

3.1 Overview

Sketches are given to illustrate main features and appearance of the tool, and labels to highlight names and functions of major units. Detailed information below will aid you in using the machine.

3.1.1 Mechanical Features

This product has excellent versatility and adaptability to meet various needs of users. It is the representative model equipped with a vertical lathe and has a wide processing range, and can be efficiently used in making various kinds of products.

1. Table Capacity

- Max. swing : $\varnothing 3500\text{mm}$
- Max. turning height : 2050mm
- Table speed : High:130.5rpm, Low:37.5rpm
- Max. work-piece weight : 25ton (Spindle bearing $\varnothing 1690 \times \varnothing 1800$)
- Spindle motor : AC55/45kW(AC75/60kW)

2. RAM Capacity

- Ram Size : 300mm X 300mm(ST-25/35VC)
: 240mm X 240mm(ST-25/35V)
- Spindle speed : 2000rpm
- Turning tool comprised of Pull Stud Bolt and Curvic Coupling is able to be clamped very strongly with Ram.(ST-25/35VC)
- Turning tool comprised of T-nut and Cuvic Coupling is able to be clamped very strongly with Ram.(ST-25/35V)
- Spindle motor : AC26/22kW

3. High rigid machine tool structure

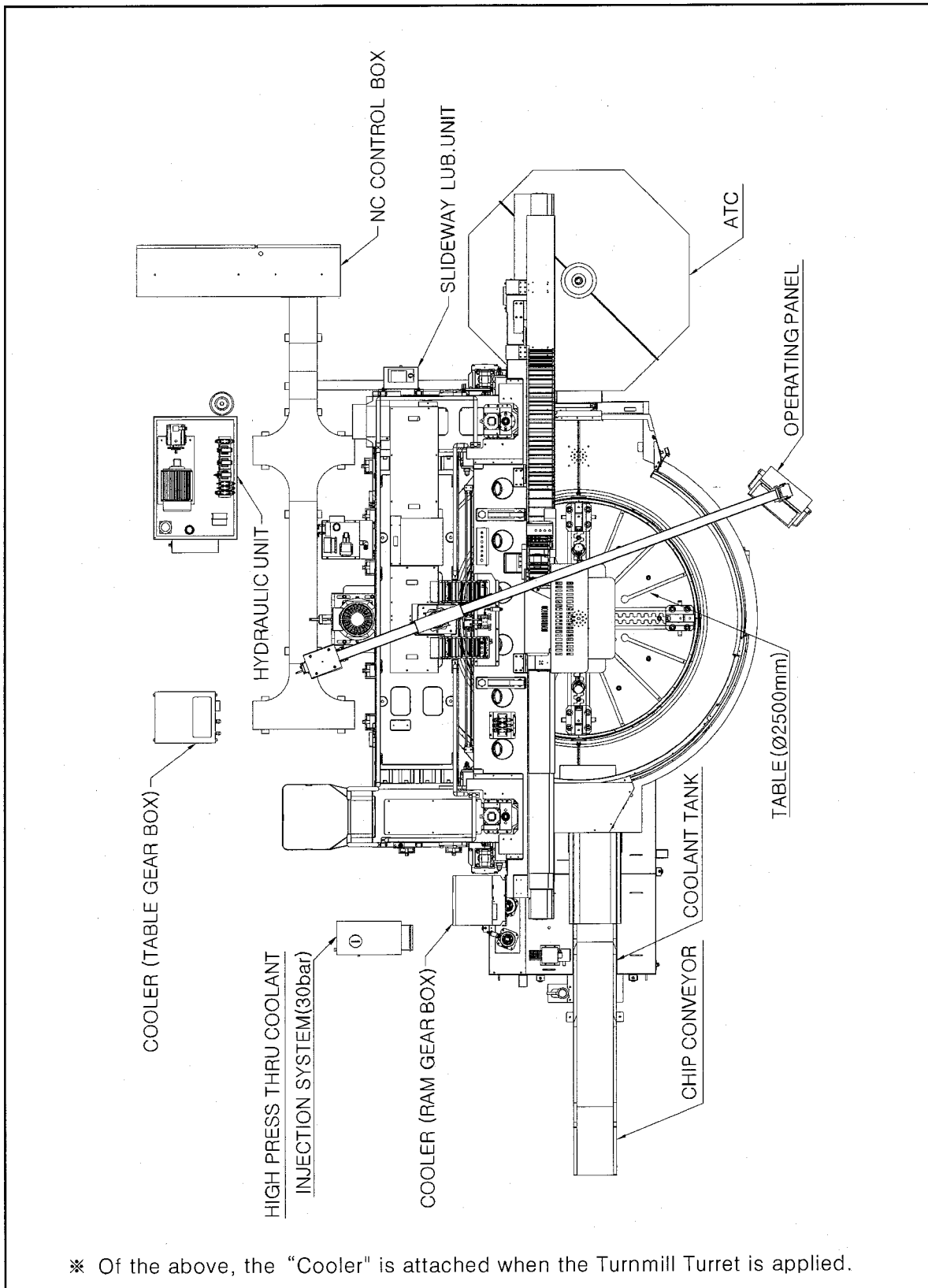
- Highly optimized machine structure by FEM analysis.
- Hardened slideway of box type is able to maintain the precision in spite of long time operation.
- Application of high class plates on Slideway
(friction coefficient 0.02~0.05)

