Akkermans Industrial Engineering B.V. info@aiebv.com T +31 (0)165 - 224140

BR-G12

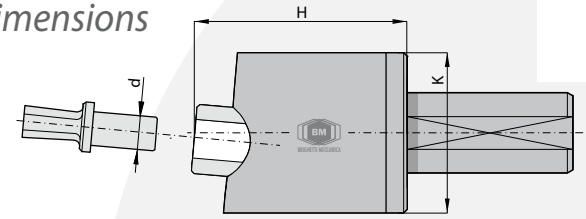
BM-250

BRIGHETTI MECCANICA

Made in Italy since 1977

Brocciatori Standard serie "BR" - Caratteristiche tecniche e dimensioni

Standard Broaching Heads "BR" series - Technical characteristics and dimensions



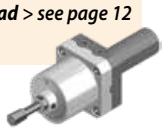
CARATTERISTICHE / *FEATURES*	dim.		BROCCIATORE (BR) / *BROACHING HEAD* (BR)									
			BR-G5	BR-G8			BR-G12		BR-G16			BR-G25
				BR-G8S	BR-G8M	BR-G8	BR-G12B	BR-G12	BR-G16	BR-G16M	BR-G16L	
GAMBO DELLA BROCCIA *SHANK OF THE BROACH*	d	mm	Ø5	Ø8	Ø8	Ø8	Ø12	Ø12	Ø16	Ø16	Ø16	Ø25
CAPACITA' CAVE ESAGONALI *HEXAGONAL SLOT CAPACITY*		mm	1÷6	1÷8	1÷8	1÷10	1÷13	1÷15	2÷25	5÷30	4÷30	15÷40
CAPACITA' CAVE QUADRE *SQUARE SLOT CAPACITY*		mm	1÷4	1÷ 6	1÷6	1÷8	1÷10	1÷12	2÷15	5÷20	4÷25	15÷25
CAPACITA' CAVE TORX® *TORX® SLOT CAPACITY*		T	3÷25	3÷40	3÷40	3÷40	3÷60	3÷60	10÷70	20÷70	30÷70	(*)
CAPACITA' CAVE TORX® PLUS *TORX® PLUS SLOT CAPACITY*		IP	6÷25	6÷40	6÷40	6÷40	6÷60	6÷60	10÷70	20÷70	30÷70	(*)
PROFONDITA' MAX DI LAVORO *MAXIMUM WORKING DEPTH*		mm	7,5	15	15	15	21	21	21	30	40	65
DIMENSIONE CORPO *BODY DIMENSIONS*	H	mm	35	36,5	47,5	55	66,5	81,5	87	91	99	115,5
DIMENSIONE CORPO *BODY DIMENSIONS*	K	mm	Ø24	Ø37	Ø29,5	Ø37	Ø47	Ø58	Ø68	Ø68	Ø79	Ø91
PESO (indicativo) *WEIGHT (indicative)*		gr.	181	412	338	525	851	1653	2628	1830	3500	4850

TIPO DI ATTACCO / *CONNECTIONS*		BROCCIATORE (BR) / *BROACHING HEAD* (BR)									
		BR-G5	BR-G8			BR-G12		BR-G16			BR-G25
			BR-G8S	BR-G8M	BR-G8	BR-G12B	BR-G12	BR-G16	BR-G16M	BR-G16L	
CODOLO CILINDRICO *CYLINDRICAL CONNECTION*	Ø	8	10	10	10	16	20	25	25	25	32
	Ø	10	12	12	12	19,05	25	32	32	32	40
	Ø	12 (*)	16	16	16	20	32	40	40	40	
	Ø	16	19,05	19,05	19,05	22					
	Ø	19,05	20	20	20	25					
	Ø	20	22	22	22	25,40					
	Ø	22 (*)	25	25	25						
	Ø		25,40	25,40 (*)	25,40						
CODOLO CONO MORSE "CM" *"CM" MORSE TAPER CONNECTION*						2	3	3 - 4	3 - 4	4 - 5	4 - 5
A RICHIESTA / *On request:* CODOLO "ISO - DIN 69871 / DIN 2080" *"ISO-DIN 69871 / DIN 2080" CONNECTION*							30 - 40	40	40 - 50	40 - 50	40 - 50
CODOLO "VDI" *"VDI" CONNECTION*							VDI 30	VDI 30 VDI 40	VDI 30 VDI 40	VDI 40	VDI 40
CODOLO "CAPTO ISO-26623" *"CAPTO ISO-26623" CONNECTION*							3	4 - 5	4 - 5	4 - 5	

(*) a richiesta / *on request*

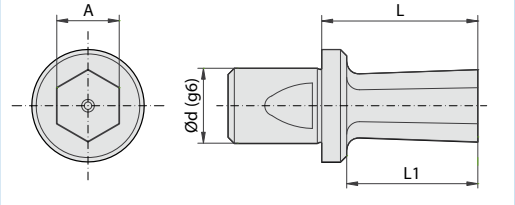
A RICHIESTA / *On request:*	In fase di richiesta specificare con disegno il tipo di attacco richiesto
CODOLO "HSK" DIN 69893-1 / ISO-12164 FORMA ... *"HSK" CONNECTION DIN 69893-1 / ISO-12164 SHAPE ...*	*When submitting a request, specify the type of connection required with a drawing*

Brocciatori REGISTRABILI > vedi pag.12
***Adjustable Broaching Head** > see page 12*

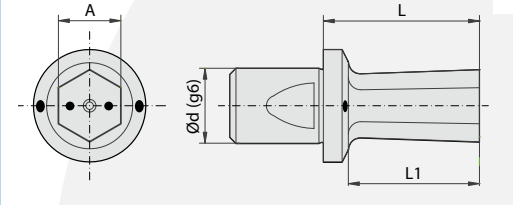


BROCCE G12 E G12C - DIAMETRO "d" DEL GAMBO: 12 mm
G12 AND G12C BROACHES - 12 mm SHANK DIAMETER ("d")

Sezione ESAGONALE (E)
HEXAGONAL section (E)



"G12" - "G12K" STANDARD
"G12" - "G12K" STANDARD



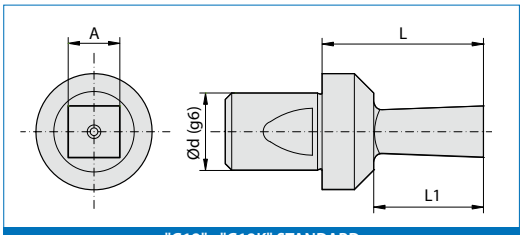
"G12C" - "G12KC" CON PASSAGGIO REFRIGERANTE INTERNO
"G12C" - "G12KC" WITH INTERNAL FLOW OF COOLANT

ARTICOLO (materiale) - *ITEM (material)*				DIMENSIONI - *DIMENSIONS*				Utilizzo su Brocciatori/ *Use on Broaching heads*
HSS		SINTERIZZATO / *SINTERED*						
Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*	d	A	L1	L	
G12-E-1	/	G12K-E-1	/	12	1 +0,04 +0,06	2	25	*Standard* BR-G12B BR-G12 BR-G12A *Refrig. / Cool.* BRC-G12B BRC-G12
G12-E-1,5		G12K-E-1,5		12	1,5 +0,05 +0,07	3	25	
G12-E-2		G12K-E-2		12	2 +0,05 +0,07	5	25	
G12-E-2,5		G12K-E-2,5		12	2,5 +0,05 +0,07	6	25	
G12-E-3	G12C-E-3	G12K-E-3	G12KC-E-3	12	3 +0,06 +0,08	7	25	
G12-E-3,5	G12C-E-3,5	G12K-E-3,5	G12KC-E-3,5	12	3,5 +0,06 +0,08	8	25	
G12-E-4	G12C-E-4	G12K-E-4	G12KC-E-4	12	4 +0,07 +0,09	9	25	
G12-E-4,5	G12C-E-4,5	G12K-E-4,5	G12KC-E-4,5	12	4,5 +0,07 +0,09	9	25	
G12-E-5	G12C-E-5	G12K-E-5	G12KC-E-5	12	5 +0,08 +0,10	11	25	
G12-E-5,5	G12C-E-5,5	G12K-E-5,5	G12KC-E-5,5	12	5,5 +0,08 +0,10	11	25	
G12-E-6	G12C-E-6	G12K-E-6	G12KC-E-6	12	6 +0,08 +0,10	13	25	
G12-E-7	G12C-E-7	G12K-E-7	G12KC-E-7	12	7 +0,08 +0,10	15	25	
G12-E-8	G12C-E-8	G12K-E-8	G12KC-E-8	12	8 +0,08 +0,10	17	25	
G12-E-9	G12C-E-9	G12K-E-9	G12KC-E-9	12	9 +0,09 +0,11	19	25	
G12-E-10	G12C-E-10	G12K-E-10	G12KC-E-10	12	10 +0,10 +0,12	21	25	
G12-E-11	G12C-E-11	G12K-E-11	G12KC-E-11	12	11 +0,10 +0,12	21	25	
G12-E-12	G12C-E-12	G12K-E-12	G12KC-E-12	12	12 +0,11 +0,13	21	25	
G12-E-13	G12C-E-13	G12K-E-13	G12KC-E-13	12	13 +0,11 +0,13	21	25	
G12-E-14	G12C-E-14	G12K-E-14	G12KC-E-14	12	14 +0,12 +0,14	21	25	
G12-E-15	G12C-E-15	G12K-E-15	G12KC-E-15	12	15 +0,13 +0,15	21	25	

