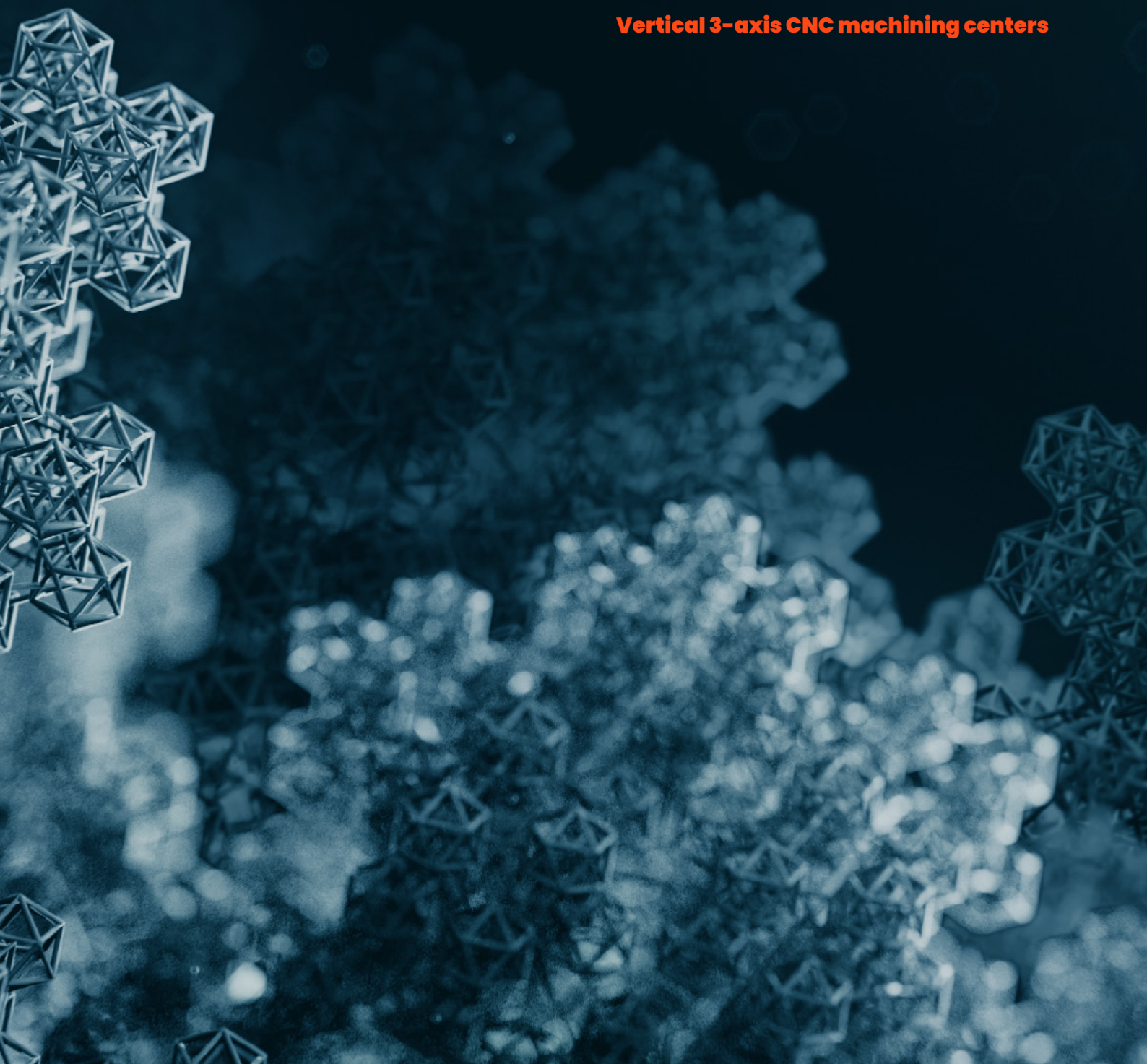
TAKUMI
When Precision Matters

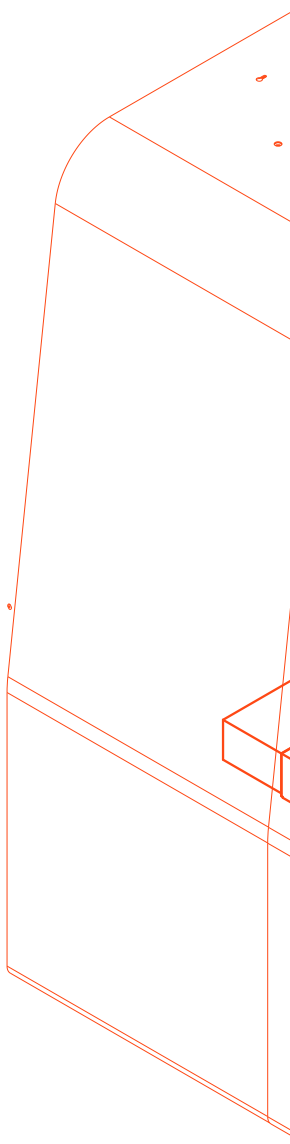
The Art of Precision Machines for your success

