

Disassembling External Pumps

When I disassemble a torch my primary goal is to not do any damage. Some of the more difficult parts to remove unscathed are the external pump cylinders. A good example is the Detroit model #42 Auto pictured on page 159 of Vintage blowtorches. Burners that unscrew can also be difficult. I have found the best way to remove these parts is to use a "Worm Screw Hose Clamp" (see picture). The clamp can be unscrewed all the way, if necessary, and split to fit around parts where it cannot simply be slipped over. The hose clamp puts equal pressure around the total circumference of the part you are trying to remove. It also gives you more leverage with the protruding screw. I put a thin piece of rubber between the clamp and the torch. You can use a piece of an old rubber glove or inner tube, or whatever is handy. Rubber works best. Attach the clamp as close to the lower threads of the cylinder as possible. ALWAYS have the screw head facing the direction you need to turn it to loosen. There is a little flange on the inside of the clamp that might leave a mark if you turned it in the wrong direction. The screws can be tightened with either a screw driver or a small socket set. You can get it tighter with a socket set.

These clamps come in all sizes and can be used for burners that unscrew as well. They can be found in hardware stores, auto stores (heater hose clamps) and on the internet. If it doesn't work at first do not apply a lot of pressure. Clean the connections with a small detailing wire brush and apply Liquid Wrench or any other type of penetrating oil and let it soak overnight. If it still doesn't work after a few days, apply heat to the bowl of the lower support. Before applying heat, move the clamp to the upper section of the pump cylinder so the rubber doesn't burn. I have always been able to remove pump cylinders using these techniques without adding tool marks.

To remove the pump supports (if they are threaded), I use two different methods:

In the first method I use an appropriate size adjustable pliers with a piece of leather in the jaws (see second picture). I do this even though there might be a nut cast into the support as you would find on some Bernz torches. The bronze is soft. If you use a wrench and have to apply any pressure, the chances are that you will leave tool marks.

In the second method the pump cylinder becomes the tool and there is no need for a pliers and leather. After unscrewing the pump cylinder from the lower support it can be used as a "T" handle to remove the upper support. This should only be done if the support can be removed with a minimal amount of pressure. If it cannot, return to the pliers, Liquid Wrench, and heat if necessary. Once the upper support arm has been removed the pump cylinder can be screwed back into the lower support and used as a lever to remove the lower support (see third picture).

The particular configuration of your torch and the ease of disassembly of the individual parts will determine which of the methods above is more appropriate.



Always remember: The goal is to leave NO tool marks. Usually they have enough to start with. If you have to strain to remove a part, STOP. You run the risk of damaging the part. Go to the backup plans of Liquid Wrench and heat. When applying heat, make sure you keep it localized on the part you are working with. You do not want to melt the solder on other parts of the torch.

