

Combination Tools

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		standard						hole tolerance	standard range		customised solution range	
		P	M	K	N	S	H		diameter range		diameter range	
									D1 mm min-max	drilling depth L/D1	D1 mm min-max	drilling depth
	BF with Solid Carbide Drill Combination Tool	●		●				IT7-11	3,4-18 (B343 drill)	approx. 3 x D	3,4-22,5	.1-5 x D
	BF with KenTIP™ Combination Tool	●	●	●				IT7-11	8-18,99	3 x D 4 x D 5 x D	8-25,99	3-5 x D
	SEFAS™ Combination Tool	●	○	●	○			IT7-11	4-20	approx. 3 x D 5 x D 8 x D 12 x D	3,4-25	1-5 x D

In regard to insert and drill coatings, anything is possible. If a specific insert or drill is not suitable for your workpiece material, please contact our Engineered Solutions Department for an offer about special coatings and edge preparations.

¹⁾ Other shank styles available as customised solution.

			■ standard and □ customised solution capabilities ¹⁾			■ standard and □ customised solution capabilities ¹⁾									page(s)
	coolant														
	■		■			■			□		■	□		■	18-110
	■		■			■			□		■	□		■	111-113
	■		■		□	■			□		■			■	123-127

➤ Combination Tools

Combination drilling tools are customisable using standard components and combine centring, drilling, and countersinking into a single operation to increase productivity by reducing cycle time and tool changes.

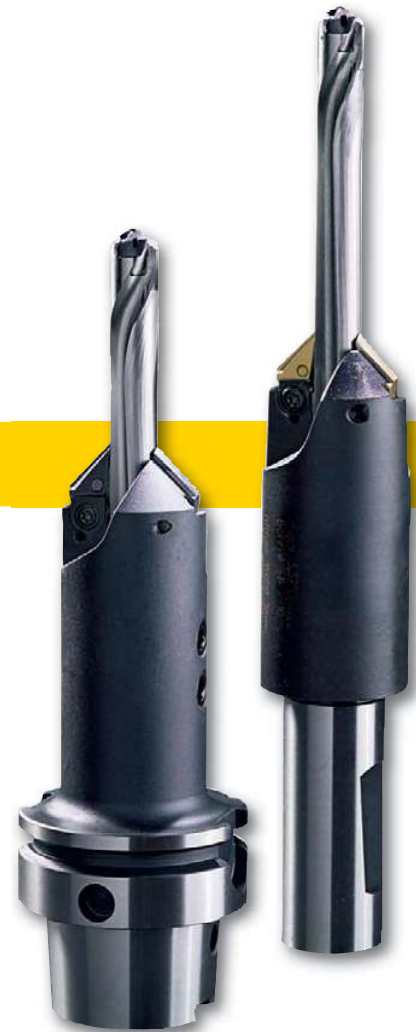
Both the BF and SEFAS™ combination systems provide high flexibility to adapt the tool to varying hole geometries and provide full through-coolant capabilities.

Features and Benefits

BF Combination Drilling System

- Drilling, chamfering, and countersinking in one tool.
- Uses solid carbide and modular KenTIP™ drills.
- Covered drill diameter range 3,4–18mm (.125–.750").
- A specific range of drill diameters can be applied for each drill body based upon drill shank size.
- Highly flexible system:
 - Chamfer insert with different angles.
 - Insert design enables special geometrical shapes.
 - Inserts can be easily interchanged.

NOTE: TF drills may be used with one insert in limited applications.
Consult your Kennametal Sales Representative for more information.



Provide high flexibility to adapt the tool to varying hole geometries.



SEFAS™ Combination Drilling System

- High-performance, self-centring drill and chamfer in one tool.
- Drill diameter range 4–18mm (.156–.750").
- Uses standard solid carbide drills in HP and TX styles as well as modular KenTIP™ drills.
- 90° and 82° angles available for chamfer inserts.
- Various shanks can be used with metric and inch diameter drills.



➤ BF Combination Drilling System

Primary Application

Combines centring, drilling, and countersinking into a single operation, increasing productivity by reducing cycle time and number of tool changes. The modular design provides flexibility to adapt the tool to varying hole geometries in small- and medium-lot-size manufacturing.

With its slim design and full-through-coolant capabilities, the BF combination system can be used in even deeper holes, in critical materials, and with restricted workspace.

Features and Benefits

Productivity

- Reduce the number of tool changes and cycle time by combining drilling and countersinking into one operation.
- Use high-performance solid carbide drills and KenTIP™ drill bodies to achieve high speeds and feeds.
- Avoid the need for reconditioning by using KenTIP blades.

Versatility

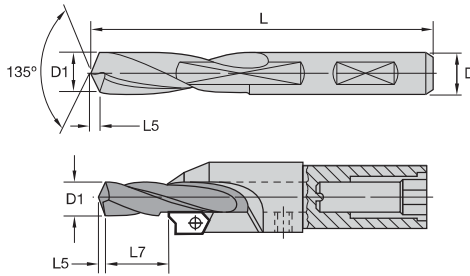
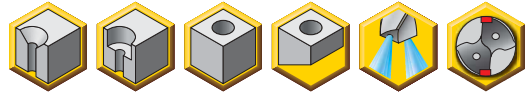
- Choose between solid carbide drills and KenTIP drill bodies.
- Various grades and insert styles.
- Flexible modular system for adjusting the drill length or insert style to manufacture different geometries.

Choose between solid carbide drills and KenTIP™ drill bodies.



Customisation

- Length variations available as engineered solutions.
- TX drills for aluminium available as engineered solutions.
- BF inserts can be customised to almost any geometry.



Combination Tools

B343_HPG



- first choice
- alternate choice

KC7315	D1	D	L	L7 min	L7 max	L5
B343S03175HPG	3,18	4	55	1,0	8,6	0,60
B343S03400HPG	3,40	4	55	1,0	10,0	0,63
B343S03500HPG	3,50	4	55	1,6	10,6	0,65
B343S03797HPG *	3,80	4	55	3,3	12,3	0,70
B343S03800HPG	3,80	4	55	3,3	12,3	0,70
B343S03970HPG	3,97	4	55	4,2	13,2	0,73
B343S04000HPG	4,00	4	55	4,4	13,4	0,74
B343S04100HPG	4,10	5	62	3,7	13,7	0,76
B343S04200HPG	4,20	5	62	4,2	14,2	0,78
B343S04300HPG	4,30	5	62	4,7	14,7	0,79
B343S04500HPG	4,50	5	62	5,6	15,6	0,83
B343S04600HPG *	4,60	5	62	5,8	15,8	0,85
B343S04623HPG	4,62	5	62	5,9	15,9	0,85
B343S04763HPG	4,76	5	62	6,6	16,6	0,88
B343S04900HPG *	4,90	5	62	7,2	17,2	0,90
B343S05000HPG	5,00	5	62	7,6	17,6	0,92
B343S05100HPG	5,10	6	66	6,8	17,8	0,60
B343S05200HPG	5,20	6	66	7,2	18,2	0,96
B343S05300HPG	5,30	6	66	7,6	18,6	0,98
B343S05400HPG	5,40	6	66	8,0	19,0	1,00
B343S05410HPG	5,41	6	66	8,0	19,0	1,00
B343S05500HPG	5,50	6	66	8,4	19,4	1,02
B343S05550HPG	5,55	6	66	8,3	19,3	1,02
B343S05558HPG *	5,56	6	66	8,4	19,4	1,03
B343S05600HPG	5,60	6	66	8,5	19,5	1,03
B343S05800HPG	5,80	6	66	9,3	20,3	1,07
B343S06000HPG	6,00	6	66	10,0	21,0	1,11
B343S06100HPG	6,10	7	74	9,1	21,1	1,13
B343S06200HPG	6,20	7	74	9,5	21,5	1,14
B343S06300HPG	6,30	7	74	9,8	21,8	1,16
B343S06350HPG	6,35	7	74	10,0	22,0	1,17
B343S06400HPG	6,40	7	74	10,2	22,2	1,18
B343S06500HPG	6,50	7	74	10,5	22,5	1,20
B343S06528HPG	6,53	7	74	10,6	22,6	1,21
B343S06600HPG	6,60	7	74	10,9	22,9	1,22
B343S06700HPG	6,70	7	74	11,2	23,2	1,24

