FLATHONING ON DLM 705

**Parts specification**
- Material: 100 Cr6
- Hardness: 60 - 65 HRC
- Previous operation: turned, hardened
- Dimensions: Ø 30 x Ø 14 x 13 mm

**Premachined condition**
- Base size: 13.08 ± 0.045 mm
- Surface: glide ground
- Flatness: 0.03 mm
- Parallelism: 0.05 mm

**Results**
- Tolerance in dimension: ± 2.5 μ
- Cpk: 1.33
- Ra: 0.15 μ
- Rz: 1.2 μ
- Flatness: 1 μ
- Parallelism: 2 μ
- Surface optical: bright crosshatch

**Process specification**
- Machine: DLM 705
- Working wheel: CBN 46
- Stock removal: 110 μ
- Pieces per load: 168
- Cycle time without handling: 4:00 min.
- Rinsing agent: honing oil
Parts specification
Material  100 Cr₆
Hardness  60 - 65 HRC
Previous operation turned, hardened
Dimensions  Ø 34 x Ø 25 x 15 mm

Premachined condition
Base size  15.2 ± 0.05 mm
Surface  turned
Flatness  0.05 mm
Parallelism  0.08 mm

Results
Tolerance in dimension  ± 2.5 μ
Cpk  1.33
Ra  0.16 μ
Rz  1.6 μ
Flatness  1 μ
Parallelism  2 μ
Surface optical:  bright crosshatch
FLATHONING ON DLM 705

Parts specification
Material  Al die cast
          AlMgSi₁
Previous operation cast
Dimensions 100 x 55 x 32 mm

Premachined condition
Base size  32.5 mm
Surface    milled
Flatness   0.5 mm
Parallelism 0.7 mm

Results
Tolerance in dimension ± 5 μ
Cpk        1.33
Ra         0.4 μ
Rz         4 μ
Flatness   2 μ
Parallelism 3 μ
Surface optical: bright crosshatch

Process specification
Machine    DLM 705
Working wheel D 64
Stock removal 650 μ
Pieces per load 30
Cycle time without handling 2:30 min.
Rinsing agent honing oil
FLATHONING ON DLM 705

Parts specification
Material \( \text{Fe}_{17}\text{Co}_{2}\text{Cr}_{0.8}\text{Mo}_{0.2}\text{V} \)
Hardness 62 ± 2 HRc
Previous operation turned, hardened
Dimensions \( \Phi 27 \times 6.3 \text{ mm} \)

Premachined condition
Base size 6.3 mm
Surface turned
Flatness 0.05 mm
Parallelism 0.07 mm

Results
Tolerance in dimension ± 4 \( \mu \)
Cpk 1.33
Ra 0.25 \( \mu \)
Rz 2.5 \( \mu \)
Flatness 2 \( \mu \)
Parallelism 3 \( \mu \)
Surface optical: bright crosshatch

Process specification
Machine DLM 705
Working wheel D4 / B54
Stock removal 120 \( \mu \)
Pieces per load 108
Cycle time without handling 3:30 min.
Rinsing agent honing oil
FLATHONING ON DLM 705

Parts specification
Material  $X_5\text{CrNi}_{1810}$
1.430
Previous operation stamped
Dimensions  $\varnothing$ 39 mm

Premachined condition
Base size  2.5 mm
Surface  rolled
Flatness  0.06 mm

Results
Tolerance in dimension  $\pm$ 4 $\mu$
Cpk  1.33
Ra  0.25 $\mu$
Rz  2.5 $\mu$
Flatness  2 $\mu$
Parallelism  3 $\mu$
Surface optical:  bright crosshatch

Process specification
Machine  DLM 705
Working wheel  D4 / B54
Stock removal  120 $\mu$
Pieces per load  108
Cycle time without handling  3:30 min.
Rinsing agent  honing oil

Built into a thermostatic expansion valve
FLATHONING ON DLM 705

Parts specification
Material  Al al die cast
          AlSi₉Cu₃
          DIN 3.2163
Previous operation cast
Dimensions  95 x 52 mm

Premachined condition
Base size  3.5 mm
Surface    cast
Flatness   0.1 mm

Results
Tolerance in dimension  ± 8 μ
Cpk        1.33
Ra         0.6 μ
Rz         5 μ
Flatness   1.5 μ
Surface optical:      bright crosshatch

Process specification
Machine    DLM 705
Working wheel  D64
Stock removal  500 μ
Pieces per load  30
Cycle time without handling  2:00 min.
Rinsing agent    honing oil
**Parts specification**

- **Material**: Sint D11
- **DIN**: 3.2163
- **Previous operation**: Sintered, turned plasmanitriocarbonated
- **Dimensions**: 95 x 52 mm

**Premachined condition**

- **Base size**: 8.1 mm
- **Surface**: Sintered, turned
- **Flatness**: 0.06 mm

**Process specification**

- **Machine**: DLM 705
- **Working wheel**: D126
- **Stock removal**: 130 µ
- **Pieces per load**: 30
- **Cycle time without handling**: 4:00 min.
- **Rinsing agent**: Honing oil

**Results**

- **Tolerance in dimension**: ± 2.5 µ
- **Cpk**: 1.33
- **Ra**: 0.4 µ
- **Rz**: 4 µ
- **Flatness**: 2 µ
- **Surface optical**: Bright crosshatch
## Process specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine</td>
<td>DLM 705</td>
</tr>
<tr>
<td>Working wheel</td>
<td>D 30</td>
</tr>
<tr>
<td>Stock removal</td>
<td>250 μ</td>
</tr>
<tr>
<td>Pieces per load</td>
<td>192</td>
</tr>
<tr>
<td>Cycle time without handling</td>
<td>1:30 min.</td>
</tr>
<tr>
<td>Rinsing agent</td>
<td>H₂O with additive</td>
</tr>
</tbody>
</table>

