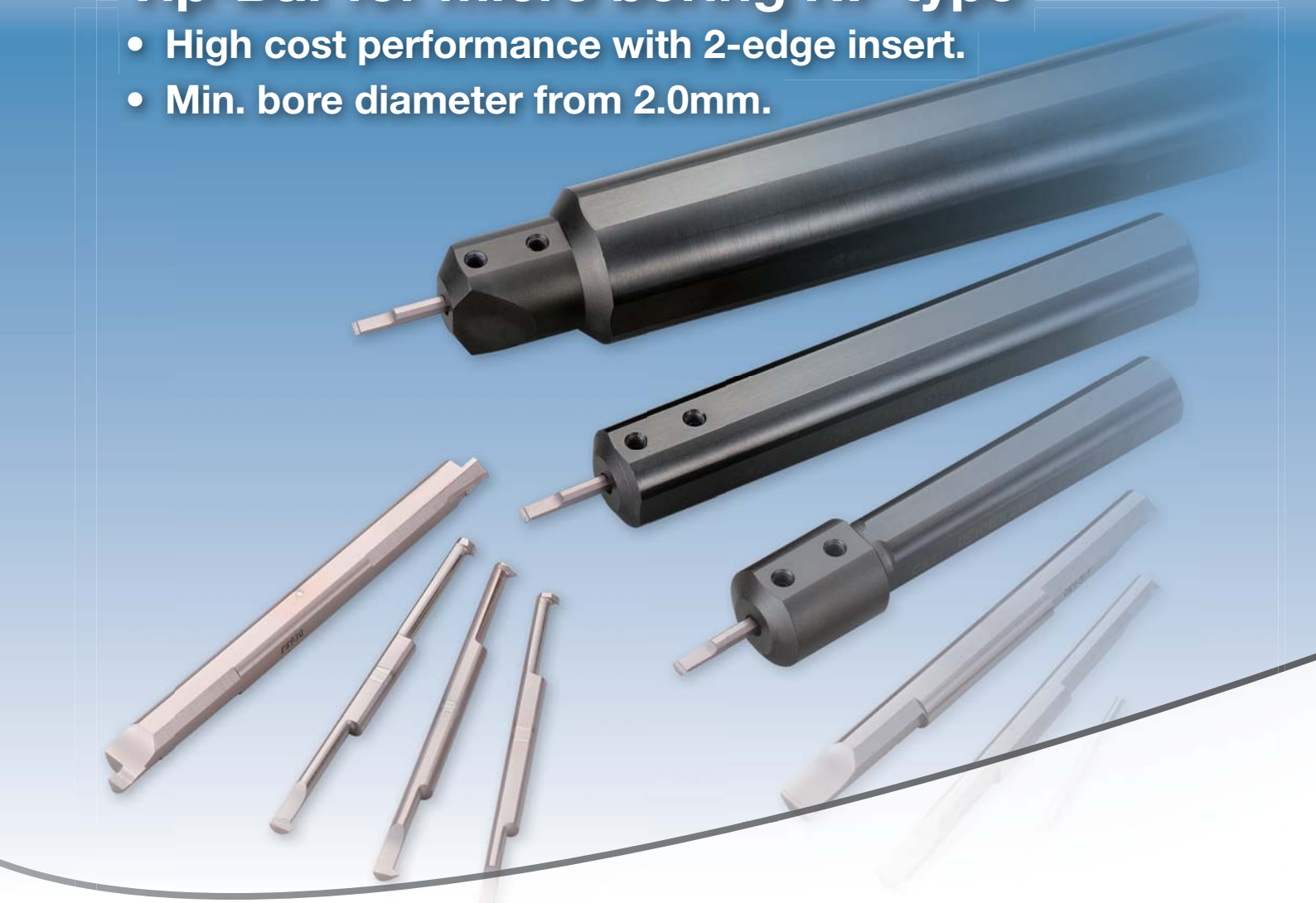
THE NEW VALUE FRONTIER

KYOCERA

2 EDGES TIP-BAR

Tip-Bar for micro boring HP type

- High cost performance with 2-edge insert.
- Min. bore diameter from 2.0mm.



