

TOOLING

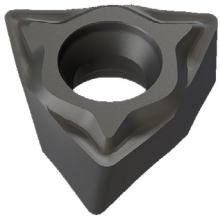
60-2024

NOVEMBER 2024

METRIC

NPA

New Product Announcement



No Setup
Time



Cost Effective
Inserts



High Productivity
Inserts



NEOBORE

MODULAR BORING HEADS

Revolutionary, User-Friendly Boring System with 3 Effective Cutting Edges

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NEO BORE

MODULAR BORING HEADS

Highlights

New User-Friendly Boring Head for High Productivity and Optimal Machining Performance

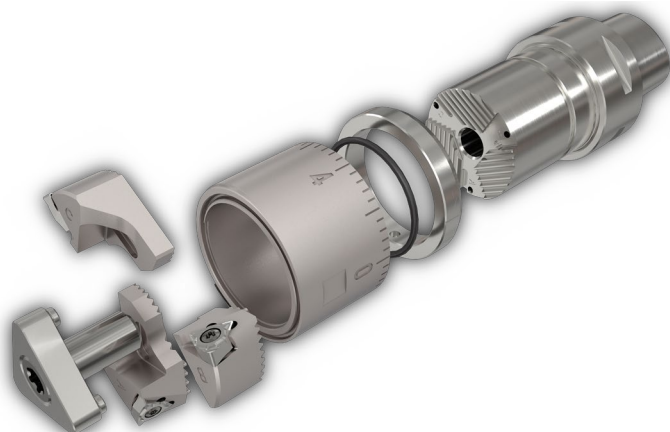
ISCAR introduces a new, user-friendly boring head which allows the operator to adjust the diameter on all three cutting edges simultaneously, without the need to extract the tool from the machine.

The system consists of the main tool body, main adjustment ring, zero (reference point) ring, three cartridges, triangular clamping plate and clamping screw. Each item provides fast, productive, and a convenient solution for optimal machining.

The simultaneous movement of all the cartridges is achieved by a patented ingenious groove which secures and moves the cartridges' guide pins depending on the direction of rotation of the main adjustment ring. Each section on the scale translates into 0.1 mm increments of the diameter change.

As shown below, the main adjustment ring shows a "zero-point reference". It allows us to set point of reference for the required diameter and to perform adjustments from this point onwards.

The cartridges slide back and forth on serrated rails. When the desired diameter is reached, the torque wrench paired with the TORX Plus bit should be used to clamp the cartridges in a fixed position by use of a special screw and a fixing triangle. The amount of torque required is marked on the triangular clamping plate.



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NEO-BORE MODULAR BORING HEADS

For the two smallest heads, the selected inserts are from WNGP family, with six cutting edges (three on each side) and functional chip breakers to achieve chip control effortlessly. Solid carbide grades guarantee the optimal tool life for every machined material. Bigger variants come with SOMX/SOGT inserts with four cutting edges, diverse chipbreakers and grades depending on the application.

CAMFIX or MB connections are available, for creating assemblies depending on the customer's needs.

Applications

The **NEO-BORE** BHR3 boring system should be used in various boring applications, including roughing, medium roughing, and semi-finishing.

The accurate mechanism enables to achieve no more than ± 0.1 mm of the diameter difference compared to the chosen diameter. Industries for rough boring such as:

- Automotive
- Power Generation
- General Engineering
- Die & Molds
- Machine Tool Builder (MTB)

Benefits

The main advantage compared to existing boring tools with three cutting edges (Zeff=3) is extremely low setup and adjustment time required.

The diameter can be set once on the pre-setting device, additional adjustments can be performed inside the machine without the need to extract the tool. We recommend performing the setting on the workbench.

An additional advantage shows up to 50% higher performance compared to common boring systems with two cutting edges (Zeff=2).

Marketing

- **NEO-BORE** tools should be offered as a direct addition to the existing **CAMFIX/MB** assemblies.
- **NEO-BORE** tools should be offered to customers using Zeff=1 and Zeff=2 boring tools featuring a more productive solution.
- **NEO-BORE** tools should be offered to customers who currently perform hole enlargement by interpolation milling and strive to be more efficient.
- **NEO-BORE** tools should be offered to small workshops who perform various diameter repairs within line range.

