ISO 9001:2000 SGS

UKAS QUALITY MANAGEMENT 005

KEY to productivity

VTL Series

You Ji Machine Industrial Company Limited

CNC Vertical Turning Center

YOU JI

MACHINE IND. CO., LTD.

No.92, Huanqiu Rd., Zhuyuan Vil.,
Luzhu Dist., Kaohsiung City 82142, Taiwan
Tel: 886-7-695-2669
Fax: 886-7-695-3301
Email：youji@ms15.hinet.net

Distributor

2018.06
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www.youji.com

VTL Series
CNC Vertical Turning Center

▲ Double column vertical turning center

▲ VTL1200ATC+C vertical turning center

▲ Full enclosure guarding

You Ji Machine Industrial Company Limited

With over 40 years experience, You Ji has obtained customers' support in design and quality of machine.There are many machines to meet customers' different needs. Table diameter from Ø200 to Ø8000mm. You Ji is the first machine manufacturer to have passed CE and EMC and to have begun sales in the European market, and is the biggest vertical lathe and floor borer manufacturer in Taiwan. The cooperation between You Ji and other advanced machine manufacturers helps to upgrade the quality of You Ji products and provide customers the best and fastest service in the business.

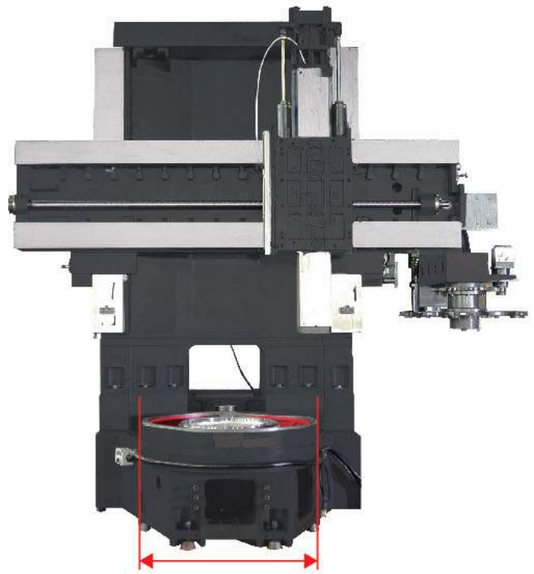
Machine Features

VTL1600ATC+C-I-2R-APC

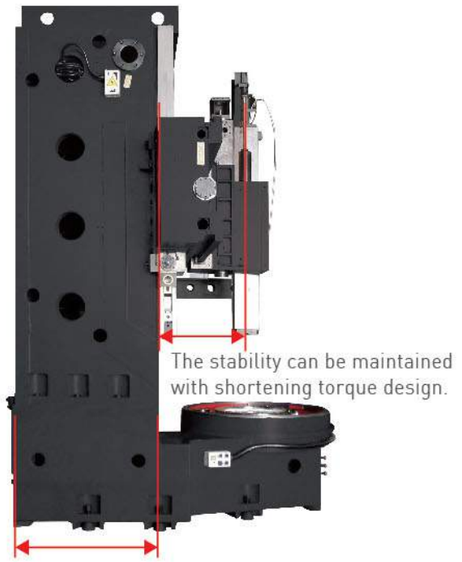
- APC : Automatic Pallet Changer (1000-2500 upward)
- 2R : Double RAM (1600 and upward)
- I : Column height extension
- II : Column height extension
- ATC : Automatic Tool Changer
- ATC+C : Automatic Tool Changer + CF axis Function
- Machine Model (Diameter 1000-4500mm)
- Vertical Turning Lathe (Symmetric design for column & base)

High Rigidity Structure

- VTL superior structure with symmetrical column design and increased thickness, provides 50% more rigidity for outstanding cutting performance.
- Distance between centerline of Z axis to surface of cross rail is shortened to increase machining stability.



Superior rigid machine base

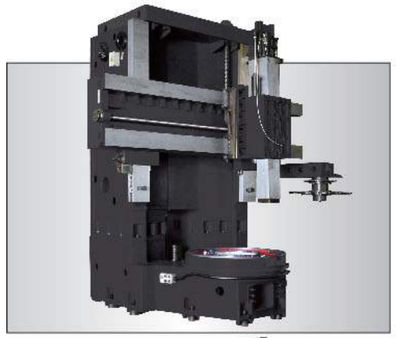


The stability can be maintained with shortening torque design.

Thickness increased to guarantee structural rigidity.

ONE Piece Column(VTL1000-2500)

- The machine column and base are manufactured from Meehanite castings, received a full heat treatment and full a stress-relieved process.This design and manufacturing process gives the best rigidity and ensures high machine stability.
- The heavily walled and multi ribbed design minimizes the thermal distortion, withstanding static and dynamic torsion, ensures a high rigid and stable machine assembly.



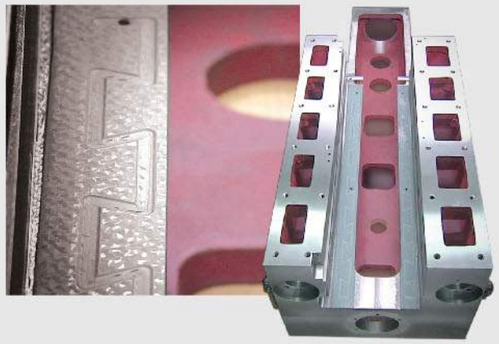
Double Column Structure(VTL3000-4500)

- The MEEHANITE casting bed and double column design provide solid support and anti-vibration solution to ensure ultimate dynamic accuracy and stability.
- Wide span column structure provides optimal column rigidity and stability.The wide span design retains stability and machining accuracy and increase the effective machining range.

High stability architecture

Machine Base and Column

The high rigidity box type symmetric column structure is fitted to machine base. The he-a vily walled and multi ribbed design minimizes the thermal distortion, withstanding static and dynamic torsion, ensures a high rigid and stable machine assembly.

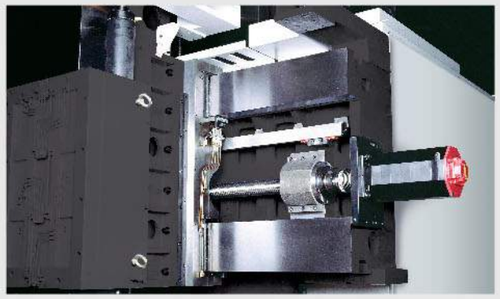


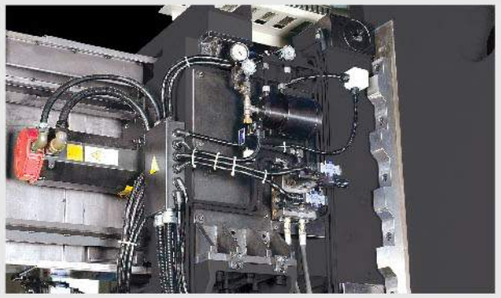
Box slideways structure

Z axis box guide way is induction hardened and precision ground, the mating sliding faces are Turcite B coated allowing slide assemblies to move with ease and low friction.

X&Z Axes Box Guideways

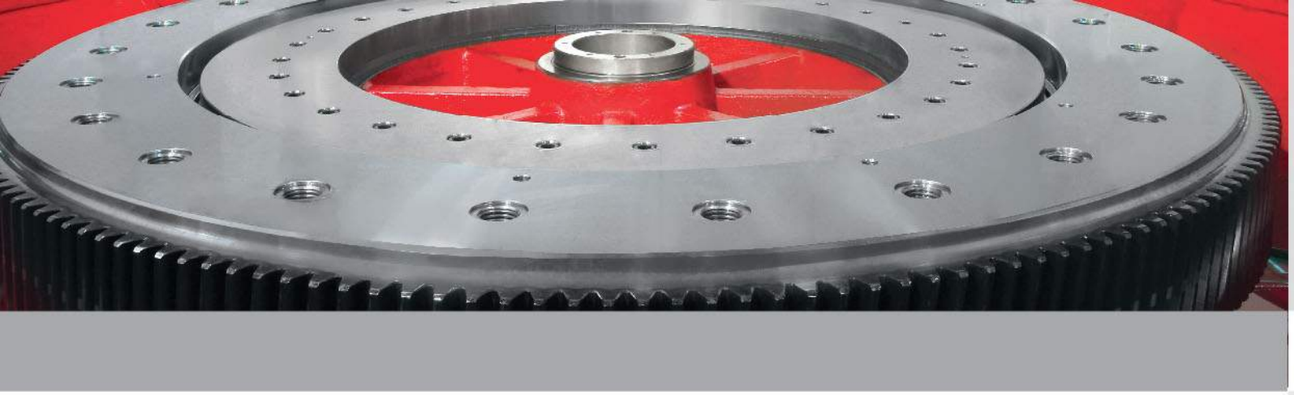
- The X and Z axes box guideways are induction hardened and precision ground, the mating sliding faces are Turcite-B coated allowing slide assemblies to move with ease and low friction.
- The slideway lubrication is controlled by an automatic central lube feeding system. The volume and timing of lubrication is controlled by CNC and enhances the machine accuracy and life.





Cross-rail

The cross-rail can move up and down in steps of every 200 mm which is designed for accommodating different height of workpieces. Cross-rail movement can be commanded via M-code, and positioned with 4 hydraulic cylinders. Sturdy and precise clamping leads to excellent machining results.

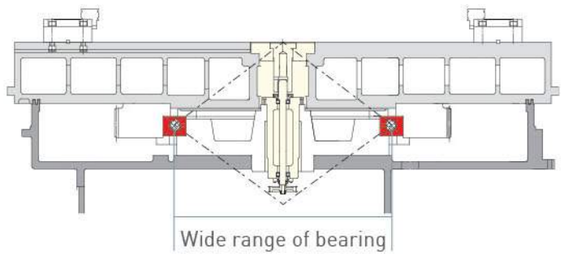


High Efficiency Transmission

High precision spindle

Cross roller bearing (standard)

- Distance of working point is increased with excellent spindle supporting force to bear the loads and moments in all directions for longer heavy cutting.
- The spindle structure is designed to optimize heat dissipation to effectively controlling thermal deformation, provides high accuracy and excellent reliability for longer bearing life.
- Nylon separators feature low inertia, ensuring the machine operation under low running torque, highlighted the lowest energy consumption.
- Two rows of rollers-cross roller bearing design consequently less bearing wear and heat generation, easy to control quality and manufacturing.



Radial load : ★★★★ Load capacity : ★★★★
Axial load : ★★★★★ Service life : ★★★★

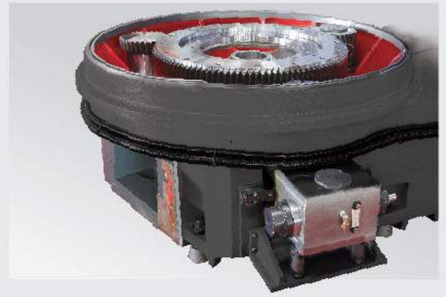
High Precision Driven Gear

High grade nickel-chrome alloy steel is used for the driven gear. Correct heat treatment and accurate grinding allows it be classified as first class precision in the Japanese JIS 1 standards.

CF axis

VTL1000-2500ATC+C Series

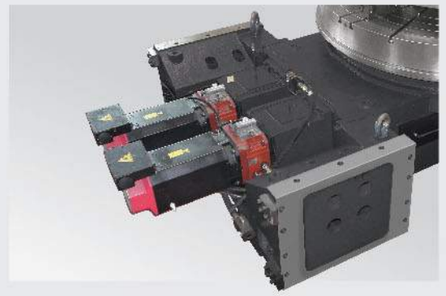
High precision CF axis delivers extraordinary performance on positioning accuracy, integrating the live spindle to perform precise drilling, tapping, milling operations. Most operations can be done without resetting, therefore reduces non-cutting time and saves labor cost.



CS axis

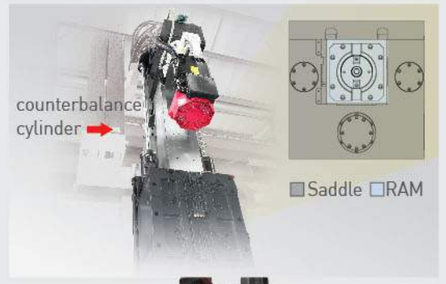
VTL3000-4500ATC+C Series(VTL2000-2500ATC+C Series Option)

Special dual-drive spindle system with CS axis indexing mechanism enhances spindle output torque and eliminates mechanical transmission backlash, the repeatability of indexing accuracy of the CS axis is 5 seconds, positioning accuracy 10 seconds.



Z axis configuration

Z axis uses a high precision ball screw, and is driven directly by AC servo motor, the counterbalance cylinder system ensures high accuracy machining results. The perfectly balanced mass enhances the structural rigidness and reliability.



Z axis-Dual Servo Motor Driven RAM (Option)

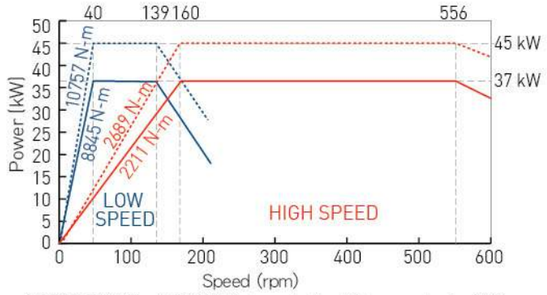
VTL2000-4500 Series

- The Z axis is driven by two servo motor and high precision ball screws. The robust structure leads to rigid cutting and precision performance that heavy duty cutting demands.
- The ram itself is a 280 mm square casting. The casted and hardened steel construction provides the stiffness for heavy duty operations, while permitting the turning of smaller bores, eliminating the added expense of boring bars in many instances
- Obviously enhancing curve profile machining accuracy, improve surface cutting performance and provides best cutting feedrate & cutting force.