Vertical 3-axis CNC machining centers

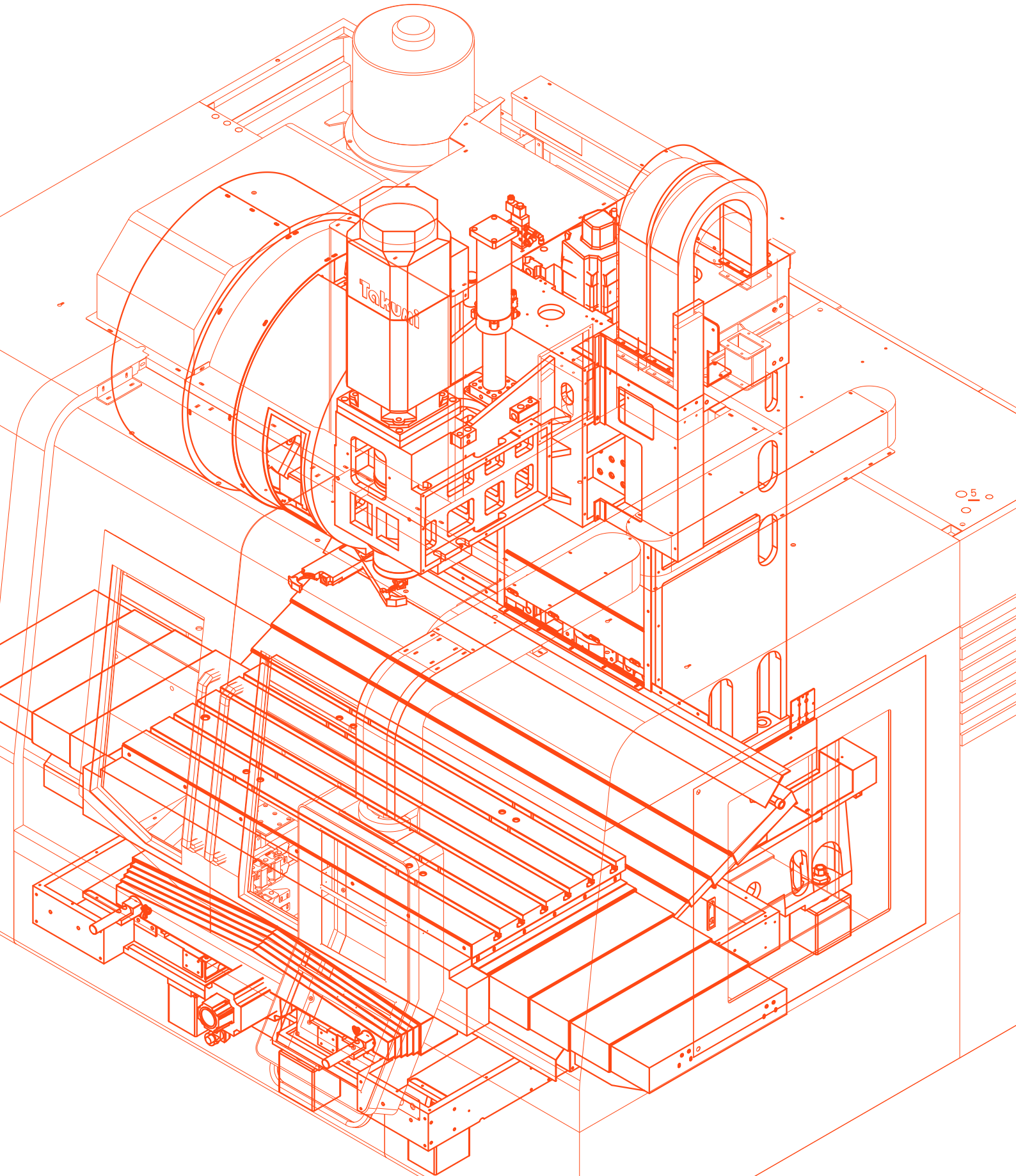


Takumi.
The industry standard.

