

# Equip Tips

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## Hand Pump Shroud

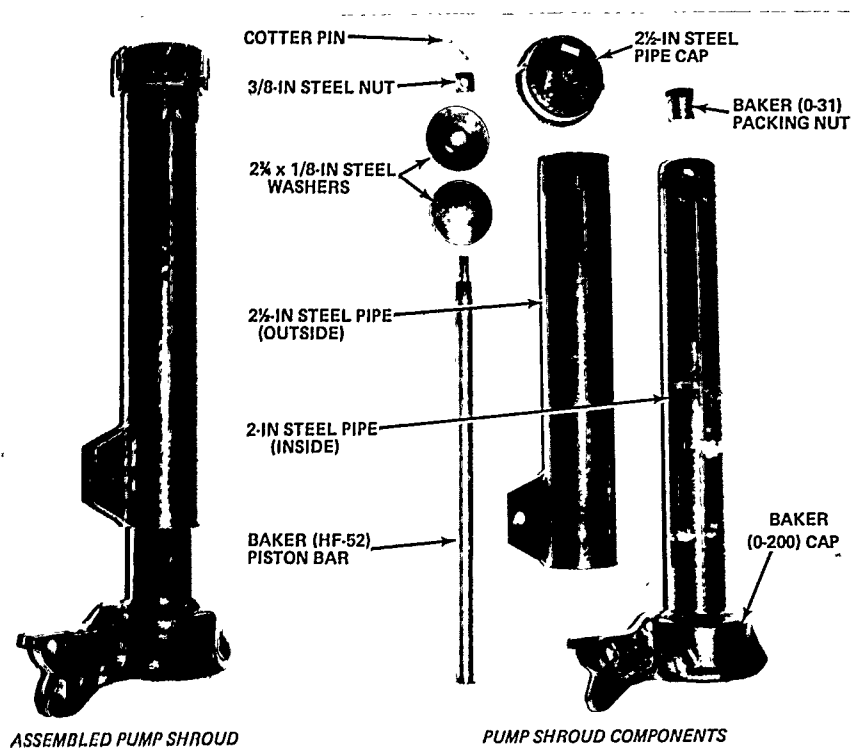


Figure 1.—Assembled hand pump shroud (left) and components for assembly (right).



Figure 2.—Field installation of hand pump with shroud.

More than 1,500 hand pumps are in use on National Forests. Contaminants can be introduced into the water being pumped through these hand pumps—especially through the valve stem packing and the packing nut on the pump's rod. To help protect the microbiological quality of potable water sources, the water can either be disinfected or the pump can be modified to help prevent contamination of the water. Many sanitarians consider a hand pump as a potentially unsatisfactory system for supplying drinking water unless proper techniques are utilized to assure that the water does not become contaminated.

A Forest Service engineer and a hydrologic technician in the Eastern Region (R-9)—James Sleeper, RO Engineering and Darrel DeRouin, Hiawatha National Forest—have developed a modification for existing hand pumps that can prevent contamination through the packing nut. This modification is a shroud covering the upper section of the pump and packing nut (see figs. 1 and 2). The shroud takes care of one hazard, but care must still be taken against

introducing other potential contaminants into the system.

The shroud was designed primarily for adaptation to the Baker Manufacturing Co. Monitor hand pumps, but can be modified to other pump designs. The shroud can be obtained through a sole source supplier (Mr. Ed Pilon, Route 2 Box 389, Bark River, MI 49807, telephone 906/466-2431) or can be fabricated locally using commercial hardware at an approximate cost of \$125. Shroud fabrication, assembly, and installation can be accomplished in approximately 12 hours. Shop drawings for shroud fabrication can be obtained from R-9 or the Hiawatha National Forest.

A prototype shroud was tested at SDEDC in early 1981 and the results indicated excellent durability and protection of water quality. Also in 1981, further information on hand pumps was issued by SDEDC in a Project Record (8171 1201, May 1981) that evaluated hand pumps, disinfection of water, and pump maintenance procedures.

