	CRF-432A	1	.....Support Rail <i>with</i> Screw & Washer
N/S	CRF-431A	2	.....Cam (Pkg. of 2) <i>with</i> Screw
37	KN-538	3	.....Washer (1/2 Plain)
43	PHS-550	3	.....Screw (1/2-13 x 1-3/4 Soc. Hd. Cap)
44	<b>LBN-738A</b>	1	.... <b>Arm</b> <i>with</i>

N/S indicates Not Shown

\*KKN\_723A Fingers are without Pads and are used for External Honing.

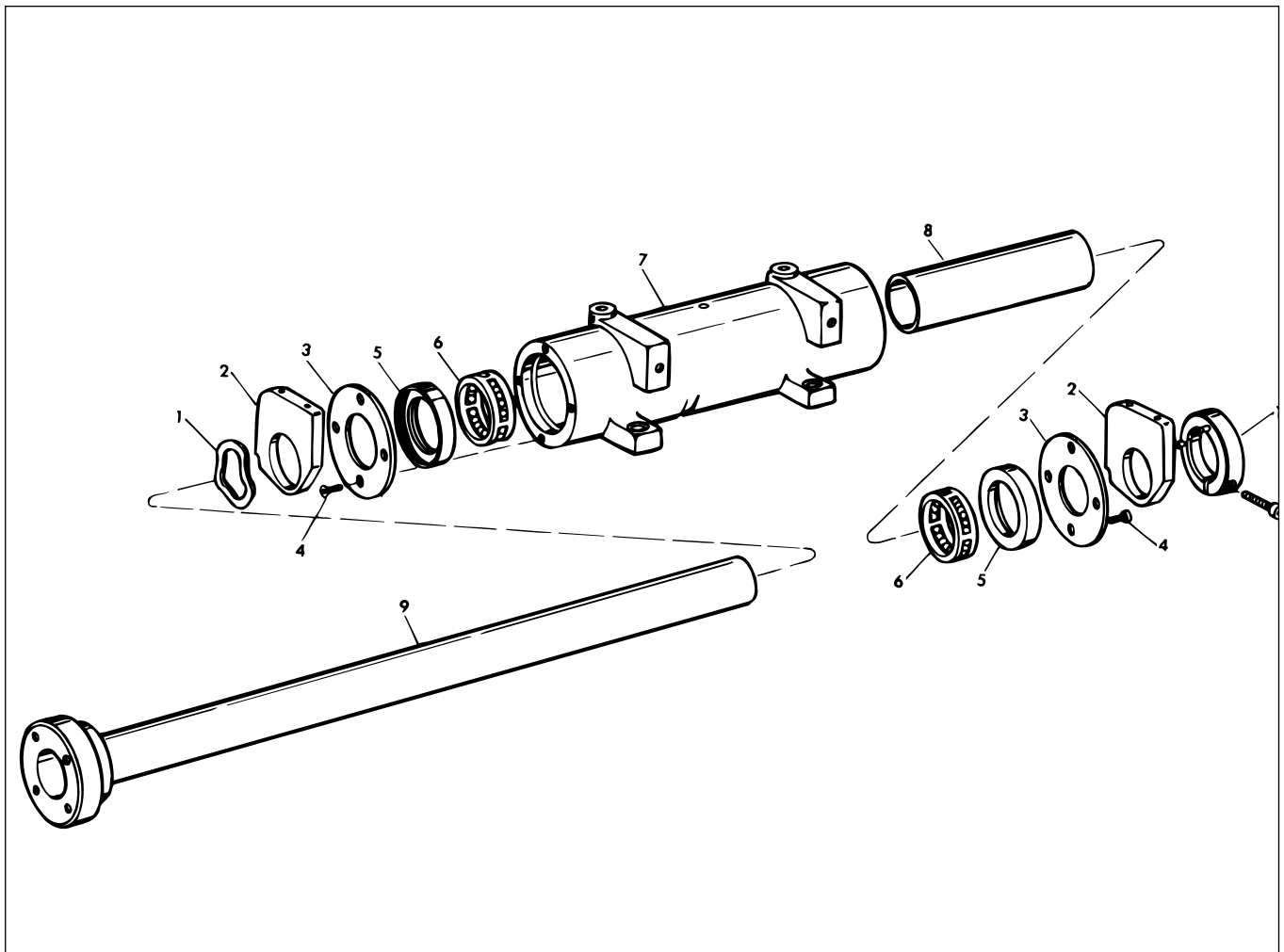
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**SECTION III**  
POWER STROKER

PARTS LIST COVERING FIGURE "K" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
45	MB-2325A	1	.....Handle Screw (1/2-20 Thread) with
37	KN-538	1	.....Washer (1/2 Plain)
46	AAN-37A	1	.....Clamping Screw with
37	KN-538	1	.....Washer (1/2 Plain)
47	<b>MB-2331A</b>	1	.... <b>Offset Bar</b> (13")
N/S	<b>MB-2333A</b>	1	.... <b>Offset Bar</b> (23") - <i>Optional</i> (Not Supplied with Machine)
48	<b>KKN-742A</b>	1	.... <b>Rod</b> (4")
49	<b>KKN-197A</b>	1	.... <b>Torque Bar</b> (1/2 Diameter)
50	<b>KKN-198A</b>	1	.... <b>Oiler Bar</b> (3/8 Diameter)
51	<b>KKN-680A</b>	1	.... <b>Safety Shield</b>
52	<b>CRF-546A</b>	1	.... <b>Wrench</b> (1" Open End)
53	<b>KKN-196A</b>	1	.... <b>Wrench</b> (1/2 & 5/8 Open End)
N/S	<b>LN-1546A</b>	1	.... <b>Hex Key Wrench</b> (5/64)
N/S	<b>KN-574A</b>	1	.... <b>Hex Key Wrench</b> (1/8)
N/S	<b>KN-575A</b>	1	.... <b>Hex Key Wrench</b> (5/32)
N/S	<b>KN-229A</b>	1	.... <b>Hex Key Wrench</b> (3/16)
N/S	<b>PHS-14A</b>	1	.... <b>Hex Key Wrench</b> (7/32)
54	<b>MBC-400A</b>	1	.... <b>Indicator</b> <i>with</i>
55	MBC-475A	1	.....Sliding Block Screw <i>with</i> Ball
56	MBC-480A	1	.....Pivot Rod <i>with</i>
57	PHR-335A	1	.....Retaining Ring