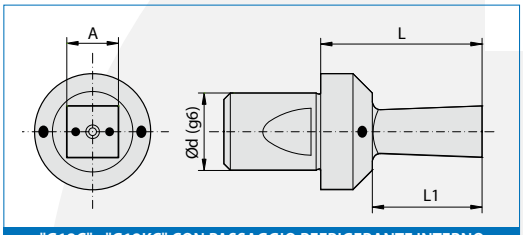
In questi articoli possiamo eseguire i seguenti rivestimenti: **WONDER, TiN, INOX PLUS e ZIRINOS** > vedi pag.18
*Available coatings for the up above mentioned items: **WONDER, TiN, INOX PLUS and ZIRINOS** > see page 18*

BROCCE G12 E G12C - DIAMETRO "d" DEL GAMBO: 12 mm
G12 AND G12C BROACHES - 12 mm SHANK DIAMETER ("d")

Sezione QUADRA (Q)
SQUARE section (Q)



"G12" - "G12K" STANDARD
"G12" - "G12K" STANDARD



"G12C" - "G12KC" CON PASSAGGIO REFRIGERANTE INTERNO
"G12C" - "G12KC" WITH INTERNAL FLOW OF COOLANT

ARTICOLO (materiale) - *ITEM (material)*				DIMENSIONI - *DIMENSIONS*				Utilizzo su Brocciatori/ *Use on Broaching heads*
HSS		SINTERIZZATO / *SINTERED*						
Standard ☐	Ref. / *Cool.* ••	Standard ☐	Ref. / *Cool.* ••	d	A	L1	L	
G12-Q-1	/	**G12K-Q-1**	/	12	1 +0,04 +0,06	2	25	*Standard* **BR-G12B** **BR-G12** **BR-G12A** *Refrig. / Cool.* **BRC-G12B** **BRC-G12**
G12-Q-1,5		**G12K-Q-1,5**		12	1,5 +0,05 +0,07	3	25	
G12-Q-2		**G12K-Q-2**		12	2 +0,05 +0,07	5	25	
G12-Q-2,5		**G12K-Q-2,5**		12	2,5 +0,05 +0,07	6	25	
G12-Q-3	**G12C-Q-3**	**G12K-Q-3**	**G12KC-Q-3**	12	3 +0,06 +0,08	7	25	
G12-Q-3,5	**G12C-Q-3,5**	**G12K-Q-3,5**	**G12KC-Q-3,5**	12	3,5 +0,06 +0,08	8	25	
G12-Q-4	**G12C-Q-4**	**G12K-Q-4**	**G12KC-Q-4**	12	4 +0,07 +0,09	9	25	
G12-Q-4,5	**G12C-Q-4,5**	**G12K-Q-4,5**	**G12KC-Q-4,5**	12	4,5 +0,07 +0,09	9	25	
G12-Q-5	**G12C-Q-5**	**G12K-Q-5**	**G12KC-Q-5**	12	5 +0,08 +0,10	11	25	
G12-Q-5,5	**G12C-Q-5,5**	**G12K-Q-5,5**	**G12KC-Q-5,5**	12	5,5 +0,08 +0,10	11	25	
G12-Q-6	**G12C-Q-6**	**G12K-Q-6**	**G12KC-Q-6**	12	6 +0,08 +0,10	13	25	
G12-Q-7	**G12C-Q-7**	**G12K-Q-7**	**G12KC-Q-7**	12	7 +0,08 +0,10	15	25	
G12-Q-8	**G12C-Q-8**	**G12K-Q-8**	**G12KC-Q-8**	12	8 +0,08 +0,10	17	25	
G12-Q-9	**G12C-Q-9**	**G12K-Q-9**	**G12KC-Q-9**	12	9 +0,09 +0,11	19	25	
G12-Q-10	**G12C-Q-10**	**G12K-Q-10**	**G12KC-Q-10**	12	10 +0,10 +0,12	21	25	
G12-Q-11	**G12C-Q-11**	**G12K-Q-11**	**G12KC-Q-11**	12	11 +0,10 +0,12	21	25	
G12-Q-12	**G12C-Q-12**	**G12K-Q-12**	**G12KC-Q-12**	12	12 +0,11 +0,13	21	25	

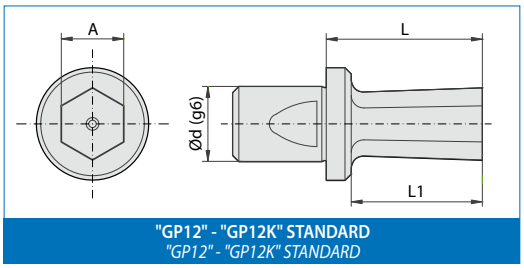
In questi articoli possiamo eseguire i seguenti rivestimenti: **WONDER, TiN, INOX PLUS e ZIRINOS** > vedi pag.18
*Available coatings for the up above mentioned items: **WONDER, TiN, INOX PLUS and ZIRINOS** > see page 18*

2026/03/30

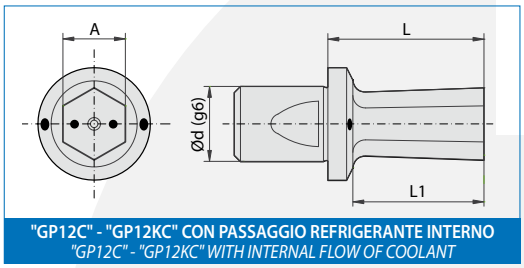
BROCCE GP12 E GP12C - DIAMETRO "d" DEL GAMBO: 12 mm - MISURE IN POLLICI

GP12 E GP12C BROACHES - 12 mm SHANK DIAMETER ("d") - SIZES IN INCHES

Sezione ESAGONALE (E) / *HEXAGONAL section (E)*



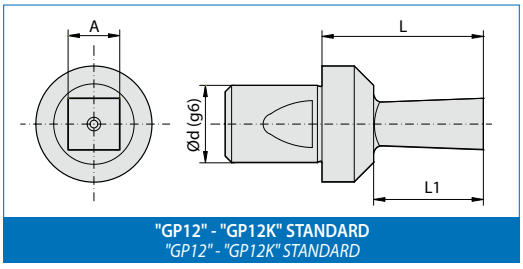
"GP12" - "GP12K" STANDARD
"GP12" - "GP12K" STANDARD



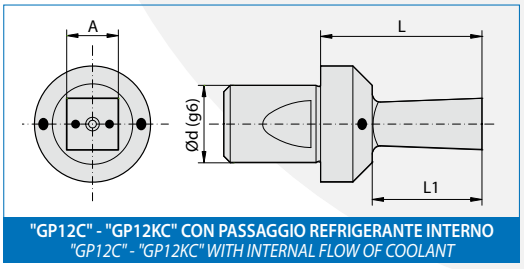
"GP12C" - "GP12KC" CON PASSAGGIO REFRIGERANTE INTERNO
"GP12C" - "GP12KC" WITH INTERNAL FLOW OF COOLANT

ARTICOLO (materiale) - *ITEM (material)*				DIMENSIONI - *DIMENSIONS*				Utilizzo su Brocciatori/ *Use on Broaching heads*
HSS		SINTERIZZATO / *SINTERED*						
Standard ⬢	Ref. / *Cool.* ⬢	Standard ⬢	Ref. / *Cool.* ⬢	d	A	L1	L	
GP12-E-3/32"	/	GP12K-E-3/32"	/	12	2,38 +0,06 +0,08	5	25	
GP12-E-1/8"	GP12C-E-1/8"	GP12K-E-1/8"	GP12KC-E-1/8"	12	3,17 +0,07 +0,09	6	25	
GP12-E-5/32"	GP12C-E-5/32"	GP12K-E-5/32"	GP12KC-E-5/32"	12	3,97 +0,08 +0,10	8	25	*Standard*
GP12-E-3/16"	GP12C-E-3/16"	GP12K-E-3/16"	GP12KC-E-3/16"	12	4,76 +0,08 +0,10	9	25	**BR-G12B**
GP12-E-7/32"	GP12C-E-7/32"	GP12K-E-7/32"	GP12KC-E-7/32"	12	5,55 +0,08 +0,10	11	25	**BR-G12**
GP12-E-1/4"	GP12C-E-1/4"	GP12K-E-1/4"	GP12KC-E-1/4"	12	6,35 +0,08 +0,10	13	25	**BR-G12A**
GP12-E-9/32"	GP12C-E-9/32"	GP12K-E-9/32"	GP12KC-E-9/32"	12	7,14 +0,09 +0,11	16	25	
GP12-E-5/16"	GP12C-E-5/16"	GP12K-E-5/16"	GP12KC-E-5/16"	12	7,93 +0,09 +0,11	16	25	*Refrig. / Cool.*
GP12-E-3/8"	GP12C-E-3/8"	GP12K-E-3/8"	GP12KC-E-3/8"	12	9,52 +0,10 +0,12	18	25	**BRC-G12B**
GP12-E-7/16"	GP12C-E-7/16"	GP12K-E-7/16"	GP12KC-E-7/16"	12	11,11 +0,11 +0,13	21	25	**BRC-G12**
GP12-E-1/2"	GP12C-E-1/2"	GP12K-E-1/2"	GP12KC-E-1/2"	12	12,70 +0,12 +0,14	21	25	
GP12-E-9/16"	GP12C-E-9/16"	GP12K-E-9/16"	GP12KC-E-9/16"	12	14,28 +0,12 +0,14	21	25	