Tip-Bar für Mikro-Ausdrehen HP-Ausführung

- Sehr wirtschaftlich mit 2 Schneidkanten.
- Mindestdrehdurchmesser ab 2.0mm.

Tip Bar Type HP pour petit alésage

- Haut niveau de performance avec 2 arêtes.
- Diamètre minimum du trou d'alésage 2 mm.

Tip-Bar modello HP per micro barenature

- Alto rendimento economico dovuto alla presenza di 2 taglienti .
- Min diametro di barenatura di 2.0 mm.

■ Advantages | Vorteile | Avantage | Vantaggi

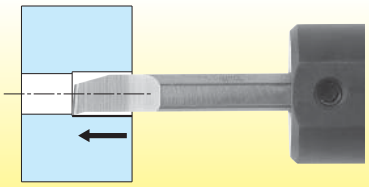
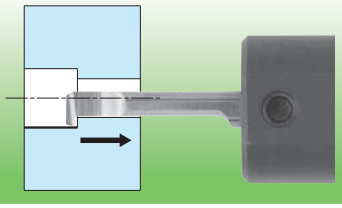
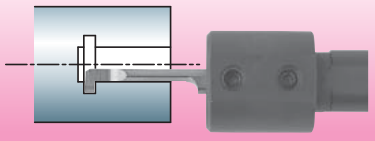
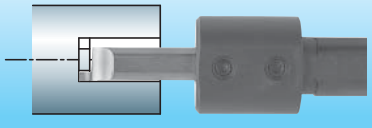
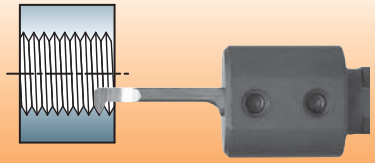
- Overhang length adjustable.
- Applicable to standard sleeve.
- Special sleeve customized to various machine tool.

- Auskraglänge verstellbar.
- Passend für Standard Schafthülsen.
- Sonder-Schafthülsen für verschiedene Werkzeugmaschinen.

- Longueur ajustable.
- Compatible avec attachement standart.
- Diamétre d'attachement spécifique pour Differentes marques de M.O.

- Lunghezza in lavoro registrabile.
- Boccole speciali personalizzate per varie macchine utensili.
- Disponibili per ampia gamma di applicazioni.

■ Available for wide application range
Breites Anwendungsspektrum
Disponible pour différentes applications
Disponibili per ampia gamma di applicazioni

Boring Innendrehen Alésage Barenatura	**HPB Type**	Min.Bore Dia.:ø2~ø7 Corner-R (rε):0.05	
Back Boring Rückwärts-Innendrehen Alésage arriere Barenatura posteriore	**HPBT Type**	Min.Bore Dia.:ø4~ø5 Corner-R (rε):0.05	
Grooving Stechen Gorge Scanalatura	**HPG Type**	Min.Bore Dia.:ø4~ø7 Groove width:1.0~2.0mm Groove depth:1.0~2.0mm	
Face Grooving Planstechen Gorge frontale Scanalatura frontale	**HPFG Type**	Minimum groove dia.:ø8 Groove width:1.0~3.0mm Groove depth: 2.0~3.0mm	
Threading Gewinden Filetage Filettatura	**HPT Type**	Minimum pilot hole dia.:ø4.5~ø8 M:0.75~1.5mm UN:28~16 TPI W:24~18 TPI RC:28~19 TPI	

■ High precision clamp screw due to notably flat bottom face
Hochpräzise Klemmschraube durch besonders plane Auflagefläche
Vis d'arrêt permettant une grande précision Grâce au plat de serrage
Serraggio a vite di alta precisione grazie al piano di contatto

● New clamp screw realizes
1. Better index height precision after replacing insert.
➡High machining quality, tool replacement time reduction.
2. Stronger clamping force.
➡Stable machining, long tool life.

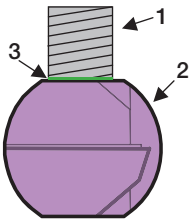
● Neue Klemmschraube ermöglicht
1. Besonders exakte Positionierung beim Plattenwechsel.
➡Hohe Bearbeitungsqualität, Kürzere Werkzeugwechselzeit.
2. Stärkere Spannkraft.
➡Stabile Bearbeitung, Lange Werkzeugstandzeit.