*N/S indicates Not Shown*



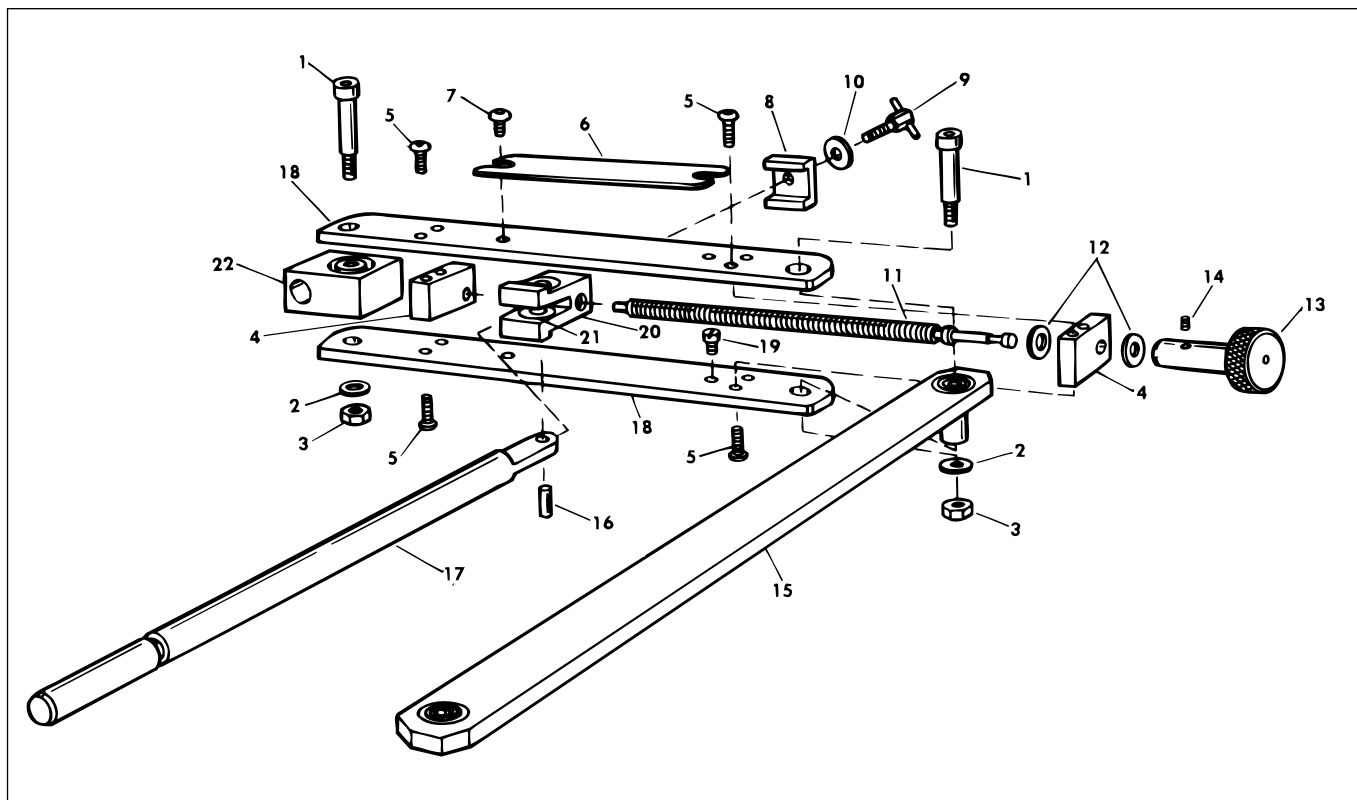
**FIGURE L - TUBE & SHAFT ASSEMBLY**

**PARTS LIST COVERING FIGURE "L"**

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>MBB-355A</b>	1	.... <b>Spring Washer</b>
2	<b>KKN-133A</b>	2	.... <b>Cover Support</b> (Pkg. of 1)
3	<b>KKN-124A</b>	2	.... <b>Seal Retainer</b> (Pkg. of 1) <i>with</i>
4	PHS-506	8	.....Screw (10-32 x 3/8 Button Hd. Cap)
5	<b>PHM-701A</b>	2	.... <b>Seal</b> (Pkg. of 2)
6	<b>KKN-120A</b>	2	.... <b>Ball &amp; Cage Assembly</b> (Pkg. of 2)
7	<b>KKN-115A</b>	1	.... <b>Bearing Tube Assembly</b>
8	<b>KKN-119A</b>	1	.... <b>Bearing Spacer</b>
9	<b>KKN-130A</b>	1	.... <b>Hub &amp; Shaft Assembly</b>
10	<b>KKN-135A</b>	1	.... <b>Collar Assembly</b> <i>with</i>
11	PHS-571	1	.....Screw (1/4-20 x 1-1/4 Soc. Hd. Cap)

*N/S indicates Not Shown*

**SECTION III**  
**POWER STROKER**



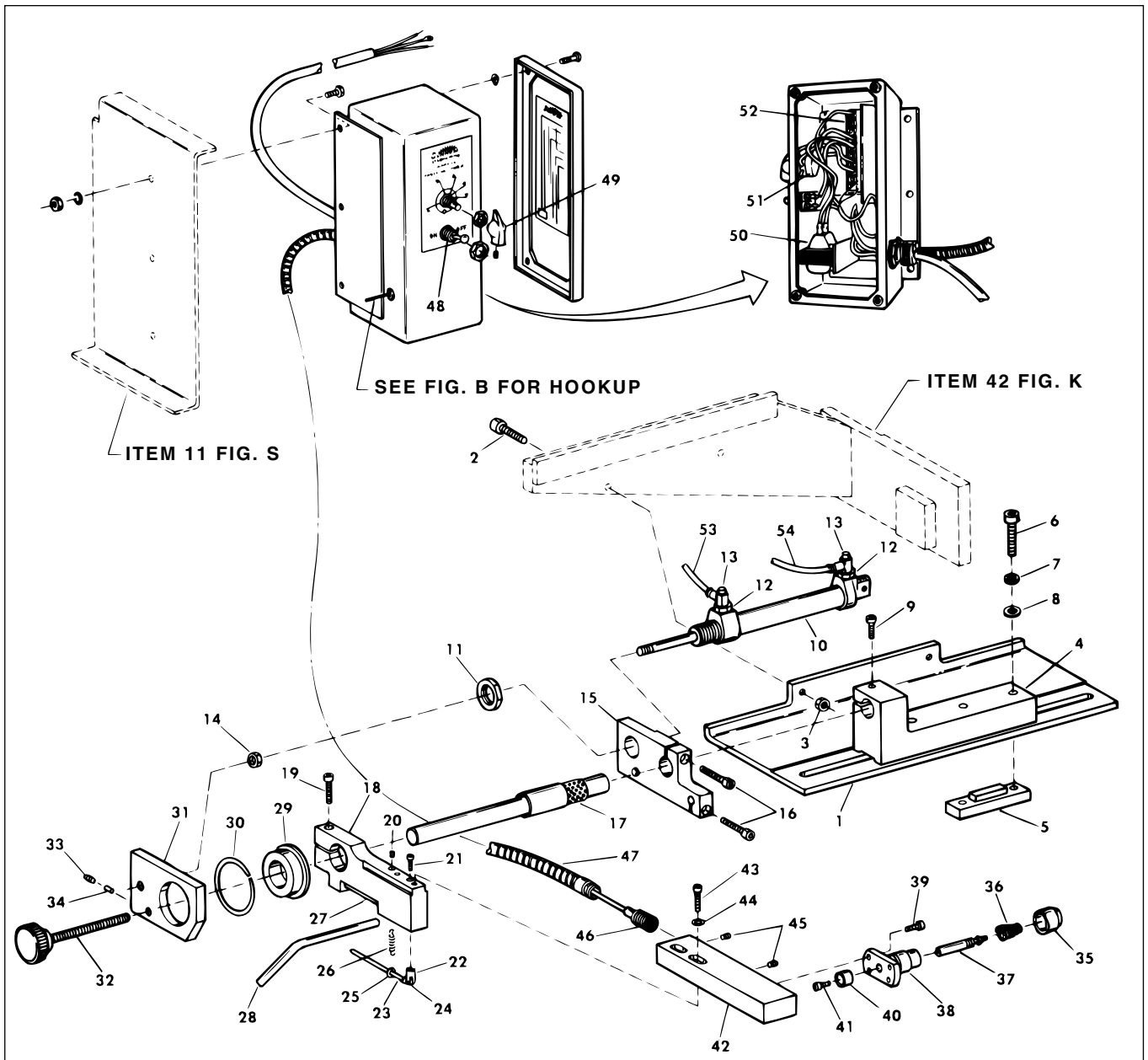
**FIGURE M - CROSS ARM ASSEMBLY**

**PARTS LIST COVERING FIGURE "M"**

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>PHS-610A</b>	2	.... <b>Shoulder Screw</b> (3/8 x 1-1/2 with 5/16-18 x 1/2 Thd.) (Pkg. of 1) <i>with</i>
2	P-165	2	.....Washer (5/16 Plain)
3	KN-172	2	.....Nut (5/16-18 Hex)
4	<b>KKN-412A</b>	2	.... <b>Spacer</b> (Pkg. of 1) <i>with</i>
5	PHS-611	8	.....Screw (1/4-20 x 5/8 Button Hd. Cap)
6	<b>PNP-339A</b>	1	.... <b>Stroke Length Scale</b> <i>with</i>
7	PHS-532	2	.....Screw (10-32 x 1/4 Button Hd. Cap)
8	<b>KKN-424A</b>	1	.... <b>Clamp Block</b>
9	<b>KKN-425A</b>	1	.... <b>Clamp Screw Assembly</b> <i>with</i>
10	KN-99	1	.....Washer (3/8 Plain)
11	<b>KKN-413A</b>	1	.... <b>Adjusting Screw</b> <i>with</i>
12	PHW-106	2	.....Washer (9/32 Plain)
13	<b>KKN-414A</b>	1	.... <b>Adjusting Knob</b> <i>with</i>
14	PHS-114	2	.....Set Screw (10-32 x 3/16 Soc. Cone Pt.)
15	<b>KKN-1915A</b>	1	.... <b>Input Bar Assembly</b> <i>with</i> Bearing and Spacer Bushing
16	<b>KKN-1897A</b>	1	.... <b>Pin</b> <i>with</i> Set Screw
17	<b>KKN-1898A</b>	1	.... <b>Pivot Rod</b>
18	<b>KKN-411A</b>	2	.... <b>Cross Bar</b> (Pkg. of 2) <i>with</i>
19	KN-704	2	.....Screw (10-32 x 1/4 Fil. Hd.)
20	<b>KKN-1895A</b>	1	.... <b>Moving Block Assembly</b> <i>with</i>
21	- - -	2	.....Bearing (Not recommended to be sold separately)
22	<b>KKN-1905A</b>	1	.... <b>Driving Block Assembly</b> <i>with</i> Bearing

