Advanced Engineering

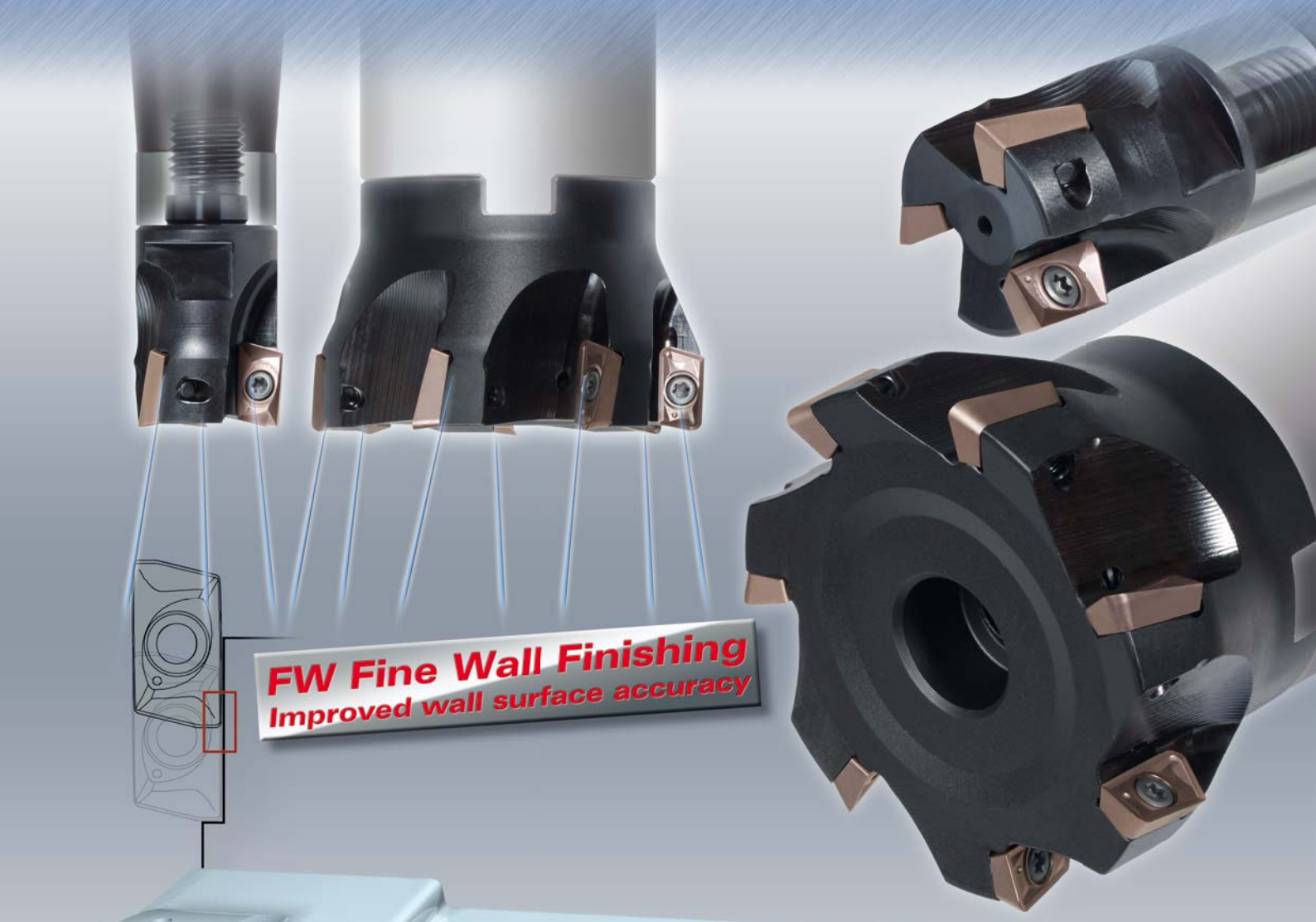
MMC Hitachi Tool

No. 323.3

Indexable Milling

AHUM15 High-Feed Ultra End Mill Modular Type
AHUB15 High-Feed Ultra Bore Type

D 25 – D 250 · High Feed Cutting (HFC)



MMC Hitachi Tool Engineering Europe GmbH
www.high-feed-cutting.com

Indexable Milling Tools

AHU15 | High Feed Ultra

HIGH-FEED ULTRA END MILL

1. Main cutting forces are reduced by the unique high rake geometry
2. Ramp milling is possible
3. 30% increased rigidity over conventional indexable end-mills due to the utilization of a special steel material and chip pocket geometry
4. Through tool coolant is available
5. The substrate and coating technology has been adopted which allows longer tool-life and the ability to use higher cutting speeds

