

# Intelligent Machining Center

## SM Box Way Series Smartcenter

- Fanuc controller
- 5-Year warranty on guideways
- Z-axis column oversized design
- Spindle run-out: 10 micro
- 6,000 rpm gear type spindle



# Versatile Machining for Industry

A perfect demonstration for machining accuracy and ability.

The SM Series offers incredible versatility for your workshop, including high efficiency material removal for large workpiece to super fine finishing on small automotive components. The SM Series covers a huge range of requirements, delivering excellent surface finish and the very latest operational features backed by the SMART brand.



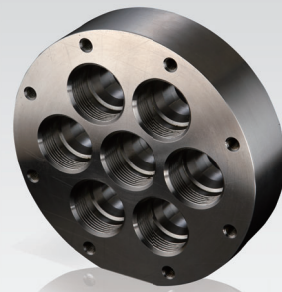
## Full range of box guideway five-year warranty

The following situation is not covered under warranty

1. Improper operation (collision)
2. No regular cleaning of accumulated debris, which causes damage to the track.



1.Honeycomb structural component



2.Mechanical part

## Actual cutting tests

Model : SM1100-50

■ Spindle : 6,000 rpm #50 Gear type 24.81HP ■ Cutting material : S45C



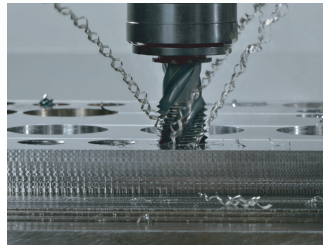
### Face milling

Tool diameter    Ø4.92 inch  
Feed rate        70.87 ipm  
Cutting depth   0.12 inch  
Cutting Width   3.94 inch  
Cutting volume   540 cc



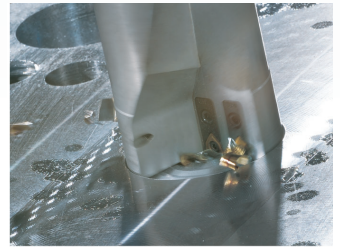
### End milling

Tool diameter    Ø2.48 inch  
Feed rate        157.48 ipm  
Cutting depth   1.18 inch  
Cutting Width   0.16 inch  
Cutting volume   600 cc



### Tapping

Tool diameter    Ø1.65 inch  
Feed rate        12.40 ipm  
Cutting depth   1.65 inch



### Drilling

Tool diameter    Ø1.97 inch  
Feed rate        9.84 ipm  
Cutting depth   1.97 inch

Model: SM1682-50

■ Spindle : 6,000 rpm #50 Gear type 34.87HP ■ Cutting material : S45C



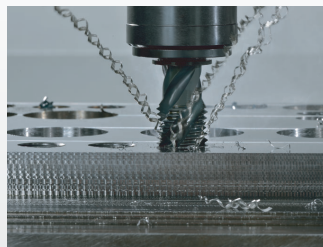
### Face milling

Tool diameter    Ø4.92 inch  
Feed rate        94.49 ipm  
Cutting depth   0.12 inch  
Cutting width   3.94 inch  
Cutting volume   720 cc



### End milling

Tool diameter    Ø2.48 inch  
Feed rate        118.11 ipm  
Cutting depth   1.57 inch  
Cutting width   0.20inch  
Cutting volume   600 cc



### Tapping

Tool diameter    Ø1.65 inch  
Feed rate        14.17 ipm  
Cutting depth   1.97 inch



### Drilling

Tool diameter    Ø2.99 inch  
Feed rate        3.94 ipm  
Cutting depth   1.97 inch

All results featured in this catalog were produced under strict testing conditions in a specialized testing environment. Under different testing conditions and in less than ideal testing environments, the results may vary from those shown in this catalog.



# Unlimited Cutting from SMART

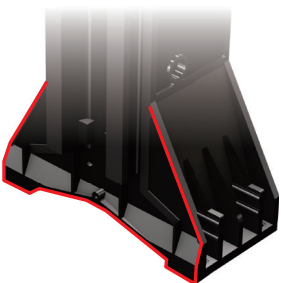
SMART delivers massive cutting versatility to your workshop. Whether you need heavy cutting or fine finishing, the incredible structural stability and cutting performance of the SM Series will exceed your expectations.



