

WT-300

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

Solve factory
problems with
this machine

Innovative
Technology

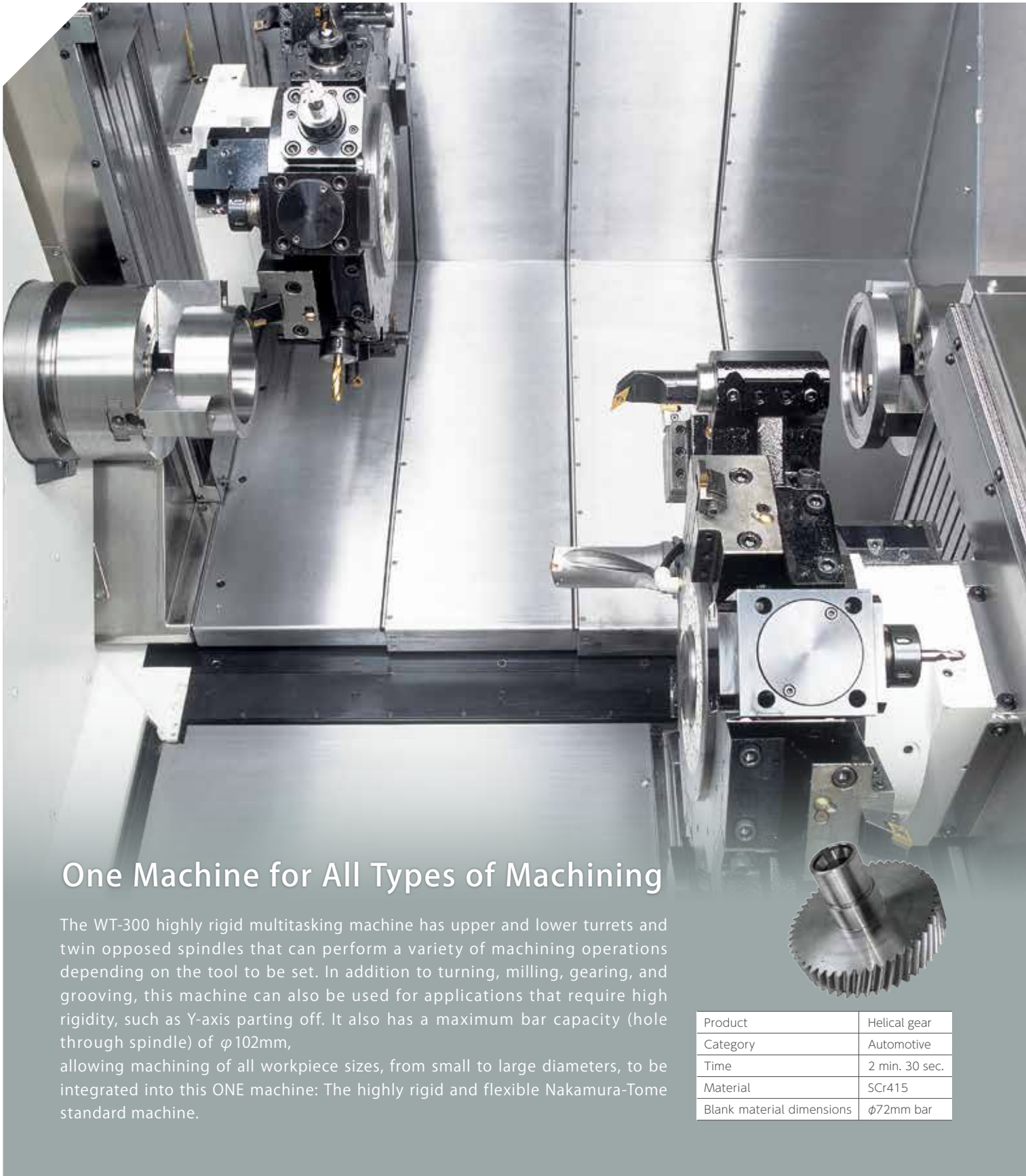
~ Creating new values ~

WT-300

High-rigidity multitasking machine equipped with upper and lower turrets and twin opposed spindles. It is a machine equipped with box-way slides for all axes, offering high stability and making it ideal for machining difficult-to-cut and high-hardness materials. A wide variety of options, peripheral devices, and a full range of software are available to meet a wide variety of needs.

