

# GENERAL CATALOGUE

# POWER...PRECISION...PERFORMANCE!



for impressive performances



# TUR 560/630/710 MN SERIES LATHES

Exceptional stability with high precision and unrivalled quality, FAT lathes will provide many years of reliable service for your business. The best combination of price and high efficiency – your most cost effective solution. We are confident there is no better choice for your work shop on the market today!

### Lathe:

TUR 560/630/710MN is a high precision, high quality European product manufactured 100% in Poland. The purchased parts used in all our products only come from the world leaders in machine tools parts manufacture and supply.

The heavy duty headstock is actually located on the two V's of the induction hardened and ground bed surface, hand scraped to ensure correct alignment and the best possible fit.





Wide range of self centering hydraulic steady rests



Follow rest



Hydraulic tailstock as an option. Quill diameter 100mm and specially extended neck. Thanks to this solution there is easy access for machining close to the tailstock's centre and high rigidity of total construction.



Fanuc or Fagor controller as an option





Pneumatic chuck

HE TUR MN

### Actuatin chuck



Special 3-V design of machine bed with its deep induction hardened and ground guide ways provides exceptional rigidity and stability on all lathes. All bed lengths are made as one mono-block casting.



Surprisingly easy programming! TUR MN with Siemens 840D SL allows you to work manually, semi-automatic or full CNC. The user friendly Siemens Shop Turn Conversational Programming System will make your work efficient and enjoyable.

Siemens features:

- easy programming using graphics and without need for knowledge of DIN/ISO
- extremely short programming time
- clear display of all technical in machining sequence
- no programming mistakes thanks to dynamic online graphics
- simply management of tools
- wide range of standard machining and measuring cycles

Actuating cylinder for hydraulic



Hydraulic chuck

# TUR MNP 630 / 710

The special version of TUR MN 560/630/710 machine designed for pipe machining. Large spindle bore (standard ø165 mm and ø190 as an option) makes pipe machining surprisingly easy!



Direct spindle drive with automatic, programmable planetary gearbox.



Second spindle nose with complete interlocked covers.







special feeder for rotating bar

### MANY DIFFERENT TOOLING SYSTEMS:





Combination of 2 horizontal head turrets

Disc turret for static tools



Manual upper cross-slide





Boring bar attachment mounted on cross-slide T slots



WTO tooling system for turning, drilling and milling operation





Tool turret with Capto seats



### Installation of whirling unit



Turret for driven tools with options for C-axis spindle positioning: - indexing 2,5 degrees

- driven by main motor in combination with hydraulic brake and spindle encoder

- full contouring C-axis driven directly by separate servo motor







Parat turret optionally with Capto seats



Z and X guideways covers



Autoblock Hydraulic Self-Centering Steady Rest



Additional cover of tailstock area

Special machine with tool turret, milling unit and automatic workpiece positioning and clamping system.

# STANDARD EQUIPMENT:

- Siemens CNC System: Sinumerik 840D SL
- Quick change toolpost type Multifix Size C (without tool holders and sleeves)
- Complete coolant system
- Hydraulic aggregate (option for P machine)
- Rotating operator panel
- Come-along tailstock system quick coupling between tailstock and cross slide
- Electrical emergency contact between tailstock and cross slide
- Double t-slot on the rear of the cross slide
- Automatic lubrication system for headstock, carriage and cross slide
- Guards
- Automatic, programmable gearbox
- USB Port
- Siemens RSV service contract 1 year
- Absolute Encoders



Additional control panel with hand-wheels installed on support

Third Hand wheel (MPG mini handheld unit) Siemens



				MN 630 A		MN 710 A	
TUR MN		MN 560	MN 630	MN 630 P	MN 710	MN 710 P	
CAPACITY				IVIN 030 P			
Distance between centers	mm		1 000 - 2 00	0 - 3 000 - 4 000 - 5	5 000 = 6 000		
Swing over bed	mm	560	630	630	710	710	
Swing over saddle	mm	300	370	370	/10	450	
Max. weight between centers	kg	2.000	2.000	2.000	2.000	2.000	
(without steadies) Max. Weight in chuck only	kg	600	600	600	600	600	
HEADSTOCK	8						
Number of spindle ranges		2	2	2	2	2	
		2	2	1: 2 - 430.	1: 2 - 430.	l: 2 - 430.	
Top spindle speed ranges	rpm	l: 2 - 430, ll:	200 - 2.500	II: 200 - 1.850	II: 200 - 2.500	II: 200 - 1.850	
Spindle nose DIN 55029 (standard and A) DIN 55026 (P version)		D-18	D-18	2 x D 1-11 2 x A2 - 11/15	D-18	2 x D 1-11 2 x A2 - 11/15	
				150		150	
Spindle inner taper	mm	115	115	1:20	115	1:20	
Colordia han		105	105	140	105	140	
Spindle bore	mm	105	105	165 / 190	105	165 / 190	
Main drive motor power	kW (S6)	18,5	18,5	18,5	18,5	18,5	
Max. Turning torque	Nm	1800	1800	2140	1800	2140	
Brondard				2050		2050	
SADDLE							
Cross slide travel X-axis	mm	365	390	390	410	410	
Rapid travel Z-axis	m/min			8			
Rapid travel X-axis	m/min	8					
Feed force tranverse	kN	10					
Feed force longitudinal	kN			15			
Ball screw Z-axis (1-3m b.c.)	mm			40			
Ball screw Z-axis (4m b.c.)	mm			63			
Ball screw X-axis	mm			32			
Carriage length on bedways	mm			610			
Width of cross slideways	mm			230			
QC Toolpost Type Multifix	Size			С			
TAILSTOCK							
Quill diameter	mm			100			
Quill taper	MT			5			
Quill stroke	mm			200			
GENERAL							
Width of bed	mm			433			
Total length of machine							
1.000 mm b.c.	mm			3 200			
2.000 mm b.c.	mm			4 200			
3.000 mm b.c.	mm			5 200			
4.000 mm b.c.	mm			6 200			
5.000 mm b.c.	mm			7 200			
6.000 mm b.c.	mm			8 200			
Width of machine	mm			2 500			
Height of machine	mm			2 100			
Weight of machine							
1.000 mm b.c.	kg	4 900	5 100	5 100	5 300	5 300	
2.000 mm b.c.	kg	5 700	5 900	5 900	6 100	6 100	
3.000 mm b.c.	kg	6 500	6 700	6 700	6 900	6 900	
4.000 mm b.c.	kg	7 300	7 500	7 500	7 700	7 700	
5.000 mm b.c.	kg	8 100	8 300	8 300	8 500	8 500	
			1	1	1	1	

### TUR SMN 800/930/1100

Exceptional stability with high precision and unrivalled quality, FAT lathes will provide many years of reliable service for your business. The best combination of price and high efficiency - your most cost effective solution. We are confident there is no better choice for your work shop on the market today!

