

GFS - Counterbore Combination Tool System ZS



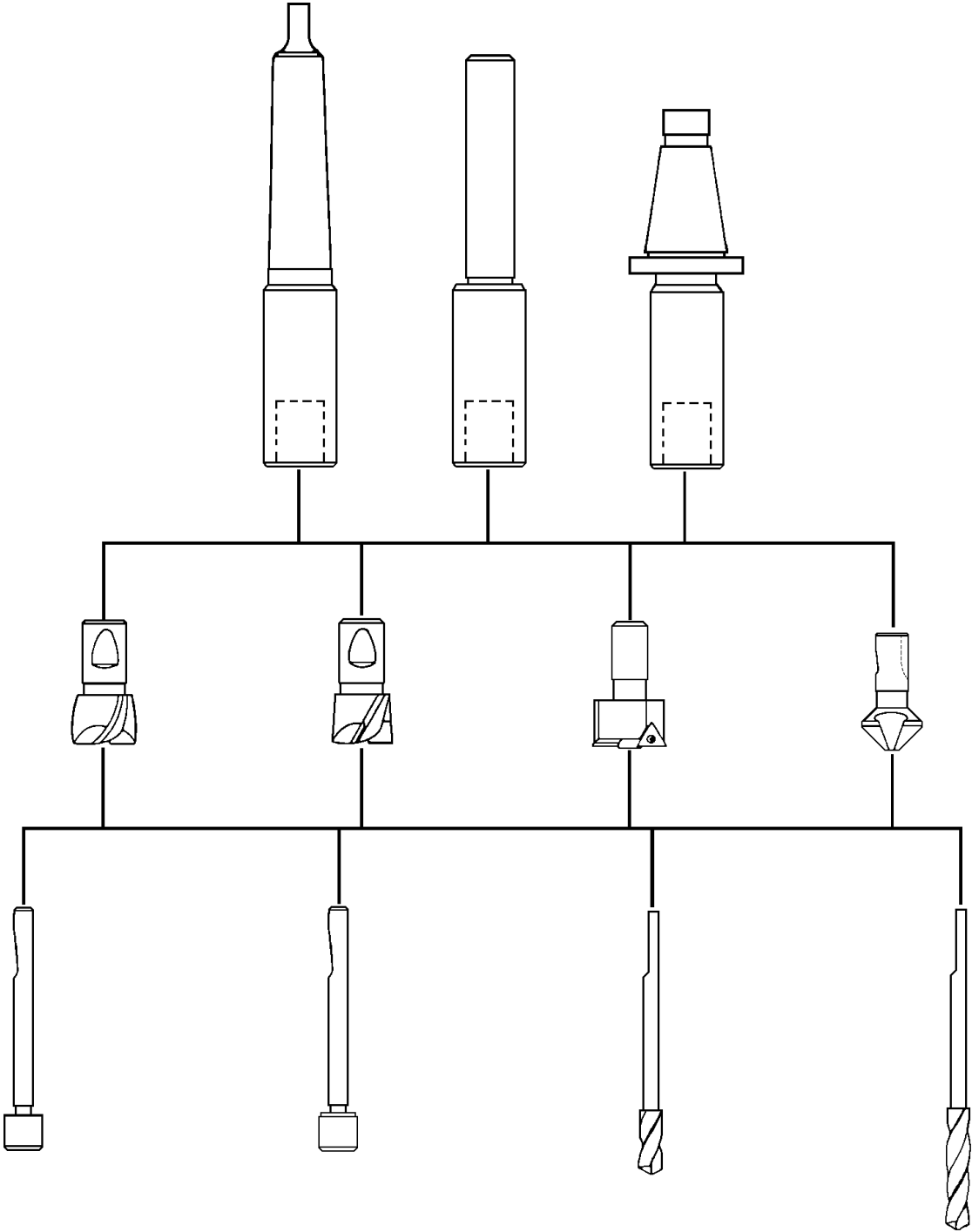
By permitting the unlimited interchangeability of holders with counterbores and pilots within a single size, the GFS counterbore tool system covers a huge range of boring /counterboring combinations. From \varnothing 8.5 mm / 0.330'', all sizes are provided with an internal coolant supply and are thus suitable for use on all modern machine tools.