Sezione QUADRA (Q) / *SQUARE section (Q)*



"GP12" - "GP12K" STANDARD
"GP12" - "GP12K" STANDARD



"GP12C" - "GP12KC" CON PASSAGGIO REFRIGERANTE INTERNO
"GP12C" - "GP12KC" WITH INTERNAL FLOW OF COOLANT

ARTICOLO (materiale) - *ITEM (material)*				DIMENSIONI - *DIMENSIONS*				Utilizzo su Brocciatori/ *Use on Broaching heads*
HSS		SINTERIZZATO / *SINTERED*						
Standard ⬜	Ref. / *Cool.* ⬜	Standard ⬜	Ref. / *Cool.* ⬜	d	A	L1	L	
GP12-Q-3/32"	/	GP12K-Q-3/32"	/	12	2,38 +0,06 +0,08	5	25	
GP12-Q-1/8"	GP12C-Q-1/8"	GP12K-Q-1/8"	GP12KC-Q-1/8"	12	3,17 +0,07 +0,09	6	25	
GP12-Q-5/32"	GP12C-Q-5/32"	GP12K-Q-5/32"	GP12KC-Q-5/32"	12	3,97 +0,08 +0,10	8	25	*Standard*
GP12-Q-3/16"	GP12C-Q-3/16"	GP12K-Q-3/16"	GP12KC-Q-3/16"	12	4,76 +0,08 +0,10	9	25	**BR-G12B**
GP12-Q-7/32"	GP12C-Q-7/32"	GP12K-Q-7/32"	GP12KC-Q-7/32"	12	5,55 +0,08 +0,10	11	25	**BR-G12**
GP12-Q-1/4"	GP12C-Q-1/4"	GP12K-Q-1/4"	GP12KC-Q-1/4"	12	6,35 +0,08 +0,10	15	25	**BR-G12A**
GP12-Q-9/32"	GP12C-Q-9/32"	GP12K-Q-9/32"	GP12KC-Q-9/32"	12	7,14 +0,09 +0,11	16	25	
GP12-Q-5/16"	GP12C-Q-5/16"	GP12K-Q-5/16"	GP12KC-Q-5/16"	12	7,93 +0,09 +0,11	16	25	*Refrig. / Cool.*
GP12-Q-3/8"	GP12C-Q-3/8"	GP12K-Q-3/8"	GP12KC-Q-3/8"	12	9,52 +0,10 +0,12	18	25	**BRC-G12B**
GP12-Q-7/16"	GP12C-Q-7/16"	GP12K-Q-7/16"	GP12KC-Q-7/16"	12	11,11 +0,11 +0,13	21	25	**BRC-G12**
GP12-Q-1/2"	GP12C-Q-1/2"	GP12K-Q-1/2"	GP12KC-Q-1/2"	12	12,70 +0,12 +0,14	21	25	

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*Available coatings for the up above mentioned items: **WONDER, TiN, INOX PLUS and ZIRINOS** > see page 18*

Brocce Standard e con passaggio refrigerante per chiavi TORX®

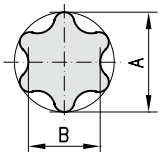
Standard Broaches and with internal flow of coolant for TORX® wrenches

per Brocciatori Standard serie "BR"

for "BR" Standard Broaching Heads series

I L'originale disegno delle cave per chiavi TORX® consente, in dimensioni contenute, di esercitare una coppia di serraggio molto elevata senza compromettere l'integrità della cava.

GB *The original design of the holes for TORX® wrenches makes it possible to exert a very high torque, despite the limited dimensions, without damaging the hole.*

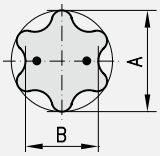


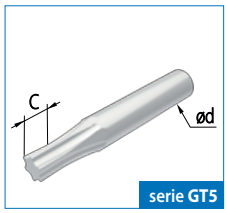
per Brocciatori serie "BRC"

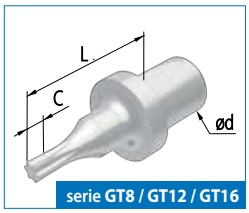
for Broaching Heads "BRC" series

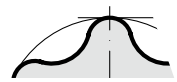
I *Brocce per realizzazione di cave per chiavi TORX® per utilizzo su brocciatori serie "BRC" con passaggio refrigerante interno per poter avere una maggiore durata della broccia, una minore rugosità e poter lavorare materiali molto tenaci.*

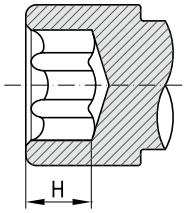
GB *Broaches for TORX profiles suitable for broaching heads BRC series with internal flow of coolant. The flow of coolant increases the broach productivity, assures a minor roughness on the work-piece and helps to machine harder materials.*











A	B	C	H max (*)	TORX®	per brocciatori serie *for broaching heads* BR-G5 ød = 5 ARTICOLO (materiale) *ITEM (material)* HSS Standard	per brocciatori serie *for broaching heads* BR-G5 ød = 5 ARTICOLO (materiale) *ITEM (material)* SINTERIZ. Standard	per brocciatori serie *for broaching heads* BR-G8S / BR-G8M / BR-G8 / BR-G8A BRC-G8M / BRC-G8 / BRC-G8HP ød = 8 / L = 18 ARTICOLO (materiale) *ITEM (material)* HSS Standard	per brocciatori serie *for broaching heads* BR-G8S / BR-G8M / BR-G8 / BR-G8A BRC-G8M / BRC-G8 / BRC-G8HP ød = 8 / L = 18 ARTICOLO (materiale) *ITEM (material)* HSS Ref. / *Cool.*	per brocciatori serie *for broaching heads* BR-G8S / BR-G8M / BR-G8 / BR-G8A BRC-G8M / BRC-G8 / BRC-G8HP ød = 8 / L = 18 ARTICOLO (materiale) *ITEM (material)* SINTERIZZATO / *SINTERED* Standard	per brocciatori serie *for broaching heads* BR-G8S / BR-G8M / BR-G8 / BR-G8A BRC-G8M / BRC-G8 / BRC-G8HP ød = 8 / L = 18 ARTICOLO (materiale) *ITEM (material)* SINTERIZZATO / *SINTERED* Ref. / *Cool.*
1,214	0,884	1,2	0,40	3	GT5-T3	GT5K-T3	GT8-T3		GT8K-T3	
1,374	0,996	1,2	0,50	4	GT5-T4	GT5K-T4	GT8-T4		GT8K-T4	
1,499	1,097	1,5	1,00	5	GT5-T5	GT5K-T5	GT8-T5	/	GT8K-T5	/
1,778	1,293	1,7	1,20	6	GT5-T6	GT5K-T6	GT8-T6		GT8K-T6	
2,095	1,521	1,7	1,50	7	GT5-T7	GT5K-T7	GT8-T7		GT8K-T7	
2,418	1,756	2,0	1,70	8	GT5-T8	GT5K-T8	GT8-T8	GT8C-T8	GT8K-T8	GT8KC-T8
2,603	1,889	2,0	1,70	9	GT5-T9	GT5K-T9	GT8-T9	GT8C-T9	GT8K-T9	GT8KC-T9
2,844	2,057	2,0	2,00	10	GT5-T10	GT5K-T10	GT8-T10	GT8C-T10	GT8K-T10	GT8KC-T10
3,378	2,438	3,0	3,00	15	GT5-T15	GT5K-T15	GT8-T15	GT8C-T15	GT8K-T15	GT8KC-T15
3,962	2,857	3,5	3,00	20	GT5-T20	GT5K-T20	GT8-T20	GT8C-T20	GT8K-T20	GT8KC-T20
4,559	3,276	4,0	3,50	25	GT5-T25	GT5K-T25	GT8-T25	GT8C-T25	GT8K-T25	GT8KC-T25
5,118	3,672	4,0	3,50	27	/	/	GT8-T27	GT8C-T27	GT8K-T27	GT8KC-T27
5,651	4,064	4,5	3,50	30			GT8-T30	GT8C-T30	GT8K-T30	GT8KC-T30
6,807	4,889	5,0	4,00	40			GT8-T40	GT8C-T40	GT8K-T40	GT8KC-T40