4. Various cutting method

- Various cutting method(ex, turning, drilling & tapping etc,.) is able to done by one setting.
- ST-25/35VC : 16Tools(8+8), ST-25/35V : 12Tools

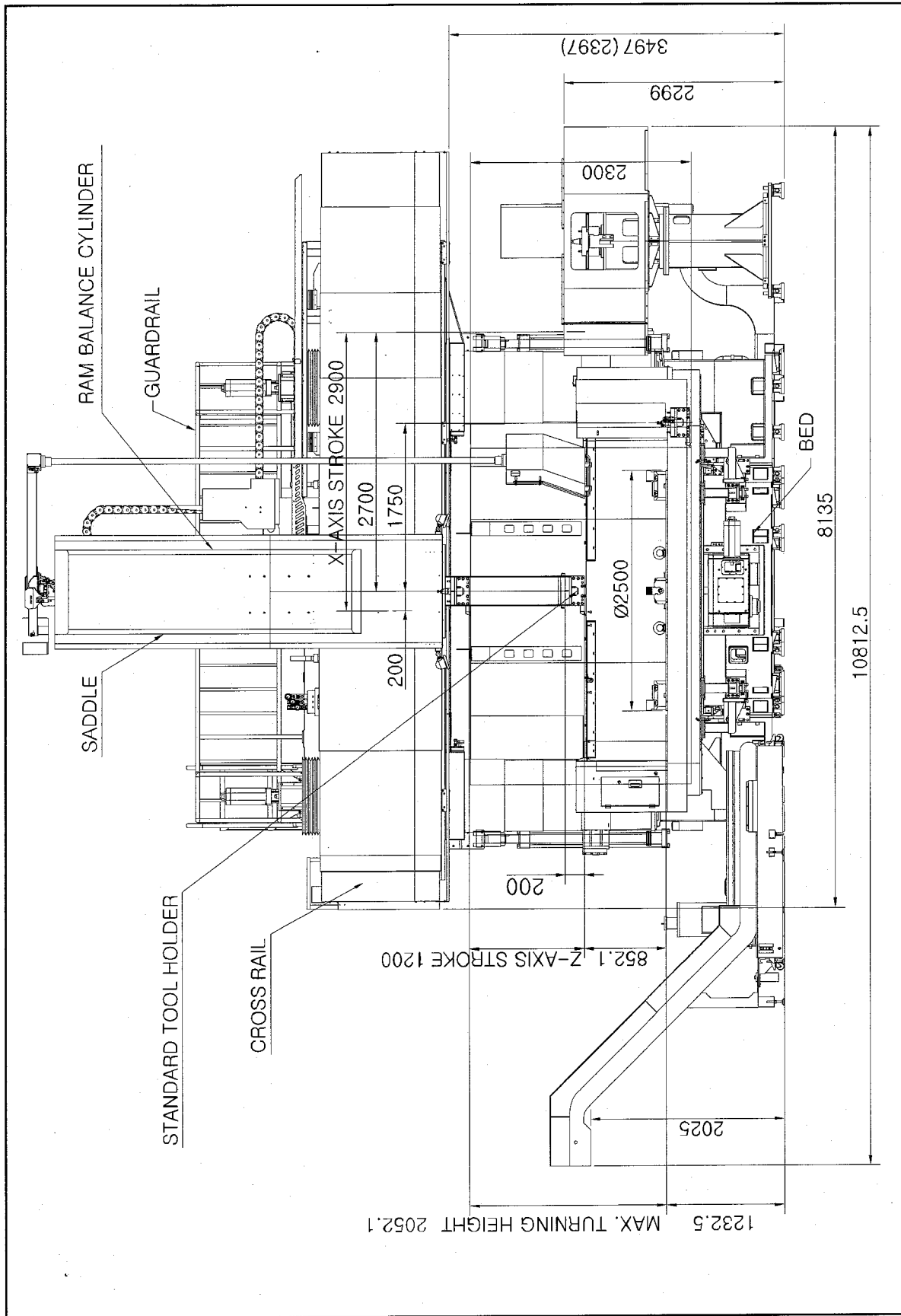
3.1.2 Outline Dimensions & Major Component Units

