

**Nidec**

All for dreams

SUPER SKIVING MACHINE

**MSS300**



**NIDEC MACHINE TOOL CORPORATION**

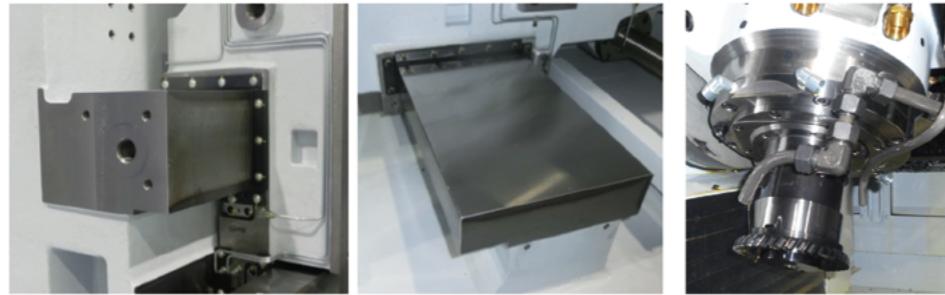
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# Next-Generation Super Skiving System: Unique New Tools + Optimum Machine

## High-rigidity machine achieves high productivity with accuracy

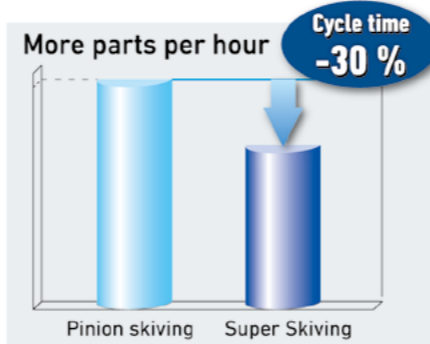
Superior machine rigidity and high-powered synchronous spindle motors

- Massive guideways for the three linear axes ensures optimal mechanical rigidity.
- Tool and table spindles use high-torque synchronous motors.
- Patented Super Skiving tools reduce chip loading, enabling high-efficiency machining with fewer passes.



Wide sliding guide surfaces

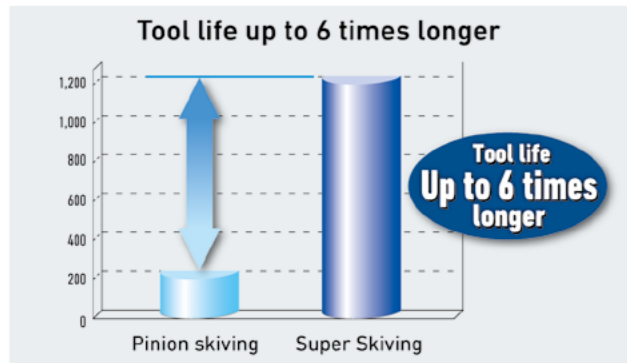
Highly rigid main spindle



## Super Skiving System - New multi-tier tool and MSS300 machine achieve remarkable tool life

Together with the unique Super Skiving cutter tool, the MSS300 offers optimum solutions for internal gear cutting.

- Compared to conventional pinion cutters, our Super Skiving cutter provides much longer tool life



[Parameters]

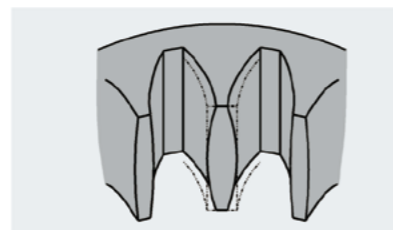
- Planetary reduction gear for automobile application
- Module: 1.5 DP: 16.93
- Number of teeth: 70
- Face width: 32 mm 1.3 in
- Helix angle: 20 degrees
- Material: SCM415 (HB180)
- Cycle time: 1 minute
- Machining accuracy: ISO 6 to 7



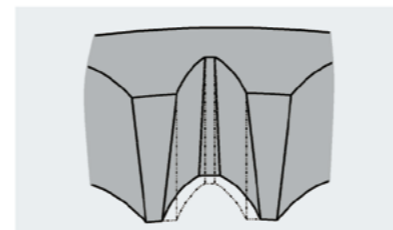
Super Skiving cutter

## Versatile software for easy corrections

- Enables helix modifications not achievable with broaching (crown, taper, end relief, etc.)
- Automatically adjusts crossed-axes angle according to tool diameter for machining with stable accuracy
- Both internal and external teeth can be processed.