HIGH-FEED ULTRA END MILL

1. Durch die einzigartige hochpositive Schneidengeometrie des AHU High Feed Ultra wird der Schnittdruck erheblich reduziert
2. Auch Fräsoperationen über Rampe sind möglich
3. Die Verwendung eines speziellen Stahls und einer speziell entwickelten Spankammer-Geometrie erhöhte die Steifigkeit des AHU High Feed Ultra gegenüber konventionellen WSP-Haltern um 30%
4. Zusätzlich verfügt der AHU High Feed Ultra über innen liegende Kühlkanäle
5. Durch das Substrat der Wendeschneidplatten in Verbindung mit einer passenden Beschichtungstechnologie ermöglicht der AHU High Feed Ultra wesentlich höhere Schnittgeschwindigkeiten bei gleichzeitig längeren Standzeiten

HIGH-FEED ULTRA END MILL

1. Maggiore stabilità e minori forze di taglio grazie alla nuova geometria positiva della spoglia.
2. La fresatura in rampa è possibile
3. 30 % maggiore rigidità a confronto con frese convenzionali grazie alla particolare geometria del collo rompitruciolo e una microfusione di acciaio del corpo fresa.
4. Refrigerante attraverso il corpo fresa disponibile
5. La combinazione dello sviluppo di una micrograna
6. Particolare con l´ultimo sviluppo di rivestimenti rende possibile un grande allungamento di vita dell'utensile e l´utilizzo di velocità di taglio più elevate.

HIGH-FEED ULTRA END MILL

1. El esfuerzo de corte se reduce gracias a una exclusiva geometría altamente positiva.
2. Capaz de mecanizar en rampa
3. 30% más de rigidez que herramientas de plaquita
4. Convencionales gracias a la utilización de un acero especial y a la geometría del canal de evacuación de viruta
5. Dispone de canal de refrigeración interior.
6. La combinación de substratos y recubrimientos de ultima tecnología permite una mayor vida de herramienta y la capacidad de usar velocidades de corte mayores

HIGH-FEED ULTRA END MILL

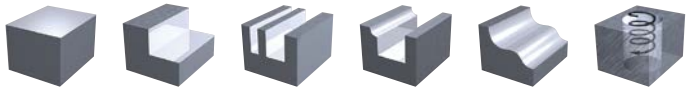
1. L'angle de dépouille très prononcé permet à lui seul de réduire la majeure partie des efforts de coupe.
2. L'usinage de rampes est possible (ramping).
3. Rigidité accrue de 30% par rapport aux fraises à plaquettes rapportées due à l'utilisation d'un acier spécial et à la forme des poches à copeaux.
4. Deux versions de corps sont disponibles : avec ou sans arrosage au centre.
5. Nous avons développés une nuance et une technologie de revêtement générant une durée de vie supérieure et une augmentation significative des vitesses de coupe.

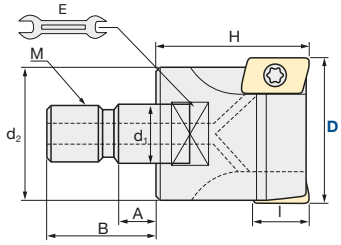
HIGH-FEED ULTRA END MILL

1. Muitas forças de corte são reduzidas devido à sua geometria positiva
2. Fresagem em rampa é possível
3. 30% aumento da rigidez comparado com plaquetes convencionais devido à utilização de um aço especial e geometria e do canal evacuação apara.
4. Dispõe de refrigeração interna
5. Tecnologia de substrato e revestimento de última geração que permite maior vida útil da ferramenta e possibilidade de usar em altas velocidades de corte.

AHUM15 | High Feed Ultra Modular Type

Q max	Jet	▽	▽▽▽	HRC	No. of Teeth
High Efficient	Air Hole	Roughing	Finishing	50	2 – 4





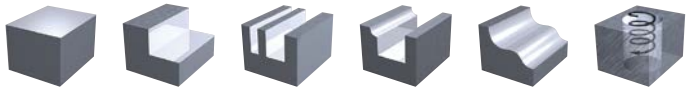
Tolerance Dia.:	Torque on screw:
0/-0.2 mm	3.0 Nm

