

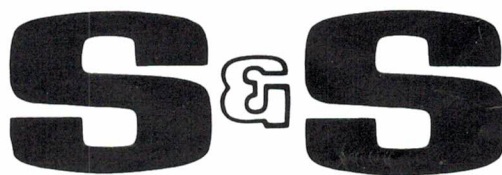
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Manual of  
Operation, Maintenance and Parts  
for

**MODEL 761/762 (HCL/HDH) PREHEATERS  
AND  
MODEL 771 (HPC) PRECONDITIONERS**

Change 1 - March 1976



S&S Corrugated Paper Machinery Co., Inc.  
160 North Fourth Street, Brooklyn, New York 11211  
Phone 212-782-9700 TLX: 223306, 232754

Corrugated Paper Machinery Co., Inc.  
Eiko Bldg. 2, 2-chome,  
Nihonbashi Honcho, Chuo-ku  
Tokyo, Japan  
Phone: 03-663-9716

#2113-3C-376

S&S Corrugated Machinery Ltd.  
P.O. Box 7, Main Street, Leiston, Suffolk, England  
Phone: Leiston 830811 TLX: 851-98209

S&S Corrugated Paper Machinery International  
(Holland) B.V.  
P.O. Box 993  
Waarderweg 80, Haarlem, Holland  
Phone: 23-319007 TLX: 844-41055

S&S Western  
574 Garrard Blvd., Richmond, California 94801  
Phone: 415-233-4080 TLX: 337739

Dundalk Engineering Works, Ltd.  
Ardee Road, Dundalk, County Louth  
Republic of Ireland  
Phone Dundalk 4636 TLX: 4578 CORREI

Printed in U.S.A.

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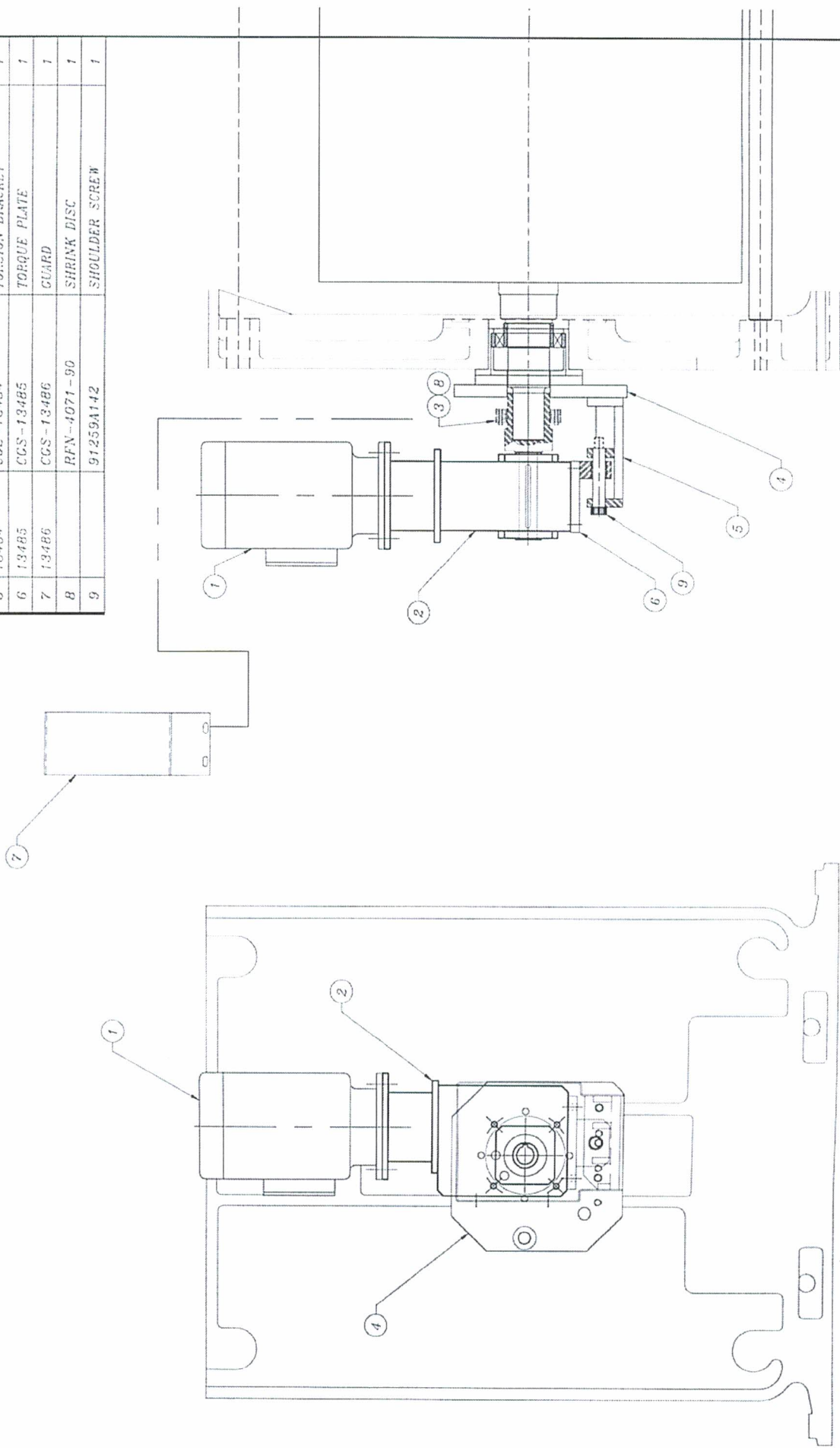
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See BW-0321 Also

NO.	CCS NO.	GEM PART NO.	DESCRIPTION	QTY
1		P18C3833	ELECTRIC MOTOR	1
2		K402AB0170	GEARBOX	1
3	13482	CCS-13482	EXTENSION JOURNAL	1
4	13483	CCS-13483	MOUNTING PLATE	1
5	13484	CCS-13484	TORSION BRACKET	1
6	13485	CCS-13485	TORQUE PLATE	1
7	13486	CCS-13486	GUARD	1
8		RFN-4071-90	SHRINK DISC	1
9		91259A142	SHOULDER SCREW	1



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ISS NO.	CCS NO.	MATERIAL N/A	DATE
REV. NO.	CONV-0075	ADDRESS N/A	12/22/82
MANUFACTURER CCS	LOCATIONS 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 023, 024, 025, 026, 027, 028, 029, 030, 031, 032, 033, 034, 035, 036, 037, 038, 039, 040, 041, 042, 043, 044, 045, 046, 047, 048, 049, 050, 051, 052, 053, 054, 055, 056, 057, 058, 059, 060, 061, 062, 063, 064, 065, 066, 067, 068, 069, 070, 071, 072, 073, 074, 075, 076, 077, 078, 079, 080, 081, 082, 083, 084, 085, 086, 087, 088, 089, 090, 091, 092, 093, 094, 095, 096, 097, 098, 099, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 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## PREFACE

This manual is designed for use by operating and maintenance personnel. It is divided into three major parts.

Operation (Sections I and II)  
Maintenance (Sections III, IV and V)  
Parts (Sections VI and VII)

An exact separation of work for operating and maintenance personnel cannot be defined in detail. In some installations, all operation and maintenance is performed by the same individual. In others, these functions may be separated. Therefore, when using this manual it will be necessary for operating personnel to use specific portions of the maintenance sections to accomplish their work. In other instances, maintenance personnel may find it necessary to use portions of the operation sections.

The following terms are used throughout this manual:

### Note

A procedure that is highlighted or calls attention to methods which make the job easier.

### CAUTION

Operating procedures and methods, which if not strictly observed, will result in damage to or destruction of equipment.

### WARNING

Calls attention to methods, procedures or limits which must be followed precisely to avoid injury to personnel.

All control names and switch positions are capitalized throughout this manual. Numbers appearing in parenthesis and accompanied by figure numbers refer to items called out on the specific figure.

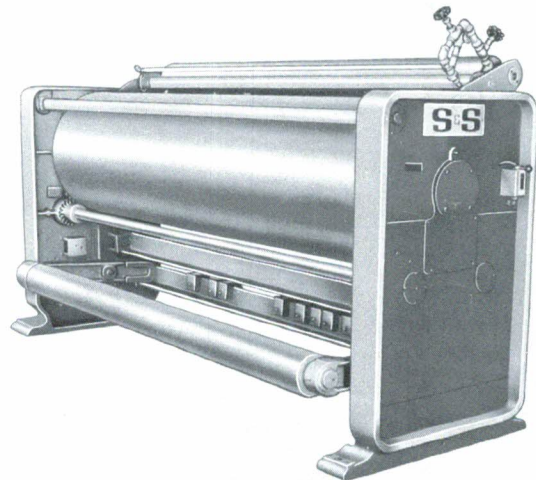
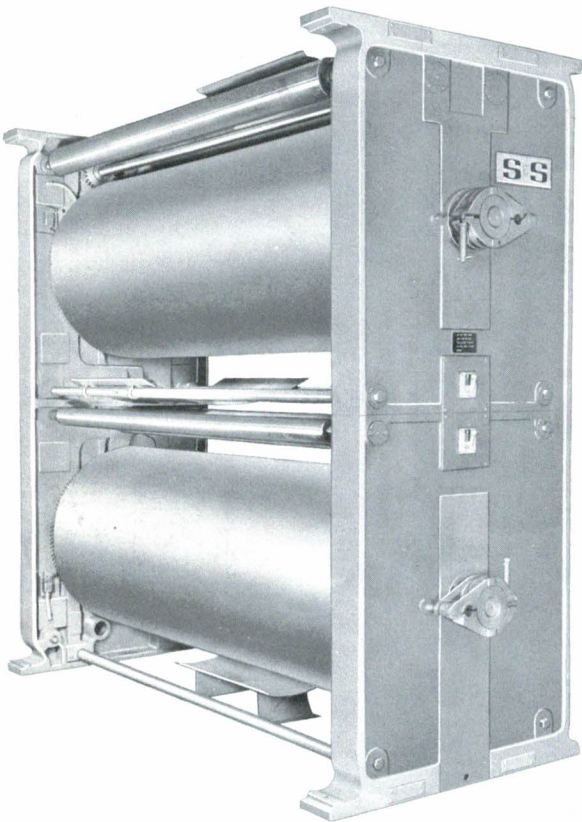
Many customers order various special controls and components, for the machine, to meet their production or environmental conditions. The procedures for operation and maintenance of these controls and components are covered in this manual.

Should your machine not incorporate such "specials", omit the procedural steps in the instructions pertaining to them. Where a procedure may be accomplished in more than one manner, depending upon the controls and components installed on the machine, both procedures are presented in detail.

Design characteristics of all machines are, for the most part, similar. The photographs in this manual depict a standard machine and not necessarily any one at a particular installation. Sufficient detail is presented to facilitate location of controls and components and for operation and maintenance of the machine.



Models HCL/HDH/HPC  
Preheaters and Preconditioner



Models HCL/HDH Preheaters  
Model HPC Preconditioner

## SECTION I INTRODUCTION

### A. GENERAL

The preheaters (single and double station) and the preconditioner are manufactured by S&S Corrugated Paper Machinery Company, Inc.

Preheaters are located in the combining line on the liner side of each single facer and prior to the glue machine. Preconditioners are located on the medium side of each single facer.

The preheaters and preconditioners are available in 68 (1727), 80 (2032), 87 (2210) and 98 (2489) inch (mm) sizes. They are high-speed continuous-duty combining line units for effectively controlling paper web moisture regardless of variations in paper grade, weight, caliper, and initial mill roll moisture content.

### B. DESCRIPTION

#### 1. PREHEATERS.

##### a. Model Differences.

Two types of preheaters are used in the combining line. The Model HCL Preheater (Figure 1-1) is a floor or bridge mounted single-station machine. The Model HDH Preheater (Figure 1-2) is a duplex or two-station floor mounted machine.

##### b. Preheater Drum.

The Preheater drum (2, Figure 1-3) is a steel fabrication, thick-walled to allow even distribution of heat over its 36 (914) inch (mm) diameter surface. Its steam capacity (200 psi), is well above the normal corrugator operating steam pressure of 160

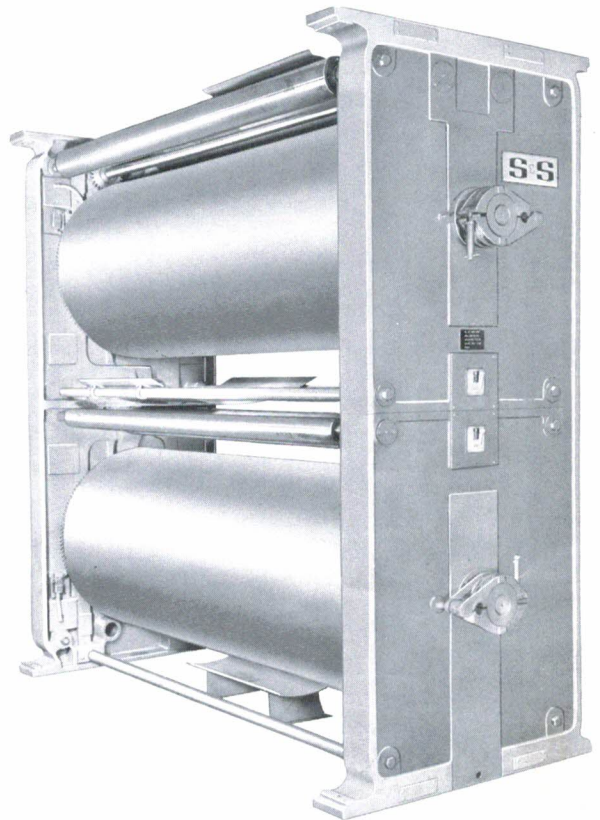
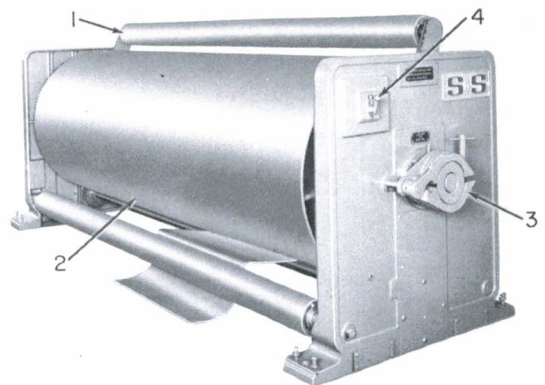


Figure 1-2. Model HDH Preheater



Figure 1-1. Model HCL Preheater



1. Adjustable Wrap Roller
2. Preheater Drum
3. Preheater Drum Brake
4. Wrap Roller Drum Switch

Figure 1-3. Preheater Components



psi. The drum is equipped with a rotary steam joint and siphon pipe. The entire steam system conforms to ASME code requirements. Roller bearings mounted in a rigidly cross-braced cast-iron frame and accurate drum balancing ensure free drum rotation by the friction of the wrapped paper. A drum brake (3, Figure 1-3) is mounted on the operating side of the drum shaft. The brake can be adjusted for fine tension control of the web and to provide sufficient braking drag to prevent the drum from overrunning when the corrugator is slowed down or stopped.

c. Adjustable Wrap Roller.

The standard single station preheater has two wrap rollers, one stationary near the base of the drum and fitted with a paper guide shield. The other is mounted on arms (1, Figure 1-3) which can be moved by a motor and controls the amount, or angle of paper wrap. The movable wrap roller can be shifted around the circumference of the drum. Subject to limit switches which ensure adequate clearance between the rollers. A drum switch (4, Figure 1-3), on the operating side of the machine, is provided for this purpose. For personnel safety, both rollers are far enough away from the preheating drum to clear a man's hand.

The machines are available in various wrap roller combinations to suit individual plant requirements and for increased paper wrap flexibility. They can be equipped with a single movable wrap roller arm (1, Figure 1-3), two single movable wrap roller arms or a dual roll single wrap roller arm (Figure 1-4).

The standard wrap roller assembly is driven by a 3/4 hp gear-head motor. For those machines incorporating dual roll or two individual motor-driven wrap roller assemblies, a one hp gear-head motor is used.

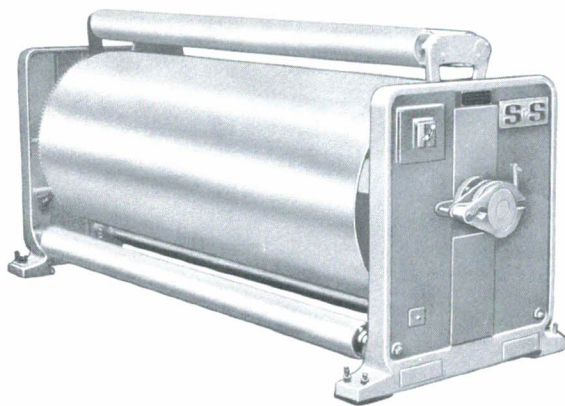


Figure 1-4. Dual Roll Single Wrap Roller Arm Configuration

2. PRECONDITIONER.

a. Steam Showers.

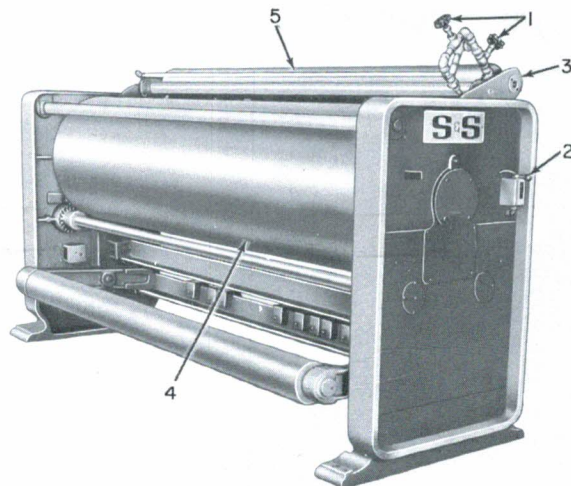
The adjustable steam showers are mounted on the same traveling arms (3, Figure 1-5) with the movable wrap roller (5, Figure 1-5). Upper and lower steam showers direct jets of steam perpendicular to the medium web for its full width on both surfaces, and at a fixed distance regardless of the feed angle (Figure 1-6). The amount of steam directed at each side of the web is regulated by a valve on each shower (1, Figure 1-5).

b. Heating Drum.

The finish-ground 24 (610) inch (mm) diameter steel drum (4, Figure 1-5) is thick-walled for even heat distribution. Regulated steam pressure (capacity 200 psi) allows a range of operating temperatures to 388°F. The entire steam system meets ASME code requirements. A two-hp DC drive motor is speed-regulated from the single-facer drive, thus coupling speed variations. Adjustment of the drum speed, by small amounts, is made through a rheostat control (Figure 1-7), with a zero-centered ammeter to indicate relative speed of the two machines. The drum is roller-bearing mounted in a cross-braced cast-iron frame.

c. Wrap Rolls.

The wrap roller (5, Figure 1-5), mounted on the same arms with the steam showers, is motor driven by a 3/4-hp AC gearhead motor around the circumference of the drum, subject to limit switches for roller clearance. A drum switch (2, Figure 1-5)



1. Steam Shower Valves
2. Wrap Roller Drum Switch
3. Wrap Roller Arm
4. Heating Drum
5. Wrap Roller

Figure 1-5. Preconditioner Components



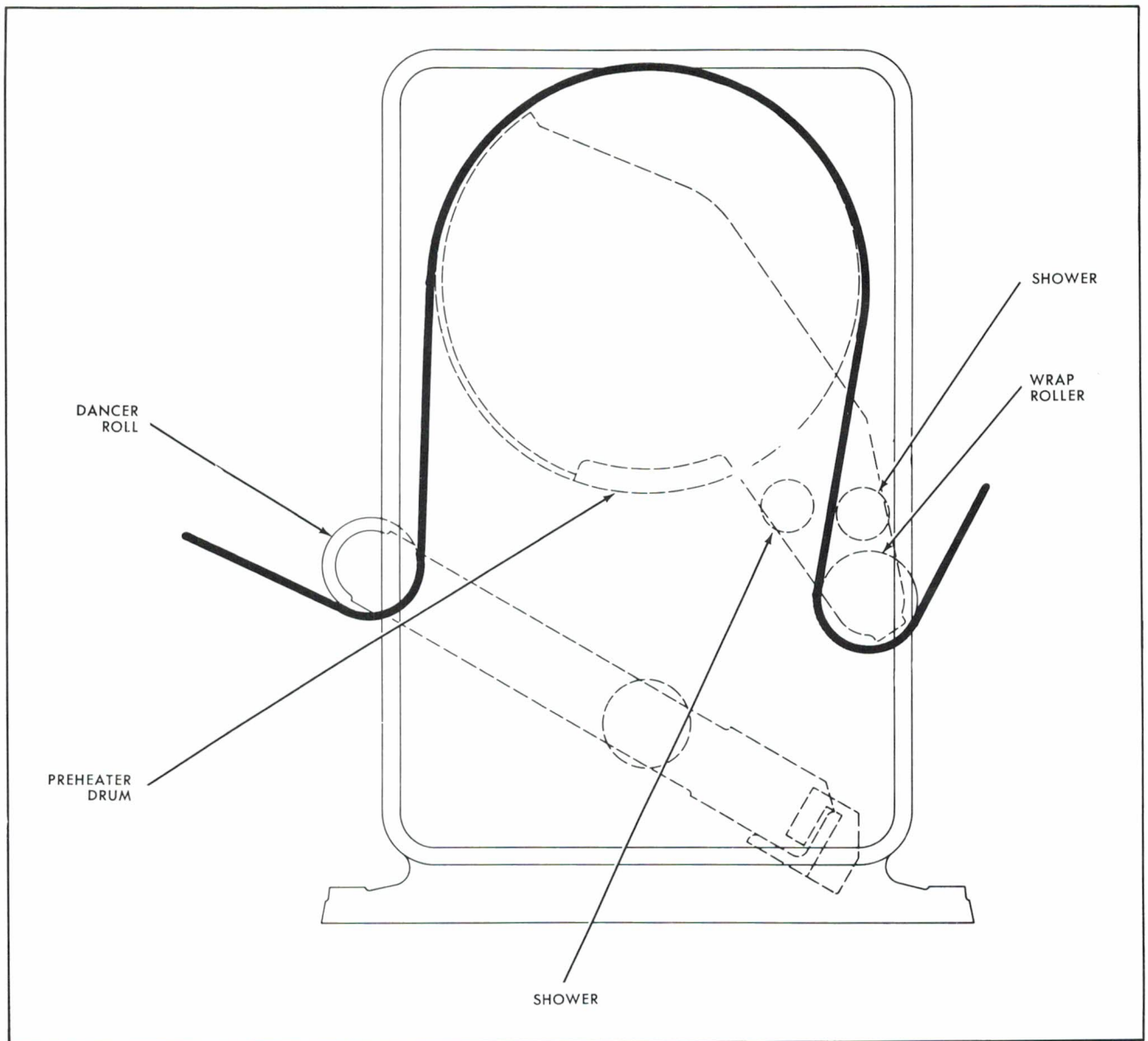


Figure 1-6. Preconditioner Cross-Section



Figure 1-7. Tension Control Rheostat

on the operating side of the machine is provided for this purpose. This controls the angle, or amount of paper wrap, permitting variation of contact time around the drum. The dancer roller (Figure 1-8) is counterbalanced and shock-mounted to maintain constant tension as the web enters the single facer. Weights may be added or removed to vary the tension; the shock mounting compensates for momentary changes in web speed.