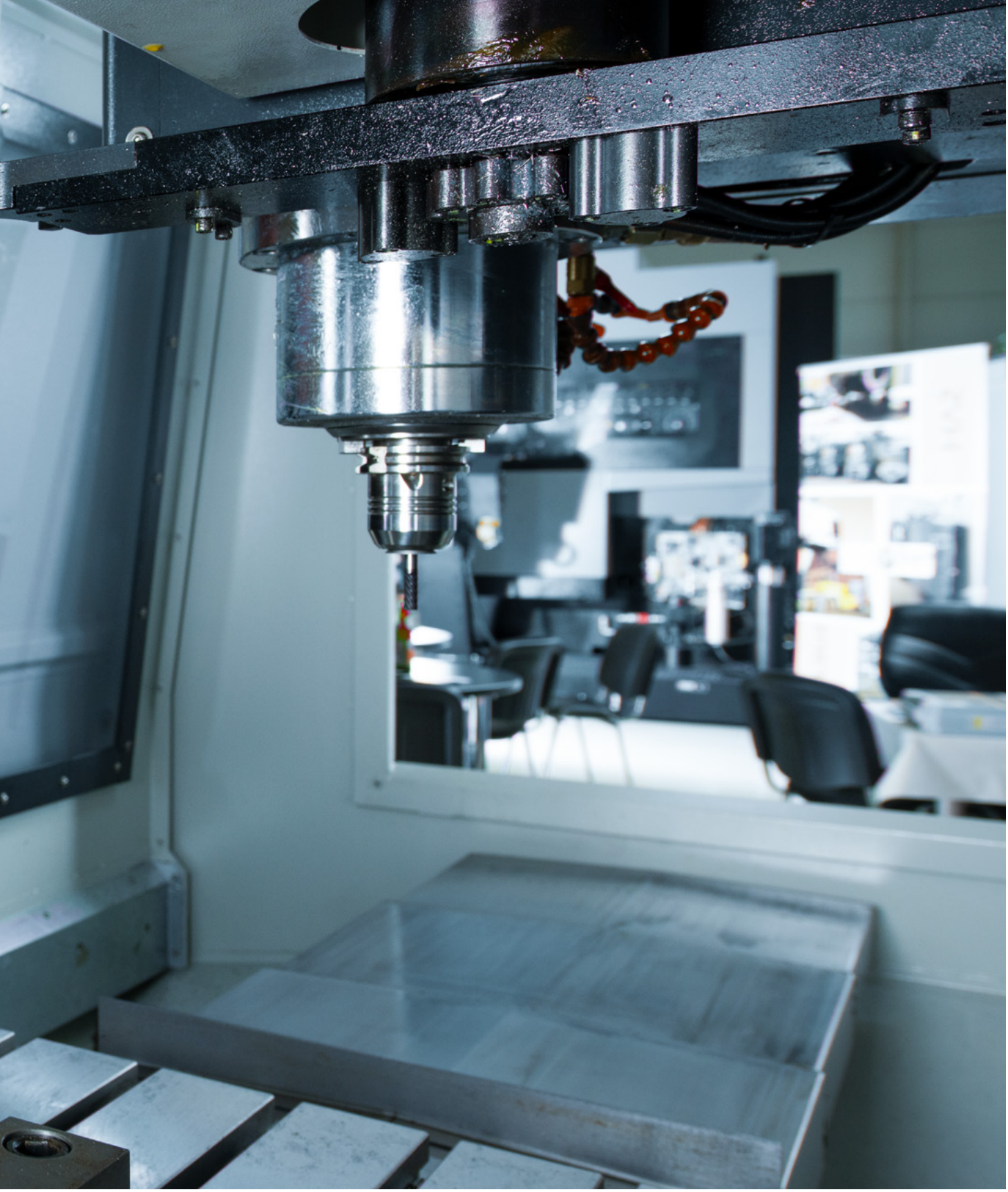
Closer to our customers, dependable in our performance: As Takumi stands for mechanical engineering in highest level 4 its products are always a secure investment in the future.



Takumi stands out thanks to our pursuit of perfection combined with our minimal waste philosophy - and has for over 30 years.



Takumi stands for unrivaled quality consciousness and strives for the highest level of precision.



The Takumi name originates from the Japanese, in which it equates with craftsmanship and a tradition of quality. It is precisely these values that have always defined how Takumi manufactures its CNC machining centers. It is in our DNA to demand that our customers consistently receive machines embodying first-class quality, manufactured exclusively using components from the premiere producers and technical specialists with whom we maintain long-term partnerships. All Takumi products are crafted in conformity with the ISO 9001:2008 quality management standard.

V-S

Visionary and variable:

The V-Series machining centers with cross table

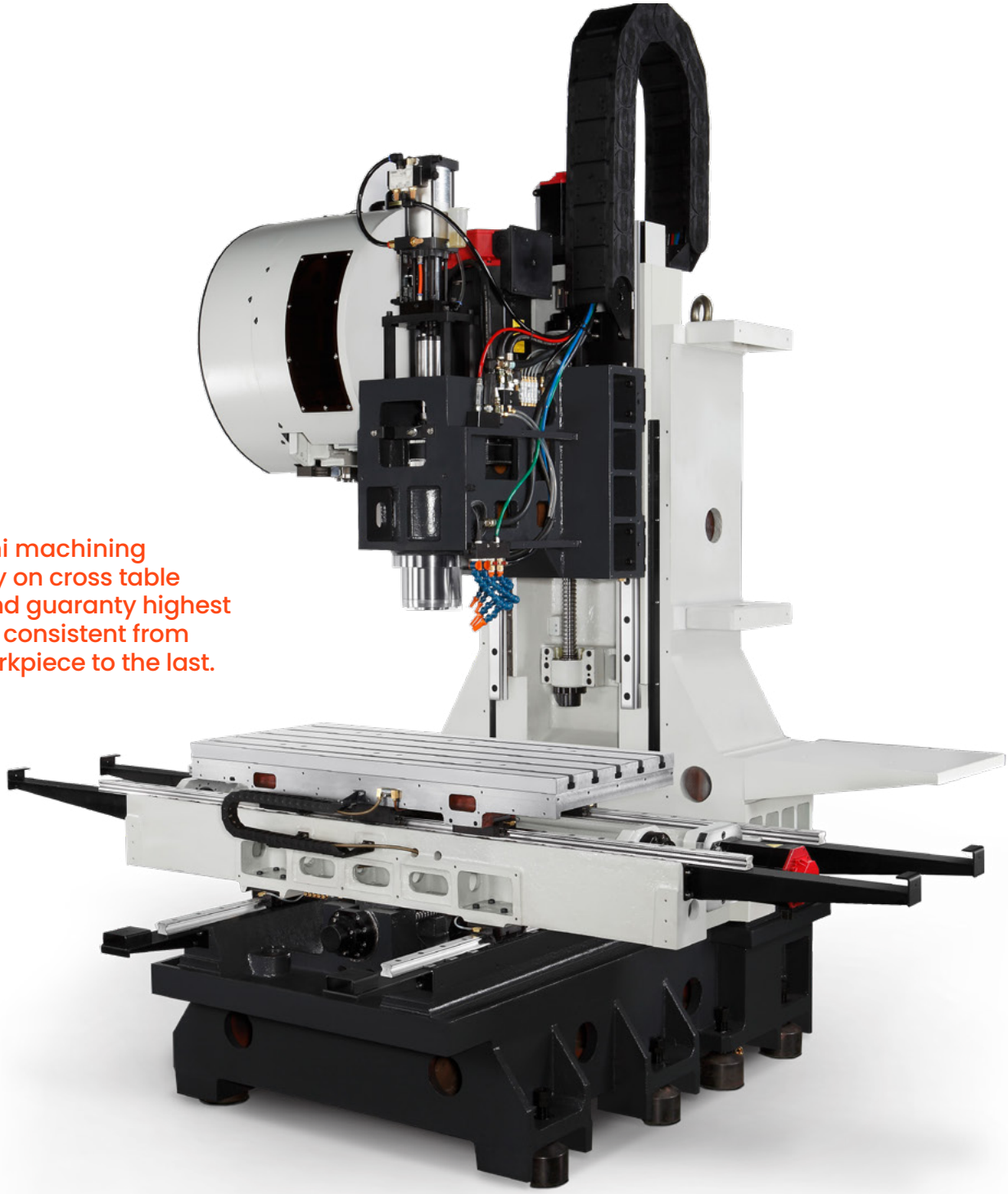
The V-Series vertical three-axis machining centers are multifaceted high-performance machines that fulfill even the most challenging tasks, such as roughing massive steel castings, with the greatest precision. The massive CNC machines have been engineered and constructed for high-performance machining of components from machine engineering as well as from the mold and die industry.

