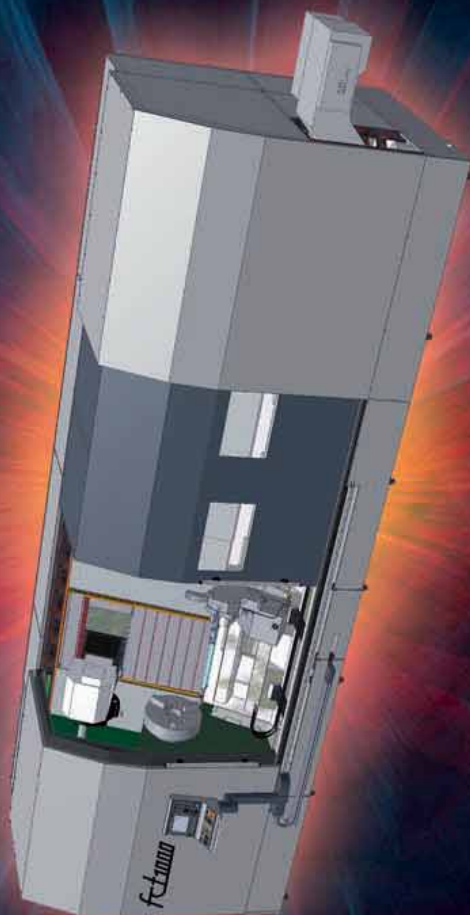




for impressive  
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## FCT 1000 / 1000A

The new FAT FCT 1000 slant bed CNC lathe has a heavy duty 60° inclined bed with 70° column. The swing over bed is 1000 mm with distance between centers of 1500, 2500, 3500 or 4500mm. The machine is equipped with a Siemens 840 D SL CNC system with Shopturn application for turning and milling. In standard execution there is a heavy duty spindle with bore of 140 mm on FCT 1000 and 220 mm on FCT 1000A. The machine can be equipped with different hydraulic power chucks. Driven tools are optionally available on standard 12-position toolturret (VDI 60). In combination with the continuous C-axis, the machine can carry out complicated milling, drilling and tapping operations. For working on long boring bars, as a special option, there is available also 9 position tool disc which is working with the standard toolturret. On the disc there are 6 positions of VDI60 (static or driven tools) and 3 positions for tool holders according to DIN69881.

Additional options:

- C - axis positioning: the spindle is driven by main motor, with hydraulic brake on spindle, spindle encoder for positioning every position (+/- 0,05°).
- Y - axis - two types possible:
  - integrated with machine with stroke ± 200mm,
  - integrated with Sauter tool turret with stroke ± 80 mm.
- B - axis

The axes are driven with servomotors through ball screw drives, utilizing roller guideways in X and Y axes for high speed movement and slide ways where high stiffness is needed. The ball screws are driven by brushless motor, toothed belt reduction unit and preloaded nuts.

The massive tailstock is positioned with the saddle with hydraulic clamp/unclamp and hook-up operation (hydraulic live quill is standard). Programmable tailstock with separate drive system is an option. The design of tailstock provides also easy setting and high stiffness.

It is possible to install 32 tools magazine powered by B-axis turret and Y-axis column. So equipped machine functions as modern Turning-Milling-Centre.

C-axis with Servo-Motor and special wormgear drive enables very high positioning precision and high torque during slow spindle rotation.

Hydraulic self-centering steady rest. This option is with special independent drive system and can function as CNC axis.

Hydraulic weight compensation of X-axis column for optimum positioning speed and precision.

Tailstock can be independently positioned by optional drive.

FCT 1000 / 1000A

Capacity	Typ	FCT 1000	FCT 1000A
Distance between centers	mm	1500 - 2500 - 3500 - 4500	
Swing over bed	mm	1000	
Swing over saddle	mm	1000	
<b>Headstock</b>			
Top spindle speed	rpm	1600	1200
Main drive motor power	kW	56	56
Spindle bore without hydraulic cylinder and chuck	mm	140	220
<b>Saddle</b>			
Cross slide travel X-axis	mm	660	
<b>Tailstock</b>			
Quill diameter (built in live quill)	mm	200	
Quill stroke	mm	300	

Subject to alterations without prior notice

## FCT 700 / 700A

The FAT FCT 700 lathe is the perfect slant bed lathe for fast, precise and heavy-duty turning and milling of large workpieces. The FCT 700 turning center provides a significant increase in productivity and results in increased profitability. The 70° inclined bed ensures optimum swarf removal, easy setting and inspection of the tools and optimal access to the workpiece for the operator. The FCT 700 lathe is equipped with a 12-station bi-directional toolturret with standard static VDI 50 tooling, which results in lower toolholder costs. Optionally there is available toolurret with driven tools, which in combination with the continuous C-axis enables complicated milling, drilling and tapping operations. The FCT 700 can be optionally equipped with Y-axis (VDI 40) to enable off centre drilling, milling operations and surface milling. Other additional options as measuring system on the X-axis, tool presetter, hydraulic steady rest are possible on demand. Programmable tailstock with hydraulic clamp unclamp system, built-in live center and automatic positioning (option) provides as well easy setting as bigger workpiece machining.

