

Macro O8504 - Compensate a single cartridge ActiveEdge tool

DESCRIPTION Compensates an ActiveEdge tool with one AE cartridge by a specific micron amount on diameter.

APPLICATION The unique Tool ID and compensation value are encoded and sent to the ActiveEdge Interface. The AEI decodes the information and returns a confirmation that the instruction has been received and is valid. The macro sets the STATUS variable, which can be checked once the macro has exited

FORMAT G65 P8504 Rr Aa

COMPULSORY INPUTS

Rr	r =	Unique ID of the ActiveEdge tool
Aa	a =	The compensation amount in microns on diameter

OPTIONAL INPUTS None

OUTPUT VALUES

STATUS	100 =	Compensation queued. OK to continue
	101 =	No compensation requested. This is set if a = 0. In this case O8504 does nothing

How the manufacturing program deals with STATUS values other than those listed above can be determined by customising the macro O8509

EXAMPLE

Compensate ActiveEdge tool 529 by 15 microns on diameter

;Siemens
L8504 (529 ,15)

(Fanuc)
G65 P8504 R529 A15

(Or if #137 = 529, #222 = 15)
G65 P8504 R#137 A#222

Macro O8508 - Compensate a dual cartridge ActiveEdge tool

DESCRIPTION Compensates an ActiveEdge tool with two AE cartridges by specific micron amounts on diameter.

APPLICATION The unique Tool ID and compensation values are encoded and sent to the ActiveEdge Interface. The AEI decodes the information and returns a confirmation that the instruction has been received and is valid. The macro sets the STATUS variable, which can be checked once the macro has exited

FORMAT G65 P8508 Rr Aa Bb

COMPULSORY INPUTS

Rr	r =	Unique ID of the ActiveEdge tool
Aa	a =	Unit 1 compensation amount in microns on diameter
Bb	b =	Unit 2 compensation amount in microns on diameter

OPTIONAL INPUTS None

OUTPUT VALUES

STATUS	100 =	Compensation queued. OK to continue
	101 =	No compensation requested. This is set only if a = 0 and b = 0. In this case O8508 does nothing

How the manufacturing program deals with STATUS values other than those listed above can be determined by customising the macro O8509

EXAMPLE

Compensate ActiveEdge tool 467; unit 1 by 0 microns, unit 2 by -12 microns on diameter

;Siemens
L8508 (467,0,-12)

(Fanuc)
G65 P8508 R467 A0 B-12

(Or if #130 = 467, #250 = 0, #260 = -12)
G65 P8508 R#130 A#250 B#260

Macro O8515 - Compensate a 5 cartridge ActiveEdge tool

DESCRIPTION Compensates an ActiveEdge tool with five AE cartridges by specific micron amounts on diameter.

APPLICATION The unique Tool ID and compensation values are encoded and sent to the ActiveEdge Interface. The AEI decodes the information and returns a confirmation that the instruction has been received and is valid. The macro then sets the STATUS variable, which can be checked once macro execution has completed

FORMAT G65 P8508 Rr Aa Bb Cc Dd Ee

COMPULSORY INPUTS

Rr	r =	Unique ID of the ActiveEdge tool
Aa	a =	Unit 1 compensation amount in microns on dia.
Bb	b =	Unit 2 compensation amount in microns on dia.
Cc	c =	Unit 3 compensation amount in microns on dia.
Dd	d =	Unit 4 compensation amount in microns on dia.
Ee	e =	Unit 5 compensation amount in microns on dia.

OPTIONAL INPUTS None

OUTPUT VALUES

STATUS	100 =	Compensation queued. OK to continue
	101 =	No compensation requested. This is set only if the sum of values a to e = 0. In this case O8515 does nothing

How the manufacturing program deals with STATUS values other than those listed above can be determined by customising the macro O8509

EXAMPLE

Compensate ActiveEdge tool 467; unit 1 by 15 microns, unit 2 by -12 microns on diameter etc.
Note: Cartridge numbering starts at the end of the tool furthest from the spindle connection.

;Siemens
L8515 (467,15,-12,0,1,3)

(Fanuc)
G65 P8515 R467. A15. B-12. C0. D1. E3.

