

type no.: 45

overall - counter: 1692068



type name: CIVIC 1st LH DOM SLL3

type management

general

Input typename CIVIC 1st LH DOM SLL3

set of boundary parts 49

retractor

retractor article code P34361270A

retractor type top-connect

retractor laser job number 1

MGG

MGG article code 34311248

MGG color 5 - light grey YAZAKI top-connect

MGG cam angle tolerance 10.000 [deg.]

FW max. - angle pos. 190.000 [deg.]

FW - set angle pos. 180.000 [deg.]

FW min. - angle pos. 170.000 [deg.]

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positions, speed, geometry & clamping force

Z1 - axis: feed spindle

basic position / start loading position MGG	270.000	[mm]
planarity measuring position	232.800	[mm]
MGG transfer position / end loading position MGG	225.500	[mm]
MGG nok unload position	225.000	[mm]
basic position feed	1500.0	[mm]
full speed feed	30000.0	[mm]

X1 - axis: stator clamping

basic position	61.000	[mm]
pre position clamping	12.800	[mm]
clamping pos.	12.600	[mm]
full speed feed	5000.0	[mm/min]

geometry data

1. chuck length spindle	97.000	[mm]
2. unsupported length spindle	0.000	[mm]
3. part length spindle	3.000	[mm]
4. free length spindle (cup-length)	32.000	[mm]
5. chuck length stator clamping	23.000	[mm]
6. unsupported length stator clamping	5.000	[mm]
safety distance	1.000	[mm]

stator clamping

	selection	min.- force	max.- force	
selection clamping force - control active	no			
setpoint clamping force		22.0	24.0	[kN]
monitoring clamping force	yes	20.0	25.0	[kN]

planarity sensor

	selection	min	max	
monitoring planarity MGG	yes	0.000	0.070	[mm]
monitoring distance MGG	no	0.000	0.000	[mm]

contact pos.

monitoring - contact pos.	yes	123.800	126.000	[mm]
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11/03/2023 12:33:17

User: ZapataF

HBO021

Date, Signature

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overview - setpoints

setpoint clamping force

24.0 [kN]

contacting

safety distance before Start

way [mm]

force [kN]

feed
[mm/min]

pat down before clamping

no

1.000

5.000

3.0

pat down after clamping

yes

15.0

contact mode

force ctr. (rot.)

contacting parameter

4.000

6.000

200.000

lifting

0.600

8000.000

recontact

0.400

process friction welding

phase friction welding

1.friction 1

2.friction 2

3.braking

4.upsetting 1

5.upsetting 2

force

12.000

4.000

12.000

12.000

[kN]

force gradient time

0.000

0.080

0.050

0.020

[s]

rotation

14000.0

14000.0

2000.0

[rpm]

switch - mode

time

time

time

process time

0.030

0.100

+0.020

0.040

0.250

[s]

reduction

0.020

0.040

+0.000

0.100

0.100

[mm]

angle pos.

180.000

[degree]

set angle pos.

yes

process control

0. contacting

1. friction 1

2. friction 2

4. upsetting 1

5. upsetting 2

Kp: P - contribution

4.000

3.000

2.000

2.000

1.000

[s]

Tn: I - contribution

0.000

0.000

0.000

0.000

0.000

[s]

Tv: D - contribution

0.000

0.250

0.270

0.270

0.300

V_max

300.000

150.000

250.000

600.000

300.000

[mm/min]

V_offset

0.000

0.000

0.000

0.000

[% V_max]

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overview - monitoring values

<u>process time</u>	1. friction 1	2. friction 2	3. braking	4. upsetting 1	5. upsetting 2	rotation speed = 0
selection	yes	yes	yes	yes	yes	yes
maximum - time	0.035	0.105	0.230	0.045	0.255	0.320 [s]
minimal - time	0.025	0.095	0.190	0.035	0.245	0.245 [s]

<u>force gradient time</u>	1. friction 1	2. friction 2	4. upsetting 1	5. upsetting 2
selection	no	no	no	no
maximum - time	0.000	0.000	0.025	0.000 [s]
minimal - time	0.000	0.000	0.008	0.000 [s]