- The Y-axis on the upper turret is available as an option.
- Milling motor 5.5/3.7kW(op.)
Milling spindle speed 3,600min⁻¹
- Tool capacity of up to 48 tools.
- Cycle times are reduced by utilizing simultaneous machining on the L/R spindles with the upper and lower turrets.
- All axes with box-way slides.





One Machine for All Types of Machining

The WT-300 highly rigid multitasking machine has upper and lower turrets and twin opposed spindles that can perform a variety of machining operations depending on the tool to be set. In addition to turning, milling, gearing, and grooving, this machine can also be used for applications that require high rigidity, such as Y-axis parting off. It also has a maximum bar capacity (hole through spindle) of $\phi 102\text{mm}$, allowing machining of all workpiece sizes, from small to large diameters, to be integrated into this ONE machine: The highly rigid and flexible Nakamura-Tome standard machine.

Product	Helical gear
Category	Automotive
Time	2 min. 30 sec.
Material	SCr415
Blank material dimensions	$\phi 72\text{mm}$ bar

Gear Skiving



- Material *SUS303*
- Module *1.25*

I.D. Gear

O.D. Gear

- Cutter speed *1,200min⁻¹*
- Spindle speed *600min⁻¹*
- Feed *0.1mm/rev*
- Number of teeth *40*
- Tip diameter *$\phi 47.8\text{mm}$*
- Time *2 min 30 sec.*

- Cutter speed *1,200min⁻¹*
- Spindle speed *533min⁻¹*
- Feed *0.1mm/rev*
- Number of teeth *45*
- Tip diameter *$\phi 58.45\text{mm}$*
- Time *2 min 46 sec.*

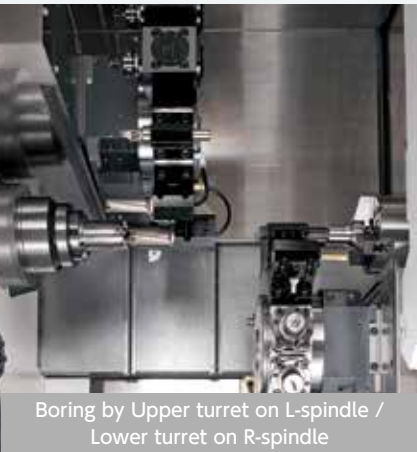
Y-axis Parting off



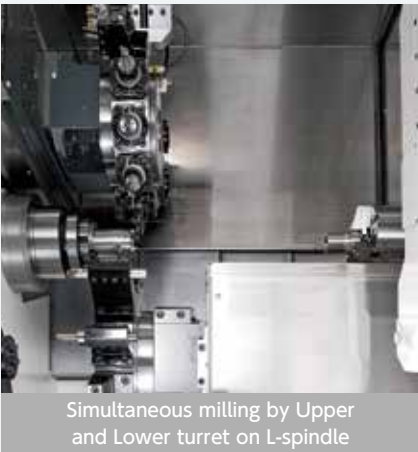
- Cutting speed *200mm/min*
- Feed *0.3mm/rev*
- Insert width *3mm*
- Material *S45C $\phi 63\text{mm}$*
- Time *6.8sec. (Non-step)*



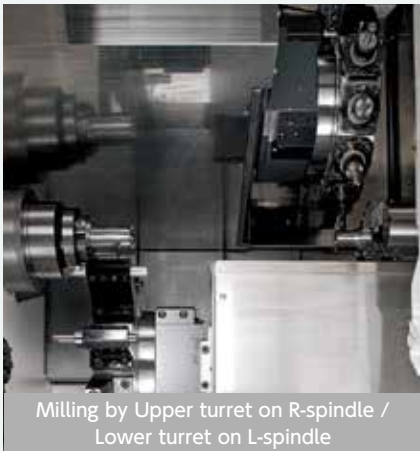
Turning by Upper turret on L-spindle / Lower turret on R-spindle