### C. SPECIFICATIONS AND CAPACITIES

Refer to Table 1-1 for important specifications.

### D. INSTALLATION

See Figures 1-9, 1-10 and 1-11 for the floor space necessary for machine installation.

Table 1-1. Specifications and Capacities

Machine Size (inches (mm))	68 in. 1727 mm.	80 in. 2032 mm.	87 in. 2210 mm.	97 in. 2464 mm.	109 in. 2769 mm.
Maximum Paper Width (inches (mm))	68 in. 1727 mm.	80 in. 2032 mm.	87 in. 2210 mm.	97 in. 2464 mm.	109 in. 2769 mm.
Drum Diameter (inches (mm)) Preheater	36 in. 914 mm.	36 in. 914 mm.	36 in. 914 mm.	36 in. 914 mm.	36 in. 914 mm.
Preconditioner	24 in. 610 mm.	24 in. 610 mm.	24 in. 610 mm.	24 in. 610 mm.	24 in. 610 mm.
Wrap Roller Diameter (inches (mm)) (Preheater and Preconditioner)	5-9/16 in. 141 mm.	5-9/16 in. 141 mm.	5-9/16 in. 141 mm.	5-9/16 in. 141 mm.	5-9/16 in. 141 mm.

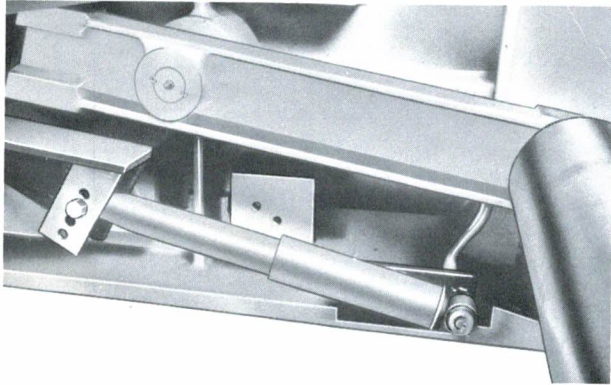


Figure 1-8. Shock Mounted Dancer Roller

## E. FUNCTIONING

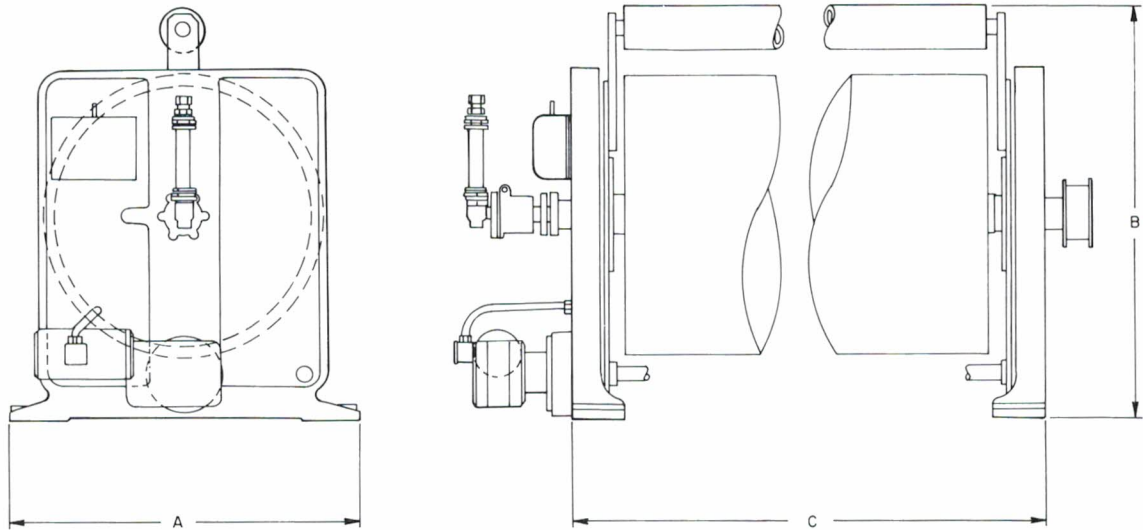
Although using different methods, the preheater and preconditioner perform basically the same function, controlling the moisture content of the liner (preheater) or the medium web (preconditioner).

Moisture control in the paper is critical to corrugated board quality. Moisture affects the strength of the adhesive bond between corrugated medium and liner and, if not properly balanced between the webs that make up the board, may cause warping, washboarding, wrinkling, or other defects.

The preheater controls the moisture content in the liner by passing the web around a steam-heated drum. The amount of heat applied to drive off excess moisture is proportional to the time the web is in contact with the drum.

The preconditioner adds moisture to the web through the use of a steam shower and drives the moisture deep into the web by passing the medium around a steam-heated drum.

In both the preheater and preconditioner, contact of the paper to the drum is controlled by the degree of wrap around the drum, and the operating speed. The degree of wrap may be varied by shifting the movable wrap roller along the circumference of the heated drum.



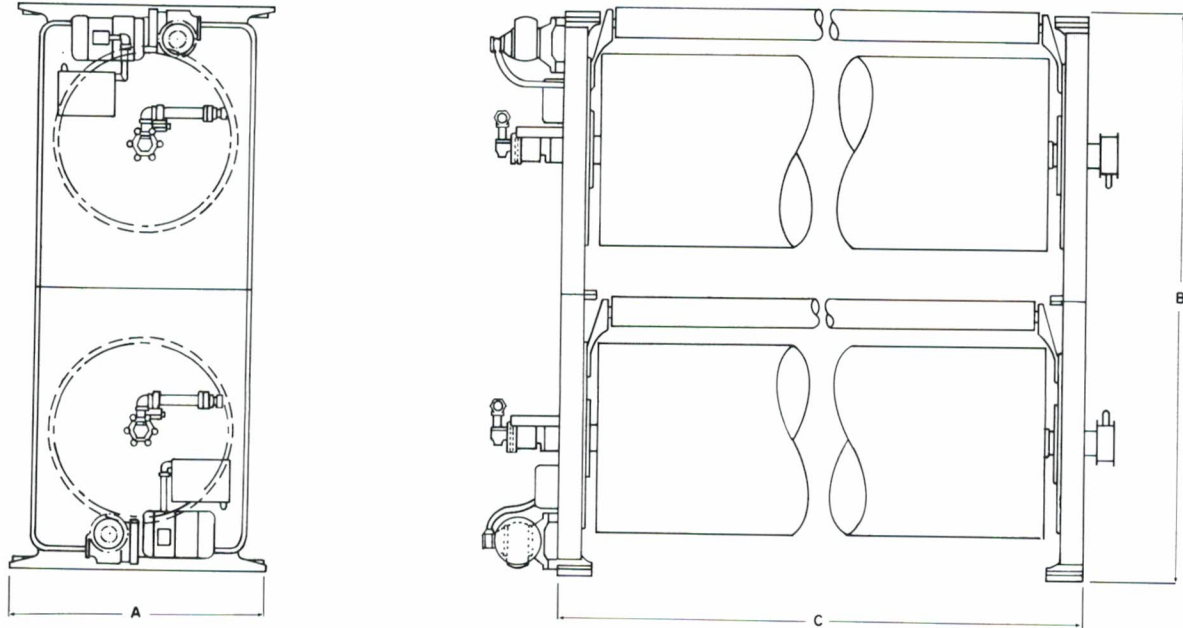
Model 761(HCL)

Machine size	68 in. 1727 mm.	80 in. 2032 mm.	87 in. 2210 mm.	97 in. 2463 mm.	109 in. 2769 mm.
Dimension A	45 in. 1143 mm.	45 in. 1143 mm.	45 in. 1143 mm.	45 in. 1143 mm.	45 in. 1143 mm.
Dimension B	44-5/8 in. 1133 mm.	44-5/8 in. 1133 mm.	44-5/8 in. 1133 mm.	44-5/8 in. 1133 mm.	44-5/8 in. 1133 mm.
Dimension C	88-7/16 in. 2246 mm.	100-7/16 in. 2551 mm.	109-7/16 in. 2780 mm.	119-7/16 in. 3034 mm.	131-7/16 in. 3339 mm.
Assembled Weight (approx. )	4715 lb. 2139 kg.	5400 lb. 2449 kg.	5800 lb. 2631 kg.	6400 lb. 2903 kg.	7100 lb. 3221 kg.
Shipping Weight (approx. )	4825 lb. 2188 kg.	5560 lb. 2522 kg.	6000 lb. 2722 kg.	6640 lb. 3012 kg.	7390 lb. 3352 kg.

Figure 1-9. Floor Plan For Model HCL Preheater



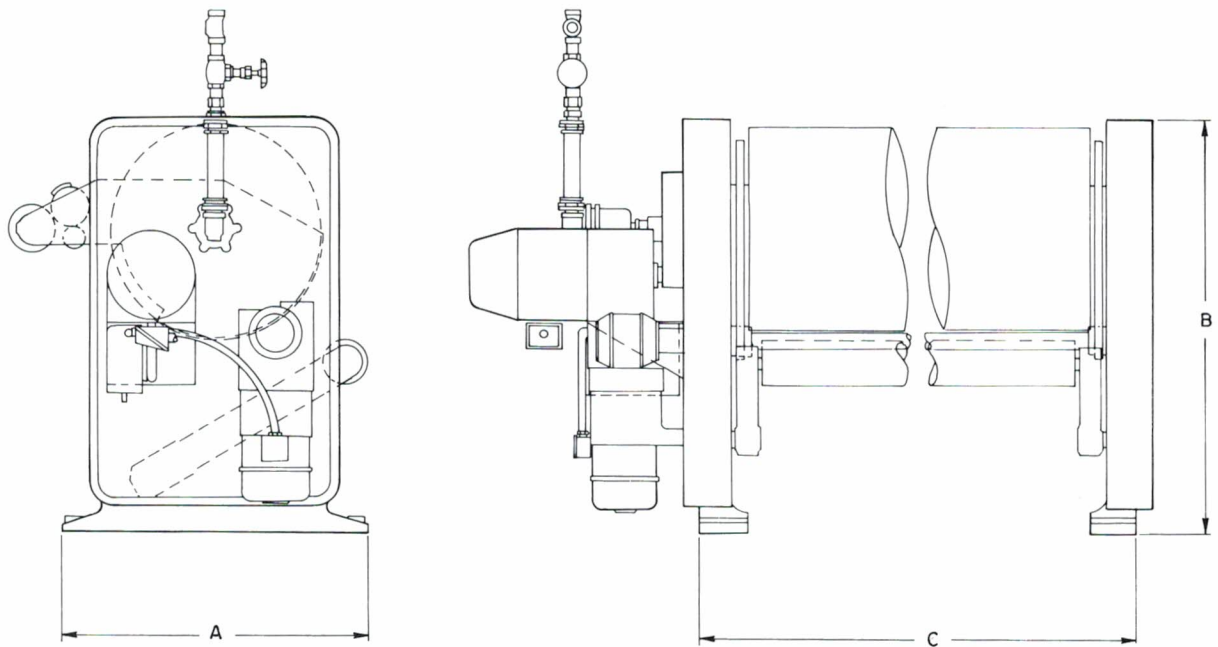
Models HCL/HDH/HPC  
Preheaters and Preconditioner



Model 762(HDH)

Machine size	68 in. 1727 mm.	80 in. 2032 mm.	87 in. 2210 mm.	97 in. 2463 mm.	109 in. 2769 mm.
Dimension A	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.
Dimension B	106 in. 2692 mm.	106 in. 2692 mm.	106 in. 2692 mm.	106 in. 2692 mm.	106 in. 2692 mm.
Dimension C	88-7/16 in. 2246 mm.	100-7/16 in. 2551 mm.	109-7/16 in. 2780 mm.	119-7/16 in. 3034 mm.	131-7/16 in. 3339 mm.
Assembled Weight (approx.)	9600 lb. 4355 kg.	12440 lb. 5643 kg.	13000 lb. 5897 kg.	14500 lb. 6577 kg.	16300 lb. 7394 kg.
Shipping Weight (approx.)	9930 lb. 4504 kg.	12840 lb. 5824 kg.	13440 lb. 6096 kg.	15000 lb. 6804 kg.	16870 lb. 7652 kg.

Figure 1-10. Floor Plan For Model HDH Preheater



MODEL 771 (HPC)

Machine size	68 in. 1727 mm.	80 in. 2032 mm.	87 in. 2210 mm.	97 in. 2464 mm.	109 in. 2769 mm.
Dimension A	37 in. 940 mm.	37 in. 940 mm.	37 in. 940 mm.	37 in. 940 mm.	37 in. 940 mm.
Dimension B	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.	49-1/4 in. 1251 mm.
Dimension C	88-3/8 in. 2245 mm.	100-3/8 in. 2549 mm.	107-3/8 in. 2727 mm.	117-3/8 in. 2981 mm.	129-3/8 in. 3286 mm.
Assembled Weight (approx.)	4383 lb. 1988 kg.	5157 lb. 2339 kg.	5608 lb. 2544 kg.	6190 lb. 2808 kg.	7026 lb. 3187 kg.
Shipping Weight (approx.)	4533 lb. 2056 kg.	5333 lb. 2419 kg.	5800 lb. 2631 kg.	6400 lb. 2903 kg.	7266 lb. 3296 kg.

Figure 1-11. Floor Plan For Model HPC Preconditioner

## SECTION II SETUP AND OPERATION

### A. SETUP

#### 1. PREHEATER.

The method of threading the preheater will depend upon a number of variables such as mill roll moisture content and established operating procedures. Figure 2-1 shows some typical threading diagrams.

a. After threading operation is completed and the liner has been threaded through the single facer and up the inclined bridge conveyor, adjust the wrap of the liner on the heating drum using the WRAP ADJUSTMENT ROLLER DRUM SWITCH (4, Figure 1-3).

b. Check the tension of the liner as it enters the single facer preheater rolls. The liner should enter slightly taut and free of wrinkles.

#### 2. PRECONDITIONER.

a. Position the movable wrap roller assembly at the vertical centerline of the heating drum using the WRAP ROLLER DRUM SWITCH (2, Figure 1-5).

b. Direct the medium web beneath the wrap roller between the upper and lower showers, around the heating drum and beneath the stock mounted wrap roller.

c. After the threading operation is completed and the medium web has been threaded through the single facer, adjust the wrap of the medium around the heating drum using the WRAP ROLLER DRUM SWITCH (2, Figure 1-5).

### B. OPERATION

#### 1. PREHEATER.

a. The preheater drum brake (3, Figure 1-3) is usually set to apply a slight drag against the paper web to increase the web tension. Dependent upon board quality, it may be necessary to adjust the brake to increase or decrease the web tension.

b. Adjustment of the wrap roller position during operation may be required to correct for board defects attributed to moisture content of the board liners. For additional drying, increase the paper wrap angle using the WRAP ROLLER DRUM SWITCH. For decreased drying, decrease the paper wrap angle.

#### 2. PRECONDITIONER.

a. When combining line is started, open the upper and lower STEAM SHOWER VALVES (1, Figure 1-5).

#### Note

The amount of steam applied will depend upon the condition of the medium being used.

b. Using the TENSION CONTROL RHEOSTAT (Figure 1-7), set the drum speed slightly higher, lower or equal to the paper speed as required.

c. As a safety feature, a solenoid valve shuts off the steam shower if electricity is cut off to the preconditioner. When the preconditioner is turned on again, the starter button must be pressed to activate the steam shower.



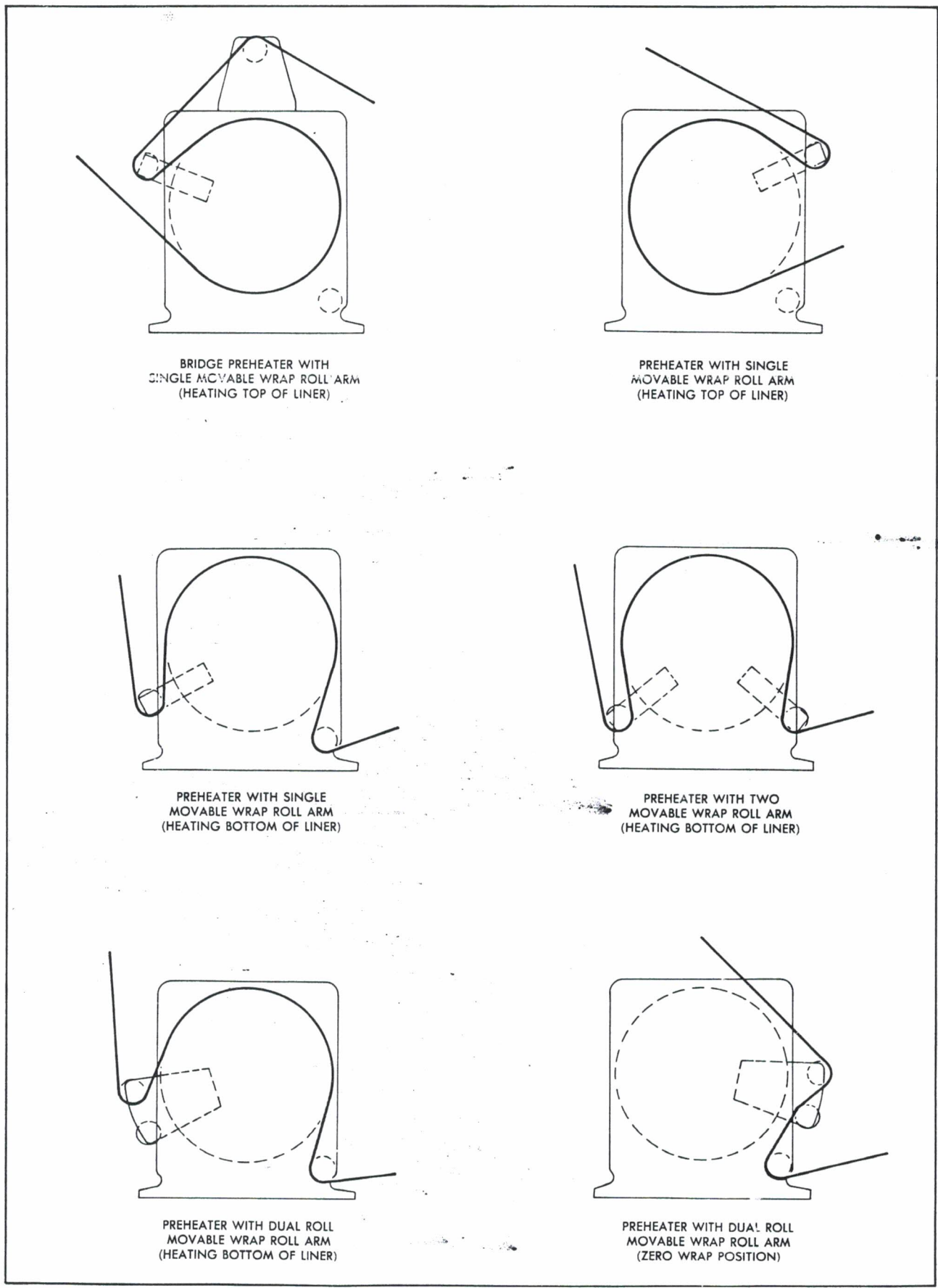


Figure 2-1. Typical Threading Diagrams

## SECTION III MAINTENANCE

### A. GENERAL

In addition to lubrication, which is described in Section IV, cleaning is the most important procedure for both the preheater and preconditioner. At every shutdown and before threading paper, thoroughly clean the machine, using dry compressed air, and wipe down with clean, dry waste or rags.

### B. WRAP ROLLERS

The wrap rollers require no maintenance beyond cleaning and lubrication.

