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Form No. 102447

Assembly and Operating Instructions for:

	60325	BI1855
014-00215	208168	SPE10010E
1853	209179	SPM10010E
1854	211535	Y-1000
1855	BI1853	Y-100-A
1856	BI1854	Y-100-AV

SHOP PRESS

Max. Capacity: 100 Ton

These instructions are intended for various model shop presses. Some models are shipped assembled and require a minor amount of assembly; others are shipped unassembled and require complete assembly. The complete assembly procedure is covered in these instructions for your reference. Check the contents of the shipping carton against the parts list to be sure all parts are present before beginning assembly.

SAFETY PRECAUTIONS

WARNING

GENERAL STATEMENTS

- **All WARNING statements must be carefully observed to help prevent personal injury.**
- **All operators must read and carefully follow the operating instructions and the safety precautions before assembling or using this press. Most problems with new equipment are caused by improper operation or assembly.**
- **All operators must read and carefully follow the operating and safety precautions for the pump and ram used with this press.**
- **The owner of this press must see that it is installed and operated in accordance with federal (OSHA), state, and local safety standards.**
- **This press can exert extremely high forces at moderate hydraulic pump pressure. If you have any questions concerning how much force is exerted at a given pressure, contact the appropriate Technical Services Department.**
- **This press is designed for shop maintenance applications. For information regarding other applications, contact the appropriate Technical Services Department.**

GENERAL OPERATION

- **Safety glasses must be worn at all times and hands and fingers must be kept out of the work area. The press should also be located in an isolated area or shielded to minimize any danger to others. High hydraulic pressure generated can cause materials to break and cause injury.**
- **Because this is a general purpose press which may be used in many different applications over a short period of time, it is not possible for the manufacturer to provide practical "all-purpose" shielding. The owner of the press must fabricate such shielding as is practical and necessary for a particular application. A certain degree of safety is afforded by wrapping the work in heavy cloth such as canvas prior to applying pressure.**

BOLSTER ADJUSTMENT

A winch and cable assembly support the bolster when the bolster support pins are not in place. The following warnings must be observed to prevent personal injury!

- **Keep hands, feet, legs, etc. out from under the bolster. Accidental slippage may result in personal injury.**
- **To prevent accidental slippage, all bolster support pins must be in place and all cables slack before a pressing operation is performed.**
- **To prevent accidental cable breakage, never raise or lower the bolster if a load is placed on it.**
- **When raising or lowering the bolster, place a support pin all the way through the front and the back uprights in the highest hole under the bolster that will not interfere with the new bolster position. Remove your hands from the support pins after the pins are in place. Failure to do so may result in personal injury if the bolster should fail.**
- **Inspect the entire length of the lifting cables at least every three months and replace any cable that appears frayed, worn, or crushed. Be sure that cables run on pulleys properly and the pulleys are free to turn. Proper cable maintenance will help prevent accidental cable breakage.**

ASSEMBLY

NOTE: During assembly of press, only hand tighten nuts and bolts unless otherwise directed. Wrench tighten after assembly is completed.