Advantages:

- 1) Only four holder sizes are required for the \varnothing 5 – 85 mm / 0.20'' - 3.340'' counterboring range.
- 2) "R" rotating pilots and "RK" rotating and cooled pilots are available for sizes 1 and 2 from \varnothing 8.5 mm / 0.330''.
- 3) The counterbore tools are available HSS, HSS/TIN-coated and with brazed carbide.
- 4) Up from \varnothing 32 mm / 1,260'' also available with reversible carbide tips
- 5) Unlimited combinations of the individual elements within a single size.
- 6) Possibility of changing the pilot without removing the counterbore

Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS



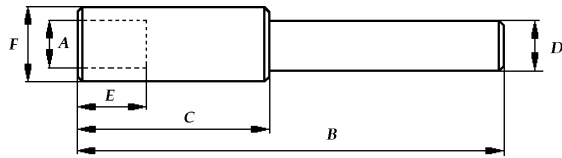
Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 01 - Size 01 - Misura 01 - Dimension 01

ZS Halter - ZS Counterbore holder - Supporto ZS - Porte-outil

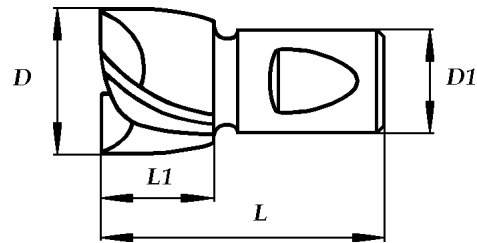
Größe - Size	A	B	C	D	E	F	Art. No.
01 / Ø 10 mm	7	86	45	10	12	14	801001



Zapfensenker - Counterbore - Allargatore - Mèche-fraise

Ø mm	Type U HSS Art.No.	Type TIN Art.No.
5,0	844050	846050
5,5	844055	846055
6,0	844060	846060
6,5	844065	846065
7,0	844070	846070
7,5	844075	846075
8,0	844080	846080
8,5	844085	846085
9,0	844090	846090
9,5	844095	846095

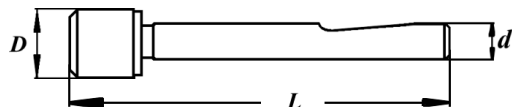
Zweischneidig - Two fluted



Type U D1 = Ø 7 L = 28 L1 = 12

Führungzapfen F (fest) - Pilot guide F (fixed) - Perno di guida F - Tourillon de guidage F

Ø mm	Art.No.	Ø mm	Art.No.	Ø mm	Art.No.	Ø mm	Art.No.
2,4	541024	3,0	541030	3,5	541035	4,1	541041
2,5	541025	3,1	541031	3,6	541036	4,2	541042
2,6	541026	3,2	541032	3,7	541037	4,3	541043
2,7	541027	3,3	541033	3,8	541038	4,4	541044
2,8	541028	3,4	541034	3,9	541039	4,5	541045
2,9	541029			4,0	541040		



d = Ø 2,4

L = 40

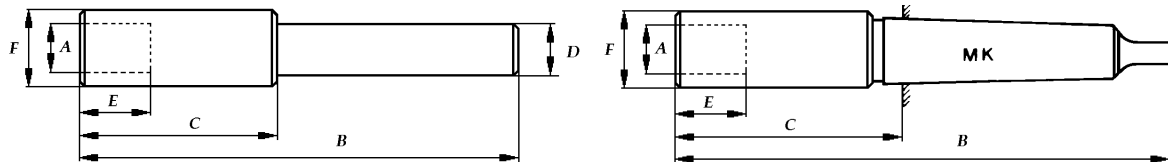
Zapfensenker Kombinationssystem ZS
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Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 0 - Size 0 - Misura 0 - Dimension 0

