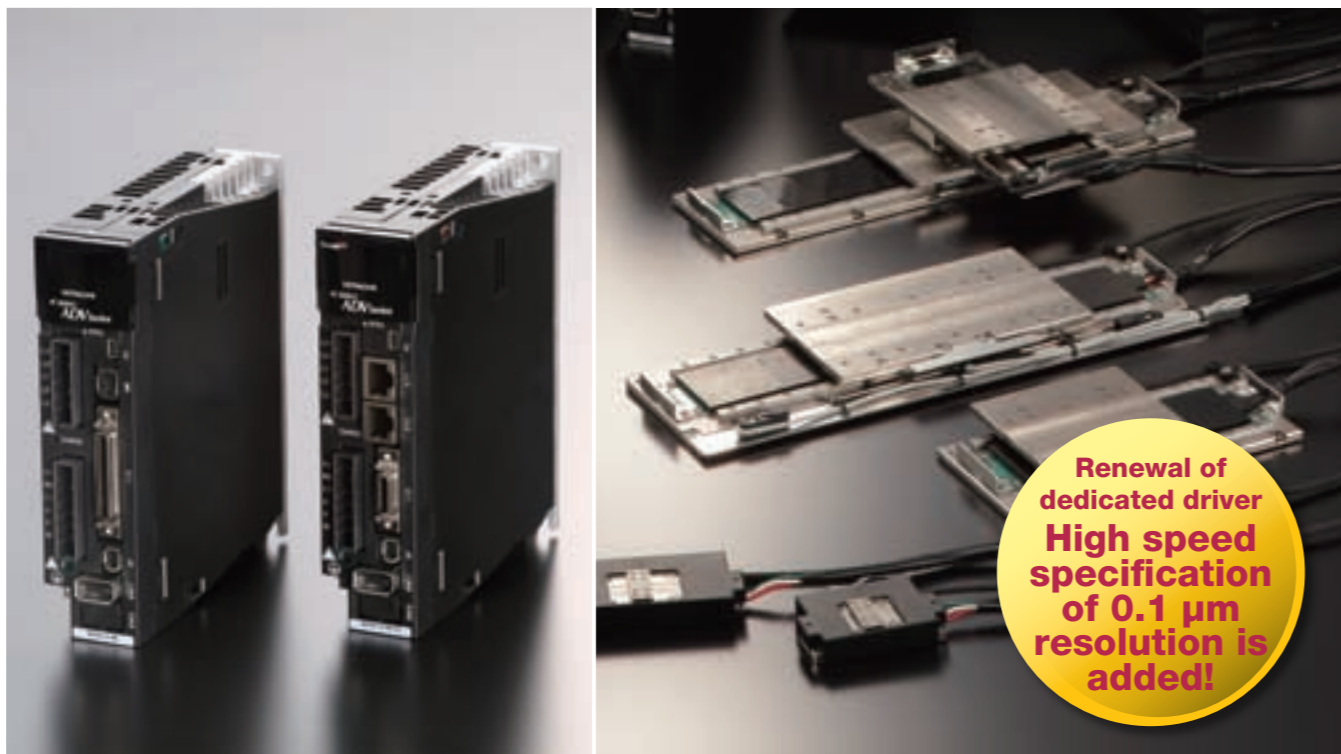


# Nano Linear NT...V Driver ADVA



**Renewal of dedicated driver  
High speed specification  
of 0.1 μm resolution is added!**

Nano Linear NT is a moving magnet type linear motor table with extremely low sectional height. Combination with the renewed dedicated driver ADVA shortens the positioning time. In addition, 1000 mm/s high speed operation is made possible even with 0.1 μm resolution. Automatic tuning function is added and the motion network EtherCAT that realizes high speed communication and high accuracy inter-node synchronization is supported.

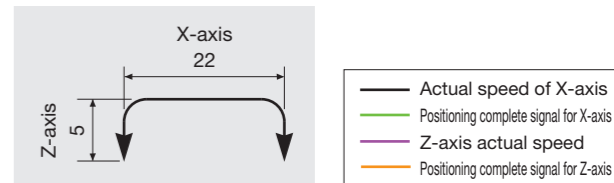
## ADVA Basic Specification (target model number: NT55V, NT80V, NT80XZ, and NT90XZH)

