

CUTTING

Times

Vol. 1, Issue 1

with better tools from

Dapra Corporation
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www.dapra.com

DAPRA™

**Visit us at IMTS
Booth C-5708**

**Sept. 4-11, 2002 — Chicago, IL
and see:**

- **Helical Ball Nose (HBN) Inserts** - see them for the first time! Fitting current cutter bodies, these inserts provide better surface finishes, improved tool life and more!
- **Solid Carbide Ball Nose Holders** - offer enhanced tool rigidity, reduced chatter, increased tool life and heat shrink toolholding capability.
- **And Much More!**

for more information, turn to page 2

Welcome . . .

For over 45 years, Dapra Corporation has been a respected supplier of machine tool accessories for the metalworking industry, and now we are pleased to introduce our first issue of *Cutting Times*.

Each issue will strive to provide you with the latest on our tool offerings, as well as articles that will help to improve your productivity and reduce lead times. We are constantly working to improve the capabilities of our existing products and to develop new and innovative cutting tool solutions for a variety of milling applications. *Cutting Times* will include the latest on our progress and how it affects your business.

Because we want this newsletter to be relevant to our readers, we welcome your suggestions for topics to be covered in future issues. Thank you for your interest.

Sincerely,

Tom Watson, President

Case Study: Helical Interpolation

Producing a large-diameter hole is a common application for many shops, and there are numerous methods that can be used to achieve the end result. However, there are often numerous obstacles to completing the process cost-effectively. Horsepower consumption is frequently a concern in these types of applications, especially on the more common 20 horsepower and below machine tools. These machines are capable of high speeds and feeds, but rigidity is sacrificed to the extent necessary to accomplish the quick movements. Using conventional means, making large-diameter holes is hard on the machine tool and the cutting tools involved. This fact has created the demand for a smoother method of making these holes that stays within the cycle times necessary to be competitive.

We at Dapra believe that helical interpolation is just such a method. Dapra has introduced a new product designed specifically for this kind of milling. The Felix® is a modular system designed to rough and finish holes up to five times the diameter in depth. It can helically interpolate a hole in only one-third the time required for a standard milling cutter, and no predrilling is required.

While helical interpolation isn't for everyone, it is a very viable alternative for many applications that involve hole making. Whether the difficulty lies in the hole size, depth, machine tool horsepower or lack of rigidity in the setup, helical interpolation is an excellent solution.

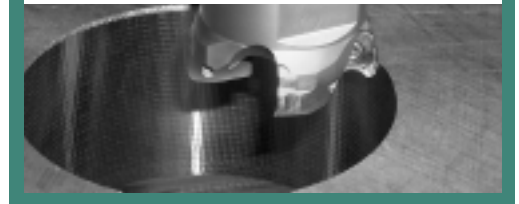
An article on helical interpolation featuring an application case study involving Dapra and one of our customers recently appeared in *Modern Machine Shop*. Please visit our Web site at www.dapra.com to read the article in its entirety.

Larger-diameter Holes... The Fast, Low-horsepower Way

Dapra Square Shoulder Shell Mill - After drilling $\frac{3}{4}$ " diameter hole, this mill is used at a .03" helix with a feedrate of .010" ipt. Cycle time= 7.5 min.

Dapra Toroid Shell Mill - No predrilling required, this mill is used at a .06" helix with a feedrate of .013" ipt. Cycle time= 3.5 min.

Dapra Felix® Cutter (below) - No predrilling required, this mill is used at a .075" helix with a feedrate of .0175" ipt. Cycle time= 1.6 min.



LONG REACH MILLING PROBLEMS? GET A GRIP... WITH DAPRA'S CARBIDE-ENHANCED CUTTING TOOLS!

Dapra Corporation has introduced new long-reach milling solutions: Carbide Shank Ball Nose, Carbide Core Ball Nose, Square Shoulder and Toroid cutting tools. Available in tools exceeding three times their diameter in effective length, Dapra's Carbide enhancements provide reduced deflection, increased stiffness and less chatter. The Ball Nose tool with a Carbide Shank has heat shrink toolholding capability.

With a combination of rigidity and toughness, our Carbide enhancements will optimize your deep

milling capabilities, allowing you to machine closer to finish size, achieve more aggressive metal removal and obtain smoother surface finishes and improved tool and spindle bearing life.