The advantages of the V-Series:

» Extremely stiff and high-precision mechanical structure
» Robust cast components, processed for precision
» Symmetrical, box-shape machine made of one piece casting
» Perfect combination of cutting and high stability
» Pre-tensioned ball screw spindles minimize thermal growth and improve accuracy
» Direct-coupled motors increase accuracy
» Spindle chiller maximizes heat dissipation
» Hand-scraped contact areas for greater precision and reduced stress in the material's microstructure
» Integrated chip flushing and discharge system
» Absolute direct measuring system ensure rapid start-up
» Extra-wide door openings facilitate loading and unloading
» Swiveling control panel optimizes floor plan utilization and enhances user convenience
» User-friendly Heidenhain TNC 620 control system
» Rapid reaction service support and excellent spare part availability

SERIES

The Takumi machining centers rely on cross table concept and guaranty highest precision - consistent from the first workpiece to the last.



VC-S

Ready to roll for perfectionists

The VC-Series machining centers equipped with cross table

The VC-Series machining centers equipped with cross table
The three-axis machining centers in the VC-Series are ideal for precise manufacturing on the shop floor. Thanks to a perfect balance of machining performance and superb precision, these compact CNC machines are ready to take on challenging contract manufacturing tasks in the mold and die sector. The VC-Series consists of three models: VC 0852, VC 1052, VC 1200.

Leading-edge technology in part production
The stable and solid cross table concept gives every VC-Series machine maximum thermal stability. All three axes on these machining centers feature high-precision linear guides for maximum accuracy and efficiency. The perfect synergy supplied by high-performance Heidenhain motors, Heidenhain control systems and the linear-motion axial guides ensures exceptional results. Precise high-performance spindles rotating at speeds of 12,000 or 15,000 rpm meet every requirement profile. The perfectly positioned chip flushing system acts in tandem with the scraper-type chip conveyor to effectively and reliably discharge hot chips and minimize heat accumulation within the machine.

User-friendly and multifaceted
All of the three-axis machining centers in the VC-Series are equipped with intuitive and user-friendly Heidenhain control systems. Optionally available are cooled ball screw spindles as well as - in some cases - linear scales for the X, Y and Z axes. Additionally, a rotary table for part production with 4 or 5 axes is available upon request.

Investment with optimal price-performance ratio for your shop floor
Thanks to their compact design concept, the VC-Series CNC machining centers stand out with their minimal space requirements, while the user-friendly Heidenhain control system supplies the ideal solution for programming and production on the shop floor.

SERIES

At home in demanding manufacturing sectors

Aeronautics

There is hardly any other industry that makes such uncompromising demands for extended service life along with quality and perfection embracing the most minute details. It is these challenges that make aerospace firms the ideal customers for Takumi. After all, we are also uncompromising when it comes to the quality of our products.

In our drive to deliver perfect machine tools to the aircraft industry, we focus on the following assets:

» Torsionally rigid machine structure featuring high-density Meehanite casting
» Massively solid supporting elements designed to absorb process oscillations and vibrations
» Hand scraped support surfaces for machine components and guides

First-class performance for dynamic applications machines from Takumi provide reliable precision with no need for time consuming finishing processes.

Automotive

Assured calculation security assumes prime priority among our customers in the automotive sector. Takumi supplies this security with machines bearing a name synonymous with reliability and long life. Our depot in Pliening near Munich operates in tandem with our proven logistics partners to ensure rapid response to requests for replacement components and wear parts.

