

NSV Series

Ultra High Performance Vertical Machining Center



NSV Series

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The NSV series ultra high performance vertical machining center is specially designed for high speed and high efficiency machining applications. The NSV series is built with a large delta machine column and wide base to ensure the highest stability during high speed movement.

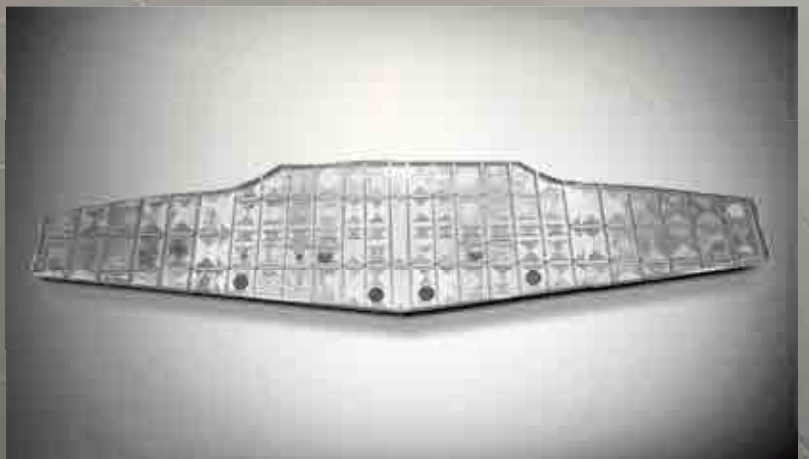
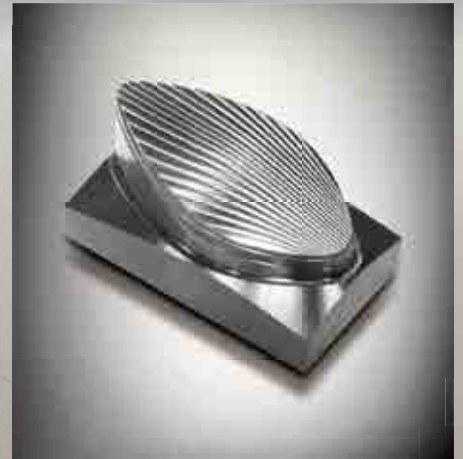


NSV 66A

NSV 66AM

NSV 156A

X	50 m/min. 1,969 ipm	24 m/min. 945 ipm	48 m/min. 1,890 ipm
Y	50 m/min. 1,969 ipm	24 m/min. 945 ipm	48 m/min. 1,890 ipm
Z	48 m/min. 1,890 ipm	24 m/min. 945 ipm	48 m/min. 1,890 ipm



- | 1. Light mold 2. Light mold 3. Light mold
4. Bottle mold 5. Frame |

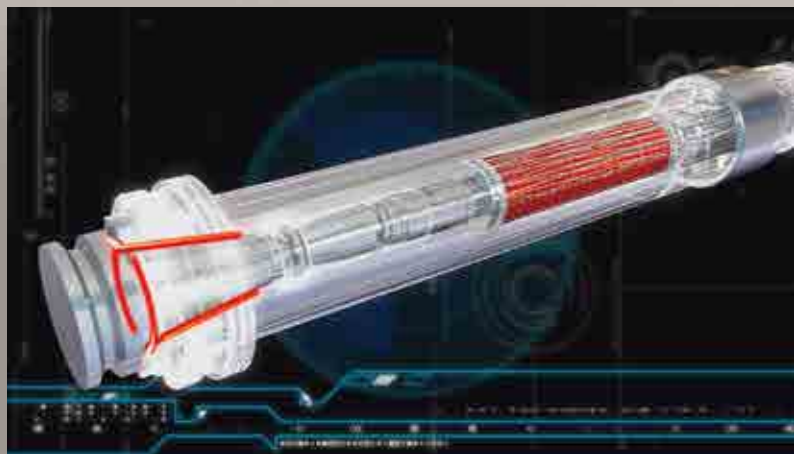


- Extra Large Delta Machine Column
- Double-nut Ball Screw with High Performance Axial Servo Motor
- Roller Type Guideways on All Axes
- Wide Distance Between Guideways