To achieve a higher torque at lower speeds for heavy machining of big workpieces, the machine can be optionally equipped with an automatic 2-step gearbox.

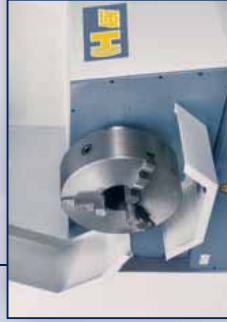


	Typ	FCT 700	FCT 700A
<b>Capacity</b>			
Distance between centers	mm	1100-1600-2100-3100	
Swing over bed	mm	700	
Swing over saddle	mm	490	
<b>Headstock</b>			
Top spindle speed	rpm	2200	1800
Main drive motor power	kW	33	33
Spindle nose (DIN 55026 / ISO7021)		A2-8	A2-11
Spindle bore without hydraulic cylinder and chuck	mm	105	140
<b>Saddle</b>			
Cross slide travel X-axis	mm		460
<b>Tailstock</b>			
Quill diameter	mm		120
Quill taper			MT 5
Subject to alterations without prior notice			



## TUR MN 560 630 / 630A 710 / 710A

The **FAT CNC** lathes in **MN** series meet present requirements for better machining. Easy operation, quick way from drawing to finished workpiece, low maintenance and special features for a modern shop, and much more are available now for very reasonable prices. TUR MN is a manual/CNC high-precision lathe combination. The newest Siemens SINUMERIK 840 D SL Manual Turn control system and AC drives make it most modern production unit for manufacturing very complicated parts made as one-offs or in small batches. When the machine is additionally equipped with such options as hydraulically operated power chuck and tailstock, chip conveyor, live tooling, automatic selection of spindle speed range and electric automatic 8-station turret, it offers efficiency of the most modern flat bed CNC lathe. [...]

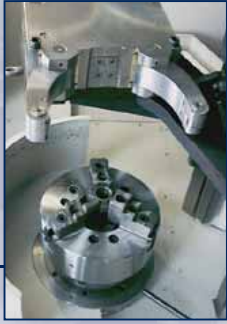


Capacity	Typ	TUR 560 MN	TUR 630 MN	TUR 630A MN	TUR 710 MN	TUR 710A MN
Distance between centers	mm	1000 – 2000 – 3000 – 4000				
Swing over bed	mm	560	630	630	710	710
Swing over saddle	mm	300	370	370	450	450
Max. Weight between centers (without steadies)	kg	2000	2000	2000	2000	2000
Max. Weight in chuck only	kg	600	600	600	600	600
<b>Headstock</b>						
Number of spindle ranges		2	2	2	2	2
Top spindle speed ranges	rpm	I: 2-430 II: 200-2500	I: 2-430 II: 200-1850	I: 2-430 II: 200-1850	I: 2-430 II: 200-2500	I: 2-430 II: 200-1850
Spindle nose (DIN 55029)		D 1-8	D 1-8	2 x D 1-11	D 1-8	2 x D 1-11
Spindle inner taper	mm	115	115	150	115	150
Spindle bore	mm	105	105	140	105	140
Main drive motor power	kW	18,5	18,5	18,5	18,5	18,5
Max. Turning torque	Nm	2100	2100	2800	2100	2800
<b>Support</b>						
Cross slide travel X-axis	mm	365	390	390	410	410
<b>Tailstock</b>						
Quill diameter	mm	100	100	100	100	100
<b>General</b>						
Width of bed	mm	433	433	433	433	433

Subject to alterations without prior notice

## TUR MN 800 930 1100

[...] The high precision ballscrews for X & Z axis are mounted on high precision bearings to enable sensitive movement. The drive for Z-axis is transmitted to the ballscrew via cogged belt from a Siemens AC servo-motor, located on the left-hand side of the machine. After stress relieving treatment and precise machining all bed castings are equipped with hardened guideways which results in a long-life accurate operation of the lathe. The headstock is also based on a modern compact design. The heavy duty spindle is supported by a combination of double-row cylindrical roller bearings and double-direction angular contact thrust ball bearings - a system which provides the highest precision and rigidity for heavy loads and superior surface finish. [...]