## Parts specification

- **Material**: Duroplast Rx 622
- **Previous operation**: injected
- **Dimensions**: ∅ 33 mm

## Premachined condition

- **Base size**: 3.0 mm
- **Surface**: injected with injection- and ejection marks
- **Flatness**: 0.05 mm

## Results

- **Tolerance in dimension**: ± 2.5 μ
- **Cpk**: 1.33
- **Ra**: 0.4 μ
- **Rz**: 6.3 μ
- **Flatness**: 2 μ
- **Surface optical**: crosshatch
FLATHONING ON DLM 705

**Parts specification**
- Material: carbide Rx 622
- Previous operation: sintered
- Dimensions: 12x12 mm

**Premachined condition**
- Base size: 3.0 mm
- Surface: sintered
- Flatness: 0.1 mm

**Process specification**
- Machine: DLM 705
- Working wheel: D 25
- Stock removal: 250
- Cycle time without handling: 2:30 min.
- Rinsing agent: honing oil

**Results**
- Tolerance in dimension: ± 2.5 µ
- Cpk: 1.33
- Ra: 0.2 µ
- Rz: 2 µ
- Flatness: 1 µ
- Surface optical: crosshatch
**Parts specification**

- **Material**: carbide
- **Fx15 HIP**
- **Previous operation**: sintered
- **Dimensions**: 20x15x3 mm

**Premachined condition**

- **Base size**: 3.1 mm
- **Surface**: raw
- **Flatness**: 0.02 mm
- **Parallelism**: 0.02 mm

**Results**

- **Tolerance in dimension**: $\pm 2 \, \mu$
- **Cpk**: 1.33
- **Ra**: 0.017 $\mu$
- **Rz**: 0.287 $\mu$
- **Flatness**: 1.2 $\mu$
- **Parallelism**: 1 $\mu$
- **Surface optical**: bright crosshatch

**Process specification**

- **Machine**: DLM 705
- **Working wheel**: D 46
- **Stock removal**: 650 $\mu$
- **Pieces per load**: 126
- **Cycle time without handling**: 25:00 min.
- **Rinsing agent**: honing oil
# FLATHONING ON DLM 705

## Parts specification
- Material: 100Cr₈ 62 HRc
- Previous operation stamped
- Dimensions: Ø 6 x 1.12 mm

## Premachined condition
- Base size: 1.12 mm
- Surface: raw
- Flatness: 0.05 mm
- Parallelism: 0.08 mm

## Results
- Tolerance in dimension: ± 5 μ
- Cpk: 1.33
- Ra: 0.1 μ
- Rz: 1 μ
- Flatness: 0.5 μ
- Parallelism: 1 μ
- Surface optical: bright crosshatch

## Process specification
- Machine: DLM 705
- Working wheel: B76
- Stock removal: 120 μ
- Pieces per load: 1'500
- Cycle time without handling: 6:00 min.
- Rinsing agent: honing oil
**Parts specification**

- Material: Al₂O₃ ceramics
- Previous operation: sintered
- Dimensions: Ø 44 x 6 mm

**Premachined condition**

- Base size: 6.4 mm
- Surface: raw
- Flatness: 0.2 mm
- Parallelism: 0.3 mm

**Results**

- Tolerance in dimension: ± 5 μ
- Cpk: 1.33
- Ra: 0.4 μ
- Rz: 4 μ
- Flatness: 1 μ
- Parallelism: 2 μ
- Surface optical: crosshatch

**Process specification**

- Machine: DLM 705
- Working wheel: D76
- Stock removal: 420 μ
- Pieces per load: 90
- Cycle time without handling: 2:00 min.
- Rinsing agent: honing oil
**Parts specification**
- Material: 100 Cr₆ (1.3505)
- Hardness: 62 ± 2 HRc
- Previous operation: turned, hardened
- Dimensions: Ø 20 x Ø 12 x 7 mm

**Application**
- Diesel injection

**Premachined condition**
- Base size: 7 ± 0.05 mm
- Surface: turned
- Flatness: 0.03 mm
- Parallelism: 0.04 mm

**Results**
- Tolerance in dimension: ± 1.5 μ
- Cpk: 1.33
- Ra: 0.16 μ
- Rz: 1.7 μ
- Flatness: 0.6 μ
- Parallelism: 1 μ
- Surface optical: bright crosshatch

**Process specification**
- Machine: DLM 705
- Working wheel: CBN 46
- Stock removal: 45 μ
- Pieces per load: 80
- Cycle time without handling: 4:00 min.
- Rinsing agent: honing oil
FLATHONING ON DLM 705

Parts specification
Material steel / bronze
Previous operation turned
Dimensions Ø 80 x 6 mm

Premachined condition
Base size 6.3 mm
Surface turned
Flatness 0.5 mm
Parallelism 0.7 mm

Results
Tolerance in dimension ± 5 μ
Cpk 1.33
Ra bronze / steel 0.2 μ / 0.7 μ
Rz 2.0 μ / 6 μ
Flatness 2 μ
Parallelism 3 μ
Surface optical: bright crosshatch

Process specification
Machine DLM 705
Working wheel D 25 / D125
Stock removal 500 μ
Pieces per load 24
Cycle time without handling 8:00 min.
Rinsing agent honing oil
FLATHONING ON DLM 705