(continued)

(B343_HPG -- continued)



- first choice
- alternate choice

KC7315	D1	D	L	L7 min	L7 max	L5
B343S06746HPG	6,75	7	74	11,4	23,4	1,25
B343S06800HPG	6,80	7	74	11,5	23,5	1,26
B343S06900HPG	6,90	7	74	11,9	23,9	1,27
B343S07000HPG	7,00	7	74	12,2	24,2	1,29
B343S07145HPG	7,14	8	79	11,1	24,1	1,32
B343S07300HPG	7,30	8	79	11,6	24,6	1,35
B343S07400HPG	7,40	8	79	11,9	24,9	1,37
B343S07500HPG	7,50	8	79	12,3	25,3	1,38
B343S07541HPG *	7,54	8	79	12,4	25,4	1,39
B343S07800HPG	7,80	8	79	13,2	26,2	1,44
B343S07900HPG	7,90	8	79	13,5	26,5	1,46
B343S07938HPG	7,94	8	79	13,6	26,6	1,47
B343S08000HPG	8,00	8	79	13,8	26,8	1,48
B343S08100HPG	8,10	9	84	12,6	26,6	1,50
B343S08200HPG	8,20	9	84	12,8	26,8	1,51
B343S08300HPG	8,30	9	84	13,1	27,1	1,53
B343S08334HPG *	8,33	9	84	13,2	27,2	1,54
B343S08400HPG	8,40	9	84	13,4	27,4	1,55
B343S08433HPG *	8,43	9	84	13,5	27,5	1,56
B343S08500HPG	8,50	9	84	13,7	27,7	1,57
B343S08600HPG	8,60	9	84	14,0	28,0	1,59
B343S08700HPG	8,70	9	84	14,3	28,3	1,61
B343S08733HPG *	8,73	9	84	14,4	28,4	1,61
B343S08800HPG	8,80	9	84	14,5	28,5	1,62
B343S09000HPG	9,00	9	84	15,1	29,1	1,66
B343S09100HPG	9,10	10	89	14,3	28,8	1,68
B343S09347HPG	9,35	10	89	15,0	29,5	1,73
B343S09400HPG *	9,40	10	89	15,1	29,6	1,74
B343S09500HPG *	9,50	10	89	15,4	29,9	1,75
B343S09525HPG *	9,53	10	89	15,4	29,9	1,76
B343S09700HPG *	9,70	10	89	15,9	30,4	1,79
B343S09800HPG	9,80	10	89	16,2	30,7	1,81
B343S09921HPG *	9,92	10	89	16,5	31,0	1,83
B343S10000HPG	10,00	10	89	16,7	31,2	1,85
B343S10100HPG	10,10	11	95	15,9	30,9	1,86
B343S10200HPG	10,20	11	95	16,2	31,2	1,88
B343S10300HPG	10,30	11	95	16,4	31,4	1,90
B343S10320HPG	10,32	11	95	16,5	31,5	1,91
B343S10400HPG	10,40	11	95	16,7	31,7	1,92
B343S10500HPG	10,50	11	95	16,9	31,9	1,94
B343S10600HPG	10,60	11	95	17,2	32,2	1,96
B343S10700HPG	10,70	11	95	17,4	32,4	1,98
B343S10710HPG	10,71	11	95	17,4	32,4	1,98
B343S10800HPG	10,80	11	95	17,7	32,7	1,99
B343S11000HPG	11,00	11	95	18,1	33,1	2,03
B343S11100HPG	11,10	12	102	17,4	32,9	2,05
B343S11110HPG	11,11	12	102	17,4	32,9	2,05
B343S11200HPG *	11,20	12	102	17,6	33,1	2,07
B343S11300HPG *	11,30	12	102	17,9	33,4	2,09
B343S11500HPG	11,50	12	102	18,3	33,8	2,12
B343S11508HPG *	11,51	12	102	18,3	33,8	2,12
B343S11700HPG	11,70	12	102	18,8	34,3	2,16

(continued)

Combination Tools

(B343_HPG – continued)



- first choice
- alternate choice



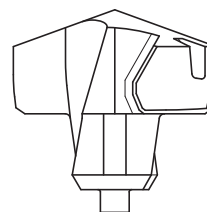
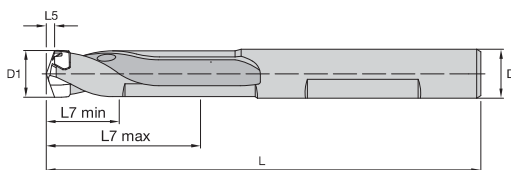
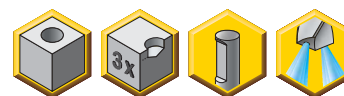
Combination Tools

KC7315	D1	D	L	L7 min	L7 max	L5
B343S11800HPG	11,80	12	102	19,0	34,5	2,18
B343S11900HPG	11,90	12	102	19,3	34,8	2,20
B343S12000HPG	12,00	12	102	19,5	35,0	2,22
B343S12200HPG	12,20	13	102	18,9	34,9	2,25
B343S12500HPG	12,50	13	102	19,6	35,6	2,31
B343S12700HPG *	12,70	13	102	20,1	36,1	2,34
B343S12800HPG	12,80	13	102	20,3	36,3	2,36
B343S13000HPG	13,00	13	102	20,7	36,7	2,40
B343S13200HPG	13,20	14	107	20,4	36,9	2,44
B343S13500HPG	13,50	14	107	21,1	37,6	2,49
B343S14000HPG	14,00	14	107	22,1	38,6	2,58
B343S14200HPG	14,20	15	111	21,5	38,5	2,62
B343S14280HPG	14,28	15	111	21,7	38,7	2,64
B343S15000HPG	15,00	15	111	23,2	40,2	2,77
B343S15500HPG	15,50	16	115	23,2	40,7	2,86
B343S15870HPG	15,87	16	115	23,9	41,4	2,93
B343S16000HPG	16,00	16	115	24,2	41,7	2,95
B343S16500HPG	16,50	17	115	24,2	42,2	3,05
B343S16670HPG *	16,67	17	115	24,5	42,5	3,08
B343S17000HPG	17,00	17	115	25,1	43,1	3,14
B343S17500HPG	17,50	18	117	25,1	43,6	3,23
B343S17700HPG	17,70	18	117	25,5	44,0	3,27
B343S18000HPG	18,00	18	117	26,0	44,5	3,32

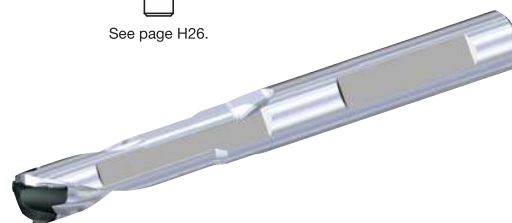
NOTE: *Made-to-order standard item. Standard pricing, manufacturing lead time, and minimum order quantity applies.

