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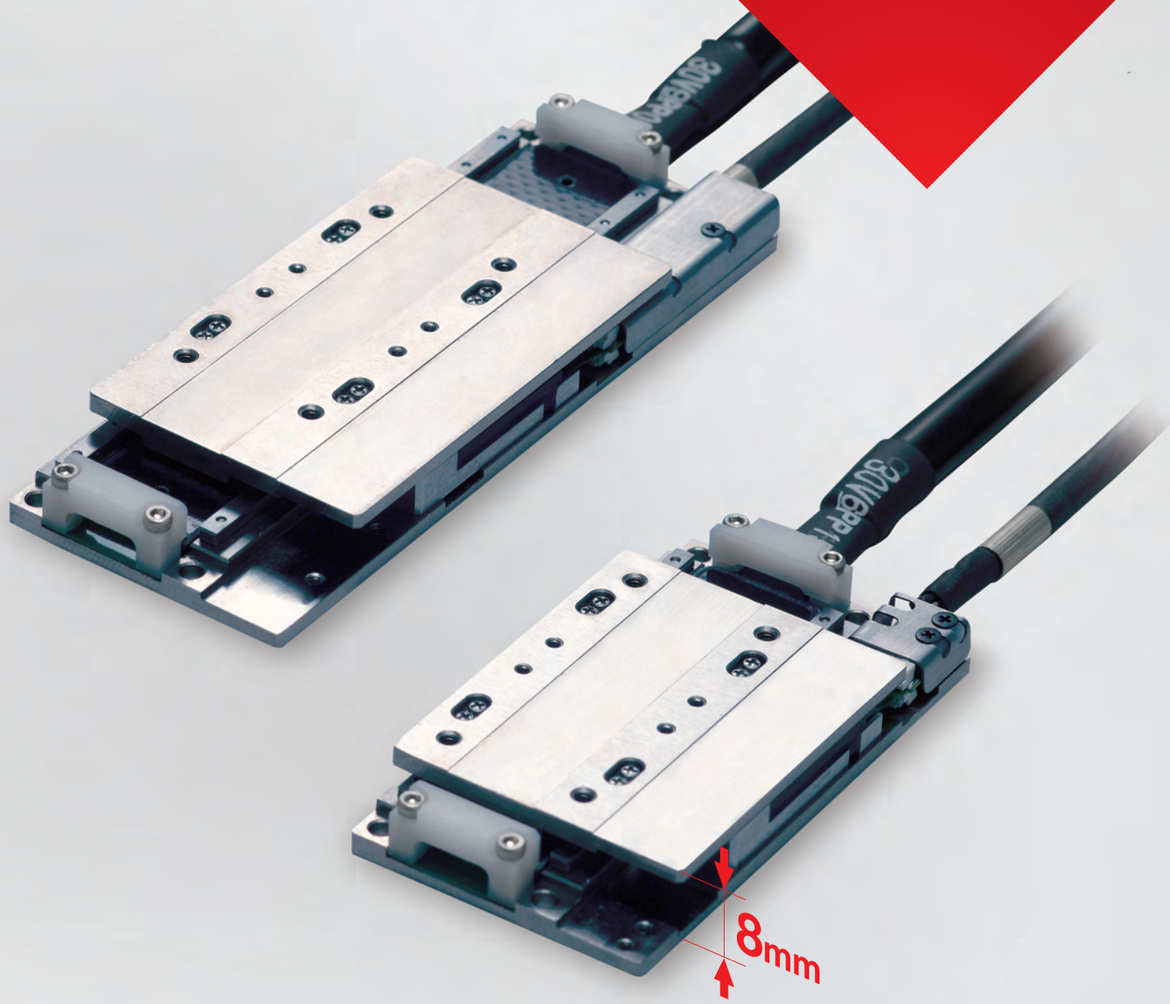
IKO

New

Nano Linear NT

NT30V

The smallest size available in the lightweight and compact Nano Linear series!

