



# IABPF/ABPF

## INDEXABLE BALL END MILL

# HITACHI

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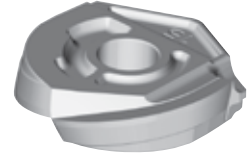
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New Insert Geometries and Coatings for Maximum Productivity and Precision



### New Geometries

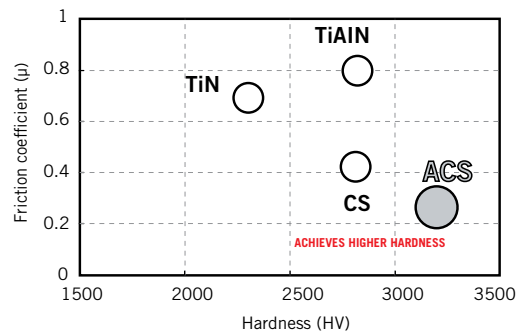
- **W-Type: Full radius flute and sharper cutting edge**
  - Full radius flute for smooth vertical wall machining.
  - Sharper cutting edge for improved surface finish.



### New Coatings

- **WF (ACS05E): For increased tool life in carbon and alloy steels (up to HRC50) and cast iron**
  - Industry's first multi-layer structure provides improved adhesion and coating hardness as well as improving the oxidation-resistance temperature.
  - Improved coefficient of friction reduces heat during machining.

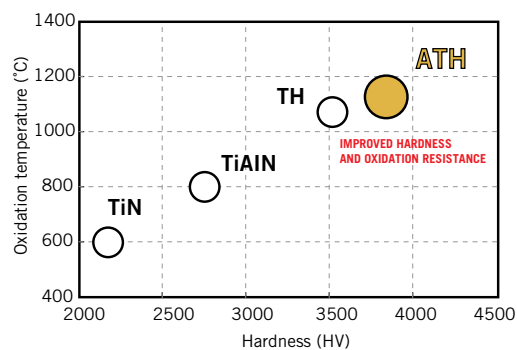
Friction Coefficient and Hardness of Coating



- **WH (ATH80D): For increased tool life in hardened steels**

- Multi-layer structure for improved adhesion strength, coating hardness and oxidation resistance.
- Ideal for hardened steels (45HRC-65HRC) such as D2, H13, M4, and 420 stainless as well as pre-hardened steels.

Oxidation Temperature and Hardness of Coating



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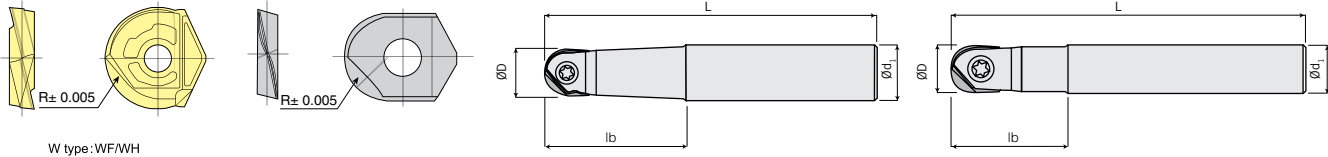
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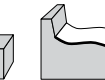
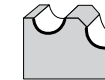
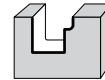


