

## Built-In Damper **SMART DAMPER** PAT.



CK BORING SYSTEM

▶ BBT : A80

▶ HSK : C26

FACE MILL  
ARBOR TYPE H

▶ BBT : A119

▶ BDV : B17

▶ HSK : C29

TURNING ADAPTER

▶ HSK : E22

▶ BIG CAPTO : E38

BORING BAR

▶ Details : F11

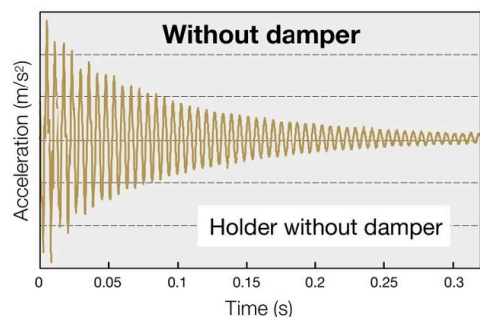
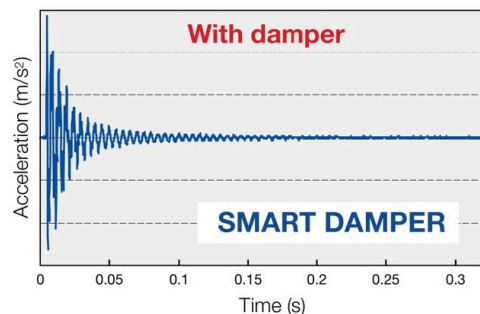


- Unique dynamic damper eliminates chatter!
- Even machining with long projection lengths achieves high speed and efficiency.



### Comparison of oscillatory waveforms with and without dampers

The Smart Damper incorporates a damping mechanism and reduces chatter instantly. The Smart Damper solves various problems caused by chatter due to long projection, such as inadequate surface roughness, defective dimensions of machined workpiece and shortened tool life.



### Chatter suppressing mechanism



An incorporated unique damper that functions as both a counter damper and friction damper. Patent-pending counter weight maximizes effect of the friction damper. Chatter is absorbed effectively and higher machining accuracy is achieved.

### Finish Boring of Ductile Cast Iron (FCD500)

× = Chattering ○ = Good ◎ Excellent surface finish

Boring holder	Cutting speed Vc (m/min)			
	25	50	100	150
Holder without damper	○	×	×	×
Built-in Damper <b>SMART DAMPER</b> BBT50-CKB6DP-380	○	○	○	◎

**Results: 6 times greater productivity.**  
**Superior surface finish and better tool life due to increased cutting speed.**

#### Cutting Conditions

Machine	Horizontal MC	BIG-PLUS BBT50	Insert radius	R0.4
Boring diameter	ø68mm		Feed	0.2mm/rev
Depth	408mm (L/D=6)		Depth of cut	0.3mm/e

## Abundant series available for various machining requirements

### CK Boring Series with Built-In Damper

High-efficiency machining of deep hole rough and finishing boring is available.



#### EWN BORING HEAD Type

Boring head with a built-in damper. The EWN Boring Head functions are maintained, featuring integrated damper.

**A54**



**Highly reliable scale plate**  
With vernier scale  
enabling 1-micron adjustment

#### SW BORING HEAD Type PAT.

Boring head with a built-in damper. Damper located closer to the cutting edge provides greater damping effect.

**A43**

#### CK Shank Type PAT.

A damper is built into the CK Shank. L/D = 6x



**A80-C26**

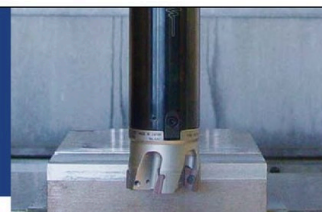
#### CK Extension Type PAT.

Just combine it with your standard CK Boring Head/CK Shank to achieve damping countermeasures.

**A80**

### Built-In Damper FACE MILL ARBOR TYPE H

Stable cutting is possible even in face milling with long projection lengths.



**Basic Holder**  
(BBT50/BDV50/HSK-A100)

**Damper head**

FMH22 / FMH25.4  
FMH27 / FMH32



**A119-B17-C29**



**Caution** If attaching both a Basic Holder and damper head, note that the damper head cannot be removed once it has been used for work.

### Built-In Damper Turning Adapter for internal turning / BORING BAR



Eliminates chatter in internal turning.

Cartridges can be exchanged according to the application.

BORING BAR **F11**

Turning Adapter **E22-E38**



**Screw-on Type is also available.**



Achieves stable damping effect even with Head Interchangeable Holder.

**A131**