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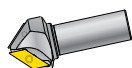
78

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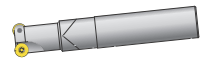
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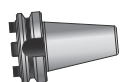
130

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B5S DRILL

U-DRILL



B5S - **3** **185** - **S25**

↓ ↓ ↓ ↓

드릴종류 가공깊이 가공직경 Ø18.5 샹크직경 Ø25
Drill group Drilling depth 3D Drilling diameter Ø18.5 Shank diameter Ø25

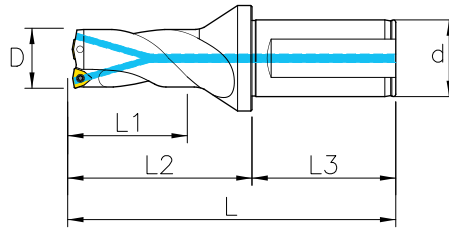
B5S-2D 드릴 U-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ I.S.O

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B5S-2130-S20	13	93	29	43	20	50	WCGX 03T104	TSB-18045	TXL-06	119,000
B5S-2135-S20	13.5	93	29	43	20	50				119,000
B5S-2140-S20	14	96	31	46	20	50				119,000
B5S-2145-S20	14.5	96	31	46	20	50				119,000
B5S-2150-S20	15	99	33	49	20	50				119,000
B5S-2155-S20	15.5	99	33	49	20	50	WCMT 030204	TSB-22060	TXL-06	119,000
B5S-2160-S25	16	107	35	51	25	56				107,000
B5S-2165-S25	16.5	107	35	51	25	56				107,000
B5S-2170-S25	17	109	37	53	25	56				107,000
B5S-2175-S25	17.5	109	37	53	25	56				107,000
B5S-2180-S25	18	112	39	56	25	56				107,000
B5S-2185-S25	18.5	112	39	56	25	56				107,000
B5S-2190-S25	19	114	41	58	25	56				107,000
B5S-2195-S25	19.5	114	41	58	25	56				107,000
B5S-2200-S25	20	118	43	62	25	56				107,000
B5S-2205-S25	20.5	118	43	62	25	56	WCMT 040204	TSB-25065	TXL-07	107,000
B5S-2210-S25	21	120	45	64	25	56				111,000
B5S-2215-S25	21.5	120	45	64	25	56				111,000
B5S-2220-S25	22	122	47	66	25	56				111,000
B5S-2225-S25	22.5	122	47	66	25	56				111,000
B5S-2230-S25	23	126	49	70	25	56				111,000
B5S-2235-S25	23.5	126	49	70	25	56				111,000
B5S-2230-S32	23	130	49	70	32	60				111,000
B5S-2240-S25	24	128	51	72	25	56				111,000
B5S-2245-S25	24.5	128	51	72	25	56				111,000
B5S-2240-S32	24	132	51	72	32	60				111,000
B5S-2250-S25	25	131	53	75	25	56				111,000
B5S-2255-S25	25.5	131	53	75	25	56				111,000
B5S-2250-S32	25	135	53	75	32	60				111,000
B5S-2255-S32	25.5	135	53	75	32	60				111,000

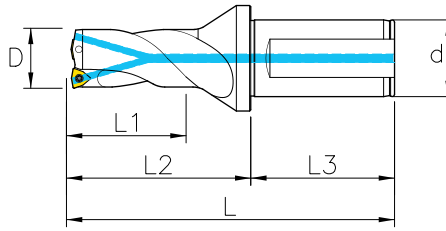
B5S-2D 드릴 U-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ I.S.O

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B5S-2260-S32	26	137	55	77	32	60	WCMT 050308	TSB-0307	TXL-09	125,000
B5S-2265-S32	26.5	137	55	77	32	60				125,000
B5S-2270-S32	27	140	57	80	32	60				125,000
B5S-2275-S32	27.5	140	57	80	32	60				125,000
B5S-2280-S32	28	143	59	83	32	60				125,000
B5S-2285-S32	28.5	143	59	83	32	60				125,000
B5S-2290-S32	29	145	61	85	32	60				125,000
B5S-2295-S32	29.5	145	61	85	32	60				125,000
B5S-2300-S32	30	149	63	89	32	60	WCMT 06T308	TSB-3508	TXL-15	125,000
B5S-2310-S32	31	151	65	91	32	60				135,000
B5S-2320-S32	32	153	67	93	32	60				135,000
B5S-2330-S32	33	158	70	98	32	60				135,000
B5S-2330-S40	33	168	70	98	40	70				135,000
B5S-2340-S32	34	160	72	100	32	60				135,000
B5S-2340-S40	34	170	72	100	40	70				135,000
B5S-2350-S32	35	162	74	102	32	60				135,000
B5S-2350-S40	35	172	74	102	40	70				135,000
B5S-2360-S32	36	165	76	105	32	60				147,000
B5S-2360-S40	36	175	76	105	40	70				147,000
B5S-2370-S32	37	167	78	107	32	60				147,000
B5S-2370-S40	37	177	78	107	40	70				147,000
B5S-2380-S32	38	170	80	110	32	60				147,000
B5S-2380-S40	38	180	80	110	40	70				147,000
B5S-2390-S32	39	172	82	112	32	60				147,000
B5S-2390-S40	39	182	82	112	40	70				147,000
B5S-2400-S32	40	175	84	115	32	60	WCMT 080412	TSB-40110	TXL-15	147,000
B5S-2400-S40	40	185	84	115	40	70				147,000
B5S-2410-S32	41	179	87	119	32	60				147,000
B5S-2410-S40	41	189	87	119	40	70				147,000
B5S-2420-S40	42	192	89	122	40	70				161,000
B5S-2430-S40	43	194	91	124	40	70				161,000
B5S-2440-S40	44	196	93	126	40	70				161,000
B5S-2450-S40	45	199	95	129	40	70				161,000
B5S-2460-S40	46	201	97	131	40	70				170,000
B5S-2470-S40	47	204	99	134	40	70				170,000
B5S-2480-S40	48	208	101	138	40	70				170,000
B5S-2490-S40	49	210	103	140	40	70				170,000
B5S-2500-S40	50	213	106	143	40	70				170,000
B5S-2510-S40	51	218	108	148	40	70				179,000
B5S-2520-S40	52	220	110	150	40	70				179,000
B5S-2530-S40	53	222	112	152	40	70				179,000
B5S-2540-S40	54	224	114	154	40	70				179,000
B5S-2550-S40	55	226	116	156	40	70				179,000
B5S-2560-S40	56	230	118	160	40	70				190,000
B5S-2570-S40	57	233	121	163	40	70				190,000
B5S-2580-S40	58	236	124	166	40	70				190,000

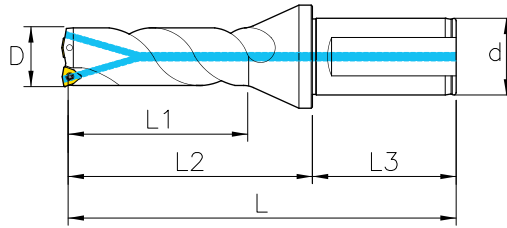
B5S-3D 드릴 U-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ I.S.O

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B5S-3130-S20	13	106	42	56	20	50	WCGX 03T104	TSB-18045	TXL-06	124,000
B5S-3135-S20	13.5	106	42	56	20	50				124,000
B5S-3140-S20	14	110	45	60	20	50				124,000
B5S-3145-S20	14.5	110	45	60	20	50				124,000
B5S-3150-S20	15	114	48	64	20	50				124,000
B5S-3155-S20	15.5	114	48	64	20	50	WCMT 030204	TSB-22060	TXL-06	124,000
B5S-3160-S25	16	123	51	67	25	56				112,000
B5S-3165-S25	16.5	123	51	67	25	56				112,000
B5S-3170-S25	17	126	54	70	25	56				112,000
B5S-3175-S25	17.5	126	54	70	25	56				112,000
B5S-3180-S25	18	130	57	74	25	56				112,000
B5S-3185-S25	18.5	130	57	74	25	56				112,000
B5S-3190-S25	19	133	60	77	25	56				112,000
B5S-3195-S25	19.5	133	60	77	25	56				112,000
B5S-3200-S25	20	138	63	82	25	56				112,000
B5S-3205-S25	20.5	138	63	82	25	56	WCMT 040204	TSB-25065	TXL-07	112,000
B5S-3210-S25	21	141	66	85	25	56				117,000
B5S-3215-S25	21.5	141	66	85	25	56				117,000
B5S-3220-S25	22	144	69	88	25	56				117,000
B5S-3225-S25	22.5	144	69	88	25	56				117,000
B5S-3230-S25	23	149	72	93	25	56				117,000
B5S-3235-S25	23.5	149	72	93	25	56				117,000
B5S-3230-S32	23	153	72	93	32	60				117,000
B5S-3240-S25	24	152	75	96	25	56				117,000
B5S-3245-S25	24.5	152	75	96	25	56				117,000
B5S-3240-S32	24	156	75	96	32	60				117,000
B5S-3250-S25	25	156	78	100	25	56				117,000
B5S-3255-S25	25.5	156	78	100	25	56				117,000
B5S-3250-S32	25	160	78	100	32	60				117,000
B5S-3255-S32	25.5	160	78	100	32	60				117,000

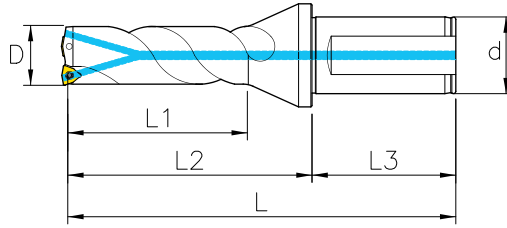
B5S-3D 드릴 U-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ I.S.O

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B5S-3260-S32	26	163	81	103	32	60	WCMT 050308	TSB-0307	TXL-09	132,000
B5S-3265-S32	26.5	163	81	103	32	60				132,000
B5S-3270-S32	27	167	84	107	32	60				132,000
B5S-3275-S32	27.5	167	84	107	32	60				132,000
B5S-3280-S32	28	171	87	111	32	60				132,000
B5S-3285-S32	28.5	171	87	111	32	60				132,000
B5S-3290-S32	29	174	90	114	32	60				132,000
B5S-3295-S32	29.5	174	90	114	32	60				132,000
B5S-3300-S32	30	179	93	119	32	60	WCMT 06T308	TSB-3508	TXL-15	132,000
B5S-3310-S32	31	182	96	122	32	60				141,000
B5S-3320-S32	32	185	99	125	32	60				141,000
B5S-3330-S32	33	191	103	131	32	60				141,000
B5S-3330-S40	33	201	103	131	40	70				141,000
B5S-3340-S32	34	194	106	134	32	60				141,000
B5S-3340-S40	34	204	106	134	40	70				141,000
B5S-3350-S32	35	197	109	137	32	60				141,000
B5S-3350-S40	35	207	109	137	40	70				141,000
B5S-3360-S32	36	201	112	141	32	60				154,000
B5S-3360-S40	36	211	112	141	40	70				154,000
B5S-3370-S32	37	204	115	144	32	60				154,000
B5S-3370-S40	37	214	115	144	40	70				154,000
B5S-3380-S32	38	208	118	148	32	60				154,000
B5S-3380-S40	38	218	118	148	40	70				154,000
B5S-3390-S32	39	211	121	151	32	60				154,000
B5S-3390-S40	39	221	121	151	40	70				154,000
B5S-3400-S32	40	215	124	155	32	60	WCMT 080412	TSB-40110	TXL-15	154,000
B5S-3400-S40	40	225	124	155	40	70				154,000
B5S-3410-S32	41	220	128	160	32	60				154,000
B5S-3410-S40	41	230	128	160	40	70				154,000
B5S-3420-S40	42	234	131	164	40	70				168,000
B5S-3430-S40	43	237	134	167	40	70				168,000
B5S-3440-S40	44	240	137	170	40	70				168,000
B5S-3450-S40	45	244	140	174	40	70				168,000
B5S-3460-S40	46	247	143	177	40	70				178,000
B5S-3470-S40	47	251	146	181	40	70				178,000
B5S-3480-S40	48	256	149	186	40	70				178,000
B5S-3490-S40	49	259	152	189	40	70				178,000
B5S-3500-S40	50	263	156	193	40	70				178,000
B5S-3510-S40	51	269	159	199	40	70				186,000
B5S-3520-S40	52	272	162	202	40	70				186,000
B5S-3530-S40	53	275	165	205	40	70				186,000
B5S-3540-S40	54	278	168	208	40	70				186,000
B5S-3550-S40	55	281	171	211	40	70				186,000
B5S-3560-S40	56	286	174	216	40	70				199,000
B5S-3570-S40	57	290	178	220	40	70				199,000
B5S-3580-S40	58	294	182	224	40	70				199,000

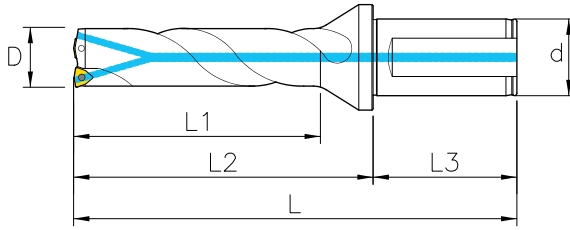
B5S-4D 드릴 U-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ I.S.O

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B5S-4130-S20	13	119	55	69	20	50	WCGX 03T104	TSB-18045	TXL-06	136,000
B5S-4135-S20	13.5	119	55	69	20	50				136,000
B5S-4140-S20	14	124	59	74	20	50				136,000
B5S-4145-S20	14.5	124	59	74	20	50				136,000
B5S-4150-S20	15	129	63	79	20	50				136,000
B5S-4155-S20	15.5	129	63	79	20	50	WCMT 030204	TSB-22060	TXL-06	136,000
B5S-4160-S25	16	139	67	83	25	56				123,000
B5S-4165-S25	16.5	139	67	83	25	56				123,000
B5S-4170-S25	17	143	71	87	25	56				123,000
B5S-4175-S25	17.5	143	71	87	25	56				123,000
B5S-4180-S25	18	148	75	92	25	56				123,000
B5S-4185-S25	18.5	148	75	92	25	56				123,000
B5S-4190-S25	19	152	79	96	25	56				123,000
B5S-4195-S25	19.5	152	79	96	25	56				123,000
B5S-4200-S25	20	158	83	102	25	56				123,000
B5S-4205-S25	20.5	158	83	102	25	56	WCMT 040204	TSB-25065	TXL-07	123,000
B5S-4210-S25	21	162	87	106	25	56				129,000
B5S-4215-S25	21.5	162	87	106	25	56				129,000
B5S-4220-S25	22	166	91	110	25	56				129,000
B5S-4225-S25	22.5	166	91	110	25	56				129,000
B5S-4230-S25	23	172	95	116	25	56				129,000
B5S-4235-S25	23.5	172	95	116	25	56				129,000
B5S-4230-S32	23	176	95	116	32	60				129,000
B5S-4240-S25	24	176	99	120	25	56				129,000
B5S-4245-S25	24.5	176	99	120	25	56				129,000
B5S-4240-S32	24	180	99	120	32	60				129,000
B5S-4250-S25	25	181	103	125	25	56				129,000
B5S-4255-S25	25.5	181	103	125	25	56				129,000
B5S-4250-S32	25	185	103	125	32	60				129,000
B5S-4255-S32	25.5	185	103	125	32	60				129,000

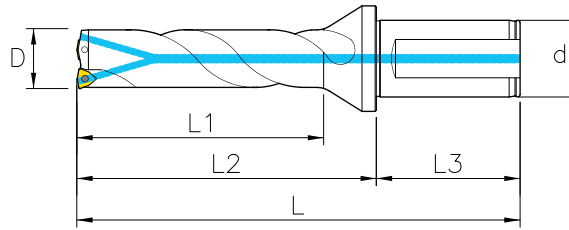
B5S-4D 드릴 U-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ I.S.O

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B5S-4260-S32	26	189	107	129	32	60	WCMT 050308	TSB-0307	TXL-09	146,000
B5S-4265-S32	26.5	189	107	129	32	60				146,000
B5S-4270-S32	27	194	111	134	32	60				146,000
B5S-4275-S32	27.5	194	111	134	32	60				146,000
B5S-4280-S32	28	199	115	139	32	60				146,000
B5S-4285-S32	28.5	199	115	139	32	60				146,000
B5S-4290-S32	29	203	119	143	32	60				146,000
B5S-4295-S32	29.5	203	119	143	32	60				146,000
B5S-4300-S32	30	209	123	149	32	60	WCMT 06T308	TSB-3508	TXL-15	146,000
B5S-4310-S32	31	213	127	153	32	60				156,000
B5S-4320-S32	32	217	131	157	32	60				156,000
B5S-4330-S32	33	224	136	164	32	60				156,000
B5S-4330-S40	33	234	136	164	40	70				156,000
B5S-4340-S32	34	228	140	168	32	60				156,000
B5S-4340-S40	34	238	140	168	40	70				156,000
B5S-4350-S32	35	232	144	172	32	60				156,000
B5S-4350-S40	35	242	144	172	40	70				156,000
B5S-4360-S32	36	237	148	177	32	60				170,000
B5S-4360-S40	36	247	148	177	40	70				170,000
B5S-4370-S32	37	241	152	181	32	60				170,000
B5S-4370-S40	37	251	152	181	40	70				170,000
B5S-4380-S32	38	246	156	186	32	60				170,000
B5S-4380-S40	38	256	156	186	40	70				170,000
B5S-4390-S32	39	250	160	190	32	60				170,000
B5S-4390-S40	39	260	160	190	40	70				170,000
B5S-4400-S32	40	255	164	195	32	60	WCMT 080412	TSB-40110	TXL-15	170,000
B5S-4400-S40	40	265	164	195	40	70				170,000
B5S-4410-S32	41	261	169	201	32	60				170,000
B5S-4410-S40	41	271	169	201	40	70				170,000
B5S-4420-S40	42	276	173	206	40	70				188,000
B5S-4430-S40	43	280	177	210	40	70				188,000
B5S-4440-S40	44	284	181	214	40	70				188,000
B5S-4450-S40	45	289	185	219	40	70				188,000
B5S-4460-S40	46	293	189	223	40	70				198,000
B5S-4470-S40	47	298	193	228	40	70				198,000
B5S-4480-S40	48	304	197	234	40	70				198,000
B5S-4490-S40	49	308	201	238	40	70				198,000
B5S-4500-S40	50	313	206	243	40	70				198,000
B5S-4510-S40	51	320	210	250	40	70				210,000
B5S-4520-S40	52	324	214	254	40	70				210,000
B5S-4530-S40	53	328	218	258	40	70				210,000
B5S-4540-S40	54	332	222	262	40	70				210,000
B5S-4550-S40	55	336	226	266	40	70				210,000
B5S-4560-S40	56	342	230	272	40	70				223,000
B5S-4570-S40	57	347	235	277	40	70				223,000
B5S-4580-S40	58	352	240	282	40	70				223,000

B5S 드릴 절삭 데이터 B5S Drill Cutting Data

Material 피삭재		Speed 속도 (m/min)	Feed 이송 (mm/rev)						
			ø13~ø15.5	ø16~ø 20	ø 20.5~ø 25	ø 25.5~ø 30	ø 31~ø 41	ø 42~ø 58	ø 59~ø 80
P 강 Steel	저탄소강 (- 0.25%) (Unalloyed steel)	180 ~ 260	0.05 ~ 0.08	0.06 ~ 0.10	0.07 ~ 0.12	0.09 ~ 0.15	0.11 ~ 0.18	0.15 ~ 0.28	0.11 ~ 0.18
	고탄소강 (0.25% -) (Low - alloy steel)	150 ~ 240	0.05 ~ 0.08	0.06 ~ 0.10	0.07 ~ 0.12	0.09 ~ 0.15	0.11 ~ 0.18	0.15 ~ 0.28	0.11 ~ 0.18
	경합금강 (- HB300) (Low - alloy steel)	120 ~ 240	0.05 ~ 0.08	0.06 ~ 0.10	0.07 ~ 0.12	0.09 ~ 0.15	0.11 ~ 0.18	0.15 ~ 0.28	0.11 ~ 0.18
	고합금강 (HB300 -) (High - alloy steel)	130 ~ 220	0.05 ~ 0.08	0.06 ~ 0.10	0.07 ~ 0.12	0.09 ~ 0.15	0.11 ~ 0.18	0.15 ~ 0.28	0.11 ~ 0.18
M 스테인레스강 Stainless steel	스테인레스강 Stainless steel	150 ~ 220	0.04 ~ 0.08	0.05 ~ 0.09	0.06 ~ 0.12	0.07 ~ 0.13	0.08 ~ 0.16	0.10 ~ 0.20	0.08 ~ 0.16
K 주철 Cast iron	회주철 Grey cast iron	150 ~ 250	0.05 ~ 0.11	0.07 ~ 0.13	0.08 ~ 0.12	0.10 ~ 0.18	0.14 ~ 0.26	0.18 ~ 0.35	0.14 ~ 0.26
	구상흑연주철 Cast iron with nodular cast	120 ~ 200	0.05 ~ 0.11	0.06 ~ 0.13	0.07 ~ 0.12	0.08 ~ 0.18	0.14 ~ 0.26	0.18 ~ 0.35	0.14 ~ 0.26
N 비철금속 Nonferrous metals	알루미늄 단조강 Aluminium forging alloys	300 ~ 380	0.04 ~ 0.06	0.05 ~ 0.07	0.16 ~ 0.08	0.07 ~ 0.09	0.10 ~ 0.14	0.12 ~ 0.17	0.10 ~ 0.14
	알루미늄 주물강 Aluminium cast alloys	260 ~ 330	0.04 ~ 0.06	0.05 ~ 0.07	0.06 ~ 0.08	0.07 ~ 0.09	0.10 ~ 0.14	0.12 ~ 0.17	0.10 ~ 0.14
S 내열합금 Super-alloys and titanium	고경도 합금강 Super-alloys and titanium	40 ~ 80	0.03 ~ 0.05	0.04 ~ 0.06	0.04 ~ 0.07	0.05 ~ 0.08	0.06 ~ 0.10	0.07 ~ 0.13	0.06 ~ 0.10

B6 DRILL

T-DRILL

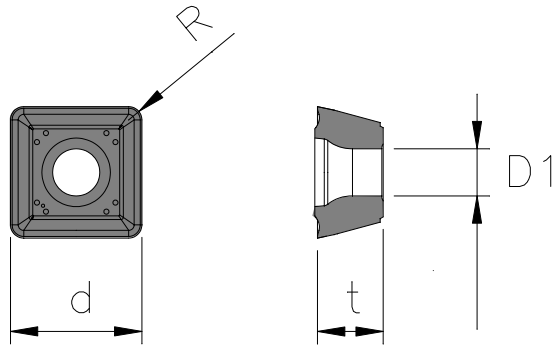


B6 - **3** **185** - **S25**

↓ ↓ ↓ ↓

드릴종류 가공깊이 가공직경 Ø18.5 샹크직경 Ø25
Drill group Drilling depth 3D Drilling diameter Ø18.5 Shank diameter Ø25

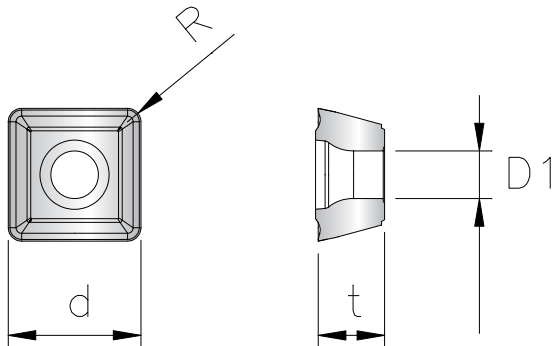
B6드릴 Insert T-DRILL



For general purpose

Order No. 주문형번	Coated	Dimension (mm)				Price
	6000	d	t	r	D1	
SPMG 050204 DE	●	5.00	2.38	0.4	2.25	6,500
SPMG 060204 DE	●	6.00	2.38	0.4	2.61	6,700
SPMG 07T308 DE	●	7.94	3.97	0.8	2.85	7,400
SPMG 090408 DE	●	9.80	4.30	0.8	4.05	7,900
SPMG 110408 DE	●	11.50	4.80	0.8	4.45	9,500
SPMG 140512 DE	●	14.30	5.20	1.2	5.75	11,000

● : Standard item



For aluminum

Order No. 주문형번	Uncoated	Dimension (mm)				Price
	K10	d	t	r	D1	
SPGG 050204 DA	●	5.00	2.38	0.4	2.25	6,500
SPGG 060204 DA	●	6.00	2.38	0.4	2.61	6,700
SPGG 07T308 DA	●	7.94	3.97	0.8	2.85	7,400
SPGG 090408 DA	●	9.80	4.30	0.8	4.05	7,900
SPGG 110408 DA	●	11.50	4.80	0.8	4.45	9,500
SPGG 140512 DA	●	14.30	5.20	1.2	5.75	11,000

● : Standard item

PLD 드릴 Pilot Drill

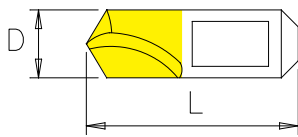


FIG 1

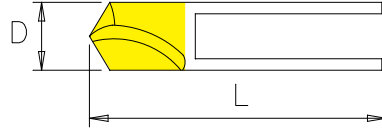


FIG 2

• PLD ⇒ BPK

Order No. 주문형번	D	L	Coolant hole	Coating	FIG.	Price
PLD-V0630	6	30	X	TIN	2	14,000
PLD-V0835	8	35	X	TIN	2	16,000
PLD-V1035 - H	10	35	💧	TIN	2	23,000
PLD-V1238 - H	12	38	💧	TIN	2	30,000
PLD-V1645 - H	16	45	💧	TIN	2	34,500
PLD-2045 - H	20	45	💧	TIN	2	50,000
PLD-2556 - H	25	56	💧	TIN	2	64,000
PLD-3068 - H	30	68	💧	TIN	2	89,000
PLD-0620	6	20	X	TIN	1	14,000
PLD-0825	8	25	X	TIN	1	16,000
PLD-1030 - H	10	30	💧	TIN	1	23,000
PLD-1236 - H	12	36	💧	TIN	1	30,000

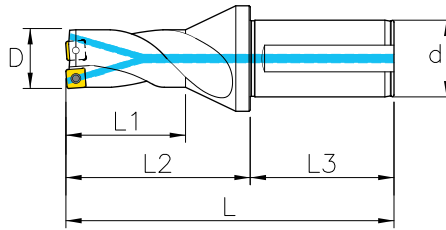
B6-2D 드릴 T-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6-2125-S20	12.5	94	26	44	20	50	SPMG 050204	TSB-0204	TXL-06	121,000
B6-2130-S20	13	94	26	44	20	50				121,000
B6-2135-S20	13.5	96	28	46	20	50				121,000
B6-2140-S20	14	96	28	46	20	50				121,000
B6-2145-S20	14.5	99	30	49	20	50				121,000
B6-2150-S20	15	99	30	49	20	50				121,000
B6-2155-S25	15.5	108	32	52	25	56	SPMG 060204	TSB-22060	TXL-06	121,000
B6-2160-S25	16	108	32	52	25	56				121,000
B6-2165-S25	16.5	110	34	54	25	56				121,000
B6-2170-S25	17	110	34	54	25	56				121,000
B6-2175-S25	17.5	113	36	57	25	56				121,000
B6-2180-S25	18	113	36	57	25	56				121,000
B6-2185-S25	18.5	115	38	59	25	56				121,000
B6-2190-S25	19	115	38	59	25	56				121,000
B6-2195-S25	19.5	119	40	63	25	56				121,000
B6-2200-S25	20	119	40	63	25	56				121,000
B6-2205-S25	20.5	121	42	65	25	56				121,000
B6-2210-S25	21	121	42	65	25	56				121,000
B6-2215-S25	21.5	123	44	67	25	56				123,000
B6-2220-S25	22	123	44	67	25	56	SPMG 07T308	TSB-25065	TXL-07	123,000
B6-2225-S32	22.5	131	46	71	32	60				123,000
B6-2230-S25	23	127	46	71	25	56				123,000
B6-2230-S32	23	131	46	71	32	60				123,000
B6-2235-S32	23.5	134	48	74	32	60				123,000
B6-2240-S25	24	130	48	74	25	56				123,000
B6-2240-S32	24	134	48	74	32	60				123,000
B6-2245-S32	24.5	137	50	77	32	60				123,000
B6-2250-S25	25	133	50	77	25	56				123,000
B6-2250-S32	25	137	50	77	32	60				123,000
B6-2255-S32	25.5	139	52	79	32	60				132,000
B6-2260-S25	26	135	52	79	25	56				132,000
B6-2260-S32	26	139	52	79	32	60				132,000
B6-2265-S32	26.5	141	54	81	32	60				132,000
B6-2270-S25	27	137	54	81	25	56				132,000
B6-2270-S32	27	141	54	81	32	60				132,000
B6-2275-S32	27.5	144	56	84	32	60				132,000

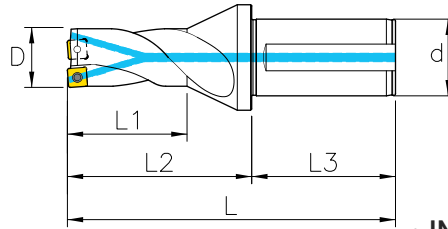
B6-2D 드릴 T-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6-2280-S25	28	140	56	84	25	56	SPMG 090408	TSB-3508	TXL-15	132,000
B6-2280-S32	28	144	56	84	32	60				132,000
B6-2285-S32	28.5	146	58	86	32	60				132,000
B6-2290-S25	29	142	58	86	25	56				132,000
B6-2290-S32	29	146	58	86	32	60				132,000
B6-2295-S32	29.5	151	60	91	32	60				132,000
B6-2300-S32	30	151	60	91	32	60				132,000
B6-2305-S32	30.5	154	62	94	32	60				149,000
B6-2310-S32	31	154	62	94	32	60				149,000
B6-2320-S32	32	156	64	96	32	60				149,000
B6-2330-S32	33	159	66	99	32	60	SPMG 110408	TSB-0410	TXL-15	149,000
B6-2340-S32	34	161	68	101	32	60				149,000
B6-2340-S40	34	171	68	101	40	70				149,000
B6-2350-S32	35	164	70	104	32	60				149,000
B6-2350-S40	35	174	70	104	40	70				149,000
B6-2360-S32	36	167	72	107	32	60				149,000
B6-2360-S40	36	177	72	107	40	70				149,000
B6-2370-S32	37	170	74	110	32	60				156,000
B6-2370-S40	37	180	74	110	40	70				156,000
B6-2380-S32	38	173	76	113	32	60				156,000
B6-2380-S40	38	183	76	113	40	70				156,000
B6-2390-S32	39	175	78	115	32	60	SPMG 140512	TSB-243	TXL-20	156,000
B6-2390-S40	39	185	78	115	40	70				156,000
B6-2400-S32	40	178	80	118	32	60				156,000
B6-2400-S40	40	188	80	118	40	70				156,000
B6-2410-S32	41	181	82	121	32	60				172,000
B6-2410-S40	41	191	82	121	40	70				172,000
B6-2420-S32	42	183	84	123	32	60				172,000
B6-2420-S40	42	193	84	123	40	70				172,000
B6-2430-S32	43	186	86	126	32	60				172,000
B6-2430-S40	43	196	86	126	40	70				172,000
B6-2440-S32	44	188	88	128	32	60	SPMG 140512	TSB-243	TXL-20	172,000
B6-2440-S40	44	198	88	128	40	70				172,000
B6-2450-S32	45	192	90	132	32	60				172,000
B6-2450-S40	45	202	90	132	40	70				172,000
B6-2460-S32	46	195	92	135	32	60				181,000
B6-2460-S40	46	205	92	135	40	70				181,000
B6-2470-S32	47	197	94	137	32	60				181,000
B6-2470-S40	47	207	94	137	40	70				181,000
B6-2480-S32	48	200	96	140	32	60				181,000
B6-2480-S40	48	210	96	140	40	70				181,000
B6-2490-S32	49	202	98	142	32	60	SPMG 140512	TSB-243	TXL-20	181,000
B6-2490-S40	49	212	98	142	40	70				181,000
B6-2500-S32	50	205	100	145	32	60				181,000
B6-2500-S40	50	215	100	145	40	70				181,000

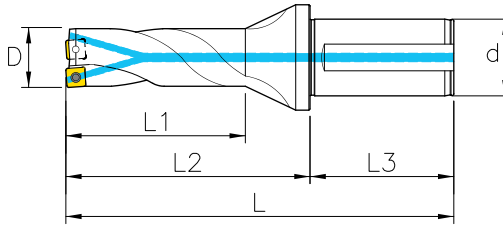
B6-3D 드릴 T-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

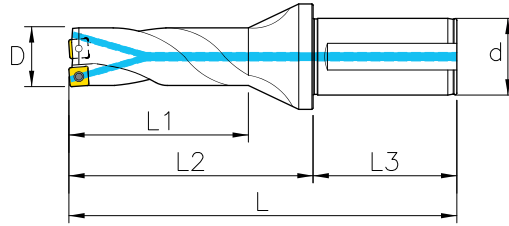
Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6-3125-S20	12.5	107	39	57	20	50	SPMG 050204	TSB-0204	TXL-06	127,000
B6-3130-S20	13	107	39	57	20	50				127,000
B6-3135-S20	13.5	110	42	60	20	50				127,000
B6-3140-S20	14	110	42	60	20	50				127,000
B6-3145-S20	14.5	114	45	64	20	50				127,000
B6-3150-S20	15	114	45	64	20	50				127,000
B6-3155-S25	15.5	124	48	68	25	56	SPMG 060204	TSB-22060	TXL-06	127,000
B6-3160-S25	16	124	48	68	25	56				127,000
B6-3165-S25	16.5	127	51	71	25	56				127,000
B6-3170-S25	17	127	51	71	25	56				127,000
B6-3175-S25	17.5	131	54	75	25	56				127,000
B6-3180-S25	18	131	54	75	25	56				127,000
B6-3185-S25	18.5	134	57	78	25	56				127,000
B6-3190-S25	19	134	57	78	25	56				127,000
B6-3195-S25	19.5	139	60	83	25	56				127,000
B6-3200-S25	20	139	60	83	25	56				127,000
B6-3205-S25	20.5	142	63	86	25	56				127,000
B6-3210-S25	21	142	63	86	25	56				127,000
B6-3215-S25	21.5	145	66	89	25	56				129,000
B6-3220-S25	22	145	66	89	25	56	SPMG 07T308	TSB-25065	TXL-07	129,000
B6-3225-S32	22.5	154	69	94	32	60				129,000
B6-3230-S25	23	150	69	94	25	56				129,000
B6-3230-S32	23	154	69	94	32	60				129,000
B6-3235-S32	23.5	158	72	98	32	60				129,000
B6-3240-S25	24	154	72	98	25	56				129,000
B6-3240-S32	24	158	72	98	32	60				129,000
B6-3245-S32	24.5	162	75	102	32	60				129,000
B6-3250-S25	25	158	75	102	25	56				129,000
B6-3250-S32	25	162	75	102	32	60				129,000
B6-3255-S32	25.5	165	78	105	32	60				138,000
B6-3260-S25	26	161	78	105	25	56				138,000
B6-3260-S32	26	165	78	105	32	60				138,000
B6-3265-S32	26.5	168	81	108	32	60				138,000
B6-3270-S25	27	164	81	108	25	56				138,000
B6-3270-S32	27	168	81	108	32	60				138,000
B6-3275-S32	27.5	172	84	112	32	60				138,000

B6-3D 드릴 T-DRILL

특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6-3280-S25	28	168	84	112	25	56	SPMG 090408	TSB-3508	TXL-15	138,000
B6-3280-S32	28	172	84	112	32	60				138,000
B6-3285-S32	28.5	175	87	115	32	60				138,000
B6-3290-S25	29	171	87	115	25	56				138,000
B6-3290-S32	29	175	87	115	32	60				138,000
B6-3295-S32	29.5	181	90	121	32	60				138,000
B6-3300-S32	30	181	90	121	32	60				138,000
B6-3305-S32	30.5	185	93	125	32	60				160,000
B6-3310-S32	31	185	93	125	32	60				160,000
B6-3320-S32	32	188	96	128	32	60				160,000
B6-3330-S32	33	192	99	132	32	60	SPMG 110408	TSB-0410	TXL-15	160,000
B6-3340-S32	34	195	102	135	32	60				160,000
B6-3340-S40	34	205	102	135	40	70				160,000
B6-3350-S32	35	199	105	139	32	60				160,000
B6-3350-S40	35	209	105	139	40	70				160,000
B6-3360-S32	36	203	108	143	32	60				160,000
B6-3360-S40	36	213	108	143	40	70				160,000
B6-3370-S32	37	207	111	147	32	60				164,000
B6-3370-S40	37	217	111	147	40	70				164,000
B6-3380-S32	38	211	114	151	32	60				164,000
B6-3380-S40	38	221	114	151	40	70	SPMG 140512	TSB-243	TXL-20	164,000
B6-3390-S32	39	214	117	154	32	60				164,000
B6-3390-S40	39	224	117	154	40	70				164,000
B6-3400-S32	40	218	120	158	32	60				164,000
B6-3400-S40	40	228	120	158	40	70				164,000
B6-3410-S32	41	222	123	162	32	60				181,000
B6-3410-S40	41	232	123	162	40	70				181,000
B6-3420-S32	42	225	126	165	32	60				181,000
B6-3420-S40	42	235	126	165	40	70				181,000
B6-3430-S32	43	229	129	169	32	60				181,000
B6-3430-S40	43	239	129	169	40	70	SPMG 140512	TSB-243	TXL-20	181,000
B6-3440-S32	44	232	132	172	32	60				181,000
B6-3440-S40	44	242	132	172	40	70				181,000
B6-3450-S32	45	237	135	177	32	60				190,000
B6-3450-S40	45	247	135	177	40	70				190,000
B6-3460-S32	46	241	138	181	32	60				190,000
B6-3460-S40	46	251	138	181	40	70				190,000
B6-3470-S32	47	244	141	184	32	60				190,000
B6-3470-S40	47	254	141	184	40	70				190,000
B6-3480-S32	48	248	144	188	32	60				190,000
B6-3480-S40	48	258	144	188	40	70	SPMG 140512	TSB-243	TXL-20	190,000
B6-3490-S32	49	251	147	191	32	60				190,000
B6-3490-S40	49	261	147	191	40	70				190,000
B6-3500-S32	50	255	150	195	32	60				190,000
B6-3500-S40	50	265	150	195	40	70				190,000

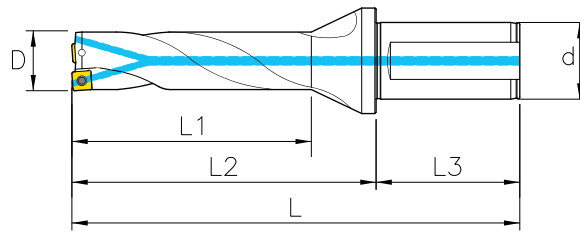
B6-4D 드릴 T-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6-4125-S20	12.5	120	52	70	20	50	SPMG 050204	TSB-0204	TXL-06	140,000
B6-4130-S20	13	120	52	70	20	50				140,000
B6-4135-S20	13.5	124	56	74	20	50				140,000
B6-4140-S20	14	124	56	74	20	50				140,000
B6-4145-S20	14.5	129	60	79	20	50				140,000
B6-4150-S20	15	129	60	79	20	50				140,000
B6-4155-S25	15.5	140	64	84	25	56	SPMG 060204	TSB-22060	TXL-06	140,000
B6-4160-S25	16	140	64	84	25	56				140,000
B6-4165-S25	16.5	144	68	88	25	56				140,000
B6-4170-S25	17	144	68	88	25	56				140,000
B6-4175-S25	17.5	149	72	93	25	56				140,000
B6-4180-S25	18	149	72	93	25	56				140,000
B6-4185-S25	18.5	153	76	97	25	56				140,000
B6-4190-S25	19	153	76	97	25	56				140,000
B6-4195-S25	19.5	159	80	103	25	56				140,000
B6-4200-S25	20	159	80	103	25	56				140,000
B6-4205-S25	20.5	163	84	107	25	56				140,000
B6-4210-S25	21	163	84	107	25	56				140,000
B6-4215-S25	21.5	167	88	111	25	56	SPMG 07T308	TSB-25065	TXL-07	142,000
B6-4220-S25	22	167	88	111	25	56				142,000
B6-4225-S32	22.5	177	92	117	32	60				142,000
B6-4230-S25	23	173	92	117	25	56				142,000
B6-4230-S32	23	177	92	117	32	60				142,000
B6-4235-S32	23.5	182	96	122	32	60				142,000
B6-4240-S25	24	178	96	122	25	56				142,000
B6-4240-S32	24	182	96	122	32	60				142,000
B6-4245-S32	24.5	187	100	127	32	60				142,000
B6-4250-S25	25	183	100	127	25	56				142,000
B6-4250-S32	25	187	100	127	32	60				142,000
B6-4255-S32	25.5	191	104	131	32	60				151,000
B6-4260-S25	26	187	104	131	25	56				151,000
B6-4260-S32	26	191	104	131	32	60				151,000
B6-4265-S32	26.5	195	108	135	32	60				151,000
B6-4270-S25	27	191	108	135	25	56				151,000
B6-4270-S32	27	195	108	135	32	60				151,000
B6-4275-S32	27.5	200	112	140	32	60				151,000

