Pantex-Cissell B.V.
Winschoten • Holland

AIR OPERATED PRESSES

Service Manual

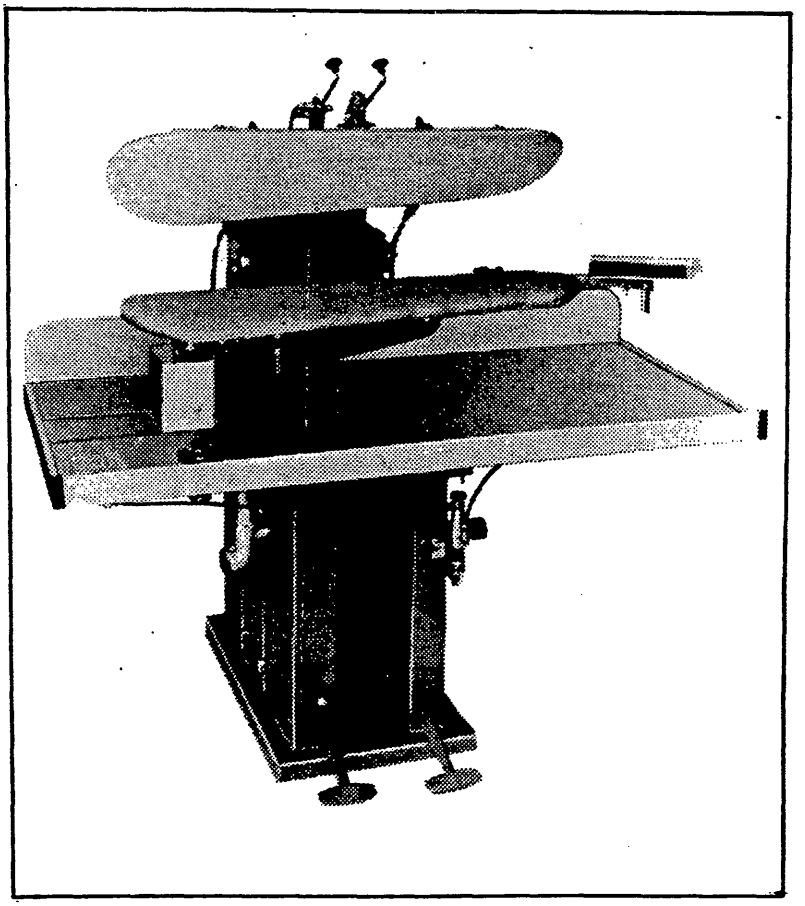
UTILITY - AU42, AU45, AU47

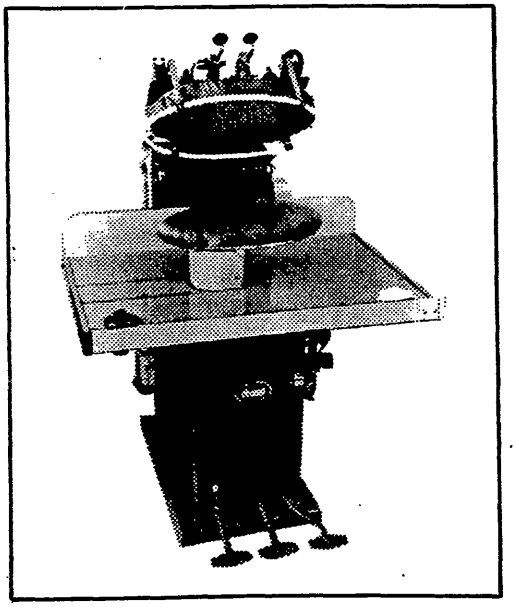
REVERSE UTILITY - AUR42, AUR45, AUR47

LEGGER - AL45

TOPPER - AMT15, AMT19, ATT24

TOPPER (PROTECTED) - AMT193, ATT243





PANTEX-CISSELL B.V.
P.O. BOX 53, 9670 AB
WINSCHOTEN, HOLLAND
TELEX 53535

CISSELL MANUFACTURING COMPANY
831 S. FIRST STREET
LOUISVILLE, KENTUCKY 40203 U.S.A.

MAN197
4/92 250 B&K

Part No. D0129

Printed in U.S.A.

WARRANTY

Cissell Manufacturing Company (Cissell) warrants all new equipment (and the original parts thereof) to be free from defects in material or workmanship for a period of one (1) year from the date of sale thereof to an original purchaser for use, except as hereinafter provided. With respect to non-durable parts normally requiring replacement in less than one (1) year due to normal wear and tear, including, but not limited to, cloth goods, valve discs, hoses and iron cords, and with respect to all new repair or replacement parts for Cissell equipment for which the one (1) year warranty period has expired or for all new repair or replacement parts for equipment other than Cissell equipment, the warranty period is limited to ninety (90) days from date of sale. The warranty period on each new replacement part furnished by Cissell in fulfillment of the warranty on new equipment or parts shall be for the unexpired portion of the original warranty period on the part replaced.

With respect to electric motors, coin meters and other accessories furnished with the new equipment, but not manufactured by Cissell, the warranty is limited to that provided by the respective manufacturer.

Cissell's total liability arising out of the manufacture and sale of new equipment and parts, whether under the warranty or caused by Cissell's negligence or otherwise, shall be limited to Cissell repairing or replacing, at its option, any defective equipment or part returned f.o.b. Cissell's factory, transportation prepaid, within the applicable warranty period and found by Cissell to have been defective, and in no event shall Cissell be liable for damages of any kind, whether for any injury to persons or property or for any special or consequential damages. The liability of Cissell does not include furnishing (or paying for) any labor such as that required to service, remove or install; to diagnose troubles; to adjust, remove or replace defective equipment or a part; nor does it include any responsibility for transportation expense which is involved therein.

The warranty of Cissell is contingent upon installation and use of its equipment under normal operating conditions. The warranty is void on equipment or parts: that have been subjected to misuse, accident, or negligent damage; operated under loads, pressures, speeds, electrical connections, plumbing, or conditions other than those specified by Cissell; operated or repaired with other than genuine Cissell replacement parts; damaged by fire, flood, vandalism, or such other causes beyond the control of Cissell; altered or repaired in any way that effects the reliability or detracts from its performance, or; which have had the identification plate, or serial number, altered, effaced, or removed.

No defective equipment or part may be returned to Cissell for repair or replacement without prior written authorization from Cissell. Charges for unauthorized repairs will not be accepted or paid by Cissell.

CISSELL MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY, STATUTORY OR OTHERWISE, CONCERNING THE EQUIPMENT OR PARTS INCLUDING, WITHOUT LIMITATION, A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR A WARRANTY OF MERCHANTABILITY. THE WARRANTIES GIVEN ABOVE ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. CISSELL NEITHER ASSUMES, NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT, ANY OTHER WARRANTY OR LIABILITY IN CONNECTION WITH THE MANUFACTURE, USE OR SALE OF ITS EQUIPMENT OR PARTS.

For warranty service, contact the Distributor from whom the Cissell equipment or part was purchased. If the Distributor cannot be reached, contact Cissell.

TABLE OF CONTENTS
AU42, AU45, AU47, AUR42, AUR45, AUR47
AL45, AMT15, AMT19, AMT24, AMT193, AMT243

TABLE OF CONTENTS

TESTING

This press has been tested in the Pantex-Cissell factory to determine that it is safe and in working order. Final adjustments must be made to obtain the best results for your garments, using your steam and vacuum in your environment.

The Pantex-Cissell presses are manufactured and tested to the highest standards. The steam pressure vessels have been tested with liquid to a pressure of 250 psi (17 bars). They have been tested for leaks with live steam at a pressure 88 psi (6 bars).

On request, we can supply pressure certification and information regarding sizes and wall thickness of the vessel(s).

FOREWORD

Air Operated Presses

These presses are engineered to provide quality finishing with minimum exertion. The press comes equipped with an air cylinder (sometimes referred to as an air motor) to close the head, an automatic head steam cycle and more important an adjustable booster for controlling the head pressure. The buck steam and air vacuum are foot pedal operated. Further depression of the vacuum pedal causes the head to open. The locking booster cylinder acts as a hydraulic snubber and as a means to exert variable additional head pressure. Needle bearings are used in the main pivot points. Operator fatigue is reduced and a quality finish is assured.

Reverse buck models are used extensively with silk units for pressing dresses and other lightweight fabric. The regular press is used with "wool" units for suits and other heavy fabrics.

INSTALLING THE PRESS

Rear Assembly - See Fig. 1

1. Uncrate the press and remove the skid. Move the press into position.

2. Hold the head down and cut the twine that holds the head closed. Allow the head to rise slowly to the open position.

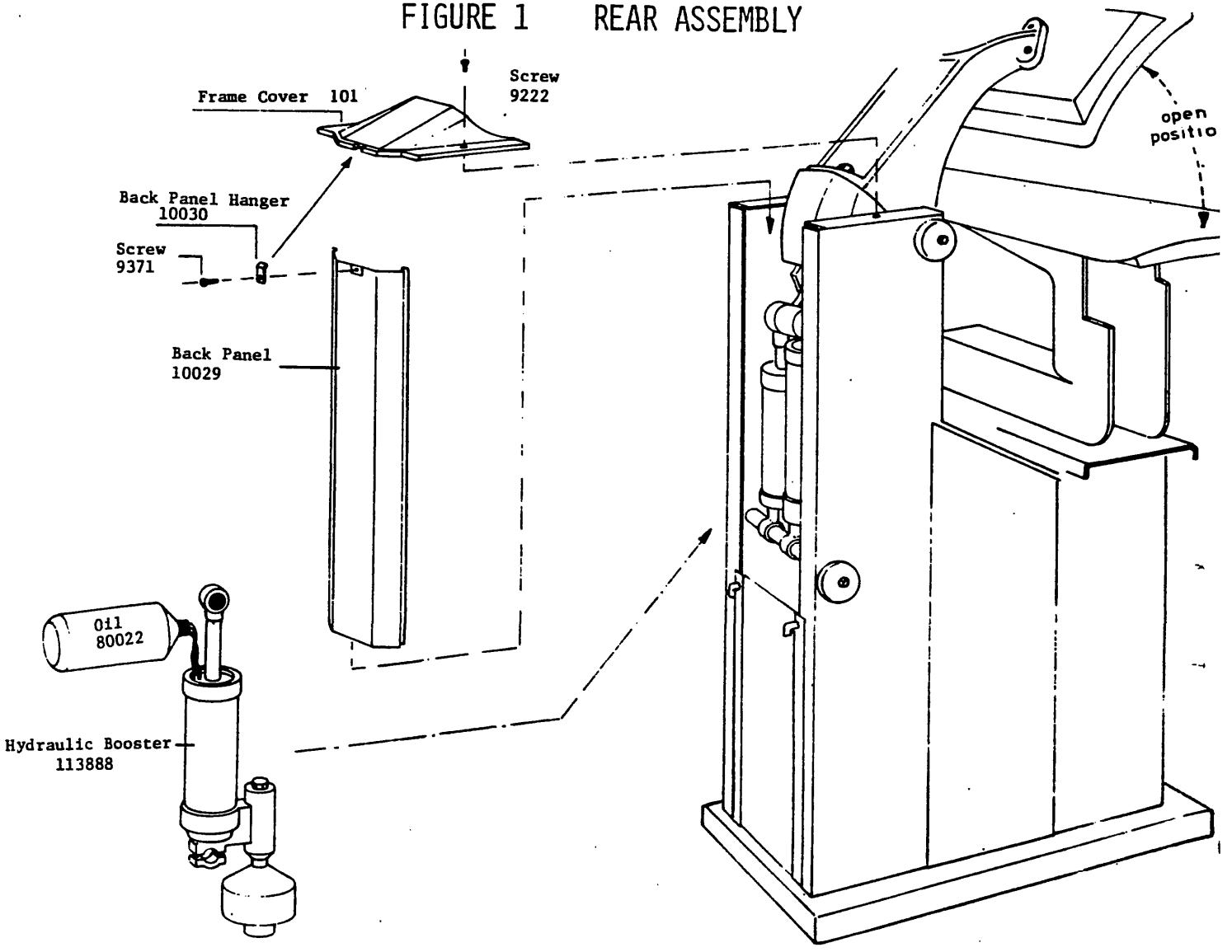
3. Slowly pour 80022 oil in (can or bottle) into the hydraulic booster. Manually open and close the head several times during the filling operation to expel air from the booster. It will require about 90% of the Container for filling. Wipe up any spilled oil. Operating the press without adding oil at this time may damage the booster.

4. Slide the back panel into the grooves in the rear frame from the top down.

5. Install the frame cover with two screws.

6. Secure the back panel with the back panel hanger and screws.

FIGURE 1 REAR ASSEMBLY



Assembly of the Table - See Fig. 2

7. Remove the left hand side strip and angle stay from the table.

8. Slide the table into place and finger tight assemble the bolts in the reinforcing bars to the mounting lugs.

9. Assemble the end cover to the buck support. Assemble the angle stay on the bottom of the table and the left hand side strip on top of the table such that the end cover is sandwiched between. Move the reinforcing bars to line up with the holes in the angle stay.

10. Tighten the mounting lug bolts.

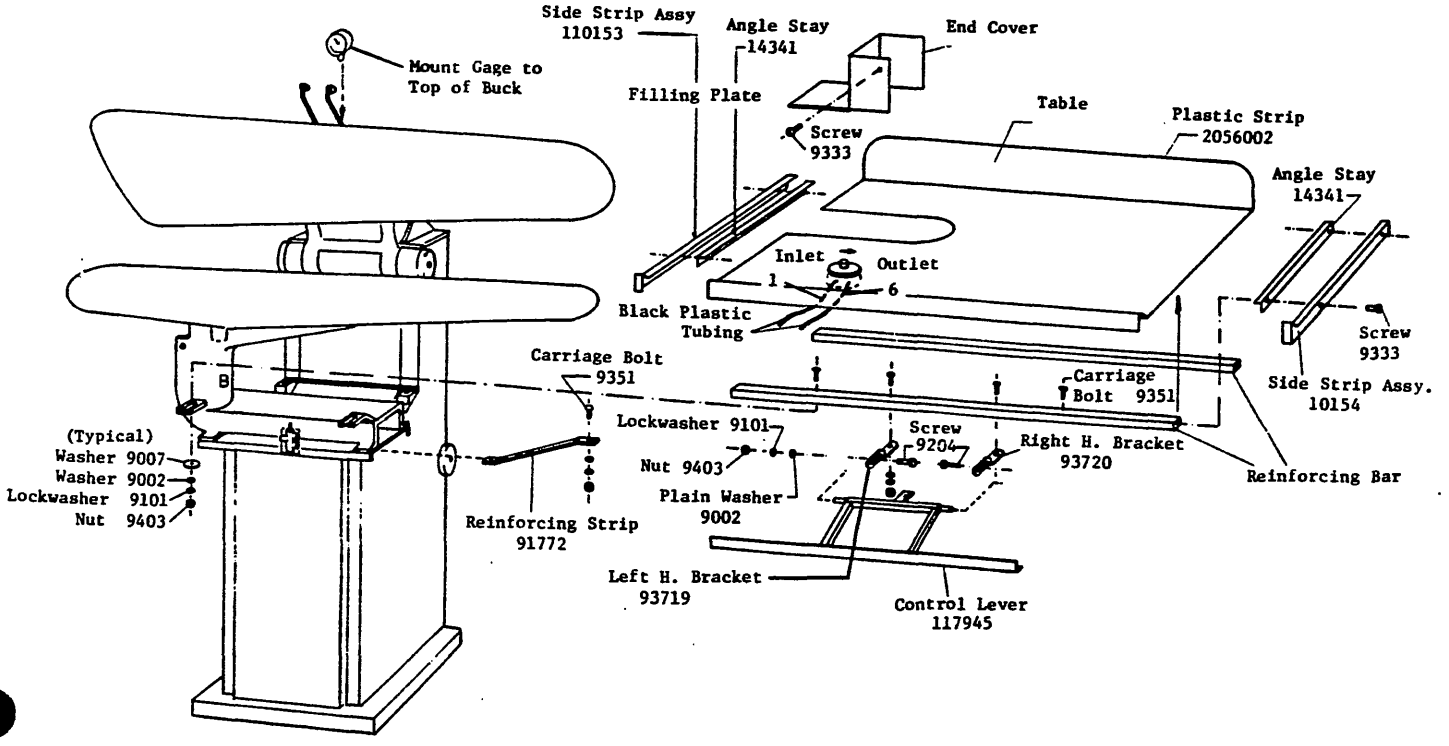
11. Assemble the reinforcing support strip to the front reinforcing bar.

12. The hidden actuating control lever under the table is already assembled and should be checked for free movement.

13. Rotate hand lever locking valve and booster gage to the vertical position. Secure with existing bolts.

14. Connect the plastic tubing under the table to the bottom of the fabric feel valve which is mounted to the table. An arrow on the valve indicates the direction of air flow from in to out. The two black plastic tubes are labeled (1) and (6). Connect (1) to the inlet, (6) to the outlet of the valve

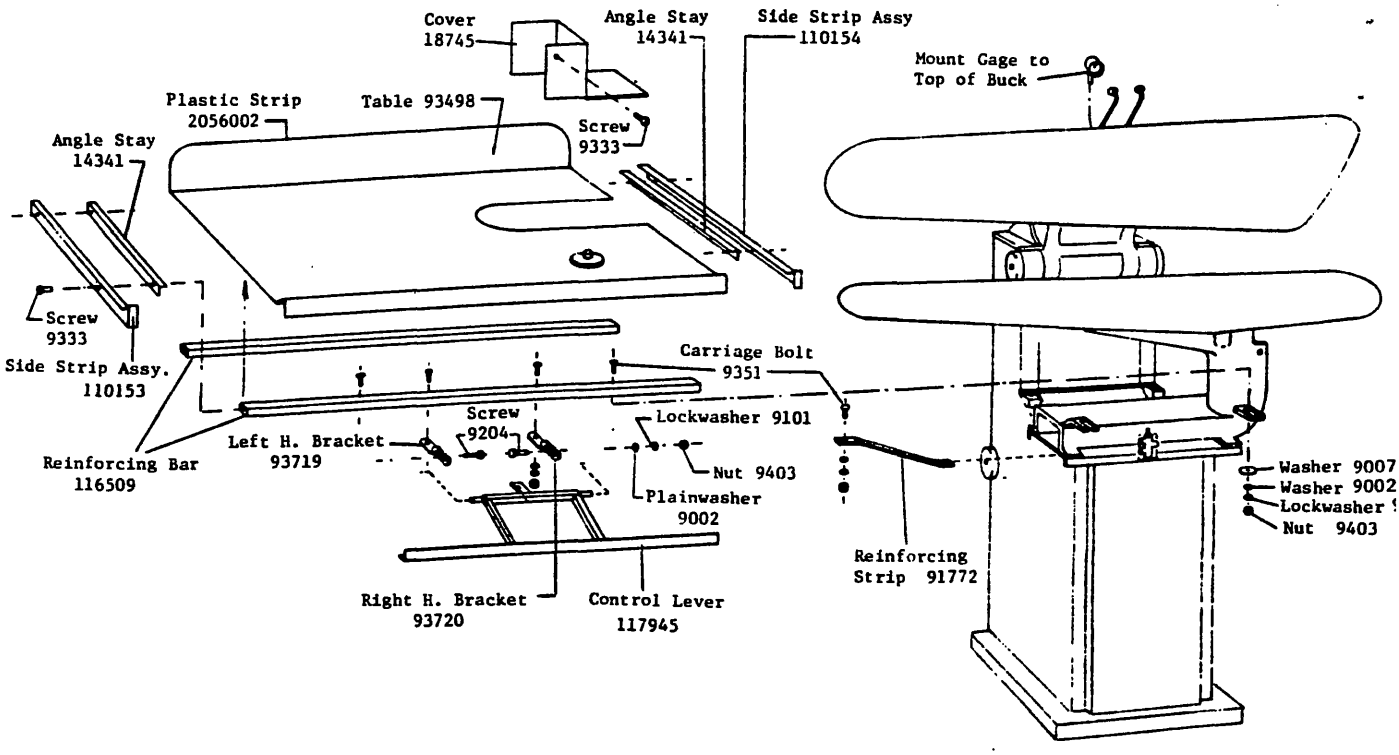
FIGURE 2 ASSEMBLY OF TABLE (REGULAR BUCK)



Assembly of the Table - See Fig. 2a (Reverse Buck)

Assembly of the AUR models is similar to that required for the AU models except that one must remember that the "R" (reverse buck) models are opposite handed.