Capacity	Typ	TUR 800 MN	TUR 930 MN	TUR 1100 MN
Distance between centers (other lengths on special request)	mm	2000 – 3000 – 4000 – 5000 – 6000		
Swing over bed	mm	800	950	1100
Swing over saddle	mm	500	630	790
Max. weight between centers (without steady rest)	kg	4000	4000	4000
Max. weight between centers (with one steady rest)	kg	4500	4500	4500
Max. weight between centers (with two steady rests)	kg	5000	5000	5000
Max. weight in chuck only	kg	1000	1000	1000
<b>Headstock</b>				
Top spindle speed ranges (standard machine with 140 mm spindle bore)	rpm	I: 4-360 II: 200-1800	I: 4-300 II: 160-1200	
	ft-lb	3020	3600	3600
<b>Standard execution:</b>				
Spindle nose Camlock	DIN55029		D1-11	
Spindle bore	mm	140	140	140
Front bearing	mm	250	250	250
<b>Special execution 220:</b>				
Spindle nose	DIN55026		A2-15	
Spindle bore	mm	-	220	220
<b>Special execution 320:</b>				
Spindle nose	DIN55026		A2-20	
Spindle bore	mm	-	320	320
<b>Saddle</b>				
Cross slide travel X-axis	mm	505	570	610
Ball screw Z-axis (1-3m b.c.)	mm	63	63	63
Ball screw Z-axis (4m b.c.)	mm	63	63	63
<b>Tailstock</b>				
Quill diameter	mm	125 (140 option)	125 (140 option)	125 (140 option)
		Subject to alterations without prior notice		

## TUR MN

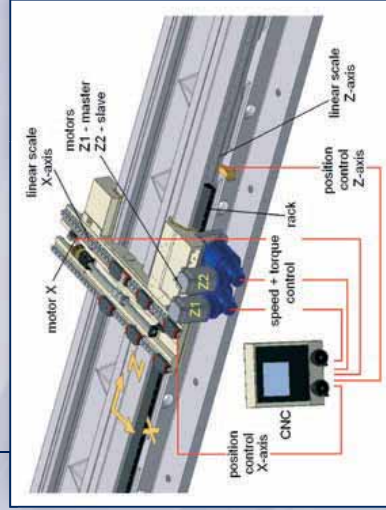
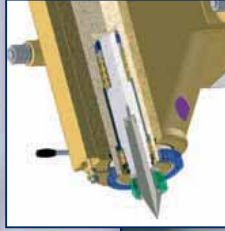
1150

1350

1550

[...] For the longitudinal travel of the saddle in 2m and 4m machines is used a very rigid ball screw of 80mm diameter. The 6m and 8m long machine has a geardrive (piggon with rack) in longitudinal axis.

**TUR 1150/1350/1550 MN** is equipped with Linear Measuring System in the X-axis as standard. The Linear Measuring System ensures a high positioning accuracy and higher repeatability. The linear measuring system eliminates deviations of position due to expansion of the ball screw because of temperature fluctuations or play between nut and screw any other mechanical play. The heavy-duty tailstock allows bigger workpiece loads and reduces vibration during heavy rough cutting. The extra large 200 mm diameter quill is hardened and has a built-in live centre with MT 6 Taper. The tailstock is on an air cushion for easy movement as standard. The tailstock can be easily positioned by carriage using a quick-released coupling. Hydraulically operated tailstock is offered also as an option.



Capacity	Typ	TUR 1150 MN	TUR 1350 MN	TUR 1550 MN
Distance between centers (other lengths on special request)	mm		2000 – 4000 – 6000 – 8000	
Swing over bed	mm	1150	1350	1550
Swing over saddle	mm	700	900	1100
Swing over gap	mm	1350	1550	1750
Max. weight between centers (without steady rest)	kg		9000	
Max. weight between centers (with one steady rest)	kg		12000	
Max. weight between centers (with two steady rest)	kg		15000	
<b>Headstock</b>				
Top spindle speed ranges (standard machine with 140 mm spindle bore)	rpm	I: 2-200 II: 180-900	I: 2-200 II: 180-900	I: 2-200 II: 180-900
<b>Standard execution:</b>				
Spindle nose	DIN55026		A2-15	
Spindle bore standard version	mm	140	140	140
<b>Special execution 220:</b>				
Spindle nose	DIN55026		A2-15	
Spindle bore	mm	220	220	220
<b>Special execution 320:</b>				
Spindle nose	DIN55026		A2-20	
Spindle bore	mm	320	320	320
<b>Saddle</b>				
Cross slide travel X-axis	mm	650	750	775
Rapid travel Z-axis	m/min		8	
Rapid travel X-axis	m/min		10	
Ball screw Z-axis (2, 4 m b.c.)	mm		63	
Drive Z-axis (6, 8 m b.c.)			Gear drive	
Ball screw X-axis	mm		40	
<b>Tailstock</b>				
Quill diameter	mm		300	
		Subject to alterations without prior notice		