## SM1100-50, the Machine Equal to the Japanese

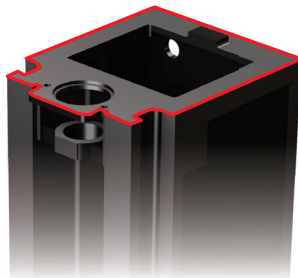
### A+ structural stability

- The increased width of the interface between the column and base by adding A+ support sections.
- Enhanced stability and efficient force dissipation.



### New square section resists torsion

- Higher rigidity column.
- Ensure even distribution of cutting forces.
- Enhanced resistance to torsional forces that could impact machining precision.



### Extra wide stable design

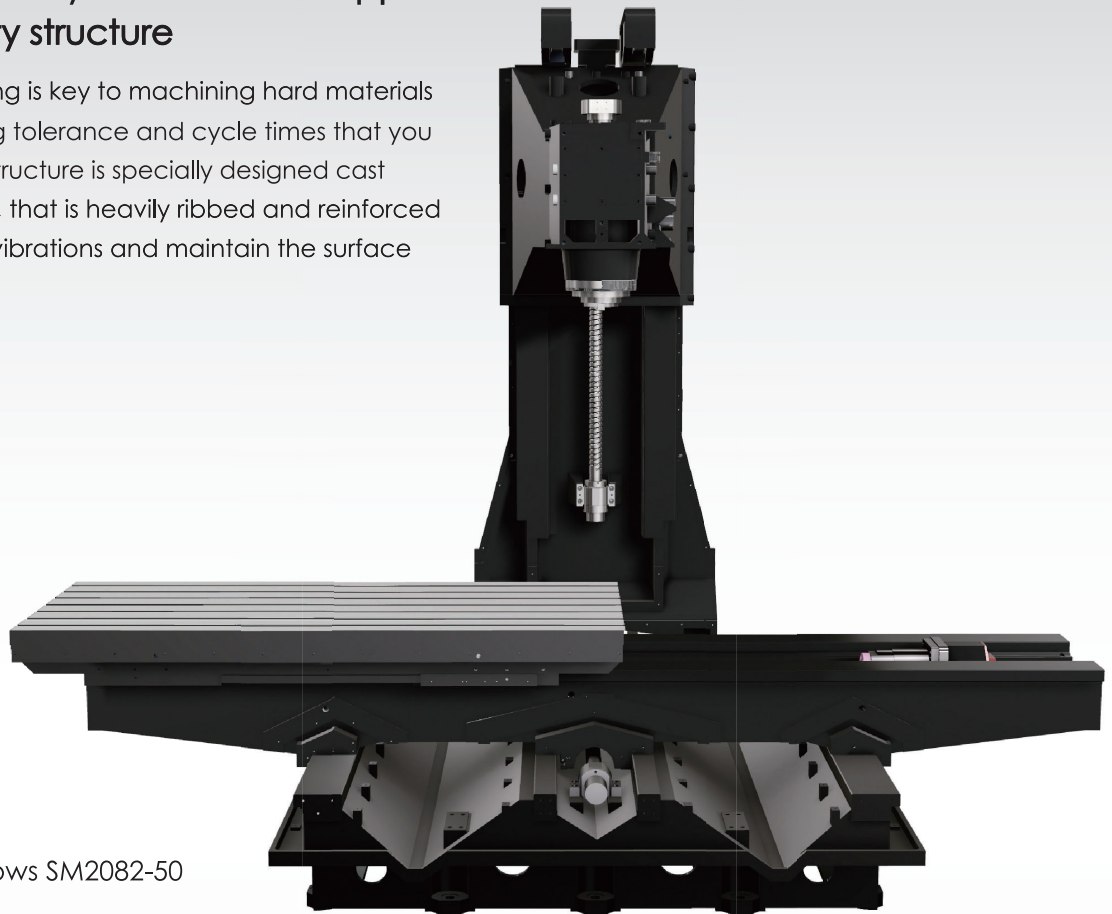
- The original width of the machine feet has been widened to 180mm.
- Delivering a much more rigid and stable platform for heavy machining.





## Optimum stability for maximum support – High rigidity structure

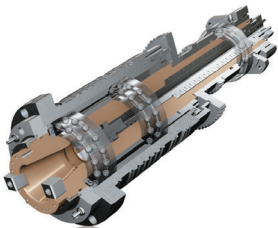
Vibration damping is key to machining hard materials while maintaining tolerance and cycle times that you need. SM series structure is specially designed cast iron (Meehanite), that is heavily ribbed and reinforced to absorb those vibrations and maintain the surface finish you need.