Tolerance			
D1	Tolerance h7	D	Tolerance h6
>3-6	0,000/-0,012	6	0,000/-0,008
>6-10	0,000/-0,016	8-10	0,000/-0,009
>10-18	0,000/-0,018	12-18	0,000/-0,011

- Tool body with insert wrench included.
- Order KenTIP blades separately.



See page H26.

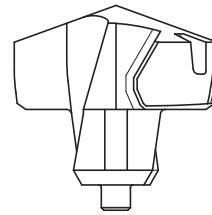
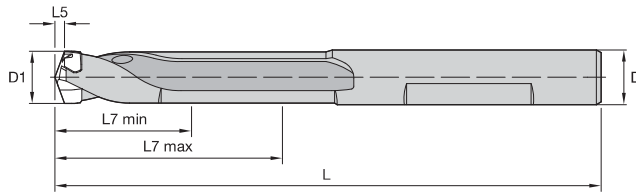
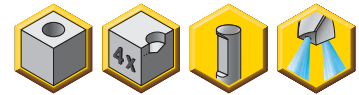


Combination Tools

KenTIP • 3 x D • Metric

catalogue number	D1	D1 max	D	L	L7 min	L7 max	L5	insert blade seat size
KTIP080R3BF08M	8,00	8,50	8,0	80,0	11,5	25,5	1,4	F
KTIP080R3BF09M	8,00	8,50	9,0	81,0	11,5	25,5	1,4	F
KTIP085R3BF09M	8,50	9,00	9,0	82,0	12,5	27,0	1,5	G
KTIP090R3BF09M	9,00	9,50	9,0	82,0	13,5	28,5	1,6	H
KTIP090R3BF10M	9,00	9,50	10,0	91,0	13,5	28,5	1,6	H
KTIP095R3BF10M	9,50	10,00	10,0	92,0	15,0	30,0	1,6	I
KTIP100R3BF10M	10,00	10,50	10,0	93,0	16,0	31,5	1,7	J
KTIP100R3BF11M	10,00	10,50	11,0	94,0	16,0	31,5	1,7	J
KTIP105R3BF11M	10,50	11,00	11,0	94,0	17,0	33,0	1,8	K
KTIP110R3BF11M	11,00	11,50	11,0	96,0	18,5	34,5	1,9	L
KTIP110R3BF12M	11,00	11,50	12,0	106,0	18,5	34,5	1,9	L
KTIP115R3BF12M	11,50	12,00	12,0	107,0	19,5	36,0	2,0	M
KTIP120R3BF12M	12,00	12,50	12,0	108,0	20,5	37,5	2,1	N
KTIP120R3BF13M	12,00	12,50	13,0	108,0	20,5	37,5	2,1	N
KTIP125R3BF13M	12,50	13,00	13,0	110,0	22,0	39,0	2,2	O
KTIP130R3BF13M	13,00	13,50	13,0	111,0	23,0	40,5	2,2	P
KTIP130R3BF14M	13,00	13,50	14,0	111,0	23,0	40,5	2,2	P
KTIP135R3BF14M	13,50	14,00	14,0	112,0	24,5	42,0	2,3	Q
KTIP140R3BF14M	14,00	14,50	14,0	113,0	25,5	43,5	2,4	R
KTIP140R3BF15M	14,00	14,50	15,0	118,0	25,5	43,5	2,4	R
KTIP145R3BF15M	14,50	15,00	15,0	118,0	26,5	45,0	2,5	S
KTIP150R3BF15M	15,00	16,00	15,0	121,0	29,0	48,0	2,6	T
KTIP150R3BF16M	15,00	16,00	16,0	121,0	29,0	48,0	2,6	T
KTIP160R3BF16M	16,00	17,00	16,0	123,0	31,5	51,0	2,8	U
KTIP160R3BF17M	16,00	17,00	17,0	124,0	31,5	51,0	2,8	U
KTIP170R3BF17M	17,00	18,00	17,0	127,0	34,0	54,0	2,9	V
KTIP170R3BF18M	17,00	18,00	18,0	127,0	34,0	54,0	2,9	V
KTIP180R3BF18M	18,00	19,00	18,0	130,0	36,5	57,0	3,1	W

- Tool body with insert wrench included.
- Order KenTIP blades separately.



See page H26.

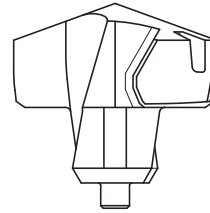
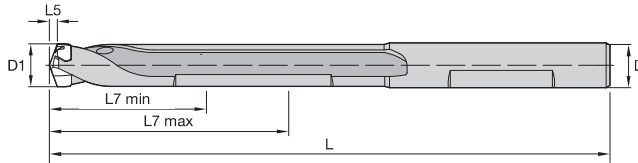


Combination Tools

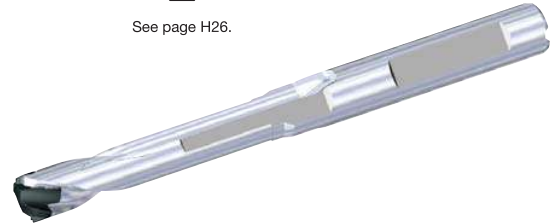
■ KenTIP • 4 x D • Metric

catalogue number	D1	D1 max	D	L	L7 min	L7 max	L5	insert blade seat size
KTIP080R4BF09M	8,00	8,50	9,0	89,5	20,0	34,0	1,4	F
KTIP085R4BF09M	8,50	9,00	9,0	91,0	21,5	36,0	1,5	G
KTIP090R4BF10M	9,00	9,50	10,0	100,5	23,0	38,0	1,6	H
KTIP095R4BF10M	9,50	10,00	10,0	102,0	25,0	40,0	1,6	I
KTIP100R4BF11M	10,00	10,50	11,0	104,5	26,5	42,0	1,7	J
KTIP105R4BF11M	10,50	11,00	11,0	105,0	28,0	44,0	1,8	K
KTIP110R4BF12M	11,00	11,50	12,0	117,5	30,0	46,0	1,9	L
KTIP115R4BF12M	11,50	12,00	12,0	119,0	31,5	48,0	2,0	M
KTIP120R4BF13M	12,00	12,50	13,0	120,5	33,0	50,0	2,1	N
KTIP125R4BF13M	12,50	13,00	13,0	123,0	35,0	52,0	2,2	O
KTIP130R4BF14M	13,00	13,50	14,0	124,5	36,5	54,0	2,2	P
KTIP135R4BF14M	13,50	14,00	14,0	126,0	38,5	56,0	2,3	Q
KTIP140R4BF15M	14,00	14,50	15,0	132,5	40,0	58,0	2,4	R
KTIP145R4BF15M	14,50	15,00	15,0	133,0	41,5	60,0	2,5	S
KTIP150R4BF16M	15,00	16,00	16,0	137,0	45,0	64,0	2,6	T
KTIP160R4BF17M	16,00	17,00	17,0	141,0	48,5	68,0	2,8	U
KTIP170R4BF18M	17,00	18,00	18,0	145,0	52,0	72,0	2,9	V
KTIP180R4BF18M	18,00	19,00	18,0	149,0	55,5	76,0	3,1	W

- Tool body with insert wrench included.
- Order KenTIP blades separately.



See page H26.