### C. WRAP ROLLER MOTOR AND SWITCHES

Refer to manufacturer's instructions.

### D. HEATING DRUM

The drum requires no maintenance beyond cleaning and lubrication.

### E. PRECONDITIONER DRIVE MOTOR, CONTROLS, AND AMMETER

Refer to manufacturer's instructions.

### F. PREHEATER BRAKE

Open brake bands and inspect blocks. Replace blocks if required.

### G. STEAM SYSTEM

Refer to manufacturer's instructions.

## SECTION IV LUBRICATION

The instructions in this section and Figures 4-1 and 4-2 are designed for use of maintenance personnel. The section presents all the information necessary for properly lubricating the Model HPC Preconditioner and Models HCL and HDH Preheaters to preclude unnecessary downtime, prevent malfunctioning of machine components and to increase the service life of the machine.

Lubricants are specified generally, by standardized specification classifications. Equivalents conforming to these classifications may be obtained from any lubricant supplier. SAE classifications are not used.

Commercial components installed on the machine generally require specialized lubricants. Manufacturers of these components should specify the lubricant to be used on their products. It is therefore recommended that they be consulted for lubrication information pertaining to their products. Published service instructions are generally available for these components. It is advisable to obtain copies of these publications to supplement the contents of this manual.

### CAUTION

Although proper lubrication will extend the service life of the machine, improper lubrication practices will be detrimental. Adherence to the following practices will aid in your lubrication or preventive maintenance program.

1. Don't use SAE numbers to specify viscosity. SAE numbers imply engine oils that are not compounded for these industrial applications.
2. Don't overlubricate. Overpacked bearings will overheat. High temperatures accompanied by leaking grease indicate excessive lubrication.
3. Don't use lubricants made from animal or vegetable oils. Such oils, when subjected to high temperatures and pressures, break down and change chemically.
4. Don't try to standardize on one oil or one grease for all equipment.
5. Don't switch brands of lubricants without thoroughly cleaning or flushing the original grease or oil.
6. Follow a regular lubricating schedule.



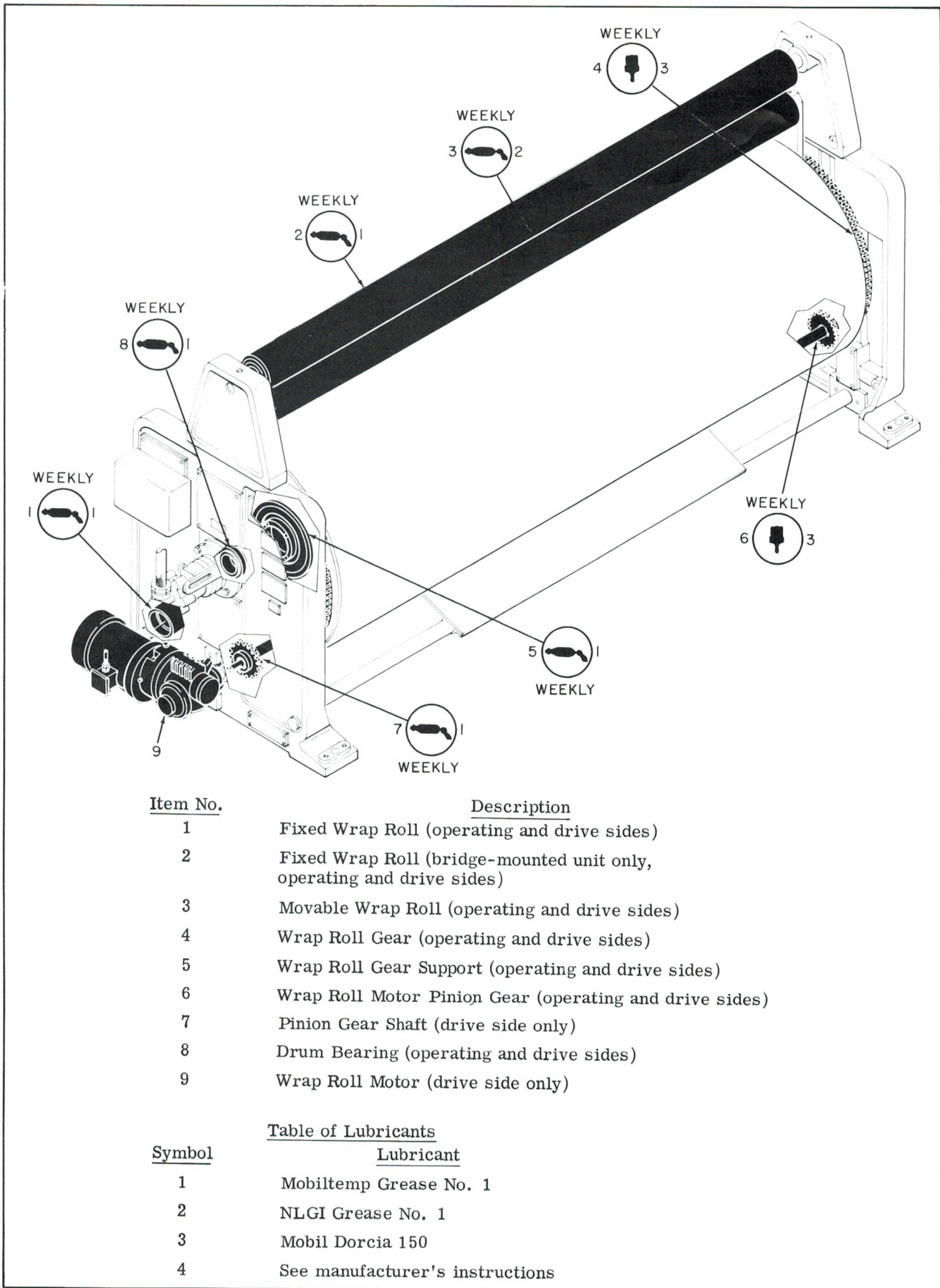


Figure 4-1. Lubrication Points (Preheater)

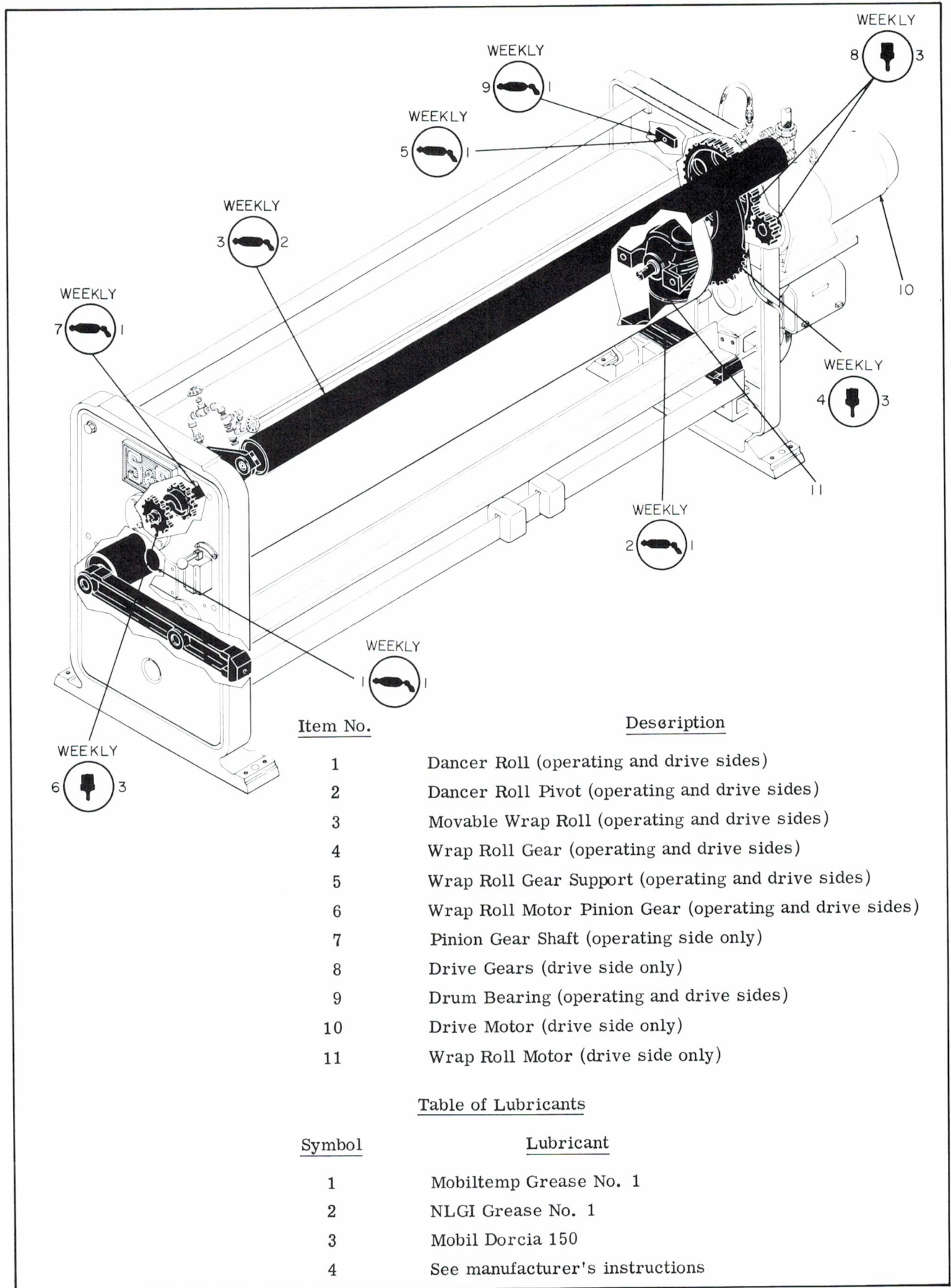


Figure 4-2. Lubrication Points (Preconditioner)

## SECTION V TROUBLESHOOTING

Refer to Tables 5-1 and 5-2 for the most common corrugated paper and board problems originating in the preheater or preconditioner, their probable causes, and corrective action. Table 5-1 refers to the preheater, Table 5-2 to the preconditioner.

Table 5-1. Troubleshooting (Preheater)

Symptom	Probable Cause	Remedy
Single-face liner bruised and cut across paper.	Wet liner	Increase preheater wrap angle.
Single-face paper not bonded at edges	Wet liner	Increase preheater wrap angle.
Warping	Liner too wet or too dry relative to medium	Change preheater wrap angle; check preconditioner.
Washboarding	Liner too dry relative to medium	Decrease preheater wrap angle; check preconditioner.
Wrinkles	Uneven moisture in liner	Adjust preheater wrap.

Table 5-2. Troubleshooting (Preconditioner)

Symptom	Probable Cause	Remedy
Improperly formed flutes in single-face paper	Dry medium	Open preconditioner steam-shower valves; adjust wrap angle.
Poorly retained flute shape in single-face paper	Wet medium	Close preconditioner steam-shower valves; adjust wrap angle.
Warping	Medium or liner too wet or too dry	Adjust preconditioner steam-shower valves, wrap angle; check preheater.
Washboarding	Medium too wet relative to liner	Close preconditioner steam-shower valves; adjust wrap angle; check preheater.
Medium cut or fractured	Medium too wet or too dry	Adjust preconditioner steam-shower valves, wrap angle.
High-low	Medium too wet or too dry	Adjust preconditioner steam-shower valves, wrap angle.
Unbonded bare spots or streaks in single-face paper	Wet medium	Close preconditioner steam-shower valves, adjust wrap angle.
Loose corrugations	Medium too wet or too dry	Adjust preconditioner steam-shower valves, wrap angle.



## SECTION VI PARTS BREAKDOWN

This section contains complete disassembly drawings for the Models HCL, HDH Preheaters and HPC Preconditioner. It is not necessary to disassemble the entire machine to make repairs or replacement of parts. When a part is to be removed and replaced, the proper procedure would be to go to the specific illustration showing that part and to work from that drawing.

The figures are arranged in order of disassembly of the machine. Each figure is arranged in the order of disassembly of the area shown either in the upper left-hand corner of the drawing or the section drawing. In many cases, a single illustration contains several subassemblies which are shown in disassembly order. If you are working on only one of these subassemblies, do not disassemble the parts which are shown in other sections of the illustration.

### CAUTION

It is not necessary to disassemble minor subassemblies which work well to replace a part on an assembly which does not function properly. For example, if a subassembly which needs repair is numbered from 7 through 11, do not disassemble the assembly numbered 1 through 6.

Each exploded view has index numbers, keyed to a legend, also arranged in the order of disassembly.

### CAUTION

In all cases, the legend title should be checked to make certain that it applies to the particular model being disassembled.

Legends are divided into four columns:

- Item Number - The part number in the exploded view.
- Description - Complete title of the part and, in most instances, its function. Names of commercial manufacturers appear in parentheses. Parts, which are details of an assembly are identified by a note following the description. The note indicates the assembly that includes the part. A full description of standard hardware is provided, although not illustrated.

Standard hardware, attaching various parts together, are indented in the legend following the part or parts that it attaches.

- Part Number - The S&S part number is listed. Part numbers appearing in parenthesis are standard catalog items of the vendors whose names appear in parenthesis in the Description column.
- Quantity per Assembly - Total number of specific parts used in the assembly.
- Example: - If four identical parts are to be removed simultaneously, the total number of parts required would be four and the number 4 will appear in the Quantity per Assembly column. However, the exploded view may show only one of these parts for identification only.

Where a small subassembly is replaced as a unit, it is shown assembled and is given the part number for replacement as a unit. Such subassemblies should not be taken apart.

In several instances, a legend may apply to two different assemblies. The more complicated assembly has been illustrated. Differences in the assemblies are shown in an outlined area on the illustration.

When ordering spare parts the following information must accompany the order:

1. Machine serial number.
2. Part Number.

### Note

The preheaters and preconditioners are available in various widths. When a part is to be ordered for a specific width machine, a note accompanies the item in the legend indicating the supplement number, letter or both to be used with the part number.

3. Complete description of the part.
4. Quantity desired.

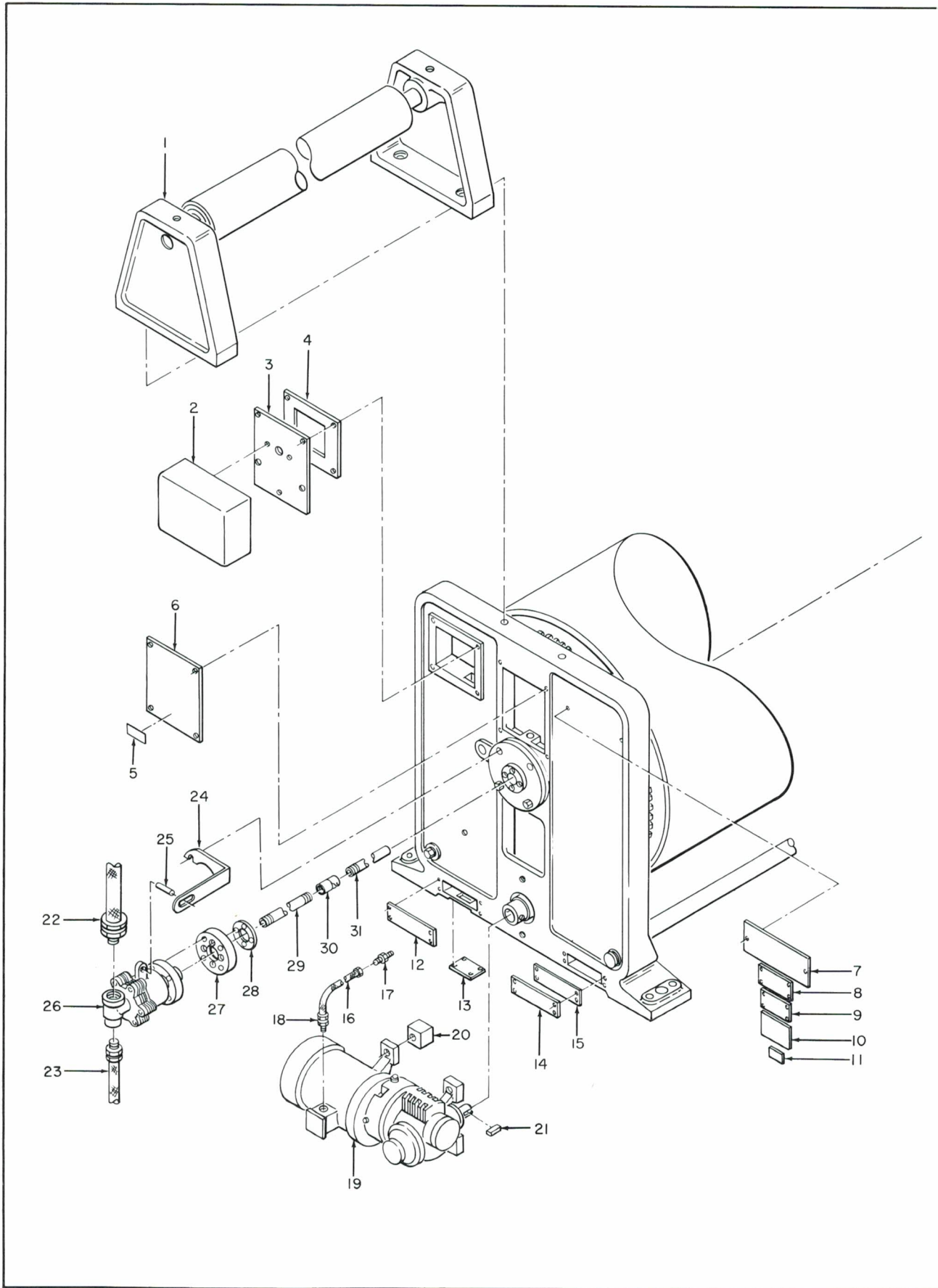


Figure 6-1. Model HCL Preheater Assembly (Sheet 1 of 2)

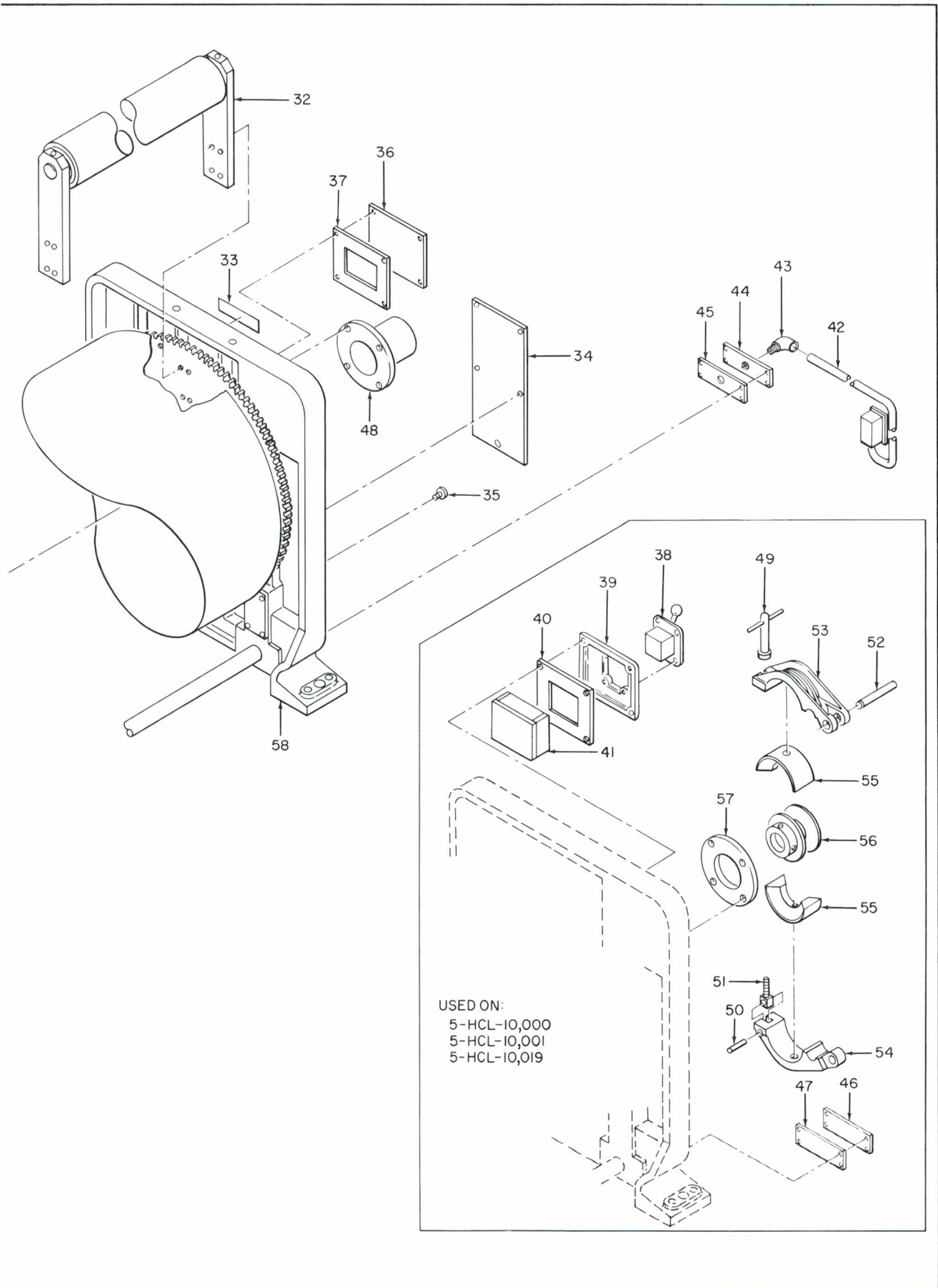


Figure 6-1. Model HCL Preheater Assembly (Sheet 2 of 2)



