HiT-15/18 ®

HYUNDAI

Hit-18

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Optimum Performance for Efficient Operation

# High Precision CNC Lathe

◆ Highest Power 15.0 kW(20 HP), High Speed Spindle 3600 rpm
  (4500 rpm : HiT-15)
◆ Fastest Rapid Traverse Rate 30 m/min(1181 ipm)
◆ Unparalleled Accuracy(measurement example)
  (Surface finish : 0.7 μm · Roundness : 0.7 μm)
◆ Powerful CNC, Siemens 810D

Powerful High Speed Cutting

● High Speed / Heavy Duty

- The headstock is specially designed to minimize the effects of thermal distortion in order to provide uncompromizing accuracy over extended periods of continuous operation.

- The symmetrical spindle housing is separated from the machine bed by a special insulation plate, so that any heat generated by operation can not displace the spindle center.

- Angular contact ball bearings and double - row cylindrical roller bearings support the spindle for heavy duty cutting.

♣ The spindle unit is assembled in a clean room class 10000 with constant temperature and humidity to ensure high precision

Double - row cylindrical roller bearings
Headstock
High speed angular contact ball bearings
Special heat - Insulating plates
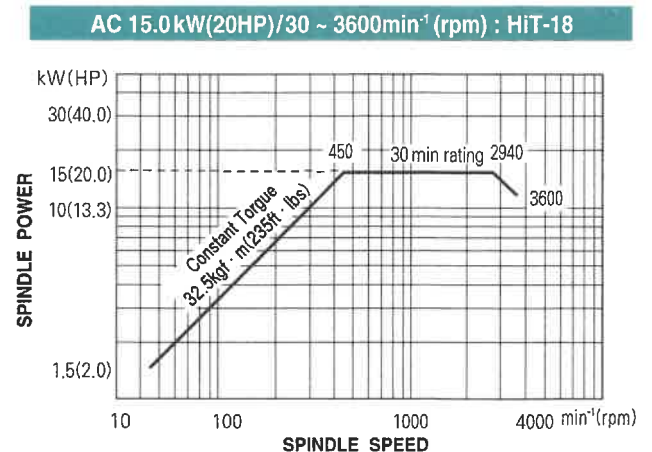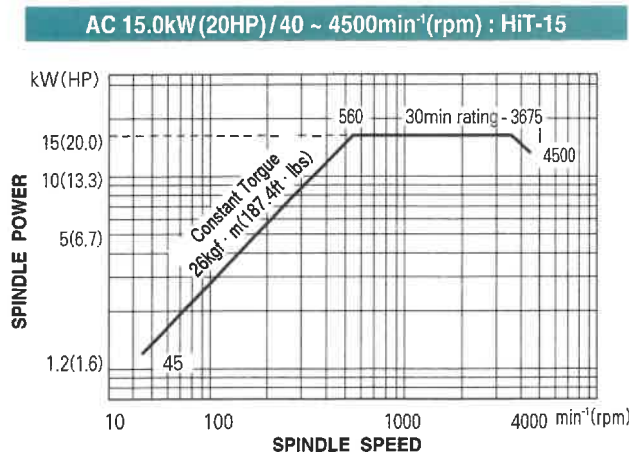Headstock base
[ ] : HiT-15
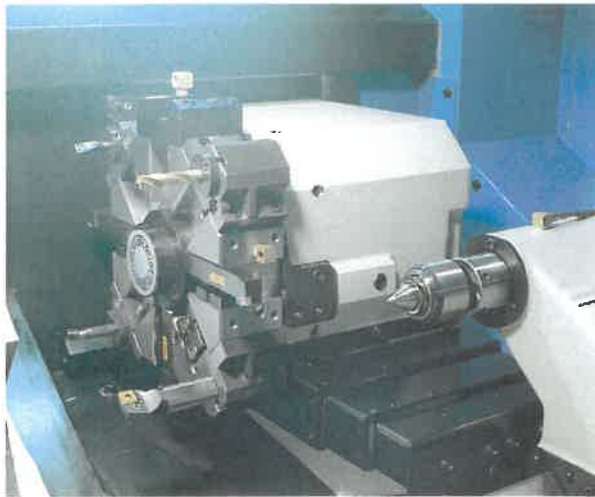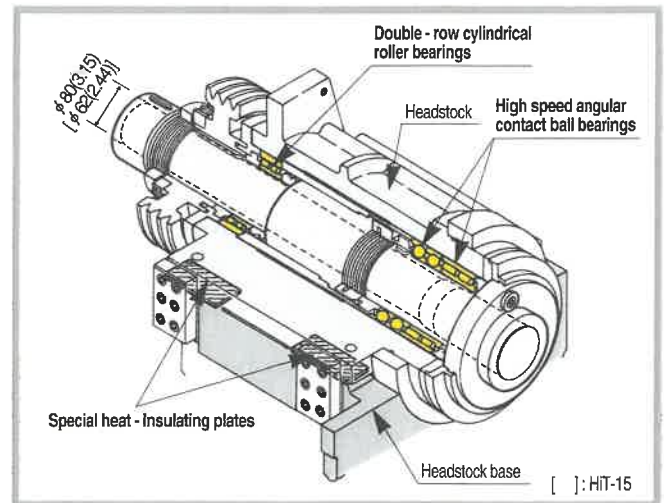
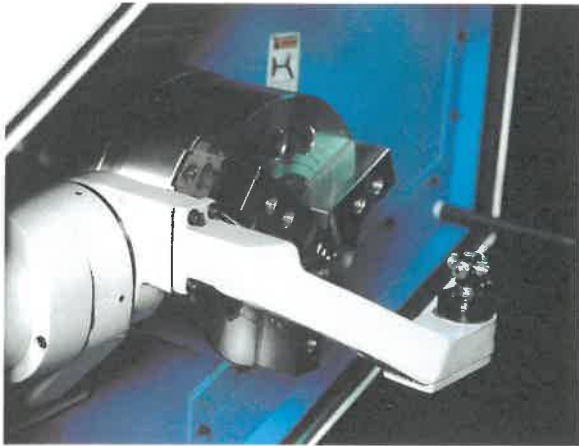
● High Accuracy and Rigid Turret

