20-ton Standard Hydraulic Press Set-up and Instructions (Manual)

Congratulations on your purchase! You have purchased a standard-size 20-ton hydraulic press manufactured and assembled by Potter USA. This press has been designed to safely and efficiently form metal in a jewelry studio environment. The press is compact and elegantly designed, and has been tested to far exceed the 20-ton rating.

About this press:

- Dimensions: 25.5” height x 19.25” wide x 15.25” deep
- Magnetic upper platen: 2-1/2” wide x 6” long
- Lower platen: 8” wide x 6” deep x 1” thick
- Space between platens: 7” (approx.) with a standard-height bottle jack; 9” (approx.) with a low-profile bottle jack (available elsewhere; allows for more space to do deep-draw work.)
- Frame: ½-inch steel plate construction, with no welds on the entire press frame
- Approx. 110 lbs. without jack, 150 lbs. with the jack.
- Powder-coated frame resists rust and corrosion for many years
- High-strength bolts, nuts, and support brackets make it extremely strong and rigid
- Lifetime warranty on the frame
- Works with many other press manufacturer’s accessories
- Designed to allow for transition/upgrade to electric

Shipping

All Potter USA presses 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.

With a Jack and Gauge: If you purchased a press with a jack, the press arrives at your door ready to use. The Norco standard-height bottle jack that came with your press is the best on the market, and includes a hose and pressure gauge; it is the only jack on the market with a gauge port. Due to its weight, this press/jack combo requires two people to set it up.

The gauge is filled with glycerin, which acts as a shock absorber for the gauge mechanism. An air bubble in the gauge is normal. It is also not critical if the glycerin evaporates over time or leaks out. It will not affect the performance or accuracy of the gauge.

Without a Jack: If you purchased only the press frame, you’ll need to add a 20-ton bottle jack. The frame fits a 20-ton Harbor Freight jack as well as any other 20-ton jack on the market; we can assist with jack selection.

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 ...

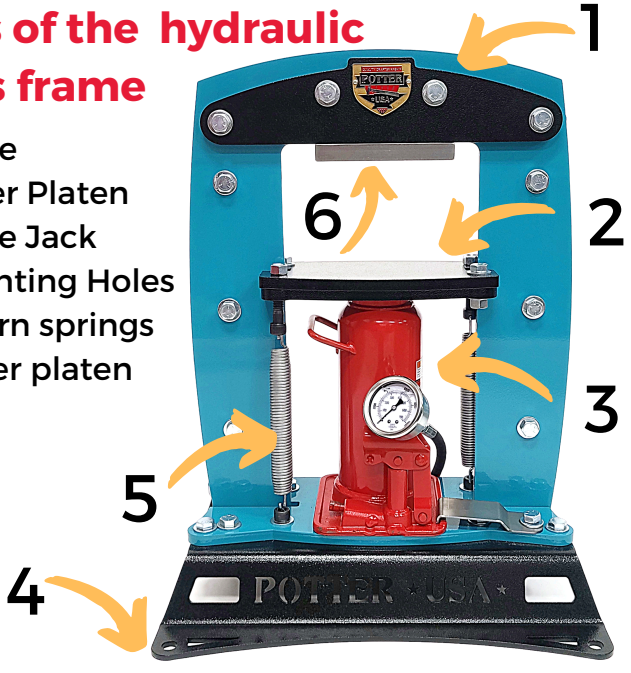
- keep your work area clean.
- keep children away from the press.
- keep fingers away from moving parts.
- tie back long hair.
- ALWAYS bolt the press to a sturdy work surface.
- wear ANSI-approved impact safety eye and face protection when using the press.
- only use replacement parts from Potter USA.
- ALWAYS center your work on the lower platen.
- ALWAYS use spacers to avoid overextending the ram of the jack.
- lower the ram completely at the end of the day to prevent dust and debris from sticking to the ram, 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, or any item that could disengage from or crack in 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 cheap bronze impression dies purchased elsewhere in the press. They can shatter or explode under pressure.
- use the press for hot forging.

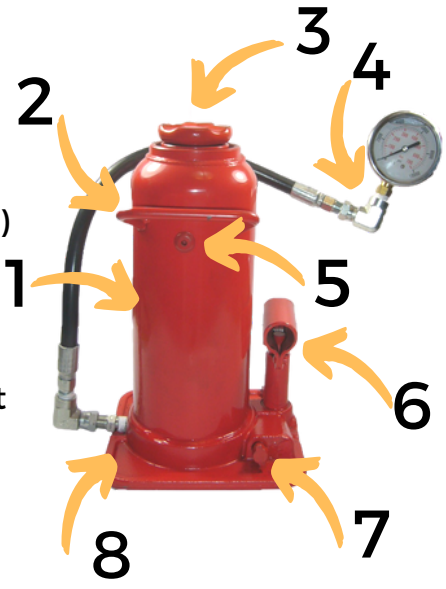
Parts of the hydraulic press frame

1. Frame
2. Lower Platen
3. Bottle Jack
4. Mounting Holes
5. Return springs
6. Upper platen



Parts of a manual bottle jack

1. Main cylinder
2. Carry handle
3. Ram (screw extension, saddle)
4. Gauge w/hose
5. Oil port
6. Pump Handle (not shown; insert handle here)
7. Release valve
8. Gauge port



Mount the Press

This press MUST be mounted to a sturdy work table before use. The press requires a decent amount of force to use, and if it's not bolted down, it may tip over, causing serious injury. Bolt the press to a work surface through the feet, or use a strong C-clamp (or two) to secure it in place. Do not use a portable tool chest or any other lightweight table, as the entire setup may fall over during use.

Tools and Materials Needed (NOT INCLUDED)

- ½"-13 bolts, as long as the thickness of the work table top plus approx. ½" (this is the most common type of bolt, available at all hardware stores) (4)
- Matching washers and nuts (4 each)
- Open-end, box-end, or combination wrench: ¾" (2)
- Electric drill with ½" drill bit
- Safety glasses
- Pencil

How to Mount the Press

1. Choose a work surface on which to mount the press. Keep in mind that it takes effort (sometimes a substantial amount) to use the manual press, so consider a slightly lower work table that will allow you to use some of your body weight to operate the press.
2. Trace the hole of one corner of a foot bracket onto the table. Slide the press to one side, and mark the center of the circle.
3. Use a ½" drill bit and an electric drill to drill a centered hole at the mark. Wear safety glasses and tie back long hair when using the drill.
4. Align the drilled hole with the first hole in the foot. Insert a ½" bolt through the foot and table. This registers the frame in place and ensures that the next hole will be aligned.
5. Trace a second hole of foot bracket onto the work table, and drill a hole at the center of the mark. Align the holes and insert a bolt to make sure everything lines up.
6. Repeat for the final two holes. Make sure all the bolts fit, remove the bolts, and adjust the holes, if needed.
7. Insert a bolt through each foot bracket hole, add a matching washer and nut to each bolt, and use a wrench to tighten the nuts.

General Use Instructions

This press is extremely versatile and can be used for a variety of applications. While each accessory, tool, and application requires a specific technique, there are a few general rules that apply no matter how you're using the press.

- **ALWAYS make sure your work and tooling is centered front-to-back and left-to-right in the press. Working off-center is dangerous and can potentially damage the press.**
- Do NOT overextend the ram of your bottle jack. Use more spacers to reduce the distance the ram must travel.
- Mount your press to a sturdy work surface.
- Don't stand directly in front of the press when using it. In the unlikely event that something you put in it were to disengage, standing off to one side of the press is safer.
- Fully lower the ram at the end of the day to prevent dust and debris from prematurely wearing out the seals and damaging the jack.

Troubleshooting

Do I need to mount the press?

YES, and it must be mounted to a sturdy work surface! Either mount it through the feet with bolts, or secure it in place with large C-clamps. Even mounted, a press mounted to a lightweight table can tip and cause serious injury.

I don't think my lower platen is level. How can I check (and fix) this?

The platen will self-level under load. It is very important to have equal tension on the springs. You can count the number of threads on the bolts extending above the nuts on the lower platen, and make sure they are equal.

I can pump the jack all the way up, but there's still space between the platens. Why, and what should I do?

Our standard hydraulic press is designed to allow enough space between the upper and lower platens for deep-draw work, and therefore, you must use spacers to avoid overextending the ram.

I have the magnetic bracelet former. Will this work with this press?

Yes. The magnetic former will affix to the upper platen of the press.

The gauge isn't registering any psi. Is it broken?

The gauge will only engage when it's under pressure. If you're using pancake dies, you won't see any change in the gauge until right before the die cuts the metal; it's under pressure for a split second, and when the metal is cut, the pressure is gone. If you're using any other type of die or former and the gauge isn't showing any change in pressure when you form the metal, contact us (or the manufacturer, if you didn't purchase a gauge from Potter USA) and we'll help you troubleshoot; it may need to be replaced.

I can raise the lower platen, but it doesn't come back down. What's wrong?

1. The springs are not tight enough. Tighten the springs a few turns with a wrench.

2. You may have over-extended the ram. Open the valve on the base of the jack a little further.

Side view, Summer 2020 model

Contact Us

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