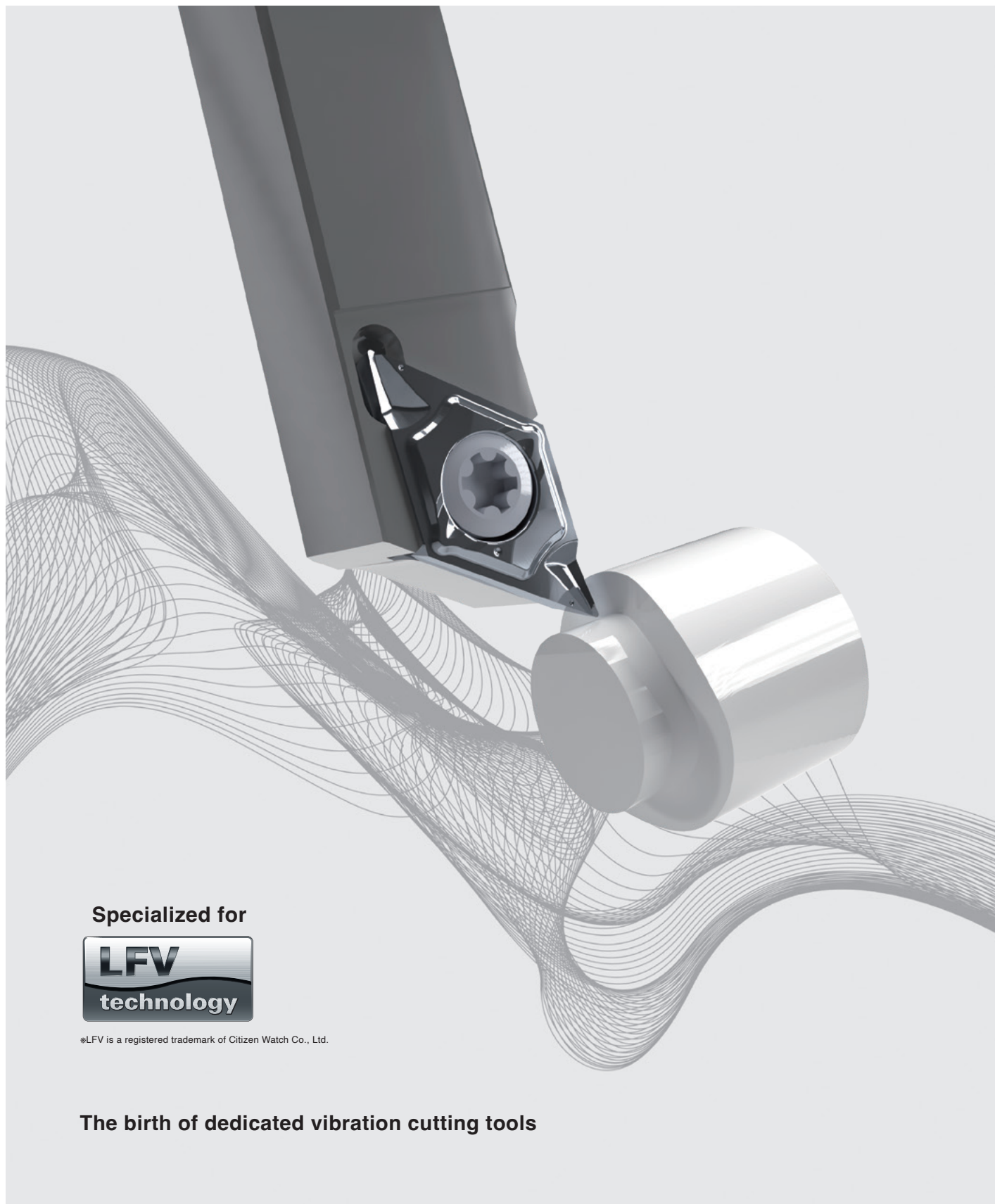


# TMV Chipbreaker

For OD Turning | Specially designed for vibration cutting on automatic lathes

CITIZEN ×



Specialized for



※LFV is a registered trademark of Citizen Watch Co., Ltd.

The birth of dedicated vibration cutting tools

*CERtainly* | but not only | *CERamics*  
Outstanding solutions for demanding applications

# The birth of dedicated vibration cutting tools

Cutting tools developed to maximize performance for vibration cutting and achieve efficient machining.  
The best selection of tooling to cover a large range of machining applications.

Specialized for



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## TMV Chipbreaker

For OD Turning | Specially designed for vibration cutting on automatic lathes

### | Compatible models ( Cincom )



L12



L20



L20XIIB5



L32



A20



D25



M16



M32

CITIZEN MACHINERY CO., LTD.

