

PERFECT HOLES IN HARD MATERIAL — MADE EASY

EXOTIC MATERIALS SPECIALIST DAMEN CARBIDE TOOL CO. EXPANDS ITS HOLEMAKING CAPABILITY AND BUSINESS BASE WITH HONING CAPACITY TO 9-INCH DIA. AND 60-INCH STROKE LENGTH



“The new hone handles any material in our shop, and the surface finishes exceed all customer requirements,” said John Bachmeier, president of Damen Carbide.

WOOD DALE, IL – Increasing a shop's machining capabilities is often one of the shortest routes to increasing business, as exotic materials specialist Damen Carbide Tool Co. recently proved with the addition of a powerful, 60-inch (1524 mm) stroke honing system that finishes holes up to 9-inch (228.6 mm) diameter. The Sunnen SV-560 hone allows the manufacturer of tooling and wear parts to process larger workpieces, with better finishes, roundness and straightness for a diversified customer base in aerospace, automotive, energy, heavy equipment, defense, medical and electronics. The pairing of the hone's potent 20-hp (15 kW) spindle and 10-hp (7.5 kW) stroker with Sunnen superabrasives delivers high stock removal on tough materials, such as the shop's namesake

carbide, as well as titanium, ceramic, stellite and other exotics. The quick setup and simple operation of the CNC hone allowed Damen to easily integrate the machine into the shop's operations and respond quickly to customers seeking high-quality finishes and tight tolerances on bushings, sleeves, valves, pump liners and other large, holed parts.

“We've never been shy about investing in new machine tool technology, especially when we know our customers will exploit the improved capability,” said John Bachmeier, president of Damen Carbide. “That's certainly been the case with the new hone and the versatility it has provided. Previously we maxed out at 8 inches (200 mm) diameter and 12 inches (304.8 mm) part length, and customers indicated a need to go larger. The new hone handles any material in our shop, and the surface finishes exceed all customer requirements.”

Capable of producing the 0.1 μm Ra or better finishes required by Damen's automotive and large cylinder customers, the SV-560's patented, synchronized servo axes eliminate the “flattening” of the crosshatch angle common with other honing machines. It produces a whole-bore, constant crosshatch, using three-axis servo control of spindle rotation, stroke and tool feed. “Tolerances on our larger parts have gone from ± 0.0005 to ± 0.0001 inches,” said Bachmeier. “The only way to get these jobs done to spec is with a machine of this caliber.”

Damen uses Sunnen superabrasives with the SV-560, adding to the machine's versatility. The superabrasives hone
(continued)



The SV-560 features an intuitive interface and advanced Windows-based PC control to simplify the honing process and allow anyone with multi-axis experience to run the machine like an expert.

the most popular tool steels as easily as hardened steel, and handle difficult exotics like stellite, Inconel, ferrotic, Nikasil, alnico and a wide range of ceramic materials commonly cut at Damen.

Established on Damen Avenue in Chicago in 1948, Damen Carbide Tool Co. Inc. started as a grinding shop making carbide saws, knives and accessory parts. The company was purchased by Bachmeier's father in 1955 and has been the family business ever since. In the early years of the shop, 90 percent of Damen's customers were Chicago-area manufacturers needing carbide cutting parts. Now parts suppliers from all over the world look to Damen to provide high-quality carbide, ceramic, titanium and steel alloy parts of all types, especially those with a hole. The company has more than 100 machine tools performing milling, turning and EDM machining in addition to flat, ID, OD and profile grinding. The shop added honing to its operation in the early 1960's, and still runs two older model

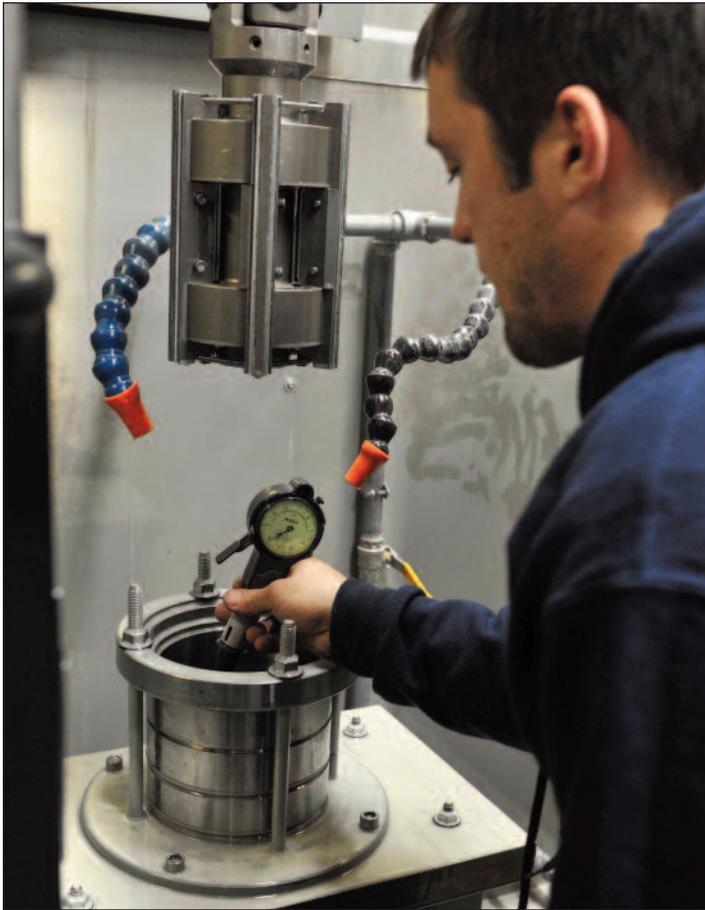
Sunnen hones – an EC-3500 and MBC-1801 – as well as a SV-210 CNC vertical hone purchased in 2007. “We’ve always purchased top-of-the-line machines, and when it comes to honing equipment, we have proven to ourselves the Sunnen machines are built to last and can handle anything we throw at them,” said Bachmeier.

