

211037

D. R. SPERRY & CO.

FILTRATION ENGINEERING
SINCE 1868

CUSTOMER: ABBOTT FERMENTATION PRODUCTS
CUST. NO.: P28C09117
SERIAL NO.: X58402A,B
PRESS NO.: E3001

43-0173
Lado Oeste

D. R. SPERRY & CO.
112 N. GRANT ST.
N. AURORA, IL 60542

630-892-4361

06-2936
Lado Este

E-PRESS ERECTION INSTRUCTIONS

D. R. SPERRY & COMPANY
112 NORTH GRANT STREET
NORTH AURORA, IL 60542
PHONE: 630 892-4361

E-PRESS ERECTION

Your Sperry filter press will be shipped assembled, whenever possible, unless specifically requested by you when ordered. Where assembly is required, please adhere to the following instructions:

1. Bolt the stationary head weldment to the floor using appropriate bolts or anchors. The stationary head is the one to which the piping is normally affixed. Tighten the foundation bolts to insure that the position of the weldment will be maintained.
2. Using the bolts supplied with the press, attach the sidebars to the stationary head end. Install only one sidebar at this time.
3. If necessary, install the cylinder, using the bolts provided, into the crosshead. The crosshead is the weldment with the other leg assembly.
4. Attach the sidebar, which was assembled to the stationary head in Step 2, to the appropriate side of the crosshead assembly. Attach the opposite sidebar to the crosshead and stationary head weldment.
5. Bolt the crosshead to the floor using appropriate bolts or anchors. **DO NOT TIGHTEN THESE BOLTS.** Snug them only so that framework has room to expand when in operation.
6. Install the sidebar covers. These are the stainless steel "U" shaped forms. Lower slide head unto sidebars to contact rollers.
7. If provided, install the rod boot over the cylinder rod. Attach the pullback plate to the cylinder rod by threading onto the rod end of the cylinder. Use the bolts provided to attach the pull back plate to the slide head.
8. Attach the hoses from the power unit to the rod and cap end of the cylinder. See the power unit section in this manual to determine which port to use.
9. Install the plates and head connections. The head connections normally thread into the head plate which is installed at the stationary head end. Where a center feed is used, please consult the head connection installation section of this manual.
10. Install the filter media. Where center feed or leakproof plates are provided, an additional manual section is provided to aid in installation

UNLOADING AND POSITIONING OF PRESS IS ACCOMPLISHED BY,
ATTACHING LIFTING BOLTS TO THE CROSSHEAD AND STATIONARY HEAD
ENDS OF THE PRESS. PRESS WILL THEN BE READY TO MOVE.

LIFTING BOLTS TO BE SUPPLIED BY PURCHASER OR MAY BE PURCHASED
FROM D. R. SPERRY & COMPANY.

CONDITIONING OF COMPRESSED AIR
Section CA

D. R. Sperry & Company
112 North Grant Street
North Aurora, IL 60542
Phone: 630 892-4361

CONDITIONING OF COMPRESSED AIR

Raw compressed air direct from an air compressor is unsuitable for most pneumatic and fluidic operations until it has been cleaned, dried, and, if necessary, lubricated. The equipment supplied with your Sperry filter press presumes that the air supplied is clean and dry. If not, conditioning of the air is required.

Once provided to the filter press, the air is passed through a series of baffles in a filter which imparts a high rotational velocity causing most dirt and moisture to separate out from centrifugal force. The contaminants drain down the side of the bowl and collect in a quiet zone below the baffles. The air then passes through the filter to remove any remaining contaminants. The bowl should be drained periodically so check it daily.

The air then passes through a self-relieving regulator which has been factory set for proper filter press operation. Any change to the regulator should be slight. Keep the setting as low as practicable to conserve air. If performance of the filter press changes radically, do not automatically increase air supply, but instead, look for possible causes and correct them.

Where needed, a lubricator has been provided which will inject a fine mist of oil into the air stream to provide lubrication for components down stream. The rate of feed should be about 1 drop of oil for every 20 SCFM of air. The lubricator can be calibrated by supplying it with 100 PSIG at its inlet and discharging its outlet through a 1/16" diameter orifice. This size orifice will pass 3 SCFM and therefore 1 drop of oil every 6-7 minutes should be adequate. Adjust as required.

Use a lightweight pneumatic oil and do not over lubricate. Less oil is actually better than too much oil for most pneumatic operations. If a lubricator was not provided with your equipment, it is unlikely that you need one. Most Sperry pneumatic components for power units are lubricated for life and sealed.

CAUTION: The filter and lubricator bowls are made from a clear polycarbonate. Do not exceed 150 degrees F. Do not expose to solvents or solvent vapors. Clean inside with a non-detergent hand soap or kerosene. Check bowl for craze marks. If found, replace bowl.

FILTER OPERATION AND FILTER OPERATING PROBLEMS

D. R. SPERRY & COMPANY
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NORTH AURORA, IL 60542
PHONE: 630 892-4361

I. LEAKAGE:

It is practically impossible to prevent a small amount of leakage between the plates and the frames when handling clear liquids. The leakage is the result of wicking through the filter media. Leakage, resulting from pumping clear water through a filter, is not a cause for alarm. Gradual accumulation of solids will reduce the major portion of the leakage. Special leakproof plates are available to prevent leakage.

High discharge heads on closed delivery presses should be avoided.

Plates and frames of Sperry filter presses are machined to give accurate parallel joint surfaces. Should any joint on a Sperry filter press leak to a serious extent, check for a wrinkle in the filter cloth, or other filter media, or for a small amount of cake in the joint surface which has not been properly cleaned. Serious leakage, except for special cases, is almost invariably due to carelessness of operation.

II. CLOUDY FILTRATES:

At the start of the filtration cycle, the filtrate usually runs cloudy for a short time until the deposit on the filter media builds up an effective filter cake. When a precoat of filter aid is used, there should be very little cloudiness.

If cloudiness persists, it may be due to a number of things. The pressure may be too high or may be fluctuating too much, leading to a pulsating effect which disturbs the filter cake on the filter media. The filter media may be torn. If cloudiness persists in the filtrate, the need for a filter aid in the main batch, a precoat of filter aid, or both is indicated.

If the filter media is torn, or if for any other reason, an individual filter chamber runs cloudy, the entire filtrate is affected. In open delivery filter presses these chambers can be determined and cut off at once by closing the outlet cock. Open delivery filter presses with plain bibb outlets, which cannot be easily cut off, are not suitable for use on any material where cloudiness would lead to a loss of valuable filter cake or to reduction in the clarification efficiency of the filter press. Continued cloudiness from certain chambers of a filter press call for a careful inspection of these chambers to determine the cause.

On closed delivery filter presses, there is no way of determining which chamber is delivering a cloudy filtrate unless a visible closed discharge fitting is used. This equipment is available on specially designed plates and makes it possible to identify the chamber that is leaking and to shut it off.