Item No.	Description	Part Number	Qty Per Assy
6-1	MODEL HCL PREHEATER ASSEMBLY		
-1	BRIDGE ASSEMBLY (See Figure 6-3 for breakdown) (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		1
	SCREW, Socket head shoulder, 1/2-13 x 1-1/4 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	WASHER, Lock, 5/8 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	NUT, Hexagon, 1/2-13 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
-2	STARTER (General Electric) or STARTER (General Electric) or STARTER (General Electric) or STARTER (General Electric) or STARTER (General Electric) or STARTER (General Electric) or STARTER (General Electric) with HEATER (General Electric) or HEATER (General Electric) or HEATER (General Electric) or HEATER (General Electric) or HEATER (General Electric)	(CR109A102AHA) (CR109A103AHA) (CR109A104AHA) (CR109A105AHA) (CR109B103AGA) (CR109B104AGA) (CR109B105AGA)	1
	HEATER (General Electric) or HEATER (General Electric) or HEATER (General Electric) or HEATER (General Electric) or HEATER (General Electric)	(CR123C1-48A) (CR123C1-84A) (CR123C2-20A) (CR123C3-56) (CR123C3-56A)	1
-3	MOUNTING PLATE, G. E. Starter SCREW, Button head socket cap, 1/4-20 x 3/4 SCREW, Button head socket cap, 1/4-20 x 5/8 WASHER, Lock, 1/4	2-HCL-7-A	1 2 2 4
-4	GASKET, G. E. Starter	2-HCL-20	1
-5	NAMEPLATE, Lubrication	1-N-905	2
-6	COVER, Inspection hole SCREW, Button head socket cap, 1/4-20 x 1/2	2-HDH-102	2 8
-7	NAMEPLATE, S&S Emblem SCREW, Oval head self-tapping, 10-32 x 1/2 (Parker-Kalon type "F")	2-N-95	2 4
-8	NAMEPLATE, Size, Number, Patent SCREW, Drive, #7 x 1/2 (Parker-Kalon type "U")	1-N-8-A	1 4
-9	INSTRUCTION PLATE, Lubrication	1-N-18-D	1
-10	PLATE, Henry Pratt Co. (Copy)		1
-11	UNION PLATE		1
-12	COVER SCREW, Button head socket cap, 1/4-20 x 3/4	1-HCL-37	1 4
-13	COVER SCREW, Button head socket cap, 1/4-20 x 1/2	1-HCL-53	2 8
-14	COVER SCREW, Button head socket cap, 1/4-20 x 3/4	1-HCL-38	2 2
-15	GASKET	1-HCL-40	2
-16	FLEXIBLE HOSE (Sealtite) 1/2 x 16 inches long		1
-17	SEALTITE CONNECTOR (Appleton)	(ST-50)	1
-18	SEALTITE CONNECTOR with 1/2 Sealtite reducing washer (Appleton) (Used on 5-HCL-10, 010 and 5-HCL-10, 011) SEALTITE CONNECTOR with 1/2 Sealtite reducing washer (Appleton) (Used on 5-HCL-10, 000, 5-HCL-10, 001 and 5-HCL-10, 019)	(ST-9050) (ST-50)	1 1
-19	MOTOR (Master) 3/4 hp - right angle combination gear (#6D dated 11-16-67 item #1) or MOTOR (Master) 3/4 hp - right angle combination gear (#6D dated 11-16-67 item #2) STUD, Motor mounting NUT, 1/2-13 WASHER, Lock, 1/2	932-00081-1 1-HCH-6020	1 3 3 3
-20	BLOCK, Spacer	1-HCL-54	3
-21	KEY, Standard square	1-5/16K-2	2

Item No.	Description	Part Number	Qty Per Assy
6-1	MODEL HCL PREHEATER ASSEMBLY (CONT)		
-22	HOSE ASSEMBLY (Aeroquip) - consisting of: Teflon hose #2807-20 Male pipe fitting #38-190627-20-20 J. I. C. swivel fitting #63-190600-20 Adapter #2022-20-20S	(A280704-20-14-1/2)	1
-23	HOSE ASSEMBLY (Aeroquip) - consisting of: Teflon hose #2807-12 Male pipe fitting #38-190627-12-12 J. I. C. swivel fitting #63-190600-12 Adapter #2022-12-12S	(A280704-12-13-1/2)	1
-24	SUPPORT, Johnson quick release joint SCREW, Hexagon head cap, 1/2-13 x 2-1/2 WASHER, Plain, 1/2	2-HCL-16	1 2 2
-25	ROD, Johnson joint support	1-HCH-6022	1
-26	1-1/2 inches #3500 SBPHQ-1 special Johnson joint with special syphon pipe support SCREW, Socket head set, 1/4-20 x 1/2	2-HCH-6122-A	1
-27	JOURNAL FLANGE, Quick release nipple SCREW, Socket head cap, 3/8-16 x 1-1/4	1-HCH-6118-A	4 1 4
-28	GASKET, Quick release journal flange	1-HCH-6123	1
-29	PIPE FOR SIPHON	1-HPC-207-A	1
-30	SIPHON ELBOW (JOCO) 1/2		1
-31	SIPHON PIPE (Short)	1-HCH-6110-A	1
-32	SINGLE WRAP ROLL ASSEMBLY (See Figure 6-4 for breakdown) (Not used on 5-HCL-10, 019) SCREW, Hexagon head cap, 1/2-13 x 1-3/4 (Not used on 5-HCL-10, 019) WASHER, Lock 1/2 (Not used on 5-HCL-10, 019)		1 8 8
	DOUBLE WRAP ROLL ASSEMBLY (See Figure 6-5 for breakdown) (Used on 5-HCL-10, 019 only) SCREW, Hexagon head cap, 1/2-13 x 1-3/4 (Used on 5-HCL-10, 019 only) WASHER, Lock, 1/2 (Used on 5-HCL-10, 019 only)		1 12 12
-33	NAMEPLATE, Instruction (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-N-513	1
-34	COVER SCREW, Button head socket cap, 1/4-20 x 1/2	1-HCL-47	1 5
-35	SCREW, Button head socket cap, 1/2-13 x 1/2		1
-36	COVER, Drum switch cavity (Used on 5-HCL-10, 010 and 5-HCL-10, 011) SCREW, Button head socket cap, 1/4-20 x 3/4 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-HCL-70	1 4
-37	GASKET, Drum switch (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-HCL-20	1
-38	DRUM SWITCH (Allen Bradley) Bulletin 350 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011) SCREW, Button head socket cap, 8-32 x 1/2 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	(TAV34STYLE AF)	1 4
-39	MOUNTING PLATE, Reversing drum switch (Not used on 5-HCL-10, 010 and 5-HCL-10, 011) SCREW, Button head socket cap, 1/4-20 x 3/4 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011) WASHER, Lock, 1/4 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	3-HCL-6	1 4 4
-40	GASKET, Drum switch (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-HCL-20	1
-41	LINER, Asbestos (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-HCL-36	1
-42	DRUM SWITCH, Bulletin 350 (Allen Bradley) (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	(TAV32STYLE A)	1
-43	1/2 inch PULLING ELBOW (Appleton) (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	(MFL-50)	1



Item No.	Description	Part Number	Qty Per Assy
6-1	MODEL HCL PREHEATER ASSEMBLY (CONT)		
-44	COVER, Wiring outlet (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-HCL-71	1
	SCREW, Button head socket cap, 1/4-20 x 3/4 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
-45	GASKET, Wiring outlet (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-HCL-69	1
-46	COVER (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-HCL-38	1
	SCREW, Button head socket cap, 1/4-20 x 3/4 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
-47	GASKET (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-HCL-40	1
-48	COVER, Bearing mounting (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-HCL-79	1
	SCREW, Hexagon head cap, 1/2-13 x 2 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	WASHER, Lock, 1/2 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
-49	NUT, Brake band tightening screw (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-MRS-51-A	1
-50	STUD, Brake band (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-MRS-52	1
-51	SCREW, Brake band tightening (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-MRS-50	1
-52	STUD, Brake band (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-HCH-2-E	1
-53	BAND, Female brake (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	3-MRS-44-B	1
-54	BAND, Male brake (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	3-MRS-43-A	1
-55	BRAKE BLOCK, Graphite asbestos (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-MRS-45	2
-56	COLLAR, Brake band (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	2-HCH-44-B	1
	SCREW, Socket head set, 1/2-13 x 5/8 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)		2
-57	COVER, Bearing mounting (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-HCL-49-A	1
	SCREW, Hexagon head cap, 1/2-13 x 2 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	WASHER, Lock, 1/2 (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	ELBOW (Alemite) (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	(43706)	1
	FITTING (Alemite) (Not used on 5-HCL-10, 010 and 5-HCL-10, 011)	(1649-B)	1
-58	FRAME AND DRUM ASSEMBLY (See Figure 6-2 for breakdown)		1

Item No.	Description	Part Number	Qty Per Assy
6-2	FRAME AND DRUM ASSEMBLIES		
-1	COVER, Bearing mounting	1-HCL-49-A	1
	SCREW, Hexagon head cap, 1/2-13 x 2	HCL-92	2
	WASHER, Lock, 1/2		2
	FITTING (Alemite)	(1649-B)	1
	ELBOW (Alemite)	(43706)	1
-2	SPACER, Bearing	1-HCL-48	1
-3	NUT, Lock (MRC)	(AN-21)	1



Item No.	Description	Part Number	Qty Per Assy
6-2	FRAME AND DRUM ASSEMBLIES (CONT)	930-01023-5A	
-4	WASHER, Lock (MRC)	(W-21)	1
-5	BEARING ASSEMBLY (Timken) Type TDOS	(37425-37626-D)	1
-6	SLEEVE, Timken bearing	2-HCL-51	1
-7	COUPLING (Rework Boston gear coupling #FCBB30-1-3/8)	1-HCH-6006-A	1
	SCREW, Set, 7/16-14 x 1/2		2
-8	BEARING (MRC with grease #DC-44)	(307-MFF)	1
-9	PLUG (Miller) (Not used on 5-HCL-10, 019)	(HP-12)	2
-10	SPACER, Bearing	1-HCL-48	1
-11	BEARING (Hyatt)	(1218-TS) 1008-23320-0	1
-12	MACHINING, Hyatt bearing inner race #A-5218	1-HCH-78	1
	SCREW, Socket set, 1/4-20 x 1/4		1
-13	SLEEVE, Hyatt bearing	2-HCL-50	1
-14	RETAINING RING (Truarc)	(5100-137)	1
-15	BEARING (MRC with grease #DC-44)	(307-MFF)	1
-16	PIPE CLAMP, 1-1/2 one hole (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	PIPE CLAMP, 1-1/2 one hole (Used on 5-HCL-10, 000 and 5-HCL-10, 001)		2
	SCREW, Hexagon head machine, 1/4-20 x 3/4 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	SCREW, Hexagon head machine, 1/4-20 x 3/4 (Used on 5-HCL-10, 000 and 5-HCL-10, 001)		2
	WASHER, Lock, 1/4 (Used on 5-HCL-10, 010 and 5-HCL-10, 011)		4
	WASHER, Lock, 1/4 (Used on 5-HCL-10, 000 and 5-HCL-10, 001)		2
-17	SUPPORT, Lower deflector (Used on 5-HCL-10, 000 and 5-HCL-10, 001)	1-HCL-45	2
	SCREW, Hexagon head cap, 3/8-16 x 3/4 (Used on 5-HCL-10, 000 and 5-HCL-10, 001)		2
	WASHER, Lock, 3/8 (Used on 5-HCL-10, 000 and 5-HCL-10, 001)		2
-18	DEFLECTOR (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	3-HCL-68	1
-19	DEFLECTOR (Used on 5-HCL-10, 000 and 5-HCL-10, 001)	3-HCL-46	1
-20	DEFLECTOR (Used on 5-HCL-10, 019 only)	2-HCL-60	1
-21	BRACE, Pipe for 68 inch machine	2-HCL-43-1	1
	BRACE, Pipe for 80 inch machine	2-HCL-43-2	
	BRACE, Pipe for 87 inch machine	2-HCL-43-3	
	BRACE, Pipe for 98 inch machine	2-HCL-43-4	
	BRACE, Pipe for 98 inch machine (Not used on 5-HCL-10, 019)	2-HCL-43-19	
-22	BRACE, Pipe (Used on 5-HCL-10, 019 only)	2-HCL-59-3	1
-23	CROSSBRACE AND SHAFT for 68 inch machine	1-HCL-44-1	1
	CROSSBRACE AND SHAFT for 80 inch machine	1-HCL-44-2	
	CROSSBRACE AND SHAFT for 87 inch machine	1-HCL-44-3	
	CROSSBRACE AND SHAFT for 98 inch machine	1-HCL-44-4	
	CROSSBRACE AND SHAFT for 98 inch machine (Not used on 5-HCL-10, 019)	1-HCL-44-19	
	SCREW, Hexagon head cap, 3/4-10 x 4-3/4 (Not used on 5-HCL-10, 019)		2
	WASHER, Lock, 3/4 (Not used on 5-HCL-10, 019)		
-24	CARTRIDGE (Sealmaster) (Used on 5-HCL-10, 001)	(MSC-31)	2
-25	ROLLER, Guide and wrap for 68 inch machine	2-HCL-9-1	1
	ROLLER, Guide and wrap for 80 inch machine	2-HCL-9-2	
	ROLLER, Guide and wrap for 87 inch machine	2-HCL-9-3	
	ROLLER, Guide and wrap for 98 inch machine	2-HCL-9-4	
	ROLLER, Guide and wrap for 98 inch machine (Used on 5-HCL-10, 000 and 5-HCL-10, 001)	2-HCL-9-19	
-26	CROSSBRACE AND SHAFT (Used on 5-HCL-10, 019 only)	1-HCL-44-3	2
	SCREW, Hex head cap, 3/4-10 x 4-3/4 (Used on 5-HCL-10, 019 only)		4
	WASHER, Lock, 3/4 (Used on 5-HCL-10, 019 only)		4

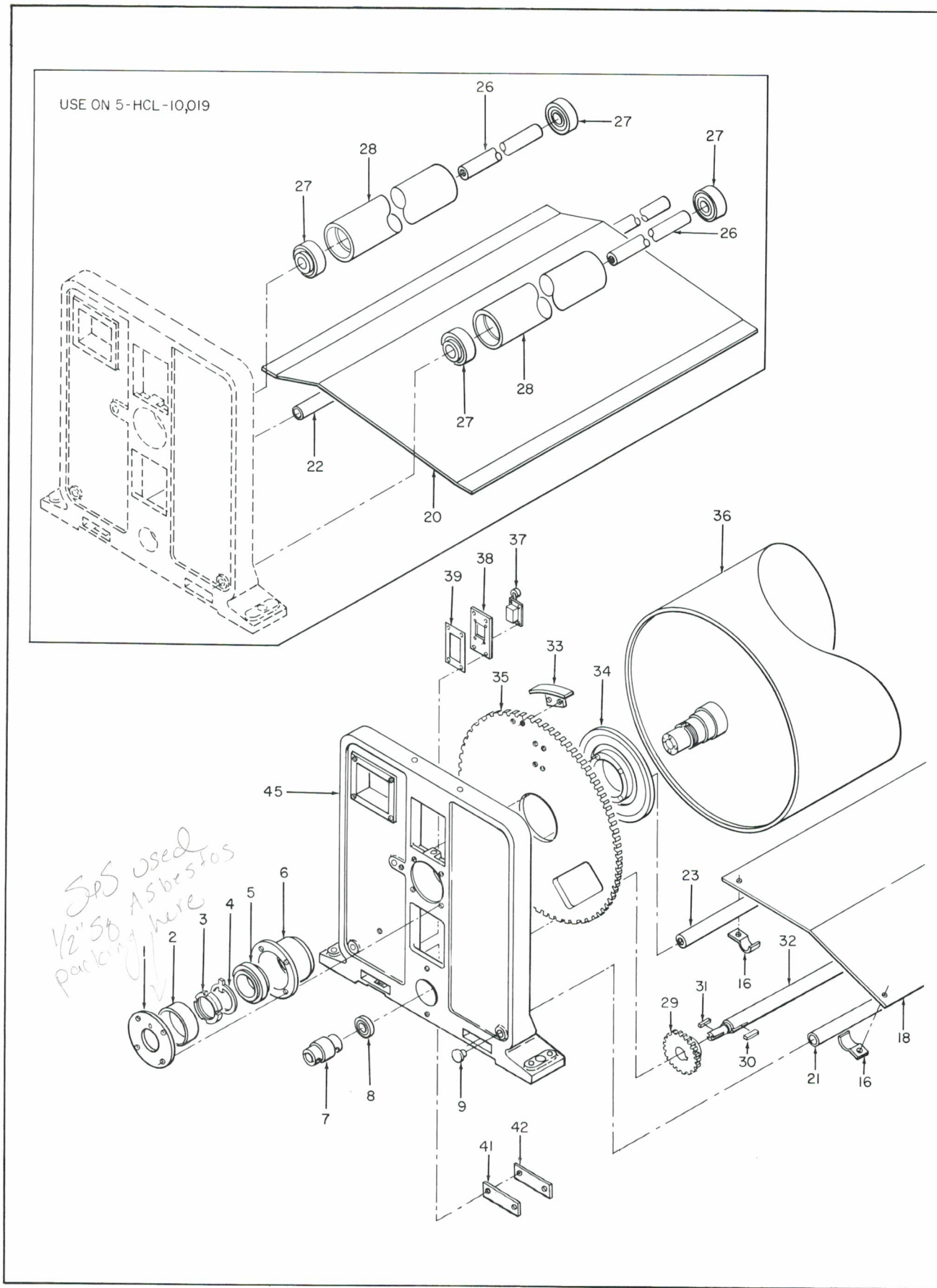


Figure 6-2. Frame and Drum Assemblies (Sheet 1 of 2)

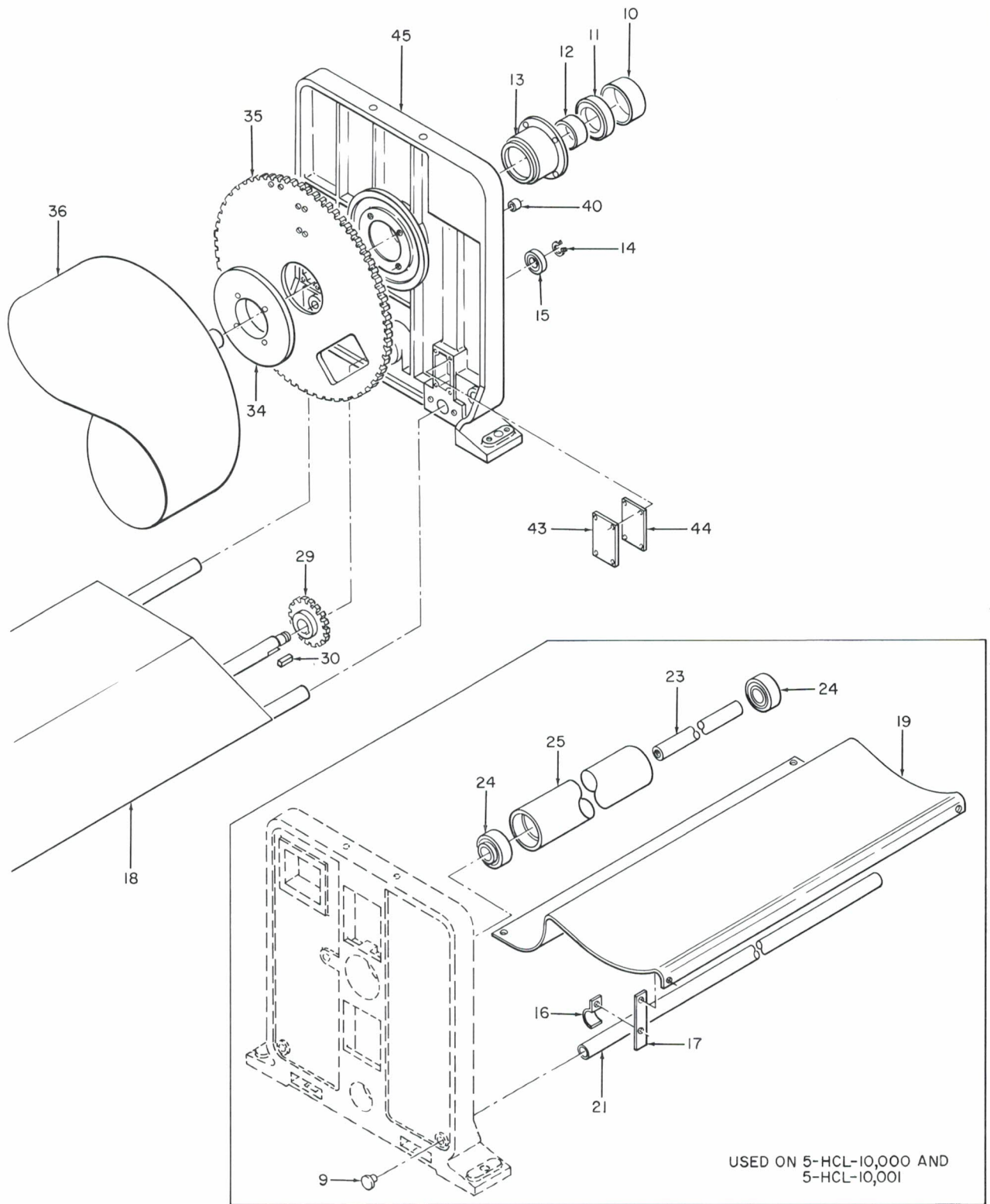


Figure 6-2. Frame and Drum Assemblies (Sheet 2 of 2)



