



# MASTER CATALOG 2018

VOLUME TWO | **ROTATING TOOLS**



HOLEMAKING | TAPPING | SOLID END MILLING | INDEXABLE MILLING

# ➤ Combination Tools

Combination drilling tools are customizable using standard components and combine centering, 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-centering 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 centering, 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

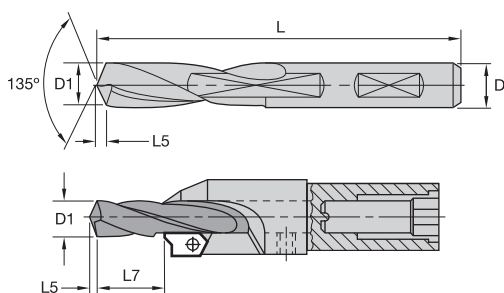
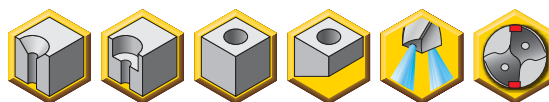
- Choose between solid carbide drills and KenTIP drill bodies.
- Various grades and insert styles.
- Flexible modular system for adjusting the drill length or insert style to manufacture different geometries.

## Choose between solid carbide drills and KenTIP™ drill bodies.



### Customization

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



Combination Tools

**B343\_HPG**



● first choice  
○ alternate choice

KC7315	D1				D		L		L7 min		L7 max		L5	
	in	mm	fraction	wire size	mm	in	mm	in	mm	in	mm	in	mm	in
B343S03175HPG	.125	3,18	1/8	—	4	.158	55	2,2	1,0	.039	8,6	.339	0,60	.024
B343S03400HPG	.134	3,40	—	—	4	.158	55	2,2	1,0	.039	10,0	.394	0,63	.025
B343S03500HPG	.138	3,50	—	—	4	.158	55	2,2	1,6	.063	10,6	.417	0,65	.025
B343S03797HPG *	.150	3,80	—	25	4	.158	55	2,2	3,3	.130	12,3	.484	0,70	.028
B343S03800HPG	.150	3,80	—	—	4	.158	55	2,2	3,3	.130	12,3	.484	0,70	.028
B343S03970HPG	.156	3,97	5/32	—	4	.158	55	2,2	4,2	.165	13,2	.520	0,73	.029
B343S04000HPG	.158	4,00	—	—	4	.158	55	2,2	4,4	.173	13,4	.528	0,74	.029
B343S04100HPG	.161	4,10	—	—	5	.197	62	2,4	3,7	.146	13,7	.539	0,76	.030
B343S04200HPG	.165	4,20	—	—	5	.197	62	2,4	4,2	.165	14,2	.559	0,78	.031
B343S04300HPG	.169	4,30	—	—	5	.197	62	2,4	4,7	.185	14,7	.579	0,79	.031
B343S04500HPG	.177	4,50	—	—	5	.197	62	2,4	5,6	.221	15,6	.614	0,83	.033
B343S04600HPG *	.181	4,60	—	—	5	.197	62	2,4	5,8	.228	15,8	.622	0,85	.033
B343S04623HPG	.182	4,62	—	14	5	.197	62	2,4	5,9	.232	15,9	.626	0,85	.034
B343S04763HPG	.188	4,76	3/16	—	5	.197	62	2,4	6,6	.260	16,6	.654	0,88	.035
B343S04900HPG *	.193	4,90	—	—	5	.197	62	2,4	7,2	.284	17,2	.677	0,90	.036
B343S05000HPG	.197	5,00	—	—	5	.197	62	2,4	7,6	.299	17,6	.693	0,92	.036
B343S05100HPG	.201	5,10	—	—	6	.236	66	2,6	6,8	.268	17,8	.701	0,94	.037
B343S05200HPG	.205	5,20	—	—	6	.236	66	2,6	7,2	.284	18,2	.717	0,96	.038
B343S05300HPG	.209	5,30	—	—	6	.236	66	2,6	7,6	.299	18,6	.732	0,98	.039
B343S05400HPG	.213	5,40	—	—	6	.236	66	2,6	8,0	.315	19,0	.748	1,00	.039
B343S05410HPG	.213	5,41	—	—	6	.236	66	2,6	8,0	.315	19,0	.748	1,00	.039
B343S05500HPG	.217	5,50	—	—	6	.236	66	2,6	8,4	.331	19,4	.764	1,02	.040
B343S05550HPG	.219	5,55	—	—	6	.236	66	2,6	8,3	.327	19,3	.760	1,02	.040
B343S05558HPG *	.219	5,56	7/32	—	6	.236	66	2,6	8,4	.331	19,4	.764	1,03	.040
B343S05600HPG	.221	5,60	—	—	6	.236	66	2,6	8,5	.335	19,5	.768	1,03	.041
B343S05800HPG	.228	5,80	—	—	6	.236	66	2,6	9,3	.366	20,3	.799	1,07	.042
B343S06000HPG	.236	6,00	—	—	6	.236	66	2,6	10,0	.394	21,0	.827	1,11	.044
B343S06100HPG	.240	6,10	—	—	7	.276	74	2,9	9,1	.358	21,1	.831	1,13	.044
B343S06200HPG	.244	6,20	—	—	7	.276	74	2,9	9,5	.374	21,5	.847	1,14	.045
B343S06300HPG	.248	6,30	—	—	7	.276	74	2,9	9,8	.386	21,8	.858	1,16	.046
B343S06350HPG	.250	6,35	1/4	—	7	.276	74	2,9	10,0	.394	22,0	.866	1,17	.046
B343S06400HPG	.252	6,40	—	—	7	.276	74	2,9	10,2	.402	22,2	.874	1,18	.047
B343S06500HPG	.256	6,50	—	—	7	.276	74	2,9	10,5	.413	22,5	.886	1,20	.047
B343S06528HPG	.257	6,53	—	F	7	.276	74	2,9	10,6	.417	22,6	.890	1,21	.047
B343S06600HPG	.260	6,60	—	—	7	.276	74	2,9	10,9	.429	22,9	.902	1,22	.048
B343S06700HPG	.264	6,70	—	—	7	.276	74	2,9	11,2	.441	23,2	.913	1,24	.049

(continued)

(B343\_HPG – continued)