III. UNEVEN FILTER CAKES:

If any chambers show evidence of uneven cakes when the filter press is opened, the cause is usually a clogged feed port in the frame of that chamber. This condition, unless corrected, can cause plate breakage.

Uneven filter cakes may result from the use of a pump of inadequate capacity or too low a discharge pressure. On some types of free filtering materials with granular or crystalline solid content, bottom discharge types of plates may lead to uneven filter cakes, because of the rapid filtration of material at the bottom section of the chamber before a solid, uniform cake is built up on the entire surface of the filter media. In such cases, a top discharge type of filter is often desirable. Uneven filter cakes are not likely to lead to cloudy filtrates, where there is any possibility of pressure fluctuation in the feed line, but make it difficult to get good washing of the cake in any chamber where the cakes are uneven.

IV. SLOW FILTRATION RATE:

The nature of many materials make a slow filtration rate inevitable. If laboratory tests have been made and the rate of filtration is found to be slow, in spite of due consideration of filter aids, heating and other factors which might increase the rate, there is little that can be done to speed it up.

On the other hand, if the product filters at a slow rate, it may be advisable to investigate the possibility of speeding up the rate by the use of filter aid in the batch, of heating the material or of making possible changes in processing prior to filtration, which would change the character of the material so as to make speedier filtration possible.

On filter presses that have been in use for a considerable period, corrosion may have removed part of the pyramids off the draining surface to the extent of handicapping the filtration rate by providing inadequate drainage from behind the filter cloth.

V. CHECK LIST FOR OPERATION DIFFICULTIES:

I. Pressure instantly increases to a high value.

Check plates and frames for proper location, making certain that all the "V" handles are on the same side bar. See Section PFV where applicable.

Check cloths to see that all necessary holes have been provided and that there are no turned corners which block off a port. Holes in the cloths must match the holes in the plates.

2. **Filtration rate decreases rapidly so only a thin cake can be obtained.**

Suitable filter aid can be used as a precoat and in the slurry being filtered to improve the filtration rate.

3. **Pump does not deliver material to filter.**

Check suction line to make certain that there is no obstruction in it.

If pump is centrifugal or turban type, make certain that pump is not air bound.

If pump is diaphragm type, open all valves and check for solids that may lodge under balls. Remove ends and check diaphragms.

4. **Material flows through filter, but no pressure develops.**

Material is very free filtering or the pump is undersize.

5. **Wash water rate increases rapidly with continuing wash and analysis of final cake shows poor washing.**

Cake contains soluble solids which are not completely in solution or cake itself is partially soluble. Dilute or heat feed to insure complete solution of soluble matter, or if cake is slightly soluble, use a wash solution that has first been saturated with the cake forming material.

VI. POOR PRECOATS OF FILTER AID:

If a filter aid precoat for the material is required and if there is difficulty in getting uniform coating, the reason is probably the use of a type filter not adapted to the precoating operation. Frequently, a filter press is installed without thought being given to the possible need for precoating. Later, the need for precoating arises and unless the type of filter press originally installed is suitable for a precoating operation, problems may be experienced.

VII. CAKE DRYING:

Cake drying involves the removal of the mother liquid or wash liquid from the filter cake by means of a gas (normally compressed air). It is practically impossible to determine exact requirements due to cake variations and moisture retentiveness. Practice shows that, if it is possible to dry the filter cake, the amount of gas will be from .08 - .2 cubic meters per minute for every square meter of filtration area, at a pressure of 2 bar, and a drying time from 5 to 30 minutes.

For further reading:

"SOLID/LIQUID SEPARATION EQUIPMENT SCALE-UP"

by: **Derek B. Purchase**
Upland Press
1 Katherine Street
Croydon CR9 1LB England

PLATE BREAKAGE

THE FOLLOWING CONDITIONS ARE SOURCES THAT CAN LEAD TO UNBALANCED PRESSURES CAUSING PLATE BREAKAGE IN A PLATE AND FRAME TYPE FILTER PRESS. THESE CONDITIONS CAN SOMETIME BE OBSERVED WHEN CLEANING THE FILTER PRESS, IN THE FORM OF THICK AND THIN CAKES, PARTIALLY FILLED CHAMBERS AND ALTERNATE FIRM AND SLOPPY CAKES. THESE CONDITIONS MUST BE CORRECTED BEFORE FILTRATION CAN CONTINUE.

WHAT CAN CAUSE BREAKAGE

<u>CAUSE</u>	<u>CORRECTION</u>
1. Clogged feed ports.	1. Clean feed ports thoroughly in frames. in recess plates, remove plugs left in feed eyes.
2. Intermittent pumping of feed pumps.	2. Eliminate cause of intermittent pumping. If pumps are to be restarted, start them at a very low pressure and gradually build pressure.

- | | | | |
|----|---|----|--|
| 3. | Short batches with insufficient solids | 3. | Have enough sludge available to complete the filter cycle or obtain a dummy plate to reduce press volume. |
| 4. | Solids build-up in plate drainage areas reducing flow to outlet. plugged or partially plugged outlet | 4. | Inspect plate drainage areas behind cloths periodically. Some cloths may allow more solids to pass through than other style cloth. Unplug & clean outlet. |
| 5. | High velocity constant pressure/flow pumps such as progressive cavity pumps used for feeding sludge to press may cause breakage due to velocity shock on one side of the plate. | 5. | Use pumps with a pressure/flow curve corresponding to the filtration curve of the material filtered. |
| 6. | Improper use of dummy plates. | 6. | Place dummy plate directly behind slide head plate. Do not use slide head plate only to shorten press chamber size. |
| 7. | Dynamiting of plates. Feed valve closed when feed pump started or outlet valves closed when feed pump started. | 7. | Open all valves before starting feed pumps. Size outlet piping to minimize back pressure. |
| 8. | Careless handling of plate | 8. | Handle plates carefully. |
| 9. | Thermal Shock | 9. | Avoid excessive temperature change between ambient and process temperature. If necessary, preheat press at 2 degrees F per minute when ambient to process temperature greater than 30 degrees F. |

AN EXAMPLE OF THE MAGNITUDE OF UNBALANCED PRESSURE CAN BE SEEN ON A 48" FILTER PRESS. IF THE PRESS PRESSURE WAS 60 PSI ON ONE SIDE OF THE PLATE AND ZERO ON THE OTHER SIDE, THE RESULTANT FORCE WOULD BE 138,240 LBS. ON THE PLATE.

HYDRAULIC OIL SYSTEM MAINTENANCE
SECTION HO

D. R. SPERRY & COMPANY
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HYDRAULIC OIL MAINTENANCE

The hydraulic power unit which came with your Sperry filter press has been filled with the correct grade of hydraulic oil and properly set for the correct closing force and relief conditions. As a general rule, no adjustments should be required.

