

FAIR FRIEND • ENGINEERING • EXCELLENCE • LEADERSHIP • EXPERTISE • RELIABILITY



FAIR FRIEND GROUP

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ISO 9001
ISO 14001



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FTC *SERIES*

Slant Bed CNC Turning Center

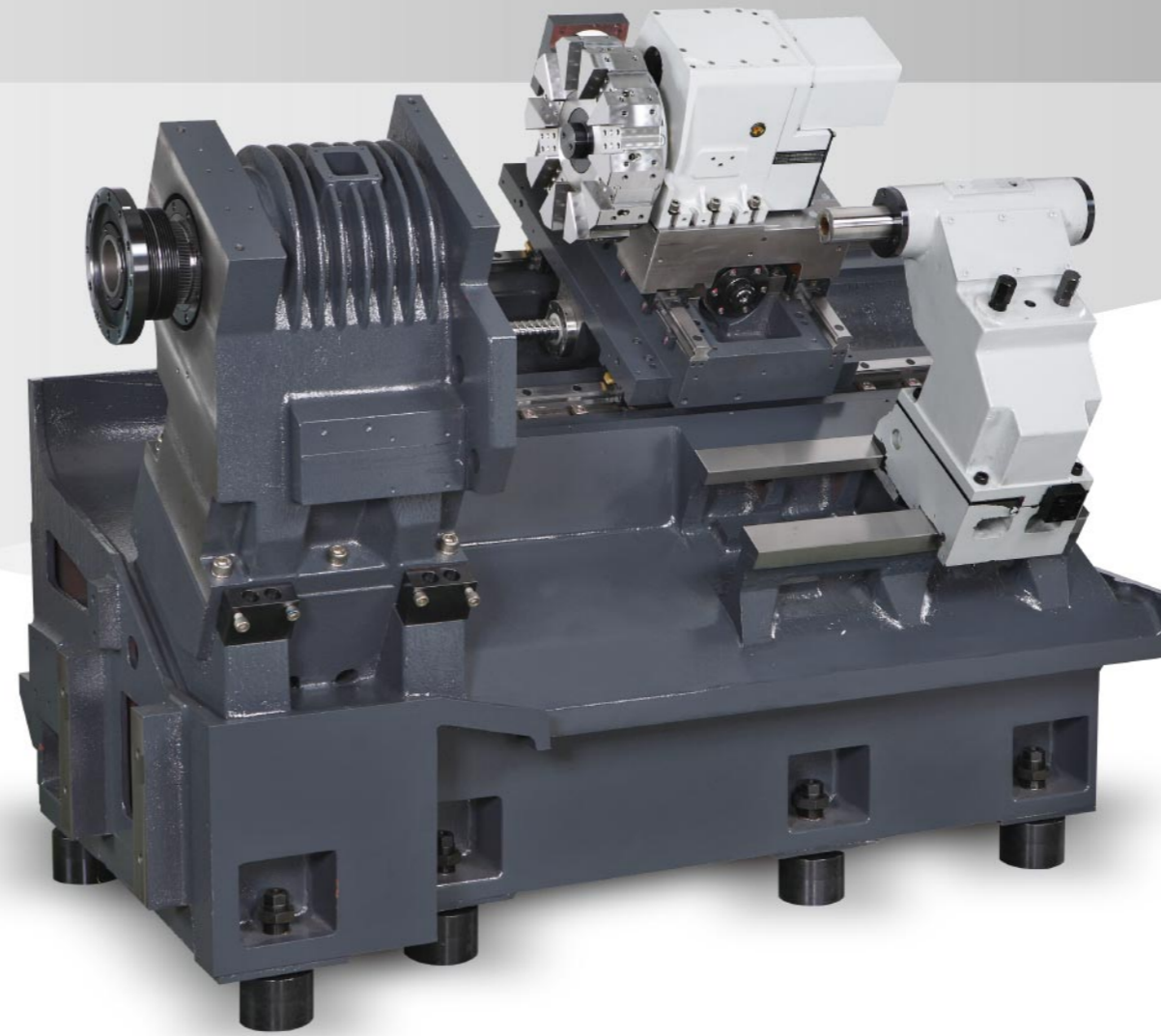
SLANT BED STRUCTURE FEATURES BEST FORCE FLOW DESIGN

FTC-300

Slant Bed CNC Turning Center 30° Slant Bed

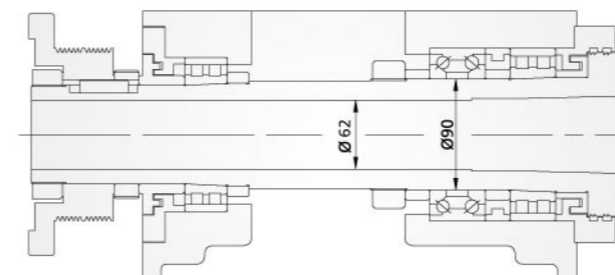
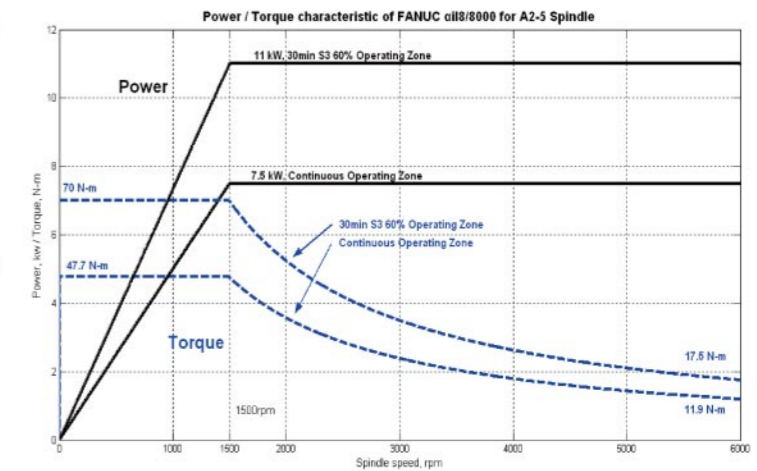
Features:

- 2.5 x 1.5 meter small footprint to save installation space.
- Linear guide ways on X, Z axis.
- 30° slant bed is one-piece constructed.
- Oil / coolant separation device prevents coolant deterioration and prolongs coolant life
- 6,000 rpm spindle speed
- 6" chuck
- Bar capacity Ø52 mm.
- Programmable tailstock (Option)



Automatic Tool Setter (OPT)

The tool setter has a touch sensor that can measure vary tool lengths and detect broken tools. It can be easily programmed to store all the tool information to reduce tool changing time.



HIGH PRECISION SPINDLE

High precision double direction angular contact thrust ball bearings are equipped on the spindle unit to meet the needs of heavy cutting. The special dissipation design on headstock eliminates heat from the spindle bearings, which also prolongs life of bearings and ensures spindle reliability.

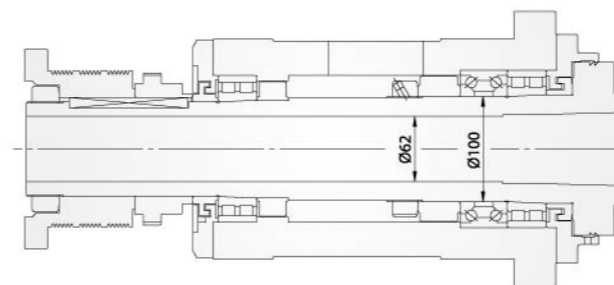
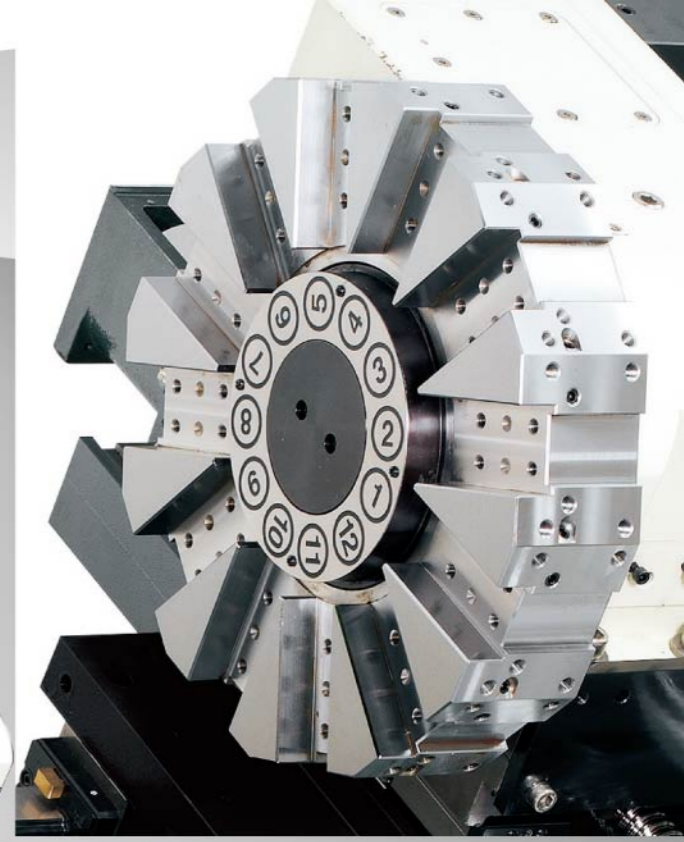
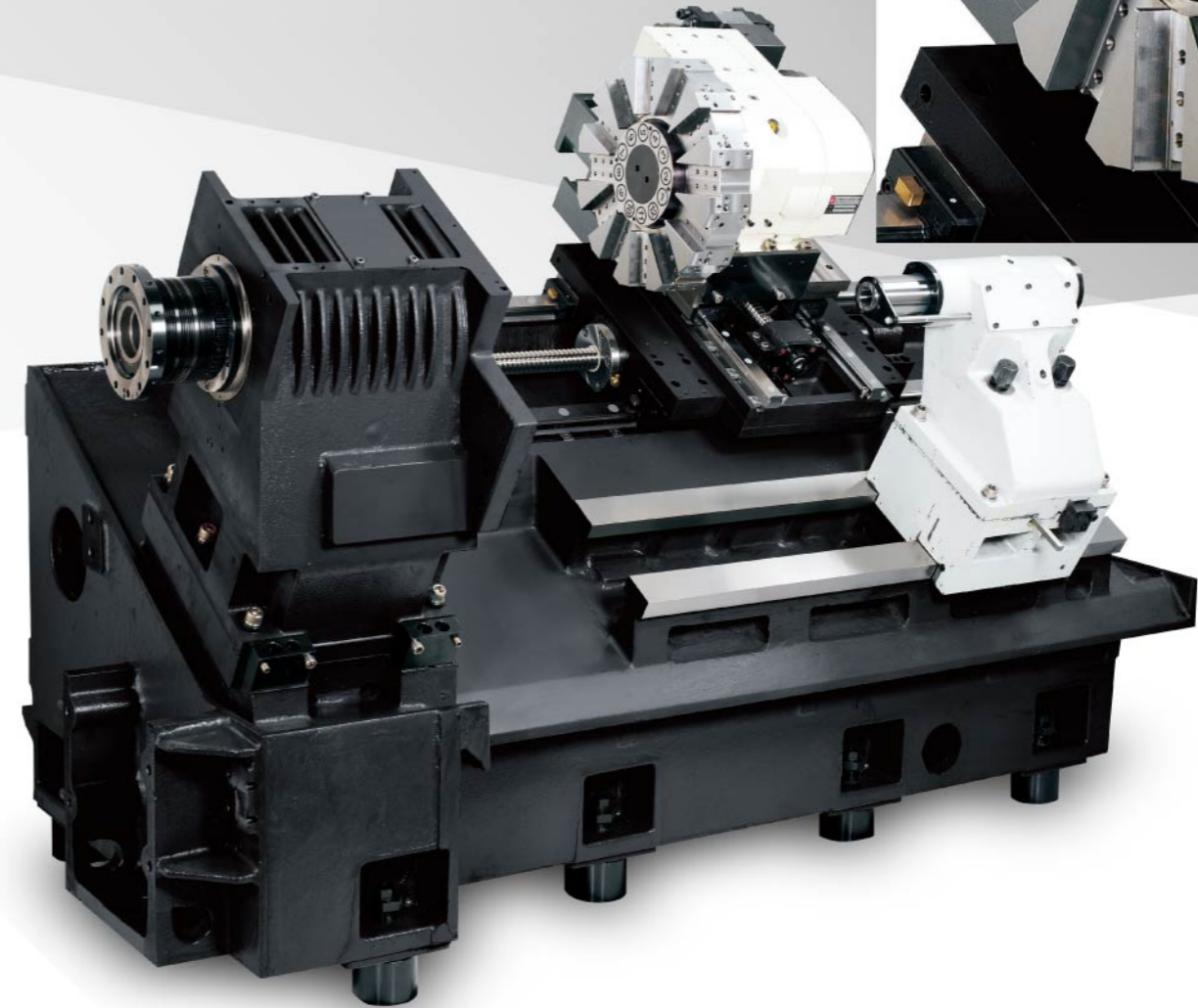
**COMBINING RIGIDITY,
EFFICIENCY AND VERSATILITY**