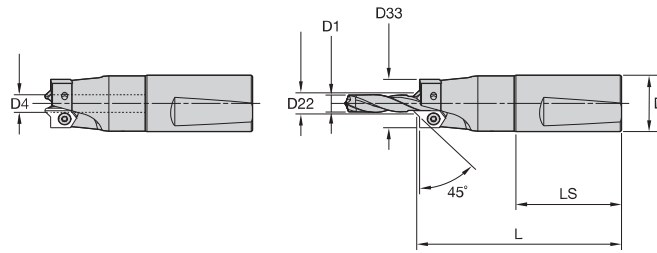


Combination Tools

KenTIP • 5 x D • Metric

catalogue number	D1	D1 max	D	L	L7 min	L7 max	L5	insert blade seat size
KTIP080R5BF09M	8,00	8,50	9,0	98,0	28,5	42,5	1,4	F
KTIP085R5BF09M	8,50	9,00	9,0	100,0	30,5	45,0	1,5	G
KTIP090R5BF10M	9,00	9,50	10,0	110,0	32,5	47,5	1,6	H
KTIP095R5BF10M	9,50	10,00	10,0	112,0	35,0	50,0	1,6	I
KTIP100R5BF11M	10,00	10,50	11,0	115,0	37,0	52,5	1,7	J
KTIP105R5BF11M	10,50	11,00	11,0	116,0	39,0	55,0	1,8	K
KTIP110R5BF12M	11,00	11,50	12,0	129,0	41,5	57,5	1,9	L
KTIP115R5BF12M	11,50	12,00	12,0	131,0	43,5	60,0	2,0	M
KTIP120R5BF13M	12,00	12,50	13,0	133,0	45,5	62,5	2,1	N
KTIP125R5BF13M	12,50	13,00	13,0	136,0	48,0	65,0	2,2	O
KTIP130R5BF14M	13,00	13,50	14,0	138,0	50,0	67,5	2,2	P
KTIP135R5BF14M	13,50	14,00	14,0	140,0	52,5	70,0	2,3	Q
KTIP140R5BF15M	14,00	14,50	15,0	147,0	54,5	72,5	2,4	R
KTIP145R5BF15M	14,50	15,00	15,0	148,0	56,5	75,0	2,5	S
KTIP150R5BF16M	15,00	16,00	16,0	153,0	61,0	80,0	2,6	T
KTIP160R5BF17M	16,00	17,00	17,0	158,0	65,5	85,0	2,8	U
KTIP170R5BF18M	17,00	18,00	18,0	163,0	70,0	90,0	2,9	V
KTIP180R5BF18M	18,00	19,00	18,0	168,0	74,5	95,0	3,1	W

- Drill body shipped with all screws and wrenches.
- Order the inserts and drills separately.
- Drills with shanks up to and including 9,10mm use only one insert.



■ Round Shank • 2° Whistle Notch Shank • Metric



DIN 1835 Form A	DIN 1835 Form E	D1	D1 max	D4	D	D22	D33	L	LS	insert
3.37042R320	3.37042R820	3,40	4,00	4,00	20,0	9,0	14,9	87,5	50,0	3.41020..
3.37051R320	3.37051R820 *	4,10	4,50	5,00	20,0	9,5	15,4	87,5	50,0	3.41020..
3.37052R320	3.37052R820	4,60	5,00	5,00	20,0	10,0	15,9	87,5	50,0	3.41020..
3.37061R320	3.37061R820	5,10	5,50	6,00	20,0	10,5	16,4	87,5	50,0	3.41020..
3.37062R320	3.37062R820	5,55	6,00	6,00	20,0	11,0	16,9	87,5	50,0	3.41020..
3.37071R320	3.37071R820	6,10	7,00	7,00	20,0	11,5	17,4	97,3	50,0	3.41020..
3.37081R320	3.37081R820	7,30	8,00	8,00	20,0	12,6	18,4	97,3	50,0	3.41020..
3.37091R320	3.37091R820	8,10	9,00	9,00	20,0	13,6	19,4	97,3	50,0	3.41020..
3.37092R320	3.37092R820	8,10	9,00	9,00	20,0	13,7	19,4	97,3	50,0	3.41020..
3.37101R332	3.37101R832	9,10	10,00	10,00	32,0	14,7	27,9	117,4	60,0	3.41220..
3.37111R332	3.37111R832	10,10	11,00	11,00	32,0	15,7	28,9	117,4	60,0	3.41220..
3.37121R332	3.37121R832	11,10	12,00	12,00	32,0	16,7	29,9	127,4	60,0	3.41220..
3.37131R332	3.37131R832	12,20	13,00	13,00	32,0	17,7	31,0	127,4	60,0	3.41220..
3.37141R332	—	13,10	14,00	14,00	32,0	18,2	31,5	127,1	60,0	3.41220..
—	3.37141R832	13,10	14,00	14,00	32,0	18,2	31,5	127,4	60,0	3.41220..
3.37151R332	—	14,10	15,00	15,00	32,0	19,3	32,5	127,4	60,0	3.41220..
—	3.37151R832	14,10	15,00	15,00	32,0	19,3	32,5	127,1	60,0	3.41220..
3.37161R332	3.37161R832	15,50	16,00	16,00	32,0	20,3	33,5	127,1	60,0	3.41220..
3.37171R332 *	3.37171R832	16,50	17,00	17,00	32,0	21,3	34,5	127,1	60,0	3.41220..
3.37181R332	3.37181R832	17,50	18,00	18,00	32,0	22,3	35,5	127,1	60,0	3.41220..

NOTE: *Made-to-order standard item. Standard pricing, manufacturing lead time, and minimum order quantity applies.

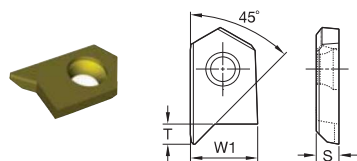
■ Spare Parts



D1	back-up screw	drill clamp screw	hex wrench	insert screw	wrench
3,40	192.888	192.718	170.003	192.432	170.028
4,10	192.888	192.718	170.003	192.432	170.028
4,60	192.888	192.718	170.003	192.432	170.028
5,10	192.888	192.718	170.003	192.432	170.028
5,55	192.888	192.718	170.003	192.432	170.028
6,10	192.888	192.718	170.003	192.432	170.028
7,30	192.888	192.718	170.003	192.432	170.028
8,10	192.888	192.718	170.003	192.432	170.028
9,10	192.889	192.720	170.005	191.725	170.025
10,10	192.889	192.720	170.005	191.725	170.025
11,10	192.889	192.720	170.005	191.725	170.025
12,20	192.889	192.720	170.005	191.725	170.025
13,10	192.889	192.720	170.005	191.725	170.025
14,10	192.889	192.720	170.005	191.725	170.025
15,50	192.889	192.720	170.005	191.725	170.025
16,50	192.889	192.720	170.005	191.725	170.025
17,50	192.889	192.720	170.005	191.725	170.025

NOTE: Dimensions are factored with a 45° insert positioned in insert pocket.

- Standard steel drill bodies are designed for inserts with 41° and 45° chamfers.

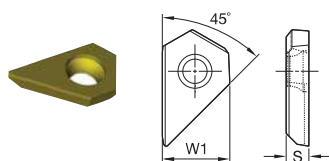


- first choice
- alternate choice

P	●	●
M	●	●
K	●	●
N	○	○
S	○	○
H	○	○

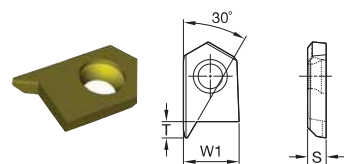
BF Insert R901 • 45° with Spot Face

catalogue number	S	W1	T	CS5	KC7315
3.41020R901	3,00	6,10	2,90	●	●
3.41220R901	3,50	10,10	3,05	●	●


BF Insert R902 • 45°

catalogue number	S	W1	CS5	KC7315
3.41020R902	3,00	6,10	●	●
3.41220R902	3,50	10,10	●	●

- When using the 60° insert or special insert, the assembled tool should be inspected.
- These insert combinations require that the steel body be altered to provide insert coverage.


