



DVX Series

CNC Bridge Dual Column Machining Center
MODELS AVAILABLE: DVX 1400/DVX 1700/DVX 1900/DVX 2100

Crafting innovation on a grand scale.

For 34 years, Racer Machinery International has been a wholly Canadian-owned company standing tall as a pillar of innovation and excellence in manufacturing. We're more than just a manufacturer of machines; we're a team dedicated to building a stronger future for the industry as a whole.

Trusted Partner, Proven Track Record

Racer's expertise spans across a wide range of industries. From the classic engine lathe to the cutting-edge world of additive manufacturing, we deliver state-of-the-art solutions that cater to the specific needs of our clients. Our diverse clientele includes those in the automotive, aerospace, defense, and academic sectors, among many others. This versatility is a testament to our adaptability and commitment to staying at the forefront of technological advancements. Our success in supplying critical systems to esteemed institutions like the Canadian Armed Forces and the U.S. Navy underlines our unwavering commitment to reliability.

Innovation at Our Core

At Racer, a core value is prioritizing research and development (R&D). We understand that continuous investment in innovation is crucial to staying ahead of the curve. Our team is constantly pushing the boundaries of advanced manufacturing technologies, ensuring that the solutions we develop meet the evolving demands of various sectors. This dedication to R&D guarantees that our clients remain competitive in their respective fields, equipped with the latest and most effective machinery available.

Growth Through Collaboration

As a proud Canadian small and medium enterprise (SME), Racer actively supports domestic supplier development. We believe in fostering a strong and collaborative ecosystem within Canada's manufacturing landscape.

This commitment extends to fostering university R&D alliances, where we work alongside academic institutions to push the boundaries of what's possible.

Diversity and inclusion are also core values at Racer. We champion these principles within our team, promoting a skilled and future-proof workforce that reflects the rich diversity of Canada. Additionally, we actively support Industrial Technology Benefits (ITBs), strengthening the Canadian manufacturing ecosystem as a whole.

When it comes to dependable and high-performance machinery, Racer is a trusted name.

A Force for the Future

Racer's commitment to growth is evident in our ongoing facility expansion. This massive project encompasses a staggering 40,000+ square feet, and upon completion, will create a hub for innovation and production excellence.

The expansion will not only benefit Racer itself but also contribute significantly to the economic growth of our communities. By creating new Canadian jobs and fostering partnerships with local suppliers, the positive impact will be far-reaching.

Finally, Racer plays a critical role in supporting Canada's Key Industrial Capabilities (KICs) for emerging technologies. Our expertise in advanced materials and production processes aligns perfectly with the needs of critical industries like aerospace, defense, and shipbuilding. By supporting these KICs, Racer ensures that Canada remains a leader in the ever-evolving landscape of advanced manufacturing.

Canada invests \$1.4 million in advanced CNC solutions

Cambridge-based Racer Machinery International Inc. (RACER) is on the cusp of an exciting development in its journey within the aerospace industry.

The Federal Economic Development Agency for Southern Ontario (FedDev Ontario) has announced a substantial investment of nearly \$1.4 million in RACER. This investment is poised to enhance the company's productivity, global competitiveness, and pave the way for over 30 new jobs.

It's a significant move that reaffirms the company's commitment to innovation and growth within the global supply chain.

FedDev Ontario's Support for Racer Machinery International

On October 13, 2022, in a press release from Cambridge, Ontario, Valerie Bradford, Member of Parliament for Kitchener South–Hespeler, made a significant announcement on behalf of the Honourable Filomena Tassi, Minister



responsible for the Federal Economic Development Agency for Southern Ontario. The government has allocated nearly \$1.4 million in support of Racer Machinery International Inc., a family-owned aerospace manufacturer located in Cambridge, Ontario.

With this repayable investment, the company is set to revolutionize its manufacturing processes, reducing

material waste and ultimately boosting productivity. As a result, this project will create and sustain up to 31 jobs and increase annual domestic and international sales by as much as \$7 million.

This investment is a testament to the ongoing collaboration between government, businesses, and the aerospace sector in southern Ontario.



“Today’s investment in Racer Machinery International Inc. is great news for Cambridge and Canada’s aerospace sector. The project will help the company boost global competitiveness and support 31 local jobs while contributing to the growth of the aerospace sector here in southern Ontario.”