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MODULAR BORING HEADS

Periodical Maintenance

- Clean and lubricate the conical and cylindrical matching surfaces.

WARNING

- Maneuvering and adjustment screws to be used are those listed in the components section.
- Screws not listed in the components section should not be used to avoid malfunction of the boring heads.
- The machine tool must be equipped with active and passive safety devices to assure the safe use of the BHR3 boring head.
- ISCAR requires that the machine tools on which the BHR3 boring head is mounted complies with the provisions of 42/2006/CE directive.
- We recommend using ISCAR inserts.
The use of different inserts can affect the ultimate machining results.

Operating Instructions

Assembly

1. Place the body on an even surface or suitable adaptor.
2. Place the cartridges on the serrated rails according to the marked letters.
A to A
B to B
C to C
3. Make sure the cartridges are placed with a uniform gap between.
4. Take the plastic assembly accessory and place the toolholder triangle inside firmly.
5. Place the two components on top of the cartridges so that the toolholder triangle is in the middle of the three cartridges.
6. Drop in the screw and start turning it with the provided TORX PLUS bit and a bit holder or other suitable tool.
7. Remove the plastic assembly accessory.
8. Do not make diameter adjustments if TORX PLUS screw was tightened.

[Click for Short Video](#)

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NEOBORE

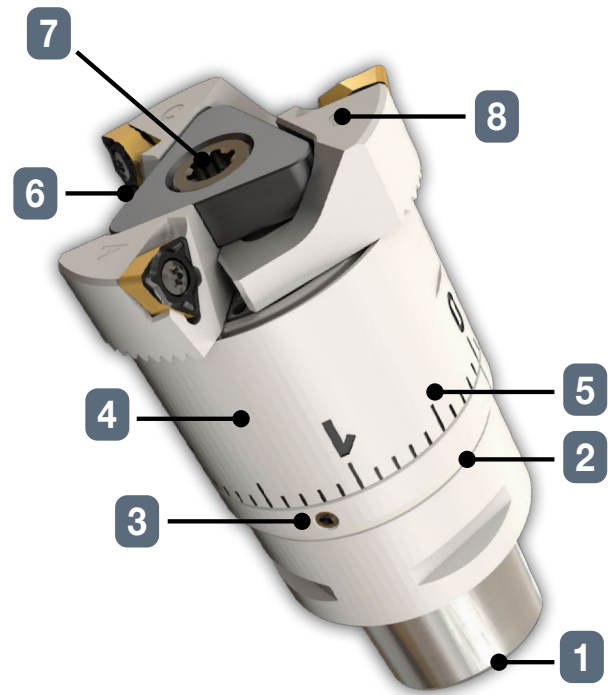
MODULAR BORING HEADS

Setup

Loosen screw (7) before making slide adjustments.

1. Adjust the required diameter by turning the slide ring (4).
2. Rotate dial ring (5) until it aligns with zero slide adjustment range.
3. The tool slide (4) allows a 10mm radial adjustment with 0.1 mm step.
4. After positioning, lock the tool slide with tool slide locking screw (7) see torque recommendation.

- 1 Body
- 2 Dial Ring
- 3 Dial Ring Locking Screw
- 4 Slide Ring
- 5 Slide Adjustment Range
- 6 Tool Slide
- 7 Tool Slide Locking Screw
- 8 Cartridge x3



[Click for Short Video](#)

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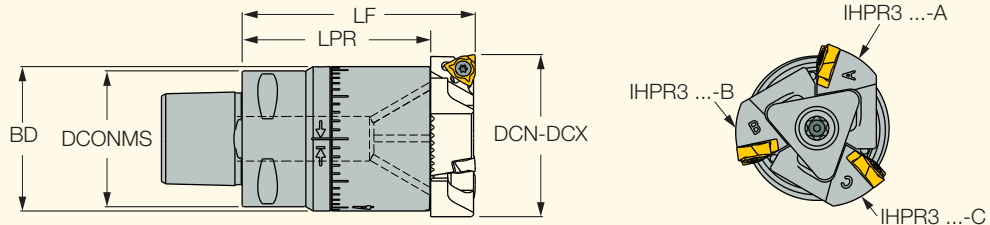
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NEOBORE MODULAR BORING HEADS