BF Insert R903 • 60° with Spot Face

catalogue number	S	W1	T	CS5	KC7315
3.41020R903	3,00	6,10	2,90	●	●
3.41220R903	3,50	10,10	3,05	●	●

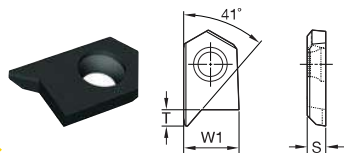


Combination Tools

- Standard steel drill bodies are designed for inserts with 41° and 45° chamfers.



Combination Tools



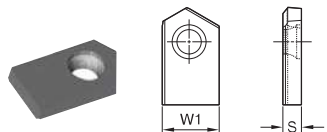
- first choice
- alternate choice

P	●
M	●
K	○
N	●
S	●
H	●

■ BF Insert R904 • 41° with Spot Face

catalogue number	S	W1	T	
3.41020R904	3,00	6,10	2,90	●
3.41220R904	3,50	10,10	3,05	●

KC7315



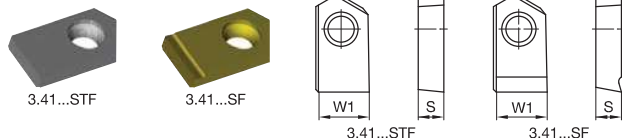
- first choice
- alternate choice

P	●
M	●
K	○
N	●
S	●
H	●

■ BF Insert R900 • Semi-Finished

catalogue number	S	W1	
3.41020R900	3,00	6,10	●
3.41220R900	3,50	10,10	●

KMF



- first choice
- alternate choice

P	●
M	●
K	○
N	●
S	●
H	●

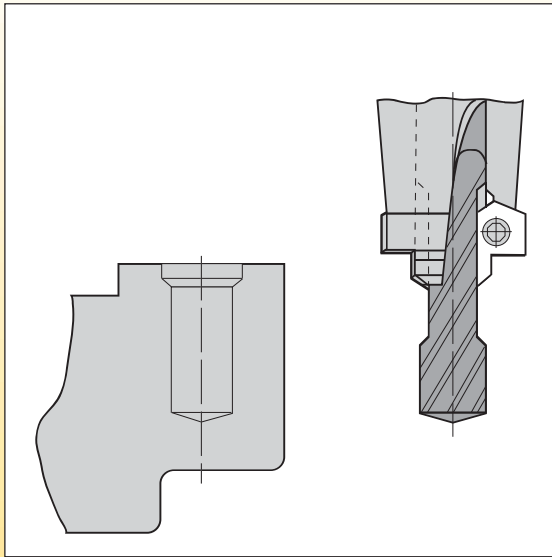
■ BF Insert R900 S(T)F • Semi-Finished

catalogue number	S	W1	CS5	KMF
3.41020R900STF	3,00	6,10	●	●
3.41220R900SF	3,50	10,10	●	●
3.41220R900STF	3,50	10,10	●	●

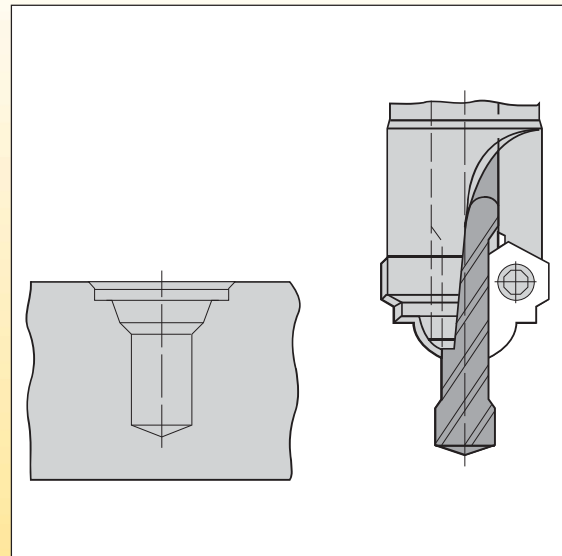
Engineered Solutions Available!



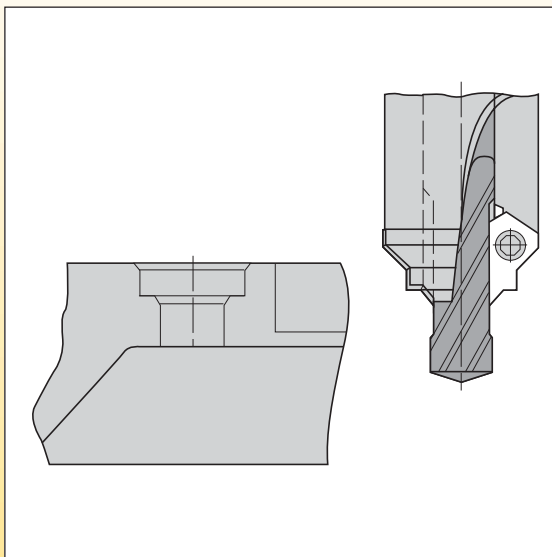
Tapped Hole with Protection Countersinking