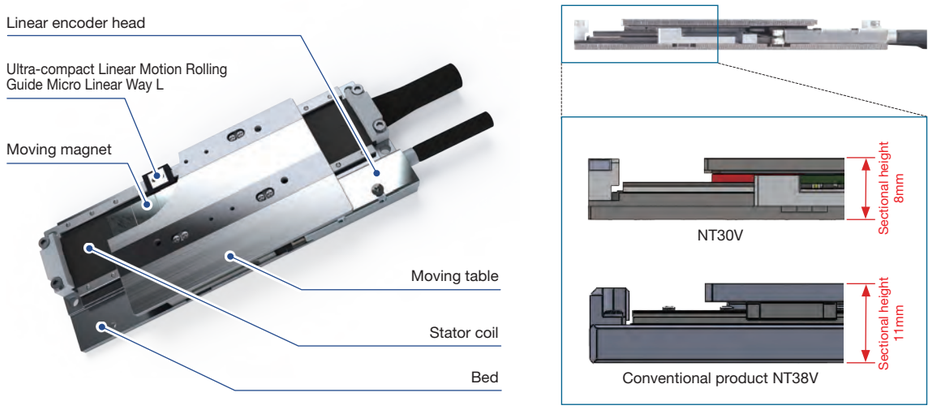


NIPPON THOMPSON CO., LTD.

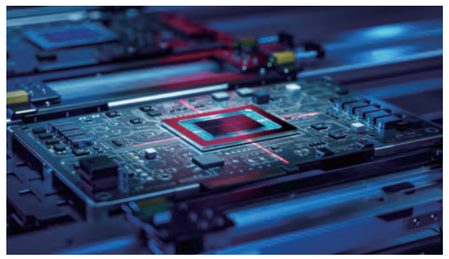
Introducing the smallest size in the lightweight/ low profile NT···V series!
Cutting-edge linear motor technology for increased performance in testing and inspection equipment as well as semiconductor manufacturing equipment.

Structure and Characteristics of NT30V

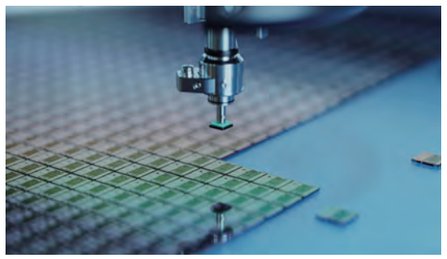
NT···V is a compact, high-accuracy Linear Motor Table using a linear motion rolling guide in its guiding parts.
The newly developed NT30V is the smallest size in the series with a table width of 30mm and a sectional height of only 8mm, thanks to a thorough revision of its components, including the use of our unique ultra-compact linear motion rolling guide.
NT30V has the same maximum thrust as the NT38V, previously the smallest model in the series, with a dramatic reduction in sectional height.
This structure enables an even lower-profile conveyor mechanism with multiple units in place.
NT30V reduces equipment size while providing takt time improvement.



● Suitable for semiconductor manufacturing equipment and high-accuracy inspection equipment



Moving multiple components to their fixed positions at high speed and with high accuracy requires high thrust conveying equipment with excellent positioning accuracy. Because NT30V combines excellent positioning accuracy, low sectional height, and high thrust, it can be installed in narrow spaces or as multiple units where conventional Linear Motor Tables could not be used.

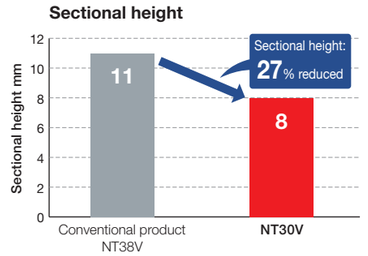


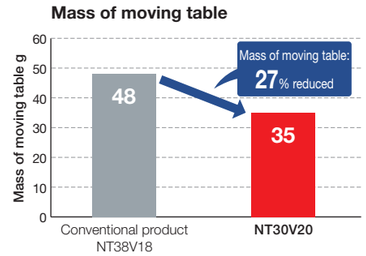
As an extremely lightweight and compact Linear Motor Table, NT30V can reduce the size and save energy in the equipment where it is installed.

