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Service—

42031 and 42044 CP2, CP3, NP2, NP3 Washer-Extractors



**Read the
separate
safety
manual
before
installing,
operating,
or servicing**

Please Read

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APPROVAL AND PROCUREMENT RECORD

APPROVAL DATA FOR: NAVSHIPS 0935-045-4010
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CONTRACT OR PURCHASE ORDER	SHIPS APPLICABLE	QTY. OF MANUALS	QTY. OF EQUIPMENT	BUILDING YARD
N62799-70-C-0009	A0E-1	10	2	LOCKHEED SHIP- BUILDING AND CON- STRUCTION CO.

REMARKS:

CERTIFICATION:

DATE:

It is hereby certified that NAVSHIPS 0935-045-4010
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Section
Installation

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CHAPTER 8

INSTALLATION

8.1. GENERAL. MILNOR HYDRO-CUSHION washer-extractors require no special foundation. Any floor having sufficient strength and rigidity to support the static weight of a fully loaded machine with a reasonable factor of safety will permit vibration-free operation. See HYDRO-CUSHION dimensional drawing for loaded weight of your machine.

8.2. SETTING THE MACHINE.

8.2.1. BEFORE TRANSFERRING ABOARD SHIP.

a. Carefully remove crate and minutely examine machine for possible shipping damage. If there is anything damaged on the machine, NOTIFY THE TRANSPORTATION COMPANY AT ONCE. Once a shipment has been delivered to a carrier by the manufacturer, it is the sole responsibility of the carrier to make sure that no damage occurs in transit. Carriers are liable for concealed damages as well as readily apparent damage.....and you should not hesitate to file a claim with the carrier if the machine has been damaged in shipment. We will be glad to assist you in filing your claim, but are not responsible for shipping damage to the machine once it has been delivered to the carrier in good condition.

b. Remove the shipping skids. Fabricate four 1-1/4" thick steel plates as shown in Figure 8.1.

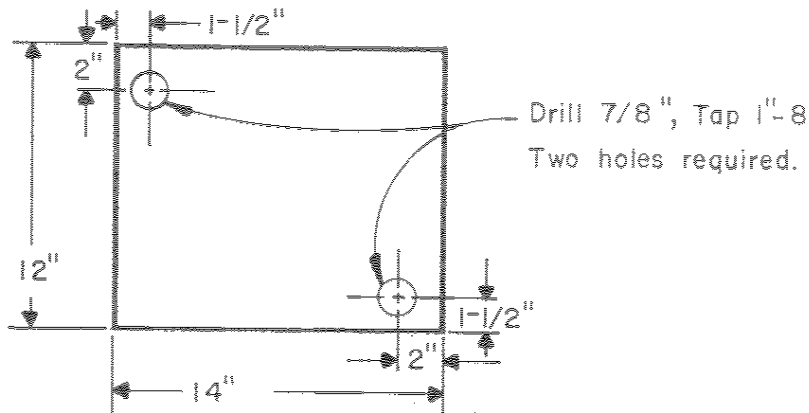


Figure 8.1. Mounting Plate Fabrication Instructions.

c. Fasten one plate under each base pad using 1"8 X 2-1/2" hex head cap screws. Do not allow these screws to protrude below the plate.

d. Transfer the machine aboard ship.

8.2.2. FASTENING MACHINE TO THE DECK.

a. Move the machine into the desired position.

b. Loosen - but do not remove - the hold down bolt at each corner of the machine. These bolts should be loosened exactly 3 turns - no more - to release the shell from the frame and remove any residual stress incurred in shipment.

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- c. Weld the steel plates to the deck.
- d. Loosen the 1" hex cap screws holding the base pads to the steel plates so that 3/4" spacers (7/8" hex nuts work well for this) may be placed between the base pads and the steel plates.
- e. Level the machine with the deck (use shims under the spacers to level).
- f. When the machine is level, tighten the 1" hex cap screws finger tight (do not tighten with a wrench).
- g. Apply grout under the base pads. Make sure it fills the large holes in the base pads and that there are no voids so that the pads rest on solid bases of grout.
- h. When the grout is hard, tighten the 1" hex cap screws in each base pad and remove the shipping hold down bolts.

8.3. CONNECTING SERVICES.

8.3.1. Connect the hot and/or cold water inlet valves as marked. (When looking at the valves while standing at the side or rear of the machine, the hot water valve is on the right and the cold water valve is on the left.) No strainers are required for the air operated water inlet valves. The owner should furnish unions at each water inlet valve to permit removal of the valve assembly for servicing when necessary. When the machine is field connected to be operated with cold water only, the hot water inlet valve may be used for "hard water", or not connected at all. (If the hot water inlet valve is used for "hard water", all references herein to "hot water switch", "hot water finger", or "hot water valve" shall be interpreted to mean "hard water" respectively. Machines that are supplied specifically for operation on cold water only may have only a cold water valve - in which case the hot water switch and hot water finger remain part of the control and may be later used to control a hard water valve.

8.3.2. Be certain that you have an adequate supply of hot and cold water. (Cold water only machines need only a cold water supply.) The MILNOR washer-extractor is a highly productive machine but cannot be expected to produce to its fullest capacity if the water pressure and/or water supply is inadequate.

8.3.3. If manual shut-off valves are to be installed upstream from a machine equipped with ball-type inlet valves, be sure the shut-off valves have flow rates equal to or greater than the valves on the machine. Globe valves do not have flow rates as great as ball valves of equal nominal size and therefore must be nominally "larger" in order to keep the machine filling at its proper rate. Use a 2-1/2" globe valve for a 1-1/4" and 1-1/2" ball valve; a 3" globe valve for 2" ball valve; a 4" globe valve for 2" "full port" ball valve. If ball-type shut-off valves are to be used they should be equal in nominal size to the ball valves on the machine.

