

Inserts

Face milling
cutters

Square shoulder
cutters

Slot cutters

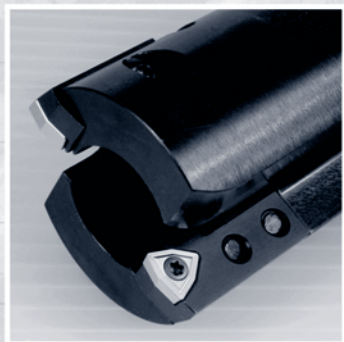
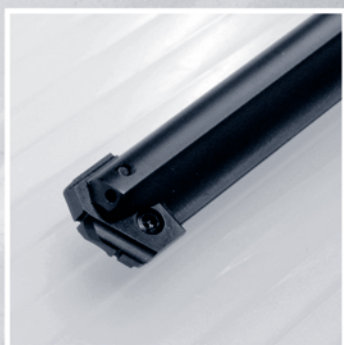
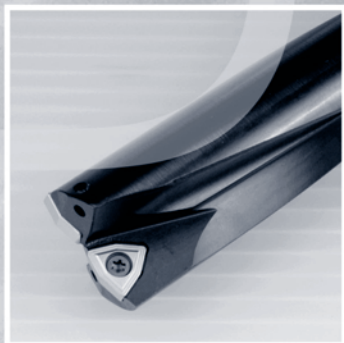
Porcupine cutters

Specific applications
and Sets

Profile milling

Solid carbide

Drills



Drills

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Code key	I.03
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Inserts

Face milling cutters

Square shoulder cutters

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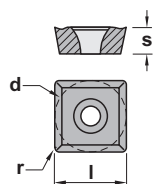


Positive 11° clearance - Square insert

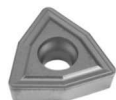
Normally available for immediate delivery ●

Only available in a limited quantity ○

SPMT



	l	s	d	r	KM15	PM25	PM40	NC40	TIN16	ZR10	TIN22	TIN25	TIN35	TL40
SPMT 060304	6,35	3,18	6,35	0,4								●	●	●
SPMT 070308	7,94	3,18	7,94	0,8								●	●	●
SPMT 090308	9,52	3,18	9,52	0,8								●	●	●
SPMT 120408	12,70	4,76	12,70	0,8								●	●	●

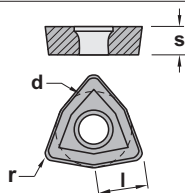


Positive 7° clearance - 80° Trigon insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

WCMX



	l	s	d	r	KM15	PM25	PM40	NC40	TIN16	ZR10	TIN22	TIN32	TIN35	TL40
WCMX 030208	3,46	2,38	5,56	0,8								●	●	●
WCMX 040208	3,99	2,38	6,35	0,8								●	●	●
WCMX 050308	5,07	3,18	7,94	0,8								●	●	●
WCMX 06T308	6,14	3,97	9,52	0,8								●	●	●
WCMX 080412	8,14	4,76	12,70	1,2								●	●	●

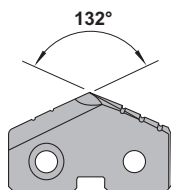


Positive inserts

Normally available for immediate delivery ●

Only available in a limited quantity ○

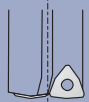
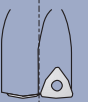
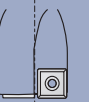
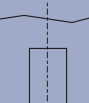
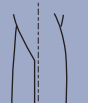
XPMT



	Diameter		s	HS15	TL40
	Metric	Inch			
XPMT095	9,50	3/8	2,4	○	○
XPMT098	9,80	-	2,4	●	●
XPMT099	9,92	25/64	2,4	○	○
XPMT100	10,00	-	2,4	○	○
XPMT102	10,20	-	2,4	●	●
XPMT103	10,32	13/32	2,4	○	○
XPMT105	10,50	-	2,4	○	○
XPMT107	10,72	27/64	2,4	○	○
XPMT108	10,80	-	2,4	●	●
XPMT110	11,00	-	2,4	●	●
XPMT111	11,11	7/16	2,4	○	○
XPMT115	11,50	29/64	2,4	○	○
XPMT119	11,91	15/32	2,4	○	○
XPMT120	12,00	-	2,4	●	●
XPMT123	12,30	31/64	2,4	○	○
XPMT125	12,50	-	2,4	●	●
XPMT127	12,70	1/2	2,4	○	○
XPMT130	13,00	-	3,2	●	●
XPMT131	13,10	33/64	3,2	○	○
XPMT135	13,50	17/32	3,2	○	○
XPMT138	13,89	35/64	3,2	○	○
XPMT140	14,00	-	3,2	●	●
XPMT142	14,29	9/16	3,2	○	○
XPMT145	14,50	-	3,2	●	●
XPMT146	14,68	37/64	3,2	○	○
XPMT150	15,00	-	3,2	○	○
XPMT155	15,50	39/64	3,2	○	○
XPMT158	15,88	5/8	3,2	○	○
XPMT160	16,00	-	3,2	●	●
XPMT162	16,27	41/64	3,2	○	○
XPMT165	16,50	-	3,2	●	●
XPMT166	16,67	21/32	3,2	○	○
XPMT170	17,00	-	3,2	○	○
XPMT174	17,46	11/16	3,2	○	○
XPMT175	17,50	-	3,2	●	●

4	2	3	4	63	027
1		2	3	4	5

1

 40	 41	 42	 45
 47	 48	 49	

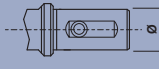
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1	2	3	4	5
 WCMX 0302	 WCMX 0402	 WCMX 0503	 WCMX 06T3	 WCMX 0804
 SPMT 0603	 SPMT 0703	 SPMT 0903	 SPMT 1204	
 XPMT 095 XPMT 110	 XPMT 115 XPMT 127	 XPMT 130 XPMT 175	 XPMT 150 XPMT 175	

3

 4

4

							
Ø20 61	Ø25 62	Ø32 63	Ø40 64	Ø20 72	Ø24 73	Ø28 74	Ø36 75

5

Diameter, mm. 