FTC-350, 350L, 350XL, 350LY, 350SLY

Slant Bed CNC Turning Center 30° Slant Bed

Features:

- 2.6 x 1.6 meter small footprint to save installation space
- Linear ways on X, Z-axis
- X, Z-axis rapid traverse 30 m/min
- 30° Slant bed is one-piece constructed
- 4,500 rpm spindle speed
- 8" chuck
- Bar capacity Ø52 mm (Ø66 mm OPT.)
- C axis + power tooling (FTC-350MC/ LMC/ XLMC)
- Twin spindle (FTC-350SLY)



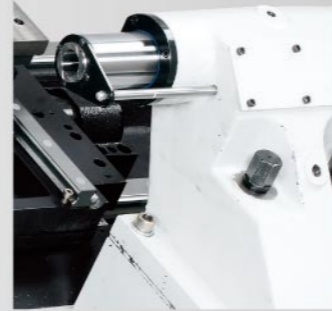
HIGH PRECISION SPINDLE

The special heat dissipation design on headstock eliminates thermal built-up on the spindle bearings. This feature also prolongs bearing service life and ensures spindle reliability. P4 grade angular contact ball bearings are equipped on the spindle unit to meet the needs of heavy cutting.

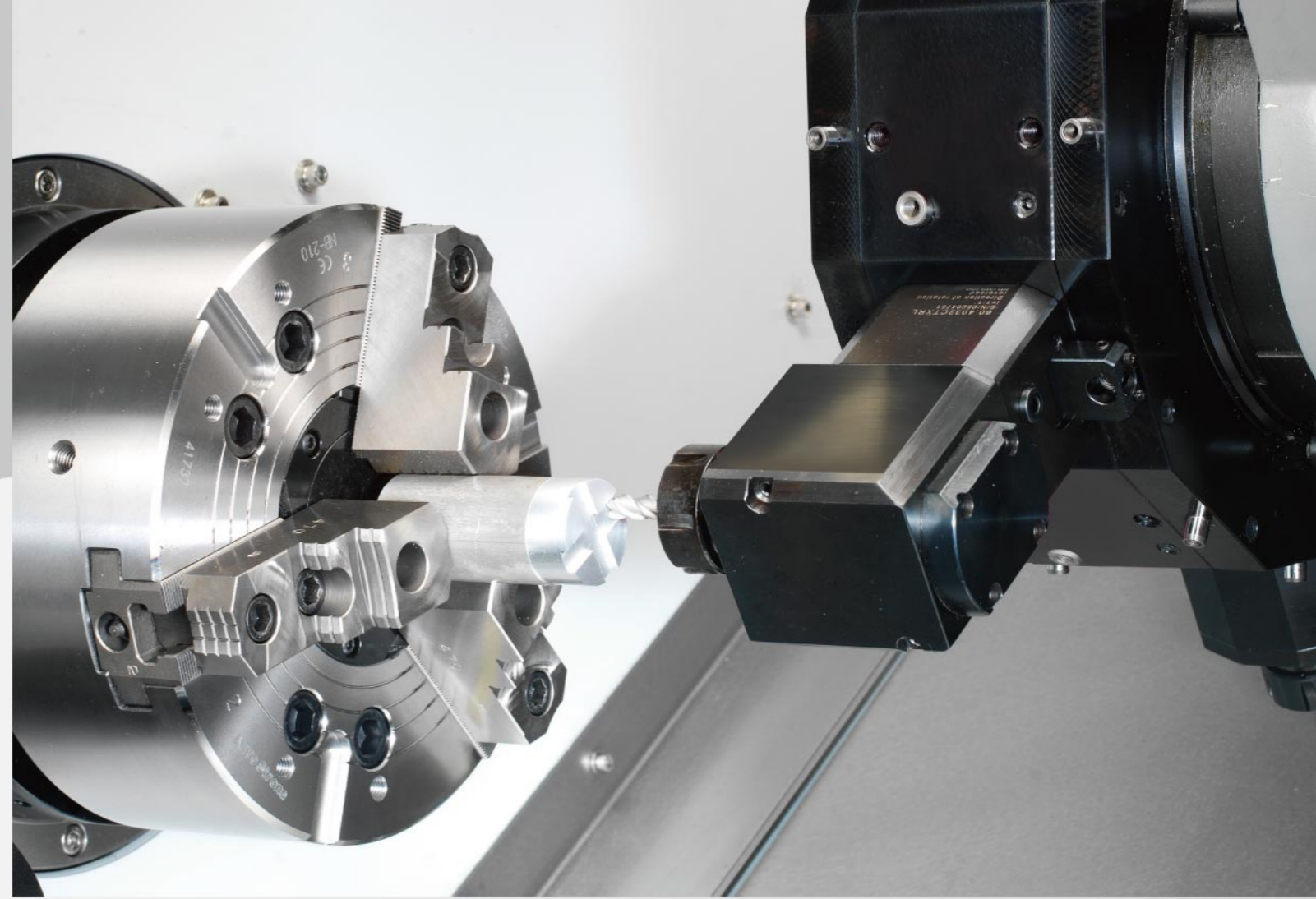
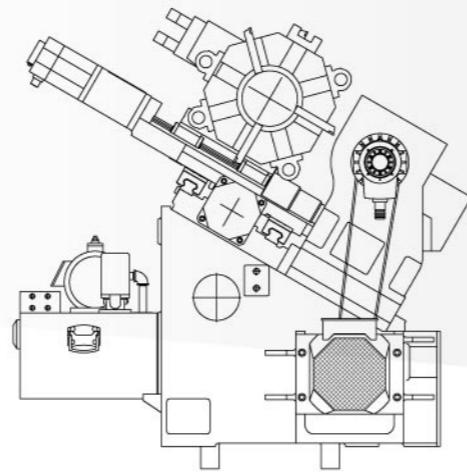
FTC-350, 350L, 350XL, 350LY, 350SLY

Max. Turning Diameter: Ø350 mm
Max. Turning Length:

MODEL	TURNING LENGTH
FTC-350	340 mm
FTC-350L	660 mm
FTC-350XL	1,000 mm
FTC-350LY	585 mm
FTC-350SLY	515 mm

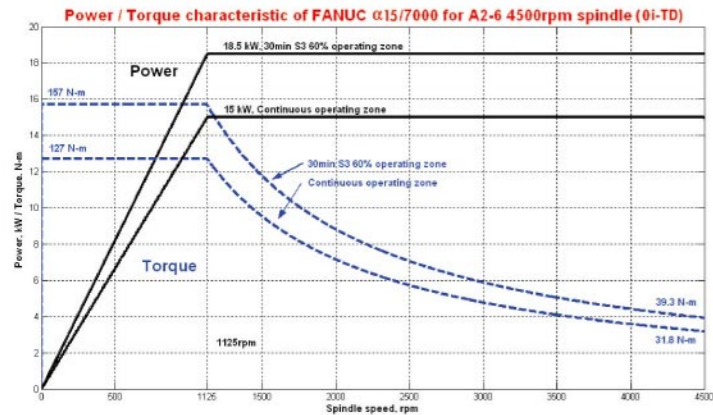


New Design

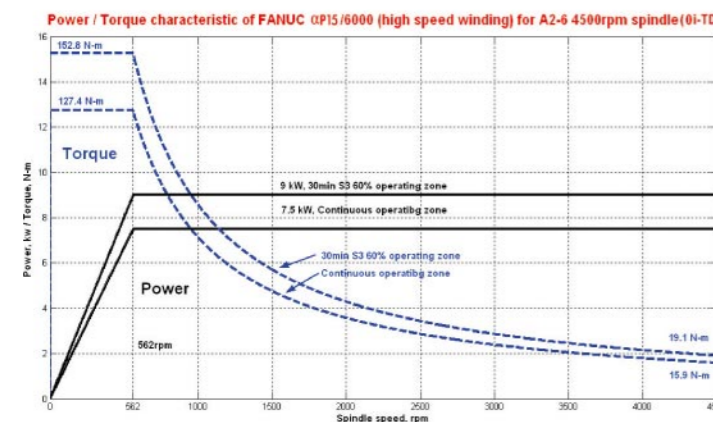
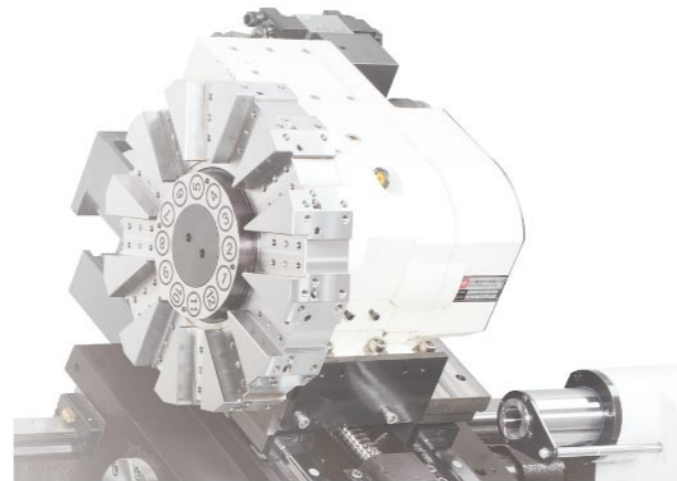


Advantageous Machine Design

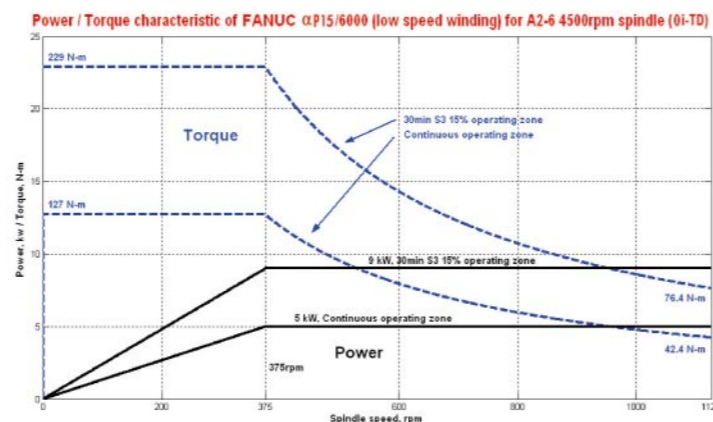
30-degree slant bed box type design assures operational safety, high speed turning accuracy and easy chip disposal.