This is why the automotive industry can place 100 % confidence in machines from Takumi:

- Exclusive reliance on premium components
- Process reliability through carefully conceived discharge of chips and shavings along with wear-resistant materials
- Rapid delivery of replacement and wear parts

Aerospace

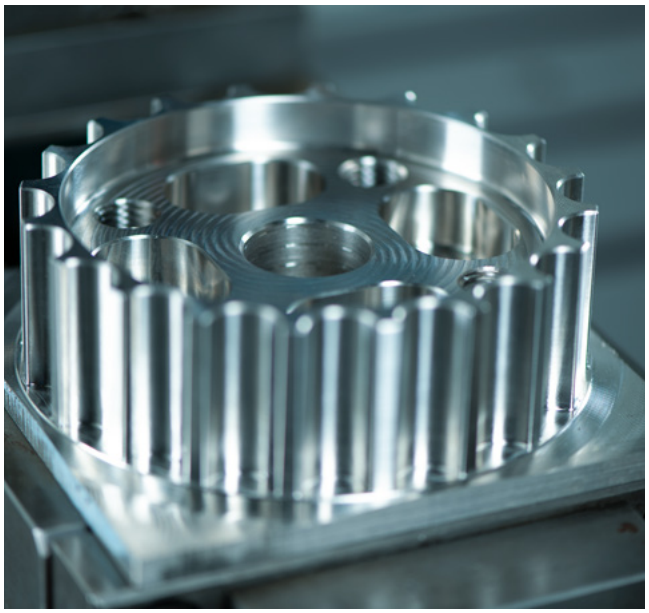
This is a market in which high production numbers are irrelevant as the focus remains firmly fixed on uncompromising quality, sometimes in production batches consisting of a single part. To achieve this level of perfection in every part and component, our clients need machines with quick, streamlined set-up procedures.

Our machines place priority on these assets:

» User convenience
» Excellent machine access
» Ergonomically ideal control environment

Energy sector

Regardless of whether the task entails machining nonferrous metals in semiconductor and PCB production or milling tough high-alloy materials for application in such sectors as weather-resistant gear-unit components and housings in wind turbine generators: The Takumi V-Series stands out with the oscillation-resistant attributes of the machine bed to offer high precision with every table size, extending from 1,250 mm x 650 mm to 3,200 mm x 1,025 mm.



Technology and machining center systems

Is every machining center unique? Is each component's design a special solution to meet individual customer requirements? When the object is to evolve individual solutions to meet ultimate demands for flexibility and agility, Takumi is right in its element. With our support, you can be sure that no position will be missed and no angle will be beyond reach. We help you set new records in reducing the time between set-up and the first shaving while also diminishing downtime to an absolute minimum.

Precision is our trademark

Typically Takumi: Robust and rigid engineering join sturdy and stable design along with high levels of thermal stability to guarantee maximum precision, even when the going gets tough.

These are the assets that Takumi applies for maximum accuracy:

» Torsionally rigid structure in massive Meehanite cast iron
» Solid and sturdy support elements to absorb process oscillations and vibrations
» Engineered with integral reinforcement for moving elements to reduce weight while maintaining optimal intrinsic rigidity
» Pretensioned ball screw bearings and cooling system for the main spindle for thermal stability. Optional: Ball screw bearings with internal cooling spindles
» Optional: Sensor system to compensate for the thermal spindle expansion
» Reliable oil skimmer to prevent emulsion deterioration

At Takumi, precision is the result of designs featuring extreme torsion resistance and thermal stability.

The compact performers

V12 / V15 / V18

The ideal V-Series models for processing medium-sized parts as well as roughing and preroughing operations, for instance, in mold and die production. To ensure maximum rigidity, linear travel motion proceeds over flat guides.

- Belt-driven or gear-driven spindle reaching up to 12,000 rpm
- Pretensioned ball screws on all axes to resist thermal deformation
- Spindle cooler
- Optional: Gear-driven spindle with torque of up to 640 Nm (S1)
- Wide machine door openings for easy and ergonomic loading and unloading

Designation	V12	V15	V18
Travel			
X axis (mm)	1,200	1,524	1,800
Y axis (mm)	660	762	850
Z axis (mm)	610	720	750
Machine capacity			
Machine table L x W (mm)	1,250 x 650	1,600 x 760	1,900 x 850
Table load (symmetrical distribution) (kg)	1,200	1,500	2,000

Products may vary from catalog illustrations


Takumi

The anchor of stability

V22 / V32

The perfect V-Series models for machining large parts as well as for roughing and preroughing operations in sectors such as mold and die manufacture. Linear travel motion proceeds along flat contact areas to minimize deflection and maximize rigidity.

- Pretensioned ball screw spindles on all axes to resist thermal deformation
- Spindle cooler
- Wide machine door openings for easy and ergonomic loading and unloading

Designation	V22	V32
Travel paths		
X axis (mm)	2,200	3,200
Y axis (mm)	1,066	1,066
Z axis (mm)	750	750
Machine capacity		
Machine table L x W (mm)	2,200 x 1,025	3,200 x 1,025
Table load (symmetrical distribution) (kg)	3,000	4,500

Products may vary from catalog illustrations


Takumi

The space-saving all-rounder

VC 0852 / VC 1052

The compact and economical models from the VC-Series are a cost-optimized investment for the precise production of smaller parts in sectors such as mold and die manufacture. Their minimal space requirements make them ideally suited for programming and operation on the shop floor.