● La nouvelle vis de serrage permet
1. Meilleur indexage avec une grande précision lors du remplacement de l'outil.
➡Haute qualité d'outil et réduction du temps de remplacement d'outil.
2. Augmentation de la force de serrage.
➡Usinage stable donc augmentation de la durée vie outil.

● Realizzata nuova vite di serraggio
1. Migliore precisione di riposizionamento dell'inserto.
➡Alta qualità di lavorazione, riduzione del tempo di sostituzione utensile.
2. Forze di serraggio maggiori.
➡Lavorazioni stabili, lunga durata utensile.

New clamp screw
Neue Klemmschraube
Nouvelle vis de serrage
Nuova vite di serraggio

Screw bottom face
Unterseite Schraube
Plat de serrage sur la vis
Piano inferiore della vite

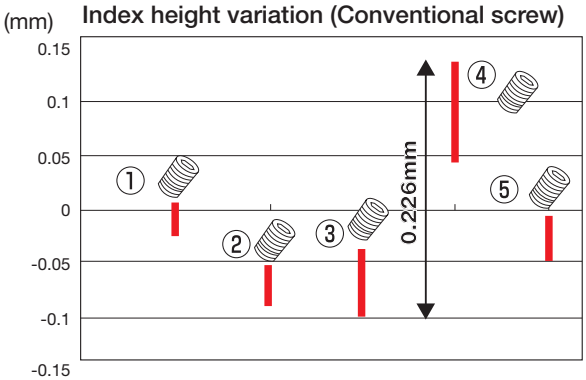


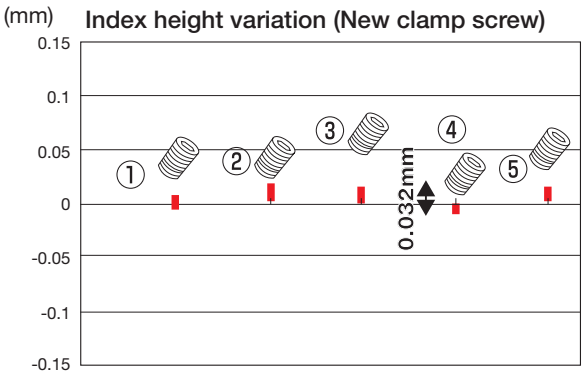
[1] Clamp
Klemme
Vis
Chiusura

[2] Tip-Bar

[3] Flat and large contact surface.
Flache und große Kontaktfläche.
Large et grande surface de contact.
Superficie di contatto piana e larga.

■ Index height variation
Höhengenauigkeit beim Wechsel
Variation de la hauteur de référence
Variazione altezza di indexaggio





Measuring method:
Measure index height of 5 screws after replacing insert (10 times each).
New clamp screw showed better index precision than the conventional screw.

Messmethode:
Gemessen wurde der Höhenunterschied von 5 Schrauben beim Wechsel von Wendeschneidplatten (jeweils 10x).
Die neue Klemmschraube weist eine bessere Wechselgenauigkeit als die konventionelle Schraube auf.

Méthode de mesure:
Mesure de la hauteur d'indexation de 5 vis après remplacement de l'outil (10 fois chacune) la nouvelle vis d'indexation permet une plus grande précision que la vis conventionnelle.

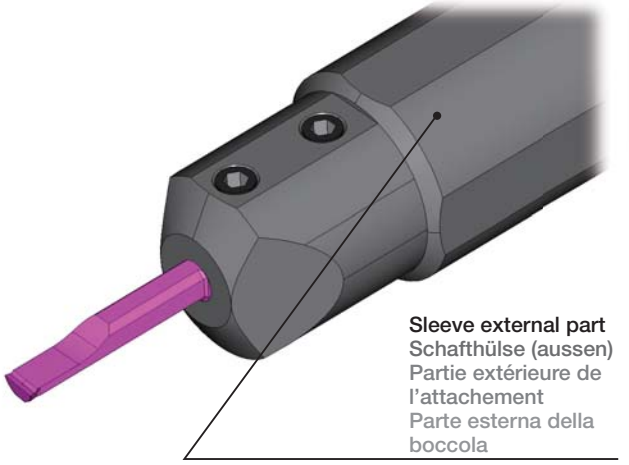
Metodo di controllo:
Misurazione dell'altezza dell'utensile cambiando 5 set di viti e sostituendo l'inserto 10 volte.
La nuova vite garantisce una migliore precisione di riposizionamento rispetto a quella di uso comune.