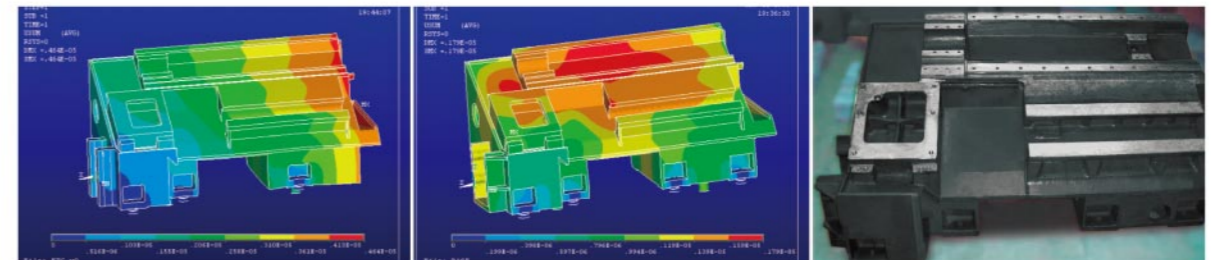
FTC-350, 350L, 350XL



FTC-350LY, 350SLY



FTC-350LY, 350SLY



High Rigidity Structure for Ultimate Performance

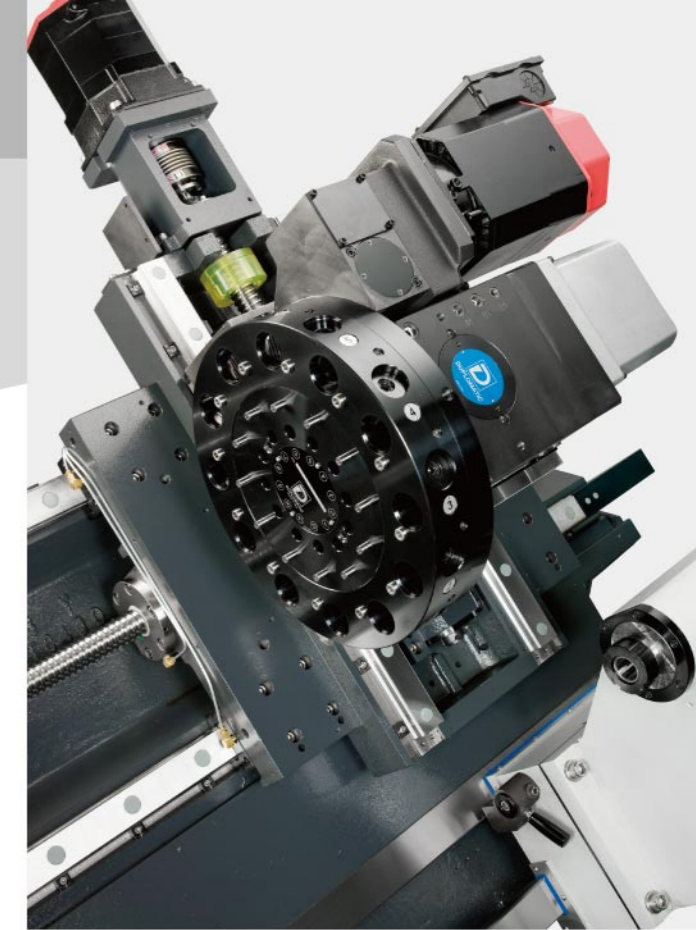
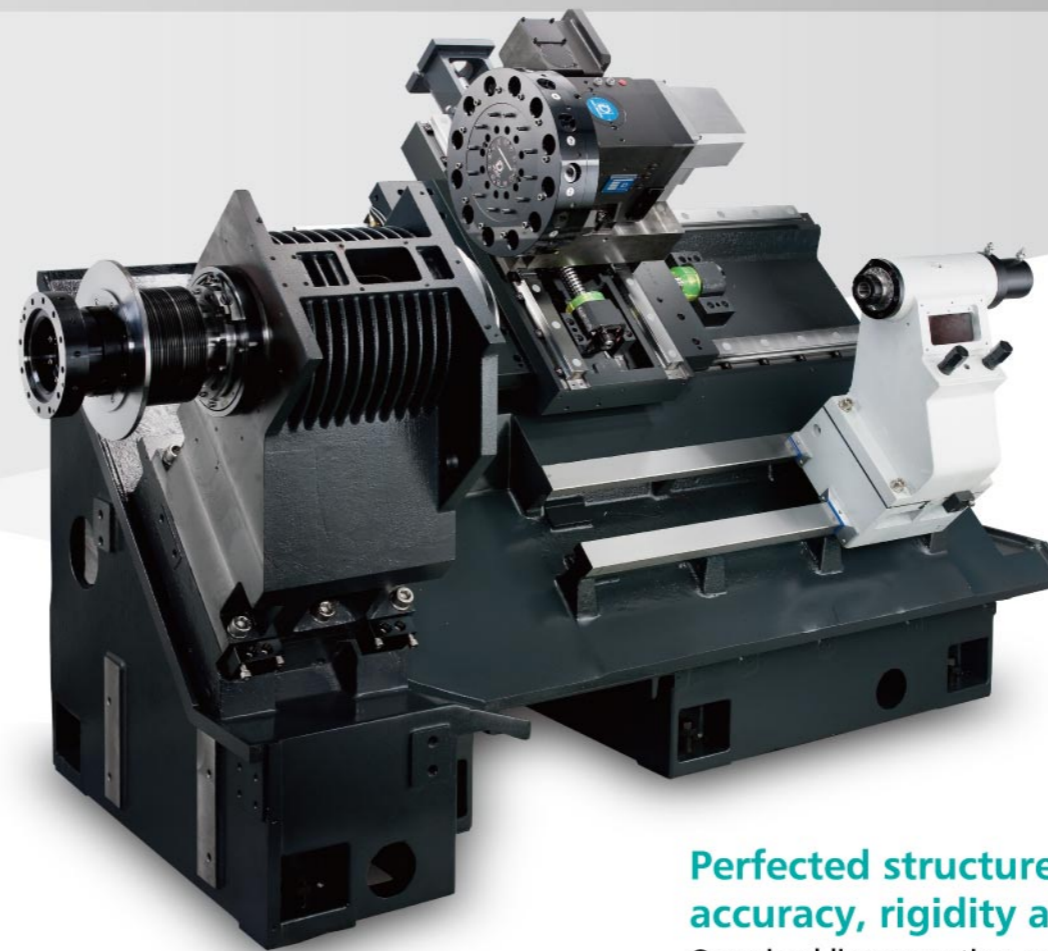
The machine structure and major parts are manufactured from MEEHANITE cast iron for outstanding material stability and assures long-term deformation-free performance. The entire machine construction underwent ANSYS and NASTRAN Finite Element Analysis to achieve optimum rigidity and stability.

ROBUST STRUCTURE TO DEAL WITH HEAVY DUTY JOBS

FTC-450, 450MC Slant Bed CNC Turning Center 45° Slant Bed

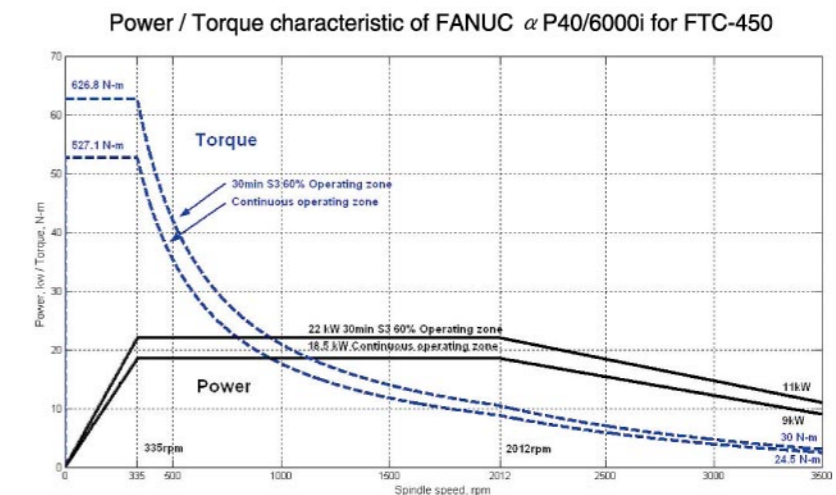
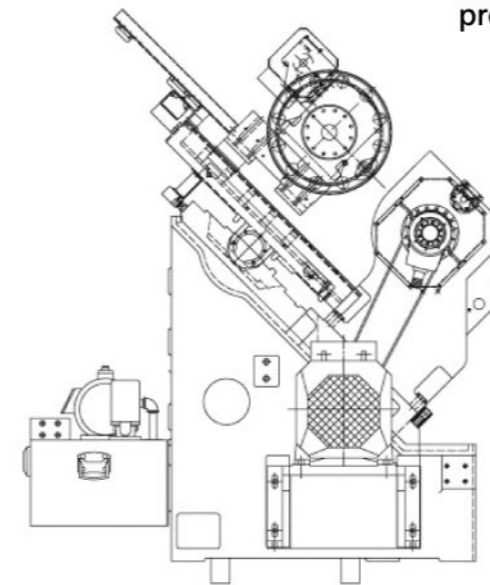
Features:

- Max. turning diameter Ø450mm (FTC-450MC, Ø270)
- Max turning length 650mm (FTC-450MC, 600mm))
- Ø78 mm bar capacity turret
- 12-position servo motor driven (FTC-450MC)
- C axis + Power tooling (FTC-450MC)
- 45° Slant bed is one-piece constructed
- Auto tool length measuring device (Opt.)
- Linear ways on X, Z-axis



Perfected structure design brings you lifetime accuracy, rigidity and stability

Oversized linear motion guideways are applied on X and Z axis, the rapid feedrate reach 30 m/min. High accuracy ball screws are pretensioned, which ensures best performance and reliability.



