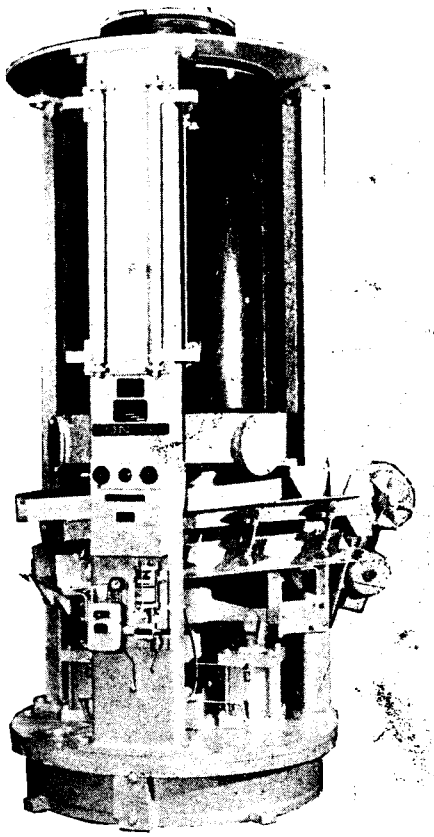
BELOIT-JONES PRESSMASTER

INSTRUCTION MANUAL

Serial #
81023

Model
"2720.



BELOIT
JONES DIVISION
DALTON, MASSACHUSETTS, U.S.A. 01226

M81-003 A

INSTRUCTION MANUAL

FOR THE INSTALLATION,

OPERATION AND MAINTENANCE

OF THE

JONES P-200 PRESSMASTER

Beloit Corporation, Jones Division
Dalton, Massachusetts

Revised March 1973

Supersedes Manual Dated

June, 1967

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General - (See Figure 1 for parts called out in text)

The Beloit-Jones Pressmaster 200 Series are vertical screw presses, having their inlet openings conveniently located at the top and liquid and solid discharges below. Top inlet opening permits either gravity or pressure feed. Located in center of the press is the basic moving part, the spindle (Part 101) which is rotated slowly by gearing. The spindle has a tapered shaft whose diameter increases toward the bottom. It carries a series of interrupted helical screw elements called "flights". The flights have a constant outer diameter which form a close fit inside a cylindrical screen.

The screen carries a number of bars which project inward toward the spindle between the flights. These bars, or "resistors" (Parts 141 to 147), prevent the pressed material from turning with the spindle.

Material is fed into press at the top, and the flights force it downward in an annular space between the screen and the spindle shaft. Since the spindle shaft tapers, this annular space gradually becomes smaller towards the bottom so that the material is compressed as it is pushed down.

At the screen bottom, the end of the annular space is closed by a "floating cone" (Part 113) sliding in guide bearings and forced upward by an air cylinder.

Air cylinders (Part 106) pressure is set by means of a air line pressure regulator. There is also a control valve which can quickly lower or return the cone to its working position.

As the flights force material down through the press, the material is subjeced to a gradually increasing pressure due to "screw" action of flights, taper of the spindle shaft and resistance of the cone. This pressure forces liquid out of the material, through the screen from where it flows by gravity into an annular water basin.

When the press is first started, the cone is closed. When the pressed material reaches the cone, pressure rises until the cone is forced open against preset air pressure and dried cake begins to discharge under constant pressure. The process then becomes continuous and the press begins automatic production.

Operation and Performance

(1) SPEED AND CONE PRESSURE

Lowering spindle speed reduces moisture in the discharged cake and also reduces power. Increasing speed will increase moisture in the discharged cake and also increase power. On some materials such as kraft pulp, an increase in speed will increase through-put or amount of material the press will handle.

Increasing cone pressure will reduce moisture in the discharged cake and increase power. Reducing cone pressure will increase moisture in the discharged cake and reduce power.

Adjustment should be made by: First, selecting the best spindle speed for suitable moisture in the cake, through-put and power; Second, adjusting the cone pressure for finer control of moisture and power. Cone pressure greater than 60 psi should not be required. Power should be kept within allowable limits and checked with an ammeter. If a permanent meter is not installed, a tong meter should be used until operating conditions are set.

(2) INLET HEAD OR PRESSURE

Operation of the press is assisted by a moderate inlet head or equivalent pressure. Five to ten feet of head above the inlet should be sufficient to insure keeping top part of press full of stock, thus preventing voids and air pockets. This will also provide some dewatering at top of the screen at a point where the spindle is just beginning to work on stock.

Effect of pressure or head is most prominent when a material having a high moisture content and free draining characteristics is being fed to the press. The limitation on pressure is reached when blinding of the screens occurs, which prevents liquid from being expelled through the screens, thus preventing dewatering.

(3) TEMPERATURES

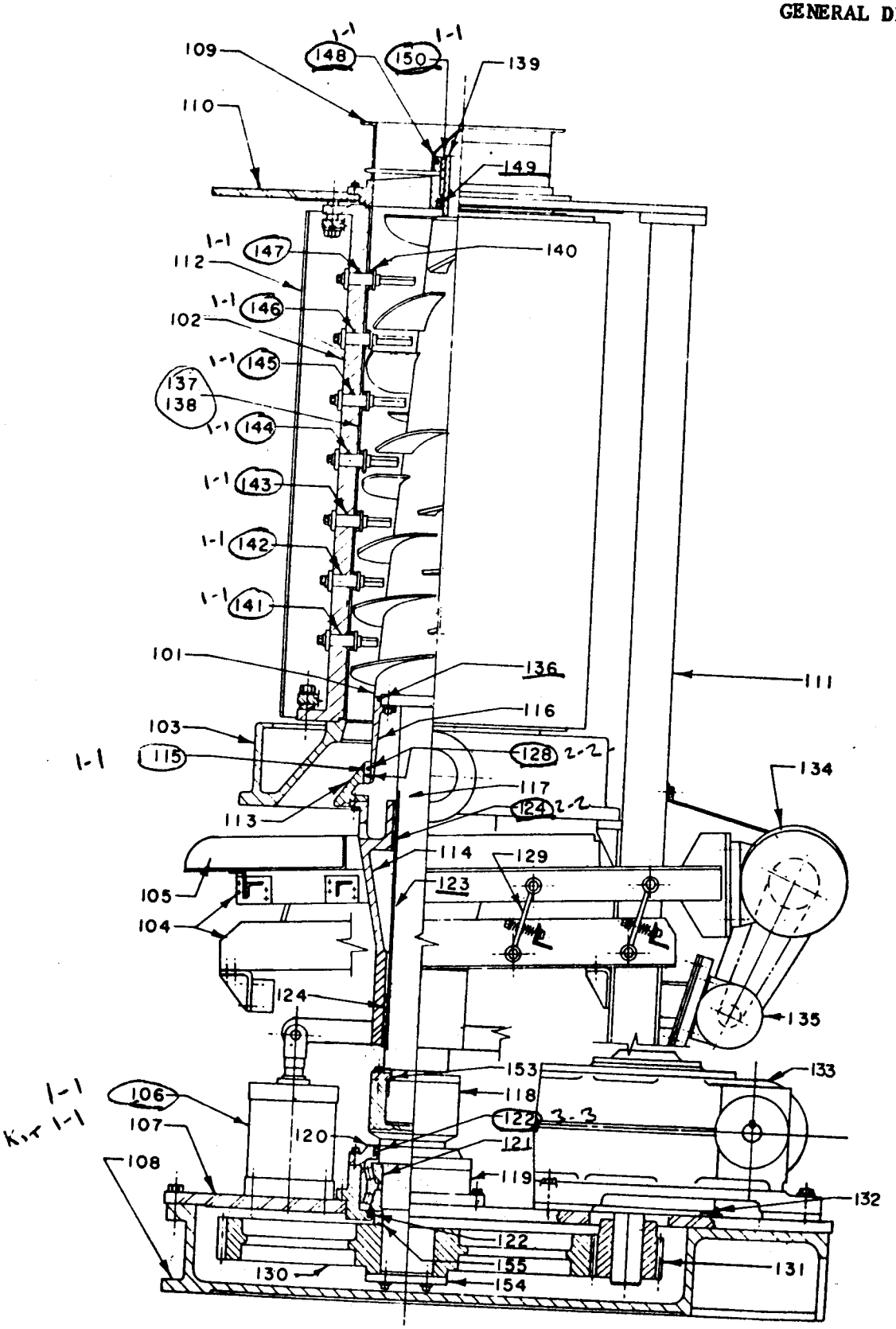
Most materials will press betterwhen heated. If acceptable or desirable, preheat the material (140°F to 180°F usual temperature range) and feed to press as usual.

(4) CONSISTENCY OF FEED AND PRE-DRAINING

Effect of input consistency depends on draining characteristics of material being pressed. A 10-12% input consistency has little effect on a free draining material having a Canadian Standard Freeness of about 600-700 cc, but will increase press capacity when pressing a slow draining material having a CSF of about 100-200 cc. Therefore, predraining to raise input consistency is beneficial when pressing slow materials.

(5) NON-UNIFORM OR INTERMITTENT FEED

The press operates best with a uniform and continuous feed. If the press is operating intermittently or the stock (or feed) varies between low (3-4%) and high (10-12%) consistency, proper adjustment of the press cannot be made. This results in a non uniform discharge, both as to through-put and consistency.



GENERAL PRESS ASSEMBLY

FIG Nº 1

Stock No.	Part No.	Part Name	No. Used
7012	101.	Spindle	1
	102.	Screen Frame Assembly	1
	103.	Water Basin	1
	104.	Vibrating Discharge Assembly	1
6953	105.	Pulp Basin	1
6928	106.	Air Cylinders	✓ 2
	107.	Frame Bottom Plate	1
	108.	Base	1
	109.	Inlet Housing Assembly	1
	110.	Top Plate	1
	111.	Columns	3
	112.	Jackets	2
	113.	Cone	1
	114.	Cone Housing	1
7615	✓ 115.	Cone Insert Bushing 1-1	1
	✓ 116.	Spindle Extension	1
	117.	Lower Spindle	1
	118.	Spindle Drive Shaft	1
	119.	Thrust Bearing Housing	1
	120.	Bearing End Cover	1
	121.	Thrust Bearing (Mont)	✓ 1
6986	122.	Seals 3-3	✓ 3
	123.	Lower Spindle Sleeve	✓ 1
6984	124.	Cone Bearings 2-2	✓ 2
6988	128.	Quad-Rings 2-2	✓ 2
	129.	Arm and Spring Ass'y	8
	130.	Spur Gear (Mont)	1
	131.	Spur Pinion (Mont.)	1

Part No.	Part Name	No. Used	
132.	Seal - Gasket	1	
133.	Reducer	1	
134.	Shaker	1	
135.	Shaker Drive Motor	1	
136.	O-Ring 1-1	✓ 1	6985
137.	Backing Screen	2	6952
138.	Liner Screen (Mont)	2	6952
139.	Shaft Sleeve 1-1	✓ 1	5391
140.	Resistor Seals 28-28	28	6981
141.	1st Resistor 1-1	4	6975
142.	2nd Resistor 1-1	4	6976
143.	3rd Resistor 1-1	4	6977
144.	4th Resistor 1-1	4	6978
145.	5th Resistor 1-1	4	6979
146.	6th Resistor 1-1	4	6980
147.	7th Resistor 1-1	4	6981
148. ✓	O-Ring 1-1	1	
149	Seals ✓ 2-2	2	
150.	Bearing Upper Spindle	✓ 1	6983
153.	Split Retaining Rings	1	
154.	Lock Disc	1	
155.	Spacer	1	
	Inner Screw Seal	1	
	Sm LPD 9514.2-2		

Air Cylinder Seal Kit 1-1 stock

Sm. 6730 L.A.

Always Give Machine Serial Number When Ordering Parts

General Press Assembly
Major Press Parts
Figure 1

Installation

The press is shipped assembled with the exception of drive motor when motor is supplied by others. Upon receipt of the press inspect for any in-transit damage.

In planning the installation it is important that sufficient clearances are shown on the installation drawing. Lift press by using suitable chains or cables attached to tye bolts provided at the top of the press. Set the press on supports provided by the mill. Use bolts of correct size as shown on the installation drawing and securely fasten press frame to the support. Install the drive motor if it has not been assembled at factory. Follow manufacturer's instructions for installing coupling and aligning motor.

Prior to any mechanical rotation of the press equipment be sure to lubricate according to instructions. (Under Maintenance Section of this Manual).

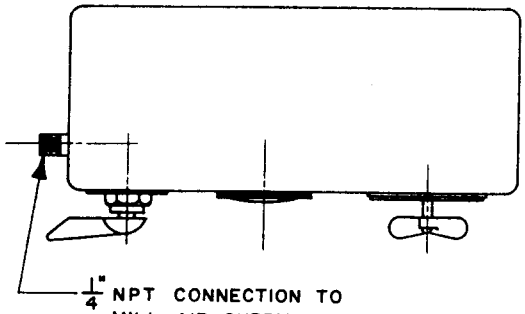
Provide electrical connections to motor including starter. It is advisable to install an ammeter in the line to be able to check load on the press. Check spindle rotation by observing direction spindle rotates through opening at the top of the screen, or at the bottom of drive housing.

The spindle should turn counter-clockwise when looking down from top of the press. If rotation is incorrect, change motor connections to reverse direction.

Connect mill air supply to cone air cylinder control. (See Figure 2). It is advisable to have a moisture condensation trap installed in air line just ahead of connections to the press. This can be made of a 2" diameter pipe about 2 feet long extending below inlet of air control with a shut off valve on lower end to drain off condensate. Feed line should be taken off top of the main line and fed to a tee at top of the 2" pipe, the tee outlet feeding to the air control. Air supply required should have a capacity of 0.5 cu. ft. per minute free air with maximum pressure of 100 psi. If this is not available a suitable compressor unit complete with motor drive, tank and controls should be obtained.

Connect stock feed pipe to inlet flange and effluent pipe to outlet flange as shown on installation drawing.

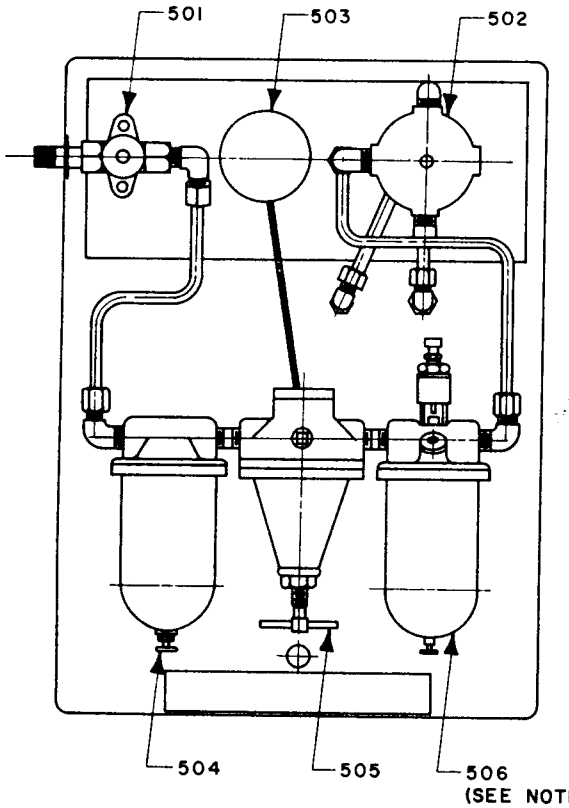
A screw or belt conveyor or other suitable means must be provided by the mill to carry off the material as it discharges from the press.

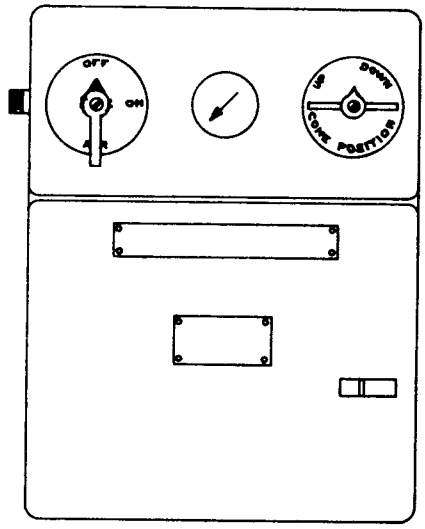


¼" NPT CONNECTION TO MILL AIR SUPPLY 100 PSI MAX.

PARTS LIST			
PT Nº	PART NAME		Nº USED
501	SHUT OFF VALVE	697702	1
502	4-WAY VALVE	677002	1
503	PRESSURE GAUGE	739506	1
504	FILTER	739302	1
505	REGULATOR	739302	1
506	LUBRICATOR	739302	1

ALWAYS GIVE MACHINE SERIAL NUMBER WHEN ORDERING PARTS





NOTE:
REFER TO LUBRICATION INSTRUCTIONS FOR OIL SPECIFICATIONS TO USE IN ITEM Nº 506.

CONE CONTROL PANEL

ERECTION TOLERANCES

Operation: Install Press

Tolerance: Vertical and Horizontal Centerlines ± 1/2 degree or 0.1 inch per foot

Associated Operational Problems: None

Special Tools and Equipment: Level, Straight-edge

Procedure: Check foundation, floor or steel support for level. If press is to be grouted in, provide shims to allow 2 inch to 3 inch for grout under press base. Set press in position (over anchor bolts) and check for level on machined surface of frame bottom plate. Fasten to anchor bolts with nuts and flat washers. Grout under press (See Figure 3).

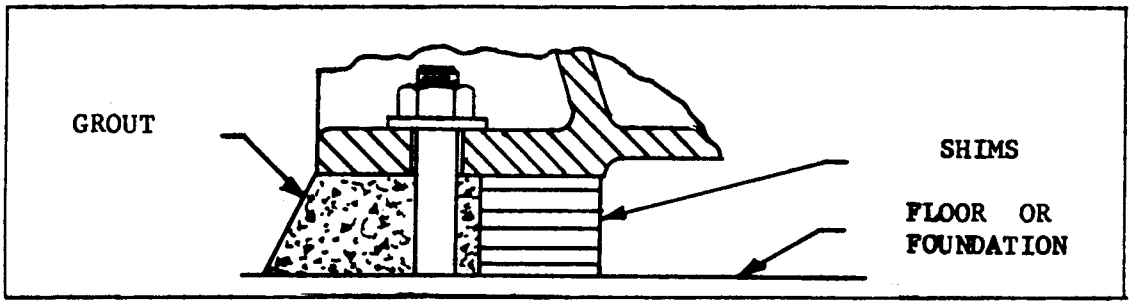


Figure 3

Correction: Use steel bar or plate material as shims under press base. Build up to required height to level press.

ERECTION TOLERANCES (Continued)

Operation:	Install Floor Mounted Motor
Tolerance:	V-belt Sheaves Parallel within ± .015 inch
Associated Operational Problems:	Excessive Wear of Belts
Special Tools and Equipment:	Straight-edge and Steel Rule
Procedure:	Install drive on foundation. Align faces of sheaves with straight-edge. Install V-belts. Adjust tension. (See Figure 4).

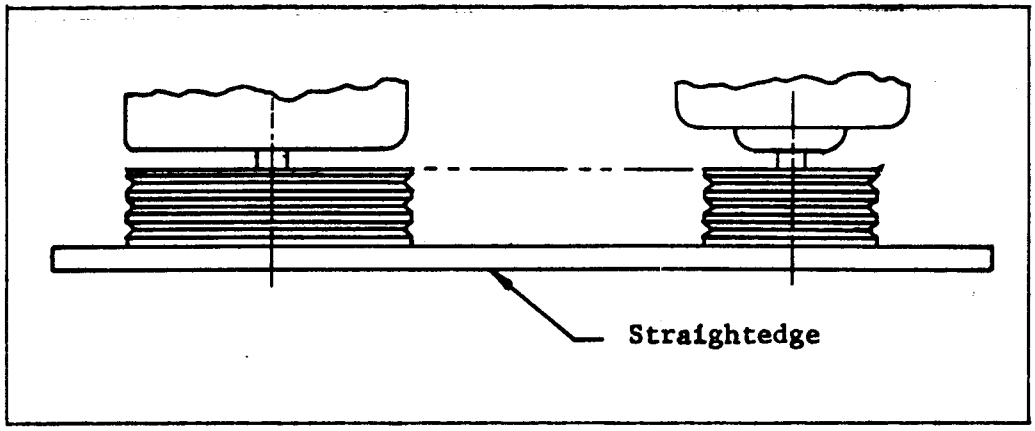


Figure 4

Correction:	If sheaves are misaligned, move sheaves on shaft. If shafts are misaligned, shim or reposition motor base.

ERECTION TOLERANCES (Continued)

Operation:	Connect Inlet
Tolerance:	± .015 inch
Associated Operational Problems:	Leakage at Flange Connection
Special Tools and Equipment:	Feeler Gauge
Procedure:	Align inlet pipe connection flange to press inlet. Use gasket for water-tight joint assembly and tighten bolts.
Correction:	Check flange for distortion and straighten, if necessary. Use thicker and softer gasket for sealing.

Operation:	Connect Pulp Discharge
Tolerance:	± 1/2 inch
Associated Operational Problems:	Pulp loss due to spillage
Special Tools and Equipment:	
Procedure:	Position pulp removal equipment at discharge end of press pulp chute. Support and bolt per mill instructions.
Correction:	Reposition pulp removal equipment to align with press chute.

ERECTION TOLERANCES (Continued)

Operation:	Connect Effluent Pipe
Tolerance:	± .015 inch
Associated Operational Problems:	Leakage at Flange Connection
Special Tools and Equipment:	Feeler Gauge
Procedure:	Align effluent pipe and flange to press. Use gasket for water-tight joint. Assemble and tighten bolts.
Correction:	Check flange for distortion and straighten if necessary. Use thicker and softer gasket for sealing.

INSTALLATION OF HYDRAULIC DRIVE

1. Fluid Motor. The fluid motor should be installed as shown on the drive arrangement drawing furnished by the JONES Division for the customer's particular press installation. Figure 4A shows a typical installation; the coupling is carefully aligned and the fluid motor is securely fastened to the base plate. The drawing shows the usual mounting position for the fluid motor shown as well as the correct rotation for spindle and fluid motor. Also shown is the correct high pressure port and the correct low pressure return port.