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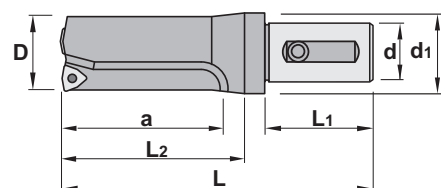
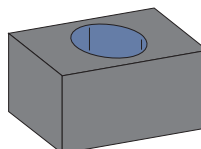
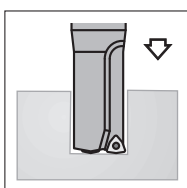
Max. hole depth = 2xDiameter (D)

Characteristics:

Straight flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. lathes. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 55 mm.

Applications:

This drill works well on steels, alloyed steels, stainless steels and refractories.

**40..**

Ref.		D	L	L1	L2	a	d	d1	Radial Adj. Dmax			Insert size	
4014.61.017,5		17,5	103	50	39	35	25	32	+1,00 ↻ 19,5	1622	5507	WCMX 0302..	0,200
4014.61.018		18	103	50	40	36	25	32	+0,90 ↻ 19,8	1622	5507	WCMX 0302..	0,200
4014.61.018,5		18,5	103	50	41	37	25	32	+0,85 ↻ 20,2	1622	5507	WCMX 0302..	0,200
4014.61.019		19	103	50	42	38	25	32	+0,80 ↻ 20,6	1622	5507	WCMX 0302..	0,250
4014.61.020		20	103	50	44	40	25	32	+0,75 ↻ 21,5	1622	5507	WCMX 0302..	0,250
4024.62.022		22	123	55	48	44	25	40	+1,25 ↻ 24,5	1225	5507	WCMX 0402..	0,385
4024.62.024		24	123	55	52	48	25	40	+0,75 ↻ 25,5	1225	5507	WCMX 0402..	0,380
4024.62.025		25	123	55	54	50	25	40	+0,50 ↻ 26,0	1225	5507	WCMX 0402..	0,400
4034.62.026		26	133	55	56	52	32	40	+2,50 ↻ 31,0	1630	5509	WCMX 0503..	0,430
4034.62.027		27	133	55	58	54	32	40	+2,20 ↻ 31,4	1630	5509	WCMX 0503..	0,430
4034.62.028		28	133	55	60	56	32	40	+2,10 ↻ 32,2	1630	5509	WCMX 0503..	0,485
4034.62.029		29	133	55	62	58	32	40	+1,80 ↻ 32,6	1630	5509	WCMX 0503..	0,465
4034.62.030		30	133	55	64	60	32	40	+1,80 ↻ 33,0	1630	5509	WCMX 0503..	0,475
4044.63.031		31	153	60	66	62	40	50	+3,50 ↻ 38,0	1635	5510	WCMX 06T3..	0,785
4044.63.032		32	153	60	68	64	40	50	+3,20 ↻ 38,4	1635	5510	WCMX 06T3..	0,800
4044.63.034		34	153	60	73	68	40	50	+2,80 ↻ 39,6	1635	5510	WCMX 06T3..	0,850
4044.63.035		35	153	60	75	70	40	50	+2,50 ↻ 40,0	1635	5510	WCMX 06T3..	0,850
4044.63.038		38	163	60	80	76	40	50	+1,80 ↻ 41,0	1635	5510	WCMX 06T3..	0,950
4044.63.039		39	163	60	82	78	40	50	+1,50 ↻ 41,6	1635	5510	WCMX 06T3..	0,950
4044.63.040		40	163	60	84	80	40	50	+1,20 ↻ 42,0	1635	5510	WCMX 06T3..	1,000
4054.64.042		42	193	65	89	84	40	60	+4,20 ↻ 51,0	1640	5515	WCMX 0804..	1,570
4054.64.043		43	193	65	91	86	40	60	+4,00 ↻ 51,4	1640	5515	WCMX 0804..	1,560
4054.64.045		45	193	65	95	90	40	60	+3,60 ↻ 52,2	1640	5515	WCMX 0804..	1,700
4054.64.048		48	193	65	101	96	40	60	+2,70 ↻ 53,4	1640	5515	WCMX 0804..	2,050
4054.64.049		49	213	65	103	98	40	60	+2,50 ↻ 54,0	1640	5515	WCMX 0804..	2,000
4054.64.050		50	213	65	105	100	40	60	+2,20 ↻ 54,4	1640	5515	WCMX 0804..	2,215
4054.64.052		52	213	65	110	104	40	60	+1,80 ↻ 55,6	1640	5515	WCMX 0804..	2,210
4054.64.054		54	213	65	114	108	40	60	+1,20 ↻ 56,4	1640	5515	WCMX 0804..	2,300
4054.64.055		55	213	65	116	110	40	60	+0,80 ↻ 56,6	1640	5515	WCMX 0804..	2,400

WCMX

Ref.

WCMX 0302..

3,46

2,38

5,56

WCMX 0402..

3,99

2,38

6,35

WCMX 0503..

5,07

3,18

7,94

WCMX 06T3..

6,14

3,97

9,52

WCMX 0804..