- Belt-driven spindle rotates at up to 12,000 rpm
- Optional: Direct-drive spindle rotating at up to 15,000 rpm
- Spindle cooler
- Easy machine loading thanks to wide machine door openings

Designation	VC 0852	VC 1052
Travel		
X axis (mm)	860	1,020
Y axis (mm)	520	520
Z axis (mm)	610	610
Machine capacity		
Machine table L x W (mm)	1,000 x 520	1,160 x 520
Table load (symmetrical distribution) (kg)	500	650

Products may vary from catalog illustrations


Takumi
VC1052

The multi-talented master

VC 1200

The compact and cost-effective cross table machining center represents the ideal investment for precise production of smaller parts in sectors such as mold and die manufacture. Their minimal space requirements make them ideally suited for programming and operation on shop floors.

- Direct-drive spindle operating at up to 15,000 rpm
- Spindle cooler
- Easy machine loading thanks to wide machine door openings

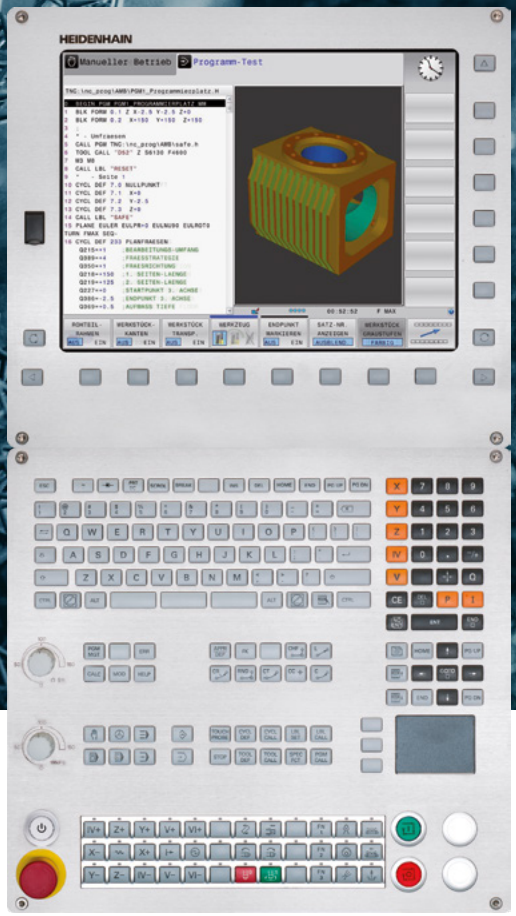
Designation	VC 1200
Travel	
X axis (mm)	1270
Y axis (mm)	660
Z axis (mm)	610
Machine capacity	
Machine table L x W (mm)	1,270 x 610
Table load (symmetrical distribution) (kg)	1,000

Products may vary from catalog illustrations


Takumi
VC1200

Heidenhain TNC 640

State-of-the-art control system for modern manufacturing jobs



The latest CNC control system for machining centers is superbly suited for dynamic machining of complex free-form surfaces using extensive data sets on 5-axis machining centers featuring a swivel bridge as well as large machines with a fork-swivel head. It is not for nothing that the control system's convenient layout and user-friendly design featuring intuitive cycle programming have become the industry standard.
A modern and robust design complemented by ease of operation ensures optimal processing speeds along with maximum precision.

Discover the advantages offered by Heidenhain control systems in Takumi machining centers

Success lies in the details

The Heidenhain TNC 640 control system convinces with extensive assets and numerous equipment options:

Standard:
- Dialog programming
- ISO NC programming
- Free contour programming
- Extended milling and drilling cycles
- Touch probe cycles
- Heidenhain DNC parallel programming
- Integrated "Help" system
- Simulation graphics
- 1024 block look-ahead
- 0.5 ms block processing time
- ≥21 Gigabyte data storage
- ≥2 Gigabyte RAM
- 15.1 inch LCD display
- Minimum input increment of 0.01 µm or 0.0001°
- 2x Gigabit Ethernet adapter
- 4x USB ports
- RS-232-C and RS-422 interfaces
- Extended data interface for remote control

Optional:
- DXF converter
- CAD import
- Adaptive Feed Control (AFC)
- Dynamic Collision Monitoring (DCM)
- 4th and 5th axis
- Heidenhain DNC
- Remote Desktop Manager
- Extended tool management
- Dynamic precision
- Dynamic efficiency

Takumi machining centers are equipped with the latest version of the Heidenhain **TNC 640** control system, while the V-Series features the **TNC 620**.

This provides distinctive assets for the operator:
- Multifaceted path control with up to five controlled axes and regulated spindle
- Shop-oriented programming with graphic support
- Multiple practically oriented cycle selections
- User-friendly control concept