A	B	C	H max (*)	TORX®	per brocciatori serie *for broaching heads* BR-G12 / BR-G12B / BR-G12A / BRC-G12 / BRC-G12B ød = 12 / L = 25				per brocciatori serie *for broaching heads* BR-G16 ød = 16 / L = 25	
					ARTICOLO (materiale) *ITEM (material)*				ARTICOLO (materiale) *ITEM (material)*	
					HSS		SINTERIZZATO / *SINTERED*		HSS	SINTERIZ.
					Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*	Standard	Standard
1,214	0,884	1,2	0,40	3	GT12-T3		GT12K-T3			
1,374	0,996	1,2	0,50	4	GT12-T4		GT12K-T4			
1,499	1,097	1,5	1,00	5	GT12-T5	/	GT12K-T5	/	/	/
1,778	1,293	1,7	1,20	6	GT12-T6		GT12K-T6			
2,095	1,521	1,7	1,50	7	GT12-T7		GT12K-T7			
2,418	1,756	2,0	1,70	8	GT12-T8	GT12C-T8	GT12K-T8	GT12KC-T8		
2,603	1,889	2,0	1,70	9	GT12-T9	GT12C-T9	GT12K-T9	GT12KC-T9		
2,844	2,057	2,0	2,00	10	GT12-T10	GT12C-T10	GT12K-T10	GT12KC-T10	GT16-T10	GT16K-T10
3,378	2,438	3,0	3,00	15	GT12-T15	GT12C-T15	GT12K-T15	GT12KC-T15	GT16-T15	GT16K-T15
3,962	2,857	3,5	3,00	20	GT12-T20	GT12C-T20	GT12K-T20	GT12KC-T20	GT16-T20	GT16K-T20
4,559	3,276	4,0	3,50	25	GT12-T25	GT12C-T25	GT12K-T25	GT12KC-T25	GT16-T25	GT16K-T25
5,118	3,672	4,0	3,50	27	GT12-T27	GT12C-T27	GT12K-T27	GT12KC-T27	GT16-T27	GT16K-T27
5,651	4,064	4,5	3,50	30	GT12-T30	GT12C-T30	GT12K-T30	GT12KC-T30	GT16-T30	GT16K-T30
6,807	4,889	5,0	4,00	40	GT12-T40	GT12C-T40	GT12K-T40	GT12KC-T40	GT16-T40	GT16K-T40
7,975	5,689	5,5	5,20	45	GT12-T45	GT12C-T45	GT12K-T45	GT12KC-T45	GT16-T45	GT16K-T45
8,991	6,502	6,0	6,00	50	GT12-T50	GT12C-T50	GT12K-T50	GT12KC-T50	GT16-T50	GT16K-T50
11,404	8,089	7,0	7,00	55	GT12-T55	GT12C-T55	GT12K-T55	GT12KC-T55	GT16-T55	GT16K-T55
13,487	9,677	7,5	7,50	60	GT12-T60	GT12C-T60	GT12K-T60	GT12KC-T60	GT16-T60	GT16K-T60
15,773	11,264	8,0	8,00	70	/	/	/	/	GT16-T70	GT16K-T70

A	B	C	H max (*)	TORX®	per brocciatori serie *for broaching heads* BR-G16M / BRC-G16M ød = 16 / L = 35				per brocciatori serie *for broaching heads* BR-G16L / BRC-G16L ød = 16 / L = 45			
					ARTICOLO (materiale) *ITEM (material)*				ARTICOLO (materiale) *ITEM (material)*			
					HSS		SINTERIZZATO / *SINTERED*		HSS		SINTERIZZATO / *SINTERED*	
					Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*
3,962	2,857	3,5	3,00	20	GT16M-T20	GT16MC-T20	GT16MK-T20	GT16MKC-T20				
4,559	3,276	4,0	3,50	25	GT16M-T25	GT16MC-T25	GT16MK-T25	GT16MKC-T25	/	/	/	/
5,118	3,672	4,0	3,50	27	GT16M-T27	GT16MC-T27	GT16MK-T27	GT16MKC-T27				
5,651	4,064	4,5	3,50	30	GT16M-T30	GT16MC-T30	GT16MK-T30	GT16MKC-T30	GT16L-T30	GT16LC-T30	GT16LK-T30	GT16LKC-T30
6,807	4,889	5,0	4,00	40	GT16M-T40	GT16MC-T40	GT16MK-T40	GT16MKC-T40	GT16L-T40	GT16LC-T40	GT16LK-T40	GT16LKC-T40
7,975	5,689	5,5	5,20	45	GT16M-T45	GT16MC-T45	GT16MK-T45	GT16MKC-T45	GT16L-T45	GT16LC-T45	GT16LK-T45	GT16LKC-T45
8,991	6,502	6,0	6,00	50	GT16M-T50	GT16MC-T50	GT16MK-T50	GT16MKC-T50	GT16L-T50	GT16LC-T50	GT16LK-T50	GT16LKC-T50
11,404	8,089	7,0	7,00	55	GT16M-T55	GT16MC-T55	GT16MK-T55	GT16MKC-T55	GT16L-T55	GT16LC-T55	GT16LK-T55	GT16LKC-T55
13,487	9,677	7,5	7,50	60	GT16M-T60	GT16MC-T60	GT16MK-T60	GT16MKC-T60	GT16L-T60	GT16LC-T60	GT16LK-T60	GT16LKC-T60
15,773	11,264	8,0	8,00	70	GT16M-T70	GT16MC-T70	GT16MK-T70	GT16MKC-T70	GT16L-T70	GT16LC-T70	GT16LK-T70	GT16LKC-T70

(*) = quota di profondità MAX standard su impronta di vite commerciale / *Measure of MAX standard depth imprint by commercial screws*

In questi articoli possiamo eseguire i seguenti rivestimenti: **WONDER, TiN, INOX PLUS e ZIRINOS** > vedi pag.18
*Available coatings for the up above mentioned items: **WONDER, TiN, INOX PLUS and ZIRINOS** > see page 18*

Brocce Standard e con passaggio refrigerante per chiavi TORX® PLUS

Standard Broaches and with internal flow of coolant for TORX® PLUS wrenches

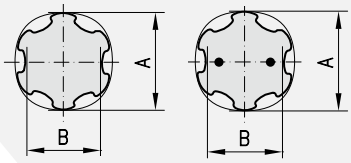
per Brocciatori Standard serie "BR"

for "BR" Standard Broaching Heads series

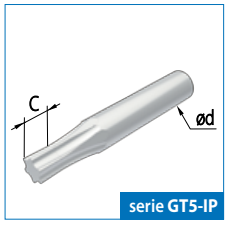
per Brocciatori serie "BRC"

for Broaching Heads "BRC" series

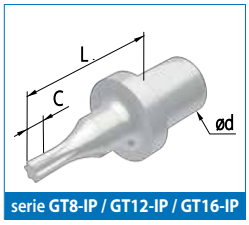
I Il profilo TORX® PLUS è un'evoluzione della precedente impronta TORX®. La variante TORX® PLUS consente una maggiore forza di presa sul pezzo e conseguentemente una elevata tenuta della coppia di serraggio. Ciò significa che l'impronta esalobata richiede una profondità della cava relativamente inferiore rispetto alla versione TORX® e nello stesso tempo garantisce più a lungo l'integrità della figura stessa. La geometria ellittica del profilo TORX® PLUS amplia la superficie di contatto consentendo un migliore e più efficace accoppiamento della chiave con la cava esalobata. In questo modo si garantisce una riduzione dello stress di torsione e di conseguenza una vita più lunga dell'utensile. Anche per il profilo TORX e TORX PLUS esiste la versione per brocciatori serie "BRC" che consente di poter lavorare materiali molto tenaci e avere una maggiore durata della broccia e una minore rugosità della cava.



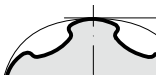
GB *TORX® PLUS profile is an enhancement of the older TORX® shape. TORX® PLUS drive system maximizes engagement between driver and fastener and optimizes torque transmission. This means the depth of the profile can be shorter than TORX® old version, even if at the same time TORX® PLUS assures a much longer life of the tools. The elliptically based geometry of the TORX® PLUS profile broadens contact surface guaranting a better engagement between driver and fastner than old TORX® shape. This feature virtually eliminates radial stresses and increase tool life. Broaches suitable for broaching heads with internal flow of coolant BRC series are available with TORX PLUS profiles too. The internal flow of coolant helps to machine harder materials and assures a higher broach productivity and a minor roughness on the work-piece.*

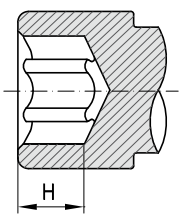


serie GT5-IP



serie GT8-IP / GT12-IP / GT16-IP





A	B	C	H max (*)	TORX®	per brocciatori serie *for broaching heads* BR-G5 ød = 5		per brocciatori serie *for broaching heads* BR-G8S / BR-G8M / BR-G8 / BR-G8A BRC-G8M / BRC-G8 / BRC-G8HP ød = 8 / L = 18			
					ARTICOLO (materiale) *ITEM (material)*		ARTICOLO (materiale) *ITEM (material)*			
					HSS	SINTERIZ.	HSS		SINTERIZZATO / *SINTERED*	
					Standard	Standard	Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*
1,778	1,381	1,7	1,20	6	GT5-IP6	GT5K-IP6	GT8-IP6	/	GT8K-IP6	/
2,095	1,606	1,7	1,50	7	GT5-IP7	GT5K-IP7	GT8-IP7		GT8K-IP7	
2,418	1,860	2,0	1,70	8	GT5-IP8	GT5K-IP8	GT8-IP8	GT8C-IP8	GT8K-IP8	GT8KC-IP8
2,603	2,014	2,0	1,70	9	GT5-IP9	GT5K-IP9	GT8-IP9	GT8C-IP9	GT8K-IP9	GT8KC-IP9
2,844	2,174	2,0	2,00	10	GT5-IP10	GT5K-IP10	GT8-IP10	GT8C-IP10	GT8K-IP10	GT8KC-IP10
3,378	2,606	3,0	3,00	15	GT5-IP15	GT5K-IP15	GT8-IP15	GT8C-IP15	GT8K-IP15	GT8KC-IP15
3,962	3,088	3,5	3,00	20	GT5-IP20	GT5K-IP20	GT8-IP20	GT8C-IP20	GT8K-IP20	GT8KC-IP20
4,559	3,492	4,0	3,50	25	GT5-IP25	GT5K-IP25	GT8-IP25	GT8C-IP25	GT8K-IP25	GT8KC-IP25
5,651	4,391	4,5	3,50	30	/	/	GT8-IP30	GT8C-IP30	GT8K-IP30	GT8KC-IP30
6,807	5,283	5,0	4,00	40			GT8-IP40	GT8C-IP40	GT8K-IP40	GT8KC-IP40