Torque Chart (FANUC Spindle Motor)

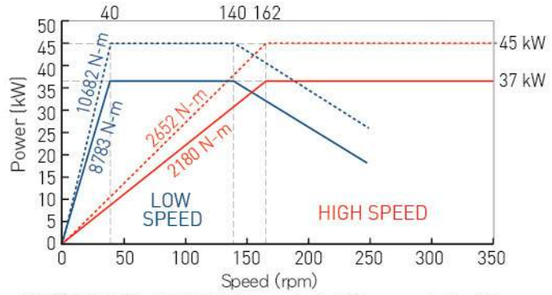
30 Min operation zone — Low gear
Continuous operation zone — High gear

1R series



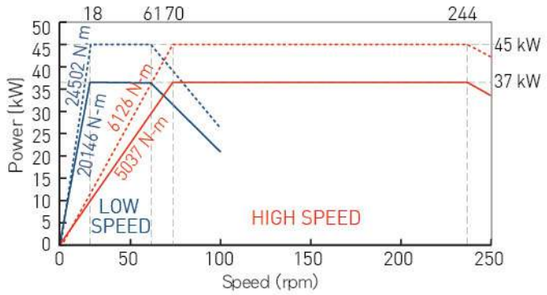
(MOTOR: FANUC αil40/7000) High speed ratio: 7.2 Low speed ratio: 28.8

VTL1000ATC Series



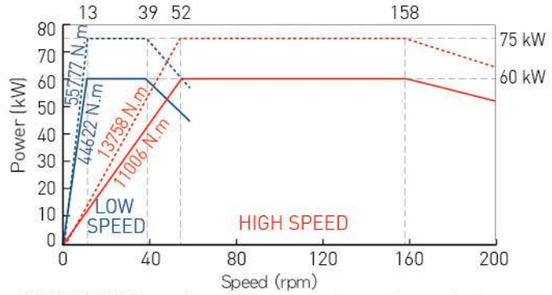
(MOTOR: FANUC αil40/7000) High speed ratio: 7.1 Low speed ratio: 28.6

VTL1200ATC Series



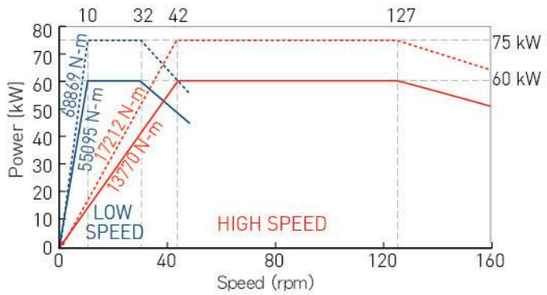
(MOTOR: FANUC αil40/7000) High speed ratio: 16.4 Low speed ratio: 65.6

VTL1600ATC Series



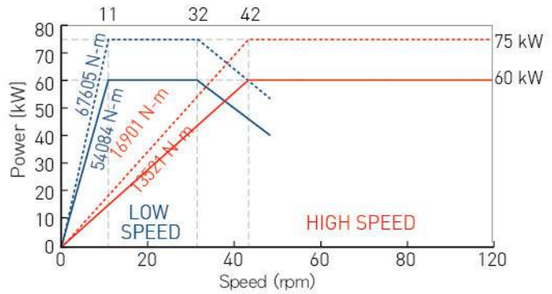
(MOTOR: FANUC αil60/5000HV) High speed ratio: 22.1 Low speed ratio: 89.6

VTL2000ATC Series



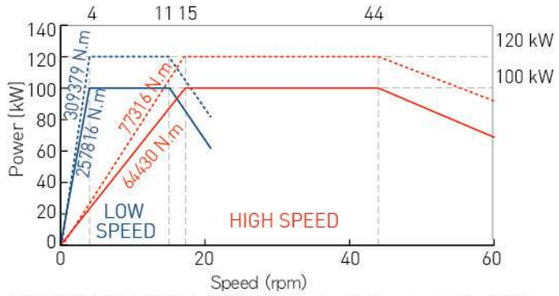
(MOTOR: FANUC αil60/5000HV) High speed ratio: 27.65 Low speed ratio: 110.63

VTL2500ATC Series



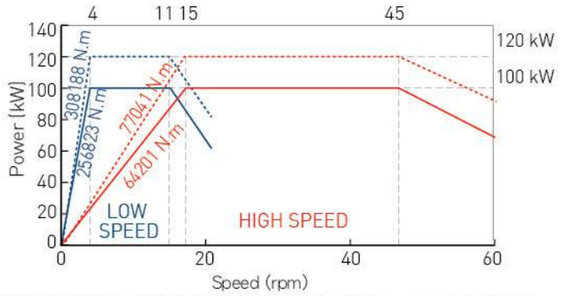
(MOTOR: FANUC αil60/5000HV) High speed ratio: 27.15 Low speed ratio: 108.60

VTL3000ATC Series



(MOTOR: FANUC αil100/5000HV) High speed ratio: 67.50 Low speed ratio: 270.10

VTL3500ATC Series

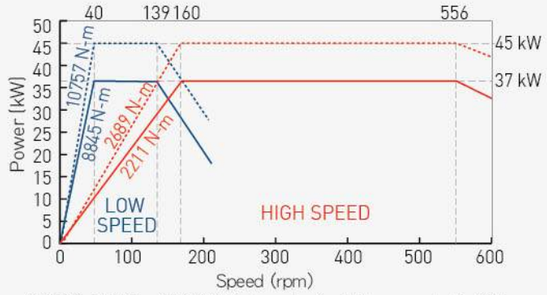


(MOTOR: FANUC αil100/5000HV) High speed ratio: 67.26 Low speed ratio: 269.06

VTL4000ATC/VTL4500ATC Series

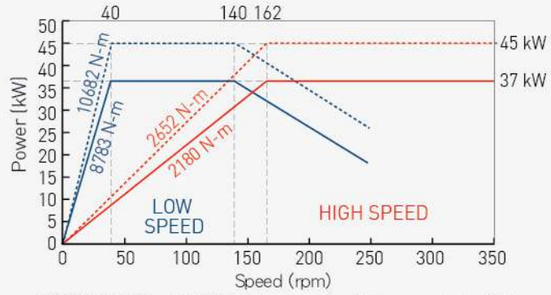
30 Min operation zone — Low gear
Continuous operation zone — High gear

1R+C series



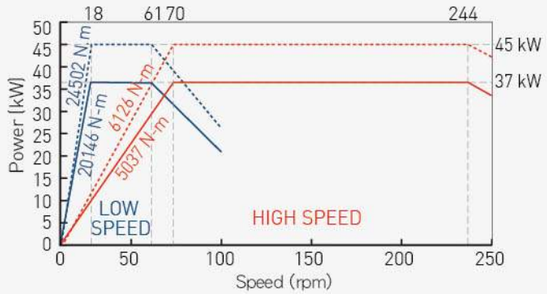
(MOTOR: FANUC αil40/7000) High speed ratio: 7.2 Low speed ratio: 28.8

VTL1000ATC+C Series



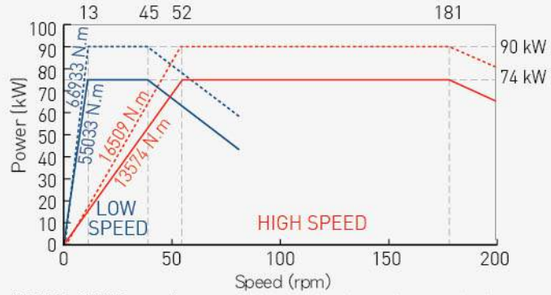
(MOTOR: FANUC αil40/7000) High speed ratio: 7.1 Low speed ratio: 28.6

VTL1200ATC+C Series



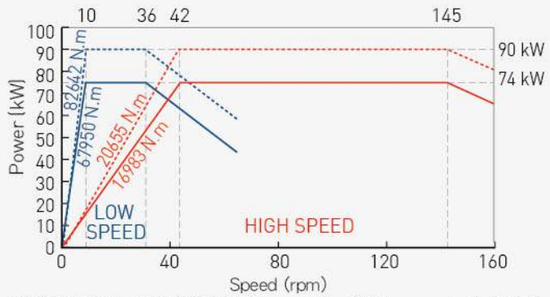
(MOTOR: FANUC αil40/7000) High speed ratio: 16.4 Low speed ratio: 65.6

VTL1600ATC+C Series



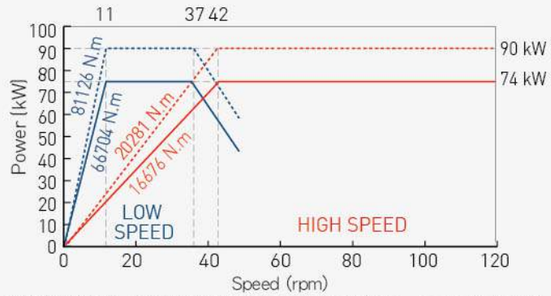
(MOTOR: FANUC αil40/7000Hvx2) High speed ratio: 22.1 Low speed ratio: 89.6

VTL2000ATC+C Series (Opt.)



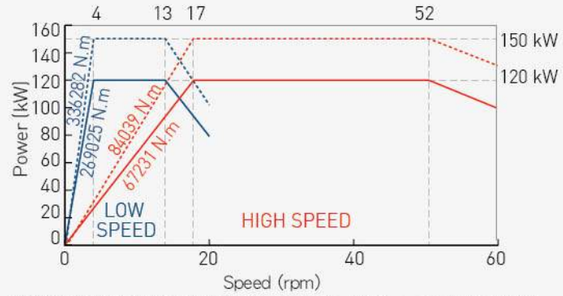
(MOTOR: FANUC αil40/7000HVx2) High speed ratio: 27.65 Low speed ratio: 110.63

VTL2500ATC+C Series (Opt.)



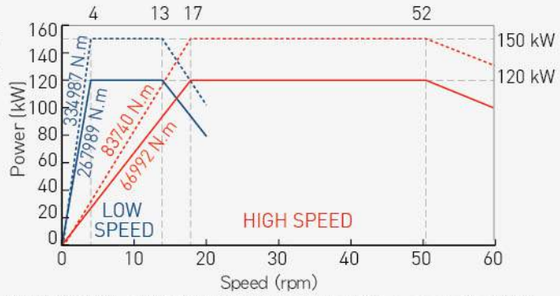
(MOTOR: FANUC αil40/7000HVx2) High speed ratio: 27.15 Low speed ratio: 108.60

VTL3000ATC+C Series



(MOTOR: FANUC αil60/5000HVx2) High speed ratio: 67.50 Low speed ratio: 270.10

VTL3500ATC+C Series



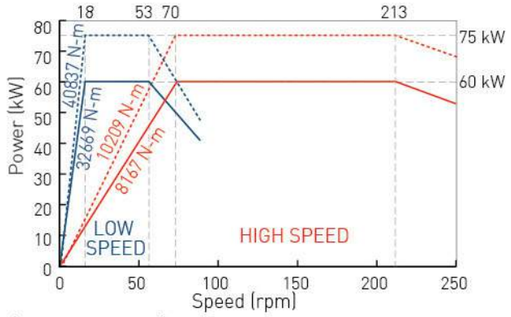
(MOTOR: FANUC αil60/5000HVx2) High speed ratio:67.26 Low speed ratio: 269.06

VTL4000ATC+C/VTL4500ATC+C Series

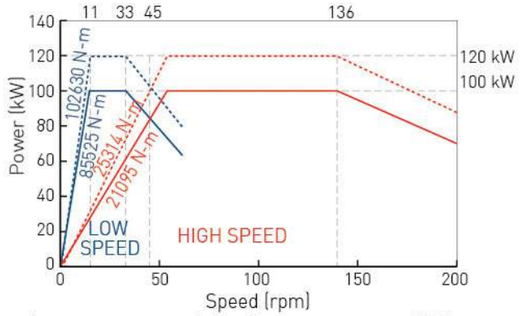
Torque Chart (FANUC Spindle Motor)

30 Min operation zone — Low gear
Continuous operation zone — High gear

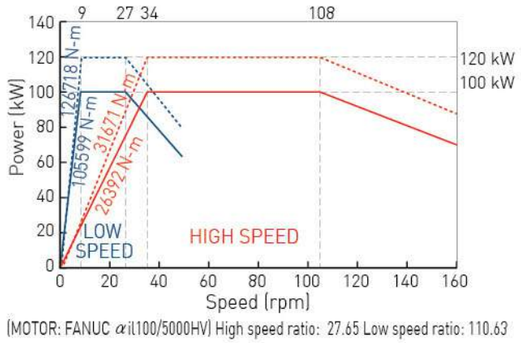
2R series



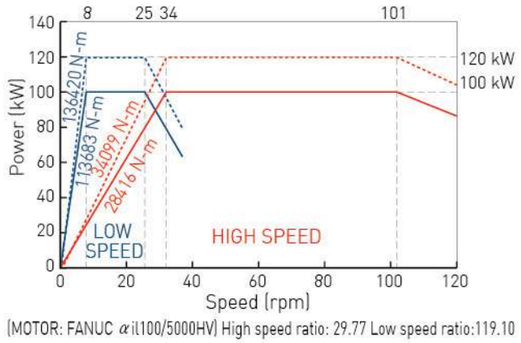
(MOTOR: FANUC αil60/5000HV) High speed ratio: 16.4 Low speed ratio: 65.6
VTL1600ATC-2R Series



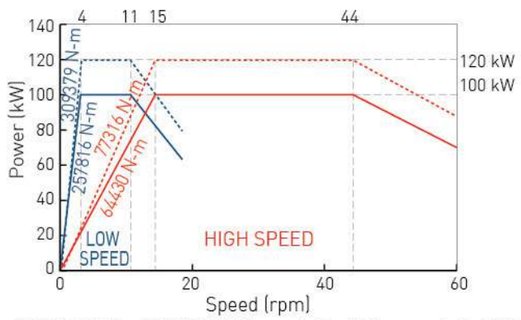
(MOTOR: FANUC αil100/5000HV) High speed ratio: 22.1 低速比: 89.6
VTL2000ATC-2R Series



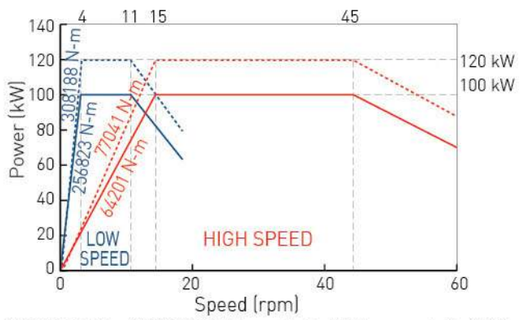
(MOTOR: FANUC αil100/5000HV) High speed ratio: 27.65 Low speed ratio: 110.63
VTL2500ATC-2R Series



(MOTOR: FANUC αil100/5000HV) High speed ratio: 29.77 Low speed ratio:119.10
VTL3000ATC-2R Series

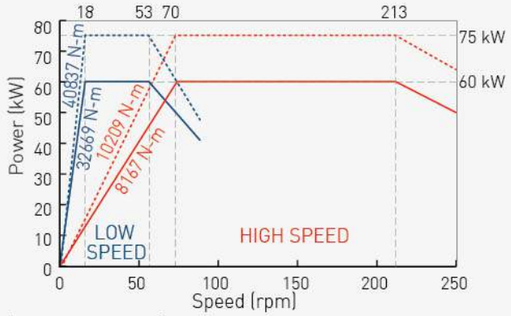


(MOTOR: FANUC αil100/5000HV) High speed ratio: 67.5 Low speed ratio: 270.1
VTL3500ATC-2R Series