1. Refer to parts list No. 100553 for Item Numbers during press assembly. Position lower bolster assembly (38) on 4" blocks approximately 30" long. Blocks must lie parallel to bolster sides.
2. Attach foot angle (2) and lower pulley bracket (22) to left hand press upright (3) using cap screws (1) and hex nuts (23).
3. Slide left hand press upright between bolster assembly (38) until upright bottoms against bolster lifting plate.
4. Attach foot angle (2) to upright and pulley bracket using cap screws (1) and hex nuts (23). Slide right hand press upright (15) between bolster assembly (38) until upright bottoms against bolster lifting plate and lower pulley bracket (22).
5. Mount one of the upper bolsters (7) to top of uprights (3 and 15) using bolster bolts (11) and hex jam nuts (10). **Note: Mounting holes for ram assembly (29) must be facing down.**
6. To install bolster lifting mechanism, insert pulley axles (8) through one side of the middle holes in press uprights, place pulleys (9) on axles then push shafts into holes in other side of press uprights. Use a general purpose grease on pulley axles for lubrication.
7. Mount remaining bolster to uprights using bolster bolts (11) and hex jam nuts (10). This will hold pulleys (9) and axles (8) in place.
8. Fasten winch cable (40) to winch assembly (4), then attach winch and cable assembly to left upright (3) using cap screws (6) and washers (5). Tighten cap screws securely.
9. Attach winch cable (40) over pulley to top hole in the left bolster lifting plate using cap screw (25), secure with hex nut (36).
10. Attach press cable (41) to lower hole in the left bolster lifting plate using cap screw (25) and hex nut (36). Lay cable in center of lower lifting bracket (22) then install pulleys (39) with clevis pins (20), secure with cotter pins (21). Thread cable over upper right pulley (9) and attach to right bolster lifting bracket with cable straps (35) and cap screws (34) and locking nuts (36). (See cable threading diagram Figure 1.)
    Note: Place cable attaching eye in center hole of cable straps (35), then raise and lower bolster assembly to make sure it operates freely. Also make sure when bolster is resting on bolster pins (24) there is slack in press cable (41). If bolster assembly does not operate freely, or if you do not have slack in press cable when bolster is resting on bolster pins move cable attaching eye up or down till bolster operates freely and there is slack in press cable.

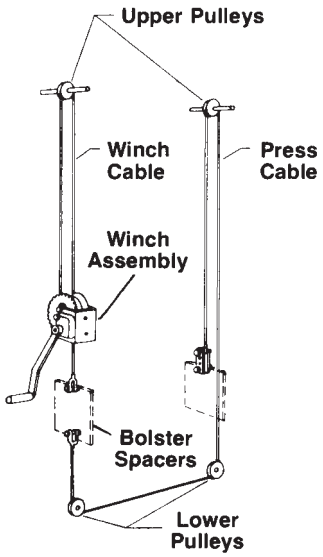

Figure 1. Cable Routing Diagram

11. One bolster operates freely and cable has needed slack, wrench tighten cap screws (34) and hex nuts (36). Raise bolster, remove support blocks and install bolster pins (24) below lower bolster assembly, lower bolster onto pins.
12. Attach pump mounting bracket (16) to right hand press upright (15) using cap screws (19) and hex nuts (37).
13. Place pump on mounting bracket. Secure with cap screws (17 or 18) see parts list for correct usage. Install hydraulic hoses and gauge to pump. Above items are not shown.
14. Set ram assembly, with pipe plug facing pump side of press frame, on the lower bolster. By operating the winch mechanism raise the ram assembly (29) to the upper bolster.
    Note: It may be necessary to block ram assembly to obtain additional height so ram will reach upper bolster when lower bolster is raised. Now, attach the bottom of the ram assembly (29) to the upper bolsters with cap screws (33), SAE washers (32), and hex nuts (23) and bevel washers (30). The beveled washers are placed on the top of the bottom lip of the upper bolster. The larger dimension of the beveled washer is positioned to the outboard side of the bolster to give a level surface for tightening the hex nut. With bevel washer in proper position, wrench tighten the hex nuts.
15. After ram assembly has been secured to upper bolster, lower the bolster assembly (38) onto bolster pins (24).
16. Remove the two pipe plugs in the ram and attach the straight union fitting to the cylinder, then fasten the hydraulic hose to the fitting. Bleed the system by loosening the fitting on the tail (upper) end of the ram. Slowly operate pump until a bubble-free stream of hydraulic fluid flows from the fitting. Tighten the fitting.
    Note: Be sure to hook-up hydraulic hoses correctly: pressure port to tail (upper) end of ram, return port to rod end of ram.
17. Straighten press and tighten all hex nuts and cap screws.