1. Plane of Machine



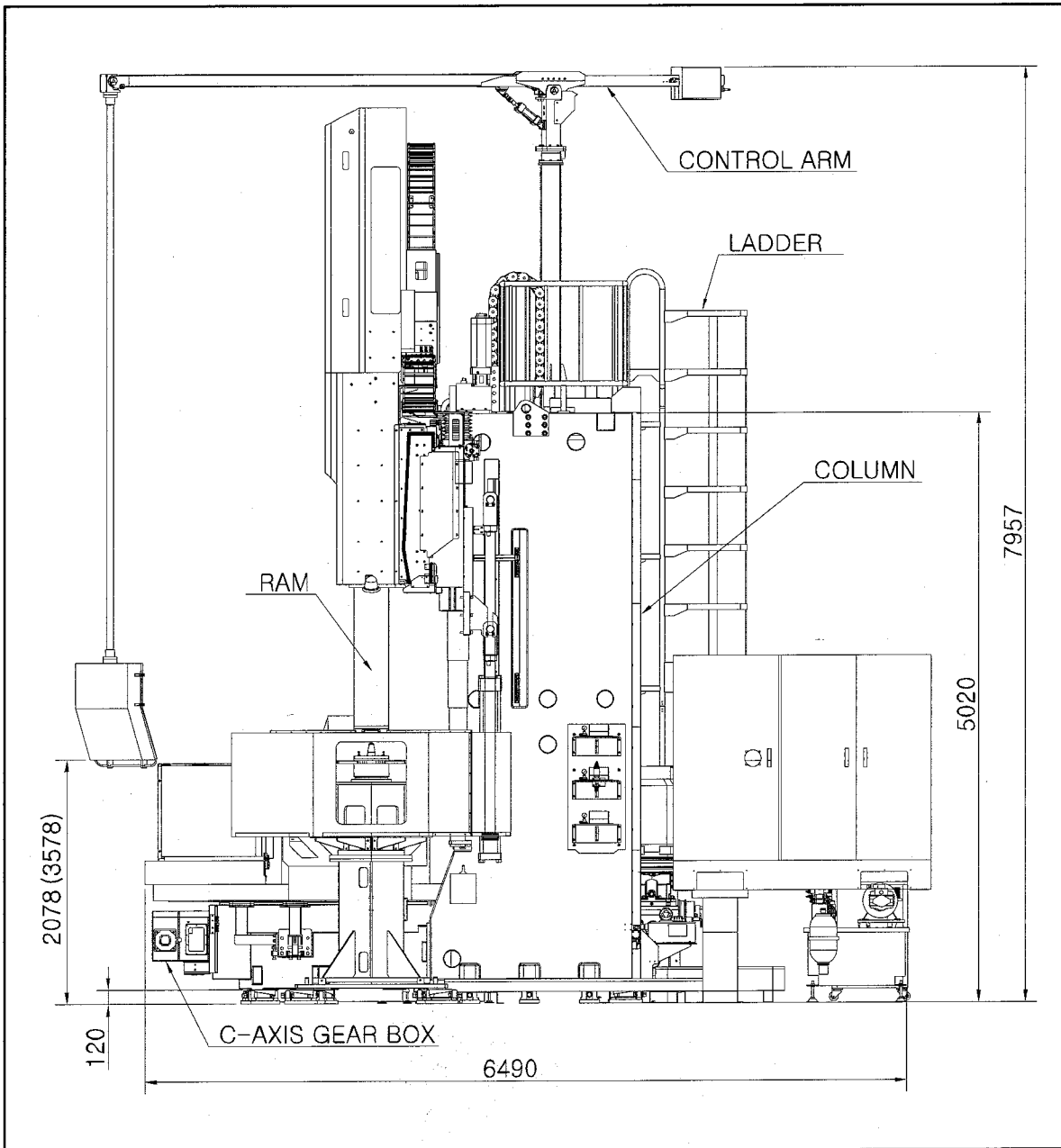
<Figure 3-1> Plane of Machine

2. Front of Machine



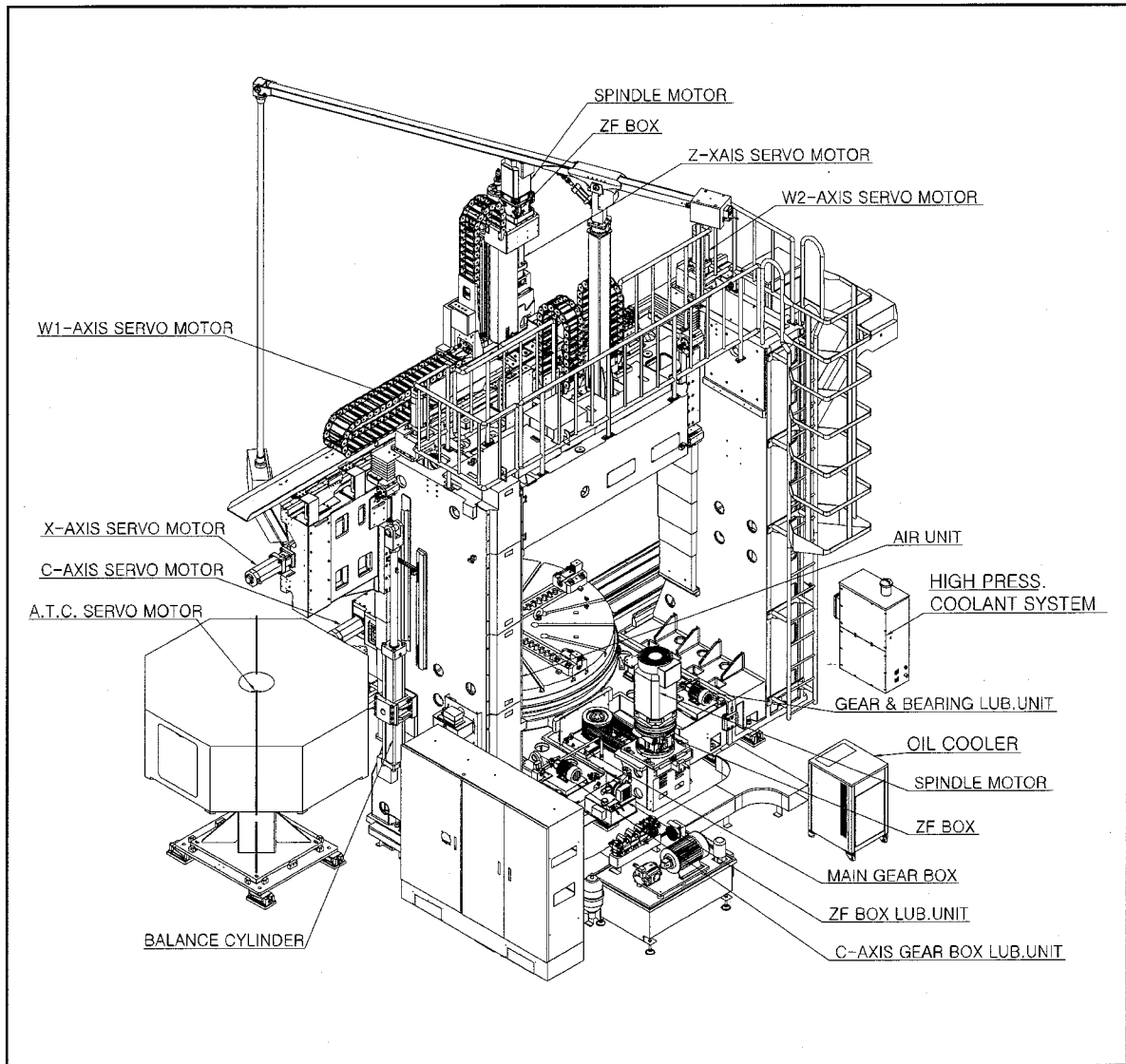
<Figure 3-2> Front of Machine

3. Right Side of Machine



<Figure 3-3> Right Side of Machine

4. Isometric Drawings



<Figure 3-4> Isometric Drawings

3.1.3 Specifications

<Table 3-1> Specifications (Capacity)

DESCRIPTION		UNIT	SPECIFICATION	
			ST-25/35VC	ST-25/35V