HIGH PRECISION SPINDLE

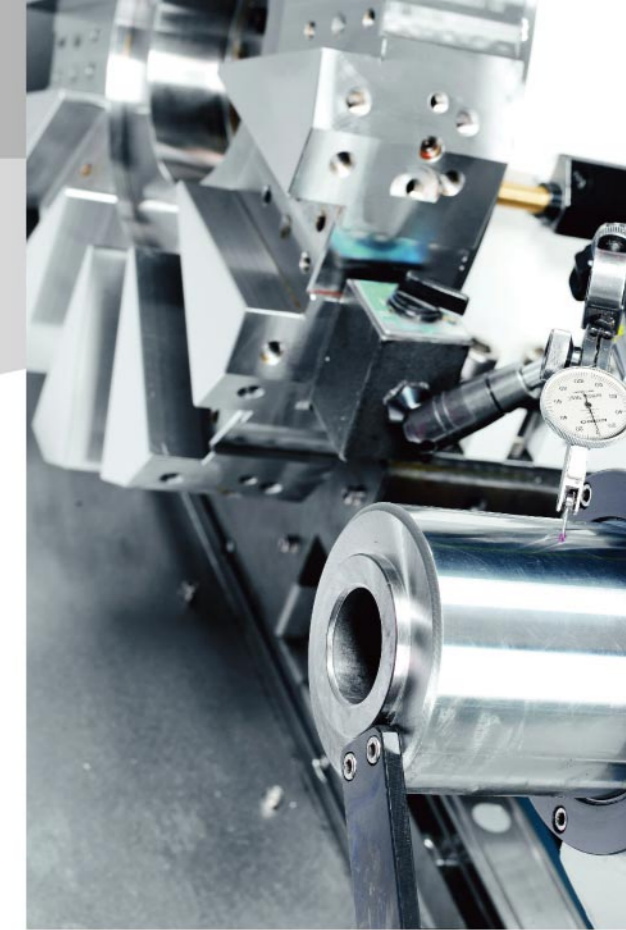
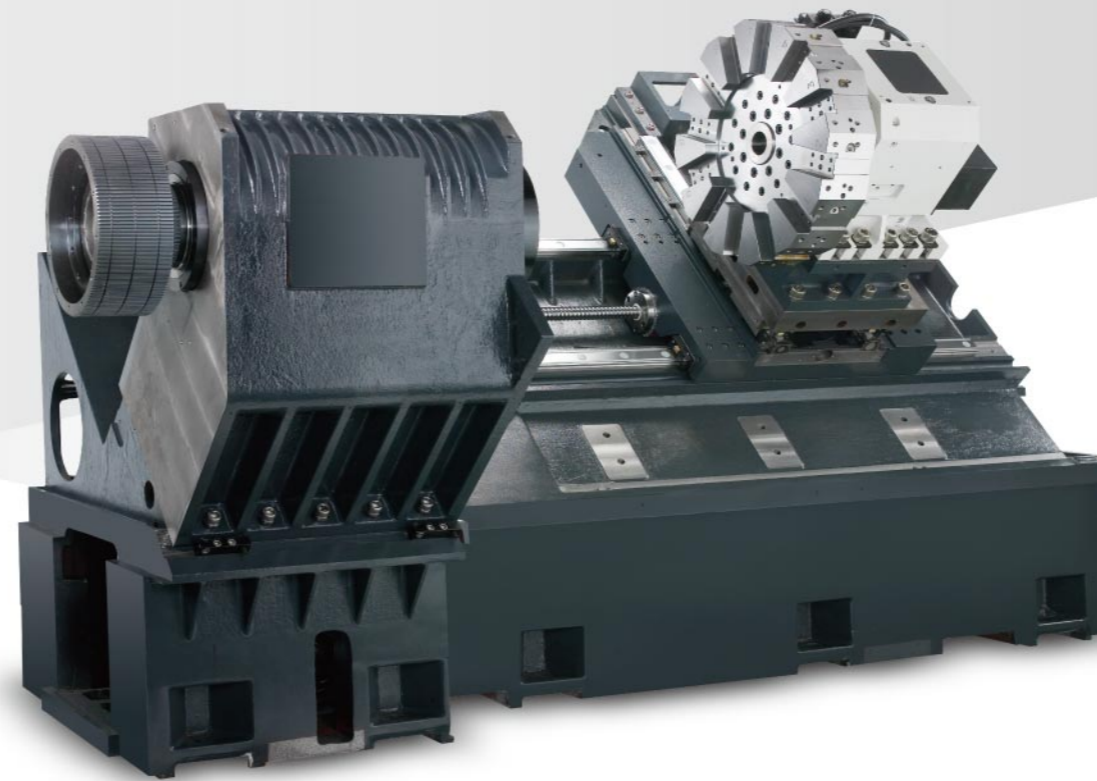
The special heat dissipation design on headstock eliminates thermal built-up on the spindle bearings. This feature also prolongs bearing service life and ensures spindle reliability. P4 grade angular contact ball bearings are equipped on the spindle unit to meet the needs of heavy cutting.

IMMENSE POWER COMES FROM ULTIMATE RIGIDITY

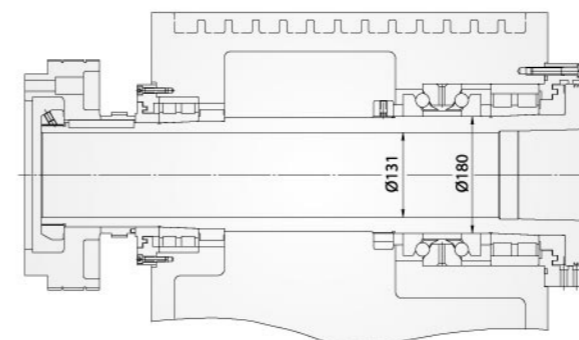
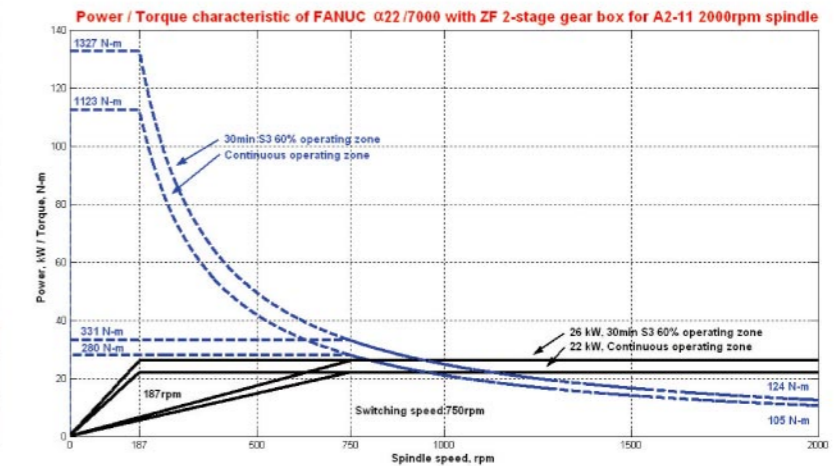
FTC-640, 640L Slant Bed CNC Turning Center 45° Slant Bed

Features:

- Two-step speed ranges with gear drive offers great torque output
- 15" hydraulic chuck
- Ø117.5 mm bar capacity
- Powerful 22 / 26 kW spindle motor
- A2-11 heavy duty spindle
- 45° Slant bed is one-piece constructed
- Linear ways on X, Z-axis
- Programmable tailstock
- Especially ideal for turning large workpieces, such as aluminum alloy wheel



Extra Large Cutting Capacity
Max. Turning Diameter: Ø640 mm
Max. Turning Length:
808 mm (FTC-640), 1,440 mm (FTC-640L)

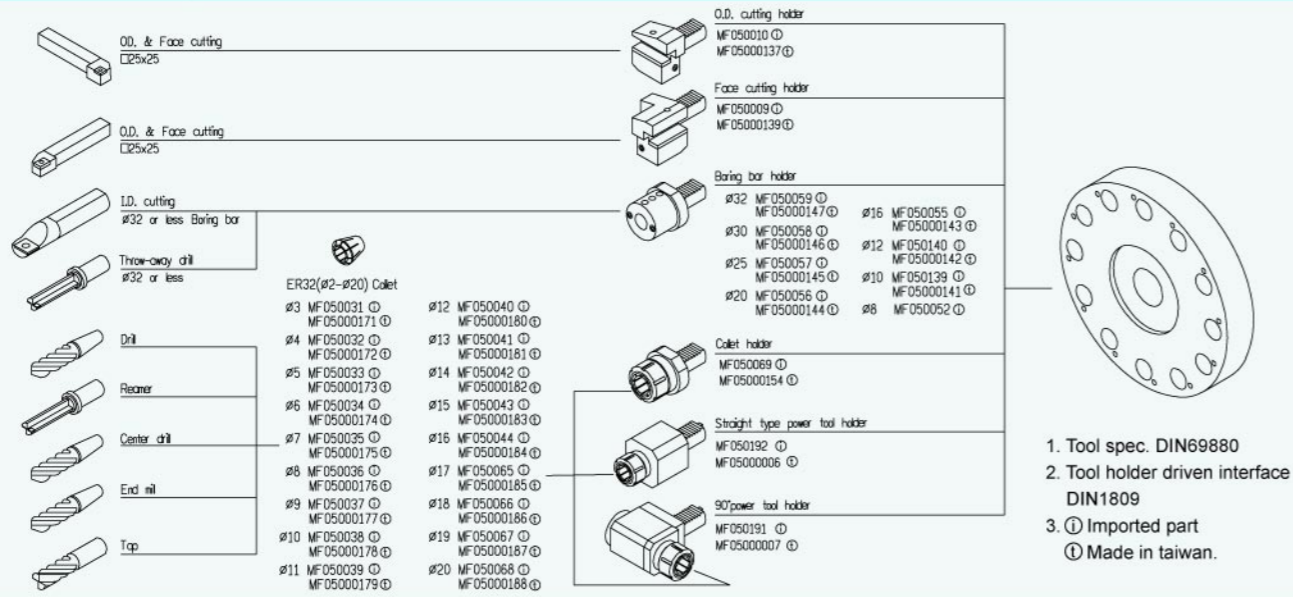


HIGH PRECISION SPINDLE

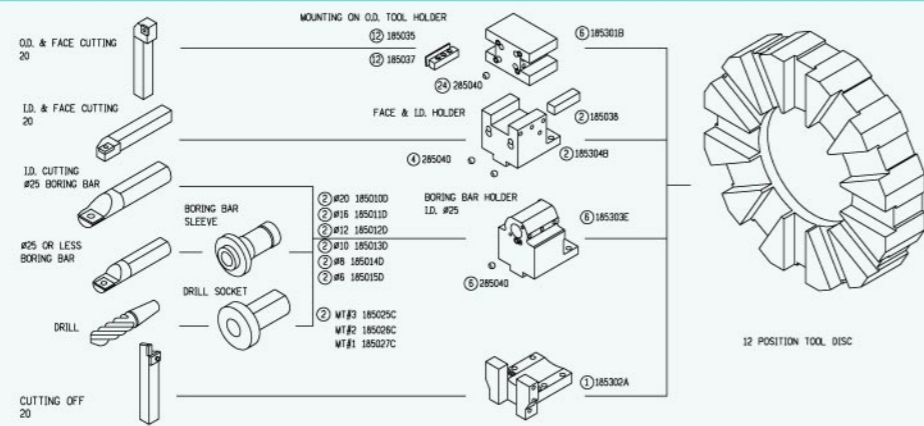
Grade double direction angular contact thrust ball bearings are equipped on the spindle unit to meet the needs of heavy cutting. The special dissipation design on headstock eliminates heat from the spindle bearings, which also prolongs life of bearings and ensures the spindle reliability.