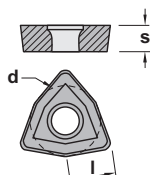
8,14

4,76

12,70

Positive 7° clearance - 80° Trigon insert.

For more information see page: I.02





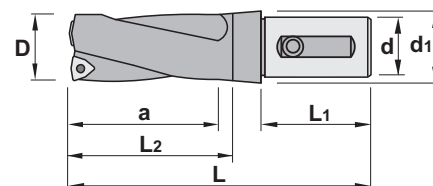
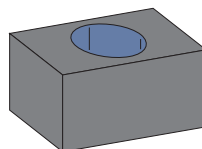
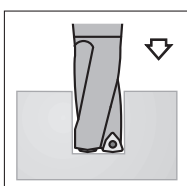
Max. hole depth = 2xDiameter (D)

Characteristics:

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting.
Drills available from 17,5 to 55 mm.

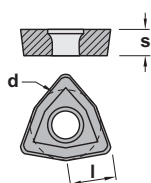
Applications:

This drill works well on steels, alloyed steels, stainless steels and refractories.



41..										 			
		D	L	L1	L2	a	d	d1	Radial Adj. Dmax			Insert size	 Kg
Ref.	4114.62.017,5	17,5	108	55	39	35	25	40	+1,00 ↻ 19,5	1622	5507	WCMX 0302..	0,200
	4114.62.018	18	108	55	40	36	25	40	+0,90 ↻ 19,8	1622	5507	WCMX 0302..	0,200
	4114.62.018,5	18,5	113	55	41	37	25	40	+0,85 ↻ 20,2	1622	5507	WCMX 0302..	0,200
	4114.62.019	19	113	55	42	38	25	40	+0,80 ↻ 20,6	1622	5507	WCMX 0302..	0,250
	4114.62.020	20	113	55	44	40	25	40	+0,75 ↻ 21,5	1622	5507	WCMX 0302..	0,250
	4124.62.022	22	123	55	48	44	25	40	+1,25 ↻ 24,5	1225	5507	WCMX 0402..	0,375
	4124.62.024	24	123	55	52	48	25	40	+0,75 ↻ 25,5	1225	5507	WCMX 0402..	0,385
	4124.62.025	25	123	55	54	50	25	40	+0,50 ↻ 26,0	1225	5507	WCMX 0402..	0,390
	4134.63.026	26	138	60	56	52	32	50	+2,50 ↻ 31,0	1630	5509	WCMX 0503..	0,425
	4134.63.027	27	138	60	58	54	32	50	+2,20 ↻ 31,4	1630	5509	WCMX 0503..	0,430
	4134.63.028	28	138	60	60	56	32	50	+2,10 ↻ 32,2	1630	5509	WCMX 0503..	0,440
	4134.63.029	29	138	60	62	58	32	50	+1,80 ↻ 32,6	1630	5509	WCMX 0503..	0,450
	4134.63.030	30	138	60	64	60	32	50	+1,80 ↻ 33,0	1630	5509	WCMX 0503..	0,470
	4144.64.031	31	158	65	66	62	40	60	+3,50 ↻ 38,0	1635	5510	WCMX 06T3..	0,765
	4144.64.032	32	158	65	68	64	40	60	+3,20 ↻ 38,4	1635	5510	WCMX 06T3..	0,780
	4144.64.034	34	158	65	73	68	40	60	+2,80 ↻ 39,6	1635	5510	WCMX 06T3..	0,800
	4144.64.035	35	158	65	75	70	40	60	+2,50 ↻ 40,0	1635	5510	WCMX 06T3..	0,815
	4144.64.038	38	168	65	80	76	40	60	+1,80 ↻ 41,0	1635	5510	WCMX 06T3..	0,930
	4144.64.039	39	168	65	82	78	40	60	+1,50 ↻ 41,6	1635	5510	WCMX 06T3..	0,950
	4144.64.040	40	168	65	84	80	40	60	+1,20 ↻ 42,0	1635	5510	WCMX 06T3..	0,970
	4154.64.042	42	193	65	89	84	40	60	+4,20 ↻ 51,0	1640	5515	WCMX 0804..	1,550
	4154.64.043	43	193	65	91	86	40	60	+4,00 ↻ 51,4	1640	5515	WCMX 0804..	1,530
	4154.64.045	45	193	65	95	90	40	60	+3,60 ↻ 52,2	1640	5515	WCMX 0804..	1,630
	4154.64.048	48	193	65	101	96	40	60	+2,70 ↻ 53,4	1640	5515	WCMX 0804..	1,700
	4154.64.049	49	213	65	103	98	40	60	+2,50 ↻ 54,0	1640	5515	WCMX 0804..	2,050
	4154.64.050	50	213	65	105	100	40	60	+2,20 ↻ 54,4	1640	5515	WCMX 0804..	2,100
4154.64.052	52	213	65	110	104	40	60	+1,80 ↻ 55,6	1640	5515	WCMX 0804..	2,120	
4154.64.054	54	213	65	114	108	40	60	+1,20 ↻ 56,4	1640	5515	WCMX 0804..	2,150	
4154.64.055	55	213	65	116	110	40	60	+0,80 ↻ 56,6	1640	5515	WCMX 0804..	2,200	

WCMX					Positive 7° clearance - 80° Trigon insert.
Ref.		l	s	d	
WCMX 0302..		3,46	2,38	5,56	
WCMX 0402..		3,99	2,38	6,35	
WCMX 0503..		5,07	3,18	7,94	
WCMX 06T3..		6,14	3,97	9,52	
WCMX 0804..		8,14	4,76	12,70	
WCMX					For more information see page: I.02



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cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and Sets

Profile milling

Solid carbide

Drills

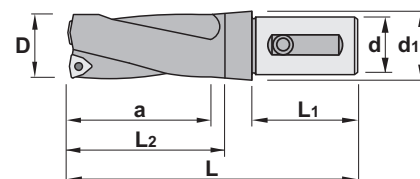
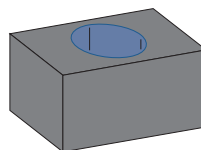
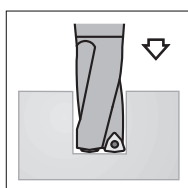
**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 55 mm.

