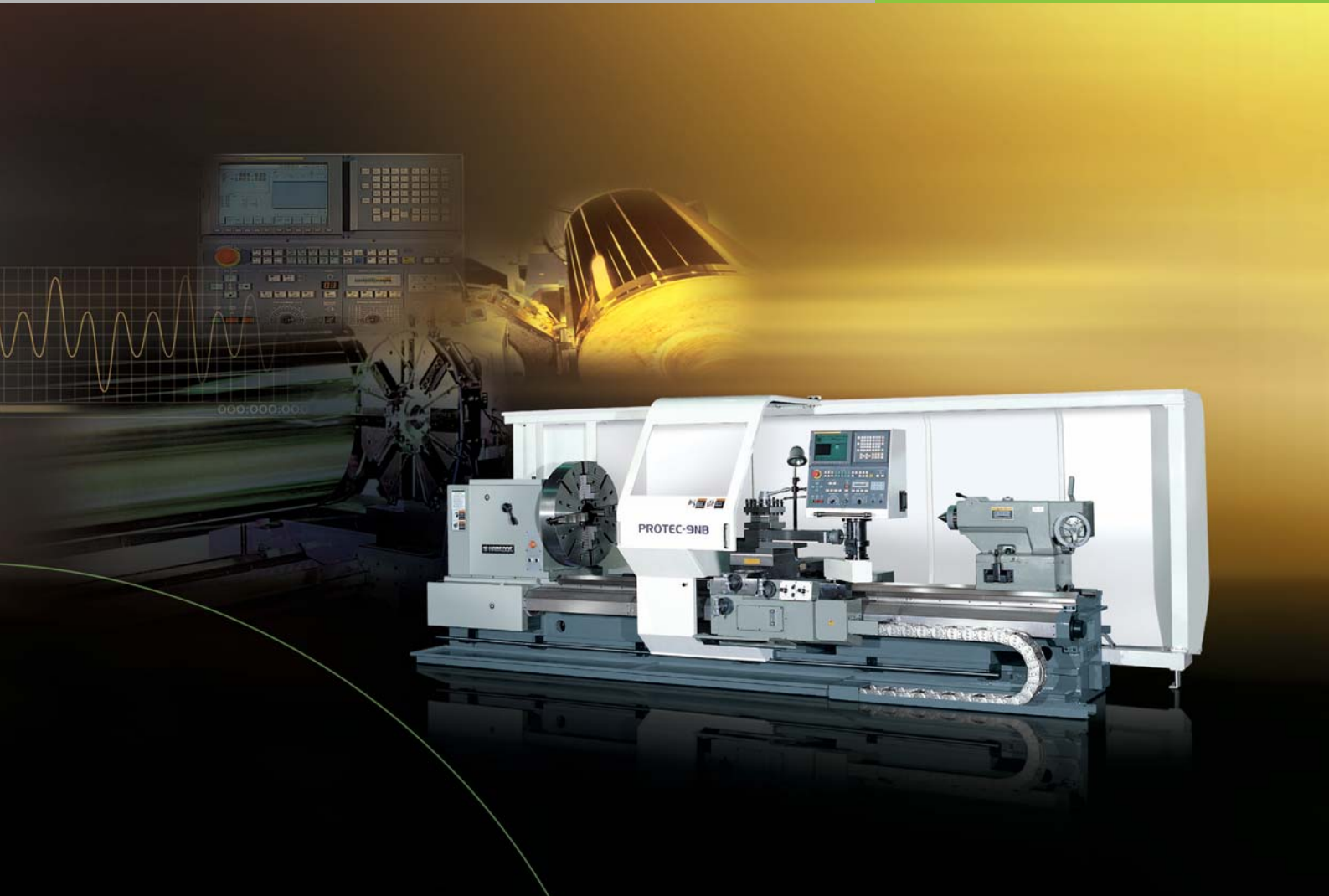


PROTEC 9N Series

Heavy Duty Semi-CNC Lathe

HANKOOK MACHINETOOLS



PROTEC

PROTEC 9N Series**Heavy Duty Semi-CNC Lathe****Combine advantages of full CNC lathe and manual lathe**