The picture shows SM2082-50

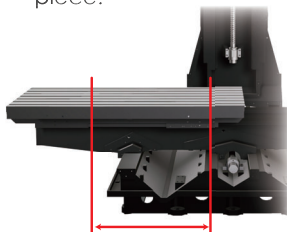
### 6,000 rpm Gear type spindle

- Two-step gear transmission.
- Spindle run-out : 5 micro
- Available for all SM models.



### Axis overhand

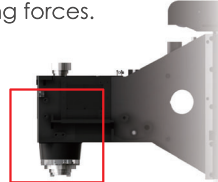
- The base has been redesigned to widen the support points on the base.
- Guarantee full support throughout the X axis traverse.
- Eliminating with overhand, especially on heavier work piece.



+35% guideway spacing on X-axis

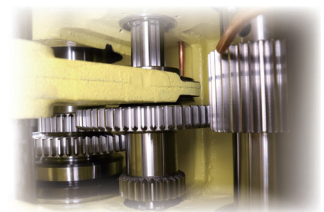
### One-piece design for spindle housing and casting iron

- Increases rigidity and cutting performance.
- Reducing weight to reduce acceleration stresses and increase positional accuracy.
- The structure of the head has been adjusted.
- Provide additional support for the spindle to absorb the cutting forces.



### Self-made gear driven spindle head

- Two-step speed for transmit
- Low speed with great force output
- Perfect for heavy cutting
- High speed cutting for die & mold industry.