■ Special sleeve customized to various machine tools
Speziell angepasste Schafthülsen für diverse Werkzeugmaschinen
Diamètre d'attachement spécifique pour différentes marques de M.O
Boccole speciali personalizzate per varie macchine utensili

Available sleeve dia. between 12mm-25.4mm, including special size for specific machines.
Verfügbare Schafthülsendurchmesser 12mm-25.4mm, inklusive Sondergrößen für spezielle Maschinen.
Attachement disponible pour des diamètres de 12 mm à 25,4 mm y compris les attachements spéciaux pour différents M.O
Boccole disponibili per diametri compresi tra i 12 mm ed i 25.4 mm, includendo anche le speciali dedicate a macchine utensili specifiche.

Machine Tool	Sleeve external dia.
Amada Wasino	ø16, ø20, ø25
Citizen Machinery	ø19.05, ø20, ø25.4
Eguro	ø16, ø20, ø25
Miyano	ø20, ø25
Nomura	ø22, ø23
Precision Tsugami	ø16, ø20, ø25
Star Micronics	ø16, ø22

● In alphabetical order



● Easy handling due to two-step sleeve design.
Einfache Handhabung durch die zweistufige Schafthülse.
Facilité grâce à la forme de l'attachement.
Di facile presa grazie al design a due fasi.

■ Easy handling at precision machine tool
Einfache Handhabung bei Präzisionswerkzeugmaschinen
Facilité de manipulation et précision
Semplice maneggevolezza per macchine utensili precise

2 edges tip-bar series are available for various types of sleeves due to integer size shank diameter.
2 Kanten Tip-Bar ist für verschiedene Ausführungen von Schafthülsen erhältlich, bedingt durch Haltergrößen mit glatten Durchmessern.
2 sortes de Tip bar sont disponibles pour plusieurs type d'attachement pour différents diamètres.
Le Tip-bar a due inserti sono disponibili per varie tipi di boccole grazie alla misura intera del diametro del foro su cui vengono serrate.

PS type (1 edge tip-bar) will shift to HP type (2 edge tip-bar).
PS Ausführung (1Kante) wird durch die HP Ausführung (2 Kanten) ersetzt.
PS type (1 arête tip bar) sera remplacé par HP type (2 arêtes tip bar).
Il tipo PS (Tip bar ad 1 inserto) sarà sostituito dal tipo HP (Tip bar a 2 inserti)

(e.g.) PSBR0202-05S(1-edge, shank dia. 1.8mm) ➡ HPBR0202-005 (2-edges, shank dia. 2.0mm)
*HP type (2 edges) has whole size dia. shank. It is not applicable to the conventional sleeve for PS type tip-bar (1 edge). (HP type sleeve and PS type sleeve are incompatible)

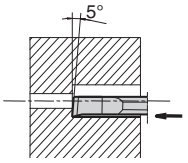
(Vgl.) PSBR0202-05S (1-Kante, Schaftdurchmesser 1.8mm) ➡ HPBR0202-005 (2-Kanten, Schaftdurchmesser 2.0mm)
*HP (2 Kanten) mit vollen Schaftdurchmesser. Nicht kompatibel mit konventionellem Shaft der PS tip-bar (1 Kante). (HP Schaft ist nicht kompatibel mit PS Shaft)