It will be necessary to change the oil and oil filter, where provided, on a regular basis. Interval lengths must be determined by application and working environment, however, the following information may be of use when setting up a program.

- A. Always use clean oil and new filters. Never return used oil to the reservoir or reuse a filter. Do not use oil straight from the barrel. Always filter oil before pouring into the reservoir.
- B. Use clean containers, hoses and funnels when transferring oil.
- C. Keep containers of oil tightly sealed.
- D. Inspect filter elements for signs of failure which may indicate a need to decrease time between service intervals
- E. Intake and return lines should be submerged in oil. If not, oil level in reservoir is too low.
- F. Listen for unusual noises or changed in performance. These are indicators of low oil levels, loose suction or return lines, clogged filter elements, or air entrapment.

There are a limited number of tests that the average user can conduct. One simple test is to compare the same grade of clean oil with a sample from the power unit. The power unit sample should be allowed to sit overnight to promote settling of any contaminants. No foam should remain. A severe color change or a change in consistency means change the oil more often! It will always be cheaper to change the oil than replace components.

Avoid the use of phosphate ester base, chlorinated hydrocarbon, water glycol, and water based emulsion oils. This manual contains recommended specifications for hydraulic oil. D. R. Sperry cannot make recommendations as to specific manufacturers of hydraulic oil. A list of "or equal" oils are contained in this section.

(Under normal operating conditions, oil and filter, where provided should be changed after 60 days and every 6 months thereafter.)

HYDRAULIC OIL SPECIFICATIONS

The following oil is used in all Sperry power units except manual pump types:

Minimum viscosity index of 95

Flash point 460 degrees F.

Fire point 475 degrees F.

Viscosity @ 100 degrees F is 300 SUS.

Very good demulsibility, separates readily from water.

HO-68-Z or equals:

Mobile Oil DTE-26

Shell Oil Tellus 68

Sun Oil Suntutac 202 WR

Texaco Rando HD-68

BP Oil Energol HLP-68

Gulf Oil Harmony 68 AW (54)

Exxon NUTO H-68 (54)

Citgo A/W hydraulic 68

Arco Duro AW-68

The following oil is used in Sperry manual pump closing devices:

Minimum viscosity index of 89

Flash point 460 degrees F.

Fire point 475 degrees F.

Viscosity @ 100 degrees F. is 100 SUS

Very good demulsibility, separates readily from water

HO-99-Z or equals:

Mobile Oil DTE-11

Amoco Oil Rykon Oil MV

Sun Oil Sunvis 701

Shell Oil Tellus 22

Gulf Oil Harmony 22

When operated in extreme heat or cold, please consult the factory.

WASH & NON-WASH PLATE ORIENTATION

SECTION PFV

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WASH & NON-WASH PLATE ORIENTATION

When filter elements are provided by D. R. Sperry & Company, they may be of a variety which allows for cake washing and/or air blow down. It is important that these plates, called wash and non-wash types, be assembled in the filter press in the correct sequence. As there are a number of variations in styles of wash and non-wash plates, the rest of this section will be devoted strictly to proper assembly and identification of types.

D. R. Sperry & Company uses a permanent mark on each plate in the form of a button to define wash and non-wash plates. These buttons will normally be located just above one of the handles of the plate. A one button plate is a non-wash plate, a three button plate is a washing plate and, if there are two buttons, it is a frame.

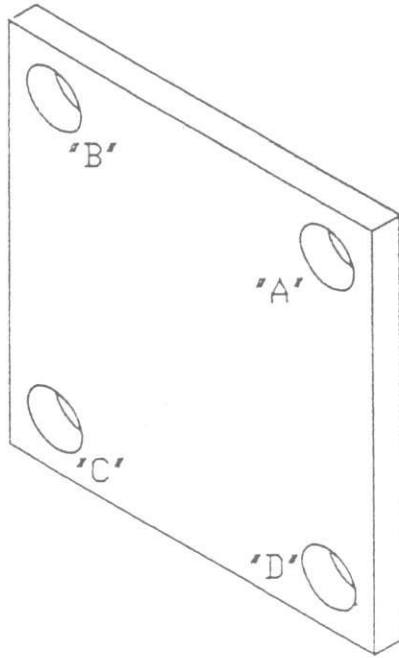
When assembling the filter plates, begin with the stationary head plate. This is the plate which contains the threaded eyes which accept the piping for the press. Once this plate is installed, observe and note the number of buttons on the plate and which side they are on. All remaining elements will be installed with the buttons on the same side as the stationary head plate buttons.

If the plates are recessed (i.e., the cake forms in a chamber created by two adjacent plates), then the stationary head plate will be a one button or three button plate. If the stationary head plate is a one button, then the next plate must be a three button and the next one will be a one button. One button and three button plates will alternate through the stack.

If the press is a plate and frame, then the stationary head plate will be followed by a frame regardless of the number of buttons. If the stationary head plate is a one button, then the next element will be a two button frame followed by a three button plate, followed by a two button frame, followed by a one button plate, etc. The button arrangement will be one, two, three, two, one, two, three, two, one, etc. through the stack. If the stationary head plate is a three button, then the order will reverse: three button, two, one, two, three, two, one, etc.

Failure to observe proper installation may result in poor filtering characteristics and possible plate damage.

Consult the factory if there are any questions.