# Choose from a Variety of High Quality SMART Made Spindles

Spindle type

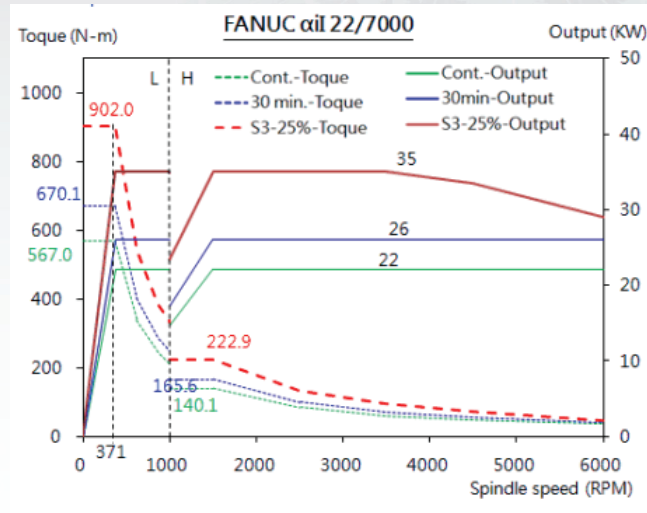
#50 Gear type 6000 rpm

Spindle torque diagram

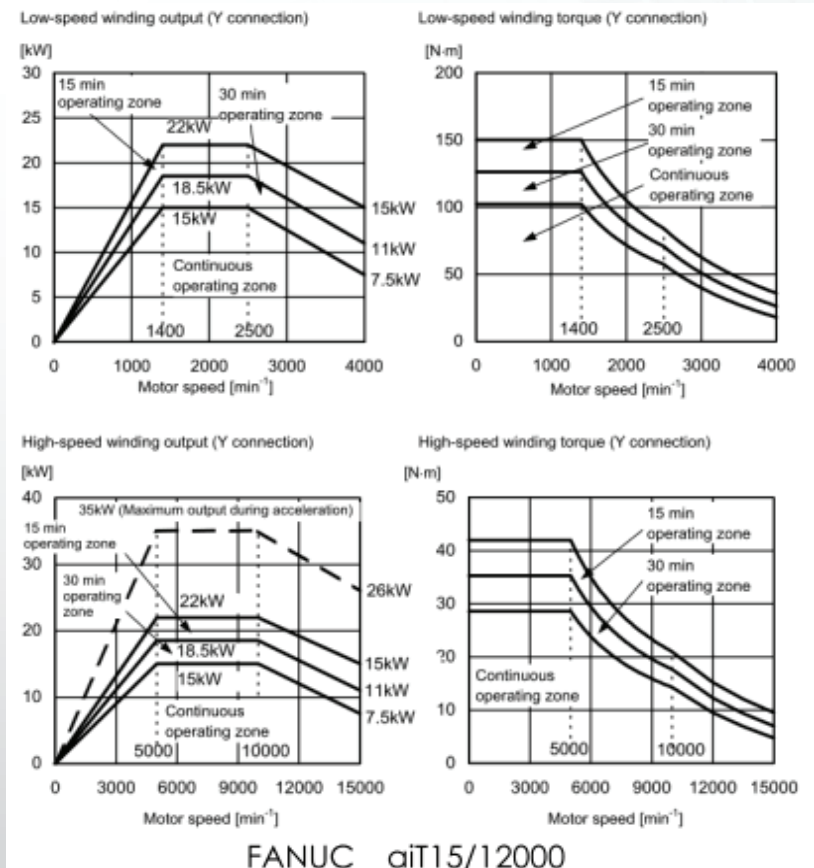
Fanuc

SM1682-50

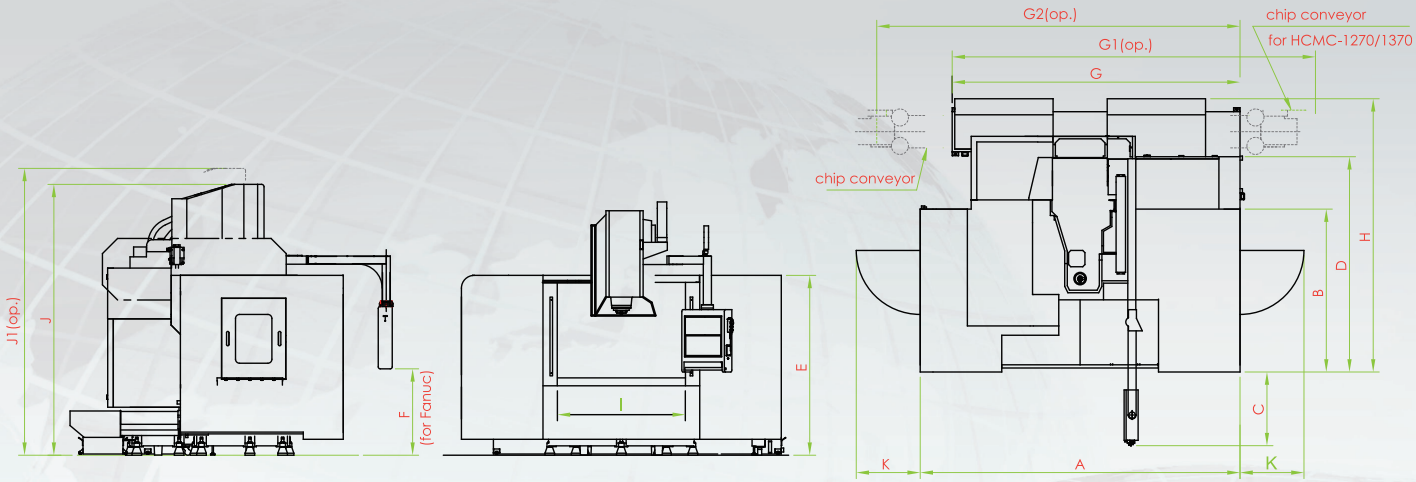
Gear 6000 rpm Standard



DDS 12000 rpm (CTS Option)

