

## I. SETTING UP PRESS FOR OPERATION

This press was shipped set-up ready for operation except for oil and the following necessary air line connections:

**Connect airline from source of supply to foot valve (Item 70) with a suitable length of air hose.**

Connect  $\frac{1}{4}$ " air hose assembly (Item 69) furnished from foot valve (Item 70) to air manifold (Item 56). Remove pipe plug from air valve (Item 42) and connect another airline from source of supply to  $\frac{3}{8}$ " pipe tap opening in rapid advance air valve (Item 42).

Remove pipe plug from quick exhaust valve outlet (Item 40).

### **CAUTION—DO NOT PLUG QUICK EXHAUST VALVE OUTLET.**

#### **Fill press with oil.**

A. Be sure to use a good grade of light industrial oil.

We recommend Socony Vacuum's Gargoyle DTE oil light or equivalent. The oil must be filtered carefully to avoid foreign substances.

B. Remove  $\frac{1}{2}$ " pipe plug from reservoir cover (Item 58) and  $\frac{1}{8}$ " pipe plug located on left side of reservoir (Item 68).

Fill with oil through hole in reservoir cover until oil reaches  $\frac{1}{8}$ " pipe tapped hole on side of reservoir.

C. Replace both pipe plugs.

## II. OPERATION AND CONTROL

### **A. Approach Speed**

Turn the release valve handle (Item 61) clockwise so that the release valve (Item 67) is closed, and open the air valve (Item 42) by locking the air valve hand lever in the down position. The air automatically closes the quick exhaust valve (Item 40) located on top of the reservoir (Item 68). Admitting air above the oil in the reservoir which forces oil out past the ball check valve (Item 36) at the bottom of the reservoir and up through the release valve (Item 67) down through the check valve (Item 77) and into the bottom of the cylinder (Item 85) to force piston (Item 86) and lower platen (Item 82) upward at approach speed. After work is contacted close the air valve (Item 42) which will automatically exhaust the air from reservoir.

### **B. Pressing.**

After the work has been reached it is only necessary to step on the foot valve (Item 70) to admit air to the air motors (Item 57).

The air operated pumps will supply oil to the cylinder (Item 85) under a maximum of 5,000

P. S. I. at which pressure the relief valve (Item 17) located at the back of the reservoir (Item 68) will bypass the oil back to the reservoir.

To release the press force and lower the platen the hand operated release valve lever (Item 61) must be turned counter-clockwise which releases air from the reservoir and permits the oil to flow from the cylinder back to the reservoir by gravity due to the weight of the platen (Item 82) and piston (Item 86).

### **C. Hoist**

Air operated hydraulic tire press models 33-101 and 33-102 are without hoists. Models 33-103 and 33-104 are equipped with a hoist (Item 51).

The hoist hand crank (Item 23) is provided to raise or lower the upper platen (Item 4) to the proper height for work.

To change the vertical position of the upper platen sufficient tension must first be applied to the hoisting cable (Item 48) to permit removal of the table pins (Item 47) and the upper platen may then be raised or lowered to the desired position and all table pins must then be inserted.

**NOTE: Be sure all table pins are in place before applying any pressure. Also slack off on cable. It is advisable to lower the upper platen one or two holes rather than run the ram and lower platen to the limit of its stroke.**

## III. MAINTENANCE

### **1. IF OIL LEAKS UP AROUND PISTON—**

#### **A. Oil above piston leather:**

If the rated stroke of the press is exceeded repeatedly by running the piston up so as to uncover the bypass hole in the side of the cylinder, the small amount of oil which drains back from the bypass line will collect above the piston leather. Eventually enough may accumulate so that when the piston is brought to the top of its stroke, oil is forced out between the piston guide and the piston. This can be remedied by disconnecting the bypass tube line from cylinder, raising piston slowly to about  $2\frac{1}{2}$ " less than its rated stroke allowing the oil above the piston cap to overflow out the bypass hole into a clean can. Replace the tube line. The oil can be put back into the reservoir by removing the fill plug in the inspection cover.