N/S indicates Not Shown

## SECTION IV - ELECTRICAL SYSTEM



**FIGURE N - AUTOMATIC SIZE CONTROL**

**PARTS LIST COVERING FIGURE "N"**

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
- -	<b>ASC-730A</b>	1	<b>....Probe Body and Clamp Assembly includes</b>
1	ASC-736A	1	.....Platform
2	PHSM-515	2	.....Screw (M8 x 1.25-6G x 25mm Soc. Hd. Cap)
3	PHNM-401	2	.....Nut (M8 x 1.25-6H)
4	ASC-718A	1	.....Bearing Shaft Clamp
5	ASC-719A	1	.....Tee Clamp Block
6	PHSM-474	2	.....Screw (M8 x 1.25-6G x 45mm Soc. Hd. Cap)
7	PHWM-501	2	.....Washer (8mm Lock)
8	PHWM-407	2	.....Washer (8mm Flat)
9	PHSM-415	1	.....Screw (M5 x 0.8 x 35mm Soc. Hd. Cap)

N/S indicates Not Shown

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**SECTION IV**  
ELECTRICAL SYSTEM

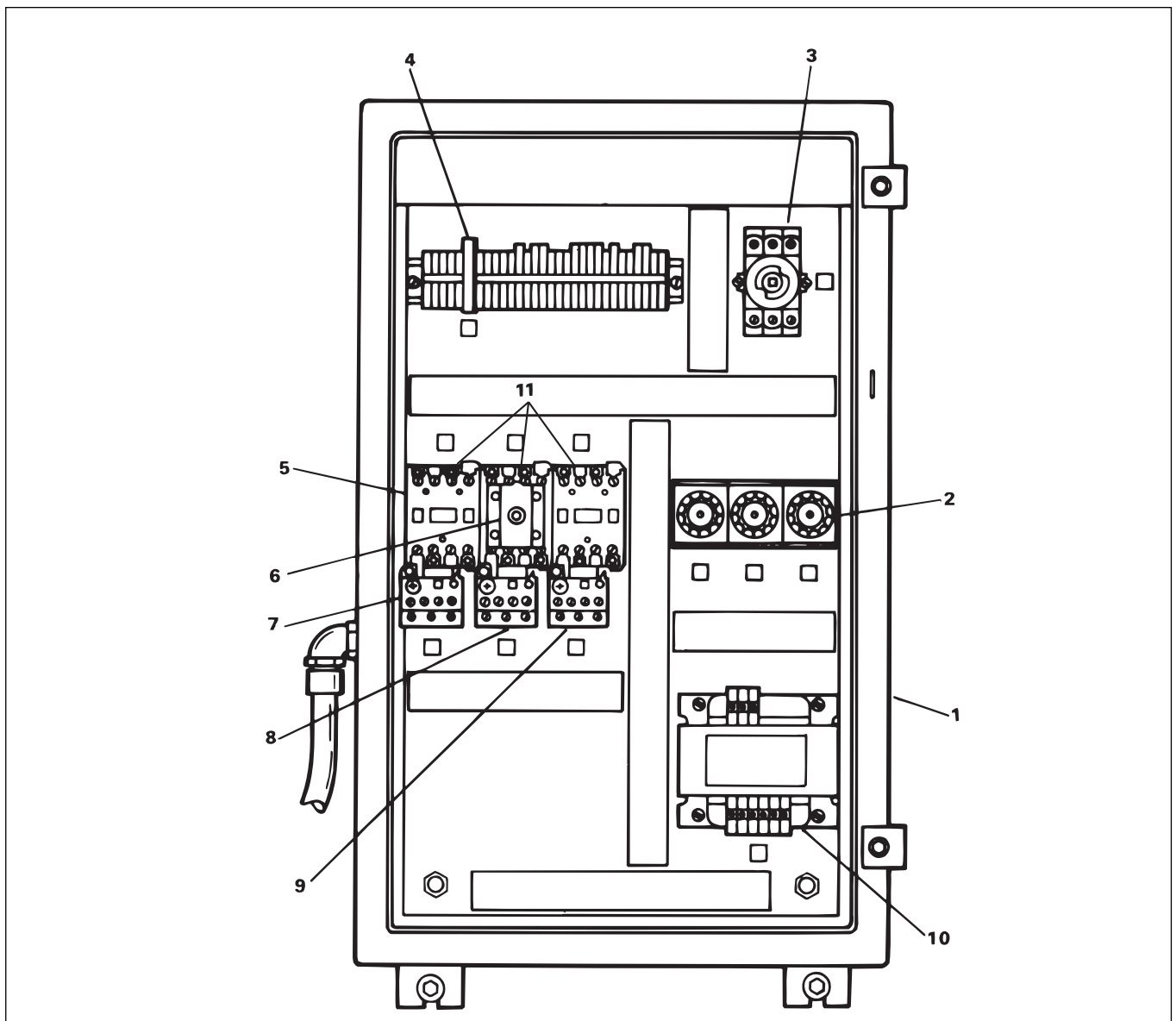
PARTS LIST COVERING FIGURE "N" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
10	ASC-757A	1	.....Air Cylinder <i>includes</i>
11	- - -	1	.....Nut
12	PPPM-402A	2	.....Reducing Nipple (Pkg. of 1)
13	PPPM-401A	2	.....Flow Control Valve (Pkg.of 1)
14	PHNM-401	1	.....Nut (M8 x 1.25-6H)
15	ASC-756A	1	.....Position Bracket
16	PHSM-963	2	.....Screw (M5 x 0.8-6G x 20mm Soc. Hd. Cap)
17	ASC-724A	1	.....Bearing Assembly
18	ASC-788A	1	.....Probe Extension Arm
19	PHSM-516	1	.....Screw (M5 x 0.8-6G x 25mm Soc. Hd. Cap)
20	PHSM-479	1	.....Set Screw (M8 x 1.25-6G x 12mm Flat Point)
21	PHSM-473	1	.....Screw (M4 x 0.7-6G x 40mm Soc. Hd. Cap)
22	ASC-741A	1	.....Pivot Post
23	ASC-795A	1	.....Pivot Assembly
24	PHP-421A	1	.....Roll Pin
25	ASC-746A	1	.....Spring Support
26	PSP-323A	1	.....Spring <i>with</i>
N/S	PHP-433A	1	.....Roll Pin
27	PHPM-507A	1	.....Dowel Pin
28	ASC-753A	1	.....Guide Rod
29	MBB-335A	1	.....Bearing <i>includes</i>
30	- - -	1	.....Retaining Ring
31	ASC-722A	1	.....Bearing Block
32	ASC-735A	1	.....Knob and Shaft Assembly
33	PHSM-410	1	.....Set Screw (M5 x 0.8 x 8mm)
34	PG-2183A	1	.....Nylon Plunger
- -	<b>ASC-235A</b>	1	.... <b>Plunger Assembly</b> <i>includes</i>
35	ASC-249A	1	.....Sealing Boot
36	PSP-506A	1	.....Coned Spring
37	ASC-246A	1	.....Plunger
38	ASC-236A	1	.....Plunger Nose
39	PHSM-520	4	.....Screw (8-32 x 3/8 Soc. Hd. Cap)
40	ASC-248A	1	.....Collar
41	PG-697	1	.....Screw (8-32 x 5/16 Soc. Hd. Cap)
N/S	PHW-156	1	....Washer (#8 Shakeproof)
42	<b>ASC-773A</b>	1	.... <b>Probe Body</b> <i>with</i>
43	PHSM-963	2	.....Screw (M5 x 0.8-6G x 20mm Soc. Hd. Cap)
44	PHWM-502	2	.....Washer
45	PHSM-410	2	.....Set Screw (M5 x 0.8 x 8mm)
46	<b>PEM-407A</b>	1	.... <b>Proximity Sensor</b>
47	<b>ASC-230A</b>	1	.... <b>Conduit Assembly</b>
48	<b>CRG-299E</b>	1	.... <b>Switch</b>
49	<b>PHM-301A</b>	1	.... <b>Knob</b>
50	<b>PES-160A</b>	1	.... <b>Solenoid, Wires, Markers and Screws</b>
51	<b>PES-161A</b>	1	.... <b>Potentiometer, Wires and Markers</b>
52	<b>PEM-408A</b>	1	.... <b>Rate Sensor Board Assembly</b>
53	<b>78161A</b>	*	.... <b>Tubing</b> (5/32 O.D. Orange)
54	<b>78161A</b>	*	.... <b>Tubing</b> (5/32 O.D. Orange)

N/S indicates Not Shown

\*Material sold by the foot only.