8.3.3.a Steam connection located at top, rear of machine (see dimensional drawing), is 2 inch IPT, 100 psi maximum steam pressure.

8.3.4. It is best to drain the machine directly into an open ditch or gutter. This assures that the machine will empty fully before extraction begins, and will permit the free flow of air and moisture during extraction. The drain valve is connected to the flexibly mounted portion of the machine and may move up to three inches in all directions while washing and extracting. Flexible hose must be used if the machine must be physically connected to the sewer pipe. The drain valve

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is normally installed in a vertical position, suitable when the machine is to straddle a drain gutter. (This is the preferred method of draining.) If the machine is physically connected to the sewer pipe, it will probably be necessary to turn the Drain Valve 90 degrees to permit it to drain toward the front or toward the rear of the machine. This is accomplished by merely unbolting the drain valve flange connection and turning the valve 90 degrees. The valve may either drain downward, to the rear (or on some machines to the front) depending upon installation requirements.

8.3.5. Shipboard machines are equipped with two 3-1/2" outlets on the side of the shell. The upper connects to the machine vent; the lower is an overflow connection and should be piped to a drain.

8.3.6. Connect air to the appropriate air connection located on the top of the machine. Air should be clean, free from oil or moisture, and at a pressure of 85 psi minimum, 100 psi maximum. A 5/16" copper tube will supply an adequate supply of air providing the tubing does not run more than 30 feet. Use 3/8" for longer runs.

8.3.7. Carefully check machine nameplate to insure that the machine electrical specifications conform with the electrical service in your plant. Have a competent electrician connect your power service to the terminals marked L1, L2, and L3 on the magnetic starter located within the control box. Comply carefully with the connection instructions on the tag affixed to the control to make sure that the "Stinger Leg" (if any) is connected to L3, not to L1 or L2. Customer must furnish wall mounted disconnect switch. See Fuse Recommendation Chart elsewhere herein.

8.3.8. To check rotation, first be sure that air pressure is on the machine. Then, with the door open, inch the cylinder in accordance with the operating instructions on the nameplate, with the Two-Way Inching Switch in the "Manual" clockwise rotation setting. The cylinder must turn clockwise during inching, when the drain valve is open, and during extraction. Caution the electrician that if necessary to change rotation, he must only swap the supply wires that he attached to terminals L1 and L2. Never interchange L3 if L3 is a "Stinger Leg". Under no circumstances is the electrician to change the motor rotation at any other point in control system - nor is he to interchange any other machine wiring - for all of the motors on the machine have been properly phased in before the machine left the factory and all motors must operate in a specific direction.

8.3.9. Before operating machine, check oil level in gear reducer, refilling if necessary. See 4.2. for lubrication instructions on the remainder of the machine.

8.3.10. On machines equipped with automatic supply injection of the flushing type, connect the injector unit to a source of hot water (when available). Connection is made directly from the water line to the supply injector pressure reducing valve. Use at least one size larger pipe than the pressure reducing valve. Hot water should be used for flushing providing your hot water source is dependable and does not occasionally boil over and produce steam in the hot water line. If such a condition exists, or if hot water is unavailable, use cold water for flushing purposes.

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8.3.11. There are five solenoid valves located within the supply injector. These valves can handle a maximum pressure of 30 psi. They are adequately protected against higher pressures by the pressure reducing valve which has been properly set at the factory to deliver 28 psi. Increasing the pressure above 28 psi may cause the flush valves to fail to open and may even cause the electric coils therein to burn out. Be sure to check the pressure gauge and reset to 28 psi as vibration and/or handling in shipment may cause the regulator to get out of adjustment. DO NOT exceed pressure of 28 psi. Check by causing an injector valve to open two or three times, then setting pressure when there is no flow of water through the injector.

NOTE: Under certain peculiar and infrequent combinations of incoming water pressure and upstream piping configurations, the supply injector pressure regulator may chatter while flushing supplies into the machine. Should this occur, check injector pressure gauge to make sure regulator is set for 28 psi where there is NO flow of flushing water through the unit, and reset if necessary. If condition persists, remove pressure regulator and reinstall approximately 10 feet further "upstream". The tubing connection in the bonnet of the regulator is a bleed off line that allows the regulator to bleed itself should foreign matter or worn seat permit seepage through the regulator (which would otherwise permit the pressure to the valves to slowly build up and exceed their maximum pressure rating). The bleed off line is normally allowed to discharge into the injector chute, but may be connected to any convenient drain.

8.4. REST PAD ADJUSTMENTS. Before the machine is put into operation the rubber rest pads found atop each base pad must be adjusted so that the machine comes to rest evenly at all four corners when washing.

- a. Turn on air pressure and electrical power to the machine (if not already on).
- b. Place the master switch (Switch No. 1) on the MILTROL in the "Manual" position. Note that the machine is pushed down onto the rest pads.
- c. Recycle the master switch through "off" back to "manual" positions. As the machine is being pushed down, slide two equally thick pieces of sheet metal between the air mount brackets and the rest pads on one side of the machine. Shim as necessary beneath the rest pads until both pieces of sheet metal bind at the same time.
- d. Repeat step "c" on the other side of the machine.
- e. Check as in step "c" to see that both the left and right sides of the machine contact the rest pads at the same time. If one side contacts the rest pads after the other, shim both pads on that side with equal thicknesses of sheet metal until all four pads on the machine contact at the same time.
- f. Center the actuator for the excursion switch (located on the drive assembly) vertically and laterally within its adjusting plate. Cycle the master switch between the "manual" and "off" positions. The actuator should remain approximately centered within the adjusting plate as the machine raises and lowers.