Parts specification
Material carbon (graphite)
Previous operation sintered
Dimensions Ø 30 x Ø 24 mm

Premachined condition
Base size 5.3 mm
Surface injected
Flatness 0.15 mm
Parallelism 0.25 mm

Results
Tolerance in dimension ± 3 μ
Cpk 1.33
Ra 0.2 μ
Rz 2.0 μ
Flatness 0.7 μ
Parallelism 1.2 μ
Surface optical: bright crosshatch

Process specification
Machine DLM 705
Working wheel D 16
Stock removal 300 μ
Pieces per load 156
Cycle time without handling 1:00 min.
Rinsing agent honing oil
**Parts specification**

Material  
Duroplast  
Rx 620

Previous operation  
injected

Dimensions  
Ø 38 mm

**Premachined condition**

Base size  
14 mm

Surface  
raw

Flatness  
0.2 mm

Parallelism  
0.2 mm

**Results**

Tolerance in dimension  
± 3 μ

Cpk  
1.33

Ra  
0.4 μ

Rz  
5 μ

Flatness  
1.2 μ

Parallelism  
3 μ

Surface optical:  
bright crosshatch
Parts specification
Material brass
Previous operation milled
Dimensions 20 x 25 mm

Premachined condition
Base size 1.8 mm
Surface raw
Flatness 0.05 mm
Parallelism 0.06 mm

Results
Tolerance in dimension ± 1 μ
Cpk 1.33
Ra 0.16 μ
Rz 2 μ
Flatness 1 μ
Parallelism 2 μ
Surface optical: bright crosshatch

Process specification
Machine DLM 705
Working wheel D 25
Stock removal 100 μ
Pieces per load 80
Cycle time without handling 2:00 min.
Rinsing agent H₂O
FLATHONING ON DLM 705

Parts specification
Material  Al₂O₃ ceramics
Previous operation shape ground
Dimensions  55 x 10 x 0.8 mm

Premachined condition
Base size  1.2 mm
Surface  sintered
Flatness  0.05 mm
Parallelism 0.05 mm

Results
Tolerance in dimension  ± 2 μ
Cpk  1.33
Ra  0.4 μ
Rz  4 μ
Flatness 3 μ
Parallelism 6 μ
Surface optical:  crosshatch

Process specification
Machine  DLM 705
Working wheel  D126
Stock removal  400 μ
Pieces per load  70
Cycle time without handling  3:00 min.
Rinsing agent  H₂O
FLATHONING ON DLM 705

Parts specification
Material  carbide K10
Previous operation  sintered
Dimensions  Ø 4 ½" x 1" x 0.04645"
Ø 114,3 x 25.4 x 1,18 mm

Preamachined condition
Base size  0.062/1.580 mm
Surface  sintered

Process specification
Machine  DLM 705
Working wheel  D126
Stock removal  400 μ
Pieces per load  6
Cycle time without handling  5:30 min.
Rinsing agent  Honing oil

Results
Tolerance in dim.  ± 5 μ
Cpk  1.33
Ra  0.15 μ
Flatness  12 μ / 0.0000472
Parallelism  2 μ / 0.0000787
Surface optical:  crosshatch
FLATHONING ON DLM 705

Parts specification
Material Bronce (CuSn8H290)
Previous operation punched
Dimensions 40 x 21 x 2 mm

Premachined condition
Base size 2,100 mm
Surface smoothed

Process specification
Machine DLM 705
Working wheel D46
Stock removal 120 μ
Pieces per load 80
Cycle time without handling 2:00 min
Rinsing agent Honing oil

Results
Tolerance in dim. ± 2 μ
Cpk 1.33
Ra 0.2 μ
Flatness 5 μ
Parallelism 2 μ
Surface optical: crosshatch
**FLATHONING ON DLM 705**

**Process specification**
- Machine: DLM 705
- Working wheel: D46
- Stock removal: 400 μ
- Pieces per load: 50
- Cycle time without handling: 5:30 min.
- Rinsing agent: Honing oil

**Parts specification**
- Material: carbide
- Previous operation: sintered
- Dimensions: 29 x 16 x 9 mm

**Premachined condition**
- Overmeasure: 9.400 mm
- Surface: sintered

**Results**
- Tolerance in dim.: ± 5 μ
- Cpk: 1.33
- Ra: 0.15 μ
- Flatness: 0.5 μ
- Parallelism: 1-2 μ
- Surface optical: crosshatch

**Process specification**
- Machine: DLM 705
- Working wheel: D46
- Stock removal: 400 μ
- Pieces per load: 50
- Cycle time without handling: 5:30 min.
- Rinsing agent: Honing oil
FLATHONING ON DLM 705

Parts specification
Material 420 stainless steel
Previous operation fine blanking
Dimensions $\varnothing$ 20 x 4 mm

Application Razor

Premachined condition
Base size 4.37 mm

Process specification
Machine DLM 705
Working wheel D46
Stock removal 80 $\mu$m
Pieces per load 200
Cycle time without handling 1:00 min.
Rinsing agent Oil

Results
Tolerance in dim. $\pm$ 10 $\mu$m
Cpk 1.33
Ra 0.2 $\mu$m
Flatness < 5 $\mu$m
Parallelism < 5 $\mu$m
Surface optical: crosshatch
FLATHONING ON DLM 705

Parts specification
Material 455 stainless steel
Previous operation blanking
Dimensions Ø 17,5 x 5.93 mm