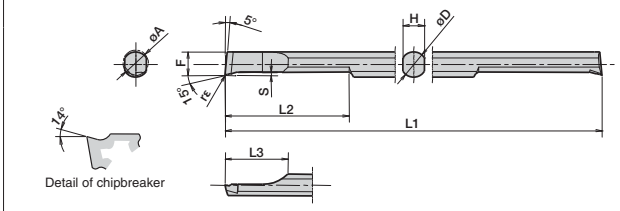
e g PSBR0202 05S (1 arête diametre de queue 1,8 mm) HPBR0202 005 (2 arêtes diamétre de queue 2,0 mm)
HP type (2 arêtes) le diametre d'attachement correspond au diametre d'usinage . le PS type bar (1 arête) n'est pas compatible pour les attachements conventionnel. (L'attachement HP type et PS type sont imcompatible)

PSBR0202-05S (1 inserto , diam. dello stelo da 1.8 mm) ➡ HPBR0202-005 (2 inserti , diam. dello stelo da 2.0 mm)
*Il tipo HP (2 inserti) ha il diametro dello stelo con dimensione non decimale en non è pertanto applicabile alle bussole standard per la Tip-bar modello PS (1 inserto). (Le bussole per i modelli HP e PS sono incompatibili)

Boring

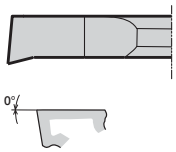
■HPB Type





● Right-hand shown

-NB Type (Without Chipbreaker)



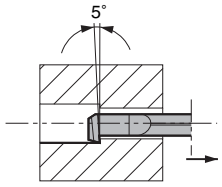
●Tip-Bar Dimension

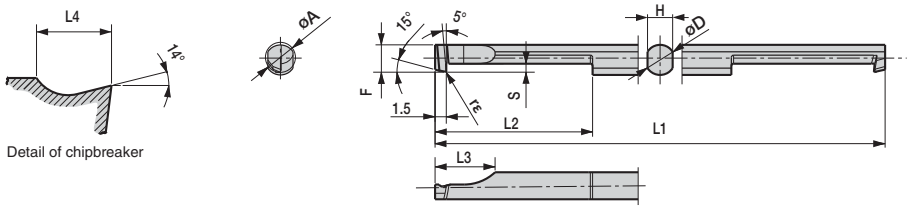
Description		Min.Bore Dia.	Dimension(mm)								Insert Grade				Applicable Sleeve ➡P6
											PVD Coated Carbide		Carbide		
		øA	øD	H	L1	L2	L3	F	S	rε	PR930		KW10		
											R	L	R	L	
HPB R/L	0202-005	2	2	1.7	50	10	5	1.75	0.25	0.05 +0 -0.02	●	●	●		PSH02○○
	0303-005	3	3	2.5		15	7	2.7	0.3		●	●	●		PSH03○○
	0404-005	4	4	3.35	60	20	10	3.65	0.5		●	●	●		PSH04○○
	0505-005	5	5	4.3	70	25	12	4.55			●	●	●		PSH05○○
	0606-005	6	6	5.2				5.5			●	●	●		PSH06○○
	0707-005	7	7	6.2	80			6.45			●	●	●		PSH07○○
HPB R/L	0202-005NB	2	2	1.7	50	10	5	1.75	0.25	0.05 +0 -0.02	●		●		PSH02○○
	0303-005NB	3	3	2.5		15	7	2.7	0.3		●		●		PSH03○○
	0404-005NB	4	4	3.35	60	20	10	3.65	0.5		●		●		PSH04○○
	0505-005NB	5	5	4.3	70	25	12	4.55			●		●		PSH05○○
	0606-005NB	6	6	5.2				5.5			●		●		PSH06○○
	0707-005NB	7	7	6.2	80			6.45			●		●		PSH07○○

●: Std.Item

Back Boring

■HPBT Type





● Right-hand shown

●Tip-Bar Dimension

Description		Min.Bore Dia.	Dimension(mm)								Insert Grade				Applicable Sleeve ➡P6
											PVD Coated Carbide		Carbide		
		øA	øD	H	L1	L2	L3	F	S	rε	PR930		KW10		
											R	L	R	L	
HPBT R/L	0404-005	4	4	3.35	60	21	8	3.65	1.0	0.05 +0 -0.02	●	●	●	●	PSH04○○
	0505-005	5	5	4.3	70	26		4.55	1.3		●	●	●	●	PSH05○○