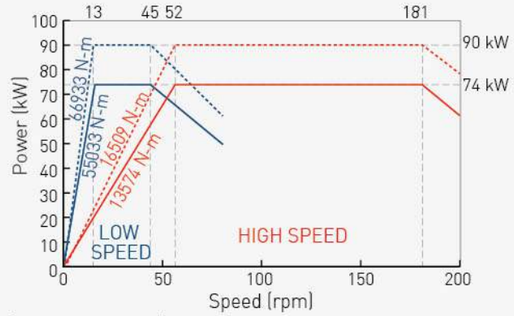


(MOTOR: FANUC αil100/5000HV) High speed ratio: 67.26 Low speed ratio: 269.06
VTL4000ATC-2R/VTL4500ATC-2R Series

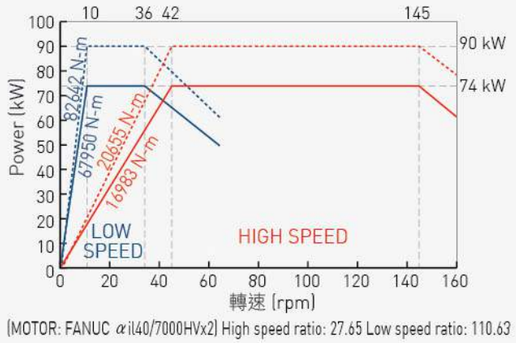
2R+C series



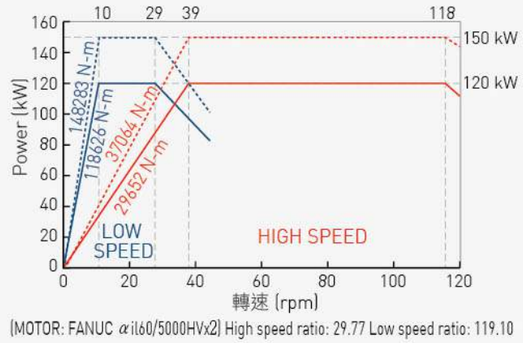
(MOTOR: FANUC αil60/5000HV) High speed ratio: 16.4 Low speed ratio: 65.6
VTL1600ATC+C-2R Series



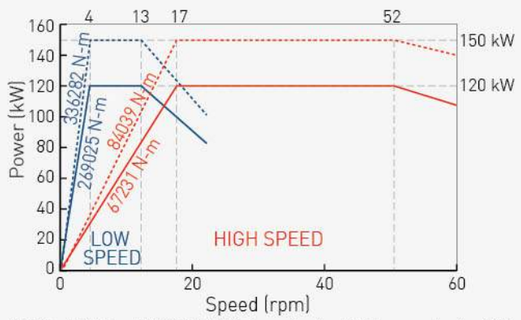
(MOTOR: FANUC αil40/7000HVx2) High speed ratio: 22.1 Low speed ratio: 89.6
VTL2000ATC+C-2R Series



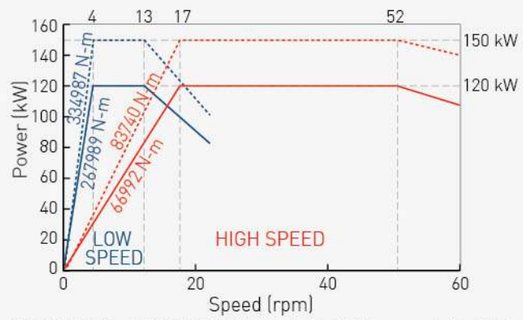
(MOTOR: FANUC αil40/7000HVx2) High speed ratio: 27.65 Low speed ratio: 110.63
VTL2500ATC+C-2R Series



(MOTOR: FANUC αil60/5000HVx2) High speed ratio: 29.77 Low speed ratio: 119.10
VTL3000ATC+C-2R Series



(MOTOR: FANUC αil60/5000HVx2) High speed ratio: 67.5 Low speed ratio: 270.1
VTL3500ATC+C-2R Series

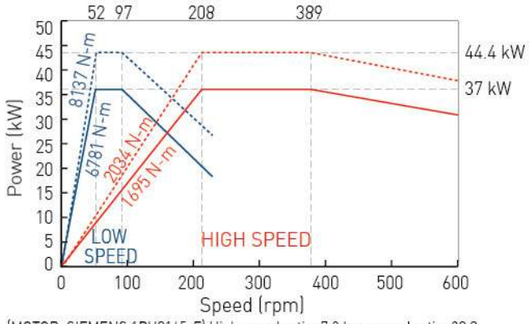


(MOTOR: FANUC αil60/5000HVx2) High speed ratio: 67.26 Low speed ratio: 269.06
VTL4000ATC+C-2R/VTL4500ATC+C-2R Series

Torque Chart (SIEMENS Spindle Motor)

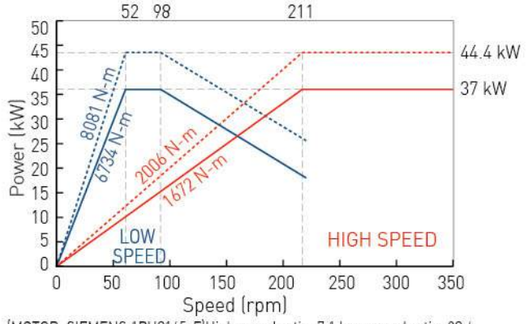
30 Min operation zone — Low gear
Continuous operation zone — High gear

1R series



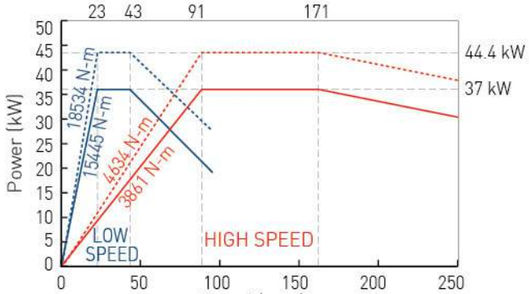
(MOTOR: SIEMENS 1PH8165-F) High speed ratio: 7.2 Low speed ratio: 28.8

VTL1000ATC Series



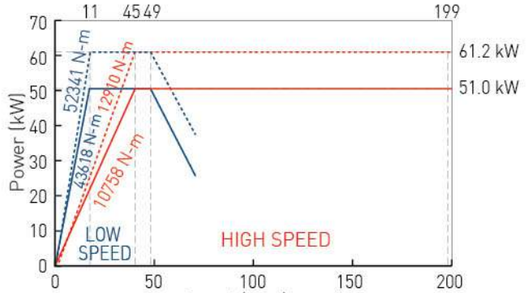
(MOTOR: SIEMENS 1PH8165-F)High speed ratio: 7.1 Low speed ratio: 28.6

VTL1200ATC Series



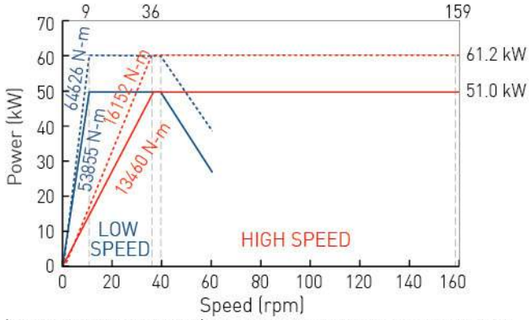
(MOTOR: SIEMENS 1PH8165-F) High speed ratio: 16.4 Low speed ratio: 65.6

VTL1600ATC Series



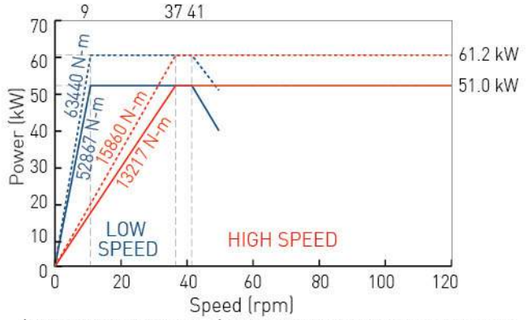
(MOTOR: SIEMENS 1PH8186-D) High speed ratio: 22.1 Low speed ratio: 89.6

VTL2000ATC Series



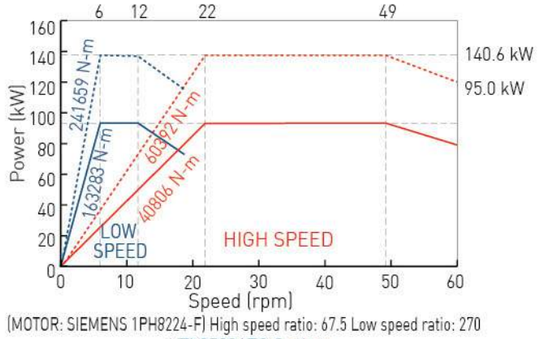
(MOTOR: SIEMENS 1PH8186-D) High speed ratio: 27.65 Low speed ratio: 110.63

VTL2500ATC Series



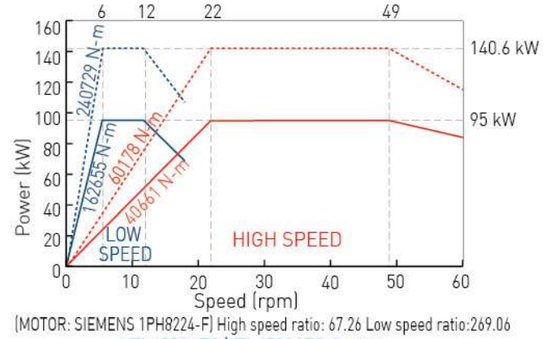
(MOTOR: SIEMENS 1PH8186-D) High speed ratio: 27.15 Low speed ratio: 108.6

VTL3000ATC Series



(MOTOR: SIEMENS 1PH8224-F) High speed ratio: 67.5 Low speed ratio: 270

VTL3500ATC Series

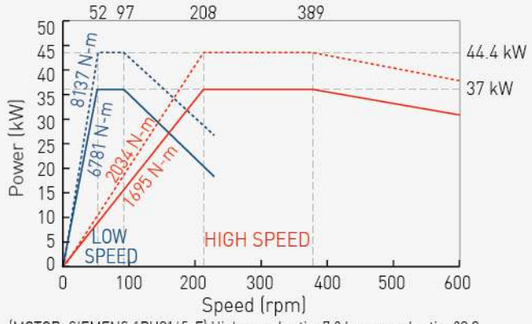


(MOTOR: SIEMENS 1PH8224-F) High speed ratio: 67.26 Low speed ratio:269.06

VTL4000ATC/VTL4500ATC Series

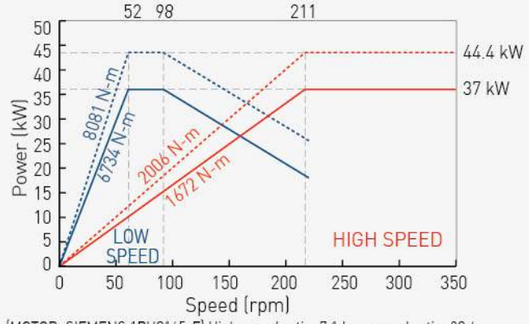
30 Min operation zone — Low gear
Continuous operation zone — High gear

1R+C series



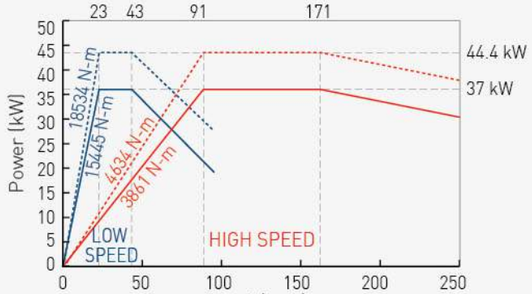
(MOTOR: SIEMENS 1PH8165-F] High speed ratio: 7.2 Low speed ratio: 28.8

VTL1000ATC+C Series



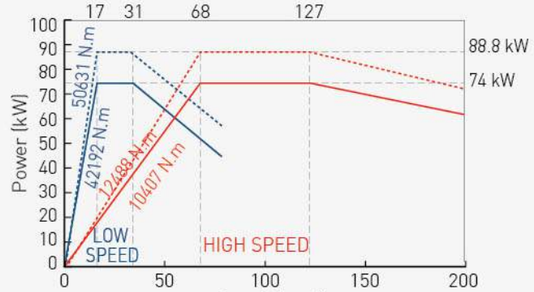
(MOTOR: SIEMENS 1PH8165-F] High speed ratio: 7.1 Low speed ratio: 28.6

VTL1200ATC+C Series



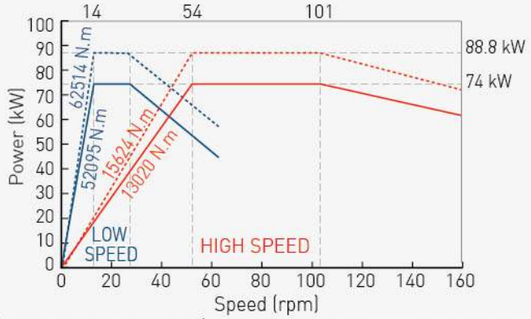
(MOTOR: SIEMENS 1PH8165-F]High speed ratio: 16.4 Low speed ratio: 65.6

VTL1600ATC+C Series



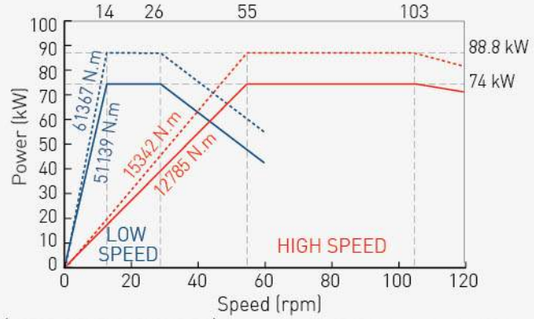
(MOTOR: SIEMENS 1PH8165-Fx2) High speed ratio: 22.1 Low speed ratio: 89.6

VTL2000ATC+C Series (Opt.)



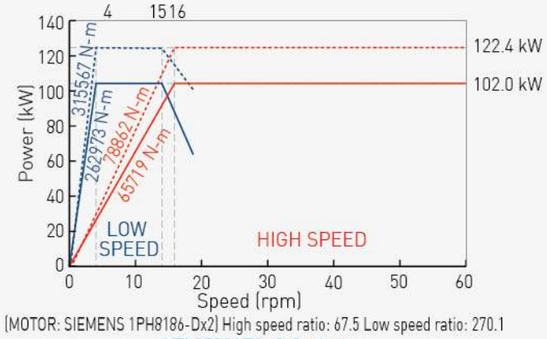
(MOTOR: SIEMENS 1PH8165-Fx2] High speed ratio: 27.65 Low speed ratio: 110.63

VTL2500ATC+C Series (Opt.)



