Toyo Seiki Seisaku-sho, Ltd. 5-15-4, Takinogawa, Kita-ku, Tokyo 114-8557, Japan

No.210 Strograph
Model E3

Single column, table-top universal testing machine, up to 1kN

E3-S **E3-L**

Operation panel

■APPLICATION

The **Strograph E3** series are the most cost effective single column tabletop universal testing machines designed for testing tensile, bend/flexure, compression, peel, friction etc. of various materials, ranging up to 1kN.

■SPECIFICATIONS

Model	E3-S	E3-L
Load cell capacity	Max. 1kN *Note: 1 set of load cell is provided as standard feature* *Selectable capacity: 5N, 50N, 100N, 500N, 1kN*	
Force accuracy	Within ±1% of indicated value *(In the range 1/1 to 1/500 of load cell related capacity)* Conforms to ISO 7500-1 (JIS B 7721) Class 1	
Force magnification	Range-less (x1 to x100 equivalent)	
Crosshead speed range	0.05 to 1500mm/min., 22 steps 0.05, 0.5, 1, 1.5, 2, 2.5, 3, 5, 10, 15, 20, 25, 30, 50, 100, 150, 200, 250, 300, 500, 1000, 1500mm/min.)	
Crosshead speed accuracy	±0.5% (0.5 to 1000mm/min.)	
Crosshead return speed	50 to 1500mm/min.	
Crosshead travel distance	490mm	990mm
Effective stroke (Using J-3 chuck)	330mm	830mm
Interface	RS-232C	
Power requirement	Single-phase, AC100 to 115V or AC200 to 230V, 50Hz or 60Hz, 0.3kVA	
Dimensions	W435 x D460 x H900mm	W435 x D460 x H1400mm
Weight	Approx. 47kg	Approx. 62kg

■OPTIONS

Load cell

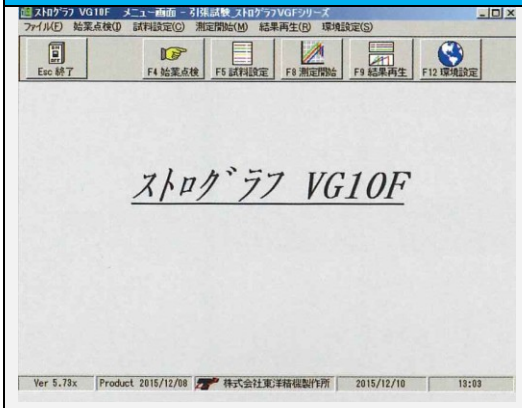
Model	Capacity	Female screw	Universal joint	Pin
RCT-5N-EA	5N	Hook	Direct connection	---
RCT-50N-EA	50N	M12P1.5	UV-200N	Ø3
RCT-500N-EA	500N		UV-1kN	Ø4
RCT-1000N-EA	1kN			

Universal joint

Data processing software (English language version)

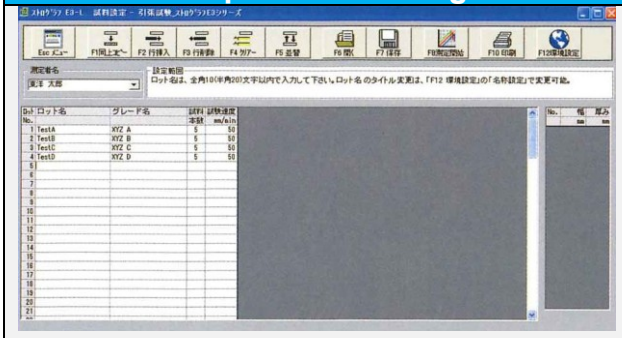
Note: Examples are Japanese language version. However functions are the same.