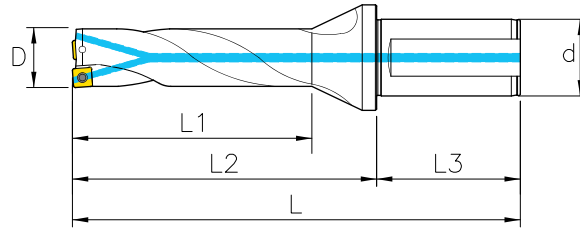
B6-4D 드릴 T-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6-4280-S25	28	196	112	140	25	56	SPMG 090408	TSB-3508	TXL-15	151,000
B6-4280-S32	28	200	112	140	32	60				151,000
B6-4285-S32	28.5	204	116	144	32	60				151,000
B6-4290-S25	29	200	116	144	25	56				151,000
B6-4290-S32	29	204	116	144	32	60				151,000
B6-4295-S32	29.5	211	120	151	32	60				151,000
B6-4300-S32	30	211	120	151	32	60				151,000
B6-4305-S32	30.5	216	124	156	32	60				175,000
B6-4310-S32	31	216	124	156	32	60				175,000
B6-4320-S32	32	220	128	160	32	60				175,000
B6-4330-S32	33	225	132	165	32	60	SPMG 110408	TSB-0410	TXL-15	175,000
B6-4340-S32	34	229	136	169	32	60				175,000
B6-4340-S40	34	239	136	169	40	70				181,000
B6-4350-S32	35	234	140	174	32	60				181,000
B6-4350-S40	35	244	140	174	40	70				181,000
B6-4360-S32	36	239	144	179	32	60				181,000
B6-4360-S40	36	249	144	179	40	70				181,000
B6-4370-S32	37	244	148	184	32	60				181,000
B6-4370-S40	37	254	148	184	40	70				181,000
B6-4380-S32	38	249	152	189	32	60				181,000
B6-4380-S40	38	259	152	189	40	70	SPMG 140512	TSB-243	TXL-20	181,000
B6-4390-S32	39	253	156	193	32	60				181,000
B6-4390-S40	39	263	156	193	40	70				199,000
B6-4400-S32	40	258	160	198	32	60				199,000
B6-4400-S40	40	268	160	198	40	70				199,000
B6-4410-S32	41	263	164	203	32	60				199,000
B6-4410-S40	41	273	164	203	40	70				199,000
B6-4420-S32	42	267	168	207	32	60				199,000
B6-4420-S40	42	277	168	207	40	70				199,000
B6-4430-S32	43	272	172	212	32	60				199,000
B6-4430-S40	43	282	172	212	40	70	SPMG 140512	TSB-243	TXL-20	199,000
B6-4440-S32	44	276	176	216	32	60				210,000
B6-4440-S40	44	286	176	216	40	70				210,000
B6-4450-S32	45	282	180	222	32	60				210,000
B6-4450-S40	45	292	180	222	40	70				210,000
B6-4460-S32	46	287	184	227	32	60				210,000
B6-4460-S40	46	297	184	227	40	70				210,000
B6-4470-S32	47	291	188	231	32	60				210,000
B6-4470-S40	47	301	188	231	40	70				210,000
B6-4480-S32	48	296	192	236	32	60				210,000
B6-4480-S40	48	306	192	236	40	70	SPMG 140512	TSB-243	TXL-20	210,000
B6-4490-S32	49	300	196	240	32	60				210,000
B6-4490-S40	49	310	196	240	40	70				210,000
B6-4500-S32	50	305	200	245	32	60				210,000
B6-4500-S40	50	315	200	245	40	70				210,000

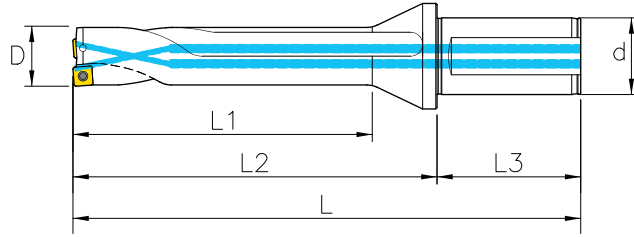
B6K-5D 드릴 T-DRILL



특허 제 10-0838176
Patent #10-0838176



초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6K-5125-S20	12.5	133	65	83	20	50	SPMG 050204	TSB-0204	TXL-06	178,000
B6K-5130-S20	13	133	65	83	20	50				178,000
B6K-5135-S20	13.5	138	70	88	20	50				178,000
B6K-5140-S20	14	138	70	88	20	50				178,000
B6K-5145-S20	14.5	144	75	94	20	50				178,000
B6K-5150-S20	15	144	75	94	20	50				178,000
B6K-5155-S25	15.5	156	80	100	25	56	SPMG 060204	TSB-22065	TXL-06	178,000
B6K-5160-S25	16	156	80	100	25	56				178,000
B6K-5165-S25	16.5	161	85	105	25	56				178,000
B6K-5170-S25	17	161	85	105	25	56				178,000
B6K-5175-S25	17.5	167	90	111	25	56				178,000
B6K-5180-S25	18	167	90	111	25	56				178,000
B6K-5185-S25	18.5	172	95	116	25	56				178,000
B6K-5190-S25	19	172	95	116	25	56				178,000
B6K-5195-S25	19.5	179	100	123	25	56				178,000
B6K-5200-S25	20	179	100	123	25	56				178,000
B6K-5205-S25	20.5	184	105	128	25	56				178,000
B6K-5210-S25	21	184	105	128	25	56				178,000
B6K-5215-S25	21.5	189	110	133	25	56	SPMG 07T308	TSB-25065	TXL-07	178,000
B6K-5220-S25	22	189	110	133	25	56				187,000
B6K-5225-S32	22.5	200	115	140	32	60				187,000
B6K-5230-S25	23	196	115	140	25	56				187,000
B6K-5230-S32	23	200	115	140	32	60				187,000
B6K-5235-S32	23.5	206	120	146	32	60				187,000
B6K-5240-S25	24	202	120	146	25	56				187,000
B6K-5240-S32	24	206	120	146	32	60				187,000
B6K-5245-S32	24.5	212	125	152	32	60				187,000
B6K-5250-S25	25	208	125	152	25	56				187,000
B6K-5250-S32	25	212	125	152	32	60				187,000
B6K-5255-S32	25.5	217	130	157	32	60				187,000
B6K-5260-S32	26	217	130	157	32	60				187,000
B6K-5265-S32	26.5	222	135	162	32	60				187,000
B6K-5270-S32	27	222	135	162	32	60				187,000
B6K-5275-S32	27.5	228	140	168	32	60				187,000

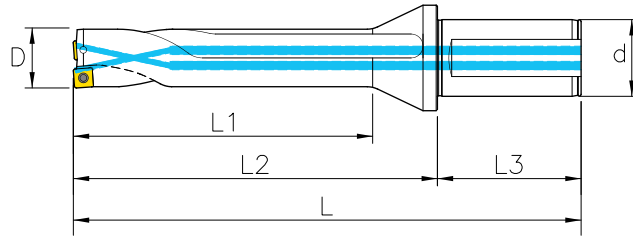
B6K-5D 드릴 T-DRILL



특허 제 10-0838176
Patent #10-0838176



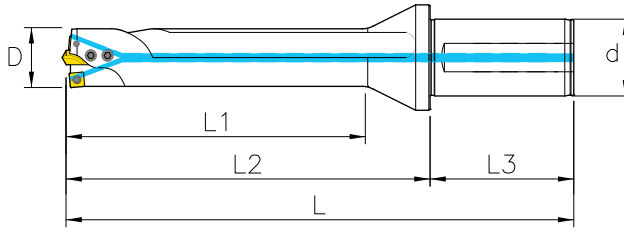
초경용접
Carbide welding



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	Dimension (mm)				Shank					Price
	D	L	L1	L2	d	L3				
B6K-5280-S32	28	228	140	168	32	60	SPMG 090408	TSB-3508	TXL-15	199,000
B6K-5285-S32	28.5	233	145	173	32	60				199,000
B6K-5290-S32	29	233	145	173	32	60				199,000
B6K-5295-S32	29.5	241	150	181	32	60				199,000
B6K-5300-S32	30	241	150	181	32	60				199,000
B6K-5310-S32	31	247	155	187	32	60				219,000
B6K-5320-S32	32	252	160	192	32	60				219,000
B6K-5330-S32	33	258	165	198	32	60				219,000
B6K-5340-S32	34	263	170	203	32	60				219,000
B6K-5340-S40	34	273	170	203	40	70				219,000
B6K-5350-S32	35	269	175	209	32	60	SPMG 110408	TSB-0410	TXL-15	219,000
B6K-5350-S40	35	279	175	209	40	70				219,000
B6K-5360-S32	36	275	180	215	32	60				232,000
B6K-5360-S40	36	285	180	215	40	70				232,000
B6K-5370-S32	37	281	185	221	32	60				232,000
B6K-5370-S40	37	291	185	221	40	70				232,000
B6K-5380-S32	38	287	190	227	32	60				232,000
B6K-5380-S40	38	297	190	227	40	70				232,000
B6K-5390-S32	39	292	195	232	32	60				232,000
B6K-5390-S40	39	302	195	232	40	70				232,000
B6K-5400-S32	40	298	200	238	32	60	SPMG 140512	TSB-243	TXL-20	232,000
B6K-5400-S40	40	308	200	238	40	70				232,000
B6K-5410-S32	41	304	205	244	32	60				232,000
B6K-5410-S40	41	314	205	244	40	70				232,000
B6K-5420-S40	42	319	210	249	40	70				254,000
B6K-5430-S40	43	325	215	255	40	70				254,000
B6K-5440-S40	44	330	220	260	40	70				254,000
B6K-5450-S40	45	337	225	267	40	70				254,000
B6K-5460-S40	46	343	230	273	40	70				270,000
B6K-5470-S40	47	348	235	278	40	70				270,000
B6K-5480-S40	48	354	240	284	40	70				270,000
B6K-5490-S40	49	359	245	289	40	70				270,000
B6K-5500-S40	50	365	250	295	40	70				270,000

B6T-6D, 9D 드릴 Turbo Drill



• INSERTS ⇒ **BPK, TAEGU-TEC**

Order No. 주문형번	D	PLD	L	L1	L2	d	L3						Price
B6T-6180-S25	D18	PLD - 0620	191	112	135	D25	56	SPMX 050204	TSB-0204	M506SS	M506CP	TXL-06	240,000
B6T-6190-S25	D19		197	118	141	D25	56						240,000
B6T-6200-S25	D20		203	124	147	D25	56						240,000
B6T-6210-S25	D21		209	130	153	D25	56						270,000
B6T-6220-S25	D22		215	136	159	D25	56						270,000
B6T-6230-S32	D23		228	142	168	D32	60						270,000
B6T-6240-S32	D24		234	148	174	D32	60						270,000
B6T-6250-S32	D25	PLD - 0825	240	154	180	D32	60	SPMX 060204	TSB-22060	M508SS	M508CP	TXL-06	308,000
B6T-6260-S32	D26		246	160	186	D32	60						330,000
B6T-6270-S32	D27		252	166	192	D32	60						330,000
B6T-6280-S32	D28		258	172	198	D32	60						330,000
B6T-6290-S32	D29		264	178	204	D32	60						330,000
B6T-6300-S32	D30		270	184	210	D32	60						330,000
B6T-9180-S25	D18	PLD - 0620	245	166	189	D25	56	SPMX 07T308	TSB-25065	M608SS	M610CP	TXL-07	276,000
B6T-9190-S25	D19		254	175	198	D25	56						276,000
B6T-9200-S25	D20		263	184	207	D25	56						276,000
B6T-9210-S25	D21		272	193	216	D25	56						311,000
B6T-9220-S25	D22		281	202	225	D25	56						311,000
B6T-9230-S32	D23		297	211	237	D32	60						311,000
B6T-9240-S32	D24		306	220	246	D32	60						311,000
B6T-9250-S32	D25	PLD - 0825	315	229	255	D32	60	SPMX 060204	TSB-22060	M508SS	M508CP	TXL-06	354,000
B6T-9260-S32	D26		324	238	264	D32	60						380,000
B6T-9270-S32	D27		333	247	273	D32	60						380,000
B6T-9280-S32	D28		342	256	282	D32	60						380,000
B6T-9290-S32	D29		351	265	291	D32	60						380,000
B6T-9300-S32	D30		360	274	300	D32	60						380,000

B6-2D, 3D, 4D / B6K - 5D 드릴 절삭 데이터 B6-2D, 3D, 4D / B6K - 5D Drill Cutting Data

Material 피삭재		Speed 속도 (m/min)	Feed 이송 (mm/rev)					
			ø12.5 ~ ø15	ø15.5 ~ ø21.5	ø22 ~ ø27.5	ø28 ~ ø33	ø34 ~ ø41	ø42 ~ ø50
P 강 Steel	저탄소강 (- 0.25%) (Unalloyed steel)	180 ~ 250	0.05 ~ 0.08	0.06 ~ 0.10	0.06 ~ 0.12	0.07 ~ 0.13	0.08 ~ 0.15	0.08 ~ 0.16
	고탄소강 (0.25% -) (Low - alloy steel)	160 ~ 220	0.06 ~ 0.12	0.08 ~ 0.15	0.10 ~ 0.18	0.12 ~ 0.22	0.12 ~ 0.24	0.13 ~ 0.25
	경합금강 (- HB300) (Low - alloy steel)	150 ~ 220	0.06 ~ 0.12	0.08 ~ 0.14	0.10 ~ 0.18	0.12 ~ 0.22	0.12 ~ 0.23	0.13 ~ 0.24
	고합금강 (HB300 -) (High - alloy steel)	130 ~ 180	0.06 ~ 0.10	0.06 ~ 0.12	0.08 ~ 0.15	0.09 ~ 0.16	0.10 ~ 0.17	0.11 ~ 0.19
M 스테인레스강 Stainless steel	스테인레스강 Stainless steel	170 ~ 240	0.05 ~ 0.10	0.06 ~ 0.12	0.08 ~ 0.15	0.09 ~ 0.16	0.10 ~ 0.17	0.11 ~ 0.19
K 주철 Cast iron	회주철 Grey cast iron	180 ~ 250	0.06 ~ 0.12	0.08 ~ 0.16	0.12 ~ 0.20	0.15 ~ 0.25	0.16 ~ 0.28	0.18 ~ 0.30
	구상흑연주철 Cast iron with nodular cast	130 ~ 200	0.06 ~ 0.10	0.08 ~ 0.15	0.10 ~ 0.18	0.12 ~ 0.20	0.15 ~ 0.23	0.16 ~ 0.25
N 비철금속 Nonferrous metals	알루미늄 Aluminium	330 ~ 380	0.06 ~ 0.14	0.08 ~ 0.15	0.10 ~ 0.20	0.12 ~ 0.22	0.14 ~ 0.23	0.15 ~ 0.26
S 내열합금 Super-alloys and titanium	고경도 합금강 Super-alloys and titanium	30 ~ 60	0.05 ~ 0.15	0.06 ~ 0.14	0.08 ~ 0.18	0.10 ~ 0.22	0.12 ~ 0.22	0.14 ~ 0.24

B6T - 6D, 9D 드릴 절삭 데이터 B6T-6D, 9D Drill Cutting Data

Material 피삭재		Speed 속도 (m/min)	Feed 이송 (mm/rev)	
			ø 18 ~ ø 25	ø 26 ~ ø 30
P 강 Steel	저탄소강 (- 0.25%) Unalloyed steel	130 ~ 190	0.06 ~ 0.10	0.07 ~ 0.11
	고탄소강 (0.25% -) Low - alloy steel	130 ~ 190	0.06 ~ 0.10	0.07 ~ 0.11
	경합금강 (- HB300) Low - alloy steel	100 ~ 140	0.06 ~ 0.10	0.07 ~ 0.11
	고합금강 (HB300 -) High - alloy steel	60 ~ 100	0.05 ~ 0.07	0.05 ~ 0.07
M 스테인레스강 Stainless steel	스테인레스강 Stainless steel	60 ~ 110	0.04 ~ 0.07	0.04 ~ 0.11
K 주철 Cast iron	회주철 Grey cast iron	130 ~ 190	0.07 ~ 0.13	0.07 ~ 0.15
	구상흑연주철 Cast iron with nodular cast	110 ~ 190	0.04 ~ 0.13	0.07 ~ 0.15
N 비철금속 Nonferrous metals	알루미늄 단조강 Aluminium forging alloys	200 ~ 300	0.04 ~ 0.06	0.07 ~ 0.12
	알루미늄 주물강 Aluminium cast alloys	140 ~ 300	0.04 ~ 0.06	0.06 ~ 0.12

B6 드릴 기술자료 B6 Drill Technical data

B6 드릴 추천 절삭유압 Recommended coolant supply for B6 drill

■ 드릴 작업시 추천 절삭유압을 공급하여야 합니다.

It is important to ensure that the recommended coolant pressure is applied.

- 절삭유압이 낮을 시 드릴 가공시 드릴이 떨며 공구 수명이 단축됩니다.

Low pressure can cause vibration and reduced tool life

- 2D, 3D의 경우 최소 4kg/cm 이며 4D, 5D의 경우 최소 5kg/cm 입니다.

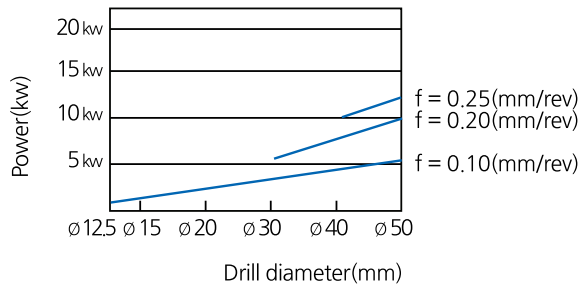
The recommended minimum pressure is 4Kg/cm for 2D and 3D and for the 4D and 5D minimum recommended pressure is 5kg/cm

실 소비 전력과 절삭유압 Net power consumption & coolant



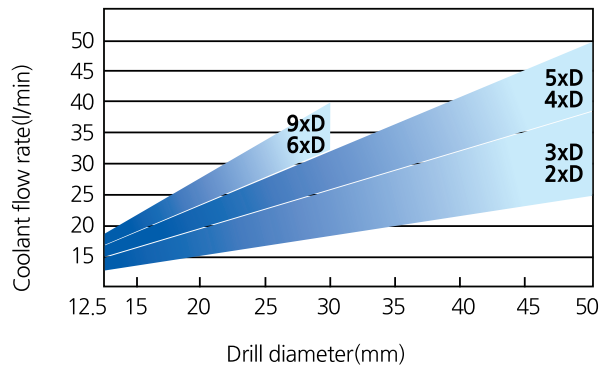
실 소비 전력

Net power consumption



절삭유압

Coolant volume



문제 발생시 Trouble shooting



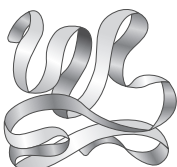
칩 배출 관련 문제점

The Problems of chip evacuation



해결책

Solution



길고 늘어지는 칩
Long chip



P

연한 피삭재
Soft materials
저탄소강
Low carbon steel

M

써스
SUS

회전
speed ↑

이송
feed ↓

P

합금강
Alloy steel
탄소강
Carbon steel

회전
speed ↑

이송
feed —



짧거나 붙는 칩
Short or tight chip



절삭유압을 높일 것
Increase coolant pressure

회전
speed ↑

이송
feed ↓

B6 드릴 기술자료 B6 Drill Technical data

선반 작업시 셋팅 Set-up

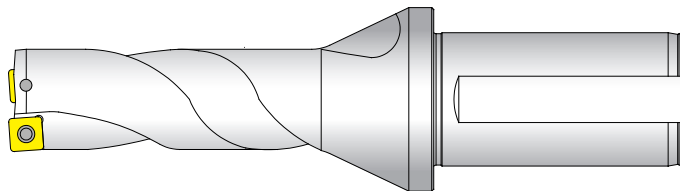
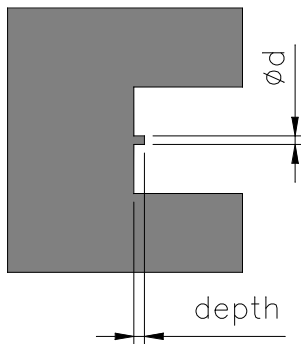
- 첫홀 가공 - 피삭재를 3~6mm가량 드릴링 한 후 코어(Core)가 크기가 0.2~0.7mm 되는지 확인하여 주십시오.
One first hole - please retract the drill after drilling to a depth of 3~6mm and check it has produced a small core within 0.2~0.7mm

만약 코어(Core)가 생성되지 않았다면 :
If a core is not created :

- 이는 인서트 파손이나 가공시 떨림을 발생 시킬 수 있습니다.
It can cause insert breakage and vibration when is drilling operation.
- 드릴을 180도 회전하여 다시 시도하여 주십시오.
Please reverse the drill body 108 degrees in tool post and try again

만약 코어(Core)가 추천 크기
(0.2~0.7mm)보다 클 때 :
If core size is a higher than
recommended values :

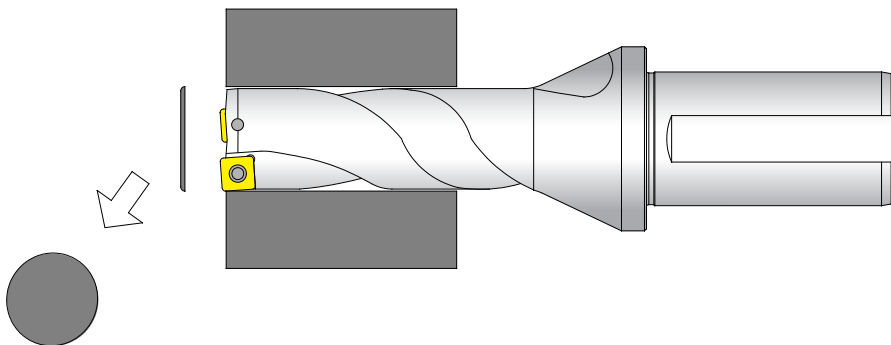
- 코어(Core)크기가 추천 크기가 되도록 오프셋량을 조정하여 주십시오.
Please adjust offsets to bring core to correct size
- 오프셋량 조정없이 가공시 과부하와 떨림 발생을 야기 할 수 있습니다.
Failure to do this, it can cause overload and vibration during drilling



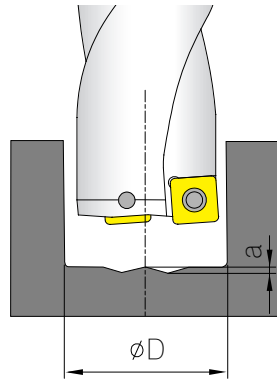
안전 유의 사항 Safety precaution

유의 사항 :
Precaution :

- 선반에서 관통 작업을 할 경우, 원판(Disk)이 떨어져 나가며 부상의 위험이 발생할 수 있으니 반드시 안전 커버를 사용하십시오.
On a stationary drilling application, there is a risk of accidents caused by the disc being thrown from the parts.



B6 드릴 기술자료 B6 Drill Technical data



• B6, B6K 바닥형상 Hole bottom shape of B6, B6K drill

Drill Diameter 드릴크기	Insert	a
Ø 13 ~ Ø 15	SPMG 050204	0.4
Ø 16 ~ Ø 21	SPMG 060204	0.5
Ø 22 ~ Ø 27	SPMG 07T308	0.5
Ø 28 ~ Ø 33	SPMG 090408	0.6
Ø 34 ~ Ø 41	SPMG 110408	0.8
Ø 42 ~ Ø 50	SPMG 140512	1.0

• Choose the shortest possible drill for best performance and productivity results

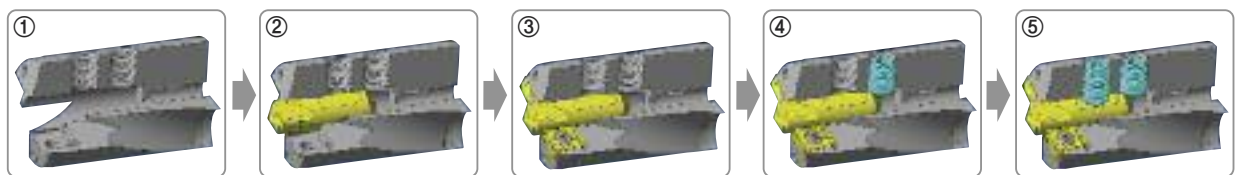
• B6, B6K 드릴 구멍공차 The hole tolerance of B6, B6K drill

Drill Diameter 드릴크기	2xD	3xD	4xD	5xD
Ø 13 ~ Ø 21.5	-0.10 ~ +0.15	-0.10 ~ +0.18	-0.15 ~ +0.20	-0.15 ~ +0.25
Ø 22 ~ Ø 50	-0.10 ~ +0.15	-0.12 ~ +0.20	-0.15 ~ +0.25	-0.15 ~ +0.30

※ 홀 공차는 드릴의 길이, 피삭재, 장비, 가공조건 등에 따라 차이가 생길 수 있습니다.

※ The length of drill, kind of workpiece, machine stability, and cutting condition could affect the hole tolerance.

• B6T 조립순서 B6T Setting View

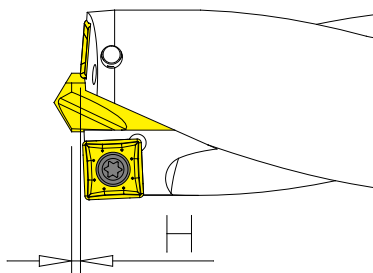


• PLD 셋팅 높이 PLD Adjustment

H			
P M K	S	P Soft Steel	N
1.0	1.2	1.2	1.5
1.2	1.4	1.4	1.7

※ Turbo drill works on P, K, M as B6, B6K drill. Pilot drill is only for guiding center. Cutting is be SPMG insert.

P 강 Steel **M** 써스 Sus **K** 주철 Cast iron **N** 비철금속 Nonferrous metals



B7 DRILL

SPADE DRILL



B7 드릴 인서트 B7 Drill Insert

인서트 각 부 명칭 및 기능

Insert each name and function

OD Margin(Land)

가공된 구멍을 다듬질한다.
To trim the hakk processed

OD Clearance

효과적인 열 방출을 도와준다
Efficient ejection of heat

Corner Chamfer

마모를 줄여주는 공구 수명을 향상시킨다.
To reduce wear and improve the tool life

Chip Splitters

칩의 폭을 줄여주는 CHIP DIVIDER의 역할을 한다.
Chip breaker for efficient chips evacuation

Cutting Edge

칩의 폭을 줄여주는 실제 절삭이 이루어지는 부분.
Cutting edge

Keyway

HOLDER의 PIN으로 축방향에 대칭이 되도록 INSERT를 잡아준다
To fix the inserts symmetric to axis

Hole

TORX SCREW를 이용하여 제품을 홀더에 고정시킨다.
To fix the inserts to the holders with TROX screw

Web Thinning&Edge

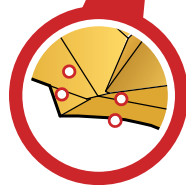
절삭 시 추력을 감소시켜주고 칩 배출 공간을 형성시킨다.
During cutting, making the space for the chips evacuation

Primary, Secondary Clearance Surface

Rake Surface와 더불어 절삭인선을 형성시켜주며 열 방출을 도와준다.
With cutting edge to make a hole and efficient ejection of heat

Rake Surface

실제 절삭이 일어나는 부분으로 칩을 끊어주는 역할을 한다.
The part of cutting and the part of chip breaker



FACET POINT

칩의 폭을 줄여주는 실제 절삭이 이루어지는 부분.
Self centering

B7 드릴 인서트 규격 B7 Drill Insert Description

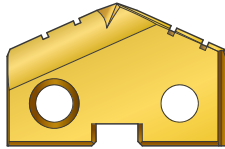
48

3

A - 460

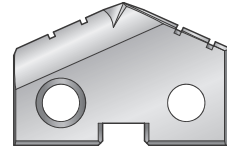
Material 소재		Series 시리즈				Coating 코팅		Diameter 가공경
04 - M4	HSS	Y	ø9.5 ~ ø11.0	4	ø48.0 ~ ø65.0	A	TiALN	Inch
48 - M48	Premium HSS	Z	ø11.5 ~ ø12.5	5	ø63.5 ~ ø76.0	C	TiCN	Metric
P2 - P25	Carbide	0	ø13.0 ~ ø17.5	6	ø78.0 ~ ø88.0	T	TiN	Special
		1	ø18.0 ~ ø24.0	7	ø90.0 ~ ø100.0	i	ALTiN	
		2	ø25.0 ~ ø35.0	8	ø102.0 ~ ø114.0			
		3	ø36.0 ~ ø47.0					

TiN



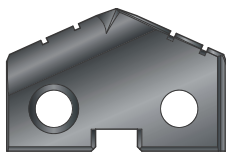
- 범용 코팅 General purpose coating
- 공구 수명 향상 Improved tool life over a noncoated insert
- 알루미늄 작업에 탁월 Excellent choice for Aluminium
- Color : Gold / Yellow

TiCN



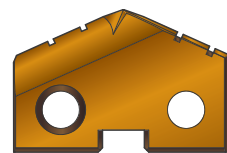
- 고속 가공시 발생하는 마모 저항에 탁월한 성능
Excellent choice for wear resistance over low surface speeds
- 고강도 / 마모방지 High hardness / wear resistance
- 400℃까지 작업가능 Maximum working temperature 400
- 경도 HV3500 Hardness HV3500
- Color : Blue / Grey

TiALN



- 고속 가공시 발생하는 마모 저항에 탁월한 성능
Excellent choice for wear resistance over low surface speeds
- 산화 저항 우수 Excellent oxidation resistance
- 800℃까지 작업가능 Maximum working temperature 800
- 경도 HV3000 Hardness HV3000
- Color : Violet / Black

Alpha



- 작업시 발생하는 열 저항이 TiN, TiCN 보다 우수
First choice for increased heat resistance over TiN, TiCN
- 타 코팅보다 우수한 공구 수명과 시장 진입의 우수성
Allows for improved tool life and higher penetration rates of the market
- TiALN 코팅보다 20% 이상 공구수명 연장
Over 20% increased tool life over TiAN
- Color : Copper / Bronze

HSS(M4) standard stock

일반강 및 주철에 사용. Applied for steels and cast Iron.

Premium HSS(M48) standard stock

고경도합금 및 경도 재질에 350~500Bhn(HRC37~49)의 사용.
Applied for high temp Alloy and 350~500Bhn(HRC37~49) and harder 9.5mm to 114.00mm

Carbide(P25) standard stock

일반탄소강, 합금강 및 난삭재에 사용.
Applied for Carbon Steel, Alloy Steel and Hard to Machine Material (Titanium and Stainless Steel)
13.00mm to 47.00mm

B7 드릴 홀더 규격 B7 Drill Holder Description

B7 **S** - **115** **125** **134**

드릴종류 드릴종류 최소 가공직경 Ø11.5 최대 가공직경 Ø12.5 드릴전장 134mm
 Drill group Drill type Min drilling diameter Ø11.5 Max drilling diameter Ø12.5 Total length 134mm



B7K



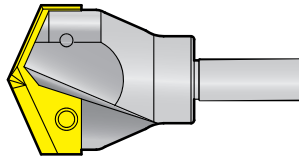
B7S



B7H



B7M



B7X

- 다양한 드릴홀더를 보유하고 있어 1.5D~30D까지 홀 가공이 용이합니다.
Possible to make a hole 1.5D to 30D with a various range of drills.
- 인서트형으로 9.5mm~114mm까지 표준형으로 제작되어 있어 사용이 편리합니다.
As indexable type of drill, composed of a various range of diameters from 9.5mm to 114mm, it is very convenient to use.
- 칩 분할 홀이 있어서 칩 처리가 용이하고 파워가 약한 기계에서도 대구경 드릴작업이 가능합니다.
Chip splitters is able to be used for chip evacuation and the weak-powered machine.
- 재고 관리가 용이, 홀더9개(Y,Z,0,1,2,3,4,5~6,7~8)로 9.5mm~114mm까지의 드릴작업이 가능.
Efficient management for the stock levels, Only nine holders can make holes 9.5mm to 114mm

Stub(Extra Short)	1.5~2D
Short	3~4D
Intermediate	5~6D
Standard	7~8D
Extended	8~12D
Long	11~14D
XL(Extra long)	20~25D
3XL(Extra long)	25~30D

Y	Z	0	1	2	3	4	5,6	7,8
9.5 ~ 11.0	11.5 ~ 12.5	13.0 ~ 17.54	18.0 ~ 24.0	25.0 ~ 35.0	36.0 ~ 47.0	48.0 ~ 65.0	64.0 ~ 88.0	90.0 ~ 114.0

- Solid type 드릴에 비해 진원도 및 가공치수 정도가 우수하며 수명도 탁월함.
Good performance and great tool life compared with solid type drill.
- 인선에 절삭유 공급이 용이.
Easy to supply the coolant inside of the hole processing
- 모듈라 시스템 드릴은 길이를 자유자제로 조정할수 있습니다.
A variety of length of drills with modular systems.

HSS(M48) Insert

Price					
Series	Metric (mm)	Tin	Ticn	Tialn	Altin
Y, Z	9.5~12.5	26,500	31,500	31,500	33,500
0	13.0~17.5	29,000	34,500	34,500	37,000
1	18.0~24.5	32,000	38,000	38,000	40,500
2	25.0~35.0	37,500	45,000	45,000	49,000
3	35.5~47.0	47,500	55,500	55,500	59,000
4	48.0~65.0	68,000	76,500	76,500	79,500

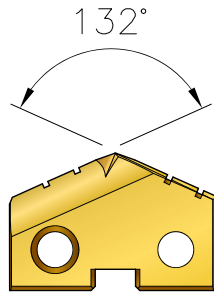
HSS(M4) Insert

Price					
Series	Metric (mm)	Tin	Ticn	Tialn	Altin
5	64.0~76.0	68,000	82,000	82,000	86,000
6	78.0~88.0	79,000	95,000	95,000	101,000
7	90.0~100	95,000	113,000	113,000	120,000
8	102.0~114.0	110,000	130,000	130,000	140,000

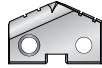
Carbide B7 Insert

Price		
Series	Metric (mm)	Altin
0	13.0 ~ 17.0	67,500
1	18.0 ~ 24.0	77,000
2	25.0 ~ 35.0	91,000
3	36.0 ~ 47.0	156,000

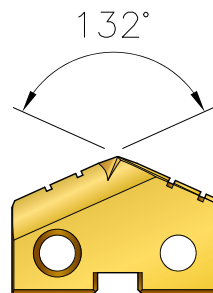
HSS B7 드릴 인서트 Y 시리즈 HSS B7 Drill Insert Y Series



9.5mm(.3740")~11mm(.4331")

Diameter			 Tin	 TiCN	 TiALN	 Alpha
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)
3/8"	9.5	.3740"	48YT-0095M	48YC-0095M	48YA-0095M	48Yi-0095M
	9.53	.3750"	48YT-03750	48YC-03750	48YA-03750	48Yi-03750
	9.80	.3860"	48YT-03860	48YC-03860	48YA-03860	48Yi-03860
25/64"	9.92	.3906"	48YT-03906	48YC-03906	48YA-03906	48Yi-03906
	10.00	.3937"	48YT-0100M	48YC-0100M	48YA-0100M	48Yi-0100M
	10.20	.4016"	48YT-04016	48YC-04016	48YA-04016	48Yi-04016
13/32"	10.32	.4063"	48YT-04063	48YC-04063	48YA-04063	48Yi-04063
	10.50	.4134"	48YT-0105M	48YC-0105M	48YA-0105M	48Yi-0105M
	10.72	.4219"	48YT-04219	48YC-04219	48YA-04219	48Yi-04219
27/64"	10.80	.4252"	48YT-04252	48YC-04252	48YA-04252	48Yi-04252
	11.00	.4331"	48YT-0110M	48YC-0110M	48YA-0110M	48Yi-0110M

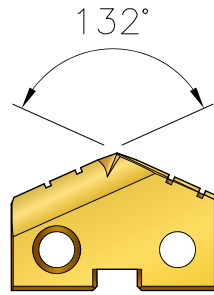
HSS B7 드릴 인서트 Z 시리즈 HSS B7 Drill Insert Z Series



11.11mm(.4375")~12.70mm(.5000")

Diameter			 Tin	 TiCN	 TiALN	 Alpha
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)
7/16"	11.11	.4375"	48ZT-04375	48ZC-04375	48ZA-04375	48Zi-04375
	11.50	.4528"	48ZT-0115M	48ZC-0115M	48ZA-0115M	48Zi-0115M
29/64"	11.51	.4531"	48ZT-04531	48ZC-04531	48ZA-04531	48Zi-04531
15/32"	11.91	.4688"	48ZT-04688	48ZC-04688	48ZA-04688	48Zi-04688
	12.00	.4724"	48ZT-0120M	48ZC-0120M	48ZA-0120M	48Zi-0120M
31/64"	12.30	.4844"	48ZT-04844	48ZC-04844	48ZA-04844	48Zi-04844
	12.50	.4921"	48ZT-0125M	48ZC-0125M	48ZA-0125M	48Zi-0125M
1/2"	12.70	.5000"	48ZT-05000	48ZC-05000	48ZA-05000	48Zi-05000

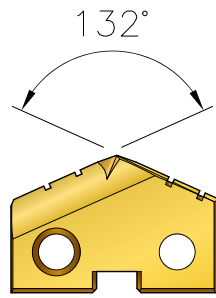
Carbide, HSS B7 드릴 인서트 O 시리즈 Carbide, HSS B7 Drill Insert O Series



11.11mm(.4375")~12.70mm(.5000")

Diameter							
Inch (inch)	Metric (mm)	Decimal (inch)	Tin	TiCN	TiAlN	Alpha	
	13.00	.5118"	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Carbide (P25)
33/64"	13.10	.5156"	480T-0130M	480C-0130M	480A-0130M	480i-0130M	P20i-0130M
17/32"	13.10	.5156"	480T-05156	480C-05156	480A-05156	480i-05156	P20i-05156
17/32"	13.49	.5313"	480T-05313	480C-05313	480A-05313	480i-05313	P20i-05313
	13.50	.5315"	480T-0135M	480C-0135M	480A-0135M	480i-0135M	P20i-0135M
35/64"	13.89	.5469"	480T-05469	480C-05469	480A-05469	480i-05469	P20i-05469
	14.00	.5512"	480T-0140M	480C-0140M	480A-0140M	480i-0140M	P20i-0140M
9/16"	14.29	.5625"	480T-05625	480C-05625	480A-05625	480i-05625	P20i-05625
	14.50	.5709"	480T-0145M	480C-0145M	480A-0145M	480i-0145M	P20i-0145M
37/64"	14.68	.5781"	480T-05781	480C-05781	480A-05781	480i-05781	P20i-05781
	15.00	.5906"	480T-0150M	480C-0150M	480A-0150M	480i-0150M	P20i-0150M
19/32"	15.08	.5938"	480T-05938	480C-05938	480A-05938	480i-05469	P20i-05469
39/64"	15.48	.6094"	480T-06094	480C-06094	480A-06094	480i-06094	P20i-06094
	15.50	.6102"	480T-0155M	480C-0155M	480A-0155M	480i-0155M	P20i-0155M
5/8"	15.88	.6250"	480T-06250	480C-06250	480A-06250	480i-06250	P20i-06250
	16.00	.6299"	480T-0160M	480C-0160M	480A-0160M	480i-0160M	P20i-0160M
41/64"	16.27	.6406"	480T-06406	480C-06406	480A-06406	480i-06406	P20i-06406
	16.50	.6496"	480T-0165M	480C-0165M	480A-0165M	480i-0165M	P20i-0165M
21/32"	16.67	.6563"	480T-06563	480C-06563	480A-06563	480i-06563	P20i-06563
	17.00	.6693"	480T-0170M	480C-0170M	480A-0170M	480i-0170M	P20i-0170M
43/64"	17.07	.6719"	480T-06719	480C-06719	480A-06719	480i-06719	P20i-06719
11/16"	17.46	.6875"	480T-06875	480C-06875	480A-06875	480i-06875	P20i-06875
	17.50	.6890"	480T-0175M	480C-0175M	480A-0175M	480i-0175M	P20i-0175M

