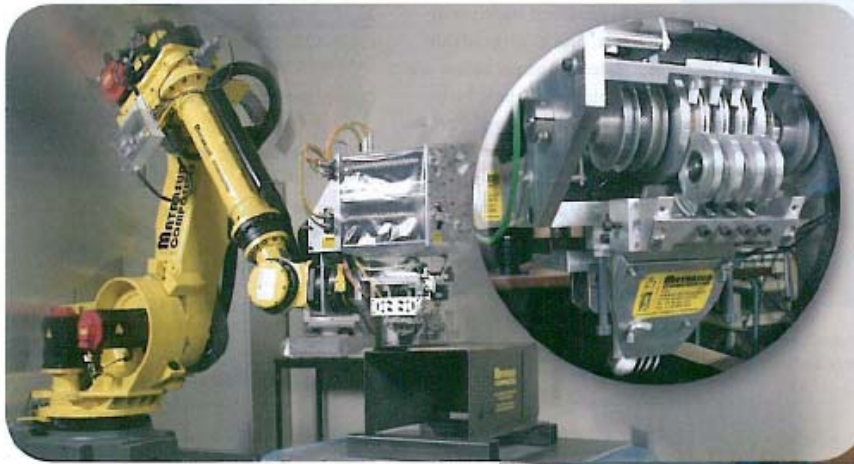


feature
composites

Composites Embrace Mass Production



Robots are keeping composites fabricators competitive in high-labor-cost countries. Matrasur in France has developed robots for automated wet spray-up and dry carbon-fiber prepreg lay-up.

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ROBOTS GALORE

Matrasur Composites in France, which has been integrating robots and automation for composite molding for the past three years (see Learn More box), featured its first complete commercial plants at JEC. Discrete robotic work cells have been used in composites for specific tasks like spraying, trimming, and bonding, but the new plants combine multiple robots with other automation in an integrated process. Matrasur's first installation of this sort, in the south of France, uses a large carousel, two robots, and four operators to spray up six swimming pools (10 x 4 meters) in 8 hr, or 5.33 man-hr per pool. The same plant before automation used to take 26 man-hr/pool.

Even more labor savings are expected for Matrasur's second fully robotic lights-out plant, also in France, for a large manufacturer of sanitary ware. Due to start up in September, it has two parallel production lines, where seven robots (mostly 6-axis) and one operator make over 200 bathtubs and shower trays in 24 hr.

In this plant, a thermoforming station first forms acrylic sheet into a tub shape. Then a robot moves the shell to a conveyor, which takes it to the spraying station. There, other robots spray it with chopped glass and polyester resin. After it cures at room temperature on the conveyor, a robot brings the part to the trim station, where another robot trims and drills holes. Last, a robot puts the part on a conveyor for packing. The manufacturer had planned to move its French production offshore to save labor, but robotic automation keeps the plant competitive. Matrasur has also developed a robot system for lay-up of dry carbon-fiber prepreg.