Menu



Measurement condition setting

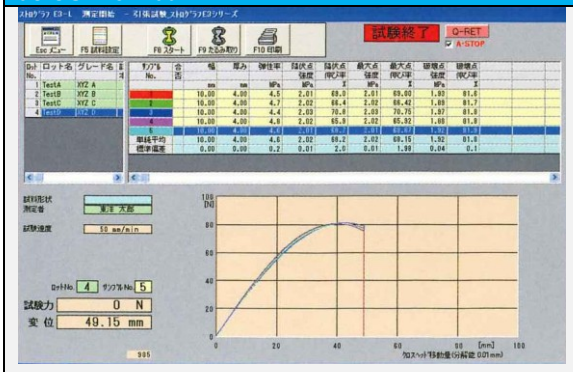
Specimen setting



Processing item setting

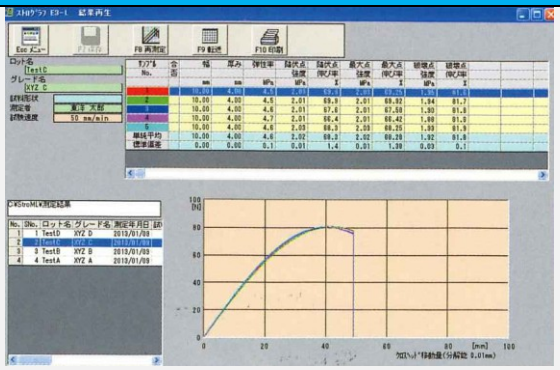
Measurement

During measurement, overwrite the displacement/ load graph. Measurement results can transfer to spread sheet as CSV format.



Results reproduction

Possible to elastic modulus recalculation, redesignation of processing item.



Features

- In measuring, measured values of load and stroke between chucks are displayed on computer's display during measurement.
- Up to 20 tests of 1 lot can be plotted together on same display.
- Maximum 50 samples of same testing conditions can be registered and continuously measured.
- Processing items are indicated on pattern, allowing you to see them at a glance.
- Detailed data processing is also possible by pressing the "Detailed Setting" button.
- Testing conditions can be registered and retrieved.
- By selecting kind of sample (plastic, rubber, etc.) and specifying standard sample, chuck span, distance between bench marks and standard sample dimensions are automatically set.

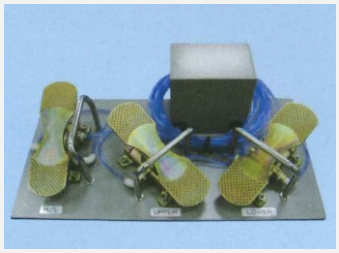
Data processing items

- Tensile test
- Tear test
- Compression test
- Bending test
- Peeling test

Mini thermal printer (S-PR1)

Printing system	Heat-sensitive serial dot system
Character configuration	7 x 5 dot matrix
Print paper	80mm x 20m

Pneumatic chuck control switch

Name	Model	
Switch box with Hi-Low pressure control (Standard)		
Air chuck drive unit (Air chuck switch) Possible to control from operation panel (Option)	VG-PSW	 
Foot switch with Hi-Low pressure control (Option)		

Hi-Low pressure control (Double action closure) of pneumatic chuck

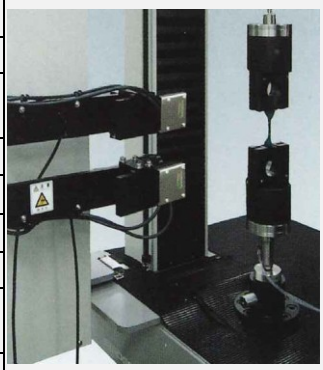
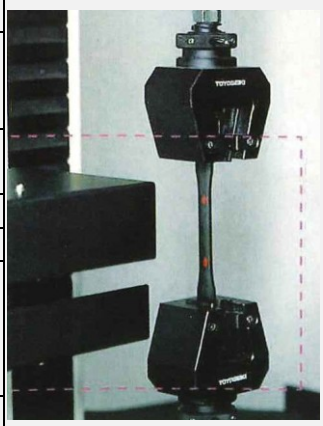
1. Step one

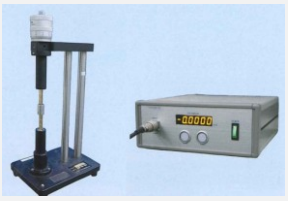
Close the chuck with "low" pressure to avoid finger injury of operator who holds the specimen.

2. Step two

Once specimen is installed, close the chuck with "high" pressure for the test.