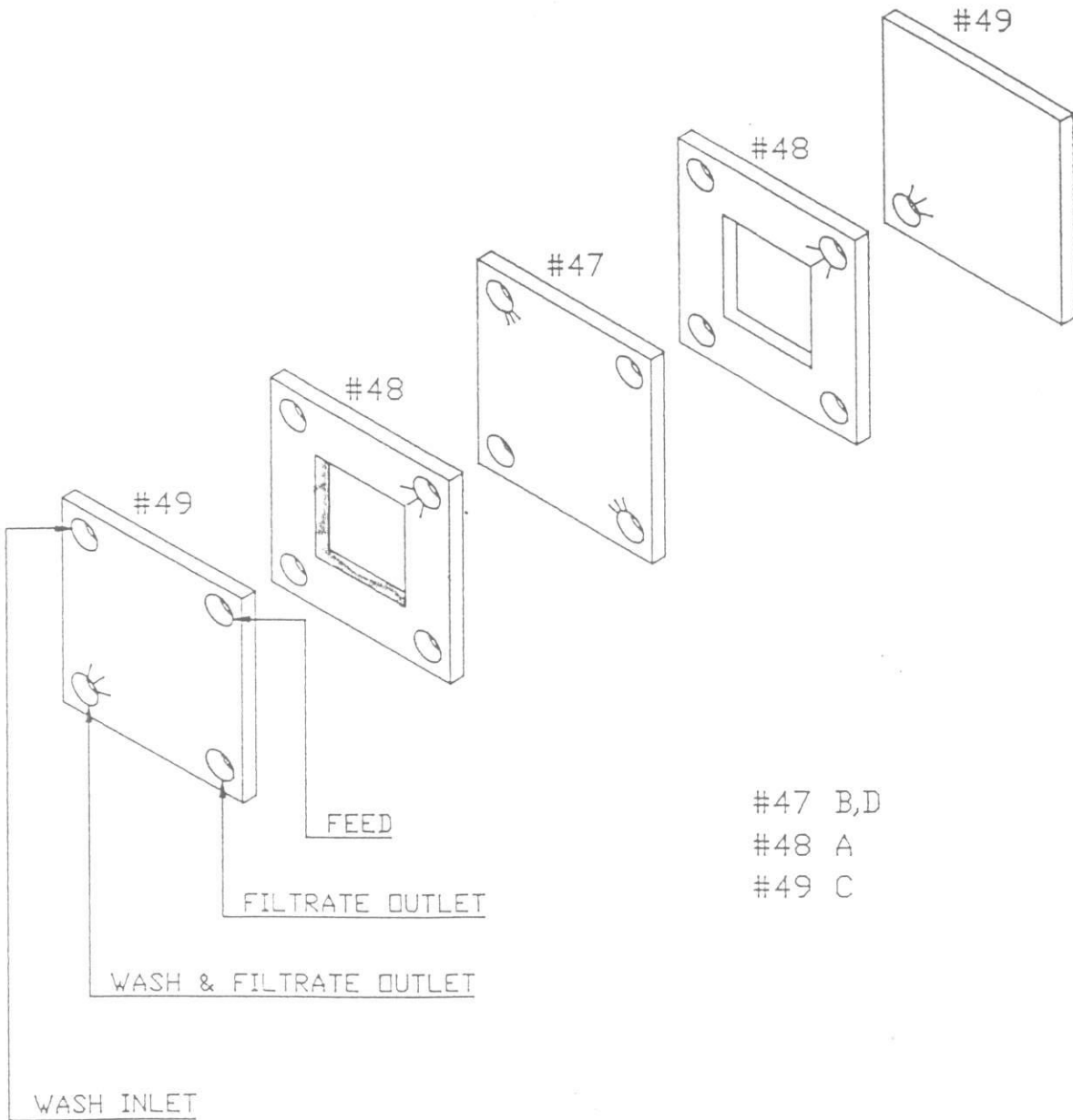
VIEWING STATIONARY HEAD END OF PRESS

LETTER AFTER PLATE OR FRAME STYLE NO.
INDICATES EYE IS PORTED

EXAMPLE:

- #41 B,C - TWO LEFT HAND PLATE EYES PORTED
- #42 A,D - TWO RIGHT HAND FRAME EYES PORTED
- #41 B - UPPER LEFT HAND PLATE EYE PORTED
- #21 A,B,C,D - ALL EYES PORTED
- #21 A,C - UPPER RIGHT & LOWER LEFT EYE PORTED

- #47 - WASH PLATE - 3 BUTTON
- #48 - FRAME - 2 BUTTON
- #49 - NON-WASH PLATE - 1 BUTTON



STANDARD PORTING FOR WASH & NON-WASH
PLATES - REGULAR & CRN

HEAD CONNECTION INSTALLATION

SECTION HCI

D. R. SPERRY & COMPANY
112 NORTH GRANT STREET
NORTH AURORA, ILLINOIS 60542
PHONE: 630 892-4361
FAX: 630 892-1664

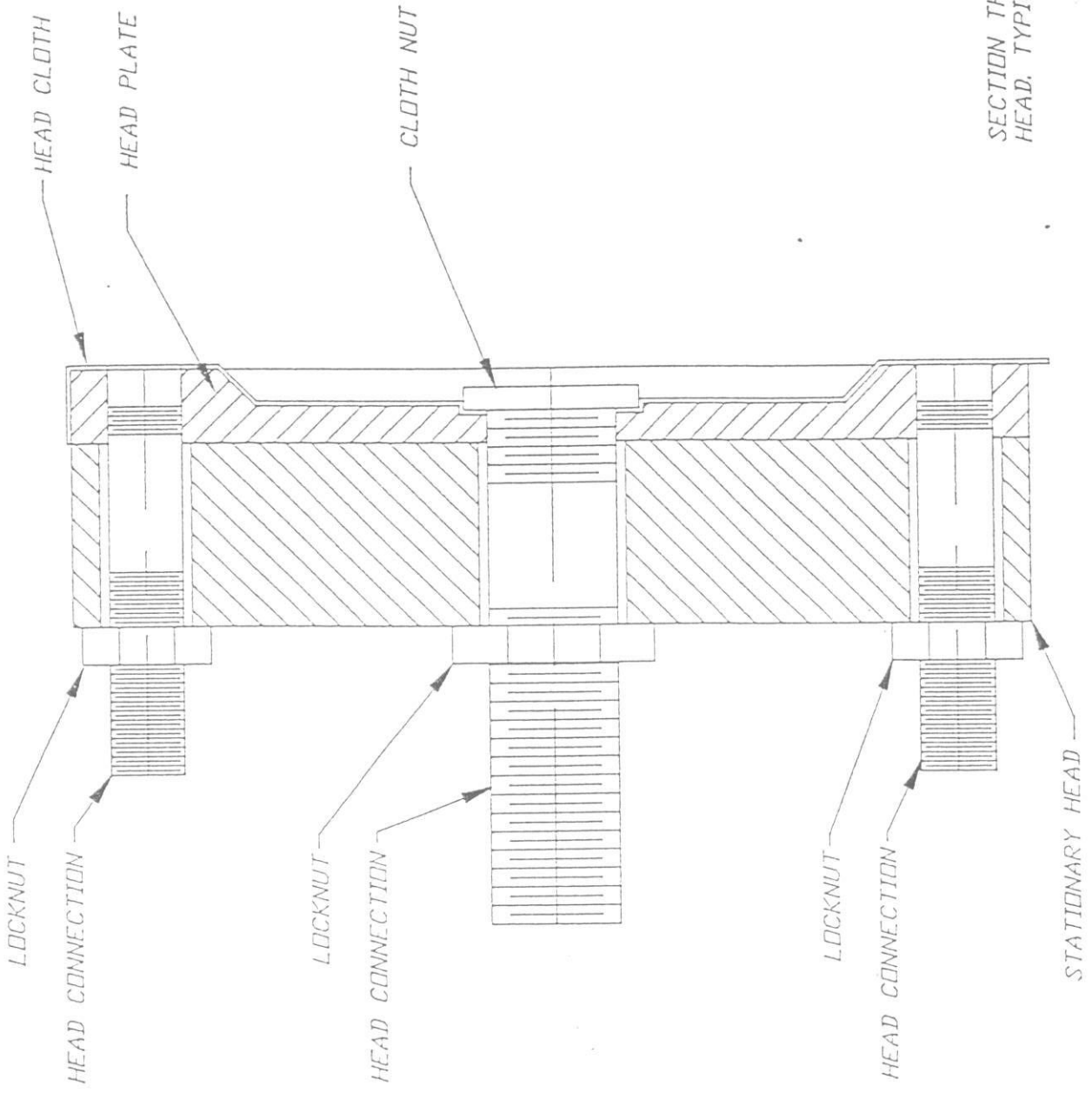
HEAD CONNECTION INSTALLATION

Your Sperry Filter Press comes complete with head connections to provide proper feed line and outlet line sizes. They are intended to adapt directly to standard NPT pipe sizes for ease of assembly.