2. Power Unit. Locate the power unit as close to fluid motor as possible. Make sure power unit is securely fastened to the base or floor. Fluid line connecting power unit and fluid motor should be as short and direct as possible. The correct size and weight of pipe, indicated in the next paragraph, must be used. Refer to Figure 4B for a typical power unit and parts, and to Figure 4C for typical circuit.

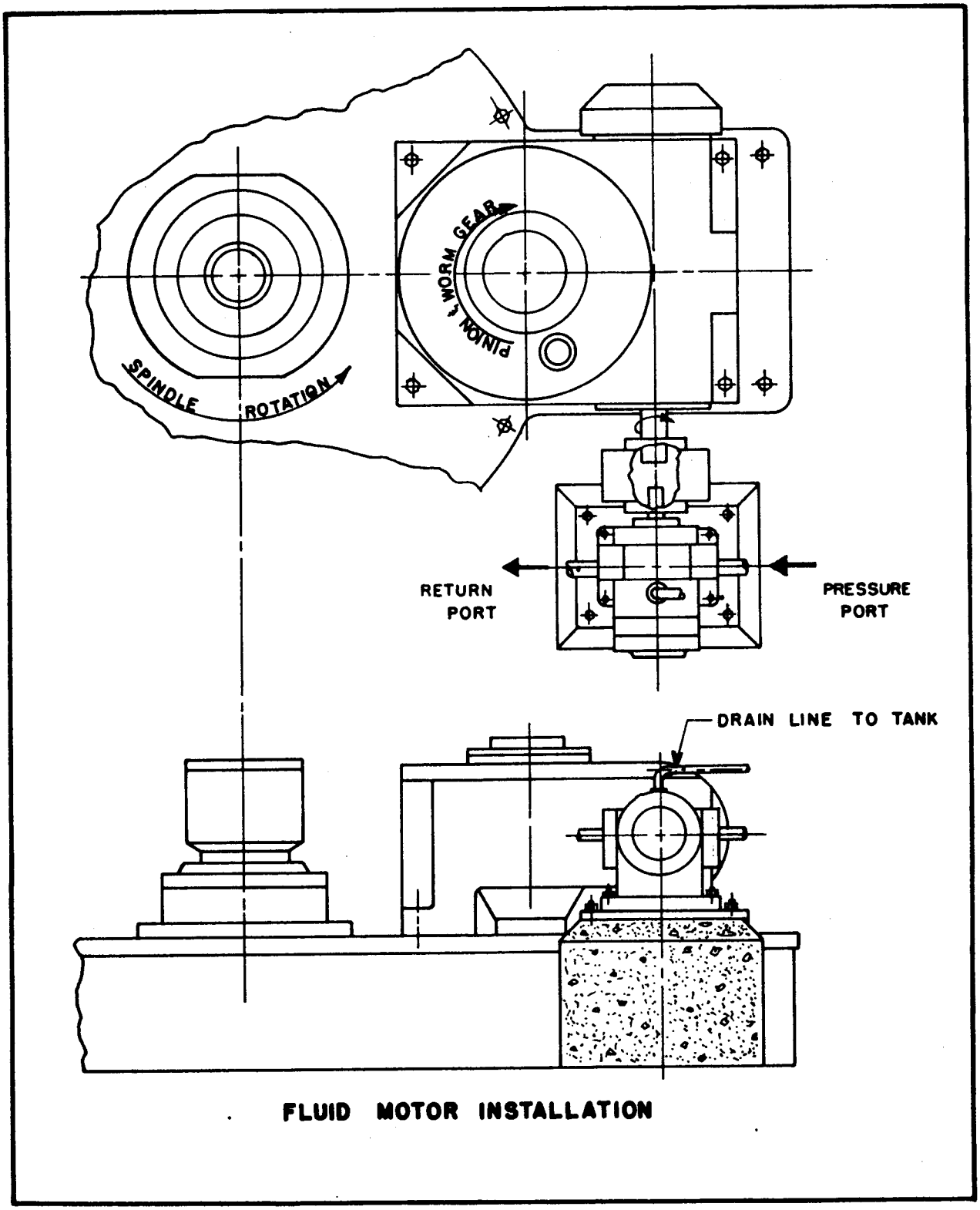
   The high pressure line is connected from directional valve to high pressure port of fluid motor. The return line runs from return port of fluid motor to fitting at oil filter. A drain line must be connected from top of fluid motor to oil reservoir. This is a low pressure line and 1/4" copper tubing may be used (no kinks). Check that drain line from top of pump housing has been connected to tank by factory. If not, connect it.

3. Connecting Hydraulic Line. The following tabulations give recommended size of pressure and return lines for each size of press.

Press Size	Pressure Line Size	Return Line Size
P-300 Heavy	1" Double Extra Strong	1-1/4" Standard
P-300 Standard	1" Double Extra Strong	1" Standard
P-200 Heavy	1" Double Extra Strong	1" Standard
P-200 Standard	1" Double Extra Strong	3/4" Standard
P-100 Heavy	1" Double Extra Strong	3/4" Standard
P-100 Standard	3/4" Schedule 160	3/4" Standard

   Welded fittings are recommended for all high pressure lines.

4. Heat Exchanger. The oil and hydraulic system is cooled by a thermostatically controlled water regulating valve. This valve is furnished loose for installation by the mill. The thermostatically controlled valve should be installed in the return cooling water line from the heat exchanger. Water should flow



FLUID MOTOR INSTALLATION

Figure 4A

through valve in direction of the arrow on the body casting. The water inlet line should have a shut-off valve. Make sure this valve is open before starting the system. The temperature bulb should be installed in the oil line as it discharges from the heat exchanger. The pipe fitting is provided here which will allow insertion of temperature bulb and the connector and feeder are furnished assembled on capillary tube. Temperature range is adjustable from 110°F. and has not been preset. Temperature of oil should not be allowed to go above 150°F.

INSPECTION AND CHECK

1. Oil. The first requisite of an efficient hydraulic system is clean oil and of the recommended viscosity. Oil must be free of dirt, scale and other foreign materials which can seriously damage critical parts of pump, valves or fluid motor. An approved list of hydraulic oil is given in the Denison Service Manual. Make sure correct grade and viscosity of oil has been used. A general specification of oil is one having a recommended viscosity of 300 SUS at 100°F and a minimum viscosity index of 90 is recommended for normal operating conditions. When equipment is located out of doors or in unheated buildings, starting temperatures encountered during winter months may congeal the oil to such an extent that special measures may be needed. Oil viscosity should not exceed 3000 SUS at starting. If the oil becomes heavier than this, it is necessary to use a special grade of low temperature oil or install some means of warming the oil before starting. Oil must reach the pump immediately upon starting, otherwise scoring or seizure of the pump will occur due to oil starvation. Do not use fire resistant fluids unless this has been specified, as special design features are required for these fluids.

2. Pump Fluid Motor and Reservoir. Fill pump and fluid motor with hydraulic fluid to top drain plug in housing before starting. Fill reservoir with correct amount and grade of oil. Do not over or under fill. The correct amount of oil to use is specified below. A sight gauge at side of tank is provided for this.

Press Size	Gallons of Oil
P-300 Heavy	150
P-300 Standard	150
P-200 Heavy	150
P-200 Standard	60
P-100 Heavy	60
P-100 Standard	45

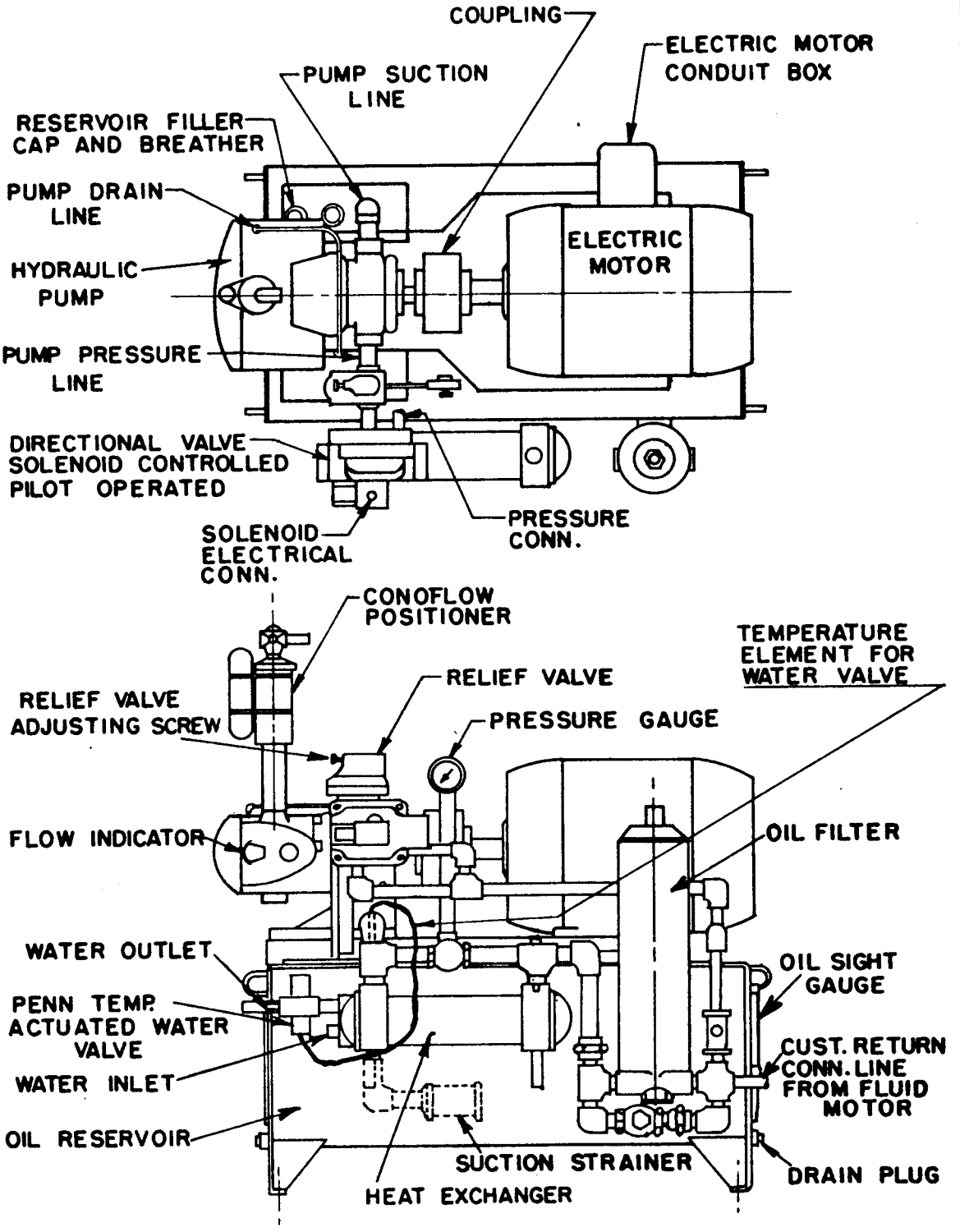

COUPLING
ELECTRIC MOTOR CONDUIT BOX
PUMP SUCTION LINE
RESERVOIR FILLER CAP AND BREATHER
PUMP DRAIN LINE
ELECTRIC MOTOR
HYDRAULIC PUMP
PUMP PRESSURE LINE
DIRECTIONAL VALVE SOLENOID CONTROLLED PILOT OPERATED
PRESSURE CONN.
SOLENOID ELECTRICAL CONN.
CONOFLOW POSITIONER
TEMPERATURE ELEMENT FOR WATER VALVE
RELIEF VALVE
RELIEF VALVE ADJUSTING SCREW
PRESSURE GAUGE
FLOW INDICATOR
OIL FILTER
WATER OUTLET
OIL SIGHT GAUGE
PENN TEMP. ACTUATED WATER VALVE
CUST. RETURN CONN. LINE FROM FLUID MOTOR
WATER INLET
OIL RESERVOIR
SUCTION STRAINER
DRAIN PLUG
HEAT EXCHANGER

FIGURE NO. 4B

3. Pump Rotation. The correct rotation of pump is shown by an arrow on the pump housing. Jog the pump motor and check direction of rotation. If incorrect, change electrical connection to reverse direction.

4. Electric Motor and Solenoid Valve. Check that the specific circuit drawing and the electric motor nameplate agree on horsepower and speed. The four way valve is solenoid operated and requires 100 volt, 60 cycle, single phase current. This should be wired to the selector switch, "press run" and "press stop".

5. Conoflow Positioner (Refer to Figure 4D, Piping Schematic). The variable volume pump has been provided with a Conoflow positioner, Model J-13, which operated with an air lock system. This positions the pump to center of the stroke in case of air failure. Check the instrument and air supply connection to see that proper connections have been made. The range of the positioner for full stroke requires a 3-15 psi instrument signal. Connect output line from instrument (control instrument supplied by mill) to connection marked instrument on the positioner. Connect a supply of clean filtered air to the supply connection shown. Plant air supply up to 100 psi can be used and a minimum of 90 psi should be provided. A pressure requlator and gauge should be installed in the supply line. The method for further checking the Conoflow for gain adjustment, zero adjustment, etc. is fully explained in their instruction and parts list bulletin and this bulletin is in the Denison Service Manual (See back part of this manual).

6. Pipe lines should be flushed out before starting, to remove any metal chips or other contamination which may have entered the pipes during installation. This can be done by installing a connecting spool in place of the fluid motor, and using a flushing oil in the tank, then following the starting procedure given below. Enough oil should be put in the tank to adequately cover the suction strainer. After flushing has been completed, a new filter element should be installed and the suction strainer inspected and cleaned.

START-UP

After checking all parts of the system as outlined above, the following steps should be followed in starting up:

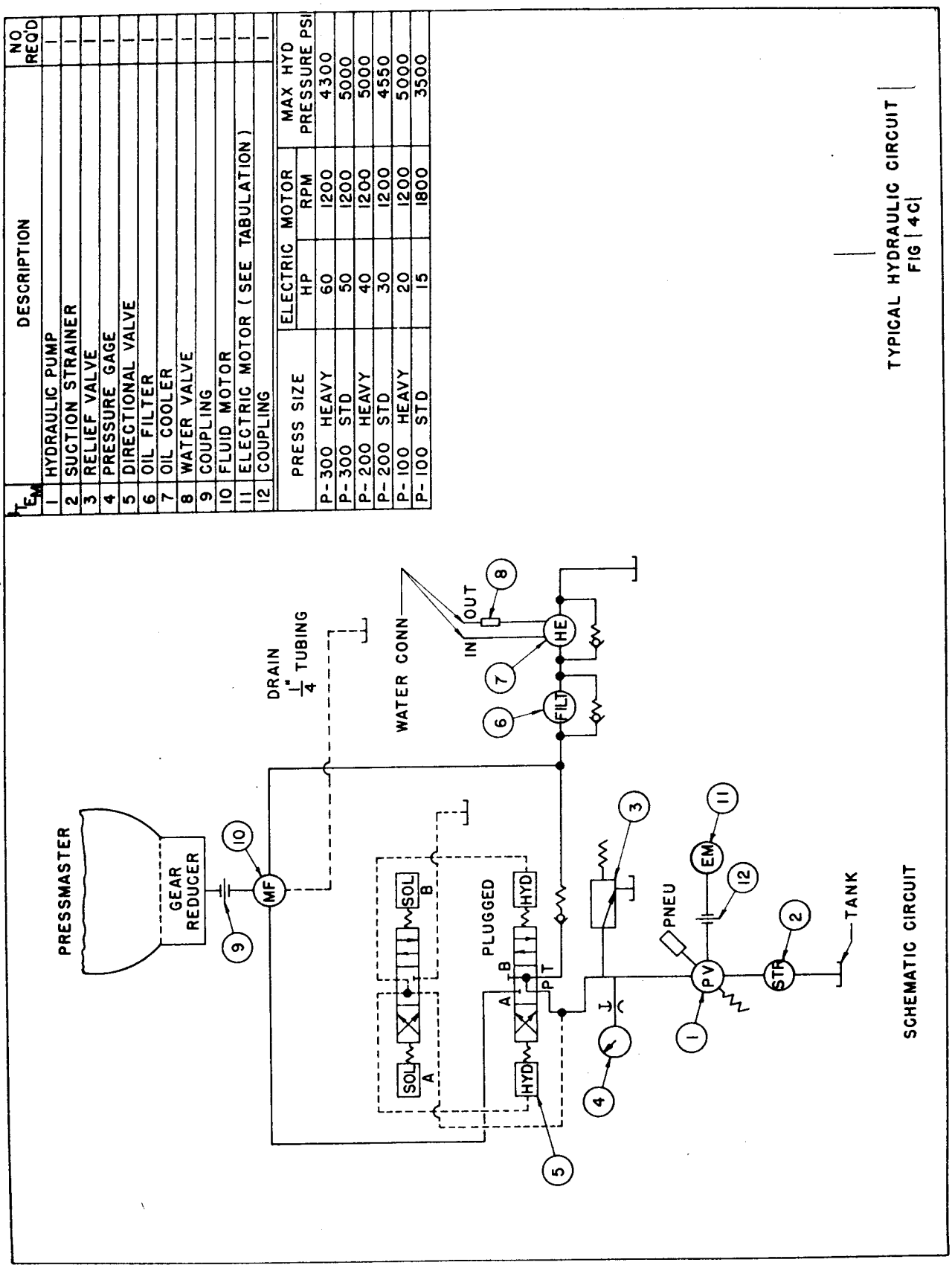
1. Place press selector switch in "press stop" position.

2. Back off relief valve adjustment screw, reference Figure 4B. This will allow oil to return to tank without developing high pressures.

3. Set Conoflow to position flow indicator on pump to approximately 1/4 position. This can be done by manually adjusting the controller.

ITEM	DESCRIPTION	NO REQ'D
1	HYDRAULIC PUMP	1
2	SUCTION STRAINER	1
3	RELIEF VALVE	1
4	PRESSURE GAGE	1
5	DIRECTIONAL VALVE	1
6	OIL FILTER	1
7	OIL COOLER	1
8	WATER VALVE	1
9	COUPLING	1
10	FLUID MOTOR	1
11	ELECTRIC MOTOR (SEE TABULATION)	1
12	COUPLING	1

PRESS SIZE	ELECTRIC MOTOR HP	ELECTRIC MOTOR RPM	MAX HYD PRESSURE PSI
P-300 HEAVY	60	1200	4300
P-300 STD	50	1200	5000
P-200 HEAVY	40	1200	5000
P-200 STD	30	1200	4550
P-100 HEAVY	20	1200	5000
P-100 STD	15	1800	3500



TYPICAL HYDRAULIC CIRCUIT
FIG | 4C|

SCHEMATIC CIRCUIT

4. Start pump motor, allow it to run at its rated speed and listen to the sounds of the pump as it operates. At the start there will probably be some air in the system. This usually is indicated by an erratic knock. Vent the air through the relief valve gauge connection. When pump is operating with a steady smooth sound, adjust the Conoflow to increase pump flow to full position. This adjustment should be made gradually. Allow to run at this position for a few minutes, then reduce flow to 1/4 position. Energize solenoid valve (run button for press) to allow oil to flow to the pilot on the main valve. As these valves shift, their sound will indicate that operation is satisfactory. The relief valve can now be turned inward until the fluid motor starts to turn. Adjust relief valve to 1/2 turn above this point and allow the press to turn. Listen to press for any sounds of scraping or interference. With everything operating normal, flow can now be increased to 1/2 indicator position. Check all lines and connections for signs of leaks. If any are found, they should be corrected immediately. Allow press to operate for at least an hour to warm up oil in press parts. The operating pressure without load on press should be about 600-800 psi. Conoflow can now be adjusted to increase flow and press speed to maximum. Spindle speed should be checked to see that it agrees with specifications. If there is a great amount of discrepancy, it may be due to an incorrect speed electric motor or an incorrect cam plate in the fluid motor.

5. Set relief valve, reference Figure 4B, to maximum operating pressure for the system. (Circuit drawing furnished to customer shows maximum pressure for his drive system.) To do this, blank off pressure port at fluid motor or at the 4-way directional valve, if system has a two position spool. For systems with a three-position spool, one position is used to check the relief valve setting.

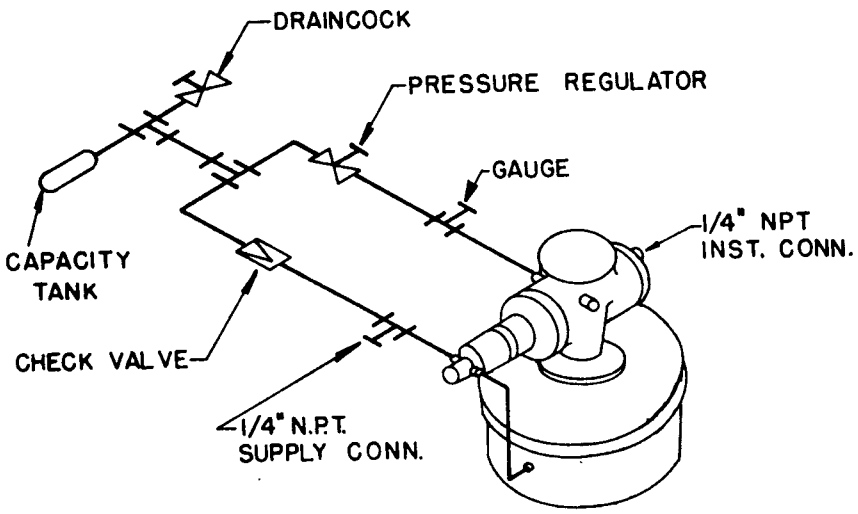
6. Starting Press. After the above check has been made and the drive operation is satisfactory, the press can be started with stock as follows. The usual starting procedure for a press should be followed as outlined in the Start-up Section of this manual. Select a starting speed for the press, adjust pressure to desired amount and run cone up to the closed position. Start stock flowing to press at moderate rate to build cake. With cake discharging, flow can be increased gradually. Observe pressure gauge on power unit, reference Figure 4B. Do not exceed maximum pressure for spindle speed as shown on circuit drawing furnished the customer for his particular press. Should fluid motor stop, pressure gauge will slow the relief valve setting which, if below the maximum, can be turned in to increase the operating pressure and start the fluid motor again. This procedure of gradually increasing flow to press should be followed until maximum flow for the spindle speed is reached. Allow press to operate 10 to 15 minutes before any adjustments are made to spindle speed or cone pressure. To shut down press, first stop feed to press but allow spindle to continue running. When flow to press has been stopped, cake discharge will gradually slow up and stop, cone should then be lowered to allow remaining cake to discharge. Raise and lower cone to compress cake and allow

CONOFLOW MODEL J POSITIONER

STANDARD PIPING SCHEMATICS

CYLINDER ACTUATOR

MODEL J-13
BOTTOM LOADING



CUSHION LOADING TYPE WITH AIRLOCK

MODEL		J-13
A S INSTRUMENT SIGNAL INCREASES	POSITIONER OUTPUT	INCREASES
	ACTUATOR STEM MOVES	I N
POSITIONER OUTPUT LOADING TO ACTUATOR		BOTTOM
ON AIR FAILURE WITH AIRLOCK ACTUATOR STEM MOVES		OUT
LETTER DESIGNATION IN ACTUATOR MODEL NO.		T

FIGURE NO. 4D

to discharge and continue this process until press is completely empty. Spindle can now be stopped by putting selector switch in "press stop" position. The pump motor can now be stopped. The relief valve can be left at the maximum operating pressure for the system, however, this pressure should never be exceeded.