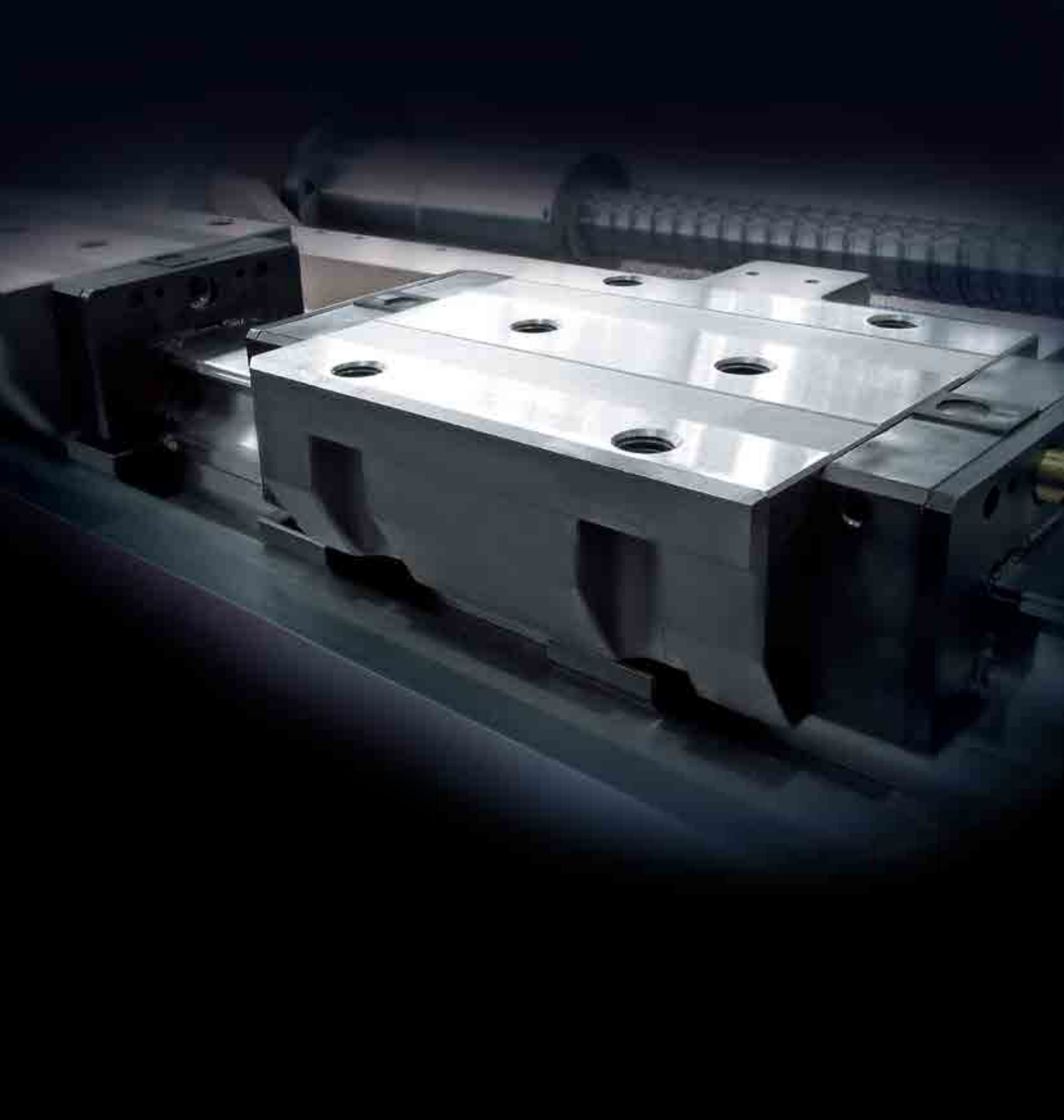
Advanced design with reinforced body structure through **FEM** analysis, the NSV series offers superb cutting performance and reduced vibration to meet the highest machining demand.



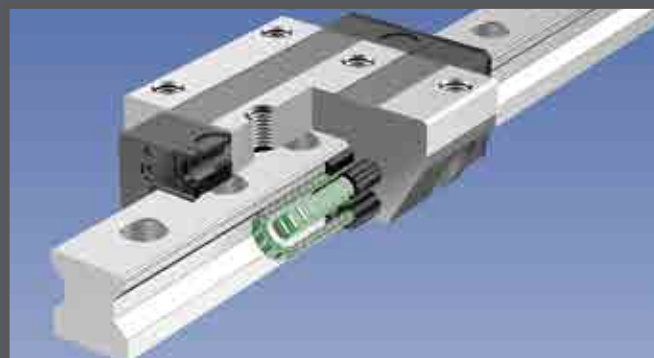
■ Micro Oil-air Lubrication System



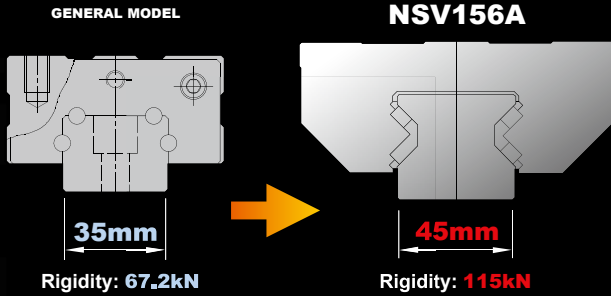
- Reliable Helical Disc Spring
- Simultaneous Taper & Flange Contact Design



- All Roller Type Guideways
- Onepiece Motor Housing
- Double-nut Ball Screw
- 6 Slider Blocks on X-axis (NSV156A)