Crowning

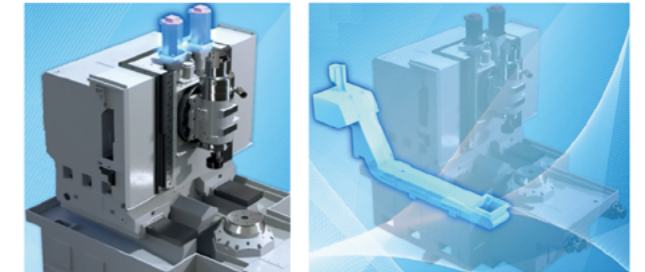


Tapering

## Sophisticated symmetrical structure for high precision machining

The MSS300 features a well balanced symmetrical structure with superior thermal and mechanical stability.

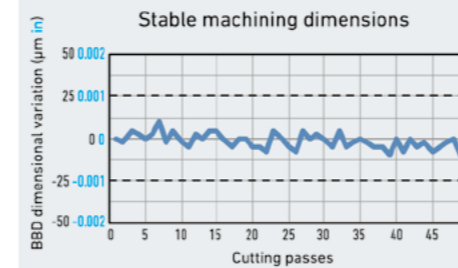
- Axial feed Z-axis adopts a twin ball screw drive to provide stable power and control during cutting.
- The machine base includes a center trough structure for directly removing chips from just under the cutting point, suppressing thermal deformation of the machine base.