– Valerie Bradford, Member of Parliament for Kitchener South–Hespeler.

Skilled workforce and industry expertise



Our industry experience extends beyond mere project execution – it encompasses a deep understanding of market trends, regulatory requirements, and customer needs.

By staying abreast of industry developments and actively engaging with clients, suppliers, and industry stakeholders, we continuously adapt and evolve to deliver cutting-edge solutions that drive our clients' success.

Skilled Workforce

At Racer Machinery International, our greatest asset is our skilled workforce, whose expertise and dedication drive our success in meeting and exceeding production demands. Our team members (50 in Canada, and 120 internationally) possess a wealth of knowledge and experience, honed through years of hands-on training and a commitment to excellence.

Whether it's operating cutting-edge machinery or troubleshooting complex production challenges, our workforce demonstrates unwavering professionalism and proficiency, ensuring that every task is completed to the highest standards.

Industry Experience

In addition to our skilled workforce, Racer boasts extensive industry experience that sets us apart as a leader in automotive manufacturing solutions. Over the years, we have forged strong partnerships and executed successful projects across the automotive sector, delivering innovative solutions that enhance efficiency, quality, and profitability for our clients.

From designing custom machining solutions to optimizing production workflows, our track record speaks volumes about our ability to understand and address the unique challenges of the automotive industry.

Strength in meeting comprehensive support demands

Beyond repairs, we offer comprehensive solutions to empower your team.

- Expert programming services to optimize your machines.
- Comprehensive machine service and maintenance plans.
- Operator training to maximize machine efficiency and safety.
- Customer training to keep your team informed and empowered.
- Maximize uptime with expert troubleshooting and repairs.
- Prevent breakdowns with proactive maintenance plans.
- Boost productivity with machine optimization and performance tuning.
- Eliminate programming errors with our skilled technicians.
- Get the parts you need fast with our extensive inventory.

RACER provides the highest level of training service, and support in the industry. Training includes three days of programming/applications training at a local university.

Additionally, the customer's maintenance personnel are invited for the last week of assembly and run off at our plant. After installation at the customer's facility,

RACER service personnel and engineers, work with three groups of customer personnel, namely, maintenance, operators and highlevel engineers to ensure understanding of the equipment to make in house support as effective as possible.



Customer Support



Installation



Training



Applications

Technical components and features

The DVX series Double Column Machining Center stands out as a robust fusion of heavy cutting and high-speed machining capabilities, rendering it an optimal choice for precision machining of exceptionally heavy parts. Its stable structure, meticulously crafted from premium Meehanite and ductile iron, ensures durability and reliability. The specially engineered machine structure not only ensures enduring accuracy but also enhances the overall performance.

With a direct-drive high-speed spindle and a high/low speed gearbox, the DVX series is custom-built to cater to the exacting requirements of high-speed, high-precision machining.

Ideal Applications

- + Aerospace
- + Automotive
- + Defense

Key Specifications	
X-axis travel	2200/3200/4200 mm
Table size	4200 x 1700 mm
Spindle power	15/18.5 kW
ATC capacity	32 tools
Accuracy	±0.005 mm

Standard Accessories

- Air blast through spindle
- Air blast for workpiece (nose)
- Automatic lubrication system
- Working lamp
- Operation status light
- Screw type chip conveyors
- Chain type 32-tool ATC
- Gear head
- Cooling System
- Z axis pneumatic balance system
- Air gun / water gun
- MPG handwheel
- Heat exchanger
- RS-232 Interface
- Rigid tapping
- Spindle oil cooler
- Tool box
- Leveling bolts and pads
- Operation and programming manual
- Semi-full splash safety guard

Optional Accessories

- Z-travel: 1100mm
- Extend column: 300mm
- Full Splash Guard
- Coolant through Spindle
- Auto workpiece measurement
- Manual Universal Head (90°)
- Auto Universal Head (90°)
- Rotary table
- Adjusting Tools and box
- Foundation bolt
- Linear Scales
- Auto tool length measurement