A	B	C	H max (*)	TORX®	per brocciatori serie *for broaching heads* BR-G12 / BR-G12B / BR-G12A / BRC-G12 / BRC-G12B ød = 12 / L = 25				per brocciatori serie *for broaching heads* BR-G16 ød = 16 / L = 25	
					ARTICOLO (materiale) *ITEM (material)*				ARTICOLO (materiale) *ITEM (material)*	
					HSS		SINTERIZZATO / *SINTERED*		HSS	SINTERIZ.
					Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*	Standard	Standard
1,778	1,381	1,7	1,20	6	GT12-IP6	/	GT12K-IP6	/	/	/
2,095	1,606	1,7	1,50	7	GT12-IP7		GT12K-IP7			
2,418	1,860	2,0	1,70	8	GT12-IP8	GT12C-IP8	GT12K-IP8	GT12KC-IP8		
2,603	2,014	2,0	1,70	9	GT12-IP9	GT12C-IP9	GT12K-IP9	GT12KC-IP9		
2,844	2,174	2,0	2,00	10	GT12-IP10	GT12C-IP10	GT12K-IP10	GT12KC-IP10	GT16-IP10	GT16K-IP10
3,378	2,606	3,0	3,00	15	GT12-IP15	GT12C-IP15	GT12K-IP15	GT12KC-IP15	GT16-IP15	GT16K-IP15
3,962	3,088	3,5	3,00	20	GT12-IP20	GT12C-IP20	GT12K-IP20	GT12KC-IP20	GT16-IP20	GT16K-IP20
4,559	3,492	4,0	3,50	25	GT12-IP25	GT12C-IP25	GT12K-IP25	GT12KC-IP25	GT16-IP25	GT16K-IP25
5,651	4,391	4,5	3,50	30	GT12-IP30	GT12C-IP30	GT12K-IP30	GT12KC-IP30	GT16-IP30	GT16K-IP30
6,807	5,283	5,0	4,00	40	GT12-IP40	GT12C-IP40	GT12K-IP40	GT12KC-IP40	GT16-IP40	GT16K-IP40
7,975	6,141	5,5	5,20	45	GT12-IP45	GT12C-IP45	GT12K-IP45	GT12KC-IP45	GT16-IP45	GT16K-IP45
8,991	6,923	6,0	6,00	50	GT12-IP50	GT12C-IP50	GT12K-IP50	GT12KC-IP50	GT16-IP50	GT16K-IP50
11,385	8,766	7,0	7,00	55	GT12-IP55	GT12C-IP55	GT12K-IP55	GT12KC-IP55	GT16-IP55	GT16K-IP55
13,442	10,350	7,5	7,50	60	GT12-IP60	GT12C-IP60	GT12K-IP60	GT12KC-IP60	GT16-IP60	GT16K-IP60
15,773	12,156	8,0	8,00	70	/	/	/	/	GT16-IP70	GT16K-IP70

A	B	C	H max (*)	TORX®	per brocciatori serie *for broaching heads* BR-G16M / BRC-G16M ød = 16 / L = 35				per brocciatori serie *for broaching heads* BR-G16L / BRC-G16L ød = 16 / L = 45			
					ARTICOLO (materiale) *ITEM (material)*				ARTICOLO (materiale) *ITEM (material)*			
					HSS		SINTERIZZATO / *SINTERED*		HSS		SINTERIZZATO / *SINTERED*	
					Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*	Standard	Ref. / *Cool.*
3,962	3,088	3,5	3,00	20	GT16M-IP20	GT16MC-IP20	GT16MK-IP20	GT16MKC-IP20	/	/	/	/
4,559	3,492	4,0	3,50	25	GT16M-IP25	GT16MC-IP25	GT16MK-IP25	GT16MKC-IP25				
5,651	4,391	4,5	3,50	30	GT16M-IP30	GT16MC-IP30	GT16MK-IP30	GT16MKC-IP30	GT16L-IP30	GT16LC-IP30	GT16LK-IP30	GT16LKC-IP30
6,807	5,283	5,0	4,00	40	GT16M-IP40	GT16MC-IP40	GT16MK-IP40	GT16MKC-IP40	GT16L-IP40	GT16LC-IP40	GT16LK-IP40	GT16LKC-IP40
7,975	6,141	5,5	5,20	45	GT16M-IP45	GT16MC-IP45	GT16MK-IP45	GT16MKC-IP45	GT16L-IP45	GT16LC-IP45	GT16LK-IP45	GT16LKC-IP45
8,991	6,923	6,0	6,00	50	GT16M-IP50	GT16MC-IP50	GT16MK-IP50	GT16MKC-IP50	GT16L-IP50	GT16LC-IP50	GT16LK-IP50	GT16LKC-IP50
11,385	8,766	7,0	7,00	55	GT16M-IP55	GT16MC-IP55	GT16MK-IP55	GT16MKC-IP55	GT16L-IP55	GT16LC-IP55	GT16LK-IP55	GT16LKC-IP55
13,442	10,350	7,5	7,50	60	GT16M-IP60	GT16MC-IP60	GT16MK-IP60	GT16MKC-IP60	GT16L-IP60	GT16LC-IP60	GT16LK-IP60	GT16LKC-IP60
15,773	12,156	8,0	8,00	70	GT16M-IP70	GT16MC-IP70	GT16MK-IP70	GT16MKC-IP70	GT16L-IP70	GT16LC-IP70	GT16LK-IP70	GT16LKC-IP70

(*) = quota di profondità MAX standard su impronta di vite commerciale / *Measure of MAX standard depth imprint by commercial screws*

In questi articoli possiamo eseguire i seguenti rivestimenti: **WONDER, TiN, INOX PLUS e ZIRINOS** > vedi pag.18
*Available coatings for the up above mentioned items: **WONDER, TiN, INOX PLUS and ZIRINOS** > see page 18*

2026/03/30

BRIGHETTI MECCANICA

Made in Italy since 1977

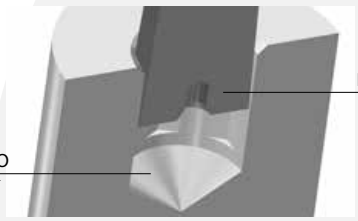
BM

Pre-foro per brocciatura profili esagonali, quadri, Torx® e Torx® Plus

Pre-hole broaching: exagonal, square, Torx® and Torx® Plus

I Prima della procedura di brocciatura è fondamentale generare uno smusso in testa al pre foro. La profondità del pre-foro si incrementa del 20%-40% rispetto al profilo utile da eseguire. La soluzione ottimale, comunque, sarebbe quella di eseguire una gola di scarico alla fine del foro, per agevolare ulteriormente lo scarico del truciolo.

GB *Before the broaching procedure it is essential to create a chamfer on the pre-hole. The depth of the pre-hole is increased by: 20% -40% compared to the profile to be obtained; the best solution, however, it's to get a chip discharge groove, at the end of the profile, to facilitate the chip evacuation.*



BROCCE ESAGONALI / *EXAGONAL BROACHES*

dimens.	PRE FORO / *PRE-HOLE*	dimens.	PRE FORO / *PRE-HOLE*
1	Ø 1,05 +0,10/0	19	Ø 20,60 +0,20/0
1,5	Ø 1,55 +0,10/0	20	Ø 19,55 +0,20/0
2	Ø 2,10 +0,10/0	21	Ø 21,60 +0,20/0
2,5	Ø 2,60 +0,10/0	22	Ø 22,65 +0,20/0
3	Ø 3,10 +0,10/0	23	Ø 23,65 +0,20/0
3,5	Ø 3,60 +0,10/0	24	Ø 24,70 +0,20/0
4	Ø 4,15 +0,10/0	25	Ø 25,75 +0,30/0
4,5	Ø 4,60 +0,10/0	26	Ø 26,80 +0,30/0
5	Ø 5,15 +0,10/0	27	Ø 27,80 +0,30/0
5,5	Ø 5,75 +0,10/0	28	Ø 28,85 +0,30/0
6	Ø 6,20 +0,10/0	29	Ø 29,90 +0,30/0
7	Ø 7,20 +0,15/0	30	Ø 30,90 +0,30/0
8	Ø 8,25 +0,15/0	31	Ø 32,00 +0,30/0
9	Ø 9,25 +0,15/0	32	Ø 33,20 +0,30/0
10	Ø 10,30 +0,15/0	33	Ø 34,30 +0,30/0
11	Ø 11,30 +0,15/0	34	Ø 35,35 +0,30/0
12	Ø 12,35 +0,15/0	35	Ø 36,40 +0,40/0
13	Ø 13,40 +0,15/0	36	Ø 37,45 +0,40/0
14	Ø 14,40 +0,15/0	37	Ø 38,50 +0,40/0
15	Ø 15,45 +0,20/0	38	Ø 39,50 +0,40/0
16	Ø 16,45 +0,20/0	39	Ø 40,65 +0,45/0
17	Ø 17,50 +0,20/0	40	Ø 42,00 +0,45/0
18	Ø 18,55 +0,20/0		