## TUR CONVENTIONAL

The TUR conventional lathes have been designed for the highly efficient machining of workpieces in unit and serial production. The rigid construction of the machine and the high motor power of 15 kW, the wide range of spindle speeds and high top cutting speeds allow to rationally choose the machining parameters and perform the machining of different materials.

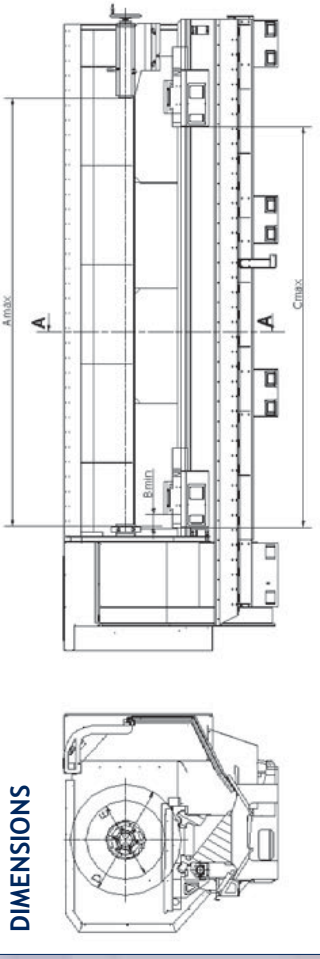
The TUR lathes, owing to their modern solution of the spindle supporting and the application of high-precision angular contact ball bearings, and the TUR 630A/ 710A as double chuck machines with a bigger spindle bore and spindle supported in special, rigid bearings, allow to achieve the best surface finish. The gears and spindle box made to high-precision standards ensure the accurate operation of the machine tool. The TUR lathes combine a rigid structure with high motor power and a wide range of spindle speeds to enable roughing and finishing all types of steel, cast iron, non-ferrous metals and plastics.

The carriage contains a transmission system which allows transverse or longitudinal feeding, either manually or mechanically. The rapid mechanical feed can also be used in both directions when the lead screw half nut is disengaged. (The transverse feed is geared to 1/2 the rate of travel of the longitudinal feed.) The headstock contains the main motor, the speed transmission and the feed and thread transmission. The head stock drives the spindle and contains the speed selection transmission which provides a range of 21 spindle speeds.

The main spindle is powered 15 kW motor. The tailstock travels along the two bed sideways. The tailstock is easily positioned by carriage and connection is with a quick-disconnect coupler.

The lathes are capable of cutting right and left-handed threads in all standards: inch, modular and diametric pitch units.

## DIMENSIONS



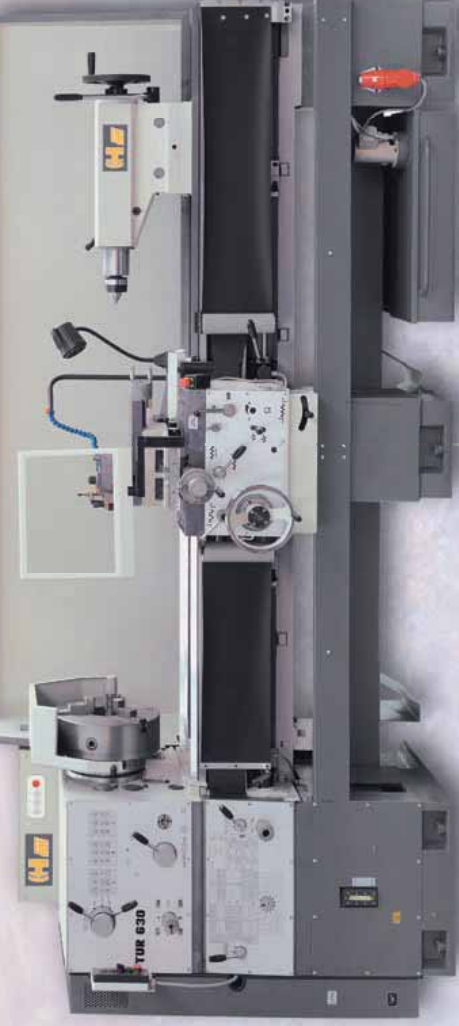
Capacity	TUR 560	TUR 630	TUR 630A	TUR 710	TUR 710A
Distance between centers	mm	1000 - 2000 - 3000 - 4000			
Swing over bed	mm	560	630	710	710
Swing over saddle	mm	320	380	440	440
Load capac. in chuck + center	kg	1500	1500	1500	1500
Load capacity in chuck	kg	400	400	400	400
<b>Headstock</b>					
Number of spindle speeds	rpm	21	21	21	21
Spindle speed range	rpm	18 - 1800		15 - 1400	
Spindle nose DIN 55029	Camlock	D 1-8	D 1-8	2 x D 1-11	D 1-8 2 x D 1-11
Spindle bore	mm	105	105	140	105
Main drive motor power	kW	15	15	15	15
<b>Support</b>					
Longitudinal feed	mm/rev		0,05 - 3,26		
Rapid feed long/ crosswise	m/min		5,6 - 2,8		
Cross slide feed	m/min		0,25 - 1,63		
Tool shank cross section	mm	36 x 20	36 x 20	36 x 20	36 x 20
Metric threads	mm		1 - 88		
Inch threads	tpi		1 - 88		
Modular threads	mm		1 - 88		
DP threads	DP		1 - 88		
<b>Tailstock</b>					
Tailstock quill diameter	mm	100	100	100	100
Tailstock quill taper		MT 5	MT 5	MT 5	MT 5