#### **B. Check Valve not seating:**

On the first presses made with rapid advance the bypass oil was returned through a check valve to the bottom of the reservoir. This has now been changed on the newer presses so that the oil is returned to the reservoir above the oil level. Previously, if the check valve failed to seat properly when the press was operated at rapid advance speed by applying air pressure to the oil in the reservoir, oil was forced back

and the bypass line causing leakage around the piston. These old style rapid advance presses can be improved by relocating the check valve in the inspection cover so that the oil from the bypass line discharges above the oil level. Instructions as to how to do this can be obtained from the factory.

## **2. IF PRESS DOES NOT HOLD PRESSURE—**

### **A. Loose tube connection:**

Check all connections and tighten any loose tube nuts.

### **B. Dirt under release valve ball:**

To remedy this condition, remove release valve stem, packing nut, packing and ball. Clean out valve seat. Reseat valve ball using brass rod as a drift and tapping lightly. Reassemble valve. If this occurs frequently, the oil should be drained from the reservoir and the reservoir should be flushed out. Fill reservoir (to oil level plug) with clean oil.

### **C. Worn cup leather:**

If neither of the previous conditions seem to have been the cause of the press not holding pressure, the trouble may be that the piston cup leather is worn out or damaged. To inspect this it is best to first remove the lower platen. Next remove capscrews which bolt piston guide to cylinder flange. Piston and Piston guide may now be lifted out of cylinder and inverted. Leather can now be inspected and replaced if necessary. Press may be reassembled, being careful not to damage lip of leather cup as it enters the cylinder.

## **3. IF PRESS DOES NOT DEVELOP RATED TONNAGE—**

### **A. Dirt under release valve ball:**

Refer to section 2B above.

### **B. Worn Cup leather:**

Refer to section 2C above.

### **C. Air pressure too low:**

This is easily seen to be the trouble if the pump operates up to the maximum tonnage available with the press and then the air motor stalls. We supply either pumps rated to develop 5000 psi oil pressure when used with 90 psi air pressure or to develop 5000 psi oil pressure when used with 145 psi air pressure. If the air supply pressure is less than 90 or 145 psi these pumps will develop less than 5000 psi pressure. When the air supply has enough pressure, it is best to use the 145 psi pump because of the greater oil output giving faster ram speed.

### **D. Relief valve set wrong:**

When the press will not develop its rated tonnage even though the air motor continues to pump, it usually indicates that the oil is by-passing through the relief valve. The relief valve is set at the factory to bypass oil back to the reservoir when the press reaches its rated capacity. The load on the spring, which governs the pressure at which the valve will bypass oil, is adjusted by turning the threaded cap. Turning it clockwise increases the load on the spring or turning it counterclockwise decreases the load

on the spring. After the valve is adjusted, the cap is locked in place with a headless setscrew. We advise that the relief valve not be tampered with after it is once set at the capacity of the press.

## **4. IF NOTHING HAPPENS WHEN PUMPS ARE OPERATED (ram will not come up)—**

### **A. Insufficient oil:**

This is not likely to be the trouble with a tire press but if the press will only make a fraction of its rated stroke and no more, check the oil level in the reservoir. With the ram down the oil should be at the level of the small plug on the side of and about four inches from the top of the reservoir.

### **B. Release valve open:**

Be sure to have release valve firmly closed when using press.

### **C. Air line connected improperly:**

If the air motors do not run the first time the press is connected up, check the instructions given on the sheet which is furnished with the press.

### **D. Press not assembled properly:**

All presses are tested before shipment but sometimes the customer when overhauling a press to install new packings or seat a ball valve may omit the check valve spring or even leave out a check ball. Naturally then the press will not function properly.