# Achieving extended tool life and stable cutting performance in vibration cutting

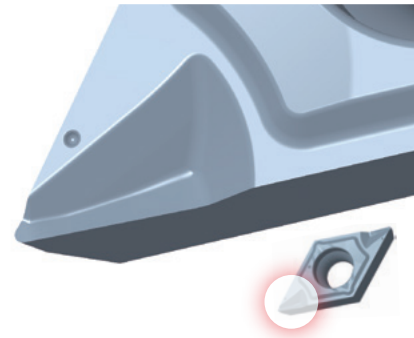
## Performance

- **Significantly reducing damage of cutting edge**

Extended lifespan can be expected even in the machining of difficult-to-cut materials

- **More stable of chip control**

Stable chip formation during vibration cutting



## Applications

Front turning process using an automatic lathe with vibration cutting function

## Cutting conditions

| Grade | Material  | Machining method | Cutting conditions    |               |             | Vibration condition ( L F V ) |     |     |
|-------|---|------------------|-----------------------|---------------|-------------|-------------------------------|-----|-----|
|       |   |                  | Cutting speed (m/min) | Feed (mm/rev) | D.O.C. (mm) | P                             | Q   | D   |
| ST4   | Austenitic stainless steel<br>( SUS304 / SUS316 etc ) | Front Turning    | 40 - 100              | 0.02 - 0.06   | 0.5 - 2.0   | Mode 1                        | 0.5 | 0.5 |
| DM4   | Carbon steel / Alloy steel<br>( SCM435 / S45C etc )   | Front Turning    | 50 - 120              | 0.02 - 0.06   |             |                               |     |     |
| TM4   | Non-ferrous<br>( Aluminum / Titanium etc )            | Front Turning    | 60 - 150              | 0.02 - 0.06   |             |                               |     |     |

⚠ Our products are designed with a low cutting edge, please use them after aligning with the center.

⚠ When using insert radius R0.08, please set the feed rate to 0.02mm/rev or less. If you want to increase the feed rate beyond 0.02mm/rev, we recommend using the [ Mode 2 / E4.0 / R0.5 ]

## Case study

|               |   | TMV Chipbreaker | Competitor |
|---------------|---|-----------------|------------|
| Machine       | Cincom L20-LFV                                  |                 |            |
| Material      | SUS316L   |                 |            |
| Speed         | 80 m/min  |                 |            |
| Feed          | 0.05 mm/rev                                     |                 |            |
| D.O.C.        | 1.0 mm  |                 |            |
| Coolant       | WET   |                 |            |
| Vib condition | Mode Q0.5 D0.5                                  |                 |            |
|               | Cutting edge photo<br>Machining distance<br>8km |                 |            |
|               | Chip condition                                  |                 |            |

### Construction equipment parts

|                              |   |                        |
|------------------------------|---|------------------------|
| Material                     | SGD material ( SS polish )<br>Machining Dia: φ8 / 10.8 / 12 |                        |
| Rotation speed (rpm)         | 2,500   |                        |
| Feed (mm/rev)                | 0.03  |                        |
| D.O.C.(mm)                   | 2.0/2.6/4.0   |                        |
| Vib condition (LFV)          | Mode 1 / Q1.0 / D0.5  |                        |
| <b>DM4 DCGT11T302MRTMV</b>   |   | <b>600pcs / Corner</b> |
| Competitor PVD coated insert |   | <b>300pcs / Corner</b> |

### Valve component

|                              |                               |                          |
|------------------------------|-------------------------------|--------------------------|
| Material                     | SUS304<br>Machining Dia: φ3.8 |                          |
| Rotation speed (rpm)         | 2,263                         |                          |
| Feed (mm/rev)                | 0.02                          |                          |
| D.O.C. (mm)                  | 3.1                           |                          |
| Vib condition (LFV)          | Mode 2 / E3.0 / R0.5 / I0.02  |                          |
| <b>ST4 DCGT11T302MRTMV</b>   |                               | <b>3,000pcs / Corner</b> |
| Competitor PVD coated insert |                               | <b>2,200pcs / Corner</b> |

| Shape | Insert number   |                 | Qty /Case | PVD coated grade |     |     | Dimensions |           |                   |
|-------|-----------------|-----------------|-----------|------------------|-----|-----|------------|-----------|-------------------|
|       | ISO             | ANSI            |           | ST4              | DM4 | TM4 | I.C.       | Thickness | Radius            |
|       | DCGT11T301MRTMV | DCGT32.504MRTMV | 10        | ●                | ●   | ●   | 9.525      | 3.97      | 0.08 <sup>※</sup> |
|       | DCGT11T302MRTMV | DCGT32.508MRTMV | 10        | ●                | ●   | ●   | 9.525      | 3.97      | 0.18              |
|       | DCGT11T304MRTMV | DCGT32.51MRTMV  | 10        | ●                | ●   | ●   | 9.525      | 3.97      | 0.38              |
|       | CCGT09T301MRTMV | CCGT32.504MRTMV | 10        | ●                | ●   | ●   | 9.525      | 3.97      | 0.08 <sup>※</sup> |
|       | CCGT09T302MRTMV | CCGT32.508MRTMV | 10        | ●                | ●   | ●   | 9.525      | 3.97      | 0.18              |
|       | CCGT09T304MRTMV | CCGT32.51MRTMV  | 10        | ●                | ●   | ●   | 9.525      | 3.97      | 0.38              |
|       | VCGT110302MRTMV | VCGT2208MRTMV   | 10        | ●                | ●   | ●   | 6.35       | 3.18      | 0.18              |
|       | VCGT110304MRTMV | VCGT221MRTMV    | 10        | ●                | ●   | ●   | 6.35       | 3.18      | 0.38              |
|       | TNGG160402MRTMV | TNGG3308MRTMV   | 10        | ●                | ●   | ●   | 9.525      | 4.76      | 0.18              |
|       | TNGG160404MRTMV | TNGG331MRTMV    | 10        | ●                | ●   | ●   | 9.525      | 4.76      | 0.38              |

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Sample request



YouTube Channel

[www.youtube.com/NTKCUTTINGTOOLS](http://www.youtube.com/NTKCUTTINGTOOLS)



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