INITIAL MAINTENANCE

During the first few days of operation, usually one week or 50 hours of service, a certain amount of purging may occur within the hydraulic system resulting in loosening of small particles of metal, sealing compound, paint or sand, etc.; consequently, hydraulic oil may pick up an increasing amount of abrasive matter. Since the filter and strainer cannot completely remove this, at the end of the week or 50 hours we suggest the hydraulic oil be drained and suitably purified or fresh oil installed. At the same time, the oil filter element should be replaced and the screen and the pump intake line cleaned of collected impurities. The most accurate method of determining when the oil should be changed is by laboratory analysis. The oil supplier is usually in a position to do this. Keeping the oil in service too long may prove poor economy and may result in heavy maintenance costs, the formation of deposits, changing in viscosity and development of corrosive acidity. For equipment in continuous service, it is generally desirable to change the oil every six months to one year.

HYDRAULIC DRIVE START-UP CHECK LIST

1. Fluid Motor Piping

   Connect high pressure port
   Connect return port
   Drain line connected
   Fluid motor filled with hydraulic fluid

2. Power Unit

   Correct amount of hydraulic fluid in tank
   Correct grade and viscosity of fluid used
   Pump filled with hydraulic fluid
   Pump rotation correct
   Solenoid selector switch in "press stop" position
   Conoflow air supply on
   Flow indicator on pump adjusted to 1/4 to 1/2 position
   Relief valve adjustment screw backed off
   Heat exchanger cooling water valve open

3. Start Power Unit

   Start pump motor
   Vent air
   Increase flow to full position
   Decrease flow to half position
   Turn selector switch to "press run" position
   Adjust relief valve (turn in) until spindle rotates
   Check speed range
   Check for oil leaks
   Set relief valve at maximum operating pressure

4. Shut Down Power Unit

   Reduce flow to 1/2 to 1/2 position
   Turn selector switch to "press stop" position
   Stop pump motor

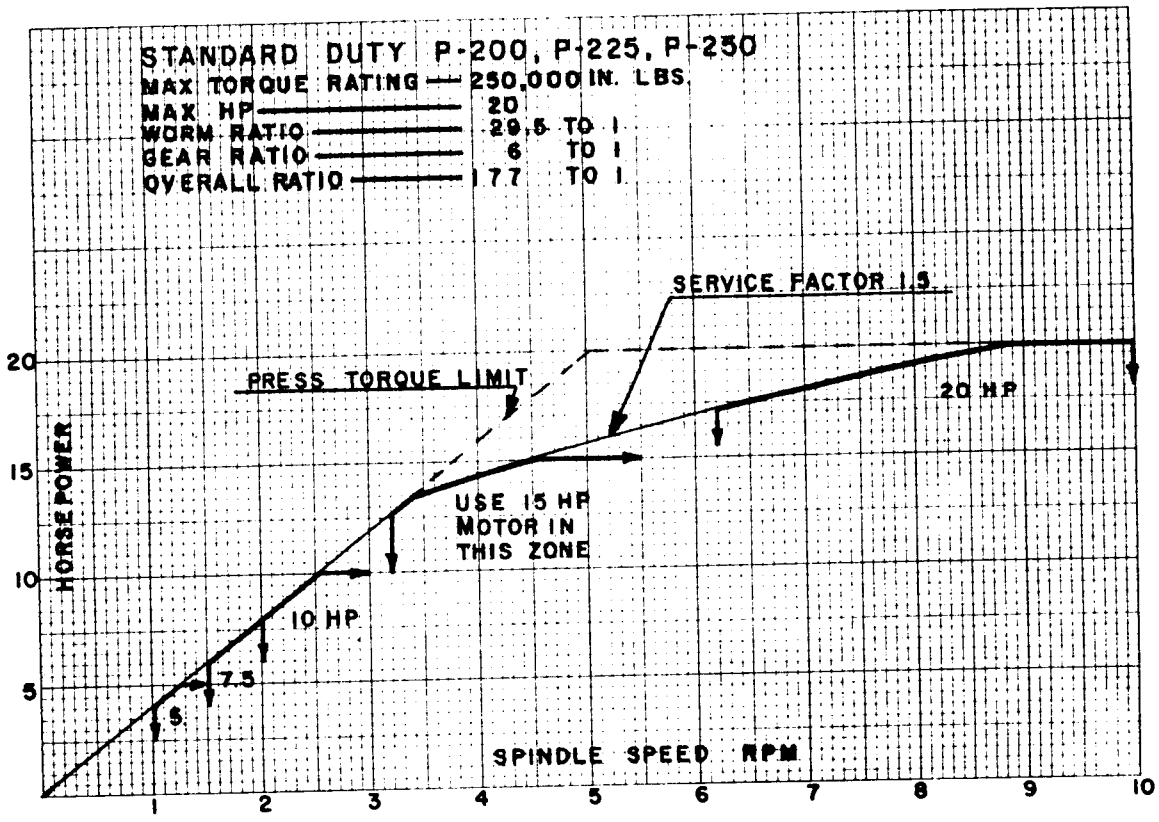


FIGURE No. 5

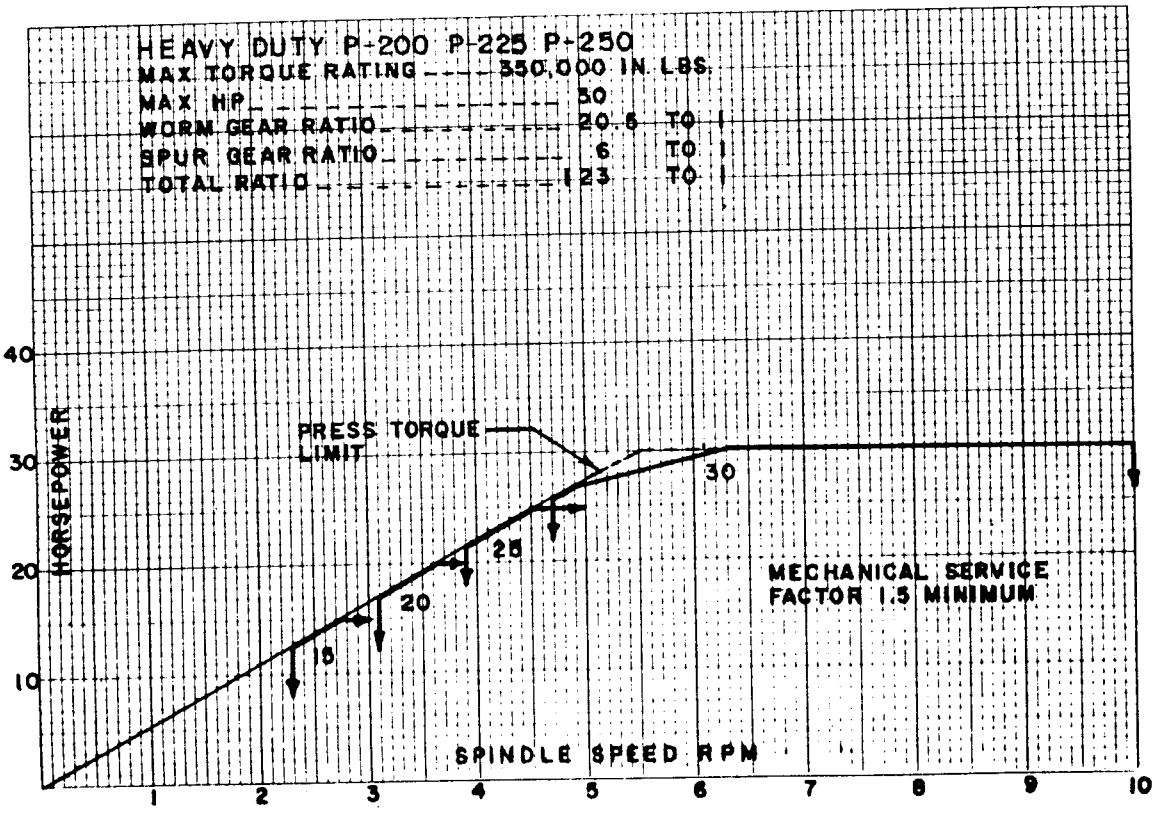
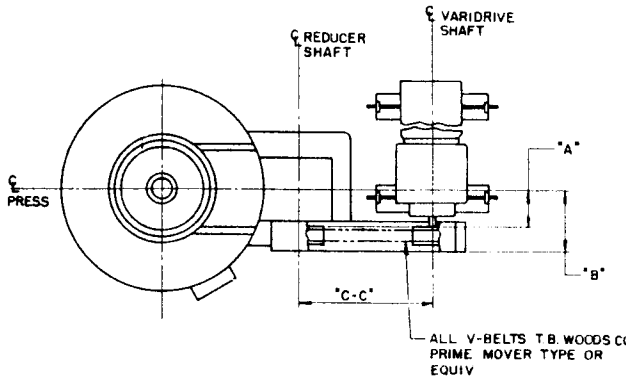


FIGURE No. 6

D81-114175 SH 1 OF 1



STANDARD & HEAVY DUTY DRIVES FOR 60 CYCLE VARIDRIVE

GROUP NO	PRESS & DRIVE	PRESS RPM	VARIDRIVE HP	VARIDRIVE FRAME	VARIDRIVE RPM	VARIDRIVE SHEAVE PD	GROOVE	HUB	BORE	KEYWAY	PRESS SHEAVE PD	GROOVE	HUB	BORE	KEYWAY	V-BELTS NO	V-BELTS SIZE	V-BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-1	P-40 HVY	1.5-11.5	7.5	44-213T	457-3650	5.0	2B	SDS	1 1/2	3/8 x 3/16	11.0	2B	SK	1 5/8	3/8 x 3/16	2	B-85	30.4	2:2	C81-824227-G1	8.6	13
G-2	P-100 STD	1.5-11.5	7.5	44-213T	▲	5.0	2B	SDS	▲	▲	11.0	2B	▲	1 5/8	3/8 x 3/16	2	B-85	30.4	2.2	C81-824020-G1	9	13.4
G-3	P-100 STD	1.5-11.5	10	44-256U		5.0	3B	SD			11.0	3B		1 5/8	3/8 x 3/16	3	B-85	30.4	2.2	C81-824020-G1	9	13.4
G-4	P-100 HVY	1.25-10.0	10	44-256U		6.4	2B	SDS			16.0	2B		2 1/4	1/2 x 1/8	2	B-97	31.5	2.5	C81-824128-G1	13	17
G-5	P-100 HVY	▲	15	44-254T	▼	6.4	3B	SD	▼		16.0	3B		▲	▲	3	B-97	31.5	2.5	C81-824128-G1	13	17
G-6	P-200 STD	▼	15	44-254T	457-3650	6.0	3B	▲	1 1/2		12.4	3B	▼	▼	▼	3	B-105	38.8	2.07	D81-824229-G1	12.0	16.8
G-7	P-200 STD	1.25-10.0	20	54-324	560-3360	6.4	4B	▼	1 5/8		12.4	4B	SK	2 1/4	1/2 x 1/8	4	B-105	38.8	1.94	D81-824229-G1	12.0	16.8
G-8	P-200 HVY	1.7-10.0	20	54-324	560-3360	6.8	4B	SD	1 5/8	▼	18.4	4B	SF	2 1/2	5/8 x 3/16	4	B-112	36.7	2.71	D81-824228-G1	14.0	18.8
G-9	P-200 HVY	1.7-10.0	30	54-326U	560-3360	6.8	5B	SK	1 5/8	3/8 x 3/16	18.4	5B	SF	2 1/2	5/8 x 3/16	5	B-112	36.7	2.71	D81-824228-G1	14.0	18.8
G-10	P-300 STD	2.5-10.0	40	65-364T	537-2150	9.0	4C	E	2 3/8	5/8 x 5/16	13.0	4C	E	2 1/2	5/8 x 5/16	4	C-128	48.1	1.44	D81-824212-G7	13.9	19.8
G-11	P-300 HVY	2.6-10.4	50	65-364T60	568-2272	10.0	4C	E	2 7/8	3/4 x 1/8	18.0	4C	E	3	3/4 x 1/8	4	C-136	47.3	1.8	D81-824212-G5	15.6	21.6

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STANDARD & HEAVY DUTY DRIVES FOR 50 CYCLE VARIDRIVE

GROUP NO	PRESS & DRIVE	PRESS RPM	VARIDRIVE HP	VARIDRIVE FRAME	VARIDRIVE RPM	VARIDRIVE SHEAVE PD	GROOVE	HUB	BORE	KEYWAY	PRESS SHEAVE PD	GROOVE	HUB	BORE	KEYWAY	V-BELTS NO	V-BELTS SIZE	V-BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-12	P-40 HVY	1.25-10.0	7.5	44-213T	382-3050	5.2	2B	SDS	1 1/2	3/8 x 3/16	11.0	2B	SK	1 5/8	3/8 x 3/16	2	B-90	32.7	2.12	C81-824227-G1	8.6	13
G-13	P-100 STD	▲	7.5	44-213T	▲	5.2	2B	SDS	▲	▲	11.0	2B	▲	1 5/8	3/8 x 3/16	2	▲	32.7	2.12	C81-824020-G1	9	13.4
G-14	P-100 STD		10	44-256U		5.2	3B	SD			11.0	3B		1 5/8	3/8 x 3/16	3		32.7	2.12	C81-824020-G1	9	13.4
G-15	P-100 HVY	▼	10	44-256U		6.0	3B	▲			12.4	3B		2 1/4	1/2 x 1/8	3	▼	31.3	2.07	C81-824127-G1	12.5	16.6
G-16	P-100 HVY	1.25-10.0	15	44-254T	▼	6.0	4B		▼		12.4	4B		▲	▲	4	B-90	31.3	2.07	C81-824127-G1	12.5	16.6
G-17	P-200 STD	1.6-10.0	15	44-254T	382-3050	6.6	3B	▼	1 1/2		11.0	3B	▼	▼	▼	3	B-105	39.9	1.67	D81-824229-G1	12.0	16.8
G-18	P-200 STD	1.6-10.0	20	54-324	466-2800	6.8	4B	SD	1 5/8		11.0	4B	SK	2 1/4	1/2 x 1/8	4	B-105	39.4	1.62	D81-824229-G1	12.0	16.6
G-19	P-200 HVY	1.7-10.0	20	54-324	466-2800	7.0	4B	SK	1 5/8	▼	15.4	4B	SF	2 1/2	5/8 x 3/16	4	B-112	39.1	2.20	D81-824228-G1	14.0	18.8
G-20	P-200 HVY	1.7-10.0	30	54-326U	466-2800	7.0	6B	SF	1 5/8	3/8 x 3/16	15.4	6B	SF	2 1/2	5/8 x 3/16	6	B-112	39.1	2.20	D81-824228-G1	14.0	18.8
G-21	P-300 STD	2.5-10.0	40	65-364T	448-1790	10.0	4C	E	2 3/8	5/8 x 5/16	12.0	4C	E	2 1/2	5/8 x 5/16	4	C-128	48.2	1.20	D81-824212-G7	13.9	19.8
G-22	P-300 HVY	2.7-10.7	50	65-364T60	473-1893	11.0	4C	E	2 7/8	3/4 x 1/8	16.0	4C	E	3	3/4 x 1/8	4	C-136	48.2	1.45	D81-824212-G5	15.6	21.6

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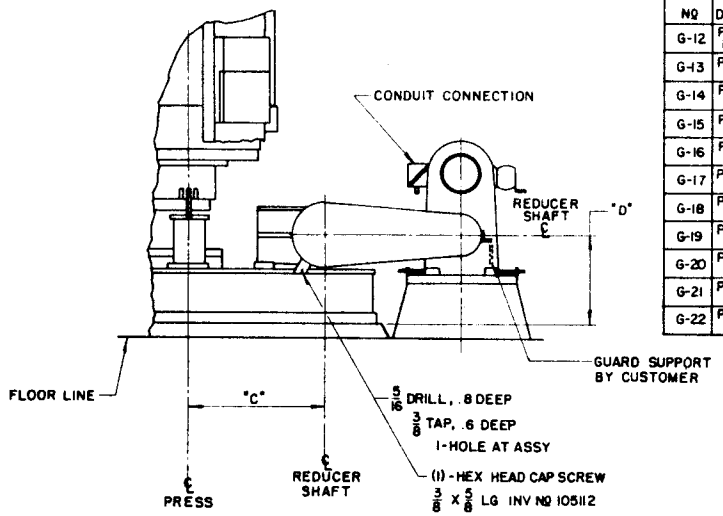


NOTE:
ALL VARIDRIVES TYPE VEU-TF ASSEMBLY "Z-1A" WITH RAILS 3PH 230/460 V

PRESS SIZE & DRIVE	P-40 HVY	P-100 STD	P-100 HVY	P-200 STD	P-200 HVY	P-300 STD	P-300 HVY
WORM GEAR RATIO	29.5	29.5	29.5	29.5	20.5	20.5	16.8
SPUR GEAR RATIO	4.95	4.95	4.95	6.00	6.00	7.29	7.29
TOTAL GEAR RATIO	146	146	146	177	123	149.4	121.5
CENTER PRESS TO REDUCER SHAFT "C"	27	29.6	32.6	36.6	38.8	47.25	49.25
BASE PRESS TO REDUCER SHAFT "D"	14.25	18.75	21.12	21.5	22.2	21.9	22.75

CONVENTIONAL "V" BELTS & SHEAVES — DELROYD TYPE "V" AIR COOLED REDUCERS

REV	ALTERATIONS	DATE	BY
A	BORE WAS 2⅞ KEYWAY WAS ⅝ x ⅜	6-20-72	GEH

SUPERSEDES D81-114150 SUPERSEDED BY

MACHINING TOLERANCES
1. or 1.9000 = ±.04
1.0 " 1.0900 = ±.02
1.00 " 1.0070 = ±.01
1.000 " 1.000 = ±.005
FOR CUTOFF, FABRICATION AND CASTING TOLERANCES AND STD SHOP PRACTICES, SEE FACTORY MANUAL SECTION 2.