Subject to alterations without prior notice

## TUR CONVENTIONAL / TUR MN DIMENSIONS

Typ	A	B	C	D	E
TUR 800 MN x 2000	2300	80	2100	800	500
TUR 800 MN x 3000	3300	80	3100	800	500
TUR 800 MN x 4000	4300	80	4100	800	500
TUR 800 MN x 5000	5300	80	5100	800	500
TUR 800 MN x 6000	6300	80	6100	800	500
TUR 930 MN x 2000	2300	80	2100	950	630
TUR 930 MN x 3000	3300	80	3100	950	630
TUR 930 MN x 4000	4300	80	4100	950	630
TUR 930 MN x 5000	5300	80	5100	950	630
TUR 930 MN x 6000	6300	80	6100	950	630
TUR 1100 MN x 2000	2300	80	2100	1100	790
TUR 1100 MN x 3000	3300	80	3100	1100	790
TUR 1100 MN x 4000	4300	80	4100	1100	790
TUR 1100 MN x 5000	5300	80	5100	1100	790
TUR 1100 MN x 6000	6300	80	6100	1100	790

Typ	A	B	C	D	E
TUR 560 MN x 1000	1200	80	1000	560	300
TUR 560 MN x 2000	2200	80	2000	560	300
TUR 560 MN x 3000	3200	80	3000	560	300
TUR 560 MN x 4000	4200	80	4000	560	300
TUR 630 MN x 1000	1200	80	1000	630	370
TUR 630 MN x 2000	2200	80	2000	630	370
TUR 630 MN x 3000	3200	80	3000	630	370
TUR 630 MN x 4000	4200	80	4000	630	370
TUR 710 MN x 1000	1200	80	1000	710	450
TUR 710 MN x 2000	2200	80	2000	710	450
TUR 710 MN x 3000	3200	80	3000	710	450
TUR 710 MN x 4000	4200	80	4000	710	450



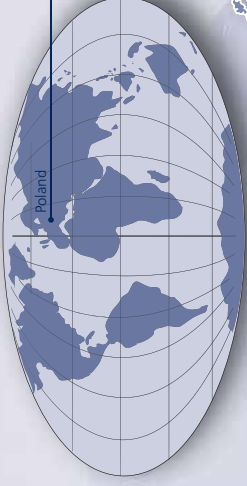
## HACO FAT

FAT, as a member of the Belgian HACO Group, is the leading manufacturer of conventional and CNC lathes in Poland. HACO Group is an important manufacturer of sheet metal working machinery (pressbrakes, guillotine shears, punching machines, lasercutting machines, etc). For more information please visit [www.haco.com](http://www.haco.com).

Since the integration into the HACO Group in 1998, the company has been quickly developing and expanding its products range. In 2001 a modern CNC slant bed lathe and milling machine was released. Its success inspired and brought to life the most modern, with turning diameter 1000mm CNC turning-milling machine.

We have our own independent sales network. About 95% of production is for world-wide export. Our biggest markets are in Western Europe and North America, but we also export to several countries in the Far East, South America, Africa and Australia. Based on more than 50 years experience of lathe production, we are able to construct and execute high quality lathes at very competitive prices.

If You have any questions, we are always for Your disposal.



Wrocław



for impressive  
performances

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