# IABPF/ABPF

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W type: WF/WH



INCH Part No.	R (in)	ØD (in)	L (in)	lb (in)	Ød <sub>1</sub> (in)	Inserts
IABPF05S08	0.156	0.313	3.937	0.984	0.500	IZDFG050-WF IZDFG050-WH IZPFG050
IABPF05S08L			5.906	1.969	0.500	
IABPF05S05W			3.937	1.181	0.313	
IABPF05S05WR			5.118	2.559	0.313	
IABPF05S05WL			7.087	1.378	0.313	
IABPF06S08	0.188	0.375	3.937	0.984	0.500	IZDFG060-WF IZDFG060-WH IZPFG060
IABPF06S08L			5.906	1.969	0.500	
IABPF06S06W			3.937	1.378	0.375	
IABPF06S06WR			5.512	2.953	0.375	
IABPF06S06WL			7.087	1.378	0.375	
IABPF08S08	0.250	0.500	4.331	1.181	0.500	IZDFG080-WF IZDFG080-WH IZPFG080
IABPF08S08L			6.299	2.362	0.625	
IABPF08S08W			4.331	1.772	0.500	
IABPF08S08WR			5.906	3.346	0.500	
IABPF08S08WL			7.087	1.772	0.500	
IABPF10S10	0.313	0.625	5.118	1.969	0.625	IZDFG100-WF IZDFG100-WH IZPFG100
IABPF10S12L			6.496	2.559	0.750	
IABPF10S10W			5.512	1.575	0.625	
IABPF10S10WL			7.874	2.559	0.625	
IABPF12S12	0.375	0.750	5.512	2.362	0.750	IZDFG120-WF IZDFG120-WH IZPFG120
IABPF12S16L			7.087	3.150	1.000	
IABPF12S12W			6.299	2.165	0.750	
IABPF12S12WL			9.843	3.150	0.750	
IABPF16S16	0.500	1.000	5.906	2.756	1.000	IZDFG160-WF IZDFG160-WH IZPFG160
IABPF16S20L			7.874	3.543	1.250	
IABPF16S16W			7.087	2.559	1.000	
IABPF16S16WL			9.843	3.150	1.000	

\* Black color items are steel shank  
\* Blue color items are carbide shank

METRIC Part No.	R (mm)	ØD (mm)	L (mm)	lb (mm)	Ød <sub>1</sub> (mm)	Inserts
ABPF08S12	4	8	100	22	12	ZDFG080-WF ZDFG080-WH ZPFG080
ABPF08S12L			130	50	12	
ABPF08S08W			100	30	8	
ABPF08S08WL			130	65	8	
ABPF10S12	5	10	100	25	12	ZDFG100-WF ZDFG100-WH ZPFG100
ABPF10S16L			150	50	16	
ABPF10S10W			100	35	10	
ABPF10S10WL			140	75	10	
ABPF12S12	6	12	110	30	12	ZDFG120-WF ZDFG120-WH ZPFG120
ABPF12S16L			160	60	16	
ABPF12S12W			110	45	12	
ABPF12S12WL			150	85	12	
ABPF16S20	8	16	130	50	20	ZDFG160-WF ZDFG160-WH ZPFG160
ABPF16S20L			160	65	20	
ABPF16S16WE			200	120	16	
ABPF20S25	10	20	140	60	25	ZDFG200-WF ZDFG200-WH ZPFG200
ABPF20S25L			180	80	25	
ABPF20S20WE			250	150	20	
ABPF25S32	12.5	25	150	70	32	ZDFG250-WF ZDFG250-WH ZPFG250
ABPF25S32L			200	90	32	
ABPF25S25WE			300	190	25	

## MODULAR SERIES

METRIC Part No.	Available carbide shank	R (mm)	ØD (mm)	L (mm)	lb (mm)	Ød <sub>1</sub> (mm)
ABPFM20	ASC20-10.5-170-90	10	20	208	128	20
	ASC20-10.5-220-120			258	158	20
ABPFM25	ASC25-12.5-215-115	12.5	25	253	153	25
	ASC25-12.5-265-145			303	183	25

## COATING MATERIALS FOR INSERTS

Material Name ISO Classification	Coating Name Coating Type	Application	Features
<b>NEW</b> IZDFGXXX-WF (ACS05E)	<b>ACS Coating</b> PVD	General purpose for steel (up to HRC50) and cast iron	Reduced friction and sharp edge achieve excellent surface finish and long tool life.
<b>NEW</b> IZDFGXXX-WH (ATH80D)	<b>ATH Coating</b> PVD	Hardened steels and pre-hardened steels	Extraordinary performance for high-speed and high-efficiency machining in hardened steels.
IZPFGXXX (PCA12M)	<b>PCA Coating</b> PVD	General purpose for steel	Uses TiAlN coating. For roughing to finishing. Tougher substrate.



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