Features of NT30V

1 The lowest sectional height in the series

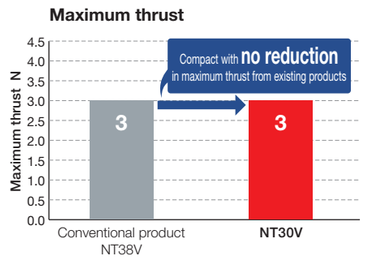
Sectional height of 8mm and table width of 30mm are both the lowest in the NT···V series.
Since it is compact and lightweight, it can be installed in narrow spaces or as multiple units.

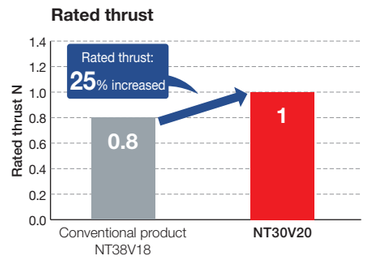




2 High thrust

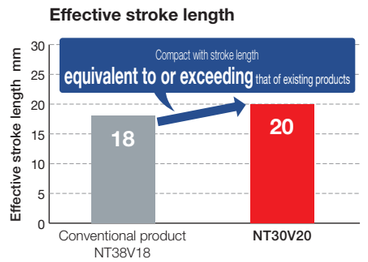
Even though it is compact, NT30V maintains the rated thrust and maximum thrust equivalent to or exceeding NT38V, previously the smallest size in the series.





3 Long stroke

While maintaining its compact size, the stroke has been increased by 2mm from the previous smallest size, thanks to an optimized design.



Identification Number/Specifications

Example NT 30 V 20 / 1 R 1

(1) (2) (3) (4) (5) (6)

(1) Model code

Model code	
NT···V	Nano Linear NT···V

(2) Size

Size	
30	Width 30mm

(3) Stroke length

Stroke length	
8	8mm
20	20mm

(4) Resolution of linear encoder

Resolution	
1	0.1μm
5	0.5μm

(5) Cord direction*

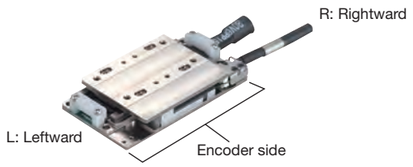
Pullout direction	
L	Leftward
R	Rightward

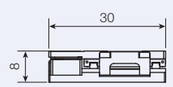
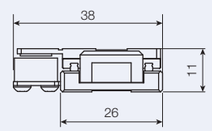
* Direction in which the cord is pulled out when the encoder side is at the front. For details, see Cord Direction below (ex.: Rightward).

(6) Specification number*

Specification number
1

* The specification number is limited to 1.

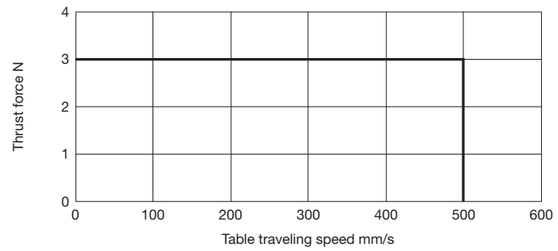


	NT30V NEW		NT38V (Conventional)	
	NT30V8	NT30V20	NT38V10	NT38V18
Appearance				
Sectional shape				
Maximum thrust (1) N	3			
Rated thrust (2) N	0.7	1	0.6	0.8
Maximum load mass kg	0.5			
Effective stroke length mm	8	20	10	18
Resolution μm	0.1 / 0.5	0.1 / 0.5	0.1 / 0.5	0.1 / 0.5
Maximum speed (3) mm/s	270 / 500	270 / 500	270 / 500	270 / 500
Positioning repeatability (4) μm	±0.5			
Mass of moving table kg	0.025	0.035	0.036	0.048
Total mass (5) kg	0.170	0.190	0.190	0.230
Operation guaranteed main body temperature °C	0 to 55			
Ambient temperature and humidity in operation	0 to 40°C/20 to 80% RH (keep condensation free)			