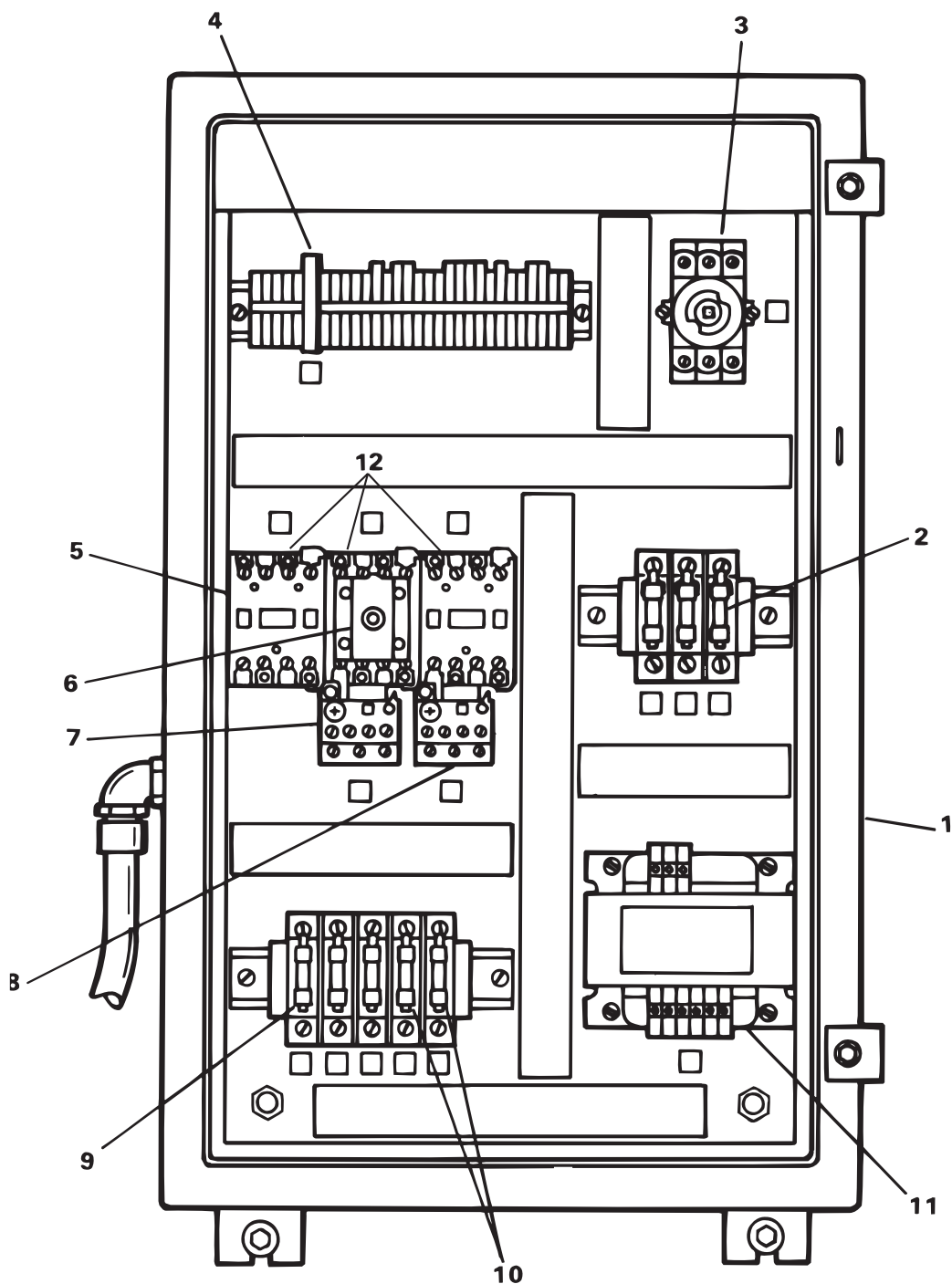
**FIGURE O - ELECTRICAL CONTROL ENCLOSURE (NON-CE MACHINES)**

**PARTS LIST COVERING FIGURE "O"**

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	- - -	1	.... <b>Enclosure</b> (For Non "CE" Machines) <i>with</i>
N/S	PEM-319A	1	.....Disconnect Handle
N/S	MBC-567A	1	.....Extension Shaft
2	<b>PEF-115A</b>	3	.... <b>Fuse, Time Lag Diazed</b> (Pkg. of 1)
3	<b>PES-297A</b>	1	.... <b>Non-Fused Disconnect Switch</b>
4	<b>PEF-114A</b>	1	.... <b>Fuse, 2 Amp, Slo-Blo</b>
5	<b>PES-718</b>	3	.... <b>Contactor</b> (Pkg. of 1)
6	<b>PES-728</b>	1	.... <b>Pneumatic Timer</b>
7	<b>PES-725</b>	1	.... <b>Overload Relay</b>
8	<b>PES-724</b>	1	.... <b>Overload Relay</b>
9	<b>PES-724</b>	1	.... <b>Overload Relay</b>
10	<b>PEM-532A</b>	1	.... <b>Control Transformer</b>
11	<b>PEM-1095</b>	3	.... <b>AC Coil Suppressor / Adapter</b>