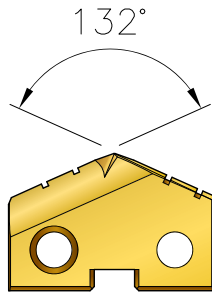
Carbide, HSS B7 드릴 인서트 1 시리즈 Carbide, HSS B7 Drill Insert 1 Series



17.86mm(.7031")~24mm(.9449")

Diameter							
			Tin	TiCN	TiALN	Alpha	
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Carbide (P25)
45/64"	17.86	.7031"	481T-07031	481C-07031	481A-07031	481i-07031	P21i-07031
	18.00	.7087"	481T-0180M	481C-0180M	481A-0180M	481i-0180M	P21i-0180M
23/32"	18.26	.7188"	481T-07188	481C-07188	481A-07188	481i-07188	P21i-07188
	18.50	.7283"	481T-0185M	481C-0185M	481A-0185M	481i-0185M	P21i-0185M
47/64"	18.65	.7344"	481T-07344	481C-07344	481A-07344	481i-07344	P21i-07344
	19.00	.7480"	481T-0190M	481C-0190M	481A-0190M	481i-0190M	P21i-0190M
3/4"	19.05	.7500"	481T-07500	481C-07500	481A-07500	481i-07500	P21i-07500
49/64"	19.45	.7656"	481T-07656	481C-07656	481A-07656	481i-07656	P21i-07656
	19.50	.7677"	481T-0195M	481C-0195M	481A-0195M	481i-0195M	P21i-0195M
25/32"	19.84	.7813"	481T-07813	481C-07813	481A-07813	481i-07813	P21i-07813
	20.00	.7874"	481T-0200M	481C-0200M	481A-0200M	481i-0200M	P21i-0200M
51/64"	20.24	.7969"	481T-07969	481C-07969	481A-07969	481i-07969	P21i-07969
	20.50	.8071"	481T-0205M	481C-0205M	481A-0205M	481i-0205M	P21i-0205M
13/16"	20.64	.8125"	481T-08125	481C-08125	481A-08125	481i-08125	P21i-08125
	21.00	.8268"	481T-0210M	481C-0210M	481A-0210M	481i-0210M	P21i-0210M
27/32"	21.43	.8438"	481T-08438	481C-08438	481A-08438	481i-08438	P21i-08438
	21.50	.8465"	481T-0215M	481C-0215M	481A-0215M	481i-0215M	P21i-0215M
55/64"	21.83	.8594"	481T-08594	481C-08594	481A-08594	481i-08594	P21i-08594
	22.00	.8661"	481T-0220M	481C-0220M	481A-0220M	481i-0220M	P21i-0220M
7/8"	22.23	.8750"	481T-08750	481C-08750	481A-08750	481i-08750	P21i-08750
	22.50	.8858"	481T-0225M	481C-0225M	481A-0225M	481i-0225M	P21i-0225M
57/64"	22.62	.8906"	481T-08906	481C-08906	481A-08906	481i-08906	P21i-08906
	23.00	.9055"	481T-0230M	481C-0230M	481A-0230M	481i-0230M	P21i-0230M
29/32"	23.02	.9063"	481T-09063	481C-09063	481A-0235M	481i-0235M	P21i-0235M
59/64"	23.42	.9219"	481T-09219	481C-09219	481A-09219	481i-09219	P21i-09219
	23.50	.9252"	481T-0235M	481C-0235M	481A-0235M	481i-0235M	P21i-0235M
15/16"	23.81	.9375"	481T-09375	481C-09375	481A-09375	481i-09375	P21i-09375
	24.00	.9449"	481T-0240M	481C-0240M	481A-0240M	481i-0240M	P21i-0240M

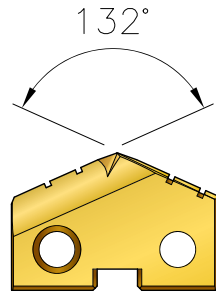
Carbide, HSS B7 드릴 인서트 2 시리즈 Carbide, HSS B7 Drill Insert 2 Series



24.5mm(0.9646")~35.0mm(1.3780")

Diameter							
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Carbide (P25)
	24.50	.9646"	482T-0245M	482C-0245M	482A-0245M	482i-0245M	P22i-0245M
31/32"	24.61	.9688"	482T-09688	482C-09688	482A-09688	482i-09688	P22i-09688
	24.85	.9783"	482T-02485	482C-02485	482A-02485	482i-02485	P22i-02485
63/64"	25.00	.9843"	482T-0250M	482C-0250M	482A-0250M	482i-0250M	P22i-0250M
1"	25.40	1.0000"	482T-10000	482C-10000	482A-10000	482i-10000	P22i-10000
	25.50	1.0039"	482T-0255M	482C-0255M	482A-0255M	482i-0255M	P22i-0255M
1-1/64"	25.80	1.0156"	482T-10156	482C-10156	482A-10156	482i-10156	P22i-10156
	26.00	1.0236"	482T-0260M	482C-0260M	482A-0260M	482i-0260M	P22i-0260M
1-1/32"	26.19	1.0313"	482T-10313	482C-10313	482A-10313	482i-10313	P22i-10313
	26.50	1.0431"	482T-0265M	482C-0265M	482A-0265M	482i-0265M	P22i-0265M
1-3/64"	26.59	1.0469"	482T-10469	482C-10469	482A-10469	482i-10469	P22i-10469
1-1/16"	26.99	1.0625"	482T-10625	482C-10625	482A-10625	482i-10625	P22i-10625
	27.00	1.0630"	482T-0270M	482C-0270M	482A-0270M	482i-0270M	P22i-0270M
	27.50	1.0827"	482T-0275M	482C-0275M	482A-0275M	482i-0275M	P22i-0275M
1-3/32"	27.78	1.0938"	482T-10938	482C-10938	482A-10938	482i-10938	P22i-10938
	28.00	1.1024"	482T-0280M	482C-0280M	482A-0280M	482i-0280M	P22i-0280M
1-7/64"	28.18	1.1094"	482T-11094	482C-11094	482A-11094	482i-11094	P22i-11094
	28.50	1.1220"	482T-0285M	482C-0285M	482A-0285M	482i-0285M	P22i-0285M
1-1/8"	28.58	1.1250"	482T-11250	482C-11250	482A-11250	482i-11250	P22i-11250
	29.00	1.1417"	482T-0290M	482C-0290M	482A-0290M	482i-0290M	P22i-0290M
1-5/32"	29.37	1.1563"	482T-11563	482C-11563	482A-11563	482i-11563	P22i-11563
	29.50	1.1614"	482T-0295M	482C-0295M	482A-0295M	482i-0295M	P22i-0295M
	30.00	1.1811"	482T-0300M	482C-0300M	482A-0300M	482i-0300M	P22i-0300M
1-3/16"	30.16	1.1875"	482T-11875	482C-11875	482A-11875	482i-11875	P22i-11875
	30.50	1.2008"	482T-0305M	482C-0305M	482A-0305M	482i-0305M	P22i-0305M
1-7/32"	30.96	1.2188"	482T-12188	482C-12188	482A-12188	482i-12188	P22i-12188
	31.00	1.2205"	482T-0310M	482C-0310M	482A-0310M	482i-0310M	P22i-0310M
	31.50	1.2402"	482T-0315M	482C-0315M	482A-0315M	482i-0315M	P22i-0315M
1-1/4"	31.75	1.2500"	482T-12500	482C-12500	482A-12500	482i-12500	P22i-12500
	32.00	1.2598"	482T-0320M	482C-0320M	482A-0320M	482i-0320M	P22i-0320M
	32.50	1.2795"	482T-0325M	482C-0325M	482A-0325M	482i-0325M	P22i-0325M
1-9/32"	32.54	1.2813"	482T-12813	482C-12813	482A-12813	482i-12813	P22i-12813
	33.00	1.2992"	482T-0330M	482C-0330M	482A-0330M	482i-0330M	P22i-0330M
1-5/16"	33.34	1.3125"	482T-13125	482C-13125	482A-13125	482i-13125	P22i-13125
	33.50	1.3187"	482T-0335M	482C-0335M	482A-0335M	482i-0335M	P22i-0335M
	34.00	1.3386"	482T-0340M	482C-0340M	482A-0340M	482i-0340M	P22i-0340M
1-11/32"	34.13	1.3438"	482T-13438	482C-13438	482A-13438	482i-13438	P22i-13438
	34.50	1.3583"	482T-0345M	482C-0345M	482A-0345M	482i-0345M	P22i-0345M
1-3/8"	34.93	1.3750"	482T-137550	482C-137550	482A-137550	482i-137550	P22i-137550
	35.00	1.3780"	482T-0350M	482C-0350M	482A-0350M	482i-0350M	P22i-0350M

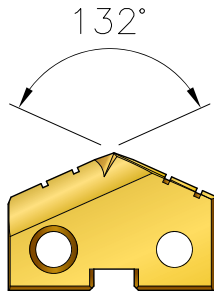
Carbide, HSS B7 드릴 인서트 3 시리즈 Carbide, HSS B7 Drill Insert 3 Series



35.5mm(1.3976")~47.63mm(1.8750")

Diameter							
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Carbide (P25)
	35.50	1.3976"	483T-0355M	483C-0355M	483A-0355M	483i-0355M	P23i-0355M
1-13/32"	35.72	1.4063"	483T-14063	483C-14063	483A-14063	483i-14063	P23i-14063
	36.00	1.4173"	483T-0360M	483C-0360M	483A-0360M	483i-0360M	P23i-0360M
	36.50	1.4370"	483T-0365M	483C-0365M	483A-0365M	483i-0365M	P23i-0365M
1-7/16"	36.51	1.4375"	483T-14375	483C-14375	483A-14375	483i-14375	P23i-14375
	37.00	1.4567"	483T-0370M	483C-0370M	483A-0370M	483i-0370M	P23i-0370M
1-15/32"	37.31	1.4688"	483T-14688	483C-14688	483A-14688	483i-14688	P23i-14688
	38.00	1.4961"	483T-0380M	483C-0380M	483A-0380M	483i-0380M	P23i-0380M
1-1/2"	38.10	1.5000"	483T-15000	483C-15000	483A-15000	483i-15000	P23i-15000
1-17/32"	38.89	1.5313"	483T-15313	483C-15313	483A-15313	483i-15313	P23i-15313
	39.00	1.5354"	483T-0390M	483C-0390M	483A-0390M	483i-0390M	P23i-0390M
1-9/16"	39.69	1.5625"	483T-15625	483C-15625	483A-15625	483i-15625	P23i-15625
	40.00	1.5748"	483T-0400M	483C-0400M	483A-0400M	483i-0400M	P23i-0400M
1-19/32"	40.48	1.5938"	483T-15938	483C-15938	483A-15938	483i-15938	P23i-15938
	41.00	1.6142"	483T-0410M	483C-0410M	483A-0410M	483i-0410M	P23i-0410M
1-5/8"	41.28	1.6250"	483T-16250	483C-16250	483A-16250	483i-16250	P23i-16250
	42.00	1.6535"	483T-0420M	483C-0420M	483A-0420M	483i-0420M	P23i-0420M
1-21/32"	42.07	1.6563"	483T-16563	483C-16563	483A-16563	483i-16563	P23i-16563
1-11/16"	42.86	1.6875"	483T-16875	483C-16875	483A-16875	483i-16875	P23i-16875
	43.00	1.6929"	483T-0430M	483C-0430M	483A-0430M	483i-0430M	P23i-0430M
1-23/32"	43.66	1.7188"	483T-17188	483C-17188	483A-17188	483i-17188	P23i-17188
	44.00	1.7323"	483T-0440M	483C-0440M	483A-0440M	483i-0440M	P23i-0440M
1-3/4"	44.45	1.7500"	483T-17500	483C-17500	483A-17500	483i-17500	P23i-17500
	45.00	1.7717"	483T-0450M	483C-0450M	483A-0450M	483i-0450M	P23i-0450M
1-25/32"	45.24	1.7813"	483T-17813	483C-17813	483A-17813	483i-17813	P23i-17813
	46.00	1.8110"	483T-0460M	483C-0460M	483A-0460M	483i-0460M	P23i-0460M
1-13/16"	46.04	1.8125"	483T-18125	483C-18125	483A-18125	483i-18125	P23i-18125
1-27/32"	46.83	1.8438"	483T-18438	483C-18438	483A-18438	483i-18438	P23i-18438
	47.00	1.8504"	483T-0470M	483C-0470M	483A-0470M	483i-0470M	P23i-0470M
1-7/8"	47.63	1.8750"	483T-18750	483C-18750	483A-18750	483i-18750	P23i-18750

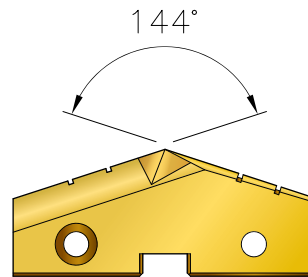
HSS B7 드릴 인서트 4 시리즈 HSS B7 Drill Insert 4 Series



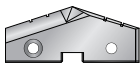
48mm(1.8898")~65.09mm(2.5625")

Diameter						
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)
	48.00	1.8898"	484T-0480M	484C-0480M	484A-0480M	484i-0480M
1-29/32"	48.42	1.9063"	484T-19063	484C-19063	484A-19063	484i-19063
	49.00	1.9291"	484T-0490M	484C-0490M	484A-0490M	484i-0490M
1-15/16"	49.21	1.9375"	484T-19375	484C-19375	484A-19375	484i-19375
	50.00	1.9685"	484T-0500M	484C-0500M	484A-0500M	484i-0500M
1-31/32"	50.01	1.9688"	484T-19688	484C-19688	484A-19688	484i-19688
2"	50.80	2.0000"	484T-20000	484C-20000	484A-20000	484i-20000
	51.00	2.0078"	484T-0510M	484C-0510M	484A-0510M	484i-0510M
2-1/32"	51.19	2.0313"	484T-20313	484C-20313	484A-20313	484i-20313
2-3/64"	52.00	2.0472"	484T-20472	484C-20472	484A-20472	484i-20472
2-1/16"	52.39	2.0625"	484T-20625	484C-20625	484A-20625	484i-20625
	53.00	2.0866"	484T-0530M	484C-0530M	484A-0530M	484i-0530M
2-3/32"	53.18	2.0938"	484T-20938	484C-20938	484A-20938	484i-20938
2-1/8"	53.98	2.1250"	484T-21250	484C-21250	484A-21250	484i-21250
	54.00	2.1260"	484T-0540M	484C-0540M	484A-0540M	484i-0540M
2-5/32"	54.79	2.1563"	484T-21563	484C-21563	484A-21563	484i-21563
	55.00	2.1654"	484T-0550M	484C-0550M	484A-0550M	484i-0550M
2-3/16"	55.56	2.1875"	484T-21875	484C-21875	484A-21875	484i-21875
	56.00	2.2047"	484T-0560M	484C-0560M	484A-0560M	484i-0560M
2-7/32"	56.36	2.2188"	484T-22188	484C-22188	484A-22188	484i-22188
	57.00	2.2441"	484T-0570M	484C-0570M	484A-0570M	484i-0570M
2-1/4"	57.15	2.2500"	484T-22500	484C-22500	484A-22500	484i-22500
2-9/32"	57.94	2.2813"	484T-22813	484C-22813	484A-22813	484i-22813
	58.00	2.2835"	484T-0580M	484C-0580M	484A-0580M	484i-0580M
2-5/16"	58.74	2.3125"	484T-23125	484C-23125	484A-23125	484i-23125
	59.00	2.3228"	484T-0590M	484C-0590M	484A-0590M	484i-0590M
2-11/32"	59.53	2.3438"	484T-23438	484C-23438	484A-23438	484i-23438
	60.00	2.3662"	484T-0600M	484C-0600M	484A-0600M	484i-0600M
2-3/8"	60.33	2.3750"	484T-23750	484C-23750	484A-23750	484i-23750
	61.00	2.4016"	484T-0610M	484C-0610M	484A-0610M	484i-0610M
2-13/32"	61.12	2.1063"	484T-24063	484C-24063	484A-24063	484i-24063
2-7/16"	61.91	2.4375"	484T-24375	484C-24375	484A-24375	484i-24375
	62.00	2.4409"	484T-0620M	484C-0620M	484A-0620M	484i-0620M
2-15/32"	62.71	2.4688"	484T-24688	484C-24688	484A-24688	484i-24688
	63.00	2.4803"	484T-0630M	484C-0630M	484A-0630M	484i-0630M
2-1/2"	63.50	2.5000"	484T-0635M	484C-0635M	484A-0635M	484i-0635M
	64.00	2.5197"	484T-0640M	484C-0640M	484A-0640M	484i-0640M
2-17/32"	64.29	2.5313"	484T-25313	484C-25313	484A-25313	484i-25313
	65.00	2.5591"	484T-0650M	484C-0650M	484A-0650M	484i-0650M
2-9/16"	65.09	2.5625"	484T-25625	484C-25625	484A-25625	484i-25625

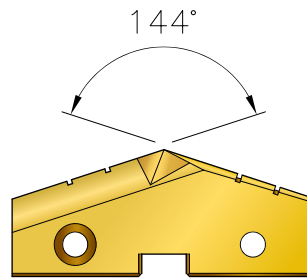
HSS B7 드릴 인서트 5 시리즈 HSS B7 Drill Insert 5 Series



63.5mm(2.2500")~76.2mm(30000")

Diameter						
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)
2-1/2"	63.50	2.2500"	045T-0635M	045C-0635M	045A-0635M	045i-0635M
	64.00	2.5197"	045T-0640M	045C-0640M	045A-0640M	045i-0640M
2-17/32"	64.29	2.5313"	045T-25313	045C-25313	045A-25313	045i-25313
2-9/16"	65.09	2.5625"	045T-25625	045C-25625	045A-25625	045i-25625
2-19/32"	65.88	2.5938"	045T-25938	045C-25938	045A-25938	045i-25938
	66.00	2.5984"	045T-0660M	045C-0660M	045A-0660M	045i-0660M
2-5/8"	66.68	2.6250"	045T-26250	045C-26250	045A-26250	045i-26250
2-21/32"	67.47	2.6563"	045T-26563	045C-26563	045A-26563	045i-26563
	68.00	2.6772"	045T-0680M	045C-0680M	045A-0680M	045i-0680M
2-11/16"	68.26	2.6875"	045T-26875	045C-26875	045A-26875	045i-26875
2-23/32"	69.05	2.7188"	045T-27188	045C-27188	045A-27188	045i-27188
2-3/4"	69.85	2.7500"	045T-27500	045C-27500	045A-27500	045i-27500
	70.00	2.7559"	045T-0700M	045C-0700M	045A-0700M	045i-0700M
2-25/32"	70.64	2.7813"	045T-27813	045C-27813	045A-27813	045i-27813
2-13/16"	71.44	2.8125"	045T-28125	045C-28125	045A-28125	045i-28125
	72.00	2.8346"	045T-0720M	045C-0720M	045A-0720M	045i-0720M
2-27/32"	72.23	2.8438"	045T-28438	045C-28438	045A-28438	045i-28438
2-7/8"	73.03	2.8750"	045T-28750	045C-28750	045A-28750	045i-28750
2-29/32"	73.82	2.9063"	045T-29063	045C-29063	045A-29063	045i-29063
	74.00	2.9134"	045T-0740M	045C-0740M	045A-0740M	045i-0740M
2-15/16"	74.61	2.9375"	045T-29375	045C-29375	045A-29375	045i-29375
2-31/32"	75.41	2.9688"	045T-29688	045C-29688	045A-29688	045i-29688
	76.00	2.9921"	045T-0760M	045C-0760M	045A-0760M	045i-0760M
3"	76.20	3.0000"	045T-30000	045C-30000	045A-30000	045i-30000

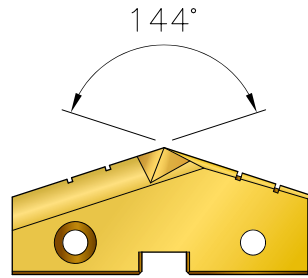
HSS B7 드릴 인서트 6 시리즈 HSS B7 Drill Insert 6 Series



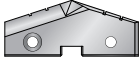
76.99mm(3.0313")~88.90mm(3.5000")

Diameter						
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)
3-1/32"	76.99	3.0313"	046T-30313	046C-30313	046A-30313	046i-30313
3-1/16"	77.79	3.0625"	046T-30625	046C-30625	046A-30625	046i-30625
	78.00	3.0709"	046T-0780M	046C-0780M	046A-0780M	046i-0780M
3-3/32"	78.58	3.0938"	046T-30938	046C-30938	046A-30938	046i-30938
3-1/8"	79.38	3.1250"	046T-31250	046C-31250	046A-31250	046i-31250
	80.00	3.1496"	046T-0800M	046C-0800M	046A-0800M	046i-0800M
3-5/32"	80.17	3.1563"	046T-31563	046C-31563	046A-31563	046i-31563
3-3/16"	80.96	3.1875"	046T-31875	046C-31875	046A-31875	046i-31875
3-7/32"	81.76	3.2188"	046T-32188	046C-32188	046A-32188	046i-32188
	82.00	3.2283"	046T-0820M	046C-0820M	046A-0820M	046i-0820M
3-1/4"	82.55	3.2500"	046T-32500	046C-32500	046A-32500	046i-32500
3-9/32"	83.34	3.2813"	046T-32813	046C-32813	046A-32813	046i-32813
	84.00	3.3071"	046T-0840M	046C-0840M	046A-0840M	046i-0840M
3-5/16"	84.14	3.3125"	046T-33125	046C-33125	046A-33125	046i-33125
3-11/32"	84.93	3.3438"	046T-33438	046C-33438	046A-33438	046i-33438
3-3/8"	85.73	3.3750"	046T-33750	046C-33750	046A-33750	046i-33750
	86.00	3.3858"	046T-0860M	046C-0860M	046A-0860M	046i-0860M
3-13/32"	86.52	3.4063"	046T-34063	046C-34063	046A-34063	046i-34063
3-7/16"	87.31	3.4375"	046T-34375	046C-34375	046A-34375	046i-34375
	88.00	3.4646"	046T-0880M	046C-0880M	046A-0880M	046i-0880M
3-15/32"	88.11	3.4688"	046T-34688	046C-34688	046A-34688	046i-34688
3-1/2"	88.90	3.5000"	046T-35000	046C-35000	046A-35000	046i-35000

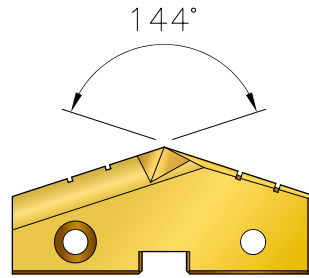
HSS B7 드릴 인서트 7 시리즈 HSS B7 Drill Insert 7 Series



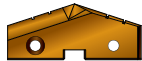
89.69mm(3.5313")~101.60mm(4.0000")

Diameter						
Inch (inch)	Metric (mm)	Decimal (inch)	Tin	TiCN	TiALN	Alpha
3-17/32"	89.69	3.5313"	Premium HSS(M48) 047T-35313	Premium HSS(M48) 047C-35313	Premium HSS(M48) 047A-35313	Premium HSS(M48) 047i-35313
	90.00	3.5433"	047T-0900M	047C-0900M	047A-0900M	047i-0900M
3-9/16"	90.49	3.5625"	047T-35625	047C-35625	047A-35625	047i-35625
3-19/32"	91.28	3.5938"	047T-35938	047C-35938	047A-35938	047i-35938
	92.00	3.6221"	047T-0920M	047C-0920M	047A-0920M	047i-0920M
3-5/8"	92.08	3.6250"	047T-36250	047C-36250	047A-36250	047i-36250
3-21/32"	92.87	3.6563"	047T-36563	047C-36563	047A-36563	047i-36563
3-11/16"	93.66	3.6875"	047T-36875	047C-36875	047A-36875	047i-36875
	94.00	3.7008"	047T-0940M	047C-0940M	047A-0940M	047i-0940M
3-23/32"	94.46	3.7188"	047T-37188	047C-37188	047A-37188	047i-37188
3-3/4"	95.25	3.7500"	047T-37500	047C-37500	047A-37500	047i-37500
	96.00	3.7795"	047T-0960M	047C-0960M	047A-0960M	047i-0960M
3-25/32"	96.04	3.7813"	047T-37813	047C-37813	047A-37813	047i-37813
3-13/16"	96.84	3.8125"	047T-38125	047C-38125	047A-38125	047i-38125
3-27/32"	97.63	3.8438"	047T-38438	047C-38438	047A-38438	047i-38438
	98.00	3.8583"	047T-0980M	047C-0980M	047A-0980M	047i-0980M
3-7/8"	98.43	3.8750"	047T-38750	047C-38750	047A-38750	047i-38750
3-29/32"	99.22	3.9063"	047T-39063	047C-39063	047A-39063	047i-39063
	100.00	3.9370"	047T-1000M	047C-1000M	047A-1000M	047i-1000M
3-15/16"	100.01	3.9375"	047T-39375	047C-39375	047A-39375	047i-39375
3-31/32"	100.81	3.9688"	047T-39688	047C-39688	047A-39688	047i-39688
4"	101.60	4.0000"	047T-40000	047C-40000	047A-40000	047i-40000

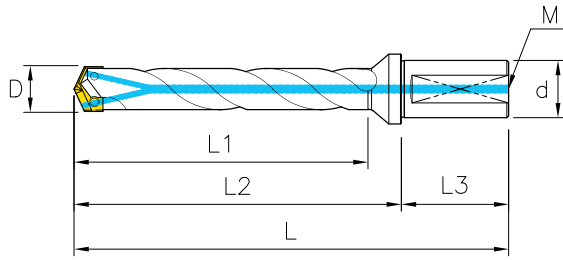
HSS B7 드릴 인서트 8 시리즈 HSS B7 Drill Insert 8 Series



102mm(4.0157")~114.30mm(4.5000")

Diameter						
Inch (inch)	Metric (mm)	Decimal (inch)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)	Premium HSS(M48)
4-1/64"	102.00	4.0157"	048T-40157	048C-40157	048A-40157	048i-40157
4-1/16"	103.19	4.0625"	048T-40625	048C-40625	048A-40625	048i-40625
4-3/32"	103.98	4.0938"	048T-40938	048C-40938	048A-40938	048i-40938
	104.00	4.0945"	048T-1040M	048C-1040M	048A-1040M	048i-1040M
4-1/8"	104.78	4.1250"	048T-41250	048C-41250	048A-41250	048i-41250
	106.00	4.1732"	048T-1060M	048C-1060M	048A-1060M	048i-1060M
4-3/16"	106.36	4.1875"	048T-41875	048C-41875	048A-41875	048i-41875
4-1/4"	107.95	4.2500"	048T-42500	048C-42500	048A-42500	048i-42500
	108.00	4.2520"	048T-1082M	048C-1082M	048A-1082M	048i-1082M
4-5/16"	109.54	4.3125"	048T-43125	048C-43125	048A-43125	048i-43125
	110.00	4.3307"	048T-1100M	048C-1100M	048A-1100M	048i-1100M
4-3/8"	111.13	4.3750"	048T-43750	048C-43750	048A-43750	048i-43750
	112.00	4.4094"	048T-1120M	048C-1120M	048A-1120M	048i-1120M
4-7/16"	112.71	4.4375"	048T-44375	048C-44375	048A-44375	048i-44375
	114.00	4.4482"	048T-1140M	048C-1140M	048A-1140M	048i-1140M
4-1/2"	114.30	4.5000"	048T-45000	048C-45000	048A-45000	048i-45000

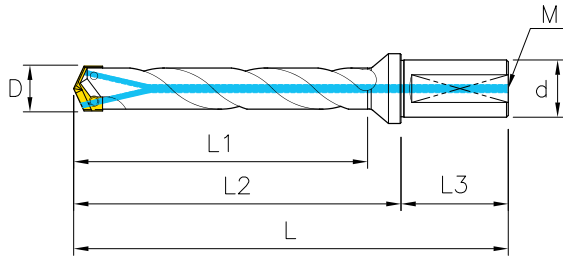
B7S 드릴 Flange Shank / Spiral Flute Type



Stub(Extra Short)	1.5~2D
Short	3~4D
Intermediate	5~6D
Standard	7~8D
Extended	8~12D
Long	11~14D
XL(Extra long)	20~25D
3XL(Extra long)	25~30D

Order No. 주문형번	Length	Dimension (mm)					Shank					Price
		Series	D	L	L1	L2	d	L3	M			
B7S-095110134	Standard	Y	9.5~11.0	134	60.3	92.1	20	50	1/8"	BS7-20040	TXL-7	133,000
B7S-095110185	Extended			192.9	111.1	142.9	20	50	1/8"			158,000
B7S-115125134	Standard	Z	11.5~12.5	136	60.3	92.1	20	50	1/8"	BS7-20050	TXL-7	133,000
B7S-115125185	Extended			192.9	111.1	142.9	20	50	1/8"			158,000
B7S-130175137	Standard	0	13.0~17.5	144.9	63.5	94.9	20	50	1/8"	BS7-25060	TXL-8	140,000
B7S-130175188	Extended			195.7	114.3	145.7	20	50	1/8"			191,000
B7S-130175251	Long			259.1	177.8	209.1	20	50	1/8"			217,000
B7S-130175377	XL(extra long)			376.7	295	326.7	20	50	1/8"			278,000
B7S-130175469	3XL(extra long)			468.8	387	418.8	20	50	1/8"			305,000
B7S-155175137	Standard		15.5~17.5	144.9	63.5	94.9	20	50	1/8"			140,000
B7S-155175188	Extended			195.7	114.3	145.7	20	50	1/8"			191,000
B7S-155175251	Long			259.1	177.8	209.1	20	50	1/8"			217,000
B7S-155175377	XL(extra long)			376.7	295	326.7	20	50	1/8"			278,000
B7S-155175469	3XL(extra long)			468.8	387	418.8	20	50	1/8"			305,000
B7S-180240212	Intermediate	1	18.0~24.0	214.4	117.5	158.4	25	56	1/8"	BS7-30070	TXL-9	162,000
B7S-180240262	Standard			265.2	168.3	209.2	25	56	1/8"			183,000
B7S-180240364	Extended			366.8	269.9	310.8	25	56	1/8"			291,000
B7S-180240460	XL(extra long)			460	363	404	25	56	1/8"			310,000
B7S-180240554	XL(extra long)			554.1	457	498.1	25	56	1/8"			320,000
B7S-180240662	3XL(extra long)			662.1	565	606.1	25	56	1/8"			526,000
B7S-220240212	Intermediate		22.0~24.0	214.4	117.5	158.4	25	56	1/8"			162,000
B7S-220240262	Standard			265.2	168.3	209.2	25	56	1/8"			183,000
B7S-220240364	Extended			366.8	269.9	310.8	25	56	1/8"			291,000
B7S-220240460	XL(extra long)			460	363	404	25	56	1/8"			310,000
B7S-220240554	XL(extra long)			554.1	457	498.1	25	56	1/8"			320,000
B7S-220240662	3XL(extra long)			662.1	565	606.1	25	56	1/8"			526,000
B7S-250350241	Intermediate	2	25.0~35.0	243	136.5	183	32	60	1/4"	BS7-40095	TXL-15	243,000
B7S-250350292	Standard			293.8	187.3	233.8	32	60	1/4"			245,000
B7S-250350393	Extended			395.4	288.9	335.4	32	60	1/4"			295,000
B7S-250350505	Long			505	399	445	32	60	1/4"			484,000
B7S-250350618	XL(extra long)			617.7	511	557.7	32	60	1/4"			533,000
B7S-250350799	3XL(extra long)			798.7	692	738.7	32	60	1/4"			613,000
B7S-300350241	Intermediate		30.0~35.0	243	136.5	183	32	60	1/4"			243,000
B7S-300350292	Standard			293.8	187.3	233.8	32	60	1/4"			245,000
B7S-300350393	Extended			395.4	288.9	335.4	32	60	1/4"			295,000
B7S-300350618	XL(extra long)			617.7	511	557.7	32	60	1/4"			533,000
B7S-300350799	3XL(extra long)			798.7	692	738.7	32	60	1/4"			613,000

B7S 드릴 Flange Shank / Spiral Flute Type



Stub(Extra Short)	1.5~2D
Short	3~4D
Intermediate	5~6D
Standard	7~8D
Extended	8~12D
Long	11~14D
XL(Extra long)	20~25D
3XL(Extra long)	25~30D

Order No. 주문형번	Length	Dimension (mm)					Shank					Price
		Series	D	L	L1	L2	d	L3	M			
B7S-360470292A	Intermediate	3	36.0~47.0	292.3	165.1	222.3	40	70	1/4"	BS7-50150	TXL-20	312,000
B7S-360470292B	Intermediate			292.3	165.1	222.3	42	70	1/4"			312,000
B7S-360470337A	Standard			336.7	209.6	266.7	40	70	1/4"			334,000
B7S-360470337B	Standard			336.7	209.6	266.7	42	70	1/4"			334,000
B7S-360470476A	Extended			476.4	349	406.4	40	70	1/4"			462,000
B7S-360470580A	Long			580	452	510	40	70	1/4"			598,000
B7S-360470686A	XL(extra long)	4	48.0~65.0	685.9	558.8	615.9	40	70	1/4"	BS7-50150	TXL-20	622,000
B7S-480650356A	Standard			355.8	231.8	285.8	40	70	1/4"			353,000
B7S-480650356B	Standard			355.8	231.8	285.8	42	70	1/4"			353,000
B7S-480650546A	Extended			546.3	422	476.3	40	70	1/4"			538,000
B7S-480650750A	XL(extra long)	5,6	64.0~88.0	749.5	625	679.5	40	70	1/4"	BS7-60190	TXL-25	640,000
B7S-640880302	Short			302.3	171.9	222.3	50	80	1/2"			384,000
B7S-640880404	Standard			403.9	273.5	323.9	50	80	1/2"			569,000
B7S-640880594	Extended			594.4	464	514.4	50	80	1/2"			645,000
B7S-9001140312	Short	7,8	90.0~114.0	311.8	172	231.8	50	80	1/2"	BS7-60190	TXL-25	559,000
B7S-9001140413	Standard			413.4	273	333.4	50	80	1/2"			742,000
B7S-9001140696	Extended			696	556	616	50	80	1/2"			952,000

B7K 드릴 Flange Shank / Straight Flute Type

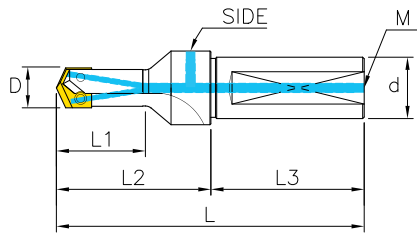


FIG1

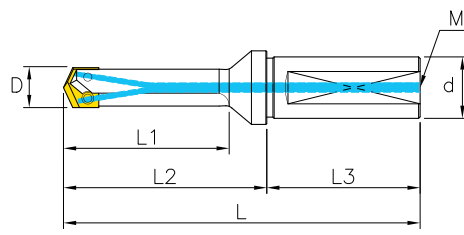


FIG2

Stub(Extra Short)	1.5~2D
Short	3~4D
Intermediate	5~6D
Standard	7~8D
Extended	8~12D
Long	11~14D
XL(Extra long)	20~25D
3XL(Extra long)	25~30D

Order No. 주문형번	Length	Dimension (mm)						Shank						Price
		Series	D	L	L1	L2	d	L3	M	Fig.	SIDE			
B7K-095110092	Stub(extra short)	Y	9.5~11.0	98	19.9	50	16	48	1/16"	1	1/8"	BS7-20040	TXL-7	108,000
B7K-095110105	Short			113.5	31.8	63.5	20	50	1/8"	2	-			120,000
B7K-095110296	XL(extra long)			304.1	222	254.1	20	50	1/8"	2	-			174,000
B7K-095110364	3XL(extra long)			372.3	290	322.3	20	50	1/8"	2	-			205,000
B7K-115125092	Stub(extra short)	Z	11.5~12.5	98	19.9	50	16	48	1/16"	1	1/8"	BS7-20050	TXL-7	105,000
B7K-115125105	Short			113.5	31.8	63.5	20	50	1/8"	2	-			120,000
B7K-115125296	XL(extra long)			304.1	222	254.1	20	50	1/8"	2	-			174,000
B7K-115125364	3XL(extra long)			372.3	290	322.3	20	50	1/8"	2	-			205,000
B7K-130175092	Stub(extra short)	0	13.0~17.5	100.4	22.2	50.4	20	50	1/8"	1	1/8"	BS7-25060	TXL-8	129,000
B7K-130175108	Short			116.3	34.9	66.3	20	50	1/8"	2	-			130,000
B7K-130175145	Intermediate			145	63.5	95	20	50	1/8"	2	-			145,000
B7K-130175196	Extended			196	114	146	20	50	1/8"	2	-			199,000
B7K-130175369	XL(extra long)	0	15.5~17.5	376.7	295	326.7	20	50	1/8"	2	-	BS7-25060	TXL-8	278,000
B7K-130175461	3XL(extra long)			468.8	387	418.8	20	50	1/8"	2	-			305,000
B7K-155175092	Stub(extra short)			100.4	22.2	50.4	20	56	1/8"	1	1/8"			129,000
B7K-155175108	Short			116.3	34.9	66.3	20	56	1/8"	2	-			130,000
B7K-155175145	Intermediate	0	15.5~17.5	145	63.5	95	20	56	1/8"	2	-	BS7-25060	TXL-8	145,000
B7K-155175196	Extended			196	114	146	20	56	1/8"	2	-			199,000
B7K-155175369	XL(extra long)			376.7	295	326.7	20	56	1/8"	2	-			301,000
B7K-155175461	3XL(extra long)			468.8	387	418.8	20	56	1/8"	2	-			305,000
B7K-180240133	Stub(extra short)	1	18.0~24.0	135.4	47.6	79.4	25	56	1/8"	1	1/8"	BS7-30070	TXL-9	156,000
B7K-180240164	Short			166.7	66.7	110.7	25	56	1/8"	2	-			159,000
B7K-180240265	Extended			265	168	209	25	56	1/8"	2	-			188,000
B7K-180240367	Long			367	270	311	25	56	1/8"	2	-			296,000
B7K-180240460	XL(extra long)	1	22.0~24.0	460	363	404	25	56	1/8"	2	-	BS7-30070	TXL-9	310,000
B7K-180240551	XL(extra long)			554.1	457	498.1	25	56	1/8"	2	-			320,000
B7K-180240659	3XL(extra long)			662.1	569	606.1	25	56	1/8"	2	-			526,000
B7K-220240133	Stub(extra short)			135.4	47.6	79.4	25	56	1/8"	1	1/8"			156,000
B7K-220240164	Short	1	22.0~24.0	166.7	66.7	110.7	25	56	1/8"	2	-	BS7-30070	TXL-9	159,000
B7K-220240265	Extended			265	168	209	25	56	1/8"	2	-			188,000
B7K-220240367	Long			367	270	311	25	56	1/8"	2	-			296,000
B7K-220240460	XL(extra long)			460	363	404	25	56	1/8"	2	-			310,000
B7K-220240551	XL(extra long)	2	25.0~35.0	554.1	457	498.7	25	56	1/8"	2	-	BS7-40095	TXL-15	320,000
B7K-220240659	3XL(extra long)			662.1	569	606.1	25	56	1/8"	2	-			526,000
B7K-250350150	Stub(extra short)			152.1	57.2	92.1	32	60	1/4"	1	1/8"			174,000
B7K-250350190	Short			192.2	85.7	132.2	32	60	1/4"	2	-			180,000
B7K-250350294	Standard	2	30.0~35.0	294	188	234	32	60	1/4"	2	-	BS7-40095	TXL-15	253,000
B7K-250350395	Extended			395	289	335	32	60	1/4"	2	-			303,000
B7K-250350505	Long			505	399	445	32	60	1/4"	2	-			484,000
B7K-250350616	XL(extra long)			617.7	511	557.7	32	60	1/4"	2	-			533,000
B7K-250350797	3XL(extra long)	2	30.0~35.0	798.7	692	738.7	32	60	1/4"	2	-	BS7-40095	TXL-15	613,000
B7K-300350150	Stub(extra short)			152.1	57.2	92.1	32	60	1/4"	1	1/8"			174,000
B7K-300350190	Short			192.2	85.7	132.2	32	60	1/4"	2	-			180,000
B7K-300350294	Standard			294	188	234	32	60	1/4"	2	-			253,000
B7K-300350395	Extended	3	36.0~47.0	395	289	335	32	60	1/4"	2	-	BS7-50150	TXL-20	303,000
B7K-300350505	Long			505	399	445	32	60	1/4"	2	-			484,000
B7K-300350616	XL(extra long)			617.7	511	557.7	32	60	1/4"	2	-			533,000
B7K-300350797	3XL(extra long)			798.7	692	738.7	32	60	1/4"	2	-			613,000
B7K-360470248A	Short	3	36.0~47.0	247.8	120.7	177.8	40	70	1/4"	2	-	BS7-50150	TXL-20	233,000
B7K-360470248B	Short			247.8	120.7	177.8	42	70	1/4"	2	-			233,000
B7K-360470337A	Intermediate			337	210	267	40	70	1/4"	2	-			334,000

