**20-ton Standard Electric Hydraulic Press Set-up (and Electric Upgrade)**

Congratulations on your purchase! You have purchased a standard-size 20-ton electric hydraulic press manufactured and assembled by Potter USA. The electric press is great if you are looking to increase your productivity or are just tired of pumping a jack by hand. This bench-mounted press has been designed to safely and efficiently form metal in a jewelry studio environment. The press frame is compact and elegantly designed and has been tested to far exceed the 20-ton rating.

We’ve used the largest motor possible for the electric pump, while also keeping it accessible by only requiring a 110-volt outlet. The cylinder and electric pump are built with off-the-shelf components; if needed, they can be repaired anywhere, saving you time and money. We will always keep parts available.

About this press:

* Frame: 70 lbs.
* Cylinder: 30lbs.
* Electric pump: 45 lbs. (60 to 65 lbs. once the oil is added); 1hp; 110-volt (draws 15 amps)
* Frame dimensions: 23” high x 16.5” wide x 7” deep
* Upper platen: 2-1/2” x 6”
* Lower platen: 8” wide x 6” deep x 1” thick
* Space between platens: 7-9”
* Frame: ½-inch steel plate construction, with no welds on the entire press frame Complete bolt together construction eliminates any stress risers as a result of welding.
* Powder-coated frame will resist rust and corrosion for many years
* High-strength bolts, nuts, and support brackets make the frame extremely strong and rigid
* Lifetime warranty on the frame; 5-year warranty on the electric pump and cylinder
* Works with other press manufacturer’s accessories
* All versions of our standard-size press frame can be upgraded to electric; medium and mini presses **(discontinued in 2015-ish)** cannot be upgraded.

**Shipping**

All Potter USA presses and press upgrades ship freight. The truck will deliver the press to your home—to your door. When ordering, if you request the driver to bring the press inside, you will be assessed an additional fee of at least $85. Any additional requests have fees attached by the shipping company. We will then bill you for the additional fees.  
  
The complete electric hydraulic press arrives fully assembled and ready to use. The electric upgrade needs to be installed in your existing 20-ton press frame.

**STOP!** Read all instructions before assembling or operating the hydraulic press. This will familiarize you with the parts, the tools required, and the order in which things are required to be done in order to properly use the press.

**General Safety: DOs and DO NOTs**

**DO …**

… keep your work area clean.

… keep children away from the press.

… keep fingers away from moving parts.

… tie back long hair.

… ALWAYS bolt the press to a sturdy work surface.

… wear ANSI-approved impact safety eye and face protection when using the press.

… only use replacement parts from Potter USA.

… ALWAYS center your work on the lower platen.

… ALWAYS use spacers to avoid overextending the ram.

… lower the cylinder completely at the end of the day to prevent dust and debris from sticking to it, which will cause wear on the seals.

**DO NOT …**

… assemble or operate the press when you’re tired or under the influence of alcohol or drugs.

… wear loose clothing or jewelry.

… operate the press beyond its rated capacity.

… place cast iron, springs, fragile or brittle objects, metal of unknown composition or temper, or any item that could disengage from the press.

… put heat-treated tool steel dies or bench blocks in the press unless you know they have been properly heat-tempered. They can shatter like glass.

… use the press for hot forging

**Parts of the standard hydraulic press frame**

Frame

Lower platen

Upper platen

Return springs

**Parts of the electric hydraulic pump and cylinder**

**Electric hydraulic pump**

Oil port cover

Quick-connect hose

On-off switch housing

Handle

**Cylinder**

Connection point

Stepped bushing

**Set Up the Electric Hydraulic Press**

**Tools and Materials Needed** (NOT INCLUDED)

* 1-1/2 to 1-3/4 gallons hydraulic oil, viscosity of ISO 32 (SAE 10WT) (**NOT** hydraulic jack oil or brake fluid!) (Available from hardware or automotive centers)
* Adjustable wrench
* Open-end, box-end, or combination wrench: ¾” and 9/16”
* Funnel
* 110-volt outlet (do NOT use an extension cord!)

**Connect the cylinder to the electric pump (Electric Upgrade)**

1. Place the electric pump and motor to the left of the press frame. Release the free end of the hose from where it was placed during shipping, and make sure it extends toward the right.
2. Bolt the press frame to a sturdy work surface.
3. Carefully disconnect the bolts and springs from the lower platen.
4. Tilt the lower platen at an angle and remove the platen from the frame. Set aside for later.
5. Place the hydraulic cylinder into the press frame. Make sure that the connection point on the cylinder is facing toward the front of the press.
6. Place the included stepped steel bushing into the top of the cylinder. If needed, use a plastic or rawhide mallet to gently tap it into place, as it’s a tight press-fit.
7. Thread an aluminum cylinder onto each of the four included bolts. These will secure the cylinder to the press frame.
8. Insert the bolts through holes in the base of the press on all sides of the cylinder.
9. Add a washer to the bottom of a bolt, add a nut, and use two ¾” wrenches to tighten the nut. Repeat for the remaining three bolts with aluminum spacers.
10. The electric pump uses an easy-connect mechanism to connect to the cylinder.
11. Press the nipple on the end of the pump hose into the opening of the cylinder until you hear a quiet “pop.” This pop occurs when the hose pushes through the cylinder gasket, ensuring a secure connection.
12. Twist the freely moving knurled piece (on the cylinder) onto the hose. Tighten as much as you can by hand; there’s no need to use a wrench for this.

**Reattach the platen**

1. The lower platen has a pocket on the underside that lines up with the bushing you placed into the cylinder. Angle the lower platen in the press frame so the slits align with the inner edges of the frame. Gently lower the platen, and rest it onto the cylinder, making sure the cylinder rests in the pocket of the platen.
2. Hook a spring through the hole in one of the bolts on the base of the frame. Add a second screw to the top of the spring.
3. Feed one of the bolts attached to a spring up through a hole in the platen. Thread the matching nut onto the bolt, but barely tighten it.
4. Repeat to add the second spring on the opposite corner of the lower platen.
5. Adjust the nuts so that they’re even; this helps ensure the platen is level.

**Fill the pump with hydraulic oil**

1. Locate the oil port on the electric pump. It’s to right of the hose fittings and is covered with a piece of metal shaped somewhat like a paddle.
2. Use a 9/16” and adjustable wrench to loosen the bolt and remove the cover. Set these aside.
3. Insert a funnel into the port and begin filling the pump with 1-1/2 to 1-3/4 gallons of hydraulic oil.
4. Replace the oil port cover and clean up any spilled oil.

\*\*Note: The hydraulic oil should last the life of the machine and does not need to be changed. Some oil leakage around the pump and cylinder is normal with use. You should not have big puddles, but a little dampness is normal. It is not a completely sealed system.

**Turn on the pump**

1. Plug the pump into a 110-volt outlet; do NOT use an extension cord!
2. There is an on-off toggle/button in a housing on the back of the pump; turn it on.
3. The handle at the front of the pump is what raises and lowers the cylinder. Pull toward you to raise it; push away from you to lower it. You can raise and lower the platen quickly or slowly, and can park it at a specific height, if needed.
4. Pay attention to the sounds you hear. It’s normal for the seals of the cylinder to be squeaky and jumpy when they’re brand new; over time, these sounds and movements will disappear.
5. When the pump reaches max pressure (2,200 psi), the sound will change. This is the bypass valve, and it prevents you from damaging your press frame.

**Troubleshooting**

**I have an older version of the press frame. Can it be upgraded to electric?** All past versions of our standard-size press frames can be upgraded to electric. Medium and Mini frames (now discontinued) cannot be upgraded, unfortunately.

**Oil is coming out the side of the pump.** You have overfilled the tank. Some oil residue around the pump and cylinder is normal. You should not have puddles, but a little dampness is normal. It is not a completely sealed system.

**Why can’t I plug the pump into an extension cord?** We have used the largest motor possible for the pump, while also keeping it accessible by making it 110-volt. The 1hp motor draws 15 amps and reaches a max pressure of 2,200psi; plugging it into anything but directly into the wall would cause it to lose amperage, therefore decreasing the amount of power you have.

**Why do I have to add the oil myself?** It is illegal to ship because it is considered a hazardous material (but is safe in your press), so the pump must be shipped empty. We test it at our shop first, and then empty the oil out of the pump before shipping. You can find hydraulic oil at automotive and/or hardware stores.

**What type of oil do I need, and how much?** You will need approximately 1-1/2 to 1-3/4 gallons of hydraulic oil [viscosity of ISO 32 (SAE 10WT)]. Do NOT use hydraulic jack oil or brake fluid! This is available from most hardware and automotive stores.

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