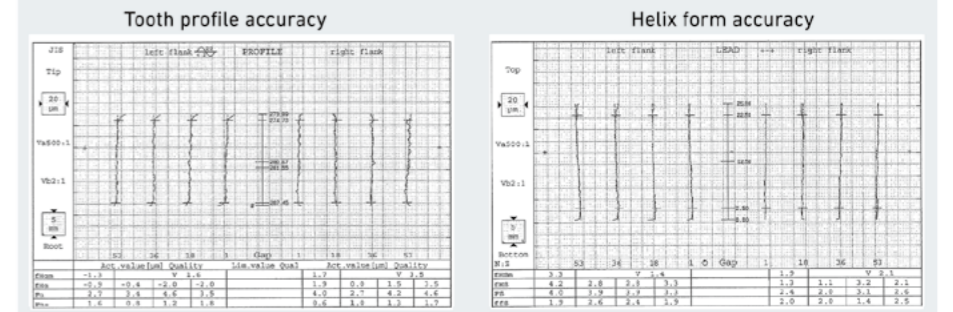
Z-axis twin ball screw

Center trough structure for chip removal

### Stable machine, stable process



### Gear machining accuracy: ISO 4



Module: 4, Number of teeth: 70, Face width: 25 mm 1.0 in, Helix angle: 0 degrees



## SUPER SKIVING MACHINE MSS300

Pinion Skiving Cutter

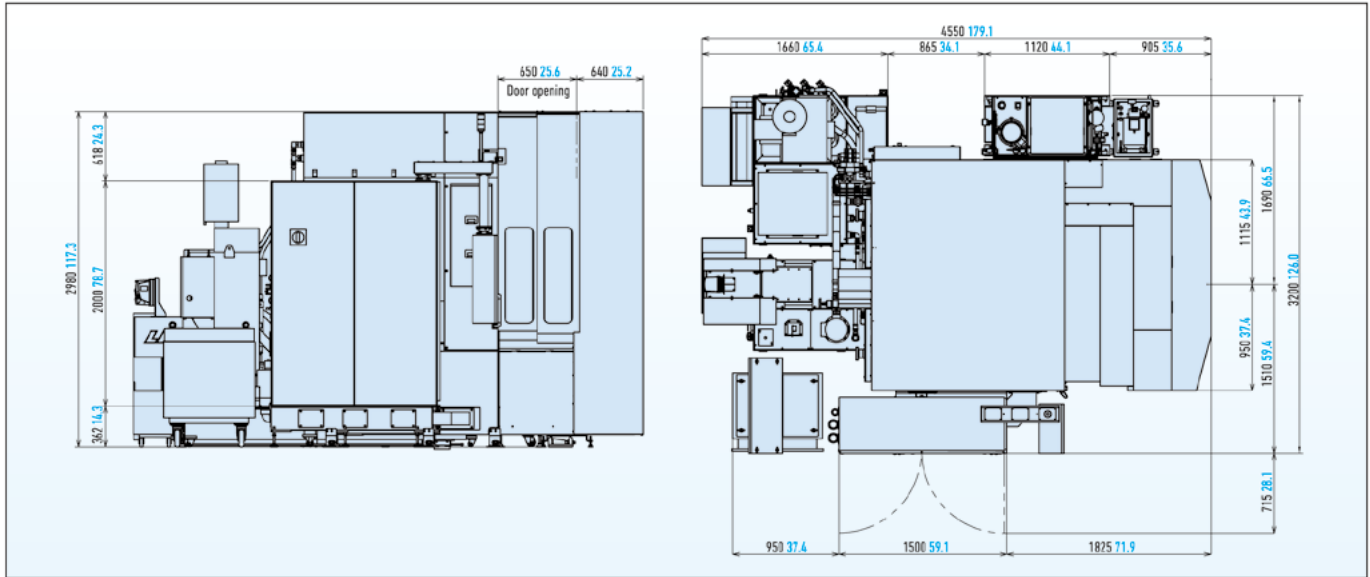


Super Skiving Cutter



## Machine Dimensions

Unit: mm in



## Machine Specifications

Item		MSS300
Max. workpiece diameter	mm in	φ300 φ11.8
Max. module <b>Diametral pitch</b>		4 6.35
Max. gear width	mm in	100 3.9
Spindle (cutter arbor type)		HSK A100
Table diameter	mm in	φ300 φ11.8
Max. spindle speed	min <sup>-1</sup>	5,000
Spindle motor output	kW HP	33 44 (Cont.)
Max. table speed	min <sup>-1</sup>	2,000
Radial feed (X-axis)	mm in	350 13.8
Tangential feed (Y-axis)	mm in	±225 ±8.9
Axial feed (Z-axis)	mm in	250 9.8
Cutter head crossed-axes angle (A-axis)	deg.	±30
NC device		FANUC 31i-B
Machine weight	kg lb	20,000 44,100

## Standard Equipment

- Hydraulic/lubrication unit
- Intermittent lubrication unit
- Hydraulic/lubrication tank
- low level detection
- Pneumatic unit
- Coolant unit
- Chip conveyor
- Splash cover
- Door interlock
- Mist collector
- Internal chip cover
- Maintenance tool kit
- Step-up transformer (400V)
- Work lighting / Control box internal lighting
- Two-hand operation button / Circuit breaker with ground fault

## Optional Equipment

- Linear/rotary axis scale feedback
- Coolant temperature control
- Workpiece clamping device
- Automatic coolant guard door
- Cutter arbor
- Part fixture
- Power failure countermeasures (retract unit)
- Various programming software

Inquiry

## NIDEC MACHINE TOOL CORPORATION

Customer Support & Sales Headquarters 130, Rokujizo, Ritto, Shiga, 520-3080, Japan

[www.nidec.com/en/nidec-machinetool/](http://www.nidec.com/en/nidec-machinetool/)

Global Group Phone: +81-77-552-9768 Facsimile: +81-77-552-9774



### Sales and Service bases

**Nidec-Shimpo (Shanghai) Int'l Trading Co., Ltd.**  
3507-3508, Tower B, 100 Zunyi Road, Chang Ning District, Shanghai, 200051 P.R.China  
Phone: +86-21-63800318  
E-mail: [nssc-koki@nidec-shimpo.com.cn](mailto:nssc-koki@nidec-shimpo.com.cn)

**Nidec-Shimpo (Shanghai) Int'l Trading Co., Ltd. Shenzhen Office**  
Room 739, 7th Floor, Dongming Building, Minkang Road, Zhangkeng Community, Minzhi Street, Longhua District, Shenzhen, 518131 P.R.China  
Phone: +86-755-23765091