Applications:

This drill works well on steels, alloyed steels, stainless steels and refractories.

Max. hole depth = 3xDiameter (D)

**42..**

Ref.		D	L	L1	L2	a	d	d1	Radial Adj. D _{max}			Insert size	
4214.62.017,5		17,5	127	55	56	53	25	40	+1,00 ↻ 19,5	1622	5507	WCMX 0302..	0,220
4214.62.018		18	128	55	57	54	25	40	+0,90 ↻ 19,8	1622	5507	WCMX 0302..	0,230
4214.62.018,5		18,5	130	55	59	56	25	40	+0,85 ↻ 20,2	1622	5507	WCMX 0302..	0,240
4214.62.019		19	131	55	60	57	25	40	+0,80 ↻ 20,6	1622	5507	WCMX 0302..	0,240
4214.62.020		20	136	55	64	60	25	40	+0,75 ↻ 21,5	1622	5507	WCMX 0302..	0,250
4224.62.022		22	142	55	69	66	25	40	+1,25 ↻ 24,5	1225	5507	WCMX 0402..	0,400
4224.62.024		24	150	55	76	72	25	40	+0,75 ↻ 25,5	1225	5507	WCMX 0402..	0,450
4224.62.025		25	154	55	79	75	25	40	+0,50 ↻ 26,0	1225	5507	WCMX 0402..	0,475
4234.63.026		26	162	60	81	78	32	50	+2,50 ↻ 31,0	1630	5509	WCMX 0503..	0,475
4234.63.027		27	165	60	84	81	32	50	+2,20 ↻ 31,4	1630	5509	WCMX 0503..	0,500
4234.63.028		28	169	60	87	84	32	50	+2,10 ↻ 32,2	1630	5509	WCMX 0503..	0,550
4234.63.029		29	172	60	90	87	32	50	+1,80 ↻ 32,6	1630	5509	WCMX 0503..	0,570
4234.63.030		30	177	60	94	90	32	50	+1,80 ↻ 33,0	1630	5509	WCMX 0503..	0,600
4244.64.031		31	186	65	97	93	40	60	+3,50 ↻ 38,0	1635	5510	WCMX 06T3..	0,850
4244.64.032		32	189	65	100	96	40	60	+3,20 ↻ 38,4	1635	5510	WCMX 06T3..	0,900
4244.64.034		34	196	65	106	102	40	60	+2,80 ↻ 39,6	1635	5510	WCMX 06T3..	0,975
4244.64.035		35	200	65	109	105	40	60	+2,50 ↻ 40,0	1635	5510	WCMX 06T3..	1,000
4244.64.038		38	211	65	118	114	40	60	+1,80 ↻ 41,0	1635	5510	WCMX 06T3..	1,170
4244.64.039		39	214	65	121	117	40	60	+1,50 ↻ 41,6	1635	5510	WCMX 06T3..	1,200
4244.64.040		40	218	65	124	120	40	60	+1,20 ↻ 42,0	1635	5510	WCMX 06T3..	1,300
4254.64.042		42	225	65	130	126	40	60	+4,20 ↻ 51,0	1640	5515	WCMX 0804..	1,600
4254.64.043		43	229	65	133	129	40	60	+4,00 ↻ 51,4	1640	5515	WCMX 0804..	1,750
4254.64.045		45	237	65	140	135	40	60	+3,60 ↻ 52,2	1640	5515	WCMX 0804..	1,900
4254.64.048		48	248	65	149	144	40	60	+2,70 ↻ 53,4	1640	5515	WCMX 0804..	2,250
4254.64.049		49	251	65	152	147	40	60	+2,50 ↻ 54,0	1640	5515	WCMX 0804..	2,200
4254.64.050		50	255	65	155	150	40	60	+2,20 ↻ 54,4	1640	5515	WCMX 0804..	2,400
4254.64.052		52	262	65	161	156	40	60	+1,80 ↻ 55,6	1640	5515	WCMX 0804..	2,500
4254.64.054		54	269	65	167	162	40	60	+1,20 ↻ 56,4	1640	5515	WCMX 0804..	2,700
4254.64.055		55	274	65	171	165	40	60	+0,80 ↻ 56,6	1640	5515	WCMX 0804..	2,850

WCMX

Ref.

WCMX 0302..

l

s

d

Positive 7° clearance - 80° Trigon insert.

WCMX 0402..

3,46

2,38

5,56

WCMX 0503..

3,99

2,38

6,35

WCMX 06T3..

5,07

3,18

7,94

WCMX 0804..

6,14

3,97

9,52

WCMX 0804..

8,14

4,76

12,70

For more information see page: I.02





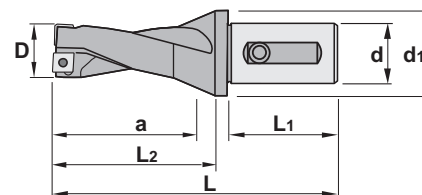
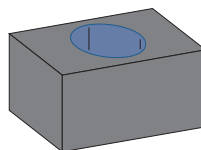
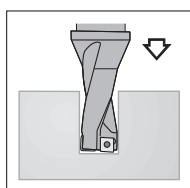
Max. hole depth = 3xDiameter (D)

Characteristics:

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down square inserts for stability and clean through-hole putting. Drills available from 15 to 55 mm.