Item	Model	ADVA-01NL (ADVA-01NLEC)	ADVA-R5ML (ADVA-R5MLEC)
Basic specification	Input power	Single-phase / Three-phase AC200 ~ 230 V, -15% ~ +10% 50 / 60 Hz ±5%	Single-phase AC100 ~ 115 V, -15% ~ +10% 50 / 60 Hz ±5%
	Rated current / momentary current	1.2 Arms / 3.6 Arms	1.2 Arms / 3.6 Arms
	Power plant capacity	0.3kVA	0.3kVA
	Protective structure	Open type IP00	
Input & output relation function	Control mode	Position control / Speed control / Thrust force control	
	Speed command	Analog input: 0 ~ ±10 V / Maximum speed (gain configurable) or EtherCAT	
	Thrust force command	Analog input: 0 ~ ±10 V / Highest thrust force (gain configurable) or EtherCAT	
	Position command	Line driver signal: 20 Mpps (non-isolated input) or EtherCAT 2 Mpps (insulated input)	
Operating environment	Contact input / output	[Input] Intelligent terminal selects 10 input terminal (6 input terminal for EtherCAT specification) function by parameter DC12 / 24 V Contact signal / Open collector signal input (with internal DC24 V power supply) [Output] Intelligent terminal selects 6 output terminal (4 output terminal for EtherCAT specification) function by parameter (Open collector signal output: sink output)	
	Ambient temperature in operation / Storage temperature	0 ~ 55°C / -10 ~ 70°C	
Operating environment	Operating humidity	20 ~ 90% RH (keep dewdrop free)	
	Vibration resistance	5.9 m/s <sup>2</sup> (0.6 G) 10 ~ 55 Hz	
	Service space	Altitude of 1000 m or below, indoor (no corrosive gas and dust)	
Mass	0.7 kg		

## Features

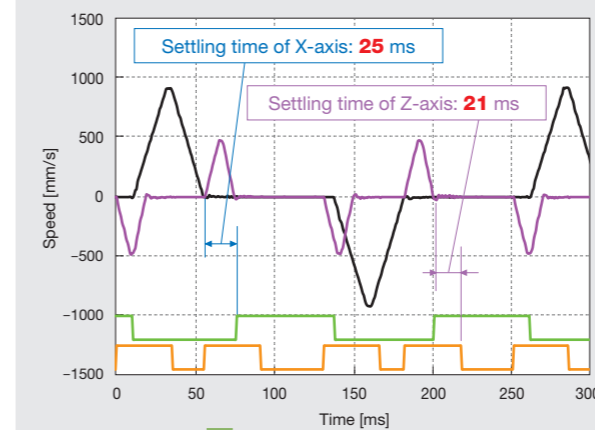
### 1 Settling time is reduced! It contributes to further improvement of productivity.

**Operation example** Model: NT90XZH2510/5 (resolution 0.5 μm)  
Operation: pick and place  
Condition: pick and place time: 20 ms  
Carrying mass: 150 g  
Positioning complete width: ±5 μm  
Stroke: X-axis; 22 mm, Z-axis; 5 mm



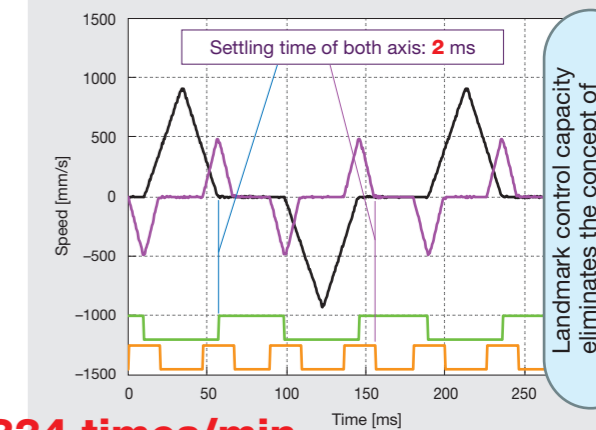
#### ADAX (oil driver)

	X-axis	Z-axis
Maximum speed	920mm/s	486mm/s
Acceleration / deceleration time	21ms	8ms
Effective thrust force	13.4N	15.4N



#### ADVA **NEW**

	X-axis	Z-axis
Maximum speed	912mm/s	488mm/s
Acceleration / deceleration time	24ms	9ms
Effective thrust force	14.8N	15.7N



Landmark control capacity eliminates the concept of settling time.

As the settling time is extremely short, energy can be saved assuming the same cycle time.

240 times/min

334 times/min

Number of cycles

**Improvement of production efficiency by 39%**

#### ADVA **NEW** Effective thrust force reduction by 54%!

	X-axis	Z-axis
Maximum speed	650mm/s	250mm/s
Acceleration / deceleration time	26ms	15ms
Effective thrust force	7.9N	5.4N

Relative to the old driver's effective thrust force of 28.8 N (sum of X and Z axes), ADVA's effective thrust force is 13.3 N (sum of X and Z axes), demonstrating 54% energy-savings.

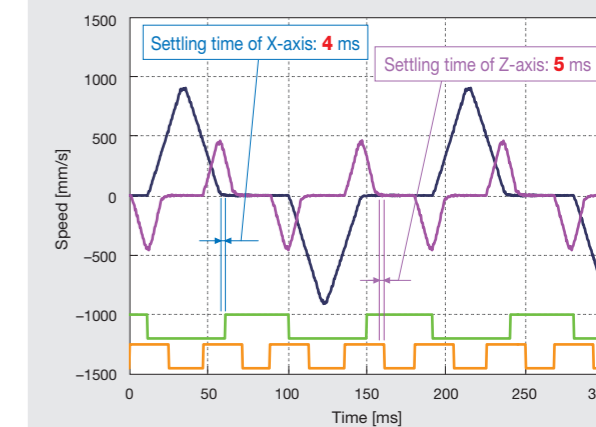
### 2 High speed specification of 0.1 μm resolution is added!

Higher accuracy is realized with the same tact.

Model: NT90XZH2510/1F (resolution 0.1 μm)  
Condition: Pick and place time: 20 ms  
Positioning complete width: ±2 μm

#### ADVA **NEW**

	X-axis	Z-axis
Maximum speed	902mm/s	462mm/s
Acceleration / deceleration time	24ms	13ms
Effective thrust force	14.8N	15.7N
Number of cycles	334 times/min	



Model and size

Example of an identification number for NT...V

NT 55 V 25 / 5 L SC 1

1 Model	
NT...V	
2 Size	
38	Width 38 mm
55	Width 55 mm
80	Width 80 mm
3 Stroke	
10	10 mm (applicable to NT38V)
18	18 mm (applicable to NT38V)
25	25 mm (applicable to NT55V and NT80V)
65	65 mm (applicable to NT55V and NT80V)
120	120 mm (applicable to NT80V)
4 Resolution of linear encoder	
1	0.1 μm
1F	0.1 μm; high speed specification (Applicable to NT55V and NT80V) <b>NEW</b>
5	0.5 μm

5 Cover	
No symbol	Without cover
D	With cover (applicable to NT38V)
6 Cord direction	
L	Leftward
R	Rightward
Select from the cord direction indicated in Fig. 1. (direction for pulling out a cord when placing an encoder on the lower side)	
7 Designation of sensor	
No symbol	Without sensor
SC	Sensor (limit and pre-origin), With sensor bracket (applicable to NT55V and NT80V)
Two types of dedicated drivers, ADVA and MR-J3-10B, are available for Nano Linear NT55V and NT80V. If MR-J3-10B is used, SC must be selected.	
8 Specification number	
1	Specification number 1 (specification number is 1 only.)

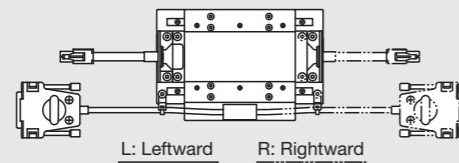


Fig. 1 NT...V cord direction

Example of an identification number for NT...XZ and NT...XZH

NT 90 XZH 25 10 / 5 CA

1 Model	
NT...XZ	Nano Linear NT...XZ
NT...XZH	Nano Linear NT...XZH
2 Size	
80	Z-axis width of 80 mm (applicable to NT...XZ)
90	Z-axis width of 90 mm (applicable to NT...XZH)
3 X-axis stroke length	
25	25 mm (applicable to NT...XZH)
45	45 mm (applicable to NT...XZ)

4 Z-axis stroke length	
10	10mm
5 Resolution of linear encoder	
1	0.1 μm
1F	0.1 μm; high speed specification <b>NEW</b>
5	0.5 μm
* When 1F is selected, combination with dedicated driver ADVA is necessary.	
6 Cooling type	
No symbol	Natural air cooling
CA	Air cooling (NT...XZH)

System configuration

The dedicated driver ADVA is applicable to NT...V (excluding NT38V), NT...XZ and NT...XZH, and 2 types of command are available: pulse train command and high-speed network EtherCAT command.