Tooling System

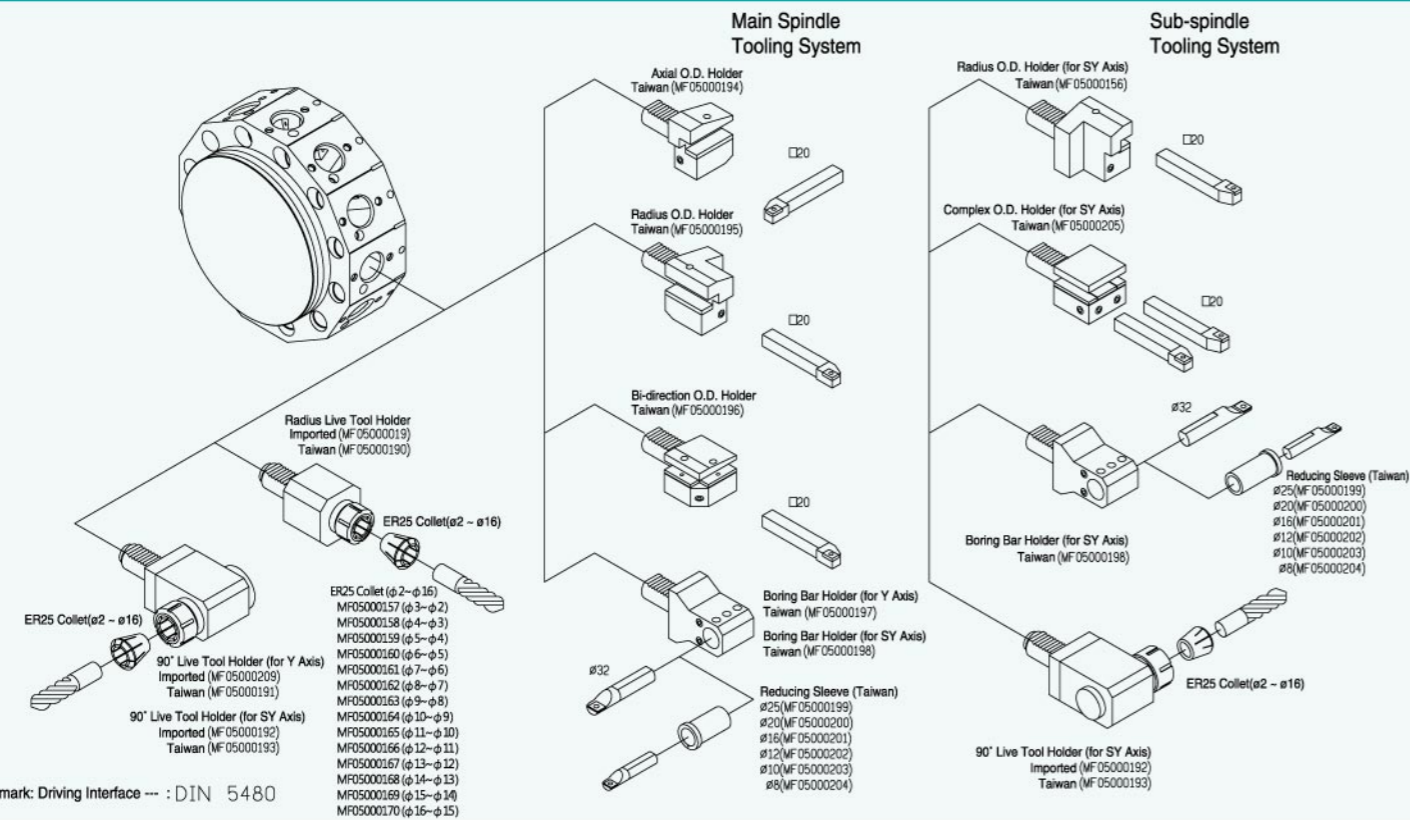
FTC-350MC/ 450MC



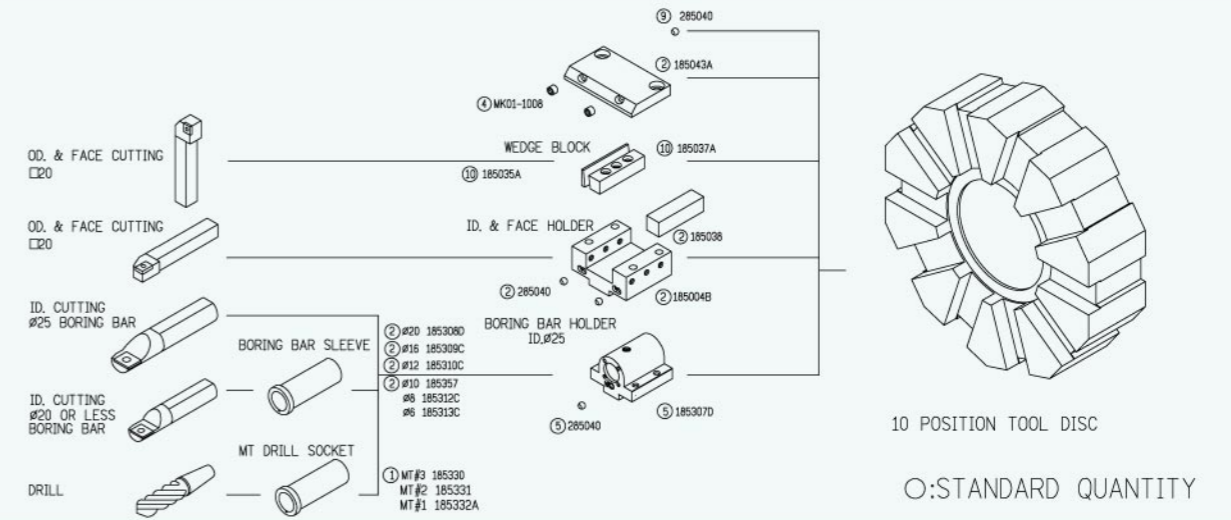
FTC-350S



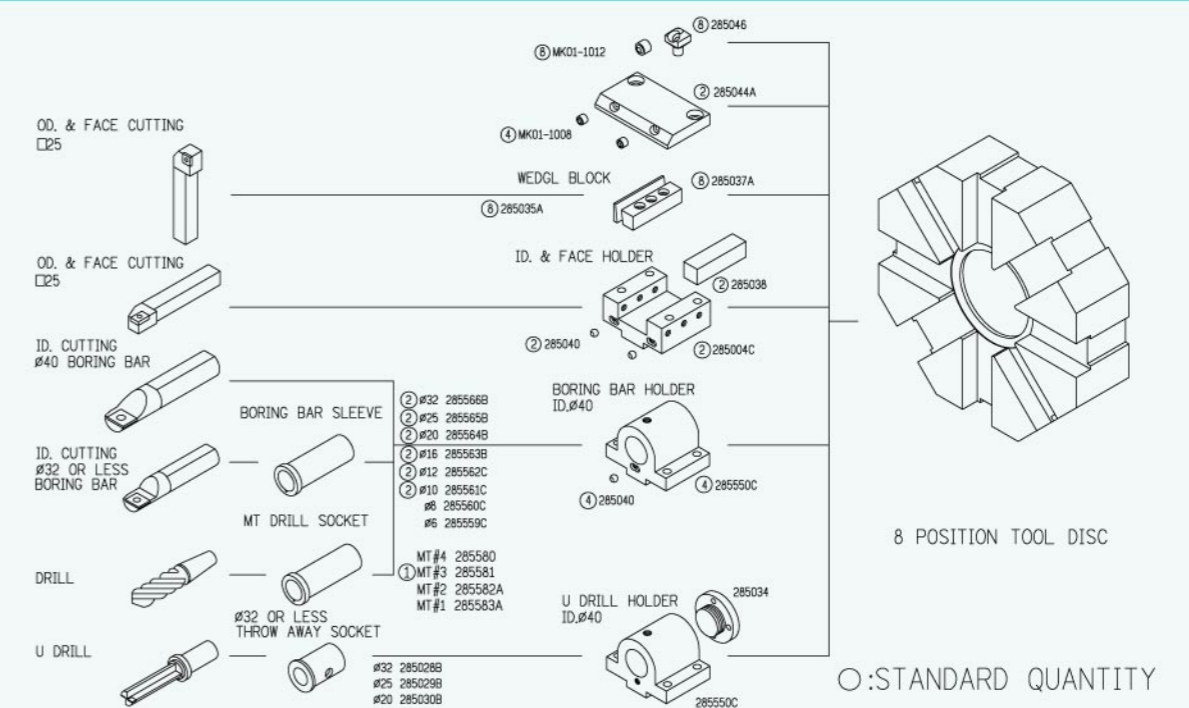
FTC-350LY / 350SLY



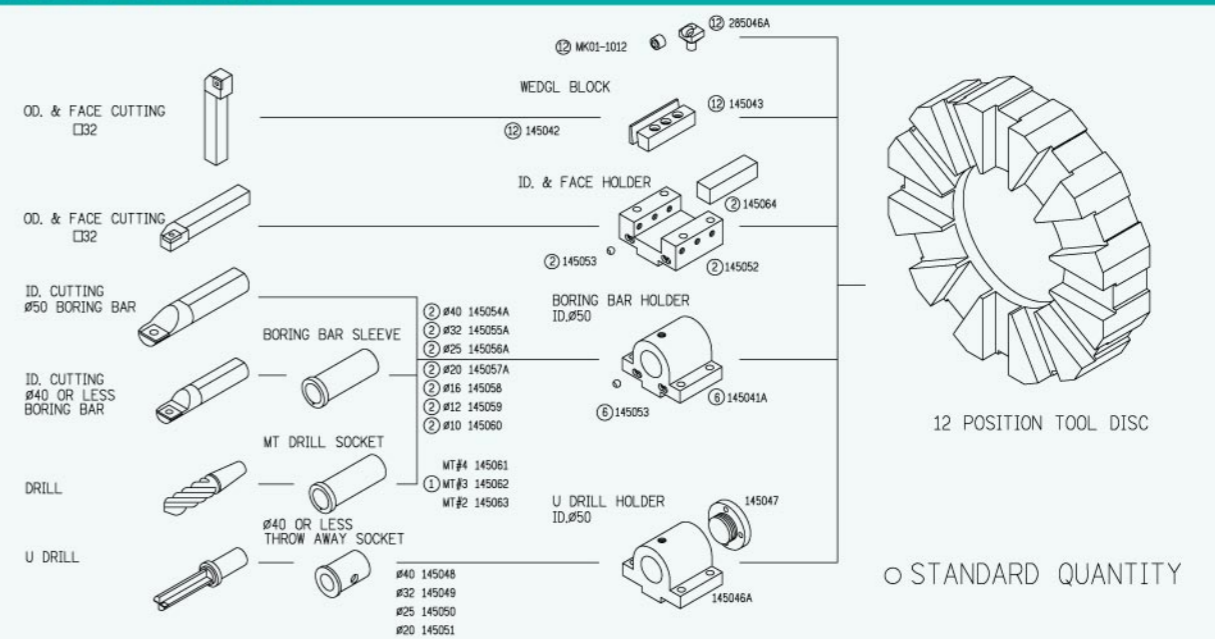
FTC-300



FTC-350 / 450



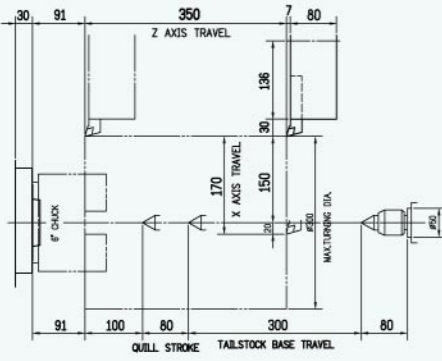
FTC-640 / 640L



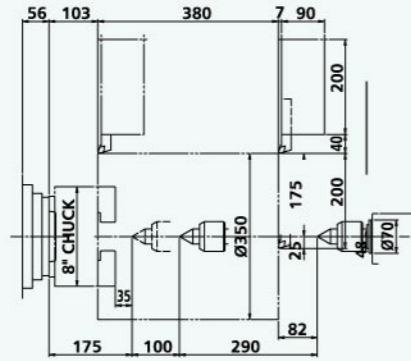
Working Capacity

FTC-300 / 350 / FTC-350L / FTC-350XL

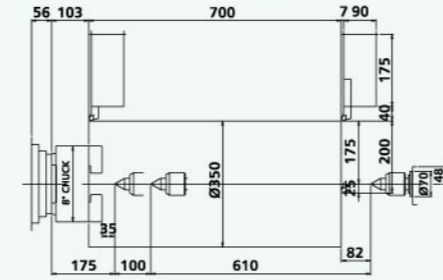
FTC-300 Working Range