Item No.	Description	Part Number	Qty Per Assy
6-2	FRAME AND DRUM ASSEMBLIES (CONT)		
-27	CARTRIDGE (Sealmaster) (Used on 5-HCL-10, 019 only)	(MSC-31)	4
-28	ROLLER, Guide and wrap (Used on 5-HCL-10, 010 only)	2-HCL-9-3	2
-29	PINION GEAR	1-HCH-68-A	2
	SCREW, Socket set, 3/8-16 x 3/4	(see con-000D FL)	2
	SCREW, Socket set, 3/8-16 x 1/2		2
-30	KEY, Standard square	1-1/2K-2	2
-31	KEY, Standard square	1-5/16K-2	2
-32	SHAFT, Pinion for 68 inch machine	2-HCL-15-1	1
	SHAFT, Pinion for 80 inch machine	2-HCL-15-2	
	SHAFT, Pinion for 87 inch machine	2-HCL-15-3	
	SHAFT, Pinion for 98 inch machine	2-HCL-15-4	
	SHAFT, Pinion for 98 inch machine	2-HCL-15-19	
-33	CAM, Gear limit switch	2-HCL-4-B	1
	SCREW, Hexagon head cap, 3/8-16 x 1		2
	WASHER, Lock, 3/8		2
-34	SUPPORT, Main gear	2-HCL-52	2
	SCREW, Hexagon head cap, 1/2-13 x 2-1/4		8
	WASHER, Lock, 1/2		8
-35	GEAR, Wrap roll (Not used on 5-HCL-10, 019)	3-HCL-2-D	2
	GEAR, Wrap roll (Used on 5-HCL-10, 019 only)	3-HCL-57-A	2
-36	DRUM for 68 inch machine	4-HCH-6121-1	1
	DRUM for 80 inch machine	4-HCH-6121-2	
	DRUM for 87 inch machine	4-HCH-6121-3	
	DRUM for 98 inch machine	4-HCH-6121-4	
	DRUM for 98 inch machine	4-HCH-6121-19	
-37	SWITCH (Allen-Bradley) with adjusting lever 802TW2	(802TAO)	2
	SCREW, Round head, 8-32 x 5/8		8
	NUT, Hexagon, No. 8		8
	WASHER, Lock, No. 8		8
-38	PLATE, Limit switch mounting	1-HCL-27-A	2
	SCREW, Round head, 1/4-20 x 5/8		8
	WASHER, Lock, 1/4		8
-39	GASKET, Limit switch mounting plate	1-HCL-28-A	2
-40	PLUG, Brake anchor hole (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	1-HCL-80	1
-41	PLATE, Cover (Not used on 5-HCL-10, 019)	1-HDH-118	2
	SCREW, Hexagon head, 1/2-13 x 1 (Not used on 5-HCL-10, 019)		4
	WASHER, Lock, 1/2 (Not used on 5-HCL-10, 019)		4
-42	GASKET (Not used on 5-HCL-10, 019)	1-HDH-119	2
-43	COVER, Limit switch cavity	1-HCL-21-A	2
	SCREW, Hexagon head cap, 1/4-20 x 1/2		8
	WASHER, Lock, 1/4		8
-44	GASKET, Limit switch cavity	1-HCL-22-A	2
-45	MAIN FRAME (Used on 5-HCL-10, 010 and 5-HCL-10, 011)	5-HCL-1-F	2
	MAIN FRAME (Used on 5-HCL-10, 000 and 5-HCL-10, 001)	5-HCL-1-D	2
	MAIN FRAME (Used on 5-HCL-10, 019 only)	1-HCL-61	2
	FITTING (Alemite)	(1610-B)	2

Item No.	Description	Part Number	Qty Per Assy
6-3	BRIDGE ASSEMBLY (Used on 5-HCL-10, 010 and 5-HCL-10, 011 only)		
-1	SUPPORT, Wrap roller	3-HCL-64	2
	SCREW, Socket set, 1/2-13 x 1		2
-2	CARTRIDGE (Sealmaster)	(MSC-31)	2
	FITTING (Alemite)	(1911-B)	2
-3	SHAFT, Wrap roller for 68 inch machine	1-HCL-65-1	1
	SHAFT, Wrap roller for 80 inch machine	1-HCL-65-2	
	SHAFT, Wrap roller for 87 inch machine	1-HCL-65-3	
	SHAFT, Wrap roller for 98 inch machine	1-HCL-65-4	
	SHAFT, Wrap roller for 98 inch machine	1-HCL-65-19	
-4	ROLLER, Guide and wrap for 68 inch machine	2-HCL-9-1	1
	ROLLER, Guide and wrap for 80 inch machine	2-HCL-9-2	
	ROLLER, Guide and wrap for 87 inch machine	2-HCL-9-3	
	ROLLER, Guide and wrap for 98 inch machine	2-HCL-9-4	
	ROLLER, Guide and wrap for 98 inch machine	2-HCL-9-19	

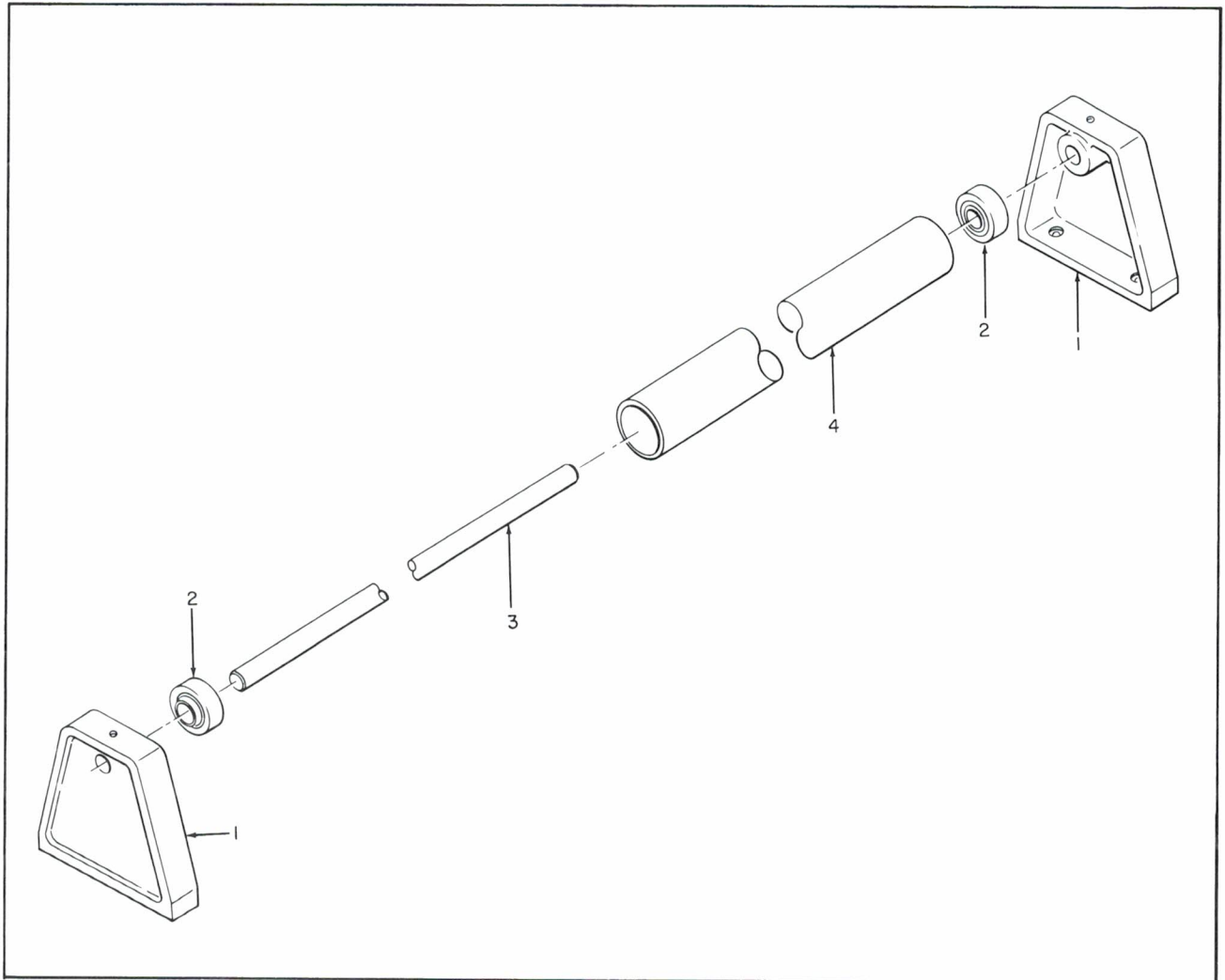


Figure 6-3. Bridge Assembly

Item No.	Description	Part Number	Qty Per Assy
6-4	SINGLE WRAP ROLL ASSEMBLY		
-1	ARM, Wrap roll	2-HCL-3-B	2
	SCREW, Socket set, 1/2-13 x 1		4
-2	CARTRIDGE (Sealmaster)	(MSC-31)	2
	FITTING (Alemite)	(1911-B)	2
-3	SHAFT, Wrap roller for 68 inch machine	1-HCL-65-1	1
	SHAFT, Wrap roller for 80 inch machine	1-HCL-65-2	
	SHAFT, Wrap roller for 87 inch machine	1-HCL-65-3	
	SHAFT, Wrap roller for 98 inch machine	1-HCL-65-4	
	SHAFT, Wrap roller for 98 inch machine	1-HCL-65-19	
-4	ROLLER, Guide and wrap for 68 inch machine	2-HCL-9-1	1
	ROLLER, Guide and wrap for 80 inch machine	2-HCL-9-2	
	ROLLER, Guide and wrap for 87 inch machine	2-HCL-9-3	
	ROLLER, Guide and wrap for 98 inch machine	2-HCL-9-4	
	ROLLER, Guide and wrap for 98 inch machine	2-HCL-9-5	

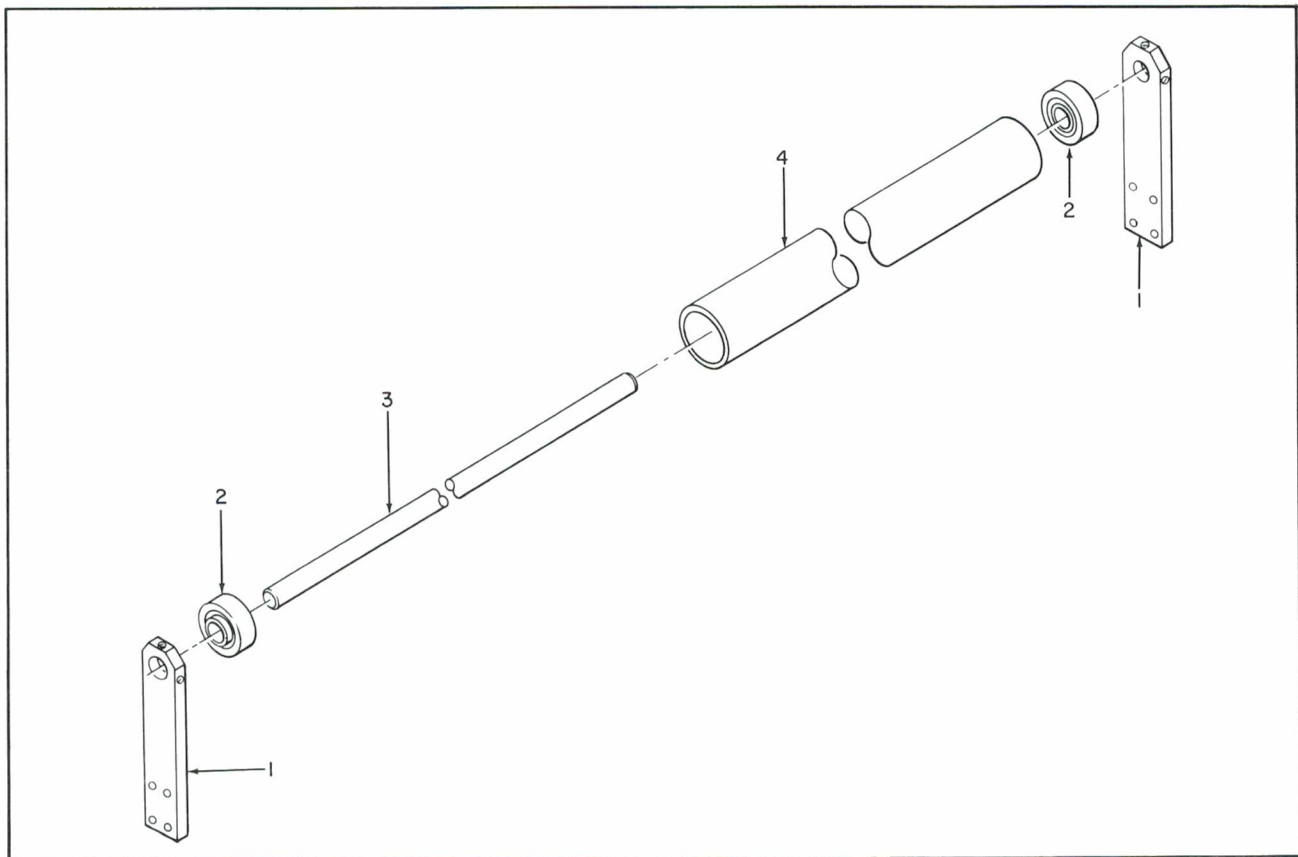


Figure 6-4. Single Wrap Roll Assembly

Item No.	Description	Part Number	Qty Per Assy
6-5	DOUBLE WRAP ROLL ASSEMBLY		
-1	STUD, Wrap roll	1-HCL-87	4
	SCREW, Button head socket cap, 3/8-16 x 1		8
	WASHER, Lock, 3/8		8
	FITTING (Alemite)	(1610-B)	4
-2	ARM, Wrap rolls	3-HCL-58-D	2
-3	BEARING (SKF)	(6206-Z)	4
-4	ROLLER, Guide and wrap	2-HCL-88-3	2



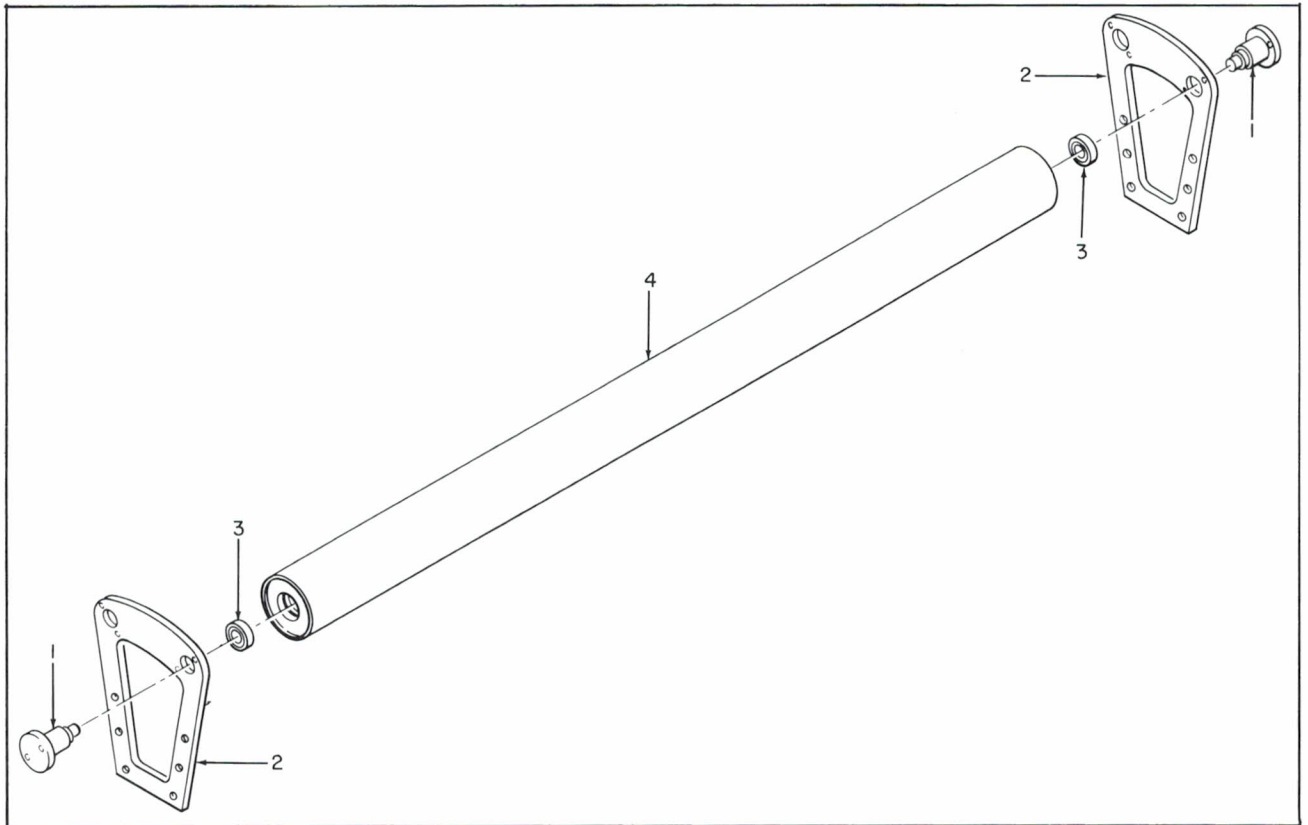


Figure 6-5. Double Wrap Roll Assembly

Item No.	Description	Part Number	Qty Per Assy
6-6	MODEL HDH DUPLEX PREHEATER ASSEMBLY	5-HDH-10012	
	CAM, Gear limit switch upper, right hand drive	3-HDH-73	2
	CAM, Gear limit switch upper, left hand drive	3-HDH-75	
	SCREW, Hexagon head cap, 1/2-13 x 1-1/4		4
	WASHER, Lock, 1/2		4
-2	CAM, Limit switch	2-HDH-43	2
	SCREW, Hexagon head cap, 1/2-13 x 1		4
	WASHER, Lock, 1/2		4
-3	STARTER (General Electric) or	(CR109A102AHA)	1
	STARTER (General Electric) or	(CR109A103AHA)	
	STARTER (General Electric) or	(CR109A104AHA)	
	STARTER (General Electric) or	(CR109A105AHA)	
	STARTER (General Electric) or	(CR109A108AHA)	
	STARTER (General Electric) or	(CR109B103AGA)	
	STARTER (General Electric) or	(CR109B104AGA)	
	STARTER (General Electric)	(CR109B105AGA)	
	with		
	HEATER (General Electric) or	(CR123C1-48A)	1
	HEATER (General Electric) or	(CR123C1-84A)	
	HEATER (General Electric) or	(CR123C2-20A)	
	HEATER (General Electric) or	(CR123C3-56A)	
	HEATER (General Electric) or	(CR123C3-79A)	
	HEATER (General Electric)	(CR123C4-66A)	
-4	COVER	1-HDH-118	4
	SCREW, Hexagon head, 1/2-13 x 1		8
	WASHER, Lock, 1/2		8
-5	GASKET	1-HDH-119	4
-6	NAMEPLATE, Instruction	2-N-513	1

