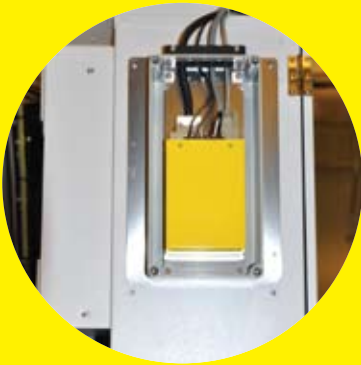


**NEW**

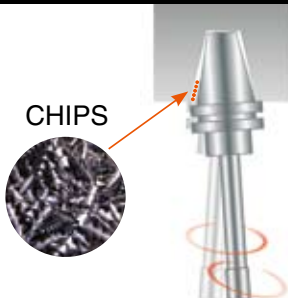
Built-In type / non-Contact Sensor

# ATC run-out Detection System

Aluminum High-Speed Cutting Process Monitoring Device



**Sudden Machining Defects —**  
**Are they being caused by chips in the tool chuck?**



- Measurement in 0.3 seconds
- High Accurate Detection 5  $\mu\text{m}$
- Simple Installation

# Measurement in 0.3second!

## Accurately detects run-out of 5 $\mu$ m. \* 1

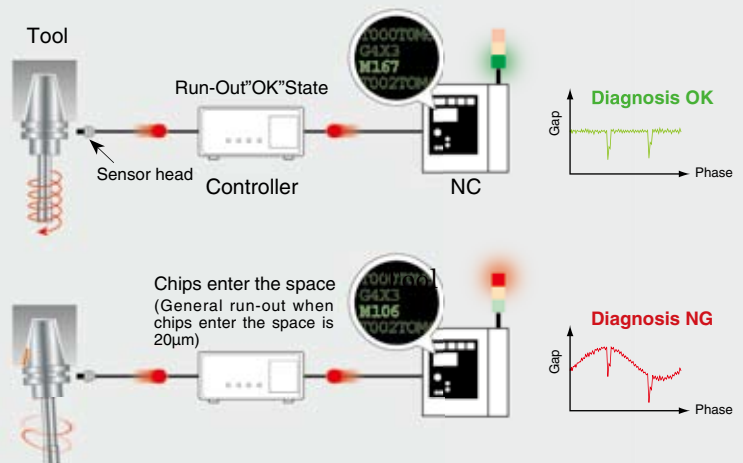
ATC run-out detection system is used to detect abnormal run-out of the tool caused by entering the tool taper and to prevent machining defects.

### ■ Accurate Detection

#### ● Accurate Detection

"True run-out quantity" is calculated by storing the shape of the tool flange in the controller without run-out state and comparing it with the shape of the run-out which is measured just before machining.

More highly accurate run-out measurement is achieved in comparison with the simple run-out measurement (repeatability:30 $\mu$ m) by using general eddy-current sensors.



#### Measurement results

Automotive Motorbike

#### Engine

Agricultural machinery, Lawn mower, etc.

#### Others

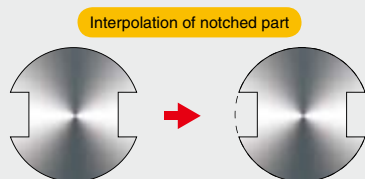
Marine propellers, HDD, Camera barrel, etc.

#### Types of Tool

Reamer, boring tool, milling cutter, etc.

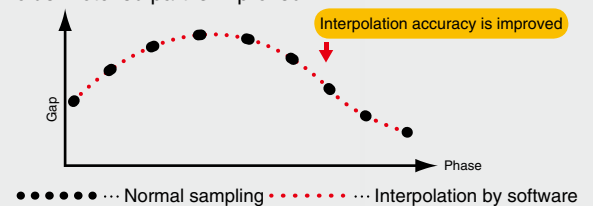
#### ● Interpolation of Notched Part

By using proprietary algorithm, reliability of the run-out measurement is improved by interpolating the notched part of the tool holder, which is the decreasing factor of the measurement accuracy.



#### ● Oversampling Method

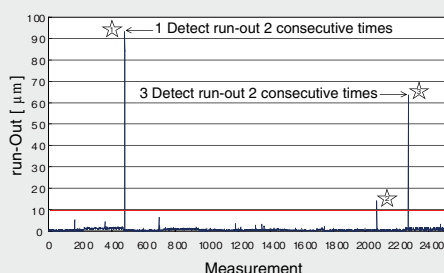
Sampling number is automatically increased by proprietary software operation process and interpolation accuracy of the tool holder notched part is improved.



#### ● Example data in the evaluation of production line

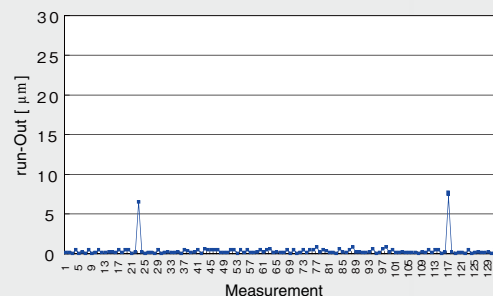
A Co.: Detect abnormal run-out every 1/843(average), during ATC

- Measurement times: 2529
- Chips enter the space : 3 times(setting parameter:10 $\mu$ m)



B Co.: Detect abnormal run-out every 1/918(average), during ATC

- Measurement times: 1836
- Chips enter t/he space : 2 times(setting parameter:5 $\mu$ m)





## ■ 0.3 second Measuring Time

### ● High Speed Measurement

Although it is very difficult to achieve run-out measurement at 600rpm by using contact type, it is achieved by using non-contact method. In addition, by using proprietary algorithm, all the measuring processes are completed in merely 0.3 seconds (at 600rot/min).