FIG. 2A ASSEMBLY OF TABLE (REVERSE BUCK)



	AU42, AL45 AU45 AU47	AUR42 AUR45 AUR47	AMT15	AMT19 AMT193	AMT24 AMT243
Reinforcing Bar	116509	116509	116508	116508	116508
Table	93497	93498	93501	93501	93503
Filling Plate	-	-	80858	80858	-
End Cover	18745	18745	80857	80859	80853
Table Asm. Complete	122370	122376	-	-	-

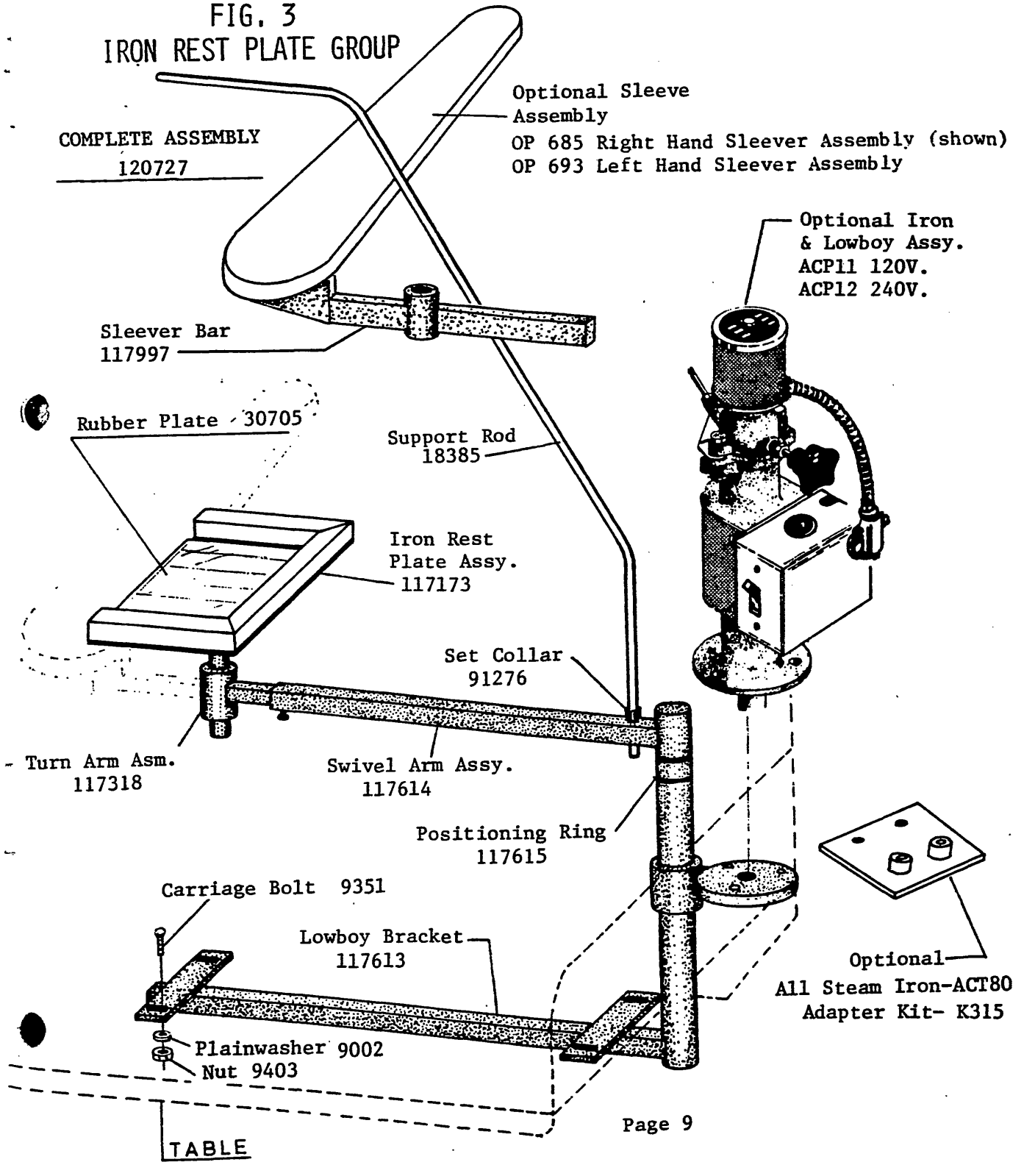
Installing the Press (Continued)

Assemble the Iron Rest Plate Group - See Fig. 3

15. Assemble the Lowboy bracket to the reinforcing bars using the bolts already in the bars. Assemble swivel arm assembly, iron rest plate and support rod to the bracket.

16. Assemble any optional Cissell equipment such as the iron and Lowboy or the sleever assembly. These will be packed in separate containers and are not shipped in the press crate.

FIG. 3
IRON REST PLATE GROUP



Steam, Vacuum and Air Connections - See Fig. 4

17. Connect a 1/2 inch steam supply line to the press at a pressure of 86 psi (about 6 bars) use a reducing valve if needed to obtain the correct pressure. The press uses one boiler horsepower (34.5 lbs. per hour) of steam.

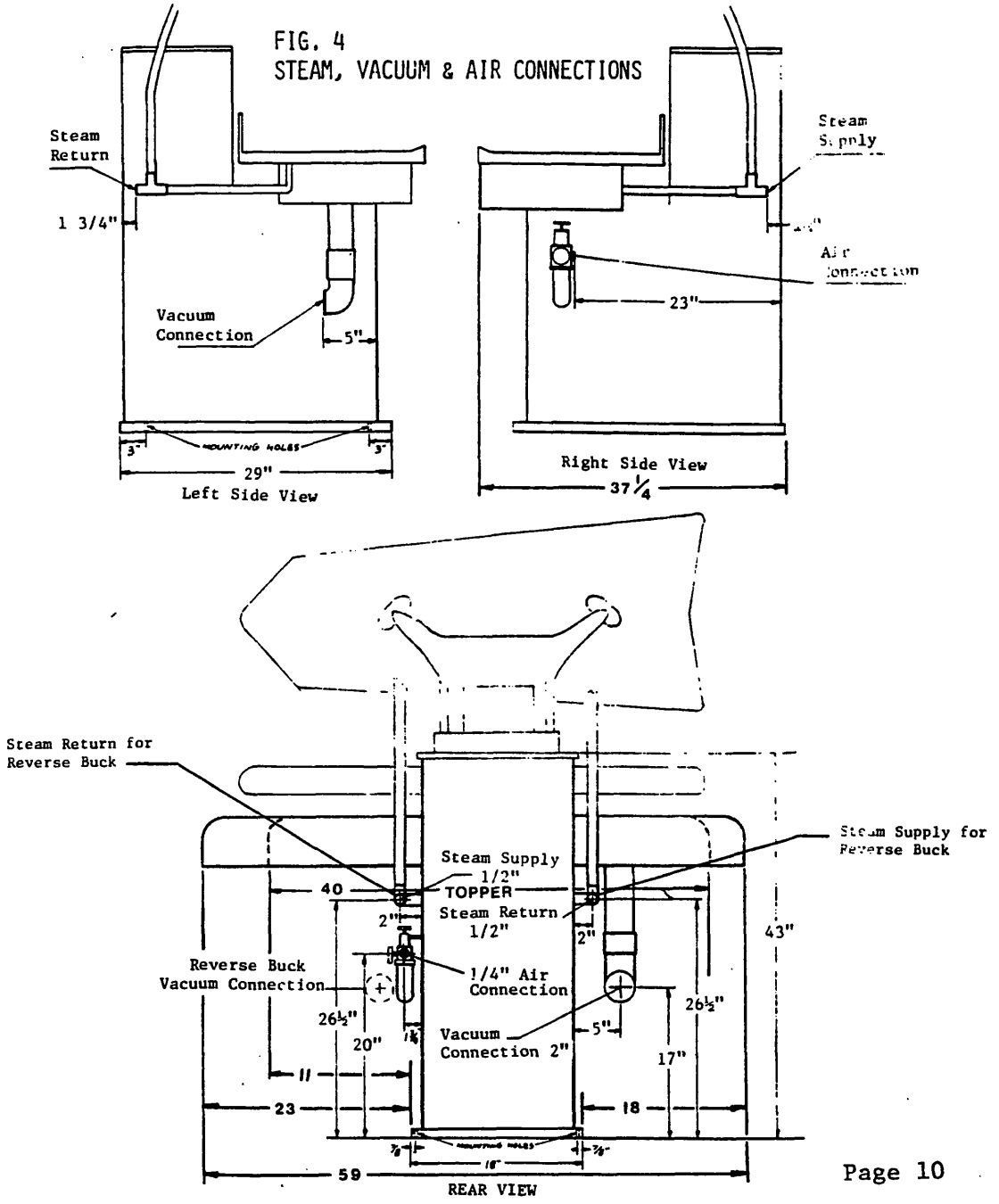
18. Connect a 1/2 inch steam return line to the press. Install a 1/2 inch trap good for 88 psi in the line.

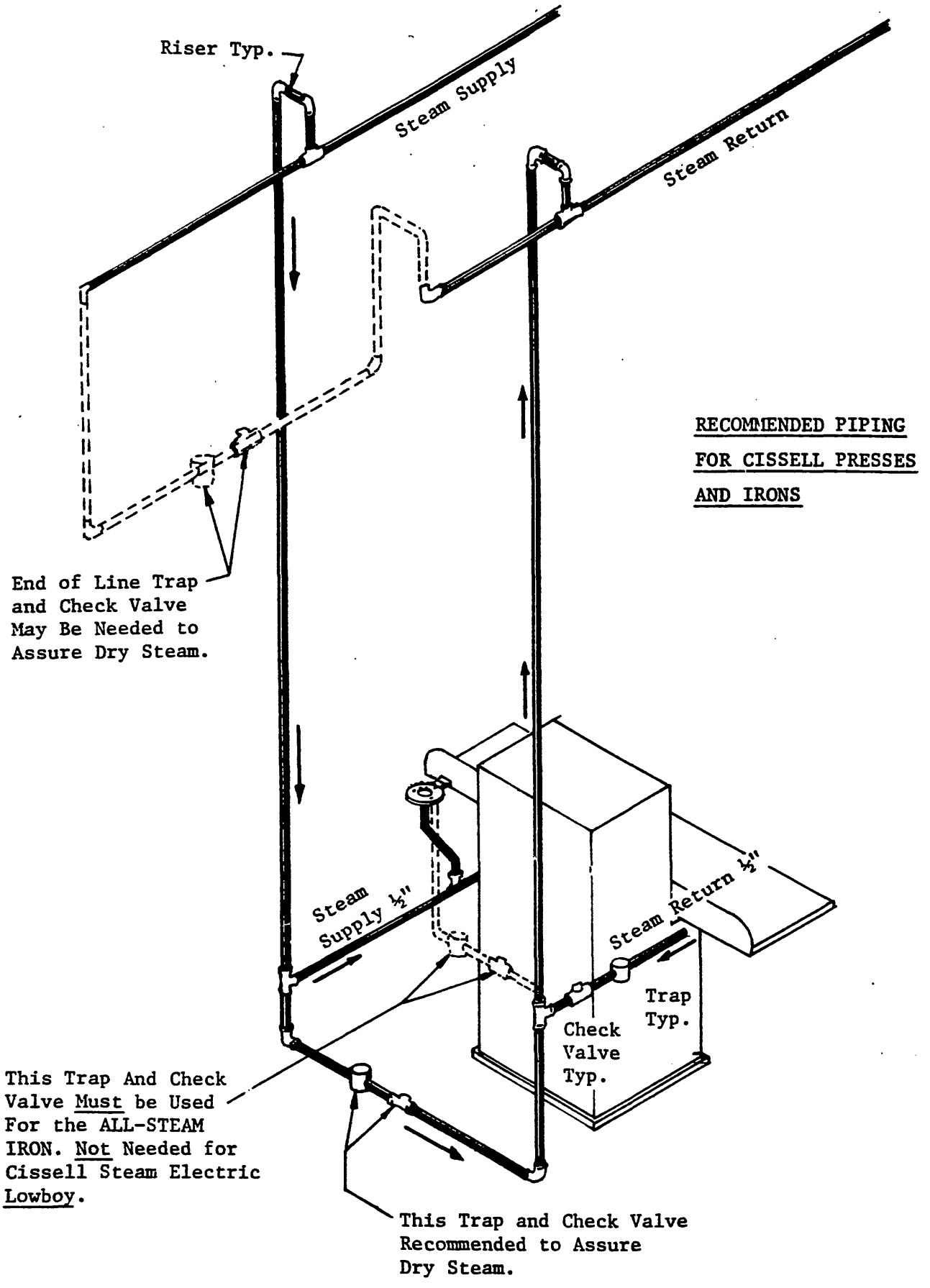
19. Connect the vacuum using a 2 inch pipe to the vacuum supply. The vacuum supply should be rated two presses or more. (Example Cissell Dryset model 2D or larger).

20. Connect the air using a 1/2 inch line at 88 psi (about 6 bars). The press is equipped with an air pressure regulator and gage. Read the gage for correct pressure. The average amount of air required is 0.5 S.C.F.M. A 1/2 horsepower compressor will operate one to five presses.

Important! The press controls are air operated and extreme care should be taken to keep dirt, metal shavings and other foreign substances out of the press to assure proper operation of the valves.

FIG. 4
STEAM, VACUUM & AIR CONNECTIONS





RECOMMENDED PIPING FOR CISSELL PRESSES AND IRONS

Part Numbers

Fig. 5 shows the assembled press as being made up of different groups of parts. See the corresponding figure number referenced below for service part numbers.

See chart for controls and part numbers for air operated utility and toppers on page 21 and for leggers on page 22.

Description of the Air Operated Press - See Fig. 5

The buck of the press is the bottom padded part of the press upon which the garment to be pressed is placed. The head is the upper part of the press. The head is closed with an air cylinder (air motor) (Fig. 24) and has a hydraulic booster assembly (Fig. 23) for applying pressure and locking the press in the closed position. The Fabric Feel control (Fig. 19) located on the table is used to vary the locking pressure for different materials.

Two black knobbed levers are located on the head. The left lever (Fig. 20) actuates the locking valve (Fig. 25) which actuates the high pressure booster (Fig. 23) and locks the head down. The right lever on the head is used for manually operating the head valve (Fig. 16) which ports steam to the head.

There is also an air operated cylinder (Fig. 21) which operates the head valve during normal automatic operation.

A hidden, long actuating bar is located under the front edge of the table. When the bar is pressed upward with one hand, the head closes but does not lock. To lock the press, the left black knobbed lever (Fig. 20) located on the head must be actuated with the other hand.

Two foot pedals are located near the floor at the front of the press. The left hand pedal is the vacuum and release pedal. Depressing the left pedal part way actuates the release valve (Fig.29) and the head opens. Completely depressing the pedal ports vacuum through the buck. The right hand pedal actuates the buck valve (Fig. 17) which ports upstream to the buck.

The unlocking bleed cock in the locking valve (Fig. 25) can be used to obtain automatic unlocking and opening of the press head.

Operation of the Air Operated Press (allow the press to warm-up)

Lay the garment to be pressed on the buck, close the head by pressing upward on the long hidden actuating bar located under the front edge of the table. When the head is fully closed and while continuing to press upward on the bar, use the other hand to depress the left hand black knobbed lever which applies pressure to the head and locks it in the closed position. In the automatic (automatic steam valve open) operation the head steam should commence just as the head touches the buck. With the automatic steam valve closed, head steam is controlled by the right hand black knobbed lever. Duration of the head steam can be varied by adjusting the steam duration valve. The commencing of the head steam can be controlled by adjusting the steam delay valve.

Upsteam to the buck is controlled by stepping on the right hand foot pedal if desired. Vacuum to the buck is controlled by partial depression of the left hand foot pedal and full depression releases the head which is pushed open by the balance springs. The garment is dried as air is drawn through the garment by the vacuum.

The Fabric Feel control sets the pressure which is exerted on the garment. The actual pressure may be observed by looking at the gage dial mounted on the press head. The left hand black knobbed lever used to apply pressure should be held until the gage needle stops. The settings of the Fabric Feel control have been determined to be correct and the control should be set for each different material. The least pressure is used on silk for instance whereas the maximum pressure is used on linen.

Lay the garment to a new position and repeat the above procedure as needed.

If desired, the head can be released automatically by adjusting the unlocking bleed cock to about 1/16 turn open.

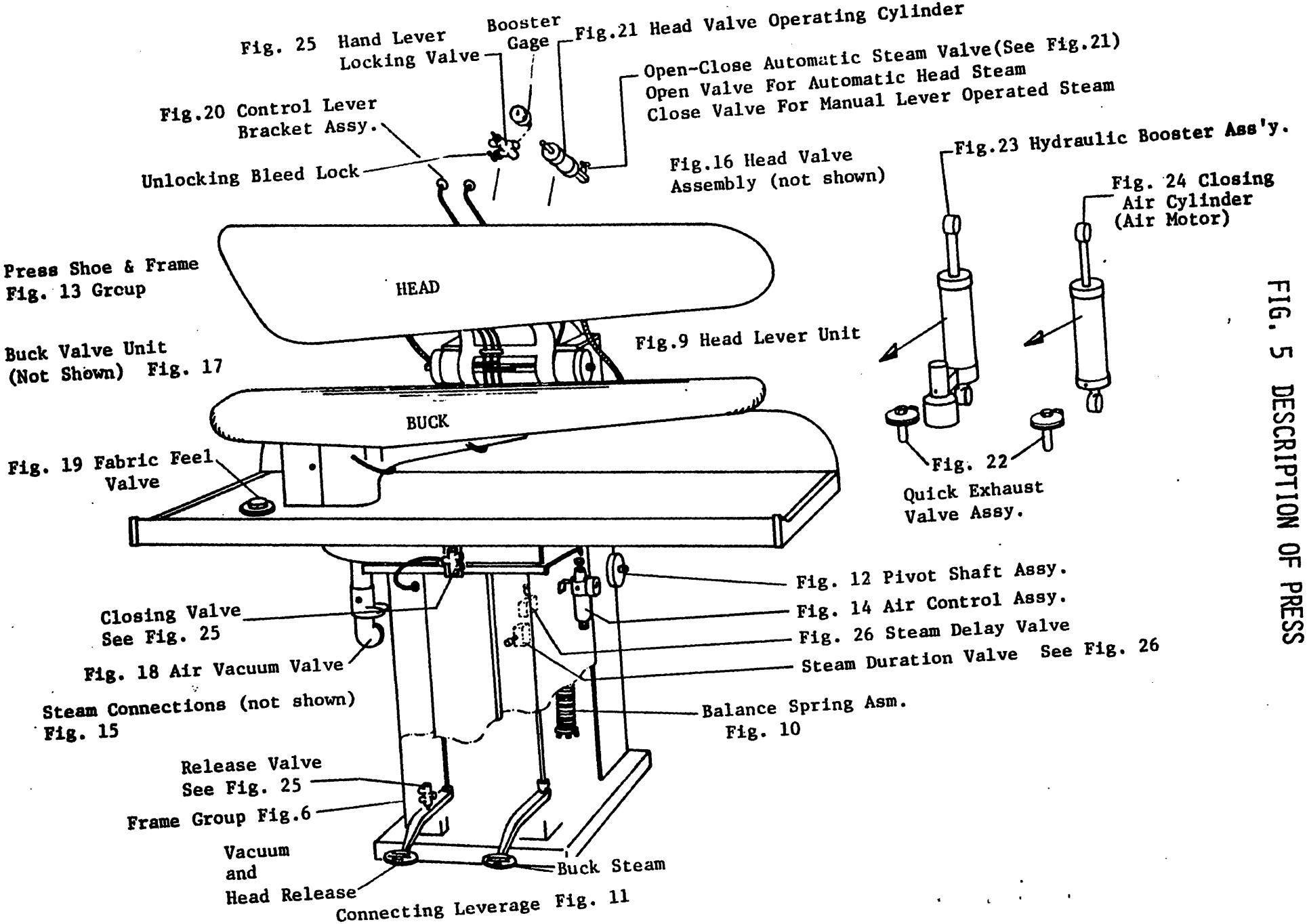


FIG. 5 DESCRIPTION OF PRESS

Maintenance

1. Once per month check oil level in the booster assembly. Use only 80022 oil. Never use ordinary lubricating oil.

2. Once per month add ordinary lubricating oil into the oil holes of the foot pedals. See Fig. 11.

3. The main pivot of the press head lever is fitted with needle bearings that are factory lubricated for the life of the machine.

4. The water and dirt should be checked in the bowl of the air cleaner daily and cleaned and/or drained when needed.

5. Other lubricating points when needed (use motor oil).
   a. Pivot points of control lever assembly.
   b. Vacuum valve pin and damper shaft.
   c. Buck valve connecting lever at connecting lever bolt (10102).
   d. Control lever bracket assembly.
   e. Head valve linkage.

   Other lubricating points when needed (use grease).
   f. Spring rod guides.

Mechanical Adjustments

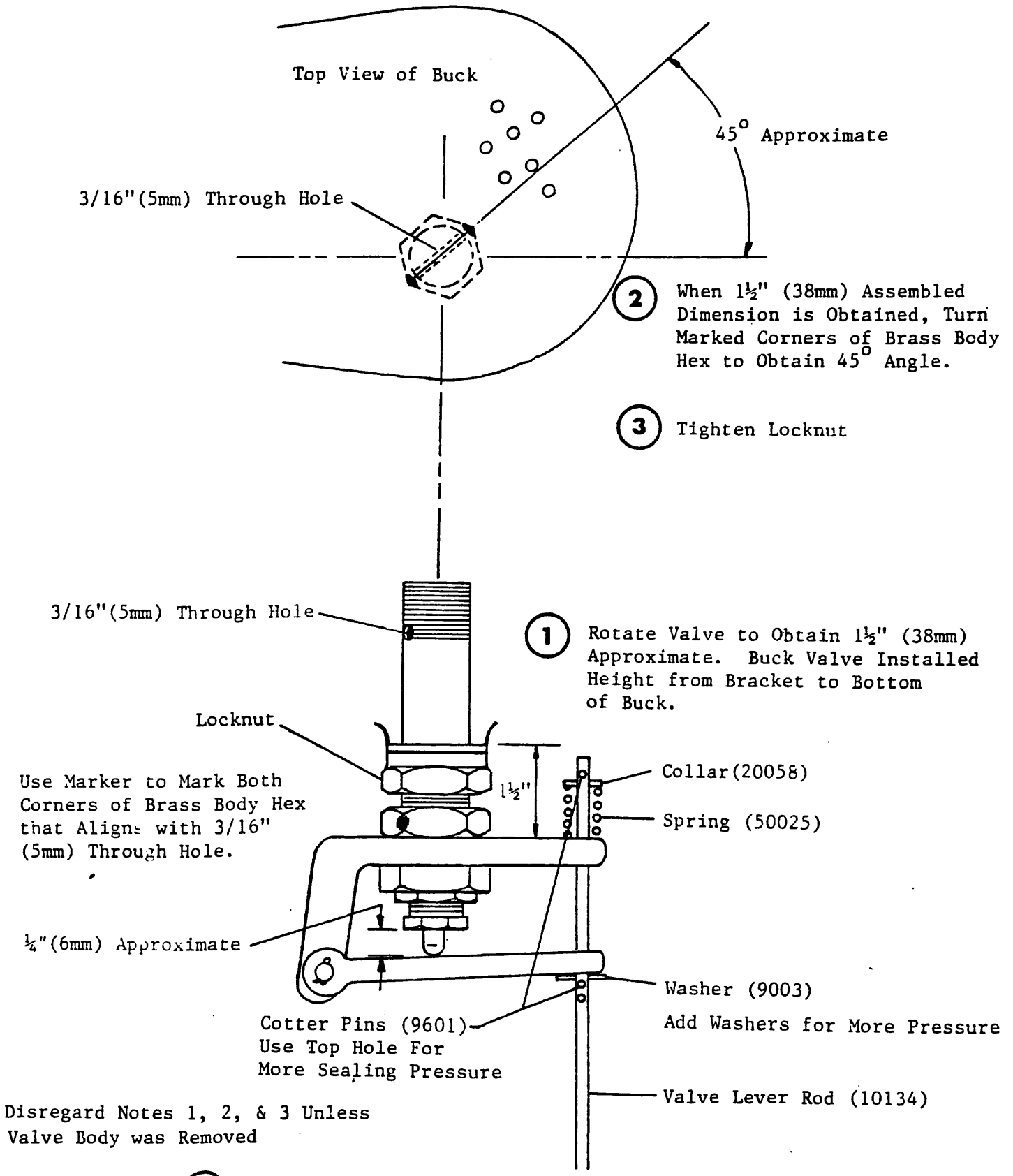
Head Valve - See Fig. 16 - This valve is equipped with an adjusting screw to meter the flow of head steam. Turning the screw counter-clockwise increases the flow of steam. See Fig. 16.

Buck Steam Linkage - Fig. 11 shows the linkage for buck steam operation. The valve lever rod visible under the table can be rotated by hand. With no pressure on the foot pedal turn this rod counter-clockwise as viewed from the top so that no steam flows into the buck. Depression of the right hand pedal should then give a good flow of steam. If there is a poor flow of steam because the pedal doesn't have enough travel, then turn the valve lever rod clockwise. If a good adjustment cannot be made adjust the buck valve, see below.

Buck Valve - This valve is set at the factory and normally would not be adjusted. In order to increase the buck steam, loosen the jam nut and turn the hex stem box counter clockwise. See Fig. 17.

Balance Springs - See Fig. 10. The balance springs are adjusted at the factory. The setting of the springs is a compromise between the closing speed and the opening speed of the head. To speed the buck opening, compress the springs more by adjusting the balance spring head which will require more closing force thus increasing the time required to close the press. Conversely extending the springs more allows faster closing and slower opening.

BUCK VALVE ADJUSTMENT



GENERAL TROUBLE SHOOTING LIST

Air Operated Press

1. Press Does Not Close

	POSSIBLE CAUSE	SOLUTION
a.	Insufficient or no air pressure at all.	Check compressor pressure.
b.	Air control assembly has either been wrongly adjusted or is blocked by dirt.	Adjust air control assembly at 88 psi (6 bar) and clean, if necessary.
c.	Closing valve under the table does not work.	Adjust valve in such a manner, that it has a clearance of 1/32 to 1/16 with regard to the operating lever.
d.	Air line to closing air cylinder leaks or is blocked.	Screw off air line to closing air cylinder and check passage.
e.	Exhaust valve of air cylinder is defective.	Check exhaust valve and replace cup if necessary. Repair kit (#30017).
f.	Closing air cylinder cup is faulty.	Check closing air cylinder; if too much air blows out of upper cover, replace the "U" packing. Repair Kit 117727

2. Press Closes Too Slowly

a.	Air pressure too low.	Increase reducing valve to 88 psi (6 bar).
b.	Tension of balance spring set high.	Reduce spring tension by unscrewing balance spring head (#121).
c.	Press works mechanically too heavy.	Lubricate press, see table of contents. (Maintenance)
d.	Supply line to air cylinder is too small.	Enlarge supply line. (½ inch dia.)

3. Press Opens Too Slowly

a.	Defective Exhaust Valve either from booster or air cylinder	Close press without high pressure. If press opens correctly when releasing the Operating lever, exhaust valve of air cylinder is o.k. In this case the exhaust valve of booster is defective (repair kit 30017).

Press Opens Too Slowly (continued)

POSSIBLE CAUSE	SOLUTION
b. Defective Booster	See description of booster.
c. Springs tension is insufficient.	Tighten springs by turning the balance spring head (#121) clockwise. Note: Tighten both springs equally.

4. Press Closes, But Gives No High Pressure

a. Unlocking bleed cock of hand lever valve leaks or is open.	Close or replace unlocking bleed cock. (#40268).
b. Foot pedal release valve on left foot pedal leaks or remains open.	1. Adjustment of the valve not correct. Clearance 1/32 to 1/16 inch. 2. Defective "O" ring.
c. Defective booster.	See description of booster.
d. Hand lever locking valve leaks	Disassemble hand lever locking valve and replace O-rings.
e. Line to booster leaks	Check air hose for leakages.
f. Exhaust valve of booster leaks.	Disassemble exhaust valve (#110025) and check diaphram. Repair kit #30017.
g. Defective fabric feel valve.	Check to see if there is any air pressure from fabric feel valve. If no air pressure or very little, adjustment of air pressure. Replace or repair the fabric feel valve. Kit #113963.

5. Press Closes, But Does Not Open

a. Exhaust valve, either on booster or of air cylinder does not work correctly.	Close press with high pressure. If press opens correctly when releasing operating lever, exhaust valve of air cylinder is in order. In this case exhaust valve of booster causes the trouble and must be repaired. Kit (#30017).
b. Booster is defective.	See description of booster.
c. Foot pedal release valve on left footpedal does not work.	Re-adjust valve. Clearance between pedal and valve should be 1/32 to 1/16 inch.

6. Head Steam Valve is Leaking

	POSSIBLE CAUSE	SOLUTION
a.	Valve disc is damaged.	Replace valve disc. (#30024)
b.	Seat is damaged.	Replace seat. (#20032)
c.	Spring is broken or out of adjustment.	Replace spring (#50010) or increase spring tension by mounting a ring behind the spring. If disc holder (#20167) or cover are too far driven in they have to be replaced.
d.	Operating cylinder jams.	Check operating cylinder, clean and grease it.

7. Head Steam Valve Leaks On The Outside

a.	O-ring worn out or faulty.	Replace O-ring 30023. Packing set screw with teflon tape can remove leakage.
b.	Teflon gasket 30049 leaks.	Replace teflon gasket (#30049).

8. Buck Steam Valve Leaks

a.	Valve 30594 is damaged.	Replace valve (30594).
b.	Seat is damaged (older types do not have a removable seat).	Clean or replace seat (#15081)
c.	Check if spring tension (out side of valve) is sufficient.	Spring tension can be increased by turning the valve lever rod.
d.	Valve leaks at thread of housing.	Disassemble valve and tighten before re-assembling.

9. Buck Steam Valve Leaks On The Outside

a.	O-ring worn out or faulty	Replace O-ring (30023)
b.	Teflon gasket 30049 leaks.	Try to tighten jam nut. If tightening jam nut does not work, replace teflon gasket (30049)

10. During Closing Of Press No Head Steam Is Released Automatically

a.	Steam delay valve of automatic head steam is blocked.	Open steam delay valve entirely and re-adjust it.
b.	Head steam valve cylinder is jamming or cup packing leaks.	If cup packing leaks, air will pass through the front cover. Replace cup (30092). Otherwise supply hose has to be loosened and checked for allowing air to pass through during closing. If so, check cylinder and operate it.

11. Head Steam Releases Automatically But Continuously

	POSSIBLE CAUSE	SOLUTION
a.	Steam duration valve is blocked or closed.	Open steam duration valve entirely and re-adjust it.
b.	Operating cylinder does not come back, is jamming.	Clean operating cylinder and/or replace spring (#50046).

12. Head Steam Valve Releases Too Much Or Too Little Steam

a.	Passage of head steam valve is either too big or too small.	Opening of valve can be adjusted by means of a set screw (80604) on front side of valve.

13. Buck Steam Valve Releases Too Much Or Too Little Steam

a.	Passage of buck steam valve is either too big or too small.	See table of contents - Adjustments - Buck Steam Valve

14. No Release Of Vacuum When Depressing Left Pedal

a.	Set collar on vacuum valve connecting rod not adjusted properly.	Take off front panel and adjust set collar 17858. Clearance between operating lever - valve and set collar has to be ± 1/16.

15. Vacuum Continuous, After Pedal Has Been Released

a.	Spring of the valve is defective.	Replace spring 50009.
b.	Vacuum valve connecting rod is not lined up with valve lever 113794.	Adjust valve accordingly.

16. Press Makes A Loud Banging Noise When Head Is Released

a.	Operator error (High pressure was applied before the head was completely closed).	Head must be in contact with the buck before high pressure is applied.

17. Trouble Shooting List Of The Hydraulic Booster
See Fig. 23

What to do if:
1. Press opens too slowly.
2. Booster gives no pressure.
3. Press looses pressure during cycle.
4. Loss of oil/loss of pressure.

When disassembling the booster, all packings and O-rings should be replaced.

At lease once a year the hydraulic oil in the booster should be replaced, because oil reduces its viscosity.

Trouble Shooting List Of the Hydraulic Booster (continued)

1. Press opens slowly
   a. Booster nut 174 has been driven in, hindering back flow of oil. If the booster nut is slightly driven in, it might be possible to adjust booster valve 10306 somewhat higher (see fig. 7). Otherwise a new booster nut has to be installed.

   b. Air booster spring 50092 is broken or does not have sufficient tension any more. Requires replacement.

2. Booster gives no pressure. Check to make sure that the booster is getting air pressure. Remove air line to booster and operate the hand lever locking valve. Check to make sure booster is full of hydraulic oil (80022).

3. Press looses pressure during cycle.
   a. Check, if air supply line is leaking.

   b. It may be that there is a leakage between check valve stem 30595 and seat. If necessary, replace valve and adjust seat. Former presses have been equipped with a metallic valve instead of a plastic one. Such metallic valve may be fixed by installing an O-ring. Old parts can simply be replaced by 30595.

   c. Back up ring 30025 and O-ring 30029 require replacement. Damages of back up ring can be hardly located, because of small cracks. check also O-ring 30032; after longer use this O-ring can be damaged.

   d. Check if seat between plunger 10520 and booster valve 10306 is damaged (always to be replaced at the same time).

   e. Check O-ring 30081 (damages do not occur very often).

   f. Check O-ring 30083.

4. Loss of oil and eventual loss of pressure.
   a. Check valve stem 30595 does not work, not allowing the oil to flow back. Oil will then accumulate in the top of the booster at piston rod guide 124.

   b. Back up ring 30084 and O-ring 30082 let oil pass through so that it can enter into the exhaust valve. In most cases this is indicated to be located by a greasy oil vapour, which blows out of the exhaust valve during opening of the press. (The exhaust valve is mounted in front of air inlet of booster). Check also, if piston rod 1884 has been damaged. Sometimes this rod can be repaired by rubbing with very fine sandpaper in longitudinal direction (only slight damages)

5. Press slows down badly at closing.
   a. Refill oil on booster (use only oil with Pantex No. 80022).

   b. In case of loss of oil see point 4.

Please note, when mounting the booster between the shafts, that upper and lower fastening points must be lined up absolutely vertically.

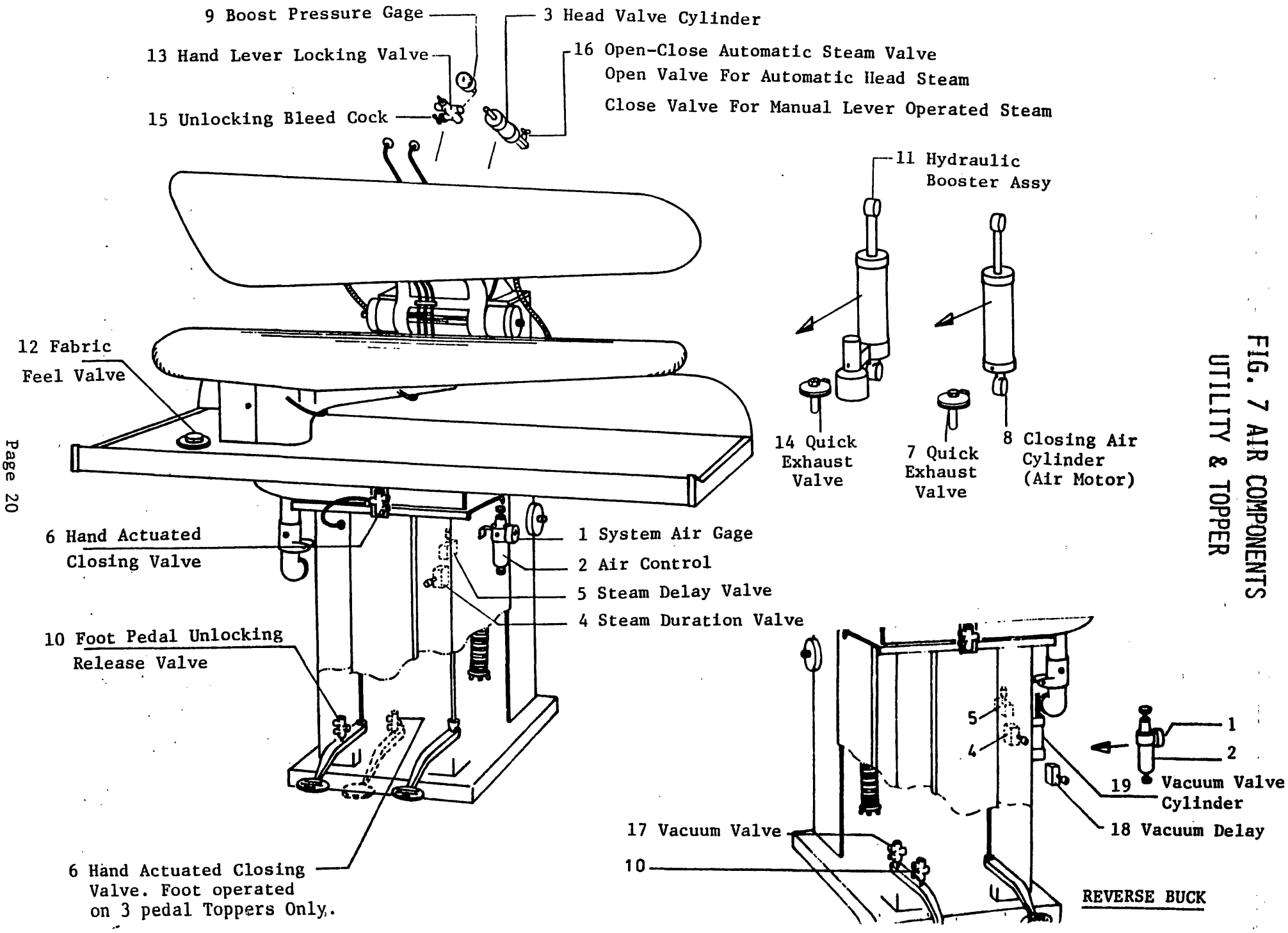


FIG. 7 AIR COMPONENTS
UTILITY & TOPPER

CHART FOR AIR OPERATED UTILITY & TOPPERS (SEE FIG. 7 & FIG. 8)

CONTROLS & FITTING PART NUMBERS

Ref. No.	Description	Part No.	Fitting Description	Fitting No.
1	Gauge	80706		
2	Air Control Assy	113 362	Elbow Adaptor	45124
3	Head Valve Operating Cylinder	110 156		
4	Steam Duration Valve	80 846	Elbow Adaptor	45125
5	Steam Delay Valve	80 846	Elbow Adaptor	45125
6	Hand Actuated Closing Valve	113 788	Straight Adaptor Swivel Tee Adp.	45130 45163
7	Quick Exhaust Valve	110 025	Elbow Adaptor	45132
8	Closing Air Cylinder	117723		
9	Boost Pressure Gauge	80864	Elbow Adaptor	45132
10	Foot Pedal Release Valve	113 788	Swivel Tee Adp.	45163
11	Hydraulic Booster Assy.	113 888		
12	Fabric Feel Valve See page 43	113 961	Straight Adp. Elbow Adaptor	45184 45155
13	Hand Lever Locking Valve	113 788	Elbow Adaptor	45124
14	Quick Exhaust Valve	110 025	Elbow Adaptor	45155
15	Unlocking Bleed Cock	40 268		
16	Open-Close Automatic Steam Valve	80 501	Elbow Adaptor	45132
17	Vacuum Air Valve	113 788	Elbow Adaptor	45132
18	Vacuum Delay Air Flow Valve	80 846	Elbow Adaptor	45125
19	Vacuum Valve Actuating Air Cylinder Assy.	116 972		