BELOIT JONES DIVISION

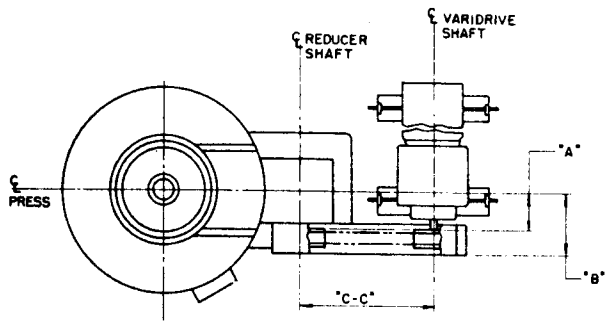
PT NO	MATERIAL	SIZE OR PATT NO	WEIGHT	REQ'D	WANTED
FIRST USED ON					

FLOOR MOUNTED VARIDRIVES
STANDARD AND HEAVY DUTY
PRESSMASTERS

DATE 2-15-72 | DRAWN SJS | APP'D | ENG | SCALE NONE | SH 1 OF 1 | D81-114175

FIGURE NO. 7

D81-114166



STANDARD & HEAVY DUTY DRIVES FOR 60 CYCLE VARIDRIVE

GROUP NO	PRESS & DRIVE	PRESS RPM	VARIDRIVE HP	VARIDRIVE FRAME	VARIDRIVE RPM	VARIDRIVE SHEAVE OD	VARIDRIVE SHEAVE GROOVE	VARIDRIVE SHEAVE HUB	VARIDRIVE SHEAVE BORE	VARIDRIVE SHEAVE KEYWAY	PRESS SHEAVE OD	PRESS SHEAVE GROOVE	PRESS SHEAVE HUB	PRESS SHEAVE BORE	PRESS SHEAVE KEYWAY	V-BELTS NO	V-BELTS SIZE	V-BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-1	P-40 HVY	1.47-11.74	7.5	44-213T	457-3650	5.0	3V-3	SDS	1 1/2	3/8 x 3/16	10.6	3V-3	SK	1 5/8	3/8 x 3/16	3	3V-900	32.6	2.13	C81-824227-G1	8.6	13
G-2	P-100 STD	▲	7.5	44-213T	▲	▲	▲	▲	▲	▲	▲	▲	▲	1 5/8	3/8 x 3/16	▲	▲	▲	▲	C81-824020-G1	9	13.4
G-3	P-100 STD		10	44-256U		▼	▼					▼		1 5/8	3/8 x 3/16	▼				C81-824020-G1	9	13.4
G-4	P-100 HVY	▼	10	44-256U		▼	3V-3					3V-3		2 1/4	1/2 x 1/8	3	▼	▼	▼	C81-824128-G1	13	17
G-5	P-100 HVY	1.47-11.74	15	44-254T	▼	5.0	3V-4	▼	▼			3V-4		▲	▲	4	3V-900	32.6	2.13	C81-824128-G1	13	17
G-6	P-200 STD	1.28-10.26	15	44-254T	457-3650	5.3	3V-4	SDS	1 1/2			3V-4	▼	▼	▼	4	3V-1000	37.4	2.01	D81-824229-G1	12.0	16.8
G-7	P-200 STD	1.67-9.99	20	54-324	560-3360	5.6	3V-5	SK	1 5/8		10.6	3V-5	SK	2 1/4	1/2 x 1/8	5	3V-1000	37.2	1.90	D81-824229-G1	12.0	16.8
G-8	P-200 HVY	1.71-10.27	20	54-324	560-3360	5.3	3V-5	SK	1 5/8	▼	14.0	3V-5	SF	2 1/2	5/8 x 3/16	5	3V-1060	37.6	2.66	D81-824228-G1	14.0	18.8
G-9	P-200 HVY	1.65-9.90	30	54-326U	560-3360	6.9	3V-5	SK	1 5/8	3/8 x 3/16	19.0	3V-5	SF	2 1/2	5/8 x 3/16	5	3V-1120	35.2	2.76	D81-824228-G1	14.0	18.8
G-10	P-300 STD	2.51-10.06	40	65-364T	537-2150	9.25	5V-3	SF	2 3/8	5/8 x 3/16	13.2	5V-3	E	2 1/2	5/8 x 5/16	3	5V-1320	48.3	1.43	D81-824212-G7	13.9	19.8
G-11	P-300 HVY	2.61-10.44	50	65-364T-60	568-2272	9.0	5V-4	E	2 7/8	3/4 x 1/8	18.0	5V-4	E	3	3/4 x 1/8	4	5V-1320	46.3	1.79	D81-824212-G8	15.6	21.6

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STANDARD & HEAVY DUTY DRIVES FOR 50 CYCLE VARIDRIVE

GROUP NO	PRESS & DRIVE	PRESS RPM	VARIDRIVE HP	VARIDRIVE FRAME	VARIDRIVE RPM	VARIDRIVE SHEAVE OD	VARIDRIVE SHEAVE GROOVE	VARIDRIVE SHEAVE HUB	VARIDRIVE SHEAVE BORE	VARIDRIVE SHEAVE KEYWAY	PRESS SHEAVE OD	PRESS SHEAVE GROOVE	PRESS SHEAVE HUB	PRESS SHEAVE BORE	PRESS SHEAVE KEYWAY	V-BELTS NO	V-BELTS SIZE	V-BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-12	P-40 HVY	1.48-11.80	7.5	44-213T	382-3050	6.0	3V-3	SDS	1 1/2	3/8 x 3/16	10.6	3V-3	SK	1 5/8	3/8 x 3/16	3	3V-900	31.9	1.77	C81-824227-G1	8.6	13
G-13	P-100 STD	▲	7.5	44-213T	▲	▲	▲	▲	▲	▲	▲	▲	▲	1 5/8	3/8 x 3/16	▲	▲	▲	▲	C81-824020-G1	9	13.4
G-14	P-100 STD		10	44-256U		▼	▼					▼		1 5/8	3/8 x 3/16	▼				C81-824020-G1	9	13.4
G-15	P-100 HVY	▼	10	44-256U		▼	3V-3					3V-3		2 1/4	1/2 x 1/8	3	▼	▼	▼	C81-824127-G1	12.5	16.6
G-16	P-100 HVY	1.48-11.80	15	44-254T	▼	6.0	3V-4	▼	▼			3V-4		▲	▲	4	3V-900	31.9	1.77	C81-824127-G1	12.5	16.6
G-17	P-200 STD	1.29-10.50	15	44-254T	382-3050	6.5	3V-3	SDS	1 1/2		▼	3V-3	▼	▼	▼	3	3V-1000	36.5	1.64	D81-824229-G1	12.0	16.8
G-18	P-200 STD	1.60-9.65	20	54-324	466-2800	▲	3V-4	SK	1 5/8		10.6	3V-4	SK	2 1/4	1/2 x 1/8	4	3V-1000	36.5	1.64	D81-824229-G1	12.0	16.8
G-19	P-200 HVY	1.75-10.54	20	54-324	466-2800	▼	3V-5	SK	1 5/8	▼	14.0	3V-5	SF	2 1/2	5/8 x 3/16	5	3V-1120	39.7	2.16	D81-824228-G1	14.0	18.8
G-20	P-200 HVY	1.75-10.54	30	54-326U	466-2800	6.5	3V-5	SK	1 5/8	3/8 x 3/16	14.0	3V-5	SF	2 1/2	5/8 x 3/16	5	3V-1120	39.7	2.16	D81-824228-G1	14.0	18.8
G-21	P-300 STD	2.48-9.90	40	65-364T	448-1790	9.75	5V-3	SF	2 3/8	5/8 x 3/16	11.8	5V-3	SF	2 1/2	5/8 x 3/16	3	5V-1320	49.1	1.21	D81-824212-G7	13.9	19.8
G-22	P-300 HVY	2.70-10.82	50	65-364T-60	473-1893	9.75	5V-4	E	2 7/8	3/4 x 1/8	14.0	5V-4	E	3	3/4 x 1/8	4	5V-1320	47.3	1.44	D81-824212-G8	15.6	21.6

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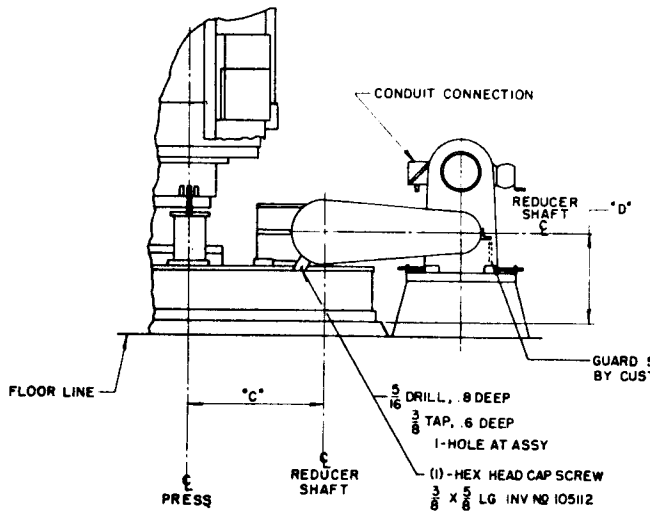


NOTE:
ALL VARIDRIVES TYPE VEU-TF, ASSEMBLY "Z-1A" WITH RAILS 3PH 230/460V

PRESS SIZE & DRIVE	P-40 HVY	P-100 STD	P-100 HVY	P-200 STD	P-200 HVY	P-300 STD	P-300 HVY
WORM GEAR RATIO	29.5	29.5	29.5	29.5	20.5	20.6	16.6
SPUR GEAR RATIO	4.95	4.95	4.95	6.00	6.00	7.29	7.29
TOTAL GEAR RATIO	146	146	146	177	123	149.4	121.5
CENTER PRESS TO REDUCER SHAFT "C"	27	29.6	32.6	36.6	38.6	47.25	49.25
BASE PRESS TO REDUCER SHAFT "D"	14.25	18.75	21.12	21.5	22.2	21.9	22.75

ULTRA "V" BELTS & SHEAVES

DELROYD TYPE "V" AIR COOLED REDUCERS

REV	ALTERATIONS	DATE	BY
A	BORE WAS 2⅜ KEY WAS ⅝ x ⅝	6-20-72	GFH

SUPERSEDES | SUPERSEDED BY

MACHINING TOLERANCES

1.	or	1.000 = ±.04
1.0	"	1.000 = ±.02
1.00	"	1.000 = ±.01
1.000	"	1.000 = ±.005

FOR CUTOFF, FABRICATION AND CASTING TOLERANCES AND STD SHOP PRACTICES, SEE FACTORY MANUAL SECTION 2.

BELOIT JONES DIVISION

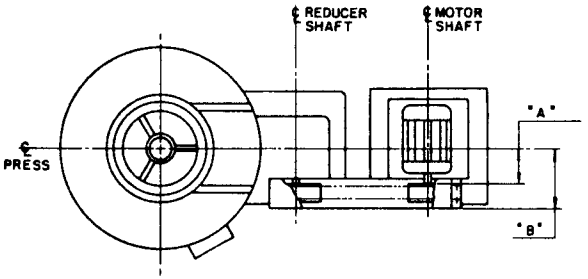
PT NO	MATERIAL	SIZE OR PATT NO	WEIGHT	REQ'D	WANTED
FIRST USED ON		FLOOR MOUNTED VARIDRIVES			
		STANDARD AND HEAVY DUTY			
DATE 2-15-72		PRESSMASTERS			

DRAWN WAF | APP'D | ENG. | SCALE NONE | SH 1 OF 1 | D81-114166

FIGURE No. 8

D81-114171 SH 1 OF 2

STANDARD DUTY REDUCER V-100
WORM GEAR RATIO 29.5 TO 1
SPUR GEAR RATIO 6.0 TO 1
TOTAL RATIO 177 TO 1

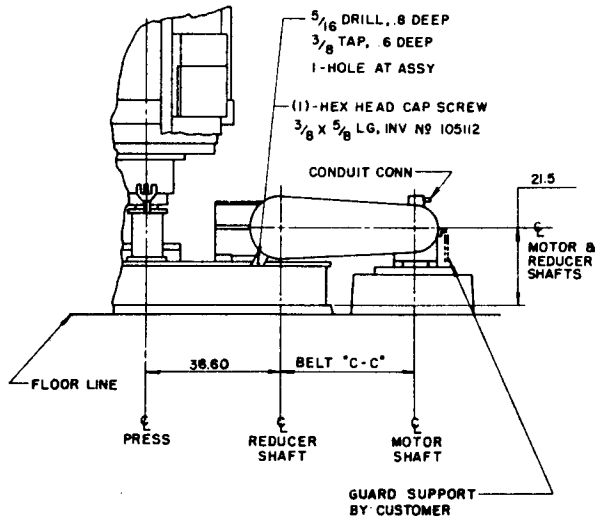


STANDARD DUTY DRIVE FOR 60 CYCLE MOTOR

GROUP Nº	PRESS RPM	MOTOR HP	MOTOR FRAME	MOTOR RPM	MOTOR SHEAVE OD	MOTOR SHEAVE GROOVE	MOTOR SHEAVE HUB	MOTOR SHEAVE BORE	MOTOR SHEAVE KEYWAY	PRESS SHEAVE OD	PRESS SHEAVE GROOVE	PRESS SHEAVE HUB	PRESS SHEAVE BORE	PRESS SHEAVE KEYWAY	BELTS Nº	BELTS SIZE	BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-1	3.03	10	256T	1160	6.5	3V-3	SDS	1 5/8	3/8 x 3/16	14.0	3V-3	SK	2 1/4	1/2 x 1/8	3	3V 1120	39.7	2.16	D81-824229-G1	12.0	16.8
G-2	3.51	15	254T	1750	5.0	3V-4	SDS			14.0	3V-4				4	3V 1060	37.8	2.82			
G-3	3.94				5.6	3V-3				14.0	3V-3				3	3V 1080	37.4	2.51			
G-4	4.41				4.75	3V-4				10.6	3V-4				4	3V 1000	37.8	2.24			
G-5	4.85				6.9	3V-3				14.0	3V-3				3	3V 1120	39.4	2.04			
G-6	5.52				4.5	3V-4				8.0	3V-4				4	3V 900	35.1	1.79			
G-7	6.14	15	254T		5.0	3V-4	SDS			8.0	3V-4				4	3V 1000	38.8	1.61			
G-8	6.55	20	256T		5.3	3V-5	SK			8.0	3V-5				5	3V 1000	39.5	1.51			
G-9	7.21				5.0		SDS			6.9						3V 900	35.6	1.37			
G-10	7.60				5.0		SDS			6.5							36.0	1.30			
G-11	8.52				5.6		SK			6.5							35.5	1.16			
G-12	9.89	20	256T	1750	5.3	3V-5	SK	1 5/8	3/8 x 3/16	5.3	3V-5	SK	2 1/4	1/2 x 1/8	5	3V 900	36.7	1.00	D81-824229-G1	12.0	16.8

STANDARD DUTY DRIVE FOR 50 CYCLE MOTOR

GROUP Nº	PRESS RPM	MOTOR HP	MOTOR FRAME	MOTOR RPM	MOTOR SHEAVE OD	MOTOR SHEAVE GROOVE	MOTOR SHEAVE HUB	MOTOR SHEAVE BORE	MOTOR SHEAVE KEYWAY	PRESS SHEAVE OD	PRESS SHEAVE GROOVE	PRESS SHEAVE HUB	PRESS SHEAVE BORE	PRESS SHEAVE KEYWAY	BELTS Nº	BELTS SIZE	BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-13	2.87	10	256T	965	5.6	3V-4	SDS	1 5/8	3/8 x 3/16	10.6	3V-4	SK	2 1/4	1/2 x 1/8	4	3V 1000	37.2	1.90	D81-824229-G1	12.0	16.8
G-14	3.66	15	254T	1450	4.75	3V-5				10.6	3V-5				5	3V 1000	37.8	2.24			
G-15	4.02				6.9	3V-3				14.0	3V-3				3	3V 1120	39.4	2.04			
G-16	4.31				5.6	3V-4				10.6	3V-4				4	3V 1000	37.2	1.90			
G-17	5.00				6.5	3V-3				10.6	3V-3				3		36.5	1.64			
G-18	5.73				5.6	3V-4	SDS			8.0	3V-4				4		39.3	1.43			
G-19	6.16	15	254T		8.0	3V-3	SK			10.6	3V-3				3		35.4	1.33			
G-20	6.66	20	256T		6.5	3V-4				8.0	3V-4				4		38.6	1.23			
G-21	7.12				6.0	3V-5				6.9	3V-5				5		38.9	1.15			
G-22	7.73				6.5	3V-5				6.9	3V-5				5		39.5	1.06			
G-23	8.19				6.5	3V-5				6.5	3V-5				5		39.8	1.00			
G-24	10.11	20	256T	1450	8.0	3V-4	SK	1 5/8	3/8 x 3/16	6.5	3V-4	SK	2 1/4	1/2 x 1/8	4	3V 1000	38.6	.81	D81-824229-G1	12.0	16.8



DELROYD TYPE "V" AIR COOLED REDUCER
ULTRA V-BELTS & SHEAVES

REV	ALTERATIONS	DATE	BY
SUPERSEDES	SUPERSEDED BY		

MACHINING TOLERANCES
1. or 1.9000 = ±.04
1.0 " 1.0900 = ±.02
1.00 " 1.0090 = ±.01
1.000 " 1.000 = ±.005
FOR CUTOFF, FABRICATION AND CASTING TOLERANCES AND STD SHOP PRACTICES, SEE FACTORY MANUAL SECTION 2.

BELOIT JONES DIVISION

PT NO	MATERIAL	SIZE OR PATT NO	WEIGHT	REQ'D	WANTED
FIRST USED ON					

FLOOR MOUNTED MOTORS
STANDARD DUTY DRIVE
PRESSMASTER 200 SERIES "A"

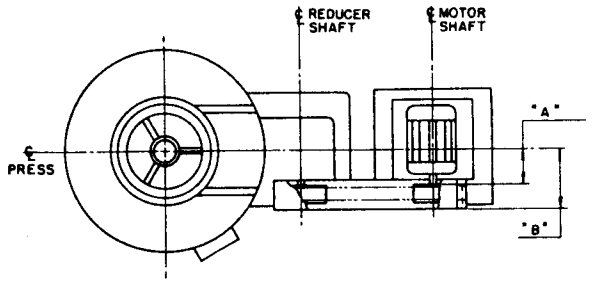
DATE	DRAWN	APP'V'D	ENG	SCALE	SH	D81-114171
2-16-72	SJS & RB			—	1 OF 2	

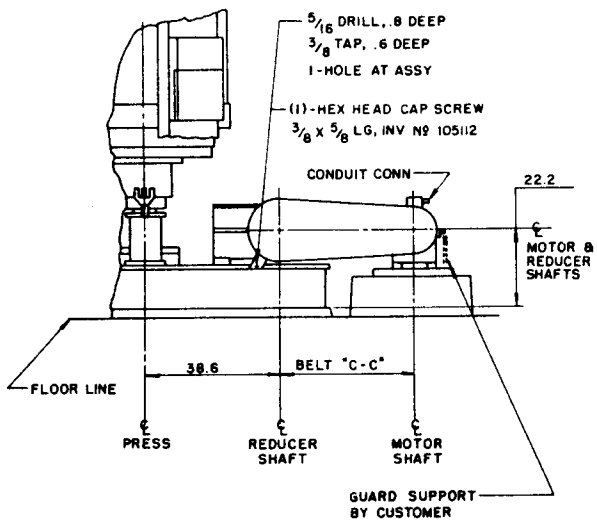
43/44

FIGURE NO. 9

D81-114171 2OF2 SH

HEAVY DUTY DRIVE	V120
WORM GEAR RATIO	20.5 TO 1
SPUR GEAR RATIO	6.0 TO 1
TOTAL RATIO	123.0 TO 1





HEAVY DUTY DRIVE FOR 60 CYCLE MOTOR

GROUP Nº	PRESS RPM	MOTOR HP	MOTOR FRAME	MOTOR RPM	MOTOR SHEAVE OD	MOTOR SHEAVE GROOVE	MOTOR SHEAVE HUB	MOTOR SHEAVE BORE	MOTOR SHEAVE KEYWAY	PRESS SHEAVE OD	PRESS SHEAVE GROOVE	PRESS SHEAVE HUB	PRESS SHEAVE BORE	PRESS SHEAVE KEYWAY	BELTS Nº	BELTS SIZE	BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-25	2.97	15	284T	1160	6.0	3V-4	SK	1 7/8	1/2 x 1/4	19.0	3V-4	SF	2 1/2	5/8 x 3/16	4	3V 1120	35.8	3.18	D81-824228-G1	14.0	18.8
G-26	3.68	20	256T	1750	6.5	3V-4	↓	1 5/8	3/8 x 3/16	25.0	3V-4	↓	↓	↓	4	3V 1250	36.7	3.87	-G2	↓	↓
G-27	3.91	25	284T	↓	6.9	3V-4		1 7/8	1/2 x 1/4	25.0	3V-4				4	3V 1250	36.3	3.64	-G2		
G-28	4.47	25	284T		6.0	3V-5		↓	↓	19.0	3V-5				5	3V 1120	35.8	3.18	-G1		
G-29	5.15	30	286T		6.9	3V-5				19.0	3V-5				5	3V 1120	35.2	2.76	-G1		
G-30	5.69	↓	↓		5.6	3V-6				14.0	3V-6				6	3V 1060	37.4	2.51	-G3		
G-31	5.98				8.0	3V-4				19.0	3V-4				4	3V 1120	34.4	2.38	-G1		
G-32	6.59				6.5	3V-5				14.0	3V-5				5	3V 1060	36.7	2.16	-G3		
G-33	7.08				5.3	3V-8				10.6	3V-8				8	3V 1000	37.4	2.01	-G3		
G-34	7.49				5.6	3V-6				10.6	3V-6				6	3V 1000	37.2	1.90	-G3		
G-35	8.68	↓	↓	↓	6.5	3V-6	↓	↓	↓	10.6	3V-6	↓	↓	↓	6	3V 1000	36.5	1.64	↓ -G3	↓	↓
G-36	9.95	30	286T	1750	5.6	3V-8	SK	1 7/8	1/2 x 1/4	8.0	3V-8	SF	2 1/2	5/8 x 3/16	8	3V 950	36.8	1.43	D81-824228-G3	14.0	18.8

HEAVY DUTY DRIVE FOR 50 CYCLE MOTOR

GROUP Nº	PRESS RPM	MOTOR HP	MOTOR FRAME	MOTOR RPM	MOTOR SHEAVE OD	MOTOR SHEAVE GROOVE	MOTOR SHEAVE HUB	MOTOR SHEAVE BORE	MOTOR SHEAVE KEYWAY	PRESS SHEAVE OD	PRESS SHEAVE GROOVE	PRESS SHEAVE HUB	PRESS SHEAVE BORE	PRESS SHEAVE KEYWAY	BELTS Nº	BELTS SIZE	BELTS C-C	V-BELT RATIO	V-BELT GUARD	"A"	"B"
G-37	2.95	15	284T	965	5.3	3V-6	SK	1 7/8	1/2 x 1/4	14.0	3V-6	SF	2 1/2	5/8 x 3/16	6	3V 1060	37.6	2.66	D81-824228-G3	14.0	18.8
G-38	3.46	20	256T	1450	5.6	3V-5	↓	1 5/8	3/8 x 3/16	19.0	3V-5	SF		5/8 x 3/16	5	3V 1120	36.1	3.41	↓ -G1	↓	↓
G-39	4.01	25	284T	↓	6.5	3V-6		1 7/8	1/2 x 1/4	19.0	3V-6	E		5/8 x 5/16	6	3V 1120	35.5	2.94	-G1		
G-40	4.43	25	284T		5.3	3V-6		↓	↓	14.0	3V-6	SF		5/8 x 3/16	6	3V 1060	37.6	2.66	-G3		
G-41	5.04	30	286T		6.0	3V-8				14.0	3V-8	E		5/8 x 5/16	8	3V 1060	37.1	2.34	-G3		
G-42	5.46	↓	↓		6.5	↓				14.0	↓	E		5/8 x 5/16	↓	3V 1060	36.7	2.16	-G3		
G-43	6.20				5.6					10.6		SF		5/8 x 3/16		3V 1000	37.2	1.90	-G3		
G-44	6.66				6.0					↓	↓	↓		↓		↓	36.9	1.77	-G3		
G-45	7.19				6.5					↓						↓	36.5	1.64	-G3		
G-46	7.65				6.9					10.6						3V 1000	36.2	1.54	-G3		
G-47	8.80	↓	↓	↓	6.0	↓	↓	↓	↓	8.0	↓	↓	↓	↓	↓	3V 950	36.5	1.34	↓ -G3	↓	↓
G-48	10.16	30	286T	1450	6.9	3V-8	SK	1 7/8	1/2 x 1/4	8.0	3V-8	SF	2 1/2	5/8 x 3/16	8	3V 1000	38.3	1.16	D81-824228-G3	14.0	18.8

ULTRA V-BELTS & SHEAVES
DELROYD TYPE "V" AIR COOLED REDUCER

REV	ALTERATIONS	DATE	BY
SUPERSEDES	SUPERSEDED BY		

MACHINING TOLERANCES
1. or 1.°000 = ±.04
1.0 " 1.0°00 = ±.02
1.00 " 1.00°0 = ±.01
1.000 " 1.000 = ±.005
FOR CUTOFF, FABRICATION AND CASTING TOLERANCES AND STD SHOP PRACTICES, SEE FACTORY MANUAL SECTION 2.