Overall Lengths of Carbide Core Tools

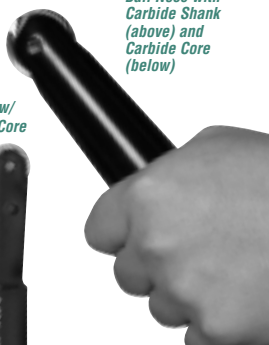
- Ball Nose - 6.28" to 15"
- Ball Nose w/Carbide Shank - 4" to 7"
- Toroid - 5.030" to 8.190"
- 90° Square Shoulder - 4.782" to 9.250"

Square Shoulder
w/Carbide Core

Toroid w/
Carbide Core



Ball Nose with
Carbide Shank
(above) and
Carbide Core
(below)



IMTS 2002 Booth C-5708

Visit us at booth C-5708 to view our latest product developments. In addition to our Helical Ball Nose (HBN) Inserts and Solid Carbide Ball Nose Holders, we will also display a wide range of our cutting tools, workholding products, scrapers and marking machines. We will also feature application-oriented films on our cutting tools and marking systems in a comfortable theater-style setting.

Q & A

Q. What is one of the most common mistakes made in milling today?

A. Many programmers/operators select tooling for an application that will get them to the bottom of the cavity/pocket right from the start. This is an incorrect approach, sacrificing material removal and cycle time. Larger, shorter tools should be utilized at the beginning, allowing the most aggressive operating parameters in the early stages of the roughing cycle. Only after the limits of this tooling's reach have been achieved should the long reach tools be implemented. At this point, depth of cut and feedrates will typically need to be reduced to compensate for the loss of rigidity.

Q. How often should the insert screw be replaced in my cutter?

A. Screws should be replaced with each new box of inserts in order to assure maximum performance. In addition, anti-seize should be placed on the entire length of the screw body before use.

Q. What kind of accuracy can I expect with one of your Servo tables?

A. The standard accuracy of the Servopress tables is 24 arc seconds. However, Servopress can manufacture the tables to achieve $\pm .5$ arc seconds.

Q. What is the maximum clamping pressure of the Allmatic vises?

A. The Allmatic vise allows for repeatable clamping pressure up to 13,200 lbs., assuring part repeatability of .0002".
Please see article at right.

Q. Do you have a minimum order?

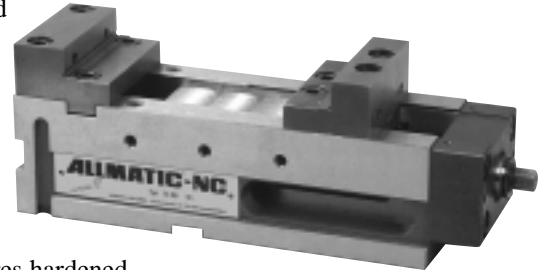
A. Dapra has a \$50 minimum order. This minimum order is not waived for premium airfreight shipments.

Allmatic High-Pressure Mechanical Vises

Hold Any Job with Constant, Repeatable Holding Pressure

Allmatic high-pressure mechanical vises provide high-pressure holding power for close-tolerance part location and repeatable pressure from 0 to over 13,000 lbs. The high-pressure spindle utilizes a mechanical pressure intensifier to deliver up to 13,000 lbs. of clamping pressure with only two turns. The mechanical force delivers more pressure than competitive vises, and with no operator fatigue.

The Allmatic vises feature up to six pre-selectable clamping pressure settings, eliminating incorrect clamping pressure and avoiding deformed or distorted parts. Repeatable clamping pressure to within 1% assures part repeatability of .0002".



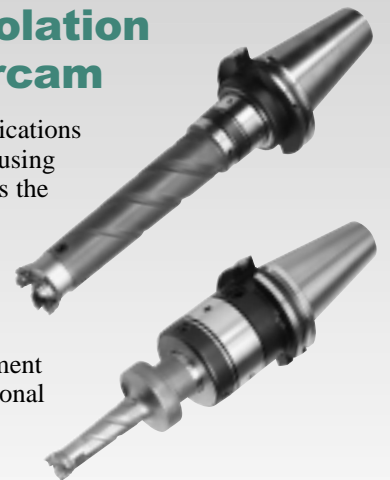
The high-grade cast iron vise body features hardened and ground construction on all sides, providing a rigid base and long-lasting performance in the harshest environments. In addition, vise bodies are guaranteed to match in height to ensure accuracy from set-up to set-up.

Dapra offers three styles of Allmatic vises with a wide selection of special jaws to meet any application requirement. The single clamping style is available in four models with jaw widths from 3.5" to 7.9" and maximum clamping pressures from 4400 lbs. to 13,200 lbs. The two-part, or duo, clamping style comes in two models with jaw widths of either 3.5" or 4.9" and maximum clamping pressures of 5280 lbs. or 8800 lbs. The self-centering model has a jaw width of 4.9" and maximum clamping pressure of 8800 lbs. The duo provides equal pressure to both part locations, while the self-centering is used for holding parts off centerline and for fine adjustments of the centerline after the vise is clamped to the machine table.