## **5. IF PRESS IS TOO SLOW—**

The rated ram speed for each model of our tire presses is given on the catalog sheet. These speeds are based upon having an air supply pressure of either 90 or 145 psi. If press is slower than it is rated, the trouble may be one of the following:

### **A. Too low air pressure:**

If the air line is not of ample size in proportion to the distance the air has to travel from the compressor, there may be a large pressure drop in the line while air is being used. Pressure drop can be checked by installing an air gauge near the press.

### **B. Wrong oil:**

The use of too heavy an oil will slow up the press speed. We recommend the use of Socony Vacuum's "DTE Oil-Light" or equal hydraulic oil.

## **6. IF AIR MOTOR STALLS—**

### **A. Air motor valve on dead center:**

If air motor does not run when air is supplied, the valve mechanism in the upper part of the pump is probably on dead center. It can usually be started again by pressing with a small rod or screw driver on the plunger located on the side of the upper part of the air pump.

### **B. Worn toggle mechanism:**

Air presses that are used on jobs requiring almost continuous operation at low or no tonnage are likely to fail first by having a broken toggle mechanism. A new toggle mechanism for the air motor can be obtained from Dake Corporation or from any of the Lincoln Engineering Company's many service branches.

**DAKE CORPORATION**



**GRAND HAVEN, MICHIGAN, U. S. A.**

349-500-8-57

## **SAFEGUARDING THE POINT OF OPERATION**

### **ANSI B11.2 – Hydraulic Power Presses Safety Requirements for Construction, Care and Use**

It is important that Dake press users have a clear understanding of their responsibility involving the care and use of their Dake hydraulic press, including point-of-operation safe guards. Dake strongly recommends that Dake press users obtain a copy of the current American National Standard Institute (ANSI) B11.2 standard, for a more complete understanding of their responsibilities.

ANSI B11.2 states the following, relative to point of operation safeguarding:

“Normally, only the employer (press user) can determine the requirements of the press productions system components, including the dies and methods for feeding. There fore, the employer is ultimately responsible to designate and provide the point-of-operation safeguarding system”.