(Or if #130 = 467, #250 = 15, #251 = -12, #252 = 0, #253 = 1, #254 = 3)
G65 P8515 R#130 A#250 B#251 C#252 D#253 E#254

Macro O8506 - Check AEI for tool compensation status

DESCRIPTION

Queries the ActiveEdge Interface for the outcome of the last compensation command it received for the Tool ID sent

APPLICATION

The unique Tool ID is encoded and sent to the AEI. The AEI returns the status of the last command related to that specific tool. This is written to the STATUS variable, which can be checked once the macro has exited

FORMAT

G65 P8506 Rr

COMPULSORY INPUTS

Rr r = Unique ID of the ActiveEdge tool

OPTIONAL INPUTS

None

OUTPUT VALUES

STATUS 100 = OK to continue

This macro does nothing if STATUS = 101 before it is called. How the manufacturing program deals with STATUS values other than those listed above can be determined by customising the macro O8509

EXAMPLE

Compensate ActiveEdge tool 724, unit 1 by 14 microns on diameter and check the outcome of the command immediately afterwards.

(Fanuc)

```
N190 G65 P8504 R724 A14    Send 14um compensation command to AEI
N200 G65 P8506 R724        Check AEI. Macro exits when the AEI confirms
                           that the requested compensation has completed
```

;Siemens

```
N190 L8504(724,14)
N200 L8506(724)
```

Macro O8503 - Check measured bore size and compute compensation

DESCRIPTION To analyse the measurements of any number of different bore sizes and decide when a tool compensation is required to maintain the bore diameter within chosen limits. Then compute a micron compensation value to achieve this.

APPLICATION The macro allows warning limits to be set within the specification limits of any number of bore sizes, and in conjunction with the bore measurement will compute an appropriate compensation amount. This can be used by an ActiveEdge tool to automatically ensure that the next bore is machined to nominal size. The macro also sets a bore condition variable that can be used in conditional statements once the macro has exited*.

FORMAT G65 P8503 Bb Rr Mm Cc Ss Tt Ww Xx Ee Ff

COMPULSORY INPUTS

Bb	b =	ID of the measured bore (starting at 0)
Rr	r =	Unique ID of the ActiveEdge tool that cut the bore
Mm	m =	Bore diameter measurement (mm)
Cc	c =	Nominal bore diameter (mm)
Ss	s =	Lower bore specification limit (mm)
Tt	t =	Upper bore specification limit (mm)
Ww	w =	Lower bore warning limit (mm)
Xx	x =	Upper bore warning limit (mm)
Ee	e =	Maximum consecutive LWL transgressions
Ff	f =	Maximum consecutive UWL transgressions

OPTIONAL INPUTS None

OUTPUT VALUES

- (i)* Compensation amount in **microns on diameter**
- (ii)* Bore status (0 to 4)

* refer to Rigibore document AE040 for more detailed information about this macro

EXAMPLE

Check a bore of nominal size 80mm, produced by ActiveEdge tool 467. The specification limits are nominal +/-0.025, and the compensation warning limits are set to nominal +0.010/-0.015. The bore measurement in this case is in variable R104 / #104.

;Siemens

```
L8503(0,467,R104,80,80-0.025,80+0.025,80-0.015,80+0.010,2,2)
```

(Fanuc)

```
G65 P8503 B0 R467 M#104 C80 S[80-0.025] T[80+0.025] W[80-0.015] X[80+0.010] E2 F2
```

Macro O8521 - Data capture

DESCRIPTION	Captures the contents of any variable within the machine control. The macro sends the value to the AEI where it is stored in a text file, together with a record of the date and time of capture.		
APPLICATION	The macro can be positioned to record data at any point within the manufacturing program. In addition to the time and date, 201 user-defined reference numbers are available to make it easier to identify particular data. Data are stored in the data.txt file which is located in the AEI's public folder. It is also accessible with Rigibore's ActiveNet program.		
FORMAT	G65 P8521 Uu Vv		
COMPULSORY INPUTS	Uu	u =	User-defined reference numbers (100 to 300 incl.)
	Vv	v =	Value to be recorded (decimal or integer)
OPTIONAL INPUTS	None		
OUTPUT VALUES	None		

EXAMPLE

```
;Siemens
L8521(100,R89)
```

(Fanuc)

```
N240 -
N245 -
N250 G65 P8521 U100 V#173 (#173 may contain a bore measurement, for example)
N255 -
N260 -
N265 -
N270 -
N275 -
N280 -
N285 G65 P8521 U101 V0 (no data, only a snapshot of the time and date)
N290 GOTO240
```

The records from the above example may appear in the data.txt file as:

```
2014/06/19 22:13:11, 4, 100, 84.508
2014/06/19 22:47:23, 4, 101, 0
2014/06/19 22:48:43, 4, 100, 84.501
2014/06/19 23:22:17, 4, 101, 0
```