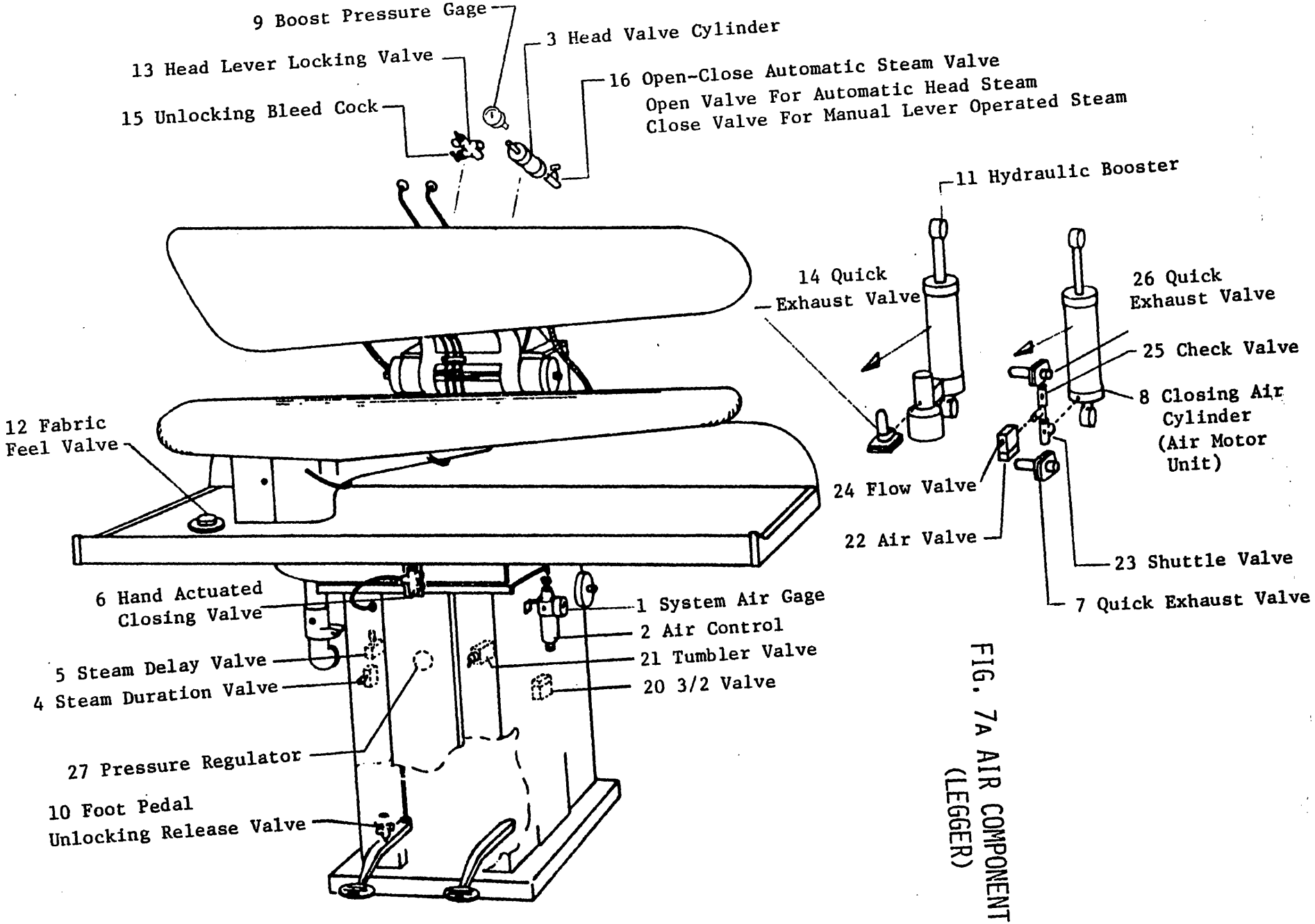
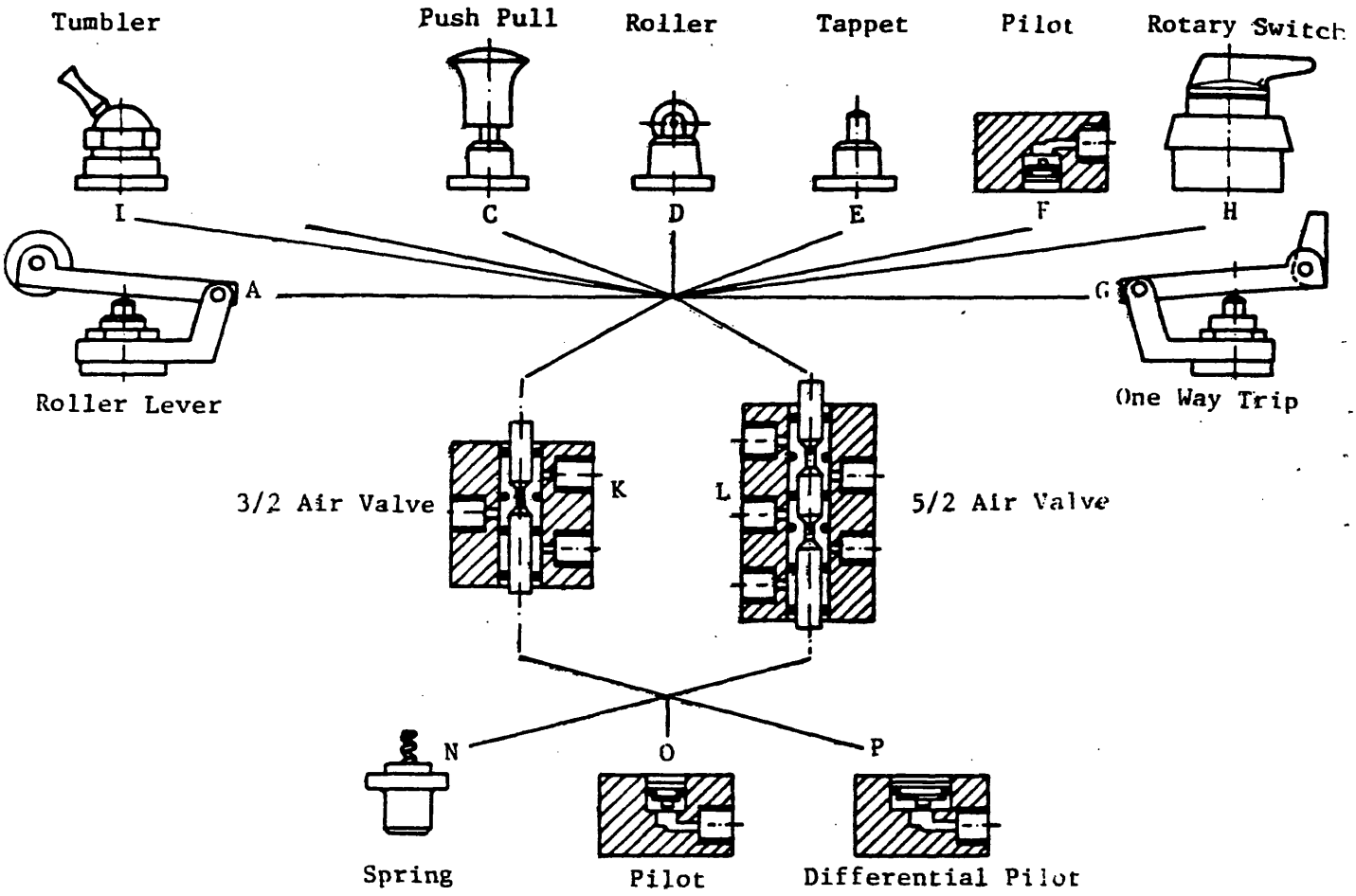


FIG. 7A AIR COMPONENTS
(LEGGER)

CHART FOR AIR OPERATED LEGGERS (SEE FIG. 7a & 8a)

CONTROL AND FITTING PART NUMBERS

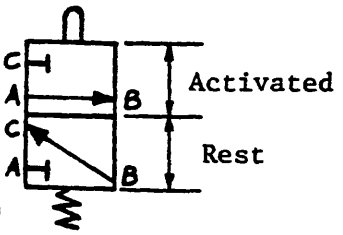
Ref. No.	Part Description	Part No.	Fitting Description	Part No.
1	Gauge	80 706		
2	Air Control Assy.	113 362	Elbow Adaptor	45124
3	Head Valve Operating Cylinder	110 156		
4	Steam Duration Valve	80 846	Elbow Adaptor	45125
5	Steam Delay Valve	80 846	Elbow Adaptor	45125
6	Hand Actuated Closing Valve	113 788	Swivel Tee Adp. Straight Adaptor	45163 45130
7	Quick Exhaust Valve	110 025	Elbow Adaptor	
8	Closing Air Cylinder	117725	Elbow Adaptor	45125
9	Boost Pressure Gauge	80864	Elbow Adaptor	45132
10	Foot Pedal Release Valve	113 788	Elbow Adaptor	45132
11	Hydraulic Booster Assy.	113 888		
12	Fabric Feel Valve	113 961	Elbow Adaptor Straight Adaptor	45155 45184
13	Hand Lever Locking Valve	113 788	Elbow Adaptor	45124/45132
14	Quick Exhaust Valve	110 025	Elbow Adaptor	45155
15	Unlocking Bleed Cock	40 268		
16	Open-Close Automatic Steam Valve	80 845	Elbow Adaptor	45132
20	Booster Control 3/2 Valve	117 175	Elbow Adaptor Elbow Adaptor Straight Adaptor	45134 45125 45179
21	Slow Release Valve	117 651	Elbow Adaptor	45125
22	Slow Opening Air Valve	117 175		
23	Shuttle Valve	117 214		
24	Slow Release Flow Control Valve	80 694		
25	Check Valve	117 106		
26	Quick Exhaust Valve	110 025	Elbow Adaptor	45132
27	Pressure Regulator	117849		



CODE	NAME	NUMBER	REPAIR KIT
F-K-O	3/2 Pilot/Pilot Valve 1/8"	117000	117006
A-K-N	3/2 Roller Lever/Spring 1/8"	117004	117003
F-L-O	5/2 Pilot/Pilot Valve 1/8"	117005	117006
F-L-P	5/2 Differential/Pilot Valve 1/4"	117007	117284
D-K-O	3/2 Roller/Spring Valve 1/8"	117021	117001
D-K-N	3/2 Roller/Spring Valve 1/8"	117105	117003
G-K-N	3/2 One Way Trip/Spring Valve 1/8"	117121	117003
F-K-N	3/2 Pilot/Spring Valve 1/8"	117175	117006
F-K-O	3/2 Pilot/Pilot Valve 1/4"	117212	117284
A-K-N	3/2 Roller Lever/ Spring Valve 1/4"	117237	117248
E-K-N	3/2 Tappet/Spring Valve 1/8"	117242	117003
F-L-N	5/2 Pilot/Spring Valve 1/8"	117265	117006
E-K-O	3/2 Tappet/Pilot Valve 1/8"	117002	117001
C-K-O	3/2 Push Pull Knob/Pilot Valve 1/8"	117281	117249
F-K-N	3/2 Pilot/Spring Valve 1/4"	117368	117284
H-L-N	5/2 Rotary Switch/Spring Valve 1/8"	117511	117003
I-K-N	3/2 Tumbler/Spring Valve 1/8"	117651	117003

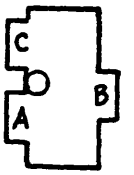
Manually Operated

(Schematic drawing)



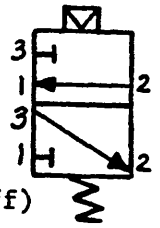
Spring Loaded (Off)

Actual Valve
113788



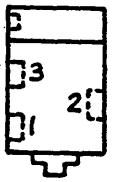
The above schematic is for manually operated air valves showing the function of the valve at rest (bottom section) and at the activated position (top section).
Although the valve has only 3 ports (a, b & c), this is a schematic way of showing how the valve works internally.

Air Operated Valve



Spring Loaded (off)

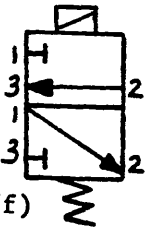
Actual Valve
117175



The above schematic is for an air operated air valve showing the function of the valve at rest (bottom section) and in the activated position (top section).
Although the valve has only 3 ports (1, 2, 3), this is a schematic way of showing how the valve works internally.

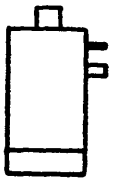
Electrical Operated Valve

Schematic Drawing



Spring Loaded (off)

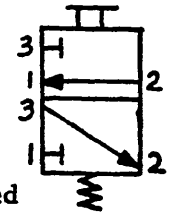
Actual Valve
117366



The above schematic is for an electrically operated air valve showing the function of the valve at rest (bottom section) and in the activated position (top section).
Although the valve has only 3 ports (1, 2, 3), this is a schematic way of showing how the valve works internally.

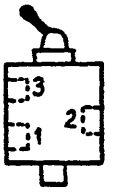
Manually Operated with Tumbler Switch

Schematic Drawing



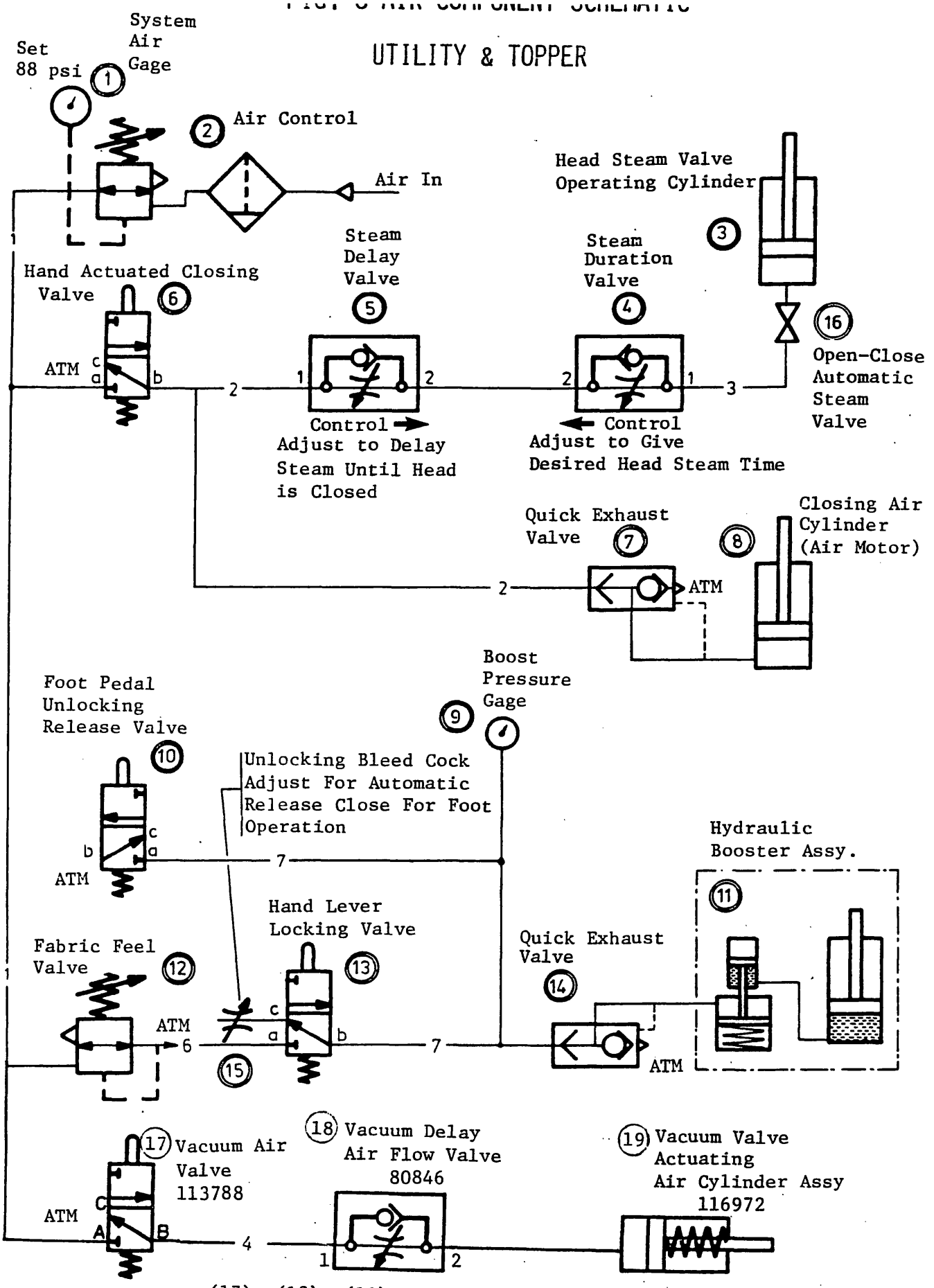
Spring Loaded

Actual Valve
117651



The above schematic is for a manually operated (with tumbler switch) air valve showing the function of the valve at rest (bottom section) and in the activated position (top section).
Although the valve has only 3 ports (1, 2, 3), this is a schematic way of showing how the valve works internally.

UTILITY & TOPPER



(17), (18), (19) used only on the reverse buck model to operate the vacuum valve with air rather than with mechanical linkage.

See Fig. 7 & Fig. 8. Plant air enters the air control (2) where it is cleaned of water and dirt. The controls should be adjusted to give a reading of 88 psi (6 bars) on the system air gage (1). The air flows to the hand actuated closing valve (6) and to the fabric feel valve (12). The fabic feel valve is really a pressure reducer and the reduced pressure is connected to the hand lever locking valve (13).

When automatic operation of the head steam is desired, the open-close automatic steam valve (16) is open. When the hand actuated closing valve (6) is operated, air flows to the quick exhaust valve (7) which moves a diaphram in the quick exhaust valve (7) such that air is ported to the closing air cylinder (8) and the head closes.

At the same time air flows through an adjustable orifice in the steam delay valve (5), free flows through the steam duration valve (4), through the open automatic steam valve (16) to the head steam valve operating cylinder (3). The adjustable orifice in the steam delay valve (5) should be adjusted so that the steam commences as soon as the head is closed.

When manual operation of the head steam is desired or when no head steam is wanted the open-close automatic steam valve (16) should be closed. If the head actuated closing valve (6) is released at this time the head will open.

To keep the head down, the hand lever locking valve (13) must be depressed with the other hand while continuing to hold the closing valve (6). Warning! The head must be fully closed when the hand locking lever (13) is depressed or poor pressing pressure will result and the booster could be damaged. Air flows from the locking valve (13) which ports air to the quick exhaust valve assembly (14) which move a diaphram in the quick exhaust valve (14) such that air is ported to the hydraulic booster assembly (11). This applies pressure to the closed head. The same air is piped to the boost pressure gage (9) and to the foot pedal unlocking release valve (10). Now both hand controls (6) and (13) can be released and the head is in the closed and locked position.