BROCCE QUADRE / *SQUARE BROACHES*

dimens.	PRE FORO / *PRE-HOLE*	dimens.	PRE FORO / *PRE-HOLE*
1	Ø 1,15 +0,05/0	11	Ø 12,90 +0,15/0
1,5	Ø 1,75 +0,05/0	12	Ø 14,20 +0,15/0
2	Ø 2,40 +0,05/0	13	Ø 15,50 +0,15/0
2,5	Ø 2,85 +0,05/0	14	Ø 16,90 +0,15/0
3	Ø 3,40 +0,05/0	15	Ø 18,20 +0,20/0
3,5	Ø 3,95 +0,05/0	16	Ø 19,50 +0,20/0
4	Ø 4,50 +0,05/0	17	Ø 20,60 +0,20/0
4,5	Ø 5,20 +0,05/0	18	Ø 21,70 +0,20/0
5	Ø 5,70 +0,10/0	19	Ø 23,00 +0,20/0
5,5	Ø 6,40 +0,10/0	20	Ø 24,10 +0,20/0
6	Ø 6,80 +0,10/0	21	Ø 25,30 +0,20/0
7	Ø 8,00 +0,10/0	22	Ø 26,50 +0,20/0
8	Ø 9,00 +0,10/0	23	Ø 27,70 +0,20/0
9	Ø 10,30 +0,10/0	24	Ø 28,90 +0,20/0
10	Ø 11,50 +0,15/0	25	Ø 30,00 +0,20/0

BROCCE ESAGONALI IN POLLICI / *EXAGONAL INCHES BROACHES*

dimens.	PRE FORO / *PRE-HOLE*	dimens.	PRE FORO / *PRE-HOLE*
3/32"	Ø 2,45 +0,10/0	3/8"	Ø 9,80 +0,15/0
1/8"	Ø 3,25 +0,10/0	7/16"	Ø 11,50 +0,15/0
5/32"	Ø 4,10 +0,10/0	1/2"	Ø 13,10 +0,15/0
3/16"	Ø 4,90 +0,10/0	9/16"	Ø 14,70 +0,15/0
7/32"	Ø 5,70 +0,10/0	5/8"	Ø 16,35 +0,20/0
1/4"	Ø 6,55 +0,10/0	3/4"	Ø 19,60 +0,20/0
9/32"	Ø 7,35 +0,15/0	7/8"	Ø 22,90 +0,20/0
5/16"	Ø 8,15 +0,15/0	1"	Ø 26,30 +0,30/0

BROCCE QUADRE IN POLLICI / *SQUARE INCHES BROACHES*

dimens.	PRE FORO / *PRE-HOLE*	dimens.	PRE FORO / *PRE-HOLE*
3/32"	Ø 2,80 +0,05/0	3/8"	Ø 11,10 +0,15/0
1/8"	Ø 3,80 +0,05/0	7/16"	Ø 13,10 +0,15/0
5/32"	Ø 4,50 +0,05/0	1/2"	Ø 15,30 +0,15/0
3/16"	Ø 5,50 +0,10/0	9/16"	Ø 17,40 +0,20/0
7/32"	Ø 6,40 +0,10/0	5/8"	Ø 19,50 +0,20/0
1/4"	Ø 7,25 +0,10/0	3/4"	Ø 23,00 +0,25/0
9/32"	Ø 8,00 +0,10/0	7/8"	Ø 27,10 +0,25/0
5/16"	Ø 9,00 +0,10/0	1"	Ø 31,00 +0,25/0

BROCCE TORX / *TORX BROACHES*

dimens.	PRE FORO / *PRE-HOLE*	dimens.	PRE FORO / *PRE-HOLE*
T3	Ø 0,95 +0,05/0	T25	Ø 3,40 +0,10/0
T4	Ø 1,05 +0,05/0	T27	Ø 3,80 +0,10/0
T5	Ø 1,20 +0,05/0	T30	Ø 4,15 +0,10/0
T6	Ø 1,40 +0,10/0	T40	Ø 5,10 +0,15/0
T7	Ø 1,60 +0,10/0	T45	Ø 6,00 +0,15/0
T8	Ø 1,90 +0,10/0	T50	Ø 6,85 +0,20/0
T9	Ø 1,95 +0,10/0	T55	Ø 9,10 +0,20/0
T10	Ø 2,20 +0,10/0	T60	Ø 11,10 +0,20/0
T15	Ø 2,60 +0,10/0	T70	Ø 13,40 +0,20/0
T20	Ø 3,00 +0,10/0		

BROCCE TORX PLUS / *TORX PLUS BROACHES*

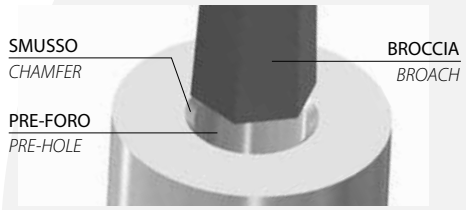
dimens.	PRE FORO / *PRE-HOLE*	dimens.	PRE FORO / *PRE-HOLE*
IP6	Ø 1,45 +0,10/0	IP27	Ø 4,15 +0,10/0
IP7	Ø 1,80 +0,10/0	IP30	Ø 4,60 +0,10/0
IP8	Ø 1,95 +0,10/0	IP40	Ø 5,50 +0,10/0
IP9	Ø 2,10 +0,10/0	IP45	Ø 6,55 +0,10/0
IP10	Ø 2,30 +0,10/0	IP50	Ø 7,30 +0,15/0
IP15	Ø 2,75 +0,10/0	IP55	Ø 9,50 +0,15/0
IP20	Ø 3,25 +0,10/0	IP60	Ø 11,10 +0,20/0
IP25	Ø 3,65 +0,10/0	IP70	Ø 13,40 +0,20/0

Smussi per brocciatura profili esagonali, quadri, Torx® e Torx® Plus

Chamfer broaching: exagonal, square, Torx® and Torx® Plus

I Per effettuare una corretta brocciatura, è necessario realizzare uno smusso in testa al pre-foro. Questo smusso, ha la funzione di accompagnare la broccia verso il pre-foro evitando che si scheggi prima che essa cominci il lavoro di compressione del materiale. E' fondamentale appoggiare la broccia allo smusso a macchina ferma.

GB *To carry out correct broaching, it is necessary to create a chamfer at the head of the pre-hole. This chamfer has the function of accompanying the broach towards the pre-hole, preventing it from chipping before it begins the work of compressing the material. It is essential to rest the broach on the chamfer with the machine stopped.*



ESAGONI METRICI / *METRIC HEXAGONS*

dimens.	SMUSSO / *CHAMFER*	dimens.	SMUSSO / *CHAMFER*
1	Ø 1,25	**19**	Ø 22,15
1,5	Ø 1,90	**20**	Ø 23,30
2	Ø 2,40	**21**	Ø 24,50
2,5	Ø 3,00	**22**	Ø 25,60
3	Ø 3,60	**23**	Ø 26,80
3,5	Ø 4,15	**24**	Ø 28,00
4	Ø 4,75	**25**	Ø 29,10
4,5	Ø 5,35	**26**	Ø 30,25
5	Ø 5,90	**27**	Ø 31,45
5,5	Ø 6,50	**28**	Ø 32,60
6	Ø 7,05	**29**	Ø 33,75
7	Ø 8,20	**30**	Ø 34,90
8	Ø 9,35	**31**	Ø 36,10
9	Ø 10,50	**32**	Ø 37,20
10	Ø 11,67	**33**	Ø 38,40
11	Ø 12,85	**34**	Ø 39,55
12	Ø 14,00	**35**	Ø 40,70
13	Ø 15,15	**36**	Ø 41,90
14	Ø 16,30	**37**	Ø 42,95
15	Ø 17,50	**38**	Ø 44,10
16	Ø 18,65	**39**	Ø 45,26
17	Ø 19,80	**40**	Ø 46,45
18	Ø 21,00		

QUADRI METRICI / METRIC *SQUARE*

dimens.	SMUSSO / *CHAMFER*	dimens.	SMUSSO / *CHAMFER*
1	Ø 1,50	**11**	Ø 15,70
1,5	Ø 2,25	**12**	Ø 17,10
2	Ø 3,00	**13**	Ø 18,55
2,5	Ø 3,80	**14**	Ø 19,95
3	Ø 4,35	**15**	Ø 21,35
3,5	Ø 5,10	**16**	Ø 22,80
4	Ø 5,80	**17**	Ø 24,20
4,5	Ø 6,50	**18**	Ø 25,65
5	Ø 7,20	**19**	Ø 27,05
5,5	Ø 8,00	**20**	Ø 28,50
6	Ø 8,60	**21**	Ø 29,90
7	Ø 10,00	**22**	Ø 31,35
8	Ø 11,45	**23**	Ø 32,75
9	Ø 12,85	**24**	Ø 34,15
10	Ø 14,30	**25**	Ø 35,60

