**Instructions for making a carousel for shrink-teflon microcolumns**

**for U-Pb ion chromatography**

**Materials:**

Spin Tray, 13" diam. x 1-1/2" h — Container Store #564010

<http://www.containerstore.com/shop?productId=10007006&N=&Ntt=spin+tray>

3 qt. Round Keeper 2.8 ltr., 7-1/4" diam. x 5-1/4" h — Container Store #10029313

<http://www.containerstore.com/shop?productId=10014891&N=&Ntt=3+qt.+round+keeper>

1/8” acrylic sheet — McMaster-Carr

[http://www.mcmaster.com/#plastics/=awm9fm](#_Hlk158619302%091,4252,4294,0,,http://www.mcmaster.com/#plastic)

12 - #8-32 x 1” plastic (nylon or other) machine screws (binder head) — McMaster-Carr

[http://www.mcmaster.com/#machine-screws/=ax383s](#_Hlk158619342%091,4467,4516,0,,http://www.mcmaster.com/#machine)

12 - #8 x 1/16” thick plastic flat washers (nylon or other) — McMaster-Carr

[http://www.mcmaster.com/#washers/=ax39qm](#_Hlk158619360%091,4677,4717,0,,http://www.mcmaster.com/#washers)

12 - #8-32 x 1” plastic machine screw nuts (nylon or other) — McMaster-Carr

<http://www.mcmaster.com/#plastic-hex-nuts/=ax3aih>

4 - #8 x 3/8” dia. x 1/2” h plastic spacer (nylon or other) — McMaster-Carr

 [http://www.mcmaster.com/#spacers-and-standoffs/=ax4b22](#_Hlk158623509%091,5075,5129,0,,http://www.mcmaster.com/#spacers)

**Tools:**

saw

drill

3/8” drill bit

razor blade

wire cutter

Sharpie

**Instructions:**

1. The lip of the spin tray should first be trimmed off with a saw, and then four 3/16” dia. holes drilled through the tray, along a radius 3-3/16” from the center of the tray.
2. Push four plastic #8-32 machine screws through the 1/2” spacers and then through the top of the tray, and fasten with washers and nuts. Closely trim off the end of the machine screw with a wire cutter. The machine screw heads with spacers serve as guide posts for the circular band made from the round keeper.
3. Cut the bottom off of the round keeper, 2” from the top, preserving the neatly trimmed upper band. The bottom can be discarded, or used as a wash tray. The circular band can now be placed right-side up onto the spin tray, friction fit around the machine screw posts.
4. Have a machine shop fabricate the disk and ring pieces illustrated on the next page from 1/8” acrylic sheet. Align the ring above the disk, with the beveled edges facing each other, and insert a plastic #8-32 machine screw from the bottom through the disk, add a washer between the disk and the ring, and fasten the ring to the disk with a nut. Repeat with all 8 holes, and closely trim off the end of the machine screw with a wire cutter. Place the coupled disk and ring onto the circular band (ring up), friction fit around the machine screw heads.
5. Label 16 spaces around the circumference of the spin tray with the Sharpie marker; the three pieces of the tray can be easily disassembled and wiped clean between uses.

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| **Three dissembled pieces of rotating carousel-style column chemistry rack for 16 shrink-teflon columns in tab holders.**  | **Rotating base of carousel-style column chemistry rack for 16 shrink-teflon columns in tab holders.**  |
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| **Plastic band of carousel-style column chemistry rack for 16 shrink-teflon columns in tab holders; cut from the top 2" of the 3 qt. Round Keeper.** | **1/4" plexiglass 2-piece circular channel holder of carousel-style column chemistry rack for 16 shrink-teflon columns in tab holders.**  |