BELOIT
JONES DIVISION

PT NO	MATERIAL	SIZE OR PATT NO	WEIGHT	REQ'D	WANTED
FIRST USED ON		FLOOR MOUNTED MOTORS			
		HEAVY DUTY DRIVE			
DATE 3-7-72		PRESSMASTER 200 SERIES "A"			

DRAWN RB | APPVD | ENG WVK | SCALE — | SH 2 OF 2 | D81-114171

FIGURE NO. 10

OPERATION

Start-Up and Shut-Down

Start main press motor to start press without feeding material to it. Check RPM of the spindle by counting number of revolutions per minute. If not as specified, check drive specifications and motor speed.

Turn air shut-off valve to admit air to cone control regulator. Adjust regulator to required pressure if known. (If not know, select a low pressure of 15 spi to 20 psi). Turn air cylinder 4-way to raise and lower cone a few times to insure lubrication to cylinders. Leave cone in up position.

With spindle turning and cone in up position, material can now be fed slowly to the press. A cake will gradually form and the cone will float down to allow material to discharge. Feed can be increased until the press is receiving the maximum amount. Allow press to run 10 to 15 minutes before any adjustments are made to spindle speed or cone pressure.

Horsepower - (Refer to Figures 5-10)

The power curve for standard duty drive is given on Figure 5 and for heavy duty drive on Figure 6. DO NOT EXCEED horsepower shown for spindle speed used. An ammeter or wattmeter should be used to check actual motor horsepower under load, and if found to be high, lower cone pressure or reduce spindle speed or both. With a variable speed drive, make adjustment to the control to change speed. For presses equipped with a constant speed motor, a change in V-belt sheaves will be necessary to change spindle speed. Refer to tables on Figure 7 to 10, which list suitable sheaves for various spindle speeds. These tables are made for both standard and heavy duty drives and 50 to 60 cycle current. Make selections from appropriate chart.

Shut-Down and Clean-Up

When shutting down, first stop feed to the press, but allow spindle to continue running. Cone should then be lowered. Continue to run press until cake stops discharging. Raise and lower cone to compress remaining cake and allow it to discharge. By this process the press can be emptied completely. The press must not be allowed to remain full of material over a long shut down period because material will dry out and add increased load when starting again. Clean the press immediately after a run if it is not planned to be used again for some time. Flush out inside of screen with fresh water admitted through the feed inlet. Remove outside jackets and hose off outside surface of the screen. This would be sufficient for ordinary applications.

Clean In Place (For Presses with Sealed Jackets)

For special application where the Pressmaster is cleaned in place, the following procedure is recommended:

1. Provide cone with 1/4" thick rubber cover. This rubber cover will act as a gasket and seal the seat when the cone is run all the way to water basin.

2. Provide cleaning solution pipe connection to press inlet with necessary valve.

3. Provide shut-off valve on effluent outlet of water basin.

Procedure To Follow To Flush Press

1. Stop press feed supply.

2. Allow spindle to continue to rotate until cake is discharged.

3. Run cone up and down several times to clear cake fully.

4. Stop spindle when clear.

5. With cone fully opened place rubber gasket on cone, secure with tape.

6. Run cone to full up position.

7. Turn on cleaning solution and flood press between spindle and screen plate. Also flood between screen frame and water tight jacket.

8. Allow solution to remain in press prescribed time.

9. Open basin drain to sewer or other convenient location.

10. Flush press with clear water before starting press again.

11. When clean remove rubber gasket.

MAINTENANCE

Screens

To remove screens, swing open jacket, remove bolts in both vertical joints of the screen frame flange. Screen halves cannot be swung open. To remove screens completely from press follow above procedure but do not swing open. Remove top and bottom hinge pins which are screwed in place. With suitable rigging each screen half can then be moved out to clear the press frame.

To reassemble, reverse the procedure. Be sure all bolts and nuts are tight before starting the press again.

Maintenance generally consists of replacing liner screens when worn or damaged. The liner screen is spot welded or screwed to the backing screen. The assembly is held to the frame with screws. Remove the screws and screens if the backing is usable and remove the liner screen by breaking the welds with a chisel. Fit new liner screen to the backing screen and secure in place; if the unit is welded, spot weld using standard electric spot welder. Trim edge and lap over as on the old screen. Drill holes for the screws and with a suitable punch impress liner into countersunk holes in backing so flat head screws will hold the assembled liner and backing screen to frame. Cut openings for resistors using standard rotary hole saw.

Should the backing screen be damaged a new one will have to be fitted to the frame, drilled and countersunk. This backing screen should be cut oversize and rolled to fit the frames, then marked along both joints and ends. Remove and trim to the marked line by sawing or grinding. It may be necessary to drill and tap new holes in the screen frame if the old holes are unusable or cannot be matched.

It should be noted that screens may be replaced as a unit assembly, consisting of liner and backing screen. This reduces the maintenance operation required and facilitates replacement.

Resistors

Normally no maintenance is required, except for periodical inspection. If signs of weakness are apparent due to corrosion or severe wear replace as necessary, by unfastening securing bolt, pull out and replace resistor and secure with bolt.

Spindle Replacement

To remove spindle for repairs, remove inlet connection at top of press. Open screens as described above. Remove screws at bottom of spindle where it attaches to the drive shaft. Lift spindle vertically to remove. Where headroom is restricted, remove insert plate at the top of the press. The spindle may now be lifted vertically, then moved out of the press to one side. Refer to the installation drawings for clearances required.

Successful press operation depends on the spindle condition. Many difficulties with press operation can be traced to excessive wear of the flight's edges. See Figure 11, note bottom edges of the flight rounded off due to wear and enlarged clearance between outside diameter of the flights and screens.

Effect of this worn condition is:

1. To wedge material being pressed between flight and screen, causing high stresses in the screen. As flight continues to rotate past a particular point, repeated stress condition in the screen may eventually result in failure.

2. That wedging action and increased pressure require additional torque to turn spindle, imposing excessive loads on driving gears, and motors.

3. The increased clearance between the screen and flight may reduce capacity of the press.

Remedy for this condition is to replace spindle with a spare and have the worn one reconditioned. This is accomplished by building up the flights with weld and remachining to its original diameter and with square edges. For increased life, hard surfacing weld rod such as Airco No. 388 or Stellite No. 6 is recommended for the last weld pass so as to leave a hard surface 1/32 to 1/16 inch deep, after grinding.

It is suggested that the spindle be periodically visually inspected to determine amount of wear and provide for reconditioning before excessive wear takes place.

The spindle may also wear at the lower radial bearing surface, or the sleeve at the cone. This bearing surface can be metalized to return it to its correct dimension. The sleeve at the cone should be replaced.

For a complete reconditioning, spindle should be returned to the factory.

SPINDLE REPAIR PROCEDURE

Stainless Steel Spindles

1. Build up worn places (Figure 12) with stainless steel welding rod compatible with original material.

2. Machine flights for hard surface 1/16" under finish diameter.
3. Hand grind sides and edges where built up.
4. Hard surface using Stellite No. 6 or Thermo Spray 16C Power or equal.
5. Finish grind diameter to correct size and grind edges square.

Mild Steel Spindles

1. Build up worn places with Airco 312 rod or equal.
2. Machine flights for hard surface 1/16" under finish diameter.
3. Hand grind sides and edges where built up.
4. Hard surface using Thermo Spray 16C Powder or Airco 388 rod or equal.
5. Finish grind diameter to correct size and grind edges square.

BEARINGS

All bearings should be kept well lubricated according to instructions. Periodic cleaning and relubrication will prevent excessive wear.

CONE AND CONE INSERT BUSHING

Wear generally takes place only at the tip where the insert bushing is located. The bushing should be replaced if worn, and the seals replaced.

GEARS

Lubrication, periodic cleaning and replacement of lubricant is the only maintenance required. When gears are worn, they must be replaced. The gear case drains should be opened occasionally to see if water has condensed or leaked into the case.

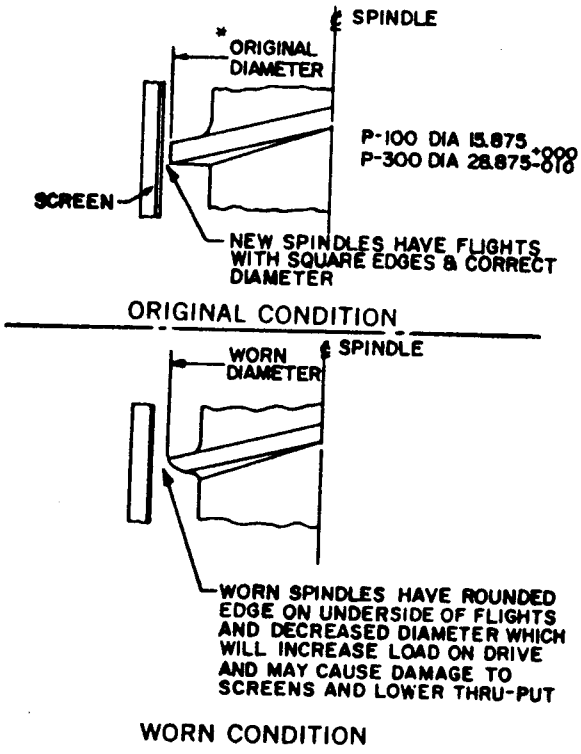


FIGURE NO. 11

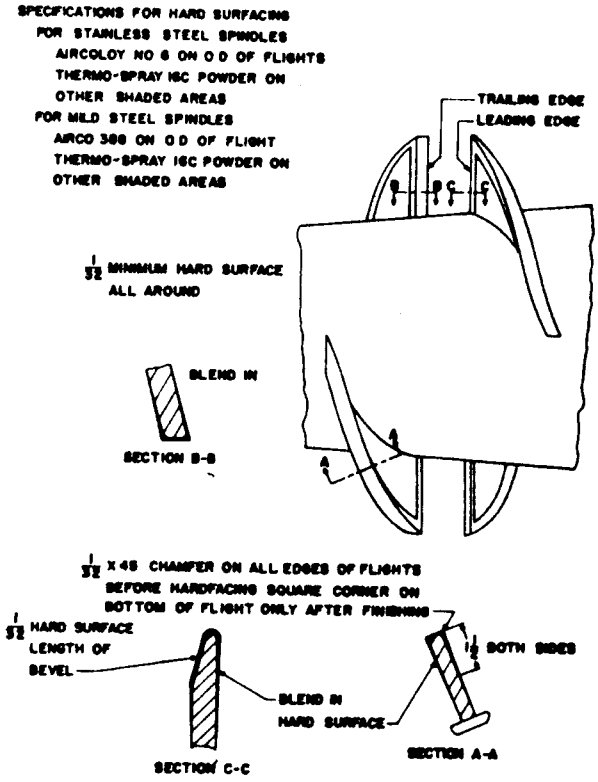


FIGURE NO. 12

Lubrication

This Pressmaster series has a central automatic grease lubrication system for all grease lubricated bearings. Gears in reduction units and Vibrator Shaker are bath lubricated.

Refer to Figure 13 - Lubrication Points

A. Spindle spur gear and pinion. Fill case in base of press to proper level with oil of good chemical stability, with lead additives for mild E.P. characteristics, viscosity 1200 to 1500 SSU at 100°F. Drain, flush and renew every six months. Capacity 55 gallons. Refer to Oil Plate No. 59.

B. Worm gear unit. Gear teeth and worm bearings are splash lubricated by oil in the case. (Gear shaft bearings are grease lubricated, See D below). Follow manufacturer's service instructions. Standard duty drive capacity approximately 12-3/4 quarts. Heavy duty drive capacity approximately 19-3/4 quarts. Refer to Oil Plate No. 52.

C. Shaker on Vibrating Pulp Discharge. Follow manufacturers recommendation in separate service bulletin. Capacity 16 fluid ounces. Use correct amount. Do not over or under fill. Use an E.P. oil of high viscosity. Oil plate No. 59 recommended.

D. Worm gear unit. Upper and lower bearings on gear shaft are grease lubricated, from central system on heavy duty drive. Upper bearing only is grease lubricated on standard duty drive.

E. Upper spindle bearing is grease lubricated from central system.

F. Upper and lower bearings in cone support, are grease lubricated from central system.

G. Thrust (lower spindle) bearing is lubricated from central system.

H. Air cylinder lubricator (See Figure 2 Cone Control Panel) should be kept full of a highly refiner mineral oil with additives to resist washing action of moisture.
Viscosity 185 SSU at 100°F, or approximately SAE 10. Capacity 1/3 pint. Refer to Oil Plate No. 60. To lubricate cylinder walls, turn 4-way valve three of four times. This operation draws oil into the air stream and lubricates the cylinder walls. Make certain that lubricator needle valve is opened.

I. Cone tip seal is grease lubricated from central system.

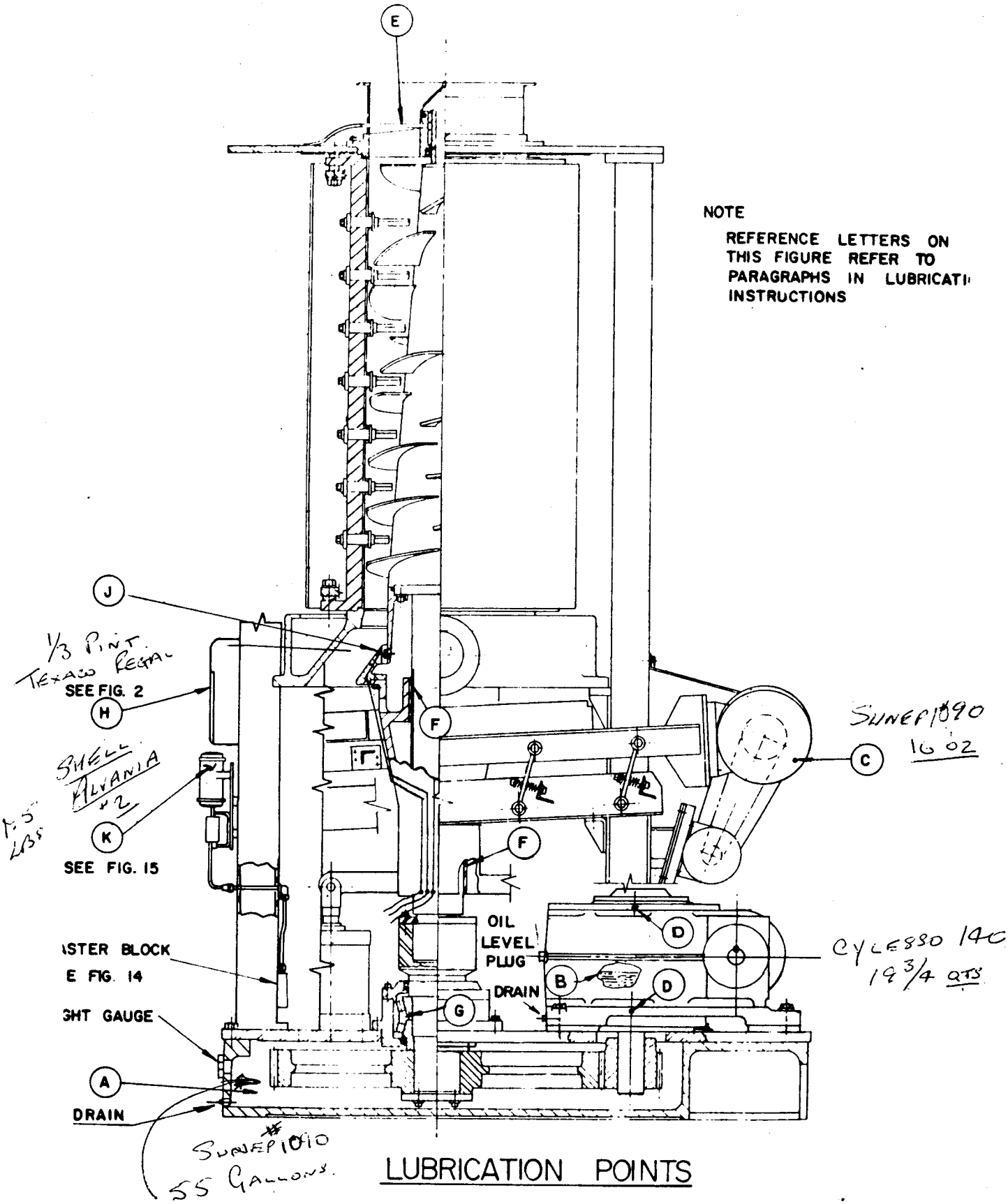

E
NOTE
REFERENCE LETTERS ON THIS FIGURE REFER TO PARAGRAPHS IN LUBRICATI INSTRUCTIONS
J
1/3 PINT TEXACO REGAL
SEE FIG. 2
H
F
SUNEP1090
16 02
C
SHELL ALVANIA #2
K
SEE FIG. 15
F
OIL LEVEL PLUG
D
CYLE830 140
19 3/4 QTS
ISTER BLOCK
E FIG. 14
B
D
DRAIN
GHT GAUGE
G
A
DRAIN
SUNEP1010
55 GALLONS.
LUBRICATION POINTS

FIG Nº 13

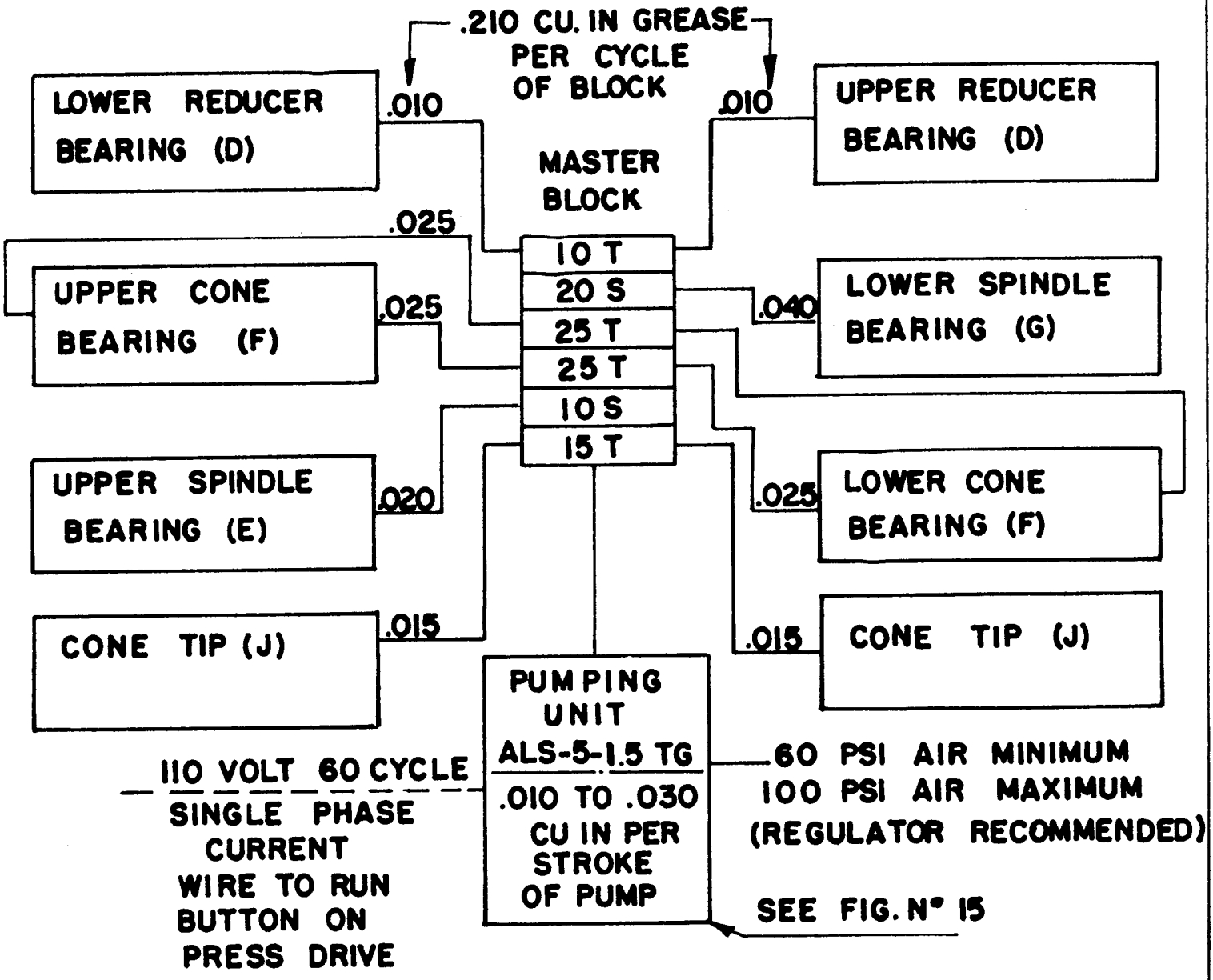
J. Central Grease System - Refer to Figures 14 and 15.

This central grease system supplies grease to points D, E, F, G and J. The reservoir (Figure 15) holds 1.5 pounds of grease, and should be kept full. use a good grade E.P. grease suitable for high pressure systems, with viscosity of mineral oil content 58 SSU at 210°F. Refer to Oil Plate No. 53.

