

Tooling & Production[®]

A HUEBCORE PUBLICATION
April 1996

Providing solutions for metalworking manufacturers

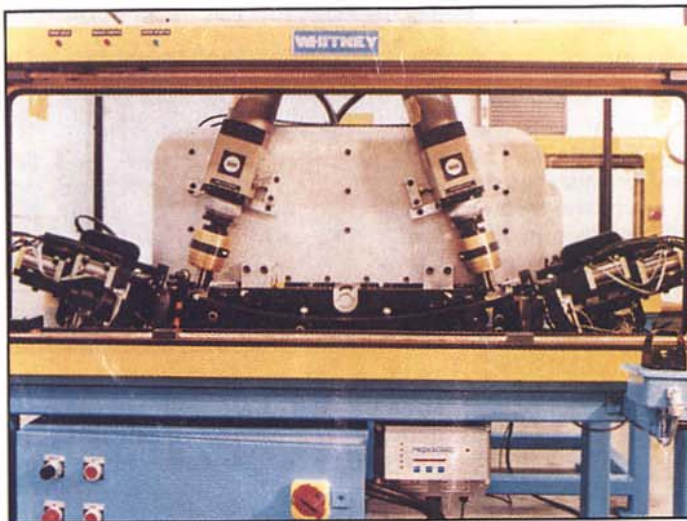
M A N U F A C T U R I N G SOLUTIONS

Window channels conquered at curve

A major supplier of automotive components contracted a system integrator to design and build assembly machines to attach two mounting brackets at both ends of window channels. Each machine featured two Taumel Multi-Point Forming Units T-250/MS-63, each mounted at a 15 deg angle off the vertical structure to simultaneously flare out two division posts at the center distance of $\frac{7}{16}$ ".

On these multi-point forming systems, each (non-spinning) form tool follows its own orbital path to radially flare out the twin posts to secure both brackets on the curved channel body. That assures a consistently tight assembly. With the original press method, cracks in the post occurred and metal chips or shavings were produced; the brackets were sometimes loose and channel section often deformed. By using Taumel machines, there was no post or channel damage, nor were metal particles generated. Contamination of the galvanized steel components and (possibly resulting leaks) would have been unacceptable in the final window assemblies.

The curved channel bodies for the rear window designs were aligned and located with fixture tooling that al-



Taumel's multi-point forming systems secure mounting brackets on curved window channels.

lowed easy loading and automatic alignment of the component parts for uniform assembly. The multi-point headforming attachments are interchangeable and can be rapidly removed to change the work pattern for the next job, eliminating equipment obsolescence. Tools for different assembly tasks can also be combined on the same tooling plate and positioned on centers as close as $\frac{3}{16}$ " to each other, or on different work levels, if required. Taumel modular headforming units can operate in any position. These building block units are also mounted in single or multiple point configurations as opposing pairs for simultaneously headforming both ends of shafts, axles, and hubs.

A remote control panel was utilized to cycle the machine functions and to monitor the assembly process. The work area was safeguarded with a capacitive, presence-sensing device

that features microprocessor-based electronics.

These multi-point systems follow the basic concepts of orbital forming pioneered by Taumel: silent, free forming of all malleable material, including thermoplastics, with infinitely variable cycle times, spindle stroke, work speed, and heading pressure.

The method also permits heading without shaft deformation to form free-moving swing joints within 0.001".

For more information from Taumel Assembly Systems, Patterson, NY, circle 284.