*N/S indicates Not Shown*

**SECTION IV**  
**ELECTRICAL SYSTEM**



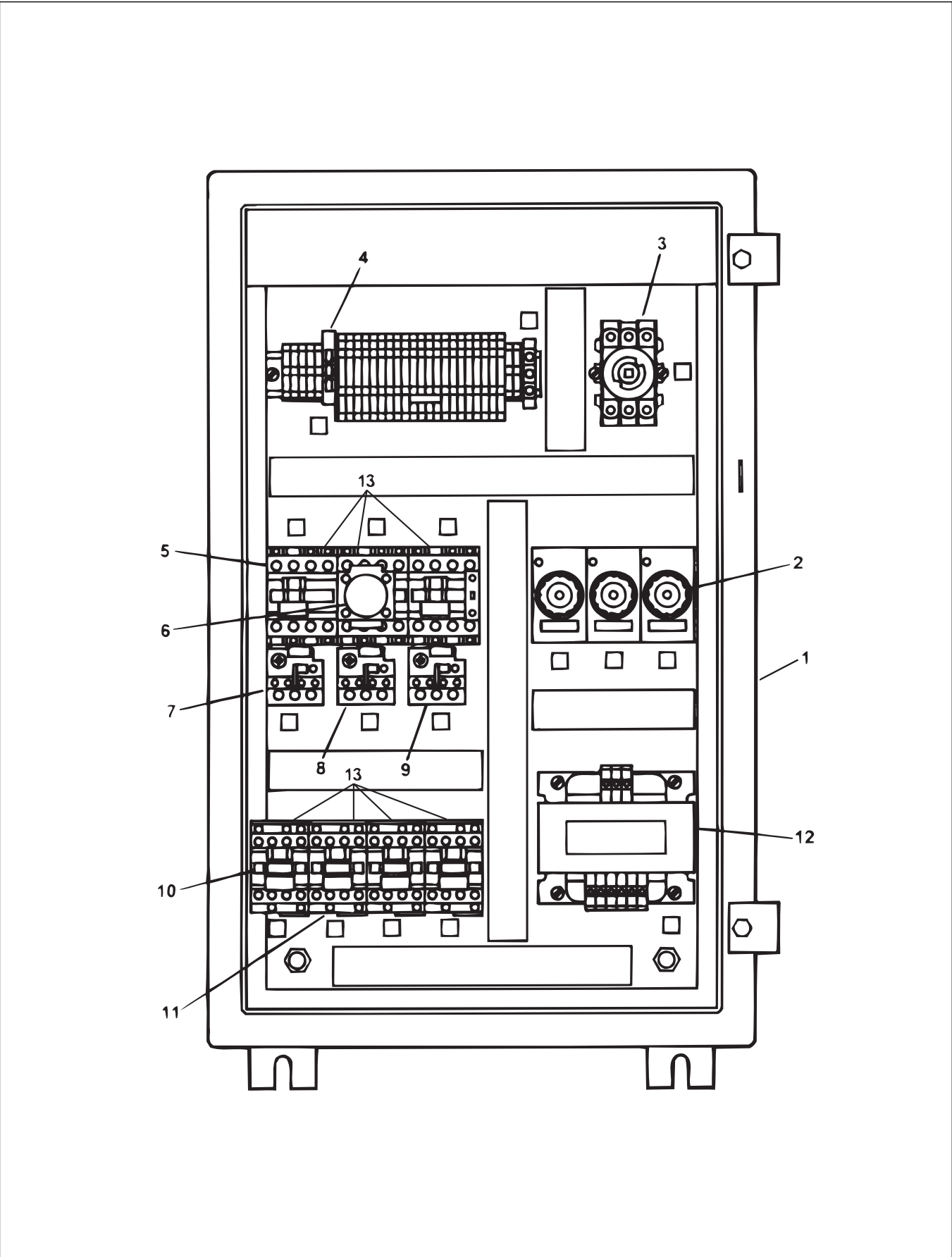
**FIGURE P - ELECTRICAL CONTROL ENCLOSURE (NON-CE MACHINES)**

PARTS LIST COVERING FIGURE "P"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	- - -	1	.... <b>Enclosure</b> (For Non "CE" Machines) <i>with</i>
N/S	PEM-319A	1	.....Disconnect Handle
N/S	MBC-567A	1	.....Extension Shaft
2	<b>PEF-21A</b>	3	.... <b>Fuse, 12 Amp</b> (Pkg. of 1) <i>for</i> (208/230V, 60Hz, 3Ph & 220V, 50Hz, 3Ph)
2	<b>PEF-24A</b>	3	.... <b>Fuse, 6 Amp</b> (Pkg. of 1) <i>for</i> (440V, 50Hz, 3Ph & 460V, 60Hz, 3Ph)
3	<b>PES-297A</b>	1	.... <b>Non-Fused Disconnect Switch</b>
4	<b>PEF-114A</b>	1	.... <b>Fuse, 2 Amp, Slo-Blo</b>
5	<b>PES-718</b>	3	.... <b>Contactor</b> (Pkg. of 1)
6	<b>PES-728</b>	1	.... <b>Pneumatic Timer</b>
7	<b>PES-724</b>	1	.... <b>Overload Relay</b> <i>for</i> (440V, 50Hz, 3Ph & 460V, 60Hz, 3Ph)
7	<b>PES-725</b>	1	.... <b>Overload Relay</b> <i>for</i> (208/230V, 60Hz, 3Ph & 220V, 50Hz, 3Ph)
8	<b>PES-724</b>	1	.... <b>Overload Relay</b> <i>for</i> (440V, 50Hz, 3Ph & 460V, 60Hz, 3Ph)
8	<b>PES-725</b>	1	.... <b>Overload Relay</b> <i>for</i> (208/230V, 60Hz, 3Ph & 220V, 50Hz, 3Ph)
9	<b>PEF-22A</b>	3	.... <b>Fuse, 5.6 Amp</b> (Pkg. of 1) <i>for</i> (208/230V, 60Hz, 3Ph & 220V, 50Hz, 3Ph)
9	<b>PEF-25A</b>	3	.... <b>Fuse, 3 Amp</b> (Pkg. of 1) <i>for</i> (440V, 50Hz, 3Ph & 460V, 60Hz, 3Ph)
10	<b>PEF-23A</b>	2	.... <b>Fuse, 1.5 Amp</b> (Pkg. of 1) <i>for</i> (208/230V, 60Hz, 3Ph & 220V, 50Hz, 3Ph)
10	<b>PEF-26A</b>	2	.... <b>Fuse, .75 Amp</b> (Pkg. of 1) <i>for</i> (440V, 50Hz, 3Ph & 460V, 60Hz, 3Ph)
11	<b>PEM-532A</b>	1	.... <b>Control Transformer</b>
12	<b>PEM-1095</b>	3	.... <b>AC Coil Suppressor / Adapter</b>

N/S indicates Not Shown

**SECTION IV**  
ELECTRICAL SYSTEM



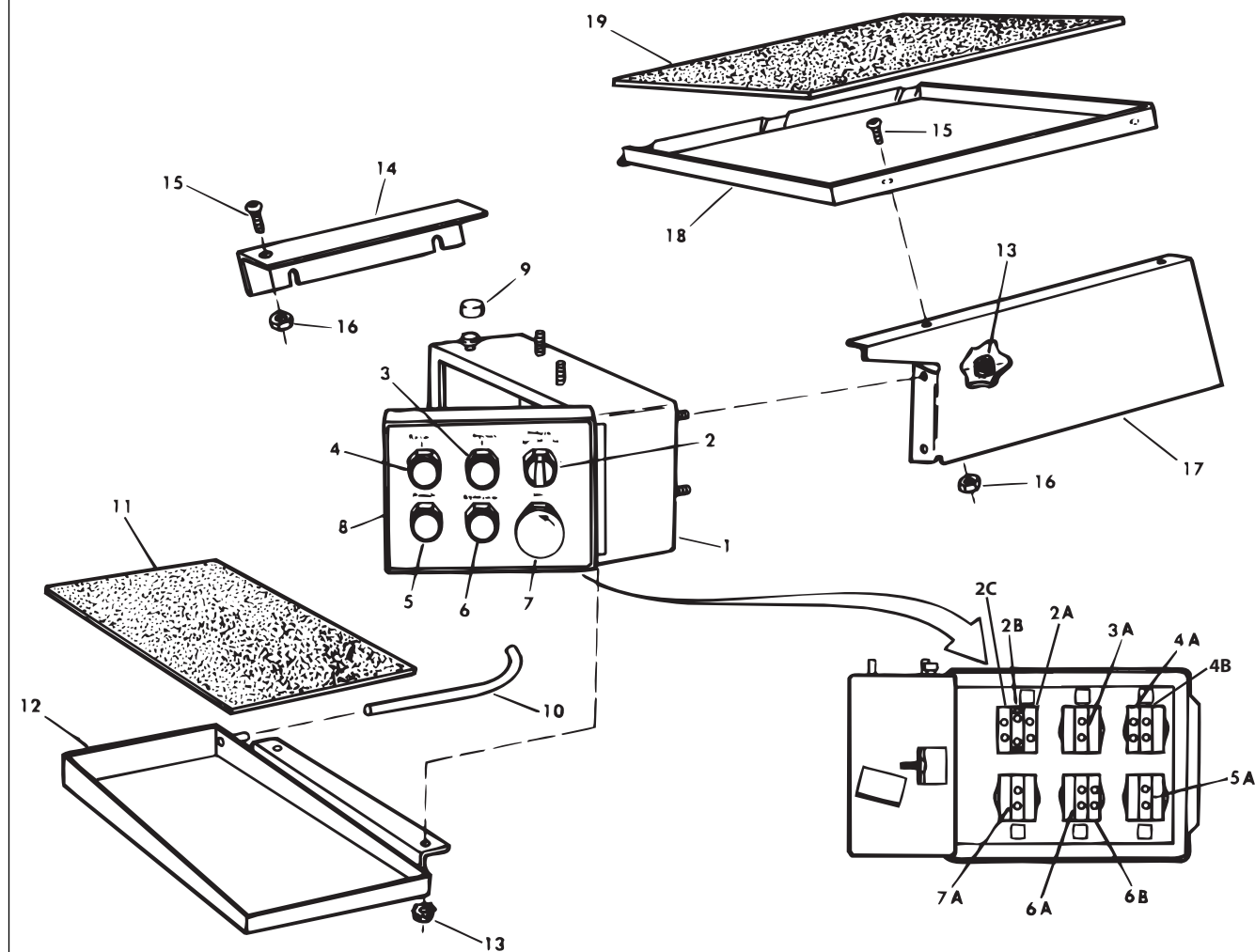
**FIGURE Q - ELECTRICAL CONTROL ENCLOSURE (CE MACHINES)**

PARTS LIST COVERING FIGURE "Q"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	- - -	1	.... <b>Enclosure</b> (For "CE" Machines) <i>with</i>
N/S	PEM-319A	1	.....Disconnect Handle
N/S	MBC-567A	1	.....Extension Shaft
2	<b>PEF-115A</b>	3	.... <b>Fuse, Time Lag Diazed</b> (Pkg. of 1)
3	<b>PES-297A</b>	1	.... <b>Non-Fused Disconnect Switch</b>
4	<b>PEF-114A</b>	1	.... <b>Fuse, 2 Amp, Slo-Blo</b>
5	<b>PES-718</b>	3	.... <b>Contactor</b> (Pkg. of 1)
6	<b>PES-728</b>	1	.... <b>Pneumatic Timer</b>
7	<b>PES-746</b>	1	.... <b>Overload Relay</b> (220V, 50Hz, 3Ph)
7	<b>PES-725</b>	1	.... <b>Overload Relay</b> (400V, 50Hz, 3Ph)
7	<b>PES-747</b>	1	.... <b>Overload Relay</b> (440V, 50Hz, 3Ph)
8	<b>PES-725</b>	1	.... <b>Overload Relay</b> (220V, 50Hz, 3Ph)
8	<b>PES-724</b>	1	.... <b>Overload Relay</b> (400/440V, 50Hz, 3Ph)
9	<b>PES-725</b>	1	.... <b>Overload Relay</b> (220V, 50Hz, 3Ph)
9	<b>PES-724</b>	1	.... <b>Overload Relay</b> (400/440V, 50Hz, 3Ph)
10	<b>PES-729</b>	3	.... <b>Control Relay</b> (Pkg. of 1)
11	<b>PES-729</b>	1	.... <b>Relay</b>
12	<b>PEM-532A</b>	1	.... <b>Control Transformer</b>
13	<b>PEM-1095</b>	3	.... <b>AC Coil Suppressor / Adapter</b>

N/S indicates Not Shown

**SECTION IV**  
ELECTRICAL SYSTEM



**FIGURE R - CONTROL BOX**

PARTS LIST COVERING FIGURE "R"

