

PreTurn

FCL series

Powered by MMD



Controllers:

- Siemens 828 D SL (default)
- Siemens 840 D SL
- Fanuc 0i mate TD
- Fanuc 0i TD

Standard *accessories*

- Siemens with Shop Turn od. Fanuc
- Heat exchanger at the control cabinet
- RS 232/Ethernet/USB
- Inclined bed 45°
- Hydraulic chuck with hard and soft jaws
- Hydraulic tailstock (programmable)
- 3 bar water system with demountable water tank
- Revolver with inner coolant system
- Chip conveyor with chip cart
- Foot switch for chuck clamping
- Heat exchanger at the control cabinet
- workroomlight
- 3 colour warning light
- Electric handwheel
- Central lubrication
- CE
- manuals

Optional accessories

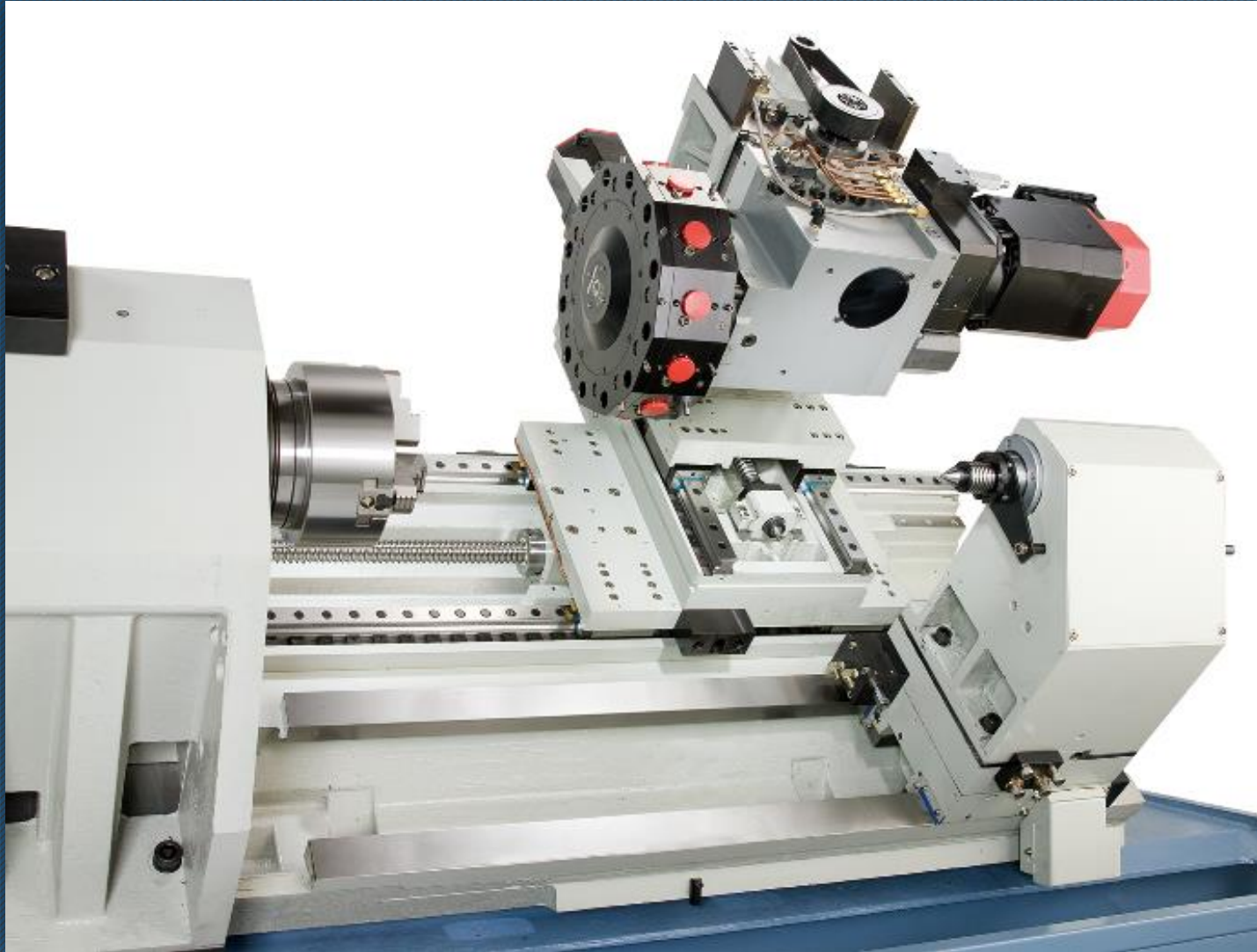
- VDI Revolver
- Servo Revolver
- Safty equipment for X, Z-axis (torque limit)
- Footswitch tailstock
- Air conditioner on the control cabinet
- Automatic tool measurement
- Manually tool measurement
- C-axis and driven tools
- Automatic door
- Parts catcher
- Bar loader
- Workpiece query
- bezels
- etc.

Siemens 840/828 D SI Shop Turn

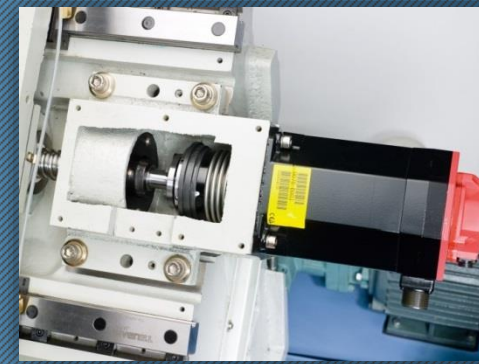


Fanuc control 0i-TD





- Slant bed 45°
- E- axis runs with boxways

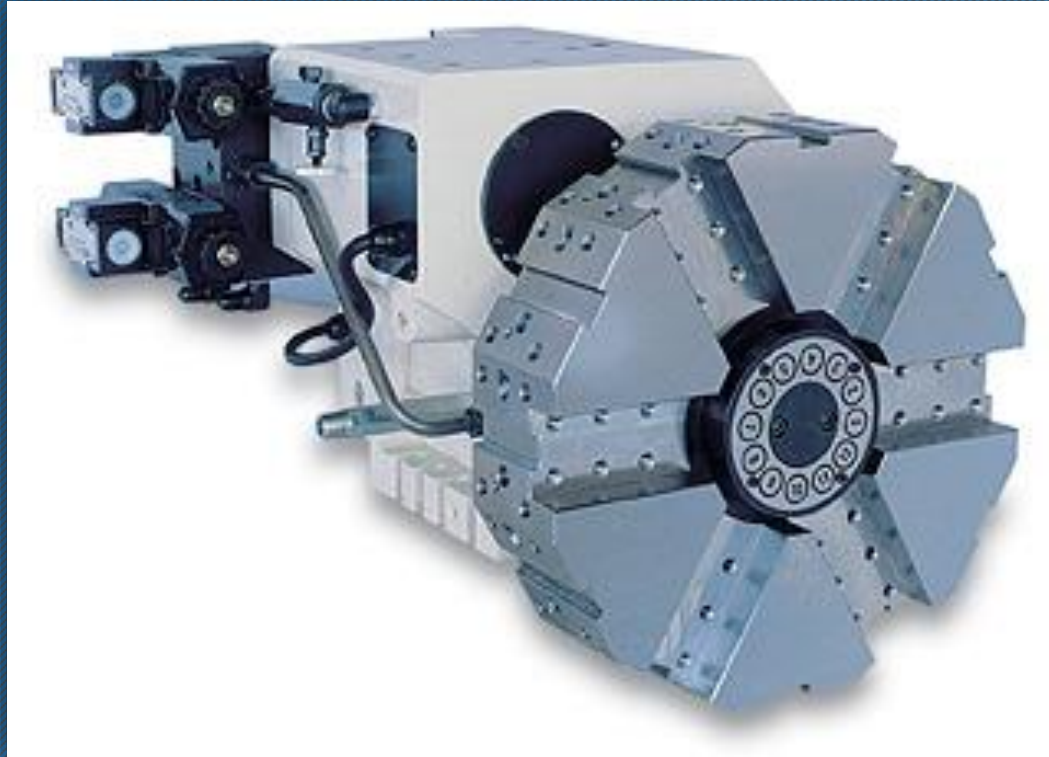


- Servomotors are DC coupled with ball screw
- The most important machine parts such as machine bed, inclined bed, slide, etc. are made of tempered Meehanite cast iron to ensure high accuracy.



**Precision spindles with
SKF bearings**

Tool turret (hydr.)