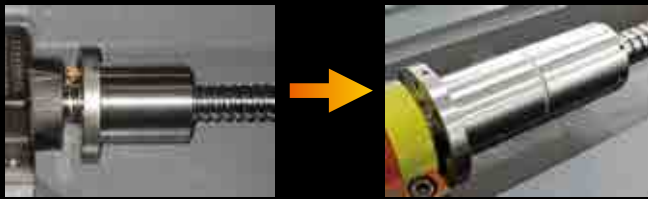
All Roller Type Guideways



+70%

RIGIDITY INCREASED BY

Double-nut Ball Screw



+140%

RIGIDITY INCREASED BY

GENERAL MODEL

Diameter: **ø40mm**

Rigidity: **62kgf/μm**

Load Capacity: **2,207kgf**

NSV Series

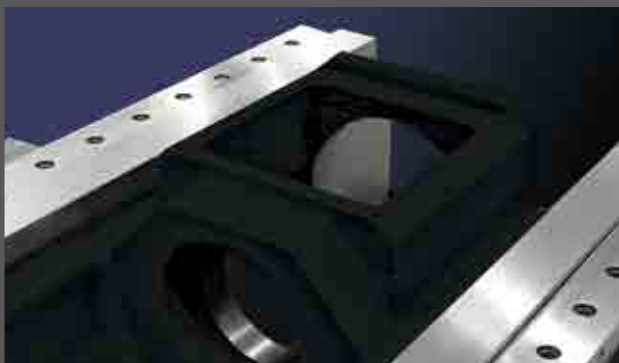
Diameter: **ø45mm**

Rigidity: **151kgf/μm**

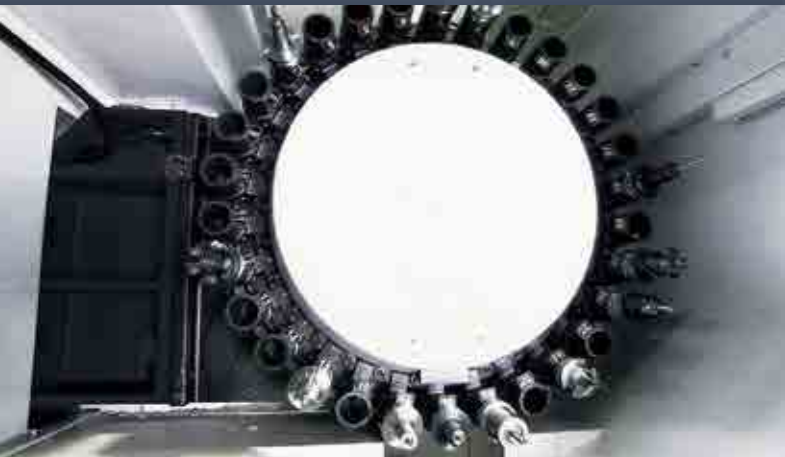
Load Capacity: **5,090kgf**

+130%

LOAD CAPACITY INCREASED BY



RELIABLE TOOL MAGAZINE SYSTEM





1.8 Sec. Tool to Tool

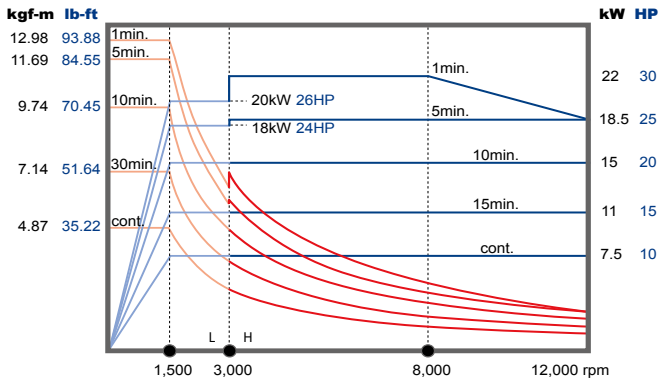


- Column Mounted Design
Minimizes the Vibration During
Tool Change
- Standard 30T Tool Magazine
- 48/60T Servo Driven Tool
Magazine (opt.)
- Automatic Chip Shield