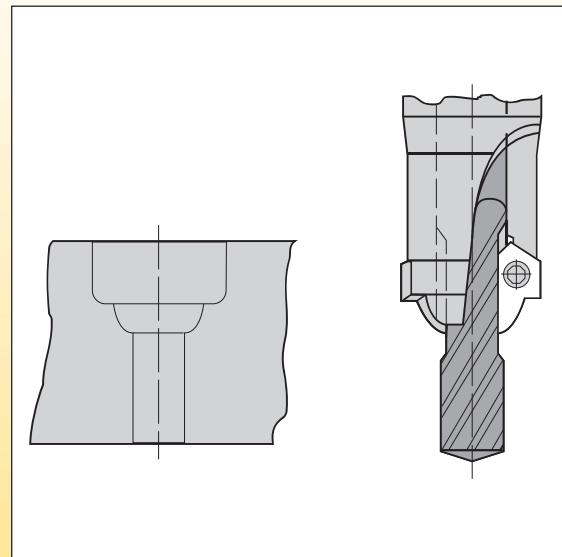
Countersinking for Round Sealing Rings



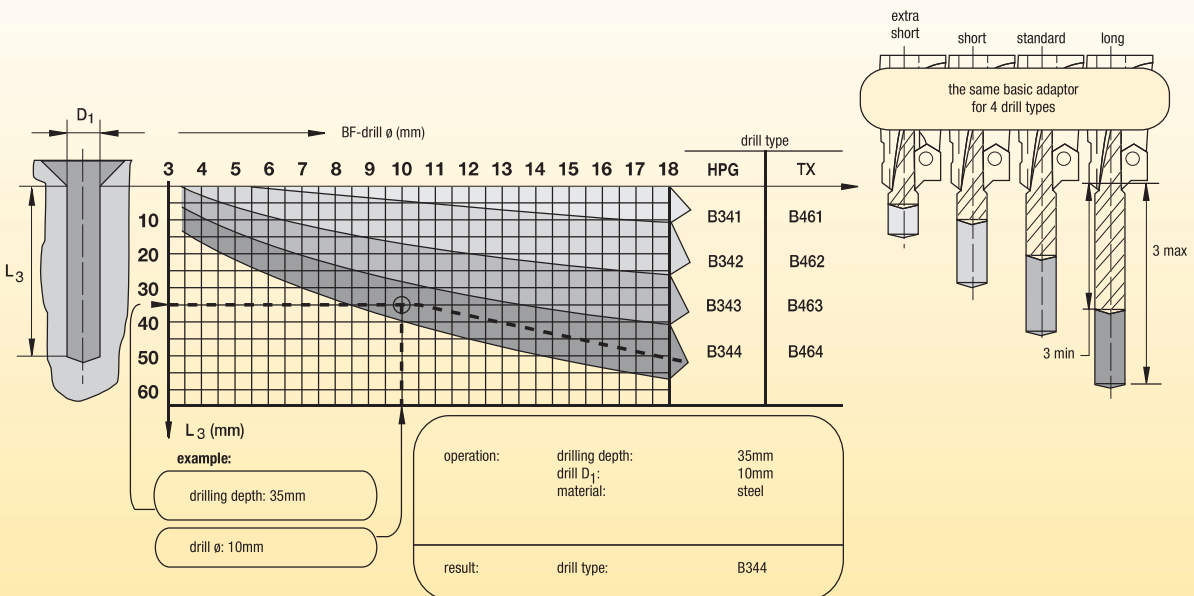
Countersinking for Countersunk Head Screws



Countersinking for Aluminium Rim



■ Possible Drilling Depths • Semi-Standard Series

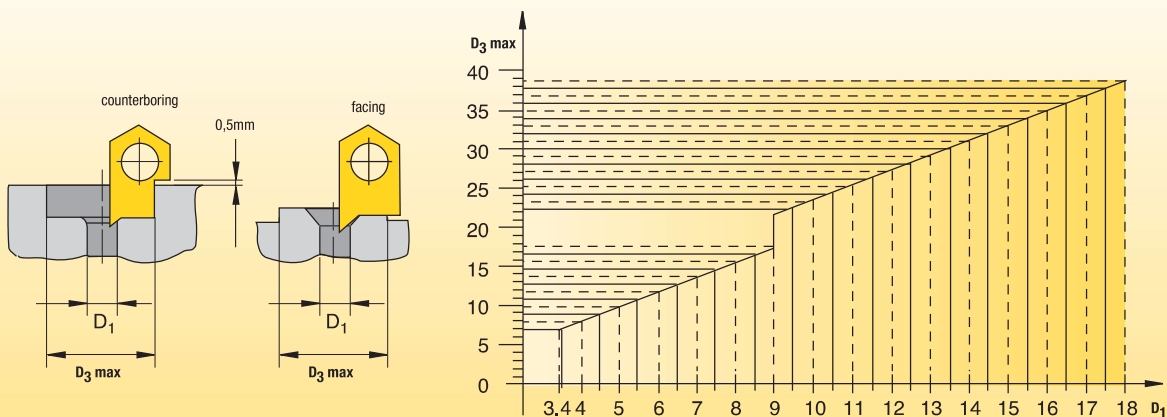


■ Possible Facing and Counterboring Diameters

90° insert blanks are available to grind special geometry forms for other multiprofile applications. Contact your local Kennametal Representative for special insert profile designs and quoting.

Use the table below to determine the maximum facing or counterboring diameter for a given BF drill diameter. Reference your chosen drill diameter across the bottom axis of the table and then read up and across to the left axis to find the maximum facing or counterboring diameter.

■ Possible Facing and Countersinking Diameter • Machining Steel



■ HP Drills • B343HPG Series • Grade KC7315™ • Through Coolant • Metric

		Cutting Speed – vc			Metric								
		Range – m/min			Recommended Feed Rate (f) by Diameter								
Material Group		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	18,0
	P	1	100	140	180	mm/r	0,07–0,16	0,08–0,19	0,10–0,23	0,13–0,29	0,15–0,33	0,17–0,37	0,19–0,44
2		90	115	140	mm/r	0,07–0,13	0,08–0,17	0,10–0,19	0,13–0,23	0,15–0,27	0,17–0,30	0,19–0,35	0,22–0,39
3		80	100	120	mm/r	0,10–0,16	0,11–0,19	0,13–0,23	0,16–0,29	0,19–0,33	0,21–0,37	0,25–0,44	0,28–0,49
4		70	90	110	mm/r	0,08–0,16	0,10–0,19	0,11–0,22	0,12–0,25	0,14–0,29	0,16–0,32	0,21–0,41	0,24–0,46
5		70	85	110	mm/r	0,07–0,12	0,08–0,14	0,10–0,16	0,12–0,20	0,14–0,23	0,16–0,26	0,18–0,31	0,21–0,34
K	1	100	120	140	mm/r	0,09–0,17	0,10–0,21	0,12–0,25	0,15–0,31	0,17–0,35	0,20–0,39	0,23–0,46	0,26–0,52
	2	80	105	130	mm/r	0,09–0,15	0,10–0,18	0,12–0,21	0,15–0,26	0,18–0,30	0,20–0,33	0,23–0,39	0,26–0,44
	3	70	85	100	mm/r	0,08–0,13	0,10–0,15	0,11–0,19	0,14–0,23	0,16–0,26	0,18–0,30	0,21–0,35	0,23–0,39

Combination Tools

➤ SEFAS™ Combination Drilling System

Primary Application

Combines centring, drilling, and chamfering into a single operation, increasing productivity by reducing cycle time and number of tool changes.

Achieve productivity gains by still using standard solid carbide or KenTIP™ drills. The SEFAS system provides full through coolant capabilities.



Features and Benefits

Productivity

- Reduce the number of tool changes and cycle time by combining drilling and countersinking into one operation.
- Achieve highest metal removal rates by applying an HP-style drill.
- Reduce inventory and avoid reconditioning by using KenTIP blades.
- Easily change tool within the machine by using KenTIP.

Versatility

- Any style of standard HP drill can be used for highest metal removal rates.
- Use TX drills to achieve excellent hole quality and tool life in non-ferrous materials.
- For increased accuracy and tool life, use the Kennametal hydraulic chuck recommended for cylindrical tool shanks.
- Range of insert styles for use in most workpiece materials.

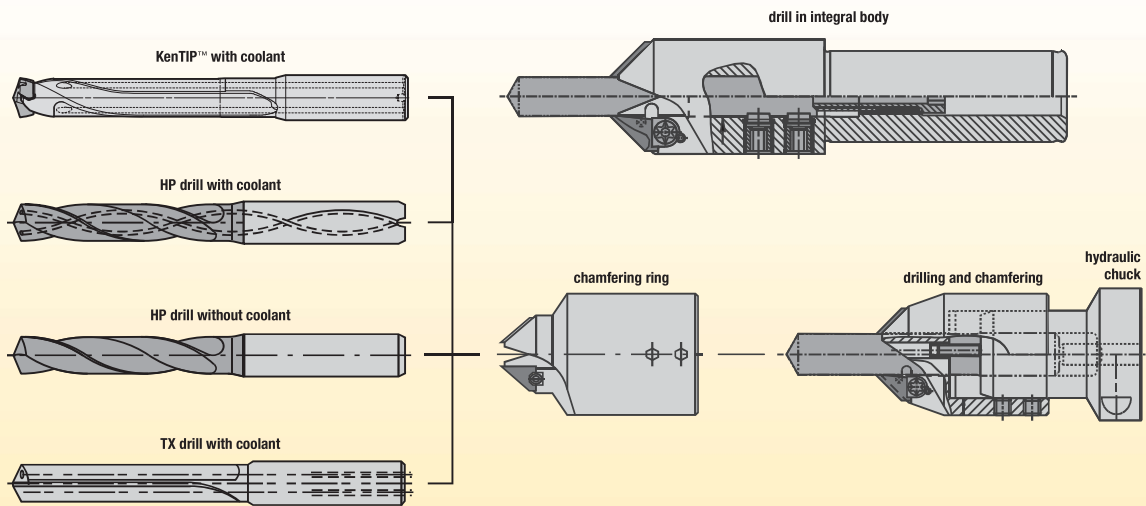
Reduce the number of tool changes and cycle time by combining drilling and countersinking into one operation.