Application Razor
Premarked condition
Base size 5.23 mm
Surface blanking

Results
Tolerance in dim. 5,08 ± 75 μ
Cpk 1.33
Ra 0.4 μ
Parallelism 20 μ
Surface optical: crosshatch

Process specification
Machine DLM 705
Working wheel D46
Stock removal 450 μ
Pieces per load 180
Cycle time without handling 1:30 min.
Rinsing agent Oil
FLATHONING ON DLM 705

Parts specification
Material  ceramics
Previous operation  sintered
Dimensions  \( \varnothing 67 \text{ mm} \)

Premachined condition
Base size  \(~7 \text{ mm}\)
Surface  sintered

Results
Tolerance in dim.  \(6 \pm 10 \mu\)
Cpk  1.33
Ra  0.4 \(\mu\)
Flatness  1.5 – 3 \(\mu\)
Parallelism  2-4 \(\mu\)
Surface optical:  crosshatch

Process specification
Machine  DLM 705
Working wheel  D46
Stock removal  390 \(\mu\)
Pieces per load  30
Cycle time without handling  2:30 min.
Rinsing agent  Oil
FLATHONING ON DLM 705

Parts specification
Material: sintered metal
Previous operation: sintered
Dimensions: \( \varnothing 5.5 \times \varnothing 3 \times 3.2 \text{ mm} \)

Premachined condition
Base size: 3.56 mm
Surface: sintered

Results
Tolerance in dim.: 3.29 mm ± 3 \( \mu \)
Cpk: 1.33
Ra: 0.2 - 0.4 \( \mu \)
Flatness: < 1 \( \mu \)
Parallelism: < 1 \( \mu \)
Surface optical: crosshatch

Process specification
Machine: DLM 705
Working wheel: D46 AL
Stock removal: 360 \( \mu \)/min.
Pieces per load: 1430
Cycle time without handling: 3:00 min.
Rinsing agent: Oil
# FLATHONING ON DLM 705

## Parts specification
- **Material**: Sintered steel soft
- **Previous operation**: Sintered
- **Dimensions**: Ø 48 x 10 mm

## Premachined condition
- **Base size**: 1.5 mm
- **Surface**: Sintered

## Process specification
- **Machine**: DLM 705
- **Working wheel**: B91
- **Stock removal**: 200 μ
- **Pieces per load**: 48
- **Cycle time without handling**: 4:00 min.
- **Rinsing agent**: Water

## Results
- **Tolerance in dim.**: 1.3 mm ± 20 μ
- **Cpk**: 1.33
- **Ra**: 0.5 μ
- **Flatness**: 1-3 μ
- **Parallelism**: 3 μ
- **Surface optical**: Crosshatch
Parts specification
Material carbide
Previous operation sintered
Dimensions 28 x 7,2 x 2,795 mm

Premachined condition
Base size 2,99 mm
Surface sintered

Process specification
Machine DLM 705
Working wheel D30
Stock removal 200 μ
Pieces per load 150
Cycle time without handling 3:00 min.
Rinsing agent oil

Results
Tolerance in dim. 2,795 mm ± 1 μ
Cpk 1.33
Ra < 0.1 μ
Flatness < 1 μ
Parallelism < 2 μ
Surface optical: crosshatch
FLATHONING ON DLM 705

Parts specification
Material 16MnCrS5
Previous operation fine blanked
Dimensions Ø 50,9x5,35 mm

Application Drilling machine

Premachined condition
Base size 5,500 mm
Surface feingestanzt
with blanking burr up to 5,56 mm

Results
Tolerance in dim. 5,0 + 10 μ
Cpk 1.33
Ra 0.6 μ
Flatness 1 μ
Parallelism 2 μ
Surface optical: crosshatch

Process specification
Machine DLM 705
Working wheel D126
Stock removal 170 μ
Pieces per load 48
Cycle time without handling 1:30 min.
Rinsing agent Oil
FLATHONING ON DLM 705

Parts description
Material  sintered steel
Previous operation  sintered
Dimensions  Ø 32,05 x 2,48 mm

Application Diesel injection

Premarkmachined condition
Base size  2,600 mm
Surface  sintered

Results
Tolerance in dim.  2,25 mm ± 1 μ
Classes  2,23 – 2,28 mm
Ra  0.15 μ
Flatness  1 μ
Parallelism  2 μ
Surface optical:  crosshatch

Process specification
Machine  DLM 705
Working wheel  B76
Stock removal  120
Pieces per load  60 μ
Cycle time without handling  4:30 min.
Rinsing agent  Oil
FLATHONING ON DLM 705

Parts description
Material: SiN
Previous operation: sintered
Dimensions: 12.5 x 12.5 x 7.940 mm

Premachined condition
Base size: 8.86 mm
Surface: sintered

Results
Tolerance in dim.: 7.940 mm ± 5 μ
Cpk: 1.33
Ra: 0.05 μ
Flatness: 1 μ
Parallelism: 1 μ
Surface optical: crosshatch

Process specification
Machine: DLM 705
Working wheel: D76
Stock removal: 900 μ
Pieces per load: 120
Cycle time without handling: 10:00 min.
Rinsing agent: Oil
FLATHONING ON DLM 705

Parts description
Material: steel soft
Previous operation: fine blanked
Dimensions: Ø 38 x 6.2 mm

Premachined condition
Base size: 6.50 mm
Surface: raw

Results
Tolerance in dim.: 5.97 mm ± 5 μ
CpK: 1.33
Ra: 0.5 μ
Flatness: 5 μ
Parallelism: 2 μ
Surface optical: crosshatch