Technical components and features

Roller type linear ways on three axes

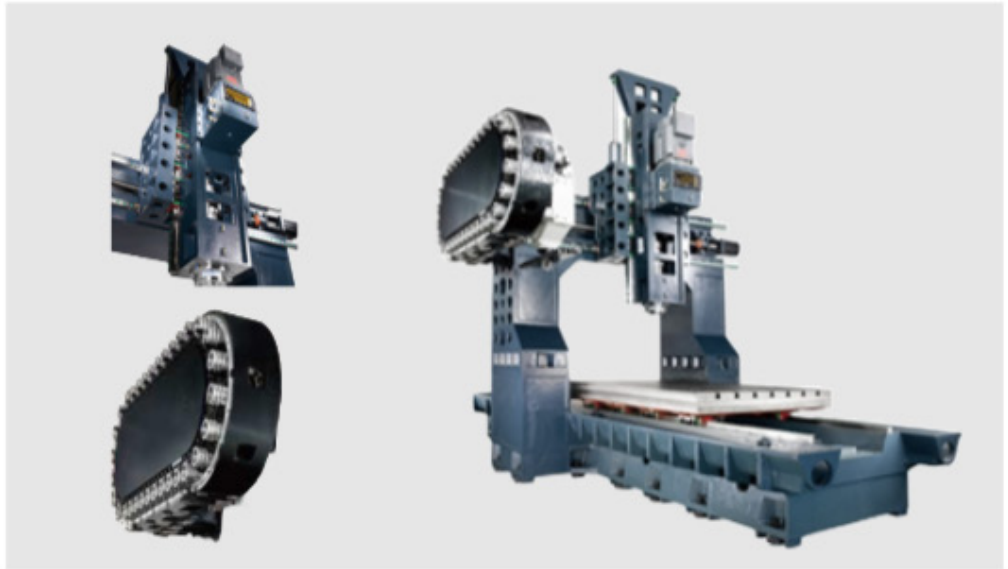
- High-quality cast iron construction with tempering treatment.
- Box-type structural parts with rib reinforcement for strength.
- Extra-heavy base for stability under heavy loads.
- Roller-type linear ways on X, Y, Z axes.

Rigid spindle head

- The spindle head is a box-type construction that increases stability when performing heavy loading.
- The linear ways on Z axis are specially designed with side layout to upgrade rigidity of the spindle head.

32 Tools chain type magazine (standard)

- The magazine is driven by a precision cam, featuring fast and accurate tool positioning.
- Tool selection is bi-directional and random for fast tool change.
- The magazine accepts ISO 50 tool shank.



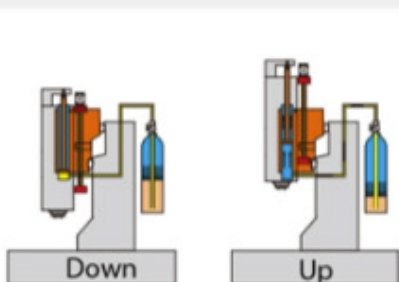
- The magazine is separately mounted from the cutting area combined with a protection door to prevent tools contamination from chips or coolant.

Two screw type chip conveyor on base

There are two screw type chip conveyors provided at right and left side of the base. During cutting, the chips are delivered through these chip augers to a chip conveyor for exhausting chips outside the machine.

Gearbox

- This spindle running is transmitted through a gear box, making the machine excellent for heavy cutting applications.
- Wide spindle speed range from 10 to 6,000 rpm permit the machine to perform heavy cutting and fine finishing.
- All gears and bearings in the gear box are oil-bath lubricated.