The grease pump is air operated and should be connected to mill air supply as shown in Figure 15. The pump is controlled by a solenoid valve wired to a timer, which is set at factory with correct number of pins to cycle the system every 4 hours. The timer should be wired to the run button for the press drive. A minimum "ON" period of 37.5 seconds with up to 48 actuations per hour can be obtained, and the circuit can be deactivated up to 8 hours by inserting pins in the "SKIP" wheel.

The central grease system is designed as follows:

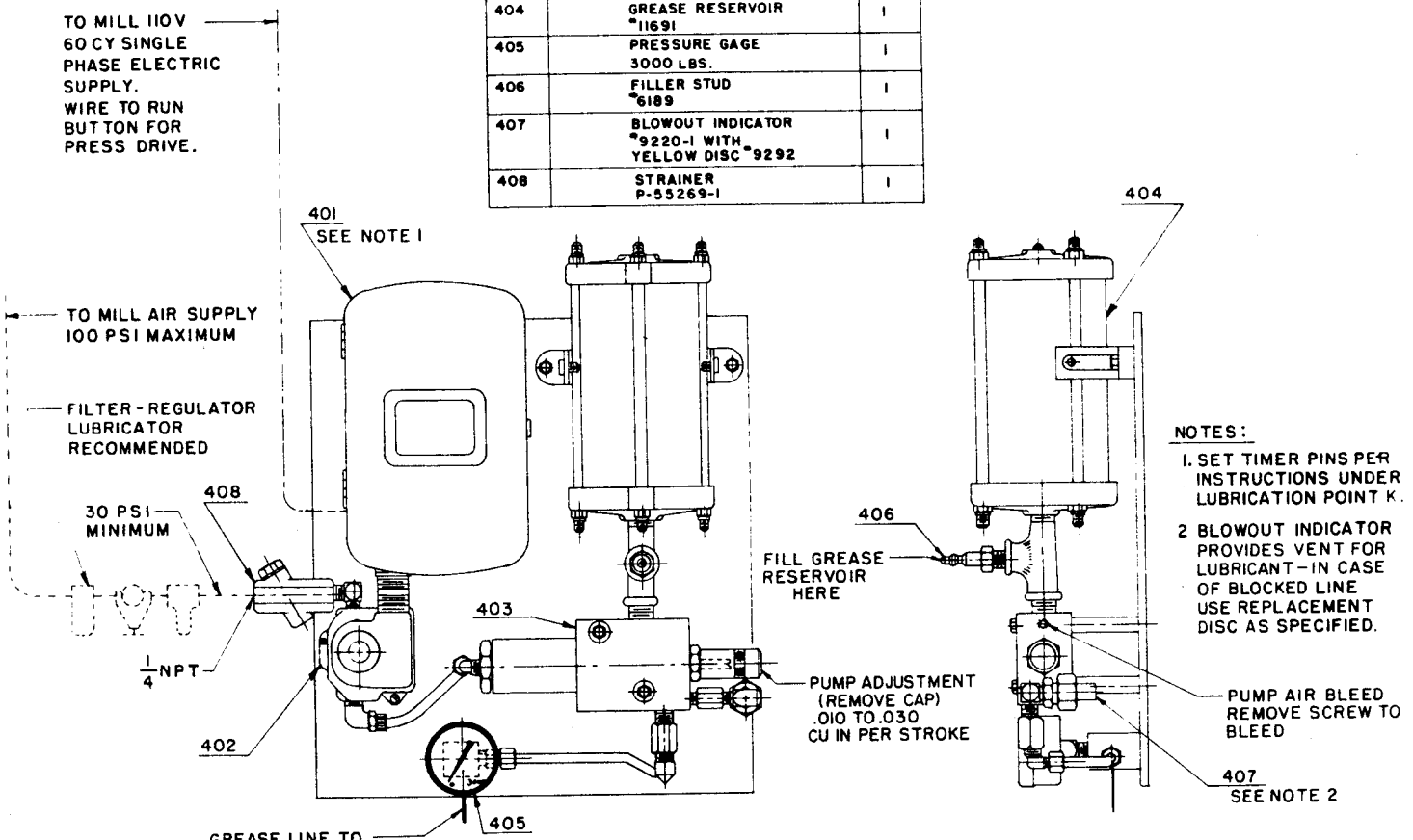
The bearing area as calculated is 630 square inch. The feeder blocks are selected to feed the required amount of grease to give .001" thick film and three cycles are required to lubricate all bearings every four hours, or a total of .630 cubic inch. This would eual .157 cubic inch per hour and with the pump set at .030 cubic inch per stroke 5 strokes per hour would be required. Five set of pins would be installed in the timer to meet the above conditions.



CENTRAL GREASE SYSTEM

FIG. N° 14

ITEM	DESCRIPTION	NO USED
	PARTS LIST	
401	TIMER #80 1 HR.	1
402	SOLENOID VALVE 115V. 60CY.	
403	PUMP ALS-5	1
404	GREASE RESERVOIR #11691	1
405	PRESSURE GAGE 3000 LBS.	1
406	FILLER STUD #6189	1
407	BLOWOUT INDICATOR #9220-1 WITH YELLOW DISC #9292	1
408	STRAINER P-55269-1	1



GREASE PUMPING UNIT
ALS-5-1.5 TG

Figure 15

SHELL ALVANIA #2

BELOIT-JONES PRESSMASTER P-200 SERIES
MAINTENANCE

old mb. new TK-460

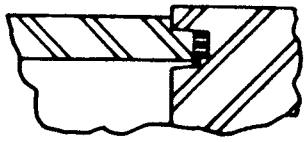
OIL COMPANIES	OIL PLATE 52	OIL PLATE 53	OIL PLATE 59	OIL PLATE 60
Humble Oil & Refining Company	Cylesso T-140	Nebula EP1	Pen-O-Led	Teresso 43
Gulf Oil	Gulf Senate 155	Gulf Crown Grease #2	Gulf EP Lubricant 95	Gulf Harmony 47
Shell Oil	Valvata Oil J78	Alvania Grease #2	Macoma Oil 72	Tonna Oil F
Keystone Lubricating	K-60	88XLT	WG-1X	Key Lubric 10
Sinclair Refining	Duro Cyl.	Litholine Ind. #2	Pennant EP #3	Truslide 150
Socony Vacuum	Mobile 600W Cyl. Oil	Mobilplex EP #2	Mobil Compound DD	Almo Oil #1
Standard of Calif.	Gear Compound 150	Ind. Grease Med.	Gear Compound 100	Vistac Oil 9-X
Standard of Ind.	Worm Gear Oil	Amolith Grease #1 or #2	Amogear Compound #4	American Way Oil #15-H
Standard of Ohio	Sohicyl 650	Sohitran 1 or 2	Fractolube 3	AR10 43
Sun Oil	Occident Cyl. Oil	Prestige 42	Sunep 90	Solnus 200 Sunvis 921
Texas Oil	Meropa #6	Multifak #2	Meropa Lube #3	Texaco Regal AR & O
Tidewater Oil	Acobryte 91	Alitho 20	Apreslube 82	Aturbrio 50

BELOIT-JONES PRESSMASTER P-200 SERIES
AIR CYLINDER - SPARE PARTS LIST
(MILLER FLUID POWER)

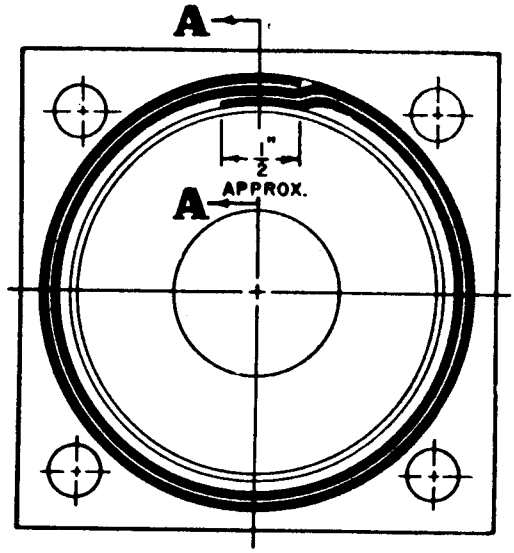
ITEM	PART NAME
9	Ring, Cup Retaining
10	Piston
11	Seal, Piston Cup
12	Follower, Threaded
13	Follower, Plain
14	Head
15	Cap
16	Tubing
23	Seal, Base-Lok Rod
27	Retainer
31	Seal, Precision Rod
32	Bushing, Base-Lok Rod
33	Nut, Cap Cushion
34	Nut, Tie Rod
35	Plunger, Cushion
35A	Plunger, Cushion
37	Rod, Piston
37F	Rod, Female Piston
37M	Rod, Male Piston
38	Rod, Tie
40	Plug, Ball Check
41	Seal, Ball Check
42	Ball, Ball Check
43	Spring, Ball Check
44	Screw, Cushion Adj.
45	Nut, Cushion Adj.
46	Seal, Cushion Adj.
47	Ring, Rod Pressure
47A	Bushing, Inner
47B	Ring, Piston Pressure
49	Seal, Tubing End - "Shef-Seal"
52	Seal, Follower
54	Wiper
55	Retainer, Piston Pressure Ring
59	Ring, Piston
60	Spring, Rod Wave
60A	Spring, Piston Wave
73	Pin
131	Screw, Cup Retaining Ring
131A	Screw, Retainer
131B	Screw, Socket Head Cap
52A	"O" Ring, Retainer
52B	"O" Ring, Precision Bushing
52C	"O" Ring, Metallic Rod Seal
52D	"O" Ring, Precision Piston
55A	Washer Wiper
60B	Spring, Wiper Wave
11A	Seal Precision Cup
27A	Retainer, Drainback
32A	Bushing, Piston Rod Double Wiper
47C	Ring, Wiper Pressure
50	Seal, Bushing
8	Circular Bushing Retainer
28	Flange Plate
52E	"O" Ring Flange Fitted Port
55B	Spirolo Ring
88	Flange Fitted Port "O" Ring Insert
122	Tru-Seal Fitting
126	Adjusting Screw (Adjustable Stroke Cyl.)
126A	Lock Block

Field Installation of Latest Design MILLER "SHEF SEAL" Tubing End Seal

SHEF SEAL is a rectangular strip of Teflon sealing material supplied already cut to the proper lengths for the various bore sizes as shown in table below—or supplied in long lengths on convenient spools from which the Teflon strip is easily cut with knife or scissors to the required lengths (shown in table). Squareness of cut is not critical and length of cut need only approximate the lengths shown in table below. Installation of the Teflon strip is as follows:



SECTION A-A
SHOWING "SHEF SEAL"
TUBING END SEAL



Step #1. Apply grease to the tubing groove of cylinder head or cap.

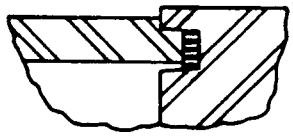
Step #2. Coil the Teflon strip on its narrow edge into the greased tubing groove. The strip should make two complete revolutions plus about ½" overlap.

For convenience of demonstration, the sketch at right exaggerates the space between the Shef Seal coils which actually hug each other closely when fitted into tubing groove.

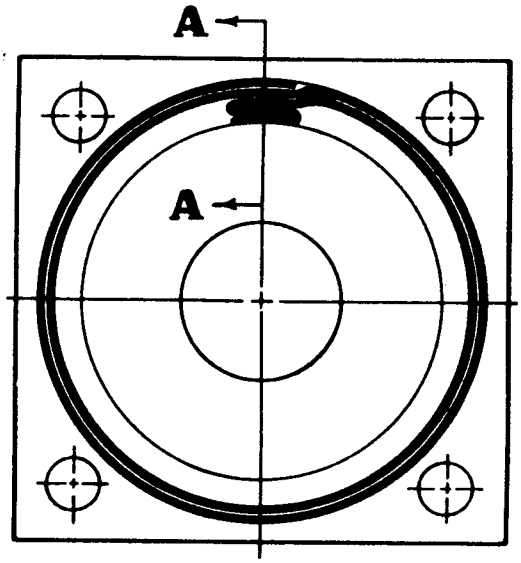
SUGGESTED "SHEF-SEAL" LENGTHS IN INCHES												
Bore	1-1/2	2	2-1/2	3-1/4	4	5	6	7	8	10	12	14
Model "A" or "J"	10-1/4	13-3/8	16-1/2	21-1/4	26	32-1/8	38-1/2	-	51	63-5/8	77	89½
Model "H"	10-3/4	14	18	22-3/4	28	34-1/2	40-3/4	47¼	53½	67	79½	93

Field Installation of Previous Design MILLER "SHEF SEAL" Tubing End Seal

Some earlier Tubing End Seals utilized .070" square "SHEF SEAL" with the ends butted together. The new rectangular strip replaces and is completely interchangeable with this previous design. Also, some earlier designs had seal cavities wider than the groove now being used. SHEF SEAL is used in the wide groove cavities by spiraling in "SHEF SEAL", starting from the O. D. of the tubing groove, then making two complete revolutions and zig-zagging in accordance with the sketch at right. The sketch is exaggerated to more clearly illustrate how "SHEF SEAL" is installed. Also, if desired, Miller can furnish a metal ring, at extra charge, which reduces this wide cavity to the narrower dimensions of the new cavity of the latest design.



SECTION A-A
SHOWING "SHEF SEAL"
TUBING END SEAL



(The space between the coils does not actually exist as "SHEF SEAL" is coiled snugly against itself.)

If the "SHEF SEAL" material becomes twisted or deformed, we ordinarily recommend replacement with new "SHEF SEAL" sealing material when the cylinder is reassembled. However, if a cylinder is disassembled and there is no new "SHEF SEAL" material available and the "SHEF SEAL" which came out of the cylinder on disassembly is twisted or distorted, it can be made more satisfactory for use by simply submerging in boiling water for 5 to 10 minutes, remove from the water and stretch the material by hand, exercising care in not pulling too hard. Distorted "SHEF SEAL" has been successfully reused after reforming in the above described manner.

"SHEF SEAL" on original equipment is sometimes furnished in a continuous ring of .070" square material. For field service, it, too, would be replaced with the rectangular strip.

Advantages of Spooled Teflon Strip SHEF SEAL

By using Teflon strip "Shef Seal" from a spool, you avoid the stocking of the many different lengths required for the different bore sizes. You just cut the length you need from the spool. And only one cross section dimension of the spooled Teflon strip Shef Seal fits all bores of Miller Model "H" and Model "J" Hydraulic Cylinders and all Miller Model "A" Air Cylinders of Shef Seal design. Thus, the great expense and confusion of stocking an extensive range of seal sizes are completely eliminated. And the field installation from the spooled strip provides the quickest, easiest and most effective servicing of tubing end seals.

Miller

MILLER FLUID POWER
DIVISION OF FLICK-REEDY CORPORATION
7N015 York Road • Bensenville

BULLETIN 6714-A
2-15-68

Trabon LUBRICATING SYSTEMS division of HOUDAILLE INDUSTRIES INC CLEVELAND, OHIO 44139

SINGLE ACTING PNEUMATIC PUMPS ALS®-5B and ALS®-25C

For Automatic Lubrication Of Machinery

ALS MODEL B/C SINGLE-ACTING AIR-LUBE PUMPS, powered by air pressure, are designed for use with Trabon® MJ,™ M,™ and MX™ Centralized Oil or Grease Systems. ALS Pumps will develop lubricating pressure approximately 25 times the air pressure available, if required.

ALS Pumps Model B/C have a fool-proof air purging arrangement. Lubricant flows through the pump in an "S" curve path providing automatic lube prime and air purging. With the pumping chamber at the low point of the "S" curve, it is virtually impossible to trap air in this area. The Main Outlet Check Valve is located immediately above the pumping chamber so that air rises naturally through and above the Check Valve. Test Screw for pump operation is located at the high point of the "S" curve. Pumps are also equipped with an auxiliary check valve at outlet, providing a "double" check valve feature.

ALS Pumps have only one air connection - the piston being returned to the lube-priming position by a spring when piston air is exhausted to atmosphere. A few seconds of exhaust must be allowed to insure a full lubricant prime for the next power stroke.

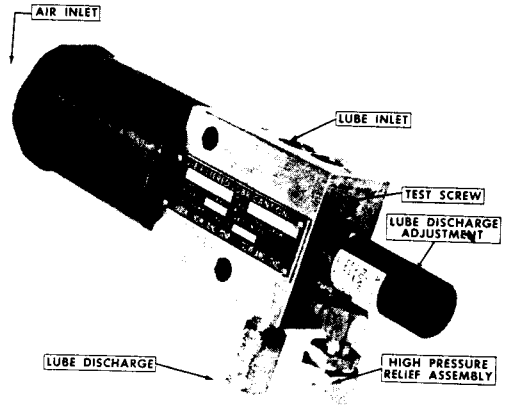
ALS Pumps may be operated by connecting the air supply line with an air cylinder or other intermittently actuated air equipment. Usually, a small 3-way air solenoid valve, controlled by a timer or limit switch, is used to provide air actuation. (Ask for bulletins on WMC,™ WSC,™ and WSC Solid State Control Panels for operation of ALS pumps with these panels.)

Seals are normally furnished for pumping petroleum base oil and grease. Be sure to specify type and make of fluid or grease if it is desired to pump a synthetic base material.

Hardened and centerless-ground steel lube pistons are individually hone-fitted to the pump cylinder and are not interchangeable.

All ALS Series Pumps have an adjustable lube stroke. The slotted adjustment screw is protected by a screw cap at the lubricant end of the pump. (See table on back page.) To decrease pump volume the screw is turned in. Decal on screw cap shows approximate lube discharge. Place open end of screw cap to top of jam nut and line up end of screw with decal.

Each pump is equipped with a High Pressure Relief Assembly. Its replaceable rupture disc protects the pump and automatically provides a visible central signal of blockage (high pressure) in the system should it occur. ALS-5B and -25C Pumps, are equipped with a #9292 (1450 psi) rupture disc. If higher or lower disc rupture pressure is required, see Bulletin 6212 for part number. If desired, a #14215-1, 3000-lb. Pressure Gauge (sold separately) can be teed into the main outlet. Also available is a high pressure blow-out switch (Suffix "-2S") which can be used to actuate a fault light or horn. (See next page.)



ALS Series Pumps require separate or attachable reservoirs. The separate cylinder type reservoirs are available in 3, 5, 12, and 20-lb. (or pint) sizes. Grease reservoirs have a spring-loaded follower and are available with either metal or plastic reservoir cylinder. Oil reservoirs of clear plastic have a top fill snap lid and cone filter screen. 1-gallon tank type reservoirs for oil, part #11725, are also available.

These pumps may be ordered with attached 5, 12 or 20-lb. (or pint) cylindrical grease or oil reservoirs. A wall-mounted adapter combines pump and reservoir into one unit. See Cylindrical Reservoir Sheet dated June 18, 1964.

Also available are "package units" assembled on husky mounting plates for use with various combinations of reservoirs (oil or grease), solenoid valve, high pressure switch or blow-out relief valve, timers, air filter, pressure gauge, low level switch, air speed control valve, and wired or unwired. See Air-Lube Pump and Reservoir Package Sheet dated September 18, 1964.

INSTALLATION AND OPERATING INSTRUCTIONS

Mount all pumps with the lube inlet on top.

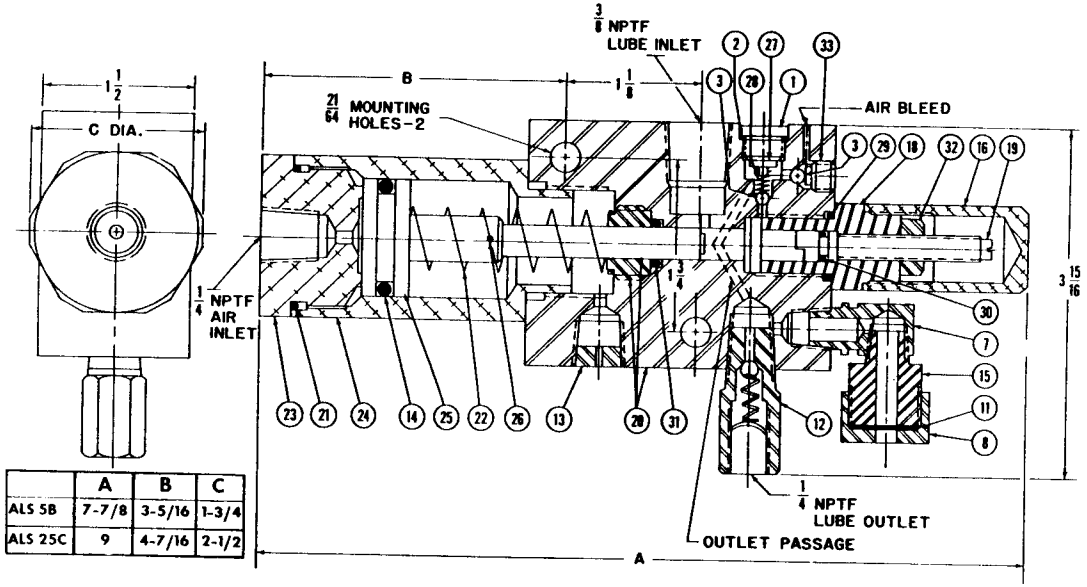
To prevent internal misalignment, use the #11827-1 spacers (5/8" lg. by 9/16" OD) when mounting pump.

Be sure air is purged from reservoir-to-pump line. On start-up or after repairs, bleeding air from pump can be speeded up by loosening the test screw (Item 33) when the piston (Item 20) is in the prime position. Power the pump (click sound) and tighten test screw before exhaust. Repeat until all air has been purged from pump. Be sure to retighten test screw after air has been purged from pump. The Lube Piston "O" Ring (Item 14) must provide a good seal. Any by-pass will cut down efficiency. Loss of vacuum will prevent proper priming action.