Capacity	Max.turning dia	mm	3,000	3,000
	Max.swing	mm	3,500	3,500
	Max.turning height	mm	2,050	2,050
	Max.torque	kgf.m	4,354(5,937)	4,354(5,937)
	Max.turning weight	kgf	25,000	25,000
Table	Table dia	mm	2,500	2,500
	Speed range shift	Step	Automatic2	Automatic 2
	Max.speeds	rpm	37.5/130.5	37.5/130.5
C spindle	Table indexing angle	deg	0.001	-
	Max.speeds	rpm	0.5	-
Ram head	No. of Tool	EA	1	1
	Tool size	mm	40×40	40×40
	Spindle taper	-	ISO 7/24 No.50	-
	Ram size	mm	300×300	240×240
	Milling spindle revolution rapid	rpm	15~2,000	-
Feed	X-axis travel	mm	-200 +2,700	-200 +2,700
	Z-axis travel	mm	1,200	1,200
	W-axis travel	mm	1,100	1,100
	X/Z-axis cutting auto feed rate	mm/min	1~2,000	1~2,000
	X/Z-axis rapid feed rate	m/min	10	10
	W-axis rapid feed rate	m/min	1	1
ATC	Magazine capacity	set	16 tools (Turning:8, Milling:8)	12 tools (Turning:12)
	Max.capacity weight	kg	75	50