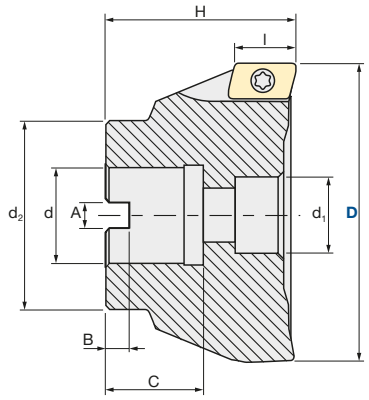
Modular Type												
ID Code	Item Code	Flutes	D	H	d_1	M	d_2	A	B	E	l	Inserts
FH068	**AHUM-1525R-2**	2	25	35	12.5	12	20.8	6	20	17	14	JDMT1505..R.. JDET-1505..R..
FH066	**AHUM-1532R-3-M16**	3	32	40	17	16	28.8		22	22		
FH176	**AHUM-1535R-3-M16**		35									
FH067	**AHUM-1540R-4-M16**	4	40	45								
FH177	**AHUM-1542R-4-M16**		42									

ASC | Carbide Shanks for Modular Mills & AS | Steel Shanks for Modular Mills: page 8

AHUB15 | High Feed Ultra Bore Type

Q max	Jet	▽	▽▽▽	HRC	No. of Teeth
High Efficient	Air Hole	Roughing	Finishing	50	4 ~ 14

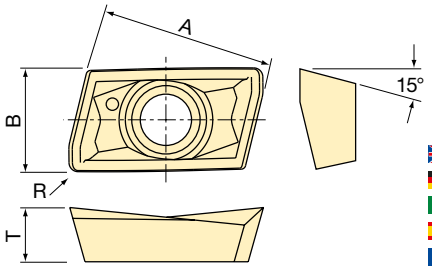




Tolerance Dia.:	Torque on screw:
0/-0.2 mm	3.0 Nm

Face Mill												
ID Code	Item Code	Flutes	D	H	d	d_1	d_2	A	B	C	l	Inserts
FH060	**AHUB-1540RM-4-16**	4	40	45	16	11.5	35	8.4	5.6	18	14	JDMT1505..R.. JDET-1505..R..
FH061	**AHUB-1550RM-5-22**	5	50	50	22	18	40	10.4	6.3	20		
FH062	**AHUB-1550RM-5-27**		50		27	20	45	12.4	7	22		
FH178	**AHUB-1552RM-5-22**		52		22	18	40	10.4	6.3	20		
FH063	**AHUB-1563RM-6-27**	6	63		27	20	60	12.4	7	22		
FH179	**AHUB-1566RM-6-27**		66									
FH064	**AHUB-1580RM-7-27**	7	80									
FH065	**AHUB-15100RM-8-32**	8	100	63	32	26	70	14.4	8	25		
FH211	**AHUB-15125RM-8-40**		125		40	32.5	90	16.4	9	29		
FH212	**AHUB-15160RM-10-40**	10	160			56	114					
FH213	**AHUB-15200RM-12-60**	12	200		60	60+screw	145	25.7	14	49		
FH214	**AHUB-15250RM-14-60**	14	250				180					

INSERTS




JDMT-150530-R


JDMT-150504-R-FW

In case of bigger corner-R than R2.0, modification of body is needed.
Für Eckenradien über R2.0 muss der Halter entsprechend modifiziert werden.
In caso di raggio torico R maggiore di 2 è necessario modificare opportunamente il corpo fresa.
Si el radio de placa es superior a R2.0, el soporte debe modificarse.
Si le rayon de tore est supérieur à R2, une modification du porte plaquettes s'avère nécessaire.
Se o raio da plaquete for maior que R2.0 , precisa de mudar o corpo.

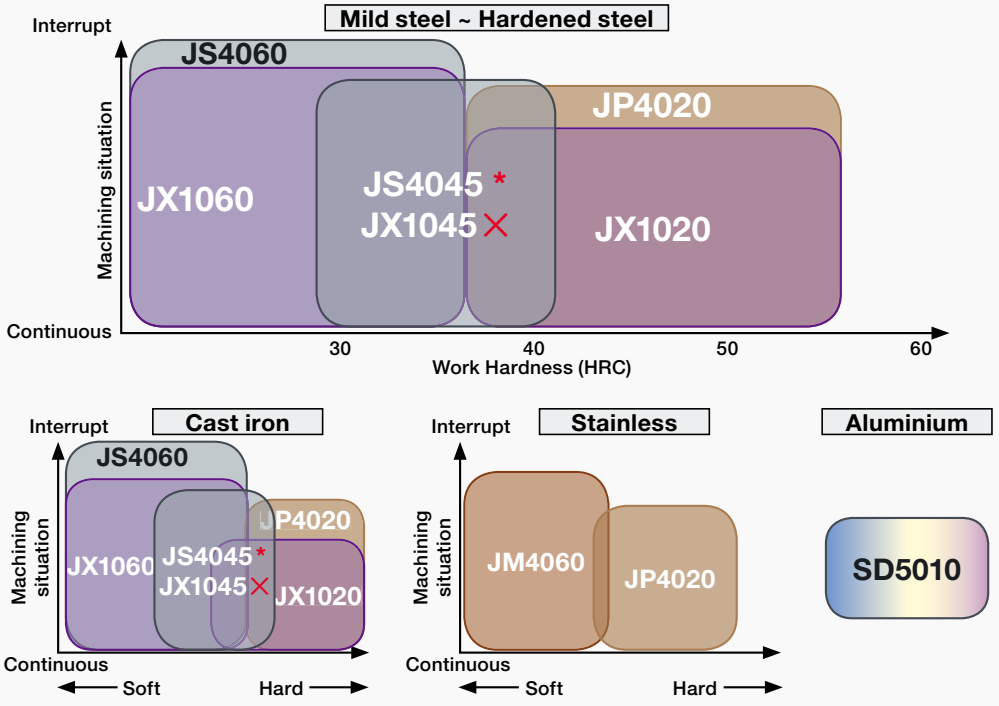
Soft ← Target Hardness of Workpiece → Hard