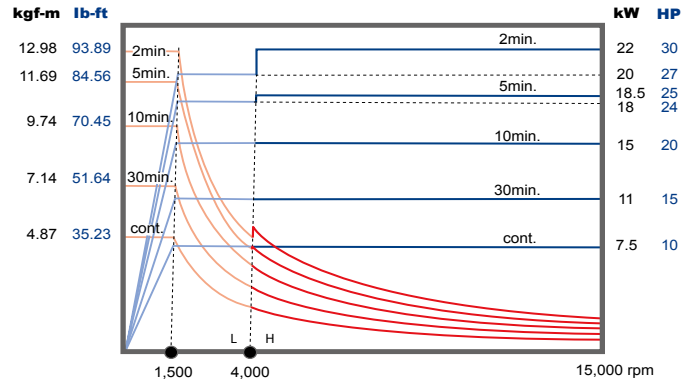
Power Chart FANUC

POWER **TORQUE**

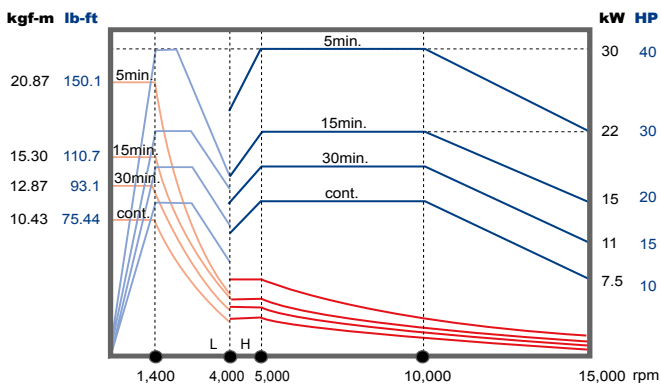
std. 12,000rpm ▼ NSV 66A/AM, 156A



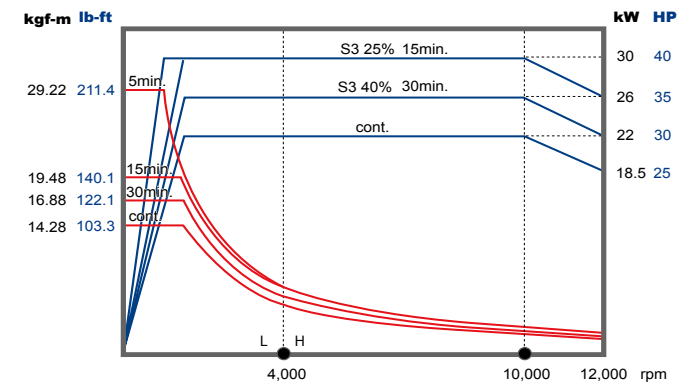
opt. 15,000rpm ▼ NSV 66A/AM



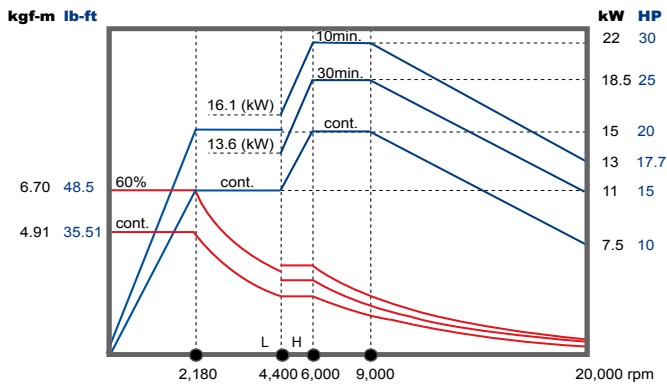
opt. 15,000rpm ▼ NSV 156A



opt. 12,000rpm ▼ NSV 156A

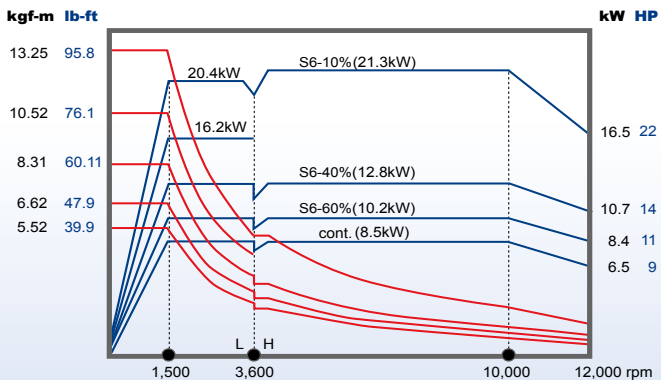


opt. 20,000rpm ▼ NSV 66AM

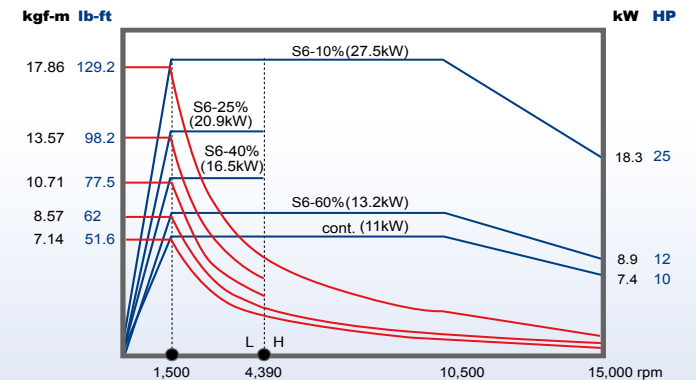


HEIDENHAIN

opt. 12,000rpm



opt. 15,000rpm

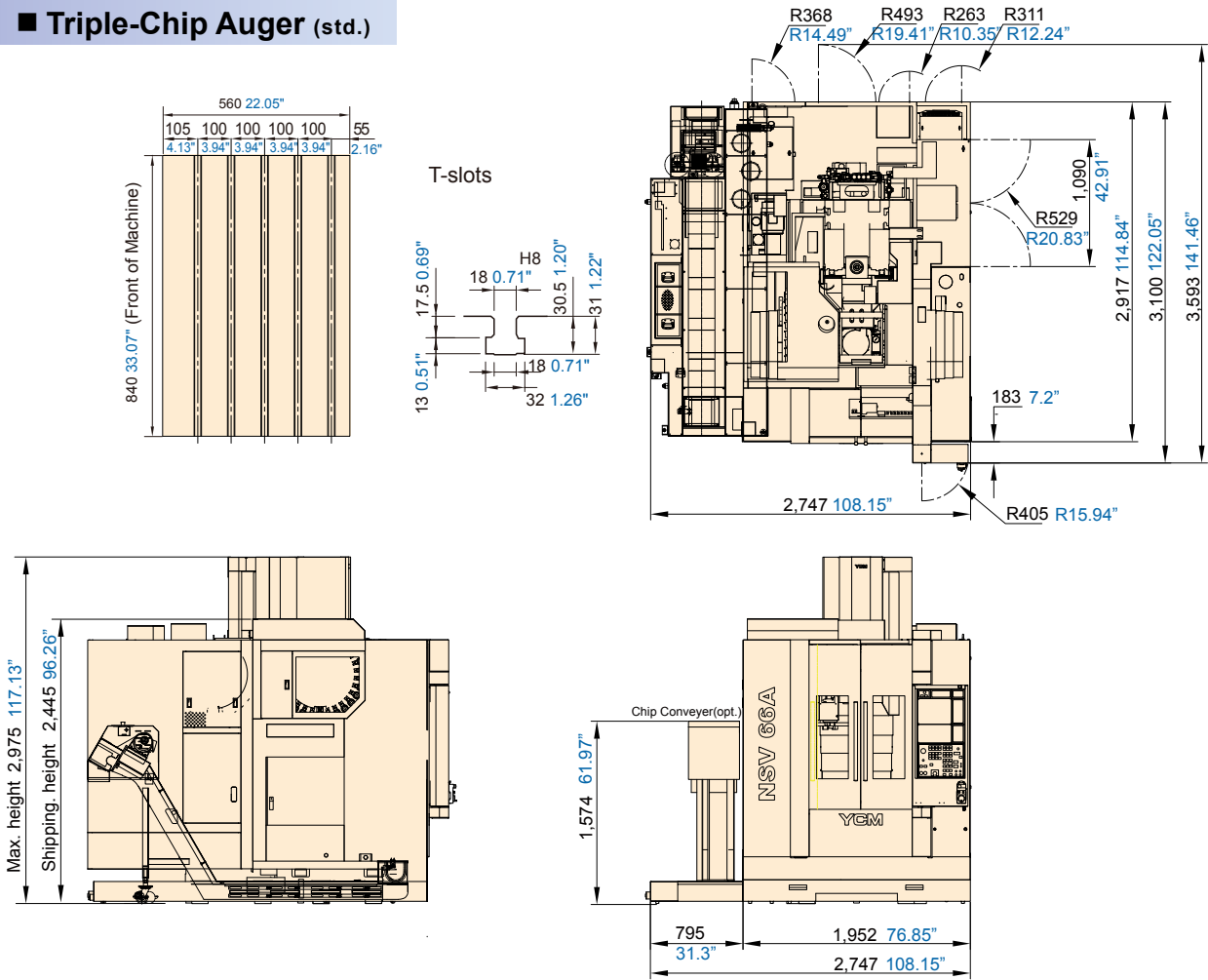


Dimensions

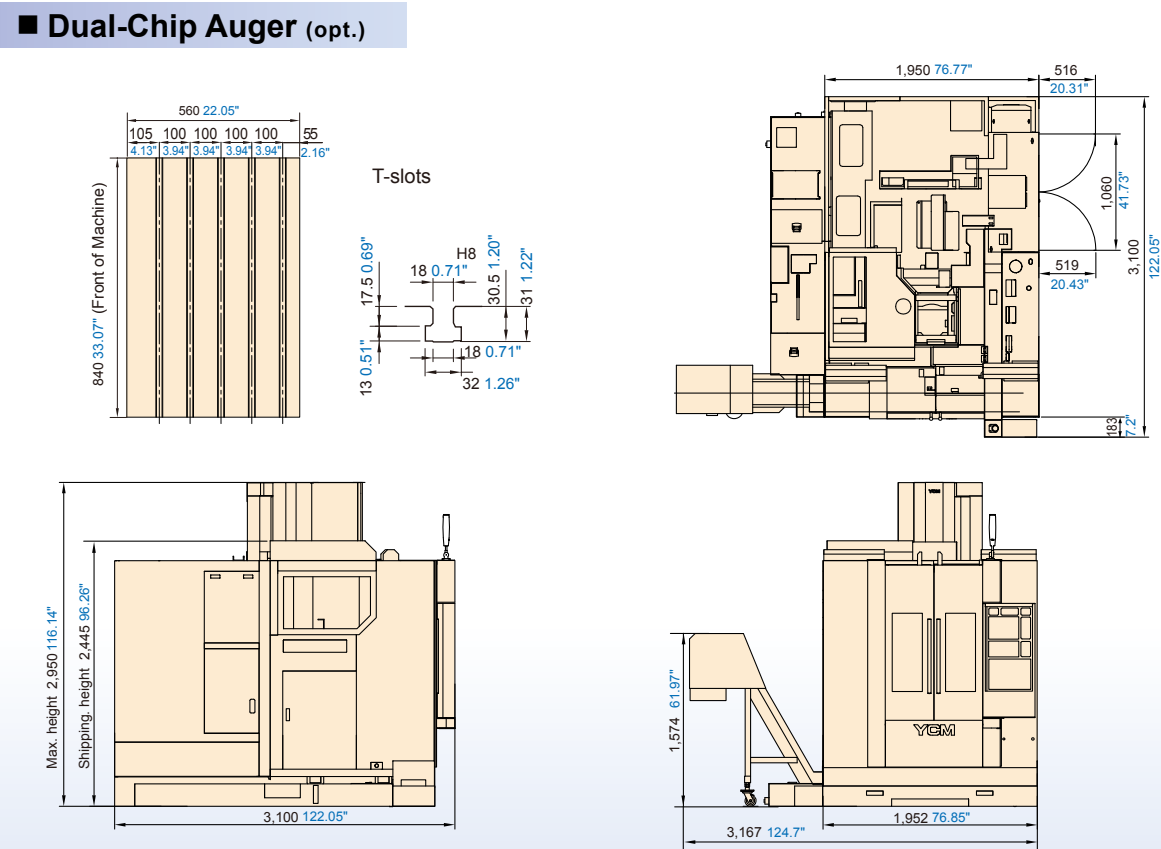
Unit: mm inch

NSV 66A/AM

■ Triple-Chip Auger (std.)



■ Dual-Chip Auger (opt.)

