

May 2006

FFJ Journal

The magazine for today's fabricating & forming technology
www.ffjournal.net

A TREND Publication

Orange County Choppers

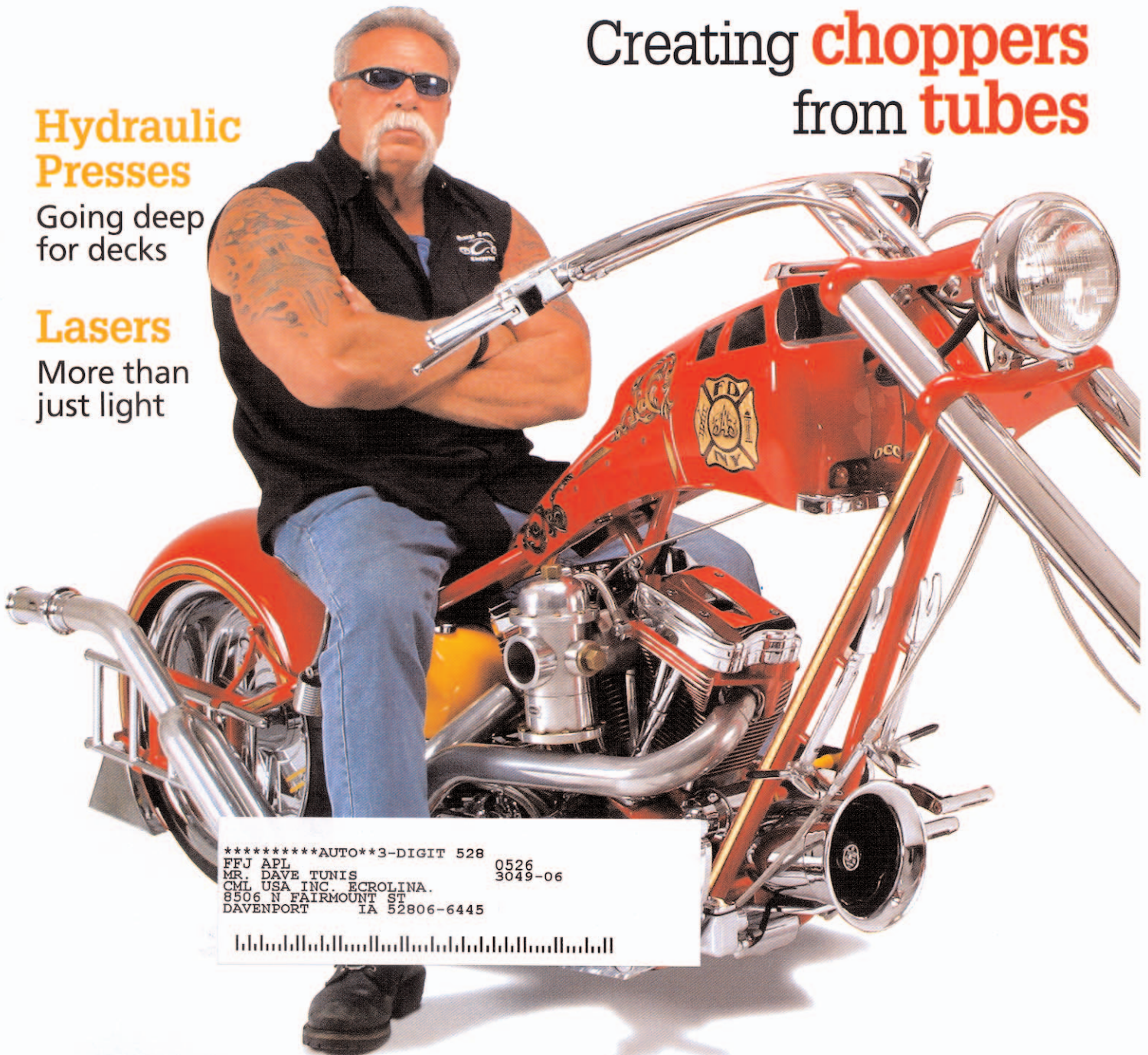
Creating **choppers**
from **tubes**

**Hydraulic
Presses**

Going deep
for decks

Lasers

More than
just light



*****AUTO**3-DIGIT 528
FFJ APL 0526
MR. DAVE TUNIS 3049-06
CML USA INC. ECROLINA.
8506 N FAIRMOUNT ST
DAVENPORT IA 52806-6445



Tube and Pipe

The crew at OCC put in a lot of hours to keep the business running smoothly.

