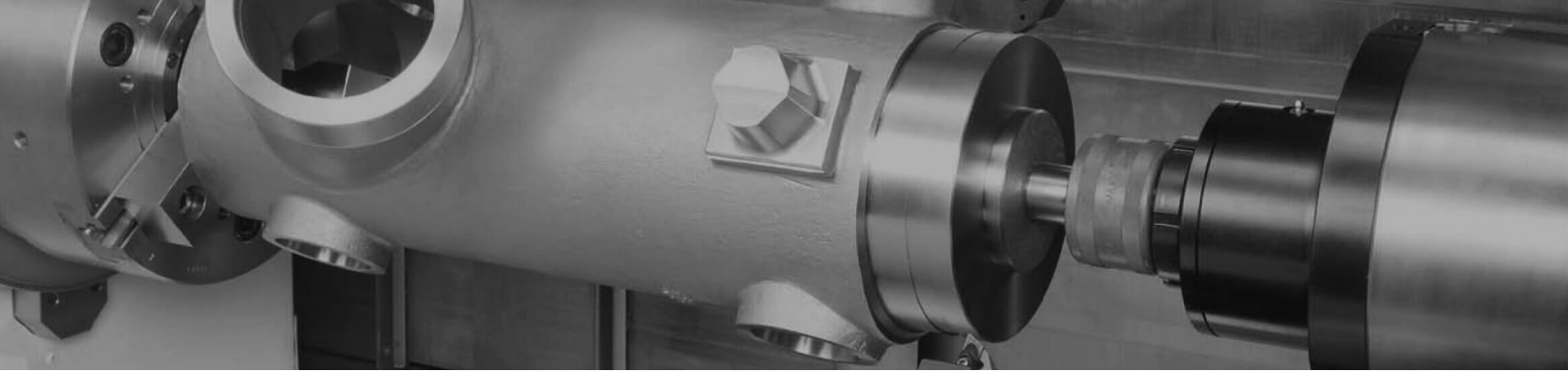
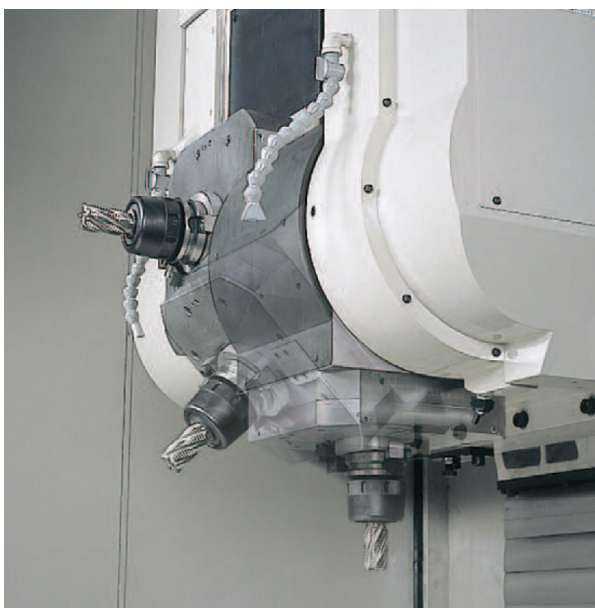


OKUMA GUIDE

MULTITASKING MACHINING



MULTITASKING TENDS TO BE SYNONYMOUS WITH NOUNS like productivity, proficiency and effectiveness. In today's world, where we're surrounded by advanced technology and tight deadlines, multitasking has certainly evolved from a luxury, to a necessity. From smart phones to all-in-one printers, combining capabilities into one product makes tasks go more quickly with added overall efficiency.



The same sentiment goes for the machining and manufacturing industry. Combining functionality onto one machine can dramatically improve your machining process and allow for incredible ROI.

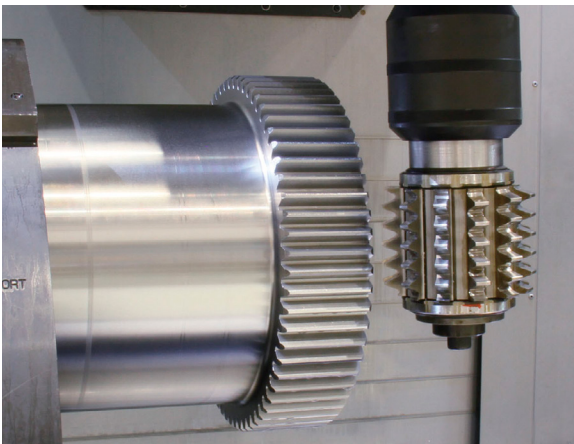
Multitasking machines have also become a critical part of smart shops and factories. But, the decision to invest in a multitasking machine relies on more than just wanting to get all your parts done in one operation. The following is a guide to all things multitasking—what it is, where it came from, and most importantly, how it can help your shop.

01 WHAT IS A MULTITASKING MACHINE?

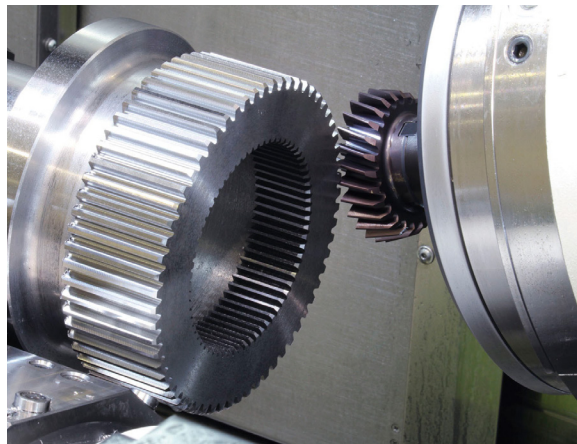
Multitasking machines combine the functionality of two or more traditional standalone machine tools to form one “super” machine. In their most common form, multitasking machines combine one or two lathes with a machining center. However, in recent years additional capabilities (grinding, gear cutting, even Laser Hybrid) have started to integrate as well. The beauty behind multitasking machines is that there are a variety of configurations available, so you can invest in what makes sense for your shop.

Multitasking machines have the following functions and capabilities:

- Turning
- Milling
- Surfacing
- Helical milling
- 5-axis
- Mill-turning
- Hobbing
- Skiving
- Turn-Cut
- Broaching
- Grinding
- Laser Hybrid



Hobbing



Skiving OD/ID spines

As their name would allude, multitasking machines are truly the epitome of productivity. When you combine several functionalities into one machine, you're significantly reducing setup times, as well as human error, by completing the part in one operation.

For example, our MULTUS U Series multitasking machines come equipped with an automatic tool changer, sub-spindle and lower turret. Because of its ability to use different cutting processes on the same part, it can create contours, perform turning, milling, skiving, Turn-Cut and gaging tasks all in one setup.

The above just barely scrapes the surface of what a multitasking machine is, as they are highly capable machines – however, this guide is in place to delve into our most frequent questions and concerns, so that you can hopefully come out the other side with a clearer picture about multitasking and its place in your shop.

02 THE HISTORY OF MULTITASKING

Multitasking machines evolved gradually, the earliest multitasking machines combining only turning and milling capabilities. However, there's a gray area around when they truly came to be, because for some time, they were only recognized as lathes with some machining center functionality and vice versa.

After they became established, multitasking machines evolved from turning centers with limited lathe capabilities, to machines that incorporated a Y-axis, sub-spindle, ATC, and B-axis.

Okuma's first official multitasking machine, the LM50-AT, was introduced in the 70's and was the first step toward the concept of multitasking.

As multitasking machines entered the market, they developed an intimidating reputation. And considering all they can do, it's not a surprising conclusion. Luckily, the development of multitasking technologies and user-friendly controls has helped take away some of the intimidation factor and today there are many more safeties built in, such as the standard Collision Avoidance System (CAS).



Okuma's Collision
Avoidance System

03 BENEFITS OF MULTITASKING MACHINING

There are quite a few benefits of bringing a multitasking machine into your shop.

- **PROCESS SIMPLIFICATION**

The part is completed on a single machine, therefore custom fixturing is eliminated.