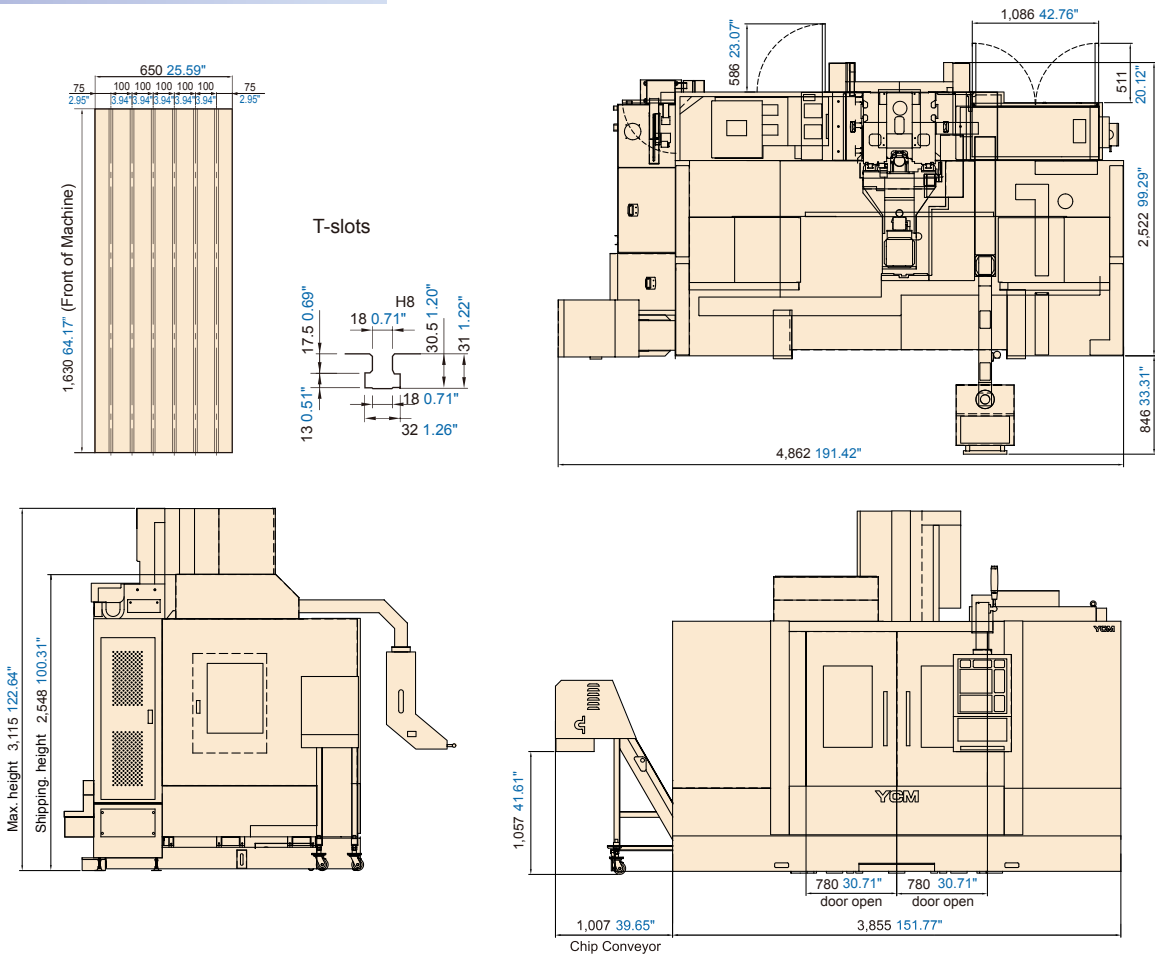


Dimensions

Unit: mm inch

NSV 156A

■ Quad-Chip Auger (std.)



Specifications

	NSV			
	66A	66A/M	156A	
SPINDLE				
Spindle Speed / Spindle Power (std.)	12,000rpm 7.5 / 11 / 15 / 18.5 / 22 kW 10 / 15 / 20 / 25 / 30HP (cont. / 15min. / 10min. / 5min. / 2min.)		12,000rpm 7.5 / 11 / 15 / 18.5 / 22 kW 10 / 15 / 20 / 25 / 30HP (cont. / 15min. / 10min. / 5min. / 1min.)	
Spindle Speed / Spindle Power (opt.1)	15,000rpm 7.5 / 11 / 15 / 18.5 / 22 kW 10 / 15 / 20 / 25 / 30 HP (cont. / 15min. / 10min. / 5min. / 1min.)		15,000rpm 15 / 18.5 / 22 / 30 kW 20 / 25 / 30 / 40HP (cont. / 30min. / 10min. / 5min.)	
Spindle Speed / Spindle Power (opt.2)	-	20,000rpm 15 / 18.5 / 22 kW 20 / 25 / 30HP (cont. / 30min. / 15min.)	12,000rpm 22 / 26 / 30 kW 30 / 35 / 40HP (cont. / 30min. / 15min. / 5min.)	
Spindle Speed / Spindle Power (opt.3)	-			
Spindle Taper (opt.)	BBT40			
TRAVEL				
X-axis Travel	660 mm 25.98"		1,530 mm 60.24"	
Y-axis Travel	510 mm 20.08"		650 mm 25.59"	
Z-axis Travel	560 mm 22.05"		610 mm 24.02"	
Distance Between Spindle Nose & Table Top	100~660 mm 3.94"~25.98"		80~690 mm 3.15"~27.17"	
TABLE				
Table Size	840 x 560 mm 33.07" x 22.05"		1,630 x 650 mm 64.17" x 25.59"	
No. T-slots x Size x Pitch	5 x 18 mm x 100 mm 5 x 0.71" x 3.94"		6 x 18 mm x 100 mm 6 x 0.71" x 3.94"	
Max. Load on Table	500 kg 1,102 lb		1,500 kg 3,307 lb	
FEEDRATE				
Rapid Feedrate (X/Y/Z)	50/50/48 m/min. 1,969/1,969/1,890 ipm	24/24/24 m/min. 945/945/945 ipm	48/48/48 m/min. 1,890/1,890/1,890 ipm	
Cutting Feedrate	1~20,000 mm/min. 0.04 ~787ipm			
Acceleration (X/Y/Z)	1g/1g/1g	0.24g/0.24g/0.18g	0.9g/0.6g/1g	
ACCURACY				
	ISO 10791-4	YCM*	ISO 10791-4	YCM*
Axial Travel	Full Length		Full Length	
Positioning (X/Y/Z) A	0.025/0.025/0.025 mm 0.00098"/0.00098"/0.00098"	0.01/0.01/0.01 mm 0.00039"/0.00039"/0.00039"	0.042/0.025/0.025 mm 0.00165"/0.00098"/0.00098"	0.014/0.01/0.01 mm 0.0006"/0.00039"/0.00039"
Repeatability (X/Y/Z) R	0.015/0.015/0.015 mm 0.00059"/0.00059"/0.00059"	0.007/0.007/0.007 mm 0.00028"/0.00028"/0.00028"	0.02/0.015/0.015 mm 0.0008"/0.00059"/0.00059"	0.01/0.007/0.007 mm 0.0004"/0.00028"/0.00028"