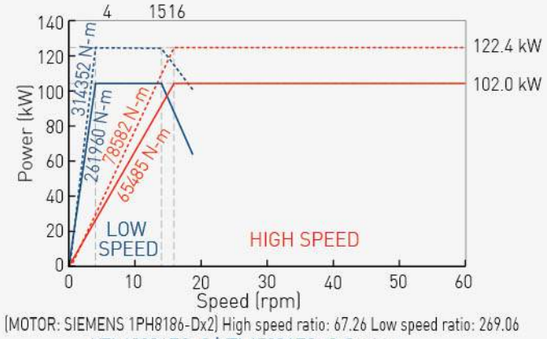
(MOTOR: SIEMENS 1PH8165-Fx2] High speed ratio: 27.15 Low speed ratio: 108.6

VTL3000ATC+C Series



(MOTOR: SIEMENS 1PH8186-Dx2] High speed ratio: 67.5 Low speed ratio: 270.1

VTL3500ATC+C Series



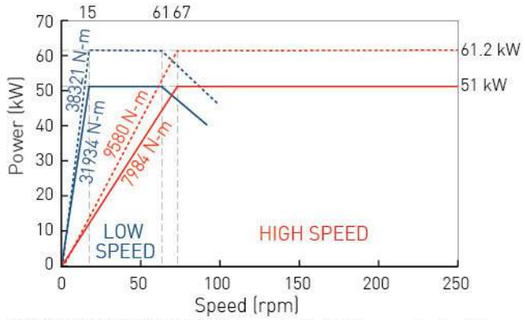
(MOTOR: SIEMENS 1PH8186-Dx2] High speed ratio: 67.26 Low speed ratio: 269.06

VTL4000ATC+C/VTL4500ATC+C Series

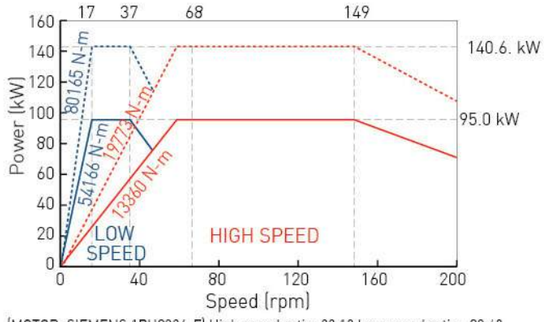
Torque Chart (SIEMENS Spindle Motor)

30 Min operation zone — Low gear
Continuous operation zone — High gear

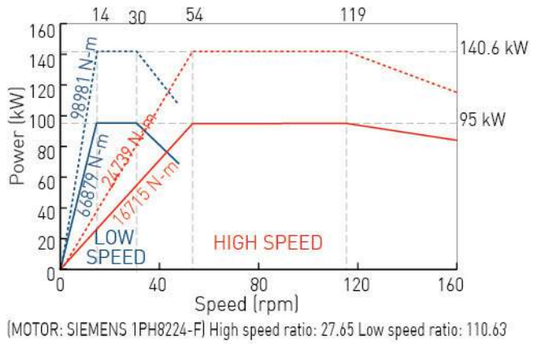
2R series



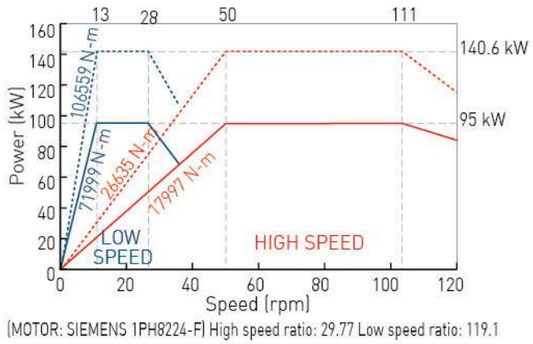
(MOTOR: SIEMENS 1PH8186-D) High speed ratio: 16.4 Low speed ratio: 65.6
VTL1600ATC-2R Series



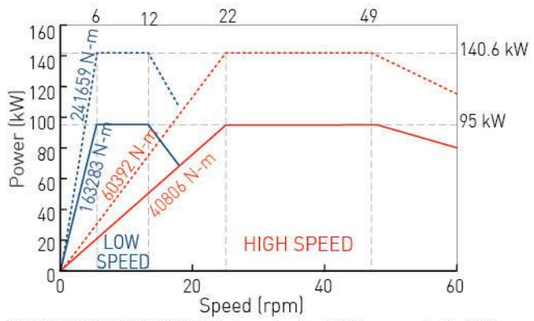
(MOTOR: SIEMENS 1PH8224-F) High speed ratio: 22.10 Low speed ratio: 89.60
VTL2000ATC-2R Series



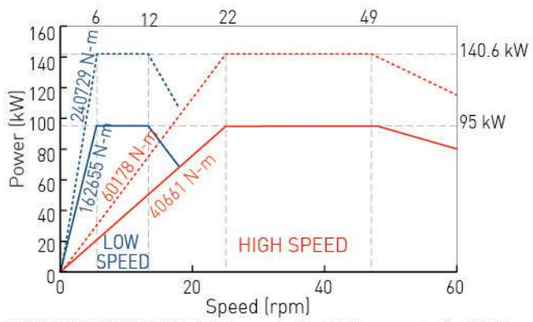
(MOTOR: SIEMENS 1PH8224-F) High speed ratio: 27.65 Low speed ratio: 110.63
VTL2500ATC-2R Series



(MOTOR: SIEMENS 1PH8224-F) High speed ratio: 29.77 Low speed ratio: 119.1
VTL3000ATC-2R Series

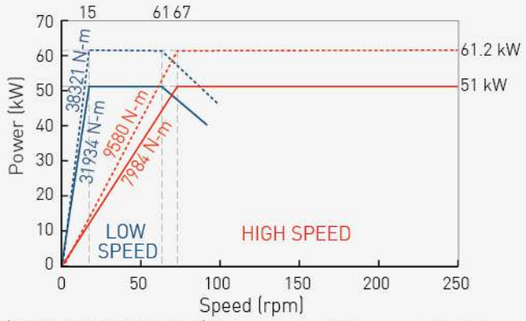


(MOTOR: SIEMENS 1PH8224-F) High speed ratio: 67.50 Low speed ratio: 270.1
VTL3500ATC-2R Series

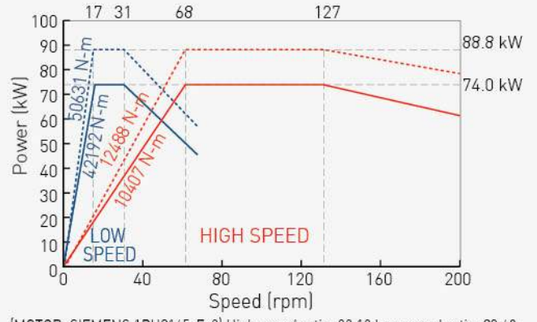


(MOTOR: SIEMENS 1PH8224-F) High speed ratio: 67.26 Low speed ratio: 269.06
VTL4000ATC-2R/VTL4500ATC-2R Series

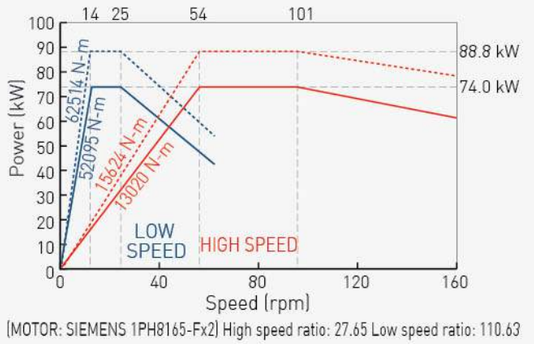
2R+C series



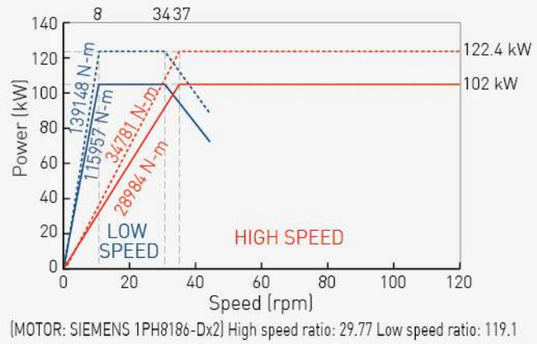
(MOTOR: SIEMENS 1PH8186-D) High speed ratio: 16.4 Low speed ratio: 65.6
VTL1600ATC+C-2R Series



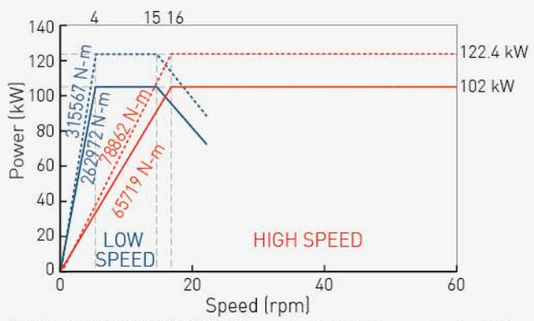
(MOTOR: SIEMENS 1PH8165-Fx2) High speed ratio: 22.10 Low speed ratio: 89.60
VTL2000ATC+C-2R Series



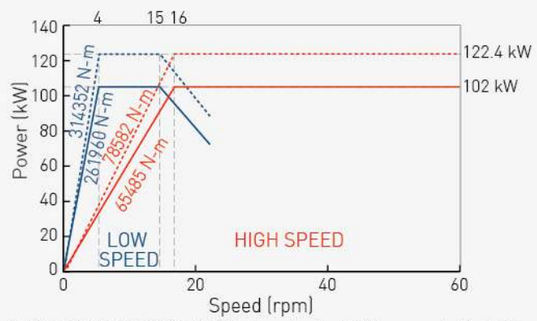
(MOTOR: SIEMENS 1PH8165-Fx2) High speed ratio: 27.65 Low speed ratio: 110.63
VTL2500ATC+C-2R Series



(MOTOR: SIEMENS 1PH8186-Dx2) High speed ratio: 29.77 Low speed ratio: 119.1
VTL3000ATC+C-2R Series



(MOTOR: SIEMENS 1PH8186-Dx2) High speed ratio: 67.50 Low speed ratio: 270.1
VTL3500ATC+C-2R Series



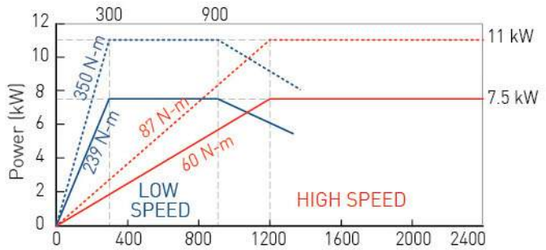
(MOTOR: SIEMENS 1PH8186-Dx2) High speed ratio: 67.26 Low speed ratio: 269.06
VTL4000ATC+C-2R/VTL4500ATC+C-2R Series

Live Spindle Features

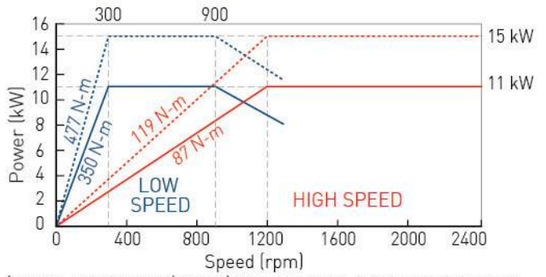
Multitasking

The live spindle motor for ATC+C series coupled with the dual speed gearbox is located on top of the ram, driving the live spindle via transmission shaft. The use of the dual speed gearbox on the live spindle enables high torque output especially for face milling, end milling, drilling, and tapping processes.

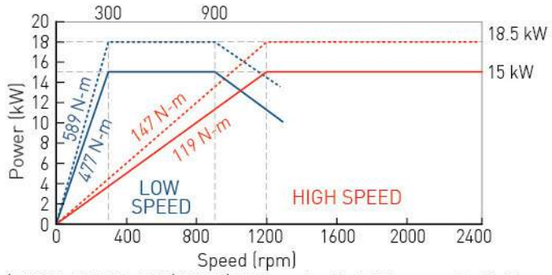
Torque Chart (FANUC Live Spindle Motor)



(MOTOR: FANUC αil8/8000) High speed ratio: 1.25 Low speed ratio: 5
VTL1000ATC+C/VTL1200ATC+C/VTL1600ATC+C Series

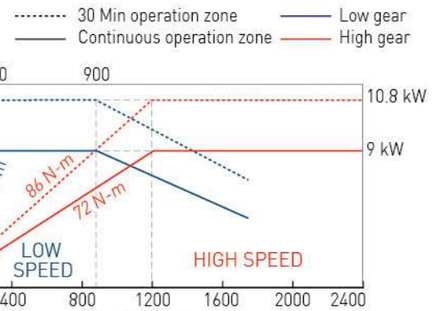


(MOTOR: FANUC αil12/8000HV) High speed ratio: 1.25 Low speed ratio: 5
VTL2000ATC+C/VTL2500ATC+C/VTL3000ATC+C/VTL3500ATC+C Series

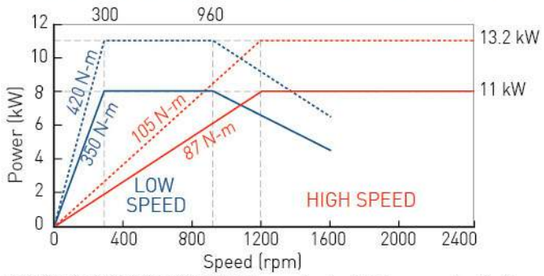


(MOTOR: FANUC αil15/8000HV) High speed ratio: 1.25 Low speed ratio: 5
VTL4000ATC+C/VTL4500ATC+C Series

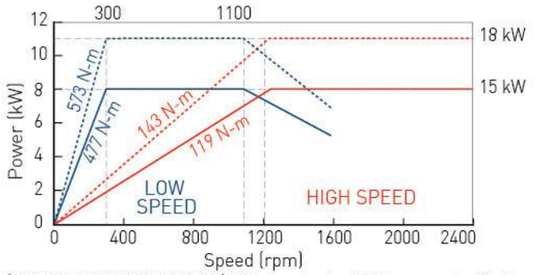
Torque Chart (SIEMENS Live Spindle Motor)



(MOTOR: SIEMENS 1PH8107-F) High speed ratio: 1.25 Low speed ratio: 5
VTL1000ATC+C/VTL1200ATC+C/VTL1600ATC+C Series



(MOTOR: SIEMENS 1PH8131-F) High speed ratio: 1.25 Low speed ratio: 5
VTL2000ATC+C/VTL2500ATC+C/VTL3000ATC+C/VTL3500ATC+C Series

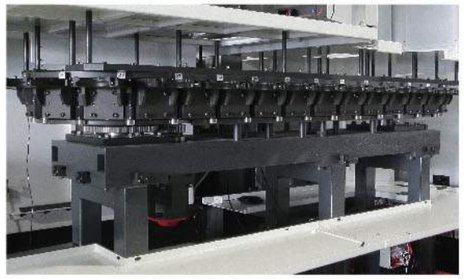


(MOTOR: SIEMENS 1PH8133-F) High speed ratio: 1.25 Low speed ratio: 5
VTL4000ATC+C/VTL4500ATC+C Series

Automatic Tool Changer

Disc Type Tool Magazine

The disc type, bi-directional ATC tool magazine is designed for the shortest route of tool selection. Rapid and reliable automatic tool change system efficiently reduces the cycle time and results greater productivity.



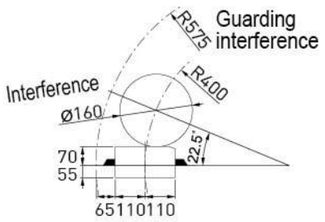
Chain Type Tool Magazine

The servo-driven chain type ATC tool magazine for VTL machines features:

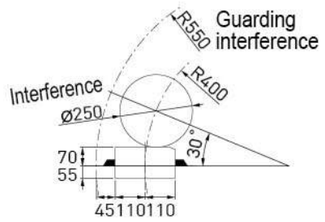
- Innovative structure for simplified installation and saving maintenance cost.
- Continually running chain with minimal interlink gap has long service life, quiet operation.
- Highly-stable, simply-structured driving and chain-positioning modules.
- Available with 32, 48, 60 or more tool positions.

Tool Dimension BT 50

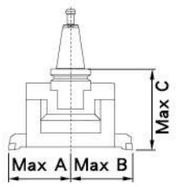
ATC+C series (16 tools)



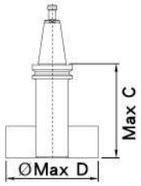
ATC series (12 tools)



ATC+C series

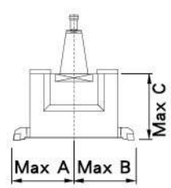


Turning tool



Live tool

ATC series



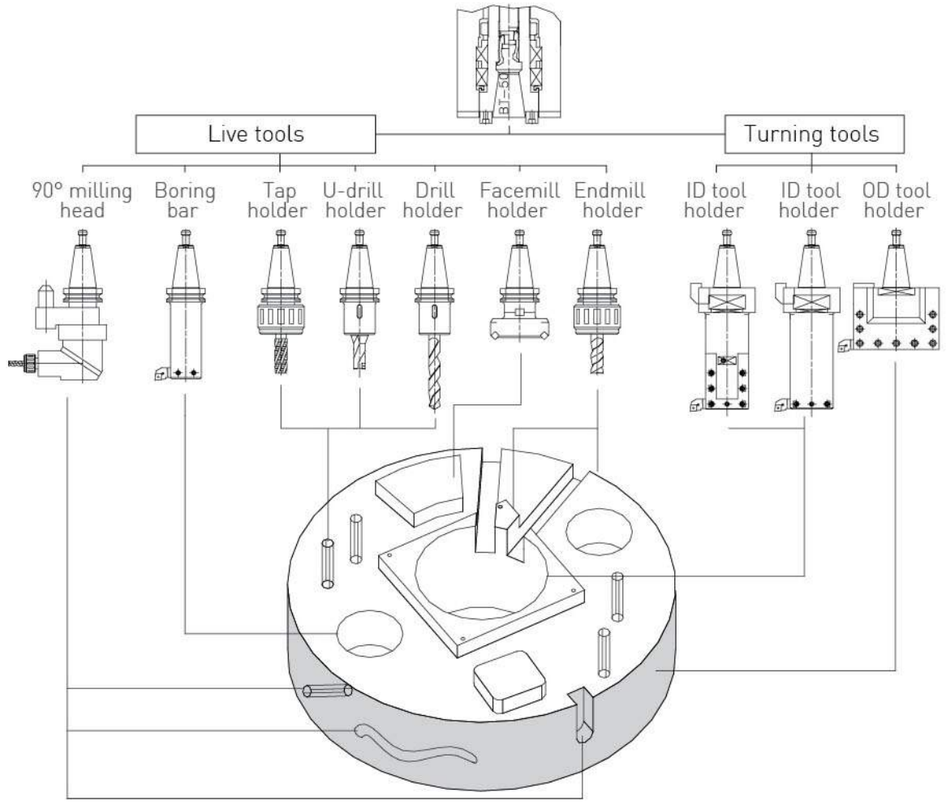
Turning tool

Model	Type	A	B	C	D
VTL1000-4500	ATC series	175	200	380	-
	ATC+C series	175	200	380	250

Unit: mm

Complex Machining

ATC Tooling System




Grinding


Milling


90° drilling


Tapping


Boring

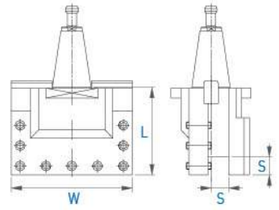

U-drilling


Drilling


Turning

BT-50 Turning Tool Holder

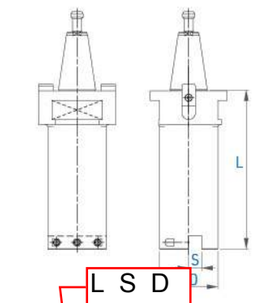
ATC series



Model	W	L	S
BT50-STST16032	220	160	32
BT50-STST16040	220	160	40
BT50-STMT16032	250	160	32
BT50-STMT16040	250	160	40

Dual contact

Model	W	L	S
BT50-DTST16032	220	160	32
BT50-DTST16040	220	160	40
BT50-DTMT16032	250	160	32
BT50-DTMT16040	250	160	40



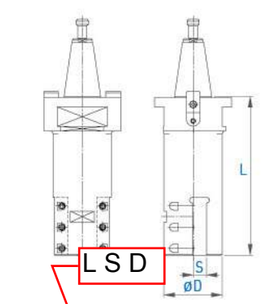
L S D

Model	ØD	L	S
BT50-STBB20025	200	25	100
BT50-STBB30025	300	25	110

L S D

Dual contact

Model	ØD	L	S
BT50-DTBB20025	200	25	100
BT50-DTBB30025	300	25	110



L S D

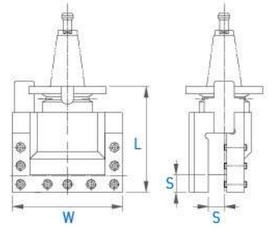
Model	ØD	L	S
BT50-STBT20025	200	25	100
BT50-STBT30025	300	25	110

L S D

Dual contact

Model	ØD	L	S
BT50-DTBT20025	200	25	100
BT50-DTBT30025	300	25	110

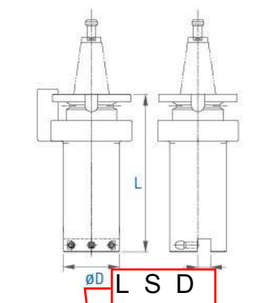
ATC+C series



Model	W	L	S
BT50-SMST19732	220	197	32
BT50-SMST19740	220	197	40
BT50-SMMT19732	250	197	32
BT50-SMMT19740	250	197	40

Dual contact

Model	W	L	S
BT50-DMST21032	220	210	32
BT50-DMST21040	220	210	40
BT50-DMMT21032	250	210	32
BT50-DMMT21040	250	210	40



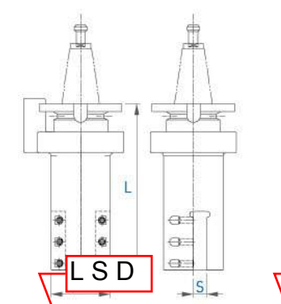
L S D

Model	ØD	L	S
BT50-SMBB20025	200	25	100
BT50-SMBB30025	300	25	110

L S D

Dual contact

Model	ØD	L	S
BT50-DMBB20025	200	25	100
BT50-DMBB30025	300	25	110



L S D

Model	ØD	L	S
BT50-SMBT20025	200	25	100
BT50-SMBT30025	300	25	110

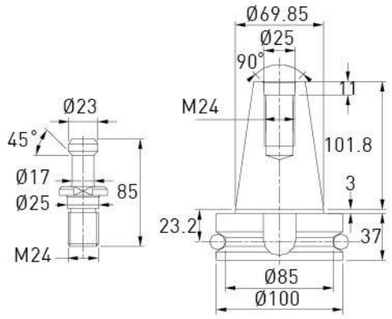
L S D

Dual contact

Model	ØD	L	S
BT50-DMBT20025	200	25	100
BT50-DMBT30025	300	25	110

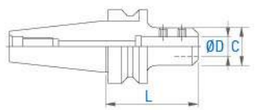
BT-50 Live tool holder

BT-50



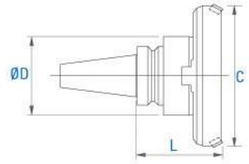
ATC+C series (Live tool holder)

Side lock chuck



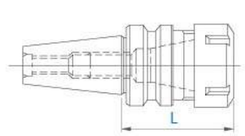
Model	L	C	D
BT50-SLA20-105	105	50	20
BT50-SLA25-105	105	55	25
BT50-SLA32-105	105	60	32
BT50-SLA40-105	105	80	40
BT50-SLA50.8-105	105	95	50.8

Facemill holder (Milling cutter excluded)



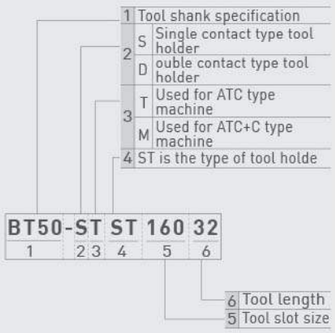
Model	L	C	D
BT50-FMA25.4-105	155	80	60
BT50-FMA31.75-105	160	100	70
BT50-FMA38.1-75	130	125	85
BT50-FMA50.8-75	135	150	95

Collet chuck

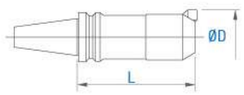


Model	L	Clamping range	Collet type
BT50-ER20-100	100	1-13	ER-20
BT50-ER32-100	100	3-20	ER-32
BT50-ER40-100	100	4-26	ER-40

Model Definition

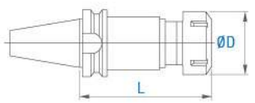


Boring bar (Rough boring)



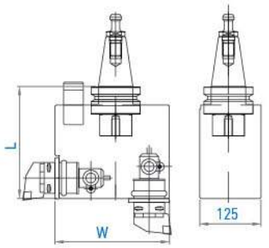
Model	L	D
BT50-BSB62-300	300	62-90
BT50-BSB72-285	285	72-110
BT50-BSB105-285	285	105-160

Tap holder

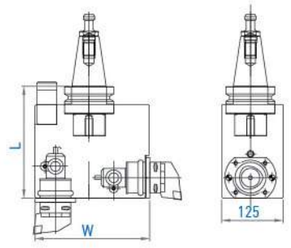


Model	L	D	Tapping range
BT50-TER16	80	28	M4-M10
BT50-TER40	117	63	M6-M27

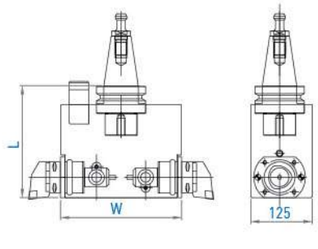
BT + Coromant Capto® System (ATC series) ※DT Dual contact



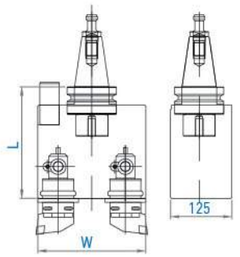
Model	W	L
BT50-STST228-R-C6-HV	234	228
BT50-DTST228-R-C6-HV	234	228



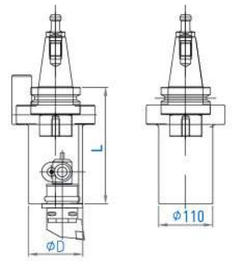
Model	W	L
BT50-STST228-R-C6-VH	234	228
BT50-DTST228-R-C6-VH	234	228



Model	W	L
BT50-STST228-R-C6-HH	247	228
BT50-DTST228-R-C6-HH	247	228

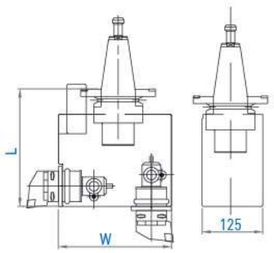


Model	W	L
BT50-STST238-R-C6-VV	220	228
BT50-DTST238-R-C6-VV	220	228

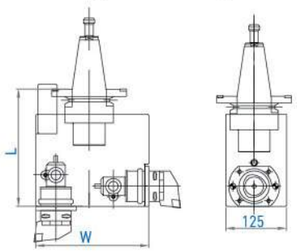


Model	ØD	L
BT50-STBT238-R-C6-V	110	238
BT50-DTBT238-R-C6-V	110	238

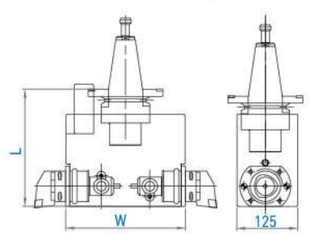
BT + Coromant Capto® System (ATC+C series) ※ DM Dual contact



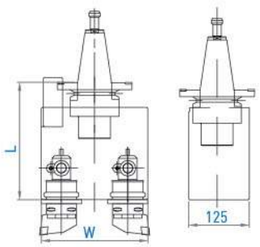
Model	W	L
BT50-SMST242-R-C6-HV	234	242
BT50-DMST242-R-C6-HV	234	242



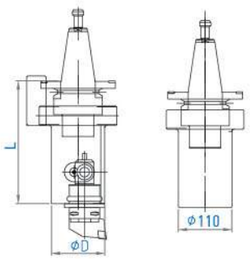
Model	W	L
BT50-SMST242-R-C6-VH	234	242
BT50-DMST242-R-C6-VH	234	242



Model	W	L
BT50-SMST242-R-C6-HH	247	242
BT50-DMST242-R-C6-HH	247	242

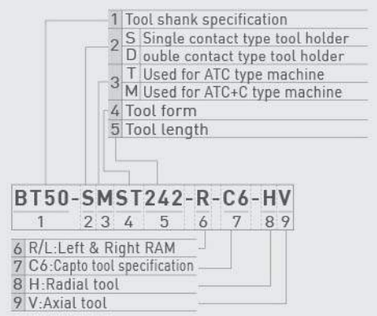


Model	W	L
BT50-SMST242-R-C6-VV	220	242
BT50-DMST242-R-C6-VV	220	242



Model	ØD	
BT50-SMBT253-R-C6-V	110	253
BT50-DMBT253-R-C6-V	110	253

Model Definition



※Capto C6 cutting tools are not included, if you have any questions or need further information. please contact You Ji overseas sales department.