- High speed indexing turret with random tool selection to the shortest path, achieves high productivity.

- For special requirements, a 12 position drum turret [HiT-15] is optionally ready as well as standard 8 position drum turret.

- Surface finish : within $0.7\mu m$ $(1.4\mu m)$
  Roundness : within $0.7\mu m$ $(0.7\mu m)$
  Continuous machining accuracy : within $7\mu m$ $(9\mu m)$
  (Test Results) [ ] : HiT-18

♣ 0.48sec/one step, 0.85sec/full step
♣ High index coupling

● Spindle Speed - Output Diagram

AC 15.0kW(20HP)/40 ~ 4500min⁻¹(rpm) : HiT-15

kW(HP)

SPINDLE POWER

15(20.0)
10(13.3)
5(6.7)
1.2(1.6)

560 30min rating - 3675
4500
Constant Torque 26kgf · m(187.4ft · lbs)
45

10   100   1000   4000 min⁻¹(rpm)

SPINDLE SPEED

AC 15.0kW(20HP)/30 ~ 3600min⁻¹ (rpm) : HiT-18

kW(HP)

SPINDLE POWER

30(40.0)
15(20.0)
10(13.3)
1.5(2.0)

450   30 min rating 2940
3600
Constant Torque 32.5kgf · m(235ft · lbs)

10   100   1000   4000 min⁻¹(rpm)