ZS Halter - ZS Counterbore holder - Supporto ZS - Porte-outil ZS

Größe - Size	A	B	C	D	E	F	Art. No.
0 / Ø 10 mm	10	92	42	10	18	18	800001
0 / MK1 (MT1)	10	111,5	49,5	---	18	18	803100

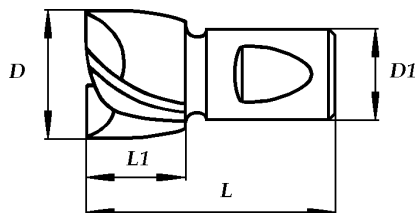


Zapfensenker - Counterbore - Allargatore - Mèche-fraise

Ø mm	Type U HSS Art.No.	Type TIN Art.No.	Type HM Art.No.
8,0	801080	806080	--
8,5	801085	806085	--
9,0	801090	806090	--
9,5	801095	806095	--
10,0	801100	806100	802100
10,5	801105	806105	802105
11,0	801110	806110	802110
11,5	801115	806115	802115
12,0	801120	806120	802120
12,5	801125	806125	802125
13,0	801130	806130	802130
13,5	801135	806135	802135
14,0	801140	806140	802140
14,5	801145	806145	802145
15,0	801150	806150	802150
15,5	801155	806155	802155
16,0	801160	806160	802160
16,5	801165	806165	802165

Ø 8 - Ø 9,5 Zweischneidig - Two fluted

Ø 10 - Ø 16,5 Dreischneidig - Three fluted



Type U D1 = Ø 10 L = 40 L1 = 19

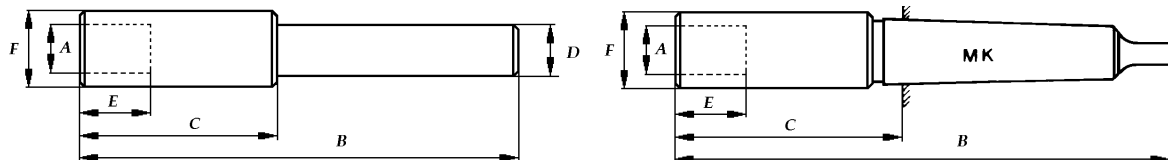
Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 1 - Size 1 - Misura 1 - Dimension 1

ZS Halter - ZS Counterbore holder - Supporto ZS - Porte-outil ZS

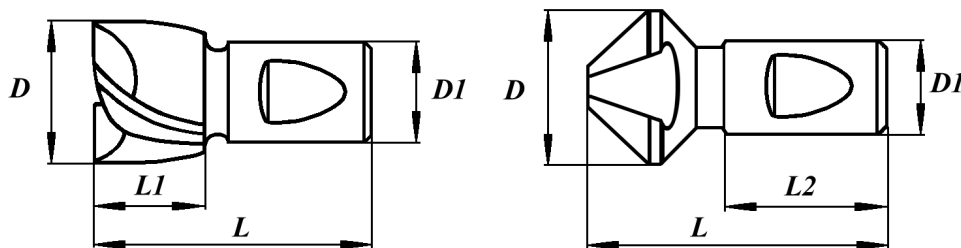
Größe - Size	A	B	C	D	E	F	Art. No.
1 / Ø 12 mm	14	120	55	12	20	24	810001
1 / MK2 (MT2)	14	135	61	---	20	24	813200
1 / Weldon Ø 20	14	105	55	20	20	24	814203



Zapfensenker - Counterbore - Allargatore - Mèche-fraise

Ø mm	Type U HSS Art.No.	Type U TIN Art.No.	Type U HM Art.No.	Type Z HSS 90° Art.No.	Type Z TIN 90° Art.No.
14,0	811140	816140	812140		
14,5	811145	816145	812145		
15,0	811150	816150	812150		
15,5	811155	816155	812155		
16,0	811160	816160	812160		
16,5	811165	816165	812165	971165	972165
17,0	811170	816170	812170		
17,5	811175	816175	812175		
18,0	811180	816180	812180		
18,5	811185	816185	812185		
19,0	811190	816190	812190	971190	972190
19,5	811195	816195	812195		
20,0	811200	816200	812200		
20,5	811205	816205	812205	971205	972205
21,0	811210	816210	812210		
21,5	811215	816215	812215		
22,0	811220	816220	812220		
22,5	811225	816225	812225		
23,0	811230	816230	812230		
23,5	811235	816235	812235		
24,0	811240	816240	812240		
24,5	811245	816245	812245		
25,0	811250	816250	812250	971250	972250
25,5	811255	816255	812255		
26,0	811260	816260	812260		
26,5	811265	816265	812265		
27,0	811270	816270	812270		
27,5	811275	816275	812275		

Dreischneidig - Three fluted



Type U D1 = Ø 14 L = 50 L1 = 22

Type Z D = Ø 14 L2 = 22

Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 1 - Size 1 - Misura 1 - Dimension 1

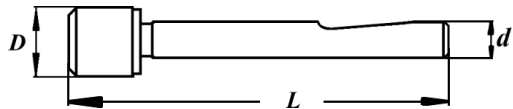
Führungszapfen F (fest) - Pilot roller F (fixed) - Perno di guida F - Tourillon de guidage F

Ø mm	Art.No.	Ø mm	Art.No.	Ø mm	Art.No.
6,6	511066	7,3	511073	8,0	511080
6,7	511067	7,4	511074	8,1	511081
6,8	511068	7,5	511075	8,2	511082
6,9	511069	7,6	511076	8,3	511083
7,0	511070	7,7	511077	8,4	511084
7,1	511071	7,8	511078		
7,2	511072	7,9	511079		

Führungszapfen RK - Pilot roller RK - Perno di guida RK - Tourillon de guidage RK

Ø mm	Art.No.	Ø mm	Art.No.	Ø mm	Art.No.
8,5	614085	11,5	614115	15,5	614155
9,0	614090	12,0	614120	16,0	614160
9,5	614095	12,5	614125	16,5	614165
9,9	614099	13,0	614130	17,0	614170
10,0	614100	13,5	614135	17,5	614175
10,2	614102	14,0	614140	18,0	614180
10,5	614105	14,5	614145		
11,0	614110	15,0	614150		

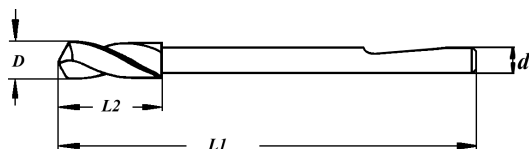
RK = Rotierend und gekühlt -- Rotating and cooled -- Rotante e raffreddato -- Rotatifs et refroidis



$$d = 6 \quad L = 79$$

Führungsbohrer - Pilot drill - Punte da guida - Foret de guidage

Ø mm	Form N : Art.No.	Form L : Art.No.	Ø mm	Form N : Art.No.	Form L : Art.No.
6,5	551065	561065	9,0	551090	561090
6,6	551066	561066	9,5	551095	561095
6,8	551068	561068	10,0	551100	561100
7,0	551070	561070	10,2	551102	561102
7,5	551075	561075	10,5	551105	561105
8,0	551080	561080	11,0	551110	561110
8,4	551084	561084	11,5	551115	561115
8,5	551085	561085	12,0	551120	561120



Form N kurz - short L1 = 90 L2 = 25

Form L lang - long L1 = 105 L2 = 40

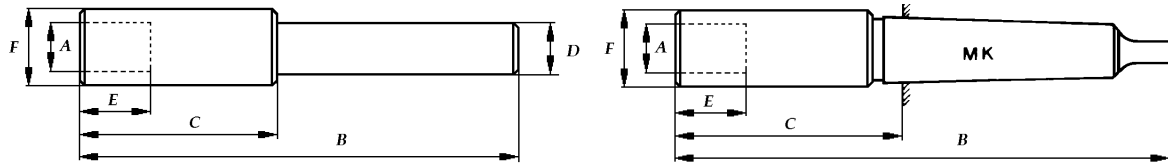
Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 2 - Size 2 - Misura 2 - Dimension 2

