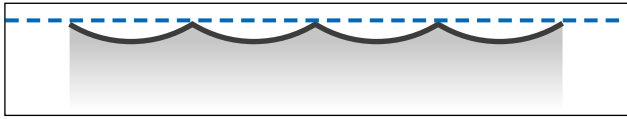
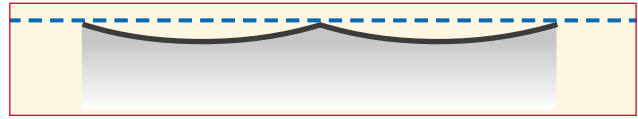
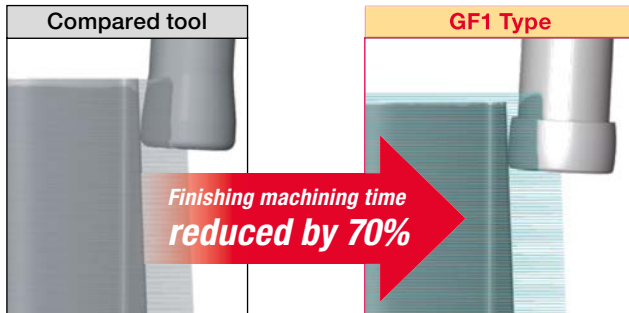


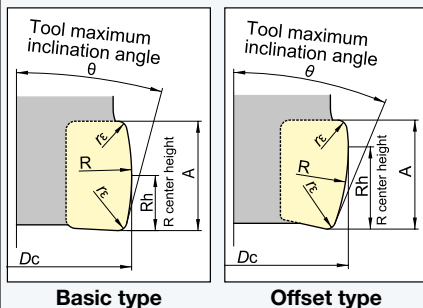
BARREL INDEXABLE SERIES GF1 | High Efficiency Finishing
How can finishing time be reduced?

Conventional pitch and cusp height
Large pitch! Low cusp!

High Efficiency Finishing Concept


Compared tool: D 20mm R1
 Corner radius end mill
Cutting conditions
 $V_f = 2,000 \text{ mm/min}$
 $n = 4,500 \text{ min}^{-1}$
 $a_p = 0.2 \text{ mm}$
 Machining time simulation =
 Approx. 150 min.

**High Efficiency Finishing Indexable
 Special Shape Tool Series**
 Max. external diameter D 20mm
 Outer peripheral flute 30R
Cutting conditions
 $V_f = 2,000 \text{ mm/min}$
 $n = 4,500 \text{ min}^{-1}$
 $a_p = 0.6 \text{ mm}$
 Cutting time = Approx. 40 min.



Workpiece: 1.2344 (45HRC)
 Size: 200mm × 200mm × 60mm
 (Wall shape height = 140mm)

Flute tip shape definitions


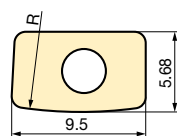
Rotation locus shape will be different depending on the combination of insert and tool diameter. Refer to the table below.

Insert	Basic type						Offset type					
	XPHW0903R-20		XPHW0903R-30		YPHW0903R-20		YPHW0903R-30		YPHW0903R-30			
Tool dia. Dc (mm)	16	20	25	16	20	25	16	20	25	16	20	25
R (mm)	20.14	20	19.93	30.38	30	29.82	20.18	20	19.91	30.33	30	29.81
Rh (mm)	4.75	4.75	4.75	4.75	4.75	4.75	7.25	7.25	7.25	7.25	7.25	7.25
rc (mm)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
A (mm)	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
θ	11°	11°	11°	7°	7°	7°	19°	19°	19°	12°	12°	12°

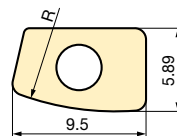
INSERTS | GF1

Basic type

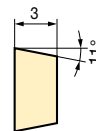
Offset type





XPHW0903R- ○○



YPHW0903R- ○○



Inserts	Grade		Size (mm)	Type
	TH315	PN215		
Item Code	ID Code		R	
XPHW0903R-20	WF786	WF788	20	Basic type
XPHW0903R-30	WF787	WF789	30	
YPHW0903R-20	WF790	WF792	20	Offset type
YPHW0903R-30	WF791	WF793	30	

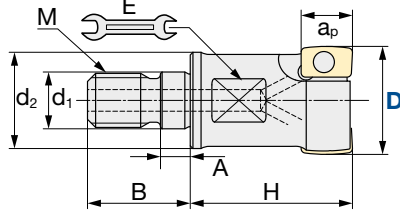
Parts	Clamp Screw			Wrench	
Shape					
	ID Code	Item Code	Fastening Torque [Nm]	ID Code	Item Code
	ET175	250-141(A)	1.1 Nm	ET013	104-T8



