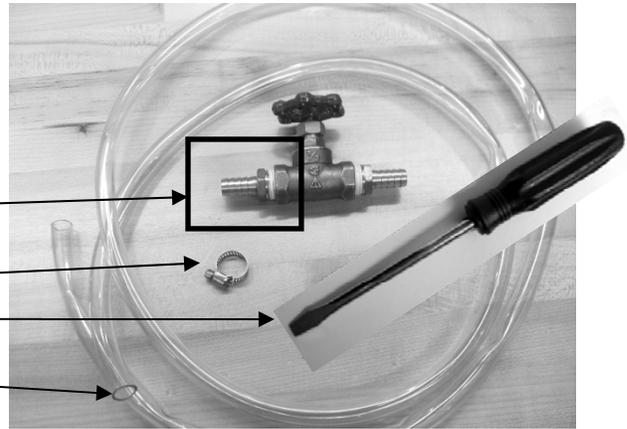


Knowledge domain: Plumbing
Unit: Connections
Skill: Hose Barb with Clamp

Tools and Parts Required:

1. **Hose barb**
2. **Screw hose Clamp (should match tubing size)**
3. **Screwdriver, flathead**
4. **Hose/Tubing**



Introduction

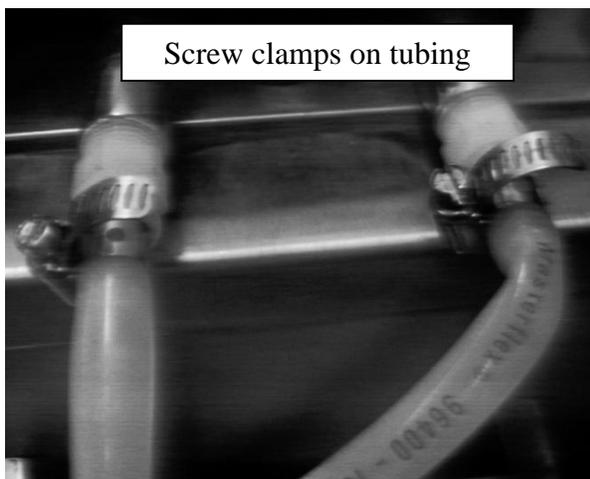
Hose barbs are cylindrical pieces that attach to tubing. A piece of tubing is also called a “hose.” The ridges on hose barbs connect easily to plastic or rubber tubing. The ridges are also called “barbs.” Hose barbs ensure that the tubing is not easily disconnected.

A hose clamp attaches and seals tubing onto a hose barb. Hose clamps insure a tight seal between the hose and the barb. Hose clamps prevent the fluid from escaping.

Hose clamps are tightened with various mechanisms, such as screw, spring, wire and ear clamps. See *Plumbing-Connections-Clamps* for information on other clamp types. On screw clamps, one end of the band contains a captive screw. A screwdriver is used to tighten the clamp around the hose. Screw clamps are normally used for hoses with a diameter of 1.27 cm and above. Other clamp types are used for smaller hoses.

Example

Below are some examples of screw hose clamps.



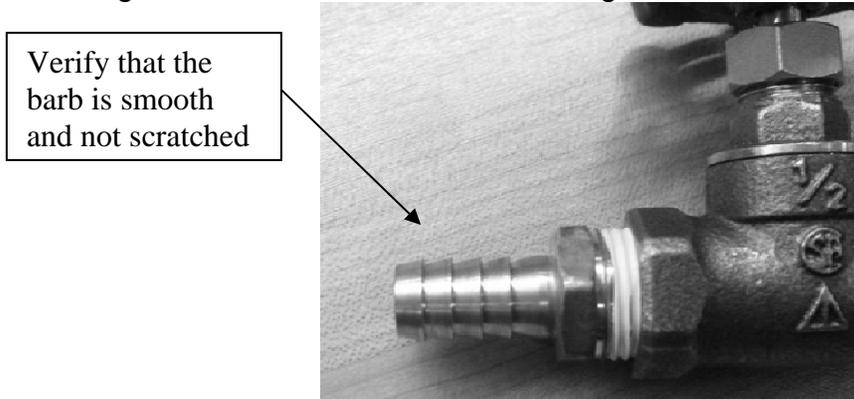
Identification and Diagnosis

To identify a leak at the hose-barb connection, observe if there is liquid around the area, or place your hand over the area to feel for air leakage. A hose clamp may help to stop fluid leaks in tubing under moderate pressure. Hosing in automotive and home applications is an example of hosing under moderate pressure. Use a hose clamp that is not rusty or loose to connect hoses or tubing that are under moderate pressure.