Also in VDI 30 and VDI 40

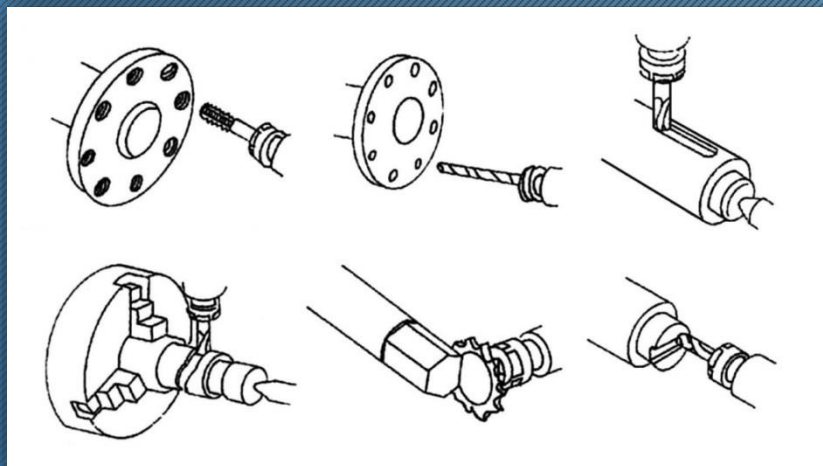
Powered tools with:

Sauter 436 Revolver *

Sauter 450 Revolver * TT Serie



Machining with powered tools Cs (Option)

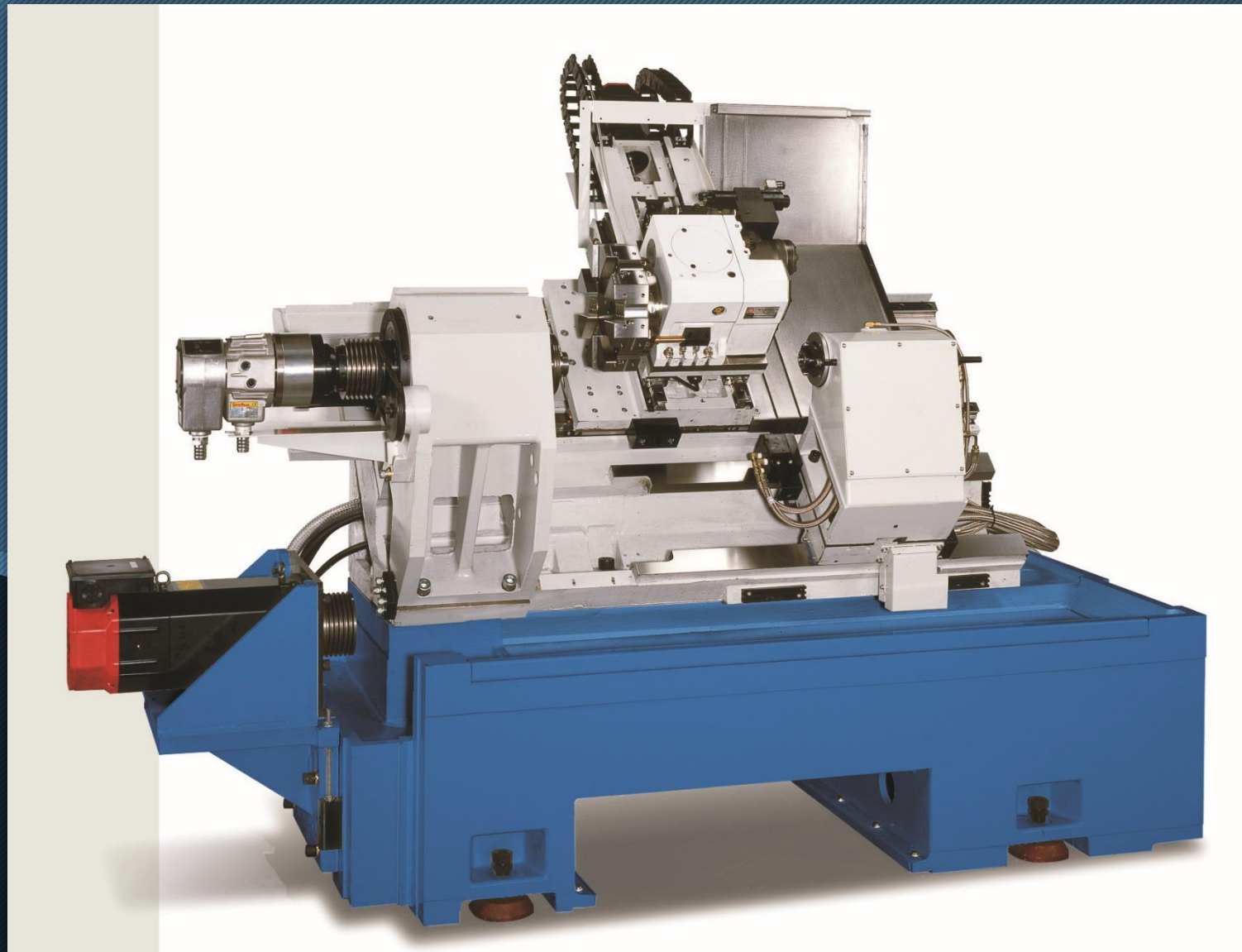


Machine types

• S series

Key Features:

- Main spindle / a revolver / tailstock
- Circumference diameter over bed from 480mm to 630 mm
- Max. turning diameter from 280 mm to 442 mm and max. Turning length 430 to 1000 mm



		Linearguides	Linearguides	Linearguides
Spezifikation	Model	FCL 20	FCL 25	FCL30
Controlling		Siemens/Fanuc	Siemens/Fanuc	Siemens/Fanuc
Number of axis		std. 2 axis/opt. 3 axis (C axis)	std. 2 axis/opt. 3 axis (C axis)	std. 2 axis/opt. 3 axis (C axis)
Swing over bed	mm	Ø480	Ø600	Ø630
max. turning diameter	mm	Ø280	Ø300	Ø442
max. turning length	mm	462/700/1000	430/690/1000	700/1000
Main spindle				
Spindle nose		A2-6	A2-6	A2-8
Spindle boring		Ø61	Ø77	Ø90
Max. tow bar	mm	Ø52	Ø65	Ø77
Speed	U/min	25~4200	25~3500	std. 10~3500 (10") opt. 10~2800 (12")
Speed driven tools	U/min	opt. 25~4000	opt. 25~4000	opt. 25~4000
Chuck				
Chuck Ø	mm	Ø210 (8")	Ø254 (10")	Ø254 (10") Ø304 (12")
Revolver				
Tools	Quantity	8T block revolver hydr. / (opt. revolver VDI)	12T block revolver hydr. / (opt. servo revolver VDI)	12T block revolver hydr. / (opt. servo revolver VDI)
O.D	mm	25x25	25x25	25x25
I.D	mm	Ø32	Ø40	Ø40
Travels				
X travel	mm	142	180	250
Z travel	mm	475/700/1000	460/700/1000	700/1000
X rapid traverse	m/min	30	30	30
Z rapid traverse	m/min	30	30	30
Turning feed	mm/U	0.001-500	0.001-500	0.001-500
Ø ball screw X	mm	Ø32	Ø32	Ø32
Ø ball screw Z	mm	Ø36	Ø36	Ø36
Enginges				
Main spindle motor	kw/kw30min.	9/11*	11/15*	11/15*
X motor	kw	1.6*	1.6*	3*
Z motor	kw	1.6*	1.6*	3*
prog. tailstock				
Ø Sleeve	mm	75	75	90
Sleeve way	mm	80	80	100
Cone	MT	4	4	5
Travel	mm	395/650/1000	390/650/1000	650/1000
Tank capacity				
Hydraulics	Liter	40	60	60
Coolant	Liter	100	100	100
Dimensions				
Required space L/W	mm	3350/4000/4700 x 1575	3550/4000/4700 x 2100	4000/4700 x 2100
Height	mm	1867	2000	2130
Weight	kg	4550/6120/7000	5050/6120/7000	6230/7000

• TS serie

Key Features:

- Main spindle and counter spindle / revolver
- Circumference diameter over bed from 600mm to 650mm
- from 245 mm to 490 mm and max. Turning length from 260 to 500 mm