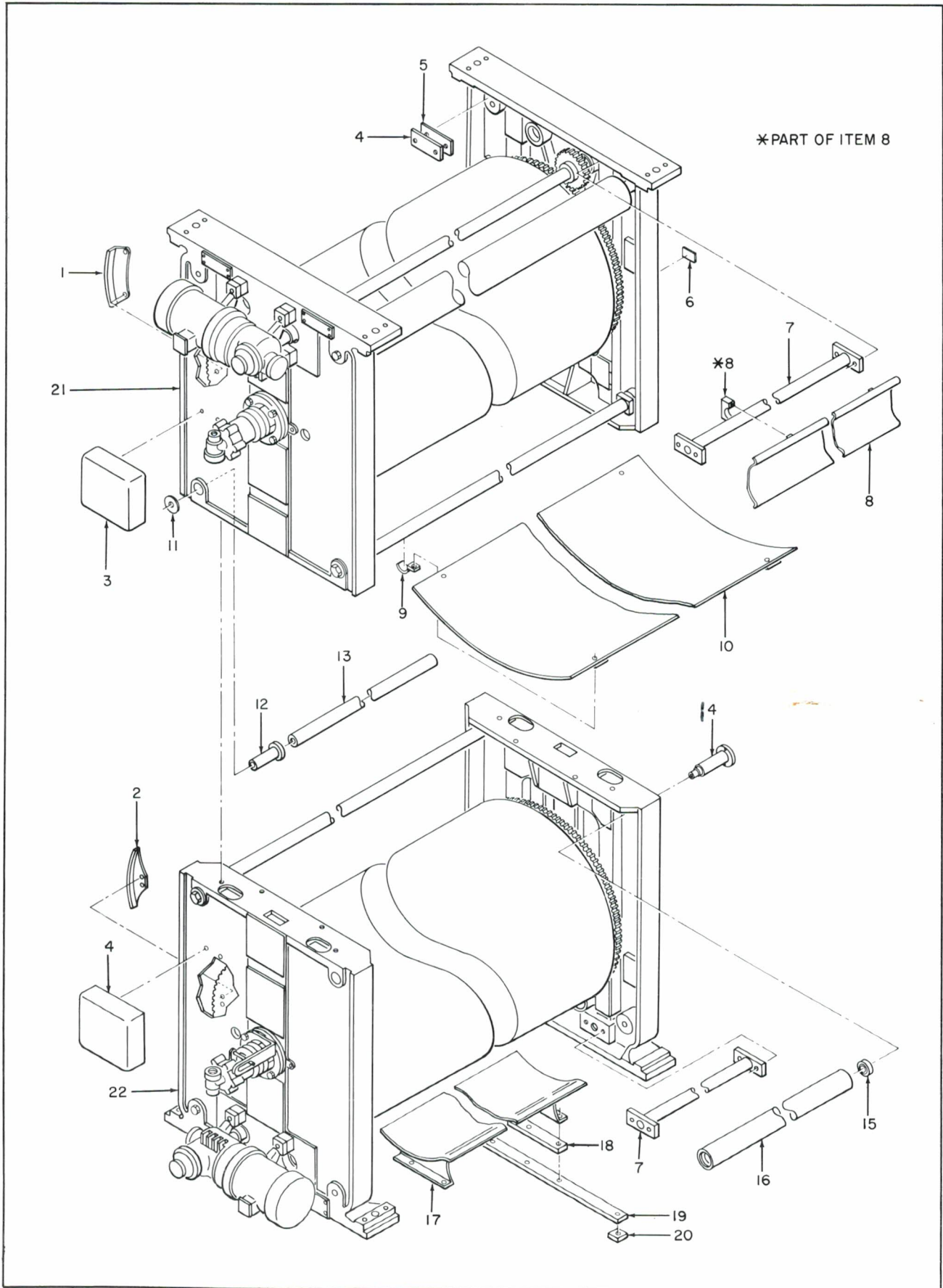


Figure 6-6. Model HDH Duplex Preheater Assembly

Item No.	Description	Part Number	Qty Per Assy
6-6	MODEL HDH DUPLEX PREHEATER ASSEMBLY (CONT)		
-7	CROSSBRACE for 68 inch machine	2-HDH-101-1	2
	CROSSBRACE for 80 inch machine	2-HDH-101-2	
	CROSSBRACE for 87 inch machine	2-HDH-101-3	
	CROSSBRACE for 98 inch machine	2-HDH-101-4	
	SCREW, Hexagon head cap, 1/2-13 x 1-1/2		8
	WASHER, Lock, 1/2		8
-8	WELDMENT, Upper deflector	2-HDH-64-D	1
-9	PIPE CLAMP, 1-1/2 one hole		4
	SCREW, Hexagon head cap, 3/8-16 x 7/8		4
	WASHER, Lock, 3/8		4
-10	DEFLECTOR, Middle	2-HDH-63-B	1
-11	WASHER, 1-1/16 inside dimension x 3-1/4 outside dimension x 1/4 thick		2
	SCREW, Hexagon head cap, 1 inch - 8 x 6-1/2 inches		2
	WASHER, Lock, 1 inch		
-12	BUSHING, Crossbrace	1-HDH-114	2
-13	CROSSBRACE for 68 inch machine	1-HDH-115-1	1
	CROSSBRACE for 80 inch machine	1-HDH-115-2	
	CROSSBRACE for 87 inch machine	1-HDH-115-3	
	CROSSBRACE for 98 inch machine	1-HDH-115-4	
-14	STUD, Roller guide	1-HDH-59	2
	SCREW, Hexagon head cap, 3/8-16 x 1		4
	WASHER, Lock, 3/8		4
	FITTING (Alemite)	(1610)	2
-15	BEARING (SKF)	(6206-ZZ)	2
-16	ROLLER, Guide for 68 inch machine	2-HDH-70-1	1
	ROLLER, Guide for 80 inch machine	2-HDH-70-2	
	ROLLER, Guide for 87 inch machine	2-HDH-70-3	
	ROLLER, Guide for 98 inch machine		
-17	WELDMENT, Deflector, lower	2-HDH-62-B	1
	SCREW, Hexagon head cap, 3/8-16 x 1-1/4		4
	WASHER, Lock, 3/8		4
-18	SPACER	1-HCH-6106	2
-19	MOUNTING PLATE, Lower deflector	1-HDH-78-A	2
-20	SPACER	1-HCH-6105-A	4
-21	FRAME AND DRUM ASSEMBLY, Upper (See Figure 6-7 for detail breakdown)		1
-22	FRAME AND DRUM ASSEMBLY, Lower (See Figure 6-7 for detail breakdown)		1
	SCREW, Hexagon head cap, 5/8-11 - 2-1/2		8
	WASHER, Lock, 5/8		8
	NUT, Hexagon, 5/8-11		8
Item No.	Description	Part Number	Qty Per Assy
6-7	FRAME AND DRUM ASSEMBLY, UPPER AND LOWER		
-1	MOTOR (Master) 3/4 hp - right angle combination gear (#6D dated 11-16-67, item #1) or		1
	MOTOR (Master) 3/4 hp - right angle combination gear (#6D dated 11-16-67, item #2) or		
	MOTOR (Master) 1 hp - right angle combination gear (#6D dated 11-16-67, item #3) or		
	MOTOR (Master) 1 hp - right angle combination gear (#6D dated 11-16-67, item #4)		
	STUD, Motor mounting		4
	NUT, 1/2-13		4
	WASHER, Lock, 1/2		4
-2	BLOCK, Spacer	1-HCH-6030-A	4



DRAW SIDE

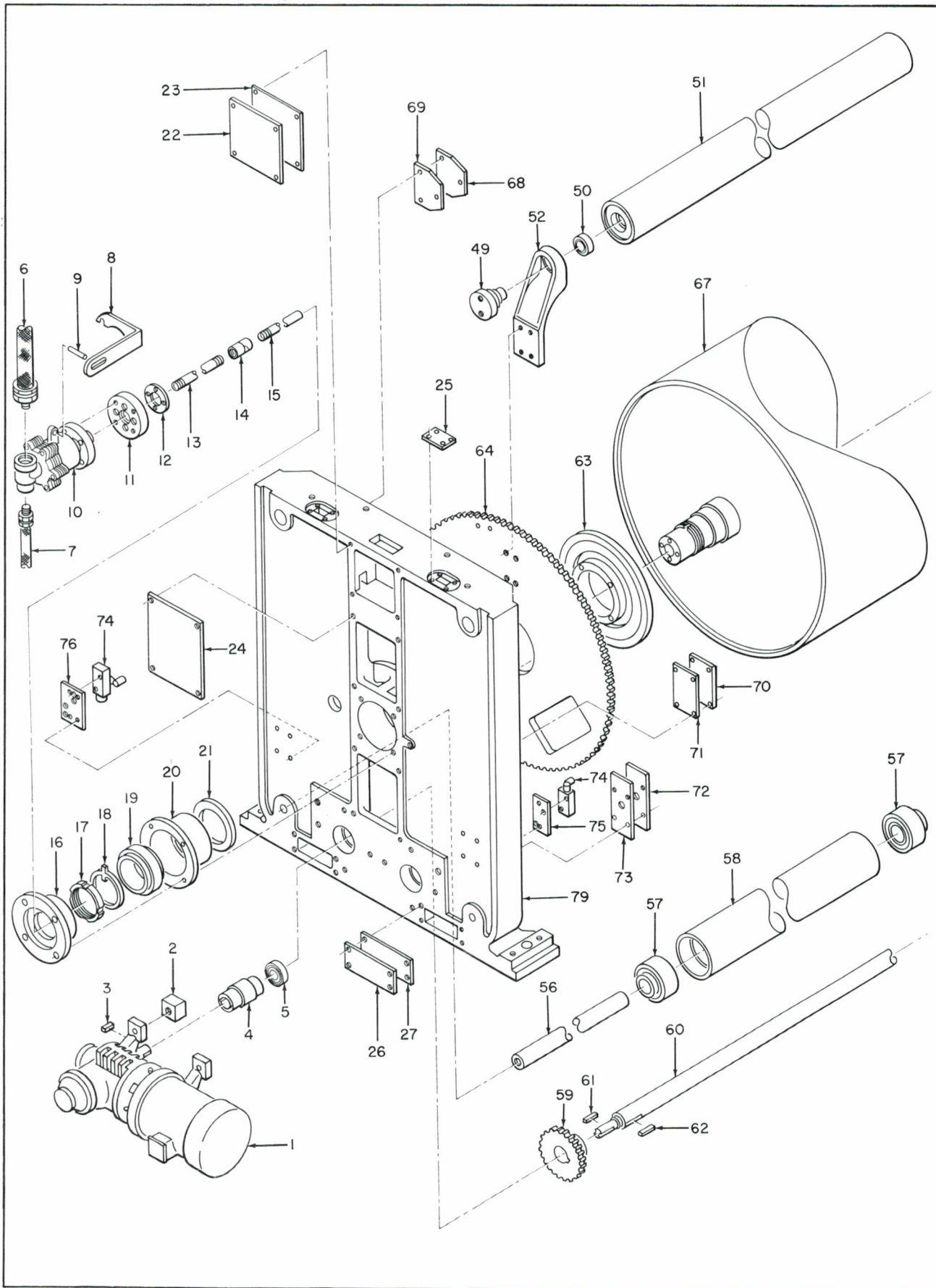


Figure 6-7. Frame and Drum Assembly, Upper and Lower (Sheet 1 of 2)

operator side

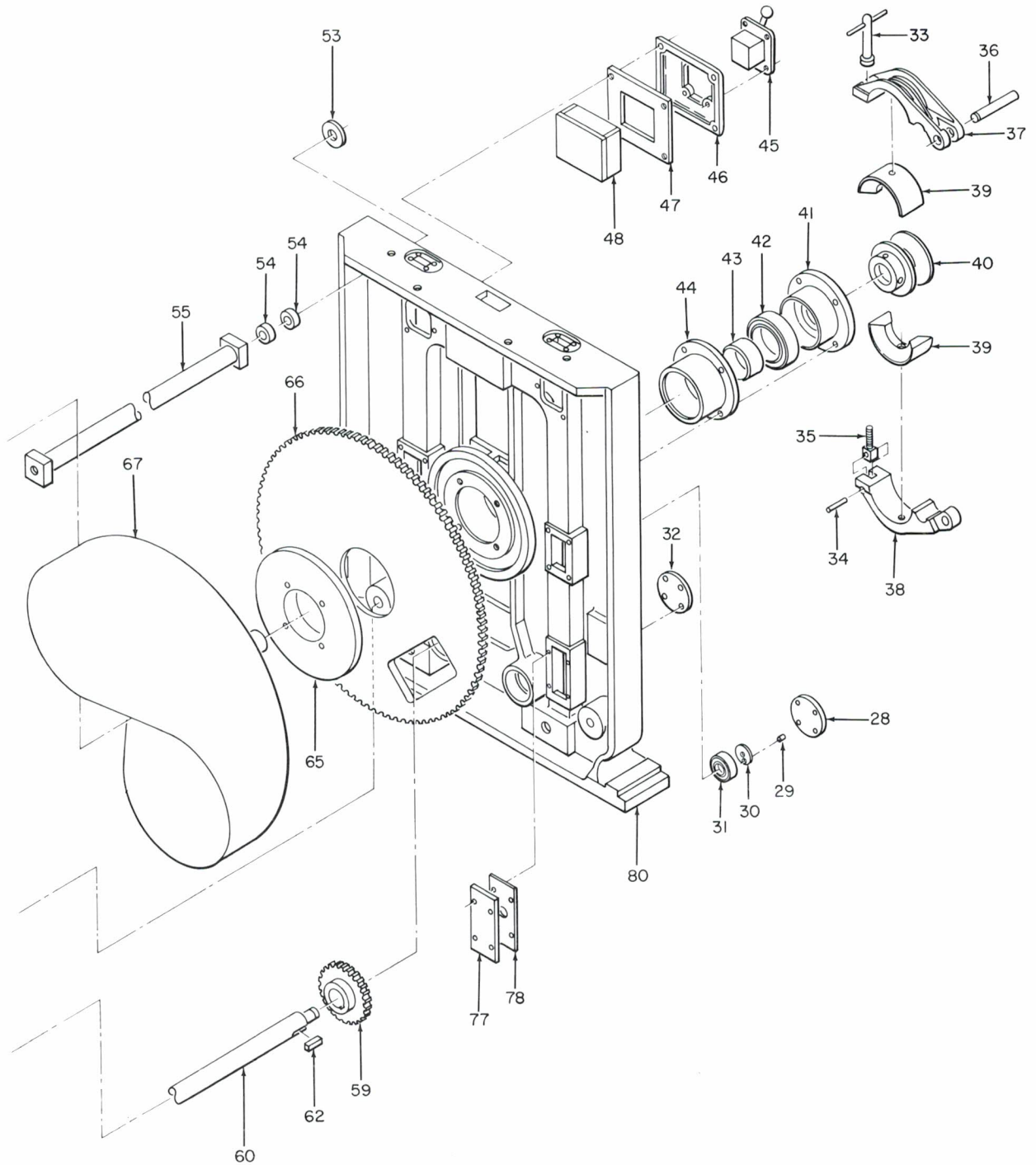


Figure 6-7. Frame and Drum Assembly Upper and Lower (Sheet 2 of 2)

Item No.	Description	Part Number	Qty Per Assy
6-7	FRAME AND DRUM ASSEMBLY, UPPER AND LOWER (CONT)		
-3	KEY, Standard square	1-5/16K-2	2
-4	COUPLING, Rework	1-HCH-6006-A	1
	SCREW, Set, 7/16-14 x 1/2		4
-5	BEARING (MRC) with grease #DC-44	(307-MFF)	1
-6	HOSE ASSEMBLY (Aeroquip) - consisting of: Teflon hose #2807-20 Male pipe fitting #38-190627-20-20 J. I. C. swivel fitting #63-190600-20 Adapter #2022-20-20S	(A280704-20-14-1/2)	1
-7	HOSE ASSEMBLY (Aeroquip) - consisting of: Teflon hose #2807-12 Male pipe fitting #38-190627-12-12 J. I. C. swivel fitting #63-190600-12 Adapter #2022-12-12S	(A280704-12-13-1/2)	1
-8	SUPPORT, Johnson quick release joint	2-HCH-6120	1
	SCREW, Hexagon head cap, 1/2-13 x 2-1/2		2
	WASHER, Plain, 1/2		2
-9	ROD, Johnson joint support	1-HCH-6022	1
-10	1-1/2 inches #3500SBPHQ-1 Special Johnson joint with special siphon pipe support	2-HCH-6122	1
-11	JOURNAL FLANGE, Quick release nipple	1-HCH-6118-A	1
	SCREW, Socket head cap, 3/8-16 x 1-1/4		4
-12	GASKET, Quick release journal flange	1-HCH-6123	1
-13	PIPE FOR SIPHON	1-HPC-207-A	1
-14	SIPHON ELBOW (JOCO) 1/2	1-4/8-00001-0	1
-15	SIPHON PIPE (Short)	1-HCH-6110-A	1
-16	COVER, Bearing mounting	2-HDH-52-E	1
	SCREW, Hexagon head cap, 1/2-13 x 2		2
	WASHER, Lock, 1/2		2
-17	NUT, Lock, (MRC)	(AN-21)	1
-18	WASHER, Lock, (MRC)	(W-21)	1
-19	BEARING ASSEMBLY (Timken) Type TDOS	(37425-37626-D)	1
-20	SLEEVE, Timken bearing	2-HDH-53-B	1
-21	SPACER, Bearing roller (drive side)	1-HDH-71	1
-22	COVER	1-HDH-110-A	1
	SCREW, Button head socket cap, 1/4-20 x 3/4		4
	WASHER, Lock, 1/4		4
-23	GASKET	1-HDH-111	1
-24	COVER, Inspection hole	2-HDH-102	4
	SCREW, Button head socket cap, 1/4-20 x 1/2		16
-25	COVER	1-HDH-124	4
	SCREW, Hexagon head, 1/4-20 x 1/2		16
-26	COVER	1-HDH-106	4
	SCREW, Button head socket cap, 1/4-20 x 3/4		16
-27	GASKET	1-HDH-106	4
-28	COVER	1-HCH-6115	1
	SCREW, Hexagon head, 1/4-20 x 3/4		4
	WASHER, Lock, 1/4		4
-29	PIN, Bearing washer (operator side)	1-HCH-49	1
-30	WASHER, Inner race bearing (operator side)	1-HCH-37	1
	SCREW, Hexagon head cap, 3/8-16 x 1/2		1
	WASHER, Lock, 3/8		1
-31	BEARING (MRC) with grease #DC-44	(307-MFF)	1
-32	COVER, Pinion	1-HDH-133	1
	SCREW, Hexagon head, 1/4-20 x 3/4		4
	WASHER, Lock, 1/4		4
-33	NUT, Brake band tightening screw	1-MRS-51-A	1
-34	STUD, Brake band	1-MRS-52	1
-35	SCREW, Brake band tightening	1-MRS-50	1
-36	STUD, Brake band	1-HCH-2-E	1
-37	BAND, Female brake	3-MRS-44-B	1



Item No.	Description	Part Number	Qty Per Assy
6-7	FRAME AND DRUM ASSEMBLY, UPPER AND LOWER (CONT)		
-38	BAND, Male brake	3-MRS-43-A	1
-39	BRAKE BLOCK, Graphite asbestos	2-MRS-45	2
-40	COLLAR, Brake band	2-HCH-44-B	1
	SCREW, Socket head set, 1/2-13 x 5/8		2
-41	COVER, Hyatt bearing (operator side)	2-HDH-54-A	1
	SCREW, Hexagon head cap, 1/2-13 x 3		4
	WASHER, Lock, 1/2		4
	FITTING (Alemite)	(1610-B)	1
-42	BEARING (Hyatt) 1008-02332-0	(1218-TS)	1
-43	MACHINING, Hyatt bearing inner race #A-5218	1-HCH-78	1
	SCREW, Socket set, 1/4-20 x 1/4		1
-44	SLEEVE, Hyatt bearing (operator side)	2-HDH-55-B	1
-45	DRUM SWITCH (Allen Bradley) bulletin 350	(TAV34STYLE AF)	1
	SCREW, Button head socket cap, 8-32 x 1/2		4
-46	MOUNTING PLATE, Reversing drum switch	3-HCL-6	1
	SCREW, Button head socket cap, 1/4-20 x 3/4		4
	WASHER, Lock, 1/4		4
-47	GASKET, Drum switch	2-HCL-20	1
-48	LINER, Asbestos	2-HCL-36	1
-49	STUD, Wrap roll	1-HCH-36-D	2
	SCREW, Hexagon head cap, 3/8-16 x 1		4
	WASHER, Lock, 3/8		4
	FITTING (Alemite)	(#1610)	2
-50	BEARING (SKF)	(#6206-Z)	2
-51	PIPE, Guide roller for 68 inch machine	2-HDH-60-1	1
	PIPE, Guide roller for 80 inch machine	2-HDH-60-2	
	PIPE, Guide roller for 87 inch machine	2-HDH-60-3	
	PIPE, Guide roller for 98 inch machine	2-HDH-60-4	
-52	ARM, Wrap roll	2-HDH-13-B	2
	SCREW, Hexagon head cap, 1/2-13 x 1-1/2		8
	WASHER, Lock, 1/2		8
-53	WASHER, 1-1/16 inside dimension x 3-1/4 outside dimension x 1/4 thick		2
	SCREW, Hexagon head cap, 1 inch - 8 x 6-1/2 inches		2
	WASHER, Lock, 1 inch		2
-54	BUSHING, Crossbrace	1-HDH-134	4
-55	CROSSBRACE for 68 inch machine	1-HDH-37-1	1
	CROSSBRACE for 80 inch machine	1-HDH-37-2	
	CROSSBRACE for 87 inch machine	1-HDH-37-3	
	CROSSBRACE for 98 inch machine	1-HDH-37-4	
-56	CROSSBRACE AND SHAFT for 68 inch machine	1-HDH-121-1	1
	CROSSBRACE AND SHAFT for 80 inch machine	1-HDH-121-2	
	CROSSBRACE AND SHAFT for 87 inch machine	1-HDH-121-3	
	CROSSBRACE AND SHAFT for 98 inch machine	1-HDH-121-4	
	SCREW, Hexagon head cap, 1 inch - 8 x 5-3/4		2
	WASHER, Lock, 1 inch		2
-57	BEARING (Sealmaster) 1013-23102-0	(MSC-31)	2
	ADAPTER (Alemite)	(51942)	2
	FITTING (Alemite)	(1613-B)	2
-58	GUIDE ROLLER for 68 inch machine	2-HDH-116-1	1
	GUIDE ROLLER for 80 inch machine	2-HDH-116-2	
	GUIDE ROLLER for 87 inch machine	2-HDH-116-3	
	GUIDE ROLLER for 98 inch machine	2-HDH-116-4	
-59	PINION GEAR	1-HCH-68-B	2
	SCREW, Socket set, 3/8-16 x 3/4		2
	SCREW, Socket set, 3/8-16 x 1/2		2
-60	SHAFT, Pinion for 68 inch machine	2-HCH-43-1	1
	SHAFT, Pinion for 80 inch machine	2-HCH-43-2	
	SHAFT, Pinion for 87 inch machine	2-HCH-43-3	
	SHAFT, Pinion for 98 inch machine	2-HCH-43-4	
-61	KEY, Standard square	1-5/16K-2	1