BHR3-C#

Three cutting edges roughing boring head

<https://www.iscar.com/eCatalog/Family.aspx?fnum=4656&mapp=BO&GFSTYP=M&srch=1>



Designation	DCONMS	BD	DCN ⁽¹⁾	DCX ⁽²⁾	LF	LPR	RPMX ⁽³⁾	
BHR3-C3X55-D40-50-14	32.00	34.00	40.00	50.00	55.00	45.60	10000	0.33
BHR3-C4X70-D50-60-17	40.00	41.00	50.00	60.00	70.00	61.50	8000	0.66

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

⁽¹⁾ Cutting diameter minimum

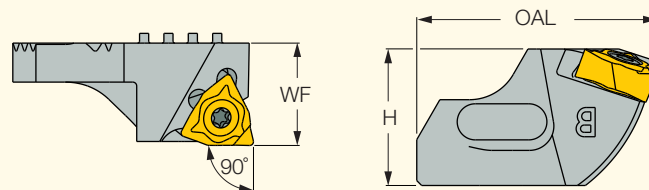
⁽²⁾ Cutting diameter maximum

⁽³⁾ Maximum RPM

IHPR3

90° Rough Boring Toolholders

<https://www.iscar.com/eCatalog/Family.aspx?fnum=4661&mapp=BO&GFSTYP=M&srch=1>



Designation	WF	OAL	H	MID ⁽¹⁾		
IHPR3 14-WNGP-A	10.50	24.70	14.0	WNGP 0403..L	SR 34-514	T-7/5
IHPR3 14-WNGP-B	10.50	24.70	14.0	WNGP 0403..L	SR 34-514	T-7/5
IHPR3 14-WNGP-C	10.50	24.70	14.0	WNGP 0403..L	SR 34-514	T-7/5
IHPR3 17-WNGP-A	12.90	30.70	17.0	WNGP 0403..L	SR 34-514	T-7/5
IHPR3 17-WNGP-B	12.90	30.70	17.0	WNGP 0403..L	SR 34-514	T-7/5
IHPR3 17-WNGP-C	12.90	30.70	17.0	WNGP 0403..L	SR 34-514	T-7/5

⁽¹⁾ Master insert identification

NEOBORE MODULAR BORING HEADS

NEOBORE Cutting Parameters

ISO	Material	Condition	Tensile Strength [N/mm ²]	Hardness HB	Material Group No.	V _c m/min	Width of Cut, mm	f _z mm/rev	
P	non-alloy steel and cast steel, free cutting steel	<0.25% C	annealed	420	125	1	100-160	Ap=1 1<Ap≤2	0.10 - 0.14 0.06 - 0.12
		≥0.25% C	annealed	650	190	2			
		<0.55% C	quenched and tempered	850	250	3			
			annealed	750	220	4			
		≥0.55% C	quenched and tempered	1000	300	5			
	low alloy and cast steel (less than 5% of alloying elements)	annealed	600	200	6				
		quenched and tempered	930	275	7				
			1000	300	8				
			1200	350	9				
	high alloyed steel, cast steel and tool steel	annealed	680	200	10				
		quenched and tempered	1100	325	11				
	stainless steel and cast steel	ferritic / martensitic	680	200	12				
		martensitic	820	240	13				
M	stainless steel and cast steel	austenitic, duplex	600	180	14	60-100	Ap=1 1<Ap≤2	0.08 - 0.12 0.06 - 0.12	
K	gray cast iron (GG)	ferritic / pearlitic		180	15	100-180	1<Ap≤2.5	0.10 - 0.15	
		pearlitic / martensitic		260	16				
	nodular cast iron (GGG)	ferritic		160	17				
		pearlitic		250	18				
	malleable cast iron	ferritic		130	19				
		pearlitic		230	20				