Applications:

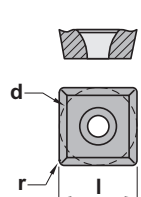
This drill works well on steels, alloyed steels, stainless steels and refractories.



45..

45..										 			
		D	L	L1	L2	a	d	d1	Radial Adj. Dmax			Insert size	
Ref.	4514.62.015	15	120	55	56	45	25	40	+0,50 ↻ 16,0	1225	5507	SPMT 0603..	0,240
	4514.62.016	16	121	55	56	48	25	40	+0,50 ↻ 17,0	1225	5007	SPMT 0603..	0,250
	4514.62.017	17	127	55	54	51	25	40	+0,50 ↻ 18,0	1225	5007	SPMT 0603..	0,250
	4514.62.017,5	17,5	127	55	56	53	25	40	+1,00 ↻ 19,5	1225	5507	SPMT 0603..	0,250
	4514.62.018	18	128	55	57	54	25	40	+0,90 ↻ 19,8	1225	5507	SPMT 0603..	0,230
	4514.62.018,5	18,5	130	55	59	56	25	40	+0,85 ↻ 20,2	1225	5507	SPMT 0603..	0,240
	4514.62.019	19	131	55	60	57	25	40	+0,80 ↻ 20,6	1225	5507	SPMT 0603..	0,240
	4514.62.020	20	136	55	64	60	25	40	+0,75 ↻ 21,5	1225	5507	SPMT 0603..	0,250
	4524.62.022	22	142	55	69	66	25	40	+1,25 ↻ 24,5	1225	5507	SPMT 0703..	0,400
	4524.62.024	24	150	55	76	72	25	40	+0,75 ↻ 25,5	1225	5507	SPMT 0703..	0,450
	4524.62.025	25	154	55	79	75	25	40	+0,50 ↻ 26,0	1225	5507	SPMT 0703..	0,475
	4534.63.026	26	162	55	81	78	32	50	+2,50 ↻ 31,0	1230	5508	SPMT 0903..	0,475
	4534.63.027	27	165	55	84	81	32	50	+2,20 ↻ 31,4	1230	5508	SPMT 0903..	0,500
	4534.63.028	28	169	55	87	84	32	50	+2,10 ↻ 32,2	1230	5508	SPMT 0903..	0,550
	4534.63.029	29	172	55	90	87	32	50	+1,80 ↻ 32,6	1230	5508	SPMT 0903..	0,570
	4534.63.030	30	177	55	94	90	32	50	+1,80 ↻ 33,0	1230	5508	SPMT 0903..	0,600
	4534.64.031	31	186	65	97	93	40	60	+3,50 ↻ 38,0	1230	5508	SPMT 0903..	0,850
	4534.64.032	32	189	65	100	96	40	60	+3,20 ↻ 38,4	1230	5508	SPMT 0903..	0,900
	4534.64.034	34	196	65	106	102	40	60	+2,80 ↻ 39,6	1230	5508	SPMT 0903..	0,975
	4544.64.035	35	200	65	109	105	40	60	+2,50 ↻ 40,0	1250	5520	SPMT 1204..	1,000
	4544.64.038	38	211	65	118	114	40	60	+1,80 ↻ 41,0	1250	5520	SPMT 1204..	1,170
4544.64.039	39	214	65	121	117	40	60	+1,50 ↻ 41,6	1250	5520	SPMT 1204..	1,200	
4544.64.040	40	218	65	124	120	40	60	+1,20 ↻ 42,0	1250	5520	SPMT 1204..	1,300	
4544.64.042	42	225	65	130	126	40	60	+4,20 ↻ 51,0	1250	5520	SPMT 1204..	1,600	
4544.64.043	43	229	65	133	129	40	60	+4,00 ↻ 51,4	1250	5520	SPMT 1204..	1,750	
4544.64.045	45	237	65	140	135	40	60	+3,60 ↻ 52,2	1250	5520	SPMT 1204..	1,900	

SPMT		l	s	d	Positive 11° clearance - Square inserts
Ref.					
SPMT 060304		6,35	3,18	6,35	
SPMT 070308		7,94	3,18	7,94	
SPMT 090308		9,52	3,18	9,52	
SPMT 120408		12,70	4,76	12,70	
					For more information see page: I.02
SPMT					
					



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

Drills

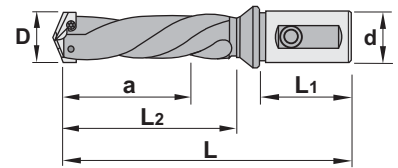
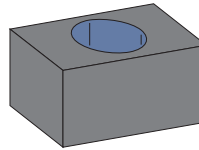
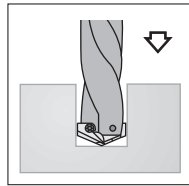
**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down spade inserts for stability and clean through-hole putting. Drills available from 9,5 to 17,5 mm.

Applications:

This drill works well on steels, alloyed steels, stainless steels and refractories.