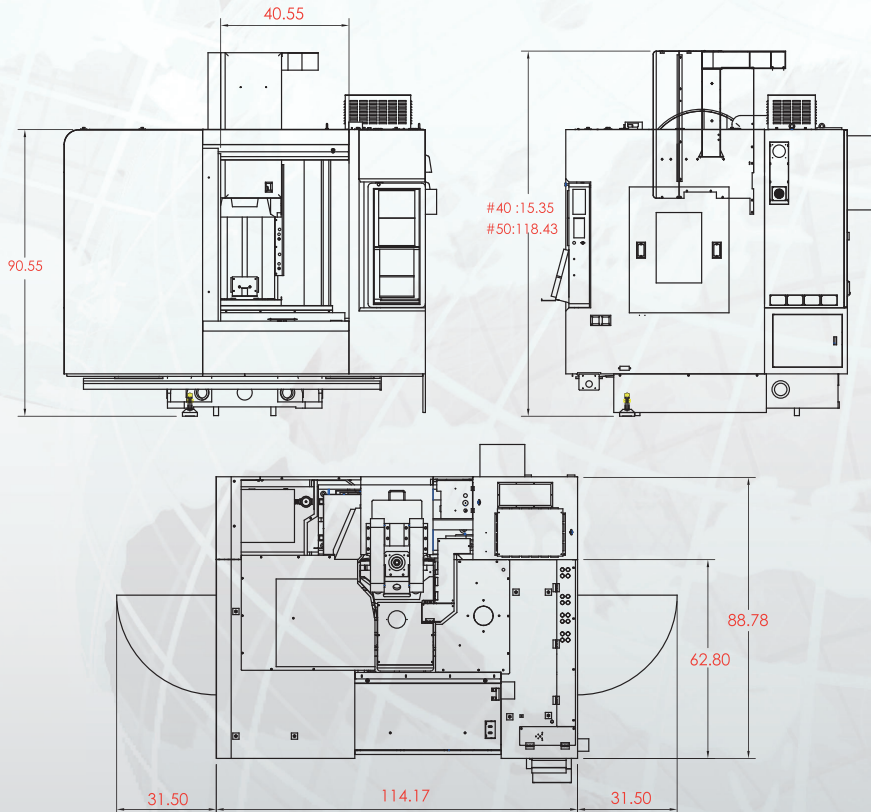


# Machine Dimensions



Model	Unit	A	B	C	D	E	F	G	(OP) G1	(OP) G2	H	I	J	(OP) J1	K
SM1370-50		129.92	63.35	37.40	89.17	87.01	42.52	135.83	167.91	-	128.74	53.94	118.11	125.98	31.50
SM1682-50		157.48	80.20	41.73	105.98	92.13	42.52	141.73	-	174.69	134.53	63.50	133.07	141.34	31.50
SM2082-50	inch	196.85	80.20	41.73	105.98	92.13	42.52	141.73	-	174.69	134.53	85.04	133.07	141.34	31.50
SM2110-50		196.85	98.54	37.09	124.33	92.13	42.52	145.67	-	185.83	157.83	82.68	142.72	150.59	39.37

SM1100-50



unit : inch

Specifications of the machine are subject to be modified without prior notice, please check with sales staff for detailed information.



## Machine Specifications

Model	Unit	SM1100-50	SM1370-50
<b>Table</b>			
Working Surface	inch	50x23.62	57.09x27.56
T-slot(Size x Number x Pitch)	mm	18x5x120	18x5x130
Max Table Load	lbs.	2645.55	3306.93
<b>Travel</b>			
Longitudinal Travel (X-axis)	inch	43.31	51.18
Gross Travel (Y-axis)	inch	23.62	27.56
Vertical Travel (Z-axis)	inch	24.80	25.98
Distance Form Spindle End to Table Center	inch	3.94~28.74	4.72~30.71 12.60~38.58(OP)
Distance Form Spindle Center to Column	inch	25.39	29.33
<b>Spindle</b>			
Spindle Nose Taper		#50	#50
Spindle Speed	rpm	Gear 6000 (STD) DDS 12000 (OP)	Gear 6000 (STD) DDS 12000 (OP)
<b>Feed</b>			
Cutting feedrate(X/Y/Z)	ipm	472.44	472.44
Rapid Traverse feedrate(X/Y/Z)	ipm	944.88/944.88/787.40	944.88/944.88/787.40
<b>ATC</b>			
Tool storage Capacity	pcs	24/32	24(32/40)
Max. Tool Weight	lbs.	33.07	44.09
Max. Tool Size(Diameter x Length)	inch	Ø4.13 x 11.81L	Ø4.92x13.78L
Tool Shank		CAT50 (BIG PLUS)	CAT50 (BIG PLUS)
Pull Stud Bolt		CAT-50	CAT-50
<b>Motor</b>			
Spindle Drive Motor(Fanuc)	HP(Cont/30min)	30/25 OPT: 25/20	35/30 OPT: 25/20
X/Y/Z Axis Drive Motor(Fanuc)	HP	4.02/4.02/5.36	5.36/5.36/5.36
<b>Positioning Accuracy</b>			
3 Axes Laser Positioning Accuracy (JIS 6338)			
Positioning Accuracy / Full Travel	inch	±0.0004	±0.0004
Repetitive Positioning Accuracy	inch	±0.0001	±0.0001
3 Axes Laser Positioning Accuracy (VDI3441) /Repeated			
5 Time Positioning Accuracy	inch	0.0009	0.0009
Repetitive Positioning Accuracy	inch	0.0004	0.0005
<b>Other</b>			
Required Air pressure	PSI	92.45	92.45
Electric Power Consumption	KVA	25~40	25~55
Machine weight	lbs.	17526.75	19841.60
Machine Dimension (L x WxH)	inch	114.17 x 106.85	129.92 x 128.74