Tools of the trade

To build custom choppers, OCC uses many of the same tools of the trade as fabricators, such as press brakes, metal



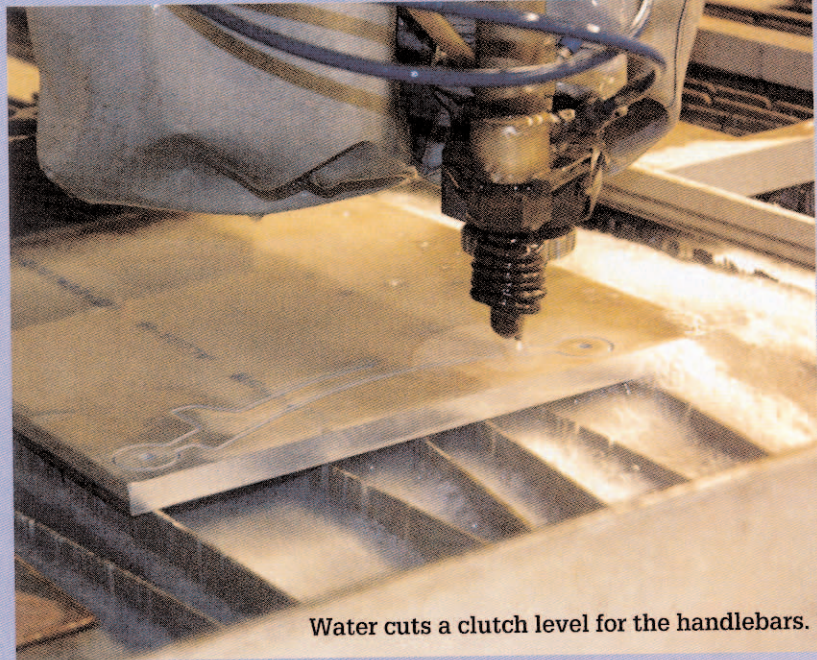
These partially completed choppers are waiting for more parts.

shears, plasma cutters, iron workers, English wheels, air hammers, welders, an Ercolina tube bender, tube swedger and even a Flow waterjet cutter, along with a full cross section of hand tools.

Tube bending is a very important process in building a chopper. Just about every bike has a unique set of exhausts. To bend them, OCC uses an Ercolina mandrel-style, tube-bending machine to get matched bends for the exhaust pipes that are made from 1 3/4-in. tubing with a wall thickness of 0.065 in. A mandrel bender produces smooth bends without metal ripples on the tube's walls. Tubes are bent to shape and are usually finished in chrome.

Why waterjet

To do some of his cutting work, Teutul uses saws, plasma torches and cut-off wheels, but he has also chosen to go with a Flow waterjet that was purchased in 2004.



Water cuts a clutch level for the handlebars.

Since implementing Flow's waterjet machine in 2003, OCC has found the need to cut very large, thick parts. To meet this need, it recently purchased and implemented Flow's IFB 6012 machine with Dynamic Waterjet. As a result, the larger machine is allowing OCC to cut very thick parts faster since the water cuts faster at a higher pressure.

Dynamic Waterjet with active tolerance control consists of patent-pending software models that control a small, articulated "wrist" cutting head to automatically adjust cutting angles for specific accuracy and part tolerance requirements. With the Dynamic Waterjet, parts can be cut faster, tapers eliminated and higher quality parts are produced with significantly better accuracy.

According to Paul Jr., the waterjet machine has become an integral part of OCC's operations, giving the company a fast, easy way to fabricate parts for its signature bikes.

The IFB 6012 with Dynamic Waterjet also helps reduce cycle time and improve cut-part tolerances through better material utilization, making it possible to produce highly accurate parts with no secondary processing.

"The coolest thing about this waterjet machine is that it can spit water out at Mach 2 speed," says Teutul. "When you watch this thing in action, it's pretty amazing to see its power and how perfectly it can cut stuff. Because the Flow waterjet can cut out any 2-D shape that I can dream up, it allows me to explore new design possibilities that there's no way I could have done a year ago. It's such an amazing tool."