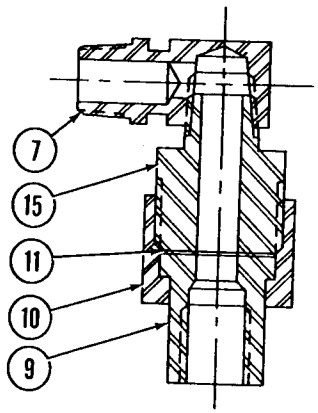
Recommended air pressure is 60 psi minimum to 150 psi maximum (do not use a regulator unless normal air pressure is over 150 psi). Very little air volume is required to stroke the pump, therefore, to prevent a high pressure surge on the lubricant pumping stroke it is wise to use a #11804 Air Control Valve or a short piece of 1/8" OD tubing to restrict air velocity on the power stroke.

Oil reservoirs must be mounted ABOVE the pump inlet (spring loaded grease reservoirs may be mounted slightly below the pump, but only if necessary). Grease reservoir-to-pump lines should be 1/2" OD or 5/8" OD tubing, two feet or less in length, with few bends. 3/8" OD tubing is satisfactory for oil reservoir-to-pump connections.

DRAWING AND DIMENSIONS OF ALS-5B & ALS-25C



	A	B	C
ALS 5B	7-7/8	3-5/16	1-3/4
ALS 25C	9	4-7/16	2-1/2



BLOW-OUT ASSY.
DASH 2 ACCESSORIES

ALS-PUMPS WITH OPTIONAL EQUIPMENT	
PART NUMBER	DESCRIPTION
ALS-5B ALS-25C	PUMP WITH STANDARD BLOW-OUT
ALS-5B-2 ALS-25C-2	PUMP WITH BLOW-OUT 9223 SPUD AND 9224 NUT
ALS-5B-2S ALS-25C-2S	PUMP WITH BLOW-OUT, 9223 SPUD AND 9224 NUT, # 11573 INDICATOR SWITCH ASSEMBLY
11573	BLOW-OUT INDICATOR SWITCH ASSEMBLY

PUMP DESCRIPTION	RATIO OF LUBE TO AIR PRESSURE	ADJUSTABLE CU. IN. PER STROKE	OVERALL DIMENSIONS		
			LENGTH	HEIGHT	DEPTH
ALS–5B	25 to 1	.010 to .030	7–7/8"	3–15/16"	1–3/4"
ALS–25C	25 to 1	.040 to .120	9"	4–7/16"	2–1/2"

BILL OF MATERIAL

ITEM	REQ.	DESCRIPTION	PART - NUMBERS ALS-5B	ALS-25C
1	1	Enclosure Screw	117	117
2	1	Gasket	132	132
3	2	Steel Ball 3/16 Diameter	772	772
* 4	1	Name Plate	4418	4418
* 5	1	Adjusting Screw Decal	4432	4433
* 6	4	Drive Screw	X-26	X-26
7	1	Street Elbow 90° 1/8 Pipe	9110	9110
8	1	Blow-Out Nut	9209	9209
9	1	Union Spud	9223	9223
10	1	Union Nut	9224	9224
11	1	Blow-Out Disc	9292	9292
12	1	Check Valve Assembly	9360-35	9360-35
13	1	Vent Plug 1/4 NPTF	11616	11616
14	1	O-Ring	11720	11609
15	1	Adaptor	11812	11812
16	1	Adjusting Screw Cap	11818	11818
*17	2	Mounting Spacer	11827-1	11827-1
18	1	Adjusting Screw Body	11828	11817
19	1	Adjusting Screw	11829	11829
**20	1	Piston and Body Assembly	11835-2	11836-2
21	1	O-Ring	11841	11843
22	1	Return Spring	11851-1	11848-3
23	1	Enclosure Plug	11852	11844
24	1	Air Cylinder	11853-1	11845-2
25	1	Air Piston	11855-1	11847-2
26	1	Groove Pin 1/16 Dia. x 1/2 Lg.	11884-1	11884-1
27	1	Spring Keeper	11892	11892
28	1	Check Valve Spring	11893	11873
29	1	O-Ring	25613	25613
30	1	O-Ring	29759	30268
31	1	O-Ring	40259	11061
32	1	Jam Nut	1/4-28NF	5/16-18NC
33	1	Half Dog Pt. Set Screw	5/16-18NC	5/16-18NC

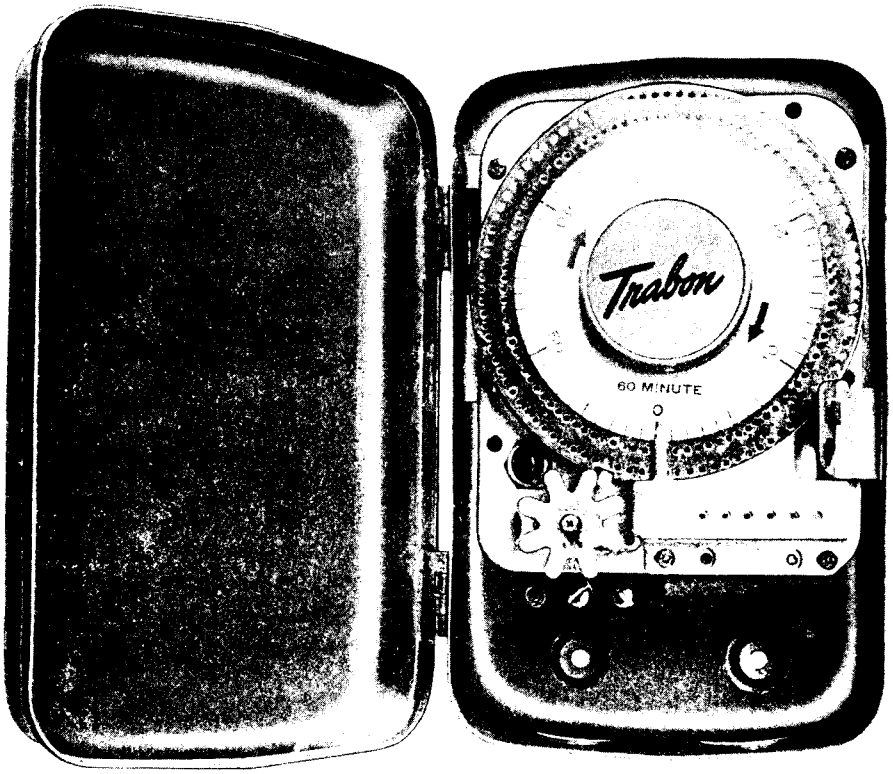
*ITEM NOT SHOWN **SOLD ONLY IN ASSEMBLY

PRINTED IN U.S.A.

Trabon Product Specs & Ordering

Trabon® Timer TD 14501

Programs and Controls Performance of Lubricating Systems



SPECIFICATIONS

POWER INPUT: 115 Volt/60 Hz., Single Phase, 3.7 Watts.

SWITCH – SPDT: 20 Amperes at 125, 250, or 480 V.A.C./60 Hz. 1 HP. 125 V.A.C., 2 HP. 250 V.A.C.

TEMPERATURE RANGE: -40°F to + 140°F.

TERMINALS: Screw terminals, conveniently located.

PROGRAMMING: Trip pin.

SKIP FEATURE: 1 Hour Timer- 8 Point Skip Wheel. 24 Hour Timer - 14 Point Skip Wheel.

ENCLOSURE: Standard - Hammertone gray cabinet with lockable hasp. Option - JIC enclosure.

SHIPPING WEIGHT: 5 lbs. with enclosure; 3 lbs. without enclosure.

DESCRIPTION

The Trabon pin-type timer represents a reliable and inexpensive means of programming and controlling the performance of the Trabon centralized lubricating systems. The timer determines frequency and duration of the operating period of automatic motor-driven or solenoid actuated pumps which supply the lubricating systems.

Two time ranges are available: a one hour timer which completes one revolution on its dial in one hour and a 24 hour timer which completes one revolution on its dial in 24 hours. The dial rotates clockwise.

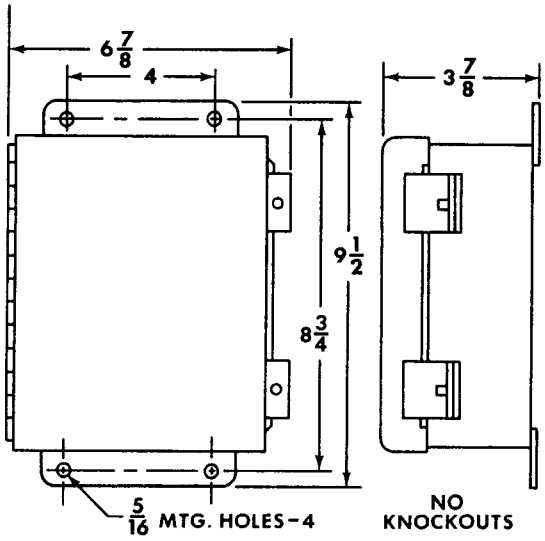
Programming is accomplished by inserting pins in two rows of tapped holes on the dial. Pins placed in the inner row of the dial will energize the load; pins inserted in the outer row of the dial will deenergize the load.

The distance between the inner pin and the following outer pin determines how long the timer switch will stay closed. Each hole on the one hour timer dial represents 37-1/2 seconds (ON or OFF); each hole on the 24 hour timer dial represents 15 minutes (ON or OFF). From 1 to 48 pairs of pins may be inserted in each dial providing for up to 48 ON-OFF periods per hour or day.

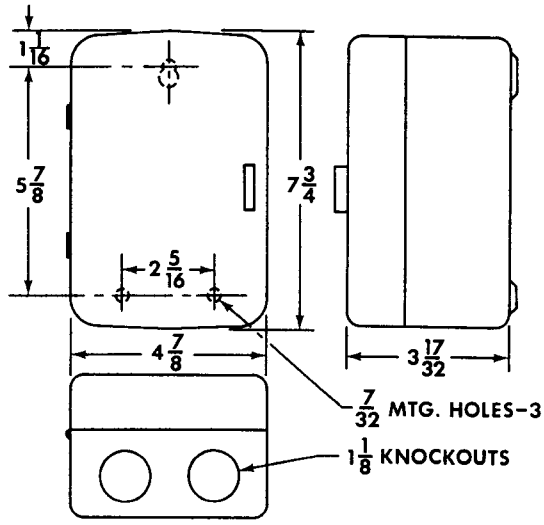
Special feature of the timer is the skip wheel, which allows the operator to skip unwanted periods of operation. Mounted at the edge of the timer dial, the wheel can be set to skip up to 7 hours on the one hour timer (8 point skip feature) and up to 13 days on the 24 hour timer (14 point skip feature).

A push button allows the operator to activate the program timer circuit manually.

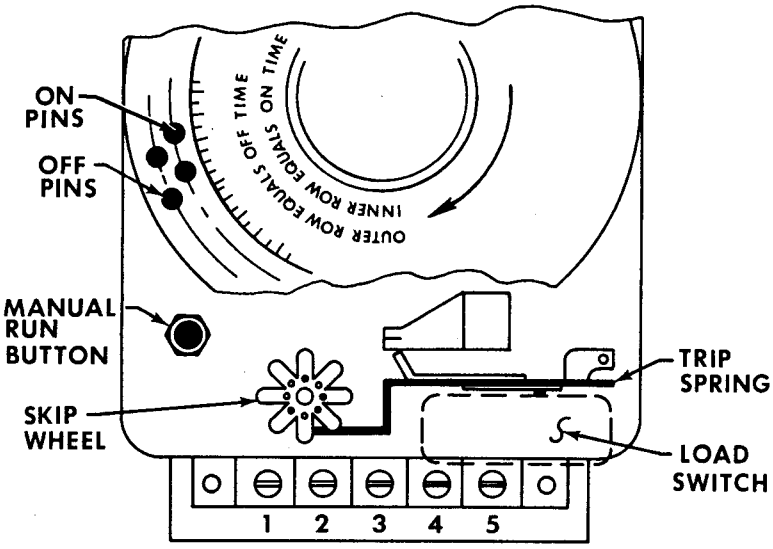
14501



TIMER DIMENSIONS – JIC ENCLOSURE



TIMER DIMENSIONS – STANDARD ENCLOSURE



TIMER DIAL DIAGRAM

ORDERING INFORMATION

TD – X X X X

TD – Timer Designation

Time Range:

1 – 1 Hour
2 – 24 Hour

Frequency:

1 – 60 Cycle
2 – 50 Cycle
3 – 25 Cycle

Voltage:

1 – 115 V.A.C.
2 – 220 V.A.C.
3 – 440 V.A.C.
4 – 24-28 Volts DC

Enclosure:

1 – With Enclosure
2 – Without Enclosure
3 – JIC Enclosure

TRABON CENTRALIZED LUBRICATING SYSTEMS, Div. of Houdaille Industries, Inc., 28815 Aurora Rd., Cleveland, Ohio 44139

Distributed by

Trabon LUBRICATING SYSTEMS division of HOUDAILLE INDUSTRIES INC CLEVELAND, OHIO 44139

BULLETIN 6306-A
2-20-68

HOW TO REMOVE AIR FROM A TRABON® SYSTEM

Procedure for Priming and Purging

After your Trabon Centralized Lubricating System has been installed completely, or in case that air has entered the system, it is necessary to prefill all the lines of the system before it can start operation. The distributor assembly serving the bearings is called "secondary distributor", and the assembly feeding lubricant into the secondaries is called "master distributor." To undertake the filling procedure correctly, follow these steps:

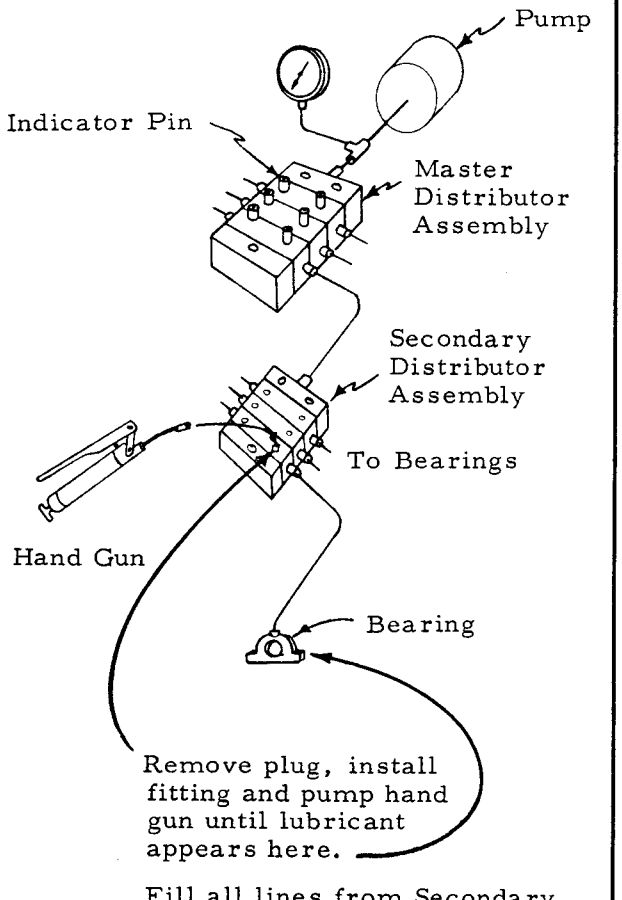


FIGURE 1

FIGURE 1

Fill the lube lines leading from the secondary distributor to the bearings first. To do this, go to the secondary distributor and remove the plug adjacent to each tube line. Connect the grease fitting to the alternate outlet and pump oil or grease with a hand gun until lubricant has reached the bearing. Disconnect the lube line coming from the secondary distributor at the bearing inlet if necessary to make sure that the lubricant has reached the end of the lube line.

Follow this procedure with each secondary distributor section until all the lines leading to the bearings are filled with lubricant and are completely free of air. Do not reinstall plugs at this time.

(Over)

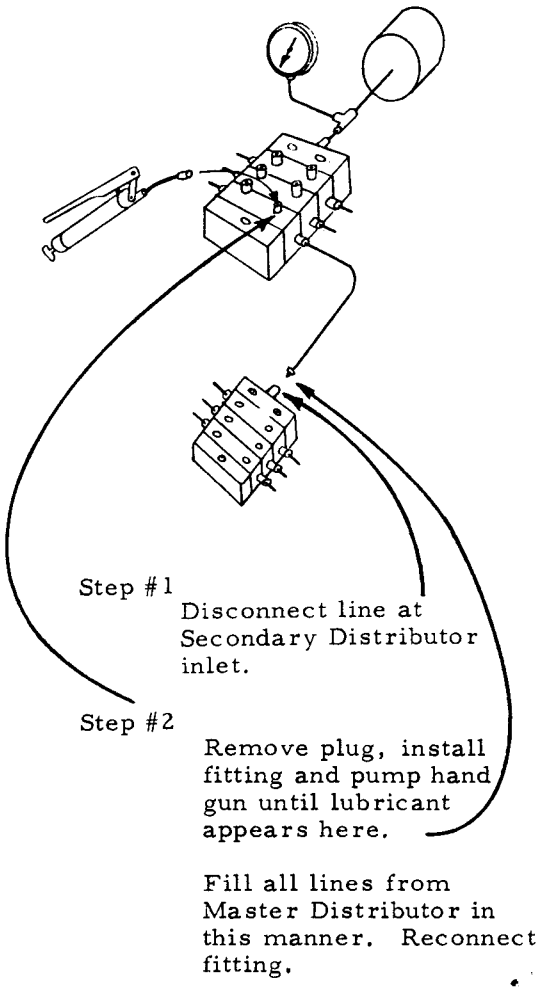


FIGURE 2

FIGURE 2

Now, disconnect the line coming from the master distributor at the inlet of the secondary distributor. Go to the master section which discharges lubricant into this line and remove the plug adjacent to it. Insert the grease fitting and pump lubricant into the line until it is discharged at the open end. Then connect the line again to the secondary distributor and pump lubricant into the secondary until satisfactory flow appears from the alternate outlets with the missing plugs. Cycle until the distributor block is free of air and reinstall the plugs in the secondary assembly. Carefully insure that no air is left in the distributor before reinstalling the plugs. Repeat this procedure (Step 1 and 2) for each secondary distributor.

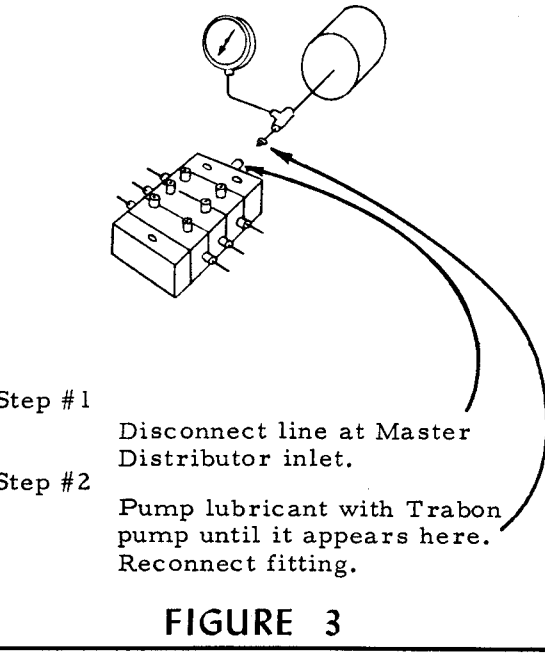


FIGURE 3

FIGURE 3

With all plugs having been removed from the master assembly, disconnect the line coming from the pump at the inlet of the master distributor. Fill this line with lubricant by cycling the pump until oil or grease is discharged from the open end of the tube line. Connect the line again to the master distributor and cycle the pump until lubricant appears from the alternate outlet ports. Reinstall the plugs and your system is ready for operation.

NOTE: It is necessary that all lines be filled completely to assure that lubricant is delivered immediately when the pump starts operation. Even if just a new line is installed in the field, be sure it is filled with lubricant before operating the machine. The same procedure as outlined in figures 1, 2, and 3 should be followed. Always be sure to use fil-

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Trabon® Product Maintenance

Locating Blockage in Series-Flo Systems

30101

June, 1971

DESCRIPTION

In a **Trabon Series-Flo System** , free flow of lubricant from the pump through the transmission system and the bearings is necessary. If any portion of this transmission system (a feeder, line fitting or any bearing) does not freely accept and pass its portion of the lubricant a blockage has occured. This blockage will cause a higher than normal pumping pressure to be developed by the pump. Depending on application or system design, this blockage with its resultant high pump pressure will usually cause a complete loss of lubricant flow into the total system and no bearing will be receiving lubricant.

The loss of flow due to a blockage is first indicated with the higher than normal system pressure that is developed by the pump as it attempts to overcome this blockage. This abnormally higher pressure that is a result of a blockage is limited, isolated, and signalled through the use of various performance indicators, seal-tite and relief, incorporated into the system design.

Feeder

A Series-Flo type feeder is a manifolded proportioning device consisting of an inlet and end section plus a minimum of three intermediate sections. The feeder is manifolded together with tie rods and nuts. A gasket is between each section. See Figure A, M Feeder Shown, details vary slightly with other styles. A master feeder is the first feeder downstream from the lube pump. A secondary feeder is any feeder receiving lubricant from the master feeder.

Intermediate Sections

Intermediate sections (three or more required per manifold) contain a piston specially fitted to that section, built in outlet check valves and various passageways that, working with the piston, meters and valves the flow of lubricant. See Figure B. Intermediate sections may be manufactured to require one (1) or two (2) lube outlets.