Boring by Upper turret on L-spindle / Lower turret on R-spindle



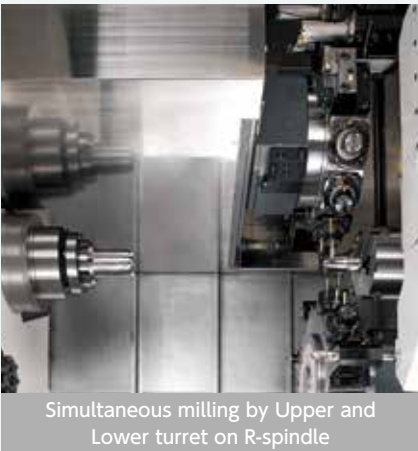
Simultaneous milling by Upper and Lower turret on L-spindle



Milling by Upper turret on R-spindle / Lower turret on L-spindle



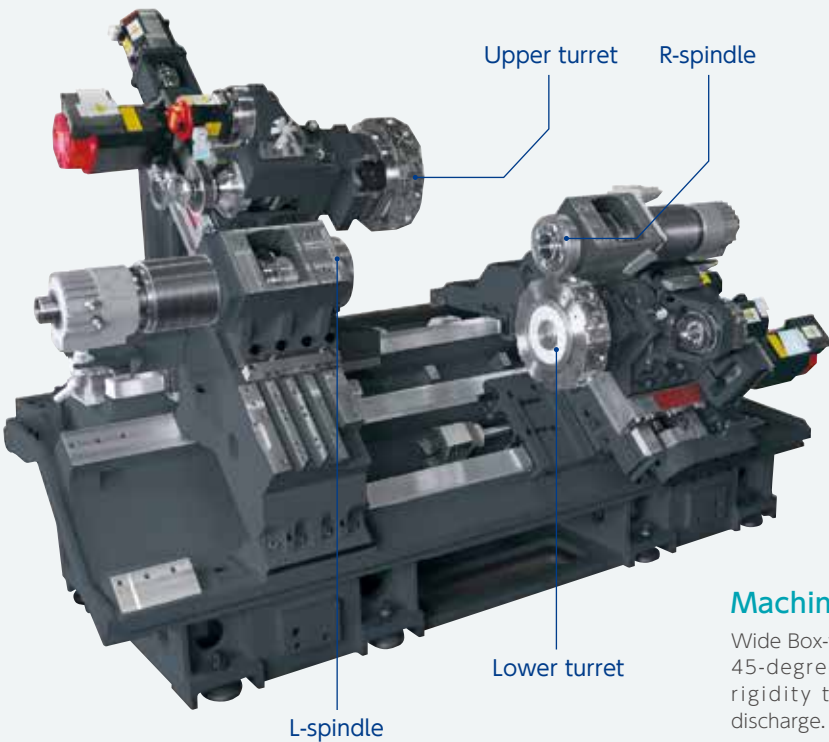
Transfer



Simultaneous milling by Upper and Lower turret on R-spindle

All Axes with Box-way Slides Enable Highly Rigid and Stable Machining.

Equipped with Box-way slides on all axes which are traditionally hand scraped by highly skilled technicians, according to our stringent quality control standards.



R-spindle	
Bar capacity $\phi 65\text{mm}$	
Standard	Option
Spindle motor $15/11\text{kW}$ $4,500\text{min}^{-1}$	Spindle motor $18.5/15\text{kW}$ $4,500\text{min}^{-1}$
Bar capacity $\phi 102\text{mm}$	
Option	Option
Spindle motor $15/11\text{kW}$ $2,500\text{min}^{-1}$	Spindle motor $18.5/15\text{kW}$ $2,500\text{min}^{-1}$

Machine Bed
Wide Box-way slides on X, Z and Y-axes.
45-degree slant bed structure with high rigidity torque tube and smooth chip discharge.