● first choice  
○ alternate choice

KC7315	D1				D		L		L7 min		L7 max		L5	
	in	mm	fraction	wire size	mm	in	mm	in	mm	in	mm	in	mm	in
B343S06746HPG	.266	6,75	17/64	—	7	.276	74	2.9	11,4	.449	23,4	.921	1,25	.049
B343S06800HPG	.268	6,80	—	—	7	.276	74	2.9	11,5	.453	23,5	.925	1,26	.049
B343S06900HPG	.272	6,90	—	—	7	.276	74	2.9	11,9	.469	23,9	.941	1,27	.050
B343S07000HPG	.276	7,00	—	—	7	.276	74	2.9	12,2	.480	24,2	.953	1,29	.051
B343S07145HPG	.281	7,14	9/32	—	8	.315	79	3.1	11,1	.437	24,1	.949	1,32	.052
B343S07300HPG	.287	7,30	—	—	8	.315	79	3.1	11,6	.457	24,6	.969	1,35	.053
B343S07400HPG	.291	7,40	—	—	8	.315	79	3.1	11,9	.469	24,9	.980	1,37	.054
B343S07500HPG	.295	7,50	—	—	8	.315	79	3.1	12,3	.484	25,3	.996	1,38	.055
B343S07541HPG *	.297	7,54	19/64	—	8	.315	79	3.1	12,4	.488	25,4	1.000	1,39	.055
B343S07800HPG	.307	7,80	—	—	8	.315	79	3.1	13,2	.520	26,2	1.032	1,44	.057
B343S07900HPG	.311	7,90	—	—	8	.315	79	3.1	13,5	.532	26,5	1.043	1,46	.057
B343S07938HPG	.313	7,94	5/16	—	8	.315	79	3.1	13,6	.535	26,6	1.047	1,47	.058
B343S08000HPG	.315	8,00	—	—	8	.315	79	3.1	13,8	.543	26,8	1.055	1,48	.058
B343S08100HPG	.319	8,10	—	—	9	.354	84	3.3	12,6	.496	26,6	1.047	1,50	.059
B343S08200HPG	.323	8,20	—	—	9	.354	84	3.3	12,8	.504	26,8	1.055	1,51	.060
B343S08300HPG	.327	8,30	—	—	9	.354	84	3.3	13,1	.516	27,1	1.067	1,53	.060
B343S08334HPG *	.328	8,33	21/64	—	9	.354	84	3.3	13,2	.520	27,2	1.071	1,54	.061
B343S08400HPG	.331	8,40	—	—	9	.354	84	3.3	13,4	.528	27,4	1.079	1,55	.061
B343S08433HPG *	.332	8,43	—	Q	9	.354	84	3.3	13,5	.532	27,5	1.083	1,56	.061
B343S08500HPG	.335	8,50	—	—	9	.354	84	3.3	13,7	.539	27,7	1.091	1,57	.062
B343S08600HPG	.339	8,60	—	—	9	.354	84	3.3	14,0	.551	28,0	1.102	1,59	.063
B343S08700HPG	.343	8,70	—	—	9	.354	84	3.3	14,3	.563	28,3	1.114	1,61	.063
B343S08733HPG *	.344	8,73	11/32	—	9	.354	84	3.3	14,4	.567	28,4	1.118	1,61	.064
B343S08800HPG	.347	8,80	—	—	9	.354	84	3.3	14,5	.571	28,5	1.122	1,62	.064
B343S09000HPG	.354	9,00	—	—	9	.354	84	3.3	15,1	.595	29,1	1.146	1,66	.065
B343S09100HPG	.358	9,10	—	—	10	.394	89	3.5	14,3	.563	28,8	1.134	1,68	.066
B343S09347HPG	.368	9,35	—	U	10	.394	89	3.5	15,0	.591	29,5	1.161	1,73	.068
B343S09400HPG *	.370	9,40	—	—	10	.394	89	3.5	15,1	.595	29,6	1.165	1,74	.068
B343S09500HPG *	.374	9,50	—	—	10	.394	89	3.5	15,4	.606	29,9	1.177	1,75	.069
B343S09525HPG *	.375	9,53	3/8	—	10	.394	89	3.5	15,4	.606	29,9	1.177	1,76	.069
B343S09700HPG *	.382	9,70	—	—	10	.394	89	3.5	15,9	.626	30,4	1.197	1,79	.071
B343S09800HPG	.386	9,80	—	—	10	.394	89	3.5	16,2	.638	30,7	1.209	1,81	.071
B343S09921HPG *	.391	9,92	25/64	—	10	.394	89	3.5	16,5	.650	31,0	1.221	1,83	.072
B343S10000HPG	.394	10,00	—	—	10	.394	89	3.5	16,7	.658	31,2	1.228	1,85	.073
B343S10100HPG	.398	10,10	—	—	11	.433	95	3.7	15,9	.630	30,9	1.220	1,86	.073
B343S10200HPG	.402	10,20	—	—	11	.433	95	3.7	16,2	.638	31,2	1.228	1,88	.074
B343S10300HPG	.406	10,30	—	—	11	.433	95	3.7	16,4	.646	31,4	1.236	1,90	.075
B343S10320HPG	.406	10,32	13/32	—	11	.433	95	3.7	16,5	.650	31,5	1.240	1,91	.075
B343S10400HPG	.409	10,40	—	—	11	.433	95	3.7	16,7	.658	31,7	1.248	1,92	.076
B343S10500HPG	.413	10,50	—	—	11	.433	95	3.7	16,9	.665	31,9	1.256	1,94	.076
B343S10600HPG	.417	10,60	—	—	11	.433	95	3.7	17,2	.677	32,2	1.268	1,96	.077
B343S10700HPG	.421	10,70	—	—	11	.433	95	3.7	17,4	.685	32,4	1.276	1,98	.078
B343S10710HPG	.422	10,71	27/64	—	11	.433	95	3.7	17,4	.685	32,4	1.276	1,98	.078
B343S10800HPG	.425	10,80	—	—	11	.433	95	3.7	17,7	.697	32,7	1.287	1,99	.079
B343S11000HPG	.433	11,00	—	—	11	.433	95	3.7	18,1	.713	33,1	1.303	2,03	.080
B343S11100HPG	.437	11,10	—	—	12	.472	102	4.0	17,4	.685	32,9	1.295	2,05	.081
B343S11110HPG	.438	11,11	7/16	—	12	.472	102	4.0	17,4	.685	32,9	1.295	2,05	.081
B343S11200HPG *	.441	11,20	—	—	12	.472	102	4.0	17,6	.693	33,1	1.303	2,07	.081
B343S11300HPG *	.445	11,30	—	—	12	.472	102	4.0	17,9	.705	33,4	1.315	2,09	.082
B343S11500HPG	.453	11,50	—	—	12	.472	102	4.0	18,3	.721	33,8	1.331	2,12	.084
B343S11508HPG *	.453	11,51	29/64	—	12	.472	102	4.0	18,3	.721	33,8	1.331	2,12	.084
B343S11700HPG	.461	11,70	—	—	12	.472	102	4.0	18,8	.740	34,3	1.350	2,16	.085

