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14

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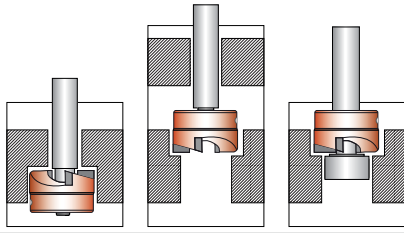
40



polledri

System zadných čelných záhlbníkov

Back Spotfacing Counterbores System



REZNÉ ÚDAJE / Cutting data

Materiál / Material			G			MD		
Resistenza / Tensile Strength N/mm ²			HSS			MD/Carbide		
Durezza / Hardness HB			Toll. k7			Toll. k7		
			Speed	Feed	Scelta Raccomandata	Speed	Feed	Scelta Raccomandata
			Vc m/min	F mm/rev		Vc m/min	F mm/rev	
	Acciaio / Steel	< 600 N/mm ²	13 - 27	0.10 - 0.3	•	40 - 100	0.1 - 0.5	
P	Acciaio / Steel	> 600 N/mm ²	8 - 16	0.05 - 0.2	•	30 - 90	0.1 - 0.3	
	Acciaio Fuso / Cast Steel	< 800 N/mm ²	11 - 18	0.05 - 0.3	•	30 - 90	0.1 - 0.3	
M	Acciaio Inossidabile / Stainless Steel		10 - 20	0.10 - 0.3	•	20 - 60	0.1 - 0.4	
	Ghisa / Cast iron	< 180 HB	20 - 35	0.20 - 0.4		40 - 50	0.2 - 0.4	•
K	Ghisa / Cast iron	< 200 HB	20 - 30	0.10 - 0.3		30 - 45	0.1 - 0.4	•
	Ghisa / Cast iron	< 220 HB	10 - 25	0.10 - 0.3		20 - 35	0.1 - 0.3	•
	Alluminio		45 - 90	0.1 - 0.5	•	50 - 100	0.2 - 0.4	
N	Ottone / Brass		40 - 80	0.10 - 0.4	•	50 - 120	0.3 - 0.5	
	Bronzo Duro / Hard Bronze		30 - 60	0.10 - 0.4		50 - 90	0.1 - 0.3	•

VZORCE / Formulas

n = giri al minuto - Rev/min.

$$n = \frac{V_c \times 1000}{\pi \times \varnothing}$$

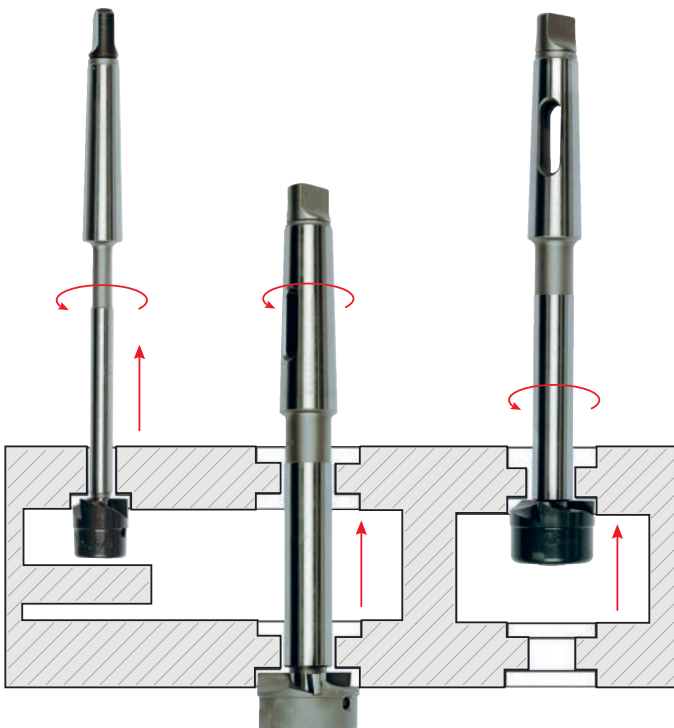
V_f = avanz. /feed (mm/min.)