B7K 드릴 Flange Shank / Straight Flute Type

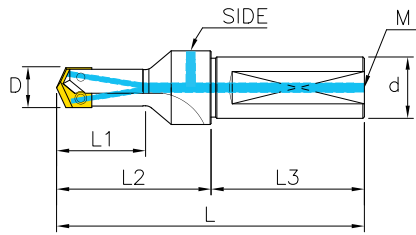


FIG1

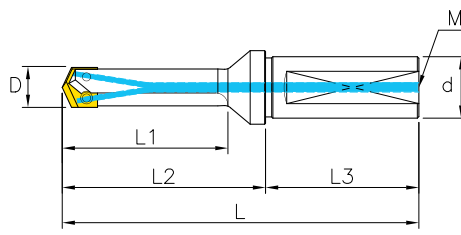
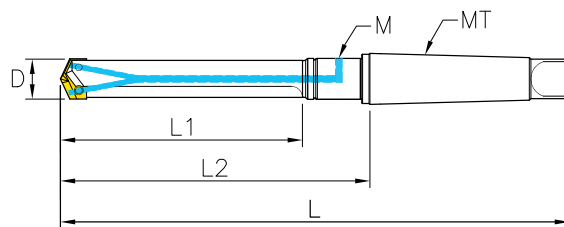


FIG2

Stub(Extra Short)	1.5~2D
Short	3~4D
Intermediate	5~6D
Standard	7~8D
Extended	8~12D
Long	11~14D
XL(Extra long)	20~25D
3XL(Extra long)	25~30D

Order No. 주문형번	Length	Dimension (mm)					Shank							Price
		Series	D	L	L1	L2	d	L3	M	Fig.	SIDE			
B7K-360470476A	Extended	3	36.0~47.0	476.4	349.3	406.4	40	70	1/4"	2	-	BS7-50150	TXL-20	484,000
B7K-360470476B	Extended			476.4	349.3	406.4	42	70	1/4"	2	-			484,000
B7K-360470580A	Long			580	491	510	40	70	1/4"	2	-			592,000
B7K-360470686A	XL(extra long)			685.9	558.8	616	40	70	1/4"	2	-			622,000
B7K-480650254A	Short	4	48.0~65.0	254.2	130.2	184.2	40	70	1/4"	2	-			240,000
B7K-480650254B	Short			254.2	130.2	184.2	42	70	1/4"	2	-			240,000
B7K-480650356A	Intermediate			356	232	286	40	70	1/4"	2	-			355,000
B7K-480650546A	Extended			546.3	422.3	476.3	40	70	1/4"	2	-			538,000
B7K-480650546B	Extended			546.3	422.3	476.3	42	70	1/4"	2	-			538,000
B7K-480650750A	XL(extra long)			749.5	625	679.6	40	70	1/4"	2	-			640,000
B7K-640880318	Short	5,6	64.0~88.0	317.5	171.5	237.5	50	80	1/4"	2	-	BS7-60190	TXL-25	384,000
B7K-640880419	Standard			419.1	273	339	50	80	1/4"	2	-			569,000
B7K-640880610	Extended			609.6	463.6	529.6	50	80	1/4"	2	-			645,000
B7K-9001140352	Short	7,8	90.0~114.0	352.4	171.5	272.4	50	80	1/4"	2	-			559,000
B7K-9001140454	Standard			454	273	374	50	80	1/4"	2	-			742,000
B7K-9001140737	Extended			736.6	555.6	656.6	50	80	1/4"	2	-			952,000

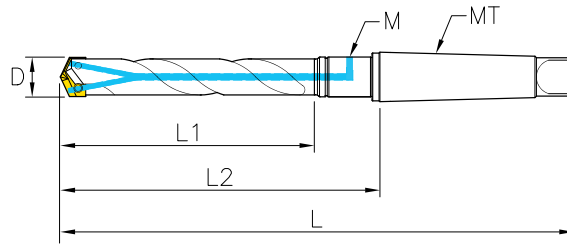
B7H 드릴 Taper Shank / Straight Flute Type



Stub(Extra Short)	1.5~2D
Short	3~4D
Intermediate	5~6D
Standard	7~8D
Extended	8~12D
Long	11~14D
XL(Extra long)	20~25D
3XL(Extra long)	25~30D

Order No. 주문형번	Length	Dimension (mm)										Price
		Series	D	L	L1	L2	MT	M				
B7H-095110163	Short	Y	9.5~11.0	162.9	31.8	88.0	#2	1/16"	COS-190522	BS7-20040	TXL-7	120,000
B7H-115125163	Short	Z	11.5~12.5	162.9	31.8	88.0	#2	1/16"				120,000
B7H-130175167	Short	0	13.0~17.5	167.1	35.0	92.4	#2	1/16"		BS7-25060	TXL-8	130,000
B7H-155175167	Short		15.5~17.5	167.1	35.0	92.4	#2	1/16"				130,000
B7H-180240236	Short	1	18.0~24.0	236.1	69.8	142.5	#3	1/8"	COS-254028	BS7-30070	TXL-9	155,000
B7H-220240236	Short		22.0~24.0	236.1	69.8	142.5	#3	1/8"				155,000
B7H-250350277	Short	2	25.0~35.0	277.4	85.7	160.4	#4	1/8"		BS7-40095	TXL-15	174,000
B7H-300350285	Short		30.0~35.0	284.6	85.7	167.6	#4	1/4"				174,000
B7H-360470323	Short	3	36.0~47.0	322.7	120.6	206.4	#4	1/4"	COS-317535			233,000
B7H-360470553	Extended			552.5	349.3	435.0	#4	1/4"				538,000
B7H-360470676	Long			676	472.8	555	#4	1/4"				622,000
B7H-480650368	Short	4	48.0~65.0	368.3	130.1	219.1	#5	1/4"	COS-444535			240,000
B7H-480650660	Extended			660.4	422.3	511.2	#5	1/4"				624,000
B7H-640880435	Short	5,6	64.0~88.0	435.0	171.5	287.3	#5	1/2"	COS-571544	BS7-60190	TXL-25	384,000
B7H-640880727	Extended			727.1	463.6	579.4	#5	1/2"				645,000
B7H-9001140445	Short	7,8	90.0~114.0	444.5	171.5	296.8	#5	1/2"				560,000
B7H-9001140829	Extended			828.7	555.6	681.1	#5	1/2"				968,000

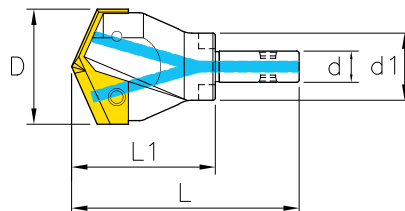
B7M 드릴 Taper Shank / Sprial Flute Type



Stub(Extra Short)	1.5~2D
Short	3~4D
Intermediate	5~6D
Standard	7~8D
Extended	8~12D
Long	11~14D
XL(Extra long)	20~25D
3XL(Extra long)	25~30D

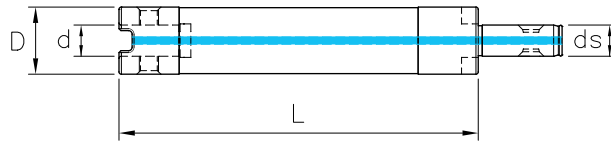
Order No. 주문형번	Length	Dimension (mm)										Price
		Series	D	L	L1	L2	MT	M				
B7M-095110191	Standard	Y	9.5~11.0	191.3	60.3	116.7	#2	1/16"	COS-190522	BS7-20040	TXL-7	133,000
B7M-095110242	Extended			242.1	111.1	167.4	#2	1/16"				157,000
B7M-115125191	Standard	Z	11.5~12.5	191.3	60.3	116.7	#2	1/16"		BS7-20050	TXL-7	133,000
B7M-115125242	Extended			242.1	111.1	167.4	#2	1/16"				157,000
B7M-130175196	Standard	0	13.0~17.5	195.7	63.5	121.0	#2	1/16"		BS7-25060	TXL-8	139,000
B7M-130175247	Extended			246.5	114.3	171.8	#2	1/16"				191,000
B7M-130175310	Long			310.3	177.8	235.3	#2	1/16"				230,000
B7M-155175196	Standard		15.5~17.5	195.7	63.5	121.0	#2	1/16"				139,000
B7M-155175247	Extended			246.5	114.3	171.8	#2	1/16"				191,000
B7M-155175310	Long			310.3	177.8	235.3	#2	1/16"				230,000
B7M-180240287	Intermediate	1	18.0~24.0	286.9	120.7	193.3	#3	1/8"	COS-254028	BS7-30070	TXL-9	162,000
B7M-180240338	Standard			337.8	171.5	244.1	#3	1/8"				183,000
B7M-180240439	Extended			439.4	273.1	345.7	#3	1/8"				291,000
B7M-220240287	Intermediate		22.0~24.0	286.9	120.7	193.3	#3	1/8"				162,000
B7M-220240338	Standard			337.8	171.5	244.1	#3	1/8"				183,000
B7M-220240439	Extended			439.4	273.1	345.7	#3	1/8"				291,000
B7M-250350328	Intermediate	2	25.0~35.0	328.2	136.5	211.2	#4	1/8"	COS-317535	BS7-40095	TXL-15	243,000
B7M-250350379	Standard			379.0	187.3	262.0	#4	1/8"				245,000
B7M-250350481	Extended			480.6	289.0	363.6	#4	1/8"				295,000
B7M-300350335	Intermediate		30.0~35.0	335.4	136.5	218.4	#4	1/4"				243,000
B7M-300350386	Standard			386.2	187.3	269.2	#4	1/4"				245,000
B7M-300350488	Extended			487.8	289.0	370.8	#4	1/4"				295,000
B7M-360470368	Intermediate	3	36.0~47.0	368.4	165.1	250.9	#4	1/4"	COS-444535	BS7-501500	TXL-20	312,000
B7M-360470413	Standard			412.8	209.5	295.3	#4	1/4"				334,000
B7M-480650470	Standard	4	48.0~65.0	469.9	231.8	320.7	#4	1/4"	COS-444535			353,000
B7M-640880537	Standard	5,6	64.0~88.0	536.6	273.1	388.9	#5	1/2"	COS-571544	BS7-60190	TXL-25	569,000
B7M-9001140546	Standard	7,8	90.0~114.0	546.1	273.1	398.5	#5	1/2"				742,000

B7X 드릴 Modular Head



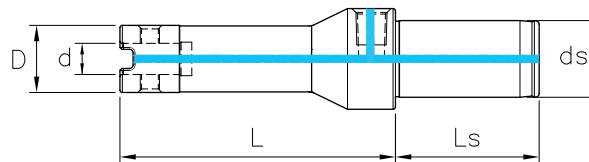
Order No. 주문형번	Dimension (mm)				Shank				Price
	D	L	L1	d1	d	L2			
B7X-48065060	48 - 65	95	60	28	13	35	BS7-50150	TXL-20	342,000
B7X-64077080	64 - 77	120	80	32	16	40			390,000
B7X-76090080	76 - 90	125	80	40	22	45			463,000
B7X-90010190	90 - 101	140	90	48	27	50			510,000
B7X-10011490	100 - 114	140	90	58	32	50			626,000

MUE Modular Extension



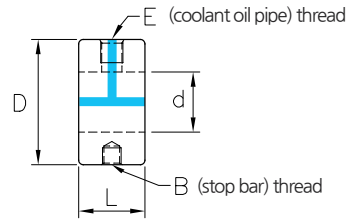
Order No. 주문형번	Dimension (mm)						Price
	D	d	L	ds			
MUE-2813115	28	13	115	13	JTB-08115	DKR-281310	121,000
MUE-2813150	28	13	150	13			129,000
MUE-2813200	28	13	200	13			129,000
MUE-2813300	28	13	300	13			152,000
MUE-3216115	32	16	115	16	JTB-08115	DKR-321610	129,000
MUE-3216200	32	16	200	16			136,000
MUE-3216300	32	16	300	16			166,000
MUE-4022113	40	22	113	22	JTB-10145	DKR-402212	136,000
MUE-4022200	40	22	200	22			152,000
MUE-4022300	40	22	300	22			182,000
MUE-4827113	48	27	113	27	JTB-12175	DKR-482712	152,000
MUE-4827200	48	27	200	27			182,000
MUE-4827300	48	27	300	27			211,000
MUE-5832186	58	32	186	32	JTB-12195	DKR-583214	198,000
MUE-5832300	58	32	300	32			242,000

MUB Modular Flange Shank



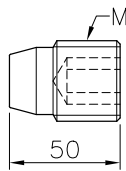
Order No. 주문형번	Dimension (mm)			Shank				Price
	D	d	L	ds	Ls			
MUB-2813115	28	13	115	32	60	JTB-08115	DKR-281310	121,000
MUB-2813200	28	13	200	32	60			129,000
MUB-2813300	28	13	300	32	60			198,000
MUB-3216125	32	16	125	40	70	JTB-08115	DKR-321610	136,000
MUB-3216200	32	16	200	40	70			198,000
MUB-3216300	32	16	300	40	70			198,000
MUB-4022148	40	22	148	40	70	JTB-10145	DKR-402212	152,000
MUB-4022200	40	22	200	40	70			182,000
MUB-4022300	40	22	300	40	70			211,000
MUB-4827168	48	27	168	40	70	JTB-12175	DKR-482712	182,000
MUB-4827300	48	27	300	40	70			242,000
MUB-5832186	58	32	186	40	70	JTB-12195	DKR-583214	212,000
MUB-5832300	58	32	300	40	70			242,000

Coolant Oil Supplier



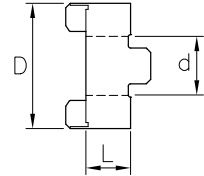
Order No. 주문형번	Dimension (mm)					Price
	d	D	L	B	E	
COS-190522	19.05	44.45	22.23	M8×1.25	1/8"	40,000
CSO-254028	25.40	53.97	28.57	M8×1.25	1/8"	46,000
COS-317535	31.75	63.50	34.92	M10×1.5	1/4"	53,000
COS-444535	44.45	76.20	34.92	M10×1.5	1/4"	60,000
COS-571544	57.15	95.27	44.45	M12×1.75	1/2"	73,000

Joint Screw



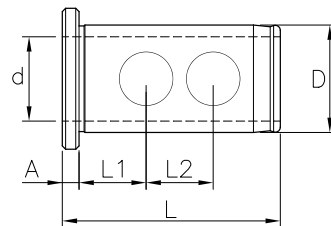
Order No. 주문형번	Dimension (mm)		Wrench	Price
	M	L		
JTB-08115	M8.0	11.5	4	3,000
JTB-10145	M10.0	14.5	5	3,000
JTB-12175	M12.0	17.5	6	3,000
JTB-12195	M12.0	19.5	6	3,000

Drive Key Ring



Order No. 주문형번	Dimension (mm)			Price
	D	d	L	
DKR-281310	28	13	10	24,000
DKR-321610	32	16	10	24,000
DKR-402212	40	22	12	31,000
DKR-482712	48	27	12	35,000
DKR-583214	58	32	14	49,000

Drill Sleeve



Order No. 주문형번	Dimension (mm)						Price
	D	d	L	L1	L2	A	
BSL-322065	32	20	65	20	-	5	27,000
BSL-322565	32	25	65	20	20	5	27,000
BSL-402075	40	20	75	20	-	5	30,000
BSL-402575	40	25	75	20	25	5	30,000
BSL-403275	40	32	75	20	25	5	30,000
BSL-502095	50	20	95	35	-	5	43,000
BSL-502595	50	25	95	35	-	5	43,000
BSL-503295	50	32	95	35	35	5	43,000
BSL-504095	50	40	95	35	35	5	43,000

HSS B7 인서트 절삭 데이터 HSS B7 Insert Cutting Data

Drill Inserts (Metric) - High Speed Steel

Material 피삭재		Brinell Hardness	HSS Grade	Speed 절삭속도 (m/min)			Feed(mm/rev)						
				TiN	TiCN	TiAlN	ø 9.5 ~ ø 12.5	ø 13 ~ ø 17.5	ø 18 ~ ø 24	ø 25 ~ ø 35	ø 36 ~ ø 47	ø 48 ~ ø 65	ø 66 ~ ø 114
P강 Steel	연강 Free Machining Steel 1118, 1215, 12L14, etc	100-150	M4	61	85	79	0.18	0.25	0.33	0.41	0.51	0.58	0.71
		150-200	M4	55	79	72	0.18	0.25	0.33	0.41	0.51	0.59	0.71
		200-250	M4	49	73	64	0.15	0.25	0.33	0.41	0.51	0.58	0.71
	저탄소강 Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc	85-125	M4	52	76	67	0.15	0.23	0.30	0.38	0.48	0.58	0.69
		125-175	M4	49	73	64	0.15	0.23	0.30	0.38	0.48	0.58	0.69
		175-225	M4	46	69	59	0.13	0.20	0.25	0.36	0.46	0.53	0.61
		225-275	M4	43	64	55	0.13	0.20	0.25	0.36	0.46	0.53	0.61
	중탄소강 Medium Carbon Steel 1030, 1040, 1050, 1527 1140, 1151, etc	125-175	M4	49	73	64	0.15	0.23	0.30	0.38	0.48	0.58	0.69
		175-225	M4	46	69	59	0.13	0.20	0.25	0.36	0.46	0.53	0.61
		225-275	M4	43	64	55	0.13	0.20	0.25	0.36	0.46	0.53	0.61
		275-325	T15, M48	40	59	52	0.10	0.18	0.23	0.30	0.41	0.48	0.56
	구조용강 Structural Steel A36, A285, A516, etc	100-150	M4	43	61	55	0.15	0.25	0.30	0.36	0.43	0.53	0.66
		150-250	M4	37	52	47	0.13	0.23	0.25	0.30	0.41	0.48	0.61
		250-350	T15, M48	30	43	40	0.10	0.20	0.23	0.25	0.36	0.43	0.51
	주철/덕타일 Cast Iron/S.G Iron A48-76, GR30/GR45, A536-72, A22-76	120-150	M4	52	76	67	0.18	0.30	0.41	0.51	0.61	0.69	0.76
		150-200	M4	46	69	59	0.15	0.28	0.36	0.46	0.56	0.64	0.71
		200-220	M4	40	59	52	0.15	0.23	0.30	0.41	0.46	0.53	0.61
		220-260	T15, M48	34	50	44	0.13	0.18	0.23	0.30	0.36	0.43	0.51
		260-320	T15, M48	27	41	37	0.10	0.15	0.18	0.23	0.30	0.36	0.41
	합금강 Alloy Steel 4140, 5140, 8640, etc	125-175	M4	46	64	59	0.15	0.20	0.25	0.36	0.43	0.48	0.56
		175-225	M4	43	59	55	0.13	0.20	0.25	0.36	0.43	0.48	0.56
		225-275	M4	40	55	52	0.13	0.18	0.25	0.36	0.43	0.48	0.56
		275-325	T15, M48	37	52	47	0.10	0.15	0.23	0.30	0.38	0.43	0.51
		325-375	T15, M48	34	47	44	0.08	0.15	0.23	0.30	0.38	0.43	0.51
	공구강 Tool Steel H-13, H-21, A-40-2, S-3, etc	150-200	T15	24	34	32	0.10	0.15	0.20	0.25	0.30	0.38	0.43
		200-250	T15, M48	18	27	26	0.10	0.15	0.20	0.25	0.30	0.38	0.43
M 스테인리스강 Stainless steel	스테인리스강 Stainless Steel 400 Series 416, 420, etc	185-275	T15, M48	23	32	29	0.08	0.18	0.20	0.25	0.36	0.41	0.46
		275-350	T15, M48	18	27	24	0.08	0.15	0.18	0.20	0.30	0.30	0.41
	스테인리스강 Stainless Steel 300 Series 304, 316, 17-4PH, etc	135-185	T15, M48	23	32	29	0.08	0.18	0.20	0.25	0.36	0.41	0.51
		185-275	T15, M48	18	27	24	0.08	0.15	0.18	0.20	0.30	0.30	0.46
N 비철금속 Nonferrous metals	알루미늄 Aluminium 2014, 6061, 7075, etc	30	M4	183	259	229	0.20	0.33	0.41	0.51	0.56	0.64	0.64
		180	M4	91	137	122	0.20	0.33	0.41	0.51	0.56	0.67	0.64
S 내열합금 Super-alloys and titanium	내열 합금강 High Temp Alloy Hastelloy B, Inconel 600, etc	220-310	M48	8	11	3	0.08	0.15	0.18	0.20	0.25	0.30	-
		225-300	T15, M48	24	34	30	0.13	0.18	0.23	0.25	0.36	0.43	0.51
	고강도 합금강 High Strength Alloy 4340, 4330V, 300M, etc	300-350	T15, M48	18	26	24	0.10	0.18	0.23	0.25	0.36	0.43	0.51
		350-400	M48	15	21	20	0.08	0.08	0.20	0.23	0.30	0.38	0.46

인서트의 외경이 드릴 몸통부위 보다 최소0.3mm(0.012)이상 커야 함.
Check that the insert outer diameter is a minimum 0.3mm(0.012")
larger than the holder body diameter.

HSS Grade=M4=HSS M4, T15=Super HSS T15,
M48=Premium HSS M48

상기표의 추천 Speed와 Feed는 이상적인 조건이며 장비의 상태와 작업
여건에 따라 Speed와 Feed는 줄여서 작업을 하십시오.

"The recommendations for speeds, feeds and other parameters
presented in this chart are nominal recommendations and should
be considered only as good starting points."

초기 작업시 Speed는 약20%, Feed는 약10%줄여서 작업조건을 설정
하시기를 바랍니다.

When initial operation, speed and feed reductions (20% reduction
in speed and 10% reduction in feed)are recommended.

$$M/min = RPM \times 0.003 \times DIA$$

$$mm/min = (RPM) \times (mm/rev)$$

$$RPM = \frac{318.47 \times (M/min)}{DIA}$$

RPM = Revolution per minute (rev/min)

M/min = Surface meter per minute (M/min)

DIA = Diameter of drill (mm)

mm/rev = Feed rate (mm/rev)

Deep Hole Drill in Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
Speed	0.90	0.85	0.80	0.75
Feed	-	0.95	0.90	0.90

Recommended Speed and Feed Example :

"If recommended speed and feed is 30M/min and
0.50mm/rev

for a standard length holder, then the speed and feed using
a 3XL holder in the same application would be 22.5M/min
and 0.45mm/rev"

$$ex) 30 \times 0.75 = 22.5 \text{ m/min}, 0.50 \times 0.90 = 0.45 \text{ mm/rev}$$

Carbide B7 인서트 절삭 데이터 Carbide B7 Insert Cutting Data

Drill Inserts (Metric) - Carbide

Materail 피삭재		Brinell Hardness	Speed 절삭속도 (m/min)	Feed(mm/rev)				
			Alpha	ø 9.5~ø 12.5	ø 13~ø 17.5	ø 18~ø 24	ø 25~ø 35	ø 36~ø 47
P강 Steel	연강 Free Machining Steel 1118, 1215, 12L14, etc	100-150	128	0.20	0.30	0.38	0.45	0.53
		150-200	110	0.18	0.28	0.35	0.40	0.48
		200-250	104	0.15	0.25	0.33	0.38	0.43
	저탄소강 Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc	85-125	119	0.20	0.25	0.33	0.43	0.48
		125-175	104	0.18	0.25	0.33	0.10	0.45
		175-225	95	0.15	0.23	0.30	0.38	0.43
	중탄소강 Medium Carbon Steel 1030, 1040, 1050, 1527 1140, 1151, ect	225-275	83	0.13	0.23	0.30	0.38	0.43
		125-175	104	0.18	0.25	0.33	0.43	0.45
		175-225	95	0.15	0.23	0.33	0.38	0.43
	구조용강 Structural Steel A36, A285, A516, ect	225-275	83	0.15	0.23	0.30	0.38	0.43
		275-325	70	0.13	0.23	0.30	0.35	0.40
		100-150	95	0.20	0.28	0.35	0.40	0.45
	주철/덕타일 Cast Iron/S.G Iron A48-76, GR30/GR45, A536-72, A22-76	150-250	76	0.15	0.25	0.30	0.35	0.40
		250-350	70	0.13	0.23	0.28	0.25	0.35
		120-150	141	0.20	0.30	0.38	0.48	0.58
	합금강 Alloy Steel 4140, 5140, 8640, etc	150-200	122	0.18	0.28	0.33	0.43	0.53
		200-220	110	0.15	0.23	0.30	0.38	0.45
		220-260	95	0.13	0.20	0.28	0.33	0.38
	공구강 Tool Steel H13, H21, A4, O2, S3, etc	260-320	83	0.13	0.18	0.25	0.28	0.33
		125-175	99	0.18	0.25	0.33	0.40	0.45
175-225		92	0.15	0.23	0.30	0.38	0.43	
M 스테인레스강 Stainless steel	스테인레스강 Stainledd Steel 400 Series 416, 420, etc	225-275	83	0.15	0.23	0.30	0.38	0.43
		275-325	76	0.13	0.20	0.28	0.35	0.40
	스테인레스강 Stainledd Steel 300 Series 304, 316, 17-4PH, etc	325-375	67	0.10	0.18	0.25	0.33	0.38
		150-200	67	0.10	0.18	0.23	0.28	0.33
N 비철금속 Nonferrous metals	알루미늄 Aluminium 2014, 6061, 7075, etc	200-250	52	0.10	0.15	0.23	0.28	0.33
		185-275	49	0.08	0.08	0.08	0.08	0.08
S 내열합금 Super-alloys and titanium	내열 합금강 High Temp Alloy Hastelloy B, Inconel 600, etc	135-185	64	0.08	0.08	0.08	0.08	0.08
		185-275	49	0.08	0.08	0.08	0.08	0.08
	고경도 합금강 High Strength Alloy 4340, 4330V, 300M, etc	30	460	0.25	0.38	0.45	0.50	0.55
		180	305	0.23	0.33	0.40	0.45	0.50
		140-220	32	0.10	0.18	0.23	0.28	0.33
		220-310	26	0.10	0.15	0.15	0.25	0.30
		225-300	61	0.15	0.23	0.25	0.30	0.38
		300-350	55	0.13	0.20	0.23	0.28	0.35
		350-400	49	0.10	0.18	0.20	0.25	0.30

인서트의 외경이 드릴 몸통부위 보다 최소0.3mm(0.012)이상 커야 함.
Check that the insert outer diameter is a minimum 0.3mm(0.012")
larger than the holder body diameter.

HSS Grade=M4=HSS M4, T15=Super HSS T15,
M48=Premium HSS M48

상기표의 추천 Speed와 Feed는 이상적인 조건이며 장비의 상태와 작업
여건에 따라 Speed와 Feed는 줄여서 작업을 하십시오.

"The recommendations for speeds, feeds and other parameters
presented in this chart are nominal recommendations and should
be considered only as good starting points."

초기 작업시 Speed는 약20%, Feed는 약10%줄여서 작업조건을 설정
하시기를 바랍니다.

When initial operation, speed and feed reductions (20% reduction
in speed and 10% reduction in feed)are recommended.

$$M/min = RPM \times 0.003 \times DIA$$

$$mm/min = (RPM) \times (mm/rev)$$

$$RPM = \frac{318.47 \times (M/min)}{DIA}$$

RPM = Revolution per minute (rev/min)

M/min = Surface meter per minute (M/min)

DIA = Diameter of drill (mm)

mm/rev = Feed rate (mm/rev)

Deep Hole Drill in Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
Speed	0.90	0.85	0.80	0.75
Feed	-	0.95	0.90	0.90

Recommended Speed and Feed Example :

"If recommended speed and feed is 30M/min and
0.50mm/rev

for a standard length holder, then the speed and feed using
a 3XL holder in the same application would be 22.5M/min
and 0.45mm/rev"

$$ex) 30 \times 0.75 = 22.5m/min, 0.50 \times 0.90 = 0.45mm/rev$$



추천 절삭유압

Coolant Recommendation

Drill Inserts (Metric) - Coolant Recommendations

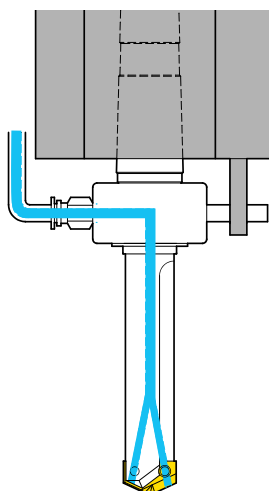
Material 피삭재		BAR (pressure) LPM (flow rate)	HSS							Carbide				
			ø 9.5 ~ ø 12.5	ø 13 ~ ø 17.5	ø 18 ~ ø 24	ø 25 ~ ø 35	ø 36 ~ ø 47	ø 48 ~ ø 65	ø 76 ~ ø 102	ø 9.5 ~ ø 12.5	ø 13 ~ ø 17.5	ø 18 ~ ø 24	ø 25 ~ ø 35	ø 36 ~ ø 47
P강 Steel	연강 Free Machining Steel 1118, 1215, 12L14, etc	Bar	12~13	7~8	7~10	6~8	5~7	4	5~6	17~20	17	15	15	20
		LPM	9.5~9.8	10.6~11.4	16.7~19.7	26.5~30.3	45.4~53.0	114~125	144~167	12.2	16.3	25.2	41.5	71.9
	저탄소강 Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc	Bar	11~12	5~6	5~7	4~6	4~5	2~3	3~5	18	11	11	12	9
		LPM	9.1~9.5	9.1~9.8	14.0~15.9	22.7~26.5	41.6~45.4	98~114	125~144	11.4	13.3	20.6	36.5	62
	중탄소강 Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc	Bar	11	5~6	5~6	4~5	3~5	2~3	3~5	17	10	10	10	8
		LPM	8.7~9.1	8.7~9.8	13.6~15.5	18.9~22.7	37.9~45.4	98~114	125~144	11.3	12.5	20	33.8	57
	구조용강 Structural Steel A36, A285, A516, etc	Bar	11	5~6	5~6	3~4	3	2	3	16	9	8	7	5
		LPM	8.7~9.1	9.7~9.8	13.2~14.8	18.9~22.7	34.1~37.9	87~98	114~125	10.8	12	17.5	27.8	47.1
M Stainless steel	합금강 Alloy Steel 4140, 5140, 8640, etc	Bar	11	5	5~6	3~5	3~4	2	3	17	9	10	8	7
		LPM	8.7~9.1	8.3~9.1	13.2~14.8	18.9~22.7	31.9~41.6	98~106	114~125	11.1	12.3	19.3	30	55.8
	공구강 Tool Steel H13, H21, A4, O2, S3, etc	Bar	10~11	4	3	2	2	2	2	15	5	5	3	3
		LPM	8.7~9.1	7.9~8.3	11.0~11.7	15.1~18.9	26.5~30.3	79~87	87~98	10.4	9.1	13.6	19	36.5
N Nonferrous metals	스테인리스강 Stainless Steel 400 Series 416, 420, etc	Bar	11.8	5.9	5.2	3.8	3.5	2	3.1	22.7	16.5	17.9	17.2	13.1
		LPM	9.5	9.8	14	23	38	98	117	13	16.3	26.3	44.2	75
	스테인리스강 Stainless Steel 300 Series 304, 316, 17-4PH, etc	Bar	11.8	5.9	5.2	3.8	3.5	2	3.1	22.7	16.5	17.9	17.2	13.1
		LPM	9.5	9.8	14	23	38	98	117	13	16.3	26.3	44.2	75.8
S 내열합금 Super-alloys and titanium	알루미늄 Aluminium 2014, 6061, 7075, etc	Bar	14.5	12.4	15.8	11	8.6	3.5	5.5	24.1	22	21.7	19.6	13.8
		LPM	10	14	23	34	31	125	159	13.4	18.8	29	47.2	77
	내열 합금강 High Temp Alloy Hastelloy B, Inconel 600, etc	Bar	10~11	4~5	3~4	2	2	2	3	17	11	12	11	9
		LPM	8.7~9.1	8.3~8.7	11.7~12.1	15.1~18.9	26.5~30.3	87~98	125	11.1	13.5	21.9	35.4	62
	고경도 합금강 High Strength Alloy 4340, 4330V, 300M, etc	Bar	10~11	4	3	2	2	1~2	2	15	5	4	3	3
		LPM	8.7~9.1	7.9~8.3	11.0~11.7	15.1~18.9	26.5~30.3	79~89	87~98	10.4	9.1	12.6	18.8	33.6

Holder	Extended	Long	XL	3XL
Pressure & Flow	1.3	1.5	2	3

Coolant Recommendation Example :

If the recommended pressure and flow is 10bar and 25 LPM for a standard length holder, the adjusted pressure and flow would be 30bar and 75LPM respectively for the 3XL holder.

ex) $10 \times 3 = 30\text{bar}$ $25 \times 3 = 75\text{LPM}$



Max Recommended COS Speed

Item	Max Recommended RPM
COS - 190522	3500
COS - 254028	2500
COS - 317535	2000
COS - 444535	1500
COS - 571544	1100

NOTE : Max recommended pressure is 600 PSI (42 bar)

NOTE : Recommendations above are based on water and oil based coolants



WARNING

드릴링 중에 COS가 회전하면 호스 또는 호스 피팅 고장, 기계 등의 원인이 될수 있습니다.
스톱바 조립 및 올바른 위치에 스톱스터드를 설치하여 예방해 주세요.

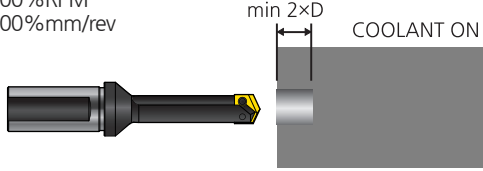
COS rotation during drilling can cause hose and / or hose fitting failure, machinery damage and / or serious injury. To prevent, use stop bar and positive stop studs when drilling.

깊은 홀 가공 방법 Deep Hole Drilling Guideline

For use with BPK drills greater than 9D, including Extended, Long, XL, 3XL and Special long drill.

STEP1. Pilot Drill

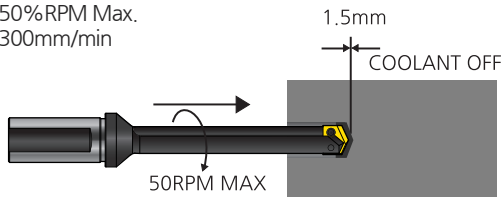
100%RPM
100%mm/rev



- 최소 2D까지 같은 구경의 짧은 드릴로 초기 구멍작업
Establish the pilot hole using the same diameter short drill to a depth of a 2D minimum
- 포인트 앵글을 포함한 것 보다 같거나 더 큰 초기 가공홀 드릴을 이용
Utilize a pilot drill with the same or larger included point angle.

STEP2. Feed In

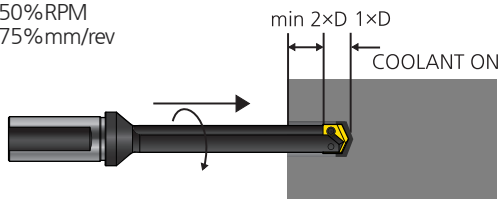
50%RPM Max.
300mm/min



- 최대 50RPM과 이송값 300mm/min으로 초기 가공홀에서 더 길이가 긴 드릴을 1.5mm(1/16") 이내로 가공
Feed the longer drill within 1.5mm(1/16") short of the established pilot hole bottom at a maximum of 50RPM and 300mm/min feed rate

STEP3. Deep Hole Transition Drilling

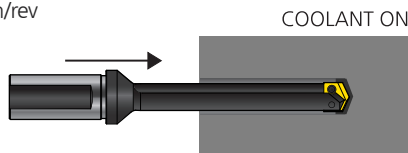
50%RPM
75%mm/rev



- 추천하는 절삭값의 50%와 이송값을 25% 감소시켜 추가로 1D를 초기 가공홀에서 더 가공
Drill additional 1xD passed bottom of pilot hole at 50% reduction of recommended speed and 25% reduction of recommend feed
- 피삭재 이송을 하기 전 추천 절삭값으로 속도를 끌어올리기 위해 최소 1초 동안 머물러 작업
Minimum of 1 second dwell is required meet full speed before feeding

STEP4. Deep Hole Drilling-Blind

100%RPM
100%mm/rev

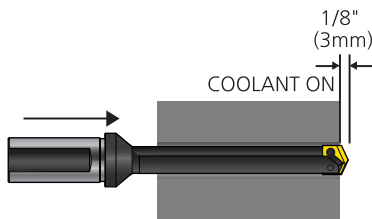


- BPK Inc에서 제공하는 절삭값으로 가공 깊이까지 가공
Drill to full depth at recommended speed and feed for longer drills according to cutting data which belongs to BPK Inc.

⚠ *Peck cycle은 권장하지 않습니다.
No peck cycle recommended

STEP5. Deep Hole Drilling-Through

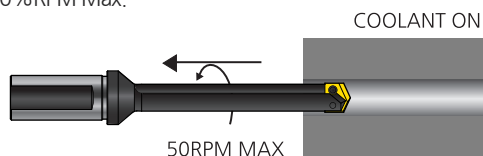
50%RPM
75%mm/rev



- 피삭재를 관통하는 경우에만 적용하세요.
For through holes only
- 관통하기 전에 속도는 50%감소 이송값은 25%까지 감소
Reduce speed by 50% and feed by 25% prior to break out
- 3mm(1/8") 이상 드릴을 관통시키지 말 것
Do not break out more than 3mm(1/8") past the full diameter of drill

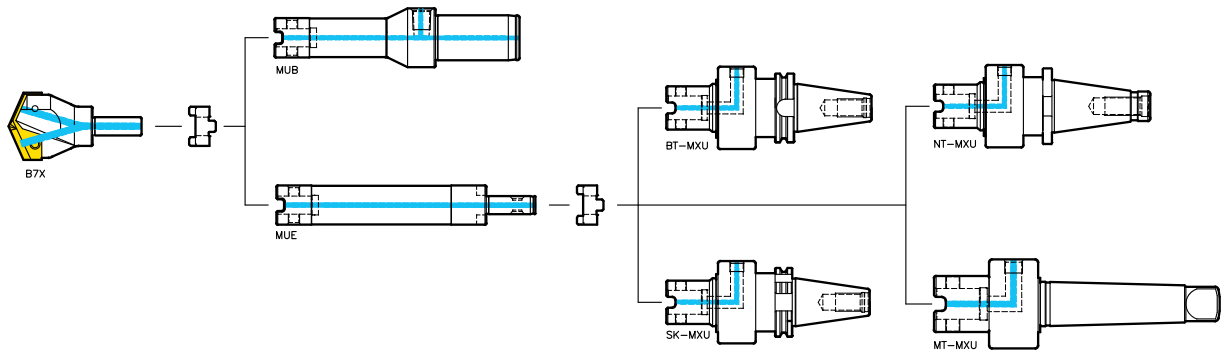
STEP6. Drill Retract

50%RPM Max.



