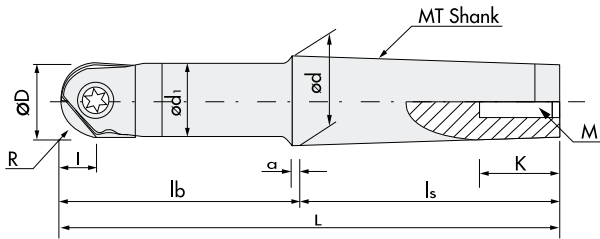
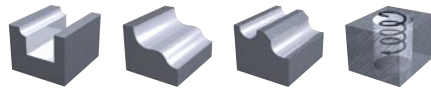


Indexable Milling Tools

ABPF | Ball High Precision Finish

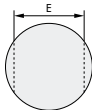
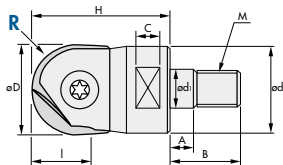
V max High Speed	 Semi Finishing	 Finishing	HRC 65	No. of Teeth 2
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R	± 0.005
Set-up	± 0.010

ABPF-MT Ball High Precision Finish - MT Shank

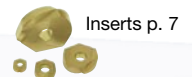
ID Code	Item Code	Stock	Flutes	ØD	R	l	MT	L	lb	ls	Ød	Ød ₁	a	K	M	Inserts x1
FH 461	ABPF-20MT2	■	2	20	10	11	MT2	129	65	64	17.78	19.5	5	24	M10	ZPFG200
FH 462	ABPF-25MT3	■	2	25	12.5	13.7	MT3	166	85	81	23.825	24.5	5	28	M12	ZPFG250
FH 463	ABPF-32MT4	■	2	32	16	17.6	MT4	217.5	115	102.5	31.267	30.8	6.5	32	M16	ZPFG320













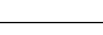


ABPF-M Ball High Precision Finish Modular

ID Code	Item Code	Stock	Flutes	ØD	R	l	H	Ød ₁	M	Ød ₂	A	B	C	E	Inserts
FH 510	ABPFM-10	■	2	10	5	5.5	26	6.5	M6	9.8	5	14.5	5	7	ZPFG100
FH 511	ABPFM-12	■	2	12	6	6.6	26	6.5	M6	9.8	5	14.5	5	7	ZPFG120
FH 512	ABPFM-16	■	2	16	8	8.8	32	8.5	M8	12.8	6	17	8	10	ZPFG160
FH 513	ABPFM-20	■	2	20	10	11	38	10.5	M10	17.8	6	19	10	15	ZPFG200
FH 514	ABPFM-25	■	2	25	12.5	13.7	38	12.5	M12	20.8	7	22	10	17	ZPFG250
FH 515	ABPFM-32	■	2	32	16	17.6	43	17	M16	28.8	7	23	12	22	ZPFG320

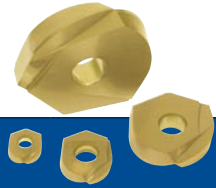
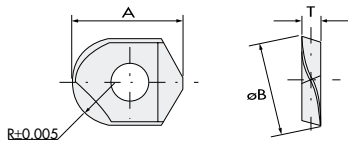
■ = Stock | Germany



Parts	Clamp Screw	Wrench		
ABPF-MT				
ABPF-M				
Body	ID-Code	Item-Code	ID-Code	Item-Code
 ABPF-20MT2	ET 157	581-145	ET 9	101-T25S
 ABPF-25MT3	ET 168	581-146	ET 167	105-T30A
 ABPF-32MT4	ET 169	581-147	ET 167	105-T30A
 ABPFM-10	ET 154	581-142	ET 11	104-T10
 ABPFM-12	ET 155	581-143	ET 14	105-T20
 ABPFM-16	ET 156	581-144	ET 14	105-T20
 ABPFM-20	ET 157	581-145	ET 9	101-T25S
 ABPFM-25	ET 168	581-146	ET 167	105-T30A
 ABPFM-32	ET 169	581-147	ET 167	105-T30A