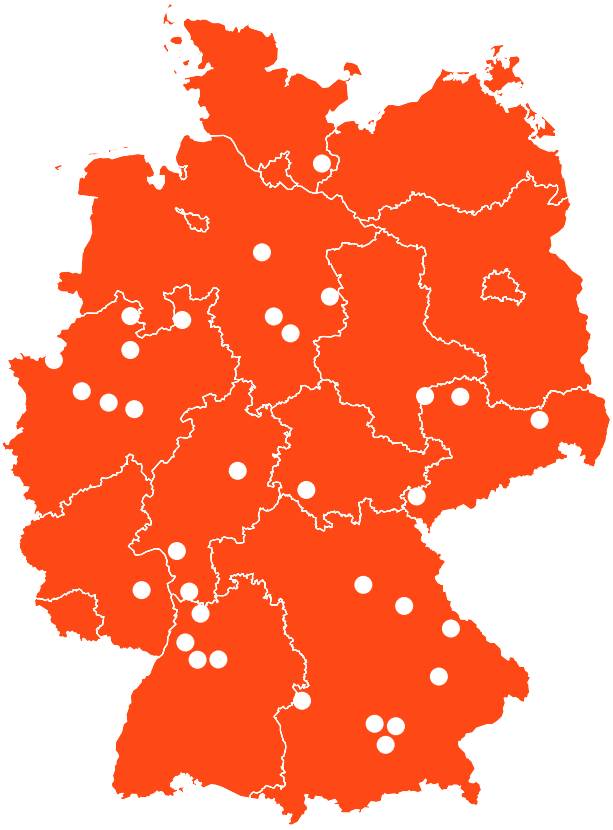
Optimal coordination of Takumi CNC machining centers and Heidenhain control systems ensures perfectly harmonized synergy at the human-machine interface. Takumi CNC supports our customers with specially trained technicians who keep abreast of the latest developments and are always standing by to offer competent, result-oriented assistance with your questions. Our immense performance potential and firm focus on result-oriented solutions form the foundation for the trust that our customers have in our technology, as demonstrated by longstanding partnerships and relationships with our customers.

Your demands, our solutions: The Takumi service pledge

At Takumi, a customer-support team numbering almost 100 staff members is standing by to provide you with effective assistance whenever you need it.

We remain close to our customers at every level – personal, technical and geographical – and we are unequivocally committed to joining you in extracting maximum quality and productivity from your Takumi. Our CNC technical specialists receive ongoing instruction including regular basic and advanced training courses at Heidenhain. To us, service means consistently focusing on our customers' requirements by finding fast and flexible solutions for their individual needs. As consistent reliability and unexcelled quality form the foundation of our firm's philosophy.

You order, and we deliver: Our Next-Day-Delivery Guarantee. In order to support our customers as they respond to the daily demands and challenges encountered as part of maintaining production, we guarantee complete availability of roughly 40,000 ready-for-delivery spare parts for Takumi machining centers. At our disposal is a super-modern and highly efficient spare parts depot housing an extensive product range embracing everything from high-performance spindles to tool changers You order it, we deliver it: Fast and uncomplicated.



Product overview and specifications

Designation	V12	V15	V18
Travel			
X axis (mm)	1,200	1,524	1,800
Y axis (mm)	660	762	850
Z axis (mm)	610	720	750
Operating range			
Spindle nose - Table (mm)	150 - 760	150 - 870	200 - 950
T-slots (number x width x interval) (mm)	5 x 18 mm x 100 mm	5 x 22 mm x 150 mm	5 x 22 mm x 150 mm
Machine table L x W (mm)	1,250 x 650	1,600 x 760	1,900 x 850
Table load (uniform) (mm)	1,200	1,500	2,000
Main spindle			
Spindle taper	SK40^{BigPlus}	SK40^{BigPlus}	SK40^{BigPlus}
Max. spindle speed (rpm)	12,000	12,000	12,000
Spindle power S1 / S6 (kW)	10 / 14	15 / 25	15 / 25
Spindle torque S1 / S6 (Nm)	63.7 / 89	95.5 / 159	95.5 / 159
Feed			
X / Y / Z-axis rapid traverse (m / min)	24 / 24 / 20	18 / 18 / 16	16 / 16 / 14
X / Y / Z axis cutting feed (m / min)	8,000	5,000	5,000
Tool changer			
Tool changer design	Arm	Arm	Arm
Magazine capacity	24	24	24
Max. tool diameter (mm)	80	76	76
Diameter with empty pockets (mm)	150	150	150
Max. tool length (mm)	300	265	265
Tool weight, max. (kg)	7	7	7
Other data			
Air supply (bar)	6	6	6
Electric power supply (kVA / A)	35 / 70	35 / 70	45 / 100
Machine weight (kg)	8,100	13,000	16,000
Required floor space (mm)*	5,418 x 3,786 x 3,092	7,000 x 5,600 x 3,256	7,500 x 5,600 x 3,230

*Notice: The specifications refer to the floor space with unrestricted access from all sides with the doors completely open. Floor space requirements can be lower subject to consultation.

You can find information on standard and optional equipment on pp. 32-33.

V 22	V 32	VC 0852	VC 1052	VC 1200
2,200	3,200	860	1,020	1,270
1,066	1,066	520	520	660
750	750	610	610	610
200 - 950	200 - 950	115 - 725	115 - 725	150 - 760
7 x 22 mm x 150 mm	7 x 22 mm x 150 mm	5 x 18 mm x 100 mm	5 x 18 mm x 100 mm	6 x 18 mm x 100 mm
2,200 x 1,025	3,200 x 1,025	1,000 x 520	1,160 x 520	1,500 x 660
3,000	4,500	500	750	1,360
SK 50	SK 50	SK40^{BigPlus} / BBT40	SK40^{BigPlus} / BBT40	SK40^{BigPlus} / BBT40
6,000	6,000	12,000	12,000	15,000
24 / 38	24 / 38	7.5 / 11.5	7.5 / 11.6	10 / 14
616 / 975	616 / 975	47.8 / 73.4	47.8 / 73.5	63.7 / 89.4
14 / 14 / 12	12 / 12 / 10	36 / 36 / 24	36 / 36 / 24	36 / 36 / 24
5,000	5,000	12,000	12,000	12,000
Arm	Arm	Arm	Arm	Arm
24	24	30	30	30
105	105	75	75	80
200	200	150	150	125
300	300	300	300	300
15	15	7	7	7
6	6	6	6	6
50 / 100	50 / 100	30 / 60	30 / 60	35 / 60
19,700	23,850	6,000	6,200	9,000
9,200 x 5,800 x 3,510	11,700 x 6,400 x 3,510	4,957 x 3,743 x 3,099	4,957 x 3,743 x 3,099	5,278 x 3,470 x 3,100