Max. hole depth = 3xDiameter (D)

**48..**

		D	L	L1	L2	a	d	Insert size	kg
Ref.	4814.61.009,5	9,50 ~ 11,0	120,0	42	50	35	20	XPMT 095 ~ XPMT 110	0,200
	4824.61.011,5	11,5 ~ 12,7	125,0	42	55	40	20	XPMT 115 ~ XPMT 127	0,250
	4834.61.013	13,0 ~ 17,5	140,0	42	65	53	20	XPMT 130 ~ XPMT 175	0,300
	4834.61.015	15,5 ~ 17,5	140,0	42	75	53	20	XPMT 150 ~ XPMT 175	0,380

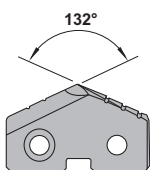


Ref.	4814.61.009,5	1420	5506
	4824.61.011,5	1422	5506
	4834.61.013	1425	5507
	4834.61.015	1425	5507

XPMT**s**

Ref.	XPMT 095 ~ XPMT 110	2,4
	XPMT 115 ~ XPMT 127	2,4
	XPMT 130 ~ XPMT 175	3,2
	XPMT 150 ~ XPMT 175	3,2

For more information see page: I.02

XPMT



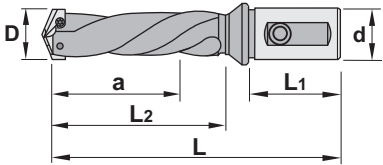
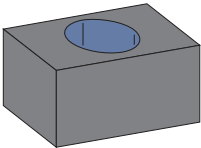
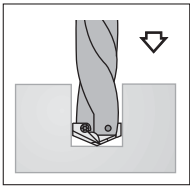
Long Series

Characteristics:

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down spade inserts for stability and clean through-hole putting. Drills available from 9,5 to 17,5 mm.

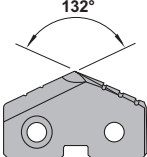
Applications:

This drill works well on steels, alloyed steels, stainless steels and refractories.

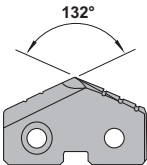


49..		D	L	L1	L2	a	d	Insert size	⚖️
Ref.	4914.61.009,5	9,50 ~ 11,0	132	42	65	57	20	XPMT 095 ~ XPMT 110	0,200
	4924.61.011,5	11,5 ~ 12,7	142	42	75	69	20	XPMT 115 ~ XPMT 127	0,250
	4934.61.013	13,0 ~ 17,5	188	42	125	112	20	XPMT 130 ~ XPMT 175	0,300
	4934.61.015	15,5 ~ 17,5	198	42	135	122	20	XPMT 150 ~ XPMT 175	0,380

			
Ref.	4914.61.009,5	1420	5506
	4924.61.011,5	1422	5506
	4934.61.013	1425	5507
	4934.61.015	1425	5507



XPMT		s				
Ref.	XPMT 095 ~ XPMT 110	2,4				
	XPMT 115 ~ XPMT 127	2,4				
	XPMT 130 ~ XPMT 175	3,2				
	XPMT 150 ~ XPMT 175	3,2				
For more information see page: I.02						
XPMT						
						



Inserts

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and Sets

Profile milling

Solid carbide

Drills

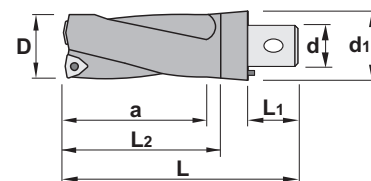
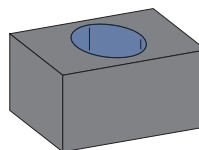
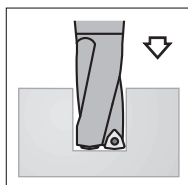
**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 40 mm.

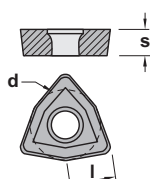
Applications:

This drill works well on steels, alloyed steels, stainless steels and refractories.

Max. hole depth = 3xDiameter (D)


42¹4.72
44.75

Ref.		D	L	L1	L2	a	d	d1	Radial Adj. Dmax			Insert size	kg
4214.72.017,5		17,5	92	20	56	53	20	32	+1,00 ↻ 19,5	1622	5507	WCMX 0302..	0,070
4214.72.018		18	93	20	57	54	20	32	+0,90 ↻ 19,8	1622	5507	WCMX 0302..	0,080
4214.72.018,5		18,5	95	20	59	56	20	32	+0,85 ↻ 20,2	1622	5507	WCMX 0302..	0,080
4214.72.019		19	96	20	60	57	20	32	+0,80 ↻ 20,6	1622	5507	WCMX 0302..	0,090
4214.72.020		20	101	20	64	60	20	32	+0,75 ↻ 21,5	1622	5507	WCMX 0302..	0,110
4224.73.022		22	112	25	69	66	24	42	+1,25 ↻ 24,5	1225	5507	WCMX 0402..	0,320
4224.73.024		24	120	25	76	72	24	42	+0,75 ↻ 26,5	1225	5507	WCMX 0402..	0,370
4224.73.025		25	124	25	79	75	24	42	+0,50 ↻ 26,0	1225	5507	WCMX 0402..	0,400
4234.74.026		26	132	30	81	78	28	50	+2,50 ↻ 31,0	1630	5509	WCMX 0503..	0,375
4234.74.027		27	135	30	84	81	28	50	+2,20 ↻ 31,4	1630	5509	WCMX 0503..	0,400
4234.74.028		28	139	30	87	84	28	50	+2,10 ↻ 32,2	1630	5509	WCMX 0503..	0,450
4234.74.029		29	142	30	90	87	28	50	+1,80 ↻ 32,6	1630	5509	WCMX 0503..	0,470
4234.74.030		30	147	30	94	90	28	50	+1,80 ↻ 33,0	1630	5509	WCMX 0503..	0,500
4244.75.031		31	161	40	97	93	36	68	+3,50 ↻ 38,0	1635	5510	WCMX 06T3..	0,600
4244.75.032		32	164	40	100	96	36	68	+3,20 ↻ 38,4	1635	5510	WCMX 06T3..	0,750
4244.75.034		34	171	40	106	102	36	68	+2,80 ↻ 39,6	1635	5510	WCMX 06T3..	0,800
4244.75.035		35	175	40	109	105	36	68	+2,50 ↻ 40,0	1635	5510	WCMX 06T3..	0,850
4244.75.038		38	186	40	118	114	36	68	+1,80 ↻ 41,0	1635	5510	WCMX 06T3..	1,000
4244.75.039		39	189	40	121	117	36	68	+1,50 ↻ 41,6	1635	5510	WCMX 06T3..	1,050
4244.75.040		40	193	40	124	120	36	68	+1,20 ↻ 42,0	1635	5510	WCMX 06T3..	1,150