(continued)

(B343\_HPG – continued)



● first choice  
○ alternate choice

Combination Tools

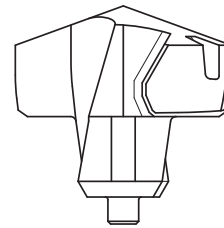
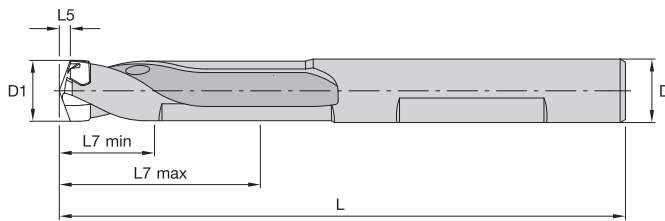
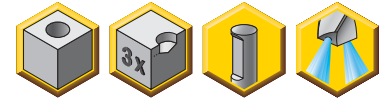
KC7315	D1				D		L		L7 min		L7 max		L5	
	in	mm	fraction	wire size	mm	in	mm	in	mm	in	mm	in	mm	in
B343S11800HPG	.465	11,80	—	—	12	.472	102	4.0	19,0	.748	34,5	1.358	2,18	.086
B343S11900HPG	.469	11,90	15/32	—	12	.472	102	4.0	19,3	.760	34,8	1.370	2,20	.087
B343S12000HPG	.472	12,00	—	—	12	.472	102	4.0	19,5	.768	35,0	1.378	2,22	.087
B343S12200HPG	.480	12,20	—	—	13	.512	102	4.0	18,9	.744	34,9	1.374	2,25	.073
B343S12500HPG	.492	12,50	—	—	13	.512	102	4.0	19,6	.772	35,6	1.400	2,31	.089
B343S12700HPG *	.500	12,70	1/2	—	13	.512	102	4.0	20,1	.791	36,1	1.421	2,34	.091
B343S12800HPG	.504	12,80	—	—	13	.512	102	4.0	20,3	.799	36,3	1.429	2,36	.092
B343S13000HPG	.512	13,00	—	—	13	.512	102	4.0	20,7	.815	36,7	1.445	2,40	.093
B343S13200HPG	.520	13,20	—	—	14	.551	107	4.2	20,4	.803	36,9	1.453	2,44	.096
B343S13500HPG	.532	13,50	—	—	14	.551	107	4.2	21,1	.831	37,6	1.480	2,49	.098
B343S14000HPG	.551	14,00	—	—	14	.551	107	4.2	22,1	.870	38,6	1.520	2,58	.102
B343S14200HPG	.559	14,20	—	—	15	.591	111	4.4	21,5	.847	38,5	1.516	2,62	.103
B343S14280HPG	.563	14,28	9/16	—	15	.591	111	4.4	21,7	.854	38,7	1.524	2,64	.104
B343S15000HPG	.591	15,00	—	—	15	.591	111	4.4	23,2	.913	40,2	1.583	2,77	.109
B343S15500HPG	.610	15,50	—	—	16	.630	115	4.5	23,2	.913	40,7	1.602	2,86	.113
B343S15870HPG	.625	15,87	5/8	—	16	.630	115	4.5	23,9	.941	41,4	1.630	2,93	.115
B343S16000HPG	.630	16,00	—	—	16	.630	115	4.5	24,2	.953	41,7	1.642	2,95	.116
B343S16500HPG	.650	16,50	—	—	17	.669	115	4.5	24,2	.953	42,2	1.661	3,05	.120
B343S16670HPG *	.656	16,67	21/32	—	17	.669	115	4.5	24,5	.965	42,5	1.673	3,08	.121
B343S17000HPG	.669	17,00	—	—	17	.669	115	4.5	25,1	.988	43,1	1.697	3,14	.124
B343S17500HPG	.689	17,50	—	—	18	.709	117	4.6	25,1	.988	43,6	1.717	3,23	.127
B343S17700HPG	.697	17,70	—	—	18	.709	117	4.6	25,5	1.004	44,0	1.732	3,27	.129
B343S18000HPG	.709	18,00	—	—	18	.709	117	4.6	26,0	1.024	44,5	1.752	3,32	.131

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

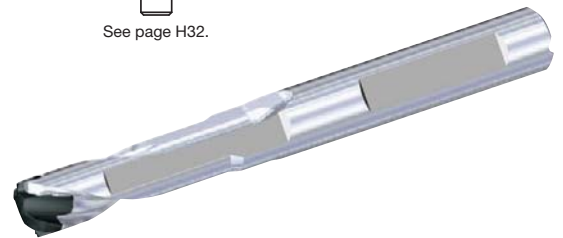
Tolerance			
D1	tolerance h7	D	tolerance h6
>3-6	0,000/-0,012	6	0,000/-0,008
>6-10	0,000/-0,016	8-10	0,000/-0,009
>10-18	0,000/-0,018	12-18	0,000/-0,011



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



See page H32.