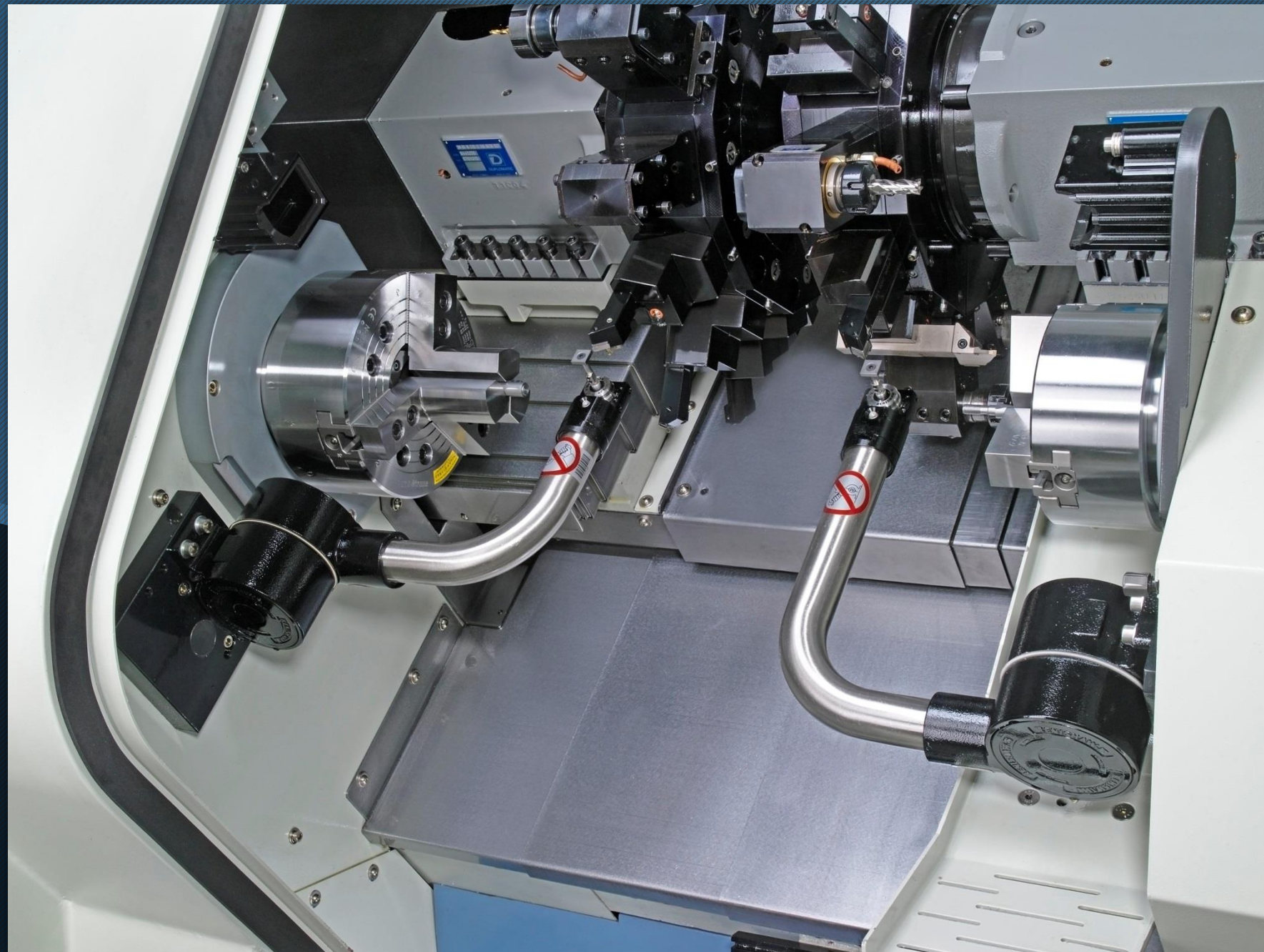


		Linear guides	Linear guides	Linear guides
Spezifikation	Model	FCL 15TS	FCL 20TS	FCL 30 TS
Controlling		Siemens/Fanuc	Siemens/Fanuc	Siemens/Fanuc
Number of axis		std. 3 axis/ opt. 5 axis (C axis)	std. 3 axis/ opt. 5 axis (C axis)	std. 3 axis/ opt. 5 axis (C axis)
Swing over bed	mm	Ø600	Ø650	Ø650
max. turning diameter	mm	Ø245	Ø490	Ø470
max. turning length	mm	260	500	470
Main spindle				
Spindle nose		L: A2-5 R: A2-5	L: A2-6 R: A2-5	L: A2-8 R: A2-6
Spindle boring		L: Ø56 R: Ø56	L: Ø61 R: Ø56	L: Ø90 R: Ø61
Max. tow bar	mm	L: Ø45 R: Ø45	L: Ø51 R: Ø45	L: Ø77 R: Ø51
Speed	U/min	L: 10~6000 R: 10~6000	L: 10~4200 R: 10~6000	L: 10~3500 R: 10~4200
Speed driven tools	U/min	opt. 25~4000	opt. 25~4000	opt. 25~4000
Chuck				
Chuck Ø	mm	L: Ø169 (6") R: Ø169 (6")	L: Ø210 (8") R: Ø169 (6")	L: Ø254 (10") R: Ø210 (8")
Revolver				
Tools	Anzahl	12T block revolver hydr. / (opt. servo revolver VDI)	12T block revolver hydr. / (opt. servo revolver VDI)	12T block revolver hydr. / (opt. servo revolver VDI)
O.D	mm	20x20	20x20	25x25
I.D	mm	Ø32	Ø32	Ø40
Travels				
X way	mm	165	280	280
Z way	mm	310	560	540
E way	mm	260	500	470
X rapid traverse	m/min	30	30	30
Z rapid traverse	m/min	30	30	30
E rapid traverse	m/min	20	20	20
Turning feed	mm/U	0.001-500	0.001-500	0.001-500
Engines				
Main spindle motor (continuously)	kW	5.5*	9*	11*
Main spindle motor (30 min.)	kW	7.5*	11*	15*
Counter spindle motor (continuously)	kW	5.5*	5.5*	7.5*
Counter spindle motor (30 min.)	kW	7.5*	7.5*	11*
X motor	kW	1.6*	1.6*	3*
Z motor	kW	1.6*	1.6*	3*
E motor	kW	1.6*	1.6*	1.6*
Tank capacity				
Hydraulics	Liter	60	60	60
Coolant	Liter	100	100	100
Dimensions				
Required place L/W	mm	3750 x 2000	4150 x 2100	4150 x 2100
Height	mm	2000	2100	2100
Weight	kg	5280	6440	6630

• TT series

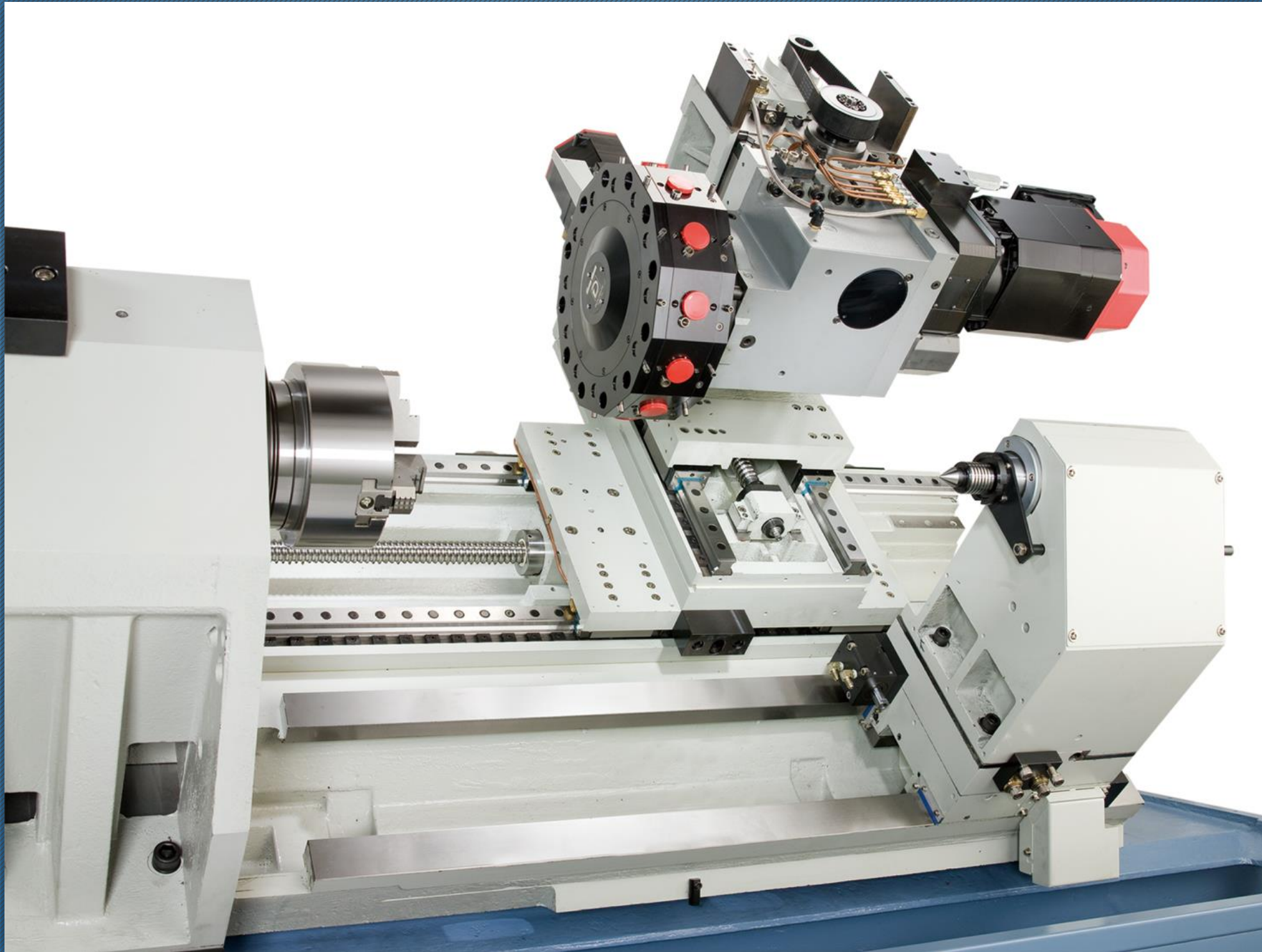
Key feature:

- Main spindle and counter spindle / two revolver
- Circumference diameter over bed: 620 mm
- **Max. Turning diameter of 440 mm and max. Turning length from 270 to 310 mm**



		Linear guides	Linear guides	Linear guides
Spezifikation	Model	FCL 15 TT	FCL 20 TT	FCL 25 TT
Controlling		Siemens/Fanuc	Siemens/Fanuc	Siemens/Fanuc
Number of axis		std. 5 axis/ opt. 7 axis (C axis)	std. 5 axis / opt. 7 axis (C axis)	std. 5 axis / opt. 7 axis (C axis)
Swing over bed	mm	Ø620	Ø620	Ø620
max. turning diameter	mm	Ø440	Ø440	Ø440
max. turning length	mm	310	290	270
Main spindle				
Spindle nose		L: A2-5 R: A2-5	L: A2-6 R: A2-5	L: A2-6 R: A2-6
Spindle boring		L: Ø56 R: Ø56	L: Ø61 R: Ø56	L: Ø77 R: Ø61
Max. tow bar	mm	L: Ø45 R: Ø45	L: Ø51 R: Ø45	L: Ø65 R: Ø51
Speed	U/min	L: 10~6000 R: 10~6000	L: 10~4200 R: 10~6000	L: 10~3500 R: 10~4200
Speed driven tools	U/min	opt. 25~4000	opt. 25~4000	opt. 25~4000
Chuck				
Chuck Ø	mm	L: Ø169 (6") R: Ø169 (6")	L: Ø210 (8") R: Ø169 (6")	L: Ø254 (10") R: Ø210 (8")
Revolver				
Tools	Anzahl	Servo Revolver VDI 30	Servo Revolver VDI 30	Servo Revolver VDI 30
O.D	mm	20x20	20x20	20x20
I.D	mm	Ø32	Ø32	Ø32
Travels				
X1,X2 way	mm	245	245	245
Z1,X2 way	mm	342	342	342
E way	mm	520	500	470
X rapid traverse	m/min	20	20	20
Z rapid traverse	m/min	20	20	20
E rapid traverse	m/min	20	20	20
Turning feed	mm/U	0.001-500	0.001-500	0.001-500
Motoren				
Main spindle motor (continuously)	kW	5.5*	9*	11*
Main spindle motor (30 min.)	kW	7.5*	11*	15*
Counter spindle motor (continuously)	kW	5.5*	5.5*	7.5*
Counter spindle motor (30 min.)	kW	7.5*	7.5*	11*
X1,X2 motor	kW	1.6*	1.6*	3*
Z1,Z2 motor	kW	1.6*	1.6*	3*
E motor	kW	1.6*	1.6*	1.6*
Tank capacity				
Hydraulics	Liter	60	60	60
Coolant	Liter	100	100	100
Dimensions				
Required space L/W	mm	4150 x 2100	4150 x 2100	4150 x 2100
Height	mm	2350	2350	2350
Weight	kg	7160	7300	7400

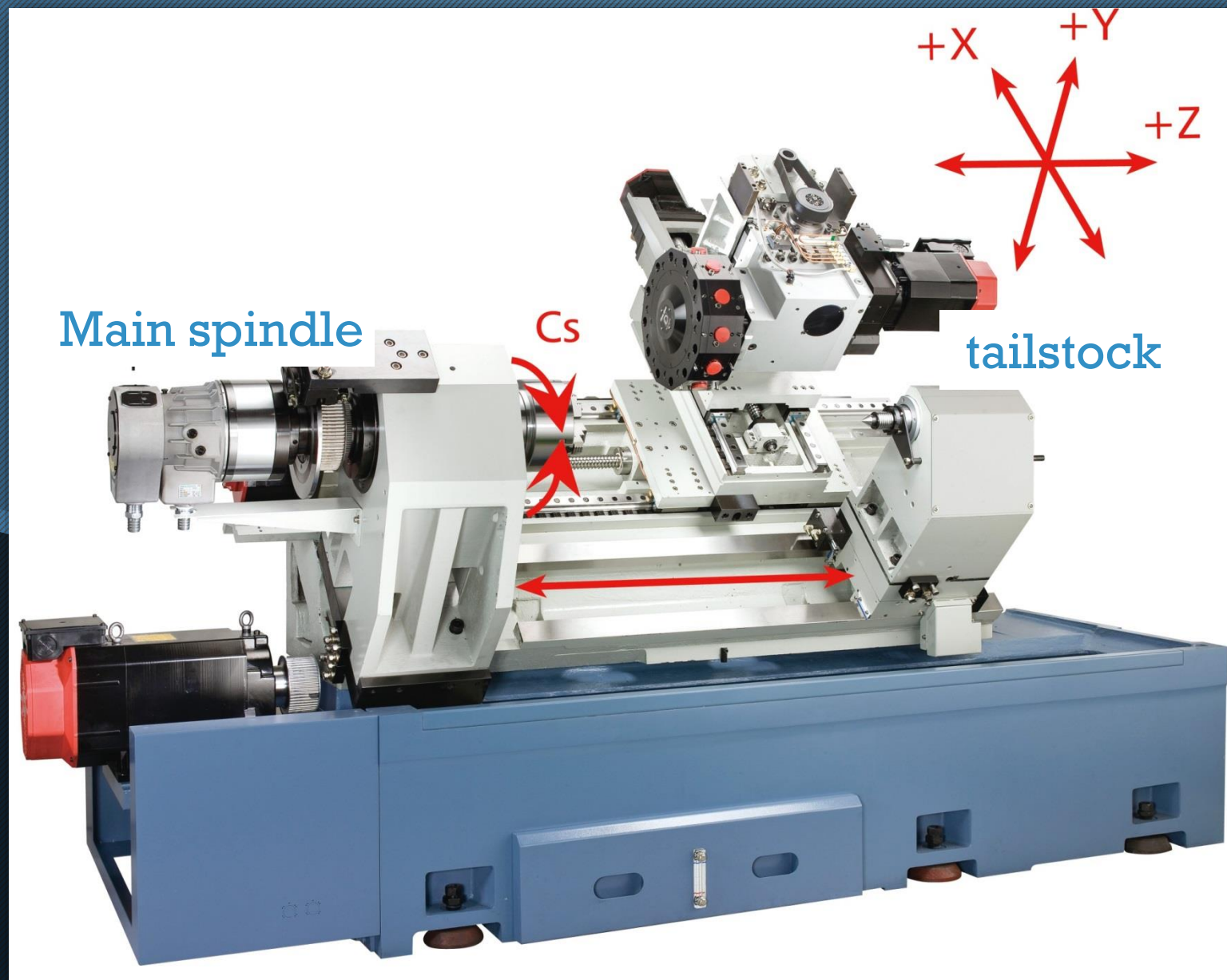
Y-Axis



• Y series

Key feature:

- Main spindle / Revolver / tailstock
- Linear guideways with Rollenumlaufschuhen
- Circulation over bed of 780 mm
- Max. Turning diameter from 250 mm to 300 mm and max. Turning length from 332 to 587 mm
- Y-axis from ± 40 mm to ± 60 mm