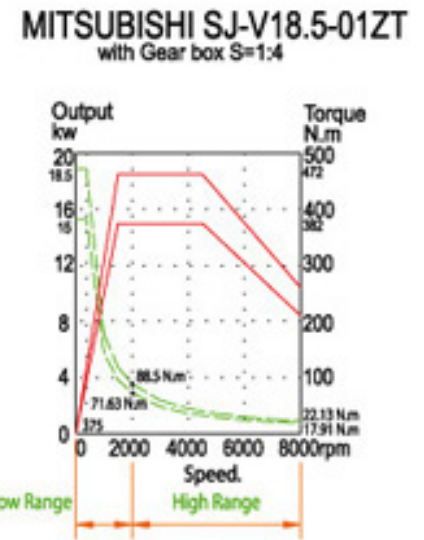
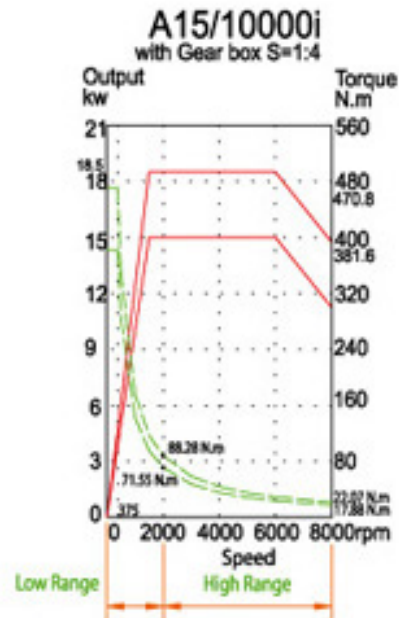
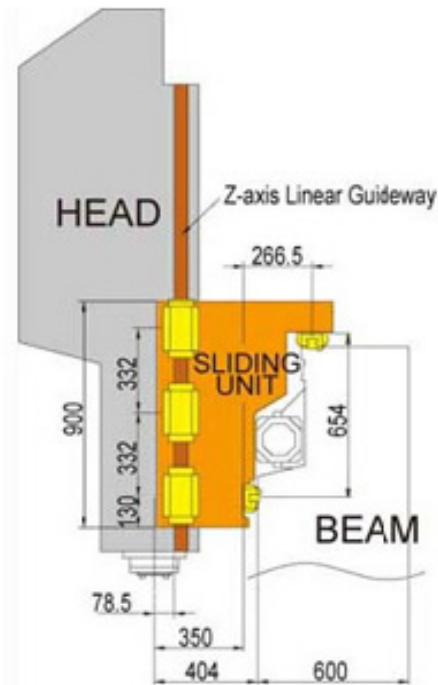


Pneumatic balance on Z-axis

The pneumatic counter-balance system effectively offsets the movement along the Z-axis.

Moreover, the air circuit incorporates an accumulator to ensure swift and consistent Z-axis motion.

Technical components and features



1. Nitrogen canister
2. Laser inspection
3. Right angle text on X and Y axes
4. Chain type chip conveyor (optional)
5. Laser inspection

Providing solutions across diverse industries

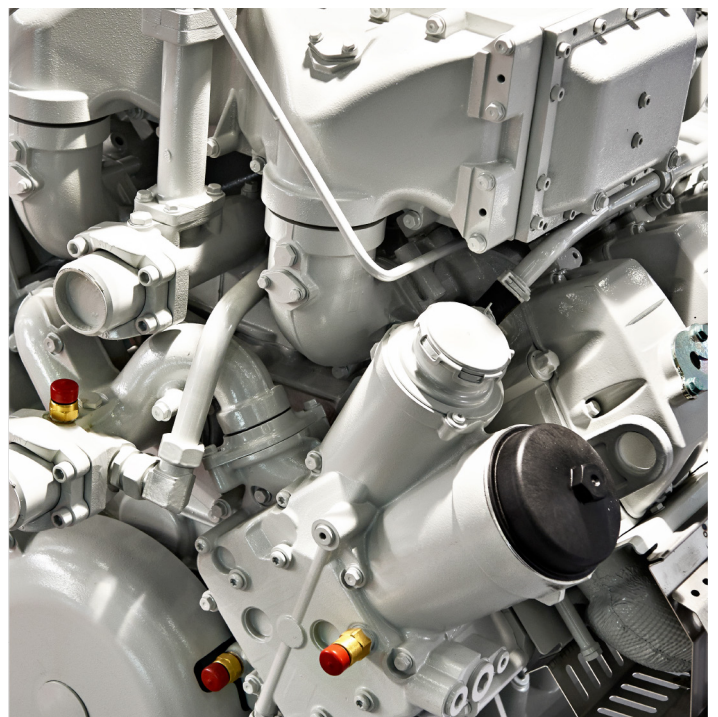


Automotive Industry

Racer Machinery International is a leading provider of precision CNC machine tools, serving a wide range of industries, including the automotive sector. The company's machines are ideal for various applications in the automotive manufacturing process.