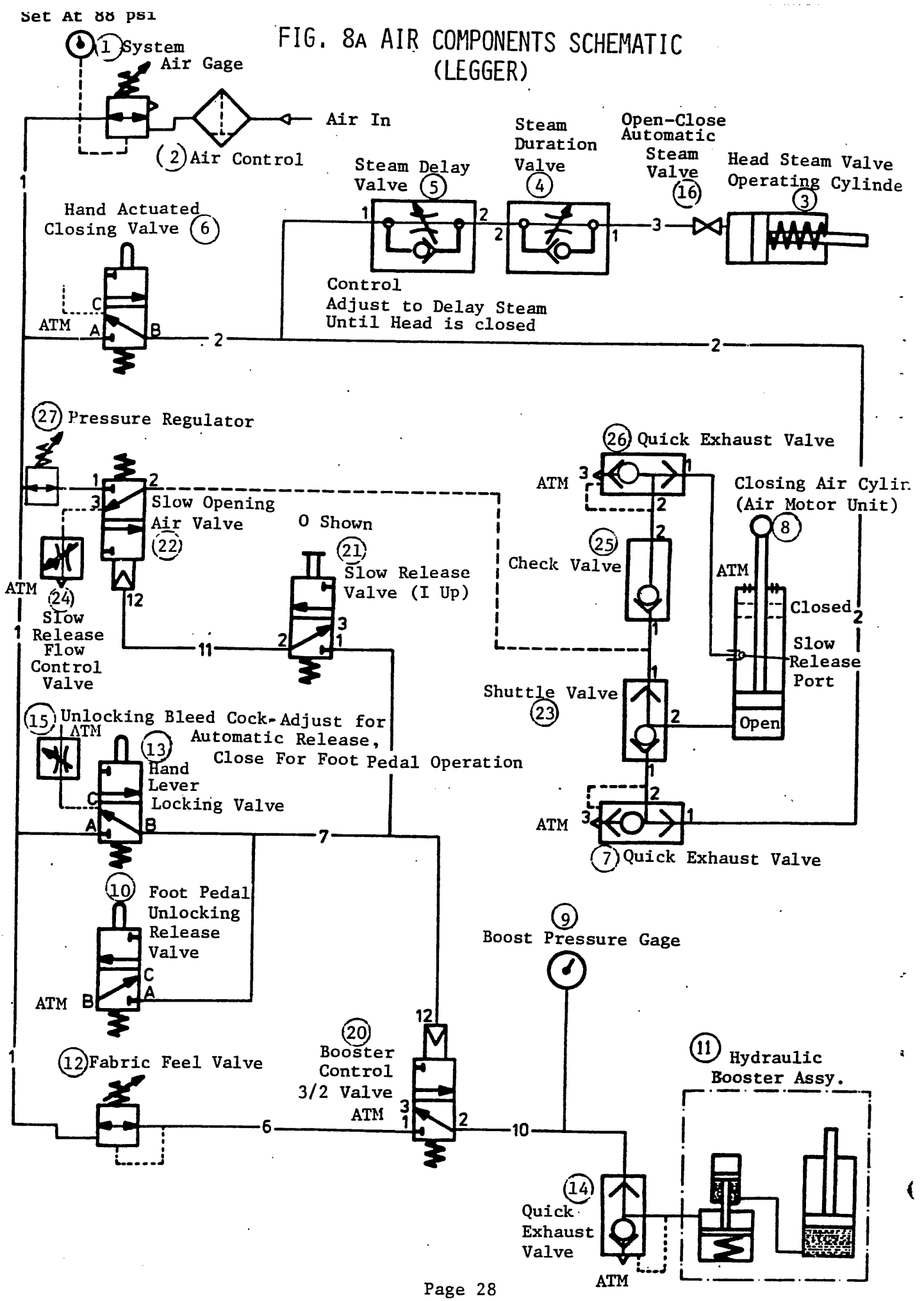
When the closing valve (6) is released, air from the closing cylinder (8) is exhausted to atmosphere through the quick exhaust valve (7). At the same time air from head valve operating cylinder (3) flows through the open-close valve (16), through an adjustable orifice in the steam duration valve (4), free flows through the steam delay valve (5), to the hand valve (6) to atmosphere. The adjustable orifice in (4) is adjusted to time the termination of the head steam flow as desired.

When the locking valve (13) is released, the air pressure is ported to the unlocking bleed cock (15) which is closed when foot pedal unlocking of the buck is desired. When the foot pedal release valve (10) is actuated, the quick exhaust valve (14) diaphram moves and the air in the hydraulic booster assembly (11) is exhausted to atmosphere through the quick exhaust valve (14). The balance springs push the head to the open position.

If desired, the head can be released automatically by adjusting the unlocking bleed cock (15) to about 1/16 turn open. When the boost air pressure decreases sufficiently the quick exhaust valve (14) diaphram moves and air in the hydraulic booster assembly is exhausted to atmosphere through the quick exhaust valve (14). The balance springs push the head to the open position.

Reverse buck vacuum valve is actuated by means of the vacuum valve air cylinder (19) when the left foot pedal is depressed. Depressing the left foot pedal allows air to flow through the vacuum air valve (17), control flow through the vacuum delay valve (18) to the vacuum cylinder (19). The vacuum delay valve (18) can be adjusted closed for more delay before vacuum or can be left open for quicker vacuum.

FIG. 8A AIR COMPONENTS SCHEMATIC (LEGGER)



How the Air Control System Works (Legger)(Read Utility & Topper Description First)

See Fig. 7a and Fig. 8a. The legger air circuitry is the same as for the air operated utility and topper presses except for the addition of more controls. Controls (20), (21), (22), (23), (24), (25) and (26) have been added to cause the head to partially open, pause and then to open at full speed. This pause allows the head to partially open, vacuuming and drying of the trouser takes place and then the head fully releases to open at full speed.

Air pressure to the booster assembly is controlled by the booster control valve (20) which is closed at this time.

When the head closing valve (6) is hand actuated, air flows to the head steam valve in the same way as described earlier for the utility and topper presses.

At the same time air flows to the quick exhaust valve (7), shuttles the diaphram in (7) and ports air to the shuttle valve (23). Air flows to the closing air cylinder, (8) and as the piston head moves past the slow release port on the side of the cylinder, air is ported to the quick exhaust valve (26), shuttles the diaphram in (26) and then is ported to closed check valve (25). If the head closing valve (6) was released at this time, the head would be pushed open with the balance springs.

To keep the head down, the hand lever locking valve (13) must be depressed with the other hand while continuing to hold the closing valve (6). Warning! The head must be fully closed when the hand locking lever (13) is depressed or poor pressing pressure will result and the booster could be damaged. Air flows from the locking valve (13) to the air operator of booster control valve (20) which allows air to flow to the booster which exerts force on the head in accordance with the pressure dictated by the fabric feel valve just as described earlier on the utility and topper presses.

When the slow release valve (21) is set at (I) for slow release, air from lever locking valve (13), flows through slow release valve (21) to the operator of the slow opening valve (22) and high pressure flows to a point between shuttle valve (23) and check valve (25). Valve (23) shuttles and air pressure to the closing air cylinder is replenished from slow opening valve (22).

Now both hand controls (6) and (13) can be released. When closing valve (6) is released air pressure is removed from the quick exhaust valve (7), but pressure is still applied to the cylinder from slow opening valve (22).

When the locking valve (13) is released the hydraulic booster (11) stays locked. The booster (11) will be released either by the unlocking bleed cock (15) or with the foot pedal valve (10). When either unlocks the booster, the head releases but stays closed because air pressure is being applied to the air cylinder (8).

Unlocking of the booster reduces pressure to the slow opening valve (22) operator and the air pressure in the air cylinder (8) is ported to the adjustable slow release flow control valve (24) which allows the air in the air cylinder (8) to escape to atmosphere and the piston head slowly moves to the slow release port in the cylinder. As the piston head passes the slow release port, one side of the quick exhaust valve is ported to atmosphere through the rod end of cylinder (18), the diaphram shuttles and the remaining trapped air in the cylinder is quickly exhausted to atmosphere by free flowing through check valve (9) and quick exhaust valve (26).

If slow release is not needed or wanted, then the slow release valve should be left in the (O) position. No air will be trapped in the closing air cylinder (8) and the head will open quickly without pause.

Beginning with Legger Serial No. 08822947, a pressure regulator (27) has been added. This allows for faster head release when the toggle switch (21) is in the up position.

Protecting Bar Group (Toppers)(See Fig. 29)

Topping of pants requires the use of both hands to hold the garment on the buck. In order to close the head, a center foot pedal is used. Whenever the center foot pedal is used, a safety protecting bar surrounds the head such that the press head closing is cancelled should an object (such as a hand) get in the closing path of the head. The protection bar requires electrical power from a separate supply on air operated press or is taken from the electrical control box on automatic presses which already have an electrical supply.

Tripping of the protection bar opens one or both sensing switches which allows two self locking circuits to open. One opens the magnetically held manual reset circuit. The second opens a relay circuit which cuts off power to and causes closing of the main air pressure solenoid valve and also in the case of an automatic press cuts off power to all controls. The machine is reactivated by pushing the manual reset button.

In summary, tripping of the protection bar causes the head to open by shutting off the air supply and also by shutting off the electrical power on automatic presses.

FIG. 6 FRAME GROUP

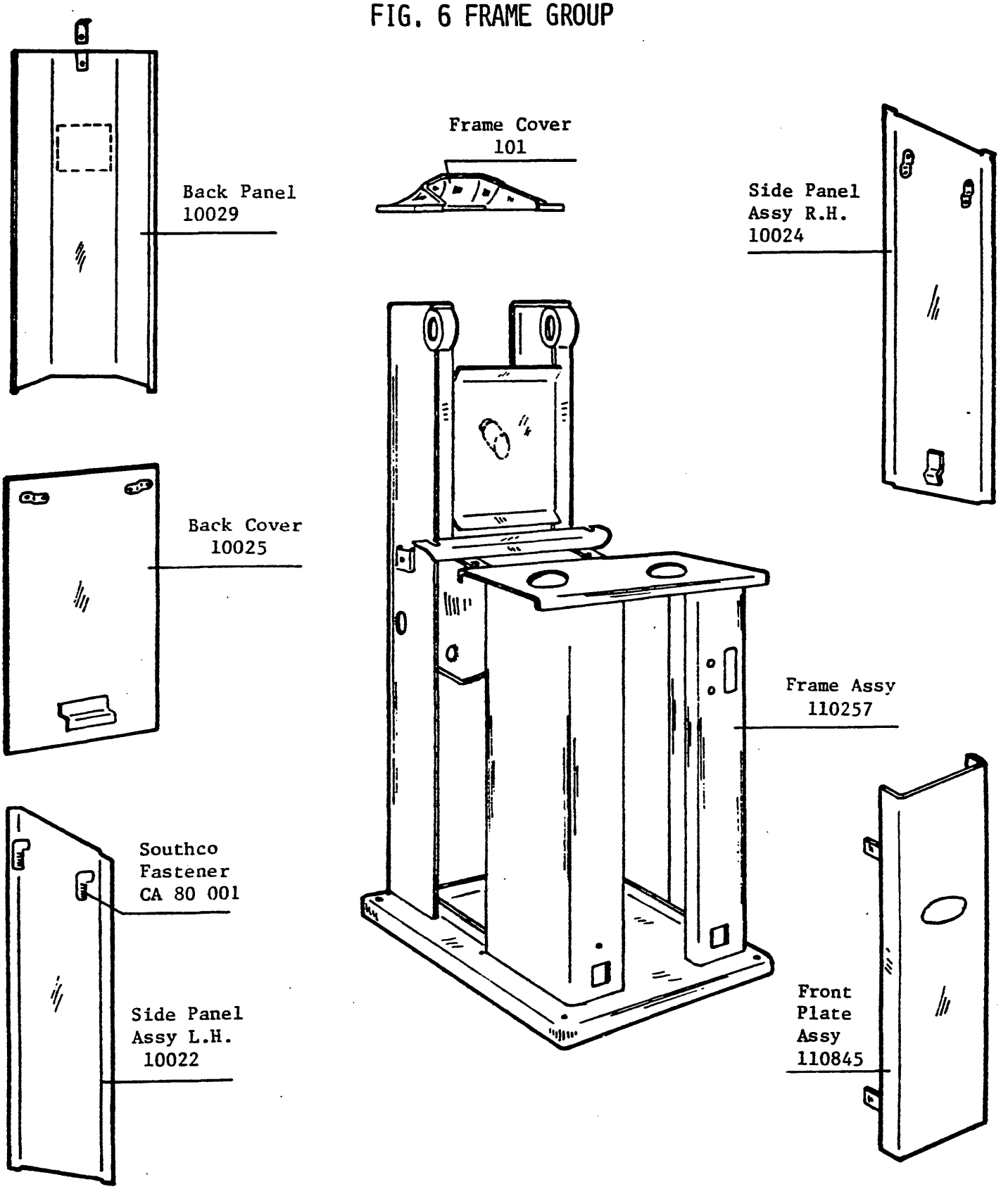


FIG. 9 HEAD LEVER UNIT

CHART

Pin	Cotter
10050	9602 (2 req'd)
10047	9603 (2 req'd)
10046	9603 (2 req'd)

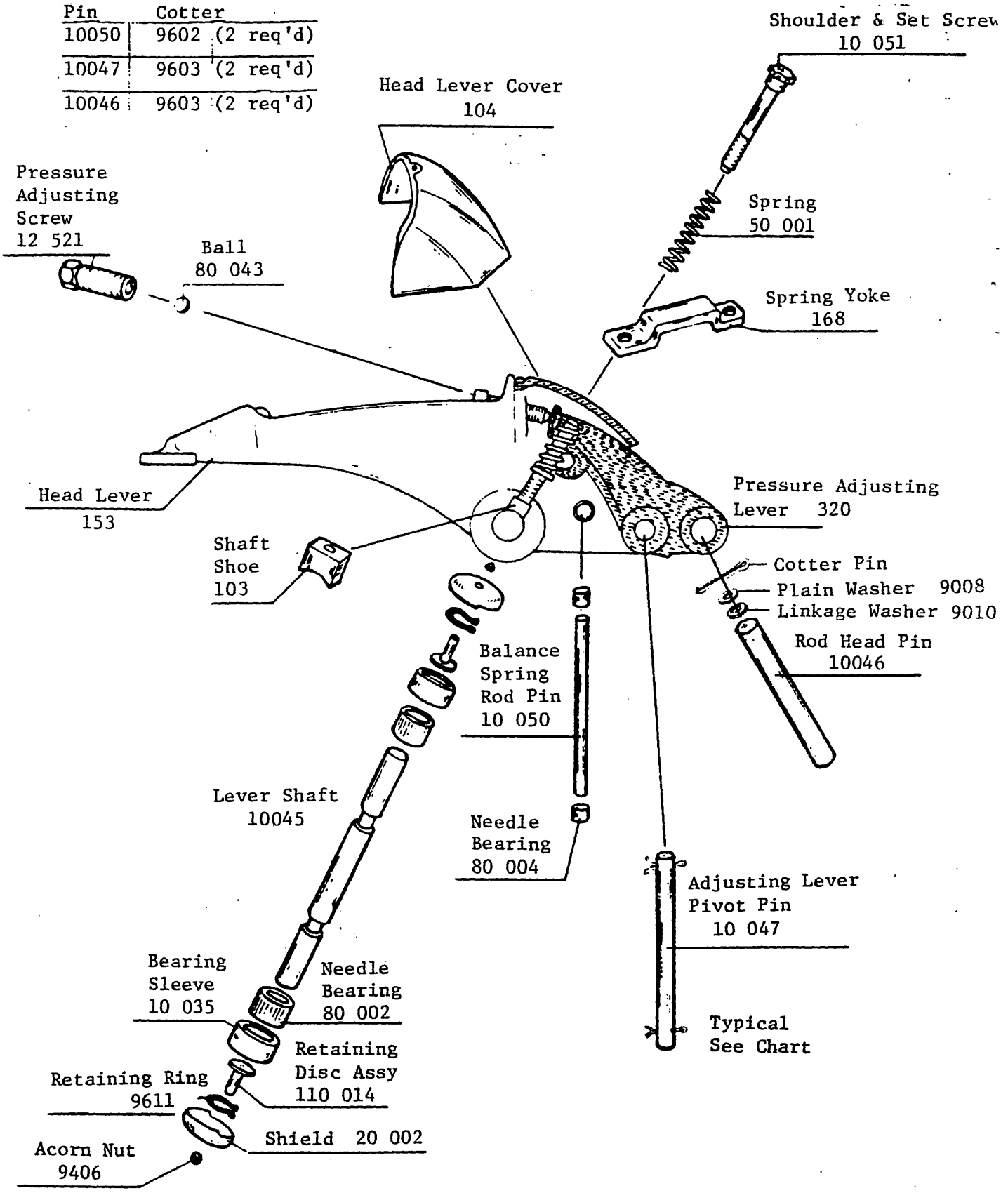


FIG. 10 BALANCE SPRING ASSY.

BALANCE SPRING		
Model	Inner	Outer
AU42	--	50012
AUR42	--	50012
AU45	50011	50012
AUR45	50011	50012
AU47	--	50042
AUR47	--	50042
AL45	--	50042
AMT15	--	50012
AMT19	50011	50012
ATT24	50011	50012