- 드릴이 가공홀을 돌아오기 전에 최대 50RPM까지 속도를 낮춤
Reduce speed to maximum of 50 RPM before retracting from hole

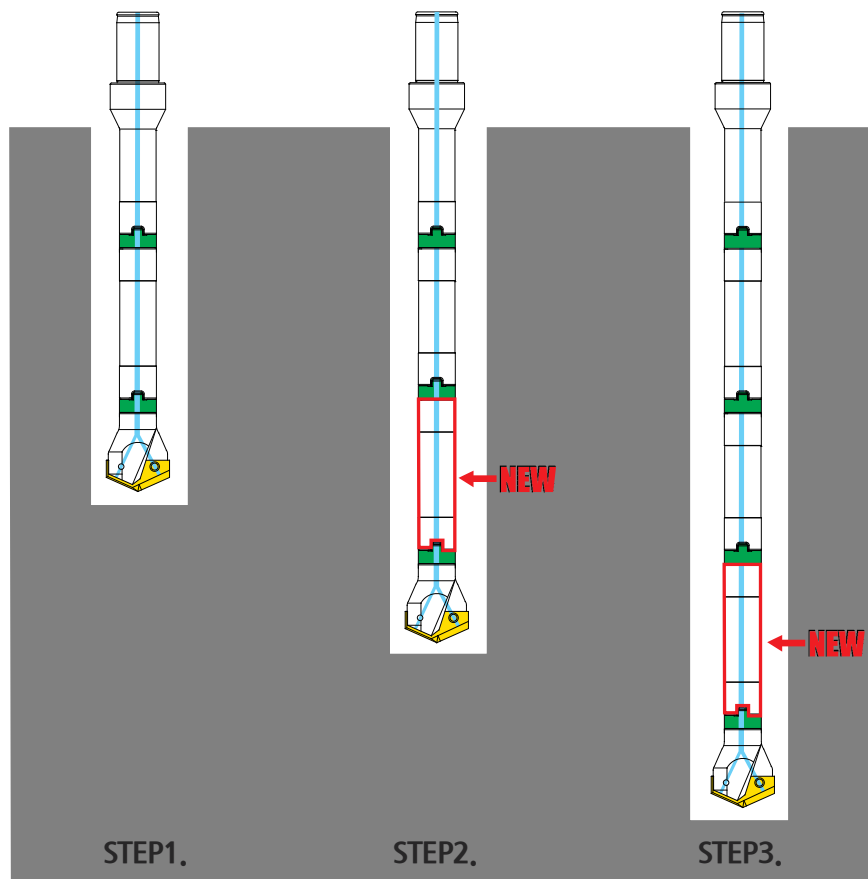
모듈라 헤드 사용법 B7X Modular Head Guideline



WARNING

- 확장바를 두개 이상 연결하거나 extension과 reducers 를 연결하지 마시오.
Do not exceed 2 extension or extension plus reducers
 - 필요에 의해 2개 이상의 extension 바를 연결해야 하는 경우 첫 번째 extension의 가공 홀 깊이 만큼 가공 후에 연결해서 추가 가공하세요.
When you need to assemble exceed 2 extension, after making first hole with the one extension and then add another extension.
- * 알림사항 : 2번 절차를 수행하는 경우 가공 홀 표면이 고르지 못할 수 있습니다.
Please be noted : if you take the No.2 procedure, surface of the hole would't be even.

추천조립사용법



B7X 추천 조립법 B7X Recommended Assemble

TOP



**BOTTOM
READY**

Clean all parts

**STEP1.
B7X**

**STEP2.
MUE or MUB**

FINISH

NOTE :

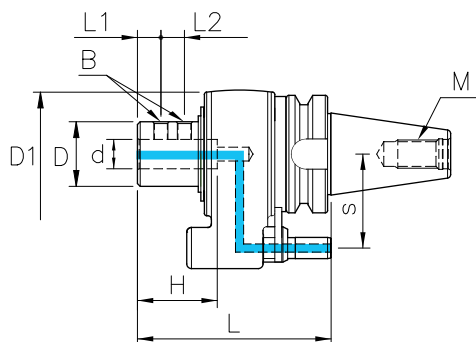
- 모든부속품을 깨끗이 닦으세요.
Make sure to clean all parts to assemble PKR
- 제공되는 렌치를 이용해 시계방향으로 밀어준 후 조립해주세요.
Assembly with JTB screw after push each parts clock wise.

ARBOR

BT-OAS / BT-OMS
NT-OMS / SK-OMS
MT-OMS / BT-SLA
NT-SLA / SK-SLA / MT-SLA



BT-OAS

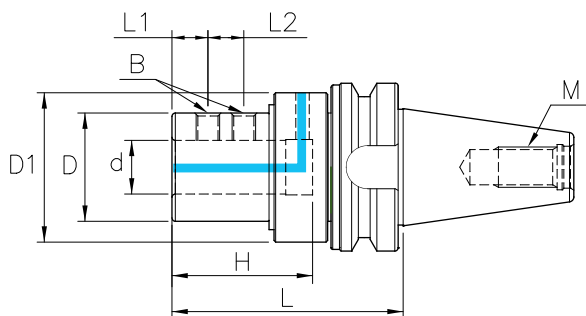


BT Side Lock Auto Matic Type

Max. 3200RPM

Order No. 주문형번	Dimension (mm)										Price
	d	L	H	L1	L2	D	D1	B	M	S	
BT40-OAS-20120	20	120	50	20	-	55	80	M12	M16	65	605,000
BT40-OAS-25140	25	140	60	20	20	55	80	M12			605,000
BT40-OAS-32140	32	140	70	20	20	65	80	M14			665,000
BT50-OAS-20145	20	145	50	20	-	55	100	M12	M24	80	724,000
BT50-OAS-25165	25	165	60	20	20	55	100	M12			724,000
BT50-OAS-32165	32	165	70	20	20	65	100	M14			724,000
BT50-OAS-40175	40	175	80	20	25	65	100	M16			790,000

BT-OMS

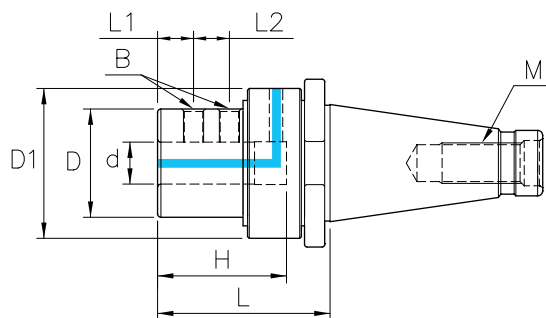


BT Side Lock Oil Feed Type

Max. 1800RPM

Order No. 주문형번	Dimension (mm)										Price
	d	L	D	D1	H	L1	L2	B	M		
BT40-OMS-20105	20	105	50	78	50	20	-	M12	M16		302,000
BT40-OMS-25120	25	120	50	78	60	20	20	M12			302,000
BT40-OMS-32125	32	125	65	88	70	20	20	M14			302,000
BT50-OMS-20120	20	120	65	89	50	20	-	M12	M24		362,000
BT50-OMS-25135	25	135	65	89	60	20	20	M12			362,000
BT50-OMS-32135	32	135	65	89	70	20	20	M14			362,000
BT50-OMS-40145	40	145	65	98	80	20	25	M16			362,000
BT50-OMS-50170	50	170	90	123	90	35	35	M20			482,000

NT-OMS

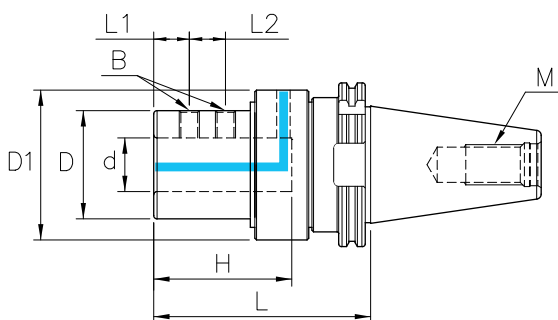


NT Side Lock Oil Feed Type

Max. 1800RPM

Order No. 주문형번	Dimension (mm)									Price
	d	L	D	D1	H	L1	L2	B	M	
NT40-OMS-20090	20	90	50	78	50	20	-	M12	5/8-11 UNC (inch)	278,000
NT40-OMS-25105	25	105	50	78	60	20	20	M12		278,000
NT40-OMS-32110	32	110	65	88	70	20	20	M14		278,000
NT50-OMS-20090	20	90	65	78	50	20	-	M12	1"-8 UNC (inch)	362,000
NT50-OMS-25105	25	105	65	78	60	20	20	M12		362,000
NT50-OMS-32105	32	105	65	98	70	20	20	M14		362,000
NT50-OMS-40120	40	120	65	98	80	20	25	M16		362,000
NT50-OMS-50145	50	145	90	123	90	35	35	M20	M16 (metric)	482,000
NT40-OMS-20090M	20	90	50	78	50	20	-	M12		278,000
NT40-OMS-25105M	25	105	50	78	60	20	20	M12		278,000
NT40-OMS-32110M	32	110	65	88	70	20	20	M14		278,000
NT50-OMS-20090M	20	90	50	78	50	20	-	M12		362,000
NT50-OMS-25105M	25	105	50	78	60	20	20	M12		362,000
NT50-OMS-32105M	32	105	65	98	70	20	20	M14		362,000
NT50-OMS-40120M	40	120	65	98	80	20	25	M16	M24 (metric)	362,000
NT50-OMS-50145M	50	145	90	123	90	35	35	M20		482,000

SK-OMS

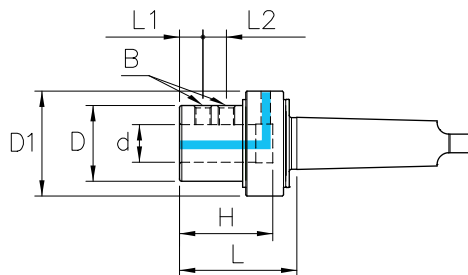


SK Side Lock Oil Feed Type

Max. 1800RPM

Order No. 주문형번	Dimension (mm)									Price
	d	L	D	D1	H	L1	L2	B	M	
SK40-OMS-20110	20	110	50	78	50	20	-	M12	M16	340,000
SK40-OMS-25125	25	125	50	78	60	20	20	M12		340,000
SK40-OMS-32130	32	130	65	88	70	20	20	M14		340,000
SK50-OMS-20105	20	105	65	78	50	20	-	M12	M24	388,000
SK50-OMS-25120	25	120	65	78	60	20	20	M12		388,000
SK50-OMS-32125	32	125	65	98	70	20	20	M14		388,000
SK50-OMS-40135	40	135	65	98	80	20	25	M16		388,000
SK50-OMS-50165	50	165	90	123	90	35	35	M20		520,000

MT-OMS

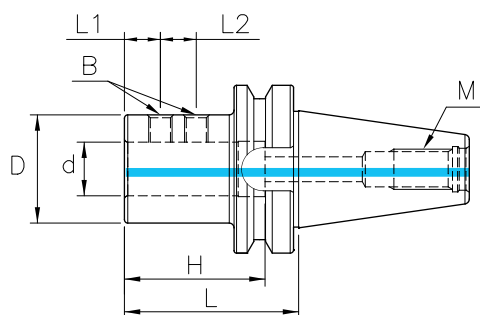


MT Side Lock Oil Feed Type

Max. 1800RPM

Order No. 주문형번	Dimension (mm)								Price
	d	L	D	D1	H	L1	L2	B	
MT4-OMS-20080	20	80	50	78	50	20	-	M12	218,000
MT4-OMS-25095	25	95	50	78	60	20	20	M12	218,000
MT4-OMS-32100	32	100	65	88	70	20	20	M14	242,000
MT5-OMS-20080	20	80	50	78	50	20	-	M12	242,000
MT5-OMS-25095	25	95	50	78	60	20	20	M12	242,000
MT5-OMS-32100	32	100	65	88	70	20	20	M14	278,000
MT5-OMS-40110	40	110	75	98	80	20	25	M16	302,000
MT5-OMS-50140	50	140	90	123	90	35	35	M20	398,000
MT6-OMS-20085	20	85	50	78	50	20	-	M12	364,000
MT6-OMS-25100	25	100	50	78	60	20	20	M12	364,000
MT6-OMS-32105	32	105	65	88	70	20	20	M14	364,000
MT6-OMS-40120	40	120	75	98	80	20	25	M16	386,000
MT6-OMS-50140	50	140	90	123	90	35	35	M20	482,000

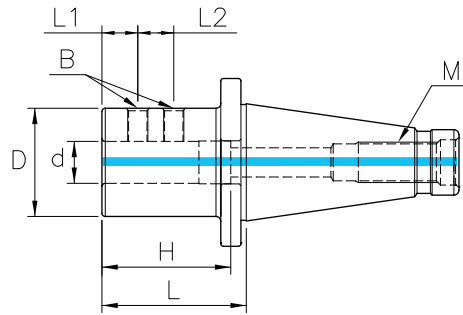
BT-SLA



BT Side Lock Type

Order No. 주문형번	Dimension (mm)								Price
	d	L	D	H	L1	L2	B	M	
BT50-SLA-20105	20	105	50	50	20	-	M12	M24	182,000
BT50-SLA-25105	25	105	50	60	20	20	M12		182,000
BT50-SLA-32105	32	105	65	70	20	20	M14		182,000
BT50-SLA-40105	40	105	65	80	20	25	M16		182,000

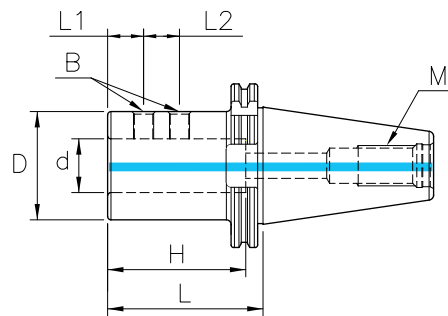
NT-SLA



NT Side Lock Type

Order No. 주문형번	Dimension (mm)								Price
	d	L	D	H	L1	L2	B	M	
NT50-SLA-40090	40	90	65	80	20	25	M16	1" - 8UNC (inch)	170,000
NT50-SLA-40090M	40	90	65	80	20	25	M16	M24 (metric)	170,000

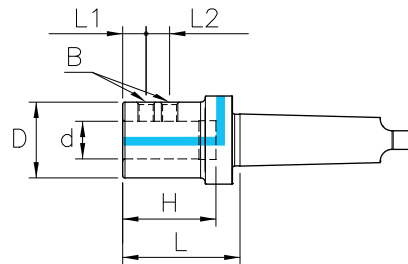
SK-SLA



SK Side Lock Type

Order No. 주문형번	Dimension (mm)								Price
	d	L	D	H	L1	L2	B	M	
SK50-SLA-32105	32	105	65	70	20	25	M14	M24	212,000
SK50-SLA-40105	40	105	65	80	20	25	M16	M24	212,000

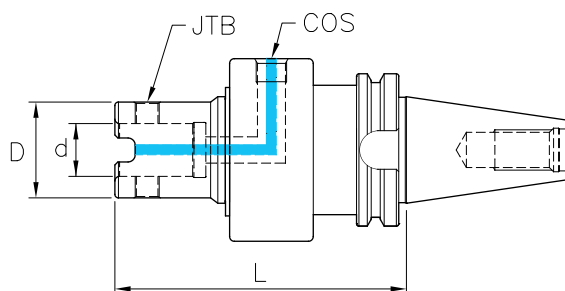
MT-SLA



MT Side Lock Type

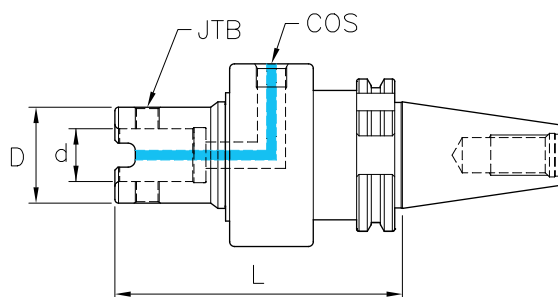
Order No. 주문형번	Dimension (mm)							Price
	d	L	D	H	L1	L2	B	
MT4-SLA-32105	32	105	65	70	20	20	M14	103,000
MT4-SLA-40105	40	105	65	80	20	25	M16	127,000
MT5-SLA-32105	32	105	65	70	20	20	M14	109,000
MT5-SLA-40105	40	105	65	80	20	25	M16	139,000
MT5-SLA-50130	50	130	90	90	35	35	M20	217,000

BT-MXU



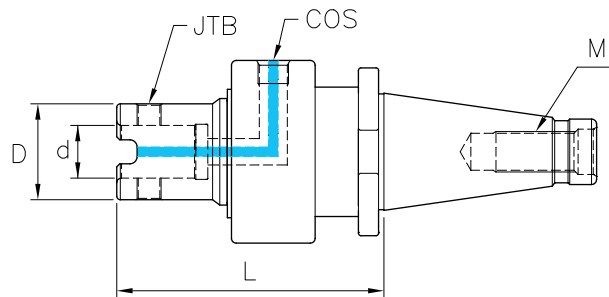
Order No. 주문형번	Dimension (mm)					Price
	D	d	L			
BT50-MXU-2813115	28	13	115	JTB-08115	COS-317535	238,000
BT50-MXU-3216120	32	16	120		COS-444535	263,000
BT50-MXU-4022120	40	22	120	JTB-10145	COS-571544	355,000
BT50-MXU-4827130	48	27	130	JTB-12175		422,000
BT50-MXU-5732130	57	32	130	JTB-12195		460,000

SK-MXU



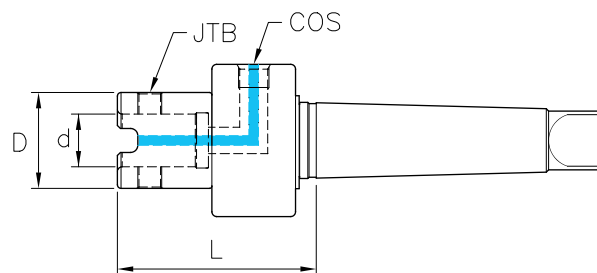
Order No. 주문형번	Dimension (mm)					Price
	D	d	L			
SK40-MXU-2813115	28	13	115	JTB-08115	COS-317535	214,000
SK40-MXU-3216120	32	16	120		COS-444535	237,000
SK40-MXU-4022120	40	22	120	JTB-10145	COS-571544	320,000
SK40-MXU-4827130	48	27	130	JTB-12175		379,000
SK40-MXU-5732130	57	32	130	JTB-12195		414,000
SK40-MXU-2813115	28	13	115	JTB-08115	COS-317535	237,000
SK40-MXU-3216120	32	16	120		COS-444535	265,000
SK40-MXU-4022120	40	22	120	JTB-10145	COS-571544	358,000
SK40-MXU-4827130	48	27	130	JTB-12175		424,000
SK40-MXU-5732130	57	32	130	JTB-12195		460,000

NT-MXU



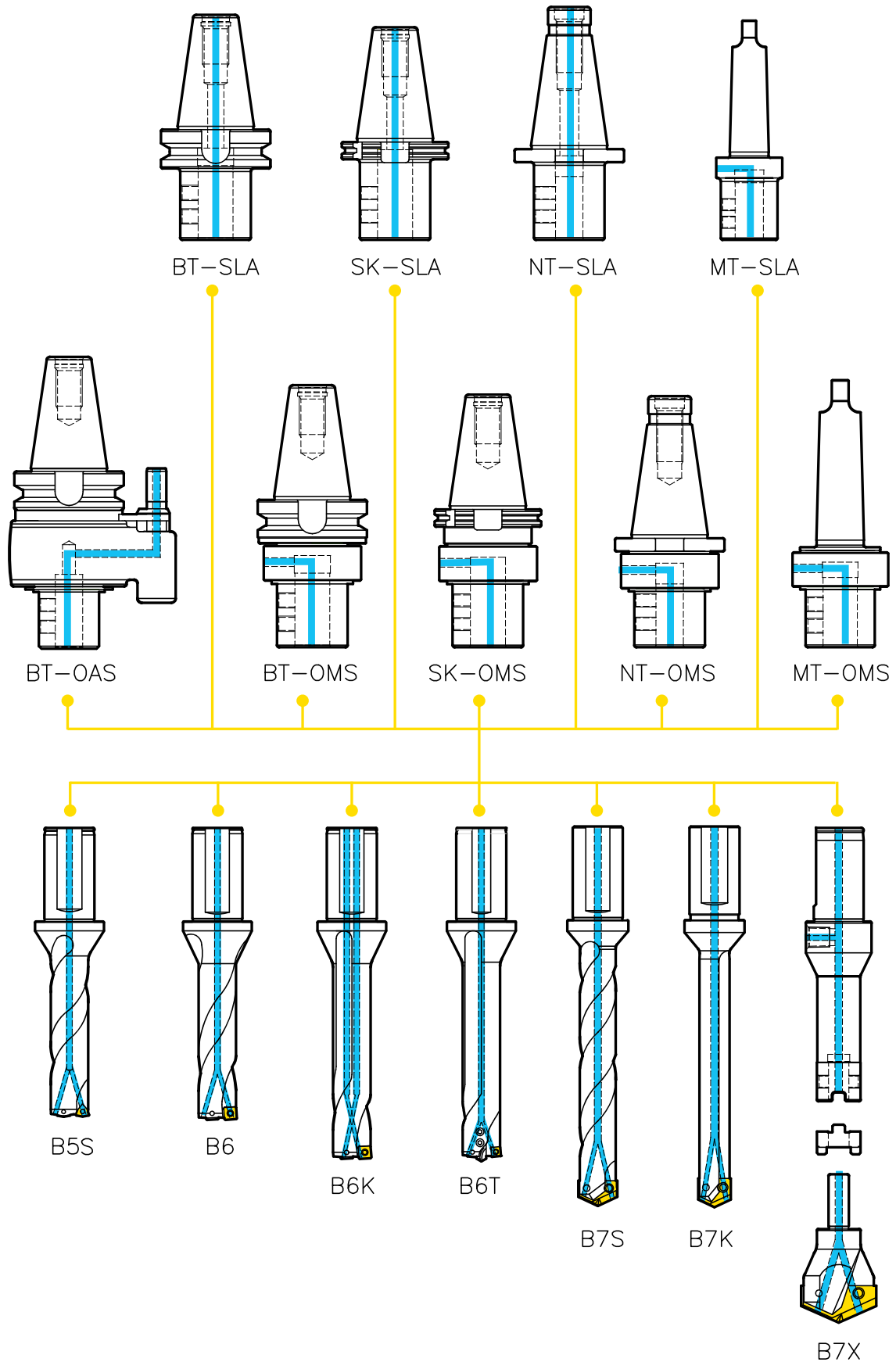
Order No. 주문형번	Dimension (mm)					M	Price
	D	d	L				
NT50-MXU-2813115	28	13	90	JTB-08115	COS-317535	1"-8UNC (inch)	238,000
NT50-MXU-3216095	32	16	95		COS-444535		265,000
NT50-MXU-4022095	40	22	95	JTB-10145	COS-571544		330,000
NT50-MXU-4827105	48	27	105	JTB-12175			395,000
NT50-MXU-5732105	57	32	105	JTB-12195			450,000
NT50-MXU-2813090M	28	13	90	JTB-08115	COS-317535	M24 (inch)	238,000
NT50-MXU-3216095M	32	16	95		COS-444535		265,000
NT50-MXU-4022095M	40	22	95	JTB-10145	COS-571544		330,000
NT50-MXU-4827105M	48	27	105	JTB-12175			395,000
NT50-MXU-5732105M	57	32	105	JTB-12195			450,000

MT-MXU

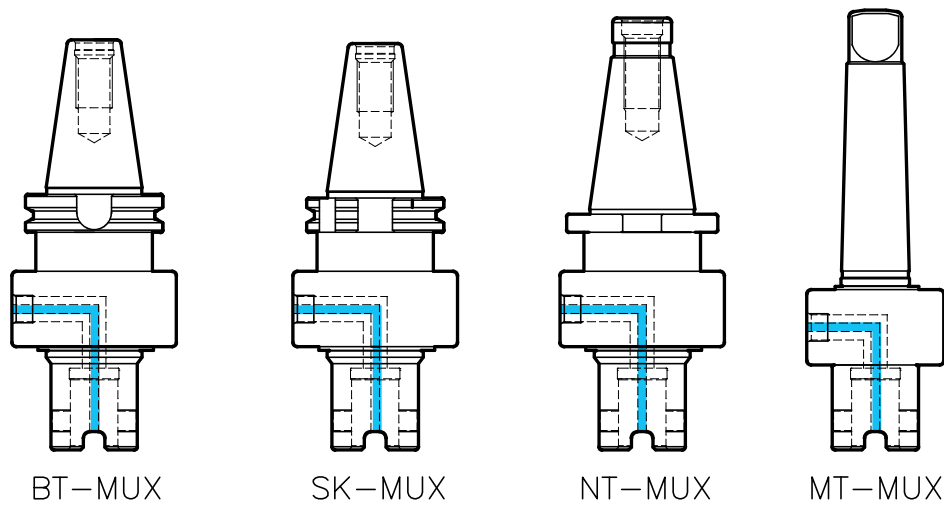


Order No. 주문형번	Dimension (mm)						Price
	D	d	L	MT			
MT4-MXU-2813080	28	13	80	#4	JTB-08115	COS-317535	238,000
MT5-MXU-2813080	28	13	80	#5		COS-444535	265,000
MT6-MXU-2813095	28	13	95	#6		COS-571544	330,000
MT4-MXU-3216080	32	16	80	#4	JTB-08115	COS-317535	238,000
MT5-MXU-3216080	32	16	80	#5		COS-444535	265,000
MT6-MXU-3216095	32	16	95	#6		COS-571544	330,000
MT4-MXU-4022080	40	22	80	#4	JTB-10145	COS-317535	395,000
MT5-MXU-4022080	40	22	80	#5		COS-444535	450,000
MT6-MXU-4022095	40	22	95	#6		COS-571544	265,000
MT5-MXU-4827095	48	27	95	#5	JTB-12175	COS-444535	290,000
MT6-MXU-4827095	48	27	95	#6		COS-571544	355,000
MT5-MXU-5732095	57	32	95	#5	JTB-12195	COS-444535	424,000
MT6-MXU-5732095	57	32	95	#6		COS-571544	460,000

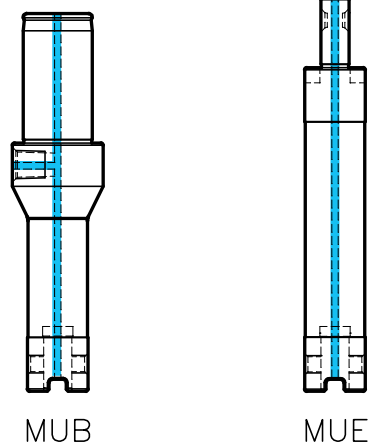
Drilling System Assembly Guide Side Lock Type



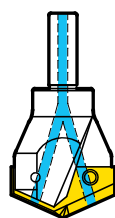
Drilling System Assembly Guide Moduar Type



해당 MUB용 아바 70 페이지 참조
Refer to side lock arbor on page 70

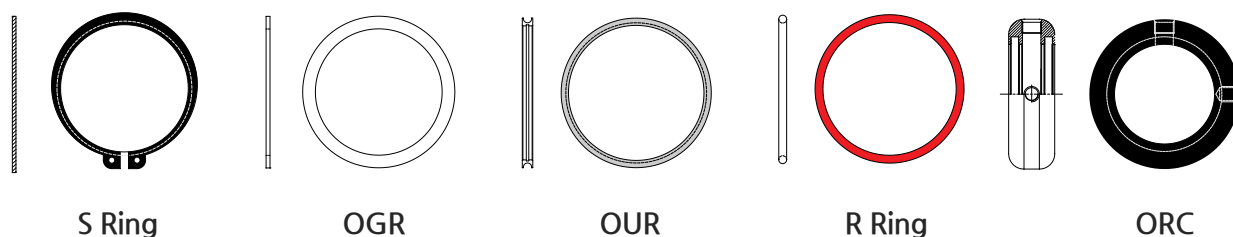
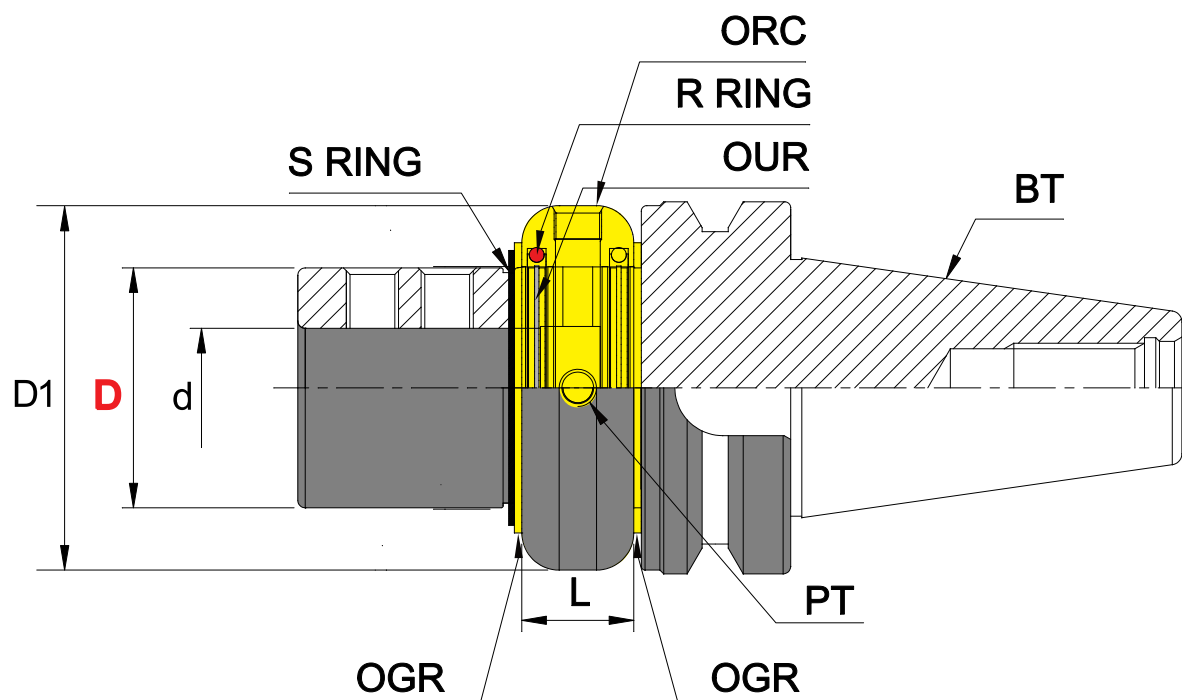


DKR



B7X

OMS 부품 OMS Spare Parts



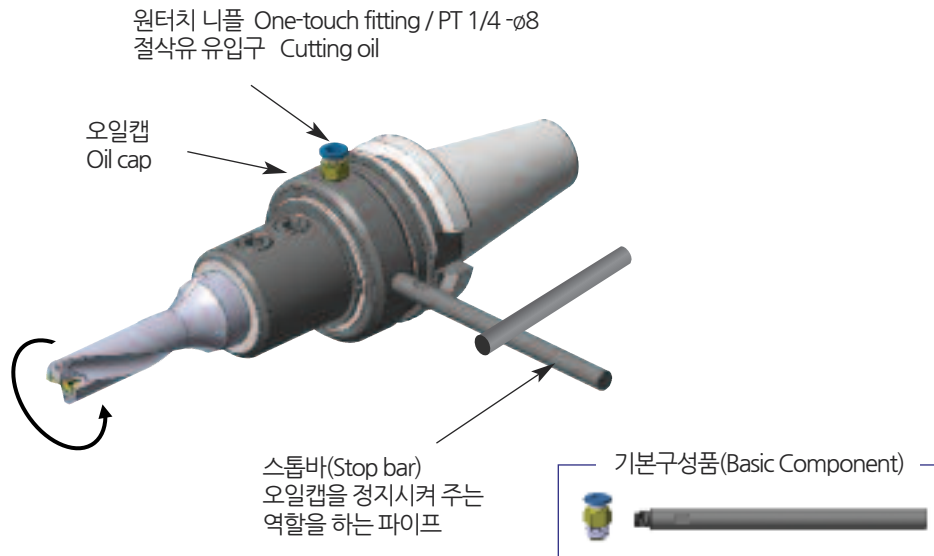
	D 50	D 65	D 80	D 90	Component
OGR	OGR 050	OGR 065	OGR 080	OGR 090	*2
OUR	OUR 050	OUR 065	OUR 080	OUR 090	*2
R Ring	R Ring 050	R Ring 065	R Ring 080	R Ring 090	*2
ORC	ORC 050	ORC 065	ORC 080	ORC 090	*1
S Ring	S Ring 050	S Ring 065	S Ring 080	S Ring 090	*1
Ring Kit	Ring Kit 050	Ring Kit 065	Ring Kit 080	Ring Kit 090	
Full component Kit	OMS Kit 050	OMS Kit 065	OMS Kit 080	OMS Kit 090	

Ring Kit = OGR*2 + OUR*2 + R Ring*2
 Full component Kit = OGR*2 + OUR*2 + R Ring*2 + ORC*1 + S Ring*1

OAS, OMS, SLA 아바 사용법

Recommend OAS, OMS, SLA Setting

오일 피드 아바의 특징 및 사용법 Oil feed arbor feature and use



- 1) 가공직경이 비교적 크거나 깊은홀 가공시 반드시 절삭유 내부 공급을 해야 한다.
When the diameters to be processed are too large, or when deep holes are processed, the cutting-oil must be supplied into the interior of the device.
- 2) 오일피드 아바는 범용장비에서도 내부 급유를 유도하여 깊은홀 가공이 가능하도록 도와주는 유용한 공구이다.
The oil feed arbor is a useful tool that enables processing deep holes, even with general-purpose equipment.
- 3) 오일캡 외부에는 90도 방향으로 쓰레드가 2곳이 나 있는데, 한 곳으로는 절삭유가 유입되는 곳이고, 다른 한 쪽으로는 스톱바가 장착되는 곳이다.
Two threads are seen at 90 degrees from the outside of the oil cap : one for the feature where the cutting-oil is supplied, and the other for the feature where the stop bar is installed.
- 4) 오일캡 내부에는 절삭유 누유를 막아주고 회전시 발생하는 마찰을 최소화 시켜주는 테프론 씰이 장착되어 있다.
There is a teflon seal inside the oil cap that keeps the cutting-oil from leaking and it also minimizes friction.
- 5) 회전시 오일캡은 정지된 상태로 절삭유를 공급해 준다.
When rotating, the cutting-oil is supplied with the oil cap stopped :
- 6) 오일피드 타입의 아바로는 OAS, OMS, SLA
Arbor oil feed types include OAS, OMS, SLA

BPK Drill Series

ø9.5

ø12.5 ø13

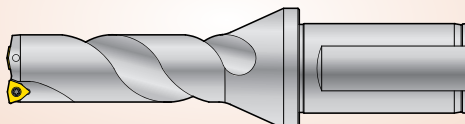
ø18

ø30

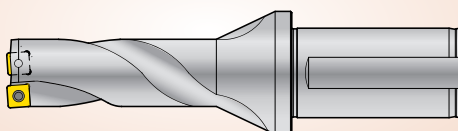
ø50 ø58

ø114

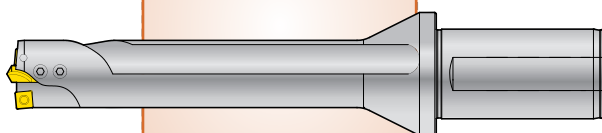
B5S
2D, 3D, 4D



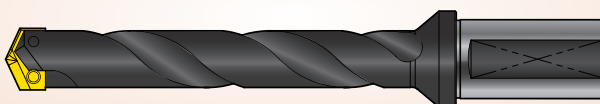
B6
2D, 3D, 4D, 5D



B6T
6D, 9D



B7
1.5D ~ 30D



ø9.5

ø12.5 ø13

ø18

ø30

ø50 ø58

ø114

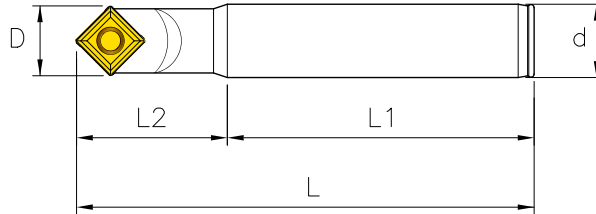
CHAMFERING TOOLS

CMN / CSC / CPC / CAC



CMN (45°) / CMS

Shank D12, D16	Shank D1/2", D5/8"	Screw Fit M08
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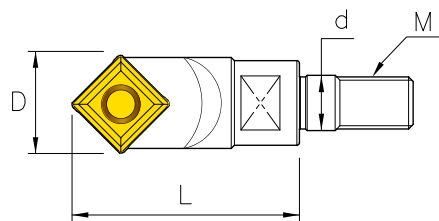


Shank Metric

Order No. 주문형번	D	d	L	L1	L2				Price
CMN-1411100-S12	14	12	100	67	33	XDBP11T3	TSB-3508	TXL-15	57,000
CMN-1411100-S16	14	16	100	67	33				57,000
CMN-1411150-S16	14	16	150	117	33				58,000
CMN-1411220-S16	14	16	220	187	33				59,000

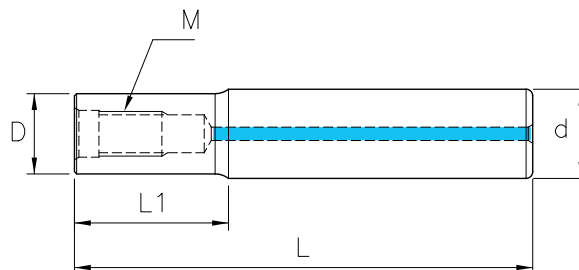
Inch

Order No. 주문형번	D	d	L	L1	L2				Price
CMN-1411100-S1/2"	14	1/2"	100	67	33	XDBP11T3	TSB-3508	TXL-15	57,000
CMN-1411100-S5/8"	14	5/8"	100	67	33				57,000
CMN-1411150-S5/8"	14	5/8"	150	117	33				58,000
CMN-1411220-S5/8"	14	5/8"	220	187	33				59,000



Screw Fit Metric

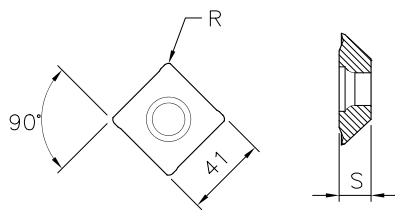
Order No. 주문형번	D	d	L				Price
CMN-1411052-M08	14	8	35	XDBP11T3	TSB-3508	TXL-15	55,000



Carbide Screw Adapter Metric

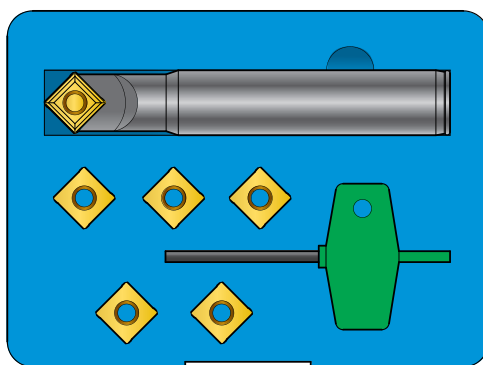
Order No. 주문형번	D	d	L	L1	M	Price
CMS-14M08080	14	14	80	80	8	191,000
CMS-16M08080	14.4	16	80	24	8	195,000
CMS-16M08120	14.4	16	120	24	8	238,000
CMS-16M08200	14.4	16	200	24	8	292,000

XDBP / CMN Set



Insert

Order No. 주문형번	D	S	R	Grade	Price
XDBP11T308-P	11	3.97	0.8	Alloy steel	20,000
XDBP11T308-M	11	3.97	0.8	SUS	20,000
XDBP11T308-C	11	3.97	0.8	Cast Iron	20,000
XDBP11T308-N	11	3.97	0.8	Aluminum	20,000
XDBP11T303-P	11	3.97	0.3	Alloy steel	20,000
XDBP11T303-M	11	3.97	0.3	SUS	20,000
XDBP11T303-C	11	3.97	0.3	Cast Iron	20,000
XDBP11T304-N	11	3.97	0.4	Aluminum	20,000

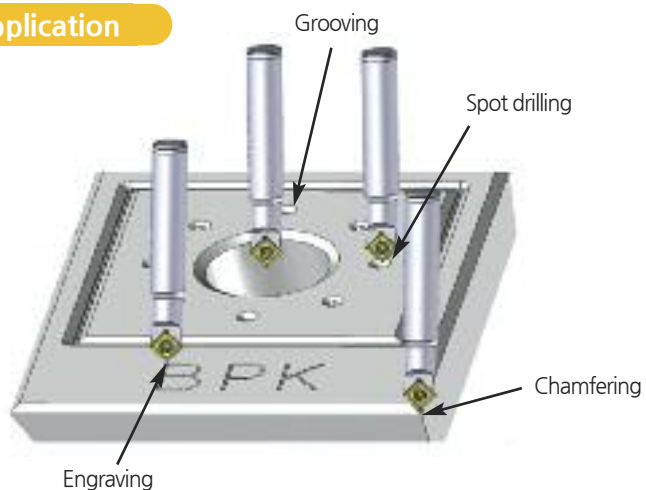


SET

Metric and Inch

Order No. 주문형번	Holder	Insert*6		Price
CMN-1411100-P SET(R0.8)	CMN-1411100-S16 or CMN-1411100-S5/8"	XDBP11T308-P	TXL-15	172,000
CMN-1411100-M SET(R0.8)		XDBP11T308-S		172,000
CMN-1411100-C SET(R0.8)		XDBP11T308-C		172,000
CMN-1411100-N SET(R0.8)		XDBP11T308-N		172,000
CMN-1411100-P SET(R0.3)		XDBP11T303-P		172,000
CMN-1411100-M SET(R0.3)		XDBP11T303-S		172,000
CMN-1411100-C SET(R0.3)		XDBP11T303-C		172,000
CMN-1411100-N SET(R0.4)		XDBP11T304-N		172,000

Application



< Centering Spot >



< Rounding >



< Grooving >



< Chamfering >

CMN 드릴 절삭데이터

CMN Drill Recommended Cutting Data

Decide S(R.P.M) and F(feed);

Inch	
$D=2 \times H \times \tan(\alpha/2)$	inch
$S=3.82 \times (V_c/D)$	R.P.M
$F=n \times f \times F_f$	ipm(inches per minute)
Metric	
$D=2 \times H \times \tan(\alpha/2)$	mm
$S=3.82 \times (V_c \times 1000/D \times \pi)$	R.P.M
$F=n \times f \times F_f$	mm/min

α = Point angle 90°, 120° and 142°

H = Centering Depth

D = Effective Diameter

Vc = Cutting Speed
m/min. or ft./min.