“Customer feedback across the board showed a need for high-quality finishes, better roundness and better straightness on large parts such as mud pump liners,” said Bachmeier. “The SV-560 allows us to meet all these requirements.” Automatic geometry correction and auto-dwell capabilities provide excellent bore straightness, and handle blind bores with ease. The SV-560's electromechanical design also provides servo-accurate performance and eliminates the drift inherent to hydraulic machines. “This is a very easy machine to operate,” said Bachmeier. “Once we get the specs dialed in



The SV-560's powerful 60-inch (1524 mm) stroke finishes holes up to 9-inch (228.6 mm) diameter.

we tell the operators, just load and unload the parts and don't touch anything
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Tolerances on the large parts processed at Damen have gone from ± 0.0005 to ± 0.0001 inches (0.0127 to 0.00254 mm). The company is meeting these requirements with the SV-560.

else.” The shop also recently acquired four Sunnen dial bore gages to measure bore variation of finished parts.

According to Bachmeier, major factors when acquiring new equipment are the quality of the parts the machine turns out and its versatility. “The ability to take care of our customers quickly and provide high-quality parts to

spec is key to our business success,” he stressed. “Turnaround times are getting shorter and shorter, and sometimes the ability to deliver on time is the difference between getting a job or not. So, we need our equipment to be versatile, reliable and easy to set up.” The SV-560 features an intuitive interface and advanced Windows®-based PC control to simplify the honing process and allow anyone with multi-axis experience to run the machine like an expert.

Even with the increased size capability – and business – that Damen garnered from acquiring the new hone, the company still budgeted room for future growth. “Right now we’re honing 4-inch to 9-inch (101.6 mm to 228.6 mm) diameter holes on parts 15 to 30 inches (381 mm to 762 mm) long,” said Bachmeier. “So, with the 60-inch stroke, we can handle even larger parts, before we have to look at one of those huge tube hones.”



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SUNNEN PRODUCTS COMPANY

St. Louis, MO - USA
World Headquarters
Phone 1.314.781.2100
Fax 1.314.781.2268
Toll Free 1.800.325.3670
Email sunnen@sunnen.com
www.sunnen.com

SUNNEN AG

Ennetaach - Switzerland
Phone +41 71 649 33 33
Fax +41 71 649 33 34
Email sales@sunnen.eu
www.sunnen.eu

SUNNEN ITALIA S.R.L.

Arese - Italy
Phone +39 02 383417 1
Fax +39 02 38341750
Email sunnen@sunnenitalia.com
www.sunnenitalia.COM

SUNNEN SAS

Saclay - France
Phone +33 1 69 30 0000
Fax +33 1 69 30 1111
Email info@sunnen.fr
www.sunnen.fr

SUNNEN BENELUX BVBA

Kontich - Belgium
Phone +32 3 880 28 00
Fax +32 3 844 39 01
Email info@sunnen.be
www.sunnen.be

SUNNEN PRODUCTS LTD.

Hempstead Herts - United Kingdom
Phone +44 1442 393939
Fax +44 1442 391212
Email hemel@sunnen.co.uk
www.sunnen.co.uk

SUNNEN DO BRASIL LTDA.

São Paulo - Brasil
Phone +55 11 4177 3824
Fax +55 11 4362 3083
Email sunnen@sunnen.com.br
www.sunnen.com.br

SUNNEN POLSKA SP. Z.O.O.

Warszawa - Poland
Phone +48 22 814 34 29
Fax +48 22 814 34 28
Email sunnen@sunnen.pl
www.sunnen.pl

SUNNEN RUS LLC

Moscow - Russia
Phone +7 495 258 43 43
Fax +7 495 258 91 75
Email sunnen@sunnen-russia.ru
www.sunnen.ru

SUNNEN S.R.O

Strakonice - Czech Republic
Phone +420 383 376 317
Fax +420 383 376 316
Email sunnen@sunnen.cz
www.sunnen.cz

SHANGHAI SUNNEN MECHANICAL CO. LTD.

Shanghai - China
Phone +86 21 58133990
Fax +86 21 58132299
Email shsunnen@sunnensh.com
www.sunnensh.com

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