Extensometer

Contact type	DE-C	Meas. principle	Pulse type encoder	
		Meas. range	Max. 1000mm	
		Gauge length	10, 20, 50, 100, 200, 500, 1000mm	
		Resolution	0.01mm	
		Accuracy	±0.2mm or 1% of reading, whichever greater	
		Power supply	Single-phase, AC100V, 0.3kVA (Others on request)	
		Dimensions	W180 x D150 x H1390mm	
Contact type (High resolution)	DE-CH	Meas. principle	Large elongation: Encoder with wire Fine elongation: Non-contact linear encoder	
		Gauge length	50mm	
		Resolution	Large elongation: 22.0µm Fine elongation: 0.4µm	
		Accuracy	Large elongation: ±1% Fine elongation: ±1µm	
		Power supply	Single-phase, AC100V, 0.5kVA (Others on request)	
		Dimensions	W300 x D250 x H1300mm	
Non-contact type (Optical)	DE-A	Meas. principle	CCD camera	
		Meas. range	Max. 450mm (No.3 Dumbbell)	
		Ink for marking	Main mark: Silver Mask mark: Black	
		Light source	LED	
		Gauge length	20, 25, 50mm	
		Resolution	0.1mm	
		Accuracy	N/A	
		Power supply	Single-phase, AC100V 0.2kVA (Others on request)	
		Dimensions	W250 x D250 x H1700mm	
Non-contact type (Laser)	DE-SP	Meas. principle	Laser (Marking is not required)	
		Applicable specimen	Plastics, Rubber etc. (Confirmation test is recommended)	
		Meas. range	Within effective stroke of Strograph main unit	
		Gauge length	20 to 75mm	
		Resolution	N/A	
		Accuracy	Large elongation: ±1% of reading Fine elongation: 1.0µm	
		Max. tensile speed	500mm/min.	
		Power supply	Single-phase, AC100V, 0.5kVA (Others on request)	
		Dimensions	N/A	

Strain gauge type Micro extensometer (For elastic modulus)	DE-ME	Meas. principle	Strain gauge	 Micro extensometer Model: DE-ME  Calibration device Mode: ME-CD
		Gauge length	50mm or 75mm (Selection)	
		Accuracy	±0.5% or 1μm whichever greater	
		Power supply	Single-phase, AC100 to 240V, 0.08kVA	
		Dimensions	W260 x D280 x H100mm	
		Net weight	Approx. 3.5kg	

Chucks (Grips)

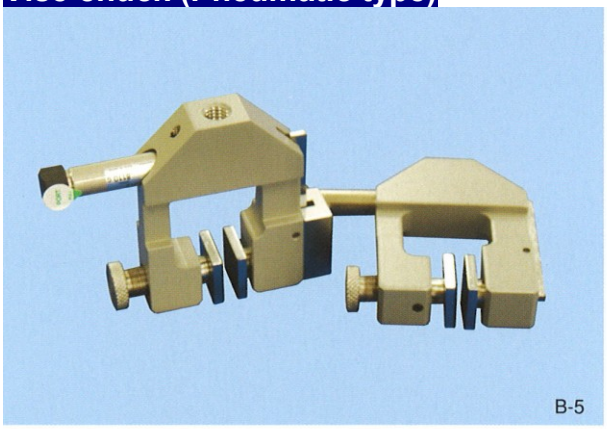
Application

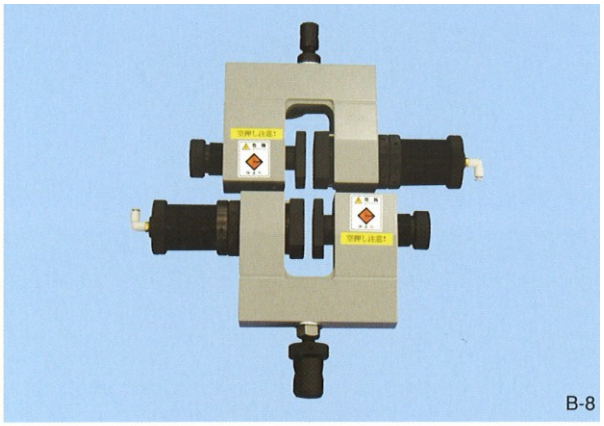
Vise chuck (Screw clamp)	50N to 1kN	Plastic sheet, Cloth, Paper etc.
Vise chuck (Pneumatic)	5N to 1kN	Plastic sheet, Plastic film, Rubber (dumbbell), Thread, Cloth, Paper etc.
Wedge chuck (Spring clamp)	300N to 1kN	Plastic sheet etc.
Wedge chuck (Fixed position)	200N to 1kN	Plastic sheet etc.
Dumbbell chuck	500N to 3kN	Rubber(dumbbell) etc.
Wide range box chuck	100N to 500N	Plastic film, Paper etc.
Eccentric chuck	1kN	Rubber(dumbbell) etc.
Box chuck	200N to 500N	Paper etc.
Cord chuck	300N to 1kN	Thread etc.