S = Spindle Speed

F = Feed Rate

f = Feed Per Rev.

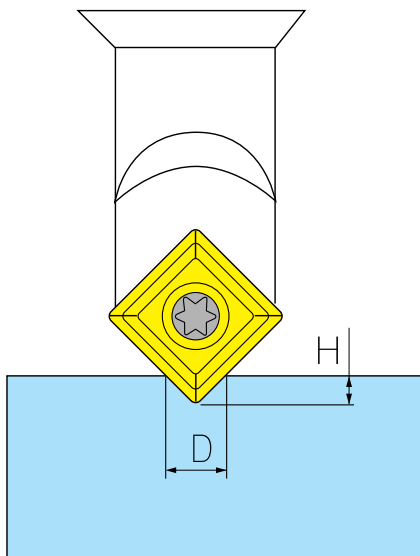
mm/rev.

inch/rev.

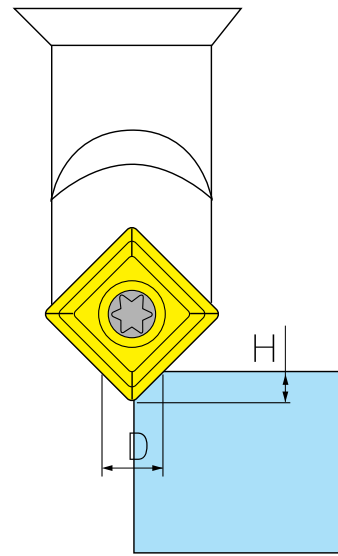
Ff = Feed Rate Factor

****Max. H** Centering=7mm(0.28")
 Grooving=5mm(0.20")
 Chamfering=7mm(0.28")

Centering and Grooving



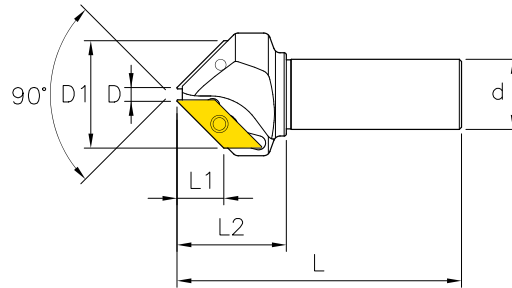
Chamfering



Recommended Cutting Data for Materials

Material 피삭재		Speed 속도		Feed 이송	
		m/min	ft/min	mm/rev.	inch/rev.
P 강 Steel	탄소강 Carbon Steel	120 ~ 150	400 ~ 500	0.05	0.002
	합금강 Alloy Steel	100 ~ 120	330 ~ 400	0.04	0.0015
	고합금강 High Alloy Steel	60 ~ 80	200 ~ 260	0.03	0.001
	저경도강 Hard Steel < HRC40°	60 ~ 80	200 ~ 260	0.03	0.001
	고경도강 Hard Steel 40° < HRC < 48°	50 ~ 60	165 ~ 200	0.03	0.001
M 스테인레스강 Stainless steel	스테인레스강 Stainless steel	50 ~ 60	165 ~ 200	0.03	0.001
K 주철 Cast iron	회주철 Grey cast iron	80 ~ 102	260 ~ 332	0.05	0.002

CSC (30°, 45°, 60°)



Metric shank

• BPK / TOSHIBA / TUNGALOY

Order No. 주문형번	Dimension (mm)												Price
	D	D1	L1	d	L2	L3	L	A					
CSC-05031R-30	5	34	25.5	32	50	80	130	60	1	XCET310404ER	TSB-0510	TXL-20	84,000
CSC-05031R-45	5	46	20.5	32	50	80	130	90	2				86,000
CSC-05031R-60	5	55	14.5	32	50	80	130	120	2				94,000

Inch shank

• BPK / TOSHIBA / TUNGALOY

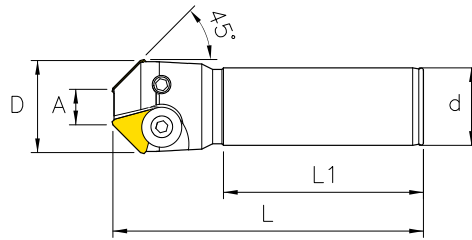
Order No. 주문형번	Dimension (mm)												Price
	D	D1	L1	d	L2	L3	L	A					
CSC-05031R-30i	5	34	25.5	31.75	50	80	130	60	1	XCET310404ER	TSB-0510	TXL-20	84,000
CSC-05031R-45i	5	46	20.5	31.75	50	80	130	90	2				86,000
CSC-05031R-60i	5	55	14.5	31.75	50	80	130	120	2				94,000

Metric weldon

• BPK / TOSHIBA / TUNGALOY

Order No. 주문형번	Dimension (mm)												Price
	D	D1	L1	d	L2	L3	L	A					
CSC-05031R-30W	5	34	25.5	32	50	80	130	60	1	XCET310404ER	TSB-0510	TXL-20	84,000
CSC-05031R-45W	5	46	20.5	32	50	80	130	90	2				86,000
CSC-05031R-60W	5	55	14.5	32	50	80	130	120	2				94,000

CPC (45°)

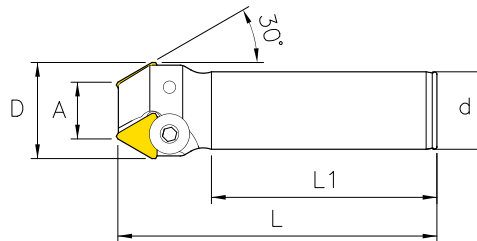


Metric shank

• ISO / TPKN

Order No. 주문형번	Dimension (mm)										Price
A	D	d	L	L1	L2						
CPC - 1016120	10	29	25(25.4)	120	80	7	2				89,000
CPC - 1016180	10	29	25(25.4)	180	150	7	2	TPKN 1603	CSB - 6012	L-4	108,000
CPC - 2022150	20	48	32(31.75)	150	95	11	2	TPKN 2204	CSB - 8018	L-5	103,000
CPC - 3522160	35	63	32(31.75)	160	100	11	3				133,000

CAC (60°)



Metric shank

• ISO / TPKN

Order No. 주문형번	Dimension (mm)										Price
A	D	d	L	L1	L2						
CAC - 2116120	8	21	20(19.05)	120	30	10	1				87,000
CAC - 3116120	19	31	25(25.4)	120	30	10	2	TPKN 1603	CSB - 6012	L-4	99,000
CAC - 4822160	29	48	32(31.75)	160	40	14	2	TPKN 2204	CSB - 8018	L-5	124,000

CPC/CAC용 절삭 데이터

CPC/CAC Recommended Cutting Data

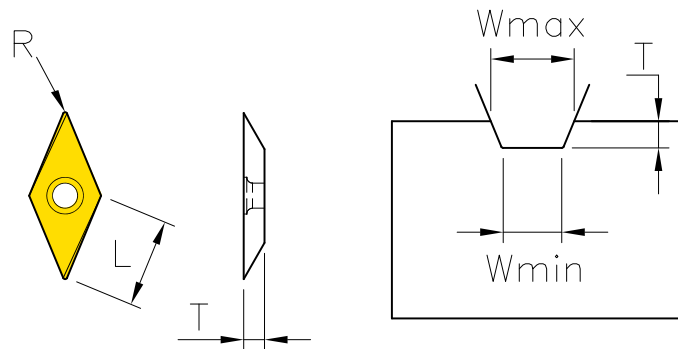
Material 피삭재		Grade 재종	Cutting Speed 절삭속도 (m/min)	Feed Rate 날당이송 (mm/TOOTH)	CPC Ø10		CPC Ø20		CPC Ø35	
					RPM 회전수	FEED 분당이송 (mm/min)	RPM 회전수	FEED 분당이송 (mm/min)	RPM 회전수	FEED 분당이송 (mm/min)
P강 Steel	연강 Mild Steels	P30	200 ~ 240	0.15 ~ 0.3	2,260	900	1,440	580	1,100	660
					Vc = 220m/min fz = 0.2mm/tooth					
	탄소 / 합금강 Carbon Steels Alloy Steels	P30	150 ~ 200	0.15 ~ 0.3	1,850	740	1,170	470	900	540
					Vc = 180m/min fz = 0.2mm/tooth					
M 스테인레스강 Stainless steel	탄소 / 합금강 Carbon Steels Alloy Steels	P30	100 ~ 140	0.1 ~ 0.2	1,230	370	780	230	600	270
					Vc = 220m/min fz = 0.15mm/tooth					
	스테인레스강 Stainless Steel	M30	180 ~ 240	0.1 ~ 0.25	2,260	900	1,440	580	1,100	660
					Vc = 220m/min fz = 0.2mm/tooth					
K 주철 Cast iron	주철 / 덕타일 Cast Iron/ FC, FCD	K10	140 ~ 200	0.15 ~ 0.3	1,750	700	1,110	440	850	510
					Vc = 170m/min fz = 0.2mm/tooth					

CET

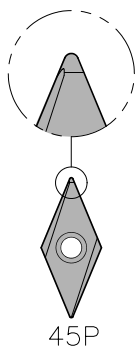
Engraving Tool 45°



CET Insert

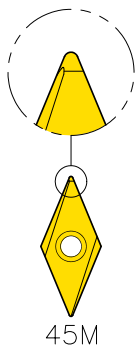


Order No. 주문형번	Dimension (mm)			W		T		Grade	Price
	L	S	R	Wmin	Wmax	Tmin	Tmax		
VPGT060202-45P	6.4	2	0.2	0.65	2.1	0.20	2.0	Alloy steel	28,000
VPGT060202-45M				0.65		0.20		SUS	30,000
VPGT060202-45N				0.45		0.05		Aluminum	30,000



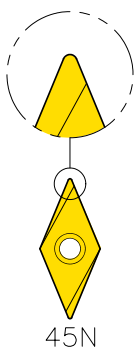
VPGT060202-45P 강용 Alloy Steel

- 탄소강, 합금강, 주철에서 공구 수명이 우수합니다.
- 30~45HRC의 모든 강에 최적화 된 절삭날과 코팅으로 제작 되었습니다.
- Long tool life on carbon steel, alloy steel, and cast iron.
- For all kinds of steel between 30 to 45 HRC as the edge, subtract and coating are tailored for it



VPGT060202-45M 써스 SUS

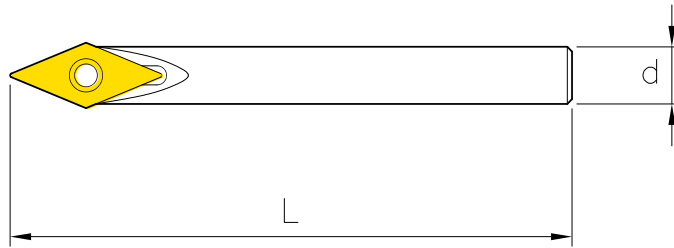
- 첫 번째 목적은 절삭날을 부드럽게 하여 써스 가공에 최적화하도록 설계 되었습니다.
- TiN 코팅으로 써스 가공시 마모를 쉽게 확인 할 수 있습니다.
- 이 외에도 30JRC미만의 연강이나 비철강에서도 사용이 가능합니다.
- Feature: slight geometry, thin coating
- First purpose is SUS on slight sharp geometry. Slight geometry is key point for cutting SUS.
- So it has thin layer of TiN coating in order to be easy to check wear out.
- Secondary material is soft steel(<30HRC) and non-ferrous steel. If a customer's needs to
- Mill Aluminum and Non-Ferrous materials as a secondary material, he can use this one.



VPGT060202-45N 비철용 Aluminum

- 비철용으로 날카로운 절삭날과 코발트 함유량이 적어 인성과 열저항성이 우수합니다.
- 주로 알루미늄, 황동, 구리 플라스틱 및 아크릴 가공에 적합합니다.
- Feature: the sharpest geometry and high heat resistant by low cobalt content(High toughness)
- First choice is for Non-ferrous materials such as aluminum, brass, copper, plastic and acrylic.

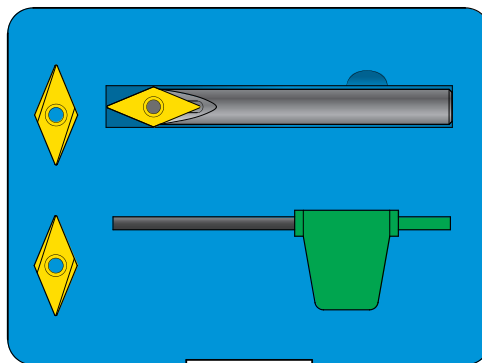
CET Holder



Order No. 주문형번	d	L	Screw	Wrench	Price
CET-0206040	6	40	TSB-22045	T6	38,000
CET-0206065C		65			47,000
CET-0206100C		100			49,000

- 초경 샹크 홀더는 열박음 홀더, engraving 전용기, 고속 가공용으로 제작 되었습니다.
- CET - 0206100C는 불균형 0.6gm 미만의 알루미늄 가공에만 사용 할 수 있습니다.
- Carbide shank holders designed for shrink-fit holder, engraving machines, high speed cutting
- CET-0206100C(100mm length) is only for Al, Al-alloy cutting, unbalanced <0.6gm

CET Set



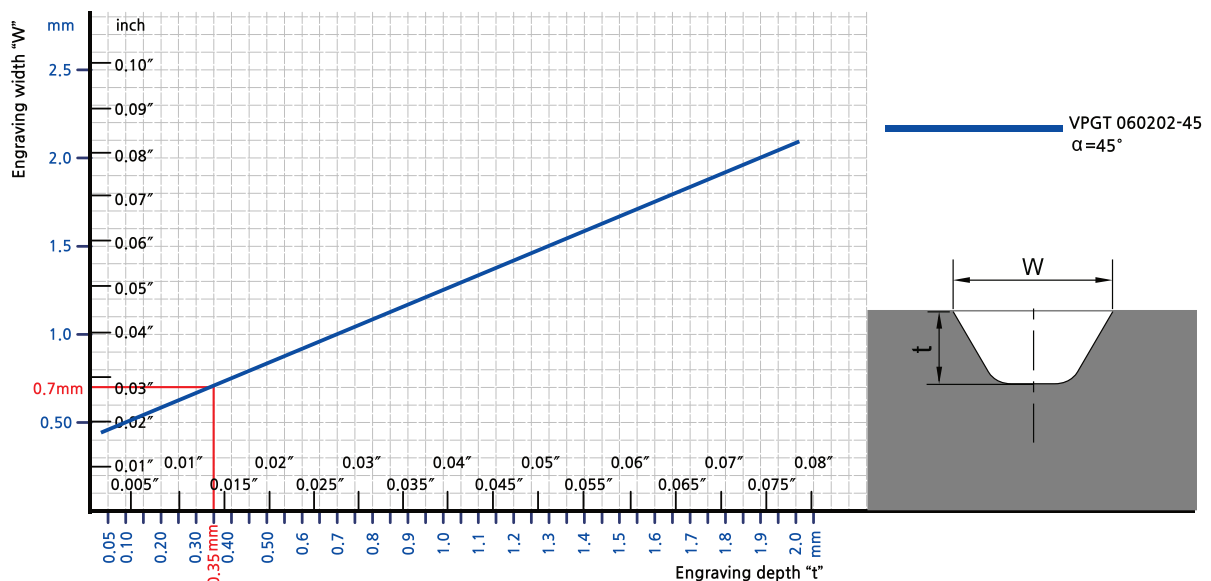
Order No. 주문형번	Holder	Insert	Content	Grade	Price
CET-0206040 P SET	CET-0206040	VPGT060202-45P	1*Holder	Alloy steel	115,000
CET-0206040C M SET		VPGT060202-45M	1*T6 Wrench	SUS	132,000
CET-0206040C N SET		VPGT060202-45N	3*Inserts	Aluminum	132,000

CET 절삭 데이터

CET Recommended Cutting Data

	Material 피삭재	S RPM	Feed 이송 (mm/rev)	Grade of Insert
P 강 Steel	< 30HRC	5000~20000	0.02~0.05	VPGT060202-45M
	30~45HRC	5000~20000	0.01~0.02	VPGT060202-45P
M 스테인레스강 Stainless steel	< 40HRC	5000~20000	0.02~0.05	VPGT060202-45M
K 주철 Cast iron	30~45HRC	5000~20000	0.01~0.02	VPGT060202-45P
N 비철금속 Nonferrous metals	Aluminum, Non-ferrous metal	5000~20000	0.02~0.08	VPGT060202-45N
	Al, Al-alloy, etc	5000~20000	0.02~0.08	VPGT060202-45N

Engraving Depth and Width Reference Chart

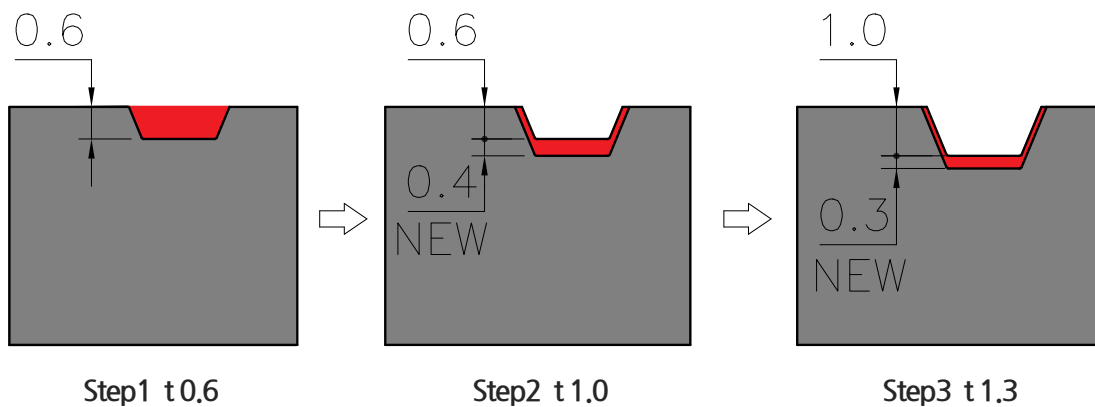


Recommended Peck Cycle on Engraving Depth

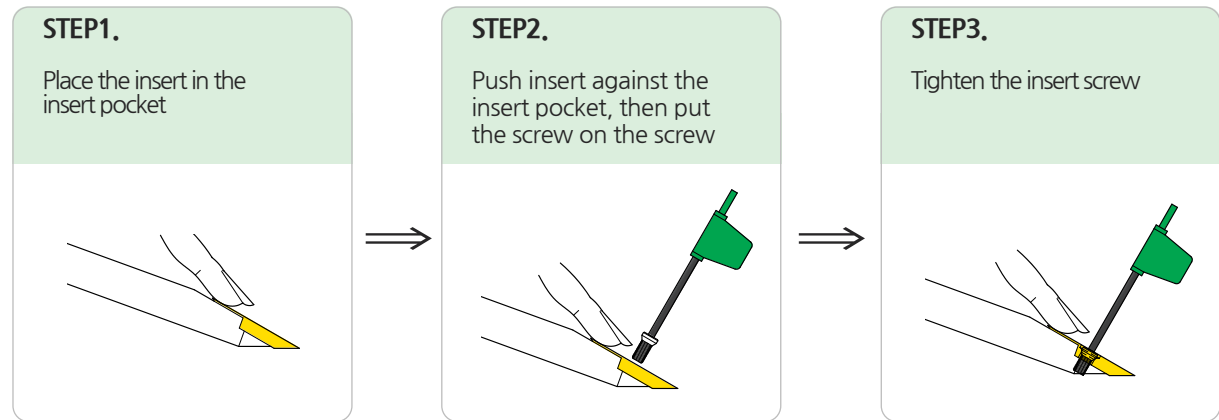
** Peck engraving cycle per work material

Material 피삭재		AP								
		1st	2nd	3rd	4th	5th	6th	~	Fine finishing	Tmax.
P 강 Steel	Carbon steel C < 0.3%	0.6	0.4	0.3	0.2	0.2	0.2	0.1	0.1	2
	Carbon steel C > 0.3%	0.8	0.6	0.3	0.2	0.1			0.1	2
	Low alloy steel C < 0.3%	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1	2
	High alloy steel C > 0.3%	0.3	0.3	0.2	0.2	0.15	0.15	0.1	0.05	1.4
	Alloy steel 30~45HRC	0.2	0.2	0.15	0.15	0.1	0.1	0.1	0.05	1
M 스테인레스강 Stainless steel	SUS	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.05	2
K 주철 Cast iron	Casting iron	0.8	0.6	0.3	0.2	0.1			0.1	2
N 비철금속 Nonferrous metals	Non-ferrous metal	1	0.8	0.2					0.1	2

ex) Engraving letter t (depth)1.3 w(width)1.5 (material carbon steel c < 0.3%)



Recommend Champing



주의 Attention

절삭값 선택 Selecting the speed and feed rate

- 파삭재에 따른 올바른 추천 절삭값을 선택 하세요.
- 모든 Z축의 가공 속도는 선택한 절삭값에서 50~70%로 줄여 주세요.
- Select the spindle speed and feed rate according to the selected material's cutting date
- The downward feed rate of the Z axis should be reduced to 50~70% of the table feed rate.

절삭유와 냉각 조건 Cutting fluid and cooling condition

- 강철, 써스, 알루미늄은 elmusion이 좋습니다.
- 주철과 플라스틱에 새기려면 냉각된 공기를 불어 넣는 것이 좋습니다.
- Elmusion is recommended for engraving on steel, SUS, Al and Al-alloy.
- Blown cooled air is recommended for engraving on cast iron and plastic.

툴홀더 셋팅 Setting-up the tool holder

- 인서트 체결시 런아웃은 0.02mm 이하가 되어야 합니다.
- 열박음 척, 유압척, 정밀 스프링 콜렛 척 사용을 권장합니다.
- RPM10000 사용시 홀더 발란스는 G6.3이 되어야 합니다.
- The tool shank runout should be below 0.02mm(0.0008")
- Shrink fit chucks, hydraulic chuck and high precision spring collect chucks are recommended.
- Pre-balance the tool holder: G6.3 / RPM10,000 is recommended.

인서트 조립 Clamping the engraving insert

- 인서트 포켓에 맞게 인서트를 제대로 자리 잡아 주세요.
- 아래의 그림과 같이 조립하는 동안 인서트를 정확하게 체결해주세요.
- Place and hold the insert in the insert pocket against the positioning side.
- Please fit the insert precisely while locking as below pictures.

QCD

Quick Change center Drill



QCD Quick Change Center Drill

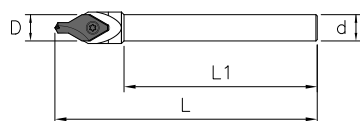


Fig.1

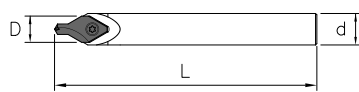


Fig.2

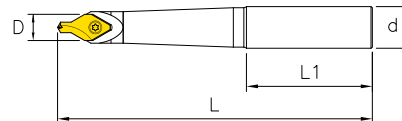


Fig.3

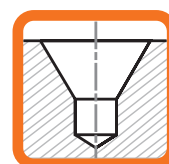
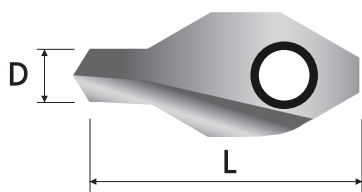
Holder

Metric

Order No. 주문형번	D	D	L	L1	Shape	Wrench	Screw	Insert	Price
QCD-1208100	12	8	100	73	Fig. 1	TXL-9	TSB-0307	XN04-200P XN04-250P XN04-300P XN04-400P	43,000
QCD-1210100		10	100	74					43,000
QCD-1212100		12	100		Fig. 2				59,000
QCD-1216120		16	120	48					59,000
QCD-1220150		20	150	50	Fig. 3				64,000
QCD-1225180		25	180	56					69,000
QCD-1232200		32	200	60					85,000

Inch

Order No. 주문형번	D	D	L	L1	Shape	Wrench	Screw	Insert	Price
QCD-1208100i	12	5/16"	100	73	Fig. 1	TXL-9	TSB-0307	XN04-5/64"P XN04-7/64"P XN04-1/8"P XN04-3/16"P	43,000
QCD-1210100i		3/8"	100	74					43,000
QCD-1212100i		1/2"	100		Fig. 2				59,000
QCD-1216120i		5/8"	120	48					59,000
QCD-1220150i		3/4"	150	50	Fig. 3				64,000
QCD-1225180i		1"	180	56					69,000
QCD-1232200i		1-1/4"	200	60					85,000



▶ ANSI 60°

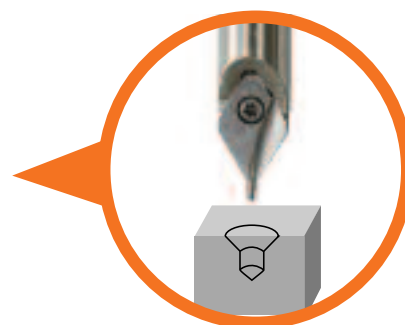
Insert

Metric

Order No. 주문형번	D	L	T	Price
XN04-200P	2	20.6	4	25,000
XN04-250P	2.5			25,000
XN04-300P	3			25,000
XN04-400P	4			25,000

Inch

Order No. 주문형번	D	L	T	Price
XN04-5/64"P	5/64"	20.6	4	25,000
XN04-7/64"P	7/64"			25,000
XN04-1/8"P	1/8"			25,000
XN04-3/16"P	3/16"			25,000



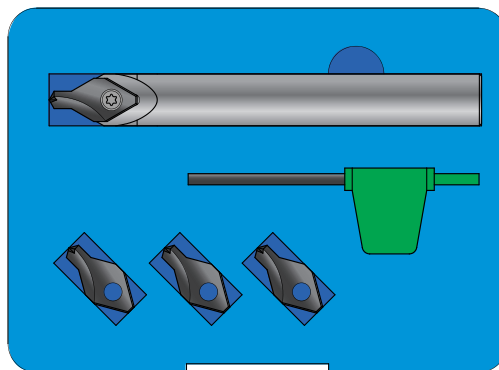
QCD Set

Set Metric

Order No. 주문형번	Insert		Holder	Wrench	Price
QCD-1216120-SET1	KN04-200P	4ea	QCD-12165120	TXL-9	159,000
QCD-1216120-SET2	KN04-250P	4ea			159,000
QCD-1216120-SET3	KN04-300P	4ea			159,000
QCD-1216120-SET4	KN04-400P	4ea			159,000
QCD-1216120-SET5	Each 1 for all sizes				159,000

Inch

Order No. 주문형번	Insert		Holder	Wrench	Price
QCD-1216120i-SET1	KN04-200P	4ea	QCD-12165120i	TXL-9	159,000
QCD-1216120i-SET2	KN04-250P	4ea			159,000
QCD-1216120i-SET3	KN04-300P	4ea			159,000
QCD-1216120i-SET4	KN04-400P	4ea			159,000
QCD-1216120i-SET5	XN04-5/64" P, 7/64", 1/8", 3/16" P Each 1 for all sizes				159,000



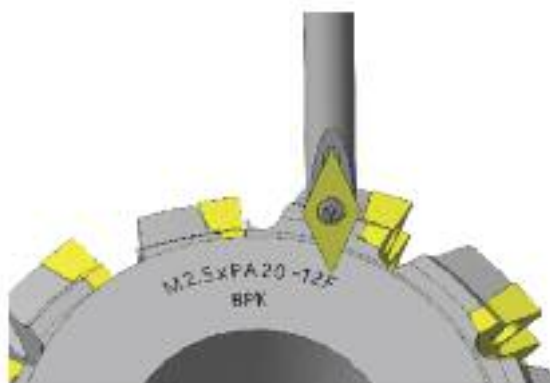
QCD 절삭 데이터 QCD Recommended Cutting Data

Material 피삭재		Speed 속도 (m/min)	Feed(mm/rev)				Cutting Fluid
			Ø2 Ø5/64"	Ø2.5 Ø7/64"	Ø3 Ø1/8"	Ø4 Ø3/16"	
P 강 Steel	저탄소강 Low Carbon Steel	60~80	0.04~0.08	0.06~0.10	0.08~0.12	0.08~0.14	emulsion
	고탄소강 High Carbon Steel	50~70	0.03~0.05	0.06~0.10	0.08~0.12	0.08~0.14	emulsion
	저합금강 Low Alloy Steel	45~55	0.02~0.05	0.04~0.08	0.06~0.10	0.06~0.10	emulsion
	고합금강 High Alloy Steel	40~60	0.01~0.04	0.02~0.06	0.04~0.08	0.04~0.08	emulsion
M 스테인레스강 Stainless steel	스테인레스강 Stainless Steel	50~20	0.01~0.02	0.01~0.03	0.02~0.05	0.02~0.06	emulsion
K 주철 Cast iron	주철 Cast Iron	50~70	0.02~0.06	0.04~0.08	0.06~0.10	0.06~0.10	dry
N 비철금속 Nonferrous metals	알루미늄 Aluminium	100~200	0.01~0.04	0.02~0.05	0.02~0.06	0.02~0.06	emulsion

Chamfering Tools

각도 ANGLE	ø0	ø5	ø10	ø15	ø20	ø25	ø30	ø35	ø40	ø45	ø50	ø55	ø60	ø65	ø70
30°		CSC min. D5 ~ max.D34 (P. 83)													
45°		CMN max. D7(P. 82)													
		CSC min. D5 ~ max. D46 (P. 83)													
			CPC min. D10 ~ max. D63 (P. 84)												
60°		CSC min. D5 ~ max. D55 (P. 83)													
			CAC min. D8 ~ max. D48 (P. 84)												

Engrooving Tools



Centering Tools



▶ ANSI 60°

Metric	ø2	ø2.5	ø3	ø4
Inch	ø5/64"	ø7/64"	ø1/8"	ø3/16"

BORING BAR

SCLCR / SDUCR
STFPR / STFPR
E-SCLCR / S-SCLCR



보링바 형번표기법 (ISO) Boring Bar Code System (ISO)

S 12 M - S T F P R - 11

1	2	3	4	5	6	7	8	9
상크 재종 Type of Bar	상크 직경 Bar Diameter	공구 길이 Bar Length	클램핑 방식 Method of Mounting Insert	인서트 형상 Insert Shape	공구 형상 Lead Angle of Boring Bar	인서트 여유각 Relief Angle of Insert	승수 Hand of Bar	인선(刃先) 길이 Length of Cutting Edge

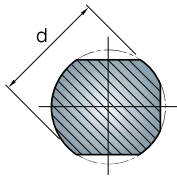
1 상크 재종 Type of Bar

S 12 M - S T F P R - 11

- A: 스틸상크+오일홀
Steel with coolant hole
- E: 초경상크+오일홀
Carbide bar with fixed steel head and coolant hole
- C: 초경상크 Carbide shank
- S: 스틸상크 Steel shank
- X: 특수형 Special type

2 상크 직경 Bar Diameter

S 12 M - S T F P R - 11



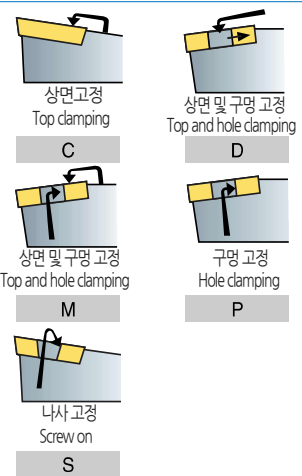
3 공구 길이 Bar Length

S 12 M - S T F P R - 11

기호(L) Symbol(L)	길이(mm) Length(mm)
H	100
J	110
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400
W	450
Y	500

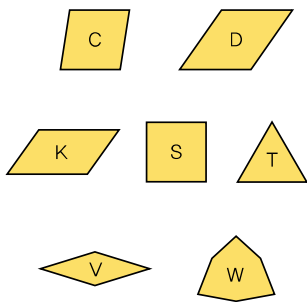
4 클램핑 방식 Method of Mounting Insert

S 12 M - S T F P R - 11



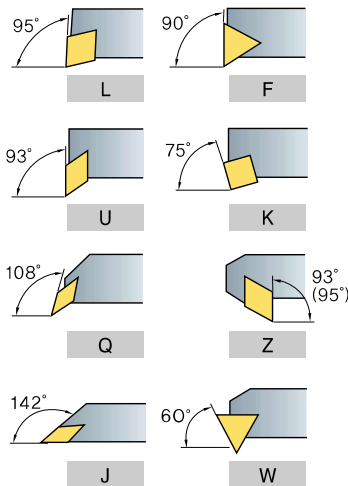
5 인서트 형상 Insert Shape

S 12 M - S T F P R - 11



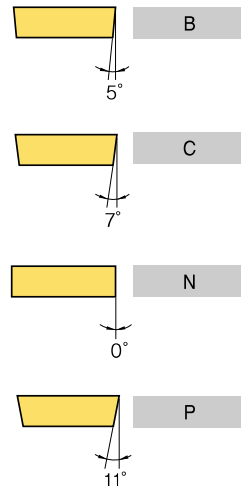
6 공구 형상 Lead Angle of Boring Bar

S 12 M - S T F P R - 11



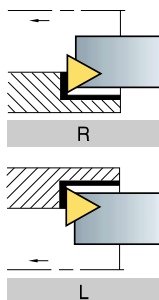
7 인서트 여유각 Relief Angle of Insert

S 12 M - S T F P R - 11



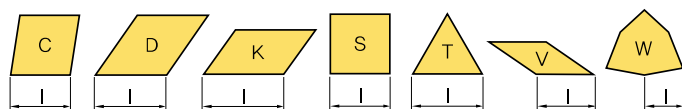
8 승수 Hand of Bar

S 12 M - S T F P R - 11

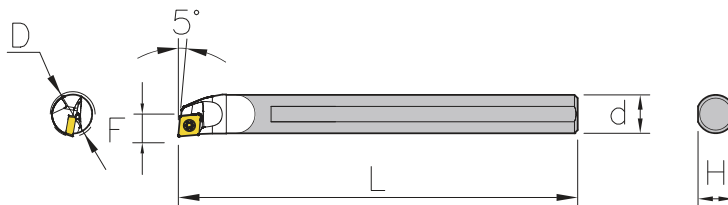


9 인선(刃先) 길이 Length of Cutting Edge

S 12 M - S T F P R - 11



SCLCR

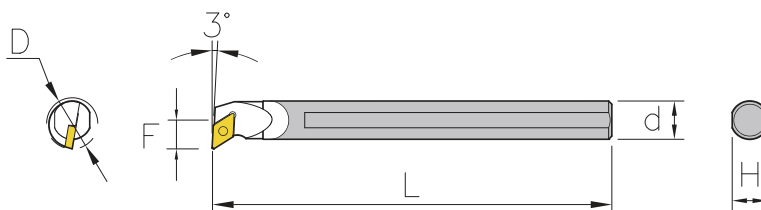


☐ Stock item (standard type) ■ Produced on order(long type)

Order No. 주문형번	Dimension (mm)								Price
	Ø D mini bore	F	Ø d	L	K				
☐ C04G-SCLCR-03	5	2.5	4	90	3.8	CCGT0301	TSB-1635	TXL-06	38,000
☐ C05H-SCLCR-03	6	3	5	100	4.4				38,000
☐ C06H-SCLCR-04	7	3.5	6	100	5.4	CCGT0401	TSB-2035	TXL-06	40,000
■ C06J-SCLCR-04	7	3.5	6	110	5.4				43,000
☐ C07K-SCLCR-04	8	4	7	125	6	CCGT0602	TSB-0204	TXL-08	48,000
☐ C08K-SCLCR-06	10	5	8	125	7				54,000
■ C08L-SCLCR-06	10	5	8	140	7	CCGT0602	TSB-2545	TXL-08	57,000
☐ C10K-SCLCR-06	12	6	10	125	9				70,000
■ C10M-SCLCR-06	12	6	10	150	9	CCGT09T3	TSB-25055	TXL-15	80,000
☐ C12M-SCLCR-06	14	7	12	150	11				100,000
☐ C12M-SCLCR-09	16	8	12	150	11	CCGT09T3	TSB-3507	TXL-15	100,000
■ C12Q-SCLCR-06	14	7	12	180	11				114,000
■ C12Q-SCLCR-09	16	8	12	180	11	CCGT09T3	TSB-25055	TXL-08	114,000
☐ C16R-SCLCR-09	18	9	16	200	15				182,000
■ C16X-SCLCR-09	18	9	16	220	15	CCGT09T3	TSB-3508	TXL-15	190,000
☐ C20R-SCLCR-09	22	11	20	200	19				270,000
■ C20S-SCLCR-09	22	11	20	250	19	CCGT09T3	TSB-3508	TXL-15	320,000
☐ C25T-SCLCR-09	27	13.5	25	300	24				590,000

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

SDUCR

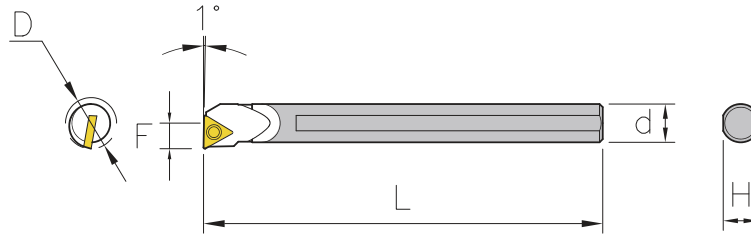


☐ Stock item (standard type) ■ Produced on order(long type)

Order No. 주문형번	Dimension (mm)								Price
	Ø D mini bore	F	Ø d	L	K				
☐ C10K-SDUCR-07	13	7	10	125	9	DCMT0702	TSB-25055	TXL-08	70,000
■ C10M-SDUCR-07	13	7	10	150	9				80,000
☐ C12M-SDUCR-07	16	9	12	150	11	DCMT0702	TSB-25055	TXL-08	100,000
■ C12Q-SDUCR-07	16	9	12	180	11				114,000
☐ C16R-SDUCR-11	20	11	16	200	15	DCMT11T3	TSB-3508	TXL-15	182,000
■ C16X-SDUCR-11	20	11	16	220	15				190,000
☐ C20R-SDUCR-11	25	13	20	200	19	DCMT11T3	TSB-3508	TXL-15	270,000
■ C20S-SDUCR-11	25	13	20	250	19				320,000
☐ C25T-SDUCR-11	32	17	25	300	24	DCMT11T3	TSB-3508	TXL-15	590,000

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

STFPR

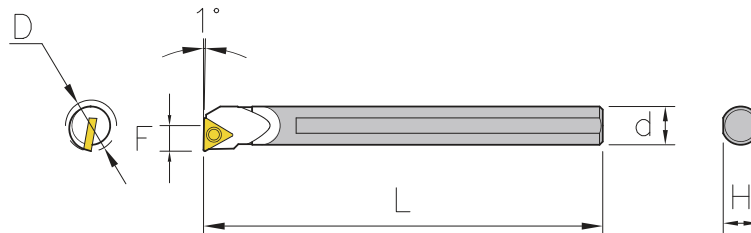


☑ Stock item (standard type) ■ Produced on order(long type)

Order No. 주문형번	Dimension (mm)								Price
	Ø D mini bore	F	Ø d	L	K				
☑ C08K-STFPR-08	10	5	8	125	4	TPMT0802	TSB-2245	TXL-06	54,000
■ C08M-STFPR-08	10	5	8	150	4				57,000
☑ C10K-STFPR-11	12	6	10	125	9				70,000
■ C10M-STFPR-11	12	6	10	150	9				80,000
☑ C12M-STFPR-11	16	8	12	150	11	TPMT1103	TSB-0307	TXL-09	100,000
■ C12Q-STFPR-11	16	8	12	180	11				114,000
☑ C16R-STFPR-11	20	10	16	200	15				182,000
■ C16X-STFPR-11	20	10	16	220	15				190,000
☑ C20R-STFPR-11	25	13	20	200	19				270,000
■ C20S-STFPR-11	25	13	20	250	19				320,000
☑ C25T-STFPR-11	32	17	25	300	24				590,000