If your press is fitted with a center feed (this feed may be center or bottom center located), the appropriate head connections should screw through the head plate for about 1/2". The corner or outlet head connections are screwed in until they bottom out. Drape the head cloth over the head plate and the cloth pins at the top of the head plate to retain the cloth. Install the cloth nut by screwing it onto the 1/1" of feed connection protruding through the head plate, capturing the head cloth and retaining it against the surface of the head plate. Install the locknuts on each head connection and tighten them down against the outside face of the stationary head. **DO NOT OVERTIGHTEN.**

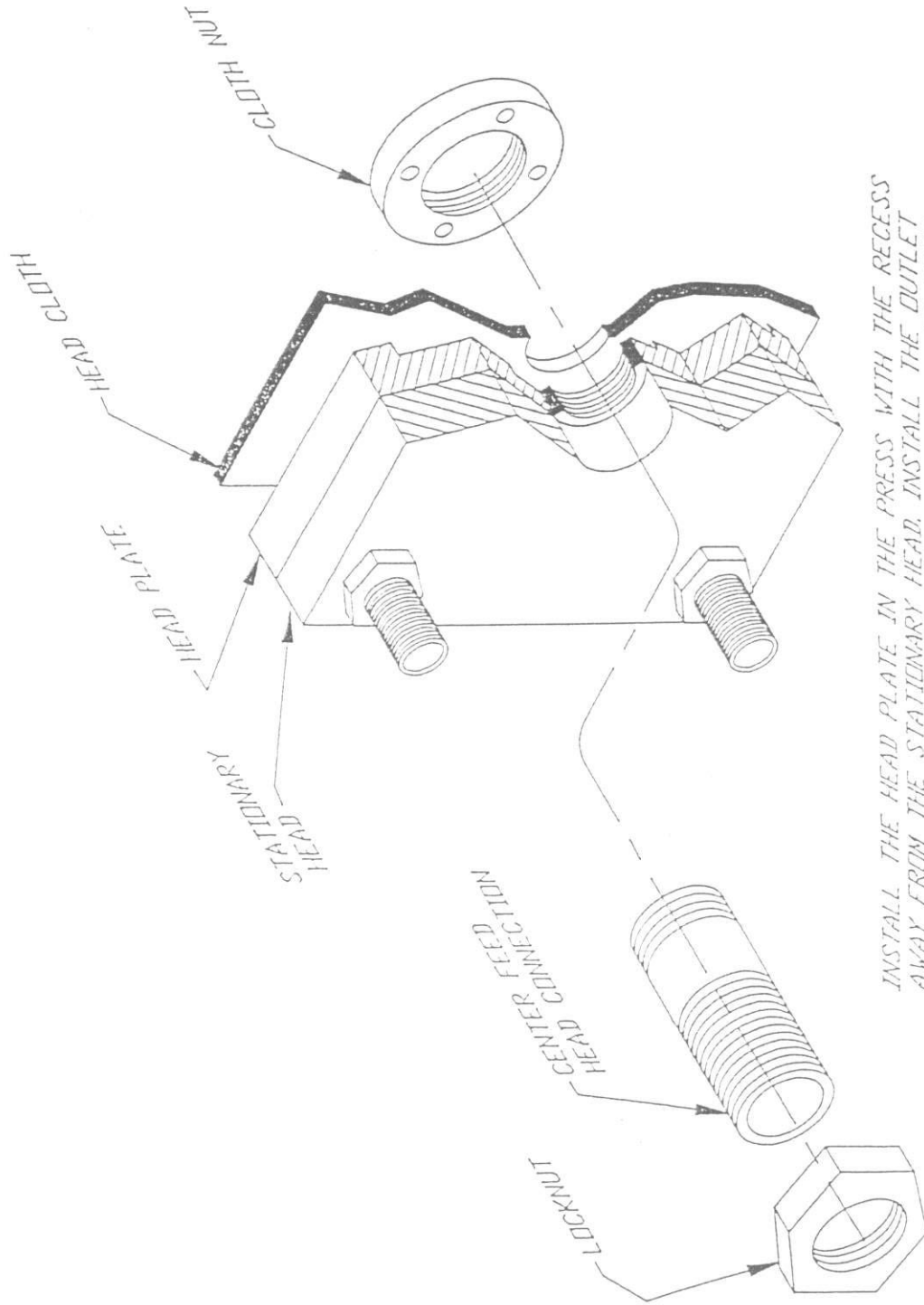
Your installation, when complete, should resemble the enclosed diagram "Section Through Stationary Head". The press is now ready to be pipe fitted for feed and outlet lines.

WARNING: If outlets are to be manifolded together, keep manifold area equal to or greater than the sum of the areas of the pipes entering it. Otherwise, back pressure may occur causing leakage and longer filtering cycles.



SECTION THRU STATIONARY HEAD, TYPICAL CENTER FEED.

D:\ACAD\MISC\HEADCON2



INSTALL THE HEAD PLATE IN THE RECESS AWAY FROM THE STATIONARY HEAD. INSTALL THE OUTLET HEAD CONNECTIONS BY SCREWING INTO THE PLATE FROM THE STATIONARY HEAD SIDE. WHEN HAND TIGHT, INSTALL THE LOCKNUT TO SECURE IN PLACE. INSTALL CENTER FEED HEAD CONNECTION BY SCREWING INTO HEAD PLATE SO THAT ABOUT 1/2" OF PIPE STICKS OUT PAST THE COUNTERBORE IN THE HEAD PLATE. SLIP HEAD CLOTH OVER THE END OF THE HEAD CONNECTION AND SCREW ON THE CLOTH NUT FIRMLY. INSTALL THE CENTER FEED LOCKNUT.

HEAD CONNECTION
COMPONENT IDENTIFICATION
AND INSTALLATION.

AHOP-IV POWER UNIT

D. R. SPERRY & COMPANY
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PHONE: 630 892-4361

AHOP4.1

AHOP-IV POWER UNIT

The Sperry Automatic Hydraulic Oil Pressure unit uses a regulated air supply (by customer) to produce a constant pressure oil output adjustable for proper closing force of any filter press. The unit contains two air/oil booster pumps. One provides a high volume output for rapid advance and retract, while the other provides high pressure for clamping force. A manual valve is provided for advance, neutral and retract positions. Two gauges are provided to monitor air input pressure and hydraulic clamping force.