$$V_f = n \times F \times z$$

GR 6 9 14 20 30 40

Spätne záhlbovanie

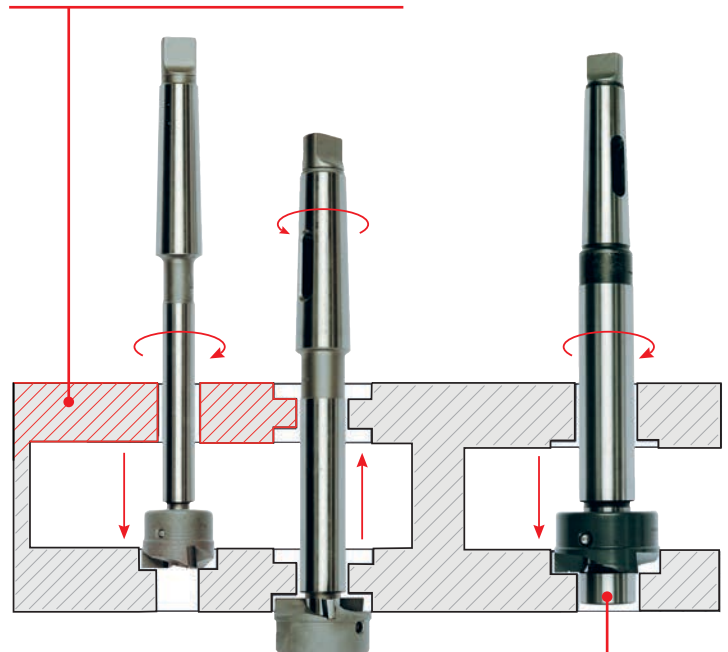
Back Spotfacing



GR 14 20

Používa sa aj na čelné záhlbovanie vpred, ak je trň primerane vedený cez obrobok alebo upínací prípravok

Also be used for forward spotfacing if the arbor is adequately guided through the workpiece or by a fixture



GR 30 40

Tiež sa dá použiť na čelné záhlbovanie dopredu pridaním vodítka

Also be used for forward spotfacing by adding a Rolling Pilot

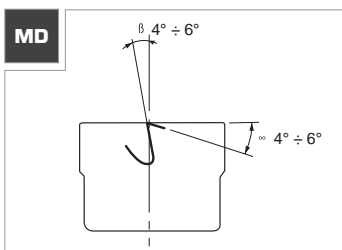
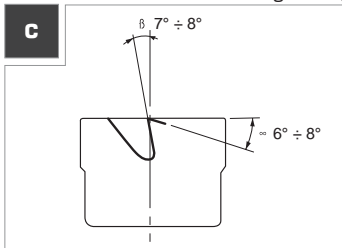


ZADNÉ ČELNÉ ZÁHLBNÍKY Back Spotfacing Counterbores		TRNY Arbors				VODÍTKO Rolling Pilots	
C	MD	CM	WELDON		Ø e8		
Ø k7	Ø k7	M.T.	Ø e8	WEL	Ø e8		
6	12.0 ÷ 26.0	12.0 ÷ 22.0	1	6.0 ÷ 10.0	12	6.0 ÷ 10.0	
9	16.0 ÷ 34.0	16.0 ÷ 34.0	2	9.0 ÷ 15.0	16	9.0 ÷ 15.0	
14	24.0 ÷ 41.0	25.0 ÷ 41.0	3	14.0 ÷ 21.0	20	14.0 ÷ 21.0	
20	35.0 ÷ 60.0	35.0 ÷ 60.0	3	20.0 ÷ 24.0	20	20.0 ÷ 32.0	
			4	25.0 ÷ 32.0			
30	60.0 ÷ 80.0	60.0 ÷ 80.0	4	30.0 ÷ 45.0	25	30.0 ÷ 45.0	32.0 ÷ 45.0
40	82.0 ÷ 125.0	82.0 ÷ 125.0	5	42.0 ÷ 62.0	32	42.0 ÷ 62.0	42.0 ÷ 62.0