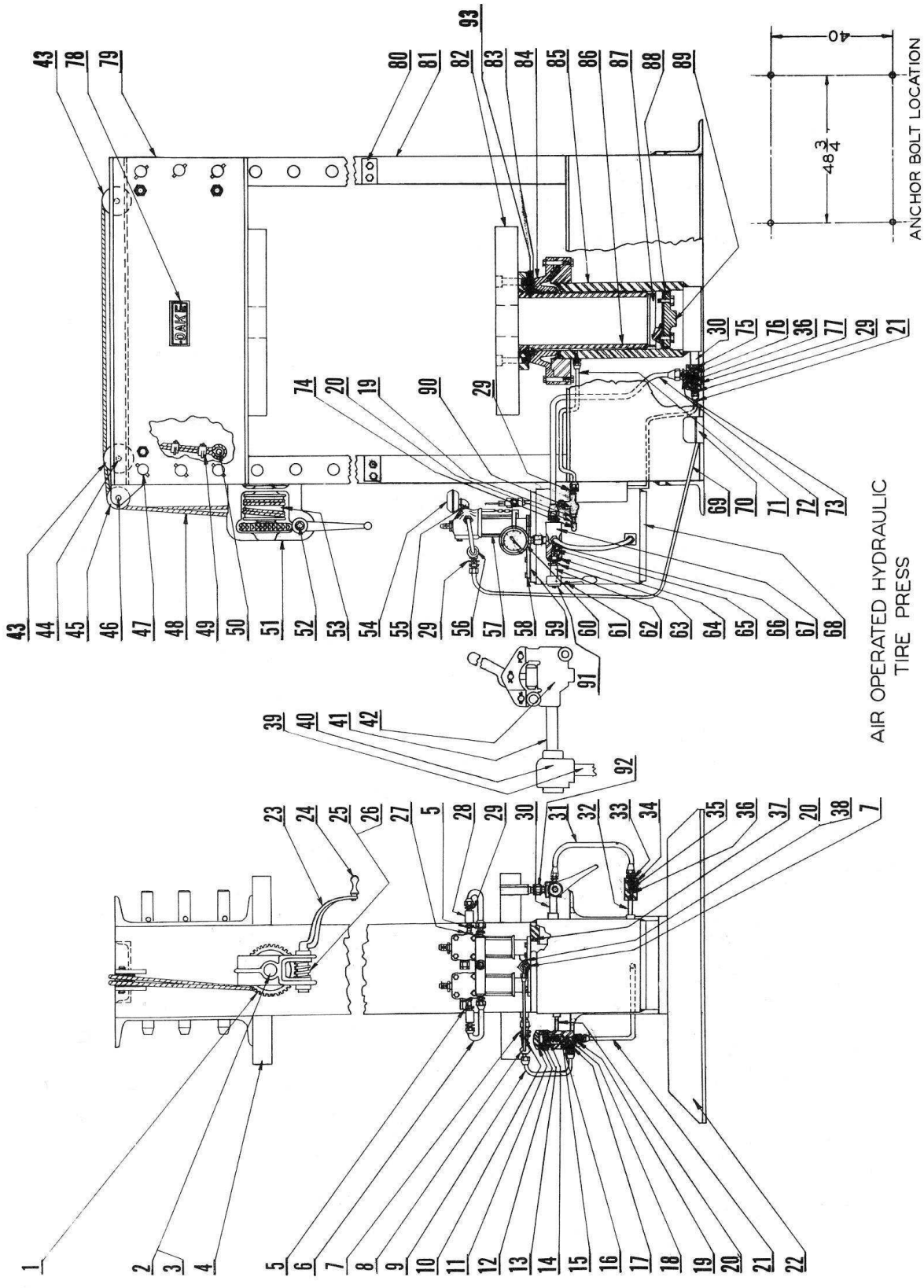
The standard also discusses additional responsibilities of the employer. Some of the key responsibilities are:

- The employer is responsible for the safety, use and care of the hydraulic power press production system.
- The employer is responsible to consider the sources of hazards for all tasks to be implemented on the hydraulic power press production system.
- The employer is required to eliminate or control identified hazards in the scope of their work activity.
- The employer is responsible for the training of personnel, caring for, inspecting, maintaining and operating hydraulic press production systems to ensure their competence.
- The employer is responsible to provide and ensure that point-of-operation safeguarding is used, checked, maintained and where applicable, adjusted on ever production operation performed on a press production system.

A complete and current copy of the ANSI B11.2 standard can be obtained by contacting the following:

American National Standards Institute  
1430 Broadway  
New York, NY 10018

AMT – The Association for Manufacturing Technology  
7901 Westpark Drive  
Mclean, VA 22102