## ■ Easy Operation

### ● Simple Setup

By just adding one line  
 [ M132 ] ... Tool registration  
 [ M133 ] ... ZDetect run-out

### ● Standard attachment of ACCRETECH

Sensor Bracket, Controller box, etc.



## ■ Superior Serviceability / High Reliability

### ● Sensor Head Automatic Tuning Function

Replacing only the sensor is possible if damage occurs to the sensor for any reason. After replacing the sensor, combination adjustment of controller and sensor head is completed by removing the tool holder from the spindle and clicking "sensor adjustment" button once.



### ● Most Suitable for Machining Environment

This run-out detection measuring system is coolant-resistant.



## ■ System Configuration



1 Test condition: When run-out of our master tool is measured at rotation speed of 600rot/min.

2 When run-out is measured by a combination of our EDYCOM, PULCOM V10, and roundness measuring function of PULCOM V10. Six common coolants were tested.

## ■ Basic specification

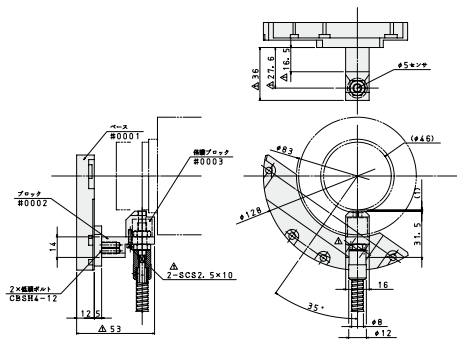
Model	Controller	A50355
	Φ5 sensor	E-DT-ED02A-234
Tool registrations	21max	
Performance	Display unit	0.5μm
	Repeatability	3μ or less *Using our master tool holder(BT40)
	Tool rotation speed	600rot/min
	Cycle time	0.3s (without retries)
Usage environment	temperature	0 to 40
	Vibration resistance	3.66G max. (x,y,z-axis directions)
	Shock resistance	sensor head: 50G max. (x,y,z-axis directions)
	Waterproof standard	IP67(sensor head) *Do not expose controller to water, oil or other liquids.
Power requirements	Rated voltage	DC24±V10%
	Rated power	14W

## ■ Product Configuration

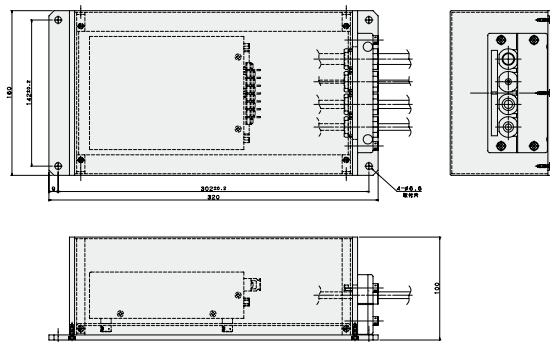
Product code	Product name	Model
System		
991005	ATC run-out detection system	
991007	Installation expense (without Moving expenses, Accommodation expenses, Meeting expenses and actual expense)	
991009	Expense of retrofit	
Service parts		
991006	Controller	AT50355
991003	Sensor head	E-DT-ED02A-234
4219412	Sensor bracket base	AM50352-0001
4219414	Sensor bracket block	AM50352-0002
4219416	Protection cap	AM50352-0003
4219646	Piping receiving plate	AM50352-0004
4454755	Box for Controller	AM50352-C005
4219804	I/O cable	AE50359-C001
4219913	Power cable (DC)	AE50360-C101
4219914	Power cable (AC)	AE50359-C201
4206870	Casing tube	
4219492	Power unit (DC24V)	Mount on to DIN rail

## ■ Model dimensions

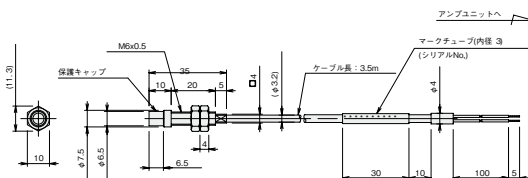
● AM50352-D001-01



● AM50352-D005-00



● E-DT-ED02A-234 (with protection cap)



**TOKYO SEIMITSU**



**JAPAN**  
TOKYO SEIMITSU Co.,LTD  
TEL : 81-29-831-1240

**USA**  
Accretech America Inc.  
TEL : 1-214-459-1688

**EU**  
ACCRETECH EUROPE GmbH  
TEL : 49-89-546788-0

Technical support  
**TOSEI ENGINEERING Co.,LTD**  
FAX:81-298-30-1891  
E-mail:amg@toseieng.co.jp

Please contact following branch to order: