

Your Global Craftsman Studio

NEW BRAND MESSAGE

Mitsubishi Materials Corporation

CRAFTSMAN STORY

Our expectations for the new "WSX445" face milling cutter

The double-sided high performance insert developed to encapsulate the passion of a craftsman

Preparatory inaugural issue

TOP MESSAGE

Teruhiko Masuda

President

Advanced Materials & Tools Company

Mitsubishi Materials Corporation

Vol. **00**
2014.11





NEW BRAND MESSAGE



YOUR GLOBAL CRAFTSMAN STUDIO

Mitsubishi Materials is not just a tool manufacturer.

We are committed to promptly responding to customers' challenges with the dedication of a professional craftsman and doing our best to actively contribute to their success.

We strive to become the only tool manufacturer globally offering “your personal craftsman studio”, a unique service for our customers.

It is the place where you can:

Find state-of-the-art technologies and products.

Find solutions, anytime, anywhere in the world.

Share our excitement on the latest technology trends and product innovation.

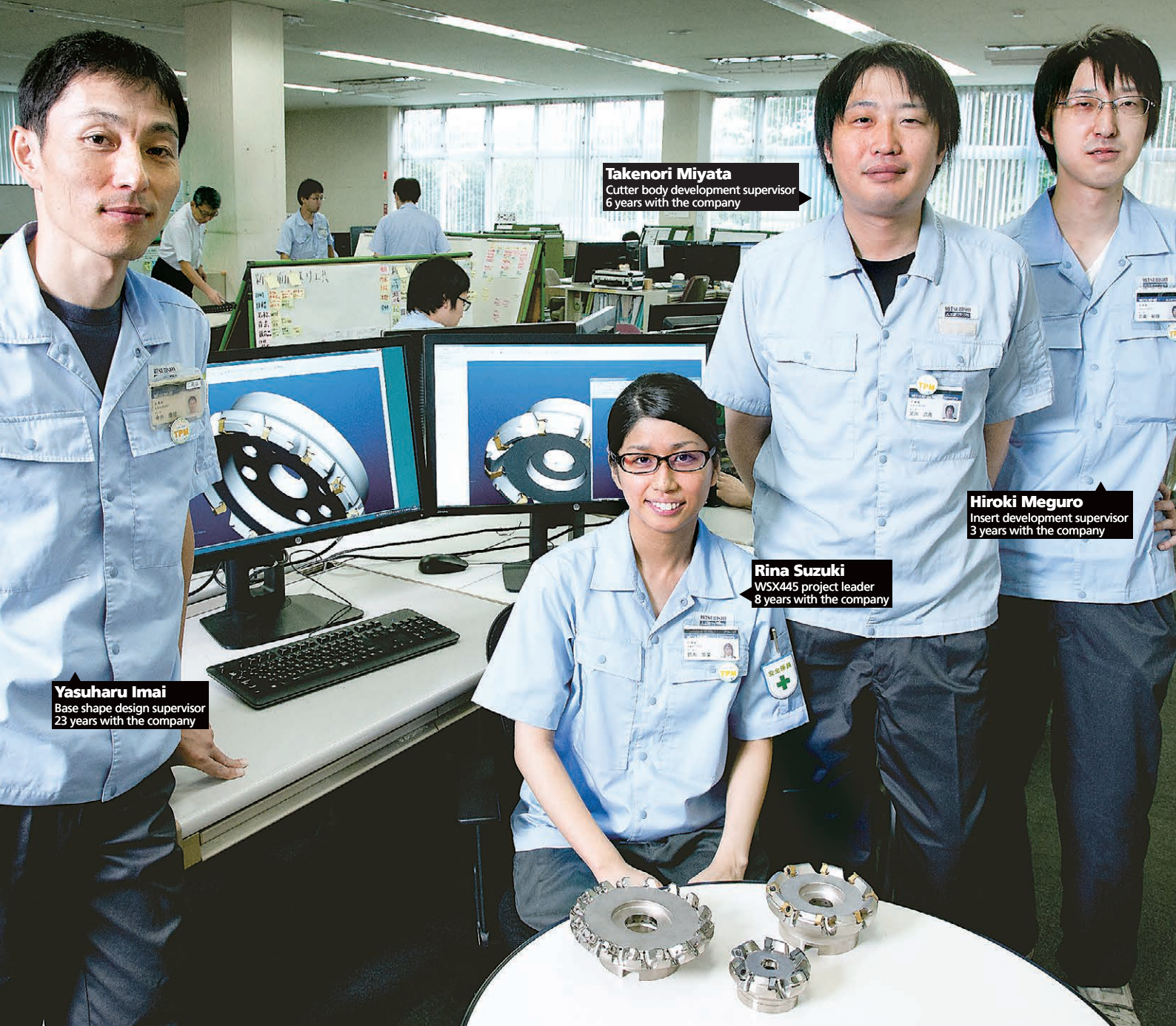
It is the studio where we think, share, create and develop together with our customers exciting solutions to meet their specific needs.

