Technical Exchange

Albrecht Gumlich, column editor

Thanks to Rebecca Newberry and Ron Voelker from the Science Museum of Minnesota for the description and drawings of their:

Flexible System for Rolled Storage

Ron Voelker is a long time volunteer in the Conservation Department at the Science Museum of Minnesota and a retired engineer. Among many cost saving innovations he has dreamed up for the department are two flexible systems for rolled storage.

Both systems utilize readily available shelving materials including wall mounted steel uprights and shelf brackets as well as metal electrical conduit. At the Science Museum, they use these systems for a diverse range of materials from storing large rolled artifacts to holding backdrops for a small photo station in the Conservation Lab.

Single Slot Uprights

The first method uses wall mounted steel shelf uprights with single row of slots. The matching shelf brackets consist of a flat piece of steel, which hooks into the slots. Be sure to get brackets with a plastic locking mechanism to secure them to the uprights.

There will be two holes in the brackets already. Using a drill press, drill additional ¼" holes in the brackets, if desired.

Fabricate S hooks by bending a 4 ½" long piece of 39 gauge 0.100 inch steel wire around a homemade jig. The jig can be made from two nails or two screws offset about 1 ½" apart in a block of wood. The wire is bent by hand around the two points to form an S with one short end and one long end.

Drill ¼" holes through both sides of a length of ¾" or 1" conduit. The short end of the S hook fits through the hole in the bracket. The longer end of the S hook fits through the holes in the conduit.

The size and shape of the S hooks can be varied to suit specific needs. Once the jig is made, they can be fabricated with relative ease.

Double Slot Uprights

The other method uses wall mounted steel shelf uprights with a double row of slots. The matching shelf brackets consist of U shaped steel with two rows of hooks at the back. There will be holes already drilled through the bottom of the bracket.

Feed a bolt through the bottom of the bracket and secure it with a nut through the top of the bracket. The bolt should stick straight up through the top of the bracket.

Drill ¼" holes through both sides of a piece of conduit and feed that over the bolt.

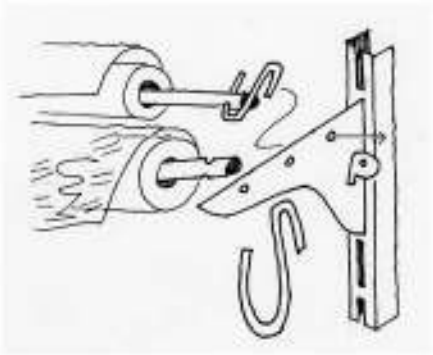
Why choose one system over the other? There are advantages and disadvantages to choosing either system. The single slot system is less expensive and affords more flexibility with hole placement since the flat brackets are easier to drill through. The flat brackets can also be cut shorter if a very shallow hanging system is desired. The rolls hang between the brackets, if space is an issue. The double slot system is more stable and easier to put together since it uses bolts rather than hand fabricated hooks. The rolls sit on top of the brackets, allowing the conduit to extend beyond them.

Materials

Single slot system:
Single slotted steel shelf uprights
Steel shelf brackets
39 gauge 0.100" steel wire
Scrap wood and screws for a jig
Steel electrical conduit ½", ¾", or 1" diameter.

Double slot system:
Double slotted steel shelf uprights
Steel shelf brackets
#10/24 x 2" or 3" bolts and nuts
Steel electrical conduit ½", ¾", or 1" diameter.

Single slot Uprights



Double slot Uprights