TOOLING

31-2024

JUNE 2024

**METRIC**

# NPA

New Product Announcement

Anti-Vibration

Longer Tool Life

High Productivity

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# Anti-Vibration Shanks for Boring Applications

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# Highlights

## A New Line of Vibration Damping Shanks for Long Overhang Boring Operations

When there is a need for internal diameter boring on an overhang exceeding 5XD, vibrations are likely to occur. These vibrations can limit the performance and surface finish achieved inside the hole after the boring tool and can shorten the tool life of the inserts used. Certain steps must be taken to address this phenomenon.

Changing the depth of the cut may not always be the best solution, as it introduces additional changes to the manufacturing steps, such as requiring a different pre-hole, which may not be possible in many cases. Another approach to mitigate chatter and vibrations is to significantly reduce the cutting parameters.

However, this can result in longer machining times and extended production times. Active vibration damping, with the assistance of ISCAR's new Anti-Vibration holder, is the optimal method for machining on long overhangs with the **ITS BORE** family of boring heads. This new line of holders incorporates a patented active anti-vibration mechanism, enabling machining at full cutting parameters and ensuring superior performance, reliability, and results.

**Advantages**

- Patented vibration damping mechanism
- Oil free
- Maintenance free
- Coolant through
- Modularity of MB system adaptations fit all machine interfaces
- Applications: Rough, Semi-Finish and Finish Boring

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## Anti-vibration basics

The shank incorporates a pre-tuned damping system, which is assembled using a heavy mass supported by rubber elements. For long overhang holders, it is recommended to use a machine spindle with face contact (such as CAMFIX, HSK, BT-FC, SK-FC, CAT-FC). It is crucial to adhere to the operational limitations of the holder, such as maximum coolant pressure and temperature, as excessive heat can negatively impact or damage the rubber support elements of the damping mechanism.

## Technical recommendations are laser marked on each holder, please read before use

1. Max. RPM 5000 RPM
2. Max. coolant pressure 40 BAR
3. Max. temperature 100° C

## Choose the optimal machining solution

To achieve the best results while working with rotating holders, there are a few basic rules that can also be applied to new anti-vibration shanks for boring applications:

- Rigid clamping.
- Shortest possible assembly length.
- Largest possible assembly diameter.
- Insert with smallest corner radius.

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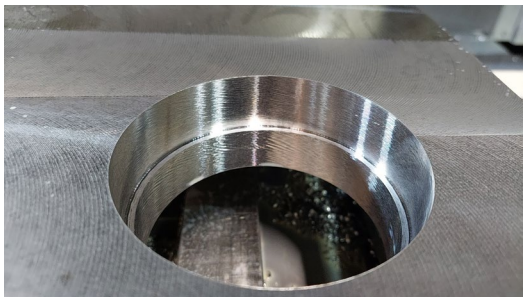
## Demonstrated performance in AISI4340 steel

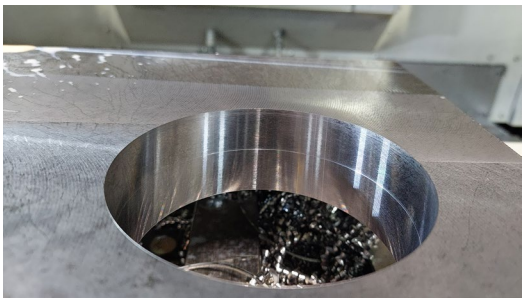
1. Adaptor: BT50 MB80
2. AV tool: AV RE MB80 MB63X280
3. Boring head: BHR MB63-63X125
4. Cartridge: IHSR 90-120
5. Insert: CCMT 120404-SM IC8150

**New AV-MB Vc=65 Fz=0.15 AP=3 D=114**

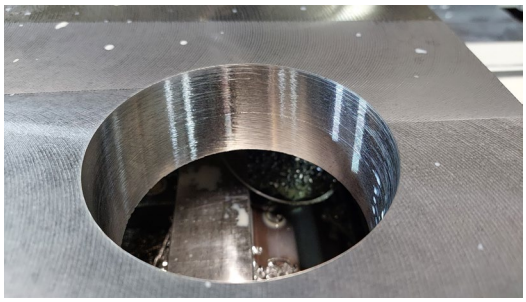
**Regular holder Vc=65 Fz=0.15 Ap=3 D=100**