VTL1200ATC Valve


VTL1200ATC
Combustion chamber part


VTL1000ATC Water valve


VTL1000ATC+C
Motor housing


VTL1200ATC Pump


VTL1000ATC
Elevator part


VTL1200ATC
Rolled wheel


VTL1200ATC
Water valve


VTL1600ATC Rolled wheel


VTL2000ATC Engine case


VTL1600ATC+C
Water valve


VTL1000ATC Elevator part


VTL2000ATC Motor housing

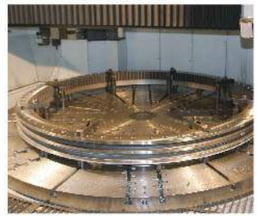

VTL2500ATC+C Valve


VTL2500ATC+C Graphite


VTL3000ATC+C Wind power
generator-rotor machining


VTL1600ATC+C
Hydraulic cylinder


VTL4000ATC Bearing ring


VTL4000ATC+C Bearing ring


VTL3000ATC+C Wind power
generator-stator machining

Safety & Operator-friendliness

HMI - Human Machine Interface

Tool monitoring system

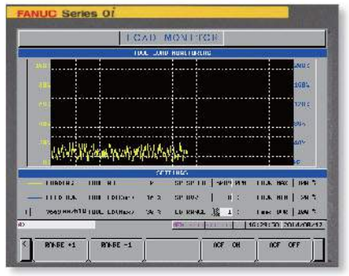
Tool monitoring system is one of the safety functions to protect the tool and spindle against possible damages caused by tool wear, breakage, or any other factors lead to abnormal load. This system is developed with following features:

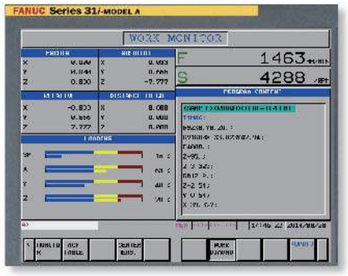
- Easy operation
- Optimum feedrate control
- Longer tool life
- Higher efficiency

Task manager

All-in-one screen shows all the work-related information in one screen, displayed info including:

- Parts program
- Mechanical coordinates
- Spindle load
- Axes load
- Real-time cut monitoring



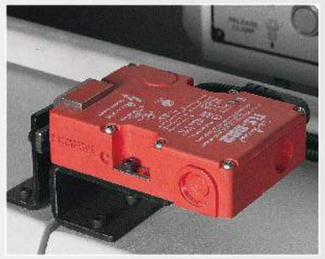


Safety features

The VTL Series machines are very safe to use as they are designed to be as safe as possible. We are always looking for ways to improve all aspects of machine safety - including clamping stroke sensor, door interlock, safety window, etc. - to create the most safe and comfortable working environment for worldwide You Ji machine users.

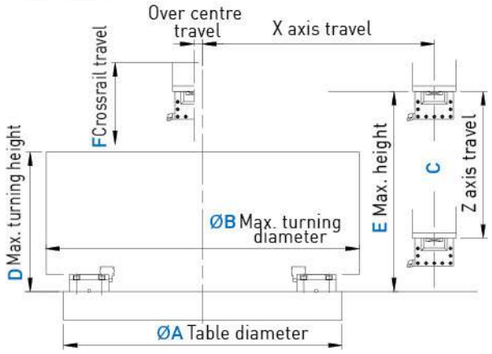

Safety window


Clamping stroke sensor


Door interlock

Machining Range

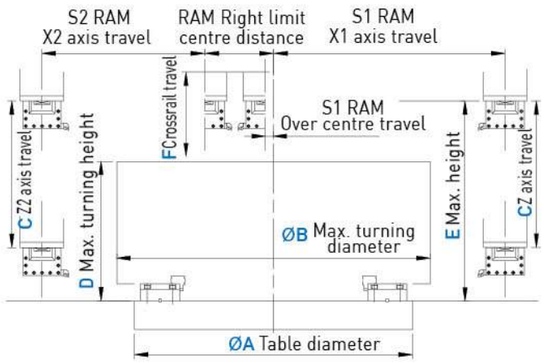
1Rtype



Model	A	B	C	D	E	F	Remark
VTL1000ATC(+C)	1000	1100	800	1000	1215	500	
VTL1200ATC(+C)			900	1200	1510	800	
VTL1200ATC- I	1250	1350	900	1600	1910	1200	
VTL1200ATC- II			1200	1800	2110	1400	
VTL1600ATC(+C)			900	1200	1530	800	(2R)
VTL1600ATC- I	1600	1800	900	1600	1930	1200	(2R)
VTL1600ATC- II			1200	1800	2130	1400	(2R)
VTL2000ATC(+C)			950	1600	2050	1150	(2R)
VTL2000ATC- I	2000	2300	1200	2000	2450	1550	(2R)
VTL2000ATC- II			1400	2000	2450	1550	(2R)
VTL2500ATC(+C)			1200	1600	2050	1150	(2R)
VTL2500ATC- I	2500	2800	1200	2000	2450	1550	(2R)
VTL2500ATC- II			1400	2000	2450	1550	(2R)

Unit: mm

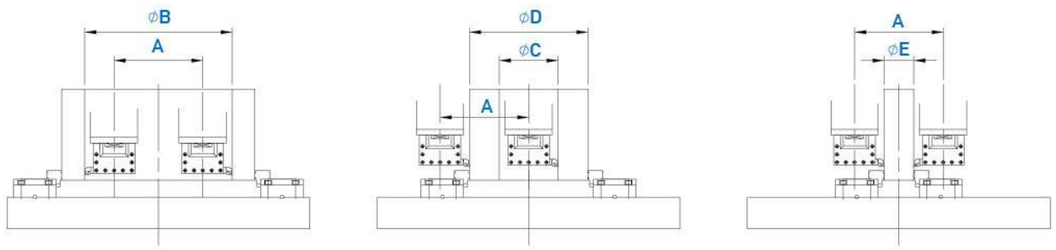
2Rtype



Model	A	B	C	D	E	F	Remark
VTL3000ATC(+C)				1600	1900	1200	(2R)
VTL3000ATC- I	3000	3300	1500	2200	2500	1400	(2R)
VTL3000ATC- II				2800	3100	2000	(2R)
VTL3500ATC(+C)				1600	1900	1200	(2R)
VTL3500ATC- I	3500	3800	1500	2200	2500	1400	(2R)
VTL3500ATC- II				2800	3100	2000	(2R)
VTL4000ATC(+C)				1500	1800	1200	(2R)
VTL4000ATC- I	4000	4300	1500	2100	2400	1400	(2R)
VTL4000ATC- II				2700	3000	2000	(2R)
VTL4500ATC(+C)				1500	1800	1200	(2R)
VTL4500ATC- I	4500	4800	1500	2100	2400	1400	(2R)
VTL4500ATC- II				2700	3000	2000	(2R)

Unit: mm

2R

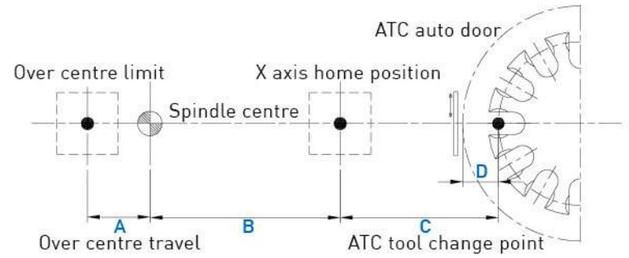


Model	A	B	C	D	E
VTL1600-2R series	800	1200	340	1400	560
VTL2000-2R series	920	1240	340	1500	600
VTL2500-2R series	950	1270	340	1560	630
VTL3000-2R series	1400	1700	400	2500	1100
VTL3500-2R series	1400	1700	400	2500	1100
VTL4000-2R series	1400	1700	400	2500	1100
VTL4500-2R series	1400	1700	400	2500	1100

Unit: mm

X axis Travel Diagram

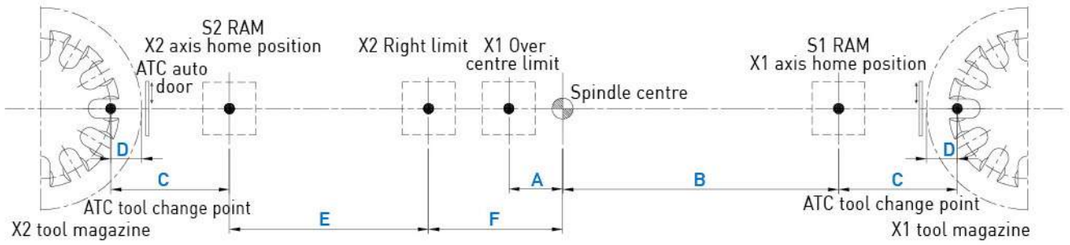
1R



Model	A	B	C	D
VTL1000 series	400	720	400	175
VTL1200 series	600	875	400	175
VTL1600 series	800	1015	400	175
VTL2000 series	1000	1350	400	175
VTL2500 series	900	1600	400	175
VTL3000 series	1500	1650	600	175
VTL3500 series	1500	1650	600	175
VTL4000 series	2000	2350	600	175
VTL4500 series	2000	2650	600	175

Unit: mm

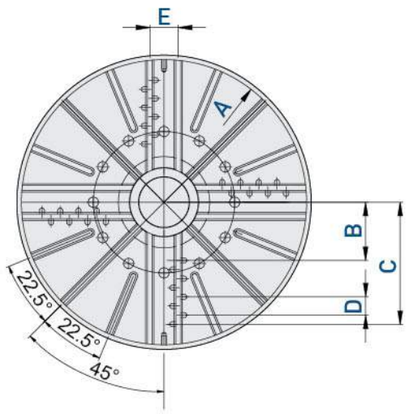
VTL 1600-4500-2R



Model	A	B	C	D	E	F
VTL1600-2R series	100	1225	400	175	805	320
VTL2000-2R series	50	1350	400	175	700	650
VTL2500-2R series	50	1600	400	175	950	650
VTL3000-2R series	50	1650	600	175	950	700
VTL3500-2R series	50	1650	600	175	950	700
VTL4000-2R series	50	2350	600	175	1650	700
VTL4500-2R series	50	2650	600	175	1950	700

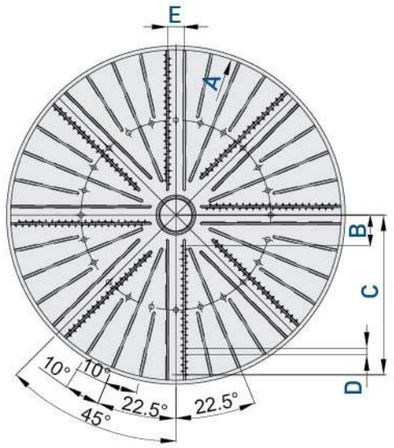
Unit: mm

Diagram of Working Table



Model	A	B	C	D	E
VTL1000 series	Ø1000	240	440	80	125
VTL1200 series	Ø1250	255	535	80	125
VTL1600 series	Ø1600	255	775	80	125
VTL2000 series	Ø2000	255	895	80	125

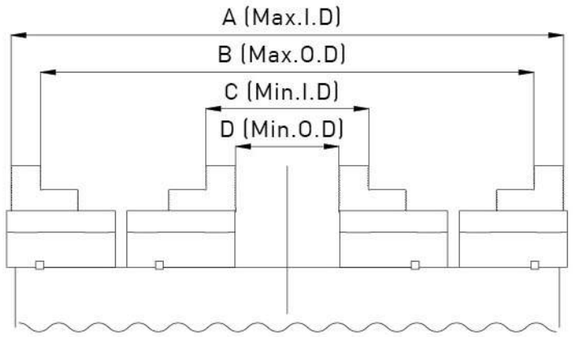
Unit: mm



Model	A	B	C	D	E
VTL2500 series	Ø2500	255	1175	80	125
VTL3000 series	Ø3000	375	1463	80	205
VTL3500 series	Ø3500	375	1703	80	205
VTL4000 series	Ø4000	375	1935	80	205
VTL4500 series	Ø4500	375	2175	80	205

Unit: mm

Inside & outside clamping for chuck jaws



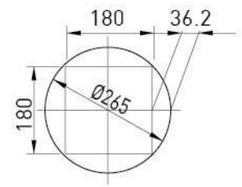
Model	A	B	C	D
VTL1000 series	Ø1000	870	370	250
VTL1200 series	Ø1180	1060	400	280
VTL1600 series	Ø1580	1460	400	280
VTL2000 series	Ø1900	1780	400	280
VTL2500 series	Ø2460	2340	480	360

Unit: mm

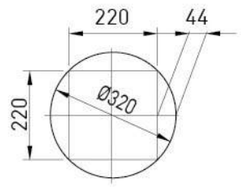
Model	A	B	C	D
VTL3000 series	Ø2756	2585	1025	845
VTL3500 series	Ø3425	3065	1025	845
VTL4000 series	Ø3710	3530	1090	910
VTL4500 series	Ø4190	4010	1090	910

Unit: mm

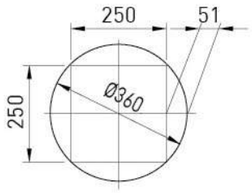
RAM Interference



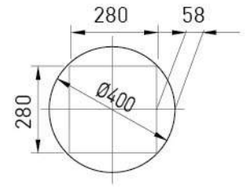
VTL1000 Series



VTL1200/1600
(Standard and Version I)
VTL2000(Standard)



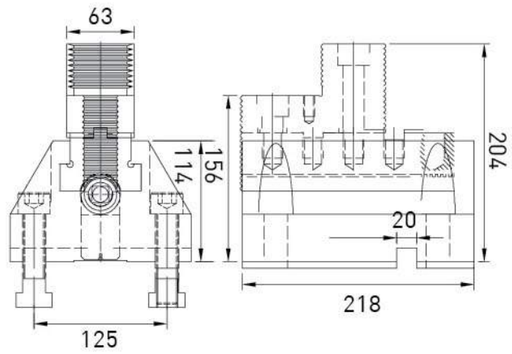
VTL1200/1600 (Version II)
VTL2000(Version I and version II)
VTL2500/3000/3500/4000/4500 Series