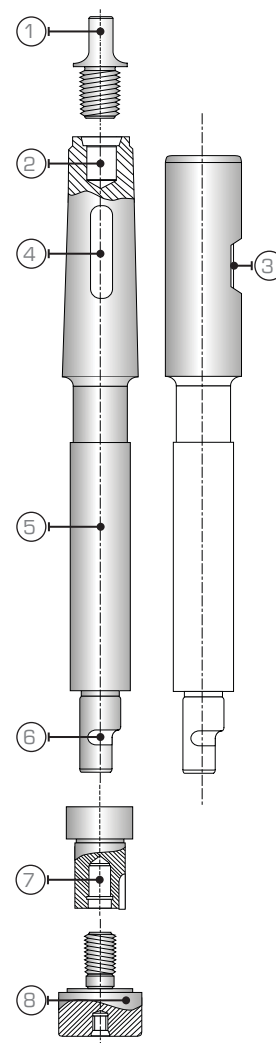
TOLERANCIA / Engineering Tolerance

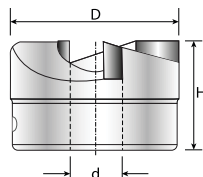
ZÁHLBNÍK C-MD Counterbores		DRŽIAK Arbors		VODÍTKO Rolling Pilots	
mm. Toll. k7	Scostamento mm	mm. Toll. e8	Scostamento mm	mm. Toll. e8	Scostamento mm
10 ÷ 18	+0.019/+0.001	6 ÷ 10	-0.025/-0.047		
18 ÷ 30	+0.023/+0.002	10 ÷ 18	-0.032/-0.059		
30 ÷ 50	+0.027/+0.002	18 ÷ 30	-0.040/-0.073		
50 ÷ 80	+0.032/+0.002	30 ÷ 50	-0.050/-0.089	30 ÷ 50	-0.050/-0.089
80 ÷ 125	+0.038/+0.003	50 ÷ 80	-0.060/-0.106	50 ÷ 80	-0.060/-0.106

PREBRÚSENIE / Regrinding



LEGENDA / legend		6	9	14	20	30	40
1	Penola filettata Threaded tang	•	•	•	•	•	•
2	Asola DIN 1806 Locking slot DIN 1806			•	•	•	•
3	Attacco Weldon Weldon shank	•	•	•	•	•	•
4	Attacco Cono Morse Morse Taper shank	•	•	•	•	•	•
5	Diametro della guida Diameter of guide	•	•	•	•	•	•
6	Aggancio rapido a baionetta Quick change bayonet	•	•	•	•	•	•
7	Sede rullo di guida Accommodation for rolling pilot					•	•
8	Rullo di guida Rolling pilot					•	•





C	HSS	MD	K30

VYMENITEĽNÉ A MODULÁRNE

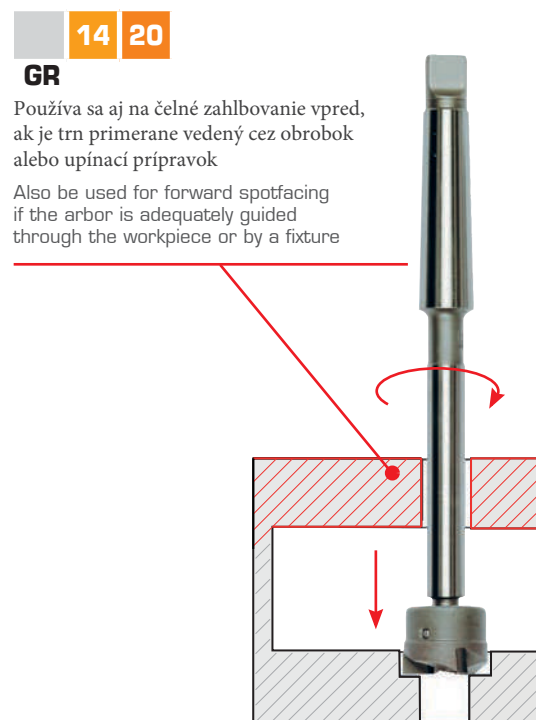
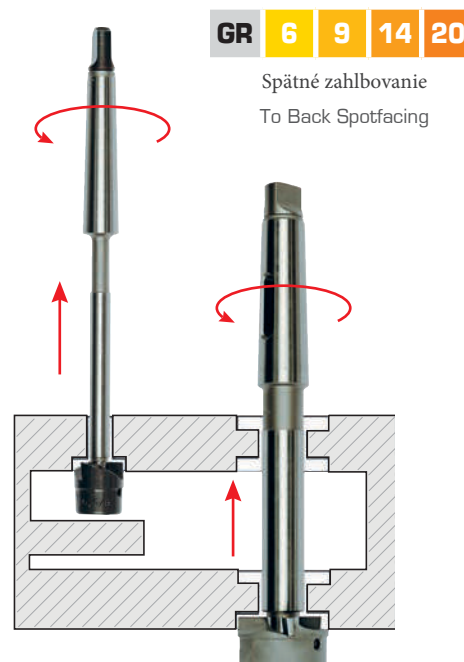
Každý záhlbník možno použiť s akýmkoľvek trními, ktoré sú z rovnakej skupiny.