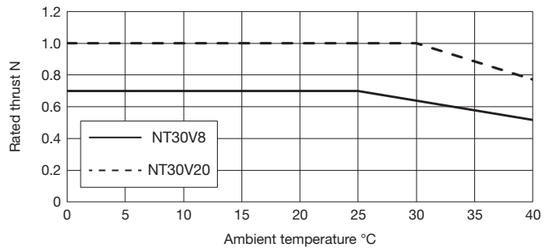
Notes (1) The duration of maximum thrust is up to 1 second.
(2) This is based on the case of mounting on a metal mating member material with ambient temperature of 20°C and product temperature of 20°C as cooling conditions.
(3) This maximum speed may not be reached depending on the maximum output frequency of the controller used, and the driver type or settings.
(4) When the temperature of the product is constant.
(5) Mass of the cord is not included.

Thrust characteristics

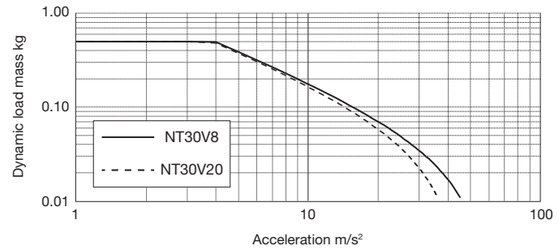
Thrust characteristics of NT30V

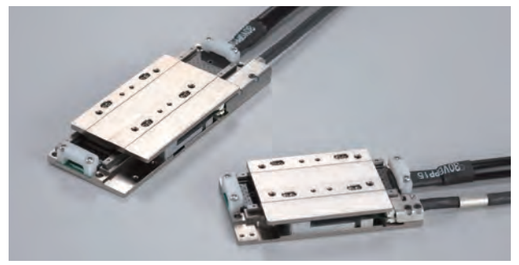


Rated thrust characteristics of NT30V



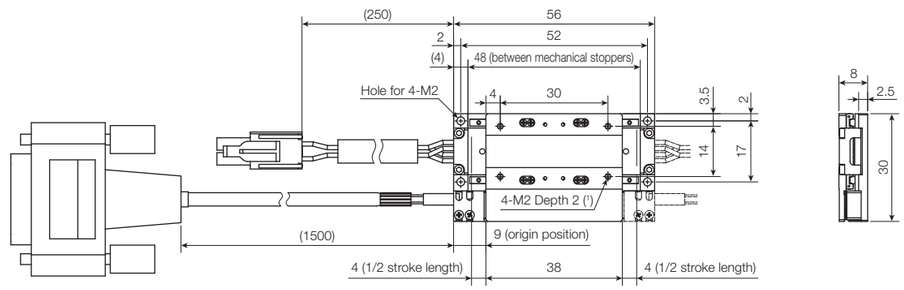
Dynamic load mass of NT30V



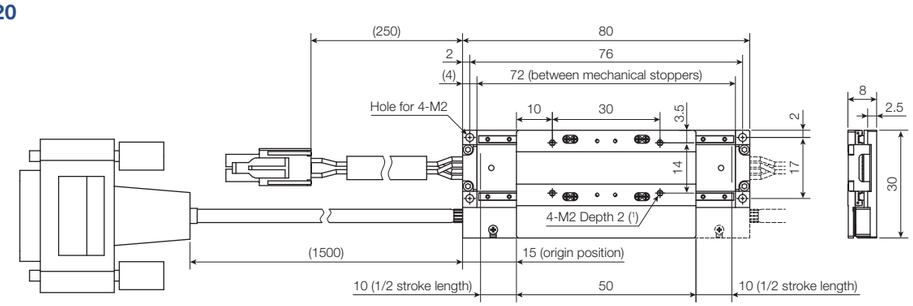


Product Dimensions

NT30V8



NT30V20



Note (1) Inserting mounting screws too deeply may affect the running performance of the moving table. Never insert a screw longer than the depth of the through hole.