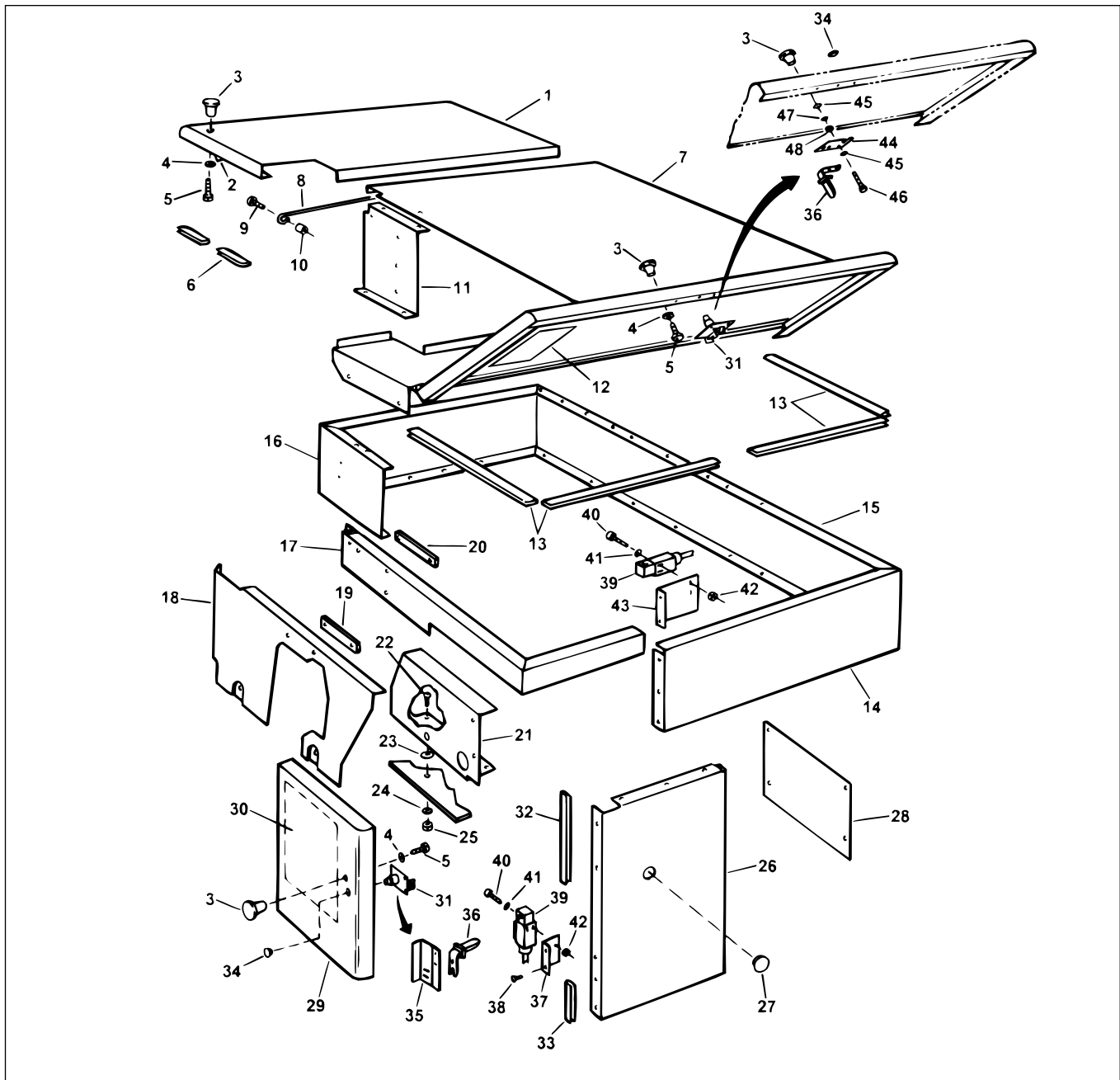
ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	- - -	1	....Switch Box
2	PES-755A	1	....3 Position Selector Switch (For Non "CE" Machines)
2	PES-495A	1	....Key Selector Switch (For "CE" Machines)
2A	PES-761A	1	....Contact Block (Two Contact NO/NC)(Pkg. of 1)
2B	PES-762A	1	....Contact Block - (Two Contact NO/NC)
2C	PES-763A	1	....Contact Block (NO)
3	PES-756A	1	....Switch (Cycle Start)
3A	PES-763A	1	....Contact Block (NO)
4	PES-757A	1	....Pushbutton Unit (Power On)
4A	PES-763A	1	....Contact Block (NO)
4B	PES-764A	1	....Light
5	PES-758A	1	....Flush Pushbutton Switch (Power Off)
5A	PES-765A	1	....Contact Block (NC)
6	PES-759A	1	....Extended Pushbutton Switch (Cycle Stop / Reset)
6A	PES-763A	1	....Contact Block (NO)
6B	PES-765A	*	....Contact Block (NC)
7	PES-760A	1	....Switch (E-Stop)
7A	PES-765A	1	....Contact Block (NC)
8	PNP-335A	1	....Nameplate
9	MBB-856A	1	....Neoprene Bumper
10	MBC-267A	1	....Drain Tube with Bushings
11	MBC-266A	1	....Tray Pad
12	MBC-265A	1	....Tray
13	PHN-134	4	....Nut & Lockwasher
14	MBB-3172A	1	....Switch Box Angle
15	PHS-506	2	....Screw (10-32 x 3/8 Button Hd. Cap)
16	PHN-134	2	....Nut (10-32 Hex)
17	MBB-3169A	1	....Side Cover
18	MBB-3205A	1	....Work Tray
19	MBB-3218A	1	....Tray Pad

N/S indicates Not Shown

\*1 Contact block required for Non CE Machines.

2 Contact blocks required for CE Machines.

## SECTION V - COVERS & GUARDS



**FIGURE S - SHEET METAL COVERS & LATCHES**

### PARTS LIST COVERING FIGURE "S"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>KKN-1630A</b>	1	.... <b>Filter Door Assembly</b> with
2	KKN-1519A	1	.....Pilot with Washer and Screw
3	KKN-458A	3	.....Knob (Pkg. of 1) with
4	PHW-118	1	.....Washer (1/4 Lock)
5	MSA-219	1	.....Screw (1/4-20 x 1/2 Hex. Hd. Cap)
6	<b>KKN-1647A</b>	1	.... <b>Bumper Set - Left Side</b>
7	<b>KKN-1715A</b>	1	.... <b>Door Assembly</b>
8	<b>MBC-701A</b>	1	.... <b>Cover Restraint</b>

N/S indicates Not Shown

(Parts continued on next page)

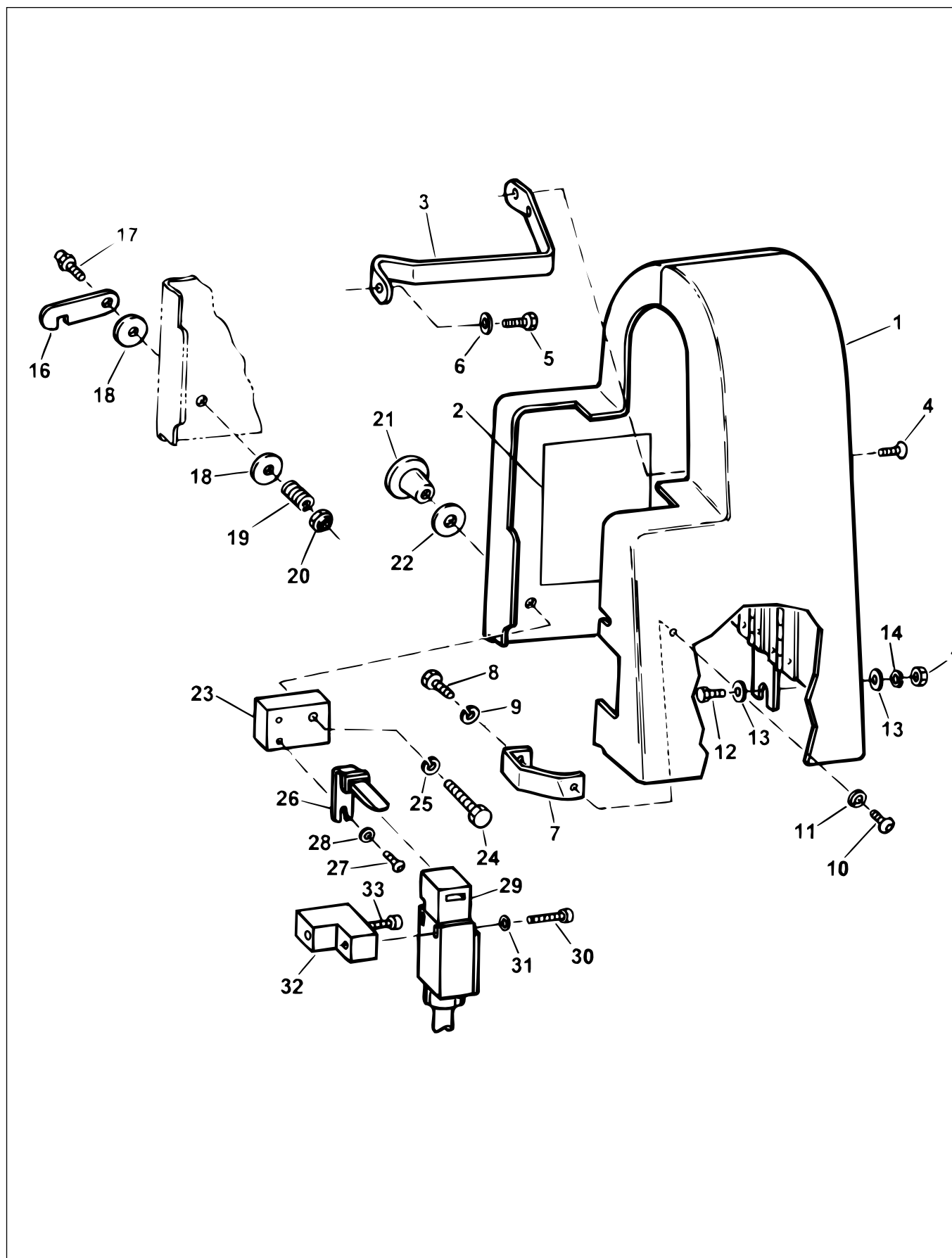


PARTS LIST COVERING FIGURE "S" (cont'd)