Racer's CNC machines are used to produce a variety of automotive components, including:

- Engine parts: Cylinder heads, blocks, crankshafts, camshafts, pistons, and connecting rods
- Transmission components: Gears, shafts, housings, and differentials
- Suspension parts: Control arms, ball joints, steering knuckles, and shock absorbers
- Body parts: Doors, hoods, fenders, and other exterior components



Providing solutions across diverse industries



Armed Forces & Defense Industry

Racer Machinery International has proudly served as a critical supplier to the U.S. Navy's nuclear shipbuilding enterprise for over six decades. They've played a vital role not just in recent years, but throughout the history of modern naval lathe technology.

Their commitment to providing Standard Modern lathes has ensured the continued success of American shipbuilding efforts, from the mightiest nuclear carriers to essential supply vessels.

In addition:

- Weapons components: Barrels, receivers, triggers, and other firearm parts
- Naval equipment: Components for ships, submarines, and other naval vessels

Providing solutions across diverse industries



Aerospace Industry

Racer Machinery International is a leading provider of precision CNC machine tools, serving a wide range of industries, including the aerospace sector. The company's machines are ideal for various applications in the aerospace manufacturing process.

Racer's CNC machines are used to produce a variety of aerospace components, including:

- Aircraft parts: Fuselage sections, wings, tail assemblies, landing gear components, and engine parts
- Rocket components: Motor cases, nozzles, and structural components
- Satellite components: Antennas, solar panels, and structural elements

The future of machining is collaborative

Command your machines with confidence.

At Racer Machinery International, we understand the colossal impact of collaboration. That's why we've strategically aligned ourselves with industry titans – Siemens and FANUC – to forge a powerhouse of CNC control for our machines.

FANUC

FANUC elevates your machining game with the powerful Series 0i-F CNC, a versatile workhorse for diverse applications.

Master Complex Machining: The 0i-F boasts increased control with more axes and program paths, allowing you to conquer intricate parts and multi-tasking workflows.

Boost Efficiency: High-speed auxiliary functions and an expanded standard feature set streamline your operation, maximizing productivity and minimizing downtime.

Effortless User Experience: The operator-friendly design features a large 15-inch display and a familiar QWERTY keyboard, minimizing training time and maximizing comfort.

SIEMENS

Siemens, a global leader in automation and digitalization, brings cutting-edge control technology to the table. Their innovative solutions seamlessly integrate with our machines, prioritizing user-friendly interfaces and robust capabilities to tackle any machining challenge.

Siemens offers a dynamic CNC duo: SINUMERIK ONE and 821D. These advanced control systems cater to various applications, ensuring optimal performance for your specific requirements.

SINUMERIK ONE- The next-generation powerhouse, ideal for complex, multi-axis machining and future-proof scalability.

Digital Native: Optimizes production with real-time data analysis for Industry 4.0 integration.

Advanced Performance: Delivers exceptional precision with the PPU 1740 control unit. Modular

Design: Easily adapts to changing needs with customizable axes, spindles, and software.

SINUMERIK 821D- A versatile option for basic to mid-complexity machining tasks.

User-Friendly: The intuitive interface simplifies operation and minimizes training time.

Reliable Performance: Delivers consistent accuracy and control for various applications.

Phantom Machine Technology

Racer Machinery International Inc. and its team of innovative engineers have developed a groundbreaking technology that is revolutionizing the machine tool industry. Phantom Machine Technology™ represents a significant advancement in every aspect of machine tool production, from manufacturing processes to end-user operations.

This patented process revolutionizes manufacturing by reducing pollutants, creating a safer and healthier workplace. Machine operators also benefit from significantly lower noise levels, reducing health hazards associated with constant exposure to loud equipment.

Machines equipped with Phantom Machine Technology™ deliver exceptional results. Cutting times are drastically reduced, tooling lasts longer, and setup is incredibly easy. The technology's versatility allows for customization to meet your specific needs. Our machines are designed for minimal maintenance, reducing downtime and maximizing productivity. This translates to lower operating costs and increased efficiency.

Phantom Machine Technology™ ensures exceptional precision and accuracy in your manufacturing processes. This means you can produce high-quality components that meet even the most stringent standards.

Our machines are built to last, designed to withstand the rigors of demanding industrial environments. This durability translates to long-term reliability and minimal downtime. Our team of experts can tailor our machines to meet your specific needs and requirements. Whether you need a machine for high-volume production or a specialized application, we can provide a solution that fits your exact needs.