●: Std.Item

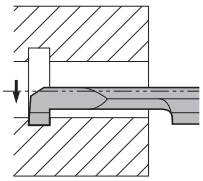
◆Recommended Cutting Conditions

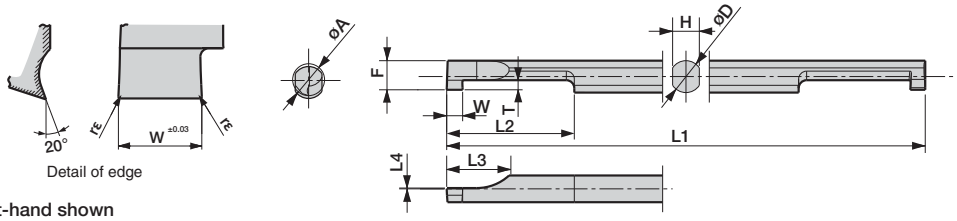
[ap (mm),f(mm/rev)]

Workpiece Material	Insert Grade (Vc:m/min)		HPB02 type		HPB type		HPB04 type HPBT04 type		HPB05/06/07 type HPBT05 type		Remarks
	PVD Coated Carbide	Carbide	ap (mm), f(mm/rev)								
	PR930	KW10	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	-	~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	with coolant
Stainless Steel	30~80	-	~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	
Non-ferrous Material	-	30~100	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	

Grooving

■HPG Type





● Right-hand shown

●Tip-Bar Dimension

Description		Min. Bore Dia.	Dimension(mm)									Insert Grade				Applicable Sleeve ➡P6
												PVD Coated Carbide		Carbide		
												PR930		KW10		
		øA	W±0.03	rε	øD	H	L1	L2	L3	L4	F	T	R	L	R	L	
HPG R/L	0404-10	4	1	+0 -0.02 0.05	4	3.35	60	15	8	0	3.65	1	●	●	●		PSH04○○
	0404-20		2										●	●	●		
	0505-10	5	1		5	4.3	70	20			4.55	1.5	●	●	●		PSH05○○
	0505-20		2										●	●	●		
	0606-10	6	1		6	5.2			10		5.5	2	●	●	●		PSH06○○
	0606-20		2										●	●	●		
	0707-10	7	1		7	6.2	80	25			6.45		●	●	●		PSH07○○
	0707-20		2										●	●	●		

·Dimension T shows available grooving depth.

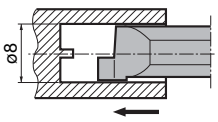
●: Std.Item

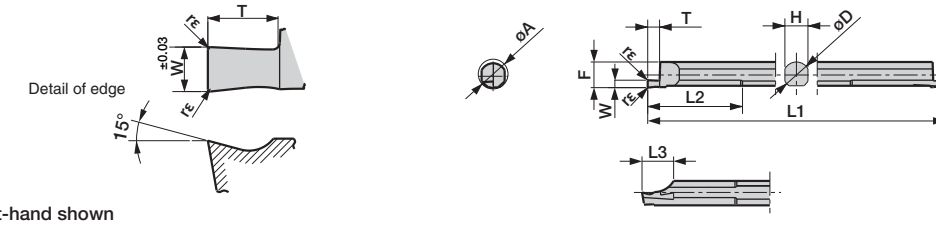
◆Recommended Cutting Conditions

Workpiece Material	Insert Grade(Vc:m/min)		HPG R/L 04 HPG R/L 05	HPG R/L 06 HPG R/L 07	Remarks
	PVD Coated Carbide	Carbide			
	PR930	KW10	ap (mm), f(mm/rev)		
Carbon steel / Alloy steel	30~100	-	~0.03	~0.05	with coolant
Stainless Steel	30~80	-	~0.02	~0.03	
Non-ferrous Material	-	~300	~0.05	~0.08	

Face Grooving

■HPFG Type





● Right-hand shown

●Tip-Bar Dimension

Description		Min. Bore Dia.	Dimension(mm)									Insert Grade				Applicable Sleeve ➡P6
												PVD Coated Carbide		Carbide		
												PR930		KW10		
		øA	W±0.03	rε	øD	H	L1	L2	L3	F	T	R	L	R	L	
HPFG R/L	0807-10	8	1	+0 -0.02 0.05	7	6.2	80	25	8.5	6.9	2	●	●	●		PSH07○○
	0807-20		2								3	●	●	●		
	0807-30		3									●	●	●		

·Dimension T shows available grooving depth.

