



Minimize workpiece waste due to defects.

Single-axis automatic screw driving machines FM513VZR

FEEDMAT® Ultra-low thrust model

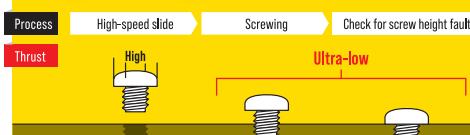
Mechanism **Self-weight cancellation function**

Calculate and offset the weight of the screwdriver bit lift mechanism



Ultra-low thrust

The thrust force during screw tightening
reduced by approx. **70%***
by self-weight cancellation function



* Compared to the conventional mode. * Thrust is set at the tip of the bit.

* The maximum thrust is as same as that of the conventional model.

Minimizing the load on the workpiece and
reducing screw-tightening defects

Reducing defects previously difficult to prevent



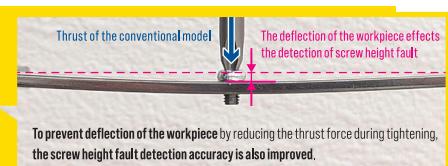
Prevent
seizing



Prevent
diagonal
tightening



Reduce
the load on
the workpiece



⊕ Easy thrust setting

Set thrust (N) directly, regardless of
the installed driver or tightening direction

Advanced thrust control

Max speed approx. **40%***
&
Control processing speed **UP**

* Compared to the conventional model.

Shortening cycle time

Time of **Start** ▶ **Screwing** ▶ **Return**

Tightening stroke 100mm

Approx. 2.7s

Approx. 2.3s

Shortening by
approx. 0.4s*

Tightening stroke 400mm

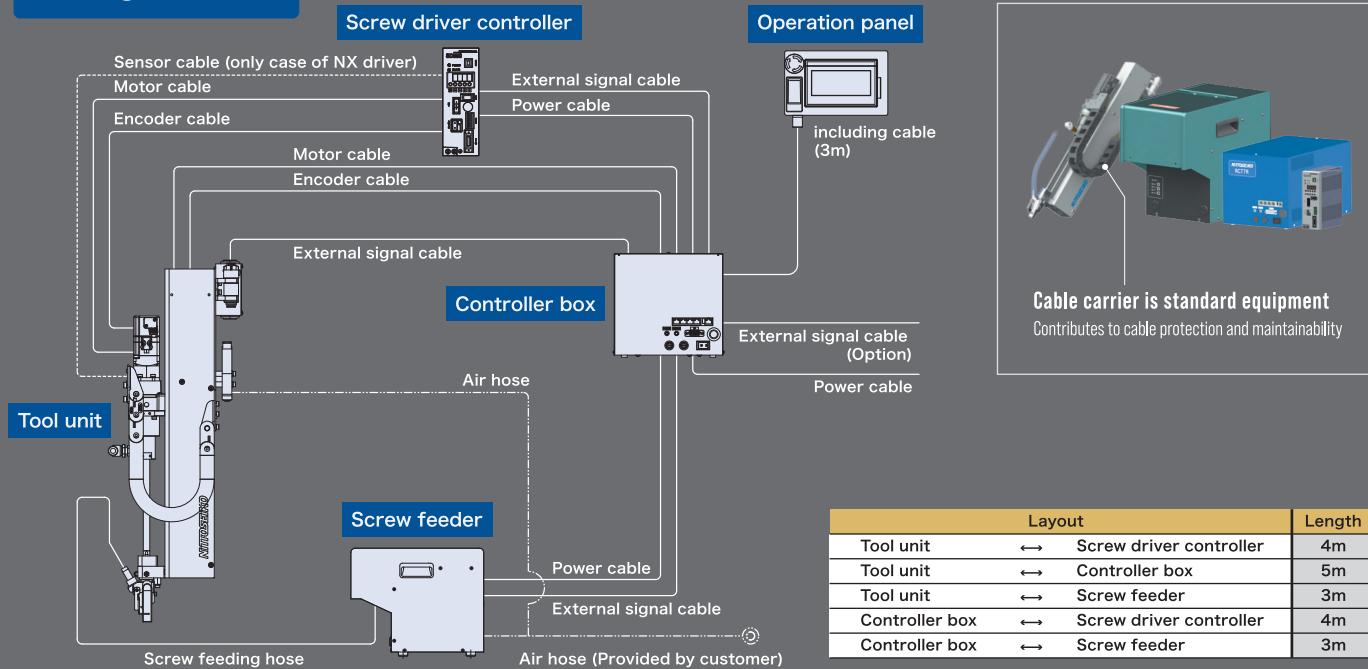
Approx. 3.7s

Approx. 3.0s

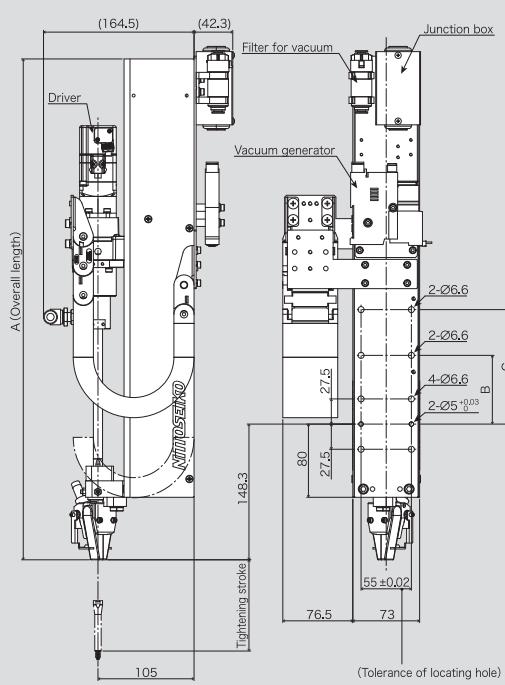
Shortening by
approx. 0.7s*

* Compared to the conventional model. * Screw feed time is not included. * Cycle time depends on

Configurations



Outside dimensions of screw tightening unit



Tightening stroke	A (Overall length)	B	C
50st	498	-	-
100st	548	-	-
150st	598	-	-
200st	648	150	-
250st	698	150	-
300st	748	150	250
350st	798	150	250
400st	848	150	250

Specifications

Model		FM513VZR
Screw holding system		Vacuum type screw guide
Slide drive type		Servo motor
Max speed		830mm/s
Thrust control setting range		13~150N
Tightening torque ¹⁾		0.15~3.8N·m
Driver		KX driver/NX driver
Tightening stroke		50, 100, 150 [200, 250, 300, 350, 400]mm
Applicable screws ^{2) 3)}	Category	Machine screw, Tapping screw, etc.
	Nom dia.	2~5mm
	Head Dia.	Φ10.5mm
Length		18mm
		Torque failure (Thread stripping)
		Error detection
Screw shortage in screw feeder		
Screw height fault (Z-axis encoder pulse) ⁴⁾		
Working air supply		0.4~0.5MPa
Power supply		Single phase 200~230VAC 50/60Hz
Tool unit weight ⁵⁾		Approx. 6.5kg (Main unit: Approx. 5.9kg, Air equipment/relay box: Approx. 0.6kg)
Screw feeder		FF311DR/FF503H

¹⁾: The type of driver varies depending on target torque.

²⁾: Products will be built up based on specification of screws, therefore it can be used for one kind of screw only.

³⁾: Application range of screws will be changed by type of screw head, or size. Please contact us to make sure for it.

⁴⁾: It can be detected more than 2mm the faulty screw height.

And also another high accuracy type of sensor is available to mount in option.

⁵⁾: It's a mass (weight) when the stroke is 100mm, and the weight of the feeder and controller is not included.

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