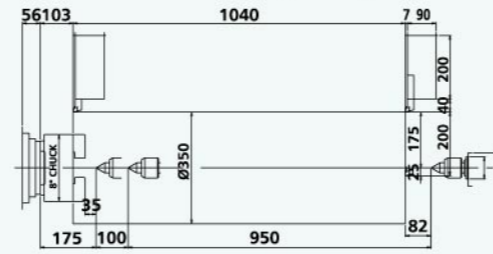
FTC-350 Working Range



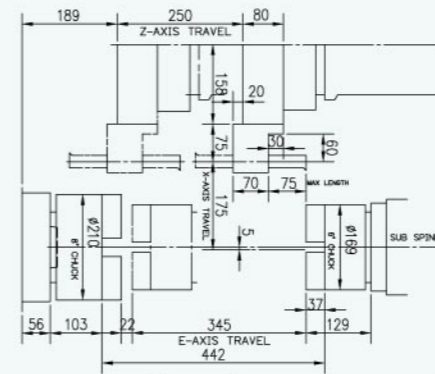
FTC-350L Working Range



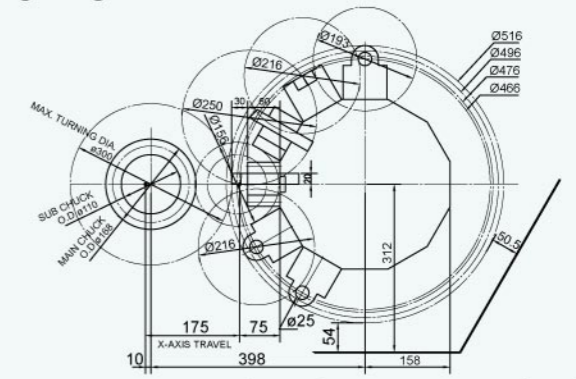
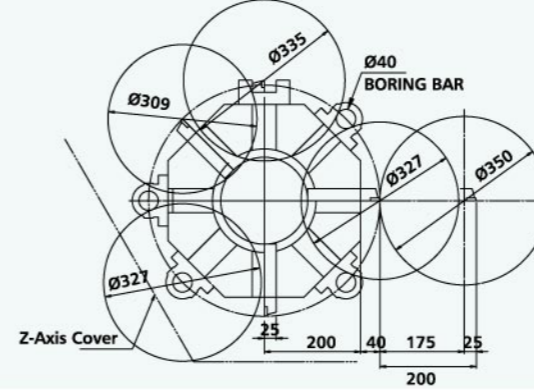
FTC-350XL Working Range



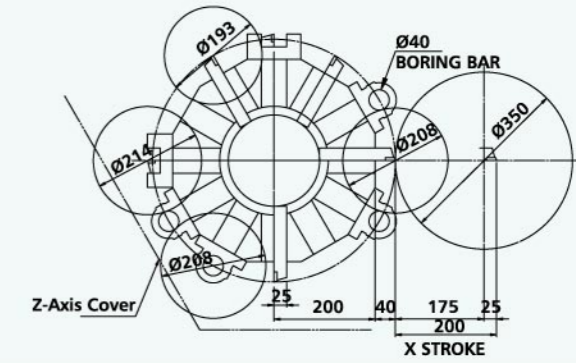
FTC-350S Working range



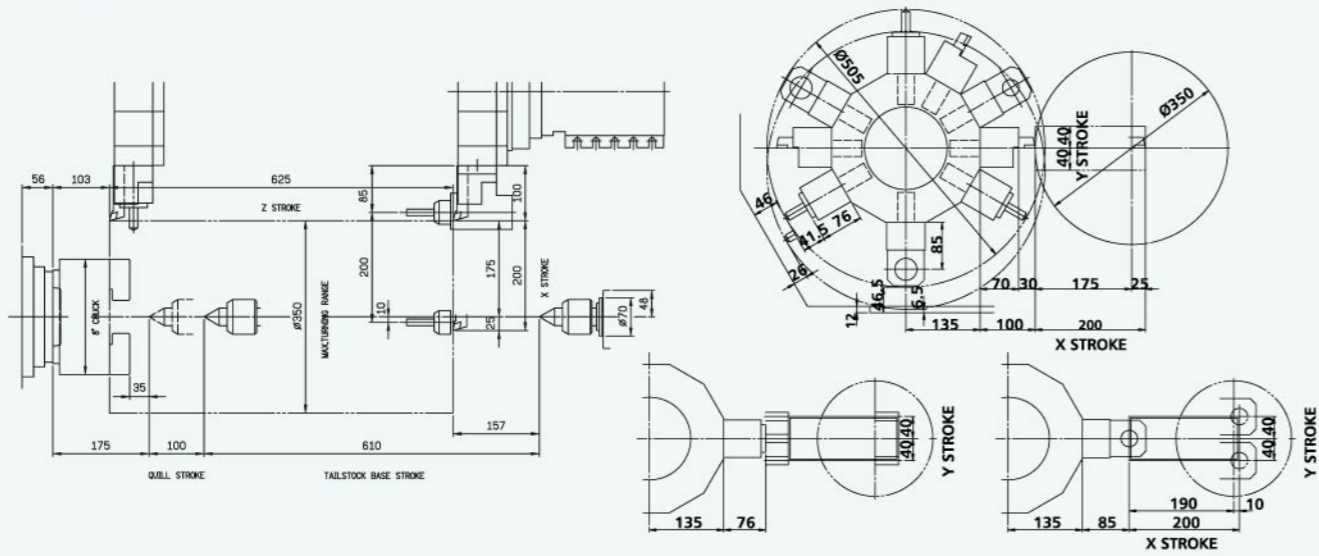
8-Position Turret Tool Interference Diagram (STD)



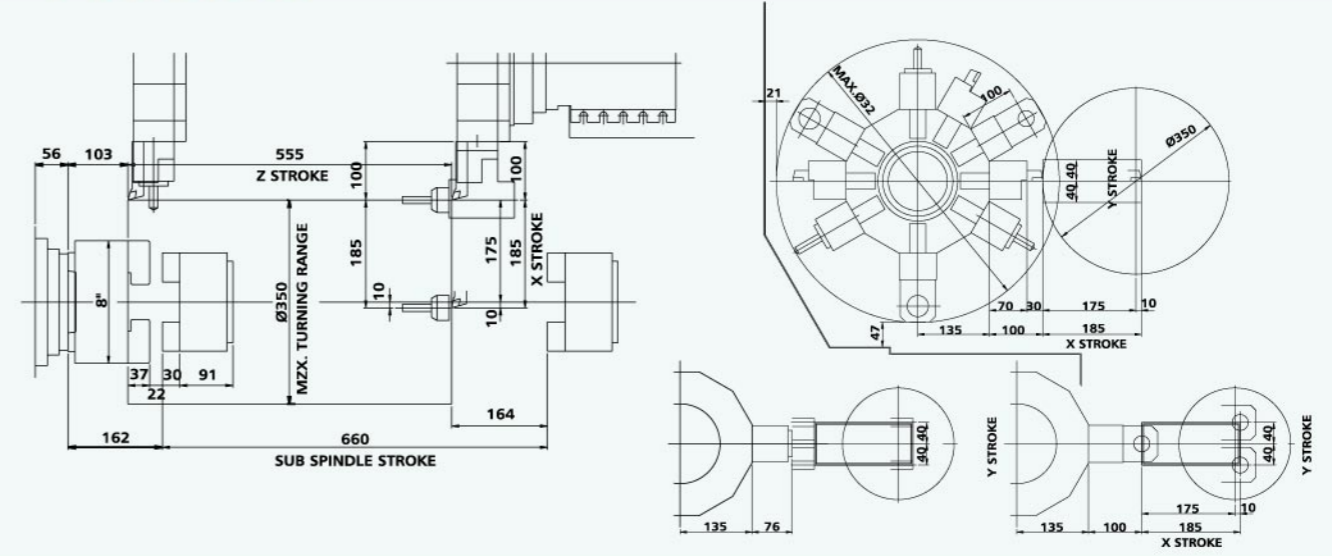
12-Position Turret Tool Interference Diagram (OPT)