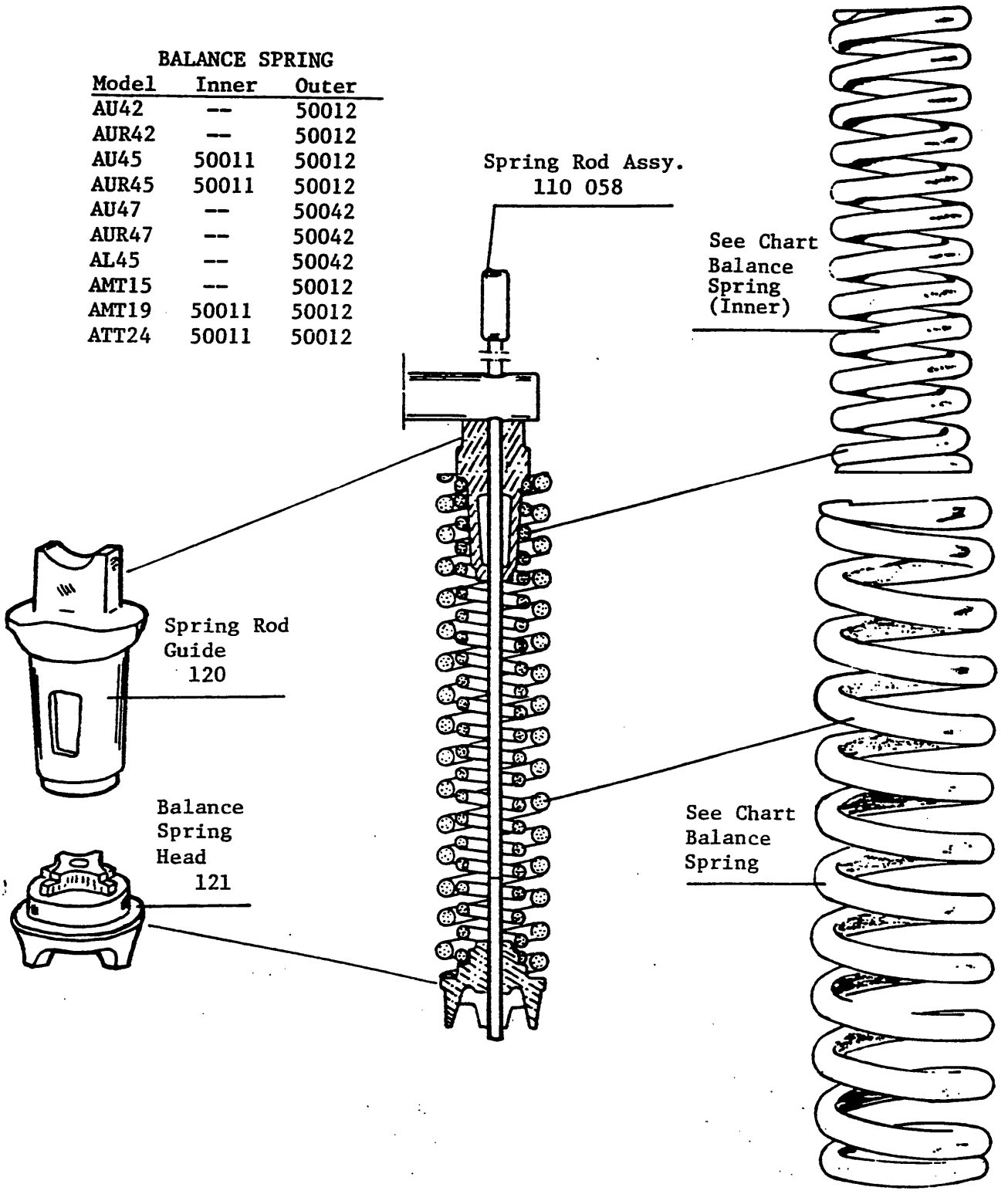


FIG. 11 CONNECTING LEVERAGE

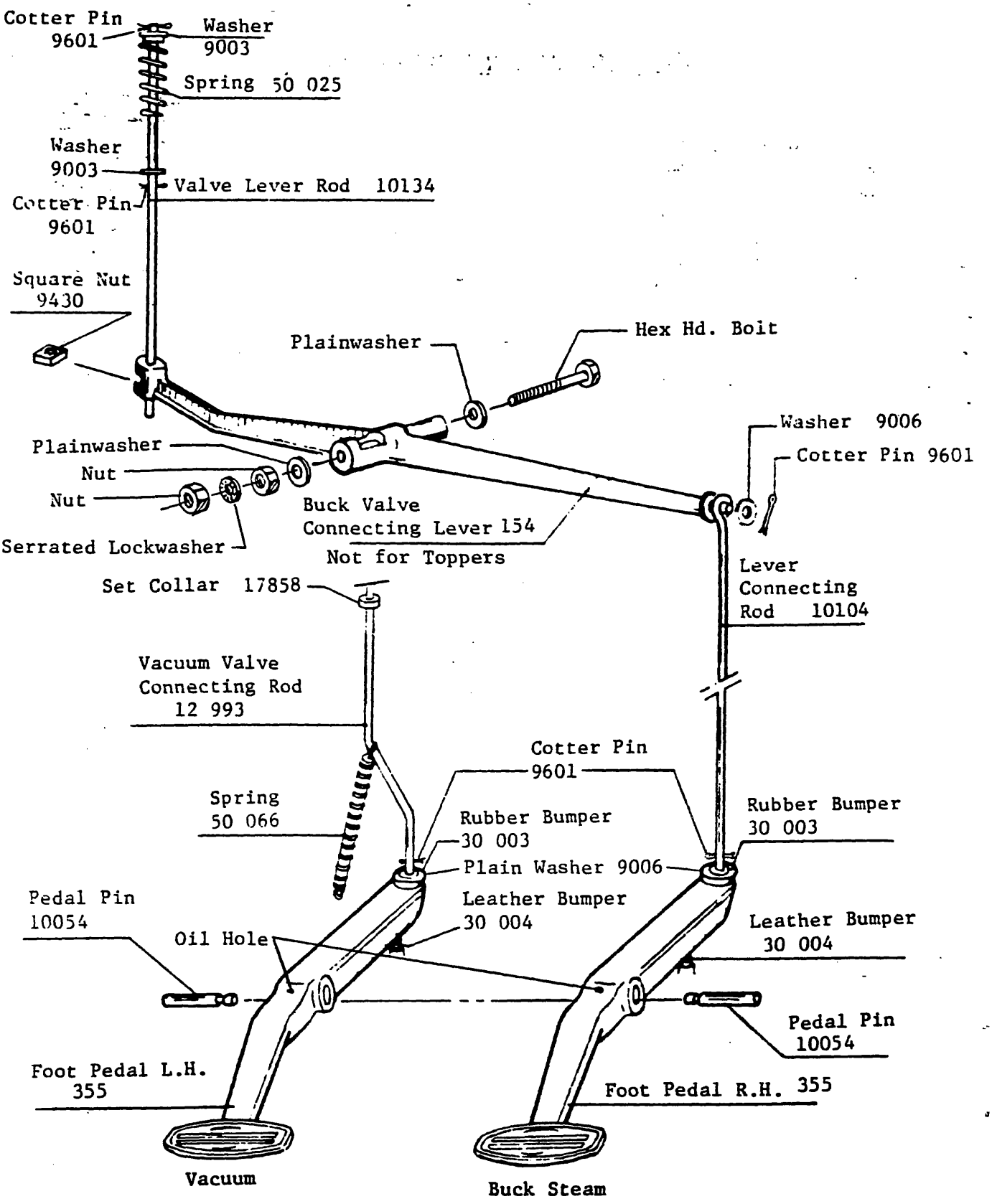


FIG. 11A CONNECTING LEVERAGE (REVERSE BUCK)

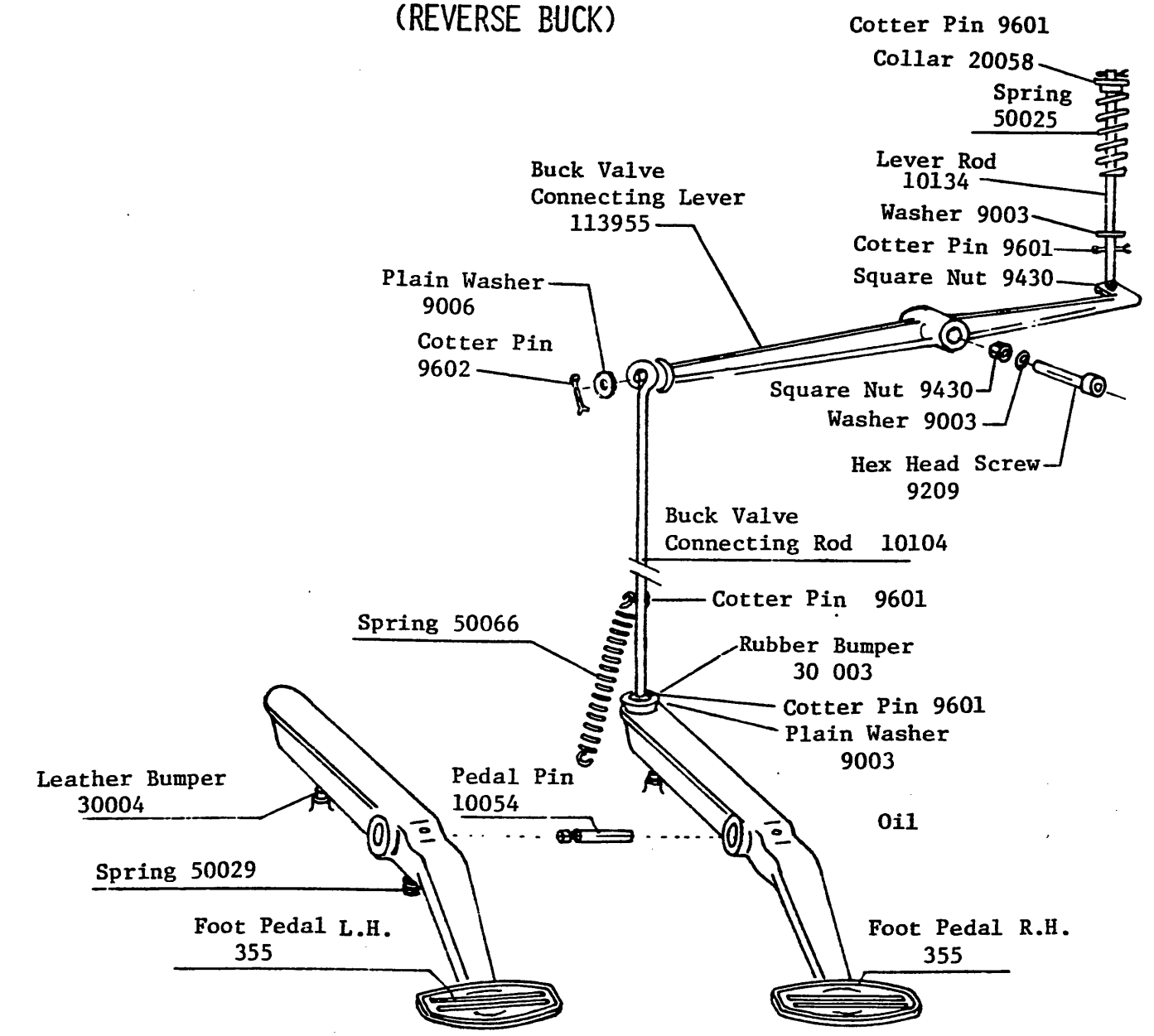


FIG. 12 PIVOT SHAFT ASSY.

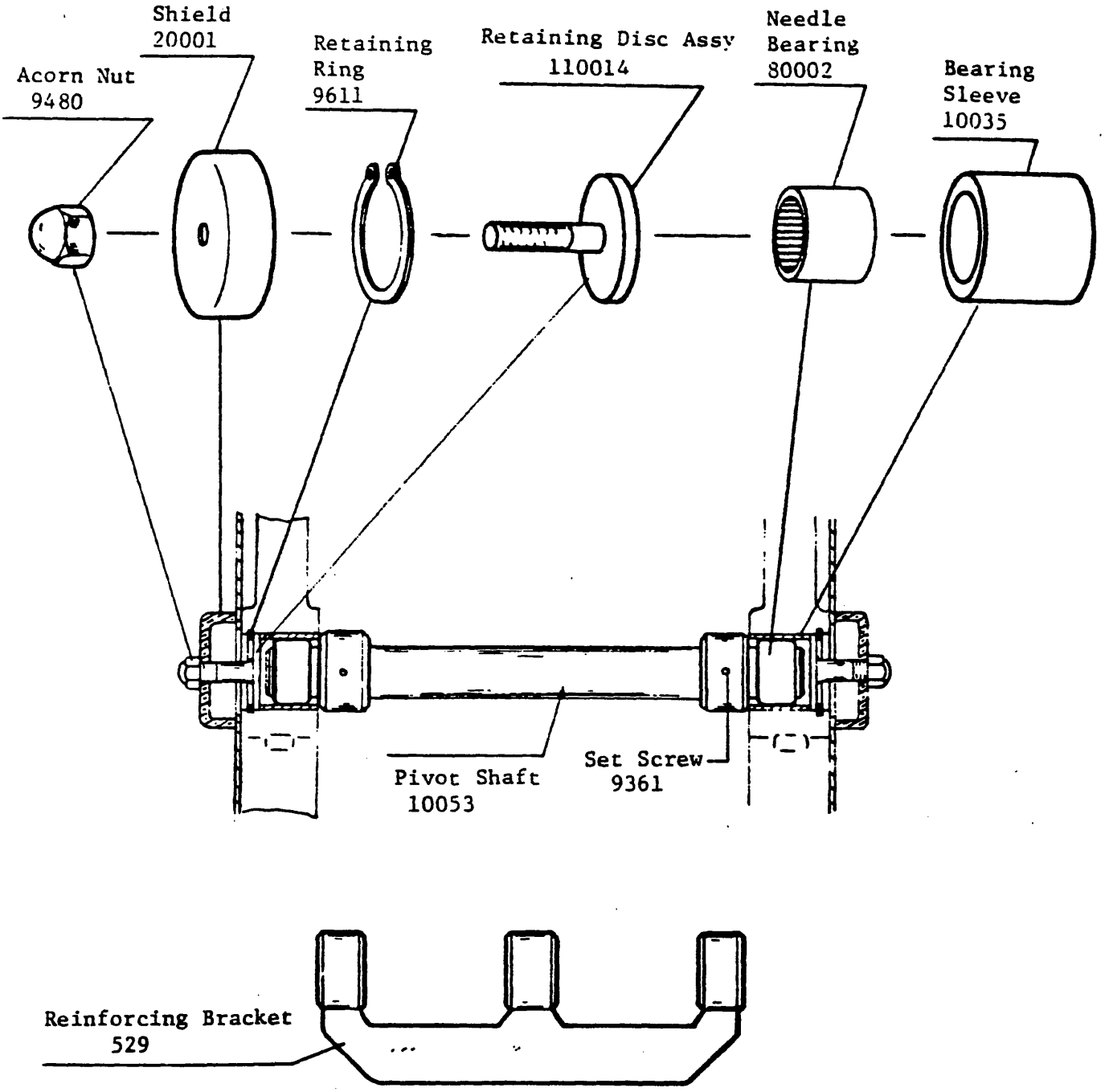
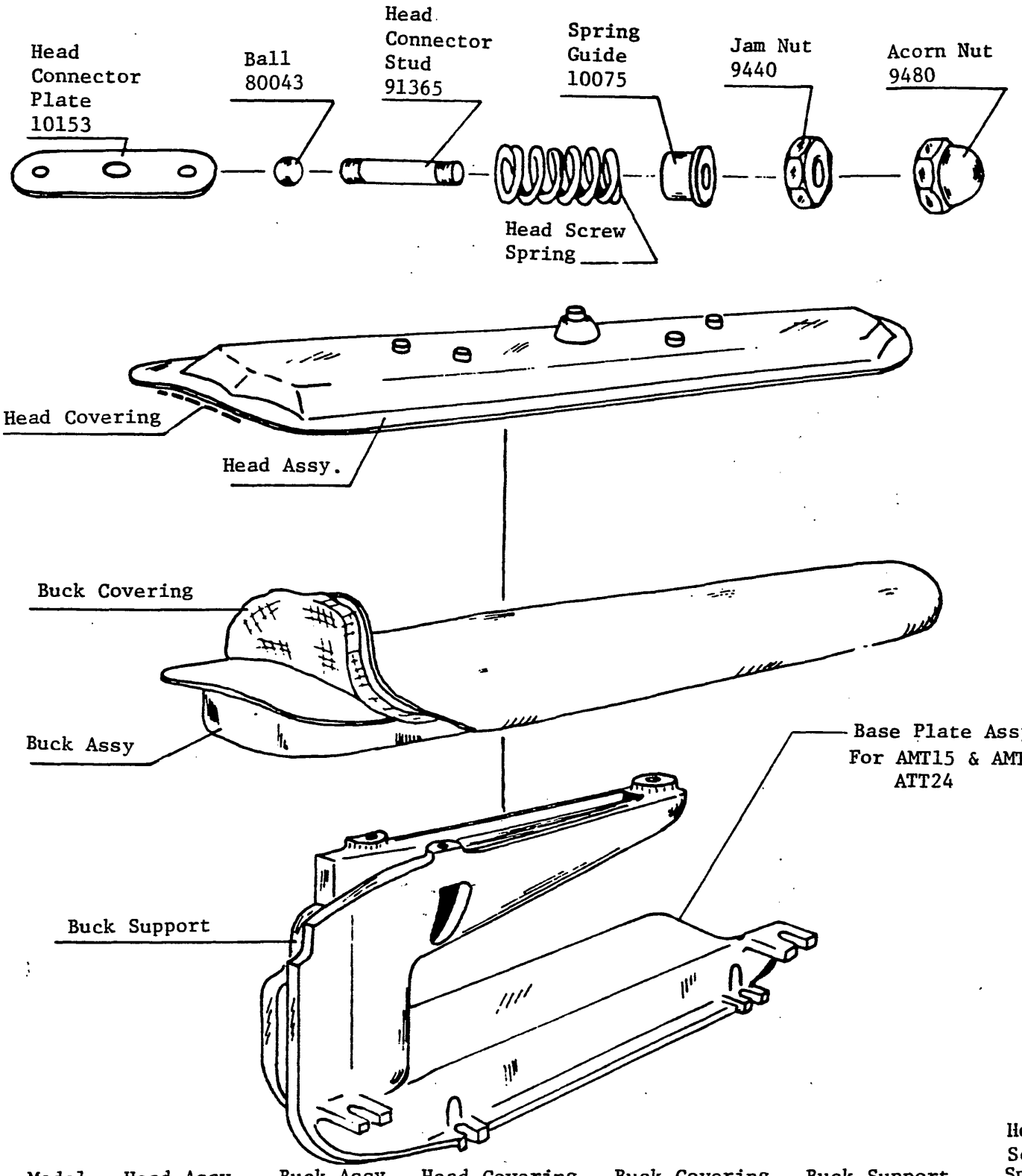
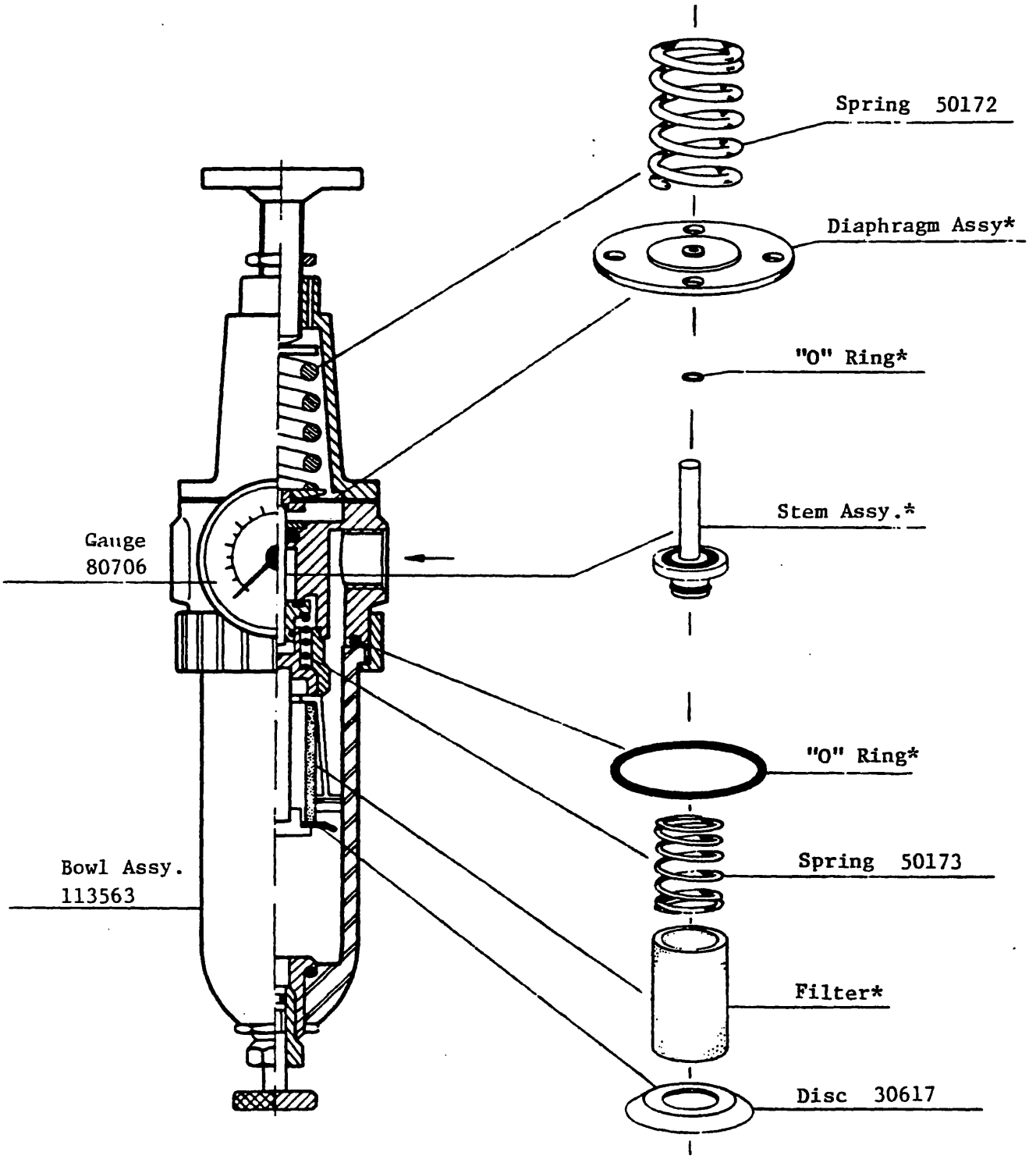


FIG. 13 PRESS SHOE GROUP



Model	Head Assy.	Buck Assy.	Head Covering	Buck Covering	Buck Support	Head Screw Spring
AU42	114126	102019	116534	116533	152	50043
AUR42	114997	102019	116534	116533	763	50043
AU45	114145	102020	116524	116523	152	50043
AUR45	114262	102020	116524	116523	763	50043
AU47	114151	102022	116526	116525	152	50043
AUR47	114259	102022	116526	116525	763	50043
AL45	114999	114998	116558	116557	152	50043
AMT15	114474	102002	116865	116864	Base Plate Assy.	50029
AMT19(3)	114542	102004	116865	116864	Base Plate Assy.	50029
ATT24(3)	114058	102026	117766	117765	Base Plate Assy.	50029