TUR SMN 800/930/1100 is a high precision, high quality European product 100% manufactured in Poland. The purchased parts used in all our products only come from world leaders in machine tools parts manufacture and supply.





Special, mono-block type bed made of cast iron is a rigid structure which perfectly absorbs vibrations. Extra wide, deeply hardened and ground guide ways 3-V ensure precise machining and excellent surface quality. All of the above guarantee long-life accurate operation of the lathe.

The headstock is made of one mono-block casting. Hand scraped contact surfaces ensure the best fit and durable alignment. High precision spindle bearings guarantee excellent stability and accuracy of machining.





Easy access to the working area. Surprisingly small distance to spindle axis



The standard tailstock has 125mm quill diameter. For heavy duty machining the diameter can be increased up to 140mm or 160mm The quill is located in a specially extended body. Optionally the tailstock can be equipped with hydraulic guill, bearing system for the dead center, independent NC drive and hydraulic clamping system to the bed.









# **OPTIONAL EQUIPMENT:**





Sauter Y axis; nazwa Turret with Y axis

LED light front



Oil and coolant mist vacuum filtration LTA



Wide variety of manual, hydraulic and pneumatic chucks



Robust attachment for heavy boring operations



Burgsmüller whirlling head



YAX-C-DEFINITIVA, Barruffaldi with Y axis



inside the Headstock





Parat toolpost with optional Capto seat



Disc turret for static tools



Combination of two 4-positions Sauter head-type turrets



Available spindle ø140mm (standard), 220mm, ø320mm, ø360mm, 450mm







C axis:



Sauter head-turret with milling unit on the rear T-slots



Sauter or Baruffaldi turret for driven tools with C axis



Standard Multifix D1 toolpost

Milling-drilling units:



Tooling system mounted on cross-slide T slots



Unit mounted on tool turret



A wide range of rests is available to suit diffrent machining applications: manual, hydraulic self-centring, steady or follow rests, C-form, ring rests and other.











Full contouring C axis with independent, direct drive on the spindle enables precise milling operations with interpolating work piece.



WTO system (VDI50) enables drilling and milling operations with a high torque. Normal turning is still possible. Available version with Y-axis and Capto seat.

### MACHINE STANDARD EQUIPMENT

- CNC Siemens 840D SL
- Toolpost type Multifix Size D1
- Tube lights (24V) in working area
- Complete coolant system
- Hydraulic aggregate
- Independent Z position operator panel
- Come-along system quick coupling between tailstock and carriage
- Emergency switch between tailstock and carriage
- Full rear guarding with sliding access doors
- Hand wheels for manual operation
- Automatic lubrication system
- Automatic gear change
- USB Port
- Absolute encoders



Tailstock with indepedent drive by push button



Heavy-duty boring bar attachment mounted on rear T-slots. Large 15" t



Scrappers with compressed air for guideways



Bellows cover



Tailstock executions:

Quill operated both manually and

hydraulically

Hydraulic tailstock quill

and load capacity

Heavy-duty tailstock with 160 mm

quill diameter for increased rigidity

Tailstock

additional

on

X-axis

(HA

Large 15" touchscreen



Additional coolant tank with filtration and high pressure pump



6.000 mm b.c.

6.000 mm b.c.

kg / Ibs

kg / Ibs

τι	JR SMN 800/930/	1100	
	TUR 800 SMN	TUR 930 SMN	TUR 1100 SMN
			·
	2.000 - 3.000	- 4.000 - 5.000 - 6.000 -	- 8.000 16.000
	79 - 11	18 - 157 - 197 - 236 -	- 315 630
	800 / 31,5	950 / 37,4	1.100 / 43,3
	500 / 19,7	630 / 24,8	790/830 / 31,1
_	7.000 / 15.500	7.000 / 15.500	7.000 / 15.500
_	4.500 / 9.900	4.500 / 9.900	4.500 / 9.900
	5.000 / 11.000	5.000 / 11.000	5.000 / 11.000
	1.000 / 2.200	1.000 / 2.200	1.000 / 2.200
	2	2	2
	I: 4–360,	I: 4-	-300,
_	II: 200-1800	II: 160	0-1200
		33 / 46	
	4100 /3020	4900 / 3600	4900 / 3600
		D1-11	1
	150 / 5,9	150 / 5,9	150 / 5,9
	140 / 5,5	140 / 5,5	140 / 5,5
		A2-15	
	1200	1200	1200
	165 / 6,5	165 / 6,5	165 / 6,5
	. /-	A2-15	
_	700	700	700
_	220 / 0.0	220 / 8 C	220 / 0.0
_	220 / 8,6	220 / 8,6	220 / 8,6
	4900 /3600	4900 / 3600	4900 / 3600
		A2-20	
	700	700	700
	320 / 12,5	320 / 12,5	320 / 12,5
	4900 /3600	4900 /3600	4900 /3600
		A2-20	
	-	500	400
	-	360 / 14,2	360 / 14,2
_	-	6100 / 4501	6100 / 4501
		A2-28	,
		250	350
	-	350	350
	-	22	22
	-	450 / 17,7	450 / 17,7
		6100 / 4501	6100 / 4501
	505	570	610
	6 / 235	6 / 235	6 / 235
	6 / 235	6 / 235	6 / 235
	15 / 3300	15 / 3300	15 / 3300
_	20 / 4400	20 / 4400	20 / 4400
_	£2/2F	£2/2F	62 / 2 F
_	03/2,5	03 / 2,5	63 / 2,5
_	40 / 1,6	40 / 1,6	40 / 1,6
	810 / 31,9	810 / 31,9	810 / 31,9
	360 / 14	360 / 14	360 / 14
		D1	
		VDI 50	
	125	125	125
_	(140/160 option)	(140/160 option)	(140/160 option)
_	4,9 (5,5 option) 810 / 31 0	4,9 (5,5 option)	4,9 (5,5 option)
	300	300	300
	11,8	11,8	11,8
	622 / 24,4	622 / 24,4	622 / 24,4
	10.100 / 22.266	10.500 / 23.149	10.900 / 24.030
_	11.000 / 24.250	11.400 / 25.132	11.800 / 26.140
_	11.900 / 26.235	12.300 / 27.113	12.500 / 27.557
-	13 700 / 30 202	14 100 / 31 085	15 200 / 30.300
_	22.700 / 50.044	23 100 / 50 926	22.200 / 53.510