An adjustable relief valve is provided for over pressure protection. An automotive type filter is used to clean return line oil and a strainer is provided on the intake line for component protection.

OPERATION OF AHOP-IV

- THE INLET AIR REQUIREMENT:
- NO FILTERING REQUIRED.
 - NO LUBRICATION REQUIRED
 - 100 PSI MAXIMUM PRESSURE
 - 80 PSI MINIMUM PRESSURE
 - 5.5 CFM
- TO CLOSE:
- Move the selector switch to the close position. When the press is fully closed, gauge will read proper hydraulic pressure and booster will stall. Feed pumps may now be started. LEAVE SWITCH IN THE CLOSE POSITION DURING FILTER CYCLE!
- TO OPEN:
- Move the selector switch to the open position. When the press is fully open, move the switch to the neutral position. Press is now ready to be cleaned. IF PLATE SHIFTER IS USED, LEAVE THE SWITCH IN THE OPEN POSITION UNTIL CLEAN CYCLE IS COMPLETE OR SHIFTER MAY NOT FUNCTION.
- CAUTION:
- Customer air shut-off is required when servicing this device. If air supply is left on, high pressure oil may be trapped between the booster and the check valve.
- During the filtering cycle, booster may periodically cycle. This is a normal condition which maintains closing force

TROUBLE SHOOTING

Refer to the hydraulic schematic and parts location diagrams elsewhere in this manual.

I. PRESS FAILS TO CLOSE

- A. Check gauge, Item 1, if no reading, turn on air supply.
- B. check selector switch position. Make sure it is in the close position.
- C. Check oil level in the reservoir.

II. PRESS FAILS TO REACH CLOSING PRESSURE

- A. Check hydraulic pressure gauge Item 2. If booster is cycling and gauge shows fluctuation, increase the setting of relief valve Item 4.
- B. If previous step has no appreciable effect, lower the setting of regulator Item 11. If booster continues to cycle, the problem lies in the booster check valves or the main cylinder seals. Try bleeding the system of any trapped air.

III. PRESS FAILS TO OPEN

- A. Check gauge Item 1. If no reading, turn on air supply.
- B. Check selector switch position. Make sure it is in the open position.
- C. If above does not resolve the problem, cylinder seals are probably leaking.

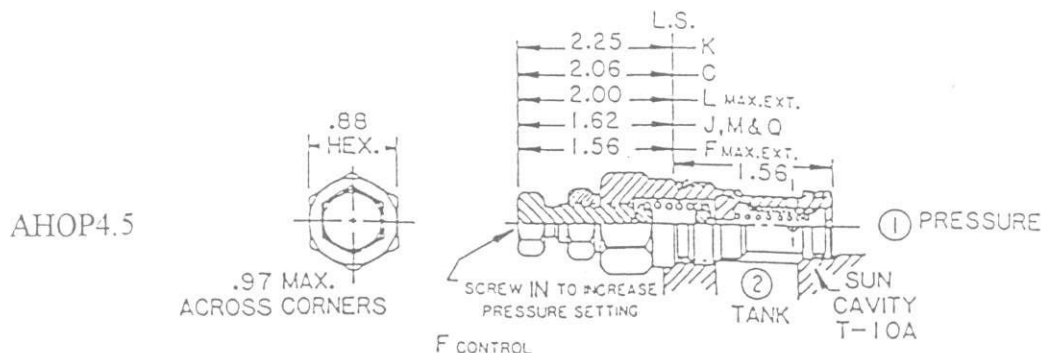
RELIEF VALVE SETTING

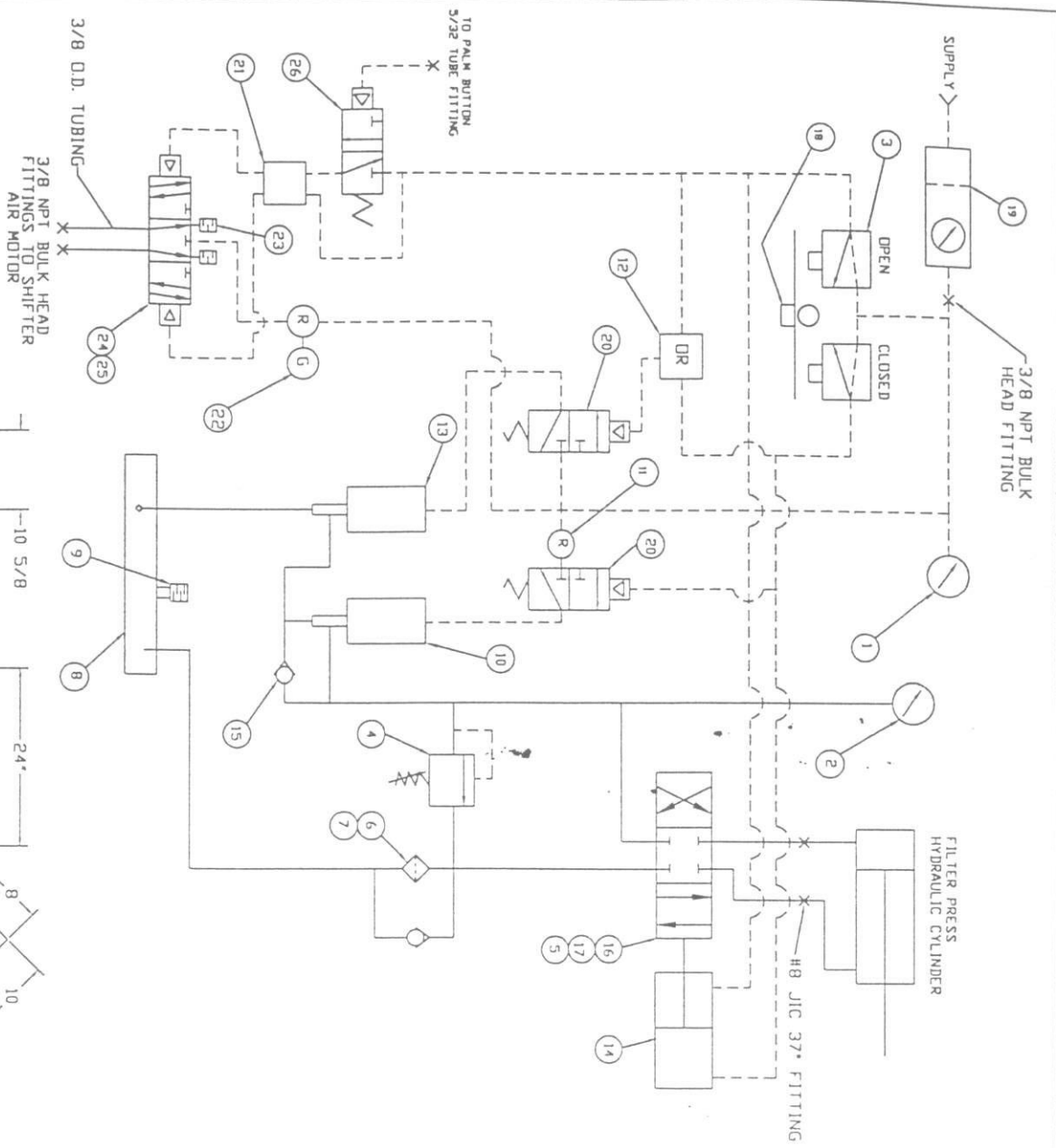
The relief cartridge is a basic service item. It is easily removed from the body for cleaning or replacement, but is not designed to be disassembled or repaired in the field. It is never necessary to remove the entire valve from the circuit piping. Simply unscrew the cartridge from the body.