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

STFCR

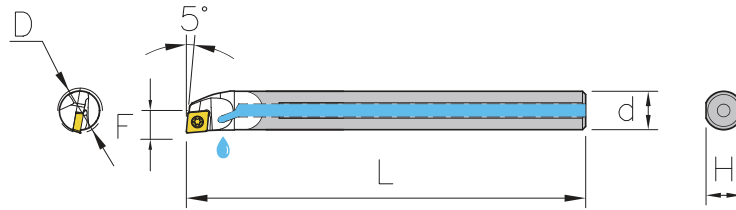


☑ Stock item (standard type) ■ Produced on order(long type)

Order No. 주문형번	Dimension (mm)								Price
	Ø D mini bore	F	Ø d	L	K				
☑ C10K-STFCR-11	12	6	10	160	9	TCMT1102	TSB-25055	TXL-08	70,000
■ C10M-STFCR-11	12	6	10	150	9				80,000
☑ C12M-STFCR-11	16	8	12	180	11				100,000
■ C12Q-STFCR-11	16	8	12	180	11				114,000
☑ C16R-STFCR-11	20	10	16	200	15				182,000
■ C16X-STFCR-11	20	10	16	220	15				190,000
☑ C20R-STFCR-11	25	13	20	200	19				270,000
■ C20S-STFCR-11	25	13	20	250	19				320,000
☑ C25T-STFCR-11	32	17	25	300	24				590,000

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

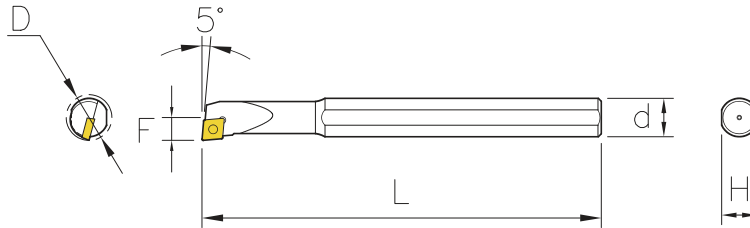
E-SCLCR Set



Order No. 주문형번	Dimension (mm)								Price	Set Price
	Ø D mini bore	F	Ø d	L	K					
E08K-SCLCR-06	10	5	8	125	7	CCGT0602	TSB-2545	TXL-08	65,000	195,000
E10K-SCLCR-06	12	6	10	125	9		TSB-25055		82,000	
E12M-SCLCR-06	14	7	12	150	11		112,000			

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

S-SCLCR Set



S-SCLCR A set

Order No. 주문형번	Dimension (mm)								Price	Set Price
	F	Ø D mini bore	L1	L2	H					
S08H-SCLCR-06	5	8	100	16	7	CCGT0602	TSB-2545	TXL-08	29,000	100,000
S10J-SCLCR-06	6	11	110	20	9		TSB-25055		29,000	
S12K-SCLCR-06	7	14	125	24	11				30,000	
S16M-SCLCR-06	9	15	150	30	11				34,000	

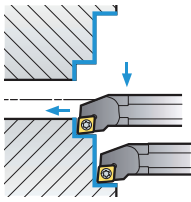
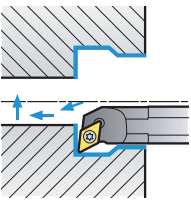
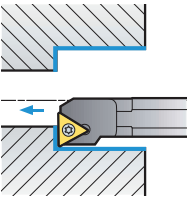
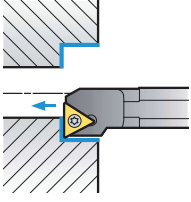
S-SCLCR B set

Order No. 주문형번	Dimension (mm)								Price	Set Price
	F	Ø D mini bore	L1	L2	H					
S08H-SCLCR-06	5	8	100	16	7	CCGT0602	TSB-2545	TXL-08	29,000	100,000
S10J-SCLCR-06	6	11	110	20	9		TSB-25055		29,000	
S12K-SCLCR-06	7	14	125	24	11				30,000	
S16M-SCLCR-09	9	16	150	30	11	CCGT09T3	TSB-3508	TXL-15	34,000	

S-SCLCR C set

Order No. 주문형번	Dimension (mm)								Price	Set Price
	F	Ø D mini bore	L1	L2	H					
S08H-SCLCR-06	5	8	100	16	7	CCGT0602	TSB-2545	TXL-08	29,000	100,000
S10J-SCLCR-06	6	11	110	20	9		TSB-25055		29,000	
S12K-SCLCR-09	8	14	125	24	11	CCGT09T3	TSB-3507	TXL-15	30,000	
S16M-SCLCR-09	9	16	150	30	11		TSB-3508		34,000	

Screw on System

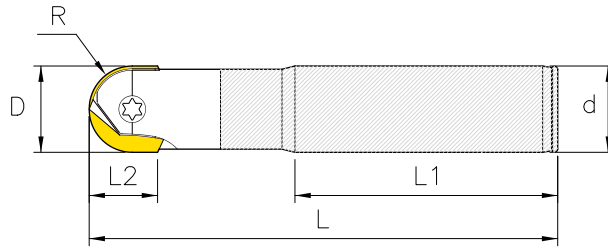
Boring Bar Type		Min. Bore Dia.												
		5	6	7	8	10	12	14	16	18	20	25	30	32
Cutting Shape 절삭 형상		0	0	0	0	0	0	0	0	0	22 0	27 0		
Item	SCLCR/L													
Page	97													
Facing	0													
Turning	0													
Cutting Shape 절삭 형상							13 0		0		0	0		0
Item	SDCUR/L													
Page	97													
Facing	0													
Turning	0													
Cutting Shape 절삭 형상						0	0		0		0	0		0
Item	STFCR/L													
Page	98													
Facing	0													
Turning	0													
Cutting Shape 절삭 형상						0	0		0		0	0		0
Item	STFPR/L													
Page	98													
Facing	0													
Turning	0													

CUTTER

End Mill Cutter
Multi Mill Cutter
Helical Cutter
Ball Nose Cutter
Cutting Blade



ABP Carbide Shank



• INSERT ⇒ **HITACHI**

Order No. 주문형번	Dimension (mm)									Price	
	R	D	d	L	L2	L1					
ABP - R0408140C	4	8	8	140	5	105	ZPFG 080, ZCFW 080	TSB-5841	TXL-8	179,000	
ABP - R0510150C	5	10	10	150	7	105	ZPFG 100, ZCFW 100	TSB-5842	TXL-10	191,000	
ABP - R0510180C	5	10	10	180	7	135				246,000	
ABP - R0612165C	6	12	12	165	8	110	ZPFG 120, ZCFW 120	TSB-5843	TXL-20	196,000	
ABP - R0612200C	6	12	12	200	8	145	ZPFG 160, ZCFW 160	TSB-5844		263,000	
ABP - R0816200C	8	16	16	200	10	135				318,000	
ABP - R0816250C	8	16	16	250	10	185				374,000	
ABP - R1020220C	10	20	20	220	12.5	150	ZPFG 200, ZCFW 200	TSB-5845	TXL-25	398,000	
ABP - R1020250C	10	20	20	250	12.5	180				435,000	
ABP - R1020300C	10	20	20	300	12.5	230				570,000	
ABP - R1225200C	12.5	25	25	200	15	120	ZPFG 250, ZCFW 250	TSB-5846	TXL-30	592,000	
ABP - R1225250C	12.5	25	25	250	15	170				614,000	
ABP - R1225300C	12.5	25	25	300	15	220				696,000	
ABP - R1532250C	15	30	32	250	18	145	ZPFG 300, ZCFW 300	TSB-5847		820,000	
ABP - R1532300C	15	30	32	300	18	195				1,120,000	

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

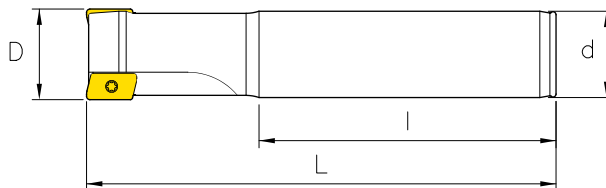
ABP용 절삭데이터

ABP Recommended Cutting Data

Material 피삭재		Grade 재종	Cutting Speed 절삭속도 (m/min)	Feed Rate 이송속도 FZ(mm/TOOTH)	Ø8		Ø10		Ø12	
					Revolution min ⁻¹	Feed Speed mm/min	Revolution min ⁻¹	Feed Speed mm/min	Revolution min ⁻¹	Feed Speed mm/min
P강 Steel	탄소강 / 합금강 Carbon Steels Alloy Steels	PCS08M (PCA12M) (PCA08M)	100~200	0.2~0.3	6,370	2,550	5,090	2,040	4,240	1,700
					Vc = 160m/min fz = 0.2mm/tooth ap = 0.025mm ae = 0.1D					
		PCS08M (PCA12M) (PCA08M)	80~150	0.2~0.3	4,770	1,910	3,820	1,530	3,180	1,270
					Vc = 120m/min fz = 0.2mm/tooth ap = 0.025mm ae = 0.1D					
K주철 Cast iron	주철 Cast iron	PTH08M (PCA12M) (PCA08M)	70~100	0.3~0.4	6,370	3,820	5,090	3,050	4,240	2,550
					Vc = 160m/min fz = 0.3mm/tooth ap = 0.025mm ae = 0.1D					
H열처리강 Hardened Steel	금형강/프리-하드강 Die Tool Steels Pre-Harden Steels	PTH08M (PCA12M) (PCA08M)	200~250	0.1~0.15	3,180	640	2,550	510	2,120	420
					Vc = 80m/min fz = 0.1mm/tooth ap = 0.025mm ae = 0.1D					
	조질강 Hardened Steels	PTH08M	100~200	0.2~0.4	9,150	3,660	7,320	2,930	6,100	2,440
					Vc = 230m/min fz = 0.2mm/tooth ap = 0.01mm ae = 0.02D					

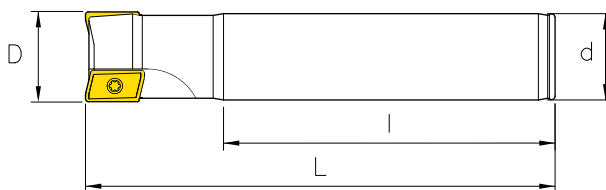
Material 피삭재		Grade 재종	Cutting Speed 절삭속도 (m/min)	Feed Rate 이송속도 FZ(mm/TOOTH)	Ø16		Ø20		Ø25		Ø30(Ø32)	
					Revolution min ⁻¹	Feed Speed mm/min	Revolution min ⁻¹	Feed Speed mm/min	Revolution min ⁻¹	Feed Speed mm/min	Revolution min ⁻¹	Feed Speed mm/min
P강 Steel	탄소강 / 합금강 Carbon Steels Alloy Steels	PCS08M (PCA12M) (PCA08M)	100~200	0.2~0.3	3,180	1,600	2,550	1,300	2,050	1,030	1,700	850
					Vc = 160m/min fz = 0.25mm/tooth ap = 0.05mm ae = 0.1D							
		PCS08M (PCA12M) (PCA08M)	80~150	0.2~0.3	2,390	1,200	1,910	955	1,530	765	1,280	640
					Vc = 120m/min fz = 0.25mm/tooth ap = 0.05mm ae = 0.1D							
K주철 Cast iron	주철 Cast iron	PTH08M (PCA12M) (PCA08M)	70~100	0.3~0.4	3,200	2,240	2,250	1,790	2,050	1,440	1,700	1,190
					Vc = 160m/min fz = 0.35mm/tooth ap = 0.05mm ae = 0.1D							
H열처리강 Hardened Steel	금형강/프리-하드강 Die Tool Steels Pre-Harden Steels	PTH08M (PCA12M) (PCA08M)	200~250	0.1~0.15	1,590	385	1,280	310	1,020	245	580	205
					Vc = 80m/min fz = 0.12mm/tooth ap = 0.05mm ae = 0.1D							
	조질강 Hardened Steels	PTH08M	100~200	0.2~0.4	4,575	2,740	3,660	2,200	2,930	1,760	2,440	1,460
					Vc = 230m/min fz = 0.3mm/tooth ap = 0.01mm ae = 0.02D							

AHUL



• INSERT ⇒ **HITACHI**

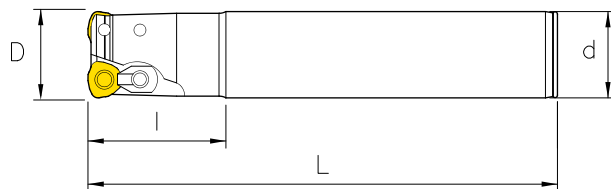
Order No. 주문형번	Dimension (mm)								Price
	D	d	L	l					
AHUL-1716200	17	16	200	160	2	JDMT1003	TSB-25055	TXL-8	50,000
AHUL-2020200	20	20	200	160	2				53,000
AHUL-2120200	21	20	200	160	2				53,000
AHUL-2120250	21	20	250	200	2				54,000
AHUL-2525250	25	25	250	200	2				60,000



• INSERT ⇒ **HITACHI**

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	l					
AHUL-2625200	26	25	200	160	2	JDMT1505	TSB-0408	TXL-15	55,000
AHUL-2625250	26	25	250	200	2				60,000
AHUL-3232250	32	32	250	200	2				72,000
AHUL-3332200	33	32	200	160	2				67,000
AHUL-3332250	33	32	250	200	2				72,000

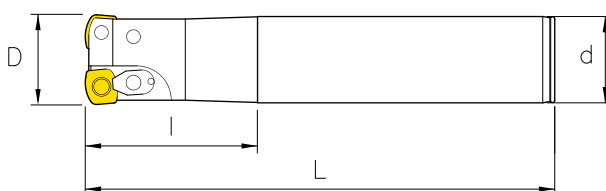
AJX



• INSERT ⇒ **MITUBISHI**

Order No. 주문형번	Dimension (mm)									Price
	D	d	L	I						
AJX-1616200	16	16	200	40	2	JO..06T215	-	TSB - 25045	TXL-8	72,000
AJX-1716200	17	16	200	40	2					72,000
AJX-2020200	20	20	200	40	2	JO..080320	-	TSB - 0307	TXL-9	80,000
AJX-2120200	21	20	200	40	2					80,000
AJX-2525200	25	25	200	40	2	JD..09T320	C-05	TSB - 3508A	TXL-15	98,000
AJX-2525250	25	25	250	50	2					107,000
AJX-2625200	26	25	200	40	2					98,000
AJX-2625250	26	25	250	50	2					107,000
AJX-3332200	33	32	200	40	2	JD..120420		TSB - 0408		115,000
AJX-3332250	33	32	250	50	2					121,000

ASRL



• MAKER ⇒ **HITACHI**

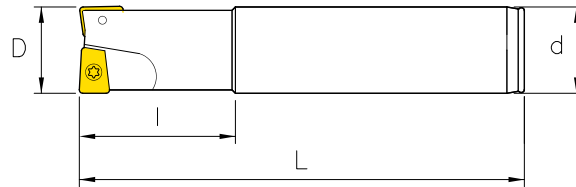
Order No. 주문형번	Dimension (mm)									Price
	D	d	L	l						
ASRL-2020200	20	20	200	40	2	EP..0803	-	TSB- 03565	TXL-15	58,000
ASRL-2120200	21	20	200	40	2					58,000
ASRL-2525250	25	25	250	50	2	EP..10T3	C-06	TSB- 319		77,000
ASRL-2625200	26	25	200	40	2					71,000
ASRL-2625250	26	25	250	50	2					77,000
ASRL-3332200	33	32	200	40	2	EP..13T4	C-08	TSB- 0510		84,000
ASRL-3332250	33	32	250	50	2					89,000

ASRL용 절삭데이터 ASRL Recommended Cutting Data

Material 피삭재		Hardness 경도	Cutting Speed 절삭속도 Vc(m/min)	Feed Rate 이송속도 Fz(mm/TOOTH)	Ø20			Ø25			Ø30			Ø40		
					Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min	Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min	Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min	Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min
P강 Steel	일반강 General Structural Steels	GX2140 JS4060 JS4045	180~200	0.6~1.5	2,860	3,430	69	2,290	2,750	69	1,900	5,700	171	1,430	6,400	256
			Vc = 180m/min fz = 0.6mm/tooth ap = 1.0mm ae = 1.0D											Vc = 180m/min fz = 1.5mm/tooth ap = 1.0mm ae = 1.0D		
		90~150	0.6~2.0	1,430	1,720	34	1,150	1,380	34	960	2,880	86	720	3,240	130	
	Vc = 90m/min fz = 0.6mm/tooth ap = 1.0mm ae = 1.0D											Vc = 90m/min fz = 1.5mm/tooth ap = 1.0mm ae = 1.0D				
	탄소, 합금강 Carbon, Alloy Steel (30HRC or less)	GX2140 JS4045 JS4060	180~200	0.6~1.5	2,860	3,430	69	2,290	2,750	69	1,900	5,700	171	1,430	6,400	256
			Vc = 180m/min fz = 0.6mm/tooth ap = 1.0mm ae = 1.0D											Vc = 180m/min fz = 1.5mm/tooth ap = 1.0mm ae = 1.0D		
M 스테인레스강 Stainless steel	탄소, 합금강 Carbon, Alloy Steel (30~45HRC)	JP4120 JS4045 JS4060	90~150	0.6~2.0	1,430	1,720	34	1,150	1,380	34	960	2,880	86	720	3,240	130
			Vc = 90m/min fz = 0.6mm/tooth ap = 1.0mm ae = 1.0D											Vc = 90m/min fz = 1.5mm/tooth ap = 1.0mm ae = 1.0D		
		80~120	0.4~0.8	1,430	1,430	29	1,150	1,150	29	960	1,500	45	720	1,730	69	
	Vc = 90m/min fz = 0.5mm/tooth ap = 1.0mm ae = 1.0D											Vc = 90m/min fz = 0.8mm/tooth ap = 1.0mm ae = 1.0D				
	스테인레스강 Stainless Steel (SUS304 등)	JM4160	80~130	0.5~1.0	1,592	1,910	387	1,274	1,528	38	1,061	1,273	38	796	1,433	57
			Vc = 100m/min fz = 0.6mm/tooth ap = 1.0mm ae = 1.0D											Vc = 100m/min fz = 0.6mm/tooth ap = 1.0mm ae = 1.0D		
K 주철 Cast iron	주철 Cast iron (FC300 등)	JP4120	180~200	0.8~2.0	2,860	4,580	92	2,290	3,670	92	1,900	7,600	342	1,430	8,580	515
			Vc = 180m/min fz = 0.8mm/tooth ap = 1.0mm ae = 1.0D											Vc = 180m/min fz = 2.0mm/tooth ap = 1.5mm ae = 1.0D		
		GX2140 JS4045	90~150	0.8~2.0	1,430	2,290	57	1,150	1,840	58	960	3,840	173	720	4,320	259
H 열처리강 Hardened Steel	열처리강 Hardened Steel (45~50HRC)	JP4120 JS4045	70~120	0.2~0.6	1,600	950	19	1,270	760	19	1,060	640	19	790	710	28
			Vc = 100m/min fz = 0.3mm/tooth ap = 1.0mm ae = 1.0D											Vc = 100m/min fz = 0.3mm/tooth ap = 1.0mm ae = 1.0D		
		70~120	0.2~0.6	1,110	440	9	890	350	9	740	300	9	550	330	13	
	Vc = 70m/min fz = 0.2mm/tooth ap = 1.0mm ae = 1.0D											Vc = 70m/min fz = 0.2mm/tooth ap = 1.0mm ae = 1.0D				
	열처리강 Hardened Steel (50~55HRC)	JP4105	70~100	0.05~0.2	1,110	440	5	890	350	5	740	300	5	550	330	7
			Vc = 70m/min fz = 0.2mm/tooth ap = 0.5mm ae = 1.0D											Vc = 70m/min fz = 0.2mm/tooth ap = 0.5mm ae = 1.0D		
열처리강 Hardened Steel (55~60HRC)	열처리강 Hardened Steel (55~60HRC)	JP4105	50~100	0.05~0.2	790	80	1	630	60	1	530	53	0.8	400	60	1
			Vc = 50m/min fz = 0.05mm/tooth ap = 0.5mm ae = 1.0D											Vc = 50m/min fz = 0.05mm/tooth ap = 0.5mm ae = 1.0D		

Material 피삭재		Hardness 경도	Cutting Speed 절삭속도 VC(m/min)	Feed Rate 이송속도 FZ(mm/TOOTH)	Ø50			Ø63			Ø80			Ø100		
					Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min	Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min	Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min	Revolution min ⁻¹	Feed Speed mm/min	Q cm ³ /min
P 강 Steel	일반강 General Structural Steels	GX2140 JS4060 JS4045	180~200	0.6~1.5	1,150	6,900	510	910	5,500	520	720	5,400	650	570	5,130	770
			Vc = 180m/min fz = 1.5mm/tooth ap = 1.5mm ae = 1.0D													
		90~150	0.6~2.0	570	3,420	257	455	2,730	258	360	2,700	325	290	2,610	390	
	탄소, 합금강 Carbon, Alloy Steel (30HRC or less)	GX2140 JS4045 JS4060	180~200	0.6~1.5	1,150	6,900	510	910	5,500	520	720	5,400	650	570	5,130	770
			Vc = 180m/min fz = 1.5mm/tooth ap = 1.5mm ae = 1.0D													
		90~150	0.6~2.0	570	3,420	257	455	2,730	258	360	2,700	325	290	2,610	390	
	탄소, 합금강 Carbon, Alloy Steel (30~45HCR)	JP4120 JS4045 JS4060	180~200	0.6~1.5	1,150	6,900	510	910	5,500	520	720	5,400	650	570	5,130	770
			Vc = 180m/min fz = 1.5mm/tooth ap = 1.5mm ae = 1.0D													
90~150		0.6~2.0	570	3,420	257	455	2,730	258	360	2,700	325	290	2,610	390		
Vc = 90m/min fz = 1.5mm/tooth ap = 1.5mm ae = 1.0D																
Vc = 90m/min fz = 0.8mm/tooth ap = 1.5mm ae = 1.0D																
M 스테인레스강 Stainless steel	스테인레스강 Stainless Steel (SUS304 등)	JM4160	80~130	0.5~1.0	637	1,528	76	505	1,213	76	398	1,194	96	319	1,146	115
			Vc = 100m/min fz = 0.6mm/tooth ap = 1.0mm ae = 1.0D													
			150~200	0.5~1.0	1,274	3,056	122	1,011	2,426	122	796	2,388	153	637	2,292	184
			Vc = 200m/min fz = 0.6mm/tooth ap = 0.8mm ae = 1.0D													
K 주철 Cast iron	주철 Cast iron (FC300 등)	JP4120	180~200	0.8~2.0	1,150	9,200	920	910	7,280	920	720	7,200	1,150	570	6,840	1,370
			Vc = 180m/min fz = 2.0mm/tooth ap = 2.0mm ae = 1.0D													
		GX2140 JS4045	90~150	0.8~2.0	570	4,560	456	455	3,640	459	360	3,600	576	290	3,480	696
			Vc = 90m/min fz = 2.0mm/tooth ap = 2.0mm ae = 1.0D													
H 열처리강 Hardened Steel	열처리강 Hardened Steel (45~50HRC)	JP4120 JS4045	70~120	0.2~0.6	630	760	38	500	600	38	400	600	48	320	576	58
			Vc = 100m/min fz = 0.3mm/tooth ap = 1.0mm ae = 1.0D													
		440	360	18	350	280	18	280	280	22	220	260	26			
	열처리강 Hardened Steel (50~55HRC)	JP4105	70~100	0.05~0.2	440	350	9	350	280	9	270	270	11	220	260	13
			Vc = 70m/min fz = 0.2mm/tooth ap = 0.5mm ae = 1.0D													
		310	62	1.5	250	50	1.5	200	50	2.0	160	48	2.4			
	열처리강 Hardened Steel (55~60HRC)	JP4105	50~100	0.05~0.2	310	62	1.5	250	50	1.5	200	50	2.0	160	48	2.4
			Vc = 50m/min fz = 0.05mm/tooth ap = 0.5mm ae = 1.0D													

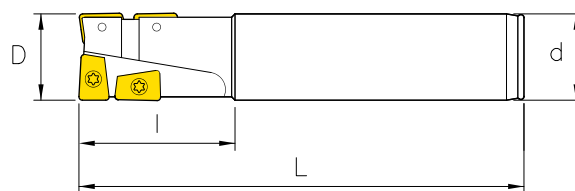
AQX - 2F



• INSERT ⇒ MITSUBISHI

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	l					
AQX-1616120-2F	16	16	120	40	2	QOMT0830R	TSB - 0204	TXL - 6	102,000
AQX-1716200-2F	17	16	200	40	2				141,000
AQX-2020200-2F	20	20	200	40	2				120,000
AQX-2120200-2F	21	20	200	40	2				120,000
AQX-2525200-2F	25	25	200	60	2	QOMT1342R	TSB - 0307	TXL - 9	125,000
AQX-2625200-2F	26	25	200	40	2				125,000
AQX-3232220-2F	32	32	220	85	2	QOMT1651R	TSB - 0408	TXL - 15	137,000
AQX-3332220-2F	33	32	220	60	2				137,000
AQX-4032160-2F	40	32	160	70	2	QOMT2062R	TSB - 0510	TXL - 20	151,000
AQX-4032250-2F	40	32	250	70	2				166,000

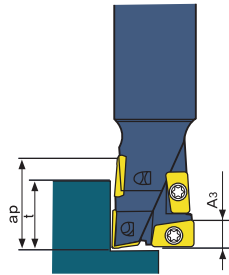
AQX - 4F



• INSERT ⇒ MITSUBISHI

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	l					
AQX-1716200-4F	17	16	200	40	4	QOMT0830R	TSB - 0204	TXL - 6	141,000
AQX-2020200-4F	20	20	200	40	4				120,000
AQX-2120200-4F	21	20	200	40	4				120,000
AQX-2525200-4F	25	25	200	60	4				125,000
AQX-2625200-4F	26	25	200	40	4	QOMT1342R	TSB - 0307	TXL - 9	125,000
AQX-3232220-4F	32	32	220	85	4				137,000
AQX-3332220-4F	33	32	220	60	4	QOMT1651R	TSB - 0408	TXL - 15	137,000
AQX-4032160-4F	40	32	160	70	4				151,000
AQX-4032250-4F	40	32	250	70	4	QOMT2062R	TSB - 0510	TXL - 20	166,000

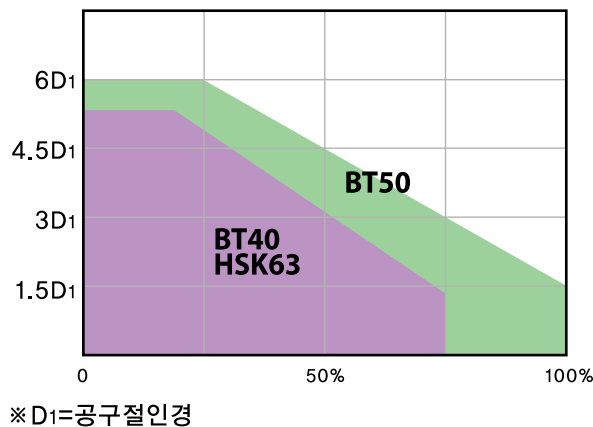
AQX용 절삭 데이터 AQX Recommended Cutting Data



공구경	최적절입량 t(mm)
Ø16, 17	12 - 14
Ø 20, 21	14 - 17
Ø25, 26	17 - 22
Ø32, 33	22 - 28
Ø40	28 - 35
Ø50	35 - 45

- 절입깊이 A3까지는 선단2날입니다.
- A3을 넘으면, 오버랩으로 인하여, 1날 영역이 발생합니다.
절입깊이와 이송속도와의 관계에 주의해 주십시오.
- 일반적으로 절입경부는, 팁 손상이 큰 경우가 있습니다. 깊은 절입에서의 사용 시는, 절입경계부가 2날이 되는
절입량 t를 추천합니다.

공구돌출장



- 공구돌출량이 큰 경우나, 기계강성이 불충분한 경우 등에는, 진동 등이 발생하기 쉽고, 불안정 절삭이 되기 쉽습니다.
- 상기 클램프를 참고로 해서, 이송속도를 내려서 가공해 주십시오.

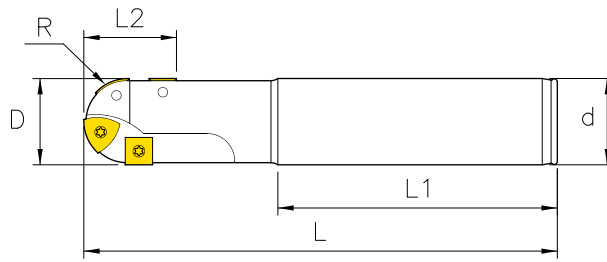
AQX용 절삭데이터

AQX Recommended Cutting Data

Material 피삭재		Hardness 경도	Insert Grade 삽재종	Cutting Speed 절삭속도 (m/min)	Ø16, Ø17			Ø20, Ø21			Ø25, Ø26			Ø32, Ø33			Ø40			Ø50		
					절입 깊이 (mm)	절입 폭 (mm)	이송 (mm/rev)	절입 깊이 (mm)	절입 폭 (mm)	이송 (mm/rev)	절입 깊이 (mm)	절입 폭 (mm)	이송 (mm/rev)	절입 깊이 (mm)	절입 폭 (mm)	이송 (mm/rev)	절입 깊이 (mm)	절입 폭 (mm)	이송 (mm/rev)	절입 깊이 (mm)	절입 폭 (mm)	이송 (mm/rev)
P 강 Steel	연강 Mild Steel (S400, S10C 등)	≤180HB	VP15TF	180 (150~220)	-4.5	-8	0.25	-6	-10	0.30	-7.5	-12.5	0.35	-9.5	-16	0.40	-12	-20	0.50	-15	-25	0.60
					4.5~12	-5	0.16	6~14	-7	0.25	7.5~17	-8	0.28	9.5~22	-11	0.32	12~28	-13	0.40	15~35	-16	0.50
					12~17	-3	0.10	14~22	-4	0.18	17~27	-5	0.20	22~23	-6	0.25	28~44	-7	0.30	35~55	-10	0.35
	탄소, 합금강 Carbon, Alloy Steel (S50C, SCM440 등)	180~350HB	VP15TF	160 (120~200)	-4.5	-8	0.20	-6	-10	0.25	-7.5	-12.5	0.30	-9.5	-16	0.35	-12	-20	0.40	-15	-25	0.50
					4.5~12	-4	0.14	6~14	-6	0.20	7.5~17	-7	0.25	9.5~22	-10	0.28	12~28	-12	0.32	15~35	-14	0.40
					12~17	-2	0.08	14~22	-3	0.16	17~27	-4	0.18	22~23	-5	0.20	28~44	-6	0.25	35~55	-8	0.30
M 스테인레스강 Stainless steel	스테인레스강 Stainless Steel (SUS304 등)	≤270HB	VP30RT	150 (120~180)	-4.5	-8	0.20	-6	-10	0.25	-7.5	-12.5	0.30	-9.5	-16	0.35	-12	-20	0.40	-15	-25	0.50
					4.5~12	-4	0.14	6~14	-6	0.20	7.5~17	-7	0.25	9.5~22	-10	0.28	12~28	-12	0.32	15~35	-14	0.40
					12~17	-2	0.08	14~22	-3	0.16	17~27	-4	0.18	22~23	-5	0.20	28~44	-6	0.25	35~55	-8	0.30
K 주철 Cast iron	주철 Cast iron (FC300 등)	인장강도 ≤450MPa	VP15TF	180 (150~220)	-4.5	-8	0.25	-6	-10	0.30	-7.5	-12.5	0.35	-9.5	-16	0.40	-12	-20	0.50	-15	-25	0.60
					4.5~12	-5	0.16	6~14	-7	0.25	7.5~17	-8	0.28	9.5~22	-11	0.32	12~28	-13	0.40	15~35	-16	0.50
					12~17	-3	0.10	14~22	-4	0.18	17~27	-5	0.20	22~23	-6	0.25	28~44	-7	0.30	35~55	-10	0.35
N 비철금속 Nonferrous metals	알루미늄합금 Aluminium Alloy	-	HT10 (G1브레이크)	500 (200~800)	-4.5	-11	0.30	-6	-14	0.35	-7.5	-17.5	0.40	-9.5	-23	0.45	-12	-28	0.55	-15	-35	0.65
					4.5~12	-8	0.21	6~14	-10	0.30	7.5~17	-12.5	0.33	9.5~22	-16	0.37	12~28	-20	0.45	15~35	-25	0.55
					12~17	-5	0.15	14~22	-6	0.23	17~27	-7.5	0.25	22~23	-10	0.30	28~44	-12	0.35	35~55	-15	0.40
H 열처리강 Hardened Steel	열처리강 Hardened Steel	40~55HRC	VP15TF	80 (50~120)	-4.5	-5	0.16	-6	-6	0.20	-7.5	-7	0.22	-9.5	-8	0.25	-12	-10	0.30	-15	-14	0.35
					4.5~12	-3	0.10	6~14	-4	0.16	7.5~17	-4	0.18	9.5~22	-5	0.20	12~28	-6	0.24	15~35	-8	0.30
					12~17	-1	0.06	14~22	-2	0.12	17~27	-2	0.14	22~23	-2	0.16	28~44	-2	0.18	35~55	-4	0.22

Material 피삭재		Hardness 경도	Insert Grade 삽재종	Cutting Speed 절삭속도 (m/min)	Ø16, Ø17		Ø20, Ø21		Ø25, Ø26		Ø32, Ø33		Ø40		Ø50	
					절입 깊이 (mm)	이송 (mm/rev)	절입 깊이 (mm)	이송 (mm/rev)	절입 깊이 (mm)	이송 (mm/rev)	절입 깊이 (mm)	이송 (mm/rev)	절입 깊이 (mm)	이송 (mm/rev)	절입 깊이 (mm)	이송 (mm/rev)
P 강 Steel	연강 Mild Steel (S400, S10C 등)	≤180HB	VP15TF	180 (150~220)	-4.5	0.16	-6	0.18	-7.5	0.20	-9.5	0.25	-12	0.30	-15	0.35
					4.5~12	0.10	6~14	0.14	7.5~17	0.16	9.5~22	0.20	12~28	0.25	15~35	0.30
					12~17	0.07	14~22	0.10	17~27	0.12	22~23	0.14	28~44	0.18	35~55	0.22
	탄소, 합금강 Carbon, Alloy Steel (S50C, SCM440 등)	180~350HB	VP15TF	160 (120~200)	-4.5	0.14	-6	0.16	-7.5	0.18	-9.5	0.20	-12	0.25	-15	0.30
					4.5~12	0.09	6~14	0.12	7.5~17	0.14	9.5~22	0.16	12~28	0.20	15~35	0.25
					12~17	0.05	14~22	0.10	17~27	0.10	22~23	0.12	28~44	0.14	35~55	0.16
M 스테인레스강 Stainless steel	스테인레스강 Stainless Steel (SUS304 등)	≤270HB	VP30RT	150 (120~180)	-4.5	0.14	-6	0.16	-7.5	0.18	-9.5	0.20	-12	0.25	-15	0.30
					4.5~12	0.09	6~14	0.12	7.5~17	0.14	9.5~22	0.16	12~28	0.20	15~35	0.25
					12~17	0.05	14~22	0.10	17~27	0.10	22~23	0.12	28~44	0.14	35~55	0.16
K 주철 Cast iron	주철 Cast iron (FC300 등)	인장강도 ≤450MPa	VP15TF	180 (150~220)	-4.5	0.16	-6	0.18	-7.5	0.20	-9.5	0.25	-12	0.30	-15	0.35
					4.5~12	0.10	6~14	0.14	7.5~17	0.16	9.5~22	0.20	12~28	0.25	15~35	0.30
					12~17	0.07	14~22	0.10	17~27	0.12	22~23	0.14	28~44	0.18	35~55	0.22
N 비철금속 Nonferrous metals	알루미늄합금 Aluminium Alloy	-	HT10 (G1브레이크)	500 (200~800)	-4.5	0.18	-6	0.20	-7.5	0.22	-9.5	0.27	-12	0.32	-15	0.37
					4.5~12	0.12	6~14	0.16	7.5~17	0.18	9.5~22	0.22	12~28	0.27	15~35	0.32
					12~17	0.09	14~22	0.12	17~27	0.14	22~23	0.16	28~44	0.20	35~55	0.25
H 열처리강 Hardened Steel	열처리강 Hardened Steel	40~55HRC	VP15TF	80 (50~120)	-4.5	0.10	-6	0.12	-7.5	0.14	-9.5	0.16	-12	0.18	-15	0.22
					4.5~12	0.07	6~14	0.10	7.5~17	0.12	9.5~22	0.12	12~28	0.14	15~35	0.16

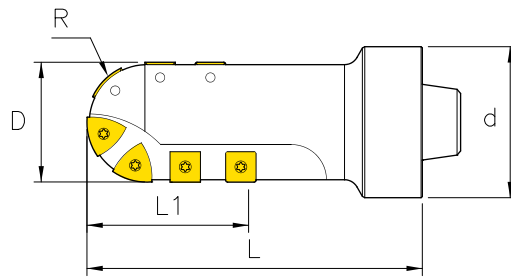
BNC



• INSERT ⇒ **WALTER**

Order No. 주문형번	Dimension (mm)						No.of Insert					Price					
	R	D	d	L	L1	L2											
BNC - R1020135	10	20	20	135	90	20.5	2/2	P26315-R10	SP..0603	TSB - 25055	TXL-8	76,000					
BNC - R1020170	10	20	20	170	125	20.5						83,000					
BNC - R1020200	10	20	20	200	155	20.5						91,000					
BNC - R1025200	10	20	25	200	125	20.5						91,000					
BNC - R1225140	12.5	25	25	140	90	23		P26315-R12				SP..09T3	TSB - 319	TXL-15	83,000		
BNC - R1225170	12.5	25	25	170	120	23									91,000		
BNC - R1225200	12.5	25	25	200	150	23									100,000		
BNC - R1225250	12.5	25	25	250	200	23									125,000		
BNC - R1225300	12.5	25	25	300	250	23		150,000									
BNC - R1532150	15	30	32	150	80	30.5		P26315-R15	SP..1204	TSB - 243	TXL-20				100,000		
BNC - R1532200	15	30	32	200	120	30.5									108,000		
BNC - R1532250	15	30	32	250	150	30.5									150,000		
BNC - R1532300	15	30	32	300	250	30.5						208,000					
BNC - R1532350	15	30	32	350	250	30.5		P26315-R16				SP..160525R-MM			240,000		
BNC - R1632150	16	32	32	150	80	31.5									100,000		
BNC - R1632200	16	32	32	200	120	31.5									125,000		
BNC - R1632250	16	32	32	250	150	31.5									150,000		
BNC - R1632300	16	32	32	300	200	31.5		208,000									
BNC - R2032150	20	40	32	150	80	41.5		P26315-R20									
BNC - R2042150	20	40	42	150	80	41.5			134,000								
BNC - R2042200	20	40	42	200	100	41.5			150,000								
BNC - R2042250	20	40	42	250	120	41.5			174,000								
BNC - R2042300	20	40	42	300	150	41.5		3/2									
BNC - R2542150	25	50	42	150	80	46.5	P26315-R25										
BNC - R2542200	25	50	42	200	80	46.5						166,000					
BNC - R2542250	25	50	42	250	130	46.5						208,000					
BNC - R2550200	25	50	50.8	200	80	46.5	3/4	ZPMT 160525R-MM				167,000					
BNC - R2550250	25	50	50.8	250	120	66.5						208,000					
BNC - R2550300	25	50	50.8	300	150	86.5						233,000					

BNC-WM



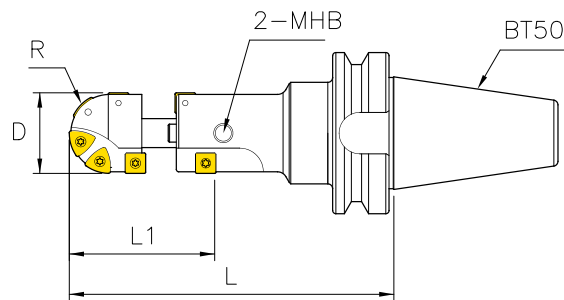
• INSERT ⇒ **TAEGU-TEC, KORLOY, WALTER**

Order No. 주문형번	Dimension (mm)					No.of Insert					Price
	R	D	d	L	L1						
BNC - R2563140-7F	25	50	63	140	67	3/4	P26315-R25				170,000
BNC - R2563140-9F	25	50	63	140	87	3/6					187,000
BNC - R2563170-7F	25	50	63	170	67	3/4					190,000
BNC - R2563170-9F	25	50	63	170	87	3/6					210,000
BNC - R2563200-9F	25	50	63	200	87	3/6	ZPMT 160525R-MM	SP..1204	TSB - 243	TXL-20	242,000
BNC - R2563250	25	50	63	250	87	3/6					250,000
BNC - R2580250	25	50	80	250	87	3/6					312,000
BNC - R2580300	25	50	80	300	87	3/6					375,000