### TUR 1150/1350/1550 MN SERIES

The TUR 1150/1350/1550 MN is been designed for machining of heavy work pieces with diameter up to 1550 mm. These heavy duty lathes have exceptional stability and high precision. The TUR MN is a durable, tested and proven group of models, based on years of experience in producing lathes using innovative structure and design. The special care taken in every single detail of the manufacturing process guarantees failure-free operation when using our machines.

The best combination of price and high efficiency is **your** cost most effective solution. We are confident there is no better choice for your work shop on the market today!

TUR 1150/1350/1550 MN is a high precision, high quality **European product** 100% manufactured in Poland. The outsourced parts used in all our products only come from world leaders in machine tools parts manufacture and supply.

The **high level of standard equipment** makes the TUR MN lathe a powerful tool which will increase the capacity of your work shop from its first day of operation! A large range of easy to install options will fulfil any special requirements.





Manual steady rest. A wide range of steadies and rests is available to suit different machining applications, including: manual, hydraulic selfcentering, follow rests, C-form, ring type and other.







Special, mono-block type bed made of cast iron is a rigid structure which perfectly absorbs vibrations. Extra wide, deeply hardened and ground guide ways ensure precise machining of huge work pieces and excellent surface quality. All of the above guarantee long-life accurate operation of the lathe.







### CARRIAGE

A "Master- Slave" drive system is used on lathes with machining lengths longer than 4M, using an automated backlash reduction system and linear scales to achieve very high accuracy. The carriage is driven by two synchronized motors, a gearbox and a rack. Lathes which have shorter machining length are equipped with a precise ball screw.



Advantages of "Master – Slave" solution:

- automatic backlash elimination
- high stiffness
- maintenance free and no readjustment needed



 $\bigotimes$ 

A robust tailstock with an extended stroke allows the full working range (between tailstock housing and carriage) to be used. Due to this solution, heavy duty machining of any work piece held in the tailstock center is possible. The hydraulically operated quill with a diameter is 200 mm is hardened and ground. The Quill has a built-in bearing sleeve with taper socket MT6 for dead center. Quick coupling between the tailstock and cross slide makes positioning time short. Optionally, the tailstock can be equipped with an independent drive. The TUR MN headstock housing is a special, ribbed structure which is tested with FEM analysis to eliminate the weakest points. The integrity of every single headstock is checked before the beginning of the machining process during every stage of assembly.



TUR MN 1150/1350/1550 main spindle has new special bearings: in the front two precision axial spherical roller bearings and in the rear one double, cylindrical roller bearing. Due to this arrangement, spindle rigidity and machining accuracy is increased. An automatic maintenance- free bearing lubrication system is used on TUR MN lathes to ensure a continuous, adequate flow for long life and reliability. Different executions are used to provide high heat stability and rigidness during machining of large work pieces and ensure excellent quality of machined surfaces. Diameter spindle bores are available 140, 220, 320, 360, 450 mm.



Dual nose spindle with a 450mm diameter bore



Special headstock with high powerful motor and additional planetary gearbox. With this solution it is possible to obtain a torque of up to 32 000 Nm



Special jaws



### MACHINE STANDARD EQUIPMENT

- Siemens CNC Control System: Sinumerik 840D SL,
- Third movable hand-wheel for easy tool-setting (MPG)
- Automatic programmable change 2-step gearbox
  - Tool-post type Multifix Size D2
  - 2 tube lights in working area
  - Complete coolant system
  - One movable front door (connected to cross slide)
  - Full back guard
- Hydraulic tailstock quill 200mm diameter with 300 mm stroke
  - Electrical emergency contact between tailstock and cross slide
- Hydraulic unit
- Automatic lubrication system
- Front chip conveyor integrated with bed and coolant system
- Rotating operator panel
- Direct measuring system in the X-axis
- Direct measuring system in the Z-axis for lathes longer
- than 4000mm between centres
   Double T-slot on the rear of the cross slide
- Absolute encoders





MN 1550 x 10000 1400 swing over cross slide, heavy duty tailstock for 20 000 kg capacity without steady rest, with two chip conveyors, 4 position turret Baruffaldi TAB 340, Milling unit with automatic Y axis



Zero Point Clamping Modules - system for quick change of different tooling solutions "Power grip"



Heavy duty tailstock 280 mm





"Power Grip" system with replaceable units for quick change tools system









8-position tool turret

Milling units with automatic Y axis and double spindle, mounted on 4-position Sauter toolpost

Parat toolpost with optional

Capto seat



Standard Multifix D toolpost



C axis with driven tools:

- driven by main motor in combination with hydraulic brake and spindle encoder

- full contouring C-axis driven directly by separate servo motor











TECHNICAL PARAN	ETERS: T
САРАСІТУ	
Distance between centers (other lengths on special request)	in
Swing over bed	mm /
Swing over hed	mm
	in
Width of gap	mm/i
Max. weight between centers (without steadies)	kg / li
Max. weight between centers (with one steady)	kg / li
Max. weight between centers (with two steadies)	kg / li
Max. weight in chuck only	kg / li
HEADSTOCK	1
Number of spindle ranges	
Top spindle speed ranges (standard machine with 140 mm spindle bore)	rpm
Main drive motor power (S6)	kW
Max. Turning torque	Nm
Standard execution 140:	
Spindle nose	DIN550
Spindle bore	mm
Front bearing	mm
Special execution:	mm
Spindle nose	DIN 55
Max speed	rpm
SADDLE	
Cross slide travel X-axis	mm /
Rapid travel Z-axis	m/min /
Rapid travel X-axis	m/min /
Feed force transverse	kN / I
Feed force longitudinal	kN lbf
Ball screw Z-axis (2,4m b.c.)	
Drive Z-axis (6m and longer)	· ·
Ball screw X-axis	mm /
Carriage length bearing on bed ways	/ /
Width of cross guide ways (linear guide ways)	, /
Manual Tool post Type Multifix	size
Automatic tool turret with 8-pos. tool disc (option)	DIN698
Automatic 4-pos. tool turret "HEAD-Type" (option)	DIN69
TAILSTOCK	
Quill diameter	mm /
Quill taper for dead centre	size
Quill stroke	mm /
GENERAL	1
Width of bed ways	mm /
Height of bed ways	, /
Total length of machine *	, 
2.000 mm b.c.	mm /
4.000 mm b.c.	
6.000 mm b.c.	mm /
16.000 mm b.c.	mm /
Width of machine	mm /
Width of machine for transport	mm /
Height of machine	mm /

mm / ir mm / i Weight of machine (approx.) 2.000 mm b.c. kg / Ibs 4.000 mm b.c. kg / Ibs 6.000 mm b.c. kg / Ibs 16.000 mm b.c. kg / Ibs

Grinding unit

18

	N 1150/	1350/1	550				
	TUP 14	50 8481	TUP 13	50 8481	TUD 15	50 MAN	
	TURII	50 1011	TUK 15		TUR 15		
mm		2.000	– 4.000 – <del>6</del>	5.000	16.000		
in		79	- 157 -	236	630		
mm / in	1150	/ 45	1350	/ 53	1550	/ 61	
mm	70	00	90	0	1.100/	/1.300	
in	27	,5	35	,5	43,3/	/51,1	
mm/in			580/	22,8			
kg / Ibs	12.000 (20.000 option) / 26.400						
kg / Ibs			15.000/	33.000			
kg / Ibs			18.000 /	39.600			
kg / Ibs			3.000 /	6.600			
	1						
		,	2		2	,	
	1: 2-	225,	1: 2-2	225,	1:2-	225,	
rpm	II: 180	-1000	II: 180	-1000	II: 180	-1000	
kW	5	6	5	5	5	6	
Nm		8 250	0; (optiona	l up to 32	2 000)		
DIN55026			A2-	15			
mm	14	10	14	0	14	10	
mm	25	50	25	0	25	50	
mm	220	3	20	3	60	450	
	A3 15		20		20	A3 20	
DIN 55026	AZ-15	AZ	-20	AZ	-20	AZ-28	
rpm	1000	5	00	4	50	350	
	1						
mm / in	650/	25,5	750/	29,5	775/	30,5	
m/min / imp			8/3	310			
m/min / imn			10 /	390			
kN / lbf			25 / 5	.000			
kN			23/3	47			
lbf			7700 /	10550			
mm / in	80 /	3,1	80 /	3,1	80 /	3,1	
-			gear	drive			
mm / in	40/	1.6	40 /	1.6	40/	1.6	
mm / in	1 150	/ 15 3	1 150	/ 15 3	1 150 / 45 3		
mm / in	366/	11 A	366 /	14.4	366/	14.4	
cizo	5007	14,4		14,4 2	5007	14,4	
size			U.	2			
DIN69880			VDI	60			
DIN69881			NG	40			
mm / in		2	220 (280 op	otion) / 8	,6		
size			MT	6			
mm / in			300 /	11,8			
mm / in			1020	/ 40			
mm / in			755	/ 30			
mm / in			5.200	/ 205			
mm / in			7.200	/ 283			
mm / in			9.200	/ 362			
mm / in			19.200	/ 756			
mm / in			3.300	/ 130			
mm / in			2.350	/ 93			
mm / in	2.250	/ 100	2.250/	100	2.750 /	108	
kg / Ibs	16.500 /	36.383	17.300/3	8.147	18.100 /	39.911	
kg / Ibs	19.000 /	41.895	19.800/4	3.659	20.600 /	45.423	
kg / Ibs	21.500 /	47.408	22.300 / 4	9.172	23.100/	50.936	
kg / Ibs	34.000 /	74.800	34.800 / 7	6.560	35.600 /	78.320	



# **FCT 700**

FCT 700 lathe is a perfect slant-bed lathe for fast, precise and heavy-duty turning and milling of large workpieces. FCT 700 provides a significant increase in productivity. The 70° inclined bed ensures optimal chip removal, easy setting and inspection of the tools and ergonomic access to the workpiece for the operator.