ITEM NO.	PART NO.	PART NAME	NO. REQ'D	ITEM NO.	PART NO.	PART NAME	NO. REQ'D
1*	743	Worm Gear	1	49*	583	Cable Clamp	4
2*	741	Drum Shaft	1	50*	1553	Table Spacer	4
3*	745	Drum Key	1	51*	739	Hoist Frame	1
4*	1813	Upper Platen	1	52*	742	Worm Shaft	1
5*	1100	$\frac{1}{4}$ " - $\frac{1}{4}$ " Hex Pipe Bushing	2	53*	740	Cable Drum	1
6	700171	Air Tube Assembly	2	54	908010	Muffler	2
7	1104	Check Valve	2	55	1108	$\frac{3}{8}$ " - 90° Street Elbow	2
8	1249	Tube Tee	1	56	1335	Air Manifold	1
9	700234	Pressure Tube Assembly	1	57		Pump (90#) .... Lincoln Pumps Obsolete See Below	
10	700233	Pressure Tube Assembly	1			Pump (145#) .. Lincoln Pumps Obsolete See Below	
11	1096	Relief Valve Cap	1	58	1822	Reservoir Cover	1
12	1095	Spring Retainer	1	59	1823	Reservoir Cover Gasket	1
13	1111	"O" Ring	1	60	2025	Gauge	1
14	1221	Valve Spring	1	61	2230	Release Valve Handle	1
15	1094	Ball Retainer	1	62	1950	Valve Rod	1
16	1222	Ball Valve	1	63	1931	Valve Rod Packing Nut	1
17	1093	Relief Valve Body	1	64	1937	Valve Rod Packing (7 Req.)	1
18	1220	Valve Seat	1	65	1935	Ball Retainer	1
19	1102	$\frac{3}{8}$ " - $\frac{1}{4}$ " Hex Pipe Bushing	1	66	1936	Ball Valve	1
20	1331	$\frac{1}{4}$ " Short Pipe Nipple	2	67	1752	Release Valve Block	1
21	700236	Pressure Tube Assembly	1	68	1904	Reservoir Assembly	1
22	1551	Base Angle	2	69		Hose Assembly	No longer available
23*	387	Crank	1	70		Foot Valve	No longer available
24*	606	Handle	1	71	700238	By-Pass Tube Assembly	1
25*	744	Worm	1	72	700237	Pressure Tube Assembly	1
26*	746	Worm Key	1	73	1943	$\frac{1}{2}$ " Std. Tube Fitting	2
27	1329	$\frac{1}{2}$ " Short Pipe Nipple	2	74	1840	$\frac{1}{4}$ " 45° Street Elbow	1
28	1330	$\frac{1}{4}$ " Pipe Coupling	2	75	1839	Spring Retainer	1
29	1247	$\frac{3}{8}$ " St. Tube Fitting	5	76	579	Check Valve Spring	1
30	1739	$\frac{1}{4}$ " Pipe Nipple	1	77	1934	Check Valve Body	1
31	700235	Rapid Advance Tube Assembly	1	78	2252	Name Plate	1
32	1107	$\frac{3}{8}$ " Short Pipe Nipple	1	79*	1812	Head Channel	2
33	1251	$\frac{1}{2}$ " Std. Tube Fitting	1	80*	1819	Stop Block	4
34	1825	Check Valve Body	1	81	1902	Frame Assy. (#33-101 & 33-102)	1
35	890	Check Valve Spring	1		1909	Frame Assy. (#33-103 & 33-104)	1
36	586	Ball Valve	1		1798	Lower Platen	1
37	912	"O" Ring	1	82	1871	Oil Seal	1
38	1099	$\frac{1}{4}$ " - 90° Elbow	1	83	1795	Piston Guide	1
39	1275	$\frac{3}{8}$ " Pipe Nipple	1	84	1793	Cylinder	1
40	1911	Quick Exhaust Valve	1	85	1796	Piston	1
41	5020	$\frac{3}{8}$ " Pipe Nipple	1	86	1842	Piston Cap	1
42	1912	3-Way Lockdown Air Valve	1	87	1539	Piston Leather	1
43*	1563	Cable Pulley	2	88	1536	Supporting Ring	1
44*	1811	Cable Pulley Shaft	2	89	1841	Check Valve	1
45*	1809	Cable Pulley	2	90	898	Valve Handle Socket Washer	1
46*	1810	Cable Pulley Shaft	1	91		Pulsation Dampener Ashcroft # $\frac{1}{2}$ - 1106S	1
47*	1555	Table Pin	6	92			
48*	1837	Cable	1	93	5131	Retainer	1

\* Used on Models #33-103 & #33-104 ONLY.

## AIR PUMPS - CONVERSION KIT TO CONVERT FROM LINCOLN TO HASKEL AIR MOTOR

33 Series tire presses and non-guided  
platen presses. (Example: 33-101,  
33-102, 33-208, 33-381, etc.)

Part Number 714416