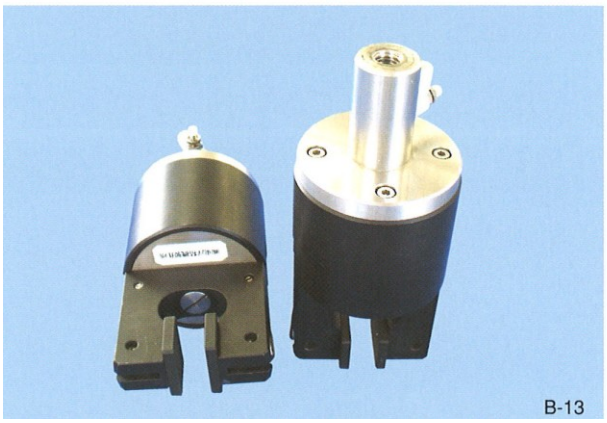
Vise chuck (Screw clamp type)

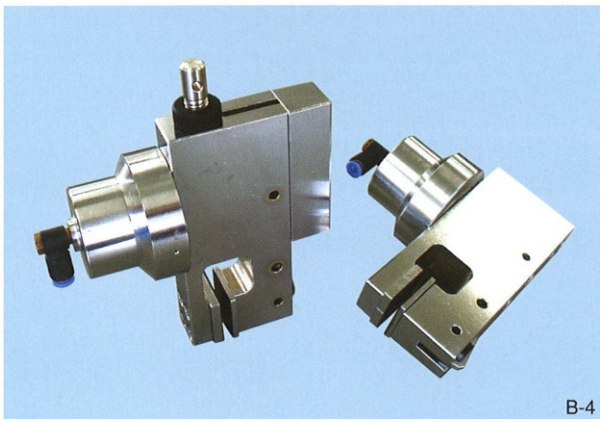
Model	Max load	W x H	Clearance	Surface
A-3	1kN	50 x 40mm	16mm	Filling or rubber sheet
A-4	200N	30 x 30mm	9mm	Filling or rubber sheet
A-5	100N	30 x 30mm	9mm	Filling or rubber sheet
A-6	50N	20 x 20mm	9mm	Filling or rubber sheet

Vise chuck (Pneumatic type)









Model	Max load	W x H	Clearance	Surface
B-3	1kN	50 x 40mm	8 + 8mm	Filling or rubber sheet
B-4	500N	25 x 25mm	3mm	Filling or rubber sheet
B-5	50N	20 x 20mm	2.5 + 2.5mm	Filling or rubber sheet
B-6	20N	18 x 18mm	3 + 3mm	Filling or rubber sheet
B-12	1kN	30 x 24mm	10mm	Filling or rubber sheet
B-13	500N	30 x 20mm	10mm	Filling or rubber sheet
B-14	5N	8 x 20mm	2mm	Flat
B-16	100N	25 x 25mm	3 + 5mm	Filling or rubber sheet
B-17	100N	25 x 20mm	8mm	Filling or rubber sheet

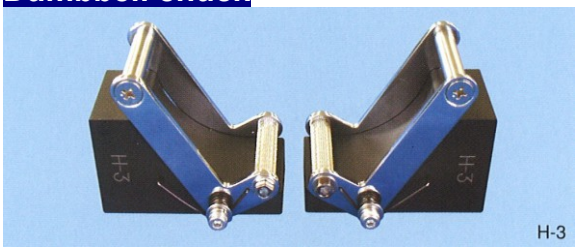
Wedge chuck (Spring clamp type)

Model	System	Max load	W x H	Clearance	Surface
D-4	Lever guide	1kN	30 x 25mm	4.5mm	Filling
D-7	Pin guide	1kN	10 x 30mm	5.0mm	Filling
D-8	Pin guide	300N	10 x 30mm	5.0mm	Filling

Wedge chuck (Fixed position type)