Standard 12 position tool turret

### MACHINE STANDARD EQUIPMENT

- CNC Siemens 840D SL
- 12-position tool turret
- Complete coolant system
- Hydraulic tailstock quill with built-in bearing system
- Hydraulic aggregate
- Programmable positioning of tailstock with come-along system; hydraulic clamping to bed
- Chip conveyor
- Linear scale (direct measuring system) on the X-axis for higher repeatability and position accuracy

口户

• Complete working area enclosure











Oil mistextraction

Sauter 12 position turret radial Tool drive











FCT 700 x 5100 with Fanuc OiF, automatic door, hydraulic chuck, self centering steady rest

FCT 700 x 1600 witch 12 position disc turret with integrated Y-axis



	I II CO	
		PF
ß	119	

			T	11	
	TECHNIC	AL PARAMETER	S: FCT 700		
			FCT 7	00	
CAPACITY					
Distance between centre	es	mm	1100 - 1600 - 2100 -	3100 – 4100-5100	
Swing over bed		mm	option)		
Swing over saddle		mm	490 (630 (	option)	
Max. weight between ce	Max. weight between centres (without steadies)		2.50	0	
			630	)	
Max turning diameter	for inside seat of tool disc	mm	700	)	
HEADSTOCK					
Spindle drive			Direct drive with C-	axis positioning	
Main drive motor powe	r	kW	33		
Spindle bore		mm	105	;	
Top spindle speed		rpm	220	D	
Max. turning torque wit	h direct drive	Nm	750		
Max. turning torque wit	h 2-range gearbox	Nm	300	D	
Spindle nose (DIN 55026	5 / ISO702/I)		A2-8	3	
Spindle inner taper		mm	115		
Spindle bore		mm	140	220	
Top spindle speed		rom	1800	1200	
Max turning torque wit	h direct drive	Nm	750	1200	
Max turning torque wit	h 2-range gearboy	Nm	200	D	
Spindle pose (DIN 5502	5 / ISO702 /I)	ivill	مال ۸۵-11	۸۶-1۵	
SADDLE	5/150/02/1)		A2-11	A2-15	
Cross slide travel X axis		mm	460		
Rapid travel 7 avis		m/min	400	·	
Rapid travel 2-axis		m/min	m/min 20		
Rapid travel X-axis	lapid travel X-axis		20		
Feed force transverse	Feed force transverse		21		
Feed force longitudinal		kN	21		
Ball screw Z-axis		mm	50		
Ball screw X-axis		mm	mm 40		
Width of saddle slidewa	ys	mm	250		
TOOLTURRET					
12-position tool turret f	or static tooling		VDI 5	50	
12-position tool turret fo	or rotating tools		VDI 5	50	
Capacities of tooldrive (	max speed/power/torque)	rpm/kW/Nm	2500/11	,3 / 65	
TAILSTOCK					
Quill diameter			120	-	
Quill taper		MT	MT	5	
Quill stroke		mm	100	, 	
SUB-SPINDLE					
Spindle bore		mm	90	_	
Top spindle speed		rpm	180	D	
Spindle nose (DIN 55026	5 / ISO702/I)		A2-8	3	
Max. turning torque		Nm	950	)	
Max. motor power		kW	33		
GENERAL					
Width of bed guide way	s - 70° slant bed	mm	395	5	
Total length of machine	•		1		
Width of machine		mm	236	0	
Height of machine		mm	254	0	
Weight of machine (app	prox.)				
FCT 700 x 1100		kg	960	0	
FCT 700 x 1600		kg	1130	00	
FCT 700 x 2100		kg	1260	00	
FCT 700 x 3100		kg	1410	00	
FCT 700 x 4100		kg	1550	00	
FCT 700 x 5100		kg	1690	00	

1

### **FCTS900**

The new FAT FCTS slant bed CNC lathe has a heavy duty bed made of cast iron. The swing over bed 900mm with distance between centers of 1100, 2100, 3100mm, 4100mm up to 5100mm. The machine is equipped with a Siemens 840 D SL CNC system with Shop Turn application for turning and milling. The machine can be equipped with different hydraulic power chucks, 12-position tool turret (VDI 50) with static or live tooling, hydraulic self-centering steady rest, C-axis, chip conveyor, milling head B-axis and many other options bringing you a powerful production unit.

Compared the FCTS machine with flat bed or other CNC lathes, main FCTS advantages are:

1) Easy chip disposal from within work area to a chip conveyor.

2) Easy access of an operator to the workpiece. Thus handling and operating the chuck is as easy as never before.

3) 4 guide ways system. Independent drive of the tool over steady rests.



	TECHNICAL PARAMETERS: FCTS900						
			FTMS 900				
	CAPACITY						
	Distance between centers	mm	1100 - 2100 - 3100- 4100 - 5100				
	Swing over bed	mm	900				
	Swing over saddle	mm	900				
	Max. Weight between centers (without steadies)	kg	4500				
	Max. Weight in chuck only	kg	1000				
	Max turning diameter	mm	900				
	HEADSTOCK	1 1					
	Number of spindle ranges	2	Direct drive with C-axis positioning				
	Main drive motor power (S1 / S6)	kW	37/56				
	Spindle hore	mm	140				
	Ton spindle speed	rnm	1800				
14	Max turning torque with 2-range gearbox	Nm	4000				
5	Spindle pose (DIN 55026 / ISO702/I)		4000				
	Spindle hose (Div 550207 15070271)	mm	220				
5		rom	1200				
ö	Max turning torque with 2 range gearbox	Nm	4000				
		NIII	4000				
			A2-15				
		1	cao / 000				
	Cross slide travel X-axis / (with B-axis)	mm	620 / 990				
	Y-axis travel (option version FCTS Y)	mm	210 (±105)				
	Y-axis long travel (option version FCTS YH) Watch out the limits with big milling heads	mm	450 (+245/-205)				
	Rapid travel Z-axis	m/min	20				
	Rapid travel X-axis	m/min	20				
	Rapid travel Y-axis	m/min	20				
	Feed force transverse	kN	17,5				
	Feed force longitudinal	kN	17,5				
	Ball screw Z-axis	mm	63				
	Ball screw X-axis	mm	40				
	Ball screw Y-axis	mm	40				
	Width of slide ways	mm	X=600, Y=600, Z=640				
	TOOLTURRET						
	12-position tool turret for static tooling	DIN69880	VDI 50				
	TAILSTOCK						
	Quill diameter	mm	160				
	Quill taper	MT	MT 6				
	Quill stroke	mm	150				
	SUBSPINDLE (option)						
	Spindle bore	mm	105				
	Top spindle speed	rpm	1800				
	Spindle nose (DIN 55026 / ISO702/I)		A2-8				
	Max turning torque	Nm	050				





### **FTM 1000**

FTM 1000 slant bed CNC lathe has a heavy duty 60° inclined bed with 70° column. Thanks to this exceptional solution the carriage does not reduce the turning diameter on total length. Swing over bed (real turning diameter) is 1000mm. Distance between centers: from 1.500mm up to 12.500mm.