System Configuration

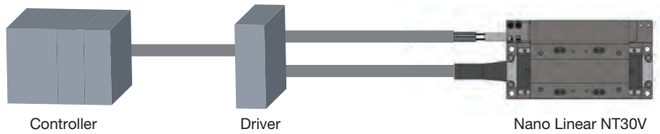
The Panasonic Corporation MVDL driver is available for Nano Linear NT30V; it supports pulse train specifications as well as the EtherCAT and RTEX motion networks. For driver types and system configurations, see pages 5 and 6. Drivers other than the above can also be used.
If needed, please contact IKO.

● Setup software

To operate Nano Linear NT30V, initial setting of driver parameters is required. The driver parameter setting is performed using the setup software. The setup software and PC connection cable are not provided with the driver. Use with multiple drivers is possible, but at least one set is required. Please obtain these on your own or place an order separately according to your requirements.

● Motion networks

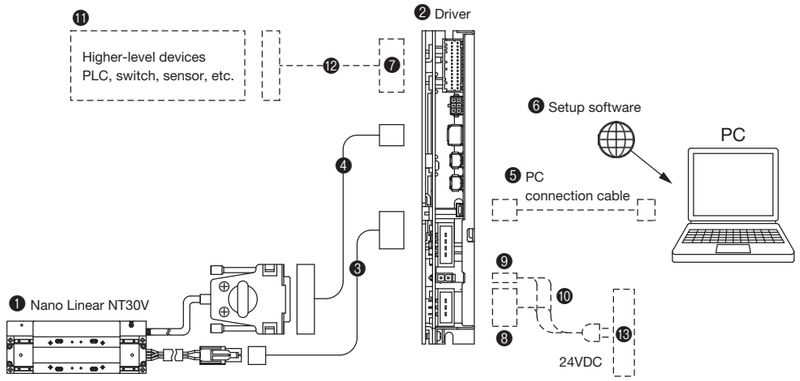
The Nano Linear NT30V MVDL driver supports various motion networks. Motion networks realize higher performance and higher accuracy free from pulse frequency constraint in pulse train command, noise effects in analog command (voltage command), voltage drop due to cable length, and the effects of temperature drifting. Reduction of wiring can also be achieved, so a synchronized system with more than one table can easily be established.



EtherCAT®

RTEX Realtime Express

Model	Features
EtherCAT	This is an Ethernet-based open network communication system developed by Beckhoff of Germany, allowing real time control. High speed communication and high accuracy inter-node synchronization provide higher performance and higher accuracy of devices. In addition, Ethernet cables available on the market can be used and various wiring types can be supported.
RTEX	RTEX (Realtime Express) is an advanced network developed independently by Panasonic Corporation, in order to deliver the high real time performance required for servos. It offers extremely high-speed communication (100Mbps), and supports commercially available LAN cables to help reduce system costs.