**WCMX**

Ref.	WCMX 0302..	l	s	d
	WCMX 0402..	3,46	2,38	5,56
	WCMX 0503..	3,99	2,38	6,35
	WCMX 06T3..	5,07	3,18	7,94
		6,14	3,97	9,52

Positive 7° clearance - 80° Trigon insert.

For more information see page: I.02





Max. hole depth = 2.5xDiameter (D)

Characteristics:

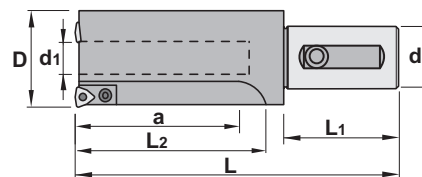
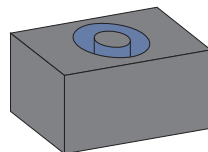
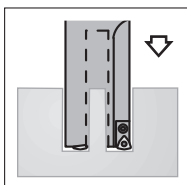
Straight flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting.

Drills available from 60 to 100 mm.

Specialy recommended for low power machines.

Applications:

This drill works well on steels, alloyed steels, stainless steels and refractories.

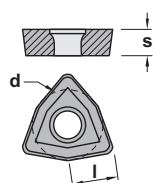


4744.64

Ref.		D	L	L ₁	L ₂	a	d	d ₁	Insert size	kg
4744.64.060		60	260	65	160	150	40	24	WCMX 06T3..	3,100
4744.64.065		65	275	65	175	165	40	29	WCMX 06T3..	3,700
4744.64.070		70	285	65	185	175	40	34	WCMX 06T3..	4,250
4744.64.075		75	300	65	200	190	40	39	WCMX 06T3..	5,100
4744.64.080		80	310	65	210	200	40	44	WCMX 06T3..	5,800
4744.64.085		85	325	65	225	215	40	49	WCMX 06T3..	6,500
4744.64.090		90	335	65	235	225	40	54	WCMX 06T3..	7,250
4744.64.095		95	350	65	250	240	40	59	WCMX 06T3..	8,200
4744.64.100		100	360	65	260	250	40	64	WCMX 06T3..	9,050

Ref.										
4744.64.060		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.065		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.070		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.075		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.080		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.085		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.090		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.095		1396	5510	1405	1635	1503	5002	5005	6806	6816
4744.64.100		1396	5510	1405	1635	1503	5002	5005	6806	6816

WCMX		l	s	d	Positive 7° clearance - 80° Trigon insert.
Ref.	WCMX 06T3..	6,14	3,97	9,52	
					For more information see page: I.02
WCMX					
					



Inserts

Face milling
cutters

Square shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and Sets

Profile milling

Solid carbide

Drills



Drills - Recommendations for the assembly



Drills for indexable inserts

A concave surface is not normally recommended because there is the possibility that the tool turns away from the center. Feed should be reduced to 1/3 of the recommended.



The surface of the tool to be drilled on should be preferably even. If the angles exceed 2° , feed should be reduced to 1/3 of the recommended.



If the starting surface is an uneven surface of the component, feed should be reduced so that the chip of the cutting edges can be avoided. The same can also happen at the way out from the tool.



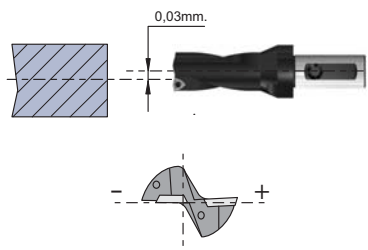
When working with a hole made beforehand, this should not be bigger than 1/4 of the final size, because the tool could turn away.



There is the possibility to drill sets of more than one piece.



When the tool has a crossed hole, which is 1/4 bigger than the diameter of the drill, feed should be reduced when going through it.



Fixed drills

The axis of the tool should not be deviated from the center of the piece more than 0,03 mm. so that the pointed tolerances are acquired.

The tool should be assembled in a way that the face of the central insert goes parallel to the cross movement axis of the machine.

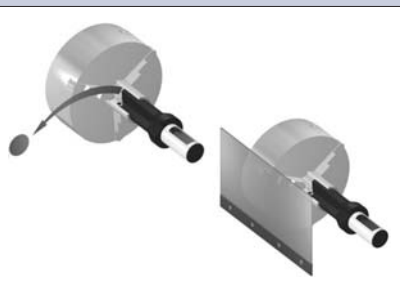


Drilling with drill-holders with housing for cutting fluid supply

When a drillholder with a housing supplier of cutting fluid is used, it has to have a fixed top so as to avoid that the housing turns around.

If it is the case that the cutting fluid has some dirty rests, this could lock the rotary housing and, consequently, the supplier tube will roll up around it, which can cause a serious accident.

If it is the case that the drillholder has not been used for a long time, check if it turns round in the housing before the spindle starts working.