Indexable Milling Tools | Grades Overview

INSERTS | Ball High Precision Finish



ID Code	Item Code	Grade	C-Coated		G-Coated		TH-Coated		R	I(A)	T	W(B)
			PCA08M	PCA12M			PTH08M					
WF 645	ZPFG-080	PTH08M					■		4	9.7	2.1	8
WF 594	ZPFG-080	PCA08M	■						4	9.7	2.1	8
WF 547	ZPFG-080	PCA12M		■					4	9.7	2.1	8
WF 646	ZPFG100	PTH08M					■		5	12.1	2.7	10
WF 595	ZPFG100	PCA08M	■						5	12.1	2.7	10
WF 548	ZPFG100	PCA12M		■					5	12.1	2.7	10
WF 647	ZPFG120	PTH08M					■		6	14.6	3.2	12
WF 596	ZPFG120	PCA08M	■						6	14.6	3.2	12
WF 549	ZPFG120	PCA12M		■					6	14.6	3.2	12
WF 648	ZPFG160	PTH08M					■		8	16.6	4.2	16
WF 597	ZPFG160	PCA08M	■						8	16.6	4.2	16
WF 598	ZPFG160	PCA12M		■					8	16.6	4.2	16
WF 649	ZPFG200	PTH08M					■		10	20.3	5.2	20
WF 599	ZPFG200	PCA08M	■						10	20.3	5.2	20
WF 600	ZPFG200	PCA12M		■					10	20.3	5.2	20
WF 650	ZPFG250	PTH08M					■		12.5	24.1	6.2	25
WF 601	ZPFG250	PCA08M	■						12.5	24.1	6.2	25
WF 602	ZPFG250	PCA12M		■					12.5	24.1	6.2	25
WF 651	ZPFG320	PTH08M					■		16	30	7.2	32
WF 603	ZPFG320	PCA08M	■						16	30	7.2	32
WF 604	ZPFG320	PCA12M		■					16	30	7.2	32

■ = Stock | Germany

ISO														
P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40
PTH08M										PTH08M				
PCA08M										PCA08M				
PCA12M					PCA12M					PCA12M				
N01	N10	N20	N30	N40	S01	S10	S20	S30	S40	H01	H10	H20	H30	H40
												PTH08M		
												PCA08M		
												PCA12M		

Indexable
Milling
+Modular Series

No. 322

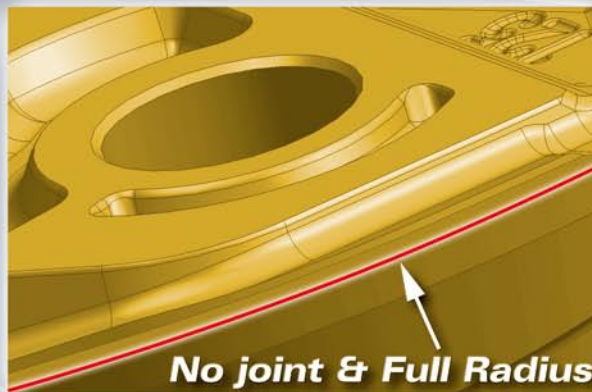
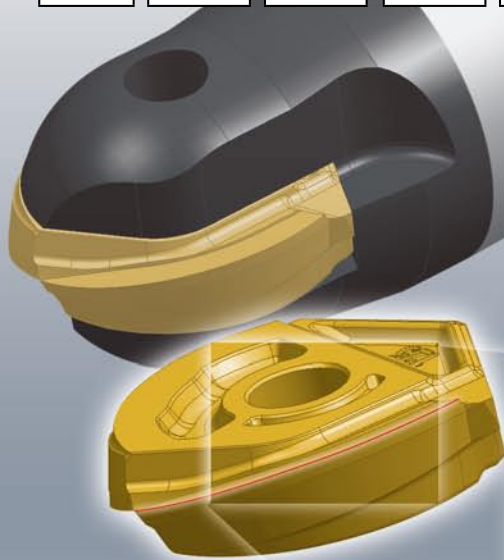
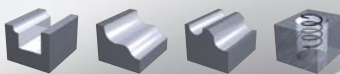
ZDFG High Speed Precision

Advanced Nano-Composite Coating **ATH+ACS**

Tool Life +

ZDFG | W Type Inserts for ABPF

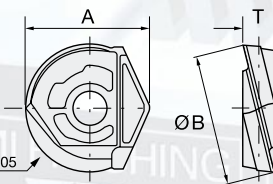
V max			HRC	No. of Teeth
High Speed	Semi Finishing	Finishing	65	2



Vertical Wall Machining

Hardened Steel:
Strong edge for
long tool life

Mild Steel, Cast Iron:
Sharp edge for
best surface quality



ID Code	Item Code	Grade	ATH-Coated ATH80D	ACS-Coated ACS05E	R	A	ØB	T
WF164	ZDFG160-WH	ATH80D	■		8	16.6	16	4.2
WF168	ZDFG160-WF	ACS05E		■				
WF165	ZDFG200-WH	ATH80D	■		10	20.3	20	5.2
WF169	ZDFG200-WF	ACS05E		■				
WF166	ZDFG250-WH	ATH80D	■		12.5	24.1	25	6.2
WF170	ZDFG250-WF	ACS05E		■				
WF167	ZDFG320-WH	ATH80D	■		16	30.2	32	7.2
WF171	ZDFG320-WF	ACS05E		■				