Product overview and specifications

Designation	V12	V15	V18
Standard			
[1] Depending on equipment specification	» Heidenhain TNC 620 control system » Belt-driven SK40[BigPlus] 12,000 rpm spindle » Chip flushing » Spindle cooler » Comprehensive work area encapsulation » Oil skimmer » Rinse and compressed-air gun » Chip conveyor and wagon » Manual pulse generator » Ethernet interface	» Heidenhain TNC 620 control system » Belt-driven SK40[BigPlus] 12,000 rpm spindle » Chip flushing » Spindle cooler » Comprehensive work area encapsulation » Oil skimmer » Rinse and compressed-air gun » Chip conveyor and wagon » Manual pulse generator » Ethernet interface	» Heidenhain TNC 620 control system » Belt-driven SK40[BigPlus] 12,000 rpm spindle » Chip flushing » Spindle cooler » Comprehensive work area encapsulation » Ball screw cooling system » Oil skimmer » Rinse and compressed-air gun » Chip conveyor and wagon » Manual pulse generator » Ethernet interface
Options			
	» SK50 6000 rpm spindle » Internal coolant supply through the spindle (CTS 30 bar) » Rotary table (4th / 5th axis) » Tool probe » Part probe » Programmable cooling air through spindle » Programmable external cooling air » Programmable oil mist lubrication » Oil mist separator » Scraper-type chip conveyor instead of hinged conveyor » Knoll production package » Bypass filter system » Rotoclear	» SK50 6000 rpm gear spindle » Power 25 kW, torque 640 Nm » Internal coolant supply through the spindle (CTS 30 bar) » Ball screw cooling system » Rotary table (4th / 5th axis) » Tool probe » Part probe » Programmable cooling air through spindle » Programmable external cooling air » Programmable oil -mist lubrication » Oil mist separator » Scraper-type chip conveyor » Knoll production package » Bypass filter system » Rotoclear	» SK50 6000 rpm spindle » Power 25 kW, torque 640 Nm » Internal coolant supply through the spindle (CTS 30 bar) » Rotary table (4th / 5th axis) » Tool probe » Part probe » Programmable cooling air through the spindle » Programmable external cooling air » Programmable oil mist lubrication » Oil mist separator » Scraper-type chip conveyor » Knoll production package » Bypass filter system » Rotoclear

V22/V32	VC0852/VC1052	VC1200
» Heidenhain TNC 620 control system » SK50 6000 rpm spindle » Chip flushing » Spindle cooler » Comprehensive work area encapsulation » Ball screw cooling system » Oil skimmer » Rinse and compressed-air gun » Chip conveyor and wagon » Manual pulse generator » Ethernet interface	» Heidenhain TNC 640 control system » Belt-driven SK40^{BigPlus} 12,000 rpm spindle » Chip flushing » Spindle cooler » Comprehensive work area encapsulation » Oil skimmer » Rinse and compressed-air gun » Chip conveyor and wagon » Manual pulse generator » Ethernet interface	» Heidenhain TNC 640 control system » Direct-drive 15,000 rpm SK40^{BigPlus} spindle » Chip flushing » Spindle cooler » Comprehensive work area encapsulation » Oil skimmer » Rinse and compressed-air gun » Chip conveyor and wagon » Manual pulse generator » Ethernet interface
» Internal coolant feed through the spindle (CTS 30 bar) » Rotary table (4th/5th axis) » Tool probe » Part probe » Programmable cooling air through the spindle » Programmable external cooling air » Programmable oil mist lubrication » Oil mist separator » Scraper-type chip conveyor » Knoll production package » Bypass filter system » Rotoclear	» Direct-drive 15,000 rpm SK40^{BigPlus} spindle » Programmable external cooling air » Internal coolant feed through the spindle (CTS 30 bar) » Rotary table (4th/5th axis) » Tool probe » Part probe » Programmable cooling air through spindle » Programmable oil mist lubrication » Oil mist separator » Scraper-type chip conveyor » Knoll production package » Bypass filter system » Rotoclear	» Internal coolant supply through the spindle (CTS 30 bar) » Programmable external cooling air » Rotary table (4th/5th axis) » Tool probe » Part probe » Programmable cooling air through spindle » Programmable oil mist lubrication » Oil mist separator » Scraper-type chip conveyor » Knoll production package » Bypass filter system » Rotoclear

匠

Commitment to quality and
precision in the Japanese mold.

HURCO GmbH
Werkzeugmaschinen,
Vertrieb und Service
Gewerbestraße 5 a
85652 Pliening / Germany
Phone: +49 (0)89 90 50 94 0
Fax: +49 (0)89 90 50 94 90
e-mail: info@hurco.de
Internet: www.hurco.de

Site of commercial registry:
Court of jurisdiction Munich HRB 67 903
Value-added tax ID No.:
DE 129 378 783
Responsible for contents:
HURCO GmbH, represented by
Managing Director Michael Auer