*All values shown above are measured for the machine in good air-conditioned environments.

ATC			
Tool Magazine Capacity (opt.)	30T (40T)	30T	30T (48T / 60T)
Max. Tool Weight (per piece)	6kg 13.2 lb		
Max. Tool Dimensions	ø76 x 300mm ø3" x 11.8"		
Max. Tool Dimensions (w/o adjacent tools)	ø125 x 300mm ø4.9" x 11.8"		
Tool Change Method	Arm Type		
Tool Selection Method	Random		

GENERAL			
Pneumatic Supplier	5.5kg/cm ² 78.2psi		
Machine Weight	6,500 kg 14,330 lb		10,000 kg 22,046 lb

Note: Above specifications may vary depending on the machine and the surrounding environment. The manufacturer reserves the right to modify the design, specifications, mechanisms, etc., to improve the performance of the machine without notice. The test data provided in this catalog is performed under specific test procedures and environmental conditions. The data for Power Consumption (Transformer) is standard, and different spindle motor may vary from those stated here. If you have any questions about other CNC controllers, please contact YCM sales representative.

Accessories

●: Standard ○: Option -: None

	NSV	
	66A/M	156A/M
Tool Kit	●	●
Work Lamp	●	●
Pilot Lamp	●	●
Coolant Gun	●	●
Coolant Equipment System	●	●
Cutting Air Blast	●	●
Spindle Air Blast	●	●
Spindle Air Seal	●	●
Central Lubrication System	●	●
Oil Skimmer	●	●
Coolant Through Spindle System	○	○
Foundation Bolts	○	○
Leveling Blocks and Bolts	●	●
Oil-mist Coolant System	○	○
Oil Hole Holder Function	○	○
Chip Conveyor	○	●
Workpiece Measurement System	○	○
Automatic Power Off	●	●
Heat Exchanger for Electrical Cabinet	●	●
A/C. Cooler for Electrical Cabinet	○	○
Mechanical, Electrical and Operating Manuals	●	●
Rigid Tapping	●	●
Guideway Cover (X/Y/Z)	●	●
Optical Scale	○	○
Automatic Door	○	○
Safety Door	●	●
4th Axis Rotary Table	○	○
Spindle Cooling System	●	●
Heavy Duty Coolant Pump	●	●
Auto Tool Length Measurement System	○	○
Full Chip Enclosure	●	●
Circular Coolant Nozzle	●	●
Dual-Chip Augers	○	-
Triple-Chip Augers	●	-
Quad-Chip Augers	-	●
Air Gun	●	●
Hydraulic System	○	○
Oil-mist Collector	○	○
CE	○	○
STC Plus	○	○
Paper Filter	○	○
Separator	○	○
CNC Control : MXP-200FB*	●	●
CNC Control : MXP-200FC	○	○
CNC Control : HEIDENHAIN TNC-640	○	○
CNC Control : SIEMENS 828D	○	○

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YCM[®]

MXP-200FB+



Communication Interface

RJ45 Ethernet
RS-232C
USB
CompactFlash Card

Excellent Vision Quality

10.4" LCD display

User-Friendly Design

Detachable keyboard
(QWERTY)

Fine Surface Setting Technology

1. AICC II+, high precision and high accuracy AI contour control
2. Smooth tolerance control+
3. Machining quality level adjustment function

Fast Cycle Time Technology

1. Maximum 400 blocks of look-ahead for pre-calculating the machining program
2. Block processing time 1ms for achieving high-speed machining requirement
3. Smart rigid tapping function combined with spindle capability for high-speed machining

Program Dynamic Simulation

Manual Guide i features dynamic simulation of machining programs with full-screen display

Upgraded Setting & Programming Application

1. 2 MB program storage size
2. Built-in memory card for easy program editing
3. Directory filing structure with organized file management
4. 400 pairs of tool offset, 1,000 registrable programs, 48 pairs of workpiece coordinate system, 256 pairs of tool life management

YCM®

i-OPERATION

Software Enhancement Exclusively from **YCM**

Plus II

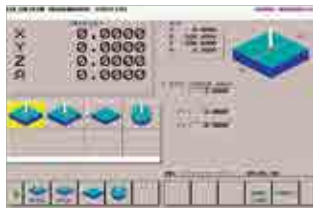


Pre-Machining



Intelligent Tool Data Management

Comprehensive tool data management function allows operators to monitor and manage all positions in tool magazine