Item No.	Description	Part Number	Qty Per Assy
6-7	FRAME AND DRUM ASSEMBLY, UPPER AND LOWER (CONT)		
-62	KEY, Standard square	1-1/2K-2	2
-63	SUPPORT, Main gear	2-HDH-72	1
	SCREW, Hexagon head cap, 1/2-13 x 2-1/4		4
	WASHER, Lock, 1/2		4
-64	GEAR, Wrap roll	3-HDH-42-B	1
-65	SUPPORT, Main gear	2-HDH-58	1
	SCREW, Hexagon head cap, 1/2-13 x 2-1/4		4
	WASHER, Lock, 1/2		4
-66	GEAR, Wrap roll	3-HDH-42-B	1
-67	DRUM for 68 inch machine	4-HCH-6121-1	1
	DRUM for 80 inch machine	4-HCH-6121-2	
	DRUM for 87 inch machine	4-HCH-6121-3	
	DRUM for 98 inch machine	4-HCH-6121-4	
-68	COVER	1-HDH-146	4
	SCREW, Hexagon head cap, 1/4-20 x 3/4		12
	WASHER, Lock, 1/4		12
-69	GASKET	1-HDH-147	4
-70	COVER	1-HDH-122-A	4
	SCREW, Hexagon head cap, 1/4-20 x 1		16
	WASHER, Lock, 1/4		16
-71	GASKET	1-HDH-123	4
-72	COVER	1-HDH-161	2
	SCREW, Hexagon head cap, 1/4-20 x 3/4		8
	WASHER, Lock, 1/4		8
-73	GASKET	1-HDH-145-A	2
-74	LIMIT SWITCH (Allen Bradley) with adjustable lever	(802-TA-W2)	2
	SCREW, Flat head, 10-32 x 5/8		4
-75	MOUNTING PLATE, Limit switch	1-HDH-80-A	1
	SCREW, Round head, 1/4-20 x 5/8		4
	WASHER, Lock, 1/4		4
-76	MOUNTING PLATE, Limit switch	1-HDH-89-A	1
	SCREW, Round head, 1/4-20 x 5/8		4
	WASHER, Lock, 1/4		4
-77	COVER	1-HDH-144	2
	SCREW, Hexagon head cap, 1/4-20 x 3/4		8
	WASHER, Lock, 1/4		8
-78	GASKET	1-HDH-145	2
-79	MAIN FRAME, Drive side (Lower) or	4-HCH-6100-G	1
	MAIN FRAME, Drive side (Upper)	4-HCH-6100-H	
	FITTING (Alemite)	(1610-B)	1
-80	MAIN FRAME, Operating side (Lower) or	4-HCH-6101-G	1
	MAIN FRAME, Operating side (Upper)	4-HCH-6101-H	
	FITTING (Alemite)		1

Item No.	Description	Part Number	Qty Per Assy
6-8	MODEL HPC PRECONDITIONER STEAM, LUBRICATION AND ELECTRICAL PARTS		
-1	S & S, Nameplate	2-N-95	1
-2	NAMEPLATE, Lubrication	1-N-904	2
-3	NAMEPLATE, Lubrication	1-N-905	2
-4	BLOCK, Lubrication	1-HPC-301	1
	SCREW, Hex head cap, 1/4-20 x 1-3/4 inches long		1
	WASHER, Lock split, 1/4		1
	FITTING, Grease (Alemite)	1610-B	2

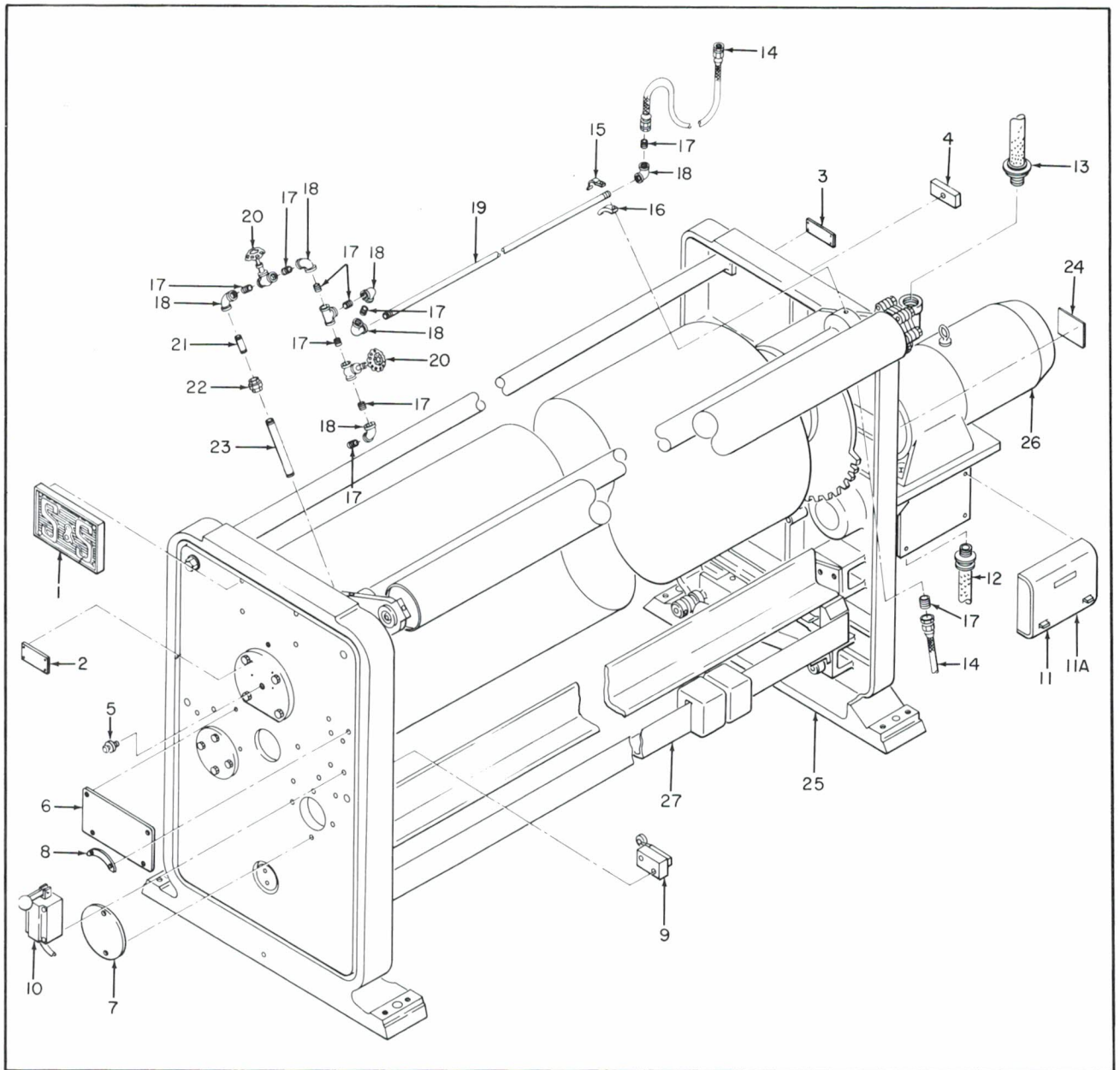


Figure 6-8. Model HPC Preconditioner Steam, Lubrication and Electrical Parts

Item No.	Description	Part Number	Qty Per Assy
6-8	MODEL HPC PRECONDITIONER STEAM, LUBRICATION AND ELECTRICAL PARTS (CONT)		
-5	FITTING, Grease (Alemite)	1610-B	6
-6	COVER, Main frame, operating side	1-HPC-278	1
	SCREW, Button head socket cap, 1/4-20 x 3/4 inches long		2
	WASHER, Lock split, 1/4		2
-7	COVER, Pinion shaft	1-HPC-80	1
	SCREW, Hex head cap, 3/8-16 x 1/2 inch long		2
	WASHER, Lock split, 3/8		2
-8	DIRECTION PLATE, Right hand drive	1-HPC-109	1
	DIRECTION PLATE, Left hand drive	1-HPC-110	2
	SCREW, Round head 10-32 x 3/8 inch long		2
	NUT, Hex, 10-32		2



Item No.	Description	Part Number	Qty Per Assy
6-8	MODEL HPC PRECONDITIONER STEAM, LUBRICATION AND ELECTRICAL PARTS (CONT)		
-9	LIMIT SWITCH (Allen Bradley)	(802TA-W2)	2
-10	DRUM SWITCH (Furnas)	(327AR)	1
-11	PULL BOX, Screw cover, 14 gauge steel standard 9 inches wide x 18 inches high x 3 inches deep (Columbia)	(TYPE SC)	1
-11A	GENERAL ELECTRIC STARTERS AND HEATERS. ONE EACH PER MACHINE AS FOLLOWS FOR SINGLE MACHINES U. S. A.		
	FOR 220 VOLTS 50 CYCLES		
	STARTER, Reversing	(CR109A107AHA)	1
	HEATER	(CR-123-C3-56A)	1
	FOR 220 VOLTS 60 CYCLES		
	STARTER, Reversing	(CR109A103AHA)	1
	HEATER	(CR-123-C3-56A)	1
	FOR 380 VOLTS 50 CYCLES		
	STARTER, Reversing	(CR109A104AHA)	1
	HEATER	(CR-123-C8-20A)	1
	FOR 440 VOLTS 50 CYCLES		
	STARTER, Reversing	(CR109A109AHA)	1
	HEATER	(CR-123-C1-85A)	1
	FOR 440 VOLTS 60 CYCLES		
	STARTER, Reversing	(CR109A104AHA)	1
	HEATER	(CR-123-C1-84A)	1
	FOR 550 VOLTS 60 CYCLES		
	STARTER, Reversing	(CR109A105AHA)	1
	HEATER	(CR-123-C1-48A)	1
	GENERAL ELECTRIC STARTERS AND HEATERS. ONE EACH PER MACHINE. AS FOLLOWS FOR 110 VOLT CONTROL WITH NEW RELIANCE DRIVE ONLY		
	FOR 220 VOLTS 60 CYCLES		
	STARTER, Reversing	(CR109A102AHA)	1
	HEATER	(CR-123-C3-56A)	1
	FOR 380 VOLTS 50 CYCLES		
	STARTER, Reversing	(CR109A102AHA)	1
	HEATER	(CR-123-C2-20A)	1
	FOR 440 VOLTS 60 CYCLES		
	STARTER, Reversing	(CR109A102AHA)	1
	HEATER	(CR-123-C1-84A)	1
	FOR 550 VOLTS 60 CYCLES		
	STARTER, Reversing	(CR109A102AHA)	1
	HEATER	(CR-123-C1-48A)	1
	GENERAL ELECTRIC STARTERS AND HEATERS. ONE EACH PER MACHINE AS FOLLOWS FOR 220 VOLT CONTROL WITH A HEEMAF OR P. P. D DRIVE ONLY		
	FOR 220 VOLTS 50 CYCLES		
	STARTER, Reversing	(CR109A108AHA)	1
	HEATER	(CR-123-C3-56A)	1
	FOR 380 VOLTS 50 CYCLES		
	STARTER, Reversing	(CR109A108AHA)	1
	HEATER	(CR-123-C2-20A)	1
	FOR 440 VOLTS 50 CYCLES		
	STARTER, Reversing	(CR109A108AHA)	1
	HEATER	(CR-123-C1-84A)	1
-12	HOSE ASSEMBLY (Aeroquip)	(A280704-10-48")	1
-13	HOSE ASSEMBLY (Aeroquip)	(A280704-20-14-1/2")	1
-14	HOSE ASSEMBLY (Aeroquip)	(A280704-6-72")	2
-15	PIPE STRAP, 1/2 inch 2 hole		1
-16	PIPE SUPPORT	1-HPC-220	1
	SCREW, Hex head cap, 1/4-20 x 1 inch long		2
	WASHER, Lock split, 1/4		2

Item No.	Description	Part Number	Qty Per Assy
6-8	MODEL HPC PRECONDITIONER STEAM, LUBRICATION AND ELECTRICAL PARTS (CONT)		
-17	NIPPLE, Close 1/2 inch		8
-18	ELBOW, 90° 1/2 inch		6
-19	PIPE, 1/2 inch (As required)		
-20	VALVE, Globe 1/2 inch	(200)	2
-21	NIPPLE, 3 inches long		1
-22	UNION, 1/2 inch x H		1
-23	NIPPLE, 6 inches long		1
-24	NAMEPLATE - Size no pattern	1-N-8	1
-25	FRAMES, Braces, drum and wrap rolls assembly (See figure 6-9 for breakdown)		1
-26	MOTORS AND DRIVE MECHANISM ASSEMBLY (See figure 6-10 for breakdown)		1
-27	DANCER ARM ASSEMBLY (See figure 6-11 for breakdown)		1

Item No.	Description	Part Number	Qty Per Assy
6-9	FRAMES, BRACES, DRUM AND WRAP ROLLS ASSEMBLY		
-1	GREASE FITTING (Alemite)	(1644-B)	2
-2	STUD, Wrap roll	2-HPC-83	2
-3	BEARING (SKF)	(6206-2)	2
-4	ROLLER, Guide (Used on 68 inch machine)	2-HPC-15-1	1
	ROLLER, Guide (Used on 80 inch machine)	2-HPC-15-2	1
	ROLLER, Guide (Used on 87 inch machine)	2-HPC-15-3	1
	ROLLER, Guide (Used on 98 inch machine)	2-HPC-15-4	1
	SCREW, Socket head set 3/8-16 x 1 inch long		2
-5	STUD, Operating side	1-HPC-61	2
	SCREW, Socket head set, 3/8-16 x 1 inch long		1
-6	PIN, Eccentric, drive side	1-HPC-78	1
	SCREW, Socket head set, 3/8-16 x 1 inch long		1
-7	MOISTENER, Upper (Used on 68 inch machine)	3-HPC-92-1	1
	MOISTENER, Upper (Used on 80 inch machine)	3-HPC-92-2	1
	MOISTENER, Upper (Used on 87 inch machine)	3-HPC-92-3	1
	MOISTENER, Upper (Used on 98 inch machine)	3-HPC-92-4	1
-8	STUD, Drive side, moistener	1-HPC-60	1
	SCREW, Socket head set, 3/8-16 x 1 inch long		1
-9	MOISTENER, Lower (Used on 68 inch machine)	3-HPC-93-1	1
	MOISTENER, Lower (Used on 80 inch machine)	3-HPC-93-2	1
	MOISTENER, Lower (Used on 87 inch machine)	3-HPC-93-3	1
	MOISTENER, Lower (Used on 98 inch machine)	3-HPC-93-4	1
-10	BEARING RETAINER, Drive side	1-HPC-204	1
	SCREW, Hex head cap, 1/2-13 x 1-1/2 inches long		4
	WASHER, Lock split, 1/2		4
-11	BEARING RETAINER, Operating side	1-HPC- <del>204</del> 203	1
	SCREW, Hex head cap, 1/2-13 x 1-1/2 inches long		4
	WASHER, Lock split, 1/2		4
-12	LOCKNUT (MRC)	(AN-16)	1
-13	LOCKWASHER (MRC)	(W-16)	1
-14	DRUM (Used on 68 inch machine)	4-HPC-217-1	1
	DRUM (Used on 80 inch machine)	4-HPC-217-2	1
	DRUM (Used on 87 inch machine)	4-HPC-217-3	1
	DRUM (Used on 98 inch machine)	4-HPC-217-4	1
	SCREW, Socket head set, 1/4-20 x 1/2 inch long		1
-15	BEARING (Timken) with X1S-495 spacer	(TDO-495-493-D)	1

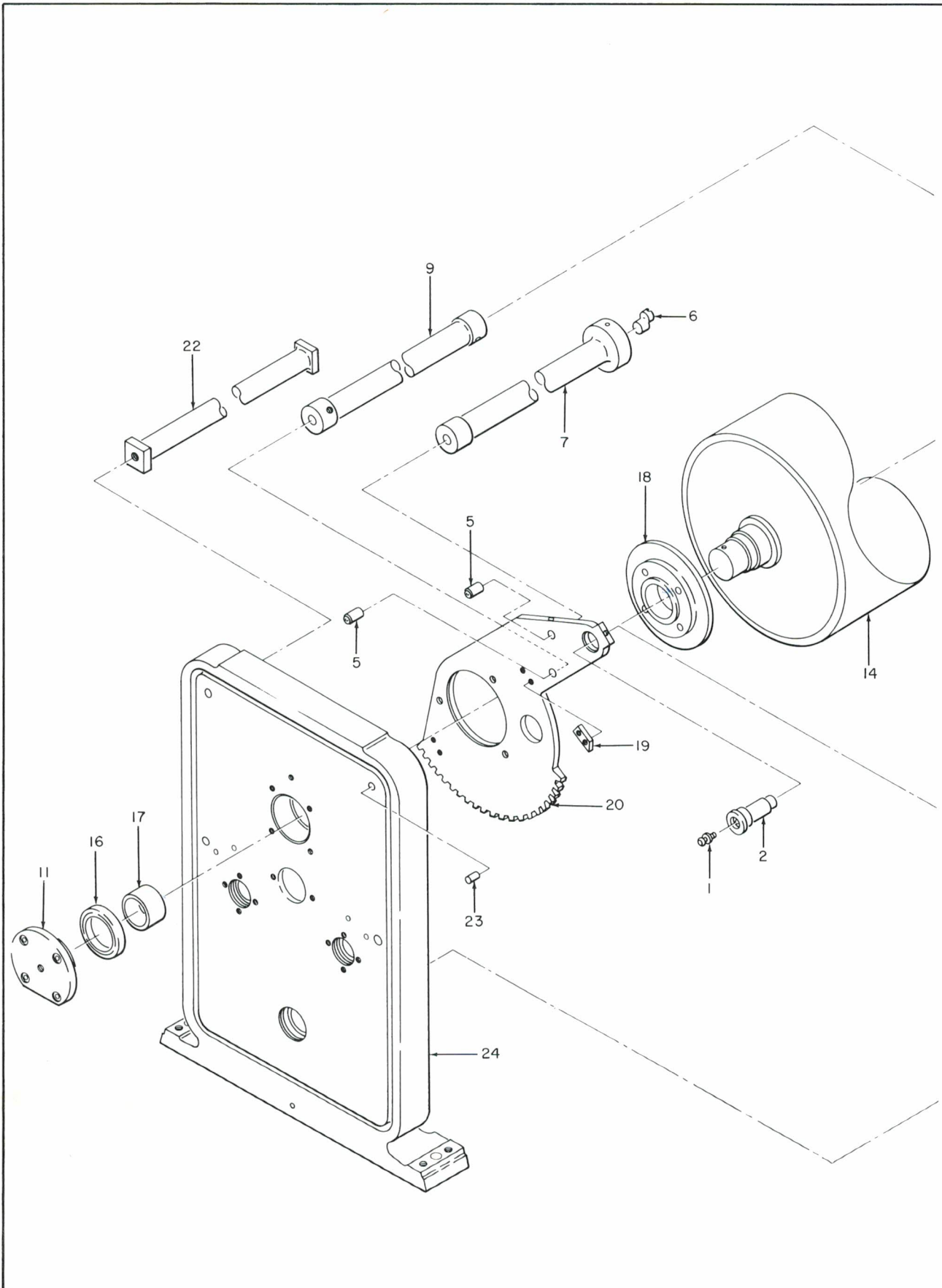


Figure 6-9. Frames, Braces, Drum and Wrap Rolls Assembly (Sheet 1 of 2)



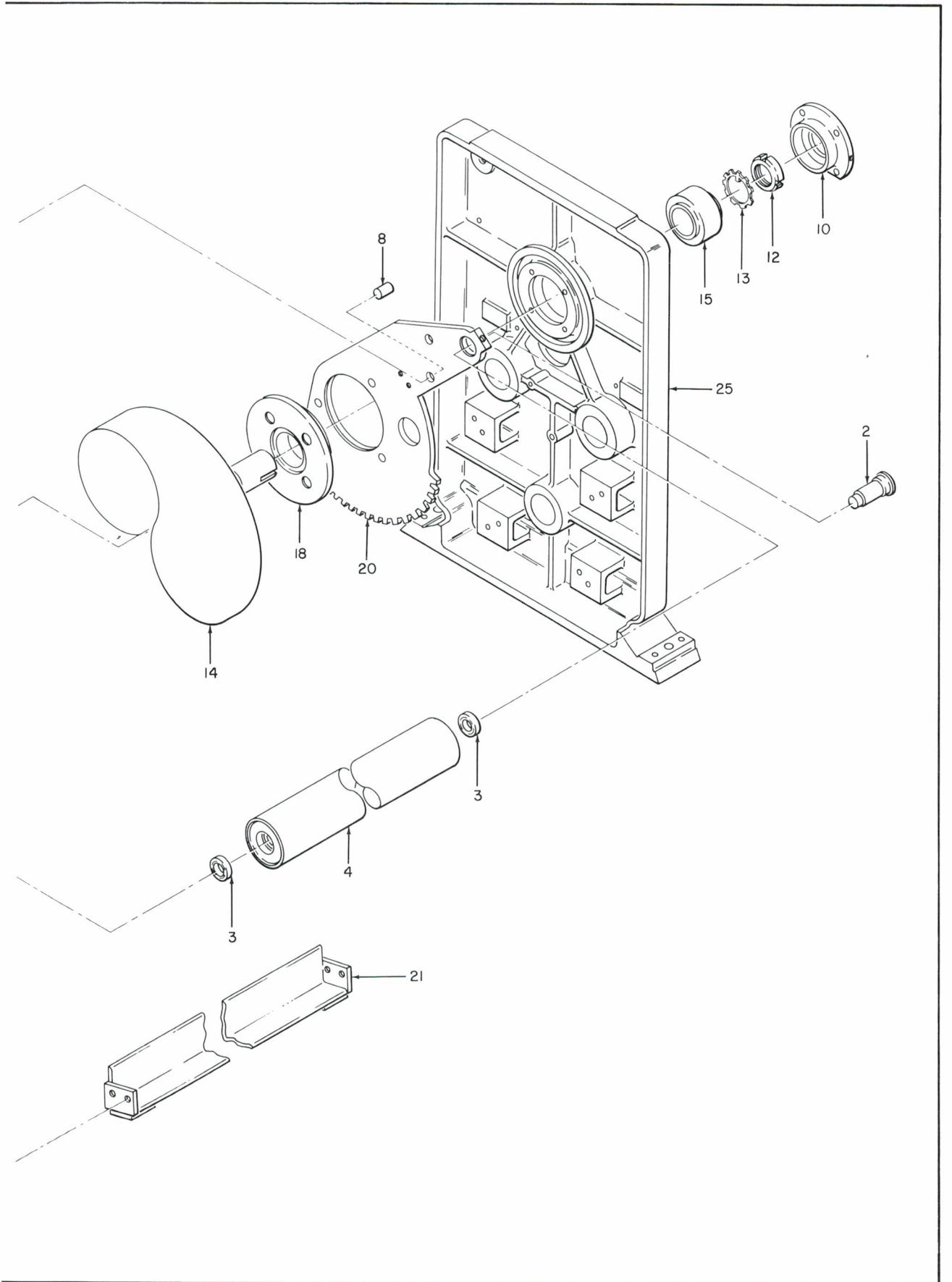


Figure 6-9. Frames, Braces, Drum and Wrap Rolls Assembly (Sheet 2 of 2)