## SM1682-50

68.90 x 32.28  
18x5x150  
4850.17

62.99  
32.28  
25.98 32.28(OP)  
5.91~31.89 7.87~40.16(OP)  
34.06

#50  
Gear 6000 (STD)  
DDS 12000 (OP)

472.44  
787.40/787.40/708.66

24(32/40)  
44.09  
Ø4.92x13.78L  
CAT50 (BIG PLUS)  
CAT-50

35/30 OPT: 25/20  
5.36/5.36/5.36

±0.0003  
±0.0001

0.0009  
0.0005

92.45  
25~55  
24912.00  
197.69 x 134.52 (OP:141.34)

## SM2082-50

84.65 x 32.28  
18x5x150  
5732.02

81.10  
32.28  
25.98 32.28(OP)  
5.91~31.89 7.87~40.16(OP)  
34.06

#50  
Gear 6000 (STD)  
DDS 12000 (OP)

472.44  
708.66 /708.66/708.66

24(32/40)  
44.09  
Ø4.92 x13.78L  
CAT50 (BIG PLUS)  
CAT-50

35/30 OPT: 25/20  
5.36/5.36/5.36

±0.0005  
±0.0001

0.001  
0.0006

92.45  
25~55  
28439.00  
237.06 x 134.52

## SM2110-50

88.58x40.16  
20x7x150  
6613.87

82.68  
40.16  
32.28  
7.87~40.16 15.75~48.03(OP)  
42.52

#50  
Gear 6000 (STD)  
DDS 12000 (OP)

393.70  
590.55 /590.55 /590.55

24(32/40)  
44.09  
Ø4.92 x13.78L  
CAT50 (BIG PLUS)  
CAT-50

35/30 OPT: 25/20  
5.36/5.36/5.36

±0.0005  
±0.0001

0.001  
0.0006

92.45  
30~50  
35273.96  
234.33 x 157.83

## Standard

- Workpiece Calibration by MPG Directly
- Tool Magazine Display
- Parameter Package
- Threading Cutting (Only for 0i & 31i)
- Monitoring of Tool Status (Only for 0i & 31i)
- Character Caving Macro

Specifications & dimensions are subject to change without notice.

# Accessories

Item	Model	SM1100-50	SM1370-50	SM1682-50
1. Full-Enclosed Splash Guard		●	●	●
2. Cooling System		●	●	●
3. Lubrication System		●	●	●
4. Two Side Chip of the Chassis (Screw Type)		★	●	●
5. Coolant Tank (with Chip Bucket)		●	●	●
6. Operation Manual & Electric Drawing Equipment		●	●	●
7. Fluorescent Lamp x 1		●	●	●
8. Air Blast Through Spindle		●	●	●
9. Leveling Bolts and Block		●	●	●
10. Remote Manual Pulse Generator		●	●	●
11. Convection Heat Exchanger in Control		●	●	●
12. Auto Power Off		●	●	●
13. Operation Finish Lamp		●	●	●
14. RS232 Interface		●	●	●
15. Tool Package		●	●	●
16. Operator Panel, Pendent Type		-	●	●
17. Spray Around Spindle		●	●	●
18. Fluorescent Lamp x 1		●	●	●
19. #50 Disk Type Tool Magazine		●	●	●
20. Spindle Oil Cooler		●	●	●
21. Coolant Through Spindle_20BAR Without Water Cart		★	★	★
22. Coolant Through Spindle_25BAR Without Water Cart		★	★	★
23. Coolant Through Spindle Preparation Only		★	★	★
24. Closed Loop Linear Scale Positioning System		★	★	★
25. AUTO Tool Length and Diameter Measurement		★	★	★
26. Oil Mist Collector System		★	★	★
27. Fluorescent Lamp x 2		★	★	★
28. NC Rotary Table		★	★	★
29. DNC Software		★	★	★
30. 90° Degree Angle Head (Tool Type)		-	★	★
31. Ink Type Chip Conveyor & Portable Chip Bucket		★	★	★
32. Spindle Oil Cooler (Only Pulley/Gear 10000rpm)		★	★	★
33. Auto Work Piece Measurement		★	★	★
34. Coolant Flushing Device		★	★	★
35. Water Gun		★	★	★
36. Air Gun		★	★	★
37. Oil Skimmer		★	★	★
38. Operation Finish Lamp		★	★	★



SM2082-50	SM2110-50
●	●
●	●
●	●
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Standard : ●    Optional : ★

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