Inserts		Grade								Size (mm)		
		SD5010	JM4060	JX1060	JS4060	JX1045 ×	JS4045	JP4020	JX1020			
Item Code	Corner-R	ID Code								A	B	T
JDMT-1505-R04-FW	0.4-FW		WF358		WF357	WF182 ×	WF367 *	WF356		16	9.12	5
JDMT-1505-R08-FW	0.8-FW		WF361	WF185	WF360	WF184 ×	WF368 *	WF359	WF183			
JDMT-1505-R20	2.0		WF364		WF363	WF186 ×	WF369 *	WF362				
JDMT-1505-R20-FW	2.0-FW					WF199 ×	*					
JDMT-1505-R30	3.0					WF187 ×	*					
JDET-1505-R04-FA	0.4-FA	WF365										

* coming soon

SD5010	PVD · For Aluminium
JM4060	PVD · For stainless steels & carbon steels < 35HRC
JX1060	PVD · For carbon steels < 35HRC
JS4060	PVD · For carbon steels < 35HRC
JX1045	× to be replaced by JS4045
JS4045	PVD · For general steels 30–40HRC
JP4020	PVD · For pre-hardened steels 40–55 HRC
JX1020	PVD · For pre-hardened steels 40–55HRC

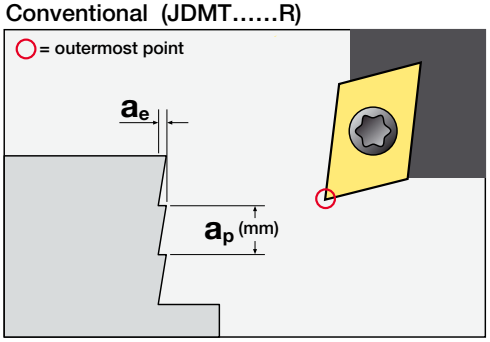
AHU15 Insert grade – target material



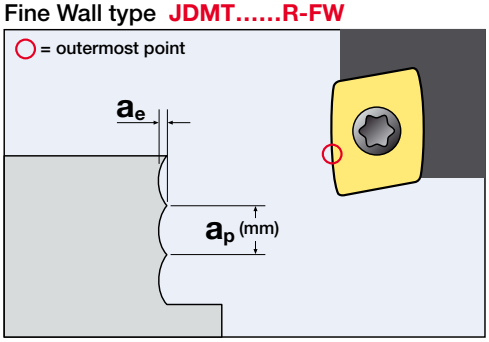
Parts	Clamp Screw ID-Code	Clamp Screw Item-Code	Wrench ID-Code	Wrench Item-Code
AHU-M / AHU-B	ET038	412-141	ET049	105-T15
AHUB-1540RM-4-16	Special screw ID-Code	Special screw Item-Code		
	ET050	K06-676		

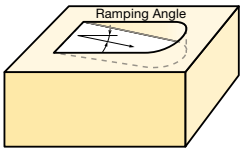
AHU15 | High Feed Ultra – improved cutting surface

Conventional (JDMT……R)

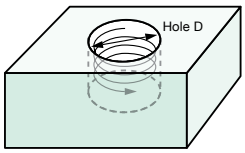


Fine Wall type JDMT……R-FW





Ramping



Helical Milling

Tool Dia (mm)		32	40	50	63	80	100	125	160	200	250
Maximum Ramping Angle		4°	3°	2°	1.5°	1°	1°	0.8°	0.6°	0.5°	0.4°
Helical Milling - Hole Dia (mm)	Min.	47	64	83	109	143	183	233	303	383	483
	Max.	60	76	96	122	156	196	246	316	396	496