Hydraulic tailstock with automatic clamping to bed. Can be equipped with separate NC-drive



### MACHINE STANDARD EQUIPMENT

- CNC Siemens 840D SL
- 12-position tool turret Sauter
- Complete coolant system
- Hydraulic tailstock quill with built-in bearing system
- Hydraulic aggregate
- Programmable positioning of tailstock with come-along system; hydraulic clamping to bed
- Chip conveyor
- Linear scale (direct measuring system) on the X-axis for higher repeatability and position accuracy
- Complete working area enclosure









### MACHINE OPITIONAL EQUIPMENT

### MANY DIFFERENT TOOLING SYSTEMS



Tool turret for driven tools



Turret with star type tooldisc Sauter or Baruffaldi



Tool magazine disc or chain type



B-axis milling-turning head



Additional coolant station with high pressure pump and filtration



Combined tool setting system: noncontact measurement of rotating tools with laser ant touch probefor static tools



Special boring bar attachment for deep boring operation. The unit is designed for boring bar 120 mm in diameter. The boring bar is mounted on swivel holder that lets the bar be put on parking position without disassembling.



Boring bar holder for milling head with parking position on tailstock







Tool turrent for driven tools with integrated Y-axis

Automatic measuring arm is hidden in the spindle box area behind automatic door. It comes into working area from the top of spindle for measuring operations. With this system it is possible to measure the tools when the work piece is installed on the machine.







Manual tool measuring arm





Hydraulic handle





Touch probe for workpiece measuring



Coolant stations with high pressure pumps and filtration





Additional heavy-duty gearbox for increasing torque of spindle



Hydraulic chuck



Motorized sub-spindle





Hydraulic self-centering steady rest. Can be equipped with separate NC-drive.

To achieve a higher torque at lower speeds for heavy machining of big workpieces, the machine is equipped with an automatic 2-step gearbox (option FCT 700).

			FTM 1000	)
CAPACITY				
Distance between centres	mm	1.500	- 2.500 -	3.5
Swing over hed	mm	4.:	1 000	501
Swing over saddle	mm		1.000	
Max turning diameter	mm		1 000	
Max weight in chuck only (chuck included)	ka		2 500	
Max weight in chuck only (chuck included)	ka		7500	
	16	<u> </u>	7500	
Number of snindle ranges		2 sten a	utomatic	σ¢
	rnm	2 step t	1800	5.
Main drive motor power (S6)	kW		56	
Max turning torque with 2-range planetary gearbox	Nm		4000	
Spindle poce	DIN 55026		4000	
Spindle inper taper	DIN 33020		150	
Spindle hore without hydraulic culic des and shuels			140	
Special spindle bore		220	220	Г
	mm	220	520	
Top spindle speed for special spindle bores	rpm	1200	500	
SADDLE		1		
Cross slide travel X-axis	mm		660	
Y-axis travel integrated with machine	mm		±200	
Rapid travel Z-axis	m/min		22	
Rapid travel X-axis	m/min		16	
Rapid travel Y-axis	m/min	10 43 25		
Feed force Z-axis	kN			
Feed force X-axis	kN			
Feed force Y-axis	kN		20	
TOOLTURRET	1	1		
12-position tool turret for static tooling	DIN69880		VDI 60	
TAILSTOCK		1		
Quill diameter (built in live quill)	mm	ļ	200	
Quill taper		ļ	MT 6	
Quill stroke	mm		300	_
SUBSPINDLE (option)	-	1		
Motor power (S6)	kW	ļ	33	
Max torque (option)	Nm	· ·	750 (3000	)
Top spindle speed	rpm	ļ	2500	
Spindle bore	mm		105	
Spindle nose	DIN 55026	ļ	A2-11	
Rapid travel	m/min	ļ	7,5	
Feed force	kN	ļ	15	
Clamping force	kN		30	
GENERAL				
Total length of machine				
FTM 1000 x 1500	mm		7850	
FTM 1000 x 2500	mm		8850	
FTM 1000 x 7500	mm		13850	
Width of machine	mm		3000	
	mm	İ	3100	
Height of machine	-			
Height of machine Weight of machine (approx.)				
Height of machine Weight of machine (approx.) FTM 1000 x 1500	kg		25500	
Height of machine Weight of machine (approx.) FTM 1000 x 1500 FTM 1000 x 2500	kg kg		25500 28500	

### FTM 165

Based on our experience gained on the larger FTM machines, this new model is the smallest in the range of highly flexible turn / mill centres available from FAT Haco. Its exceptional stability is based on a machine whose structures are produced in our own foundry which, together with the use of high precision components and unrivalled quality of assembly, will ensure many years of reliable service.