Process specification
Machine: DLM 705
Working wheel: D126
Stock removal: 300 μ
Pieces per load: 114
Cycle time without handling: 2:00 min.
Rinsing agent: Oil
FLATHONING ON DLM 705

Parts description
Material  carbide
Previous operation  sintered
Dimensions  26 x 6 x 0.65 mm

Premachined condition
Base size  0.95 mm
Surface  raw

Process specification
Machine  DLM 705
Working wheel  D46
Stock removal  300 µ
Pieces per load  250
Cycle time without handling  10:00 min.
Rinsing agent  Oil

Results
Tolerance in dim.  0.63 mm ± 5 µ
CpK  1.33
Ra  0.2 µ
Flatness  2 µ
Parallelism  1 µ
Surface optical:  crosshatch
**FLATHONING ON DLM 705**

**Parts description**
- **Material**: steel soft
- **Previous operation**: fine blanked
- **Dimensions**: \( \varnothing 23 \times 6.25 \text{ mm} \)

**Premachined condition**
- **Base size**: 6.25 mm
- **Surface**: raw

**Results**
- **Tolerance in dim.**: 6.1 mm ± 10 \( \mu \) 
- **CpK**: 1.33
- **Ra**: 0.5 \( \mu \)
- **Flatness**: 5 \( \mu \)
- **Parallelism**: 2 \( \mu \)
- **Surface optical**: crosshatch

**Process specification**
- **Machine**: DLM 705
- **Working wheel**: D126
- **Stock removal**: 300 \( \mu \)/min.
- **Pieces per load**: 205
- **Cycle time without handling**: 1:00 min.
- **Rinsing agent**: Oil
FLATHONING ON DLM 705

**Parts description**
- **Material**: Aluminium
- **Previous operation**: turned on a lathe
- **Dimensions**: Ø 60 x 30 x 1.6 mm

**Premachined condition**
- **Base size**: 1.6 mm
- **Surface**: turned on a lathe

**Process specification**
- **Machine**: DLM 705
- **Working wheel**: D30
- **Stock removal**: 100 μ
- **Pieces per load**: 30
- **Cycle time without handling**: 1:30 min.
- **Rinsing agent**: Oil

**Results**
- **Tolerance in dim.**: 1.5 mm ± 5 μ
- **CpK**: 1.33
- **Ra**: 0.5 μ
- **Flatness**: 10 μ
- **Parallelism**: 2 μ
- **Surface optical**: crosshatch
FLATHONING ON DLM 705

**Parts description**
- **Material**: Bronze
- **Previous operation**: blanking
- **Dimensions**: 40 x 40 x 1.5 mm

**Premachined condition**
- **Base size**: 1.8 mm
- **Surface**: raw

**Process specification**
- **Machine**: DLM 705
- **Working wheel**: D46
- **Stock removal**: 300 μ
- **Pieces per load**: 40
- **Cycle time without handling**: 7:30 min.
- **Rinsing agent**: Oil

**Results**
- **Tolerance in dim.**: 1.65 mm ± 5 μ
- **CpK**: 1.33
- **Ra**: 0.4 μ
- **Flatness**: 10 μ
- **Parallelism**: 2 μ
- **Surface optical**: crosshatch
FLATHONING ON DLM 705

Parts description
Material: carbide
Previous operation: sintered
Dimensions: 9 x 17 x 1.5 mm

Premachined condition
Base size: 1.8 mm
Surface: raw

Process specification
Machine: DLM 705
Working wheel: D46
Stock removal: 300 μ
Pieces per load: 300
Cycle time without handling: 7:00 min.
Rinsing agent: Oil

Results
Tolerance in dim.: 1.6 mm ± 5 μ
CpK: 1.33
Ra: 0.3 μ
Flatness: 1 μ
Parallelism: 1 μ
Surface optical: crosshatch
FLATHONING ON DLM 705

Parts description
Material  steel
Previous operation  milling
Dimensions  40 x 60 mm

Premachined condition
Base size  12.200 mm
Surface milled

Results
Tolerance in dim.  12.000 mm ± 5 μ
CpK  1.33
Ra  0.4 μ
Flatness 5 μ
Parallelism 3 μ
Surface optical: crosshatch

Process specification
Machine  DLM 705
Working wheel  B91
Stock removal  133 μ
Pieces per load  48
Cycle time without handling  1:30 min.
Rinsing agent  Oil
FLATHONING ON DLM 705

Parts description
Material: Carbide
Previous operation: sintered
Dimensions: Ø 152 x 108 x 11.5 mm

Premachined condition
Base size: 12.500 mm
Surface: raw

Process specification
Machine: DLM 705
Working wheel: D126
Stock removal: 1000 μ
Pieces per load: 6
Cycle time without handling: 5:30 min.
Rinsing agent: Oil

Results
Tolerance in dim.: 11.506 mm ± 5 μ
CpK: 1.33
Ra: 0.15 μ
Flatness: 6 μ
Parallelism: 5 μ
Surface optical: crosshatch
**FLATHONING ON DLM 705**

**Parts description**
- Material: Carbide
- Previous operation: sintered
- Dimensions: $\varnothing 37 \times 32 \times 11$ mm

**Premachined condition**
- Base size: 11.500 mm
- Surface: raw

**Process specification**
- Machine: DLM 705
- Working wheel: D126
- Stock removal: 540 µ
- Pieces per load: 72
- Cycle time without handling: 1:50 min.
- Rinsing agent: Oil

