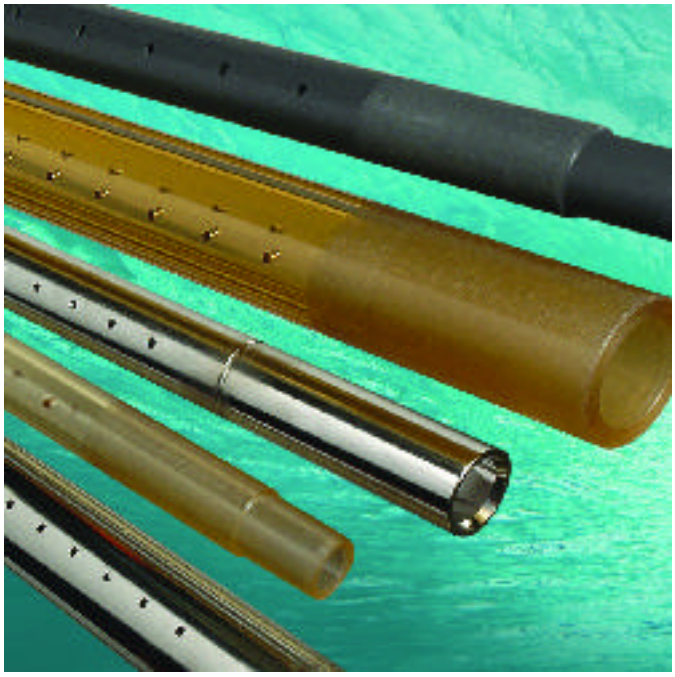
Drilled Core Tubes Integral for Liquid Filtration Systems



Marshall Manufacturing Company utilizes automated manufacturing cells that were designed by Marshall's in-house engineering team. Each manufacturing cell is capable of machining its own specific range of tube diameters and lengths. Typical core tube materials include ABS, Polysulfone, Noryl, PVC, CPVC, and stainless steel. These cells are very efficient and generate cost effective products. Individual cell capacity can be as high as 650,000 pieces annually.

Marshall has been machining "Core Tubes" for the filtration and the reverse osmosis (RO) industries for over 30 years. Core tubes are designed by their customers for use in a variety of industries and applications. Working with many of the Filtration and RO OEMs from infancy, Marshall continues to provide engineering expertise as well as products built to their customer's specifications.

The tube cell capabilities include machining both ends of the tubes. Features that can be generated include: turned and/or bored diameters, chamfers, grooves, multiple rows of drilled cross-holes, abraded surfaces, slots, and specific overall lengths. Outside diameters range from 0.5 to 4.0 in. Overall lengths are typically held to +/-0.030 in., but can be held tighter if the application requires it. Tighter tolerances require temperature controlled inspections because the overall length can vary significantly at different temperatures. For example, a 40 in. long ABS tube will grow 0.002 in. per degree of temperature increase. Size, location, and geometry of other machined features are held to standard CNC controlled tolerances.

The efficiency of the cells is created by automation specific to the product. Robots and multiple work centers are used with little operator intervention. The key to the

cells is the crosshole drilling work center. Marshall's cells can generate multiple holes simultaneously. A typical core tube may require 160 holes per tube. Marshall has designed tooling, fixturing, and processes that can drill all required cross holes in a few seconds. Marshall's experience allows them to design drills specific to an application that will generate thousands of burr free holes without drill wear.

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