Standard 12 position turret with static tools VDI 30 seats











FTM 165 w ith Y axis turret and



Hydraulic tailstock stroke 15mm Automatic part catcher





subspindle

FMT 165 with turret "star" and subspindle and part catcher





	FTM 165									
			FTM 165							
CAPACITY										
Distance between ce	enters	mm	600 - 1.000							
Swing over bed		mm	550							
PACITY stance between ce ing over bed ax turning dia. ADSTOCK p spindle speed ain drive motor po ax. turning torque indle bore withou IDDLE oss slide travel X-a pid travel Z-axis pid travel Z-axis pid travel Z-axis pid travel Z-axis IDLTURRET -position turret fo robstion turret fo ax speed of rotatir ax torque of rotatir ax torque of rotatir ILSTOCK uill taper avel method uill diameter rdr. stroke of tailstor irust IBSPINDLE ueed rate upid travel indle nose ax. Turning torque ibspindle bore par ENERAL fidth of machine eight of machine ight of machine i	static tool disc VDI 30	mm	340							
iviax turning dia.	driven tool disc VDI 30 (option)	mm	340							
HEADSTOCK										
Top spindle speed		rpm	5.000							
Main drive motor po	wer	kW	20							
Max. turning torque		Nm	190							
Spindle bore witho	ut hydraulic cylinder and chuck		80, 105-option							
SADDLE										
Cross slide travel X-a	xis	mm	210							
Rapid travel Z-axis		m/min	30							
Rapid travel X-axis		m/min	30							
TOOL TURRET										
12-position turret fo	r static tools	VDI 30; VDI 40	210							
12-position turret fo	r dynamic tools (o)	VDI 30; VDI 40	30							
Number of driven po	ositions (o)	12	55							
Max speed of rotating tool (o)		rpm	6000							
Max torque of rotati	ng tool (o)	Nm	16							
TAILSTOCK										
Quill taper		mm	MT4							
Travel method			auto positioning							
Quill diameter		mm	55							
Hydr. stroke of tailsto	ock	mm	15							
Thrust		N	4.400							
SUBSPINDLE										
Speed rate		rpm	0-4500							
Rapid travel		m/min	30							
Spindle nose		DIN55026	A2-5							
Max. Turning torque		Nm	140							
Subspindle bore tota	al	mm	30							
Subspindle bore par	tial	mm	45							
GENERAL										
Width of machine		mm	1.940							
Height of machine		mm	1.860							
Length of machine		mm	3.600 / 3.800							
Weight of machine (	approx.)		140							
FTM 165 x 600 / 100	0	kg	4500 / 5300							
Control system		Туре	Siemens 840 D SL							
			10 1 10							

# TUR 3MN/4MN

**TUR 3MN** is a lighter version of a 4 - guideways lathe. It enables machining of pieces at diameter up to 2.000 mm and weight to 15.000 kg. Similarly as in case of other FAT lathes, this machine can be designed in different configurations using many options.







Due to compact design of the bed, the machine takes little space while keeping rigidity. Standard version and compact version





Tooling system WTO for turning, milling and drilling

	TECHNICAL	PARAMETERS:	TUR 3MN					
			TUR	3 MN				
		Stan	dard	Не	avy			
CAPACITY								
Distance between centres	mm		4.800 - 6.400 - 8.0	00 – 9.600 16.000	)			
(other lengths on special request)	in		189 – 252 – 3	15 – 378630				
Swing over hed	mm		1.300 - 15	500 - 1.800				
	in		51	- 71				
Swing over saddle	mm		1.100 - 1300 - 1.600					
	in		39	- 63				
Max. weight between centers	kg	12.	000	20.	000			
(without steadles)	lbs	19.	800	44.	000			
Max. weight in chuck only	kg	3.0	000	3.0	000			
	lbs	6.6	500	6.0	500			
HEADSTOCK	-	1						
Number of spindle ranges				2				
Top spindle speed ranges	rpm	l: 2- II: 180	-225, -1.000	l: 2- II: 10	-120 0-700			
	kW	37,	/83	80	/98			
Main drive motor power (S1/S6)	hp	50/	112	108	/133			
Max Turning torque	Nm	9.0	000	32.	000			
	fl-lb	6.630		23.	600			
Normal execution:		1		1				
Spindle bore diameter:	mm	140		2	60			
	in	5	,5	10,2				
Spindle nose	DIN55026	A2	-15	A2-15				
Max speed	rpm	1.0	000	7	00			
Special executions:	DINEE036	42.15	42.20	42.20	42.28			
Max speed *	DIN55020	A2-13	A2-20	A2-20	AZ-26			
	mm	220	320	360	450			
Spindle bore diameter	in	8,6	12,5	14	17,7			
SADDLE								
Denid travel 7 avia	m/min			6				
	ipm		2	36				
Ranid travel X-axis	m/min	6						
	ipm		2	36				
Feed force transverse	kN		35	/ 47				
	lbf		7700 /	/ 10550				
Feed force longitudinal	kN			10				
	Ibt		8.	900				
TAILSTOCK			-					
Quill diameter	mm	2.	20	2	80			
	in	8	,6	1	.1			
Quill stroke	in	300		3	00			
	····							

# TUR 3MN/4MN

The TUR 4MN is a heavy duty 4-guideway lathe designed for highly efficient machining of long and heavy workpieces. This machine can be used for machining of workpieces at length up to 16 m and weight of 80.000 kg.





### The enormous wide step bed is made from high-grade cast iron. The upper guide ways are hardened and ground, with high quality steel inserts assembled using "Guide Easy FIX" technology.





4 position tool turret



Tailstock with quill's diameter 400 mm and stroke 300 mm. The heavy duty headstock is equipped with 185 mm



spindle bore. Thanks to the planetary gearbox, the maximum turning torque is 100.000 Nm.



