High precision and accuracy comparable to full CNC lathe
 Simple, convenient and versatile operation of manual lathe
 Most effective machine at most competitive price
 For your satisfaction with various machining need

Features

- Up to 8,000mm (315 ") shaft turning length
- Large 5,000kg (11,000lbs) load capacity between centers
- Automatic shifting 2 or 3 speed geared headstock
- Extra wide one-piece cast iron bed
- Induction-hardened and precision-ground guide ways
- High precision ball screws for both axes
- Servo motor for both axes
- Large spindle bore (\varnothing 105, 176 and 254 mm)
- Square tool post featuring Curvic coupling
- Built-in live tailstock spindle(\varnothing 180mm quill dia.)
- Two speeds tailstock spindle
- Guidance hand-wheel (simultaneous 2 axes control)
- X/Z axes electronic hand wheels (MPG)
- Full automatic lubrication to all critical areas

Bed

- The bed is a heavy one-piece casting with thick ribbing to prevent twisting and deformation.
- High-qualified cast iron is used for its excellent dampening characteristics.
- The flat bed design is suitable for heavy weight of work-piece directly downward onto the bed ways.
- Width of bed is 630 mm.

Headstock

- Extremely rigid, robust box type to sustain heavy duty work.
- 2 or 3 steps gear change for high torque driving with low speed.
- All spindle bearings are precision class and permanently grease lubricated to minimize thermal growth.
- 3 kinds of spindle bore, 105mm, 176mm and 254mm.
- Main spindle gears & other bearings are forced-lubricated.

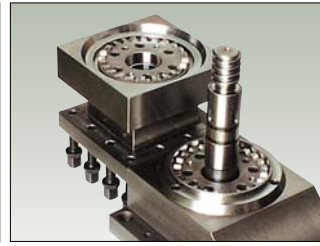




Headstock



Big Bore Spindle



Curvic Tool post



Operation Panel

Carriage

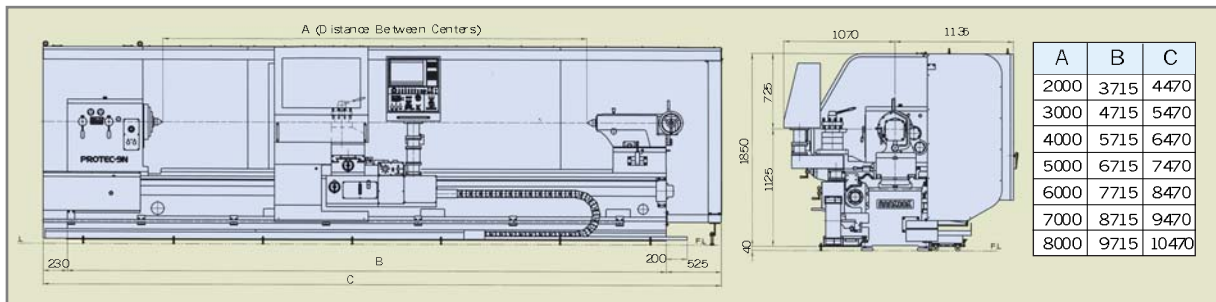
- The extremely rigid extended H-style saddle and wide cross slide allow heavy and interrupted cutting with ultimate stability and high accuracy.
- High precision ball screw for longitudinal and cross feed to obtain high accurate turning with servo motors. Longitudinal and cross handles have pulse generators, not connected directly with ball screw.
- Even the operators accustomed to manual lathes can operate this machine very easily by operating portable handles.
- The fluorine-plastic resin combined way lubrication provides a low friction on surface and prevent guide-way from wearing.
- The manually indexed square tool post features Curvic coupling. It can be positioned per every 15 degree increments. Index repeatability is guaranteed within ± 5 seconds.

Tailstock

- The heavy duty tailstock has a M.T#6 center and quill diameter 180mm for to load heavy shafts up to 5 tons(11,000lbs).
- The quill stroke of 250mm and speed reduction gear box(ratio 1:1/4) for drilling operation.
- Built-in live tailstock spindle provided as standard.
- Tailstock body feed is accomplished by a drive hook engaged with the carriage.