**Results**
- Tolerance in dim.: $10.380 \text{ mm} \pm 5 \mu$
- CpK: 1.33
- Ra: 0.28 µ
- Flatness: 4 µ
- Parallelism: 5 µ
- Surface optical: crosshatch
FLATHONING ON DLM 705

Parts description
Material: Sapphire
Previous operation: sawed
Dimensions: Ø 32.3 x 3.3 mm

Application: watch industry

Premachined condition
Base size: 4.5 mm
Surface: sawed

Results
Tolerance in dim.: 3.3 mm ± 5 μ
Ra: 0.3 μ
Flatness: < 1 μ
Parallelism: 0.6 μ
Surface optical: crosshatch
FLATHONING ON DLM 705

Parts description
Material: Steel
Previous operation: fine blanked
Dimensions: Ø 37 x 28 x 3 mm

Premachined condition
Base size: 2.53 mm
Surface: fine blanked

Results
Tolerance in dim.: 2.41 mm ± 5 μ
CpK: 1.33
Ra: 0.2 μ
Flatness: 1 μ
Parallelism: 1 μ
Surface optical: crosshatch

Process specification
Machine: DLM 705
Working wheel: B54
Stock removal: 470 μ
Pieces per load: 60
Cycle time without handling: 5:00 min.
Rinsing agent: Oil
FLATHONING ON DLM 705

Parts description
Material  Carbide
Previous operation  sintered
Dimensions  Ø 154 x 107 x 10 mm

Premachined condition
Base size  11.5 mm
Surface  sintered

Results
Tolerance in dim.  10.5 mm ± 5 μ
CpK  1.33
Ra  0.14 μ
Flatness  5 μ
Parallelism  3 μ
Surface optical:  crosshatch

Process specification
Machine  DLM 705
Working wheel  D126
Stock removal  1500 μ/min.
Pieces per load  6
Cycle time without handling  5:00 min.
Rinsing agent  Oil
FLATHONING ON DLM 705

**Parts description**
- Material: Magnetite
- Previous operation: Sintered
- Dimensions: Ø 50 x Ø 30 x 8 mm

**Premachined condition**
- Base size: 8.4 mm
- Surface: Raw

**Process specification**
- Machine: DLM 705
- Working wheel: D46
- Stock removal: 400 μ
- Pieces per load: 40
- Cycle time without handling: 7:00 min.
- Rinsing agent: Oil

**Results**
- Tolerance in dim.: 8.00 mm ± 5 μ
- CpK: 1.33
- Ra: 0.8 μ
- Flatness: 2 μ
- Parallelism: 2 μ
- Surface optical: Crosshatch
FLATHONING ON DLM 705

Parts description
Material  100Cr6
Previous operation  turned on lathe
Dimensions  Ø 26 x Ø 18 x 7 mm

Premachined condition
Base size  7.180 mm
Surface  turned on lathe

Process specification
Machine  DLM 705
Working wheel  B76, dummy wheel
Stock removal  180 μ/min.
Pieces per load  120
Cycle time without handling  3:30 min.
Rinsing agent  Oil

Results
Tolerance in dim.  7.0 mm ± 5 μ
CpK  1.33
Ra  0.2 μ
Flatness  5 μ
Parallelism  5 μ
Surface optical:  crosshatch
**FLATHONING ON DLM 705**

**Parts description**
- Material: (Phos)Bronze
- Previous operation: blanking
- Dimensions: $\varnothing 7.5 \times \varnothing 4 \times 2.235$ mm

**Premachined condition**
- Base size: 2.27 mm
- Surface: blanking

**Process specification**
- Machine: DLM 705
- Working wheel: D12
- Stock removal: 40 $\mu$m
- Pieces per load: 1000
- Cycle time without handling: 3:00 min.
- Rinsing agent: Oil

**Results**
- Tolerance in dim.: $2.235$ mm $\pm 1.5$ $\mu$m
- CpK: 2.1
- Ra: 0.14 $\mu$m
- Flatness: 0.3 $\mu$m
- Parallelism: 0.26 $\mu$m
- Surface optical: crosshatch
FLATHONING ON DLM 705

Parts description
Material hardened steel C10
Previous operation blanking
Dimensions Ø 42 x 2,8 mm

Premachined condition
Base size 2.96 mm + burr
Surface raw

Process specification
Machine DLM 705
Working wheel B126
Stock removal 160 μ
Pieces per load 66
Cycle time without handling 2:00 min.
Rinsing agent Oil

Results
Tolerance in dim. 2.8 mm ± 8 μ
CpK 1.33
Ra 0.3 μ
Flatness max. 5 μ
Parallelism 3 μ
Surface optical: crosshatch
FLATHONING ON DLM 705

**Parts description**

- **Material**: hardened steel C10
- **Previous operation**: blanking, hardened, de-burred
- **Dimensions**: Ø 27 x 1.2 mm

**Premachined condition**

- **Base size**: 1.29 mm
- **Surface**: raw

**Process specification**

- **Machine**: DLM 705
- **Working wheel**: B126
- **Stock removal**: 100 μ
- **Pieces per load**: 168
- **Cycle time without handling**: 2:00 min.
- **Rinsing agent**: Oil

**Results**

- **Tolerance in dim.**: 1.2 mm ± 10 μ
- **CpK**: 1.33
- **Ra**: 0.18 μ
- **Flatness**: 3-4 μ
- **Parallelism**: 1-2 μ
- **Surface optical**: crosshatch
FLATHONING ON DLM 705

Parts description
Material: hard metal
Previous operation: sintered
Dimensions: 43.5 x 2.7 mm

