

## FCM-5000A

### Ferrule Concentricity Measuring Instrument

#### Static-Pressure Air Bearing Centripetal Method Achieves High Precision

- Core ACCRETECH air technology used to develop new method that achieves measuring accuracy of  $0.1 \mu\text{m}$  (patent pending).

#### High Throughput: Six Second Measurements!

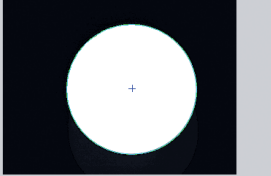
- A new method where the ferrule is not rotated enables unprecedented measuring speed (3 sec. measurement + 3 sec. loading/unloading).

#### Easy Operation with LCD Touch Panel

- The LCD touch panel can be used on the production floor.
- Judgment conditions/system conditions can be tailored to individual users.
- Maintenance function facilitates management of system accuracy.

#### Standard Workpiece Loading/Unloading Device

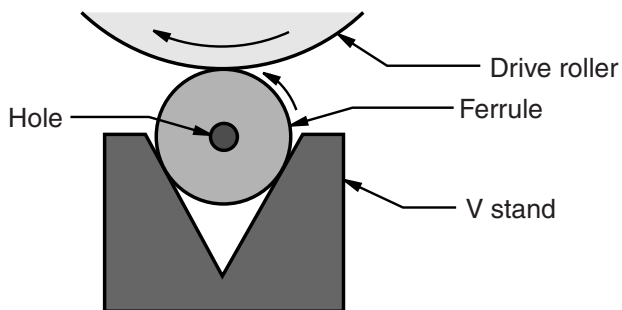
ACCRETECH		Measuring		User name	User ID	Operator
FCM-5000A				Tokyo Seimitsu	31-1234	Administrator
Work	Test	Start time	2002/03/25 13:02:47			
Lot	123-456	End time				
title1	Comment1					
title2	Comment2					
		No.4	Rank	1		
		Cnctrc.	0.36 <sup>mm</sup>	OK1		
		I.D.	125.38 <sup>mm</sup>	OK3		
		O.D.	2.4996 <sup>mm</sup>	OK1		
Rank		Excl. range	0.0 <sup>deg</sup>	OK		
1	1					
2	2					
3	1					
4	0					
Non-calc.	0					




Robot transfer type

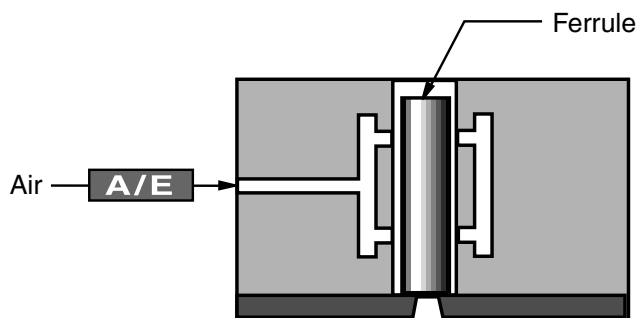
## Differences in Ferrule Holding Methods

### Conventional Method



- Subject to influence of contaminants (V stand, rotation roller and ferrule must be cleaned).
- Defective component of outer diameter profile is included in measured value since two points on outer diameter are used as reference, preventing the eccentricity and shape defect from being separated.
- Measuring accuracy deteriorates due to wear of V stand (management of V stand required).

### ACCURETECH Method



- Centripetal holding of ferrule outer diameter reference with static-pressure air bearings.
- Not subject to influence from external contaminants or shape defects.
- Outer diameter measured can be performed (measurement of bearing back pressure).
- Contact is minimal when the item is inserted and removed, minimizing wear.

### Specifications

Model		FCM-5000A
Applicable ferrules		$\phi 1.25\text{mm}$ and $\phi 2.5\text{mm}$ (by changing measuring head)
Measuring items		Concentricity, inner diameter, outer diameter
Measuring method	Concentricity/inner diameter	Optical microscope
	Outer diameter	Static-pressure air bearing centripetal method (* patent pending)
Measuring accuracy	Concentricity	$\pm 0.1\mu\text{m}$ or less/ $2\sigma$ (Resolution: $0.01\mu\text{m}$ )
	Inner diameter	$\pm 0.1\mu\text{m}$ or less/ $2\sigma$ (Resolution: $0.01\mu\text{m}$ )
	Outer diameter	$\pm 0.1\mu\text{m}$ or less/ $2\sigma$ (Resolution: $0.01\mu\text{m}$ )
Transfer device		Select part feeder or robot
Power source		Single phase AC 100V $\pm 10\%$ , 50/60 Hz
Power consumption		1.5 kVA
Air source		Air supply: 0.4 MPa, Consumption: 100 $\ell$ /min, Clean/dry air
Installation dimensions		1250 (W) $\times$ 650 (D) $\times$ 1650 (H) mm: Part feeder type
		1360 (W) $\times$ 650 (D) $\times$ 1650 (H) mm: Robot transfer type
Weight		450 kg



Parts feeder type