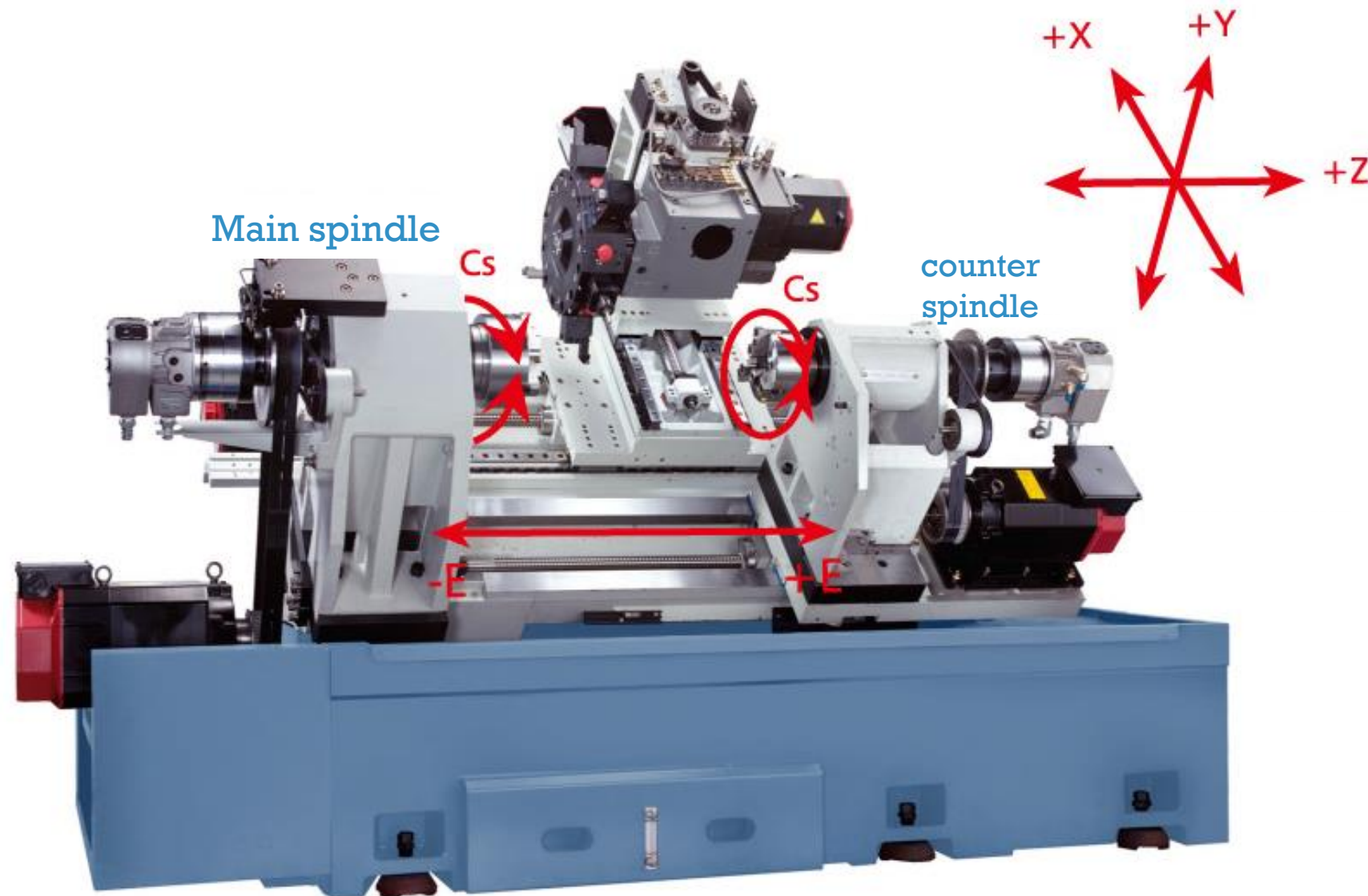


		Linear guides	Linear guides	Linear guides
Spezifikation	Modell	FCL 20Y	FCL 25Y	FCL 30Y
Controlling		Siemens/Fanuc	Siemens/Fanuc	Siemens/Fanuc
Number of axis		4 axis (X+Z+C+Y)	4 axis (X+Z+C+Y)	4 axis (X+Z+C+Y)
Swing over bed	mm	Ø780	Ø780	Ø780
max. turning diameter	mm	Ø300	Ø300	Ø300
max. turning length	mm	332	587	520
Main spindle				
Spindle nose		A2-6	A2-6	A2-8
Spindle boring		Ø61	Ø77	Ø90
Max. tow bar	mm	Ø52	Ø65	Ø77
Speed	U/min	4200	3500	std. 3500 opt. 2800
Speed driven tools	U/min	4000	4000	4000
Chuck				
ChuckØ	mm	210 (8")	254 (10")	std. 254 (10") opt.305 (12")
Revolver				
Tools	Anzahl	Servo revolver VDI 30 DIN 5480	Servo revolver VDI 30 DIN 5480	Servo revolver VDI 40 DIN 5480
O.D	mm	20x20	20x20	25x25
I.D	mm	Ø32	Ø32	Ø40
Travels				
X way	mm	180	180	170
Z way	mm	410	685	610
Y way	mm	±40	±40	±60
X rapid traverse	mm	30	30	30
Z rapid traverse	mm	30	30	30
Y rapid traverse	m/min	7	7	7
Turning feed	mm/U	0.001-500	0.001-500	0.001-500
Engines				
Main spindle motor (continuously)	kw	9*	11*	15*
Main spindle motor (30 min.)	kw	11*	15*	18*
X motor	kw	3*	3*	4*
Z motor	kw	3*	3*	3*
Y motor	kw	1.4*	1.4*	1.6*
TD motor	kw	2.2*	2.2*	3.7*
prog. tailstock				
Ø Quill	mm	75	75	75
Quill way	mm	80	80	80
Cone	MT	4	4	4
Travels	mm	235	500	430
Tank capacity				
Hydraulics	Liter	60	60	60
Coolant	Liter	100	100	100
Dimension				
Required spcae L/W	mm	3550 x 2000	4000 x 2200	4000 x 2200
Height	mm	2200	2200	2200
Weight	kg	5500	6320	7000

• TSY series

Key features:

- Main spindle / counter spindle / Revolver
- Linear guides with roller bearings
- Swing over bed from 780 mm
- max. turning diameter 250 mm - 300 mm and max. turning length 231 - 520 mm
- Y-axis ± 40 mm - ± 60 mm