Benefit from our dedicated customer service and technical support team, available to assist you throughout your partnership. Our team is committed to providing prompt and efficient support, ensuring that you get the most out of your investment in Racer Machinery International.



Key Features of Phantom Machine Technology



Environmentally Friendly

The manufacturing process behind the weldment frame generates less waste compared to traditional casting methods.



Lower Cost

The innovative weldment frame design offers a more cost-effective manufacturing alternative to cast iron frames.



Vibration Dampening

The weldment construction effectively absorbs vibrations that can mar surface finishes and reduce tool life.

Travel	DVX 1400 Series
X TRAVEL	1700/2200/3200/4200
Y TRAVEL	1400
Z TRAVEL	900
SPINDLE NOSE TO TABLE SURFACE (mm)	160~1060/110~1010
SPINDLE CENTER TO COLUMN (mm)	404
DISTANCE BETWEEN COLUMN (mm)	1400
Table	
TABLE SIZE (mm)	1700x1200/2200x1200/3200x1200/4200x1200
T-SLOT (Width x Distance x Number mm)	22x150x7
MAX. TABLE LOAD (Kgs)	5000/8000
Spindle	
TOOL SHANK & PULL STUD	CAT 50
SPINDLE INNER DIAMETER (mm)	Ø100
SPINDLE SPEED (rpm) Gear	8000
DRAW BAR FORCE (Kgf)	1800
MAIN MOTOR (con/30min kW)	15/18.5
Axis Servo Motor	
RAPID FEED RATE (X/Y/Z m/min)	20/20/20,16/20/20,12/20/20
FEED RATE (X/Y/Z mm/min)	10000
FANUC kW	α30/3000i 7.0
SIEMENS kW	1FK7 105 8.2
Auto Tool Changer	
ATC TYPE	DISK/CHAIN
CAM TYPE	ARM
TOOL SELECTION (Bi-direction)	RANDOM
TOOL STORAGE CAPACITY (PCs)	24/32
MAX. TOOL DIAMETER (mm)	Ø115/Ø127 (Ø160/Ø250)
MAX. TOOL LENGTH (mm)	350
MAX. TOOL WEIGHT (Kg)	20
Miscellaneous	
AIR REQUIREMENT (Kg/cm ²)	6
VOLTAGE	220
POWER REQUIREMENT (KVA)	50
COOLANT TANK CAPACITY (L)	900
MACHINE WEIGHT (KGs)	15500-18000
MACHINE HEIGHT (mm)	4500
FLOOR SPACE (L x W mm)	5800x4150/6090x4150/8130x4150/10310x4150

Travel	DVX 1700 Series
X TRAVEL	2200/3200/4200
Y TRAVEL	1700
Z TRAVEL	900
SPINDLE NOSE TO TABLE SURFACE (mm)	160~1060/110~1010
SPINDLE CENTER TO COLUMN (mm)	404
DISTANCE BETWEEN COLUMN (mm)	1900
Table	
TABLE SIZE (mm)	2200x1500/3200x1500/4200x1500
T-SLOT (Width x Distance x Number mm)	22x150x9
MAX. TABLE LOAD (Kgs)	8000/10000/12000
Spindle	
TOOL SHANK & PULL STUD	CAT 50
SPINDLE INNER DIAMETER (mm)	Ø100
SPINDLE SPEED (rpm) Gear	8000
DRAW BAR FORCE (Kgf)	1800
MAIN MOTOR (con/30min kW)	15/18.5
Axis Servo Motor	
RAPID FEED RATE (X/Y/Z m/min)	16/16/20,16/16/20,12/16/20
FEED RATE (X/Y/Z mm/min)	10000
FANUC kW	α30/3000i 7.0
SIEMENS kW	1FK7 105 8.2
Auto Tool Changer	
ATC TYPE	DISK/CHAIN
CAM TYPE	ARM
TOOL SELECTION (Bi-direction)	RANDOM
TOOL STORAGE CAPACITY (PCs)	24/32
MAX. TOOL DIAMETER (mm)	Ø115/Ø127 (Ø160/Ø250)
MAX. TOOL LENGTH (mm)	350
MAX. TOOL WEIGHT (Kg)	20
Miscellaneous	
AIR REQUIREMENT (Kg/cm ²)	6
VOLTAGE	220
POWER REQUIREMENT (KVA)	50
COOLANT TANK CAPACITY (L)	900
MACHINE WEIGHT (KGs)	21000-24000
MACHINE HEIGHT (mm)	4500
FLOOR SPACE (L x W mm)	6090x5300/8130x5300/10310x5300