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
9	PHS-674	1	....Screw (8-32 x 1/2 Binding Hd.)
10	PF-287A	1	....Bushing
11	KKN-1624A	1	....Cover Support
12	PNP-338A	1	....Stroke Length Selector Label
13	KKN-1748A	1	....Bumper Set - Right Side
	KKN-1622A	1	....Wrap Around <i>includes</i>
14	KKN-1619A	1	.....Right Panel
15	KKN-1618A	1	.....Rear Panel
16	KKN-1620A	1	.....Left Panel
17	KKN-1612A	1	....Front Strip
18	---	1	....Rear Splash Guard (See Fig. E)
19	KKN-1512A	1	....Tap Strip
20	KKN-1712A	1	....Tap Strip
21	KKN-2066A	1	....Front Cover <i>with</i>
22	PHS-672	1	.....Screw (1/4-20 x 1 Button Hd, Cap)
23	MSN-189	1	.....Washer
24	PHW-118	1	.....Washer (1/4 Lock)
25	LBN-431	1	.....Nut (1/4-20 Hex.)
26	KKN-1615A	1	....Side Panel Assembly <i>with</i>
27	PF-309	1	.....Caplug
28	KKN-1657A	1	....Rear Plate
29	KKN-455A	1	....Lower Door <i>with</i>
N/S	PHS-506	4	.....Screw (10-32 x 1/4 Button Hd. Cap)
30	PNP-337A	1	.....Stroke Speed Selector Chart
--	---		<b>FOLLOWING PARTS ARE FOR NON "CE" MACHINES</b>
31	KKN-1705A	2	....Safety Latch (Pkg. of 1)
32	KKN-1744A	1	....Bumper Strip
33	KKN-1743A	1	....Bumper Strip
--	---		<b>FOLLOWING PARTS ARE FOR "CE" MACHINES</b>
32	MBC-747A	1	....Bumper Strip
33	MBC-746A	1	....Bumper Strip
34	PHM-746	2	....Button Plug
35	MBC-742A	1	....Safety Key Bracket
36	PEM-734A	2	....Safety Key (Pkg. of 1)
37	MBC-743	1	....Switch Bracket
38	PHS-506	2	....Screw (10-32 x 3/8 Button Hd. Cap)
N/S	PHN-134	2	....Nut and Lockwasher
39	PES-494A	2	....Safety Interlock (Pkg. of 1) <i>with</i>
40	PHS-715	2	.....Screw (8-32 x 1-1/4 Soc. Hd. Cap)
41	PG-605	2	.....Washer
42	PHN-134	2	.....Nut and Lockwasher
43	MBC-741A	1	....Switch Bracket
44	MBC-739	1	....Safety Key Plate
45	LBN-401	2	....Washer
46	PHS-602	1	....Screw (1/4-20 x 1-1/2 Hex. Hd. Cap)
47	PHW-118	1	....Lockwasher
48	LBN-431	1	....Nut (1/4-20 Hex.)

N/S indicates Not Shown

**SECTION V**  
**COVERS & GUARDS**



**FIGURE T - BELT GUARD ASSEMBLY**

PARTS LIST COVERING FIGURE "T"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	<b>KKN-970A</b>	1	.... <b>Belt Guard Assembly</b> <i>with</i>
2	PNP-336A	1	.....Spindle Speed Selection Chart
3	MBB-1019A	1	.....Upper Support
4	PHS-506	1	.....Screw (10-32 x 3/8 Button Hd. Cap)
5	MAN-1028	1	.....Screw (1/4-20 x 3/4 Hex. Hd. Cap)
6	LBN-401	1	.....Washer (1/4 Plain)
7	KKN-960A	1	.....Belt Guard Bracket <i>with</i>
8	MSA-219	1	.....Screw (1/4-20 x 1/2 Hex. Hd. Cap)
9	PHW-118	1	.....Lockwasher
10	PHS-652	1	.....Screw (1/4-20 x 1/2 Button Hd. Cap)
11	AN-13B	1	.....Lockwasher
12	KN-567	1	.....Screw (5/16-18 x 3/4 Hex. Hd. Cap)
13	KN-568	2	.....Washer (5/16 Plain)
14	PHW-119	1	.....Lockwasher
15	KN-172	1	.....Nut (5/16-18 Hex.)
--	---		<b><i>FOLLOWING PARTS ARE FOR NON "CE" MACHINES</i></b>
16	MBB-807A	1	.....Latch
17	MBB-806	1	.....Latch Pivot
18	MBB-804	2	.....Washer (1/4 Special)
19	AN-15A	1	.....Spring
20	PHN-121	1	.....Nut (1/4-20 Hex. Self-Locking)
--	---		<b><i>FOLLOWING PARTS ARE FOR "CE" MACHINES</i></b>
21	KKN-458A	1	.....Knob
22	MBB-804	1	.....Washer (1/4 Special)
23	MBC-738	1	.....Safety Key Block
24	PHS-560	1	.....Screw (1/4-20 x 1-1/4 Hex. Hd. Cap)
25	PHW-118	1	.....Lockwasher
26	PEM-734A	1	.....Safety Key
27	PHS-506	2	.....Screw (10-32 x 3/8 Button Hd. Cap)
28	LBA-451	2	.....Washer (Shakeproof)
29	<b>PES-494A</b>	1	.... <b>Safety Interlock</b>
30	<b>PHS-715</b>	2	.... <b>Screw</b> (8-32 x 1-1/4 Soc. Hd. Cap)
31	<b>PG-605</b>	2	.... <b>Washer</b>
32	<b>MBC-737</b>	1	.... <b>Switch Mounting Block</b>
33	<b>PHS-571</b>	1	.... <b>Screw</b> (1/4-20 x 1-1/4 Soc. Hd. Cap)