The most common cause of a cartridge failing to operate is dirt in the hydraulic system. If the cartridge does not operate as required, it should be removed from the valve body and thoroughly cleaned by washing in a suitable solvent. If the cleaning procedure does not eliminate the problem, replace the cartridge.

The pressure may be adjusted by screwing the stem in to increase pressure setting or out to decrease the pressure. The following procedure may be used to adjust the valve cartridge setting:

1. Select the CLOSE position with valve actuator Item 18.
2. Gradually increase air pressure by adjusting regulator Item 11 until relief valve setting is reached. The correct relief valve setting varies depending on the press and its application. The correct settings for working pressure and relief valve pressure may be found on the general arrangement drawing which came with your press.
3. Adjust the relief valve by turning stem in or out until pressure reaches correct setting and then drops back approximately 200 PSI. Tighten the cartridge locking nut at this point.
4. Select the OPEN position with valve actuator Item 18. Once pressure drops off, return selector to CLOSE position and observe the highest pressure reading before the pressure drops off. This should equal the relief valve pressure setting.
5. Reduce booster air pressure by adjusting the regulator Item 11 until specified working pressure is achieved.





ITEM	PART NO.	DESCRIPTION	QTY.
1	36046	0-160 PSI AIR PRESSURE GAUGE	1
2	36047	0-5000 PSI HYDRAULIC GAUGE	1
3	63186	2 POSITION 3 WAY VALVE	2
4	63140	5000 PSI RELIEF CARTRIDGE	1
5	24103	VALVE TO ACTUATOR COUPLING	1
6	63139	10 MICRON FILTER	1
7	63234	FILTER HEAD	1
8	----	HYDRAULIC OIL RESERVOIR	1
9	61496	OIL FILLER CAP & BREATHER	1
10	63243	HIGH PRESSURE BOOSTER	1
11	63257	AIR REGULATOR	1
12	58193	OR LOGIC ELEMENT	1
13	63219	HIGH VOLUME BOOSTER	1
14	63258	ROTARY ACTUATOR	1
15	61497	CHECK VALVE	1
16	61499	3 POSITION 4 WAY VALVE	1
17	61498	VALVE SUBPLATE FOR ITEM 16	1
18	63193	VALVE ACTUATOR FOR ITEM 3	1
19	63231	FILTER REGULATOR, 3/8 NPT	1
20	58194	2 POSITION 3 WAY VALVE	2
21	63188	COUNT 2 MODULE	1
22	63259	REGULATOR WITH GAUGE	1
23	63260	EXHAUST MUFFLER 3/8 NPT	2
24	63261	3 POSITION 5 WAY VALVE	1
25	63262	SUB PLATE FOR P/N 63261	1
26	58195	2 POSITION 3 WAY VALVE	1

PART NO	61482	D.R. SPERRY & CO.	
DESCRIPTION	112 N. GRANT ST. N. AURORA, IL. 60542		
TOLERANCES UNLESS OTHERWISE SPECIFIED	X DECIMAL +/- .030	FRACTIONAL +/-	DRN. CHR
	XX DECIMAL +/- .015	0625	CHKD
	XXX DECIMAL +/- .005	123	DATE
			SCALE 1:12
			DWG. NO.
			1482

SPS OPERATION MANUAL

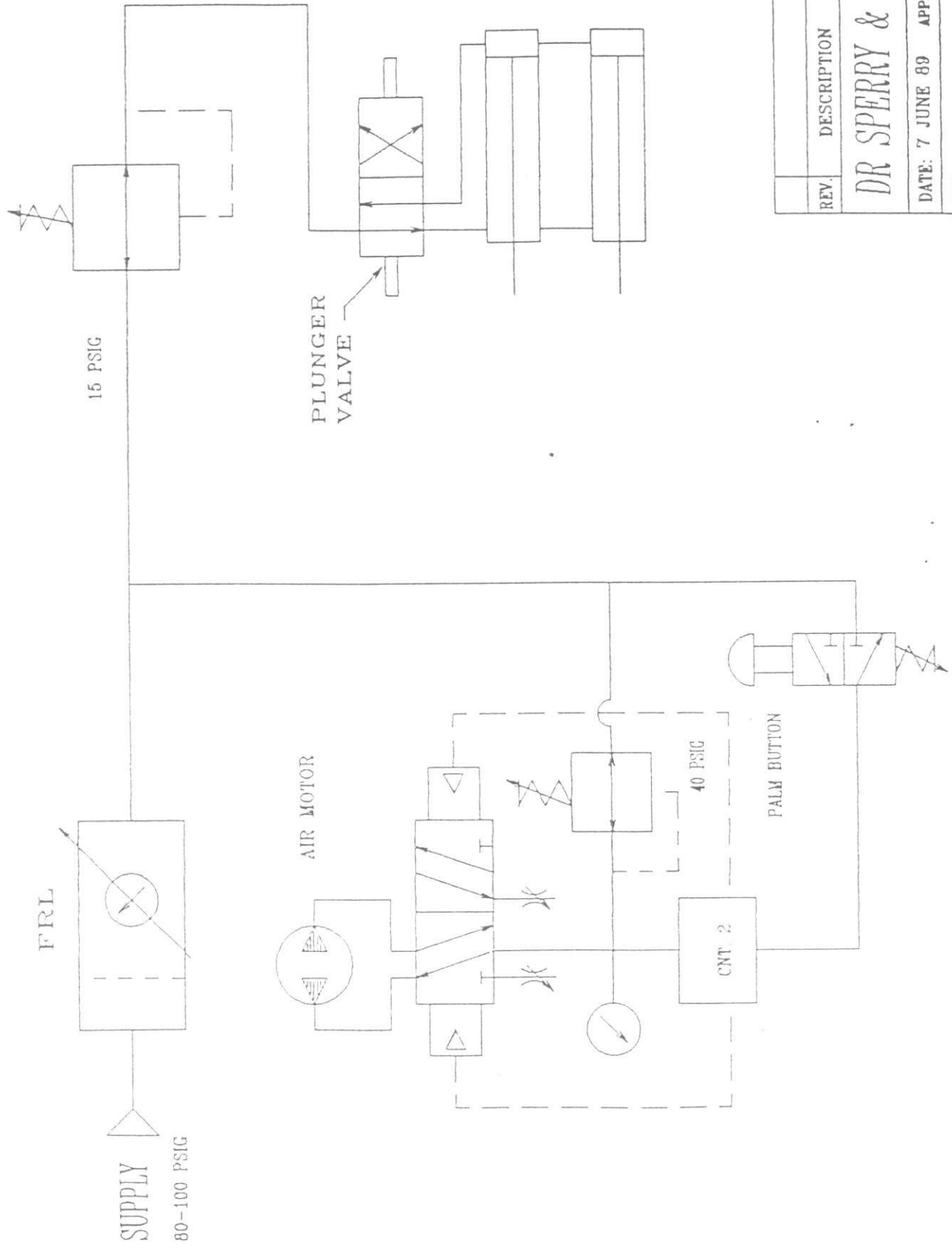
The Sperry Shuttle Plate Shifter (SPS) uses an air motor to turn a sprocketed shaft, which supplies mechanical motion through a chain, to the shifter framework. A pair of cams are used to latch on an air cylinder, one on each side. For a complete pneumatic diagram, please see Drawing #C61482 elsewhere in this manual.