Premachined condition
Base size: 2.740 mm
Surface: sintered

Process specification
Machine: DLM 705
Working wheel: D16 Cu
Stock removal: 30 μ
Pieces per load: 55
Cycle time without handling: 40:00 min.
Rinsing agent: Oil

Results
Tolerance in dim.: 2.700 ± 5 μ
Ra: 0.015 μ (<N1)
Flatness: 1 μ
Parallelism: 2 μ
Surface optical: Bright, slight cross hatch
FLATHONING ON DLM 705

Parts description
Material       hard metal
Previous operation       sintered
Dimensions       80 x 50 x 3 mm

Premachined condition
Base size       3.75 mm
Surface       sintered

Process specification
Machine       DLM 705
Working wheel       D126
Stock removal       750 µ
Pieces per load       24
Cycle time without handling       40:00 min.
Rinsing agent       Oil

Results
Tolerance in dim.       3 mm + 8 µ
CpK       1.33
Ra       0.1 µ
Flatness       -
Parallelism       2 - 3 µ
Surface optical:       cross hatch
FLATHONING ON DLM 705

Parts description
Material  100Cr6
Previous operation  hardened
Dimensions  D=13.95 mm, L=8.33 mm

Premachined condition
Base size  8.60 mm
Surface  hardened

Results
Tolerance in dim.  +/- 3 μ
CpK  >1.00
Ra  0.08 μ
Flatness  0.5 μ
Parallelism  1 μ
Surface optical:  crosshatch

Process specification
Machine  DLM 705
Working wheel  B 76 / D 25
Pieces per load  280
Cycle time without handling  4:00 min. approx.
Rinsing agent  Oil
FLATHONING ON DLM 705

**Parts description**
- Material: Pöhler 800
- Previous operation: hardened
- Dimensions: D1 = 19 mm, D2 = 9 mm, L = 5.14 mm

**Premachined condition**
- Base size: 5.15 mm
- Surface: hardened

**Process specification**
- Machine: DLM 705
- Working wheel: B25
- Pieces per load: Large side 145 pcs, Small side 210 pcs
- Cycle time without handling: 2:00 min. approx.
- Rinsing agent: Oil

**Results**
- Tolerance in dim.: +/- 20 μ
- CpK: >1.00
- Rz: 1.3 μ
- Flatness: 0.8 μ
- Parallelism: 1 μ
- Surface optical: crosshatch
**FLATHONING ON DLM 705**

**Parts description**
- **Material**: 40Cr13
- **Previous operation**: turned on lathe
- **Dimensions**: D = 9 mm, L = 10 mm

**Premachined condition**
- **Base size**: 10.15 mm
- **Surface**: turned on lathe

**Results**
- **Tolerance in dim.**: 10 +/- 0.005 μ
- **CpK**: >1.33
- **Ra**: 0.4 μ
- **Flatness**: 0.005 μ
- **Parallelism**: -
- **Surface optical**: bright

**Process specification**
- **Machine**: DLM 705
- **Working wheel**: B76
- **Pieces per load**: 910
- **Cycle time without handling**: 10:00 min. approx.
- **Rinsing agent**: Oil
FLATHONING ON DLM 705

Parts description
- Material: CuPb10 Sn
- Previous operation: sawed
- Dimensions: 50 x 86 mm

Premachined condition
- Base size: 6.85 ± 0.25 mm
- Surface: sawed

Results
- Tolerance in dim.: 6.40 ± 0.02 mm
- Ra: < 0.5 μ
- Flatness: < 0.003 μ
- Parallelism: < 0.01 mm
- Surface optical: crosshatch

Process specification
- Machine: DLM 705
- Working wheel: D126
- Pieces per load: 25
- Stock removal: 600 μ
- Cycle time without handling: 1:40 min.
- Rinsing agent: Oil
FLATHONING ON DLM 705

Parts description
- Material: Brass
- Previous operation: tumbled
- Dimensions: 15 x 15 mm

Premachined condition
- Base size: 1.2 mm
- Surface: tumbled

Results
- Tolerance in dim.: 1.1 ± 0.007 mm
- Ra: < 0.14 μ
- Flatness: < 0.0073 mm
- Parallelism: < 0.001 mm
- Surface optical: crosshatch

Process specification
- Machine: DLM 705
- Working wheel: D20
- Pieces per load: 300
- Stock removal: 0.1 mm
- Cycle time without handling: 1:00 min.
- Rinsing agent: Oil
FLATHONING ON DLM 705

**Parts description**
- Material: 20 Cr Mo S5
- Previous operation: sintered
- Dimensions: Ø 86 mm

**Premachined condition**
- Base size: 34.6 mm
- Surface: raw

**Process specification**
- Machine: DLM 705
- Working wheel: B54
- Stock removal: 350 μ
- Pieces per load: 24 pcs
- Cycle time without handling: 2:30 min.
- Rinsing agent: Oil

**Results**
- Tolerance in dim.: 34.2 mm, ± 2 μ
- Cpk: 1.33
- Ra: 0.2 μ
- Flatness: 2 μ
- Parallelism: 2 μ
- Surface optical: crosshatch
FLATHONING ON DLM 705

Parts description
Material 20 Cr Mo S5
Previous operation sintered
Dimensions Ø 54 x 3.9 mm

Premachined condition
Base size 4.1 mm
Surface raw

Process specification
Machine DLM 705
Working wheel B54
Stock removal 240 μ
Pieces per load 42
Cycle time without handling 5:00 min.
Rinsing agent Oil

