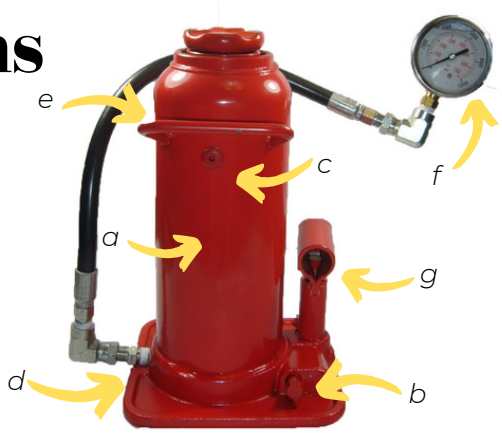
Bottle Jack Instructions



How does a bottle jack work?

1. The upstroke of the pump handle draws oil from the main reservoir into the pump cylinder.
2. The down stroke pushes that oil into the main cylinder, raising the main piston, which raises the ram.
3. The check valves ensure oil doesn't flow back into the pump cylinder and that pressure is maintained in the main cylinder.
4. Each stroke draws more oil from the main reservoir into the pump cylinder, which then pushes the oil into the main cylinder, raising the main piston, which further raises the ram.
5. When you open the release, fluid is ported back into the reservoir, lowering the piston and the ram.

Parts of a bottle jack

- Reservoir
- Pump piston
- Pump cylinder
- Main cylinder (*a*)
- Main piston
- Release valve (*b*)
- Check valves
- Oil port (*c*)
- Gauge port (*d*)
- Carry handle (*e*)
- Ram (screw extension, saddle)
- Pressure gauge (*f*)
- Pump handle (*g*)

Pressure Gauges

A pressure gauge allows you to see how much pressure you are exerting on your metal to make it easier to get repeatable results. It is not necessary, though it is helpful. The Norco standard-height, 20-ton bottle jack that we sell 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.

What about the bubble? 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.

Topping off low oil

Most bottle jacks are topped off with oil when they're shipped, but may leak during transport. Bottle jacks should NOT leak huge amounts of oil regularly; if it does, your jack likely needs to have the seals replaced.

1. Check your bottle jack manufacturer's instructions for recommended oil level. For most bottle jacks, the proper fill level is to the bottom of the oil-port opening, or slightly below it.
2. Lower the ram completely.
3. Use a screwdriver to remove the oil-port plug. Some bottle jacks have a screw-in oil port, others have a rubber plug. If it's rubber, make sure not to damage it or push it into the cylinder.
NOTE: Keep some oil rags handy; this process can get messy.
4. Check the oil level; if it's low, add ONLY hydraulic jack oil.
5. Replace the oil-port plug.

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Troubleshooting

As with all mechanical tools, there are instances where they don't work perfectly and need to be adjusted. Here are answers to some commonly asked questions, so give these a try before assuming your press or your bottle jack is broken.

The ram will not raise, or will raise but does not exert any pressure.

First, check to make sure there's oil in the jack. Sometimes, especially with less-expensive bottle jacks, they arrive empty, or may have leaked oil during shipping. See above for instructions on how to fill/top-off the oil.

If the oil is at the correct level, it's likely that air has gotten trapped in the bottle jack, and it is now air-locked. Don't worry, it sounds worse than it is. Air can enter the system any time the jack is laid on its side, either during storage or transport. To prevent this, always store and transport bottle jacks in the upright position.

To purge air from the bottle jack:

1. Open the release valve.
2. Pump the handle approx. 20 times—this helps purge air from the system.
3. Tighten the release valve.
4. Insert handle, pump to confirm it operates.
5. Repeat if needed.

The ram will not lower completely.

In order for the ram to lower completely, the return springs must be exerting enough downward force on the lower platen. Open the release valve, and tighten the nuts on the top return-spring bolts evenly until the ram is fully lowered. Close the release valve.

Where is this oil coming from?

A little oil leaking from the bottle jack is nothing to be too concerned about, but if your jack is leaking a tablespoon of oil or more each week, then you should look into having the jack looked at by a professional. It's possible that the seals need to be replaced.

Another possibility is that you're opening the release valve too much. You only need to open it about a quarter of a turn. Any further than that, and you may have oil begin to seep out. Opening it further doesn't make the ram retract any faster, so stick to about a quarter of a turn and be patient.

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.