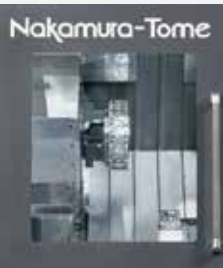
L-spindle		
Bar capacity $\phi 65\text{mm}$		
Standard	Option	Option
Spindle motor $15/11\text{kW}$ $4,500\text{min}^{-1}$	Spindle motor $18.5/15\text{kW}$ $4,500\text{min}^{-1}$	Spindle motor $22/18.5\text{kW}$ $4,500\text{min}^{-1}$
Bar capacity $\phi 80\text{mm}$		
Option	Option	Option
Spindle motor $15/11\text{kW}$ $3,500\text{min}^{-1}$	Spindle motor $18.5/15\text{kW}$ $3,500\text{min}^{-1}$	Spindle motor $22/18.5\text{kW}$ $3,500\text{min}^{-1}$

L-spindle		
Bar capacity $\phi 71\text{mm}$		
Option	Option	Option
Spindle motor $15/11\text{kW}$ $4,000\text{min}^{-1}$	Spindle motor $18.5/15\text{kW}$ $4,000\text{min}^{-1}$	Spindle motor $22/18.5\text{kW}$ $4,000\text{min}^{-1}$
Bar capacity $\phi 102\text{mm}$		
Option	Option	Option
Spindle motor $15/11\text{kW}$ $2,500\text{min}^{-1}$	Spindle motor $18.5/15\text{kW}$ $2,500\text{min}^{-1}$	Spindle motor $22/18.5\text{kW}$ $2,500\text{min}^{-1}$

Upper turret	
Standard	
Type of turret head	<i>Dodecagonal</i>
Number of milling stations / Number of indexing positions	<i>12/24</i>
Option	
Milling motor	$5.5/3.7\text{kW}$ $3,600\text{min}^{-1}$
Option	
Y-axis slide travel	$\pm 60\text{mm}$ (L: $\phi 65, \phi 71$) $\pm 40\text{mm}$ (L: $\phi 80, \phi 102$)

Lower turret	
Standard	
Type of turret head	<i>Dodecagonal</i>
Number of milling stations / Number of indexing positions	<i>12/24</i>
Option	
Milling motor	$5.5/3.7\text{kW}$ $3,600\text{min}^{-1}$

The Upper and Lower turrets reduce cycle time.



Large window for easy viewing of the machining area
The door windows are equipped with wipers that keep the windows clean.

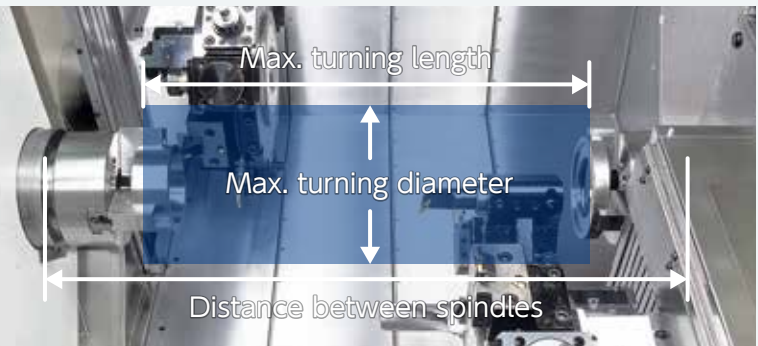
NT SmartX 19 inch touch screen
With a movable operation panel, the angle can now be adjusted by the operator.

Tool setter(op.)
Can be configured for a detachable, or for an automatic swing-down type tool setter.



Parts catcher type G(op.)

- Max. turning length 780mm
- Max. turning diameter $\phi 270\text{mm}$
*L-spindle: $\phi 65, \phi 71$ specifications
- Bar capacity $\phi 65\text{mm}$
(op. $\phi 71, \phi 80, \phi 102\text{mm}$)
- Distance between spindles $\text{Max. } 1,100\text{mm}$
 $\text{Min. } 250\text{mm}$



■ Capacity		φ65	φ71(op.)	φ80(op.)	φ102(op.)
Max. turning diameter	Upper	270mm		199mm	199mm
	Lower			270mm	270mm (L: φ102/R: φ65) 229mm (L: φ102/R: φ102)
Distance between spindles		max. 1,100mm / min. 250mm			
Max. turning length		780mm			
Bar capacity	L	φ65mm	φ71mm	φ80mm	φ102mm
	R		-	-	
Chuch size		8"		12"	