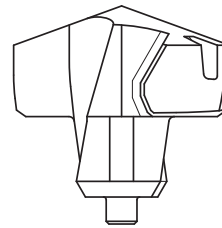
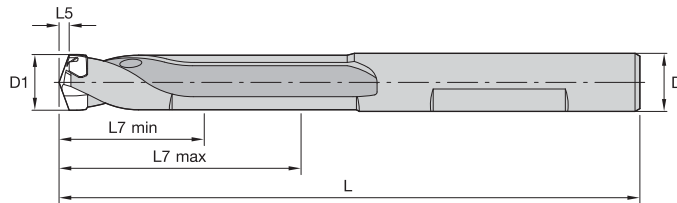
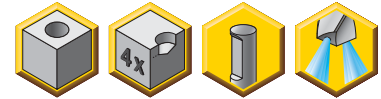


Combination Tools

**KenTIP • 3 x D • Metric**

catalog number	D1		D1 max		D		L		L7 min		L7 max		L5		insert blade seat size
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
KTIP080R3BF08M	8,00	.315	8,50	.335	8,0	.315	80,0	3.150	11,5	.453	25,5	1.004	1,4	.055	F
KTIP080R3BF09M	8,00	.315	8,50	.335	9,0	.354	81,0	3.189	11,5	.453	25,5	1.004	1,4	.055	F
KTIP085R3BF09M	8,50	.335	9,00	.354	9,0	.354	82,0	3.228	12,5	.492	27,0	1.063	1,5	.059	G
KTIP090R3BF09M	9,00	.354	9,50	.374	9,0	.354	82,0	3.228	13,5	.532	28,5	1.122	1,6	.063	H
KTIP090R3BF10M	9,00	.354	9,50	.374	10,0	.394	91,0	3.583	13,5	.532	28,5	1.122	1,6	.063	H
KTIP095R3BF10M	9,50	.374	10,00	.394	10,0	.394	92,0	3.622	15,0	.591	30,0	1.181	1,6	.063	I
KTIP100R3BF10M	10,00	.394	10,50	.413	10,0	.394	93,0	3.661	16,0	.630	31,5	1.240	1,7	.067	J
KTIP100R3BF11M	10,00	.394	10,50	.413	11,0	.433	94,0	3.701	16,0	.630	31,5	1.240	1,7	.067	J
KTIP105R3BF11M	10,50	.413	11,00	.433	11,0	.433	94,0	3.701	17,0	.669	33,0	1.299	1,8	.071	K
KTIP110R3BF11M	11,00	.433	11,50	.453	11,0	.433	96,0	3.780	18,5	.728	34,5	1.358	1,9	.075	L
KTIP110R3BF12M	11,00	.433	11,50	.453	12,0	.472	106,0	4.173	18,5	.728	34,5	1.358	1,9	.075	L
KTIP115R3BF12M	11,50	.453	12,00	.472	12,0	.472	107,0	4.213	19,5	.768	36,0	1.417	2,0	.079	M
KTIP120R3BF12M	12,00	.472	12,50	.492	12,0	.472	108,0	4.252	20,5	.787	37,5	1.476	2,1	.083	N
KTIP120R3BF13M	12,00	.472	12,50	.492	13,0	.512	108,0	4.252	20,5	.787	37,5	1.476	2,1	.083	N
KTIP125R3BF13M	12,50	.492	13,00	.512	13,0	.512	110,0	4.331	22,0	.866	39,0	1.535	2,2	.087	O
KTIP130R3BF13M	13,00	.512	13,50	.532	13,0	.512	111,0	4.370	23,0	.906	40,5	1.595	2,2	.087	P
KTIP130R3BF14M	13,00	.512	13,50	.532	14,0	.551	111,0	4.370	23,0	.906	40,5	1.595	2,2	.087	P
KTIP135R3BF14M	13,50	.532	14,00	.551	14,0	.551	112,0	4.409	24,5	.965	42,0	1.654	2,3	.091	Q
KTIP140R3BF14M	14,00	.551	14,50	.571	14,0	.551	113,0	4.449	25,5	1.000	43,5	1.713	2,4	.095	R
KTIP140R3BF15M	14,00	.551	14,50	.571	15,0	.591	118,0	4.646	25,5	1.004	43,5	1.713	2,4	.095	R
KTIP145R3BF15M	14,50	.571	15,00	.591	15,0	.591	118,0	4.646	26,5	1.043	45,0	1.772	2,5	.098	S
KTIP150R3BF15M	15,00	.591	16,00	.630	15,0	.591	121,0	4.764	29,0	1.142	48,0	1.890	2,6	.102	T
KTIP150R3BF16M	15,00	.591	16,00	.630	16,0	.630	121,0	4.764	29,0	1.142	48,0	1.890	2,6	.102	T
KTIP160R3BF16M	16,00	.630	17,00	.669	16,0	.630	123,0	4.843	31,5	1.240	51,0	2.008	2,8	.110	U
KTIP160R3BF17M	16,00	.630	17,00	.669	17,0	.669	124,0	4.882	31,5	1.240	51,0	2.008	2,8	.110	U
KTIP170R3BF17M	17,00	.669	18,00	.709	17,0	.669	127,0	5.000	34,0	1.339	54,0	2.126	2,9	.120	V
KTIP170R3BF18M	17,00	.669	18,00	.709	18,0	.709	127,0	5.000	34,0	1.339	54,0	2.126	2,9	.115	V
KTIP180R3BF18M	18,00	.709	19,00	.748	18,0	.709	130,0	5.118	36,5	1.437	57,0	2.244	3,1	.122	W

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



See page H32.

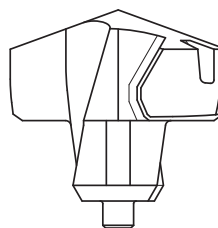
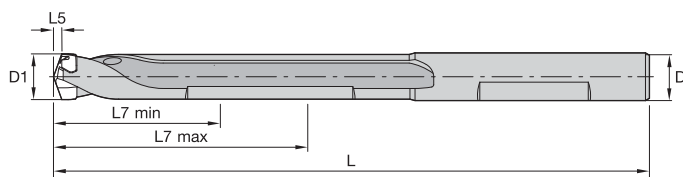
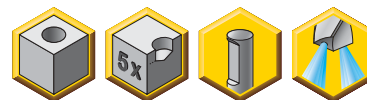


Combination Tools

## ■ KenTIP • 4 x D • Metric

catalog number	D1		D1 max		D		L		L7 min		L7 max		L5		insert blade seat size
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
KTIP080R4BF09M	8,00	.315	8,50	.335	9,0	.354	89,5	3.524	20,0	.787	34,0	1.339	1,4	.054	F
KTIP085R4BF09M	8,50	.335	9,00	.354	9,0	.354	91,0	3.583	21,5	.847	36,0	1.417	1,5	.058	G
KTIP090R4BF10M	9,00	.354	9,50	.374	10,0	.394	100,5	3.957	23,0	.906	38,0	1.496	1,6	.061	H
KTIP095R4BF10M	9,50	.374	10,00	.394	10,0	.394	102,0	4.016	25,0	.984	40,0	1.575	1,6	.065	I
KTIP100R4BF11M	10,00	.394	10,50	.413	11,0	.433	104,5	4.114	26,5	1.043	42,0	1.654	1,7	.068	J
KTIP105R4BF11M	10,50	.413	11,00	.433	11,0	.433	105,0	4.134	28,0	1.102	44,0	1.732	1,8	.071	K
KTIP110R4BF12M	11,00	.433	11,50	.453	12,0	.472	117,5	4.626	30,0	1.181	46,0	1.811	1,9	.075	L
KTIP115R4BF12M	11,50	.453	12,00	.472	12,0	.472	119,0	4.685	31,5	1.240	48,0	1.890	2,0	.078	M
KTIP120R4BF13M	12,00	.472	12,50	.492	13,0	.512	120,5	4.744	33,0	1.299	50,0	1.969	2,1	.083	N
KTIP125R4BF13M	12,50	.492	13,00	.512	13,0	.512	123,0	4.843	35,0	1.378	52,0	2.047	2,2	.087	O
KTIP130R4BF14M	13,00	.512	13,50	.532	14,0	.551	124,5	4.902	36,5	1.437	54,0	2.126	2,2	.087	P
KTIP135R4BF14M	13,50	.532	14,00	.551	14,0	.551	126,0	4.961	38,5	1.516	56,0	2.205	2,3	.091	Q
KTIP140R4BF15M	14,00	.551	14,50	.571	15,0	.591	132,5	5.217	40,0	1.575	58,0	2.284	2,4	.095	R
KTIP145R4BF15M	14,50	.571	15,00	.591	15,0	.591	133,0	5.236	41,5	1.634	60,0	2.362	2,5	.098	S
KTIP150R4BF16M	15,00	.591	16,00	.630	16,0	.630	137,0	5.394	45,0	1.772	64,0	2.520	2,6	.102	T
KTIP160R4BF17M	16,00	.630	17,00	.669	17,0	.669	141,0	5.551	48,5	1.909	68,0	2.677	2,8	.110	U
KTIP170R4BF18M	17,00	.669	18,00	.709	18,0	.709	145,0	5.709	52,0	2.047	72,0	2.835	2,9	.115	V
KTIP180R4BF18M	18,00	.709	19,00	.748	18,0	.709	149,0	5.866	55,5	2.185	76,0	2.992	3,1	.122	W

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



See page H32.

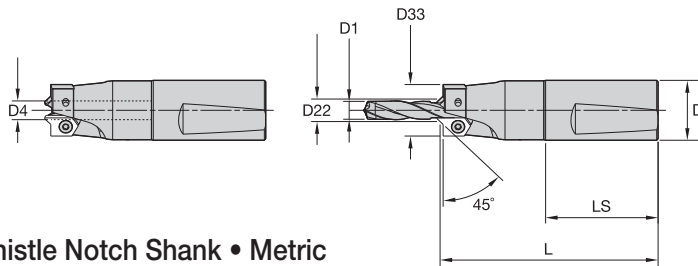


Combination Tools

**■ KenTIP • 5 x D • Metric**

catalog number	D1		D1 max		D		L		L7 min		L7 max		L5		insert blade seat size
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
KTIP080R5BF09M	8,00	.315	8,50	.335	9,0	.354	98,0	3.858	28,5	1.122	42,5	1.673	1,4	.054	F
KTIP085R5BF09M	8,50	.335	9,00	.354	9,0	.354	100,0	3.937	30,5	1.201	45,0	1.772	1,5	.059	G
KTIP090R5BF10M	9,00	.354	9,50	.374	10,0	.394	110,0	4.331	32,5	1.280	47,5	1.870	1,6	.061	H
KTIP095R5BF10M	9,50	.374	10,00	.394	10,0	.394	112,0	4.409	35,0	1.378	50,0	1.969	1,6	.065	I
KTIP100R5BF11M	10,00	.394	10,50	.413	11,0	.433	115,0	4.528	37,0	1.457	52,5	2.067	1,7	.068	J
KTIP105R5BF11M	10,50	.413	11,00	.433	11,0	.433	116,0	4.567	39,0	1.535	55,0	2.165	1,8	.071	K
KTIP110R5BF12M	11,00	.433	11,50	.453	12,0	.473	129,0	5.079	41,5	1.634	57,5	2.264	1,9	.075	L
KTIP115R5BF12M	11,50	.453	12,00	.472	12,0	.473	131,0	5.158	43,5	1.713	60,0	2.362	2,0	.078	M
KTIP120R5BF13M	12,00	.472	12,50	.492	13,0	.512	133,0	5.236	45,5	1.791	62,5	2.461	2,1	.083	N
KTIP125R5BF13M	12,50	.492	13,00	.512	13,0	.512	136,0	5.354	48,0	1.890	65,0	2.559	2,2	.087	O
KTIP130R5BF14M	13,00	.512	13,50	.532	14,0	.551	138,0	5.433	50,0	1.969	67,5	2.658	2,2	.087	P
KTIP135R5BF14M	13,50	.532	14,00	.551	14,0	.551	140,0	5.512	52,5	2.067	70,0	2.756	2,3	.091	Q
KTIP140R5BF15M	14,00	.551	14,50	.571	15,0	.591	147,0	5.787	54,5	2.146	72,5	2.854	2,4	.095	R
KTIP145R5BF15M	14,50	.571	15,00	.591	15,0	.591	148,0	5.827	56,5	2.244	75,0	2.953	2,5	.098	S
KTIP150R5BF16M	15,00	.591	16,00	.630	16,0	.630	153,0	6.024	61,0	2.402	80,0	3.150	2,6	.102	T
KTIP160R5BF17M	16,00	.630	17,00	.669	17,0	.669	158,0	6.221	65,5	2.579	85,0	3.347	2,8	.110	U
KTIP170R5BF18M	17,00	.669	18,00	.709	18,0	.709	163,0	6.417	70,0	2.756	90,0	3.543	2,9	.115	V
KTIP180R5BF18M	18,00	.709	19,00	.748	18,0	.709	168,0	6.614	74,5	2.933	95,0	3.740	3,1	.122	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.