POZOR na minimálny priemer trňa pre typ MD v tvrdkove.

INTERCHANGEABLE AND MODULAR

Each counterbore can be used with any arbors, provided of the same group.

ATTENTION to the minimum arbor diameter for MD type in Hard Metal.



Gruppo	Altezza Fresa H	Ø Foro d	D k7	CODICE	PREZZO €
6	17	Ø	● 12.0	60.01.120	132,80
			● 13.0	60.01.130	132,80
			○ 13.5	60.01.135	161,30
			● 14.0	60.01.140	132,80
			○ 14.5	60.01.145	169,10
			● 15.0	60.01.150	140,95
			● 16.0	60.01.160	140,95
			○ 16.5	60.01.165	169,10
			● 17.0	60.01.170	140,95
			○ 17.5	60.01.175	172,45
			● 18.0	60.01.180	144,90
			● 20.0	60.01.200	144,90
			○ 22.0	60.01.220	144,90
			○ 24.0	60.01.240	183,55
● 26.0	60.01.260	155,40			
○ = Misura a Richiesta/On demand					
9	21	Ø	● 16.0	90.01.160	139,15
			● 17.0	90.01.170	139,15
			● 18.0	90.01.180	141,75
			● 19.0	90.01.190	141,75
			● 20.0	90.01.200	143,30
			○ 21.0	90.01.210	174,65
			● 22.0	90.01.220	145,90
			● 24.0	90.01.240	151,90
			● 25.0	90.01.250	152,40
			● 26.0	90.01.260	152,40
			● 28.0	90.01.280	161,40
			● 30.0	90.01.300	161,40
			● 32.0	90.01.320	164,40
			○ 33.0	90.01.330	191,35
● 34.0	90.01.340	164,40			
○ = Misura a Richiesta/On demand					
14	27	Ø	● 24.0	14.01.240	164,85
			● 25.0	14.01.250	164,85
			● 26.0	14.01.260	166,15
			○ 27.0	14.01.270	202,50
			● 28.0	14.01.280	169,45
			● 30.0	14.01.300	175,65
			● 32.0	14.01.320	175,65
			● 33.0	14.01.330	175,65
			● 34.0	14.01.340	199,05
			● 35.0	14.01.350	205,10
			● 36.0	14.01.360	205,10
			● 38.0	14.01.380	211,20
			● 40.0	14.01.400	211,20
			● 41.0	14.01.410	226,25
○ = Misura a Richiesta/On demand					
20	31	Ø	● 34.0	20.01.340	215,40
			● 35.0	20.01.350	215,40
			○ 36.0	20.01.360	261,45
			● 38.0	20.01.380	227,80
			○ 39.0	20.01.390	261,45
			● 40.0	20.01.400	227,80
			○ 41.0	20.01.410	280,35
			● 42.0	20.01.420	246,25
			○ 44.0	20.01.440	283,70
			● 45.0	20.01.450	249,35
			○ 46.0	20.01.460	294,80
			● 48.0	20.01.480	258,65
			● 50.0	20.01.500	266,10
			● 52.0	20.01.520	286,20
● 55.0	20.01.550	316,90			
● 57.0	20.01.570	381,55			
● 60.0	20.01.600	400,10			
○ = Misura a Richiesta/On demand					
		Ø	● 12.0	60.02.120	217,45
			● 13.0	60.02.130	217,45
			○ 13.5	60.02.135	244,75
			● 14.0	60.02.140	217,45
			○ 14.5	60.02.145	255,90
			● 15.0	60.02.150	225,00
			● 16.0	60.02.160	225,00
			○ 16.5	60.02.165	255,90
			● 17.0	60.02.170	225,00
			○ 17.5	60.02.175	255,90
			● 18.0	60.02.180	225,00
			● 20.0	60.02.200	235,90
			○ 22.0	60.02.220	240,40
			○ = Misura a Richiesta/On demand		
Albero di guida/Arbor Min. Ø 7.5					
		Ø	● 16.0	90.02.160	216,75
			● 17.0	90.02.170	255,90
			● 18.0	90.02.180	223,00
			○ 19.0	90.02.190	255,90
			● 20.0	90.02.200	223,00
			○ 21.0	90.02.210	255,90
			● 22.0	90.02.220	223,00
			● 24.0	90.02.240	229,15
			● 25.0	90.02.250	229,15
			● 26.0	90.02.260	238,90
			● 28.0	90.02.280	238,90
			● 30.0	90.02.300	238,90
			● 32.0	90.02.320	262,25
			○ 33.0	90.02.330	328,20
● 34.0	90.02.340	295,30			
○ = Misura a Richiesta/On demand					
Albero di guida/Arbor Min. Ø 10.5					
		Ø	● 24.0	14.02.240	273,70
			● 25.0	14.02.250	240,35
			● 26.0	14.02.260	240,35
			● 27.0	14.02.270	243,50
			● 28.0	14.02.280	249,55
			● 30.0	14.02.300	254,45
			○ 32.0	14.02.320	294,80
			● 33.0	14.02.330	262,25
			● 34.0	14.02.340	262,25
			● 35.0	14.02.350	267,05
			● 36.0	14.02.360	267,05
			● 38.0	14.02.380	273,30
			○ 40.0	14.02.400	342,65
			● 41.0	14.02.410	309,35
○ = Misura a Richiesta/On demand					
Albero di guida/Arbor Min. Ø 16.0					
		Ø	● 34.0	20.02.340	310,40
			● 35.0	20.02.350	276,20
			○ 36.0	20.02.360	324,85
			● 38.0	20.02.380	290,60
			○ 39.0	20.02.390	324,85
			● 40.0	20.02.400	290,60
			○ 41.0	20.02.410	338,20
			● 42.0	20.02.420	304,70
			○ 44.0	20.02.440	356,00
			● 45.0	20.02.450	321,85
			○ 46.0	20.02.460	361,55
			● 48.0	20.02.480	328,15
			● 50.0	20.02.500	337,70
			● 52.0	20.02.520	370,60
● 55.0	20.02.550	379,95			
● 57.0	20.02.570	442,90			
● 60.0	20.02.600	463,35			
○ = Misura a Richiesta/On demand					
Albero di guida/Arbor Min. Ø 22.0					