Drilling of through-holes

When through holes are drilled a disk is produced after the drill has finished the hole. This disk is often thrown away at high speed through the dish claws and can cause injuries and accidents.

In order to avoid this accident, a suitable safety system has to be placed around the dish.

Inserts

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and Sets

Profile milling

Solid carbide

Drills

Material	HB	Condition	D mm.	Feed mm./Rev.	Cutting speed m./min.
Unalloyed steel P	90-200	Non-hardened 0,05-0,25%C	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,04-0,08 0,06-0,10 0,08-0,12 0,08-0,12	100-250
Unalloyed steel	125-225 150-225 180-225	Non-hardened 0,25-0,55%C Non-hardened 0,55-0,80%C High carbon & carbon tool steel	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,04-0,12 0,09-0,19 0,11-0,20 0,14-0,25	100-250
Low alloyed steel	150-260	Non-hardened	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,08-0,12 0,09-0,16 0,11-0,20 0,14-0,22	90-250
Low alloyed steel	220-400	Hardened	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,06-0,10 0,08-0,15 0,08-0,15 0,11-0,20	80-220
High alloyed steel	150-250 150-250	Annealed Annealed HSS	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,08-0,12 0,09-0,18 0,11-0,22 0,14-0,25	100-220
High alloyed steel	250-350 250-400	Hardened tool steel Hardened steel	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,08-0,12 0,09-0,15 0,11-0,17 0,12-0,20	90-200
Stainless steel	150-270	Ferritic, Martensitic 13-25%Cr	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,04-0,12 0,10-0,16 0,11-0,18 0,11-0,18	90-190
Steel castings	150-270	Unalloyed	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,05-0,08 0,06-0,10 0,09-0,15 0,11-0,18	100-230
Steel castings	90-225	Low alloyed (alloying elements < 5%)	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,08-0,12 0,09-0,15 0,12-0,20 0,14-0,22	90-200
Stainless steel M	150-250	Austenitic Ni > 8%, 18-25% Cr	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,04-0,12 0,10-0,16 0,11-0,18 0,11-0,18	70-150
Malleable cast iron K	110-145	Ferritic (short chipping)	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,11-0,18 0,14-0,22 0,17-0,27 0,18-0,30	90-200
Malleable cast iron	150-270	Pearlitic (long chipping)	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,09-0,15 0,11-0,19 0,12-0,20 0,14-0,22	80-180
Grey cast iron	150-220	Low tensile strength	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,09-0,15 0,14-0,22 0,15-0,25 0,18-0,30	80-180
Grey cast iron	200-330	High tensile strength	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,09-0,15 0,12-0,20 0,14-0,22 0,15-0,25	70-150
Nodular cast iron	125-230	Ferritic	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,09-0,15 0,14-0,22 0,15-0,25 0,17-0,28	80-180
Nodular cast iron	200-300	Pearlitic	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,09-0,15 0,12-0,20 0,14-0,22 0,15-0,30	70-150
Aluminium alloys	75-150 40-100 70-125	Wrought, solution treated & aged Cast Cast, solution treated & aged	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,08-0,12 0,11-0,17 0,17-0,27 0,17-0,27	150-375
Copper and copper alloys	50 - 160	Free cutting alloys (pb>1%) Brass and lead bronzes (pb<1%)	17,5-25,4 26,0-30,0 31,0-41,3 42,0-80,0	0,09-0,15 0,09-0,15 0,15-0,25 0,15-0,25	80-160

Material	HB	Condition	D mm.	Cutting speed m/min	Feed mm/Rev
Unalloyed steel P	90-200	Non-hardened 0,05-0,25%C	60-100	150-250	0,08-0,12
	125-225	Non-hardened 0,25-0,55%C		100-250	0,11-0,18
	150-225	Non-hardened 0,55-0,80%C		100-250	0,11-0,18
	180-225	High carbon & carbon tool steel		100-250	0,11-0,18
Low alloyed steel	150-260	Non-hardened	60-100	100-250	0,11-0,18
	220-400	Hardened		100-220	0,08-0,12
High alloyed steel	150-250	Annealed	60-100	100-220	0,11-0,19
	150-250	Annealed HSS		100-220	0,11-0,19
	250-350	Hardened tool steel		100-200	0,11-0,18
	250-400	Hardened steel		100-200	0,11-0,17
Stainless steel	150-270	Ferritic, Martensitic 13-25%Cr	60-100	100-200	0,11-0,17
Steel castings	90-225	Unalloyed	60-100	100-200	0,12-0,20
	150-250	Low alloyed (< 5%)		100-150	0,11-0,17

Stainless steel M	150-270	Austenitic Ni > 8%, 18-25% Cr	60-100	100-230	0,09-0,15
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Malleable cast iron K	110-145	Ferritic (short chipping)	60-100	100-200	0,17-0,27
	150-270	Pearlitic (long chipping)	60-100	90-180	0,12-0,20
Grey cast iron	150-220	Low tensile strength	60-100	90-180	0,15-0,25
	200-300	High tensile strength	60-100	90-150	0,14-0,22
Nodular cast iron	125-230	Ferritic	60-100	100-180	0,15-0,25
	200-300	Pearlitic	60-100	90-150	0,14-0,22
Aluminium alloys	75-150	Wrought, solution treated & aged	60-100	150-375	0,17-0,27
	40-100	Cast	60-100	150-375	0,17-0,27
	70-125	Cast, solution treated & aged	60-100	150-375	0,17-0,27
Copper and copper alloys	50-160	Free cutting alloys (pb>1%) Brass and leaded bronzes (pb<1%)	60-100	100-160	0,15-0,25