ESAGONI IN POLLICI / *HEXAGONS IN INCHES*

dimens.	SMUSSO / *CHAMFER*	dimens.	SMUSSO / *CHAMFER*
3/32"	Ø 2,95	**3/8"**	Ø 11,15
1/8"	Ø 3,75	**7/16"**	Ø 12,95
5/32"	Ø 4,70	**1/2"**	Ø 14,85
3/16"	Ø 5,60	**9/16"**	Ø 16,70
7/32"	Ø 6,55	**5/8"**	Ø 18,50
1/4"	Ø 7,45	**3/4"**	Ø 22,20
9/32"	Ø 8,90	**7/8"**	Ø 25,90
5/16"	Ø 9,30	**1"**	Ø 29,55

QUADRI IN POLLICI / *SQUARE IN INCHES*

dimens.	SMUSSO / *CHAMFER*	dimens.	SMUSSO / *CHAMFER*
3/32"	Ø 3,50	**3/8"**	Ø 13,80
1/8"	Ø 4,75	**7/16"**	Ø 16,00
5/32"	Ø 5,80	**1/2"**	Ø 18,30
3/16"	Ø 7,00	**9/16"**	Ø 20,50
7/32"	Ø 8,10	**5/8"**	Ø 22,80
1/4"	Ø 9,20	**3/4"**	Ø 27,40
9/32"	Ø 10,30	**7/8"**	Ø 32,00
5/16"	Ø 11,50	**1"**	Ø 36,50

TORX / *TORX*

dimens.	SMUSSO / *CHAMFER*	dimens.	SMUSSO / *CHAMFER*
T3	Ø 1,25	**T25**	Ø 4,60
T4	Ø 1,40	**T27**	Ø 5,15
T5	Ø 1,60	**T30**	Ø 5,65
T6	Ø 1,80	**T40**	Ø 6,85
T7	Ø 2,10	**T45**	Ø 8,00
T8	Ø 2,45	**T50**	Ø 9,00
T9	Ø 2,60	**T55**	Ø 11,40
T10	Ø 2,85	**T60**	Ø 13,50
T15	Ø 3,40	**T70**	Ø 15,80
T20	Ø 4,00		

BROCCE TORX PLUS / *TORX PLUS BROACHES*

dimens.	SMUSSO / *CHAMFER*	dimens.	SMUSSO / *CHAMFER*
IP6	Ø 1,80	**IP27**	Ø 5,30
IP7	Ø 2,20	**IP30**	Ø 5,70
IP8	Ø 2,50	**IP40**	Ø 7,00
IP9	Ø 2,70	**IP45**	Ø 8,20
IP10	Ø 3,00	**IP50**	Ø 9,20
IP15	Ø 3,50	**IP55**	Ø 11,50
IP20	Ø 4,10	**IP60**	Ø 13,60
IP25	Ø 4,70	**IP70**	Ø 16,00

BM

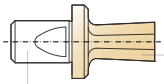
Rivestimenti per brocce
Coatings for broaches

I A seconda della tipologia di materiale da lavorare, sulle brocce possono essere applicati rivestimenti per migliorarne la durata in termini di numero di pezzi prodotti, come **WONDER (TiALN*)**, **TiN**, **INOX PLUS** e **ZIRINOS**. Di seguito alcuni esempi di materiali da lavorare con i grafici che ne evidenziano la differenza fra l'utensile realizzato in HSS o SINTERIZZATO normale rispetto all'utensile rivestito.

GB *Depending on the type of material to be machined, coatings can be applied to the broaches to improve their durability in terms of number of work-pieces produced, such as* ***WONDER (TiALN*)***, ***TiN***, ***INOX PLUS*** *and* ***ZIRINOS***. Here are some examples of materials to be machined with the graphs highlighting the difference between the tool made of normal HSS or SINTERED and the coated tool.

Materiale broccia *Broach material*	Materiale da lavorare *Machined material*		TiN	WONDER/ TiALN *	INOX PLUS	ZIRINOS
HSS	**ALLUMINIO** / *ALUMINUM*	Rm ≤ 350 (N/mm²)				√
HSS	**ACCIAIO TENERO** / *MILD STEEL*	Rm ≤ 510 (N/mm²)	√			
HSS	**ACCIAIO COMUNE** / *COMMON STEEL*	Rm 510÷680 (N/mm²)	√			
HSS	**ACCIAIO LEGATO** / *ALLOY STEEL*	Rm 680÷1050 (N/mm²)		√		
HSS	**ACCIAI INOX** / *STAINLESS STEELS*	Rm ≤ 520 (N/mm²)			√	
HSS		Rm 520÷1050 (N/mm²)			√	
HSS	**GHISA** / *CAST IRON*	Rm ≤ 400 (N/mm²)	√			
SINTERIZZATO	**TITANIO** / *TITANIUM*	Rm ≤ 350 (N/mm²)				√
HSS	**OTTONE-BRONZO** / *BRASS - BRONZE*	Rm ≤ 350 (N/mm²)				√

materiale da lavorare: **ALLUMINIO - OTTONE - BRONZO**
machined material: ***ALUMINUM - BRASS - BRONZE***

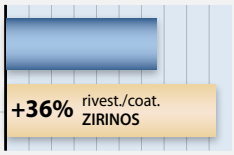


HSS
materiale broccia / *broach material*

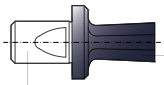
ZIRINOS
rivestimento applicato / *applied coating*

n°pz brocciati senza rivestimento
n°pcs broached without broached coating

n°pz brocciati con rivestimento
n°pcs broached coating



materiale da lavorare: **ACCIAIO BONIFICATI**
machined material: ***HARDENED STEEL***

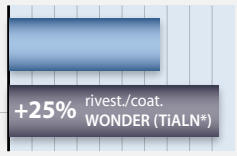


HSS
materiale broccia / *broach material*

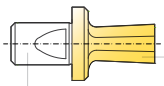
WONDER (TiALN*)
rivestimento applicato / *applied coating*

n°pz brocciati senza rivestimento
n°pcs broached without broached coating

n°pz brocciati con rivestimento
n°pcs broached coating



materiale da lavorare: **ACCIAIO TENERO/COMUNE - GHISA**
machined material: ***MILD/COMMON STEEL - CAST IRON***

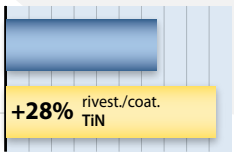


HSS
materiale broccia / *broach material*

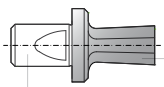
TiN
rivestimento applicato / *applied coating*

n°pz brocciati senza rivestimento
n°pcs broached without broached coating

n°pz brocciati con rivestimento
n°pcs broached coating



materiale da lavorare: **ACCIAI INOX**
machined material: ***STAINLESS STEELS***

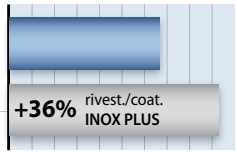


HSS
materiale broccia / *broach material*

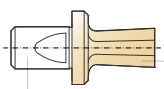
INOX PLUS
rivestimento applicato / *applied coating*

n°pz brocciati senza rivestimento
n°pcs broached without broached coating

n°pz brocciati con rivestimento
n°pcs broached coating



materiale da lavorare: **TITANIO**
machined material: ***TITANIUM***

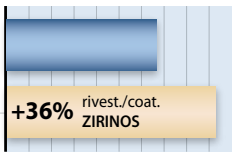


SINTERIZZATO
SINTERED
materiale broccia / *broach material*

ZIRINOS
rivestimento applicato / *applied coating*

n°pz brocciati senza rivestimento
n°pcs broached without broached coating

n°pz brocciati con rivestimento
n°pcs broached coating



Per acciai e/o materiali non indicati in tabella, chiedere informazioni al nostro ufficio tecnico

(*) TiALN solo a richiesta, sostituito dal WONDER

2026/03/30

Parametri di utilizzo per lavorazioni con brocce in HSS e Sinterizzato

Working parameters for broach machining made of HSS and sintered material

I La scelta se utilizzare brocce in ACCIAIO HSS o SINTERIZZATO può dipendere da alcuni aspetti:

GB *The choice whether to use HSS STEEL or SINTERED broaches may depend on some aspects:*