FIG. 14 AIR CONTROL ASSY.
113362



*Repair Kit 113661

FIG. 15 STEAM CONNECTIONS

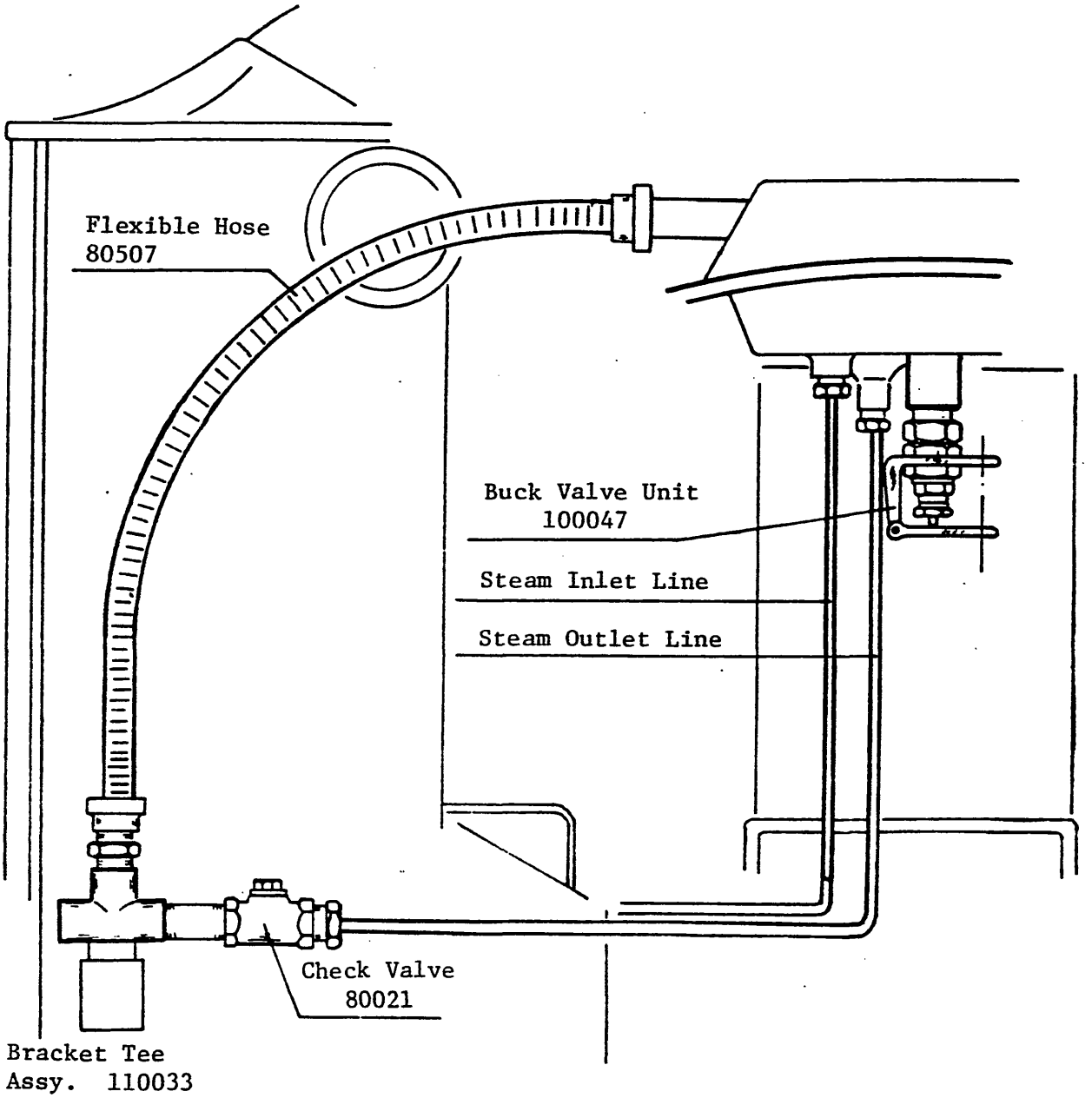
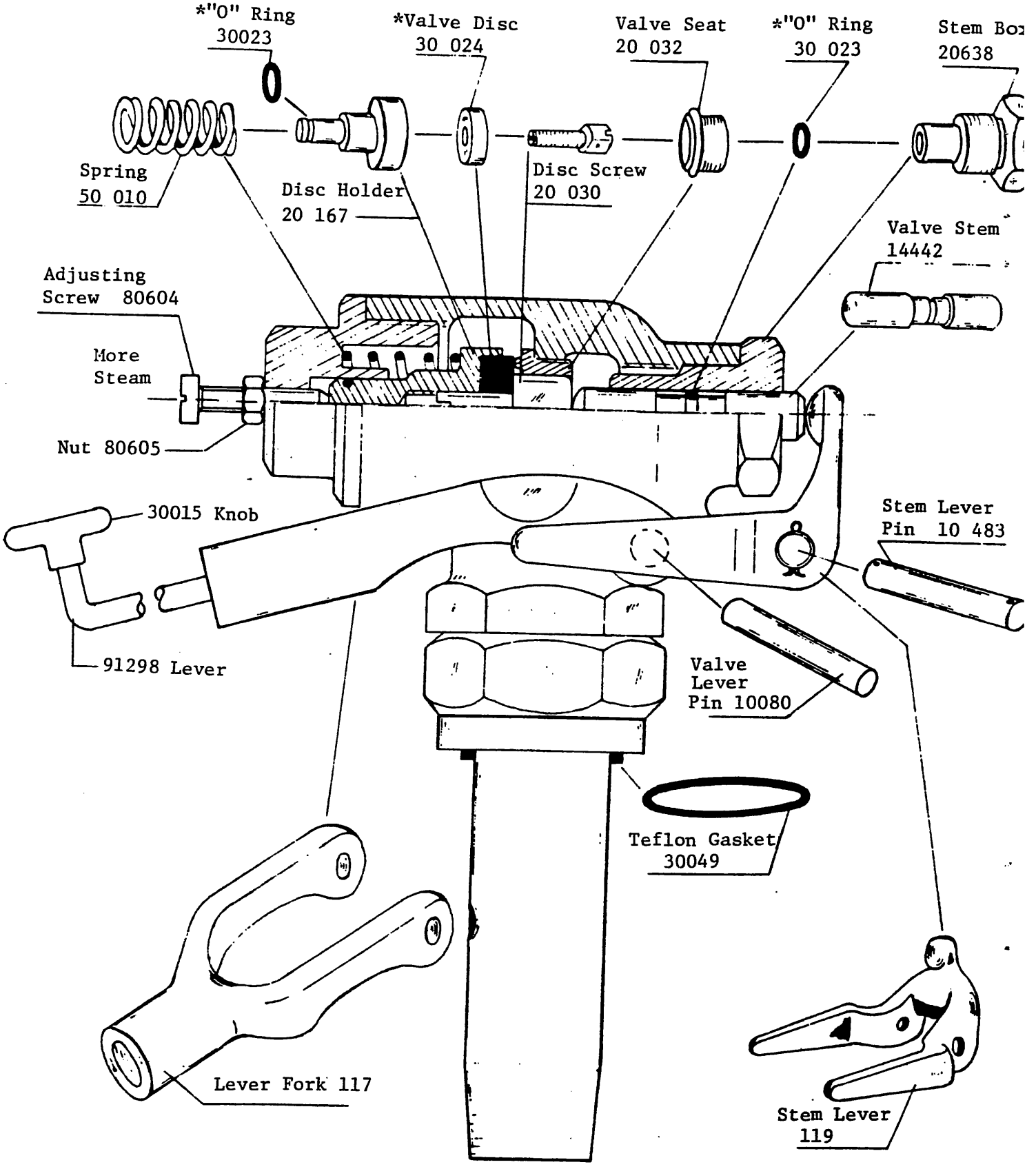
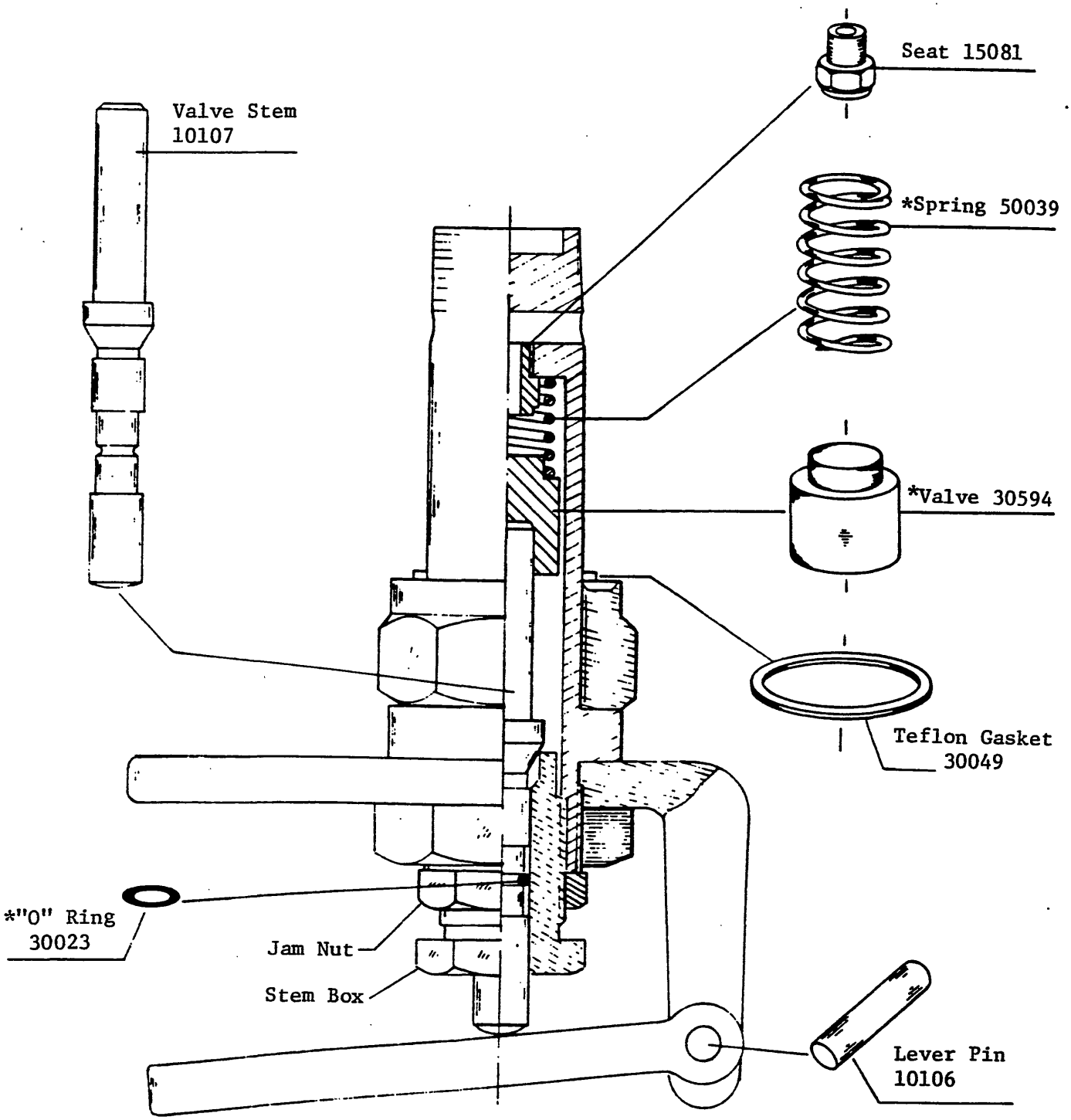


FIG. 16 HEAD VALVE ASSY
110 241



*Spare Parts

FIGURE 17 BUCK VALVE UNIT 100047



*Recommended Spare Parts

FIGURE 18

AIR VACUUM VALVE ASSY. 2"
111788

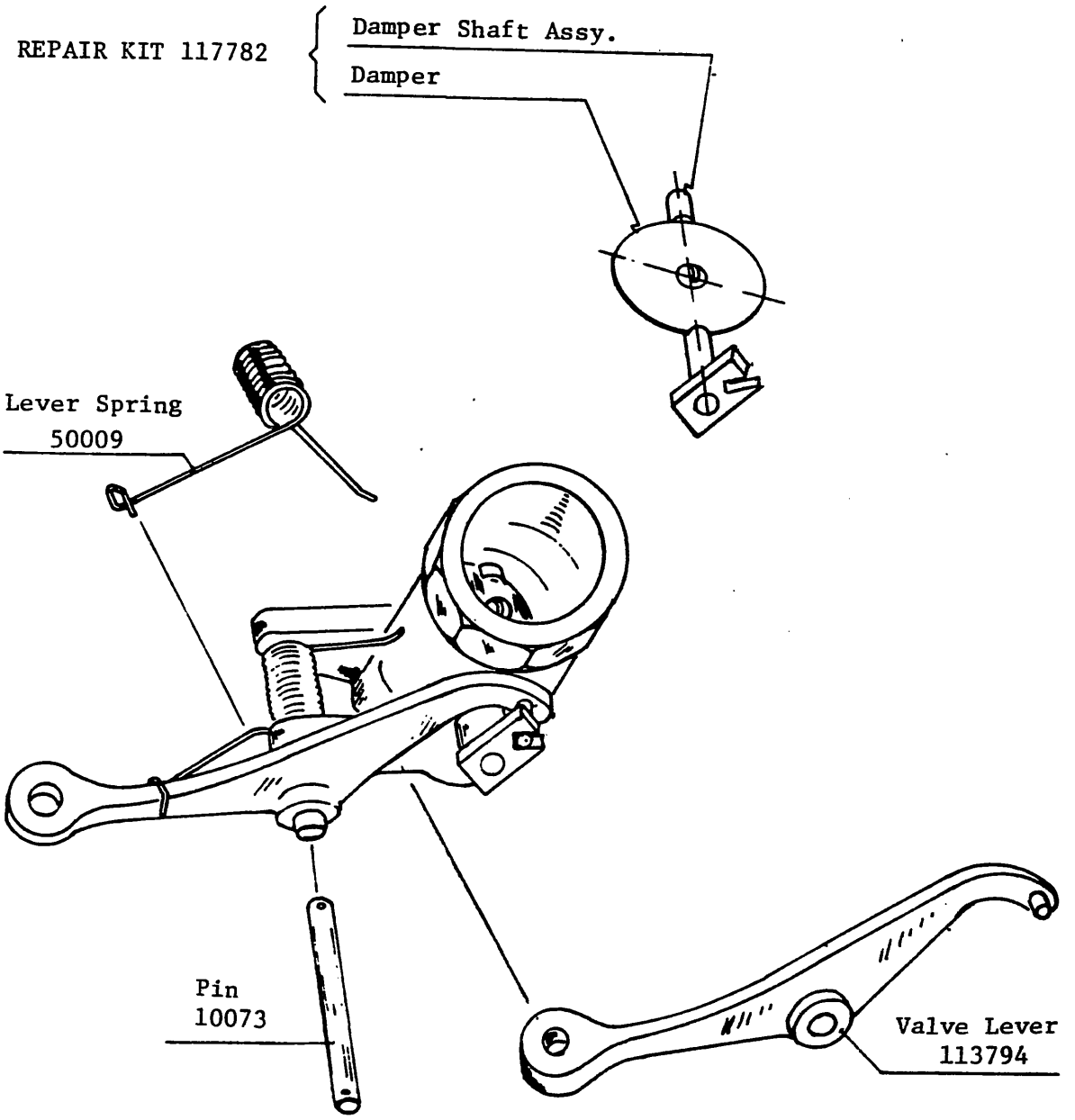


FIG. 19 FABRIC FEEL VALVE

113960	(0	3 Bar)
113961	(0	5 Bar)
113962	(0	6 Bar)

*Set Spare Parts 113963

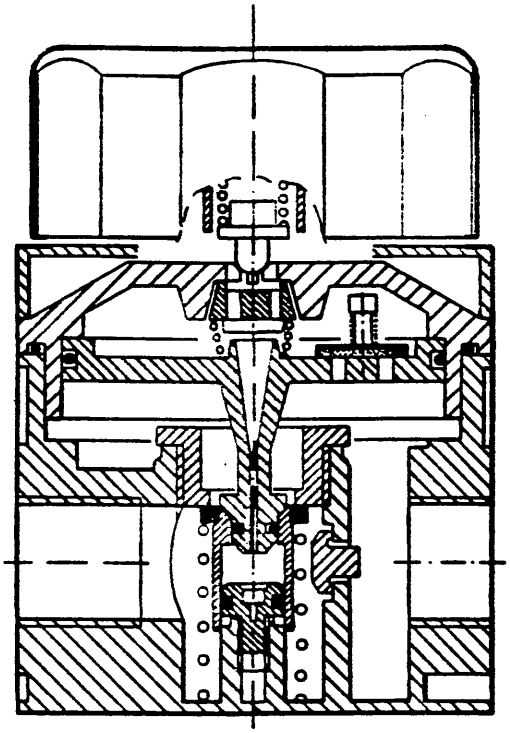


FIG. 20 CONTROL LEVER BRACKET ASSY.

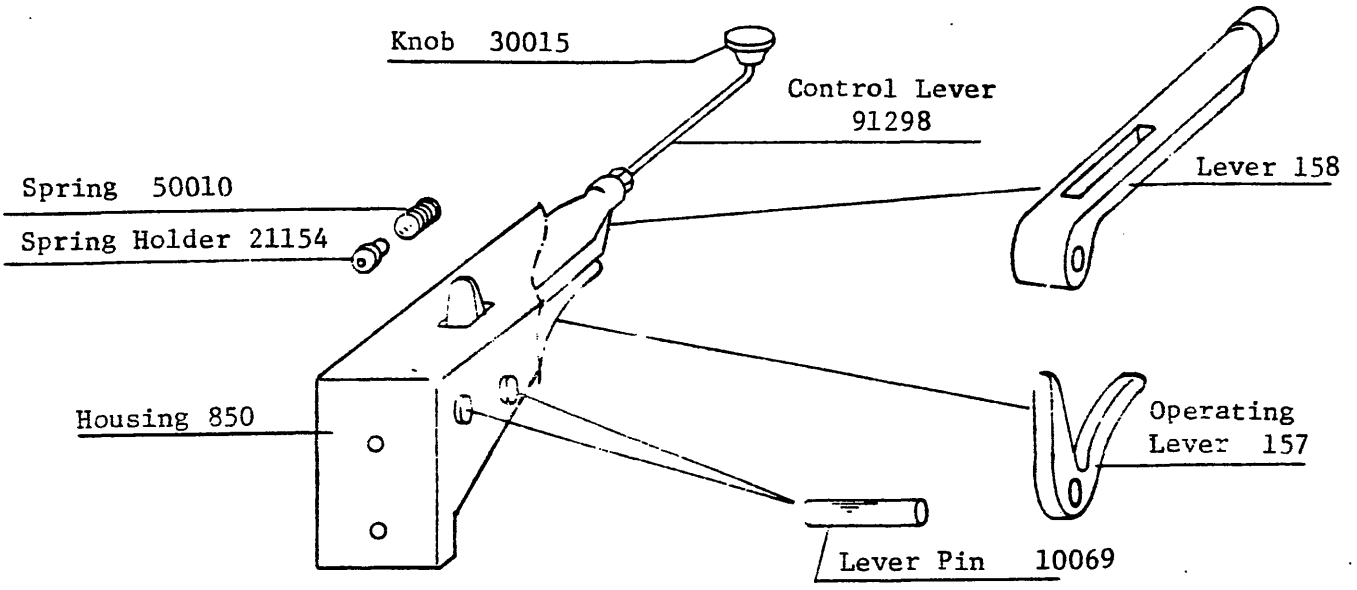


FIG. 21 HEAD VALVE OPERATING CYLINDER 110156

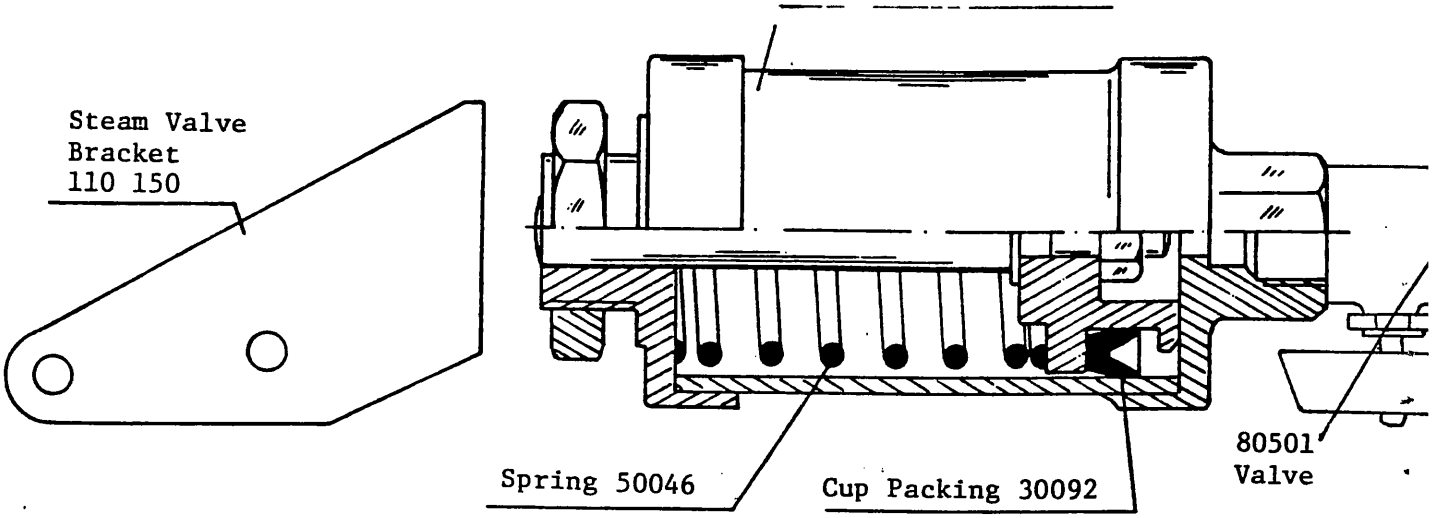


FIG. 22 QUICK EXHAUST VALVE ASSY.