ZS Halter - ZS Counterbore holder - Supporto ZS - Porte-outil ZS

Größe - Size	A	B	C	D	E	F	Art. No.
2 / MK2 (MT2)	22	155	81	---	28	34,5	823200
2 / MK3 (MT3)	22	174	81	---	28	34,5	823300
2 / Weldon Ø 25	22	137	75	25	28	34,5	824204



Zapfensenker - Counterbore - Allargatore - Mèche-fraise

Ø mm	Type U HSS Art.No.	Type U TIN Art.No.	Type U HM Art.No.	Type U WP Art.No.	Type Z HSS 90° Art.No.	Type Z TIN 90° Art.No.
24,0	821240	826240	822240	---		
24,5	821245	826245	822245	---		
25,0	821250	826250	822250	---		
25,5	821255	826255	822255	---		
26,0	821260	826260	822260	---		
26,5	821265	826265	822265	---		
27,0	821270	826270	822270	---		
27,5	821275	826275	822275	---		
28,0	821280	826280	822280	---	971280	972280
28,5	821285	826285	822285	---		
29,0	821290	826290	822290	---		
29,5	821295	826295	822295	---		
30,0	821300	826300	822300	---		
30,5	821305	826305	822305	---		
31,0	821310	826310	822310	---	971310	972310
32,0	821320	826320	822320	825320		
33,0	821330	826330	822330	825330		
34,0	821340	826340	822340	825340	971340	972340
35,0	821350	826350	822350	825350		
36,0	821360	826360	822360	825360		
37,0	821370	826370	822370	825370	971370	972370
38,0	821380	826380	822380	825380		
39,0	821390	826390	822390	825390		
40,0	821400	826400	822400	825400		
41,0	821410	826410	822410	825410		
42,0	821420	826420	822420	825420		
43,0	821430	826430	822430	825430		
44,0	821440	826440	822440	825440		
45,0	821450	826450	822450	825450	971450	972450
46,0	821460	826460	822460	825460		
47,0	821470	826470	822470	825470		
48,0	821480	826480	822480	825480		
49,0	821490	826490	822490	825490		
50,0	821500	826500	822500	825500		

Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

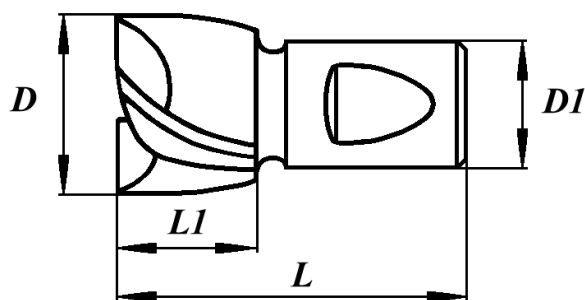
Größe 2 - Size 2 - Misura 2 - Dimension 2

Zapfensenker - Counterbore - Allargatore - Mèche-fraise

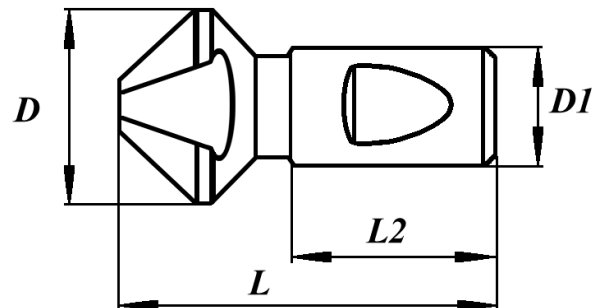
Ø mm	Type U HSS Art.No.	Type U TIN Art.No.	Type U HM Art.No.	Type U WP Art.No.	Type Z HSS 90° Art.No.	Type Z TIN 90° Art.No.
51,0	821510	826510	822510	825510		
52,0	821520	826520	822520	825520		
53,0	821530	826530	822530	825530		
54,0	821540	826540	822540	825540		
55,0	821550	826550	822550	825550		
56,0	821560	826560	822560	825560		
58,0	821580	826580	822580	825580		
60,0	821600	826600	822600	825600		
62,0	821620	826620	822620	825620		
64,0	821640	826640	822640	825640		
65,0	821650	826650	822650	825650		
66,0	821660	826660	822660	825660		