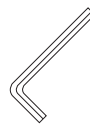
■ Round Shank • 2° Whistle Notch Shank • Metric



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.

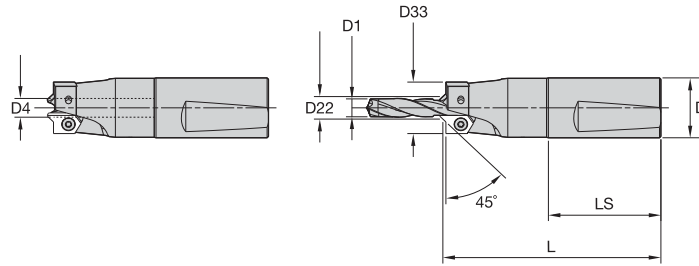
■ Spare Parts



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.

- Drill body shipped with all screws and wrenches.
- Order the inserts and drills separately.
- Drills up to and including .359" shanks use only one insert.



■ Round Shank • Inch



catalog number	D1	D1 max	D4	D	D22	D33	L	LS	insert
<b>KBF14</b>	.125	.156	4,0	.75	.36	.59	3.44	1.97	3.41020..
<b>KBF15B</b>	.182	.188	5,0	.75	.40	.62	3.44	1.97	3.41020..
<b>KBF16B</b>	.213	.230	6,0	.75	.44	.66	3.44	1.97	3.41020..
<b>KBF17</b>	.250	.266	7,0	.75	.46	.68	3.83	1.97	3.41020..
<b>KBF18</b>	.281	.313	8,0	.75	.50	.72	3.83	1.97	3.41020..
<b>KBF19</b>	.328	.344	9,0	1.00	.54	.76	4.31	2.20	3.41020..
<b>KBF110</b>	.359	.391	10,0	1.00	.58	1.10	4.62	2.20	3.41220..
<b>KBF111</b>	.406	.430	11,0	1.00	.62	1.14	4.62	2.20	3.41220..
<b>KBF112 *</b>	.438	.469	12,0	1.00	.66	1.18	5.02	2.20	3.41220..
<b>KBF113</b>	.484	.510	13,0	1.00	.70	1.22	5.02	2.20	3.41220..
<b>KBF114</b>	.516	.550	14,0	1.25	.72	1.24	5.00	2.40	3.41220..
<b>KBF115</b>	.563	.590	15,0	1.25	.76	1.28	5.00	2.36	3.41220..
<b>KBF116</b>	.625	.630	16,0	1.25	.80	1.32	5.14	2.36	3.41220..
<b>KBF117</b>	.656	.670	17,0	1.25	.84	1.36	5.00	2.40	3.41220..
<b>KBF118</b>	.688	.700	18,0	1.25	.88	1.40	5.00	2.36	3.41220..

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

■ Spare Parts



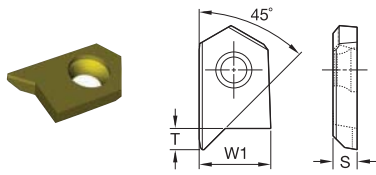
D1	back-up screw	drill clamp screw	insert screw	wrench
.125	192.888	192.718	192.432	170.028
.182	192.888	192.718	192.432	170.028
.213	192.888	192.718	192.432	170.028
.250	192.888	192.718	192.432	170.028
.281	192.888	192.718	192.432	170.028
.328	192.889	192.718	192.432	170.028
.359	192.889	192.720	191.725	170.025
.406	192.889	192.720	191.725	170.025
.438	192.889	192.720	191.725	170.025
.484	192.889	192.720	191.725	170.025
.516	192.889	192.720	191.725	170.025
.563	192.889	192.720	191.725	170.025
.625	192.889	192.720	191.725	170.025
.656	192.889	192.720	191.725	170.025
.688	192.889	192.720	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.

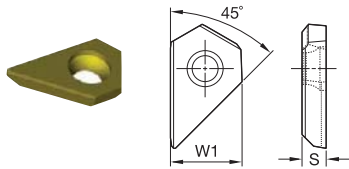
P	●	●
M	●	●
K	●	●
N	○	○
S	○	○
H	○	○

- first choice
- alternate choice



■ BF Insert R901 • 45° with Spot Face

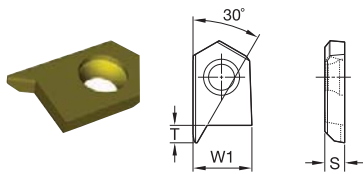
catalog number	S		W1		T		CS5	KC7315
	mm	in	mm	in	mm	in		
3.41020R901	3,00	.118	6,10	.240	2,90	.114	●	●
3.41220R901	3,50	.138	10,10	.398	3,05	.120	●	●



■ BF Insert R902 • 45°

catalog number	S		W1		CS5	KC7315
	mm	in	mm	in		
3.41020R902	3,00	.118	6,10	.240	●	●
3.41220R902	3,50	.138	10,10	.398	●	●

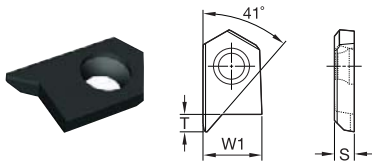
- When using the 60° insert or special insert, the assembled tool should be inspected.
- These insert combinations require that the steel body be altered to provide insert coverage.