Model	Max load	W x H	Clearance	Surface
C-4	1kN	26 x 30mm	7.5mm	Filling

Dumbbell chuck



Model	Max load	Width	Roll diameter	Clearance	Surface
H-1	3kN	35mm	Ø8mm	4mm	Rod
H-2	500N	35mm	Ø8mm	4mm	Rod
H-3	3kN	35mm	Ø8mm	4mm	Knurling
H-4	500N	35mm	Ø8mm	4mm	Knurling

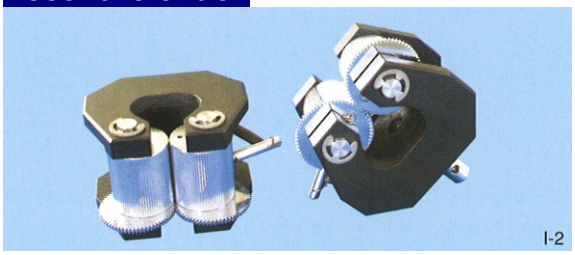
Wide range box chuck

Model	Max load	W x H	Clearance	Surface
J-2	500N	50 x 30mm	6mm	Flat or Rubber sheet or Filling
J-3	100N	50 x 20mm	6mm	Flat or Rubber sheet or Filling

Strip chuck

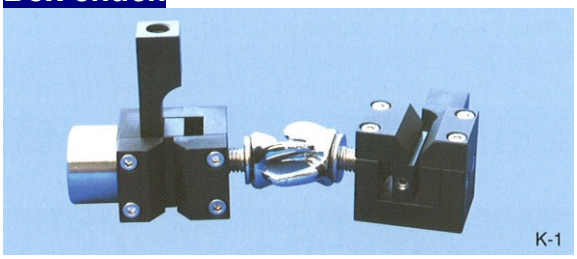
Model	Max load	W x H	Clearance	Surface
L-2	500N	60 x 30mm	6mm	Corrugated rubber or filing

Eccentric chuck



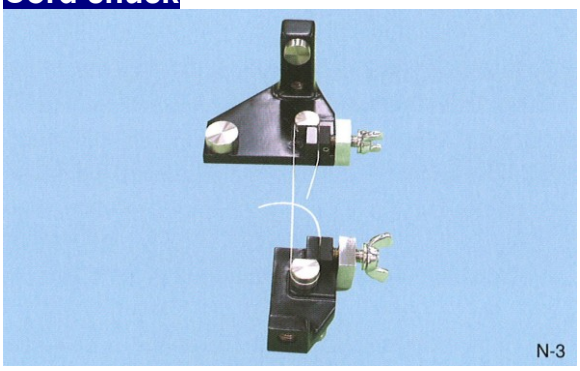
Model	Max load	Width	Clearance	Surface
I-2	1kN	26mm	6mm	Knurling

Box chuck



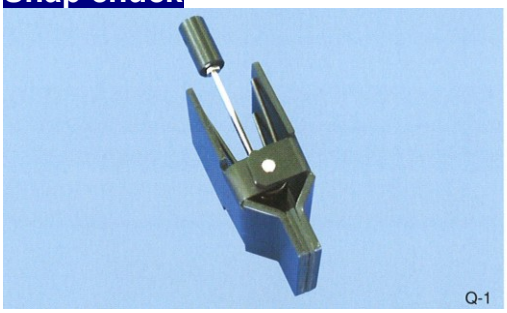
Model	Max load	W x H	Clearance	Surface
K-1	500N	16 x 30mm	3mm	Flat or Rubber sheet
K-2	200N	16 x 30mm	3mm	Flat or Rubber sheet

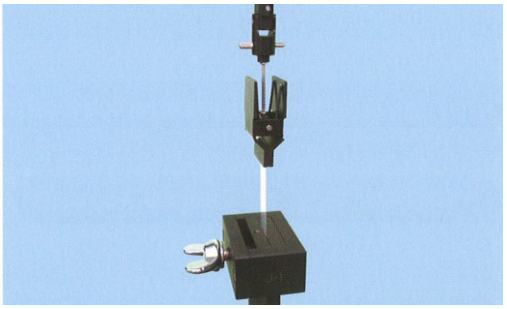
Cord chuck



Model	Max load	Clearance	System
N-2	1kN	3mm	Manual
N-3	300N	3mm	Manual
N-4	1kN	3mm	Pneumatic

