



Linear series

CONTOURECORD 2700DX3/SD3

High-Accuracy Contour Detector

Using Laser Optical Diffraction Scale 0.025 μm Resolution



CONTOURECORD 2700DX3



CONTOURECORD 2700SD3

Printer is optional

New High-Accuracy Contour Detector that Weighs 40% Less Than Previous Models

- Laser optical diffraction scale ensures high resolution over the entire range.
- Contours can be measured and analyzed with high accuracy and high resolution.

Optical Diffraction Scale

The laser wavelength of the light source is highly stable, and is not affected by air fluctuation or pressure change. This scale has high repeatability and no backlash errors occur.

Linear Motor Drive (Patented)

- A linear motor drive ensures high accuracy and high-speed movement.
- Low vibration ensures more stable measurement at high magnifications.

*See page 8 for the details of the linear drive.

A Choice of Linear Series DX Type or SD Type to Suit Specific Needs

Available as an all-in-one space-saving DX Type or conventional separate style SD Type.

Outstanding Expandability

- Roughness detector and CNC table can be added.
- Flexible design ready to meet future requirements.

Flexible Arm and Probe Combination

- This model uses a master ball calibration to correct the arc distortion (X-direction error) characteristic of a contour detector and has the ability to combine a flexible arm and a probe.
- Various contour measuring styli for a wide variety of workpieces from small holes to deep grooves.

In the case of a long workpiece like a ball screw, measuring with a conventional arm and probe position relationship resulted in interference with the detector, making it impossible to achieve a large measuring range in the X-direction. Master ball calibration creates a combination in which the arm and probe are downwardly offset, as shown in the photograph below, which allows unimpeded measuring, even in the case of long workpieces. See page 44 for details about arc correction using master ball calibration.



System Expandability (Option)

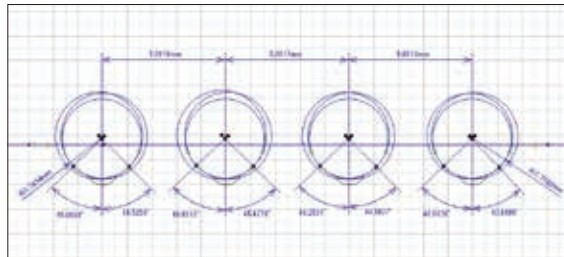
In case roughness measurement capability is required following installation, the system can be upgraded to a multi-functional contour and roughness measurement system simply by adding a roughness detector and roughness analysis program.



Roughness measuring detector (option)

Example of Ball Screw Measurement (Option)

Various evaluations are performed by dropping a sample circle on the ball screw grooves to obtain the point of contact between the sample circle and the profile.



Specifications

Model		CONTOURECORD 2700DX3/SD3								
		-12	-13	-14	-15	-22	-23	-24	-25	
Measuring range	Z-axis (vertical)	50 mm								
	X-axis (horizontal)	100 mm				200 mm				
Accuracy	Detector	Z-axis indication accuracy (vertical)	$\pm (0.8 + 2H /100) \mu\text{m}$ (H: Measuring Height mm)							
		Resolution	0.025 μm /Full range							
	Tracing driver	X-axis Indication accuracy (horizontal)	$\pm (1.0 + L/100) \mu\text{m}$ (L: Measuring length mm)							
		Resolution	0.016 μm							
Straightness accuracy		1 $\mu\text{m}/100 \text{ mm}$				2 $\mu\text{m}/200 \text{ mm}$				
Sensing method	Z-axis (vertical)	Laser optical diffraction scale								
	X-axis (horizontal)	Linear scale								
Speed	Column up/down speed (Z-axis)	10 mm/s								
	Measuring speed (X-axis)	0.03 mm/s to 20 mm/s								
	Moving speed (X-axis)	60 mm/s max.								
Detector	Stylus, measuring force	Replaceable, 30 mN or less, and stepless(retract) function								
	Stylus radius (stylus material)	25 μmR (24° conical carbide), two pieces equipped as standard								
	Measuring direction, position	Pull/push and Up/down directions, Max. following angle: 77°								
Operation range	Tracing driver stroke	100 mm				200 mm				
	Column up/down stroke	226 mm	426 mm	626 mm	226 mm	426 mm	626 mm			
Granite table	Dimensions	600 × 317 mm		1000 × 450 mm		600 × 317 mm		1000 × 450 mm		
	Permissible loading weight★	37 kg	28 kg	93 kg	84 kg	31 kg	22 kg	87 kg	78 kg	
Other	Installation dimensions★	Width	1250 mm		1650 mm		1250 mm		1650 mm	
		Depth	800 mm		900 mm		800 mm		900 mm	
		Height	1480 mm	1680 mm		1880 mm	1480 mm	1680 mm		1880 mm
	Weight★	225 kg	235 kg	420 kg	430 kg	230 kg	240 kg	425 kg	435 kg	
Power supply, frequency, consumption		Single phase AC 100 V $\pm 10\%$ (grounding required), 50 Hz/60 Hz, 670 VA								

★Dimensions and weight are for the DX type.