N/S indicates Not Shown

SECTION V  
COVERS & GUARDS

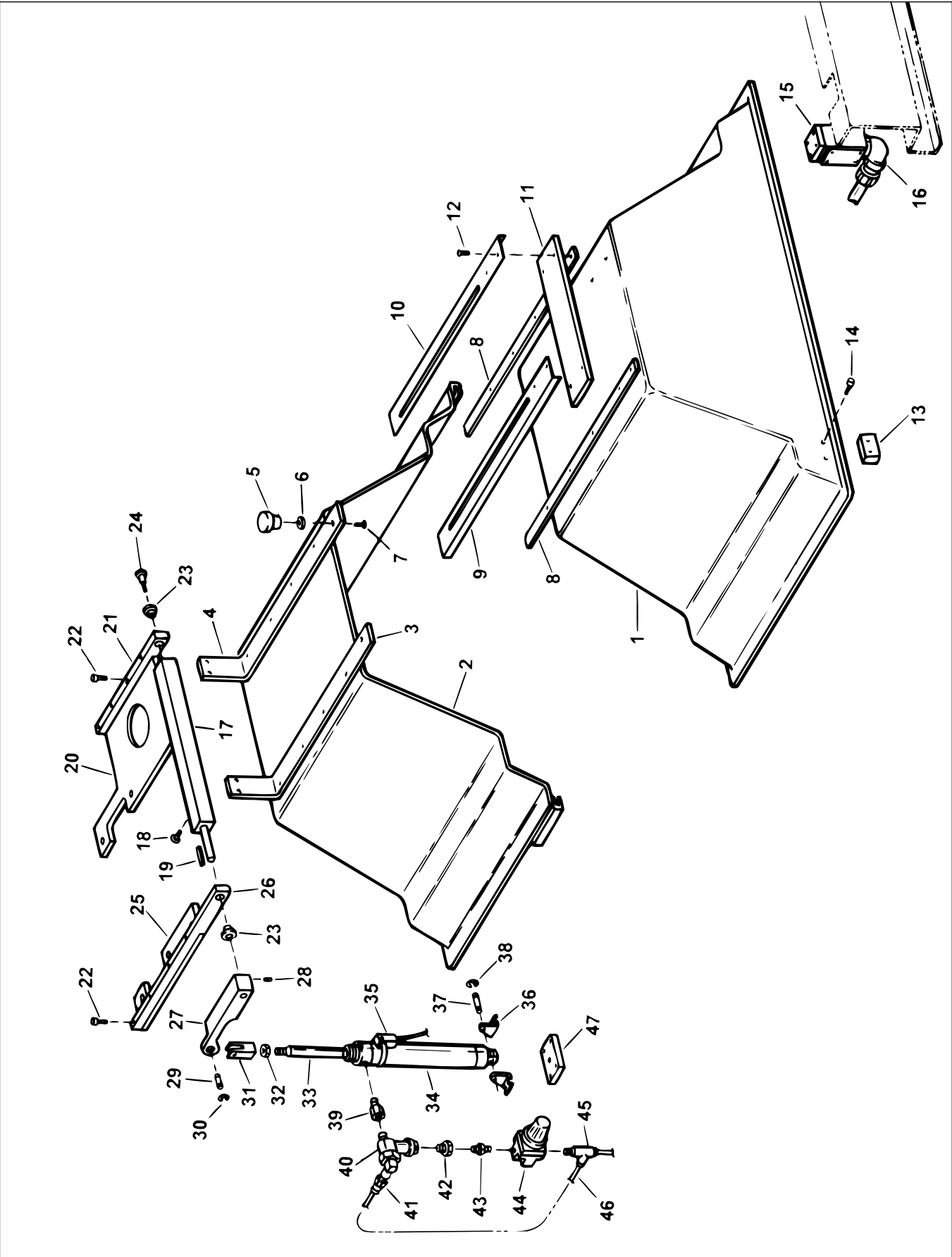


FIGURE U - WORK AREA COVER

PARTS LIST COVERING FIGURE "U"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
--	<b>MBC-755</b>	1	.... <b>Adjustable Work Area Cover</b> <i>includes</i>
1	MBC-836A	1	.....Bottom Cover
2	MBC-830A	1	.....Top Cover Assembly
3	MBC-824	1	.....Top Mounting Rail - Left Hand
4	MBC-828	1	.....Top Mounting Rail - Right Hand
5	PHM-351A	2	.....Plastic Knob (Pkg. of 1)
6	KN-568	2	.....Washer
7	MBC-826	2	.....Stud
8	MBC-837	2	.....Bottom Mounting Rail
9	MBC-841	1	.....Left Top Slide Rail
10	MBC-843	1	.....Right Top Slide Rail
11	MBC-839	1	.....Tie Bar
12	PHS-683	4	.....Screw (10-32 x 5/8 Button Hd. Cap)
13	PEM-737A	1	.....Magnet Actuator
14	PHS-715	2	.....Screw (8-32 x 1-1/4 Soc. Hd. Cap)
N/S	PG-605	2	.....Washer
N/S	CL-26	2	.....Nut (8-32 Hex.)
15	PES-493A	1	.....Magnetic Proximity Sensor
16	PEC-193	1	.....Cord Grip
--	<b>MBC-750</b>	1	<b>Cover Support Linkage</b> <i>includes</i>
17	MBC-821A	1	.....Axle
18	PHS-652	4	.....Screw (1/4-20 x 1/2 Button Hd. Cap)
19	PHK-109A	1	.....Key
20	MBC-818	1	.....Bracket Support - Right Side
21	MBC-816	1	.....Bracket - Right Side
22	AG-128	4	.....Screw (10-32 x 3/4 Soc. Hd. Cap)
23	PBR-171A	2	.....Teflon Bearing (Pkg. of 2)
24	PHS-971	1	.....Shoulder Screw (1/2-16 x 1-1/4 Soc. Hd. Cap)
25	MBC-813	1	.....Bracket Support - Left Side
26	MBC-811	1	.....Bracket - Left Side
22	AG-128	4	.....Screw (10-32 x 3/4 Soc. Hd. Cap)
27	MBC-845	1	.....Crank Assembly
28	AN-320	2	.....Set Screw (10-32 x 1/4 Cup Point)
29	---	1	.....Pin
30	---	2	.....Retaining Ring
31	MBC-858	1	.....Rod Clevis
32	LBA-150	1	.....Nut (3/8-24 Hex.)
33	MBC-856	1	.....Cylinder Extension
34	MBC-854A	1	.....Air Cylinder
35	MBC-857A	1	.....Reed Switch
36	MBC-852	1	.....Pivot Bracket
37	---	1	.....Pin
38	---	2	.....Retaining Ring
39	PPP-328	1	.....Adapter
40	MBC-859A	1	.....Blocking Valve
41	PPP-370	1	.....Adapter
42	PPP-242	1	.....Reducing Bushing
43	PPPM-430	1	.....Nipple
44	PFC-126A	1	.....Regulator
45	PPPM-406	1	.....Male Run Tee
46	78160A	*	.....Tubing (5/32 O.D. Yellow)
47	<b>MBC-851</b>	1	.... <b>Mounting Block</b>

N/S indicates Not Shown

\*Sold by the foot only.



Like any machinery, this equipment may be dangerous if used improperly. Be sure to read and follow instructions for operation of equipment.

# FRACTION / DECIMAL / MILLIMETER EQUIVALENTS CHART

INCH			INCH			INCH		
FRACTION	DECIMAL	MILLIMETER	FRACTION	DECIMAL	MILLIMETER	FRACTION	DECIMAL	MILLIMETER
....	.003937	0,1000	9/32	.281250	7,1438	21/32	.656250	16,6688
....	.007874	0,2000	19/64	.296875	7,5406	....	.669291	17,0000
....	.011811	0,3000	5/16	.312500	7,9375	43/64	.671875	17,0656
1/64	.015625	0,3969	....	.314961	8,0000	11/16	.687500	17,4625
....	.015748	0,4000	21/64	.328125	8,3344	45/64	.703125	17,8594
....	.019685	0,5000	11/32	.343750	8,7313	....	.708661	18,0000
....	.023622	0,6000	....	.354331	9,0000	23/32	.718750	18,2563
....	.027559	0,7000	23/64	.359375	9,1281	47/64	.734375	18,6531
1/32	.031250	0,7938	3/8	.375000	9,5250	....	.748031	19,0000
....	.031496	0,8000	25/64	.390625	9,9219	3/4	.750000	19,0500
....	.035433	0,9000	....	.393701	10,0000	49/64	.765625	19,4469
....	.039370	1,0000	13/32	.406250	10,3188	25/32	.781250	19,8438
3/64	.046875	1,1906	27/64	.421875	10,7156	....	.787402	20,0000
1/16	.062500	1,5875	....	.433071	11,0000	51/64	.796875	20,2406
5/64	.078125	1,9844	7/16	.437500	11,1125	13/16	.812500	20,6375
....	.078740	2,0000	29/64	.453125	11,5094	....	.826772	21,0000
3/32	.093750	2,3813	15/32	.468750	11,9063	53/64	.828125	21,0344
7/64	.109375	2,7781	....	.472441	12,0000	27/32	.843750	21,4313
....	.118110	3,0000	31/64	.484375	12,3031	55/64	.859375	21,8281
1/8	.125000	3,1750	1/2	.500000	12,7000	....	.866142	22,0000
9/64	.140625	3,5719	....	.511811	13,0000	7/8	.875000	22,2250
5/32	.156250	3,9688	33/64	.515625	13,0969	57/64	.890625	22,6219
....	.157480	4,0000	17/32	.531250	13,4938	....	.905512	23,0000
11/64	.171875	4,3656	35/64	.546875	13,8906	29/32	.906250	23,0188
3/16	.187500	4,7625	....	.551181	14,0000	59/64	.921875	23,4156
....	.196850	5,0000	9/16	.562500	14,2875	15/16	.937500	23,8125
13/64	.203125	5,1594	37/64	.578125	14,6844	....	.944882	24,0000
7/32	.218750	5,5563	....	.590551	15,0000	61/64	.953125	24,2094
15/64	.234375	5,9531	19/32	.593750	15,0813	31/32	.968750	24,6063
....	.236220	6,0000	39/64	.609375	15,4781	....	.984252	25,0000
1/4	.250000	6,3500	5/8	.625000	15,8750	63/64	.984375	25,0031
17/64	.265625	6,7469	....	.629921	16,0000	1	1.000000	25,4000
....	.275591	7,0000	41/64	.640625	16,2719	1-1/16	1.062500	26,9880

## FORMULAS:

MULTIPLY BY TO GET  
 INCHES (in) x 25.4 = MILLIMETERS (mm)  
 FEET (ft) x 0.3048 = METERS (m)

MULTIPLY BY TO GET  
 MILLIMETERS (mm) x 0.03937 = INCHES (in)  
 METERS (m) x 3.281 = FEET (ft)

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