Item No.	Description	Part Number	Qty Per Assy
6-9	FRAMES, BRACES, DRUM AND WRAP ROLLS ASSEMBLY (CONT)	1008-23280-0	
-16	BEARING (Hyatt)	(1216TS)	1
-17	BEARING RACE, Inner	1-HPC-27	1
-18	GEAR RETAINER	2-HPC-8	1
	SCREW, Hex head cap, 1/2-13 x 2-1/2 inches long		4
	WASHER, Lock split, 1/2		4
-19	CAM, Limit switch	1-HPC-68	2
	SCREW, Socket head cap, 3/8-16 x 1 inch long		2
	WASHER, Lock split, 3/8		2
-20	GEAR, Segment	3-HPC-29	2
-21	BRACE (Used on 68 inch machine)	1-HPC-114-1	1
	BRACE (Used on 80 inch machine)	1-HPC-114-2	1
	BRACE (Used on 87 inch machine)	1-HPC-114-3	1
	BRACE (Used on 98 inch machine)	1-HPC-114-4	1
	SCREW, Hex head cap, 1/2-13 x 1 inch long		4
	WASHER, Lock split, 1/2		4
-22	CROSSBRACE (Used on 68 inch machine)	1-HPC-205-1	1
	CROSSBRACE (Used on 80 inch machine)	1-HPC-205-2	1
	CROSSBRACE (Used on 87 inch machine)	1-HPC-205-3	1
	CROSSBRACE (Used on 98 inch machine)	1-HPC-205-4	1
	SCREW, Hex head cap, 1/8 x 3 inches long		2
	WASHER, Lock split, 1/8		2
-23	PLUG	1-HPC-206	2
-24	FRAME, Operating side	4-HPC-201	1
-25	FRAME, Drive side	4-HPC-200-G	1

Item No.	Description	Part Number	Qty Per Assy
6-10	MOTORS AND DRIVE MECHANISM ASSEMBLY	932-00021-10	
-1	MASTER MOTOR (WRC) 1725/1425 RPM <i>3/4 hp</i> TOTALLY ENCLOSED NON VENTILATED	(7415)	1
-2	BLOCK, Motor mount FOLLOWING ALTERNATE INSTALLATION USED ON RELIANCE 3/4 hp motor CG16F.	1-HPC-67	4
-2	MOUNT, Adjusting motor	2-HPC-269	1
	SCREW, Hex head cap 1/2-13 x 1-1/2 inches long		4
	SCREW, Socket head cap, 1/2-13 x 2-1/4 inches long		4
	WASHER, Lock split, 1/2		4
	WASHER, Lock (Band H) 1/2		4
	PIN, Dowel, 1/2 diameter x 1-1/4 inches long		2
-3	BOLT, Special	1-HPC-39-3	4
-4	KEY	1-5/16K-1-7/8	1
-5	COUPLING (Boston Gear) (Rework per 1-HCH-6006-Ab)	(FCBB30)	1
	SCREW, Set, 7/16-14 x 1/2 inch long		2
-6	KEY	1-5/16K-1-7/8	1
-7	BEARING (MRC)	(307-MFF)	2
-8	GEAR, Wrap adjusting	2-HPC-65	1
-9	DOG, Gear adjusting wrap roll	2-HPC-64	1
	SCREW, Socket set, 1/2-13 x 3/4 inch long		2
	SCREW, Square head set, 1/2-13 x 3 inches long		2
	NUT, Hex 1/2-13		2
-10	KEY	1-1/2KJ-2	1
-11	WASHER, Inner race, operating side	1-HCH-37	1
	SCREW, Hex head cap, 3/8-16 x 1/2 inch long		1
	WASHER, Lock split 3/8		1
-12	STUD, Dancer	1-HCH-49	1
-13	GEAR, Wrap adjusting	1-HPC-32	1
-14	KEY	1-1/2KJ-2-7/8	1

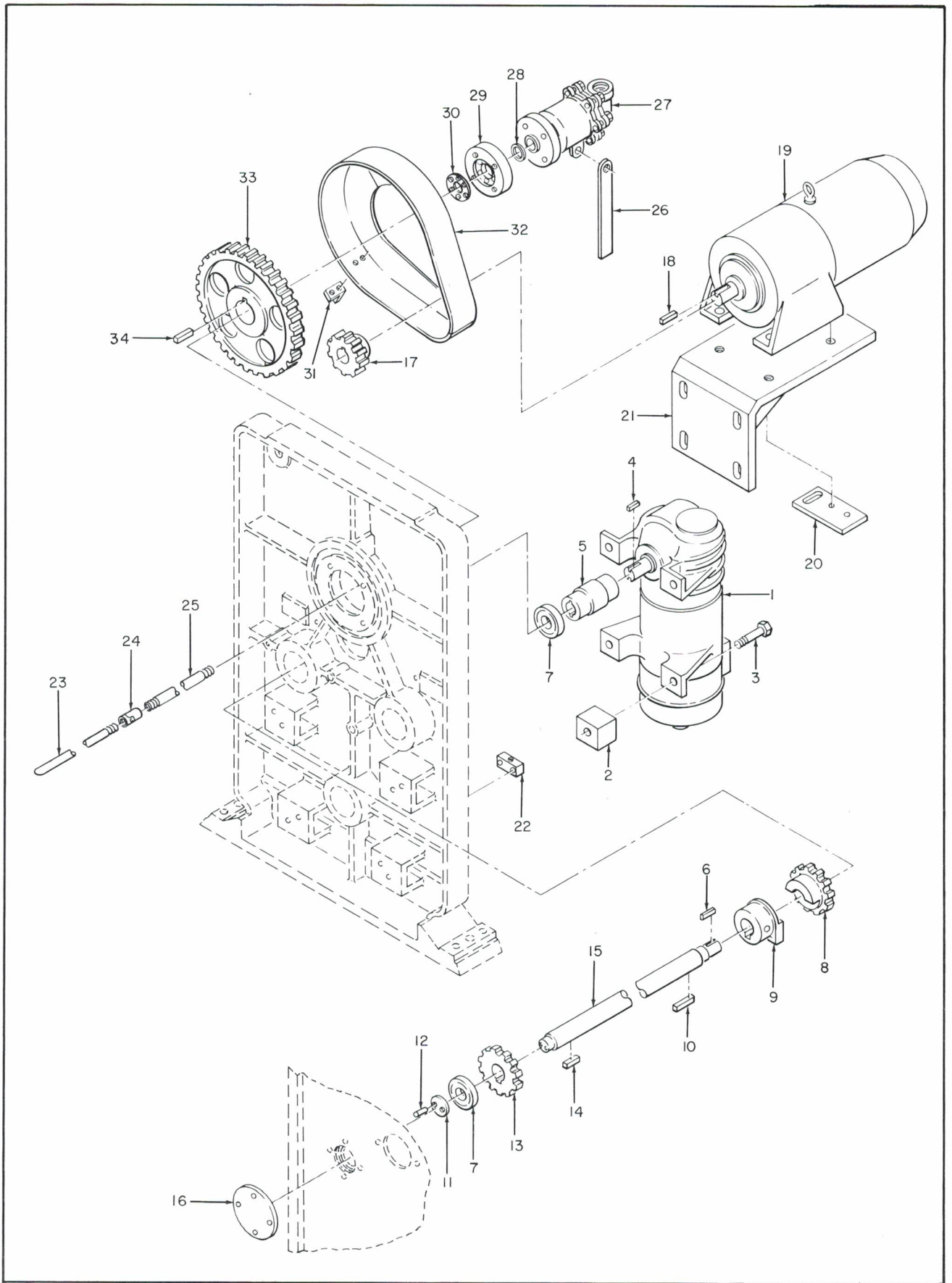


Figure 6-10. Motors and Drive Mechanism Assembly



Item No.	Description	Part Number	Qty Per Assy
6-10	MOTORS AND DRIVE MECHANISM ASSEMBLY (CONT)		
-15	SHAFT, Pinion	2-HPC-18-3	1
-16	STOP, Dancer	1-HCH-31	1
	SCREW, Hex head cap, 3/8-16 x 1 inch long		4
	WASHER, Lock split, 3/8		4
	FITTING, Grease (Alemite)	(1610)	1
-17	GEAR, Motor 550 ft/min (Used on Reliance rotating "C-Flute")	1-HPC-11	1
	or		
	GEAR, Motor 400 ft/min (Used on Reliance static "A-Flute")	1-HPC-290	1
	GEAR, Motor 500 ft/min (Used on Reliance static "A-Flute")	1-HPC-293	1
	GEAR, Motor 550 ft/min (Used on Reliance static "A-Flute")	1-HPC-295	1
	GEAR, Motor 600 ft/min (Used on Reliance static "A-Flute")	1-HPC-297	1
	GEAR, Motor 650 ft/min (Used on Reliance static "A-Flute")	1-HPC-298	1
	GEAR, Motor 550 ft/min (Used on Reliance static "B-Flute")	1-HPC-292	1
	GEAR, Motor 600 ft/min (Used on Reliance static "B-Flute")	1-HPC-294	1
	GEAR, Motor 650 ft/min (Used on Reliance static "B-Flute")	1-HPC-296	1
-18	KEY	1-1/2KJ-2	1
-19	MOTOR, Gear head 2 hp 1750/2600 rpm (Reliance)	(215-A)	1
	or		
	MOTOR, Gear head 2 hp 1750/2600 rpm (General Electric)	(215B299)	1
	SCREW, Hex head cap, 1/2-13 x 1-1/4 inches long		4
	WASHER, Lock split, 1/2		4
-20	MOUNTING PLATE, Johnson joint	1-HPC-96	1
	SCREW, Hex head cap, 3/8-16 x 1 inch long		2
	WASHER, Lock split, 3/8		2
-21	BRACKET, Motor (General Electric)	3-HPC-13	1
	BRACKET, Motor (Reliance)	3-HPC-240	1
	SCREW, Hex head cap, 1/2-13 x 1-1/4 inches long		4
	WASHER, Lock split, 1/2		4
-22	BLOCK, Mounting plate adjusting	1-2S-4	2
	SCREW, Hex head cap, 1/2-13 x 3 inches long		1
	NUT, Hex, 1/2		1
	SCREW, Hex head cap, 3/8-18 x 1-1/2 inches long		2
	WASHER, Lock split, 3/8		2
-23	SIPHON PIPE (Short)	1-HCH-6110	1
-24	SIPHON ELBOW (JOCO) 1/2 inch		1
-25	PIPE FOR SIPHON	1-HPC-207	1
-26	BRACKET, Johnson joint	1-HPC-97	1
-27	ROTARY JOINT, Super pressure with quick release nipple and special siphon pipe support (Rework to 2-HCH-6122-Aa) (Johnson)	(1-1/2-3500-SBPHQ-1)	1
-28	GASKET		1
-29	JOURNAL FLANGE, Quick release nipple	1-HPC-216	1
	SCREW, Socket head cap, 5/16-18 x 1-1/4 inches long		6
-30	GASKET, Quick release journal flange	1-HPC-218	1
-31	BRACKET, Angle	1-HPC-21	3
	SCREW, Machine, 1/8-18 x 1 inch long		2
-32	GUARD	3-HPC-72	1
-33	GEAR, Drum	2-HPC-119	1
-34	KEY	1-1/2KJ-2	1

Item No.	Description	Part Number	Qty Per Assy
6-11	DANCER ARM ASSEMBLY		
-1	COUNTERWEIGHT	1-HPC-35	As req'd
	SCREW, Square head 1/2-13 x 2 inches long		1
-2	COLLAR, Steel	1-STD-108	4
	SCREW, Socket head set, 1/4-20 x 3/4 inches long		8
-3	SHOCK ABSORBER (GABIAL HYDROSHOX)	1068-0005-0 (18961)	2
	STUD, Thread both ends 1/2-18 x 6 inches long		2
	NUT, 1/2-18		4
-4	BRACKET, Shock absorber mounting (drive side)	2-HPC-274	1
	BRACKET, Shock absorber mounting (operating side)	2-HPC-273	1
	SCREW, Hex head cap, 1/2-13 x 1-1/4 inches long		2
	WASHER, Lock split, 1/2-13		2
-5	BRACKET, Shock absorber mounting (drive side)	3-HPC-276	1
	BRACKET, Shock absorber mounting (operating side)	3-HPC-275	1
	SCREW, Hex head cap, 1/2-13 x 3-1/4 inches long		2
	WASHER, Lock split, 1/2		2
	NUT, 1/2-13		2
-6	BRACE, Support dancing arm (Used on 68 inch machine)	2-HPC-56-1	1
	BRACE, Support dancing arm (Used on 80 inch machine)	2-HPC-56-2	1
	BRACE, Support dancing arm (Used on 87 inch machine)	2-HPC-56-3	1
	BRACE, Support dancing arm (Used on 98 inch machine)	2-HPC-56-4	1
	SCREW, Hex head cap, 1/2-13 x 1-1/2 inches long		2
	WASHER, Lock split, 1/2		2
-7	WASHER, Bearing retainer	1-HPC-46	2
	SCREW, Hex head cap, 3/8-16 x 1-1/4 inches long		2
	WASHER, Lock split, 3/8		2
-8	RETAINING RING (Truarc)	(5000-354)	2
-9	BEARING (MRC)	(307-MFF)	2
-10	SPACER, Bearing	1-HPC-47	2
-11	BEARING (MRC)	(308-SZ)	2
-12	STUD	2-HPC-49	2
	SCREW, Socket head set, 3/8-16 x 7/8 inch long		1
-13	STUD	2-HPC-48	2
	SCREW, Socket head set, 3/8-16 x 1 inch long		1
-14	BEARING (SKF)	(6206-Z)	2
-15	ROLLER GUIDE (Used on 68 inch machine)	2-HPC-15-1	1
	ROLLER GUIDE (Used on 80 inch machine)	2-HPC-15-2	1
	ROLLER GUIDE (Used on 87 inch machine)	2-HPC-15-3	1
	ROLLER GUIDE (Used on 98 inch machine)	2-HPC-15-4	1
-16	DANCER ARM	3-HPC-57	2
	FITTING, Grease (Alemite)	(1610)	8
-17	STOP, Dancer arm	1-HPC-31	2
	SCREW, Socket head cap, 1/2-13 x 1 inch long		2

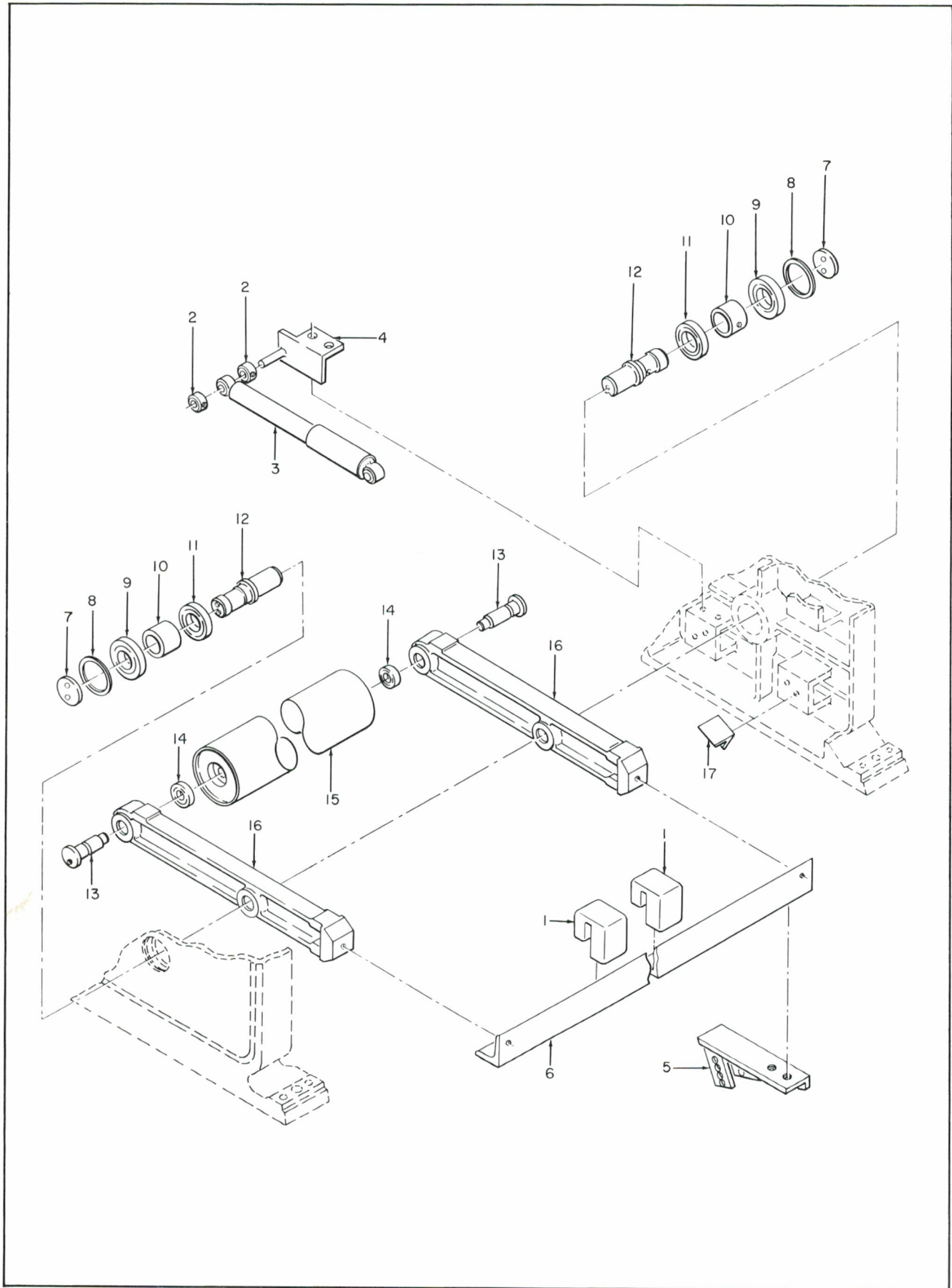


Figure 6-11. Dancer Arm Assembly



## SECTION VII RECOMMENDED SPARE PARTS

The following list of parts should be kept as spares. They are normally replaced in the field. Should it be necessary to replace other parts, they may be purchased from S&S.

Machine	Part Number	Description	Quantity
HCL HDH	(Type TDOS 37425-37626-D with X1S cone spacer)	Bearing (for operation at 350° F) (Timken)	1
HCL HDH	1-HCH-78	Operating Side Bearing (inner race ground per 1-HCH-78)	1
HCL HDH	(A-1218-TS)	Operating Side Bearing (outer race) (Hyatt)	1
HCL HDH HPC		Flexible Hose, 1-1/4-inch NPT x 14-1/2 inches long, 250 psi (1 end male, 1 end female)	2
HCL HDH HPC		Flexible Hose, 3/4-inch NPT x 13-1/2-inches long, 250 psi (1 end male, 1 end female)	2
HCL HDH	1-HCH-6123	Gasket (between nipple flange and end of drum)	2
HPC	(Type TDO 495-493-D with X1S-495 spacer)	Drive Side Bearing (Timken)	1
HPC	1-HPC-27	Operating Side Bearing Inner Race	1
HPC	(1216-TS)	Operating Side Bearing Outer Race (Hyatt)	1
HCL HDH HPC	(S-3504Q)	Nipple (Johnson)	3
HCL HDH HPC	(S-3506)	Carbon Seal Ring (Johnson)	3
HCL HDH HPC	(S-3507)	Spring (Johnson)	3
HCL HDH HPC	(S-3508)	Internal Gasket (Johnson)	3
HCL HDH HPC	(S-3510)	Carbon Guide (Johnson)	3
HCL HDH HPC		Q NippleMetal Gasket	2