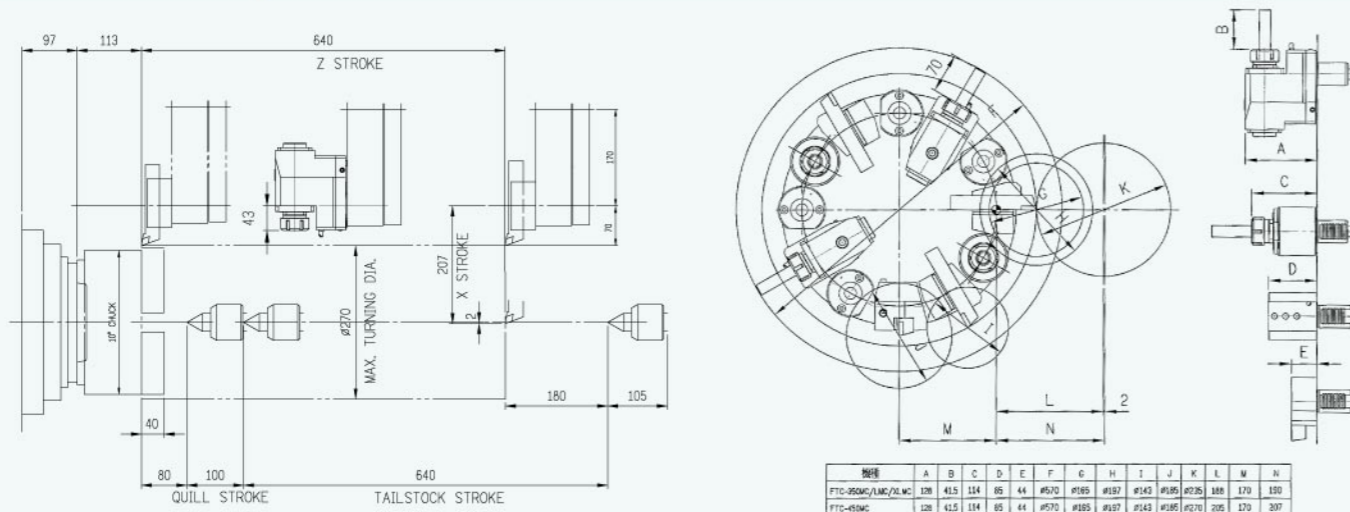
FTC-350LY



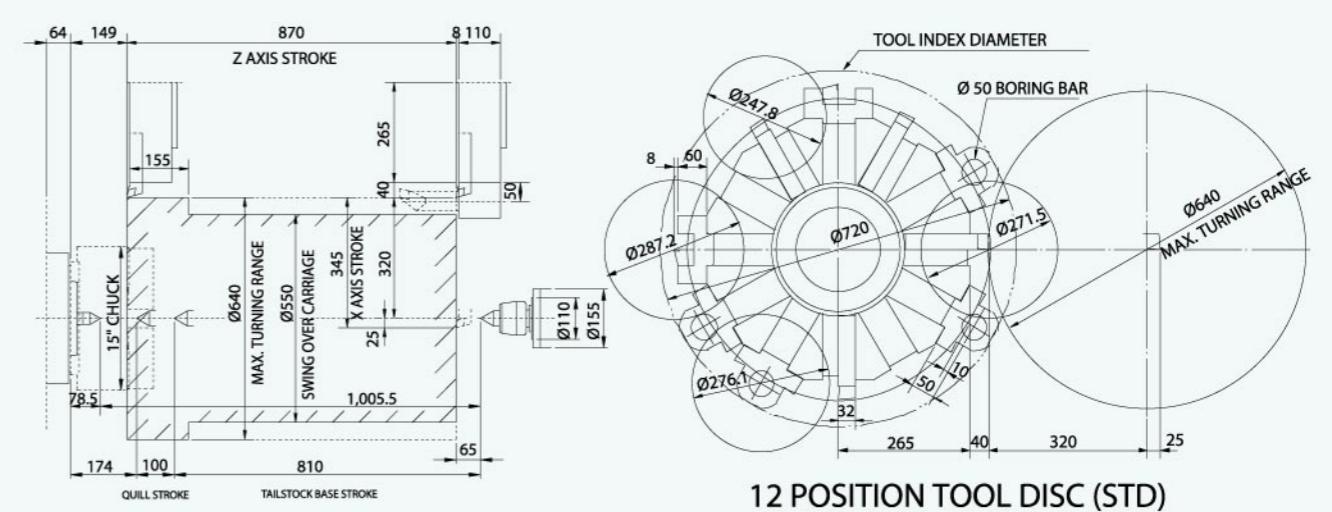
FTC-350SLY



FTC-350MC/ 450MC



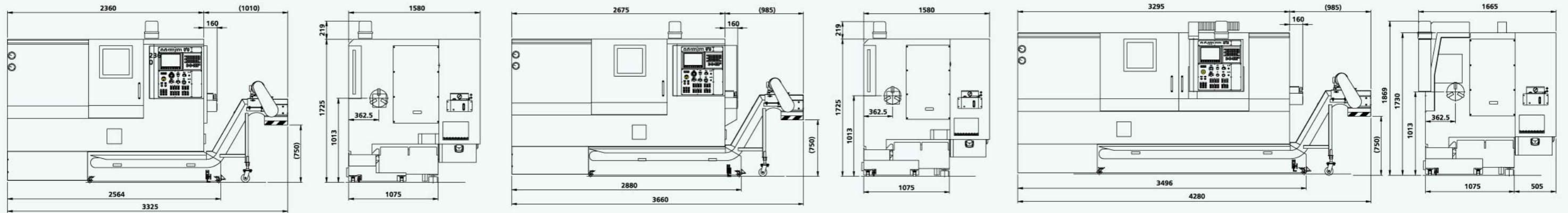
FTC-640 / FTC-640L



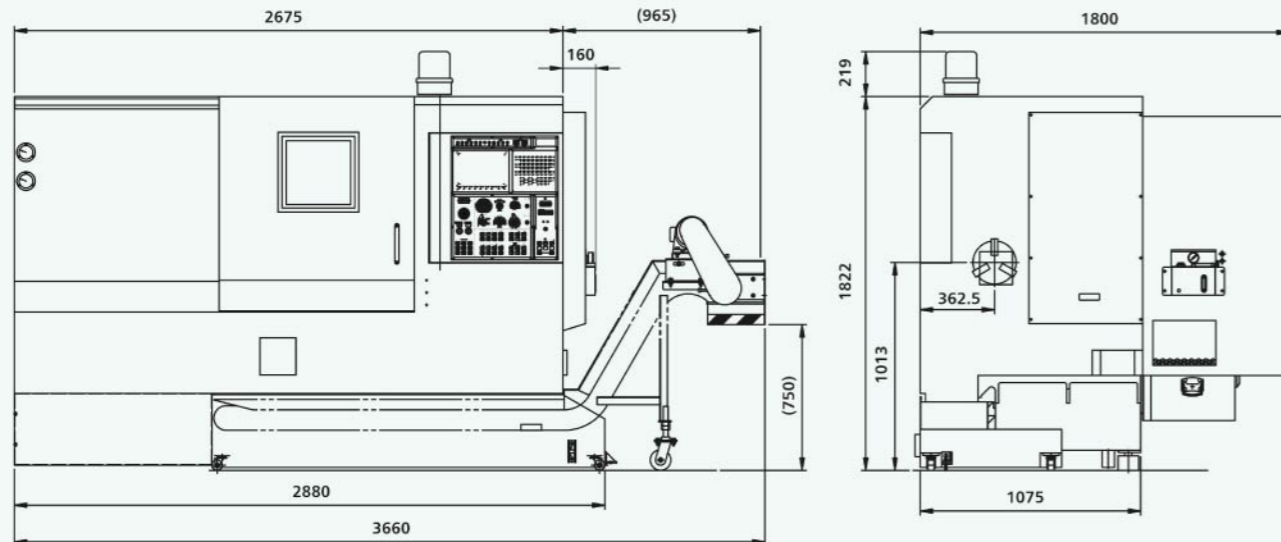
12 POSITION TOOL DISC (STD)