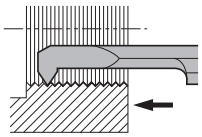
●: Std.Item

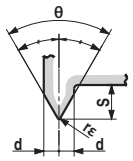
◆Recommended Cutting Conditions

Workpiece Material	Insert Grade(Vc:m/min)		HPFG R/L 0807-10	HPFG R/L 0807-20	HPFG R/L 0807-30	Remarks
	PVD Coated Carbide	Carbide				
	PR930	KW10	ap (mm), f(mm/rev)			
Carbon steel / Alloy steel	30~100	-	~0.02	~0.04	~0.05	with coolant
Stainless Steel	30~80	-	~0.01	~0.02	~0.03	
Non-ferrous Material	-	~300	~0.04	~0.06	~0.08	

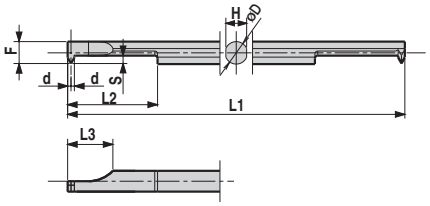
Threading

■HPT Type





Detail of edge



● Right-hand shown

●Tip-Bar Dimension

Description		Min. Bore Dia.	Dimension(mm)										Insert Grade		Applicable Thread				Applicable Sleeve ➡P6
													PVD Coated Carbide	Carbide	Metric		Unified		
		øA	øD	H	L1	L2	L3	F	S	d	rε	θ	PR930	KW10	Nominal Thread	Pitch (mm)	Nominal Thread	TPI	
HPTR	04504-60-005	4.5	4	3.7	60	16	8	3.9	1.3	0.6	0.05	60°	●	●	M6TPI~	P0.75 ~P1.25	1/4-20UNC 1/4-28UNF~	28~20	PSH04○○
	06005-60-005	6	5	4.6	70	21		4.9	1.6	0.8			●	●	M8TPI~	P0.75 ~P1.50	5/16-18UNC 5/16-24UNF~	24~18	PSH05○○
	07507-60-005	7.5	7	6.4	80	26	10	6.9	2	1			●	●	M10TPI~	P0.75 ~P1.50	3/8-16UNC 3/8-24UNF~	24~16	PSH07○○

Description		Min. Bore Dia.	Dimension(mm)										Insert Grade		Applicable Thread				Applicable Sleeve ➡P6
													PVD Coated Carbide	Carbide	Whitworth		Parallel Pipe Tapered Pipe		
		øA	øD	H	L1	L2	L3	F	S	d	rε	θ	PR930	KW10	Nominal Thread	TPI	Nominal Thread	TPI	
HPTR	06005-55-010	6	5	4.6	70	21	8	4.9	1.6	0.8	0.1	55°	●	●	W10TPI20~ W10TPI24~	24~20	G1/16~ R1/16~	28	PSH05○○
	08007-55-010	8	7	6.4	80	26	10	6.9	2.0	1.0			●	●	W11TPI18 W11TPI20~	20~18	G1/8~ R1/8~	28~19	PSH07○○

●: Std.Item

◆Recommended Cutting Conditions

Workpiece Material	Insert Grade(Vc:m/min)	
	PVD Coated Carbide	Carbide
	PR930	KW10
Carbon steel / Alloy steel	30~100	-
Stainless Steel	30~80	-
Non-ferrous Material	-	~300

◆Depth of Cut & Number of Passes

Pitch (mm)	Total ap (mm)	No. of Passes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.75	0.44	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03							
1.00	0.60	12	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03					
1.25	0.76	14	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03			
1.50	0.92	17	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03

◆Depth of Cut & Number of Passes

TPI	Total ap (mm)	No. of Passes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
24TPI	0.65	13	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03				
20TPI	0.81	15	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03		
18TPI	0.91	17	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03