		TECHN	ICAL PA	RAME	TERS: "	TUR 4N	1N			
							TUR 4 MN			
				Stan	dard		Medium Heavy duty			
	CAPACITY									
	Distance between centres	mm	4800 - 6400 - 8000 - 9600 - 11200 - 12800 - 14400 - 16000							
	(other lengths on special request)	in		189 - 252 - 315 - 378 - 441 - 504 - 567 - 630						
	Swing over hed	mm			70	0 - 1100	- 1600 - 1800 - 2000 - 2	300		
	Swillg over bed	in		27,5 - 43,3 - 63 - 70,9 - 78,7 - 90,5						
	Swing over saddle **	mm	700 - 1100 - 1200 - 1400 - 1600 - 1900							
		in				27,5 - 4	43,3 - 47 - 55 - 63 - 74,8			
	Max. weight between centers (without steadies)	kg		12.000		15.000	30.000 Optionally up to 60.00			
	. ,	lbs		19.	800		33.000	66.000 / 132.000		
	Max. weight in chuck only			3.0	00		3.000 6.600	5.000		
	HEADSTOCK									
	Number of spindle ranges		<u> </u>				2			
	Top spindle speed ranges	rpm		I: 2– II: 18	200 <i>,</i> 0-900		I: 2–120, II: 100-700	I: 2–90, II: 80-360		
		kW	37/56				80/98	71/105		
	Main drive motor power (\$1/\$6)	hp	50/76				108/133	96/142		
ĺ		Nm	8.250				32.000	45.000		
	Max. Turning torque	ft-ib	6.082				23.594	33.179		
	Colordly have discusted	mm	140				260	185		
_	Spindle bore diameter:	in	5,5				10,2	7,3		
	Spindle nose	DIN55026	A2-15				A2-15	A2-20		
xect	Max speed	rpm		900		700	400			
۳ ا		mm	1	250			400	460		
	Front bearing	in		9	8		15,7 18,1			
	Spindle nose	DIN55026	A2-15	A2-20	A2-20	A2-28	-	A2-28		
non	Max speed	rpm	700 (900)	500 (900)	350 (500)	350	-	350		
ecut		mm	220	320	360	450	-	460		
ě	Spindle bore diameter	in	8,6	12,5	14	17,7	-	18		
		mm	380	520	560	670	-	670		
	Front bearing	in	15	20,5	22	26,4	-	18		
	BLADE SYSTEM SADDLE									
		m/min	6							
	Rapid travel Z-axis	ipm	236							
		m/min					6			
	Rapid travel X-axis	ipm					236			
	Feed force transverse	kN					35			
		lbf					7800			
	Feed force longitudinal	kN lbf					40 8900			
	TAILSTOCK									
	Orill discusts (* 1	mm		22	20		*280x280	400 / 480x480		
	Quill diameter/* dimension	in		8,	6		*11x11	15 / 18,9 x 18,9		
		mm		30	00		250	300		
		in		11	,8		9,8 11,8			
	ELECTRIC AND CNC CONTROL									
	Voltage		3	8x400 V A	C +/-109	6	3x400 V AC +/-10%	3x400 V AC +/-10%		
-	Fraguancy			50Hz	+/-5%		50Hz +/-5%	E0H7 1/ E9/		

### **TUR CONVENTIONAL**

The rigid construction of the machine, the high motor power of 15 kW, the wide range of spindle speeds and high top cutting speeds all allow the operator to select cutting parameters and perform the machining of different materials.





Spindle with bore 140 mm and double nose



Taper turning attachment



( 00 000 00000 00 ()

The head stock drives the spindle and contains the speed selection transmission which provides a range of 21 spindle speeds.

The feed box contains a three

00



# TUR 560/630/710 SC

The TUR SC is a combination of a conventional and a CNC high-precision lathe. A great advantage to the user is the possibility of using defined machining operations without special programming knowledge. Reduced machining times, uniform precision of all parts in a batch, as well as taking away from the operator much routine work, demonstrates a new level of production efficiency.







Simplified controller allows the operator to use easy macros without knowledge of programming skills

Covers for manual operations

	TECHNI	CAL PARAMETERS: TUR 5	60/630/710 SC	
		TUR SC 560	TUR SC 630	TUR SC 710
CAPACITY				
Distance between centres	mm		1.000-2.000-3.000-4.000	
Swing over bed	mm	560	630	710
Swing over saddle	mm	300	450	
Max. weight between centres	kg		2.000	
HEADSTOCK				
Spindle speed	rpm		4 -1.800	
Main drive motor power (S1)	kW		12	
Spindle bore	mm		105	
SADDLE				
Cross slide travel X-axis	mm	365	390	410
TAILSTOCK				
Quill diameter	mm		100	
	Jacob and			

		TUR 560	TUR 630	TUR 630A	TUR 710	TUR 710A
CAPACITY						
Distance between centres	mm	1.000-2.000-3.000-4.000				
Swing over bed	mm	560	630	630	710	710
Swing over saddle	mm	320	380	380	440	440
Max. weight between centres (without steadies)	kg	1.500	1.500	1.500	1.500	1.500
HEADSTOCK						
Number of spindle speeds		21	21	21	21	21
Spindle speed	rpm	18-1.800	18-1.800	15-1.400	18-1.800	15-1.400
Spindle bore	mm	105	105	140	105	140
Main motor power	kW	15	15	15	15	15
SADDLE						
Cross slide travel	mm	345 407		07		
Top slide travel	mm	155				
TAILSTOCK						
Tailstock quill diameter	mm	100	100	100	100	100





Compact headstock with direct drive and planetary gearbox

# **SPECIAL MACHINES**

Based on the combination of our broad experience in lathe manufacturing, our constant development and improvements and fulfilling our customer's requests, our product range has been expanded to include special machines dedicated to meet specific requests from our clients. We are not only focused on producing standard, small horizontal lathes. Our aim is to provide huge stand-alone machines and also manufacture complete production lines for complicated machining operations to include turning, grinding, boring and other complex operations. Below, we have examples of completed and current projects.

TUR 4 MN 3.000 x 22.000 - turning machine consists of two independent beds. This solution enables machining of shafts up to 3.000 mm in diameter and 22.000 mm in length. The machine is equipped with a



Deep drilling machine TUR FDD 100 x 6000. Range of drilling length is 1.200-6.000 and the diameter 20-100 mm

Production line for high efficient pipe drilling. The machine consists of lathe and loading/unloading station.

Production line for grinding of welded pipes

TUR 6 MN - a lathe equipped with a 6 guideway bed and double saddle system. Designed for highly efficient machining of aluminum billets.



A lathe designed for machining of long pieces. Due to very special machining requirements, this lathe is equipped with movable headstock with separate drive. Thanks to this solution, the headstock can be positioned in every position along the bed.



Machine with a simplified control system, designed for machining rubber printing shafts. The lathe is equipped with "Power grip" system for quick tool changing.



Turning-boring machine designed based on TUR MN

TUR RMN 240 - milling machine for railways switches











# FAT Haco offers you the benefit of our vast experience – since the year 1945 over 50.000 machine tools have been sold in many countries around the world!

Our excellently equipped machine shop, assembly facility, research office and our own foundry allows us to manufacture most components by ourselves - complete from casting to the finished product. FAT works closely with you to develop the absolute best product for your needs. Our experience and quick reaction time will save you both time and money.

Together, let's make creative imagination our only limitation!





for impressive performances

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