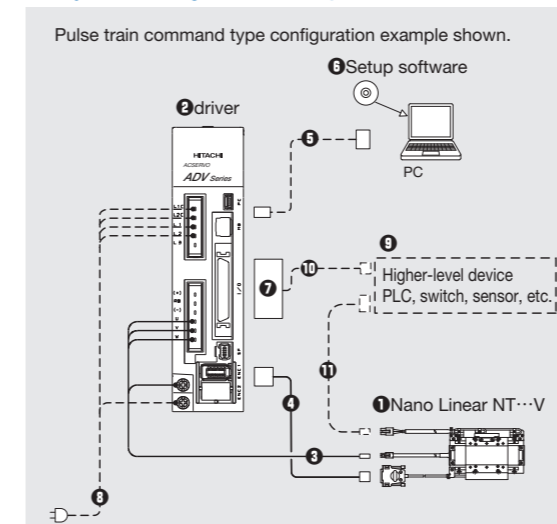
Identification number for ADVA

ADVA - 01NL EC / NT55V25

1 Model	
ADVA	
2 Current and voltage	
01NL	Single-phase / Three-phase 200 V
R5ML	Single-phase 100 V
3 Command type	
No symbol	Pulse train command
EC	EtherCAT

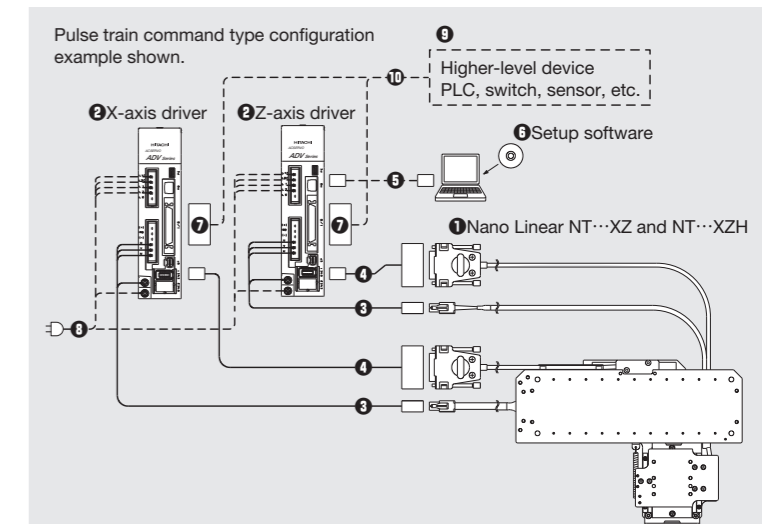
4 Applicable Nano Linear model	
NT55V25	NT55V25
NT55V65	NT55V65
NT80V25	NT80V25
NT80V65	NT80V65
NT80V120	NT80V120
NT80XZ-X	NT80XZ X-axis
NT80XZ-Z	NT80XZ Z-axis
NT90XZH	For both NT90XZH X-axis and Z-axis

System configuration example for NT55V and NT80V



No.	Name	Model and size
1	Nano Linear NT...V	NT55V25
2	driver	ADVA-01NL/NT55V25
3	Motor relay cord	TAE20V3-AM03
4	Encoder relay cord	TAE20V4-EC02
5	PC connection cable	USB mini B cable This must be prepared by customer.
6	Setup software	ProDriveNext To be provided on Web site.
7	I/O connector	TAE20R5-CN
8	Power cord	This must be prepared by customer.
9	Higher-level device	
10	I/O connector connection cable	
11	Sensor relay cord	

System configuration example for NT80XZ and NT90XZH



No.	Name	Model and size
1	Nano Linear NT...XZ	NT80XZ4510
2	driver	ADVA-01NL/NT80XZ-X ADVA-01NL/NT80XZ-Z
3	Motor relay cord	TAE20V3-AM03
4	Encoder relay cord	TAE20V4-EC02
5	PC connection cable	USB mini B cable This must be prepared by customer.
6	Setup software	ProDriveNext To be provided on Web site.
7	I/O connector	TAE20R5-CN
8	Power cord	This must be prepared by customer.
9	Higher-level device	
10	I/O connector connection cable	

EtherCAT

EtherCAT is Ethernet-based network and Ethernet cable available on the market can be used. Therefore, cable standardization and simplification are possible and cost of startup processes and wiring can be reduced.

\* EtherCAT™ is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.\*