●Applicable Sleeve

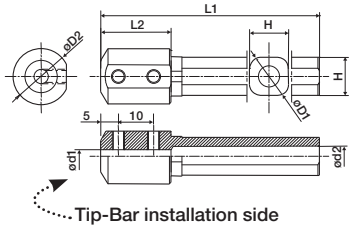


Fig.1

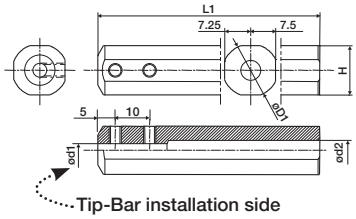


Fig.2

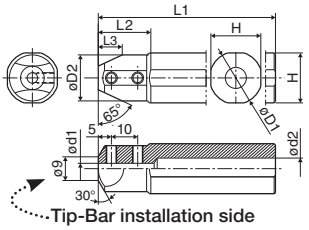


Fig.3

Description		Dimension (mm)								Shape	Spare Parts		Applicable Machine Tools	Ref.Page for Applicable Tooiholder
		*ød1	øD1	øD2	ød2	H	L1	L2	L3		Screw	Wrench		
PSH	0212-80	2	12	16	6	11	80	20	-	Fig.1	HS3×4P	LW-1.5	(general use)	Boring (HPB)➡P3 Back Boring (HPBT)➡P3 Grooving (HPG)➡P4 Face Grooving (HPFG)➡P4 Threading (HPT)➡P5
	0312-80	3												
	0412-80	4									HS4×4P	LW-2		
	0512-80	5												
	0612-80	6			8									
	0712-80	7												
PSH	0216-100	2	16	-	6	15	100	-	-	Fig.2	HS3×4P	LW-1.5		
	0316-100	3												
	0416-100	4									HS4×4P	LW-2		
	0516-100	5												
	0616-100	6			8									
	0716-100	7												
PSH	0220-120	2	20	17.5	6	19	120	20	11	Fig.3	HS3×4P	LW-1.5	Amada Wasino Citizen Machinery Eguro Miyano Precision Tsugami (general use)	
	0320-120	3												
	0420-120	4							9		HS4×4P	LW-2		
	0520-120	5												
	0620-120	6			8				7.5					
	0720-120	7												
PSH	0225.0-135	2	25	18	6	24	135	23	11.5	Fig.3	HS3×4P	LW-1.5	Amada Wasino Eguro Miyano Precision Tsugami (general use)	
	0325.0-135	3												
	0425.0-135	4							9.5		HS4×4P	LW-2		
	0525.0-135	5												
	0625.0-135	6			8				8					
	0725.0-135	7												
PSH	0219-120	2	19.05	17.5	6	18	120	20	11	Fig.3	HS3×4P	LW-1.5	Citizen Machinery	
	0319-120	3												
	0419-120	4							9		HS4×4P	LW-2		
	0519-120	5												
	0619-120	6			8				7.5					
	0719-120	7												
PSH	0225-120	2	25.4	18	6	24.4	120	23	11.5	Fig.3	HS3×4P	LW-1.5		
	0325-120	3												
	0425-120	4							9.5		HS4×4P	LW-2		
	0525-120	5												
	0625-120	6			8				8					
	0725-120	7												
PSH	0222-135	2	22	18	6	21	135	22	11.5	Fig.3	HS3×4P	LW-1.5	Nomura Star Micronics	
	0322-135	3												
	0422-135	4							9.5		HS4×4P	LW-2		
	0522-135	5												
	0622-135	6			8				8					
	0722-135	7												
PSH	0223-120	2	23	18	6	22	120	22	11.5	Fig.3	HS3×4P	LW-1.5	Nomura	
	0323-120	3												
	0423-120	4							9.5		HS4×4P	LW-2		
	0523-120	5												
	0623-120	6			8				8					
	0723-120	7												

*:Length of ød1 ···20mm(PH02,PH03,PH04) | ···25mm(PH05,PH06,PH07)

·Choose sleeves (ød1) to meet with øD dimension of tip-bar.

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