VYMENTITEĽNÉ A MODULÁRNE

Každý trn môže byť použitý s akýmkoľvek valcovým záhlbníkom z rovnakej skupiny.

Použite Arbor s d1 rovnakého priemeru ako vstupný otvor.

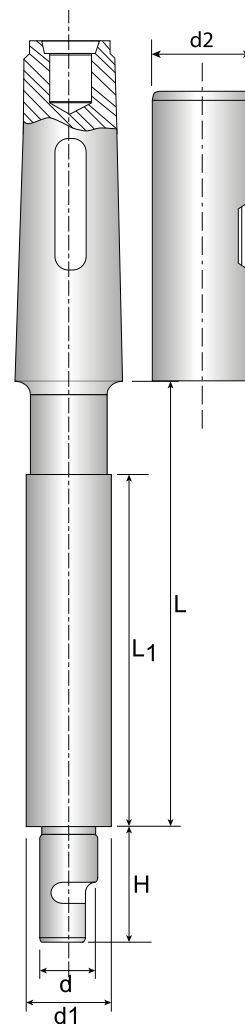
INTERCHANGEABLE AND MODULAR

Each arbor can be used with any counterbore, provided of the same group.

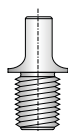
Use the Arbor with d1 of the same diameter as the input hole.

Gruppo d Ø	L1 Guida	H Attacco	L Albero	Cono Morse	d2 Ø Weldon
6	55	19	73.5	M.T. 1	12
9	75	24	92.5	M.T. 2	16
14	90	29	114	M.T. 3	20
20	90	33	114	M.T. 3	20
20	110	33	135.5	M.T. 4	20