All models feature thread wipers and an encapsulated spindle to protect from coolant and chip contamination. For more information on our Allmatic high-pressure mechanical vises, or to inquire about our machine vises, contact Dapra today.

Perform Helical Interpolation with Felix® and Mastercam

Mastercam has written a special "C-Hook" applications program designed to helically interpolate holes using Dapra's Felix® milling tool. This program makes the helixing process very simple to program and allows not only for the roughing out of the hole on the way down, but also for the hole to be reverse-helixed with a finishing cut on the way up and out. This method of programming the Felix® tool will save your programming department at least 50% programming time versus conventional methods of helical interpolation. Please visit www.mastercam.com for more information on Mastercam's products and services.



**Coming in the next issue... Milling Update:
The Many Benefits of Copy Milling Cutters**

Question? Comment? Suggestion? Here's who to contact:

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Service/Repair	Richard Tatem	x226	rtatem@dapra.com
Warehouse	Bob Felber	x250	bfelber@dapra.com

Just a reminder... We service all of our vises, spindles, BIAX scrapers, air tools and tables in our on-site repair department. Call 1-800-243-3344 for more information.

Dapra Corporation – National Sales Force:

Territory	Manufacturer's Representative	Regional Application Specialist	Phone
New England (CT, MA, RI, VT, NH, ME, NY)	F&L Technical Sales 413-564-0733	Paul Harris	860-857-7473
Atlantic North (NJ, MD, DE, Eastern PA)	Direct Territory	Mike Bitner	815-509-6395
Atlantic South (WV, VA, GA, NC, SC, Eastern TN)	Jones Marketing 803-366-2720	Paul Harris	860-857-7473
Southeast (AL, MS, Western TN)	Jones Marketing 770-921-1711	Paul Harris	860-857-7473
Florida	Direct Territory	Mike Bitner	845-509-6395
Ohio (OH, Western PA)	Direct Territory	Phil Woodworth Jeff Clear	231-578-4509 734-777-0357
Ohio Valley (IN, KY)	Direct Territory	Richard Joos	815-509-6397
Michigan (Excludes Upper Peninsula)	Direct Territory	Phil Woodworth Jeff Clear	231-578-4509 734-777-0357
Illinois	Direct Territory	Mike Bitner Richard Joos	815-509-6395 815-509-6397
North Plains (WI, MN, ND, SD, MI Upper Peninsula)	Direct Territory	Jay Swenson	414-788-1854
Central Plains (NE, IA, MO, KS)	Direct Territory	Richard Joos	815-509-6397
South Central (TX, OK)	Direct Territory	Phil Woodworth Jeff Clear	231-578-4509 734-777-0357
Louisiana/Arkansas	Direct Territory	Mike Bitner	815-509-6395
Mountain (MT, WY, CO, UT, NM, ID)	Precise Tooling 801-375-1721	Mike Bitner	815-509-6395
California (CA, AZ, NV)	Innovative Tool Sales 714-780-0730	Phil Woodworth Jeff Clear	231-578-4509 734-777-0357
Pacific Northwest (WA, OR)	Industrial Marketing 360-387-8648	Mike Bitner	815-509-6395

DAPRATM CORPORATION

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Inside...

CUTTING Times

*Visit us at IMTS, booth C-5708...
for more details, turn to pages 1 & 2*

Welcome to Cutting Times	p.1
Case Study: Helical Interpolation	p.1
Carbide-Enhanced Cutting Tools	p.1
Dapra Q&A	p.2
Allmatic High-Pressure Mechanical Vises	p.2
Helical Interpolation with Felix [®] and Mastercam	p.2
Dapra Corporation Contacts	p.3

How to Contact Dapra Corporation:

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www.dapra.com • Email info@dapra.com

Now Available: Dapra's Complete Product Line... in One Catalog!

Call now to request your copy of our latest product overview catalog, introducing you to the general features and specifications of our:

Ball Nose and Back Draft Finishing Mills - Superior Surface Finishing Mills

Toroid Cutters - Roughing and Semifinishing

90° Square Shoulder Mills - 90° Precision with Extreme Metal Removal

Face Milling Solutions - High-Velocity Mills, 945 Cutters and 45° Shell Mills

Felix[®] 2010 Advanced Milling Tool - Interpolating, Ramping, Chamfering and more

Workholding Equipment - Precision Machine Vises and Indexing Tables

Power Scrapers - Precision Scraping