- **SETUP REDUCTION**

- **IMPROVED ACCURACY AND REDUCTION OF HUMAN ERROR**

No need to move the part from machine to machine

- **REDUCTION IN TOLERANCE STACK UP**

If you have a heavy part, using a multitasking machine will be your best bet; there's less moving of heavy parts which ultimately means the part is done in less time.

- **FLEXIBILITY**

You can set these machines up with the largest bar stock possible and schedule programming (i.e. run 6 of these, 4 of these, 2 of these). The machine will use that same bar stock for an array of different parts—making chips out of what it doesn't need. This process saves time, and



Vacuum Rotor
(done on MULTUS BII Series)



Spiral Bevel Gear
(done on MULTUS BII Series)

therefore money—where time is worth more than the material evacuated. There are cases where this may not be true, but it is something unique to general multitasking.

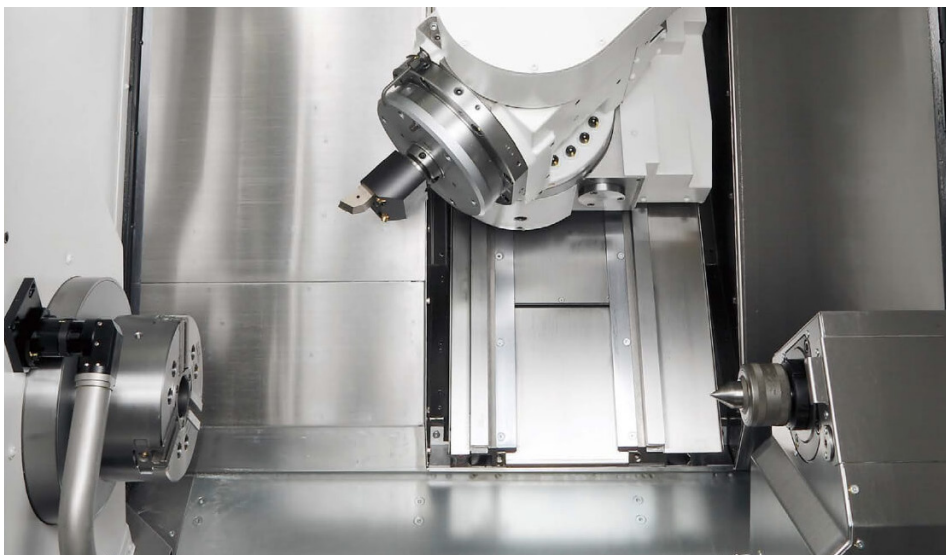
04 COMMON PERCEPTIONS OF MULTITASKING MACHINING

One of the most common perceptions of using a multitasking machine is that for everything you gain, you also lose something. On much older machines, it was true that you had to give up certain things—for example, if you gained capabilities and functionalities, you often lost rigidity and the machine wouldn't be able to take as heavy of cuts. But with newer machines, such as the MULTUS U, you no longer make those sacrifices.

Another common perception is that the machines are difficult to program and even more difficult to operate. For example, one job shop bought an Okuma MULTUS and struggled with it, to the point where they were convinced it was time to sell it. Before they did, the Okuma team came back into the shop and retrained the operators until they were comfortable with the machine (this is often necessary because these machines' functionalities are so different).

Once they were comfortable running the MULTUS, their shop went from three parts a day to nine parts a day.

It turned out they didn't need any fixturing or additional handling, it was just a matter of getting comfortable with the new technology.



One thing we do notice is that the B-axis on a multitasking machine can throw some operators a curveball, and expensive machines in general can be intimidating to use. That's why Okuma helps protect your investment with the Collision Avoidance System (CAS), as well as other standard tools, to help minimize any potential crashes.

05 GETTING THE MOST OUT OF YOUR MULTITASKING MACHINE

We find that multitasking machines are a good fit for shops that are producing customized parts, prototype parts or small- to mid-size production quantities. Multitasking machines can be seen as a big leap of faith for many shops, but in reality, they're often a missed opportunity. Many shops already have lathes and machining centers taking up space on their floor, instead of taking the plunge and investing in a multitasking machine that saves floor space.