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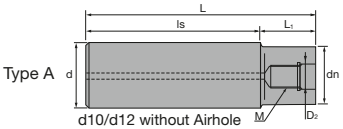
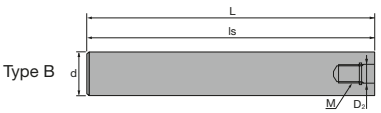
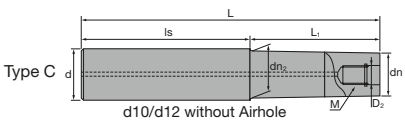
ASC | Carbide Shanks for Modular Mills







	Carbide Shank										
	ID Code	Item Code	D_2	M	L	L_1	ls	dn	dn_2	d	Type
Without Airhole	FH137	**ASC10-6.5-74-24**	6.5	M6	74	24	50	9.3	–	10	A
	FH254	**ASC10-6.5-84-34**			84	34					
	FH255	**ASC10-6.5-114-24**			114	24	90				
	FH138	**ASC10-6.5-114-49**				49	65				
	FH139	**ASC12-6.5-74-24**			74	24	50	11	11.5	12	C
	FH256	**ASC12-6.5-94-44**			94	44					
	FH257	**ASC12-6.5-129-24**			129	24	105				
	FH140	**ASC12-6.5-129-64**				64	65				
With Airhole	FH141	**ASC16-8.5-95-30**	8.5	M8	95	30	65	14.5	15.5	16	C
	FH258	**ASC16-8.5-120-55**			120	55					
	FH142	**ASC16-8.5-140-75**			140	75					
	FH260	**ASC16-8.5-160-30**			160	30	130				
	FH259	**ASC16-8.5-160-95**				95	65				
	FH143	**ASC20-10.5-120-50**	10.5	M10	120	50	70	18	–	20	A
	FH261	**ASC20-10.5-170-90Z**			170	90	80	18.5	19.5		C
	FH144	**ASC20-10.5-220-50**			220	50	170	18	–		A
	FH262	**ASC20-10.5-220-120Z**				120	100	18.5	19.5		C
	FH263	**ASC20-10.5-270-150Z**			270	150	120				
	FH264	**ASC20-10.5-270-50Z**				50	220				
	FH145	**ASC25-12.5-145-65**	12.5	M12	145	65	80	23	–	25	A
	FH146	**ASC25-12.5-265-65**			265		200				
	FH265	**ASC25-12.5-215-115**			215	115	100				
	FH266	**ASC25-12.5-265-145**			265	145	120				
	FH268	**ASC25-12.5-315-65**			315	65	250				
	FH267	**ASC25-12.5-315-195**				195	120				
	FH147	**ASC32-17-160-80**	17	M16	160	80	80	28		32	
	FH269	**ASC32-17-260-140**			260	140	120				
	FH148	**ASC32-17-310-80**			310	80	230				
	FH270	**ASC32-17-360-240**			360	240	120				

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.

AS | Steel Shanks for Modular Mills

	Steel Shank										
	ID Code	Item Code	D_2	M	L	L_1	ls	dn	dn_2	d	Type
Without Airhole	FH131	**AS10-6.5-74-0**	6.5	M6	74	–	74	–	–	10	B
	FH132	**AS12-6.5-84-4**			84	4	80	11		12	A
With Airhole	FH133	**AS16-8.5-95-15**	8.5	M8	95	15	80	14.5	15.5	16	C
	FH134	**AS20-10.5-100-20**	10.5	M10	100	20		18	–	20	A
	FH271	**AS25-12.5-115-35**	12.5	M12	115	35		23	23	25	
	FH272	**AS32-17-110-30**	17	M16	110	30		28	28	32	

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SUPER Lock Aufnahmen können verwendet werden.
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For further information about modular chucks please see our brochure *Indexable Modular Series No. 328.2*
Weitere Informationen über modulare Werkzeugaufnahmen finden Sie in unserem Prospekt: *Indexable Modular Series No. 328.2*
Para obtener más información sobre conos modulares consulte nuestro folleto *Indexable Modular Series No. 328.2*
Per maggiori informazioni riguardanti la gamma dei mandrini avvitabili consultate il catalogo *Indexable Modular Series No. 328.2*
Pour de plus amples informations concernant les attachements modulaires, voyez SVP notre brochure *Indexable Modular Series No. 328.2*
Para mais informações sobre Cones Modulares consulte o nosso folheto *Indexable Modular Series No. 328.2*

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