C.M. Morse Taper Shank		WELDON Weldon Shank	
d1 e8	CODICE ConoMorse	CODICE Weldon	PREZZO €
• 6.0 (*)	60.04.060	60.04.060/W	112,65
• 6.5 (*)	60.04.065	60.04.065/W	112,65
• 7.0 (*)	60.04.070	60.04.070/W	112,65
○ 7.5	60.04.075	60.04.075/W	130,20
• 8.0	60.04.080	60.04.080/W	112,65
• 8.5	60.04.085	60.04.085/W	112,65
• 9.0	60.04.090	60.04.090/W	112,65
○ 9.5	60.04.095	60.04.095/W	130,20
• 10.0	60.04.100	60.04.100/W	112,65
○ = Misura a richiesta/On demand			
• 9.0 (*)	90.04.090	90.04.090/W	115,15
• 9.5 (*)	90.04.095	90.04.095/W	115,15
• 10.0 (*)	90.04.100	90.04.100/W	115,15
• 10.5	90.04.105	90.04.105/W	115,15
• 11.0	90.04.110	90.04.110/W	115,15
○ 11.5	90.04.115	90.04.115/W	132,40
• 12.0	90.04.120	90.04.120/W	115,15
○ 12.5	90.04.125	90.04.125/W	132,40
• 13.0	90.04.130	90.04.130/W	115,15
○ 13.5	90.04.135	90.04.135/W	132,40
• 14.0	90.04.140	90.04.140/W	115,15
○ 14.5	90.04.145	90.04.145/W	132,40
• 15.0	90.04.150	90.04.150/W	115,15
○ = Misura a richiesta/On demand			
• 14.0 (*)	14.04.140	14.04.140/W	167,95
○ 14.5 (*)	14.04.145	14.04.145/W	184,70
• 15.0 (*)	14.04.150	14.04.150/W	167,95
• 16.0	14.04.160	14.04.160/W	167,95
• 17.0	14.04.170	14.04.170/W	167,95
• 18.0	14.04.180	14.04.180/W	167,95
○ 19.0	14.04.190	14.04.190/W	184,70
• 20.0	14.04.200	14.04.200/W	167,95
• 21.0	14.04.210	14.04.210/W	167,95
○ = Misura a richiesta/On demand			
• 20.0 (*)	20.04.200	20.04.200/W	176,00
• 21.0 (*)	20.04.210	20.04.210/W	176,00
• 22.0	20.04.220	20.04.220/W	176,00
• 23.0	20.04.230	20.04.230/W	176,00
• 24.0	20.04.240	20.04.240/W	176,00
• 25.0	20.04.250	20.04.250/W	230,15
• 26.0	20.04.260	20.04.260/W	230,15
• 27.0	20.04.270	20.04.270/W	230,15
○ 28.0	20.04.280	20.04.280/W	258,10
• 30.0	20.04.300	20.04.300/W	230,15
• 32.0	20.04.320	20.04.320/W	231,85
○ = Misura a richiesta/On demand			



Unášač / Threaded tang



Filetto	C.M.	CODICE	PREZZO €
M.6	M.T. 1	60.03.006	22,20
M.10	M.T. 2	90.03.010	26,75
M.12	M.T. 3	14.03.012	31,35
M.16	M.T. 4	20.03.016	35,65



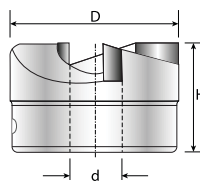
(*) = Pozor! NON impiegare con frese in M.D.
(*) = Important! Not to be used with H.M. cutters



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ZÁHLBNÍKY ČELNÉ a SPÄTNÉ

Back and Forward Spotfacing Counterbores



Gruppo Ø Foro d	Altezza Fresa H	C HSS			MD K30		
		D k7	CODICE	PREZZO €	D k7	CODICE	PREZZO €
30	38	• 60.0	30.01.600	398,30	• 60.0	30.02.600	433,05
		• 62.0	30.01.620	405,30	• 62.0	30.02.620	470,90
		○ 64.0	30.01.640	502,20	○ 64.0	30.02.640	564,85
		• 65.0	30.01.650	466,30	• 65.0	30.02.650	526,90
		○ 67.0	30.01.670	502,20	○ 67.0	30.02.670	594,00
		• 68.0	30.01.680	466,30	• 68.0	30.02.680	556,45
		• 70.0	30.01.700	509,35	• 70.0	30.02.700	585,80
		• 72.0	30.01.720	588,50	• 72.0	30.02.720	674,15
		• 75.0	30.01.750	588,50	• 75.0	30.02.750	674,15
		○ 78.0	30.01.780	691,20	○ 78.0	30.02.780	771,15
		• 80.0	30.01.800	653,70	• 80.0	30.02.800	732,95
		○ = Misura a Richiesta/On demand			○ = Misura a Richiesta/On demand		
		Albero di guida/Arbor Min Ø 32.0			Albero di guida/Arbor Min Ø 32.0		
40	48	82.0	40.01.820	877,70	82.0	40.02.820	934,65
		85.0	40.01.850	917,80	85.0	40.02.850	965,80
		90.0	40.01.900	997,95	90.0	40.02.900	1.097,65
		95.0	40.01.950	1.038,10	95.0	40.02.950	1.141,90
		100.0	40.01.100	1.158,25	100.0	40.02.100	1.216,10
		105.0	40.01.105	1.198,45	105.0	40.02.105	1.258,35
		110.0	40.01.110	1.285,10	110.0	40.02.110	1.337,75
		115.0	40.01.115	1.357,30	115.0	40.02.115	1.378,55
		120.0	40.01.120	1.395,95	120.0	40.02.120	1.409,65
		125.0	40.01.125	1.592,00	125.0	40.02.125	1.467,25
		Albero di guida/Arbor Min Ø 42.0			Albero di guida/Arbor Min Ø 42.0		