To operate the shifter, begin by selecting "OPEN" on the AHOP-IV control console. When the press is completely open, the operator would depress the palm button on the shifter framework. The shifter will move toward the first plate to be shifted. Depress the palm button again and the framework will shift the first plate to the slide head. Continue depressing the palm button until all of the plates are shifted, cleaning out the cake as you move through the plate stack. When the last plate is shifted, depress the palm button once more to send the plate shifter framework to its home position, at the crosshead/cylinder end of the press. Once shifter is HOME, the cams will extend up and you are ready for another press cycle.

All adjustable conditions have been factory set; however, it may be necessary to occasionally adjust cam extension pressure or air motor force. If the cams are lifting the plates as they pass under them, reduce the force applied by decreasing the regulator pressure opposite the palm button. If the plate shifter is applying excessive force to the plate handles, decrease the setting of the regulator inside the AHOP-IV console.

CAUTION: THERE ARE TWO REGULATORS INSIDE THE AHOP-IV CONSOLE. MAKE SURE THE CORRECT ONE IS ADJUSTED.

If the shifter runs too fast or too slow, open or close the exhaust mufflers on the air motor valve in the AHOP-IV enclosure. Use caution when making these adjustments as a small change can create a large difference.



SPS CIRCUIT (AIR MOTOR)

REV.	DESCRIPTION	DATE	BY
	DR SPERRY & CO.	N. AURORA, IL. 60542	
	DATE: 7 JUNE 89	APPROX. SCALE: NONE	
	FOR:	BY: C. ROGERS	
	PART NO.: 64685	DRG. NO.: A64685	

ITEM	DESCRIPTION	PART NO.	QTY.
1	2" NPT x NPT UNION PVC	37401	3
2	2" x 1/4" LG. PVC T.D.E.	37428	5
3	2" TEE SKT-SKT-SKT	37430	3
4	2" 90° ELBOW SKT-SKT	37429	2
5	2" UNION B.V.L.C. SKT-SKT	37462	3
6	2" x 1 1/2" LG. PIPE PVC	37446	4
7	2" x 1/4" LG. PIPE PVC	37450	2

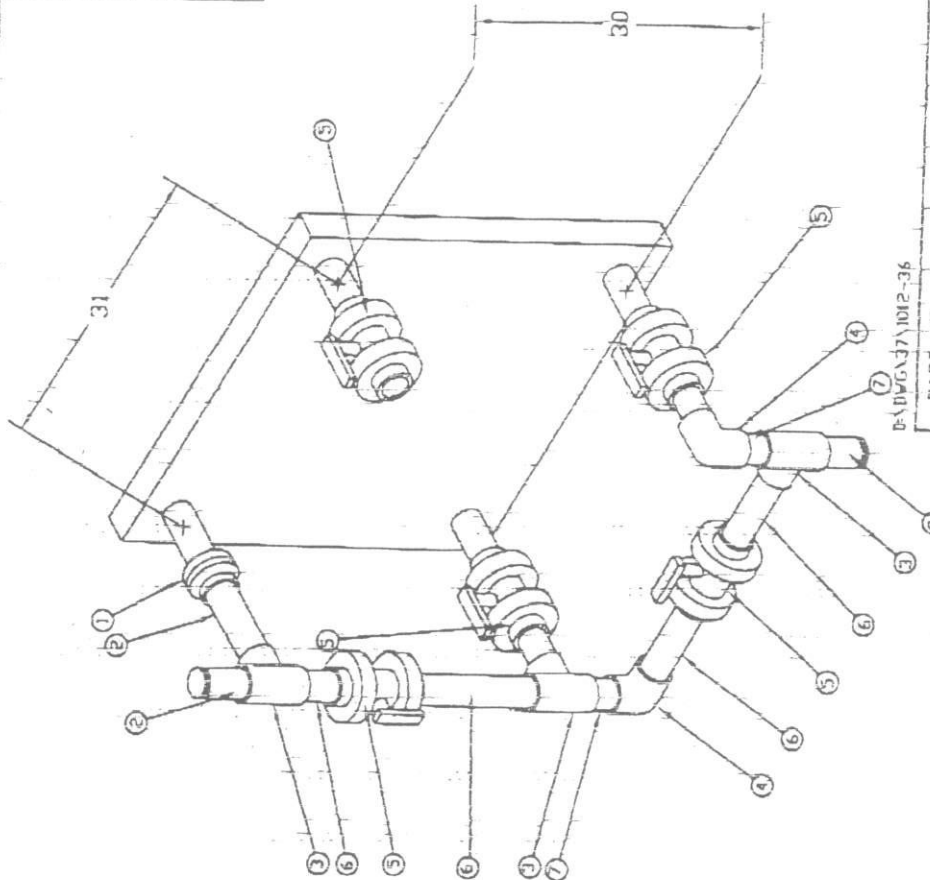
Post-it® Fax Note 7671 Date 3/2 # of pages 1

To **BILL D.R. SPERRY** From **JESSE**

Co./Dept _____ Co. _____

Phone # _____ Phone # _____

Fax # _____ Fax # _____



D.R. SPERRY

112 N. GRANT ST.
N. AURORA, IL. 60542

DRN. J.J. DWG. NO. _____

CHKD. _____

DATE 2/19/03

SCALE 1:16

PART NO. 371176-36

DESCRIPTION
36" AIR/WASH/IR DOWDOWN MANIFOLD UNION

TOLERANCES UNLESS OTHERWISE SPECIFIED
 X DECIMAL +/- .030 FRACTIONAL +/-
 XX DECIMAL +/- .015 06/25
 XXX DECIMAL +/- .005 12/9

SYM.	DATE	REVISION	BY