Customisation

- Length variations available as engineered solutions.



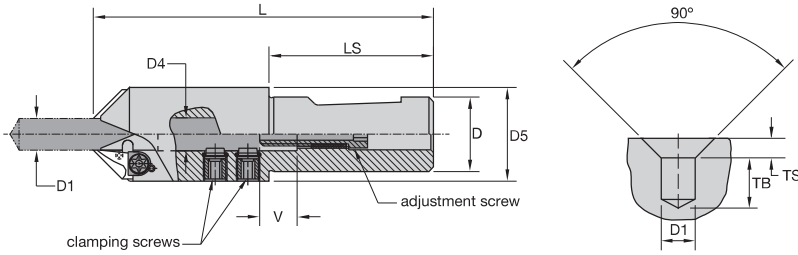


The SEFAS combination drilling system may be used in most workpiece materials. The design and flexibility of the system can be used with a wide variety of solid carbide drills.

Three types of SEFAS chamfering tools are offered: (1) integral bodies with a compact design that provides additional workpiece and work-holding clearance; (2) chamfering rings that may be mounted to Kennametal hydraulic chucks for optimal drill performance and increased productivity; and (3) high-performance HSK bodies (available as customised solutions) for new machine spindles and high-output applications.



- Drill body shipped with all screws, clamps, and wrenches.
- Order the inserts and drills separately.
- Two chamfer inserts required per body.



Combination Tools

■ 2° Whistle Notch (WN) Shank • For Use with Metric Drills • Metric

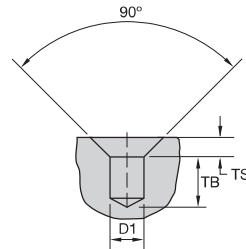
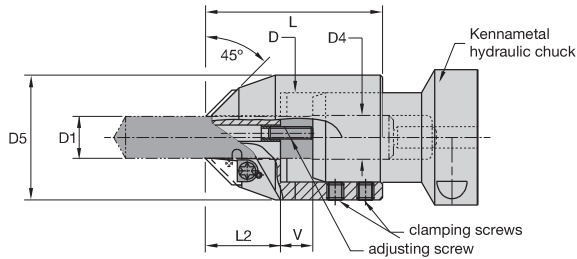


catalogue number	D1	D1 max	D	D4	D5	L	LS	V	gage insert	insert clamp	Torx wrench	drill clamp screw	adjusting screw
3.37060R720	4,000	6,0	20,0	6,0	24,0	102,0	52,0	18,0	3.42805..	360.550	170.024	360.630	360.510
3.37080R720	>6,000	8,0	20,0	8,0	26,0	108,0	52,0	18,0	3.42805..	360.550	170.024	360.634	360.510
3.37100R720	>8,000	10,0	20,0	10,0	29,0	122,0	52,0	17,0	3.42805..	360.550	170.024	360.631	360.510
3.37120R732	>10,000	12,0	32,0	12,0	38,0	133,0	62,0	21,0	3.42807..	360.551	170.025	360.635	360.513
3.37140R732	>12,000	14,0	32,0	14,0	40,0	137,0	62,0	16,0	3.42807..	360.551	170.025	360.636	360.511
3.37160R732	>14,000	16,0	32,0	16,0	41,5	141,0	62,0	19,0	3.42807..	360.551	170.025	360.632	360.511
3.37180R732	>16,000	18,0	32,0	18,0	47,0	144,0	62,0	15,0	3.42807..	360.551	170.025	360.633	360.511

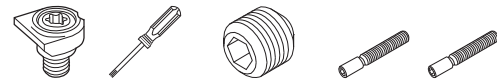
- Drill body shipped with all screws, clamps, and wrenches.
- Order the inserts and drills separately.
- Use only with hydraulic chucks.



Combination Tools



■ Chamfer Rings • For Use with Metric Kennametal Hydraulic Chucks • For Use with Inch or Metric Drills



catalogue number	D1	D1 max	D	D4	D5	L	L2	V	gage insert	insert clamp	Torx wrench	drill clamp screw	adjusting screw	adjusting screw
3.37526R006	4,000	6,0	25,70	6,00	38,00	49,50	21,00	5,00	3.42805..	360.550	170.024	190.195	—	192.057
3.37528R008	>6,000	8,0	27,70	8,00	40,00	50,00	21,00	6,00	3.42805..	360.550	170.024	190.195	190.371	—
3.37530R010	>8,000	10,0	29,70	10,00	41,50	56,50	22,00	8,00	3.42805..	360.550	170.024	190.195	193.113	—
3.37532R012	>10,000	12,0	31,60	12,00	48,00	68,00	29,00	12,00	3.42807..	360.551	170.025	190.076	193.114	—
3.37534R014	>12,000	14,0	33,60	14,00	50,00	70,50	29,00	12,00	3.42807..	360.551	170.025	190.076	193.114	—
3.37538R016	>14,000	16,0	37,60	16,00	54,00	78,00	32,00	12,00	3.42807..	360.551	170.025	190.076	193.115	—
3.37540R018	>16,000	18,0	39,60	18,00	56,00	80,50	34,00	15,00	3.42807..	360.551	170.025	190.076	193.116	—
3.37542R020	>18,000	20,0	41,60	20,00	58,00	82,50	35,00	15,00	3.42807..	360.551	170.025	190.076	193.116	—

■ Achievable Drilling (TB) and Sink Depths (TS)



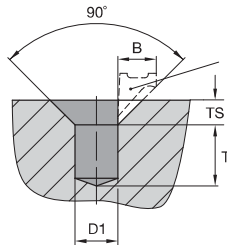
drill diameter D1	B210, B221, B224, B254, B284, B291, B707, B966, B976		B211, B222, B225, B285, B292, B411, B708, B977		B212, B256, B709, B978		B269		unalloyed and low-alloy steel; unalloyed and alloy steel, and cast iron, high-alloy steel and stainless steel		
	TB _{min}	TB _{max}	TB _{min}	TB _{max}	TB _{min}	TB _{max}	TB _{min}	TB _{max}	TS ₁₀₀	TS ₈₀	TS _{max}
4,0–4,7	4	17	12	29	20	36	45	62	1,2	1,8	2,5
>4,7–6,0	4	20	20	35	27	43	63	80	1,5	2,2	3,0
>6,0–7,0	11	24	23	40	32	49	71	88	2	3,0	4,0
>7,0–8,0	11	28	23	40	42	59	85	102	2,5	4,0	5,0
>8,0–10,0	13	29	27	43	46	62	109	125	2,5	4,0	5,0
>10,0–12,0	15	35	31	51	54	74	131	151	3,5	5,0	7,0
>12,0–14,0	21	36	38	53	69	84	160	175	4,0	6,0	8,0
>14,0–16,0	22	40	40	58	78	96	184	202	4,0	6,0	8,0
>16,0–18,0	31	45	51	65	93	107	213	227	4,0	6,0	8,0
>18,0–20,0	34	50	56	72	103	119	237	253	4,0	6,0	8,0

(continued)