VYMENITELNÉ A MODULÁRNE

Každý záhlbník je možné použiť s akýmkoľvek upínacím hriadeľom z rovnakej skupiny.

POZOR na minimálny priemer trnu pre typ MD v tvrdokove.

INTERCHANGEABLE AND MODULAR

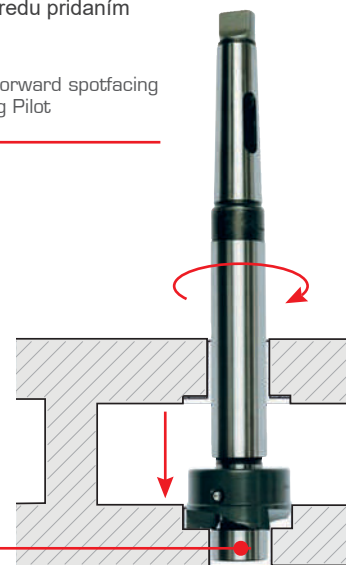
Each counterbore can be used with any arbors, provided of the same group.

ATTENTION to the minimum arbor diameter for MD type in Hard Metal.

GR 30 40

Tiež sa dá použiť na zahľbovanie dopredu pridaním vodička

Also be used for forward spotfacing by adding a Rolling Pilot



SÚPRAVY NA VYŽIADANIE / Sets on demand

MIDI	HSS	MIDI	K30	MINI	HSS	MINI	K30
CODICE	PREZZO €	CODICE	PREZZO €	CODICE	PREZZO €	CODICE	PREZZO €
22.01.000	2.215,90	22.02.000	2.879,80	14.01.000	1.201,95	14.02.000	1.625,25
6	60.01.220	6	60.02.220	6	60.01.140	6	60.02.140
	60.04.080		60.04.080		60.01.160		60.02.160
9	90.01.240	9	90.02.240	9	60.01.180	9	60.02.180
	90.01.260		90.02.260		60.04.070		60.04.075
14	90.04.100	14	90.04.105	9	60.04.080	9	60.04.080
	14.01.280		14.02.280		90.01.200		90.02.200
	14.01.300		14.02.300		90.01.240		90.02.240
	14.01.320		14.02.320		90.04.090		90.04.105
	14.01.340		14.02.340		90.04.110		90.04.120
20	14.04.150	20	14.04.160				
	14.04.180		14.04.180				
20	20.01.360	20	20.02.360				
	20.04.200		20.04.220				

bez unášača

Arbors To Back Spotfacing without tang

VYMENITEĽNÉ A MODULÁRNE

Každý trn môže byť použitý s akýmkoľvek valcovým záhlbníkom z rovnakej skupiny.

Použí trn s d1 rovnakého priemeru ako vstupný otvor.

INTERCHANGEABLE AND MODULAR

Each arbor can be used with any counterbore, provided of the same group.

Use the Arbor with d1 of the same diameter as the input hole.