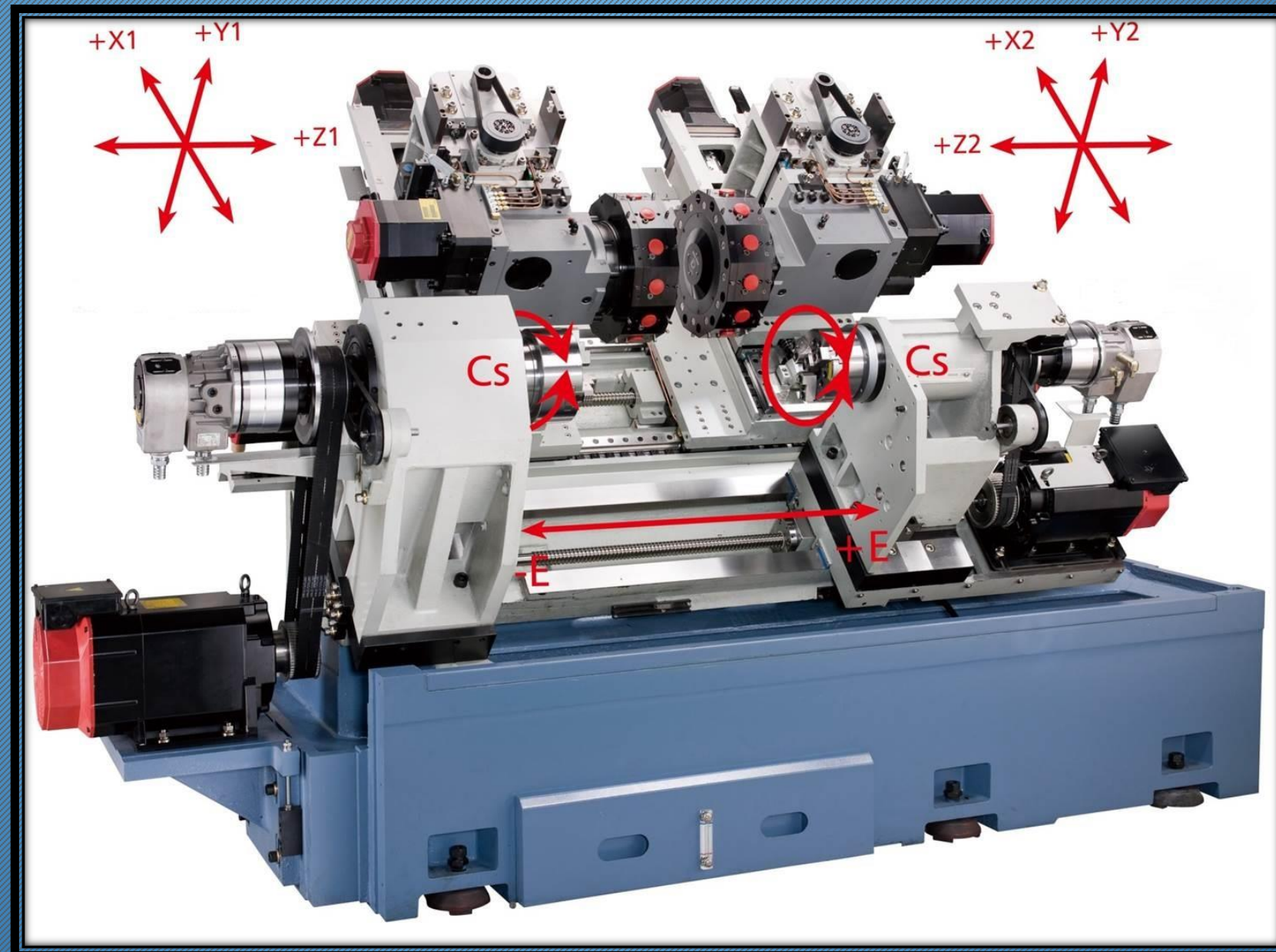


		Linear guides	Linear guides	Linear guides
Spezifikation	Model	FCL 15 TSY	FCL 20 TSY	FCL 30 TSY
Controlling		Siemens/Fanuc	Siemens/Fanuc	Siemens/Fanuc
Number of axis		7 axis (X+Z+E+C1+C2+Y+TD)	7 axis (X+Z+E+C1+C2+Y+TD)	7 axis (X+Z+E+C1+C2+Y+TD)
Swing over bed	mm	Ø780	Ø780	Ø780
max. turning diamter	mm	Ø300	Ø300	Ø250
max. turning length	mm	231	500	520
Main spindle				
Spindle nose		L: A2-5 R: A2-5	L: A2-6 R: A2-5	L: A2-8 R: A2-6
Spindle boring		L: Ø56 R: Ø56	L: Ø61 R: Ø56	L: Ø90 R: Ø61
Max. tow bar	mm	L: Ø45 R: Ø45	L: Ø51 R: Ø45	L: Ø77 R: Ø51
Speed	U/min	L: 10~6000 R: 10~6000	L: 10~4200 R: 10~6000	L: 10~3500 R: 10~4200
Speed driven tools	U/min	opt. 25~4000	opt. 25~4000	opt. 25~4000
Chuck				
Chcuk Ø	mm	L: Ø169 (6") R: Ø169 (6")	L: Ø210 (8") R: Ø169 (6")	L: Ø254 (10") R: Ø210 (8")
Revolver DIN 5480				
Tools	Anzahl	12 T servo revolver VDI 30	12 T servo revolver VDI 30	12T servo revolver VDI 40
O.D	mm	20x20	20x20	25x25
I.D	mm	Ø32	Ø32	Ø40
Travels				
X way	mm	180	180	170
Z way	mm	339	619	610
E way	mm	231	500	490
Y way	mm	±40	±40	±60
X Rapid traverse	mm	30	30	30
Z Rapid traverse	mm	30	30	30
E Rapid traverse	m/min	20	20	20
Y Rapid traverse	m/min	7	7	7
Turning speed	mm/U	0.001-500	0.001-500	0.001-500
Motoren				
Main spindle motor (continuously)	kw	5.5*	9*	11*
Main spindle motor (30 min.)	kw	7.5*	11*	15*
Counter spindle motor (continuously)	kw	5.5*	5.5*	7.5*
Counter spindle motor (30 min.)	kw	7.5*	7.5*	11*
X motor	kw	3	3	4
Z motor	kw	3	3	3
Y motor	kw	1.4*	1.4*	1.6*
E motor	kw	1.6*	1.6*	1.6*
TD motor	kw	3	3	3
Tank capacity				
Hydraulics	Liter	60	60	60
Coolant	Liter	100	100	100
Dimensions				
Required space L/W	mm	3750 x 2000	4000 x 2200	4000 x 2200
Height	mm	2200	2200	2200
Weight	kg	5480	6640	6830

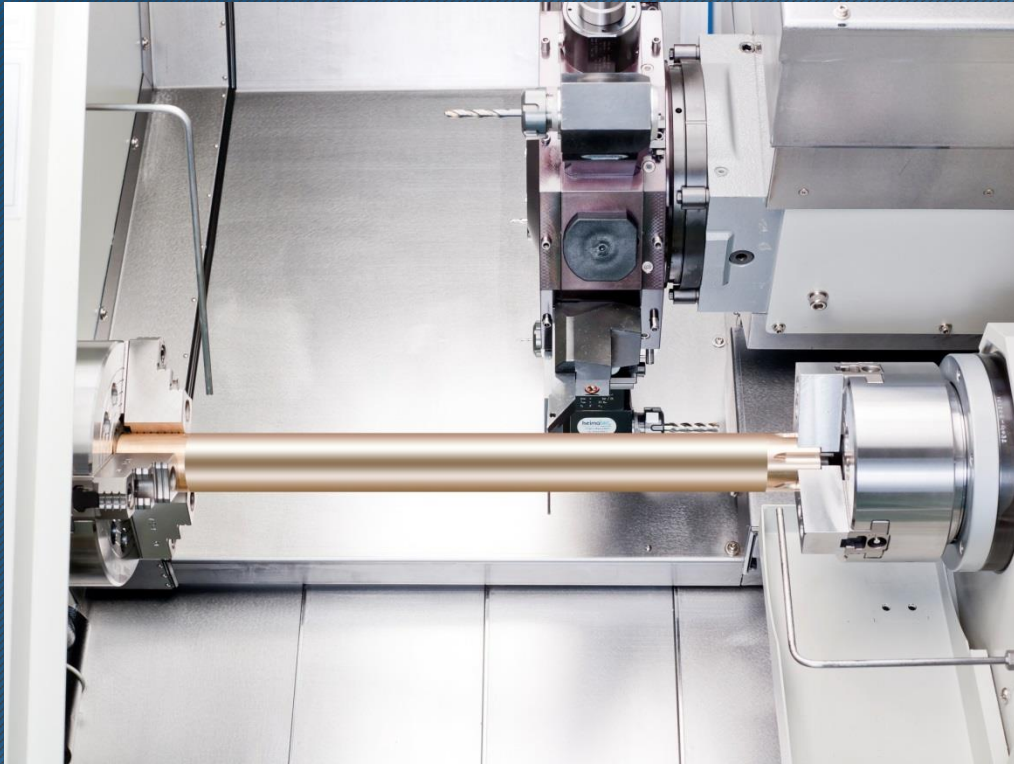
• TTY series

Key features:

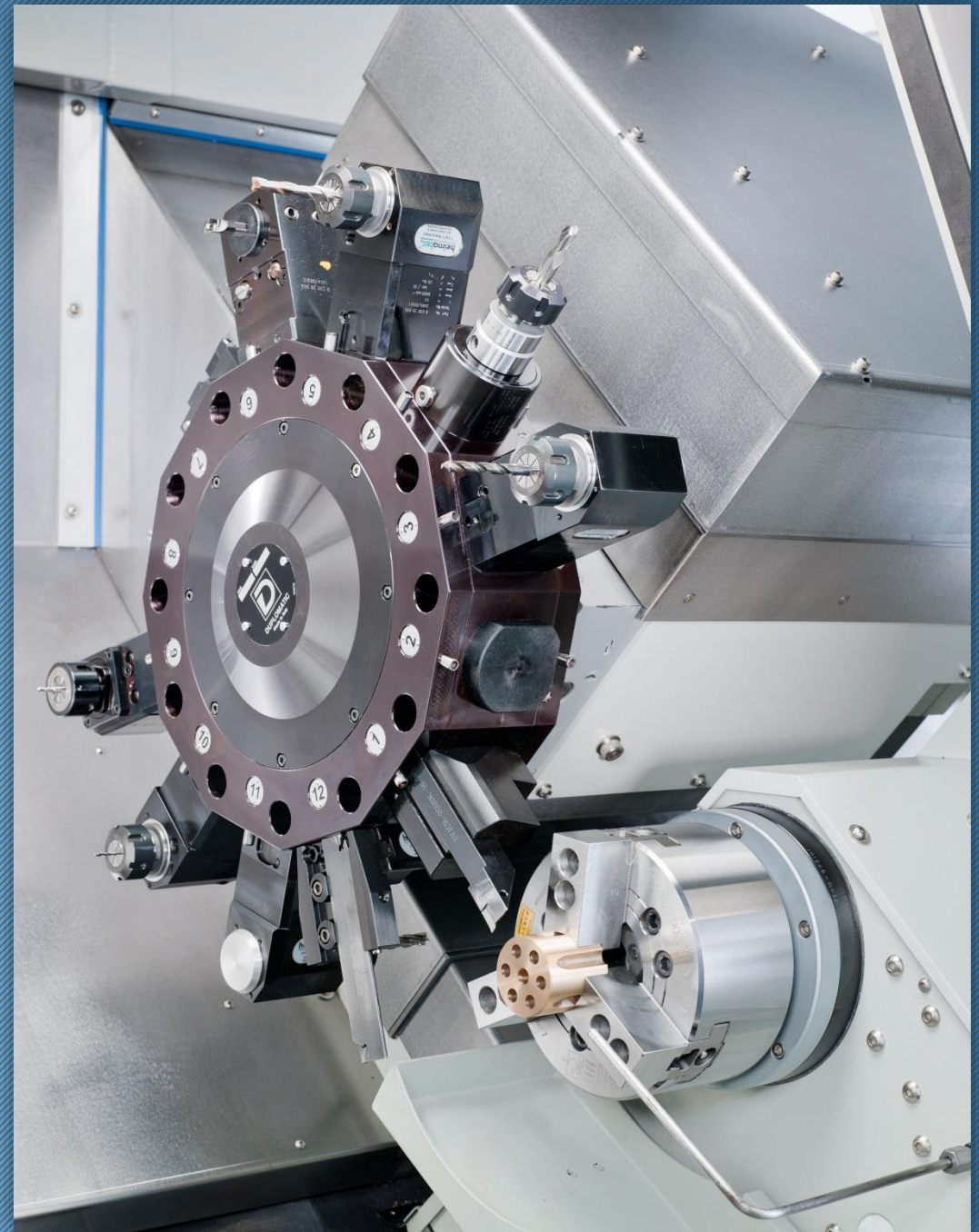
- Main spindle/ counter spindle / two revolver
- Linear guides with roller bearings
- Swing over bed 780 mm
- max. turning diameter 300 mm and max. turning length 290 mm
- Y-axis ± 40 mm