While your shop's parts and goals are important, the true key to getting the most out of your multitasking machine is having a well-trained team that is ready to embrace the machine's functionalities, as well as utilize its specific controls and technologies.

At Okuma, we specifically tailor our controls to the machine – which gives operators more control over how the machine operates. Our OSP-P300SA control system can help shops simplify the user experience and get the most out of their machines. The OSP controls were designed to meet contemporary manufacturing needs and enhance the operator experience. While the OSP-P300A provides a variety of user benefits, its greatest strength is crystal-clear: it provides comprehensive machine operations in one easy-to-use interface.

Specific beneficial applications include the Collision Avoidance System (CAS), a lifesaving tool for avoiding costly mistakes, and the built-in quick-change functionality of the ATC, which is an incredible time saver. In addition, if your tools are in the magazine and you do a changeover, you can change out the chuck jaws in which you'd get a quick-change chuck: the jaws take two minutes to changeover, select the program and then cycle start. You still must step through the program, but your change time goes to a couple minutes, and it makes a huge difference when you want to run a lot of different parts.

06 OUR MULTITASKING MACHINES

For those who may not be as familiar with Okuma machines, here's a little cheat sheet.

TOP SELLING MULTITASKING MACHINES



MULTUS U3000

Max dia. 25.59" | Bed 39.4"
Opt. 2nd Turret | Opt. RH (W) Spindle



MULTUS U4000

Max dia. 25.59" | Bed 59.05"
Opt. 2nd Turret | Opt. RH (W) Spindle



MULTUS U5000

Max dia. 25.59" | Bed 59.05"
Opt. 2nd Turret | Opt. RH (W) Spindle



MULTUS B200II

Max dia. 23.63" | Bed 550 [1,750]
Opt. Big Bore Spindle
Opt. RH (W) Spindle



MULTUS B250II

Max dia. 23.63" | Bed 750
Opt. Big Bore Spindle
Opt. RH (W) Spindle



MULTUS B300II

Max dia. 24.80" | Bed 900
Opt. Big Bore Spindle
Opt. RH (W) Spindle



MULTUS B400II

Max dia. 27.95" | Bed 1,500 [2,000]
Opt. Big Bore Spindle
Opt. RH (W) Spindle



MULTUS B550

Max dia 32.68" | Bed length 2,000
Opt. Big Bore Spindle



MULTUS B750

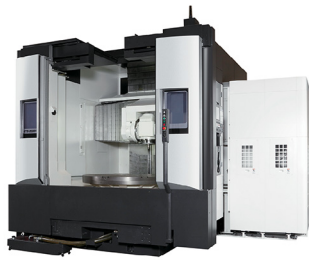
Max dia 41.34" | Available bed
lengths 2,000; 3,000; 4,000;
6,000 | Available RH (W) spindle

TOP SELLING MULTITASKING MACHINES CONTINUED



VTM-1200YB

Max dia. Ø49.20" | Max length 42.50
Spindle: Ø380 Flat



VTM-2000YB

Max dia. Ø78.74" | Max length 55.12
Spindle: Ø1,400 Tablet



MU-4000V

Work envelope (in):
30x18x18



MU-5000V

Work envelope (in):
31x41x23



MU-6300V

Work envelope (in):
36x41x23



MU-8000V

Work envelope (in):
36x41x23



MU-10000H

Max workpiece: Ø59.05 x 44.29
Max load 5,500 lbs.

For more information about Okuma products, contact your local Okuma distributor or schedule an appointment to visit us at one of the following locations:

Okuma America Corporation

11900 Westhall Drive
Charlotte, NC 28278
P: 704.588.7000

The Okuma Technical Center at Hartwig Houston

10321 Regal Row
Houston, TX 77040
P: 713.749.9600

Partners in THINC

12428 Sam Neely Road
Charlotte, NC 28278
P: 704.587.6789

The Okuma Technical Center at Morris Midwest

68 Congress Circle W.
Roselle, IL 60172
P: 630.351.1901

Contact your local distributor at www.okuma.com/distributors