



Application Story: Weiler Machine Tools

WEILER BRINGS CNCs TO SHORT WORKPIECE RUNS ON FULL LINE OF LATHES

Long thought to be the main reason for maintaining manual lathe capability, short runs can now occur with all the benefits of a CNC machine. So says Weiler Machine Tools VP of Sales, Ingomar Nemling. As a full-range precision lathe builder, Weiler produces manual, semi-CNC (controlled cycle) and full CNC lathes at its factory in Germany. The U.S. subsidiary has recently carved a niche in the oil, aircraft, power generation and steel industries, as well as at job shops where high-precision turning and small quantity workpiece runs are the norm.

Weiler currently has over 150 machines in the U.S., more than half of which are in the competitive oil field equipment industry. As Nemling explains, "We concentrate our sales on controlled cycle machines, which are needed wherever the workpiece quantities are small, even single piece, but where the part contours are extremely complicated and thus difficult to do manually."

At one oil industry customer, Baker Oil in Houston, TX, 22 Weiler E-Series machines are used to produce that company's tapered

threads on long drill rods. One-off and short batches, as well as recent work, is done effectively and economically, owing to the reduced programming time. Baker Oil produces a variety of oil drilling and coring devices on its Weiler lathes, all of which feature the digital drive technology of a Siemens 810D CNC plus proprietary D2 control software from Weiler, which runs fully automated cycles. These cycles comprise all longitudinal and transverse machining, thread cutting, radius/taper turning, internal/external undercuts, bolt circle and thread boring, plus graphically supported contour programming with automated intersect point calculation. An RS-232 interface allows remote data monitoring of all machines in-process. The E-Series machines from Weiler now offer a 69" swing over bed and center distance up to 470" on 8,000 kg (17,600 lb.) workpieces.

Another Weiler oil industry success is found at Camco International, also in Houston. Here, the job-specific performance of the machine controls is found in the recutting of threads. Though it operates and costs in the manner of

Above: Weiler C30-Controlled-Cycle Lathe enables up to 30 cutting, grooving and threading cycles to be stored onboard an otherwise manual machine



Weiler E90-Fully automated CNC machine also allows manual operations; ideal for one-off and small batch production with high precision

a manual machine, the E-Series machine with onboard CNC allows an operator to select a handwheel to locate the bottom of the existing thread, then simply press a button for the machine to memorize the location. The operator can start and run the cycle or maintain complete manual control, as needed. The lathe will continue to run along the established path or the operator can use the handwheels to control both axes. At Camco, over 75% improvement in record time, plus only one scrapped part in a recent 12-month period, were realized, according to company sources.

Finally, Weiler's latest application of a Siemens CNC (802D) is on its C-Series machines, with a true "controlled cycle" manual lathe. With plain language, graphic supported and dialog

prompts, the operator can perform complex thread cutting and other tasks such as facing, cylindrical turning, taper and radii turning, all from the cycle storage in the onboard memory. Short set-up time and a reduction in tool use improve overall shop performance, especially key in a short run job shop or rework department.

Weiler's D2 software is a WOP (workpiece oriented programming) platform with a significant difference, compared to earlier programs. An operator needs virtually no CNC expertise to run the D2 software and this factor has been critical to the success of Weiler's controlled cycle machines, according to Ingomar Nemling, VP of Sales for Weiler's U.S. operation. ■

For more information, please contact:

SIEMENS MACHINE TOOL BUSINESS
390 Kent Avenue
Elk Grove Village, IL 60007

Phone: (847) 640-1595
Fax: (847) 952-4116
Web: www.SiemensCNC.com
E-mail: SiemensMTBUMarCom@sea.siemens.com

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