		Linear guides	Linear guides	Linear guides
Spezifikation	Model	FCL 15 TTY	FCL 20 TTY	FCL 25 TTY
Controlling		Siemens/Fanuc	Siemens/Fanuc	Siemens/Fanuc
Number of axis		11 axis (X1+Z1+C1+E+Y1+TD1+X2+Z2+C2+Y2 +TD2)	11 axis (X1+Z1+C1+E+Y1+TD1+X2+Z2+C2+Y2 +TD2)	11 axis (X1+Z1+C1+E+Y1+TD1+X2+Z2+C2+Y2 +TD2)
Swing over bed	mm	Ø780	Ø780	Ø780
max. turning diameter	mm	Ø300	Ø300	Ø300
max. turning length	mm	290	290	290
Main spindle				
Spindle nose		L: A2-5 R: A2-5	L: A2-6 R: A2-5	L: A2-6 R: A2-6
Spindle boring		L: Ø56 R: Ø56	L: Ø61 R: Ø56	L: Ø77 R: Ø61
Max. tow bar	mm	L: Ø45 R: Ø45	L: Ø51 R: Ø45	L: Ø65 R: Ø52
Speed	U/min	L: 10~6000 R: 10~6000	L: 10~4200 R: 10~6000	L: 10~3500 R: 10~4200
Speed with driven tools	U/min	4000	4000	4000
Chuck				
chuckØ	mm	L: Ø169 (6") R: Ø169 (6")	L: Ø210 (8") R: Ø169 (6")	L: Ø254 (10") R: Ø210 (8")
Revolver 2x				
Tools	Anzahl 2x	12 T servo revolver VDI 30 DIN 5480	12 T servo revolver VDI 30 DIN 5480	12 T servo revolver VDI 30 DIN 5480
O.D	mm	20x20	20x20	20x20
I.D	mm	Ø32	Ø32	Ø32
Travels				
X1,X2 way	mm	180	180	180
Z1,X2 way	mm	334	334	334
E way	mm	520	500	465
Y1,Y2 way	mm	±40	±40	±40
X1,X2 rapid traverse	m/min	20	20	20
Z1,Z2 rapid traverse	m/min	20	20	20
E rapid traverse	m/min	20	20	20
Y1,Y2 rapid traverse	m/min	7	7	7
Turning speed	mm/U	0.001-500	0.001-500	0.001-500
Engines				
Main spindle motor (continuously)	kW	5.5*	9*	11*
Main spindle motor (30 min.)	kW	7.5*	11*	15*
Counter spindle motor (continuously)	kW	5.5*	5.5*	7.5*
Counter spindle motor (30 min.)	kW	7.5*	7.5*	11*
E motor	kW	1.6*	1.6*	1.6*
X1,X2 motor	kW	3*	3*	3*
Z1,Z2 motor	kW	1.6*	1.6*	1.6*
Y1,Y2 motor	kW	1.4*	1.4*	1.4*
TD1,TD2 motor	kW	3	3	3
Tank capacity				
Hydraulics	Liter	60	60	60
Coolant	Liter	100	100	100
Dimensions				
Required space L/W	mm	4150 x 2150	4150 x 2150	4150 x 2150
Height	mm	2335	2335	2335
Weight	kg	7670	7800	8000