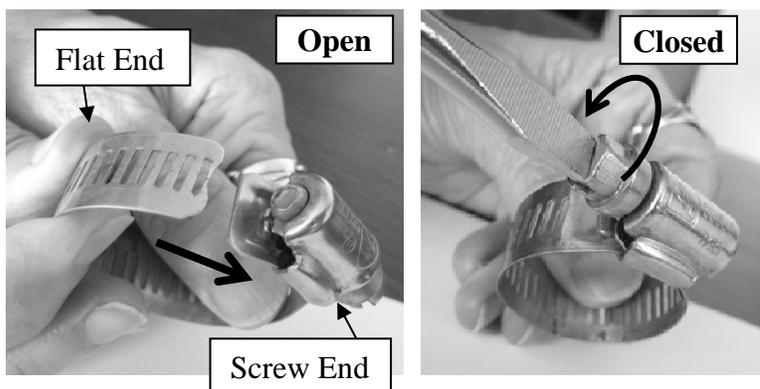
Procedure

Note: The procedure below is for a screw clamp. Other clamp types will follow a similar procedure, except with a different method of tightening and loosening the clamp. For screw clamps, use an appropriately-sized screwdriver. The width of the screwdriver tip should match the diameter of the captive screw.

1. Select a hose clamp appropriate for your hose barb. The hose clamp should be able to fit around the hose barb and tubing.
2. Verify that the hose barb is smooth and not scratched.
 - The purpose of the hose clamp is to secure the hose onto the barb and to prevent leaking.
 - The hose barb must be smooth, without scratches or contamination to avoid leaking. A smooth hose barb insures a tight seal.

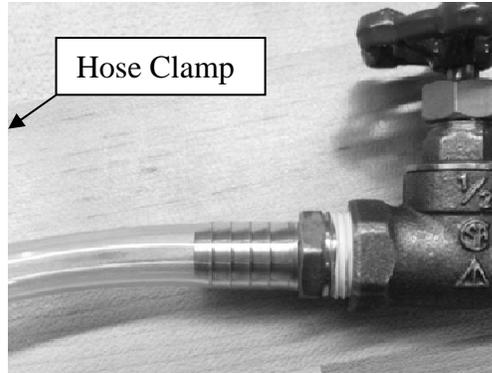
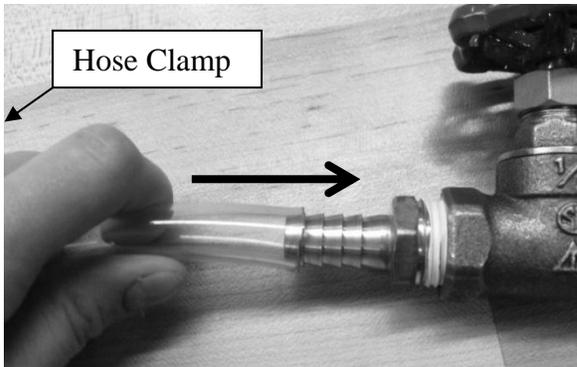


3. Adjust the hose clamp so it will fit loosely around the tubing.
 - If the hose clamp is “open,” insert the flat end into the screw end.
 - If the hose clamp is “closed,” insure that it will fit around the tubing. If the clamp is too narrow, loosen the clamp by turning the captive screw counterclockwise. Turn the screw with an appropriately sized screwdriver.

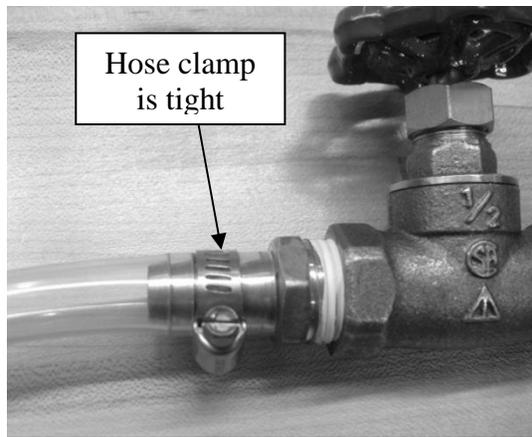


4. Slip the hose clamp over the tubing.

5. Push the hose or tubing completely onto the hose barb.
 - If you have difficulty placing the hose completely over the barbs, heat the tubing.
 - Do not use grease or other petroleum products (like Vaseline) to lubricate the barbs. Petroleum products destroy tubing.



6. Slide the hose clamp over onto the hose barb. The hose clamp should be placed in the center of the hose barb. Tighten the screw clockwise with a screwdriver.



Caution! If a hose is stuck:

- Do not cut the hose off. Cutting a hose off can leave a scratch on the barb. A scratch on the barb will cause a leak.
- Do not attempt to use a screwdriver to remove the hose. You are likely to scratch the barb.
- Instead, heat the tubing with very hot water, then attempt to remove the tubing.

Exercise

Your instructor will give you a hose barb, hose clamp and a hose/tubing. Use the hose clamp to secure and seal the hose onto the barb. Pour water into the tubing. It should not leak. Your instructor must verify your work before you continue.

Preventative Maintenance and Calibration

Always calibrate every medical device before returning it to use.