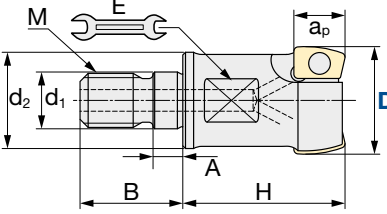
GF1 | High Efficiency Finishing Indexable Special Shape Tool Series



A - Basic Type



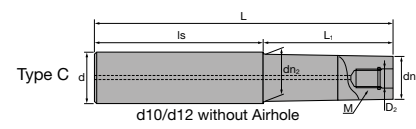
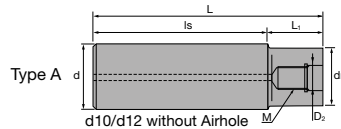
B - Offset Type



Diameter Holder only [mm]	Fastening Torque [Nm]
-0.026/-0.06 mm	1.1 Nm

Type	ID Code	Item Code	Z	D	H	a _p	d ₁	M	d ₂	A	B	E	Inserts
Basic type	FH620	GF1G-2016M-2-M8	2	16	25	9.5	8.5	M8	14	5.5	17	10	XPHW0903R-20 XPHW0903R-30
	FH621	GF1G-2020M-3-M10	3	20	30	9.5	10.5	M10	17.8	5.5	19	15	
	FH622	GF1G-2025M-4-M10	4	25	30	9.5	10.5	M10	17.8	5.5	19	15	
	FH623	GF1G-2025M-4-M12	4	25	35	9.5	12.5	M12	22.5	5.5	22	17	
Offset type	FH624	GF1T-2016M-2-M8	2	16	25	9.5	8.5	M8	14	5.5	17	10	YPHW0903R-20 YPHW0903R-30
	FH625	GF1T-2020M-3-M10	3	20	30	9.5	10.5	M10	17.8	5.5	19	15	
	FH626	GF1T-2025M-4-M12	4	25	35	9.5	12.5	M12	22.5	5.5	22	17	

ASC | Carbide Shanks for GF1



ID Code	Item Code	D ₂	M	L	L ₁	Is	dn	dn ₂	d	Type	Cutter body
FH141	ASC16-8.5-95-30	8.5	M8	95	30	65	14.5	15.5	16	C	GF1G2016M-2-M8 GF1T2016M-2-M8
FH258	ASC16-8.5-120-55			120	55						
FH142	ASC16-8.5-140-75			140	75						
FH259	ASC16-8.5-160-95			160	95						
FH260	ASC16-8.5-160-30			160	30						
FH143	ASC20-10.5-120-50Z	10.5	M10	120	50	70	18	-	20	A	GF1G2020M-3-M10 GF1T2020M-3-M10 GF1G2025M-4-M10
FH261	ASC20-10.5-170-90Z			170	90	80	18.5	19.5			
FH262	ASC20-10.5-220-120Z			220	120	100					
FH263	ASC20-10.5-270-150Z			270	150	120					
FH144	ASC20-10.5-220-50Z	10.5	M10	220	50	170	18	-	20	A	GF1G2020M-3-M10 GF1T2020M-3-M10 GF1G2025M-4-M10
FH264	ASC20-10.5-270-50Z			270		220	18.5	19.5			
FH145	ASC25-12.5-145-65	12.5	M12	145	65	80	23	-	25	A	GF1G2025M-4-M12 GF1T2025M-4-M12
FH265	ASC25-12.5-215-115			215	115	100					
FH266	ASC25-12.5-265-145			265	145	120					
FH267	ASC25-12.5-315-195			315	195						
FH146	ASC25-12.5-265-65			12.5	M12	265					
FH268	ASC25-12.5-315-65	315	250								

SUPER Lock milling chucks or shrink-fit holders can be used.
 SUPER Lock Aufnahmen oder Schrumpffutter können verwendet werden.
 Possono essere utilizzati mandrini a forte serraggio SUPER Lock.

Aptos para amarrar en portapinzas SUPER Lock.
 Les attachements SUPER Lock peuvent être utilisés.
 Cones hidráulicos de grande aperto e aperto térmico podem ser usados.

For further information about modular chucks please see our brochure *Indexable Modular Series No. 328*
 Weitere Informationen über modulare Werkzeugaufnahmen finden Sie in unserem Prospekt: *Indexable Modular Series No. 328*
 Para obtener más información sobre conos modulares consulte nuestro folleto *Indexable Modular Series No. 328*
 Per maggiori informazioni riguardanti la gamma dei mandrini avvitabili consultate il catalogo *Indexable Modular Series No. 328*

Pour de plus amples informations concernant les attachements modulaires, voyez SVP notre brochure *Indexable Modular Series No. 328*
 Para mais informações sobre Cones Modulares consulte o nosso folheto *Indexable Modular Series No. 328*