Main and counter spindle are running synchronous



Finishing on counter spindle



Options

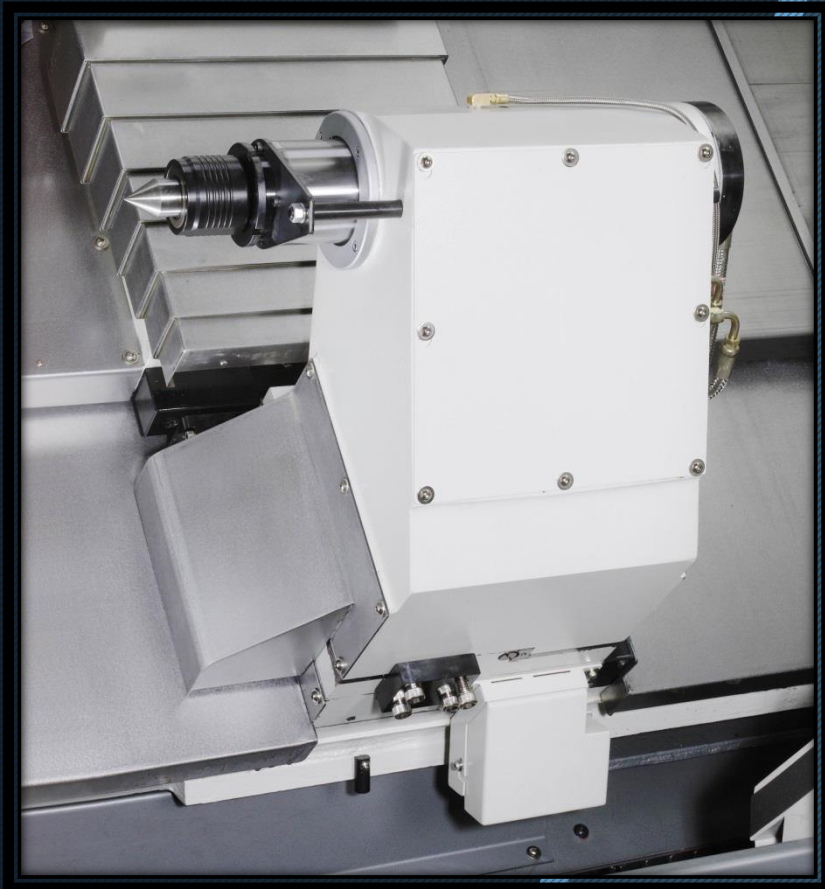


Finishing

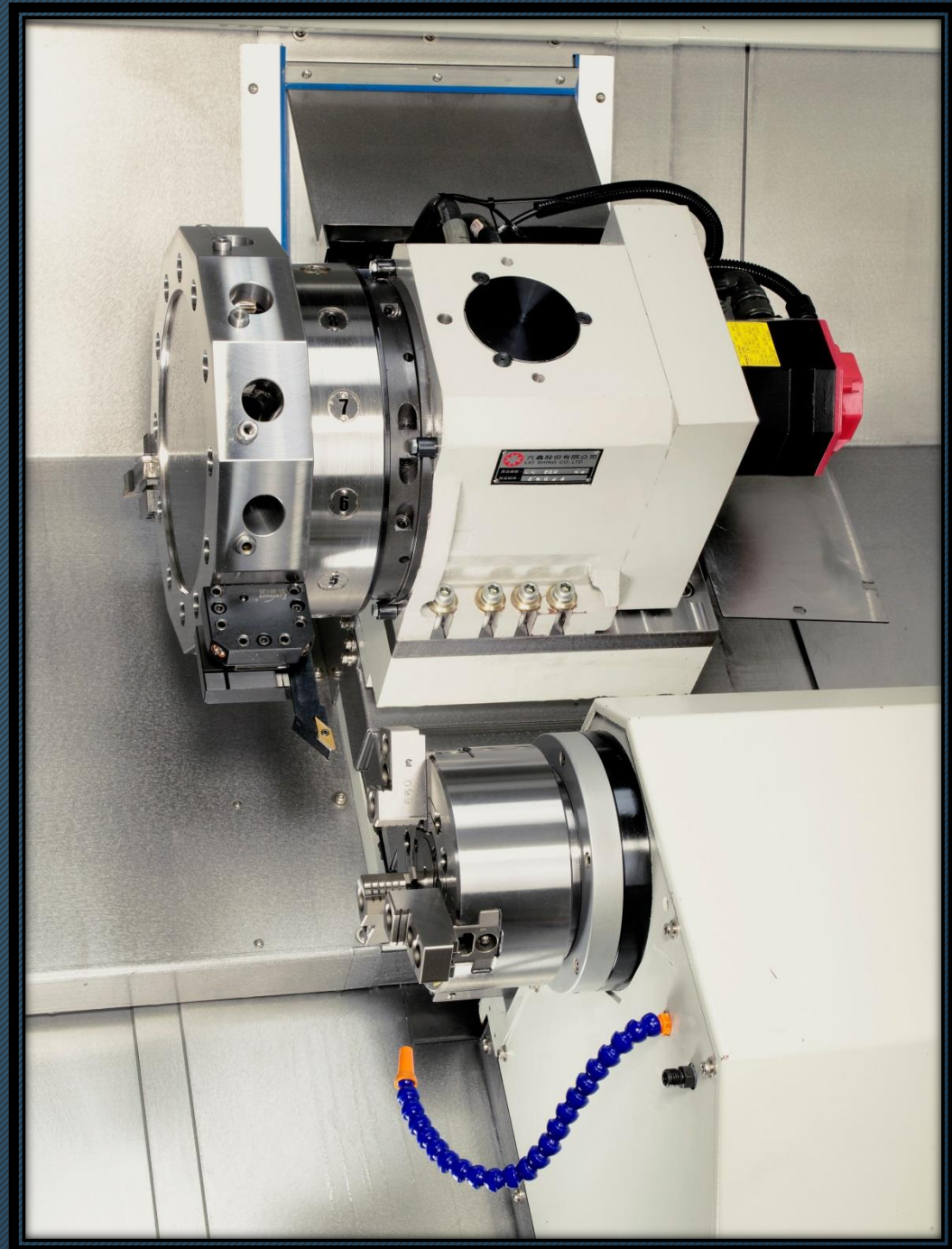


Workpiece querying

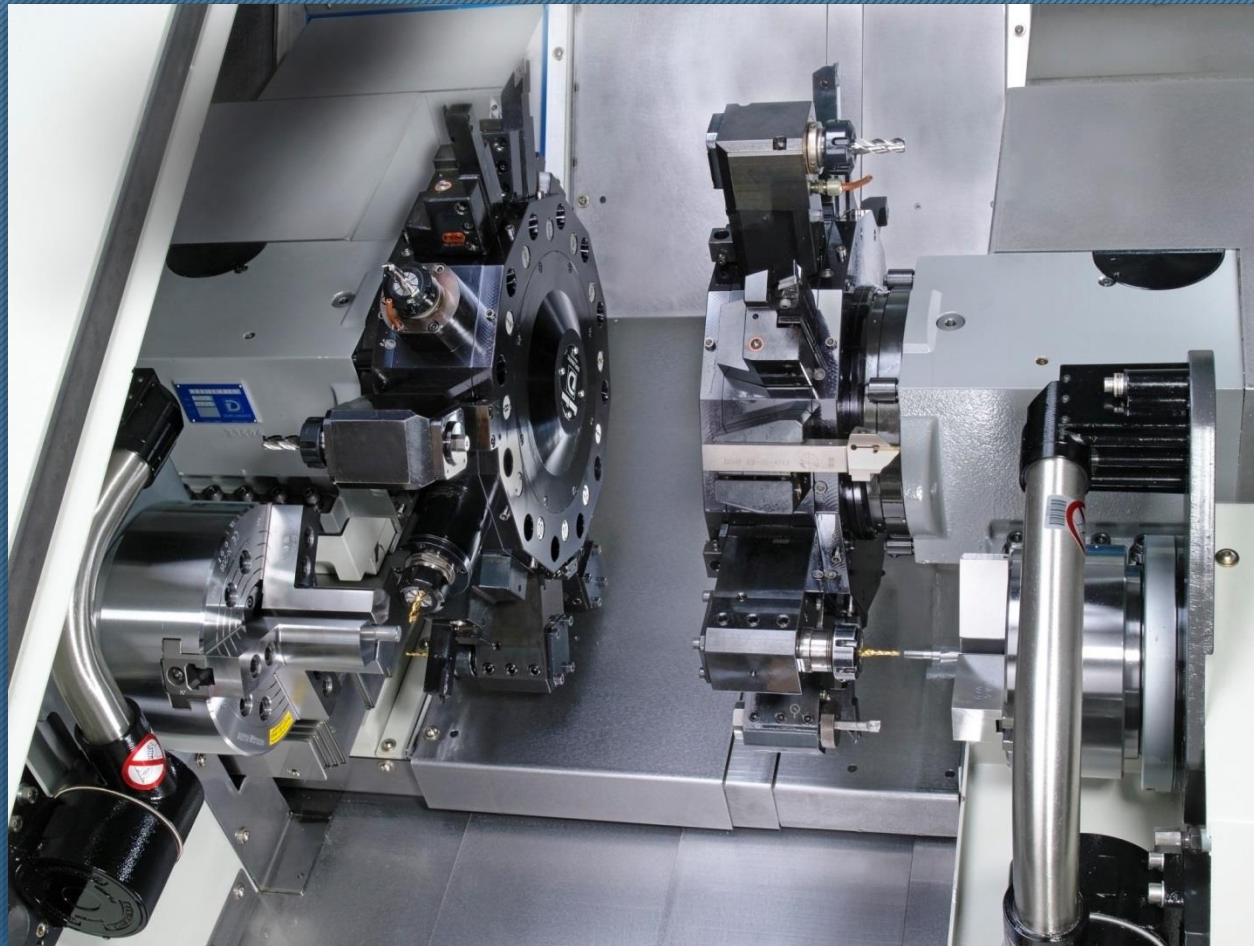
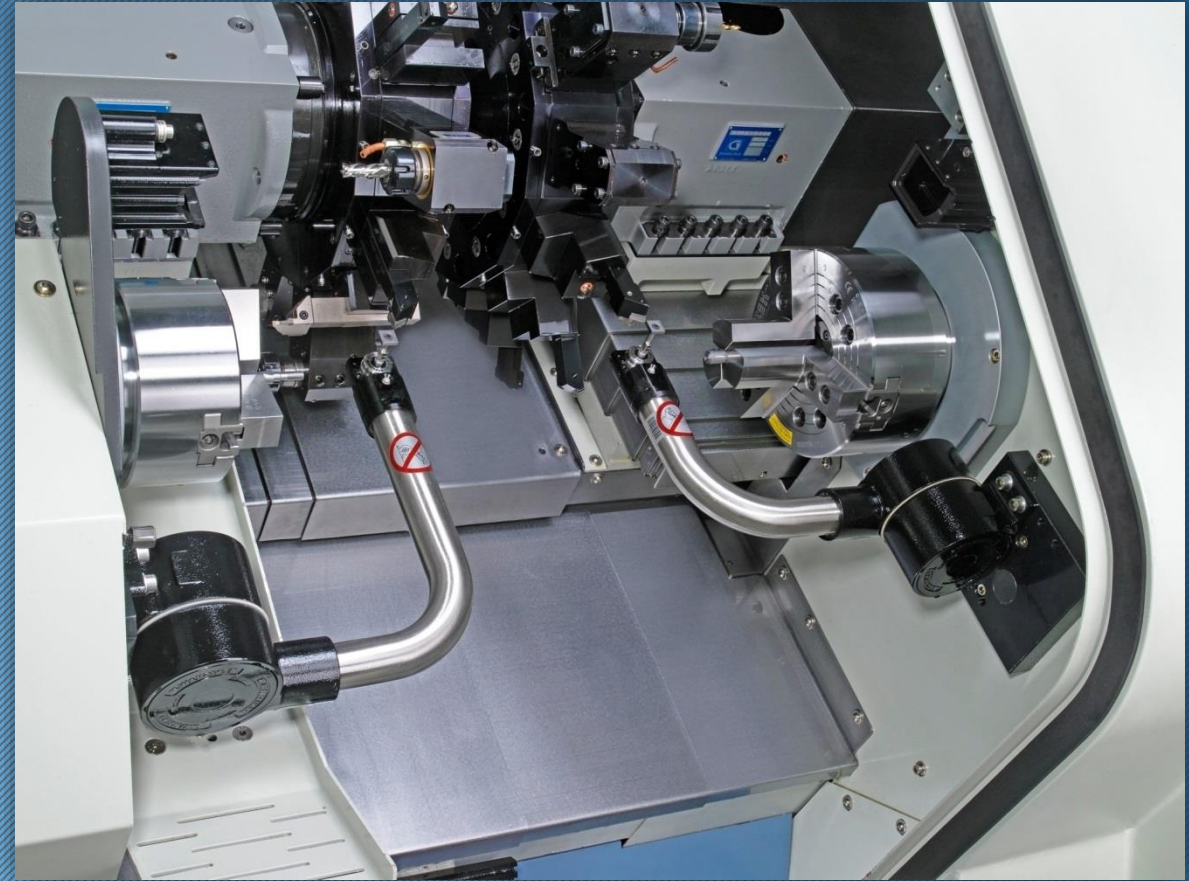
Programmable tailstock



Counter spindle



Tool measuring (option)



Bar loader



Air conditioner



Please call us and we will compile your wanted machine.

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