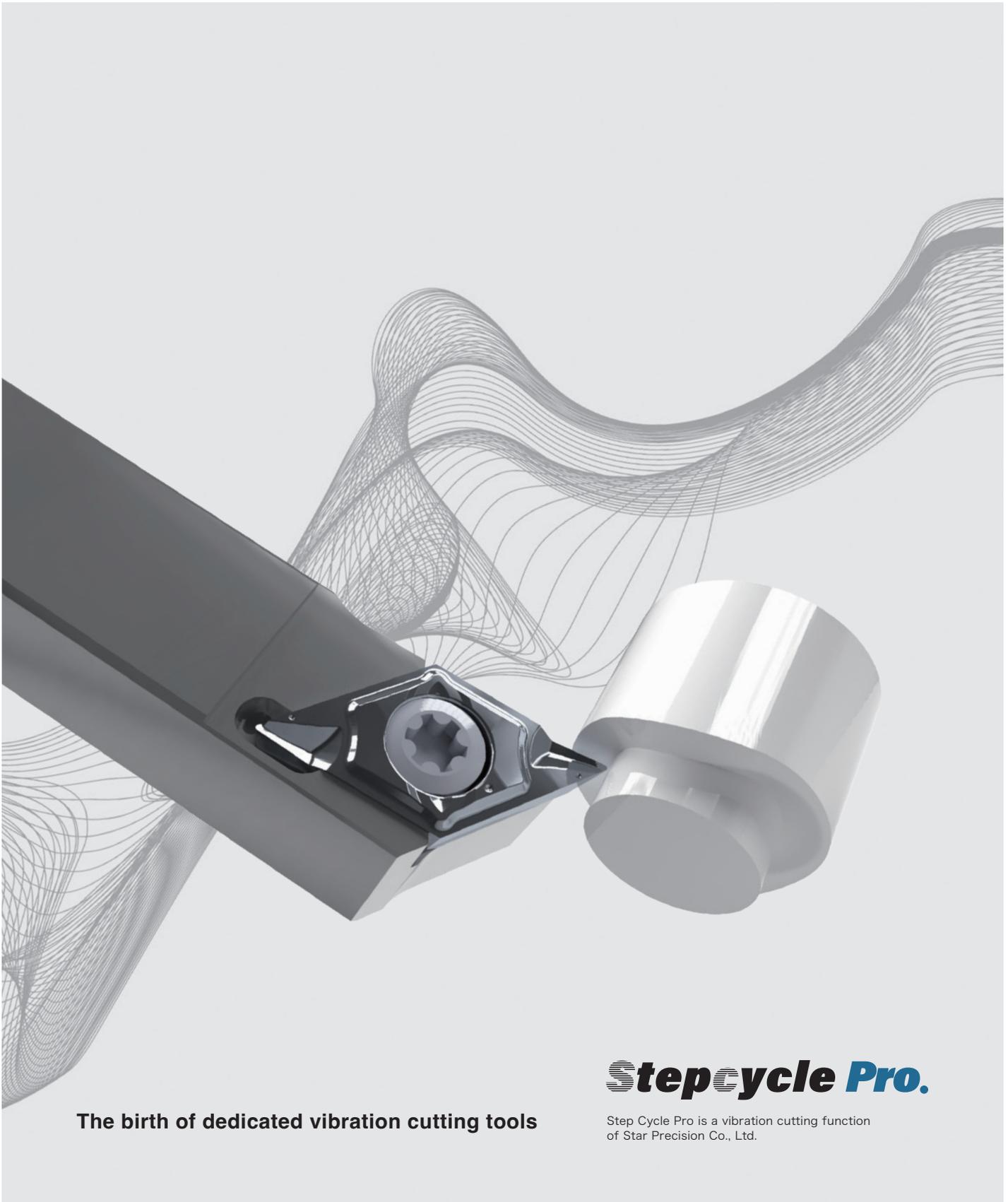


# TMV Chipbreaker

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



The birth of dedicated vibration cutting tools

**Stepcycle Pro.**

Step Cycle Pro is a vibration cutting function of Star Precision Co., Ltd.

**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 wide range of machining applications.

## TMV Chipbreaker

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

**star**

**Stepcycle Pro.**

| Representative models



SB-20R typeG



SP-20



SD-26



SL-10

Please check with Star Precision Co., Ltd. for compatible models of Step Cycle Pro.

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

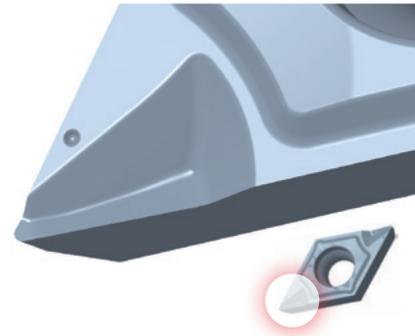
## Performance

- **Significantly reduces damage of cutting edge**

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

- **Improved chip control for stable machining**

Stable chip formation during vibration cutting



## Applications

Front turning process using an automatic lathe with vibration cutting function

## Cutting conditions

Grade	Material	Operation	Cutting parameters			Vibration Conditions (Step Cycle Pro)	
			Cutting speed (m/min)	Feed (mm/rev)	D.O.C. (mm)	A Chip length factor	D Amplitude factor
ST4	Austenitic stainless steel ( SUS304 / SUS316 etc )	Front Turning	40 - 100	0.02 - 0.06	0.5 - 2.0	More than 2.0	More than 2.0
DM4	Carbon steel / Alloy steel ( SCM435 / S45C etc )	Front Turning	50 - 120	0.02 - 0.06			
TM4	Non-ferrous ( 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.

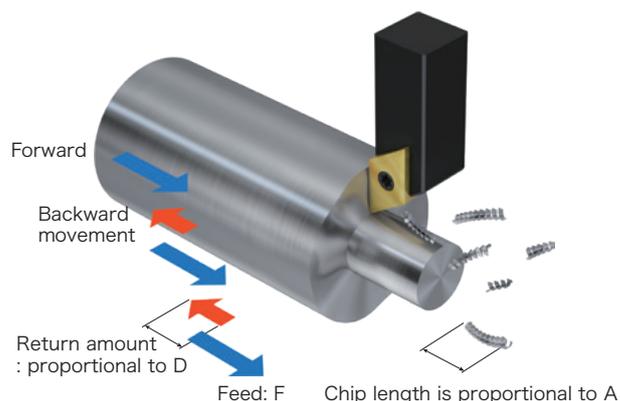
⚠ When using insert radius R0.08, please set the feed rate to 0.02mm/rev or less.

## Case study

		TMV Chipbreaker	Competitor
Machine	STAR SR-38		
Material	SUS316L		
Speed	80 m/min		
Feed	0.05 mm/rev		
D.O.C.	1.0 mm		
Coolant	WET		
Vib condition	A3.0 D2.0		
	Cutting edge photo		
	Chip condition		

## What is the Step Cycle Pro?

Step Cycle Pro is a machining method called vibratory cutting or oscillating cutting. This is a technique to generate an idle sway area during cutting by vibrating an optional control axis X,Y,Z according to the rotational period of the main shaft, thereby cutting chips. Prevents chips from becoming entangled in the workpiece by cutting chips into small pieces and discharging them intermittently. This is a new generation of cutting technology that can cope with a variety of machining shapes and materials and reduce problems during cutting.



Shape	Insert number		Qty /Case	PVD coated grade			Dimensions		
	Metric	Inch		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)



LINE Technical consultation @ntktech