	ACCIAIO HSS / *HSS STEEL*	SINTERIZZATO / *SINTERED*
VANTAGGI *ADVANTAGES*	Massima flessibilità per tutti i materiali. Acciaio da utensili (super rapido) indicato per qualsiasi tipo di lavorazione. **Rivestimenti** consigliati vedi pag. 18. *Maximum flexibility for all types of steel and alloys. Super high speed steel suitable for any type of processing. Recommended **coatings** see page. 18.*	Altissima tenacità e durezza adatta per la lavorazione del titanio e acciai fino a MAX 32-33 HRC. **Rivestimenti** consigliati vedi pag. 18 *Very high toughness and hardness suitable to work titanium and steels till MAX 32-33 HRC. Recommended **coatings** see page. 18.*
SVANTAGGI *DISADVANTAGES*	Non idoneo a lavorare il Titanio e acciai fino a MAX 28-29 HRC. *Not suitable for working titanium and steels till to MAX 28-29 HRC.*	Estrema fragilità agli urti e vibrazioni, non consigliato a lavorare acciai Inox e acciai semplici. *Extreme fragility to shocks and vibrations, not recommended to stainless steels and simple steels.*

BROCCE IN ACCIAIO HSS
HSS STEEL BROACHES

ROTAZIONE MANDRINO: M3, M4
SPINDLE ROTATION: M3, M4

MATERIALE DA LAVORARE / *MATERIAL TO WORK*

PROFILO *PROFILE*	dimensioni *dimensions* (mm)	ALLUMINIO *ALUMINUM* Vc m/min=55 Rm ≤ 350 (N/mm²)		ACCIAI / *STEELS* TENERO *MILD STEEL* Vc m/min=40 Rm ≤ 510 (N/mm²)		COMUNE *COMMON STEEL* Vc m/min=38 Rm 510÷680 (N/mm²)		LEGATO *ALLOY STEEL* Vc m/min=30 Rm 680÷1050 (N/mm²)		ACCIAI INOX *STAINLESS STEELS* Vc m/min=25 Rm ≤ 520 (N/mm²)		ACCIAI INOX *STAINLESS STEELS* Vc m/min=20 Rm 520÷1050 (N/mm²)		GHISA *CAST IRON* Vc m/min=30 Rm ≤ 400 (N/mm²)		TITANIO (*) *TITANIUM (*)* Rm ≤ 350 (N/mm²)	RAME *COPPER* Rm ≤ 200 (N/mm²)		OTTONE/ BRONZO *BRASS / BRONZE* Vc m/min=40 Rm ≤ 350 (N/mm²)	
		LUBRIFICAZIONE NECESSARIA / *LUBRICATION REQUIRED*																		
		f	S	f	S	f	S	f	S	f	S	f	S	f	S		f	S	f	S
ESAGONALE *HEXAGONAL*	1 - 12,9	0,11	1800/ 900	0,10	1500/ 850	0,08	1450/ 800	0,05	1400/ 750	0,07	1450/ 750	0,04	1200/ 700	0,07	1600/ 700	NON CONSIGLIATO NOT RECOMMENDED	0,09	1600/ 950	0,10	1700/ 950
	13 - 23,9	0,08	900/ 550	0,08	850/ 500	0,06	800/ 400	0,02	750/ 400	0,06	750/ 500	0,03	700/ 450	0,05	700/ 500		0,07	950/ 600	0,07	950/ 700
	24 - 40	0,05	550/ 350	0,04	500/ 300	0,03	400/ 300	0,01	400/ 300	0,03	500/ 400	0,02	450/ 350	0,03	500/ 350		0,04	600/ 450	0,03	700/ 450
QUADRATO *SQUARE*	1 - 10,9	0,10	1800/ 900	0,06	1500/ 850	0,05	1450/ 800	0,02	1400/ 750	0,05	1450/ 750	0,03	1200/ 700	0,07	1600/ 700		0,10	1600/ 950	0,08	1700/ 950
	11 - 20,9	0,06	900/ 550	0,04	850/ 500	0,03	800/ 400	0,02	750/ 400	0,04	750/ 500	0,02	700/ 450	0,05	700/ 500		0,08	950/ 600	0,06	950/ 700
	21 - 25	0,03	550/ 350	0,02	500/ 300	0,02	400/ 300	0,01	400/ 300	0,02	500/ 400	0,01	450/ 350	0,03	500/ 350		0,06	600/ 450	0,04	700/ 450
TORX® (T) TORX®PLUS (IP)	T3 - T6	0,12	1800/ 900	0,10	1500/ 850	0,08	1450/ 800	0,05	1400/ 750	0,08	1450/ 750	0,045	1200/ 700	0,09	1600/ 700		0,12	1600/ 950	0,10	1700/ 950
	T7 - T27 IP6 - IP27	0,10	900/ 550	0,09	850/ 500	0,07	800/ 400	0,04	750/ 400	0,07	750/ 500	0,04	700/ 450	0,08	700/ 500		0,11	950/ 600	0,09	950/ 700
	T30 - T70 IP30 - IP70	0,08	550/ 350	0,07	500/ 300	0,05	400/ 300	0,03	400/ 300	0,06	500/ 400	0,03	450/ 350	0,06	500/ 350		0,09	600/ 450	0,06	700/ 450

Legenda / *Legend*:
f = avanzamento (mm/giro) / *advancement (mm/round)*
S = velocità (giri/min) / *RPM (rounds/minute)*
Vc = velocità di taglio (m/min) / *cutting speed (meters/minute)*

BROCCE IN ACCIAIO SINTERIZZATO
SINTERED STEEL BROACHES

ROTAZIONE MANDRINO: M3, M4
SPINDLE ROTATION: M3, M4

MATERIALE DA LAVORARE / *MATERIAL TO WORK*

PROFILO *PROFILE*	dimensioni *dimensions* (mm)	ALLUMINIO *ALUMINUM* Rm ≤ 350 (N/mm²)		ACCIAI / *STEELS* TENERO *MILD STEEL* Rm ≤ 510 (N/mm²)		COMUNE *COMMON STEEL* Rm 510÷680 (N/mm²)		LEGATO *ALLOY STEEL* Rm 680÷1050 (N/mm²)		ACCIAI INOX *STAINLESS STEELS* Rm ≤ 520 (N/mm²)		ACCIAI INOX *STAINLESS STEELS* Rm 520÷1050 (N/mm²)		GHISA *CAST IRON* Rm ≤ 400 (N/mm²)		PARTICOLARMENTE CONSIGLIATO TITANIO (*) *TITANIUM (*)* Rm ≤ 350 (N/mm²)		RAME *COPPER* Rm ≤ 200 (N/mm²)		OTTONE *BRASS* Rm ≤ 350 (N/mm²)	
		LUBRIFICAZIONE NECESSARIA / *LUBRICATION REQUIRED*																			
		f	S	f	S	f	S	f	S	f	S	f	S	f	S	f	S	f	S	f	S
ESAGONALE *HEXAGONAL*	1 - 12,9	0,14	2000/ 1000	0,12	1600/ 950	0,10	1600/ 900	0,07	1400/ 850	0,09	1600/ 850	0,055	1200/ 800	0,12	1700/ 1000	0,05	1000/ 750	0,16	1800/ 900	0,12	1800/ 1000
	13 - 23,9	0,11	1000/ 700	0,10	950/ 650	0,08	900/ 700	0,04	850/ 550	0,07	850/ 600	0,045	800/ 550	0,08	1000/ 650	0,04	750/ 550	0,12	900/ 750	0,09	1000/ 600
	24 - 40	0,08	700/ 500	0,07	650/ 450	0,05	700/ 400	0,015	550/ 400	0,05	600/ 450	0,025	550/ 350	0,05	650/ 350	0,02	550/ 400	0,08	750/ 500	0,06	600/ 400
QUADRATO *SQUARE*	1 - 10,9	0,11	2000/ 1000	0,08	1600/ 950	0,07	1600/ 900	0,05	1400/ 850	0,07	1600/ 850	0,045	1200/ 800	0,10	1700/ 1000	0,04	1000/ 750	0,12	1800/ 900	0,09	1800/ 1000
	11 - 20,9	0,08	1000/ 700	0,06	950/ 650	0,06	900/ 700	0,04	850/ 550	0,06	850/ 600	0,035	800/ 550	0,07	1000/ 650	0,04	750/ 550	0,10	900/ 750	0,07	1000/ 600
	21 - 25	0,06	700/ 500	0,04	650/ 450	0,04	700/ 400	0,02	550/ 400	0,04	600/ 450	0,015	550/ 350	0,04	650/ 350	0,02	550/ 400	0,07	750/ 500	0,04	600/ 400
TORX® (T) TORX®PLUS (IP)	T3 - T6	0,16	2000/ 1000	0,12	1600/ 950	0,10	1600/ 900	0,07	1400/ 850	0,09	1600/ 850	0,06	1200/ 800	0,12	1700/ 1000	0,05	1000/ 750	0,16	1800/ 900	0,13	1800/ 1000
	T7 - T27 IP6 - IP27	0,13	1000/ 700	0,11	950/ 650	0,09	900/ 700	0,06	850/ 550	0,08	850/ 600	0,045	800/ 550	0,10	1000/ 650	0,045	750/ 550	0,15	900/ 750	0,11	1000/ 600
	T30 - T70 IP30 - IP70	0,11	700/ 500	0,10	650/ 450	0,08	700/ 400	0,05	550/ 400	0,07	600/ 450	0,04	550/ 350	0,09	650/ 350	0,04	550/ 400	0,12	750/ 500	0,09	600/ 400

(*) adatto fino a classe 3, poco consigliato su classe 4, sconsigliato per classi 5 e 6 / ***suitable up to class 3, not recommended for class 4, not recommended for classes 5 and 6***

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