YOUR GLOBAL CRAFTSMAN STUDIO MITSUBISHI MATERIALS

[The meaning of our logo] ▶▶▶

Our logo shows people, standing on a circle, holding hands. The circle represents the earth. Holding hands reflect our commitment to grow and succeed “hand in hand” with our customers and closely work with them improving performance across the globe.

The shape of the logo embodies a variety of ideas. It captures the image of “cutting tools” combined with the dominant letter “M” of the Mitsubishi Materials brand name. It also depicts a flame that symbolizes our passion for craftsmanship.



Yasuharu Imai
Base shape design supervisor
23 years with the company

Takenori Miyata
Cutter body development supervisor
6 years with the company

Hiroki Meguro
Insert development supervisor
3 years with the company

Rina Suzuki
WSX445 project leader
8 years with the company

CRAFTSMAN STORY

***Our expectations for the new
"WSX445" face milling cutter.***

*The double-sided high performance insert developed to
encapsulate the passion of a craftsman.*

The new double-sided insert-type face milling cutter WSX445 was officially launched in October 2014. Merely by looking at the tool, one can spot the difference. It combines higher cutting performance that exceeds conventional double-sided inserts, while guaranteeing a stable long tool life. Its secret lies in the unique shape of the insert design. We have asked four of our engineers to share their experiences on the development of WSX445.



Q.What can you tell us about the development of the WSX445?

Suzuki Manufacturers are continuously improving products and processes aiming to reduce costs. Taking machining as an example, the face milling cutter is amongst the most widely used tools. In recent years, the conventional single-sided insert-type face milling cutter was replaced by the economically superior double-sided insert-type, which has twice as many cutting edges. This led to the assumption that it would dominate the cutting tool market, however, for various reasons this did not happen. The main issue with double-sided inserts is the reduction of the rake angle, which has detrimental effects on the cutting action, causing an increased requirement in power and rigidity and reduced tool life. For these highlighted reasons, I always

carved, unique shape.

Suzuki Producing this shape in large numbers was extremely challenging. However, the development of such a complex shape revitalized the passion and creativity of our team.

Q.What obstacles did you have to overcome to achieve the cutting ability of a single-sided type with a stable, long lifespan?

Meguro We firstly had to design the mold for the unique shape of this insert. As you know, cemented carbide is being sintered, so the more complex the design, the harder it is to make the shape match the design. We had to work closely with the production technology department to solve this problem. For me, as a new staff member, this was a valuable experience.

ifications and fulfil the requirements of even the most demanding customers. We invite you to test it, in order to convince yourself and get inspired by its performance. There are already product expansion plans with regard to insert materials and cutter body shapes that many of our customers have already requested. We strongly believe that you will be satisfied.

Imai It is our desire to create outstanding products for our customers. This desire is taking shape with the creation of products such as the WSX445. I hope that many of our customers will soon realize its unique look and feel as well as its performance superiority and include it amongst their preferences.

Miyata Mitsubishi Materials Tsukuba Plant took the lead on the WSX445 project collaborating with Gifu Plant as well as with team members from other departments. All those involved in the product development, including R&D, production and sales teams, have put their “craftsman” heart and soul into the project. We invite you to try out the tool for yourself.

Meguro The machining environment and tool requirements are different for every customer, with tool applications varying widely. Listening to the voice of our customers, we plan regular customer visits to discuss their specific requirements and identify possible deficiencies and improvement needs. Our target is to get closer to our customers, create even more desirable products and become a valuable partner to them.



WSX445

**Double-sided insert type
with the cutting ability of
a single-sided insert.**

wanted to develop a new innovative double-sided insert for those customers who had previously rejected the existing double-sided cutters currently available - after all, the tool should completely meet their needs.

Imai The design of the WSX445 was “a double-sided type that could provide an equivalent cutting ability as a single-sided type having a stable, longer lifespan.”

Q.What sort of issues did you encounter during the product development?

Suzuki An important point was the insert shape. Comparing the WSX445 to conventional double-sided types, you can see that it has a very complex shape. Developing this shape was a long and arduous process.

Imai The conventional double-sided insert originated from the existing traditional shape and had performance flaws when mounted to a cutter body. Therefore, we abandoned the existing insert design and started from scratch to develop this new insert. The result was a deeply

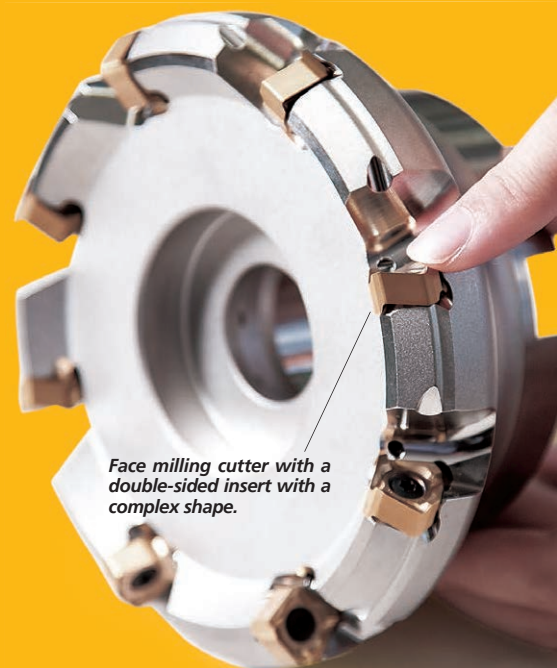
Miyata The insert was not our only problem; we had issues with the cutter body design as well. Having a shape that can securely clamp the deeply carved insert was extremely unusual in conventional designs.

Suzuki After carrying out in-house tests, we asked our customers all over the world to test and evaluate the tool in real manufacturing environments. Most of our customers obtained good results but some of them weren't completely satisfied. By making direct modifications and repeating the test, we were able to create an outstanding, highly reliable product.

Q.What would you say to customers interested in buying the WSX445?

Suzuki We have always been striving to provide our customers with highest quality products. We have been creating products with specific functionalities, tailor made to the needs of the industry, capturing the latest technology trends. We continuously try to maximize product durability focusing on different application areas.

The WSX445 is designed to match spec-



Face milling cutter with a double-sided insert with a complex shape.

Your Global Craftsman Studio

A message from the company President to mark the first issue

Trust is hard to gain and easy to lose.

As one of Japan's oldest carbide tool manufacturers, we strive to support each one of our customers involved in craftsmanship and by doing so, we believe we are growing and accumulating the treasure that is trust.

However, our surrounding environment has undergone a change in recent times and we've been criticized by customers for being "faceless" or "slow". Elaborating on this alarming feedback I would like to remind us all that we have over 50 years of industry experience. We need to go back to the basics, realizing that this is a unique opportunity to improve and grow with our customers.

Based on these observations, all employees should thoroughly look for problem areas and contemplate ways to improve our service and relationship with our customers. The answer to those questions is to lead our customers into a world of excitement and enthusiasm, becoming their trustful tool studio partners.

It is my expectation that every one of us, in every department from sales, R&D, production to logistics, will uphold these values and contribute to our business development and success.

Our challenge has just begun. There is no greater art on this planet than meeting people and communicating. Let us all, as employees of Mitsubishi Materials throughout the world, provide heartfelt solutions and services that excite and inspire our customers.

ものに心ありて まして人

(Give your attention to things but
more value to people.)

We will convey that feeling in our PR magazine "Your Global Craftsman Studio", which will be published in 2015.

みちとは未知 知ることなきゆえに 道楽し

(The path is unknown;
we don't know where it leads,
hence the journey is exciting.)