SPINDLE SPEED

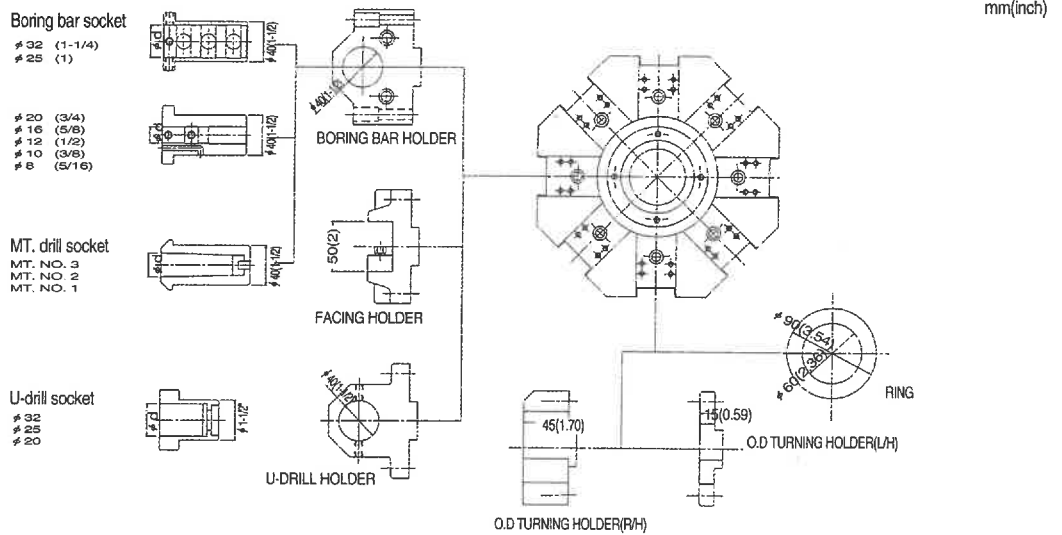# Wide Cutting Range and Convenient Operating Features
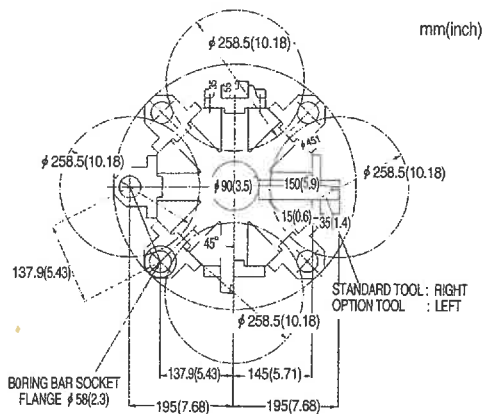

Automatic Tool Setter

- Compared with former tool setting methods, increased productivity, safer operation and less scrap is realized from the automatic tool touch sensor.

- Additionally, using the "Tool Life Management", it can be used to automatically measure tool wear and compensate the offset according to measured results or detect tool breakage.

  - ♣ tool setting
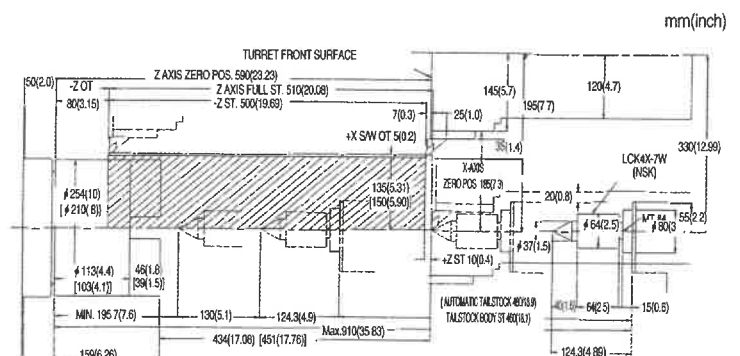 - ♣ tool wear compensation
  - ♣ broken tools detection

Tooling System

mm(inch)

Boring bar socket
∮ 32　(1-1/4)
∮ 25　(1)

∮ 20　(3/4)
∮ 16　(5/8)
∮ 12　(1/2)
∮ 10　(3/8)
∮ 8　(5/16)

BORING BAR HOLDER

MT. drill socket
MT. NO. 3
MT. NO. 2
MT. NO. 1

FACING HOLDER

U-drill socket
∮ 32
∮ 25
∮ 20

U-DRILL HOLDER

RING

45(1.70)　　15(0.59)

O.D TURNING HOLDER(L/H)

O.D TURNING HOLDER(R/H)

Cutting Area

mm(inch)

∮ 258.5(10.18)

∮ 258.5(10.18)　　∮ 258.5(10.18)

∮ 90(3.5)　150(5.9)

15(0.6)　35(1.4)

45°

137.9(5.43)

STANDARD TOOL : RIGHT
OPTION TOOL　　: LEFT

∮ 258.5(10.18)

BORING BAR SOCKET
FLANGE ∮ 58(2.3)

137.9(5.43)　145(5.71)

195(7.68)　195(7.68)

Large Machining Area

mm(inch)

TURRET FRONT SURFACE

50(2.0)　-Z OT　Z AXIS ZERO POS. 590(23.23)

80(3.15)　Z AXIS FULL ST. 510(20.08)

-Z ST. 500(19.69)

145(5.7)　120(4.7)

7(0.3)　25(1.0)　195(7.7)

+X S/W OT 5(0.2)

25(1.4)

330(12.99)

X-AXIS
ZERO POS. 185(7.3)

LCK4X-7W
(NSK)

∮ 254(10)
[∮ 210(8)]

135(5.31)
[150(5.90)]

20(0.8)

∮ 64(2.5)　MT. M
∮ 60(3

55(2.2)