< Ø33 (< Ø 36 HM) Dreischneidig - Three fluted

> Ø33 (> Ø 36 HM) Vierschneidig - Four fluted



Type U
 $D1 = \text{Ø } 22$ $L = 60$ $L1 = 27$



Type Z
 $D1 = \text{Ø } 22$ $L2 = 28$

Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 2 - Size 2 - Misura 2 - Dimension 2

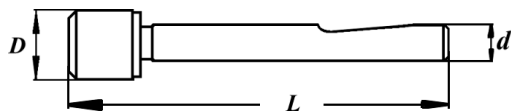
Führungszapfen F (fest) - Pilot roller F (fixed) - Perno di guida F - Tourillon de guidage F

Ø mm	Art.No.
11,5	521115
12,0	521120
12,5	521125
13,0	521130
13,5	521135

Führungszapfen RK - Pilot roller RK - Perno di guida RK - Tourillon de guidage RK

Ø mm	Art.No.	Ø mm	Art.No.	Ø mm	Art.No.
14,0	624140	20,5	624205	29,0	624290
14,5	624145	21,0	624210	30,0	624300
15,0	624150	21,5	624215	31,0	624310
15,5	624155	22,0	624220	32,0	624320
16,0	624160	22,5	624225	33,0	624330
16,5	624165	23,0	624230	34,0	624340
17,0	624170	23,5	624235	35,0	624350
17,5	624175	24,0	624240	36,0	624360
18,0	624180	24,5	624245	37,0	624370
18,5	624185	25,0	624250	38,0	624380
19,0	624190	26,0	624260	39,0	624390
19,5	624195	27,0	624270	40,0	624400
20,0	624200	28,0	624280		

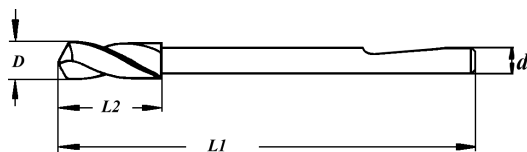
RK = Rotierend und gekühlt -- Rotating and cooled -- Rotante e raffreddato -- Rotatifs et refroidis



d = 10 L = 105

Führungsbohrer - Pilot drill - Punta da guida - Foret de guidage

Ø mm	Form N : Art.No.	Form L : Art.No.	Ø mm	Form N : Art.No.	Form L : Art.No.
11,0	552110	562110	17,0	552170	562170
11,5	552115	562115	17,5	552175	562175
12,0	552120	562120	18,0	552180	562180
12,5	552125	562125	18,5	552185	562185
13,0	552130	562130	19,0	552190	562190
13,5	552135	562135	19,5	552195	562195
14,0	552140	562140	20,0	552200	562200
14,5	552145	562145	21,0	552210	562210
15,0	552150	562150	22,0	552220	562220
15,5	552155	562155	23,0	552230	562230
16,0	552160	562160	24,0	552240	562240
16,5	552165	562165	25,0	552250	562250



Form N kurz - short L1 = 115 L2 = 30

Form L lang - long L1 = 135 L2 = 50

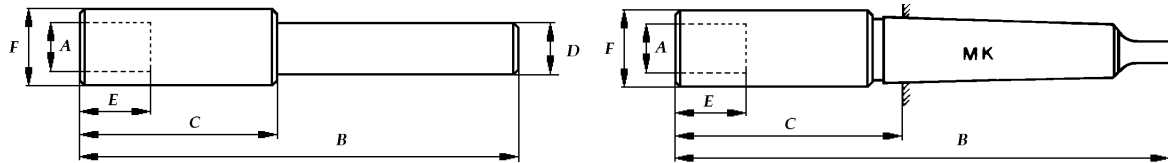
Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 2M - Size 2M - Misura 2M - Dimension 2M