Machine Dimensions

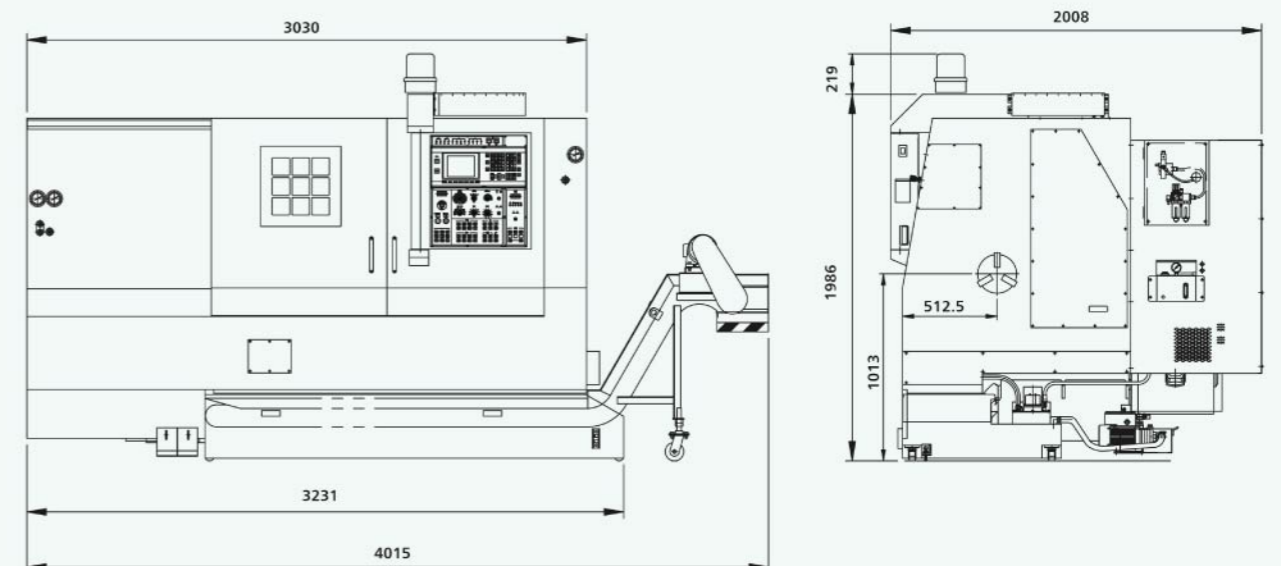
FTC-350 / FTC-350L / FTC-350XL



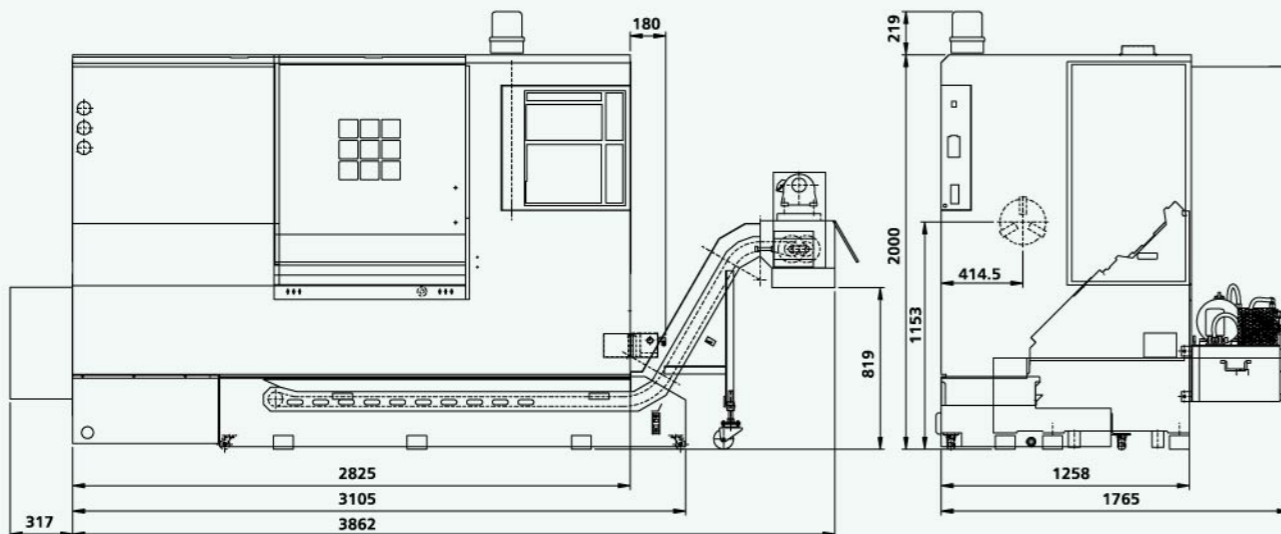
FTC-350LY



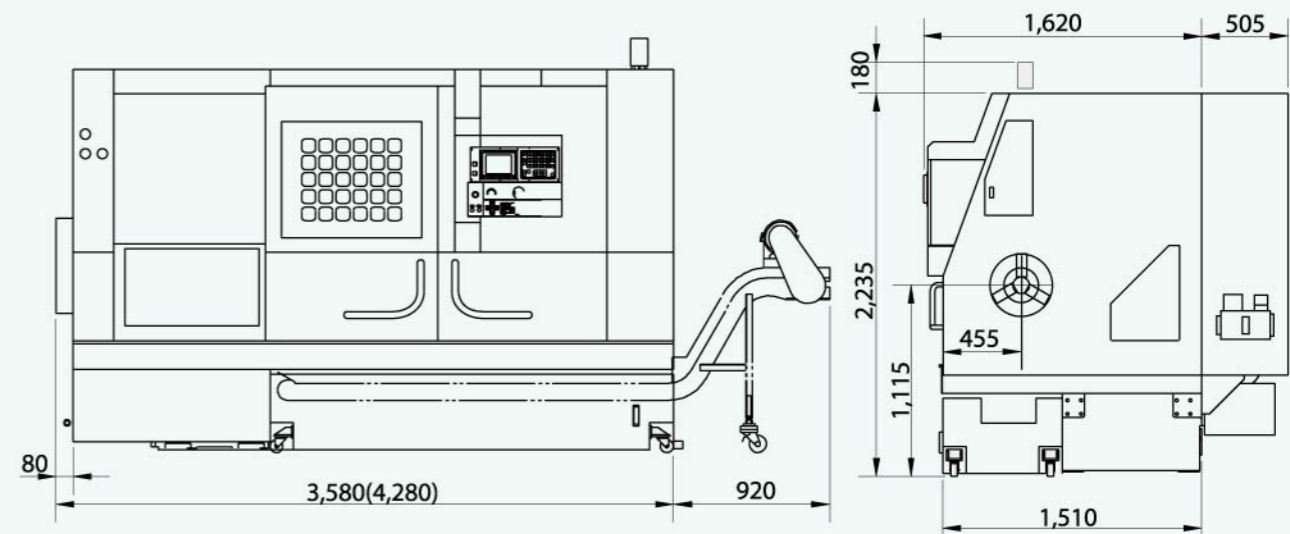
FTC-350SLY



FTC-450



FTC-640 / FTC-640L



FTC MACHINE SPECIFICATIONS

MODEL		FTC-300	FTC-350 (MC)	FTC-350L (MC)	FTC-350XL (MC)	FTC-350S	FTC-350LY	FTC-350SLY	FTC-450 (MC)	FTC-640(MC)	FTC-640L(MC)
WORKING RANGE											
Swing over bed	mm	ø550	ø600	ø600	ø600	ø650	ø600	ø650	ø670	ø750	ø750
Swing over saddle	mm	ø260	ø400	ø400	ø400	ø450	ø400	ø450	ø450	ø550	ø550
Standard turning diameter	mm	ø180	ø327 (165)	ø327 (165)	ø327 (165)	ø156	ø200	ø200	ø327 (ø165)	ø271 (ø240)	ø271 (ø240)
Max. turning diameter	mm	ø300	ø350 (235)	ø350 (235)	ø350 (235)	ø300	ø350	ø350	ø450 (ø270)	ø640 (ø470)	ø640 (ø470)
Max. turning length	mm	320	340 (310)	660 (600)	1000 (970)	210	585	515	650 (600)	808 (760)	1,440 (1,170)
Bar capacity	mm	ø52	ø52 (ø52)/ (ø66)	ø52 (ø52)/ (ø66)	ø52 (ø52)/ (ø66)	ø52 ø45	ø52	ø52 ø45	ø78	ø117.5	ø117.5
TRAVEL											
X-axis travel	mm	150+20	175+25 (188+2)	175+25 (188+2)	175+25 (188+2)	150+10	175+25	175+10	225+25 (205+2)	320+25 (325+2)	320+25 (325+2)
Y-axis travel	mm	-	-	-	-	-	80(±40)	80(±40)	-	-	-
Z-axis travel	mm	350	380 (350)	700 (640)	1040 (1,010)	250	625	555	700 (640)	870 (830)	1,500 (1,240)
E-axis travel	mm	-	-	-	-	345	-	660	-	-	-
Tailstock travel type	type	Manual	Manual	Manual	Manual	-	Manual	-	Manual	Programmable	Programmable
Tailstock travel	mm	300	290	610	950	-	610	-	610	810	1,440
Quill travel type	type	Hydraulic	Hydraulic	Hydraulic	Hydraulic	-	Hydraulic	-	Hydraulic	Hydraulic	Hydraulic
Quill diameter	mm	ø50	ø70	ø70	ø70	-	ø70	-	ø100	ø110	ø110
Quill stroke	mm	80	90	90	90	-	90	-	100	100	100
Quill taper	MT	MT-3	MT-4	MT-4	MT-4	-	MT-4	-	MT-4	MT-5	MT-5
FEEDRATE											
Rapid traverse X-axis	m/min	24	30	30	30	24	24	24	30	20	20
Rapid traverse Y-axis	m/min	-	-	-	-	-	12	12	-	-	-
Rapid traverse Z-axis	m/min	24	30	30	30	24	24	24	30	20	20
Rapid traverse E-axis	m/min	-	-	-	-	12	-	12	-	-	-
SPINDLE											
Spindle speed	rpm	6000	4500	4500	4500	4500 6000	4500	4500 6000	3500	2000(2 Step)	2000(2 Step)
Spindle nose	type	A2-5	A2-6	A2-6	A2-6	A2-6 A2-5	A2-6	A2-6 A2-5	A2-8	A2-11	A2-11
Hydraulic chuck diameter	mm	ø169 (6")	ø210 (8")	ø210 (8")	ø210 (8")	ø210 sub:ø169	ø210 (8")	ø210 sub:ø169	10"	15"	15"
Spindle bore diameter	mm	ø62	ø62 (ø76)	ø62 (ø76)	ø62 (ø76)	ø62 ø56	ø62 (ø76)	ø62 ø56	ø88	ø131	ø131
Spindle bearing diameter	mm	ø90	ø100 (ø110)	ø100 (ø110)	ø100 (ø110)	ø100 ø90	ø100 (ø110)	ø100 ø90	ø130	ø180	ø180
Spindle taper	mm	MT-6	1:20	1:20	1:20	1:20 sub:MT#6	1:20	1:20 sub:MT#6	1:20	1:20	1:20
Live tooling spindle speed	mm	-	-(4000)	-(4,000)	-(4,000)	-	3,000	3,000	-(4,000)	-(3,000)	-(3,000)
TURRET											
No. of tool	set	10	8 (12VDI40)/ (12)	8 (12VDI40)/ (12)	8 (12VDI40)/ (12)	12	12-VDI30	12VDI30	8 (12VDI40)/(12)	12 (VDI60)	12 (VDI60)
Standard O.D. tool size	mm	□20	□25	□25	□25	□20	□20	□20	□25	□32	□32
I.D. tool size (Max.)	mm	ø25	ø40	ø40	ø40	ø25	ø32	ø25	ø40	ø50	ø50
Tool changing time	sec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
MOTOR OUTPUT											
Spindle motor (cont / 30)	kW	7.5/11	15/18.5 (7.5/15)	15/18.5 (7.5/15)	15/18.5 (7.5/15)	15/18.5 sub:5.5/7.5	5/9	5/9 sub:5.5/7.5	13/22	22/26	22/26
X / Y / Z / E servo motor	kW	1.6(X) /1.6(Z)	3(X)/3(Z)	3(X)/3(Z)	3(X)/3(Z)	3/-/3/1.6	3/1.6/3	3/1.6/3/3	3(X)/3(Z)	4(X) /4(Z)	4(X) /4(Z)
Live tooling spindle power (cont/30)		-	-(2.2/3.7)	-(2.2/3.7)	-(2.2/3.7)	-	3	-	- / (2.2/3.7)	-(11/15)	-(11/15)
ACCURACY											
Positining accuracy X / Y / Z	µm	10(X)/ 10(Z)	10(X)/ 10(Z)	10(X)/ 10(Z)	10(X)/ 10(Z)	10/10/10	10/10/10	10/10/10	10(X)/ 10(Z)	10(X)/ 25(Z)	10(X)/ 25(Z)
Repeatability accuracy X / Y / Z	µm	6(X)/ 6(Z)	6(X)/ 6(Z)	6(X)/ 6(Z)	6(X)/ 6(Z)	6/6	6/ 6/ 6	6/6/6	6(X)/ 6(Z)	6(X)/ 6(Z)	6(X)/ 6(Z)
TANK CAPACITY											
Power capacity	KVA	15	25	25	25	40	30	45	30	45	45
Coolant tank capacity	l	100	90	110	135	120	110	150	185	200	350
MACHINE DIMENSION											
Machine width	mm	2,500	2,564	2,880	3,500	2,920	2,880	3,235	3,425	3,580 (3,680)	4,280 (4,380)
Machine depth	mm	1,530	1,580	1,580	1,665	2,010	1,800	2,010	1,770	2,125	2,125
Machine height	mm	1,650	1,945 (2,045)	1,945 (2,045)	1,870 (2,180)	1,967	2,050	2,205	2,220 (2,280)	2,415 (2,550)	2,550
Machine weight	kg	3,100	3,500 (4,000)	4,000 (4,500)	4,500 (5,000)	4,000	4,500	5,000	6,000	9,550 (10,050)	10,050 (11,000)

* Specifications and design characteristics are subject to change without prior notice.

Standard Accessories

- * 3-Jaw power chuck
- * Manual tailstock
- * Programmable tailstock (FTC-640 / 640L)
- * Hydraulic quill movement
- * Heat exchanger
- * Hard jaw (1 Set)
- * Soft jaw (3 Sets)
- * Chip conveyor (FTC-640/640L)
- * Fanuc Oi-TD
- * Door Inter lock

Optional Accessories

- * Extra hard / soft jaw
- * Automatic door
- * Parts catcher
- * Tool setter
- * Programmable tailstock
- * Chip conveyor / chip bucket
- * Bar feeder
- * Power tooling + C axis
- * Collet chuck
- * Oil mist collector
- * Air blower
- * Coolant gun
- * Live tool holder
- * High pressure pump
- * Oil water skimmer
- * VDI turret
- * CE modification