Travel	DVX 1900 Series
X TRAVEL	2200/3200/4200
Y TRAVEL	1900
Z TRAVEL	900
SPINDLE NOSE TO TABLE SURFACE (mm)	160~1060/110~1010
SPINDLE CENTER TO COLUMN (mm)	404
DISTANCE BETWEEN COLUMN (mm)	1900
Table	
TABLE SIZE (mm)	2200x1700/3200x1700/4200x1700
T-SLOT (Width x Distance x Number mm)	22x150x11
MAX. TABLE LOAD (Kgs)	8000/10000/12000
Spindle	
TOOL SHANK & PULL STUD	CAT 50
SPINDLE INNER DIAMETER (mm)	Ø100
SPINDLE SPEED (rpm) Gear	8000
DRAW BAR FORCE (Kgf)	1800
MAIN MOTOR (con/30min kW)	15/18.5
Axis Servo Motor	
RAPID FEED RATE (X/Y/Z m/min)	12/16/20,12/16/20,10/16/20
FEED RATE (X/Y/Z mm/min)	10000
FANUC kW	α30/3000i 7.0
SIEMENS kW	1FK7 105 8.2
Auto Tool Changer	
ATC TYPE	DISK/CHAIN
CAM TYPE	ARM
TOOL SELECTION (Bi-direction)	RANDOM
TOOL STORAGE CAPACITY (PCs)	24/32
MAX. TOOL DIAMETER (mm)	Ø115/Ø127 (Ø160/Ø250)
MAX. TOOL LENGTH (mm)	350
MAX. TOOL WEIGHT (Kg)	20
Miscellaneous	
AIR REQUIREMENT (Kg/cm ²)	6
VOLTAGE	220
POWER REQUIREMENT (KVA)	50
COOLANT TANK CAPACITY (L)	900
MACHINE WEIGHT (KGs)	22000-25000
MACHINE HEIGHT (mm)	4500
FLOOR SPACE (L x W mm)	6090x5300/8130x5300/10310x5300

Travel	DVX 2100 Series
X TRAVEL	2200/3200/4200
Y TRAVEL	2100
Z TRAVEL	900
SPINDLE NOSE TO TABLE SURFACE (mm)	160~1060/110~1010
SPINDLE CENTER TO COLUMN (mm)	404
DISTANCE BETWEEN COLUMN (mm)	2100
Table	
TABLE SIZE (mm)	2200x1700/3200x1700/4200x1700
T-SLOT (Width x Distance x Number mm)	22x150x11
MAX. TABLE LOAD (Kgs)	8000/10000/12000
Spindle	
TOOL SHANK & PULL STUD	CAT 50
SPINDLE INNER DIAMETER (mm)	Ø100
SPINDLE SPEED (rpm) Gear	8000
DRAW BAR FORCE (Kgf)	1800
MAIN MOTOR (con/30min kW)	15/18.5
Axis Servo Motor	
RAPID FEED RATE (X/Y/Z m/min)	12/16/20,12/16/20,10/16/20
FEED RATE (X/Y/Z mm/min)	10000
FANUC kW	α30/3000i 7.0
SIEMENS kW	1FK7 105 8.2
Auto Tool Changer	
ATC TYPE	DISK/CHAIN
CAM TYPE	ARM
TOOL SELECTION (Bi-direction)	RANDOM
TOOL STORAGE CAPACITY (PCs)	24/32
MAX. TOOL DIAMETER (mm)	Ø115/Ø127 (Ø160/Ø250)
MAX. TOOL LENGTH (mm)	350
MAX. TOOL WEIGHT (Kg)	20
Miscellaneous	
AIR REQUIREMENT (Kg/cm ²)	6
VOLTAGE	220
POWER REQUIREMENT (KVA)	50
COOLANT TANK CAPACITY (L)	900
MACHINE WEIGHT (KGs)	23500-25500
MACHINE HEIGHT (mm)	4500
FLOOR SPACE (L x W mm)	6090x5300/8130x5300/10310x5300

Get in Touch.



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