■ BF Insert R903 • 60° with Spot Face

catalog number	S		W1		T		CS5	KC7315
	mm	in	mm	in	in	mm		
3.41020R903	3,00	.118	6,10	.240	0,114	2,90	●	●
3.41220R903	3,50	.138	10,10	.398	0,120	3,05	●	●

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

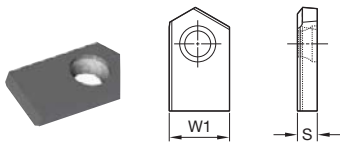


- first choice
- alternate choice

P	●
M	●
K	●
N	●
S	●
H	●

■ BF Insert R904 • 41° with Spot Face

catalog number	S		W1		T		KC7315
	mm	in	mm	in	mm	in	
3.41020R904	3,00	.118	6,10	.240	2,90	.114	●
3.41220R904	3,50	.138	10,10	.398	3,05	.120	●

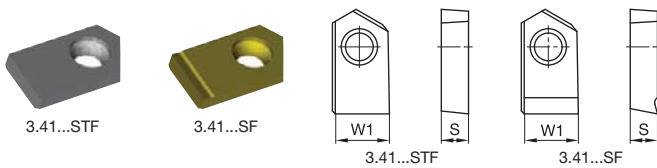


- first choice
- alternate choice

P	●
M	●
K	○
N	●
S	●
H	●

■ BF Insert R900 • Semi-Finished

catalog number	S		W1		KMF
	mm	in	mm	in	
3.41020R900	3,00	.118	6,10	.240	●
3.41220R900	3,50	.138	10,10	.398	●



- first choice
- alternate choice

P	●
M	●
K	○
N	●
S	●
H	●

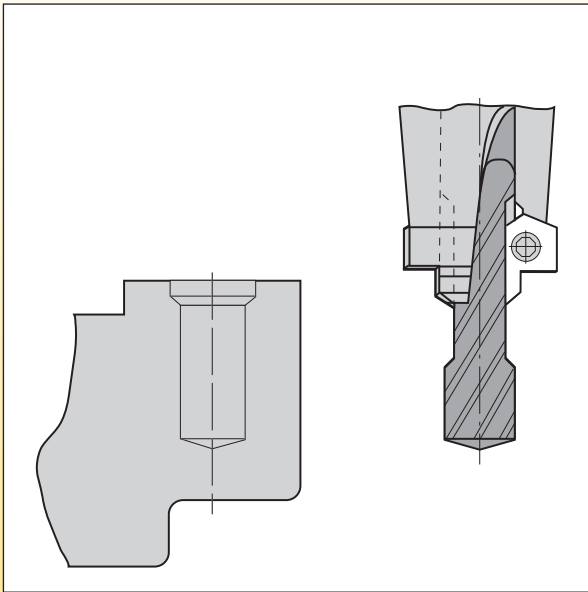
■ BF Insert R900 S(T)F • Semi-Finished

catalog number	S		W1		CS5	KMF
	mm	in	mm	in		
3.41020R900STF	3,00	.118	6,10	.240	●	—
3.41220R900SF	3,50	.138	10,10	.398	—	●
3.41220R900STF	3,50	.138	10,10	.398	●	—

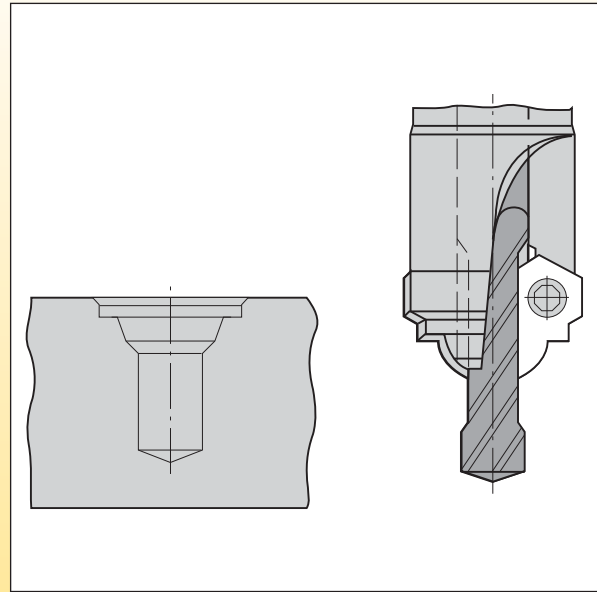
## Engineered Solutions Available!



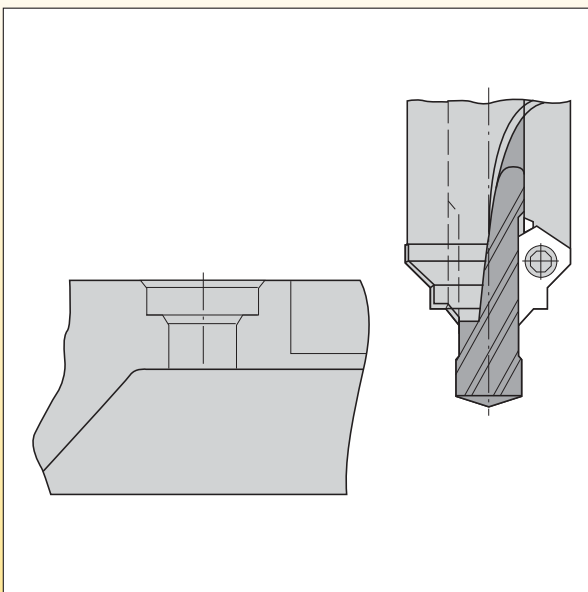
Tapped Hole with Protection Countersinking