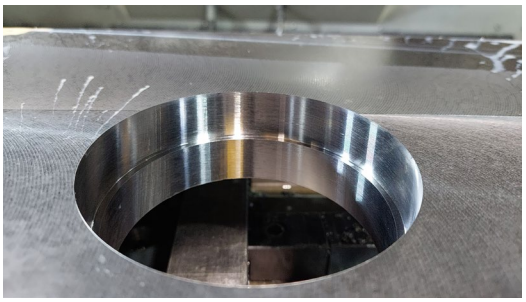
**New AV-MB Vc=80 Fz=0.15 Ap=3 D=114**



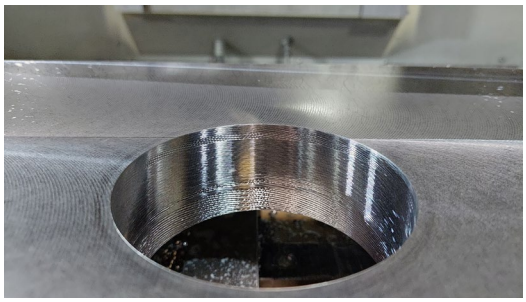
**Regular holder Vc=80 Fz=0.15 Ap=3 D=100**



**New AV-MB Vc=120 Fz=0.15 Ap=3 D=114**



**Regular holder Vc=120 Fz=0.15 Ap=3 D=100**





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The new line of anti-vibration shanks differs from the existing RE MB-AVI reduction shanks due to its **damping** mechanism.
The RE MB-AVI reducers have a pressed-in solid carbide core that i**mproves stiffness with no damping ability.**

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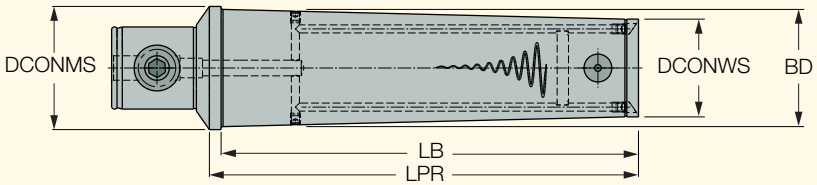
## AV-RE-MB

MB Modular System Anti Vibration Reducers
https://www.iscar.com/eCatalog/Family.aspx?mapp=BO&fnum=5096&GFSTYP=M

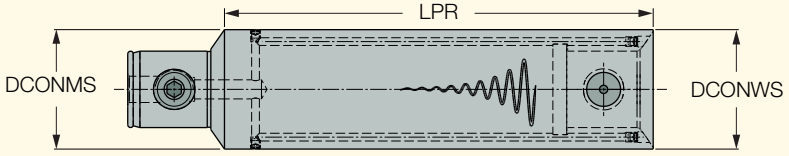



| Designation | DCONMS | DCONWS | LPR | BD | LB | kg |
|---|---|---|---|---|---|---|
| AV RE MB50 MB40X176 | 50.00 | 40.00 | 176.00 | 47.00 | 170.0 | 3.67 |
| AV RE MB63 MB50X220 | 63.00 | 50.00 | 220.00 | 60.00 | 214.0 | 4.66 |
| AV RE MB80 MB63X280 | 80.00 | 63.00 | 280.00 | 77.00 | 272.0 | 8.40 |

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

## AV-EX-MB

MB Modular System Anti Vibration Extensions
https://www.iscar.com/eCatalog/Family.aspx?mapp=BO&fnum=5097&GFSTYP=M




| Designation | DCONMS | DCONWS | LPR | kg |
|---|---|---|---|---|
| AV EX MB50X180 | 50.00 | 50.00 | 180.00 | 4.29 |
| AV EX MB63X230 | 63.00 | 63.00 | 230.00 | 6.54 |
| AV EX MB80X280 | 80.00 | 80.00 | 280.00 | 8.70 |

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.



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