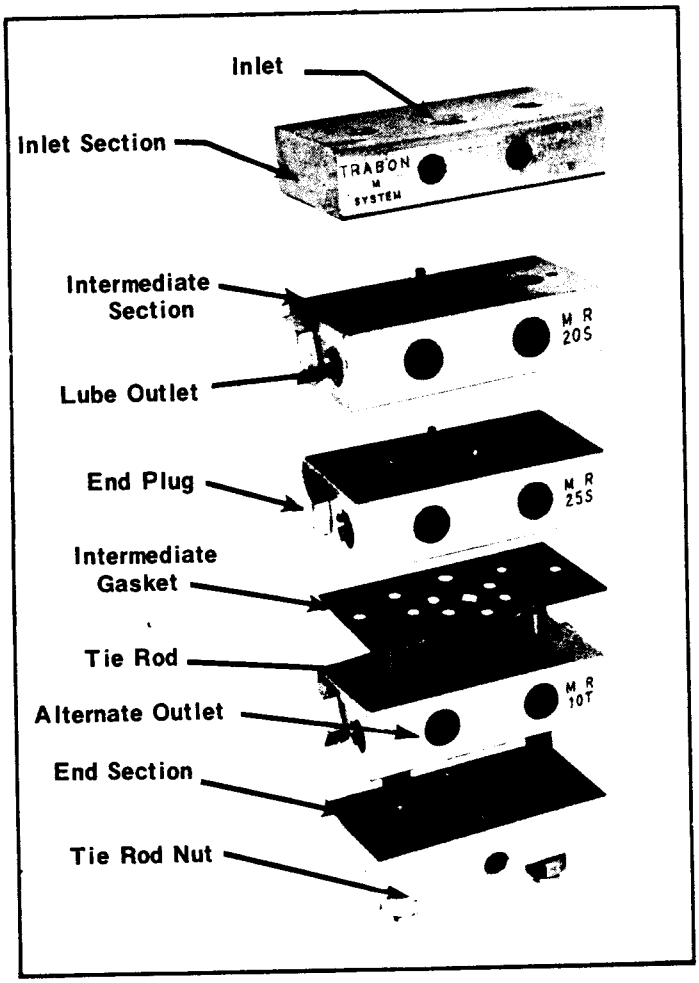


Figure A Components of the M Feeder

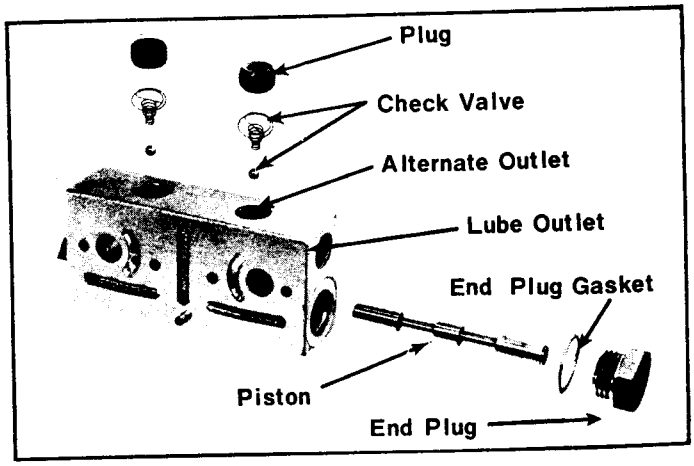


Figure B Intermediate Section

Stamping located on the face of each section will indicate (1) the style of feeder section (M, MX, etc.), (2) the discharge per piston stroke expressed in thousandths of cubic inches (35=.035 in3) and (3) the number of lube outlets required (S=single, one outlet only; T=twin, two lube outlets required). See Figure A.

WARNING

Never block a lube outlet that is designed to discharge lubricant.

Performance Indicators

A wide variety of performance indicators are used in the lubrication system to limit, isolate and signal abnormal pressure and locate the point of blockage. Trabon performance indicators are of two styles:

(1) Relief

(2) Seal-Tite

Style and pressure ratings are determined by original design requirements. Do not change style or pressure rating without approval of a qualified system designer.

Relief Performance Indicators
(Generally located at pump)

A. Disc Relief - Lubricant flow is exposed to an aluminum rupture disc. As pumping pressure increases disc will burst at a specified pressure exhausting lubricant flow to atmosphere.

B. Reset Relief - Lubricant flow is exposed to a spring-loaded piston. As pumping pressure increases to a specified pressure piston moves, compressing spring, and opens discharge port allowing lubricant to exhaust to stmosphere.

Seal-Tite Performance Indicators
(Generally located in alternate outlet ports of feeder)

A. Disc Seal-Tite - Lubricant is exposed to aluminum rupture disc. As pumping pressure increases the disc will burst at a specified pressure and lubricant will extend pin from body of indicator.

B. Reset Seal-Tite - Lubricant is exposed to a spring loaded piston. As pumping pressure increases to a specified pressure piston moves compressing the spring and extending pin from body of indicator.

Note: No lubricant will be exhausted using Seal-Tite performance indicators.

Reset of Performance Indicators

(1) Locate and correct cause of high pressure.

A. Spring Performance Indicators (Seal-Tite or Relief)

1. Reset is automatic when high pressure is removed.

B. Disc Performance Indicator (Seal-Tite or Relief)

1. Remove all pieces of ruptured disc.
2. Manually push pin into body as required.
3. Install new disc of the same pressure rating (color).
4. Tighten assembly sufficiently to stop any leakage.

Caution

Do not overtighten as disc will be damaged, and pressure rating can be lowered.

LOCATING BLOCKAGE

If a blockage exists in a Trabon Series-Flo system it is caused by one of the following reasons:

(1) Crushed transmission line in the system.

(2) Blocked Bearing in the system.

(3) Improperly drilled fitting in the system.

(4) Blocked feeder in the system.

All servicing and disassembling should be carried out under the cleanest conditions possible. A blockage in a Trabon Series-Flo system will be centrally signalled by a pressure gauge, pressure switch, controller or by the pump relief indicator, exhausting lubricant. Before proceeding as outlined, make a visual inspection of the system and check for crushed lines or improper feeder installation. Verify that each feeder outlet required to discharge lubricant can do so and that no pipe plugs have been installed in an outlet designed to serve a bearing or another feeder.

USE FILTERED LUBRICANT ONLY.

Note: Dirt and foreign material are the worst enemies of any lubricating system.

PROCEDURE

Step No. 1

Use a manual pump with a gauge as shown in Figure C. Fill pump with clean, filtered lubricant common to the system. Connect the manual pump into the inlet of the Master feeder and slowly operate pump. If system will not cycle freely below 1500 PSI, see Step 2.

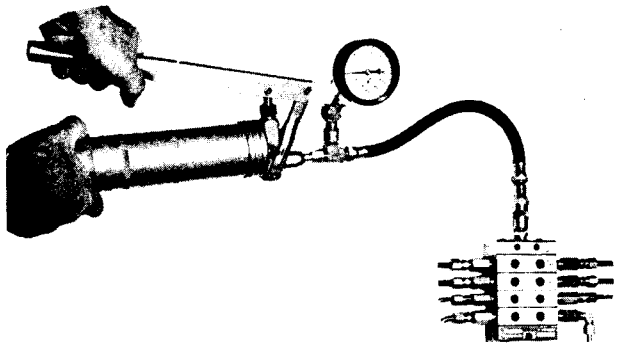


Figure C

Step No. 2

A. Master Feeder Equipped With Performance Indicator: With manual pump connected to the master feeder as outlined in Step 1, raise pressure to 2,000 PSI, the indicators in the alternate outlet ports will signal the location of the blockage. An indicator in the up position indicates pressure is in that outgoing line and signals the blockage is in the area being served from this outlet, as shown in Figure D. See Step 3.

   If no indicator pins are protruding, the blockage is in the master feeder.

B. Master Feeder Without Performance Indicators: With pressure on the master as outlined in Step 2A, remove one at a time each alternate outlet plug and attempt to operate manual pump after each plug is removed. Do not exceed 2000 PSI. If pressure drops and master cycles freely after an alternate outlet plug is removed than blockage is downstream in the area that is being served from that outlet. See Step 3.

   If all alternate outlet plugs are removed and master will not cycle, blockage is in this feeder.

   Note: When alternate outlet plug of a blocked area is removed a small shot of trapped lubricant will usually surge out of this outlet as the inlet pressure on the feeder drops.

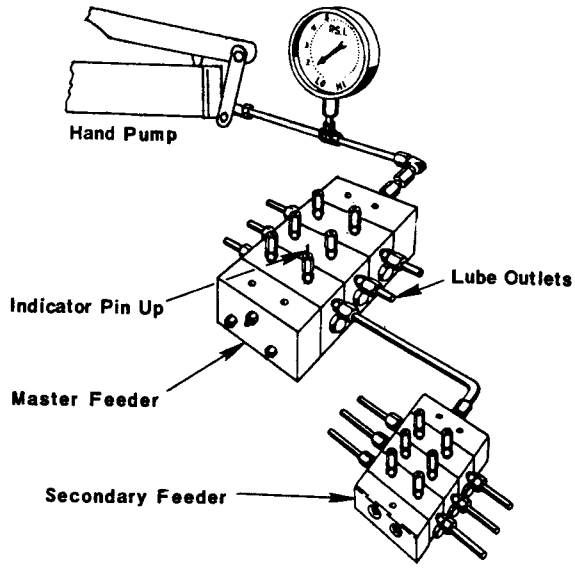


Figure D

If testing in Step 2 (A or B) indicates a blockage in master feeder, this feeder must be disassembled and cleaned. See Step 5 for instructions on correct procedure.

Step No. 3

Testing accomplished in Step 2 has indicated the blockage is downstream of the master feeder. Install the manual pump in the alternate outlet of the master feeder that is common to this blocked area. See Figure E. Proceed to downstream secondary feeder and remove all alternate outlet plugs. Slowly operate manual pump. If lubricant can be discharged freely through each of the alternate outlets of this feeder the blockage is not in the supply line or the feeder, see Step 4. If lubricant is not freely discharged through the open alternate outlets of the secondary feeder the blockage is in this feeder or its supply line. Disconnect supply line at secondary inlet fitting and slowly operate manual pump to verify location. If blockage is in feeder see Step No. 5.

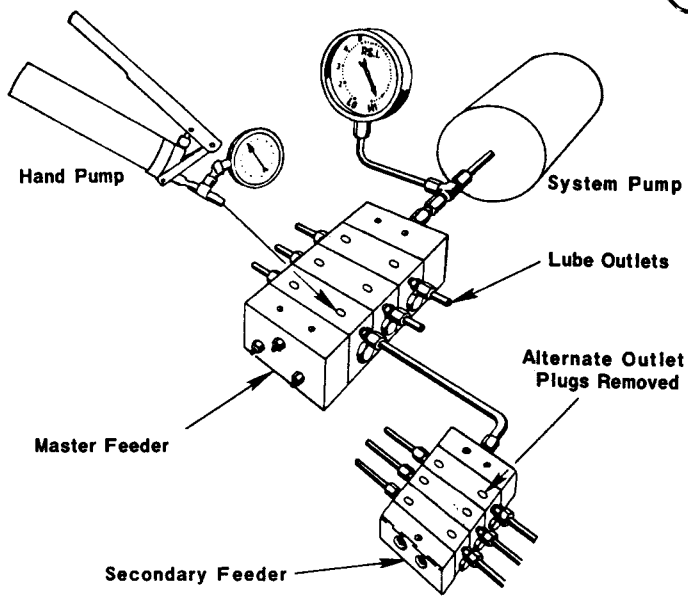


Figure E

Step No. 4

Install manual pump into each alternate outlet of secondary feeder in turn, and slowly operate pump. See Figure F. If high pressure exists blockage has been located. Look for **crushed line, tight bearing, improperly drilled fittings and/or lube inlet port.** Correct as necessary.

Step No. 5

When testing indicates a blockage has occurred in any feeder, that feeder must be disassembled and cleaned.

> **Note:** Dirt and foreign material are the worst enemies of any lubricating equipment. All servicing and disassembling should be carried out under the cleanest possible conditions.

Before disassembling any feeder make a sketch and note as to the arrangement of the intermediate sections. For example: INLET 10T-20S-10T-30S END. See Figure G. Also remove end plugs only and try to move each piston back and forth without removing the piston from the intermediate section.

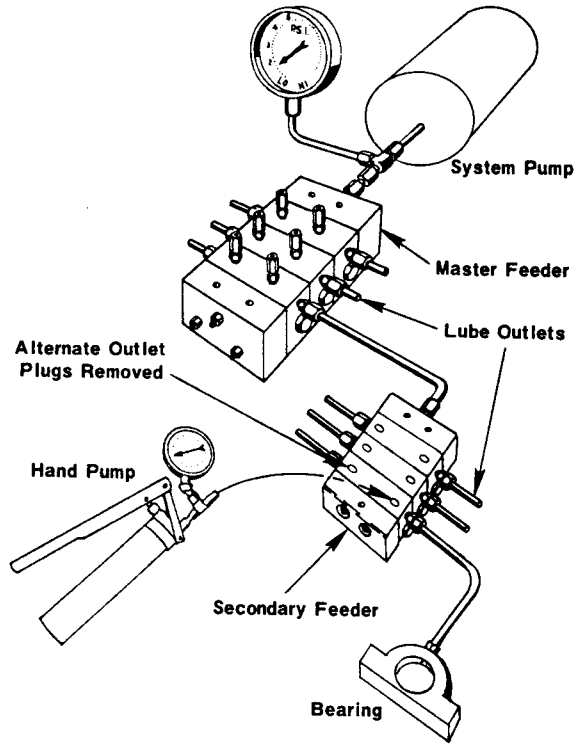


Figure F

Caution

> DO NOT insert hard metal objects into piston bore (i.e., punches, screwdrivers, etc.) use a brass rod and hand pressure only.

If all pistons are movable and there is no indication of a more serious problem replace end plugs and using a new gasket apply the correct torque, see Torque Table. Retest this feeder using the manual pump. If a piston is jammed, or a hard wax-like substance, or dirt is noted at the end of the piston chamber, proceed with the disassembly. The feeder can be dismantled by removing the tie rod nuts. With the individual sections on the bench remove the end plug from both ends of the section. Taking one section at a time remove the piston, if it appears to be jammed, try removing it from the other direction. With badly jammed pistons it may be necessary to use a brass rod and lightly tap piston out.

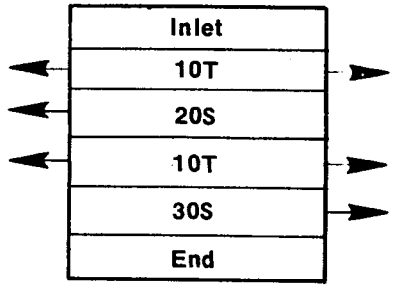


Figure G

Clean sections and pistons in a suitable **clean** solvent until all lubricant has been removed. Use compressed air to dry and blow out all ports throughly. A small wire probe should be used to make sure all passages are clean and open. Inspect the cylinder bore and piston carefully for scratches, score marks or other damage.

Note: If either piston or cylinder bore is damaged a **new** section must be installed. All pistons are selectively fitted to the bore for proper clearance. Care must be taken to install piston only into the intermediate section from which it was removed.

If feeder section and piston both appear in good condition, reassemble section making certain that piston slides smoothly but snugly in cylinder bore. Repeat cleaning and inspection of each section. After all sections have been cleaned, blown out, inspected and found to be in good condition, reassemble feeder as indicated by the notes and sketches.

CAUTION

Use all new gaskets, and correct torque ratings listing below. Test operation of feeder using manual pump.

Torque Information in Foot Pounds

	MJ	M	MV	MVH	MX	MG
Tie Rod Nuts	12	20	20	24	30	12
Alternate Outlets	15	15	15	15	24	24
End Plug	15	15	15	15	45	15

CONTAMINATION BLOCKAGE

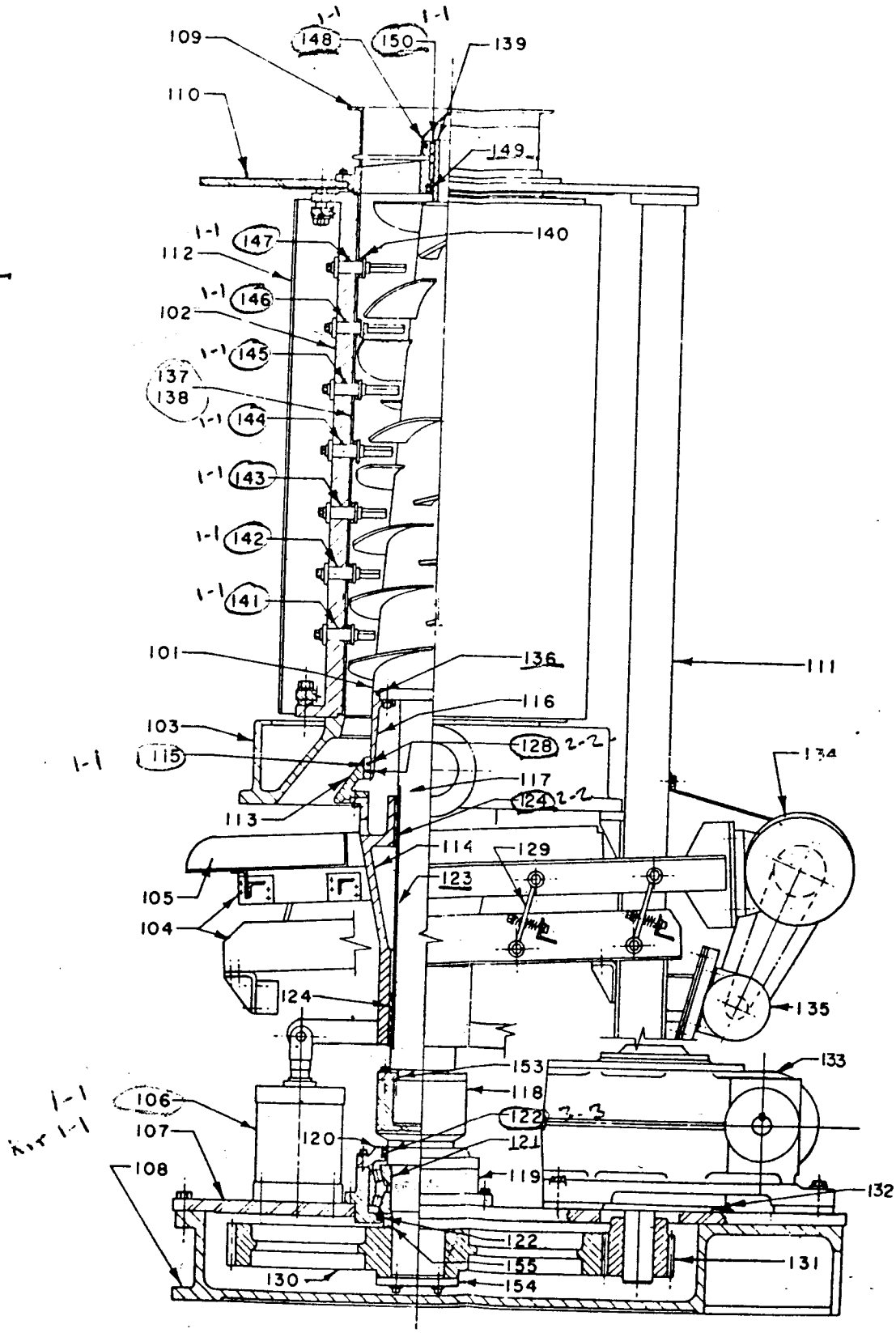
If dirt, foreign material or any other form of contamination is found in a feeder, cleaning that feeder will only temporarily solve contamination blockage problems. **The source of the contamination must be eliminated for satisfactory service.** The system filtering method must be investigated, filter elements should be inspected or changed as required. The reservoir must be inspected and cleaned if necessary. The reservoir filling method should be reviewed to eliminate any chance of foreign material entering the reservoir during filling. All lubricating systems require filtered lubricant.

SEPARATION BLOCKAGE

If a hard wax or soap like material is found in the intermediate section grease separation is occurring. This means that the oil is being squeezed from the grease at normal system operating pressure and the grease thickener is being deposited in the feeder. Cleaning the feeder will usually result in only temporarily solving this problem.

Consult your lubricant supplier for recommendations on alternate lubricants and your local Trabon Distributor to verify compatability with centralized lubricating systems.

Litho in U.S.A



GENERAL PRESS ASSEMBLY

FIG Nº 1

Stock No.	Part No.	Part Name	No. Used
7012	101.	Spindle	1
	102.	Screen Frame Assembly	1
	103.	Water Basin	1
	104.	Vibrating Discharge Assembly	1
6953	105.	Pulp Basin	1
6928	106.	Air Cylinders	✓ 2
	107.	Frame Bottom Plate	1
	108.	Base	1
	109.	Inlet Housing Assembly	1
	110.	Top Plate	1
	111.	Columns	3
	112.	Jackets	2
	113.	Cone	1
	114.	Cone Housing	1
7615	✓115.	Cone Insert Bushing 1-1	1
	✓116.	Spindle Extension	1
	117.	Lower Spindle	1
	118.	Spindle Drive Shaft	1
	119.	Thrust Bearing Housing	1
	120.	Bearing End Cover	1
	121.	Thrust Bearing (Mont.)	✓ 1
6986	122.	Seals 3-3	✓ 3
	123.	Lower Spindle Sleeve	✓ 1
6984	124.	Cone Bearings 2-2	✓ 2
6988	128.	Quad-Rings 2-2	✓ 2
	129.	Arm and Spring Ass'y	8
	130.	Spur Gear (Mont.)	1
	131.	Spur Pinion (Mont.)	1

Part No.	Part Name	No. Used	
	132.	Seal - Gasket	1	
	133.	Reducer	1	
	134.	Shaker	1	
	135.	Shaker Drive Motor	1	
	136.	O-Ring 1-1	✓ 1	6955
	137.	Backing Screen	2	6952
	138.	Liner Screen (Mont.)	2	6952.
	139.	Shaft Sleeve 1-1	✓ 1	5391
	140.	Resistor Seals 28-28	28	6981
	141.	1st Resistor 1-1	4	6975
	142.	2nd Resistor 1-1	4	6976
	143.	3rd Resistor 1-1	4	6977
	144.	4th Resistor 1-1	4	6978
	145.	5th Resistor 1-1	4	6979
	146.	6th Resistor 1-1	4	6980
	147.	7th Resistor 1-1	4	6981
	148. ✓	O-Ring 1-1	1	
	149	Seals ✓ 2-2	2	
	150.	Bearing Upper Spindle	✓ 1	6983
	153.	Split Retaining Rings	1	
	154.	Lock Disc	1	
	155.	Spacer	1	
		Inner Screen Seal	1	
		Sm LPO 9514.2-2		

Air Cylinder Seal Kit 1-1 stock

Sm. 6730 L.A.

Always Give Machine Serial Number When Ordering Parts

General Press Assembly
Major Press Parts
Figure 1