External Dimensions



Machine Specifications

Items	Unit	PROTEC							
		9NA		9NB			9NC		
Capacity	Swing over bed	mm(in) \varnothing 950(37.4)							
	Swing over carriage	mm(in) \varnothing 630(24.8)							
	Max. turning length	mm(in)	1845(73)	2845(112)	3845(151)	4845(191)	5845(230)	6845(269)	7845(309)
	Distance between centers	mm(in)	2000(79)	3000(118)	4000(157)	5000(197)	6000(236)	7000(275)	8000(315)
Load capacity between centers	kg(lbs)	5000(11000)							
Spindle	Spindle bore	mm(in)	\varnothing 105(4)		\varnothing 176(7)		\varnothing 254(10)		
	Spindle nose	-	A2-11"		A2-11"		A2-15"		
	Spindle speeds	rpm	2~1000		3~800		2~630		
	Spindle speed range	step	Manual 3		Manual 2				
	Spindle center taper	-	MT#6						
Carriage	Type of tool post	-	Manual H-4(Curvic tool post)						
	Tool size	mm(in)	32 x 32(1.26 x 1.26)						
	X-axis travel(cross)	mm(in)	535(21.1)						
	Z-axis travel(longitudinal)	mm(in)	1845(73)	2845(112)	3845(151)	4845(191)	5845(230)	6845(269)	7845(309)
	X-axis rapid traverse	m/min	4(157ipm)						
	Z-axis rapid traverse	m/min	6(236ipm)						
Tailstock	Tailstock quill diameter	mm(in)	\varnothing 180(7.08)						
	Tailstock spindle taper	-	MT#6						
	Max. quill travel	mm(in)	250(9.8)						
Bed	Bed width	mm(in)	630(24.8)						
	Bed length	mm(in)	3175(146)	4715(186)	5715(225)	6715(264)	7715(304)	8715(343)	9715(382)
Motor	Spindle motor (30min/cont.)	kW(HP)	AC 22/18.5(30/25)			AC 26/22(35/30)			
	X-axis servo motor (Torque/Power)	Nm/kW	12/1.8(2.4HP)						
	Z-axis servo motor (Torque/Power)	Nm/kW	30/4.2(5.6HP)						
Machine Weight		kg(lbs)	7010 (15450)	8090 (17830)	9170 (20220)	10280 (22660)	11360 (25040)	11450 (25240)	13530 (29830)
CNC system		-	FANUC 21i-TB						

Standard Accessories

- CNC system(Fanuc 21i-TB)
- Main drive motor & electrical equipments
- Automatic spindle shifting
- 4-jaw independent chuck: 9NA: 24" (int. dia.176mm), 9NB: 28" (int. dia.176mm), 9NC: 32" (int. dia.176mm)
- Built-in live tailstock spindle
- 2-speed tailstock spindle
- Curvic tool post(Manual H-4)
- Coolant system
- Work light
- Center sleeve
- Center MT#6
- Full length rear chip guard and single front door (for BC 2000,3000)
- Chuck cover(9NA: Front, 9NB/9NC: Front & Rear)
- Handle for bite clamping
- Leveling block
- Foundation bolts and liners
- Tool box with necessary tools

Optional Accessories

- 3-jaw scroll chuck \varnothing 14" to 36"
- 4-jaw independent chuck \varnothing 18" to 36"
- Steady rest(metal jaws) \varnothing 50~250mm(2~10")
- \varnothing 250~450mm(10~17.7"), \varnothing 450~650mm(17.7~25.6")
- Steady rest(roller jaws) \varnothing 50~250mm(2~10")
- \varnothing 250~450mm(10~17.7"), \varnothing 450~650mm(17.7~25.6")
- Follow rest \varnothing 20~200mm(0.8~7.9")
- Auto. tool post H-4, V-8
- Face plate \varnothing 850mm(33.5")
- Tool slide
- Live center MT#6
- Pipe center
- Full length rear chip guard and single front door (for BC 4000 to 8000)
- Boring bar device \varnothing 100/150/200mm
- Tool holders
- Transformer

Note: Specifications and features are subject to change without prior notice



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