Results
Tolerance in dim. 3.9 mm, ± 2 μ
Cpk 1.33
Ra 0.2 μ
Flatness 2 μ
Parallelism 2 μ
Surface optical: crosshatch
FLATHONING ON DLM 705

Parts description
Material \( \text{Al}_2 \text{O}_3 \) ceramic
Previous operation sintered
Dimensions \( \varnothing 16.1 \times 3.4 \text{ mm} \)

Premachined condition
Base size \( \varnothing 16.1 \times 3.4 \text{ mm} \)
Surface raw

Process specification
Machine DLM 705
Working wheel D 76
Stock removal
Pieces per load
Cycle time without handling 2:00 min.
Rinsing agent Oil

Results
Tolerance in dim. \( \pm 5 \mu \)
Cpk 1.33
Ra 0.4 \( \mu \)
Flatness 1 \( \mu \)
Parallelism 2 \( \mu \)
Surface optical: mat
FLATHONING ON DLM 705

Parts description
Material 100 Cr 6
Previous operation turned on a lathe
Dimensions Ø 47 - Ø 62 x 15 mm

Premachined condition
Base size 15.1 mm
Surface turned on a lathe

Process specification
Machine DLM 705
Working wheel CBN-K / dummy wheel
Stock removal 50 µ
Pieces per load 48
Cycle time without handling 5:00 min.
Rinsing agent Oil

Results
Tolerance in dim. 15 mm, +0 / - 5 µ
Cpk 1.33
Ra 0.8 µ
Flatness 1 µ
Parallelism 2 µ
Surface optical: bright, crosshatch
FLATHONING ON DLM 705

**Parts description**
- Material: Special ceramic (Zn 0?)
- Previous operation: sintered
- Dimensions: Ø 47 x 43.5 mm

**Premachined condition**
- Base size: 43.5 mm
- Surface: raw

**Process specification**
- Machine: DLM 705
- Working wheel: D 126 T
- Stock removal: 1200 μ
- Pieces per load: 36 / 40
- Cycle time without handling: 3:30 min.
- Rinsing agent: Oil

**Results**
- Tolerance in dim.: 42.3 mm, ± 2 μ
- Cpk: 1.33
- Ra: 1.5 μ
- Flatness: 0.02 μ
- Parallelism: 0.02 μ
- Surface optical: bright, crosshatch
FLATHONING ON DLM 705

Parts description
Material: X46 Cr 13
Previous operation: punched
Dimensions: Ø 9 mm

Premachined condition
Base size: Ø 9 x 0.9 mm
Surface: raw

Process specification
Machine: DLM 705
Working wheel: B 76 rot
Stock removal: 100 - 125μ
Pieces per load: 600
Cycle time without handling: 4:00 min.
Rinsing agent: Oil

Results
Tolerance in dim.: 0.8 mm, +0 / - 50 μ
Cpk: 1.33
Ra: 0.4 μ
Flatness: 0.01 μ
Parallelism: --
Surface optical: bright
## Parts description
- **Material**: hard metall
- **Previous operation**: sintered
- **Dimensions**: Ø 101 mm

## Premachined condition
- **Base size**: 1.0 mm
- **Surface**: sintered, raw/porous

## Process specification
- **Machine**: DLM 705
- **Working wheel**: D 151
- **Stock removal**: 650 μ
- **Pieces per load**: 6
- **Cycle time without handling**: 12:00 min.
- **Rinsing agent**: Oil

## Results
- **Tolerance in dim.**: 0.35 mm, ± 30 μ
- **Cpk**: 1.33
- **Ra**: 0.1 μ
- **Flatness**: 50 μ
- **Parallelism**: 1 μ
- **Surface optical**: bright, cross hatch
**Parts description**

- Outer ring
- Material: 100 Cr6
- Previous operation: ground
- Dimensions: Ø 75/63 x 15 mm

**Premachined condition**

- Base size: 15.1 mm
- Surface: ground

**Process specification**

- Machine: DLM 705
- Working wheel: B 25
- Stock removal: 100 μ
- Pieces per load: 30
- Cycle time without handling: 3:00 min.
- Rinsing agent: Oil

**Results**

- Tolerance in dim.: 15 mm, + 0 / - 5 μ
- Cpk: 1.33
- Ra: < 0.06 μ
- Flatness: < 0.025 μ
- Parallelism: 0.0005 μ
- Surface optical: cross hatch
**Parts description**
Housing ring
Material 100 Cr6
Previous turned, hardened, operation tempered
Dimensions Ø 135 x 7 mm

**Premachined condition**
Base size 7.4 +/- 0.1 mm
Surface rough

**Process specification**
Machine DLM 705
Working wheel B 64
Stock removal bis 460 μ
Pieces per load 6
Cycle time without handling 2:00 min.
Rinsing agent Oil

**Results**
Tolerance in dim. 7 mm, + 0 / - 0.09 mm
Cpk 1.33
Ra < 0.2 μ
Flatness < 4 μ
Parallelism < 5 μ
Surface optical: cross hatch
FLATHONING ON DLM 705

Parts description
Material AL203
Previous raw operation
Dimensions 131 x 98 x 6.5 mm

Premachined condition
Base size 6.5 mm
Surface raw

Process specification
Machine DLM 705
Working wheel D91 Hex
Stock removal 1400 μ
Pieces per load 6
Cycle time without handling 6:00 min.
Rinsing agent Oil

Results
Tolerance in dim. 4.85 mm, ± 20 μ
Cpk 1.33
Ra 0.8 μ
Flatness < 6 μ
Parallelism < 6 μ
Surface optical: bright