<u>reduction</u>	1. friction 1	2. friction 2	3. braking / 4. upsetting 1	5. upsetting 2	overall
selection	no	no	yes	no	yes
maximum - reduction	0.280	0.100	1.200	0.140	1.900 [mm]
minimal - reduction	0.100	0.025	0.700	0.020	1.000 [mm]

<u>rotation</u>	1. friction 1	2. friction 2	4. upsetting 1
selection	yes	no	no
maximum - rotation	14100.0	13010.0	27.0 [rpm]
minimal - rotation	12000.0	12990.0	-120.0 [rpm]

<u>part length</u>	part length
selection	no
maximum - length	0.00 [mm]
minimal - length	0.00 [mm]

<u>part angle</u>	angle pos.
selection	yes
maximum - angle	190.000 [deg.]
minimal - angle	170.000 [deg.]

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overview - force envelope settings

overall-
activation

yes

friction 1

min. - force

max. - force

phase - time

point 1

+5.000

+8.500

[kN]

0

[ms]

point 2

+6.500

+10.500

[kN]

13

[ms]

point 3

+6.500

+11.200

[kN]

22

[ms]

point 4

+6.500

+11.700

[kN]

30

[ms]

point 5

+6.500

+12.000

[kN]

38

[ms]

activation

yes

friction 2

min. - force

max. - force

phase - time

point 1

+6.500

+12.000

[kN]

0

[ms]

point 2

+6.500

+12.500

[kN]

16

[ms]

point 3

+5.300

+9.500

[kN]

70

[ms]

point 4

+4.400

+6.500

[kN]

120

[ms]

point 5

+4.200

+6.400

[kN]

290

[ms]

activation

yes

upsetting 1

min. - force

max. - force

phase - time

point 1

+4.200

+6.400

[kN]

0

[ms]

point 2

+3.000

+5.900

[kN]

12

[ms]

point 3

+2.500

+5.600

[kN]

18

[ms]

point 4

+2.000

+4.500

[kN]

30

[ms]

point 5

+2.000

+5.500

[kN]

38

[ms]

activation

yes

upsetting 2

min. - force

max. - force

phase - time

point 1

+2.000

+5.500

[kN]

0

[ms]

point 2

+4.000

+9.000

[kN]

12

[ms]

point 3

+7.000

+10.500

[kN]

28

[ms]

point 4

+9.000

+11.000

[kN]

75

[ms]

point 5

+9.000

+11.000

[kN]

250

[ms]

activation

yes

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overview - distance envelope settings

overall-
activation

yes

friction 1

min. - dist.

max. - dist.

phase - time

point 1

-0.030

+0.030

[mm]

0

[ms]

point 2

+0.000

+0.060

[mm]

10

[ms]

point 3

+0.015

+0.070

[mm]

15

[ms]

point 4

+0.030

+0.080

[mm]

20

[ms]

point 5

+0.040

+0.100

[mm]

28

[ms]

activation

yes

friction 2

min. - dist.

max. - dist.

phase - time

point 1

+0.040

+0.100

[mm]

0

[ms]

point 2

+0.060

+0.200

[mm]

30

[ms]

point 3

+0.100

+0.460

[mm]

100

[ms]

point 4

+0.330

+0.870

[mm]

210

[ms]

point 5

+0.550

+1.250

[mm]

302

[ms]

activation

yes

upsetting 1

min. - dist.

max. - dist.

phase - time

point 1

+0.550

+1.250

[mm]

0

[ms]

point 2

+0.600

+1.300

[mm]

12

[ms]

point 3

+0.670

+1.400

[mm]

22

[ms]

point 4

+0.830

+1.570

[mm]

38

[ms]

point 5

+0.870

+1.600

[mm]

42

[ms]

activation

yes

upsetting 2

min. - dist.

max. - dist.

phase - time

point 1

+0.870

+1.600

[mm]

0

[ms]

point 2

+1.000

+1.900

[mm]

28

[ms]

point 3

+1.000

+1.900

[mm]

120

[ms]

point 4

+1.000

+1.900

[mm]

200

[ms]

point 5

+1.000

+1.900

[mm]

248

[ms]

activation

yes