**NIDEC MACHINE TOOL CORPORATION TAIPEI BRANCH**  
Room 1001, 10F, No. 88, Sec. 2, Jhongsiao E. Road, Jhongjheng District, Taipei City 100, Taiwan  
Phone: +886-2-2395-6210 Facsimile: +886-2-2395-6230

**NIDEC MACHINE TOOL (THAILAND) CO. LTD.**  
777 WHA Tower, 16th Fl., Room No. 1602, Moo 13, Debaratna (Bangna-Trad) KM. 7 Road, Bangkaew, Bangplee, Samutprakarn, 10540 Thailand  
Phone: +66-2-001-9050 Facsimile: +66-2-001-9370

**NIDEC-SHIMPO INDIA MANUFACTURING PRIVATE LIMITED Delhi Office**  
No.435, Regus Level 4, Rectangle No.1, Commercial Complex, D4, Saket New Delhi, Delhi 110017, India  
Phone: +91-11-6854-4030

**NIDEC-SHIMPO INDIA MANUFACTURING PRIVATE LIMITED Bengaluru Office**  
BVR Lake Front, No. 40/32/50/1/2, Nagavara Village, Kasaba Hobli, Near Ring Road, Veerannapalya, Arabi College Post, Bangalore -560 045, India  
Phone: +91-80-4953-6579

**PT. NIDEC MOBILITY INDONESIA**  
M Gold Tower, 20th floor unit A & B, Jl. KH Kalimalang, RT.001/RW.012, Pekayon Jaya, Kec. Bekasi Sel., Kota Bks, Jawa Barat, Indonesia  
Phone: +62-21-2808-7288

**NIDEC-SHIMPO KOREA CORPORATION**  
#317, Kolon sciencevally II, 55, Digital-ro 34-gil, Guro-gu, SEOUL 08378 KOREA  
Phone: +82-2-2038-3537 Facsimile: +82-2-2038-3538

**Nidec Machine Tool America LLC**  
46992 Liberty Drive, Wixom, MI 48393 U.S.A.  
Phone: +1-248-669-6136 Facsimile: +1-248-669-0614  
<https://www.nidec-machinetoolamerica.com>

**NIDEC DRIVE TECHNOLOGY DE MEXICO, S. de R.L. de C.V.**  
Parque Industrial NAVEX PARK, Callejón de la Evangelización #106, Cal. Santa Maria Magdalena, Querétaro, Qro. 76137, México  
Phone: +52-442-242-3351

**Nidec-Shimpo do Brazil Imp., Exp. e Com. de Equip. Ltda.**  
Estrada General Motors, 852 - Galpão 11 & 12, Indaiatuba - SP 13347-500 Brazil  
Phone: +55-11-5071-0015

**Nidec-Shimpo GmbH**  
Ludwigstrasse 9, 80539 Munich, Germany  
Phone: +49-89-125030-780 Facsimile: +49-89-125030-780

### Manufacturing bases

**Federal Broach & Machine Company, LLC**  
1961 Sullivan Drive, Harrison, MI 48625 U.S.A.  
Phone: +1-989-539-7420 Facsimile: +1-989-539-7381  
<https://federalbroach.com/>

**Southeast Broach Company - South Carolina LLC**  
431 S Buncombe Rd Greer, SC 29650 U.S.A.  
Phone: +1-864-879-7641 Facsimile: +1-864-879-7693  
<https://www.sebroach.com/index-2.html>

**Nidec India Precision Tools Ltd.**  
No.2 SIPCOT Industrial Complex, Ranipet, Tamil Nadu, India  
Phone: +91-4172-244361

**Nidec Machine Tool (Changshu) Corporation**  
181 Huangpujiang Road, Changshu New & Hi-tech Industrial Development Zone, Changshu City, Jiangsu Province 215500, P.R. China  
Phone: +86-512-5230-3030



Machine specifications such as dimensions etc., are fixed using SI units including the metric system. In case data are shown in other units in blue, such as inches, pounds and gallons etc. they are for reference only and the formal data in black supersedes any equivalent data given in blue when fractions caused by conversion become an issue. Specifications are subject to change without prior notice. The export of this product is subject to Japanese Governmental approval.