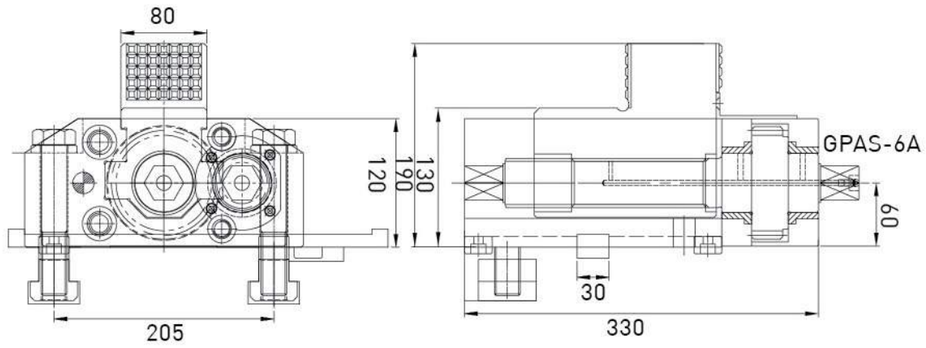
Option

Dimension of Chuck Jaws

4 T VTL1000/1200/1600/2000/2500 series

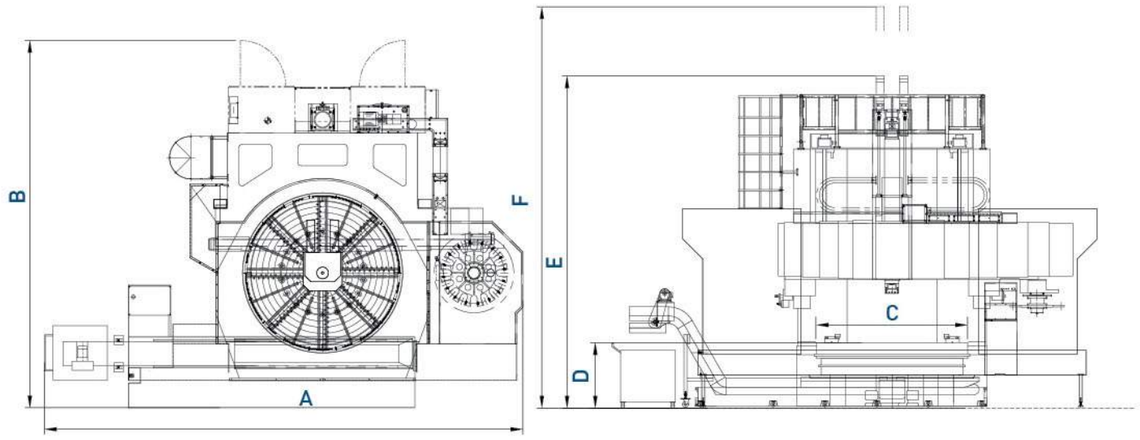


8 T VTL3000/3500/4000/4500 series



Machine Layout Dimension

VTL1000~2500 ATC



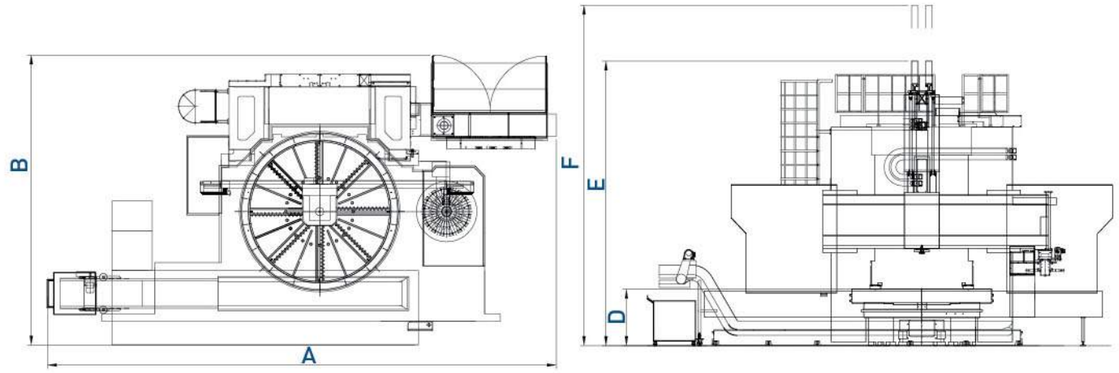
Model	A	B	C	D	E	F
VTL1000ATC	3850	4620	1000	980	4350	4850
VTL1000ATC+C	3850	4620	1000	980	4450	4950
VTL1200ATC	4260	5580	1250	970	4600	5400
VTL1200ATC+C	4260	5580	1250	970	4600	5400
VTL1200ATC- I	4260	5580	1250	970	4750	5800
VTL1200ATC- II	4260	5580	1250	970	5200	6600
VTL1600ATC	4510	5850	1600	970	4600	5400
VTL1600ATC+C	4510	5850	1600	970	4600	5400
VTL1600ATC- I	4510	5850	1600	970	4750	5800
VTL1600ATC- II	4510	5850	1600	970	5200	6500

Unit: mm

Model	A	B	C	D	E	F
VTL2000ATC	4650	6850	2000	1080	5120	6270
VTL2000ATC+C	4650	6850	2000	1080	5140	6290
VTL2000ATC- I	4650	6850	2000	1080	5520	7070
VTL2000ATC- II	4650	6850	2000	1080	6120	7670
VTL2500ATC	5130	7550	2500	1080	5500	6650
VTL2500ATC+C	5130	7550	2500	1080	5500	6650
VTL2500ATC- I	5130	7550	2500	1080	5500	7050
VTL2500ATC- II	5130	7550	2500	1080	6150	7700

Unit: mm

VTL3000~4500 ATC



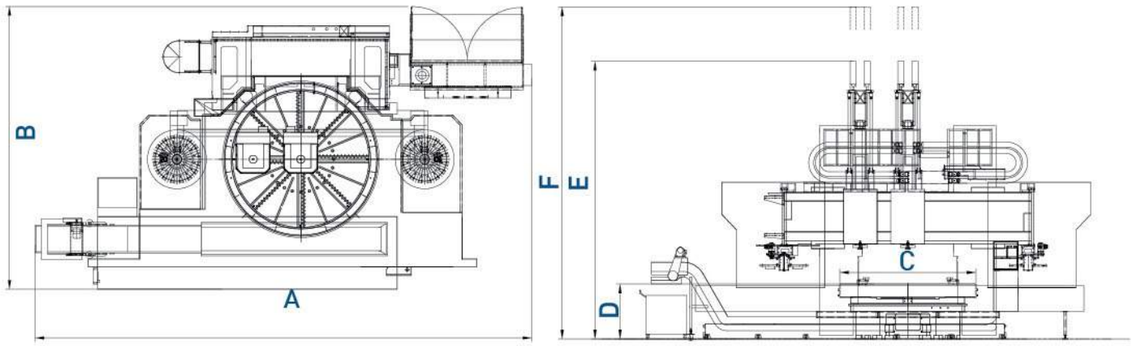
Model	A	B	C	D	E	F
VTL3000ATC	7000	11000	3000	1210	6200	7400
VTL3000ATC+C	7000	11000	3000	1210	6200	7400
VTL3000ATC- I	7000	11000	3000	1210	6600	8000
VTL3000ATC- II	7000	11000	3000	1210	6600	8600
VTL3500ATC	8500	12500	3500	1210	6200	7400
VTL3500ATC+C	8500	12500	3500	1210	6200	7400
VTL3500ATC- I	8500	12500	3500	1210	6600	8000
VTL3500ATC- II	8500	12500	3500	1210	6600	8600

Unit: mm

Model	A	B	C	D	E	F
VTL4000ATC	9500	12500	4000	1330	6200	7400
VTL4000ATC+C	9500	12500	4000	1330	6200	7400
VTL4000ATC- I	9500	12500	4000	1330	6600	8000
VTL4000ATC- II	9500	12500	4000	1330	6600	8600
VTL4500ATC	9500	12500	4500	1385	6600	7800
VTL4500ATC+C	9500	12500	4500	1385	6600	7800
VTL4500ATC- I	9500	12500	4500	1385	6800	8200
VTL4500ATC- II	9500	12500	4500	1385	6800	8600

Unit: mm

VTL 2R Series



Model	A	B	C	D	E	F
VTL1600ATC-2R	5850	5000	1600	970	4600	5300
VTL2000ATC-2R	6900	5900	2000	1080	5300	6450
VTL2500ATC-2R	7920	6300	2500	1080	5400	6550
VTL3000ATC-2R	11000	7000	3000	1140	6200	7400
VTL3500ATC-2R	12500	8500	3500	1140	6200	7400
VTL4000ATC-2R	12500	8500	4000	1140	6200	7400
VTL4500ATC-2R	13000	10500	4500	1295	6400	7800

Unit: mm

Machine Specifications

Capacity			VTL1000		VTL1200				VTL1600				VTL2000				VTL2500			
Item		Unit	ATC	ATC+C	ATC	ATC-I	ATC-II	ATC+C	ATC	ATC-I	ATC-II	ATC+C	ATC	ATC-I	ATC-II	ATC+C	ATC	ATC-I	ATC-II	ATC+C
Capacity																				
Table diameter		mm	Ø1000	Ø1000	Ø1250	Ø1250	Ø1250	Ø1250	Ø1600	Ø1600	Ø1600	Ø1600	Ø2000	Ø2000	Ø2000	Ø2000	Ø2500	Ø2500	Ø2500	Ø2500
Max. swing diameter		mm	Ø1350	Ø1350	Ø1600	Ø1600	Ø1600	Ø1600	Ø2000	Ø2000	Ø2000	Ø2000	Ø2500	Ø2500	Ø2500	Ø2500	Ø3000	Ø3000	Ø3000	Ø3000
Max. turning diameter		mm	Ø1100	Ø1100	Ø1350	Ø1350	Ø1350	Ø1350	Ø1800	Ø1800	Ø1800	Ø1800	Ø2300	Ø2300	Ø2300	Ø2300	Ø2800	Ø2800	Ø2800	Ø2800
Max. turning height		mm	1000	1000	1200	1600	1800	1200	1200	1600	1800	1200	1600	2000	2000	1600	1600	2000	2000	1600
Max. work-piece weight		kg	4000	4000	5000	5000	5000	5000	8000	8000	8000	8000	10000	10000	10000	10000	15000	15000	15000	15000
Travel																				
X-axis travel		mm	-400, +720	-400, +720	-600, +875	-600, +875	-600, +875	-600, +875	-800, +1015	-800, +1015	-800, +1015	-800, +1015	-1000, +1350	-1000, +1350	-1000, +1350	-1000, +1350	-900, +1600	-900, +1600	-900, +1600	-900, +1600
Z-axis travel		mm	800	800	900	900	1200	900	900	900	1200	900	950	1200	1400	950	1200	1200	1400	1200
Vertical travel of crossrail		mm	500	500	800	1200	1400	800	800	1200	1400	800	1150	1550	1550	1150	1150	1550	1550	1150
Spindle (FANUC motor)																				
Spindle speed		RPM	1~160	1~160	1~150	1~150	1~150	1~150	1~70	1~70	1~70	1~70	1~50	1~50	1~50	1~50	1~40	1~40	1~40	1~40
Live spindle speed	Low	RPM	160~600	160~600	150~350	150~350	150~350	150~350	70~250	70~250	70~250	70~250	50~200	50~200	50~200	50~200	40~160	40~160	40~160	40~160
	High	RPM		1~1200				1~1200				1~1200				1~1200				1~1200
Max. table torque	Low	RPM		1200~2400				1200~2400				1200~2400				1200~2400				1200~2400
	High	N-m	10,757(1097)	10,757(1097)	10,682(1090)	10,682(1090)	10,682(1090)	10,682(1090)	24,502(2500)	24,502(2500)	24,502(2500)	24,502(2500)	55,777(5691)	55,777(5691)	55,777(5691)	66,933(6829)	68,869(7027)	68,869(7027)	68,869(7027)	82,642(8432)
Feed rate																				
X-axis rapid traverse		m/min	12		12		12		12		12		10		10		10		10	
Z-axis rapid traverse		m/min	10		10		10		10		10		10		10		10		10	
Cutting feed rate		mm/min	1~2000		1~2000		1~2000		1~2000		1~2000		1~2000		1~2000		1~2000		1~2000	
Manual feed rate		m/min	0~6		0~6		0~6		0~6		0~6		0~6		0~6		0~6		0~6	
Automatic Tool Changer																				
Number of tool position			12	16	12			16	12			16	12			16	12			16
Type of tool shank			7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50	
Max. tool length of ATC		mm	380		380		380		380		380		380		380		380		380	
Max. tool weight		kg	50		50		50		50		50		50		50		50		50	
Max. loading weight of ATC		kg	600	800	600			800	600			800	600			800	600			800
Time of tool change (tool to tool)		sec	40		40		40		40		40		40		40		50		50	
Controller (FANUC)			FANUC 0i-T										FANUC 0i-T							
FANUC motor																				
Spindle motor		kW	37/45 (αil40)		37/45 (αil40)				37/45 (αil40)				60/75 (αil60HV)				60/75 (αil60HV)			
Live spindle motor		kW		7.5/11(αil8)				7.5/11(αil8)				7.5/11(αil8)				11/15(αil12HV)				11/15(αil12HV)
X-axis servo motor		kW	7 (α30i)		6 (α40i)				6 (α40i)				5.5(αiS40)				5.5(αiS40)			
Z-axis servo motor		kW	9(αiF40)		9(αiF40)				9(αiF40)				5.5(αiS40)				5.5(αiS40)			
CF-axis servo motor		kW		7 (αiF30)				7 (αiF30)				7 (αiF30)				5.5 (αiS40)				5.5 (αiS40)
Coolant pump		kW	3		3				3				3				3			
Power capacity		KVA	85	105	85			105	85			105	115			130	115			130
Tank capacity																				
Hydraulic tank		L	60	130	130				130				130				130			
Coolant tank		L	750	750	550				550				900				1100			
Lubrication tank		L	4.6	4.6	4.6				4.6				4.6				4.6			
Machine dimension																				
Floor dimension		mm	4620 x 3850		5580 x 4260				5850 x 4510				6850 x 4650				7550 x 5130			
Machine height		mm	4850	4950	5400	5800	6600	5400	5400	5800	6500	5400	6270	7070	7670	6290	6650	7050	7700	6650
Machine weight		kg	21000	22000	33000	34500	36500	33500	37000	38000	39500	37500	49000	49500	50000	49500	55500	60000	60500	57000