(Achievable Drilling (TB) and Sink Depths (TS) — continued)

drill diameter D1	K210, K254, K284		K211, K222, K255, K285, K411		K212, K256		unalloyed and low-alloy steel, unalloyed and alloy steel, and cast iron, high-alloy steel and stainless steel		
	TB _{min}	TB _{max}	TB _{min}	TB _{max}	TB _{min}	TB _{max}	TS ₁₀₀	TS ₈₀	TS _{max}
.156–.250	not applicable (drill shank diameter > chamfer ring inside diameter), not applicable (metric ring and hydraulic chuck are not interchangeable)								
>.250–.313	not applicable (drill shank diameter > chamfer ring inside diameter), not applicable (metric ring and hydraulic chuck are not interchangeable)								
>.313–.375	.748	1.339	1.229	1.890	2.165	2.756	.098	.157	.197
>.375–.500	not applicable (drill shank diameter > chamfer ring inside diameter), not applicable (metric ring and hydraulic chuck are not interchangeable)								
>.500–.563	not applicable (drill shank diameter > chamfer ring inside diameter), not applicable (metric ring and hydraulic chuck are not interchangeable)								
>.563–.625	.906	1.732	1.614	2.441	3.110	3.937	.157	.236	.315
>.625–.709	not applicable (metric ring and hydraulic chuck are not interchangeable)								
>.709–.750	1.142	2.087	1.890	2.835	3.819	4.764	.157	.236	.315

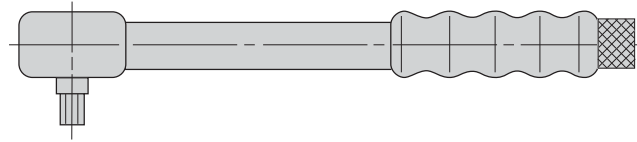
NOTE: TS₁₀₀: maximum sink depths at which the full feed values can be maintained during chamfering and sinking.
 TS₈₀: maximum sink depths that can be achieved without chipbreak cycles and at a 20% feed reduction.
 TS_{max}: maximum sink depths that can be achieved without chipbreak cycles and at a 50% feed reduction.
 When using SEFAS with GDrill™, please contact your Kennametal Representative for application support.



■ Achievable Drilling (T) and Sink Depths (TS) with KenTIP Tool Bodies

D1 mm	drilling depths (T) with SEFAS compact tools						drilling depths (T) with SEFAS chamfer rings						sink depths (TS)		
	T	T _{max}	T	T _{max}	T	T _{max}	T	T _{max}	T	T _{max}	T	T _{max}	TS ₁₀₀	TS ₈₀	TS _{max}
8,00–8,49	11	19	21	37	47	63	11	22	22	40	48	66	2,5	4,0	5,0
8,50–8,99	12	21	24	40	51	67	12	24	25	43	52	70	2,5	4,0	5,0
9,00–9,49	12	23	27	43	56	72	12	26	28	46	57	75	2,5	4,0	5,0
9,50–9,99	13	25	31	47	61	77	13	28	32	50	62	80	2,5	4,0	5,0
10,00–10,49	13	26	28	49	60	81	13	28	29	51	61	83	3,5	5,0	7,0
10,50–10,99	14	28	31	52	64	85	14	30	32	54	65	87	3,5	5,0	7,0
11,00–11,49	14	30	34	55	69	90	14	32	35	57	70	92	3,5	5,0	7,0
11,50–11,99	15	32	37	58	73	94	15	34	38	60	74	96	3,5	5,0	7,0
12,00–12,49	15	30	41	56	79	94	15	32	36	58	74	96	4,0	6,0	8,0
12,50–12,99	17	32	44	59	83	98	16	34	39	61	78	100	4,0	6,0	8,0
13,00–13,49	19	34	47	62	88	103	16	36	42	64	83	105	4,0	6,0	8,0
13,50–13,99	21	36	51	66	93	108	17	38	46	68	88	110	4,0	6,0	8,0
14,00–14,49	19	37	50	68	94	112	18	40	49	71	93	115	4,0	6,0	8,0
14,50–14,99	21	39	53	71	98	116	20	42	52	74	97	119	4,0	6,0	8,0
15,00–15,99	25	43	59	77	107	125	24	46	58	80	106	128	4,0	6,0	8,0
16,00–16,99	29	47	65	83	117	135	28	50	64	85	115	136	4,0	6,0	8,0
17,00–17,99	35	49	73	87	127	141	30	54	68	92	122	146	4,0	6,0	8,0
18,00–18,99	36	52	76	92	133	149	33	57	73	97	130	154	4,0	6,0	8,0
19,00–19,99	40	56	82	98	142	158	37	61	79	103	139	163	4,0	6,0	8,0

NOTE: TS₁₀₀: maximum sink depths at which the full feed values can be maintained during chamfering and sinking.
 TS₈₀: maximum sink depths that can be achieved without chipbreak cycles and at a 20% feed reduction.
 TS_{max}: maximum sink depths that can be achieved without chipbreak cycles and at a 50% feed reduction.
 T: minimum drilling depth that can be achieved due to the protruded length of the drill.
 T_{max}: maximum drilling depth that can be achieved due to the protruded length of the drill.

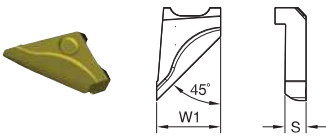


Torque Wrench • Metric

Combination Tools



drill diameter D1	torque wrench	tightening torque Nm	SW	drill clamp screw	wrench adaptor
4,0–6,0	170.190	7	3	360.630	170.240
>6,0–8,0	170.190	8	3	360.635	170.240
>8,0–10,0	170.190	10	4	360.631	170.232
>10,0–12,0	170.190	15	4	360.635	170.232
>12,0–14,0	170.190	20	5	360.636	170.233
>14,0–16,0	170.190	30	5	360.632	170.233
>16,0–18,0	170.190	45	6	360.633	170.234
>18,0–20,0	170.190	45	6	360.637	170.234



● first choice
○ alternate choice

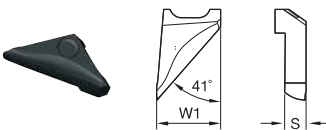
P	●			
M	●			
K	●	●	●	
N	●	●	●	
S	●	●	●	
H	●	●	●	

SEFAS Chamfering Inserts for Solid Carbide Drills • 45°

catalogue number	angle	S	W1	CS5	KC7215	KMF
3.42805R001	45	2,83	8,00	●	●	●
3.42807R001	45	3,98	12,00	●	●	●



Combination Tools

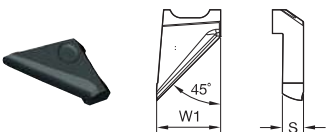


● first choice
○ alternate choice

P	●			
M	●			
K	●	●	●	
N	●	●	●	
S	●	●	●	
H	●	●	●	

SEFAS Chamfering Inserts for Solid Carbide Drills • 41°

catalogue number	angle	S	W1	KC7215
3.42805R081	41	2,83	8,00	●
3.42807R081	41	3,98	12,00	●



● first choice
○ alternate choice

P	●			
M	●	●	●	
K	●	●	●	
N	●	●	●	
S	●	●	●	
H	●	●	●	

SEFAS Chamfering Inserts for KentIP™ Drills • 45°

catalogue number	angle	S	W1	CS5	KC7015	KC7215	KC7315	KMF
3.42805R001	45	2,83	8,00	●	-	●	-	●
3.42805R021	45	2,83	8,00	-	●	●	-	●
3.42807R001	45	3,98	12,00	●	-	●	-	●
3.42807R021	45	3,98	12,00	-	●	●	-	●