

High Adventure Team
Golden Empire Council, BSA
Snowshoe Making Workshop

By Steve Hupner 11- 1997

Required Tools

1. **One (1) 4'x8' sheet of plywood.** A plywood work table is necessary for the snowshoe bending activity. 1½" thick plywood sub-flooring works best. The thicker the plywood the better, as it provides a stable non-flexing work surface. As much as possible, prevent the work surface from moving around during the bending operation.
2. **Two (2) saw horses.** Two saw horses, or something similar are needed to support the plywood. The height of the work table is governed by the height of the person bending the snow shoes. Scouts may need a shorter table height, while adults will enjoy a taller work surface so they are not having to bend over so far.
3. **Electrical Metallic Tubing (EMT) bender.** Benders come in ½" EMT and ¾" EMT sizes. When purchasing or selecting this tool, a ½" **EMT bender** is required. Do not be confused by the information typically found on the ¾" EMT bender; . . . a ¾" EMT bender can also be used to bend ½" rigid pipe. a ½" **EMT bender** is required. (EMT is sometimes called "Thinwall")

EMT benders are sold without a handle. You can purchase a handle or make your own from a ¾" diameter steel pipe about 3' long. The pipe must be threaded on 1 end in order to attach the bender to the handle. If the pipe is threaded on both ends, place a pipe cap or coupling on the other end (this will keep the user's hands and clothing from being cut or damaged).
4. **Conduit (pipe) straps and wood screws.** It is necessary to securely attach the conduit bender and its handle to the plywood work surface. This is done with omega shaped pipe straps and wood screws (sheet rock screws work well). An electric screw gun (drill motor) saves time and energy for installing and removing the screws.
5. **Measuring tape.**
6. **Miscellaneous other supplies and equipment.**
 - a. **Duct tape**
 - b. **Laundry marker ink pen.** It's a good idea to have more than one. The extra(s) will be of value when someone leaves the top off the pen and the ink dries out. With an extra, you can continue the project after discussing the merits of capping the pen.

Preparing the EMT Bender Gig

With the 4'x8' sheet of plywood on the saw horses, but before mounting and securing the bender to the plywood, take advantage of the flat table top work surface . . . it makes a great surface to support all the EMT while marking them for bending. Follow the lay-out instruction noted at item #1 of **Bending the EMT** in these instructions.

1. Place the "work table" in the middle of the work area (large room or garage). Ample room is needed around the work table when bending 10' lengths of EMT.

Suggestion: When teaching Scouts, let them know . . . "Everyone will get a turn. Leave the EMT on the floor until it is your turn. Stand back (and watch). Getting hit with EMT hurts!"
2. **Secure the EMT bender to the plywood** with pipe straps and screws. Set bender handle at an approximate 45° angle to one of the plywood panel edges, with the head of the bender about 4" away from the plywood panel end and side. The bender head includes a *retainer* to keep the EMT in place while it is being shaped. The retainer opening must face up in order to be functional and it must be nearest the end (as opposed to the long edge) of the plywood panel.
3. **Secure the plywood to the saw horses.** Before securing the bender to the plywood, set a length of EMT in the bender at the approximate middle of the EMT's length. Bring the EMT up tight into the bender's *retainer*, and while holding the EMT tight to the retainer, adjust the location of the bender so the EMT is parallel to and about 4" away from the end of the plywood panel. Maintain the same 4" distance off the plywood panel's long side. Holding the bender in this location, secure the bender to the plywood with 2 or 3 screw down clamps.