※Specification is subject to change without prior notice

Machine Specifications

Capacity		VTL3000				VTL3500				VTL4000				VTL4500			
Item	Unit	ATC	ATC-I	ATC-II	ATC+C	ATC	ATC-I	ATC-II	ATC+C	ATC	ATC-I	ATC-II	ATC+C	ATC	ATC-I	ATC-II	ATC+C
Capacity																	
Table diameter	mm	Ø3000	Ø3000	Ø3000	Ø3000	Ø3500	Ø3500	Ø3500	Ø3500	Ø4000	Ø4000	Ø4000	Ø4000	Ø4500	Ø4500	Ø4500	Ø4500
Max. swing diameter	mm	Ø3400	Ø3400	Ø3400	Ø3400	Ø4100	Ø4100	Ø4100	Ø4100	Ø4600	Ø4600	Ø4600	Ø4600	Ø5100	Ø5100	Ø5100	Ø5100
Max. turning diameter	mm	Ø3300	Ø3300	Ø3300	Ø3300	Ø3800	Ø3800	Ø3800	Ø3800	Ø4300	Ø4300	Ø4300	Ø4300	Ø4800	Ø4800	Ø4800	Ø4800
Max. turning height	mm	1600	2200	2800	1600	1600	2200	2800	1600	1500	2100	2700	1500	1500	2100	2700	1500
Max. work-piece weight	kg	20000	20000	20000	20000	20000	20000	20000	20000	30000	30000	30000	30000	30000	30000	30000	30000
Travel																	
X-axis travel	mm	-1500,+1650				-1500,+1650				-2000,+2350				-2000,+2650			
Z-axis travel	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Vertical travel of crossrail	mm	1200	1400	2000	1200	1200	1400	2000	1200	1200	1400	2000	1200	1200	1400	2000	1200
Spindle (FANUC motor)																	
Spindle speed Low	RPM	1~40	1~40	1~40	1~40	1~14	1~14	1~14	1~14	1~14	1~14	1~14	1~14	1~14	1~14	1~14	1~14
Spindle speed High	RPM	40~120	40~120	40~120	40~120	14~60	14~60	14~60	14~60	14~60	14~60	14~60	14~60	14~60	14~60	14~60	14~60
Live spindle speed Low	RPM				1~1200				1~1200				1~1200				1~1200
Live spindle speed High	RPM				1200~2400				1200~2400				1200~2400				1200~2400
Max. table torque	N-m	67,605(6898)			81,126(8278)	309,379(31,569)			336,282(34,314)	308,188(31,447)			334,987(34,182)	308,188(31,447)			334,987(34,182)
Feed rate																	
X-axis rapid traverse	m/min	6		6		6		6		6		6		6		6	
Z-axis rapid traverse	m/min	10		10		10		10		10		10		10		10	
Cutting feed rate	mm/min	1~2000		1~2000		1~2000		1~2000		1~2000		1~2000		1~2000		1~2000	
Manual feed rate	m/min	0~6		0~6		0~6		0~6		0~6		0~6		0~6		0~6	
Automatic Tool Changer																	
Number of tool position		16				16				16				16			
Type of tool shank		7/24 Taper BT-50				7/24 Taper BT-50				7/24 Taper BT-50				7/24 Taper BT-50			
Max. tool length of ATC	mm	400				400				400				400			
Max. tool weight	kg	50				50				50				50			
Max. loading weight of ATC	kg	800				800				800				800			
Time of tool change (tool to tool)	sec	60				60				60				60			
Controller (FANUC)		FANUC 0i-T								FANUC 0i-T							
FANUC motor																	
Spindle motor	kW	60/75(aiI60HV)			37/45(aiI40HV)x2	100/120(aiI00HV)			60/75(aiI60HV)x2	100/120(aiI00HV)			60/75(aiI60HV)x2	100/120(aiI00HV)			60/75(aiI60HV)x2
Live spindle motor	kW				11/15(aiI12HV)				11/15(aiI12HV)				15/18(aiI15HV)				15/18(aiI15HV)
X-axis servo motor	kW	5.5 (aiS40)				5.5 (aiS40)				5.5(aiS40)				5.5(aiS40)			
Z-axis servo motor	kW	5.5 (aiS40)				5.5 (aiS40)				5.5(aiS40)				5.5(aiS40)			
Coolant pump	kW	3				3				3				3			
Power capacity	KVA	115			185	115			185	130			200	175			200
Tank capacity																	
Hydraulic tank	L	130				130				130				130			
Coolant tank	L	2000				2500				2500				2800			
Lubrication tank	L	4.6+8				4.6+8				4.6+8				4.6+8			
Machine dimension																	
Floor dimension	mm	11000 x 7000				12500 x 8500				12500 x 9500				12500 x 9500			
Machine height	mm	7400	8000	8600	7400	7400	8000	8600	7400	7400	8000	8600	7400	7800	8200	8600	7800
Machine weight	kg	70000	80000	90000	75000	90000	100000	110000	90000	100000	110000	120000	105000	125000	135000	145000	130000

※本產品若有更改設計恕不另行通知 ※Specifications subject to change without prior notice

Machine Specifications-2R Series

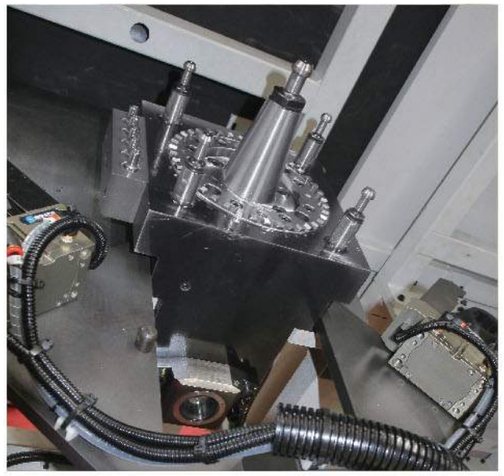
Capacity		VTL1600		VTL2000		VTL2500		VTL3000		VTL3500		VTL4000		VTL4500	
Item	Unit	ATC-2R	ATC+C-2R	ATC-2R	ATC+C-2R	ATC-2R	ATC+C-2R	ATC-2R	ATC+C-2R	ATC-2R	ATC+C-2R	ATC-2R	ATC+C-2R	ATC-2R	ATC+C-2R
Capacity															
Table diameter	mm	Ø1600	Ø1600	Ø2000	Ø2000	Ø2500	Ø2500	Ø3000	Ø3000	Ø3500	Ø3500	Ø4000	Ø4000	Ø4500	Ø4500
Max. swing diameter	mm	Ø2000	Ø2000	Ø2500	Ø2500	Ø3000	Ø3000	Ø3500	Ø3500	Ø4100	Ø4100	Ø4600	Ø4600	Ø5100	Ø5100
Max. turning diameter	mm	Ø1800	Ø1800	Ø2300	Ø2300	Ø2800	Ø2800	Ø3400	Ø3400	Ø3800	Ø3800	Ø4300	Ø4300	Ø4800	Ø4800
Max. turning height	mm	1200	1200	1600	1600	1600	1600	1600	1600	1600	1600	1500	1500	1500	1500
Max. work-piece weight	kg	8000	8000	10000	10000	15000	15000	20000	20000	20000	20000	30000	30000	30000	30000
Travel															
X-axis travel	mm	X2:-1225,-320/X1:-100,1225		X2:-1350,-650 / X1:-50,1350		X2:-1600,-650 / X1:-50,1600		X2:-1650,-700 / X1:-50,1650		X2:-1650,-700 / X1:-50,1650		X2:-2350,-700 / X1:-50,2350		X2:-2650,-700 / X1:-50,2650	
Z-axis travel	mm	900	900	950	950	1200	1200	1500	1500	1500	1500	1500	1500	1500	1500
Vertical travel of crossrail	mm	800	800	1150	1150	1150	1150	1200	1200	1200	1200	1200	1200	1000	1000
Spindle (FANUC motor)															
Spindle speed Low	RPM	1~60	1~60	1~45	1~45	1~35	1~35	1~40	1~40	1~14		1~14	1~14	1~14	1~14
Spindle speed High	RPM	60~250	60~250	45~200	45~200	35~160	35~160	40~120	40~120	14~60		14~60	14~60	14~60	14~60
Live spindle speed Low	RPM		1~1200		1~1200		1~1200		1~1200		1~1200		1~1200		1~1200
Live spindle speed High	RPM		1200~2400		1200~2400		1200~2400		1200~2400		1200~2400		1200~2400		1200~2400
Max. table torque	N-m	40,837(4167)	40,837(4167)	102,630(10,472)	66,933(6829)	126,718(13,920)	82,642(8432)	136,420(13,920)	148,283(15,130)	309,379(31,569)	336,282(34,314)	308,188(31,447)	334,987(34,182)	308,188(31,447)	334,987(34,182)
Feed rate															
X-axis rapid traverse	m/min	12		10		10		6		6		6		6	
Z-axis rapid traverse	m/min	10		10		10		10		10		10		10	
Cutting feed rate	mm/min	1~2000		1~2000		1~2000		1~2000		1~2000		1~2000		1~2000	
Manual feed rate	m/min	0~6		0~6		0~6		0~6		0~6		0~6		0~6	
Automatic Tool Changer															
Number of tool position		12x2	16+12	12x2	16+12	12x2	16+12	16x2	16x2	16x2	16x2	16x2	16x2	16x2	16x2
Type of tool shank		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50		7/24 Taper BT-50	
Max. tool length of ATC	mm	380		380		380		380		380		380		380	
Max. tool weight	kg	50		50		50		50		50		50		50	
Max. loading weight of ATC	kg	600	800	600	800	600	800	800		800		800		800	
Time of tool change (tool to tool)	sec	40		50		50		60		60		60		60	
Controller (FANUC)		FANUC 0i-T								FANUC 0i-T					
FANUC motor															
Spindle motor	kW	100/120(αiI100HV)	37/45(αiI40HV)x2	100/120(αiI100HV)	37/45(αiI40HV)x2	100/120(αiI100HV)	60/75 (αiI60HV)x2	100/120(αiI100HV)	60/75 (αiI60HV)x2	100/120(αiI100HV)	60/75 (αiI60HV)x2	100/120(αiI100HV)	60/75 (αiI60HV)x2	100/120(αiI100HV)	60/75 (αiI60HV)x2
Live spindle motor	kW		7.5/11(αiI8)		11/15(αiI12HV)		11/15(αiI12HV)		11/15(αiI12HV)		11/15(αiI12HV)		15/18(αiI15HV)		15/18(αiI15HV)
X-axis servo motor	kW	5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2	
Z-axis servo motor	kW	5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2		5.5 (αiS40)x2	
CF-axis servo motor	kW		5.5 (αiS30)		5.5 (αiS40)		5.5 (αiS40)								
Coolant pump	kW	3		3		3		3		3		3		3	
Power capacity	KVA	125	150	125	150	125	150	135	170	150	195	165	215	165	215
Tank capacity															
Hydraulic tank	L	130+60		130+60		130+60		130+60		130+60		130+60		130+60	
Coolant tank	L	550		900		1100		2000		2500		2500		2800	
Lubrication tank	L	4.6		4.6		4.6		4.6+8		4.6+8		4.6+8		4.6+8	
Machine dimension															
Floor dimension	mm	5850 x 5000		6090 x 4660		7110 x 5080		11000 x 7000		12500 x 8500		12500 x 8500		13000 x 10500	
Machine height	mm	5300	5300	6450	6450	6550	6550	7400	7400	7400	7400	7400	7400	7800	7800
Machine weight	kg	42000	42500	54000	55000	60500	61500	77000	82000	97000	102000	107000	112000	132000	137000

※Specification is subject to change without prior notice

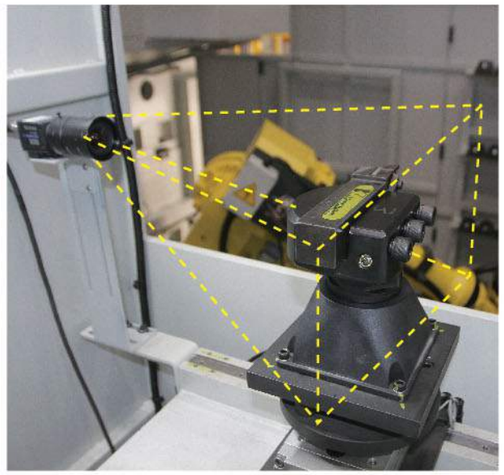
Optional accessories

AAC-Automatic robotic tool changer

AAC-Automatic attachment changer



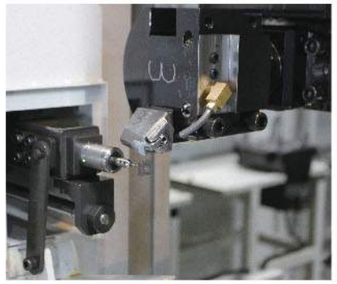
BT50 turning tool holder with 4 pull studs



Tool identification system

Tool management system

Tool magazine for 32, 48, 60 tool position



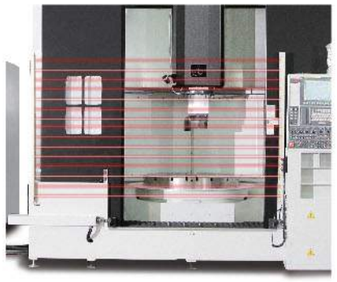
Tool presetter

Capto tool

Side door opening

APC-Automatic pallet changer

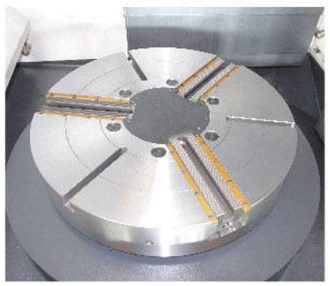
Full enclosure guarding



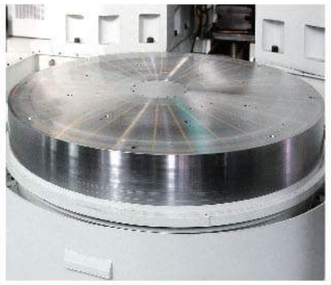
Light curtain & Auto door

Special way cover design

Spin window



3 jaws/4 jaws/6 jaws hydraulic chuck



Magnetic chuck

SIEMENS 840 D controller

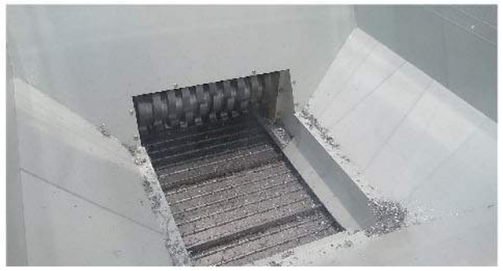
Pendant / moveable type control

Optional accessories

Hydraulic foot platform

Big slope guarding-Better chip disposal

Machine monitoring system



Chip crusher

Coolant through tooling12/20/60/ bar

X/Z axis linear scales

chips briquetting press

Oil skimmer

Operator's platform extension

Oil mist collector

Paper filter

Grinding attachment

Standard Accessories

- FANUC controller
- 4 jaws manual chuck VTL1000/1200/1600/2000 series
- 8 jaws manual chuck VTL2500/3000/3500/4000/4500 series
- 12 positions tool magazine -VTL1000-2500 ATC series
- 16 positions tool magazine -VTL1000-2500 ATC+C &VTL3000-4500 series
- Dual speed gearbox
- Pressure relief automatic lubrication system
- Chip conveyor and chip bucket
- Air conditioner for electrical cabinet
- Coolant unit
- Signal tower light (3 stage)
- Hydraulic unit
- Square guarding
- Working lamp
- Tool box with tools

Optional Accessories

- SIEMENS 840 D controller
- Tool magazine for 24, 32, 48, 70 tool position
- Coolant through spindle 12/20/70 bar
- Pendant/moveable type control
- 3 jaws/4 jaws/6 jaws hydraulic chuck
- Tool presetter
- Work piece probe
- X/Z axis linear scales
- Paper filter
- Oil mist collector
- Oil skimmer
- Coolant chiller
- Machine monitoring system
- Full enclosure guarding
- Magnetic chuck
- Grinding attachment
- Transformer
- Automatic pallet changer