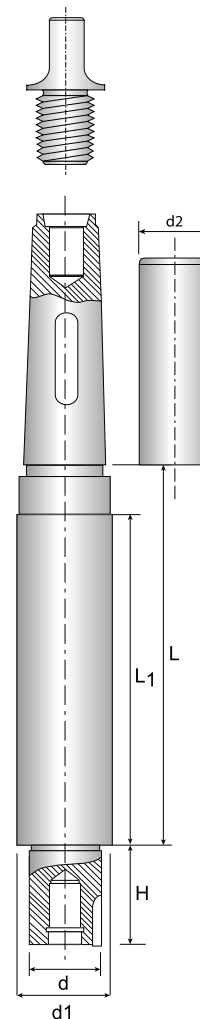
Gruppo d Ø	L1 Guida	H Attacco	L Albero	Cono Morse	d2 Ø Weldon
30	135	40	165.5	M.T. 4	25

Gruppo d Ø	L1	H	L	Cono	d2
40	175	50	206	M.T. 5	32

C.M. Morse Taper Shank		WELDON Weldon Shank	
d1 e8	CODICE ConoMorse	CODICE Weldon	PREZZO €
30.0 (*)	30.04.300	30.04.300/W	276,55
32.0	30.04.320	30.04.320/W	276,55
35.0	30.04.350	30.04.350/W	284,05
36.0	30.04.360	30.04.360/W	284,05
38.0	30.04.380	30.04.380/W	307,50
40.0	30.04.400	30.04.400/W	307,50
42.0	30.04.420	30.04.420/W	345,90
45.0	30.04.450	30.04.450/W	345,90

○ 40.0 (*)	40.04.400	40.04.400/W	561,60
● 42.0	40.04.420	40.04.420/W	526,05
● 45.0	40.04.450	40.04.450/W	734,40
● 46.0	40.04.460	40.04.460/W	734,40
○ 47.0	40.04.470	40.04.470/W	761,40
● 48.0	40.04.480	40.04.480/W	734,40
● 50.0	40.04.500	40.04.500/W	734,40
○ 52.0	40.04.520	40.04.520/W	766,80
● 54.0	40.04.540	40.04.540/W	734,40
○ 56.0	40.04.560	40.04.560/W	831,60
● 58.0	40.04.580	40.04.580/W	797,40
○ 60.0	40.04.600	40.04.600/W	896,40
● 62.0	40.04.620	40.04.620/W	863,85

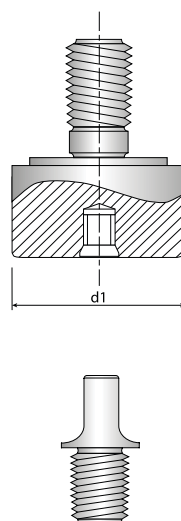
○ = Na vyžiadanie /On demand
 ! (*) = Pozor! Nepoužívať s H.M. frézy
 (*) = Important! Not to be used with H.M. cutters



30		VODÍTKO Rolling Pilots	
d1e8	CODICE	PREZZO €	
○ 30.0 (*)	30.05.300	144,90	
○ 32.0	30.05.320	122,00	
○ 34.0	30.05.340	124,85	
○ 35.0	30.05.350	152,10	
○ 36.0	30.05.360	129,20	
○ 37.0	30.05.370	130,35	
○ 38.0	30.05.380	132,30	
○ 39.0	30.05.390	135,85	
○ 40.0	30.05.400	137,40	
○ 42.0	30.05.420	140,50	
○ 44.0	30.05.440	142,80	
○ 45.0	30.05.450	149,90	
○ 46.0	30.05.460	156,75	

40		VODÍTKO Rolling Pilots	
d1e8	CODICE	PREZZO €	
○ 40.0 (*)	40.05.400	182,60	
○ 42.0	40.05.420	159,70	
○ 45.0	40.05.450	197,45	
○ 46.0	40.05.460	174,55	
○ 48.0	40.05.480	214,95	
○ 49.0	40.05.490	192,05	
○ 50.0	40.05.500	192,05	
○ 52.0	40.05.520	223,90	
○ 54.0	40.05.540	201,00	
○ 56.0	40.05.560	226,70	
○ 58.0	40.05.580	203,80	
○ 60.0	40.05.600	233,55	
○ 62.0	40.05.620	210,60	

○ = Na vyžiadanie /On demand
 ! (*) = Pozor! Nepoužívať s H.M. frézy
 (*) = Important! Not to be used with H.M. cutters



UNÁŠAČ Threaded tang

Filetto	C.M.	CODICE	PREZZO €
M.16	M.T. 4	20.03.016	35,65
M.20	M.T. 5	40.03.020	35,65