∮ 37(1.5)

+Z ST 10(0.4)

∮ 113(4.4)　46(1.8)
[103(4.1)]　[39(1.5)]

[AUTOMATIC TAILSTOCK 480(18.9)]
TAILSTOCK BODY ST 460(18.1)

40(1.6)　54(2.5)　15(0.5)

MIN. 195.7(7.6)　130(5.1)　124.3(4.9)

Max.910(35.83)

434(17.08) [451(17.76)]

124.3(4.89)

159(6.26)
[142(5.59)]

[ ] : HiT-15

New concept of CNC system

● Siemens 810D is á innovative concept of knowledge-based CNC system which has capability of various machine applications for the next generation of technical environment.

The Advantage of Siemens 810D

Perfect digital control system
Control accuracy is 10 times better than old analogue type.
Small, light, and high-reliable structure and noise-free.
Monitoring the state of feed and spindle axis.
Compensation of errors (back-lash and pitch error, friction compensation).

Energy saving
The in-feed and regenerative feed back system results in reducing more than 30% of energy and in avoiding the temperature rising on the power cabinet, compare to old inverter.

PC-embedded CNC
PC-embedded CNC system for the next generation
Faster transfer the data and part program by multi-processor system
PC-embedded CNC makes management of the processing and scheduling possible.
Hard memory: 200 MBytes (min.)

Intelligence control and interpolation
Applying the most advanced functions of look-ahead, jerk limit, and frame, which are not available on the other controller

Simple and high-level programming
High-level G-code programming
Perfect graphical Dialog Programming is available(D-PRO).

Tele-diagnosis (Option)
It is possible to diagnose and fix the machine problems by the direct electrical conections between A/S center and each machine tool in user site.
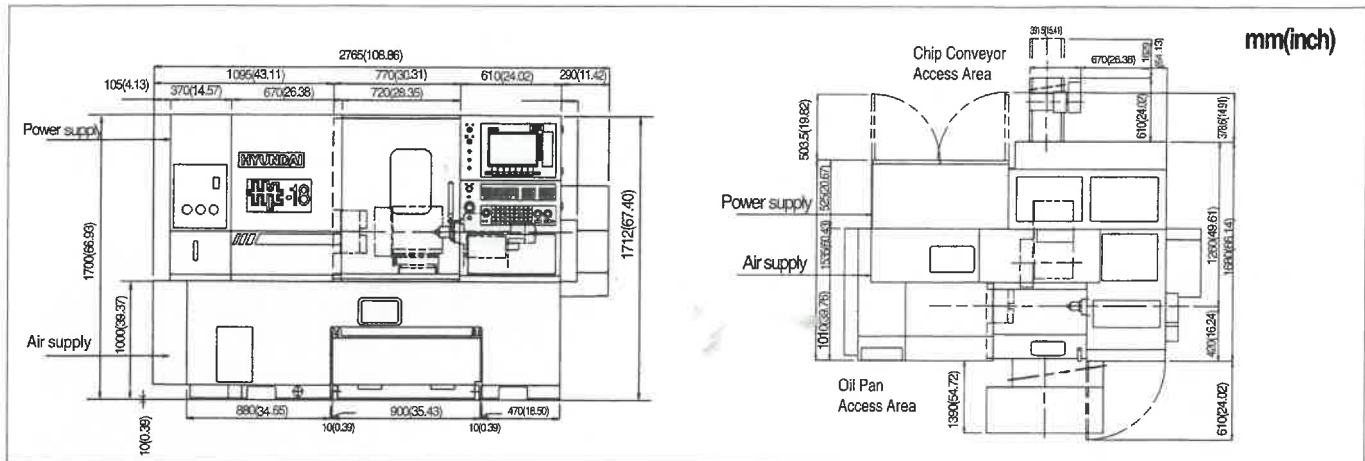
Compact and modular structure
Lower troubles on the controller because of compact and modular structure.