Workpiece Coordinate Calculation

Conversational window provides convenient and fast setup of workpiece coordinates

RENISHAW GUI System (Conversational Graphic Operating Interface)

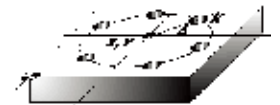


Tool Measurement & Measurement Calibration

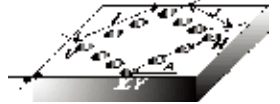


Workpiece Measurement (applicable to certain models)

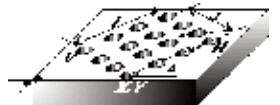
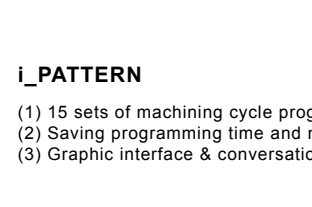
Program Editing



CIRCULAR HOLE PATTERN
(G120 P1) Function



RECTANGULAR HOLE PATTERN
(G120 P4) Function



GRID HOLE PATTERN
(G120 P5) Function

i_PATTERN

- (1) 15 sets of machining cycle program
- (2) Saving programming time and memory time
- (3) Graphic interface & conversational command input

Machining

High Performance Machining Mode M300

With 5 sets of parameter settings, it's easy to find suitable and optimized machining.

High Speed Machining Mode M400

Reducing machining time for drilling and tapping process

Tool Load Management

Instant tool load monitoring with alarm function

Multi-Display Function

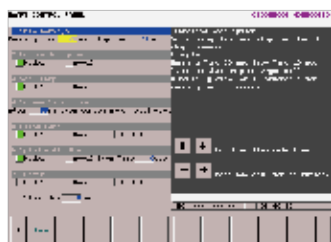
Displaying 4 statuses simultaneously with configurable status display

Tool Life Management

Indicating tool status of each group with tool life alarm



Smart Control Panel



iPANEL

Easy to set up and operate important functions

Intelligent Counter



Instantly providing users with periodic maintenance notifications and work-pieces counter management

VMC

Vertical Machining Center

FP Series High Precision High Performance Die Mold Vertical Machining Center
FP66A, FP100A, NFP66A



NXV Series High Performance Vertical Machining Center
NXV600A, NXV560A-APC, NXV1020A/AM, NXV1380A, NXV1680A/B



TV Series Heavy Duty Vertical Machining Center
TV116B, TV146B, TV158B, TV188B, TV2110B, TV2610B

NTV Series High Efficiency T-base Vertical Machining Center
NTV158A/B

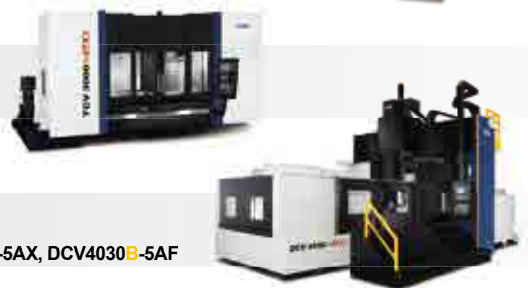
NMV Series High Performance High Rigidity Vertical Machining Center
NMV76A, NMV106A



WV Series Ultra Wide High Performance Vertical Machining Center
WV108A/B

NFX Series High Performance 5-axis Vertical Machining Center
NFX400A

NSV Series Ultra High Performance Vertical Machining Center
NSV66A, NSV106A/AM/AS/AMS, NSV156A/AM



TCV Series High Performance Traveling Column Vertical Machining Center
TCV2000A, TCV3000A, TCV4500B, TCV2300A-4A, TCV3000A-4A/5AF/5AX

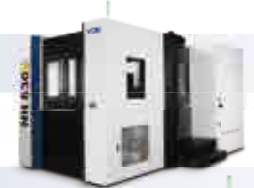
DCV Series Advanced Double Column Vertical Machining Center
DCV2012A/B, DCV3016B-6035B, DCV2018A-4018A-5AX, DCV4030B-6030B-5AX, DCV4030B-5AF

NDC Series High Performance Double Column Vertical Machining Center
NDC2016B-4016B, NDC3022B-6027B, NDC2018B-4018B-AHC, NDC3022B-6027B-AHC

HMC

Horizontal Machining Center

NH Series High Speed High Precision Horizontal Machining Center
NH500A, NH630B, NH800B



CNC LATHES

CNC Turning Center

NT Series High Performance Mill/Turn Center
NT-2500SY



GT Series High Performance Geo Turning Center
GT-200B/MA, GT-250B/MA, GT-300B/MA/LMB

TC Series High Performance High Precision CNC Lathe
TC-16LA/LB, TC-26, TC-36, TC-46 1000/1650/2300/3200, TC-46M 3200



NTC Series High Efficiency CNC Turning Center
NTC-2000LY/LSY



Integrated Operation Control System



Intelligent Production Management

Automation Solutions



INTEGRATION AND SOLUTIONS



YEONG CHIN MACHINERY INDUSTRIES CO., LTD.

No. 888, Sec. 1, Homu Road, Shengang District, Taichung 42953, Taiwan

Tel : +886-4-2562-3211

Fax: +886-4-2562-6479

Web Page: www.YCMCNC.com

Email: sales@YCMCNC.com



201801-E07-2000