DESCRIPTION		UNIT	SPECIFICATION	
			ST-25/35VC	
Motor	Table motor	Kw	AC45/55(60/75)	AC45/55(60/75)
	Milling spindle motor	Kw	AC22/26	—
	X-axis servo motor	Kw	6[α 40_38Nm]	6[α 40_38Nm]
	Z-axis servo motor	Kw	6[α 40_53Nm]	6[α 40_53Nm]
	C-axis servo motor	Kw	6[α 40_38Nm]	—
	W-axis servo motor	Kw	6[α 40_38Nm]	6[α 40_38Nm]
Floor Space	Length × Width × Height	mm	11100 × 8800 × 8000	11100 × 8800 × 8000
Net Weight		kgf	75,000	70,000
Numerical value control equipment		—	FANUC31i-A	FANUC31i-A
Hydraulic motor		Kw	11	11
Table lub. Motor		W	750	750
C-axis lub. Motor		W	750	—
Way lub. Motor		W	46 × 3	46 × 3
Table ZF-box lub.motor		W	200	200
Coolant pump		W	1500	1500

3.1.4 Accessories Specification

1. Standard Accessories

- 1) Fanuc 31i-A (AC 45/55 Kw)
- 2) 2-Step Independent Manual Chuck Ø2500mm
- 3) Standard turning tool holder(2EA)
- 4) ATC / Tool magazine ST-25/35VC : 16Tools, ST-25/35V : 12Tools
- 5) Linear scale(X-axis)
- 6) Hydraulic device
- 7) Coolant equipment
- 8) Lub.equipment
- 9) Splash guard
- 10) Work light
- 11) Leveling bolt & Block

- 12) Patrol lamp
- 13) Tool kit & Box
- 14) Coolant tank
- 15) Oil skimmer
- 16) Cooler (Table gear box)

2. Optional Accessories

- 1) Fanuc 31i-A (AC 60/75 Kw)
- 2) Transformer
- 3) C.T.S / Coolant through spindle
- 4) Linear scale(Z-axis, W-axis)
- 5) Standard angle head
- 6) Special angle head
- 7) Various turning tool holder
- 8) Automatic tool presetter
- 9) Work – piece probe
- 10) Chip conveyor

3.1.5 CNC SPECIFICATION

FANUC 31i-A(ST-25/35VC)	
Controlled axis	
Controlled axis	5 axis (X,Z,C,W1,W2)
Simultaneously controlled axis	4 axis
Least command increment	0.001mm/0.001°
Mirror image	Each axis
Stored stroke check 1	
Feed function	
Jog feed	0~1260mm/min
Feedrate override	0~150%(each 10%)
Rapid traverse override	FO, 25, 50, 100%
Manual handle feedrate	x1, x10, x100
Spindle speed function	
Spindle speed command	4-digit S code
Spindle speed override	50~120%(each 10%)
Constant surface speed control	G96
Multi spindle control)	

Program input	
Absolute/Incremental command	G90/G91
Feed per minute/revolution	G96/G94
Part program storage	320m
No of registered programs	250
Extended part program editing	Copy/ Move/ Edit
Background editing	
Custom Macro B	
Workpiece coordinate system	G54~G59
Programmable data input	G10
Canned cycle	
Multiple repetitive cycle 1	
Optional Chamfering/Corner R	
Interpolation function	
Linear/Circular interpolation	G01/G02.G03
Continuous threading	
Polar coordinate interpolation	
Cylindrical interpolation	
Rigid tapping	
Communication function	
Tape code	EIA/ISO Automatic recognition
Communication port	RS~232C
DNC operation	
Compensation function	
Stored pith error compensation	
Backlash compensation	
Circular rotated compensation	Backlash acceleration function
Dual position feed back	
Tool function	
Tool offset pairs	64
Tool offset	
Direct input of tool offset value measured	
Direct input of tool offset value measured	
Operation	
Machine lock/Single block/Run hour and parts count display	
Program/Sequence number search/Memory protect/Z-axis neglect	
4nd reference point return/Clock display/Program check/Dry run	

Manual absolute/Self diagnostic/Emergency stop	
Cycle start/Feed hold	
Others	
Display unit	10.4" color LCD
Options	
Dynamic graphic display	Color graphic
Manual guide Oi	