Siemens 810D Specifications

Function	Item	Specifications
Control	Controlled axis	5 axes (Max.)
	Simultaneously controlled axes	4 axes (Max.)
Interpolation	Linear, circular, and helical interpolation	
Movement	Feedrate override	0 -120 %
	Velocity command	digital
	Automatic acceleration / deceleration are provided	
	Rapid traverse override	F0, 10,50,100%
	override cancel	
Tool management	Tool function	5 - digit
	Length and wear compensation	
	Nose radius compensation	
Compensation	Back-lash & pitch error compensation	
Display	10.4″ TFT LCD	
Spindle	Spindle override	50 - 120%
	Spindle orientation	
	Constant surface speed control	
Manual operation	Manual handwheel feed	
	MDI and JOG operating	
	Manual repositioning	
	Home position return	1-st home return
	Spindle control	running
		stop
		reverse rotation
Automatic operation	Automatic machining	
	Automatic acceleration and deceleration	
	NC reset	
	Single block	
	Feed hold	
	Optional block skip	
	Machine lock	
	Dry run	
	Automatic home return	
	Restart operation	
Diagnosis	Alarm display	
	Memory protected	
Programming	Programming capacity	part program storage length: 200MB (HDD) 256KB (NC)
	Thread(constant pitch), multiple thread	
	Scaling	
	Inch / metric conversion	
	Absolute / incremental programming	
	Dialog programming(D-PRO)	
	EIA / ISO programming	
	Tool path display	
	Variable program(Macro)	
	Simulation	
	Back ground edit	
Safety functions	Emergency stop	
	Over travel (Soft Limit)	
	Strored stroke check	
	Work limitation	
	Contour monitoring	
	Program protect	
Support Automation	Actual speed display	
	Tool life management	
	Workplece count	
Multitask	Back ground editing	
PLC	No. of DI / DO	total 768, Op. Panel(IN:64, OUT:48)
	User memory	64 kBytes (max. 128KB)
	Programming language	STL
Data transfer	RS232C(V.24) Serial interface	
	2-nd RS232C(V.24) Serial interface	

Special Features
3.5″ (1.44MB) Diskette

Machine Dimensions and Required Floor Space

mm(inch)

Machine Specifications

	Item	Unit	Specification	
			HiT-15	**HiT-18**
Capacity	Max. swing	mm (inch)	⌀ 440 (17.32)	⌀ 440 (17.32)
	Max. cutting (dia × length)	mm (inch)	⌀ 254 × 500 (10.6 × 19.69)	⌀ 254 × 500 (10.0 × 19.69)
	Max. bar work size	mm (inch)	⌀ 51 (2″)	⌀ 70 (2.76)
Spindle	Spindle speed	rpm	Max. 4500	Max. 3600
	Spindle nose	-	A2-6	A2-8
	Spindle drive motor(30min./ continuous)	kW(HP)	15 (20) / 11 (15)	15 (20) / 11 (15)
	Spindle bore	mm(inch)	⌀ 62 (2.44)	⌀ 80 (3.15)
Travel	Travel(X/ Z)	mm (inch)	180/ 510 (7.09/20.08)	180/ 510 (7.09/20.08)
	Rapid traverse(X/ Z)	m/min (ipm)	30/ 30 (1181/ 1181)	30/ 30 (1181/ 1181)
Turret	Turret type		8D 8P	8D 8P
	Tool capacity	ea	8	8
	Turret index time (one/ full step)	sec	0.48/ 0.85	0.48/ 0.85
Tailstock	Diameter of tailstock sleeve	mm (inch)	⌀ 80 (3.15)	⌀ 80 (3.15)
	Stroke of tailstock sleeve	mm (inch)	130 (5.12)	130 (5.12)
	Taper type		MT # 4	MT # 4
	Stroke of tailstock body	mm (inch)	460 (18.11)	460 (18.11)
Machine size	Bed type	mm (inch)	Flat	Flat
	Floor space (L × W)	mm (inch)	2765 (108.86) × 1680 (66.14)	
	Machine height	mm (inch)	1712 (67.4)	1712 (67.4)
	Electrical power supply	kVA	34	34.6
	Machine weight	kg (lbs)	4200 (9260)	4300 (9480)

◆ Standard Equipments

- Worklight
- Coolant system
- Chip and coolant splash guarding
- 8" through hole chuck [HiT-15]
- 10" through hole chuck [HiT-18]
- One (1) set of adjusting tool
- Manuals
- Chuck foot switch (Sigle)
- Door interlock
- Automatic chuck jaw open/ close

◆ Optional Equipments

- Chip conveyor (rear/ side disposal)
- chip bucket
- Automatic front door open/ close
  (by M - code)
- Chuck jaw open/ close confirmation
- Chuck air blast
- Auto parts catcher
- Patrol light (3 colors)
- Operational end buzzer
- 12 Position drum turret [HiT-15]
- Powerful coolant (750w)
- Chuck foot switch (Double)
- Automatic tool setter
- Automatic tailstock with live center

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