ZS Halter - ZS Counterbore holder - Supporto ZS - Porte-outil ZS

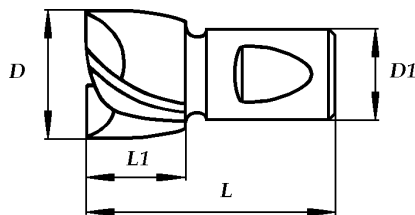
Größe - Size	A	B	C	D	E	F	Art. No.
2 / MK4 (MT4)	22	204	86,5	---	33	43	823400
2 / MK5 (MT5)	22	236	86,5	---	33	43	823500
2 / Weldon Ø 32	22	142	80	32	33	43	824205



Zapfensenker - Counterbore - Allargatore - Mèche-fraise

Ø mm	Type U HSS Art.No.	Type U TIN Art.No.	Type U HM Art.No.	Type U WP Art.No.
60,0	821600	826600	822600	825600
62,0	821620	826620	822620	825620
64,0	821640	826640	822640	825640
65,0	821650	826650	822650	825650
66,0	821660	826660	822660	825660
68,0	821680	826680	822680	825680
70,0	821700	826700	822700	825700
72,0	821720	826720	822720	825720
74,0	821740	826740	822740	825740
76,0	821760	826760	822760	825760
78,0	821780	826780	822780	825780
80,0	821800	826800	822800	825800
82,0	821820	826820	822820	825820
84,0	821840	826840	822840	825840
85,0	821850	826850	822850	825850

Vierschneidig - Four fluted



Type U D1 = Ø 22 L = 60 L1 = 27

Zapfensenker Kombinationssystem ZS
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Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Größe 2M - Size 2M - Misura 2M - Dimension 2M

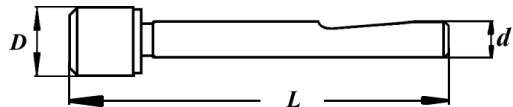
Führungzapfen F (fest) - Pilot roller F (fixed) - Perno di guida F - Tourillon de guidage F

Ø mm	Art.No.
11,5	521115
12,0	521120
12,5	521125
13,0	521130
13,5	521135

Führungzapfen RK - Pilot roller RK - Perno di guida RK - Tourillon de guidage RK

Ø mm	Art.No.	Ø mm	Art.No.	Ø mm	Art.No.	Ø mm	Art.No.
14,0	624140	19,0	624190	24,0	624240	33,0	624330
14,5	624145	19,5	624195	24,5	624245	34,0	624340
15,0	624150	20,0	624200	25,0	624250	35,0	624350
15,5	624155	20,5	624205	26,0	624260	36,0	624360
16,0	624160	21,0	624210	27,0	624270	37,0	624370
16,5	624165	21,5	624215	28,0	624280	38,0	624380
17,0	624170	22,0	624220	29,0	624290	39,0	624390
17,5	624175	22,5	624225	30,0	624300	40,0	624400
18,0	624180	23,0	624230	31,0	624310		
18,5	624185	23,5	624235	32,0	624320		

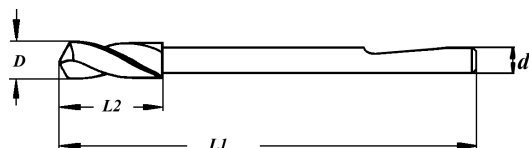
RK = Rotierend und gekühlt -- Rotating and cooled -- Rotante e raffreddato -- Rotatifs et refroidis



d = 10 L = 105

Führungsbohrer - Pilot drill - Punta da guida - Foret de guidage

Ø mm	Form N : Art.No.	Form L : Art.No.	Ø mm	Form N : Art.No.	Form L : Art.No.
11,0	552110	562110	17,0	552170	562170
11,5	552115	562115	17,5	552175	562175
12,0	552120	562120	18,0	552180	562180
12,5	552125	562125	18,5	552185	562185
13,0	552130	562130	19,0	552190	562190
13,5	552135	562135	19,5	552195	562195
14,0	552140	562140	20,0	552200	562200
14,5	552145	562145	21,0	552210	562210
15,0	552150	562150	22,0	552220	562220
15,5	552155	562155	23,0	552230	562230
16,0	552160	562160	24,0	552240	562240
16,5	552165	562165	25,0	552250	562250