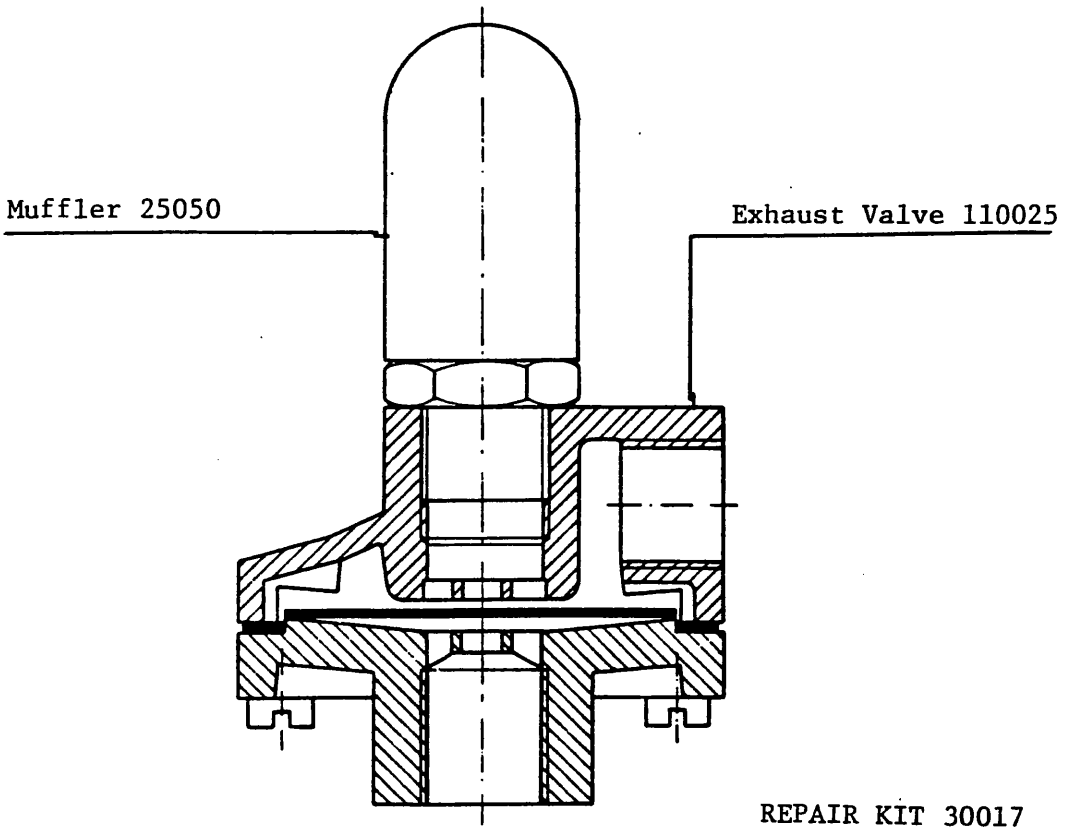


FIG. 23 HYDRAULIC BOOSTER ASSY.
113888

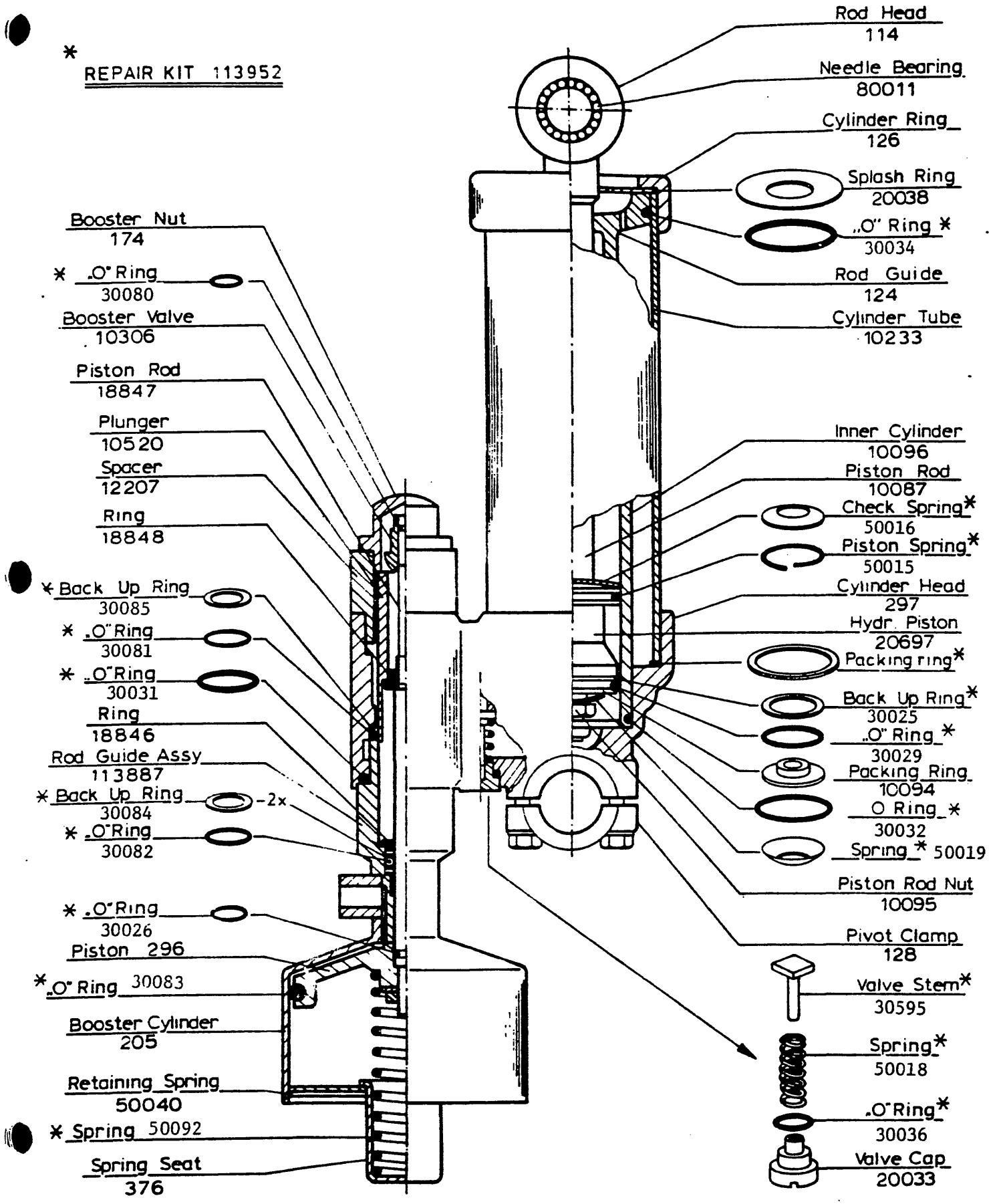
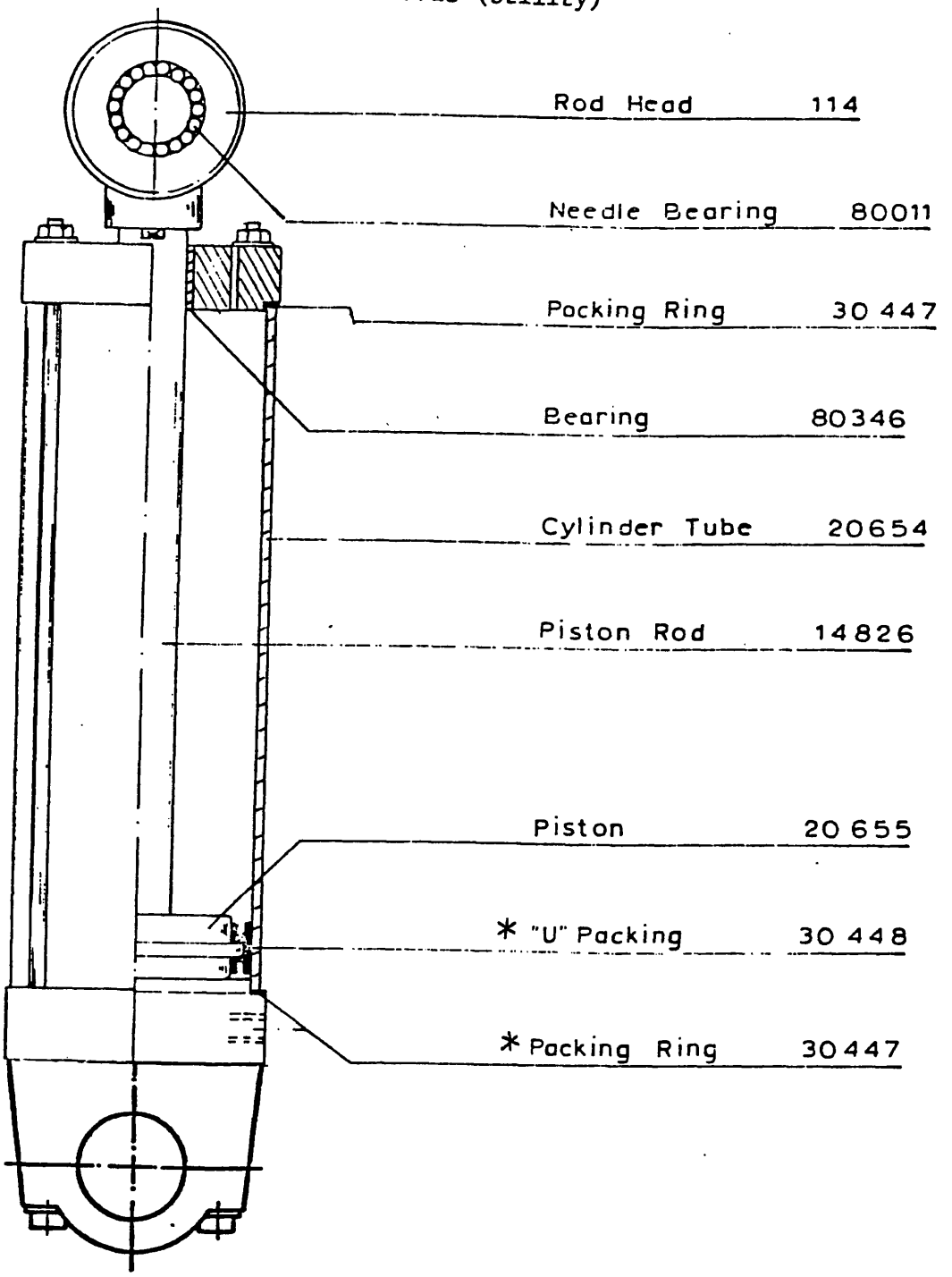


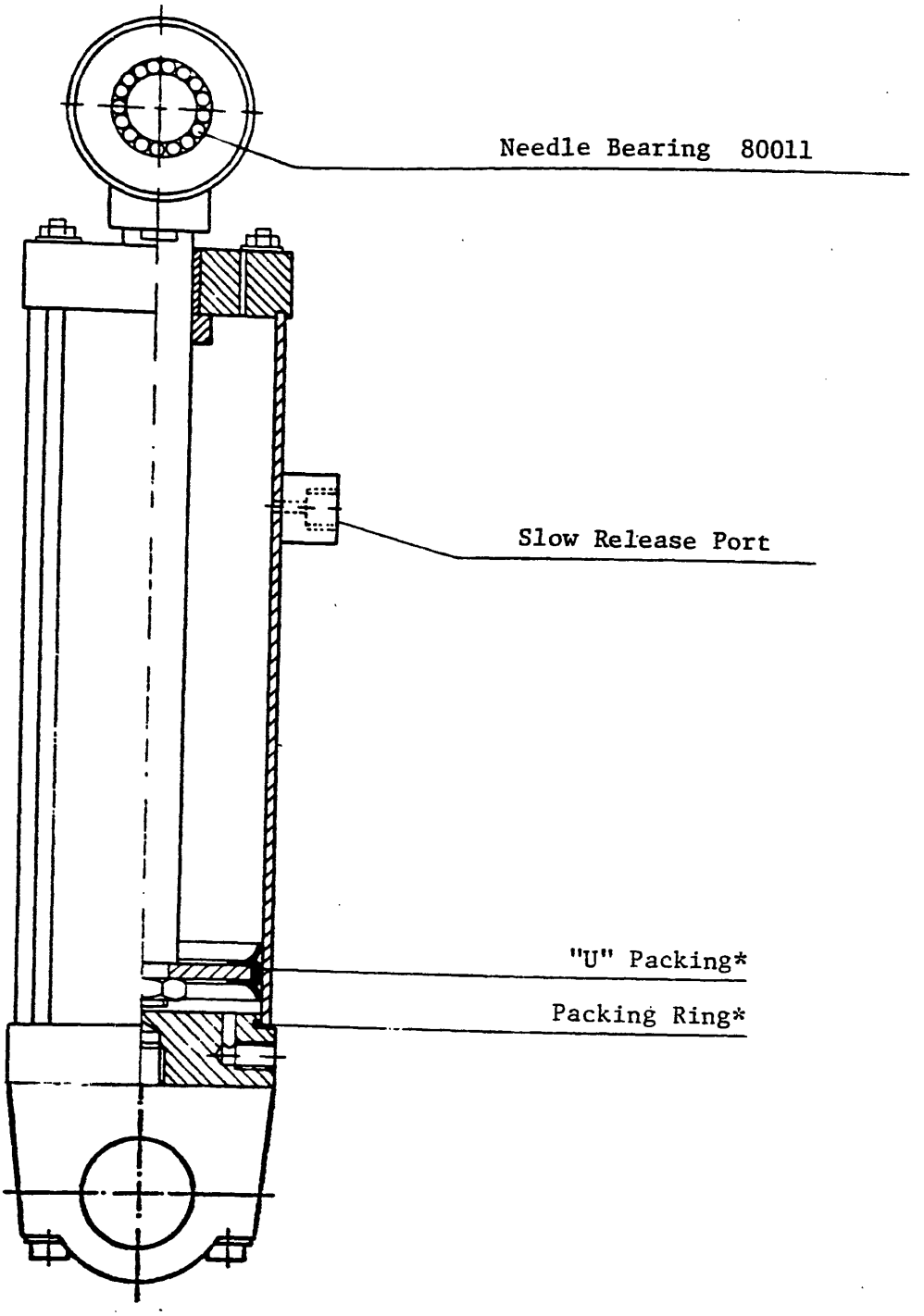
FIG. 24 CLOSING AIR CYLINDER AIR MOTOR UNIT

117723 (Utility)



* Repair Kit - 117727

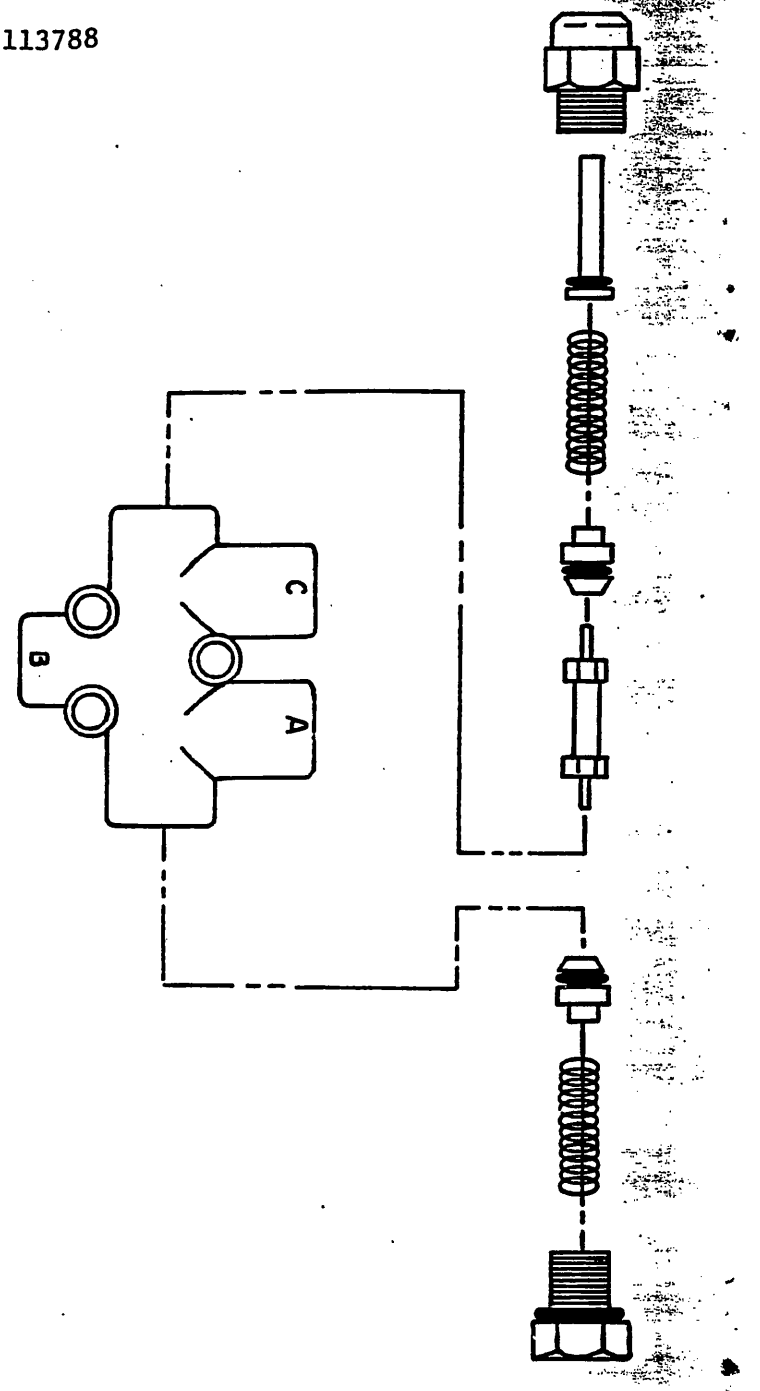
FIG. 24 A CLOSING AIR CYLINDER
AIR MOTOR UNIT 117725 (Legger)



*Repair Kit 117727

FIG. 25 AIR VALVE

113788



Used Four Places For -

Hand Lever Locking Valve

Closing Valve

Release Valve

Vacuum Valve (Reverse Buck)

Repair Kit 113662

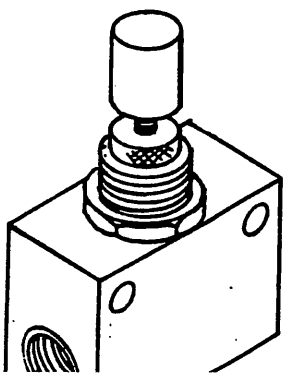


FIG. 26 AIR FLOW CONTROL VALVE
80846

Used Three Places For -

Steam Duration Valve

Steam Delay Valve

Vacuum Valve (Reverse Buck)