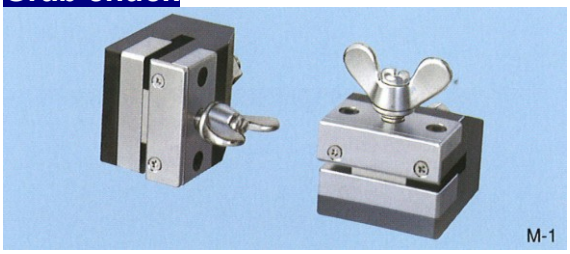
Snap chuck





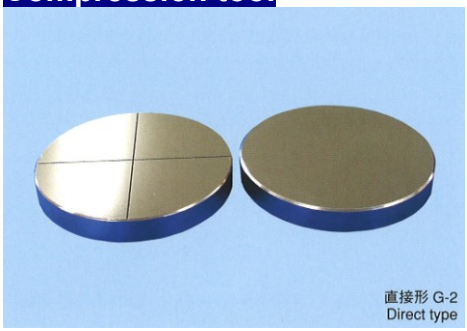
Model	Max load	W x H	Clearance	Surface
Q-1	10N	32 x 10mm	1mm	Rubber sheet

Grab chuck



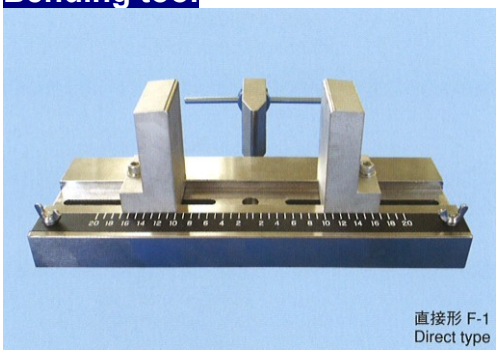
Model	Max load	W x H	Clearance	Surface
M-2	1kN	25.4 x 25.4mm	4mm	Flat

Compression tool



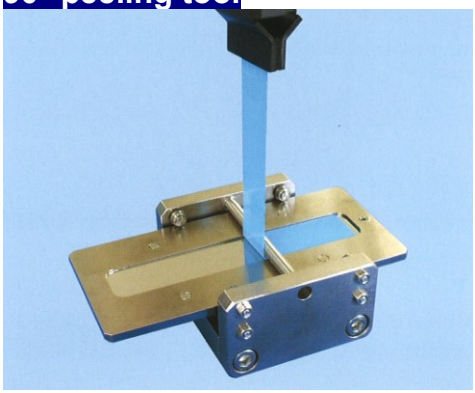
Model	Max load	Diameter	System	Max diameter of specimen
G-11	500N	Ø80mm	Direct type	Ø80mm

Bending tool



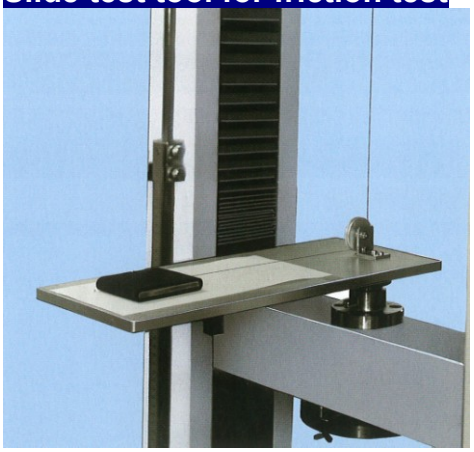
Model	Max load	Standard	Span	Indenter	Fulcrum	System
F-7	500N	JIS	20~150mm	R5mm	R5mm	Direct type

90° peeling tool



Model	Max load	Size of base material	Exfoliation Width
R-1	50N	25 x 109mm	19mm

Slide test tool for friction test



Model	Standard	Table size	Sled dimensions	Sled contact face	Sled weight	Spring	Sliding speed
S-1	ASTM	160 x 380mm	63.5 x 63.5mm	Sponge	200g	N/A	150mm/min
S-2	J.TAPPI	200 x 450mm	60 x 100mm	Metal	1000g	N/A	10mm/min
S-3	JIS/ISO	160 x 380mm	63 x 63mm	Felt	200g	Use for static friction	100mm/min

Specifications are subject to change without notice.

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