Form N kurz - short L1 = 115 L2 = 30

Form L lang - long L1 = 135 L2 = 50

Zapfensenker Kombinationssystem ZS
Sistema di allargatori cilindrici ZS

Counterbore Combination Tool System ZS
Mèche-fraise système combiné ZS

Sätze -- Sets

Inhalt - Content - Contenuto - Content

Größe Size Misura Dimension	Art. No.	Halter Holder Supporto Porte-outil	Ø Senker Type U HSS Ø Counterbore Ø Allargatore Ø Fraisage	Ø Führungzapfen Ø Pilot guide Ø Perno di guida
01 / 10	800222	01 Ø 10	5 - 5,5 - 6 - 6,5 7 - 8 - 9	2,4 - 2,5 - 2,7 - 3 3,3 - 3,5 - 4 - 4,5
0 / 10	805222	0 Ø 10	8,5 - 9,5 - 10,5 11,5 - 13,5 - 16,5	4 - 4,5 - 5 - 5,5 - 6 6,5 - 7 - 7,5 - 8 - 8,5 9 - 9,5 - 10 - 10,5
0 / MK 1	804222	0 Ø MK 1	8,5 - 9,5 - 10,5 11,5 - 13,5 - 16,5	4 - 4,5 - 5 - 5,5 - 6 6,5 - 7 - 7,5 - 8 - 8,5 9 - 9,5 - 10 - 10,5
1 / 12	815222	1 Ø 12	14,5 - 16,5 - 18,5 20,5 - 22,5 - 24,5	7 - 7,5 - 8 - 8,5 - 9 9,5 - 10 - 10,5 - 11 11,5 - 12 - 13 - 14 - 15
1 / MK 2	814222	1 Ø MK 2	14,5 - 16,5 - 18,5 20,5 - 22,5 - 24,5	7 - 7,5 - 8 - 8,5 - 9 9,5 - 10 - 10,5 - 11 11,5 - 12 - 13 - 14 - 15
2 / MK 2	824222	2 MK 2	26 - 28 - 30 - 32 33 - 34 - 36	12 - 13 - 14 - 15 - 16 17 - 18 - 19 - 20 - 21 22 - 23 - 24 - 25
2 / MK 3	825222	2 MK 3	26 - 28 - 30 - 32 33 - 34 - 36	12 - 13 - 14 - 15 - 16 17 - 18 - 19 - 20 - 21 22 - 23 - 24 - 25

Sätze für Senkungen nach DIN 74 / Bl.2 Form H,J,K

Inhalt - Content - Contenuto - Content

Größe Size Misura Dimension	Art. No.	Halter Holder Supporto Porte-outil	Ø Senker Type U HSS Ø Counterbore Ø Allargatore Ø Fraisage	Ø Führungzapfen Ø Pilot guide Ø Perno di guida
M3-M4	830222	01 Ø 10	6 - 8	2,5 - 3,3 - 3,4 - 4,5
M5-M6-M8	831222	0 Ø 10	10 - 11 - 15	4,2 - 5 - 5,5 - 6,6 - 6,8 - 9
M5-M6-M8	832222	0 Ø MK 1	10 - 11 - 15	4,2 - 5 - 5,5 - 6,6 - 6,8 - 9
M10-M12 M14-M16	833222	1 Ø 12	18 - 20 - 24 - 26	8,5 - 10,2 - 11 - 12 13,5 - 14 - 15,5 - 17,5
M10-M12 M14-M16	834222	1 Ø MK 2	18 - 20 - 24 - 26	8,5 - 10,2 - 11 - 12 13,5 - 14 - 15,5 - 17,5