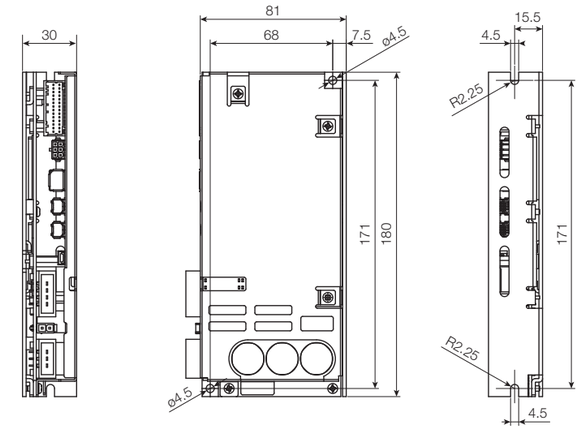


No.	Name	Identification number	
❷	Driver	MVDLN2CSM	Pulse train
		MVDLN2CNL	RTEX
		MVDLN2CBL	EtherCAT
❸	Motor extension cord	TAE20X5-AM03	
❹	Encoder extension cord	TAE20W9-EC02	
❺	PC connection cable	USB mini B cable (this must be provided by the customer).	
❻	Setup software	Download PANATERM from the Panasonic Corporation website.	
❼	Connectors for input/output signal	TE Connectivity Japan G.K. 1-1827863-4 (housing) and 1827587-2 (contact) (this must be provided by the customer).	
❽	Power supply connector (XA-1)	JST Mfg. Co., Ltd. F31FSS-03V-KX (housing) and SF3F-41GF-P2.0 (contact) (this must be provided by the customer).	
❾	Power supply connector (XA-2)	Molex Japan Co., Ltd. 5557-02R-210 (housing) and 5556-PBGSPL (contact) (this must be provided by the customer).	
❿	Power cord	This must be provided by the customer.	
⓫	Higher-level device		
⓬	Higher-level device connection cord		
⓭	24VDC power supply		

Driver for NT30V

● MVDL specifications

- Low-floor, slim design 30mm thin. Contributes to keeping equipment more compact and saving space.
- Equipment optimal high-speed response control is possible through high-speed response performance, load fluctuation control, and vibration control function.



Item		Identification number	MVDLN2CSM	MVDLN2CNL	MVDLN2CBL
Basic specification	Input power supply (1) (2)		24VDC (+21, -17%)		
	Maximum output current		4 Arms		
	Control mode		· Position control · Speed control (built-in commands/ analog commands) · Thrust force control · Position/speed control · Position/thrust force control Switching with parameters	· Position control/Protocol control (PP) · Position control/Cyclic control (CP) · Speed control/Cyclic control (CV) · Thrust force control/Cyclic control (CT) Switching with RTEX communication commands	· Position control/Protocol control (pp) · Position control/Cyclic control (scp) · Position control/Return to origin position control (hm) · Speed control/Protocol control (pv) · Speed control/Cyclic control (scv) · Thrust force control/Protocol control (tq) · Thrust force control/Cyclic control (cst) Switching with EtherCat communication commands
Input/Output relation function	Operation commands		Pulse train input Line driver: 500kpps (after 4-time multiplication) Open collector: 200kpps (after 4-time multiplication) Analog input 0 to ±10V (1 input 16-bit A/D)	Realtime Express (RTEX)	EtherCAT
	Contact input/output	Input	Universal 5 inputs (function selected with parameters) 12 to 24VDC ±5% Open collector signal input	Universal 8 inputs (function selected with parameters) 12 to 24VDC ±5% Open collector signal input	
		Output	Universal 3 outputs (function selected with parameters) 12 to 24VDC ±5% Open collector signal output	Universal 2 outputs (function selected with parameters) Alarm 1 output 12 to 24VDC ±5% Open collector signal output	
	Analog monitor output		1 output ±10V (function selected with parameters)	-	
Internal function	Communication function		USB : Parameter setting, status monitor RS232C : Higher-level controller 1:1 communication RS485 : Higher-level controller 1:N communication Modbus : Higher-level controller 1:N communication	USB : Parameter setting, status monitor RTEX : Parameter setting, status monitor	USB : Parameter setting, status monitor EtherCAT : Parameter setting, status monitor
	Dynamic brake circuit		Built-in		
	Regenerative processing circuit		Not supported		
	Safety terminal		Not supported		
Operating environment	Ambient temperature in operation / Storage temperature (3)		0 to 50°C (no condensation) / -20 to 65°C (maximum temperature guarantee: 80°C, 72 hours, no condensation)		
	Operating/storage humidity (3)		20 to 85% RH or lower (no condensation)		
	Vibration resistance		5.8m/s^2 or less, 10 to 60Hz		
	Altitude		1000m or less		
	Pollution degree		Pollution degree 2		
Mass			0.35 kg		

Notes (1) For DC power supply, use a stabilized power supply with reinforced insulation. Also, pay attention to the DC power supply voltage fluctuation, load fluctuation, regeneration, etc. to keep it within the input power supply range.
(2) The input power voltage range is the range within which the servo amp can functionally drive the motor. Note that depending on the motor specifications, if the voltage falls below the rated voltage nominal value (24V), the overload protection function may activate even if the speed and torque are within rated ranges.
(3) Note that condensation is more likely if the temperature falls.