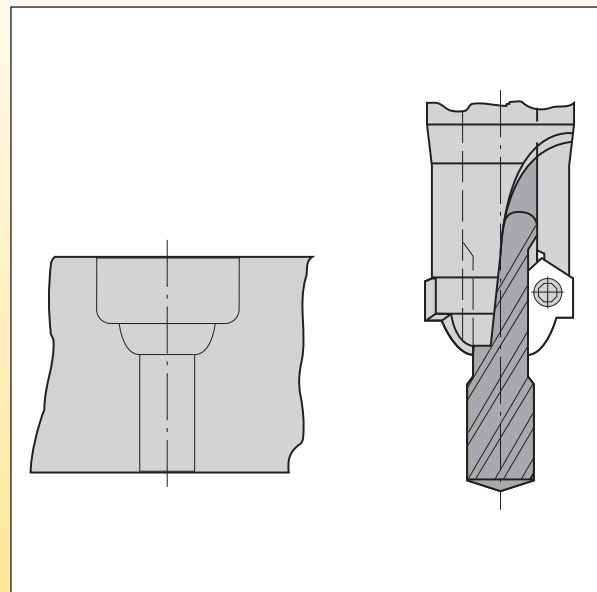
Countersinking for Round Sealing Rings



Countersinking for Countersunk Head Screws

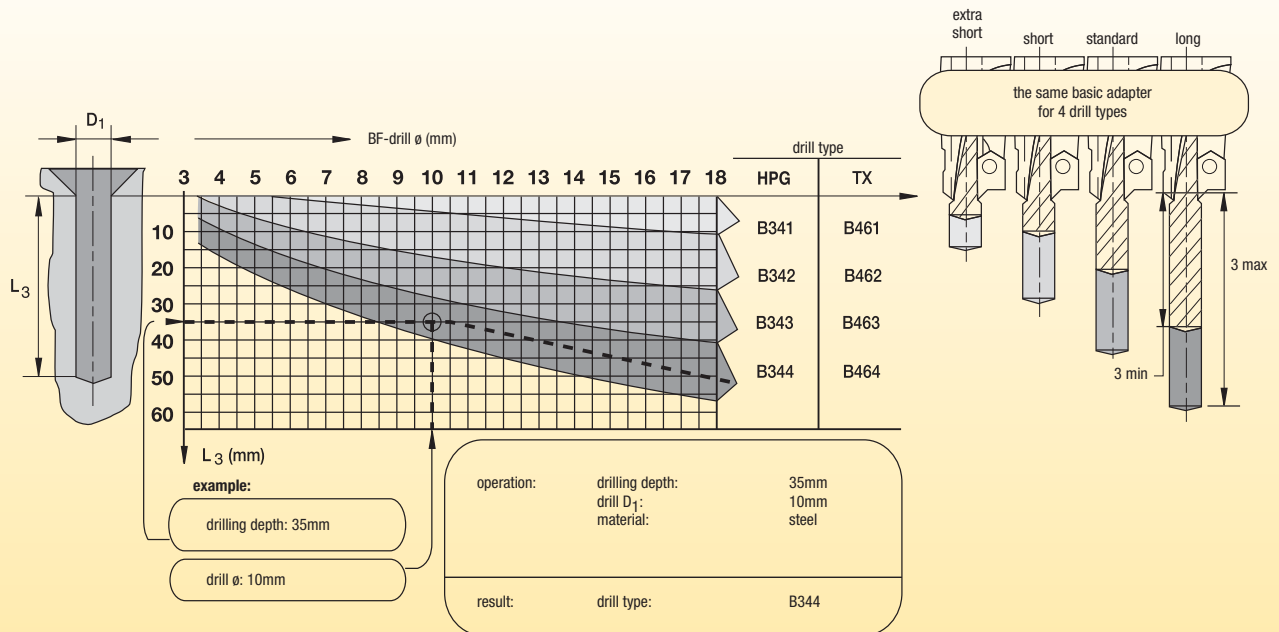


Countersinking for Aluminum Rim





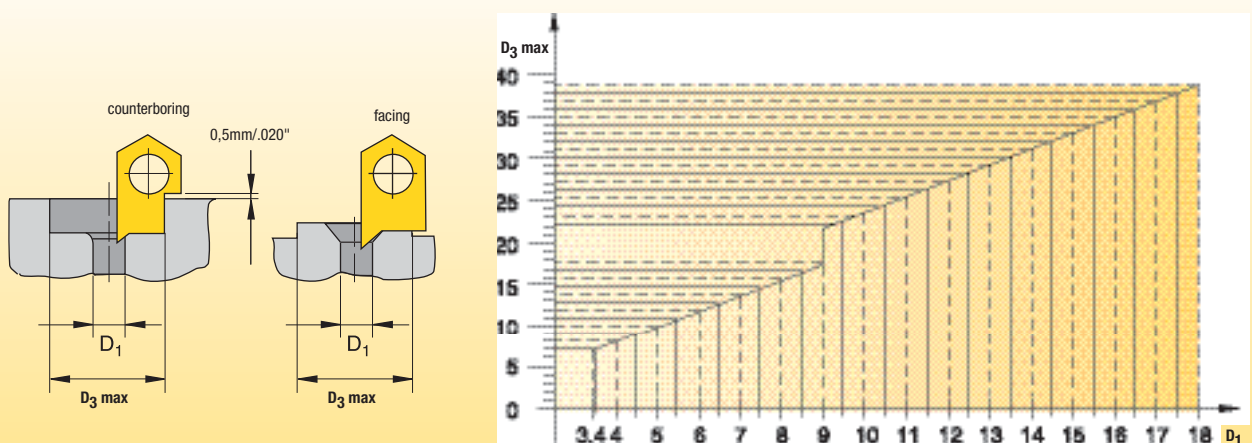
■ Possible Drilling Depths • Semi-Standard Series



■ 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	0,22–0,44
	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

■ HP Drills • B343HPG Series • Grade KC7315 • Through Coolant • Inch

		Cutting Speed – vc			Inch								
		Range – SFM			Recommended Feed Rate (f) by Diameter								
Material Group		min	Starting Value	max		1/8 .125	3/16 .188	1/4 .250	5/16 .313	3/8 .375	1/2 .500	5/8 .625	3/4 .750
P	1	328	459	591	IPR	.003–.006	.003–.007	.004–.009	.005–.011	.006–.013	.007–.015	.007–.017	.009–.017
	2	295	377	459	IPR	.003–.005	.003–.007	.004–.007	.005–.009	.006–.011	.007–.012	.007–.014	.009–.017
	3	262	328	394	IPR	.004–.006	.004–.007	.005–.009	.006–.011	.007–.013	.008–.015	.010–.017	.011–.019
	4	230	295	361	IPR	.003–.006	.004–.007	.004–.009	.005–.010	.006–.011	.006–.013	.008–.016	.009–.018
	5	230	279	361	IPR	.003–.005	.003–.006	.004–.006	.005–.008	.006–.009	.006–.010	.007–.012	.008–.013
K	1	328	394	459	IPR	.004–.007	.004–.008	.005–.011	.005–.010	.007–.014	.008–.015	.009–.018	.010–.020
	2	262	345	427	IPR	.004–.006	.004–.007	.005–.008	.006–.010	.007–.012	.008–.013	.009–.015	.010–.017
	3	230	279	328	IPR	.003–.005	.004–.006	.004–.007	.006–.009	.006–.010	.007–.012	.008–.014	.009–.015

Combination Tools