Teruhiko Masuda

President
Advanced Materials & Tools Company
Mitsubishi Materials Corporation



Your Global Craftsman Studio

Inaugural issue

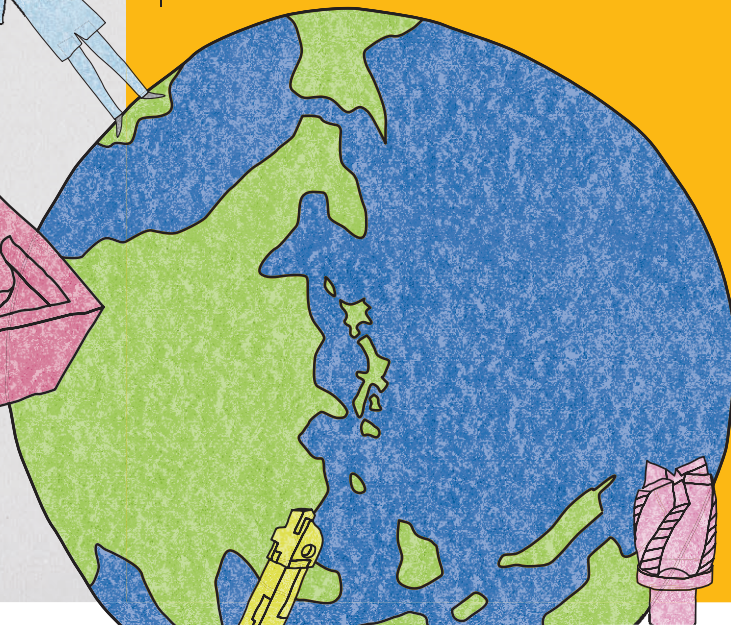
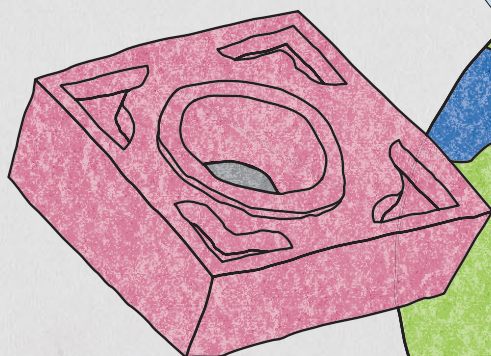
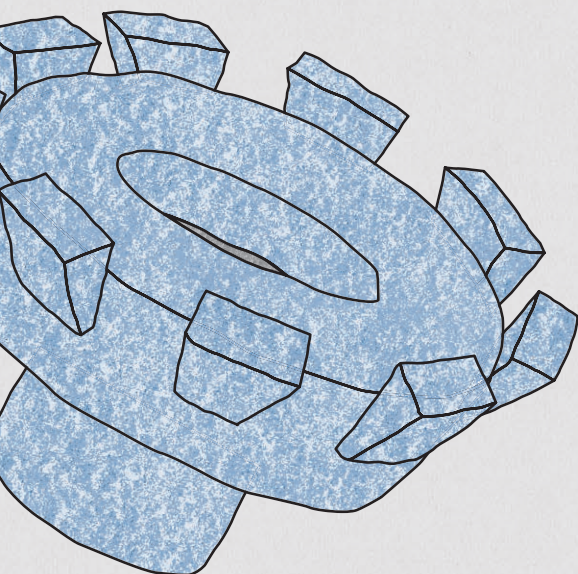
Preview of the next issue ♦ Vol. **01**

The magazine that makes craftsmanship exciting

We plan to publish "Your Global Craftsman Studio" officially in 2015. Our goal is to publish a communication magazine that makes craftsmanship exciting from various perspectives, including the latest examples, domestic and international, information about trends from various industries as well as interviews with Mitsubishi Materials' product developers. If you wish to receive a copy, please contact your closest Mitsubishi Materials sales office.

[Planned Content of the Inaugural Issue]

- ▶ Analyzing trends in the automotive industry from a unique perspective
- ▶ Our expectations for the iMX exchangeable head end mills
- ▶ Introduction of Mitsubishi Materials craftsman





For People, Society and the Earth

“We will become the *world's leading* business group
committed to supporting recycling-oriented society through *materials* innovation,
with use of our *unique and distinctive* technologies”.