■ Axis travel • Rapid feed

X1-axis slide travel	195mm	188mm	152.5mm	152.5mm
X2-axis slide travel	195mm	195mm	195mm	195mm (L: φ102/R: φ65) 135mm (L: φ102/R: φ102)
Z1-axis slide travel	780mm			
Z2-axis slide travel	780mm			
Y-axis slide travel (op.)	±60mm		±40mm	
B2-axis slide travel	850mm			
X1 / X2 rapid feed rate	16m/min			
Z1 / Z2 rapid feed rate	27m/min			
Y rapid feed rate(op.)	6m/min			
B2 rapid feed rate	27m/min			18m/min (R: φ102)

■ L-spindle

Spindle speed	4,500min ⁻¹	4,000min ⁻¹	3,500min ⁻¹	2,500min ⁻¹
Spindle speed range	Stepless	Stepless	Stepless	Stepless
Spindle nose	A2-6	A1-8	A1-8	A2-8
Hole through spindle	80mm	85mm	90mm	120mm
I. D. of front bearing	110mm	120mm	120mm	160mm
Hole through draw tube	66mm	72mm	81mm	103mm

■ R-spindle

Spindle speed	4,500min ⁻¹	-	-	2,500min ⁻¹
Spindle speed range	Stepless	-	-	Stepless
Spindle nose	A2-6	-	-	A2-8
Hole through spindle	80mm	-	-	120mm
I. D. of front bearing	110mm	-	-	160mm
Hole through draw tube	66mm	-	-	103mm

● Safety quality specifications

Various interlocks, such as safety fences, auto extinguisher devices, and other safety related equipment may be required. These have to be selected during the configuration of the machine.

① Safety devices include electromagnetic door lock, chuck interlock, hydraulic pressure switch, air pressure switch, short circuit breaker and quill interlock. (Door interlock and chuck interlock are standard equipment.)

② In case of automation, various safety fences may be required, such as work stocker safety fences, robot safety fences, ...etc.

During the configuration of machine specifications, please discuss these requirements with the Nakamura-Tome machine sales representative.



Nakamura-Tome

<https://www.nakamura-tome.com>

Netsuno 15, Hakusan city, Ishikawa, 920-2195 Japan
Phone : +81 76 273 8100 Fax : +81 76 273 4312
E-mail : nt-jpn@nakamura-tome.co.jp

■ C-axis (op.)	φ65	φ71(op.)	φ80(op.)	φ102(op.)
Least input increment	0.001°			
Least command increment	0.001°			
Rapid speed	600min ⁻¹			
Cutting feed rate	1 - 4,800° /min			
C-axis clamp	Disk clamp			
C-axis connecting time	1.5s			

■ Upper/Lower turret

Type of turret head	Dodecagonal drum turret			
Number of tool stations	12 (Max. 24)			
Number of indexing positions	24			
Tool size (square shank)	□20mm / □25mm			
Tool size (round shank)	φ25mm / φ32mm			

■ Milling (op.)

Rotary system	Individual rotation			
Milling spindle speed	3,600min ⁻¹			
Spindle speed range	Stepless			
Number of milling stations	12			
Holder type and Tool size	Straight	φ2mm - φ20mm		
	Cross	φ2mm - φ20mm		

■ Drive motor

L-spindle	15/11kW	Standard	op.	op.	op.
	18.5/15kW	op.	op.	op.	op.
	22/18.5kW	op.	op.	op.	op.
R-spindle	15/11kW	Standard	-	-	op.
	18.5/15kW	op.	-	-	op.
Milling (op.)	5.5/3.7kW				

■ General

Machine size	Height	2,276mm		
	Width	4,230mm	4,275mm	4,345mm
	Depth	2,487mm		
Machine weight (incl. control)		14,000kg		

● Precautions on the use of cutting fluids and lubricating oils

Some types of cutting fluids (coolant) are harmful to machine components, causing damages such as peeling of paint, cracking of resin, expanding of rubber, corrosion and rust build up on aluminum and copper. To avoid causing damage to the machine, never use synthetic coolants, or any coolants containing chlorine. In addition, never use coolants and lubricating oils which contain organic solvents such as butane, pentane, hexane and octane.

Machine warranty terms are void for any claims or damage arising from the use of inappropriate cutting fluids or lubricating oils.

* This catalog was published in February 2024. Specifications, illustrations and data given herein are subject to change without notice.

* The products in this catalog are controlled by Japan's "Foreign Exchange and Foreign Trade Law". The export of the products is subject to an export license to be issued by the Japanese government.