BNC MODULAR

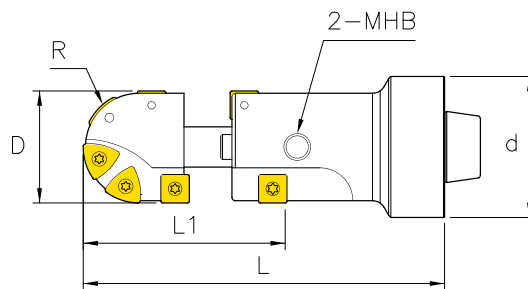


특허 제 10-1021963
Patent #10-1021963



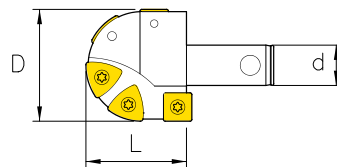
• INSERT ⇒ **TAEGU-TEC, KORLOY, WALTER**

Order No. 주문형번	Dimension (mm)				No.of Insert					Price
	R	D	L	L1						
BNC - R25BT140M-7F	25	50	180	67	3/4	P26315-R25 ZPMT	SP..1204	TSB - 243	TXL-20	400,000
BNC - R25BT170M-7F	25	50	210	67	3/4	160525R-MM				430,000



• INSERT ⇒ **TAEGU-TEC, KORLOY, WALTER**

Order No. 주문형번	Dimension (mm)					No.of Insert					Price
	R	D	d	L	L1						
BNC - WM2563140-7F	25	50	63	140	67	3/4	P26315-R25 ZPMT	SP..1204	TSB - 243	TXL-20	253,000
BNC - WM2563170-7F	25	50	63	170	67	3/4	160525R-MM				278,000



• INSERT ⇒ **TAEGU-TEC, KORLOY, WALTER**

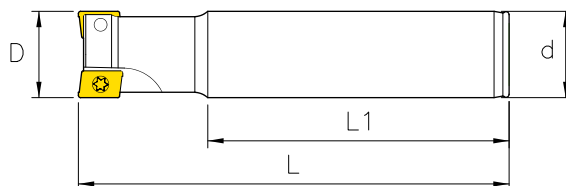
Order No. 주문형번	Dimension (mm)				No.of Insert					Price
	R	D	d	L						
BNC - R254518	25	50	18	45	3/4	P26315-R25 ZPMT	SP..1204	TSB - 243	TXL-20	140,000

BNC용 절삭데이터

BNC Recommended Cutting Data

Material 피삭재		Hardness 경도	Cutting Depth 절삭깊이 (mm)	Cutting Speed 절삭속도 (m/min)	Ø20		Ø25		Ø32		Ø40		Ø50	
					RPM	F (mm/min)	RPM	F (mm/min)	RPM	F (mm/min)	RPM	F (mm/min)	RPM	F (mm/min)
P강 Steel	고경도 합금강 인코넬 High Temp. Alloy - Inconel		0.4	45	2.6K	890	2.3K	1170	2K	1550	1.9K	1650	1.6K	1420
			0.8	45	1.9K	480	1.7K	610	1.5K	635	1.3K	680	1.2K	710
			1.5	35	1.1K	230	1K	250	850	280	765	305	665	330
			3.2	33	0.7K	100	0.6K	125	500	125	460	150	395	150
			4.8	27	0.5K	60	0.4K	75	385	70	350	75	300	65
			6.4	24	0.4K	45	350	50	300	50	275	50	230	40
			7.9	22	0.4K	45	300	40	265	35	235	40	200	35
			9.5+	22	0.4K	45	300	40	250	30	220	35	185	30
	티타늄합금 Titanium Alloy		0.4	90	5K	1775	2.6K	2280	4K	3050	3.8K	3300	3.2K	2790
			0.8	85	3.6K	890	3.1K	1140	2.7K	1400	3.5K	1725	3K	2100
			1.5	80	2.4K	610	2.1K	530	1.8K	585	1.6K	635	1.4K	740
			3.2	75	1.6K	230	1.4K	305	1.2K	305	1.1K	355	940	355
			4.8	60	1.2K	125	1K	150	860	150	770	150	660	150
			6.4	54	970	100	790	110	690	110	615	110	520	100
			7.9	54	930	95	740	100	640	90	565	100	475	85
			9.5+	45	760	75	590	80	500	65	440	70	365	60
K주철 Cast iron	회주철 Grey Castiron	190~220	0.4	380	max	max	max	max	max	max	max	max	13K	max
			0.8	350	max	max	max	max	max	max	10K	max	9K	max
			1.5	335	10K	2540	9K	2970	8K	3050	7K	3100	6K	3550
			3.2	320	7K	1270	6K	1520	5.3K	1625	5K	1900	4K	1620
			4.8	300	6K	890	5K	890	4K	910	3.7K	940	3.2K	810
			6.4	275	5K	660	4K	660	3.5K	660	3K	660	2.6K	560
			7.9	260	4K	510	3.5K	530	3K	560	2.7K	580	2.2K	480
			9.5+	245	4K	510	3.2K	510	2.7K	430	2.3K	430	2K	380
	주철 Molten Castiron	140~225	0.4	270	max	max	max	max	max	max	11K	max	9.5K	9400
			0.8	265	11K	3420	9K	4130	8K	4150	7.5K	4380	6.6K	4640
			1.5	235	7.2K	1840	6.3K	1880	5.5K	2080	5K	2130	4.3K	2540
			3.2	210	5.0K	910	4.2K	1080	3.7K	1140	3.3K	1270	3K	1130
			4.8	200	4.0K	570	3.3K	620	2.9K	635	2.8K	685	2.2K	600
			6.4	185	3.5K	460	2.7K	460	2.4K	460	2.2K	460	1.8K	430
			7.9	175	3.0K	380	2.3K	380	2K	370	1.8K	380	1.5K	355
			9.5+	170	2.5K	355	2.2K	355	1.8K	305	1.6K	290	1.3K	265
N비철금속 Nonferrous metals	알루미늄합금 Aluminium Alloy		0.4	1220	max	max	max	max	max	max	max	max	max	max
			0.8	1220	max	max	max	max	max	max	max	max	max	max
			1.5	1160	max	max	max	max	max	max	max	max	max	max
			3.2	1100	max	max	max	max	max	max	max	max	max	max
			4.8	1035	max	max	max	max	max	max	max	max	max	max
			6.4	975	max	max	max	max	max	max	max	max	max	max
			7.9	910	max	max	max	max	max	max	max	max	max	max
			9.5+	910	max	max	max	max	max	max	max	max	max	max

EMC-09

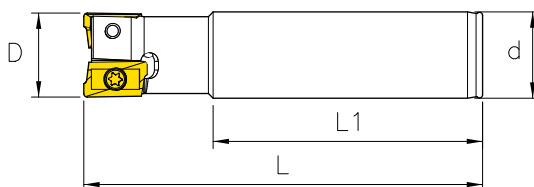


APKT 09T3

• INSERT ⇒ TAEGU-TEC

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	L1					
EMC-1009080D	10	10	80	50	1	APKT 09T3	TSB - 25055	TXL-8	55,000
EMC-1209080D	12	12	80	50	1				55,000
EMC-1409080D	14	12	80	50	1				55,000
EMC-1609110D	16	16	110	80	2				60,000
EMC-1609160D	16	16	160	130	2				64,000
EMC-1709150D	17	16	150	120	2				64,000
EMC-1709200D	17	16	200	170	2				69,000
EMC-1809090D	18	16	90	60	2				60,000
EMC-2009110D	20	20	110	80	2				64,000
EMC-2009180D	20	20	180	150	2				73,000
EMC-2109150D	21	20	150	120	2				73,000
EMC-2109200D	21	20	200	170	2				75,000
EMC-2209110D	22	20	110	80	2				63,000
EMC-2509110D	25	25	110	80	3				73,000
EMC-2509210D	25	25	210	160	3				76,000
EMC-3009130D	30	32	130	96	3				76,000
EMC-3209130D	32	32	130	96	3				76,000
EMC-3209250D	32	32	250	216	3				116,000
EMC-4009130D	40	32	130	80	4				79,000
EMC-4009250D	40	32	250	200	4				126,000

EMC-12

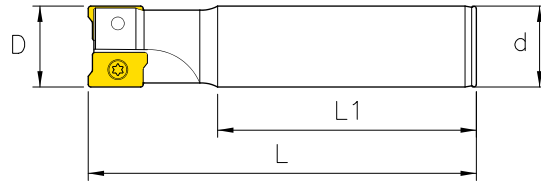


APKT 1204

• INSERT ⇒ TAEGU-TEC

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	L1					
EMC - 1612150D-1Z	16	16	150	124	1	APKT 1204	TSB - 3508S	TXL-10	61,000
EMC - 2012150D-2Z	20	20	150	120	2				64,000
EMC - 2512150D-3Z	25	25	150	110	3		TSB - 3508C		65,000
EMC - 3212150D-3Z	32	32	150	110	3				69,000
EMC - 4012150D-4Z	40	32	150	110	4				74,000

EMC-17



APKT 1705

• INSERT ⇒ **TAEGU-TEC**

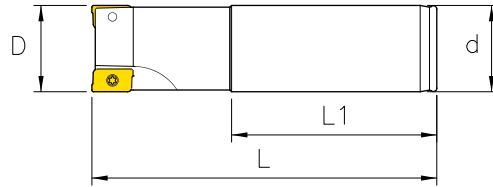
Order No. 주문형번	Dimension (mm)								Price
	D	d	L	L1					
EMC - 2517120P	25	25	120	80	2	APKT 1705	TSB - 0408	TXL-15	71,000
EMC - 2517220P	25	25	220	180	2				92,000
EMC - 2617150P	26	25	150	110	2				75,000
EMC - 2617200P	26	25	200	160	2				95,000
EMC - 2817150P	28	25	150	110	2				71,000
EMC - 2817200P	28	25	200	160	2				83,000
EMC - 3017150P	30	25	150	110	2				83,000
EMC - 3017200P	30	25	200	160	2				98,000
EMC - 3217130P	32	32	130	90	3		83,000		
EMC - 3217200P-2F	32	32	200	160	2		98,000		
EMC - 3217200P	32	32	200	160	3		98,000		
EMC - 3317150P	33	32	150	109	3		87,000		
EMC - 3317200P	33	32	200	160	3		98,000		
EMC - 4017120P	40	32	120	76	3		91,000		
EMC - 4017250P	40	32	250	205	3		124,000		
EMC - 5017150P	50	32	150	110	3		107,000		
EMC - 5017250P	50	32	250	210	3		157,000		
EMC - 5017250XP	50	42	250	210	3		157,000		

EMC-09,12,17 용 절삭데이터 EMC-09,12,17 Recommended Cutting Data

Material 피삭재		Hardness 경도	Cutting Depth 절삭깊이 (mm)	Cutting Speed 절삭속도 (m/min)	Inserts Grade 추천재종	Feed Rate 이송(mm/TOOTH)					
						Ø20	Ø40	Ø50	Ø63	Ø80	Ø100
P 강 Steel	저탄소강 Low Carbon Steel	85~175	0.5-EDGE/2	210~300	TT7030,TT8020	0.12~0.60	0.15~0.75	0.15~0.85	0.15~1.20	0.15~1.40	0.15~1.60
	고탄소강 High Carbon Steel	175~225	0.5-EDGE/2	120~210	TT7030,TT8020	0.12~0.60	0.15~0.75	0.15~0.85	0.15~1.20	0.15~1.40	0.15~1.60
	합금강 Alloy Steel	275~325	0.5-EDGE/2	90~180	TT8020,TT7030	0.10~0.40	0.12~0.55	0.12~0.75	0.12~1.05	0.12~1.24	0.12~1.40
	공구강 Tool Steel	200~250	0.5-EDGE/2	75~140	TT8020,TT7030	0.10~0.40	0.12~0.55	0.12~0.75	0.12~1.05	0.12~1.24	0.12~1.40
	고경도 합금 인코넬 High Temp. Alloy - Inconel		0.5-EDGE/2	22~45	TT8020,TT7030	0.10~0.40	0.12~0.55	0.12~0.75	0.12~1.05	0.12~1.24	0.12~1.40
	티타늄합금 Titanium Alloy		0.5-EDGE/2	36~54	TT8020	0.10~0.40	0.12~0.55	0.12~0.75	0.12~1.05	0.12~1.24	0.12~1.40
M 스테인레스강 Stainless steel	스테인레스 300시리즈 Stainless 300Series		0.5-EDGE/2	120~180	TT8020,TT7030	0.10~0.40	0.12~0.55	0.12~0.75	0.12~1.05	0.12~1.24	0.12~1.40
	스테인레스 400시리즈 Stainless 400Series		0.5-EDGE/2	120~210	TT8020,TT7030	0.12~0.60	0.15~0.75	0.15~0.85	0.15~1.20	0.15~1.40	0.15~1.60
K 주철 Cast iron	회주철 Grey Castiron	190~220	0.5-EDGE/2	120~210	TT6080	0.60~0.12	0.15~0.75	0.15~0.85	0.15~1.20	0.15~1.40	0.15~1.60
	가단주철 Malleable Cast iron	140~200	0.5-EDGE/2	120~210	TT6080	0.12~0.60	0.15~0.75	0.15~0.85	0.15~1.20	0.15~1.40	0.15~1.60
N 비철금속 Nonferrous metals	알루미늄합금 Aluminium Alloy		0.5-EDGE/2	450+	K10	0.25~1.00	0.25~1.00	0.25~1.25	0.25~1.50	0.25~1.75	0.25~2.00

- 계산된 이송은 실제 칩두께를 고려함.
- 절삭폭이 커터 직경의 3/4이상인 경우 속도 20%감소 요망 또는 APKT1705인서트 사용하여 엔드밀 및 커터로 여러번 가공도 가능

EMC-11

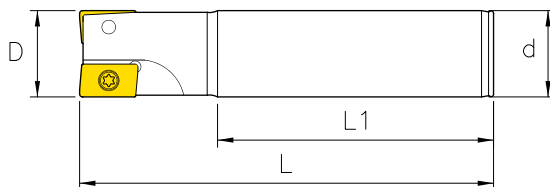


APMT 11T3

• INSERT ⇒ KORLOY

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	L1					
EMC - 1011080	10	16	80	50	1	APMT 11T3	TSB - 25055	TXL-8	43,000
EMC - 1011160	10	16	160	130	1				48,000
EMC - 1211080	12	16	80	50	1				43,000
EMC - 1211160	12	16	160	130	1				48,000
EMC - 1411080	14	16	80	50	1				43,000
EMC - 1411160	14	16	160	130	1				48,000
EMC - 1611080	16	16	80	50	2				48,000
EMC - 1611160	16	16	160	130	2				59,000
EMC - 1811090	18	16	90	50	2				48,000
EMC - 1811160	18	16	160	130	2				59,000
EMC - 2011090	20	20	90	50	2				54,000
EMC - 2011160	20	20	160	130	2				63,000
EMC - 2211100	22	25	100	60	2				54,000
EMC - 2211180	22	25	180	140	2				63,000
EMC - 2511100	25	25	100	60	3				59,000
EMC - 2511180	25	25	180	140	3				68,000

EMC-16



APKT 1604

• INSERT ⇒ KORLOY, SECO

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	L1					
EMC - 2416120	24	25	120	80	2	APKT 1604	TSB - 0408	TXL-15	54,000
EMC - 2516120	25	25	120	80	2				54,000
EMC - 2516180	25	25	180	140	2				64,000
EMC - 2616180	26	25	180	140	2				64,000
EMC - 2716120	27	25	120	80	2				54,000
EMC - 2816120	28	25	120	80	2				54,000
EMC - 2816200	28	32	200	150	2				64,000
EMC - 2916120	29	32	120	60	2		TSB - 0410		54,000
EMC - 3016120	30	32	120	60	2				54,000
EMC - 3016200	30	32	200	150	2				64,000
EMC - 3216120	32	32	120	70	3				60,000
EMC - 3216200	32	32	200	150	3				68,000
EMC - 3316200	33	32	200	150	3				68,000
EMC - 4016120	40	32	120	70	3				64,000
EMC - 4016200	40	32	200	160	3				68,000
EMC - 5016120	50	32	120	75	3				79,000
EMC - 5016200	50	32	200	155	3				83,000
EMC - 5016200X	50	42	200	165	3				83,000
EMC - 5016250X	50	42	250	215	3				98,000

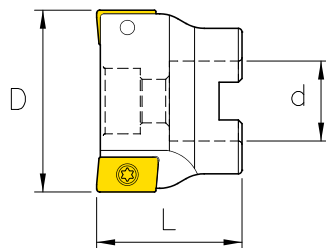
EMC-11,16용 절삭데이터 EMC-11,16 Recommended Cutting Data

Material 피삭재		Grade 재종		Ø20,Ø25		Ø32,Ø40		Ø50,Ø63		Ø80,Ø100	
				VC(m/min)	FZ(mm/t)	VC(m/min)	FZ(mm/t)	VC(m/min)	FZ(mm/t)	VC(m/min)	FZ(mm/t)
P 강 Steel	저탄소강 Low Carbon Steel	NCM325 PC3500	①	60~80	0.05~0.08	80~120	0.05~0.08	120~200	0.05~0.08	150~200	0.05~0.08
			②	80~120	0.08~0.1	120~180	0.08~0.1	180~250	0.08~0.1	200~250	0.08~0.1
			③	80~120	0.1~0.15	120~180	0.1~0.15	180~250	0.1~0.5	200~250	0.1~0.5
	고탄소강 / 합금강 High Carbon Steel Alloy Steel	NCM325 PC3500	①	50~80	0.05	80~110	0.05	100~150	0.05	100~150	0.05
			②	80~100	0.05~0.08	110~150	0.05~0.1	150~200	0.05~0.1	150~200	0.05~0.1
			③	80~100	0.1~0.15	120~150	0.1~0.15	180~200	0.1~0.15	80~200	0.1~0.15
	합금공구강 Alloy Tool Steel	NCM325 PC3500	①	50~70	0.05	80~100	0.05	100~130	0.05	100~130	0.05
			②	70~100	0.05~0.08	100~130	0.05~0.1	130~180	0.05~0.1	130~180	0.05~0.1
			③	70~100	0.1~0.15	100~150	0.1~0.15	130~180	0.1~0.15	130~180	0.1~0.15
M 스테인레스강 Stainless steel	스테인레스강 Stainless Steel	NCM325 PC9500	①	50~70	0.05	80~100	0.05	100~130	0.05	100~130	0.05
			②	70~100	0.05~0.08	100~130	0.05~0.1	130~180	0.05~0.1	130~180	0.05~0.1
			③	70~100	0.1~0.15	100~150	0.1~0.15	130~180	0.1~0.15	130~180	0.1~0.15
K 주철 Cast iron	주철 Molten Cast iron	PC215K	①	80~100	0.08~0.12	80~100	0.15	120~150	0.15	120~150	0.15
			②	100~120	0.12~0.15	100~130	0.15~0.18	150~200	0.15~0.18	150~200	0.15~0.18
			③	100~120	0.15~0.2	100~130	0.15~0.2	150~200	0.15~0.2	150~200	0.15~0.2
N 비철금속 Nonferrous metals	알루미늄합금 Aluminium Alloy	H01	①	250~800	0.15~0.2	300~900	0.15~0.2	400~1,000	0.1~0.2	400~1,000	0.1~0.2
			②	250~900	0.2~0.25	350~950	0.2~0.25	400~1,000	0.2~0.3	400~1,000	0.2~0.3
			③	250~900	0.25~0.3	350~950	0.25~0.3	400~1,000	0.3~0.1	400~1,000	0.3~0.4
H 열처리강 Hardened Steel	열처리강 Hardened Steel	NCM325 PC3500	①	50~70	0.03	60~90	0.03	60~90	0.03	60~90	0.03
			②	60~80	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08
			③	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08

가공 형태

- ① - 직경 1/2 홀 가공시.
- ② - 직경 1/2 면가공 기준.
- ③ - 절삭날 길이 80% 기준 측면가공.

ESC-16

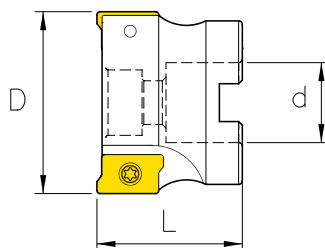


APKT 1604

• INSERT ⇒ KORLOY, SECO

Order No. 주문형번	Dimension (mm)							Price
	D	d	L					
ESC - 401616P	40	16	40	3	APKT 1604	TSB - 0410	TXL-15	100,000
ESC - 501622P	50	22	40	3				108,000
ESC - 631622P	63	22	40	4				153,000
ESC - 631625P	63	25.4	50	4				153,000
ESC - 801625P	80	25.4	50	5				192,000
ESC - 801627P	80	27	50	5				192,000
ESC - 1001631P	100	31.75	50	6				232,000
ESC - 1001632P	100	32	50	6				232,000
ESC - 1251640P	125	40	63	7				290,000

ESC-17

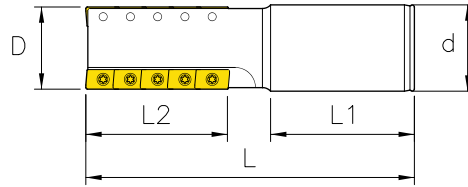


APKT 1705

• INSERT ⇒ TAEGU-TEC

Order No. 주문형번	Dimension (mm)							Price
	D	d	L					
ESC - 401716P	40	16	40	3	APKT 1705	TSB - 0410	TXL-15	100,000
ESC - 501722P	50	22	40	3				108,000
ESC - 631722P	63	22	40	4				153,000
ESC - 631725P	63	25.4	40	4				153,000
ESC - 801725P	80	25.4	50	5				192,000
ESC - 801727P	80	27	50	5				192,000
ESC - 1001731P	100	31.75	50	6				232,000
ESC - 1001732P	100	32	50	6				232,000
ESC - 1251740P	125	40	63	7				290,000

HEC



APKT 1604

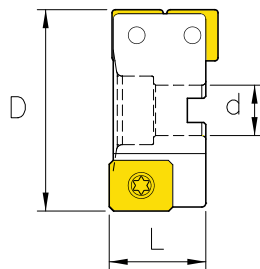
• INSERT ⇒ KORLOY, SECO

Order No. 주문형번	Dimension (mm)					No. of Insert	APKT 1604	TSB - 0410	TXL-15	Price
	D	d	L	L1	L2					
HEC - 3216120	32	32	120	60	42	2	APKT 1604	TSB - 0410	TXL-15	146,000
HEC - 3216150	32	32	150	60	70	2				216,000
HEC - 3216200-6F	32	32	200	140	42	2				270,000
HEC - 3216200-10F	32	32	200	110	70	2				238,000
HEC - 4016135	40	32	135	60	56	3				259,000
HEC - 4016160	40	42	160	70	70	3				327,000
HEC - 4016185	40	42	185	70	98	3				417,000
HEC - 5016160	50	42	160	70	70	3				406,000
HEC - 5016220CB	50	50.8	220	80	112	3				645,000

HEC용 절삭데이터 HEC Recommended Cutting Data

Material 피삭재		Hardness 경도	Cutting Speed 절삭속도 (m/min)	Feed Rate 이송(mm/TOOTH)	
				Ø20~Ø40	Ø40~Ø80
P 강 Steel	일반강 General Steel	125~300	115~225	0.15	0.20
	경합금강 High Temp. Alloy Steel	180~350	80~195	0.10	0.15
	고합금강과 공구강 High Alloy Steel Tool Steel	200~240	55~110	0.10	0.15
M 스테인레스강 Stainless steel	스테인레스강 마텐자이트계 Stainless Steel Martensite	180~350	65~110	0.08	0.12
	스테인레스강 오스트나이트계 Stainless Steel Austenite	180~350		0.15	0.25
K 주철 Cast iron	회주철 Gray Cast iron	180~260	80~130	0.15	0.25
	구상흑연주철 Spheroidal Graphite Cast iron	160~250	100~115	0.12	0.20
	가단주철 Malleable Cast iron	130~230	105~130	0.12	0.20

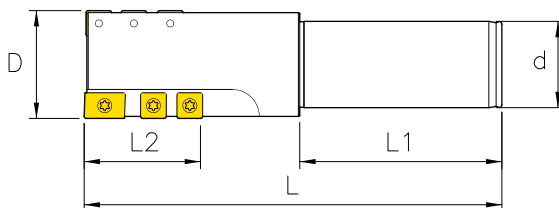
FPC



• INSERT ⇒ WALTER

Order No. 주문형번	Dimension (mm)				No.of Insert						Price
	D	d	L								
FPC - 5024P	50	12.5	24	4	2/4	FPB-5024					149,000
FPC - 5034P	50	12.5	34	4	2/6	FPB-5034					195,000
FPC - 5050P	50	12.5	50	4	2/8	FPB-5050					253,000
FPC - 6334P	63	16.5	34	4	2/6	FPB-6334					184,000
FPC - 8034P	80	18.0	34	6	3/9	FPB-8034					402,000

HMC

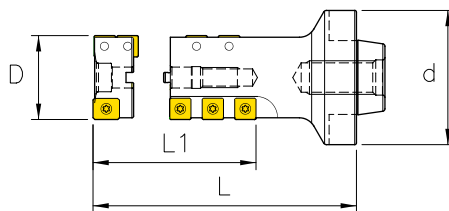


LPMT, SPMT

• INSERT ⇒ TAEGU-TEC, WALTER

Order No. 주문형번	Dimension (mm)						No. of Insert					Price
	D	d	L	L1	L2							
HMC - 2025110	20	25	110	65	32	2	1/6	LPMT 070304	SPMT 060304	TSB-25055	TXD-8	121,000
HMC - 2525120	25	25	120	75	32	2	1/6					157,000
HMC - 3232150	32	32	150	75	42	2	1/5					200,000
HMC - 4032155	40	32	155	75	50	4	2/12	LPMT 15T308	SPMT 09T308	TSB-319	TXD-15	242,000
HMC - 4042165	40	42	165	85	50	4	2/12					270,000
HMC - 5042170	50	42	170	85	56	4	2/10					320,000
HMC - 5050200CB	50	50.8	200	85	76	4	2/14	LPMT 150412	SPMT 120408	TSB-243	TXD-20	342,000

HMC-WM

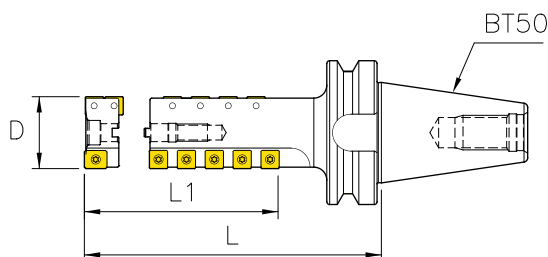


LPMT,SPMT

• INSERT ⇒ TAEGU-TEC, WALTER

Order No. 주문형번	Dimension (mm)					No.of Insert						Price
	D	d	L	L1								
HMC - 5080135	50	80	135	76	4	2/14	FPB-5024 FPB-5034	LPMT 150412	SPMT 120408	TSB-243	TXD-20	356,000
HMC - 5080155	50	80	155	96	4	2/18						456,000
HMC - 5080185	50	80	185	126	4	2/24						684,000
HMC - 5080205	50	80	205	146	4	2/28						827,000
HMC - 5080225	50	80	225	166	4	2/32						890,000
HMC - 6380135	63	80	135	86	4	2/16	FPB-6334 FPB-6344					420,000
HMC - 6380165	63	80	165	116	4	2/22						527,000
HMC - 6380195	63	80	195	146	4	2/28						705,000
HMC - 6380235	63	80	235	186	4	2/36						967,000
HMC - 8080155	80	80	155	106	6	3/30						FPB-8034

HMC-BT



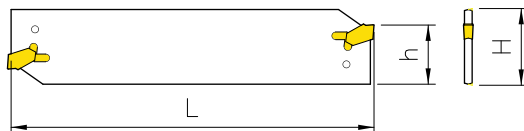
• INSERT ⇒ TAEGU-TEC, WALTER

Order No. 주문형번	Dimension (mm)				No.of Insert						Price			
	D	L	L1											
HMC - 50BT50185	50	185	110	4	2/22	FPB-5024 FPB-5034	LPMT 150412	SPMT 120408	TSB-243	TXD-20	954,000			
HMC - 50BT50205	50	205	130	4	2/26						1,240,000			
HMC - 50BT50235	50	235	166	4	2/32						1,383,000			
HMC - 50BT50255	50	255	180	4	2/36						1,527,000			
HMC - 63BT50165	63	165	90	4	2/18	FPB-6334 FPB-6344								1,145,000
HMC - 63BT50195	63	195	120	4	2/24						1,288,000			
HMC - 63BT50225	63	225	150	4	2/30						1,383,000			
HMC - 63BT50265	63	265	190	4	2/38						1,622,000			

HMC용 절삭 데이터 HMC Recommended Cutting Data

	Material 피삭재	Hardness 경도	Cutting Speed 절삭속도(WAP35Vc)	Feed Rate 날당이송 (mm/TOOTH)		
				Ø20~Ø32	Ø40~Ø65	Ø80~Ø125
P 강 Steel	일반강 General Steel	125~300	115~225	0.10	0.15	0.20
	경합금강 High Temp. Alloy Steel	180~350	80~195	0.008	0.12	0.15
	고합금강, 공구강 High Alloy Steel Tool Steel	200~325	55~110	0.08	0.12	0.15
	스테인레스강 마텐자이트계 Stainless Steel Martensite	200~240	65~110	0.06	0.08	0.12
M 스테인레스강 Stainless steel	스테인레스강 오스트나이트계 Stainless Steel Austenite	180~350		0.06	0.08	0.10
K 주철 Cast iron	회주철 Gray Cast iron	180~260	180~130	0.12	0.20	0.25
	구상흑연주철 Spheroidal Graphite Cast iron	160~250	100~115	0.10	0.15	0.20
	가단주철 Malleable Cast iron	130~230	105~130	0.10	0.15	0.20

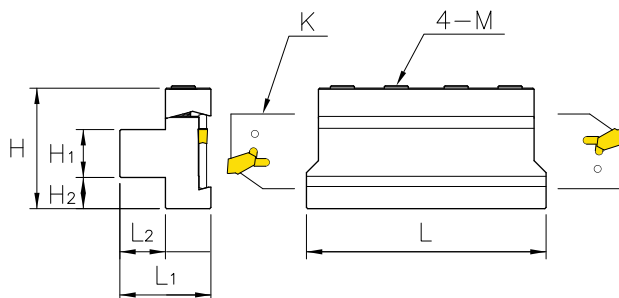
KCB (블레이드)



• INSERT ⇒ KORLOY

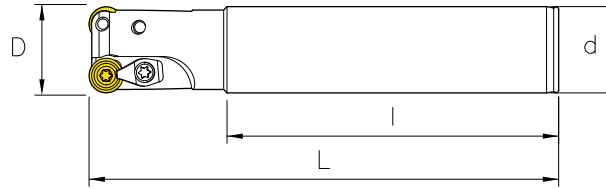
Order No. 주문형번	Dimension (mm)					Price
	H	h	L			
KCB26-2	26	21	110	SP200,200R/L	KWN-120	32,000
KCB26-3	26	21	110	SP300,300R/L		32,000
KCB26-4	26	21	110	SP400,400R/L		32,000
KCB32-2	32	25	150	SP200,200R/L		34,000
KCB32-3	32	25	150	SP300,300R/L		34,000
KCB32-4	32	25	150	SP400,400R/L		34,000
KCB32-5	32	25	150	SP500,500R/L		34,000

KCBB (블럭)



Order No. 주문형번	Dimension (mm)							K		Price
	H	H1	H2	L1	L2	L	M			
KCBB-2026	43	20	9	38	19	86	M6	KCB26	L-5	48,000
KCBB-2032	50	20	13	38	19	100	M6	KCB32		50,000
KCBB-2526	43	25	4	42	23	110	M6	KCB26		52,000
KCBB-2532	50	25	8	42	23	110	M6	KCB32		52,000
KCBB-3232	54	32	5	48	30	110	M6	KCB32		59,000

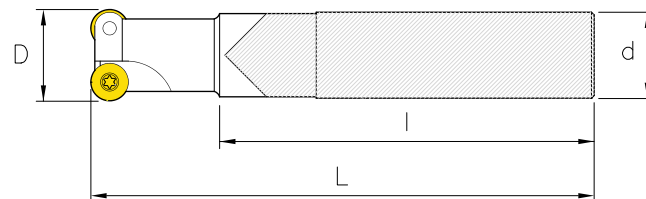
RDT



• INSERT ⇒ **HITACHI**

Order No. 주문형번	Dimension (mm)										Price
	D	d	L	l							
RDT-1616200-R4	16	16	200	160	2	RDMT0802	CS-0307	C-04	TSB-0305	TXL-9	50,000
RDT-1716200-R4	17	16	200	160	2						50,000
RDT-2020200-R4	20	20	200	160	2						58,000
RDT-2120150-R4	21	20	150	120	2						58,000
RDT-2120200-R4	21	20	200	160	2						58,000
RDT-2020200-R5	20	20	200	160	2	RDMT10T3	CS-0410	C-06	TSB-319	TXL-15	58,000
RDT-2120200-R5	21	20	200	160	2						59,000
RDT-2525200-R5	25	25	200	160	2						59,000
RDT-2625200-R5	26	25	200	160	2						59,000
RDT-2625150-R6	26	25	150	120	2						57,000
RDT-2625200-R6	26	25	200	170	2	RDMT1204			TSB-0410		59,000
RDT-3332200-R6	33	32	200	160	2						61,000
RDT-3332250-R6	33	32	250	200	2						63,000

C-RDT Carbide Shank



• INSERT ⇒ **HITACHI**

Order No. 주문형번	Dimension (mm)									Price
	D	d	L	l						
C-RDT-1312150-R2.5	13	12	150	110	2	RDMW0501	TSB-18045		TXL-6	250,000

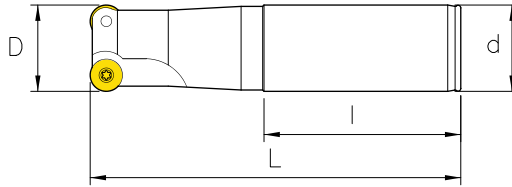
※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

• INSERT ⇒ **TUNGALOY**

Order No. 주문형번	Dimension (mm)									Price
	D	d	L	l						
C-RDT-1716200-R3.5	17	16	200	150	2	RDMW0702	TSB-25055		TXL-8	340,000

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

RMC

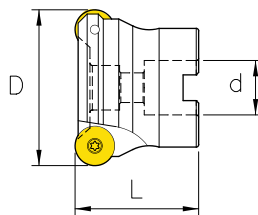


RXMX 12T3

• INSERT ⇒ **TAEGU-TEC**

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	l					
RMC - 3212150D	32	32	150	86	2				72,000
RMC - 3212200D	32	32	200	136	2				94,000
RMC - 3212250D	32	32	250	186	2				112,000
RMC - 3212300D	32	32	300	236	2				155,000
RMC - 3312200D	33	32	200	136	2				117,000
RMC - 3512150D	35	32	150	80	2				100,000
RMC - 3512200D	35	32	200	130	2				100,000
RMC - 3512250D	35	32	250	180	2				122,000
RMC - 4012150D	40	32	150	102	3				90,000
RMC - 4012200D	40	32	200	152	3				112,000
RMC - 4012250D	40	32	250	200	3				145,000
RMC - 5012150D	50	32	150	90	4				100,000
RMC - 5012150XD	50	42	150	90	4				100,000
RMC - 5012200D	50	42	200	150	4				167,000
RMC - 5012250D	50	42	250	200	4				190,000
RMC - 5012300D	50	42	300	250	4				224,000

RSC



RXMX 12T3

• INSERT ⇒ TAEGU-TEC

Order No. 주문형번	Dimension (mm)							Price
	D	d	L					
RSC - 401216D	40	16	40	3	RXMX 12T3	TSB - 3508	TXL-15	99,000
RSC - 501222D	50	22	40	4				109,000
RSC - 631222D	63	22	50	5				139,000
RSC - 631225D	63	25.4	50	5				139,000

RXMX 1604

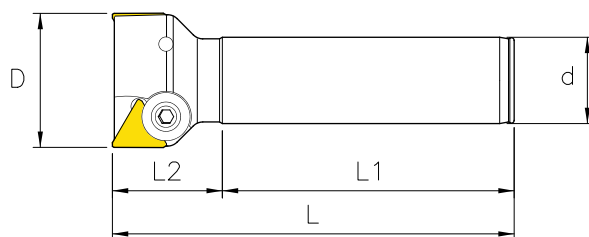
• INSERT ⇒ TAEGU-TEC

Order No. 주문형번	Dimension (mm)							Price
	D	d	L					
RSC - 501616D	50	16	40	3	RXMX 1604	TSB - 45110	TXL-20	109,000
RSC - 631622D	63	22	50	4				139,000
RSC - 801625D	80	25.4	50	5				179,000
RSC - 801627D	80	27	50	5				179,000

RSC용 절삭데이터

RSC Recommended Cutting Data

Material 피삭재		Hardness 경도	Cutting Depth 절삭깊이 (mm)	Cutting Speed 절삭속도 (m/min)	Inserts Grade 추천재종	Feed Rate 이송 (mm/TOOTH)				
						RDMX 05	RDMX 07	RDMX 10	RDMX 12	RDMX 16
P 강 Steel	저탄소강 Low Carbon Steel	85~175	0.75	300	P30	0.12-0.25	0.13-0.26	0.24-0.44	0.32-0.57	0.37-0.06
			1.50	280	P30	0.10-0.17	0.11-0.18	0.17-0.31	0.18-0.32	0.25-0.45
			2.50	260	P30	0.08-0.13	0.09-0.15	0.13-0.24	0.15-0.27	0.21-0.38
			3.50	240	P30	-	0.09-0.13	0.12-0.23	0.14-0.25	0.18-0.33
			4.5+	220	P30	-	-	0.12-0.23	0.13-0.24	0.16-0.30
	고탄소강 High Carbon Steel	175~225	0.75	250	P30	0.12-0.25	0.13-0.26	0.24-0.40	0.32-0.52	0.37-0.60
			1.50	230	P30	0.10-0.17	0.11-0.18	0.17-0.28	0.18-0.30	0.25-0.45
			2.50	200	P30	0.08-0.13	0.09-0.15	0.13-0.22	0.15-0.25	0.21-0.38
			3.50	170	P30	-	0.09-0.13	0.12-0.21	0.14-0.23	0.18-0.33
			4.5+	150	P30	-	-	0.12-0.21	0.13-0.22	0.16-0.30
	합금강 Alloy Steel	275~325	0.75	180	P30	0.11-0.23	0.12-0.23	0.24-0.34	0.32-0.45	0.32-0.55
			1.50	150	P30	0.08-0.17	0.10-0.18	0.17-0.24	0.18-0.25	0.21-0.36
			2.50	130	P30	0.07-0.12	0.09-0.15	0.13-0.19	0.15-0.20	0.18-0.31
			3.50	120	P30	-	0.09-0.13	0.12-0.18	0.14-0.17	0.16-0.27
			4.5+	100	P30	-	-	0.12-0.17	0.13-0.16	0.14-0.24
	공구강 Tool Steel	200~250	0.75	150	P30	0.11-0.19	0.12-0.19	0.24-0.34	0.32-0.45	0.32-0.55
			1.50	130	P30	0.08-0.12	0.10-0.15	0.17-0.24	0.18-0.25	0.21-0.35
			2.50	110	P30	0.07-0.12	0.09-0.13	0.13-0.18	0.15-0.20	0.18-0.30
			3.50	95	P30	-	0.09-0.12	0.12-0.16	0.14-0.17	0.16-0.25
			4.5+	85	P30	-	-	0.12-0.15	0.13-0.16	0.14-0.22
M 스테인리스강 Stainless steel	스테인리스 300시리즈 Stainless 300Series		0.75	45	M30	0.09-0.17	0.11-0.18	0.16-0.28	0.25-0.37	0.27-0.42
			1.50	35	M30	0.07-0.10	0.09-0.12	0.12-0.21	0.14-0.21	0.18-0.31
			2.50	30	M30	0.05-0.10	0.06-0.10	0.10-0.16	0.11-0.17	0.15-0.26
			3.50	25	M30	-	0.05-0.10	0.09-0.15	0.10-0.16	0.13-0.24
			4.5+	25	M30	-	-	0.09-0.15	0.10-0.15	0.11-0.19
	스테인리스 400시리즈 Stainless 400Series		0.75	60	M30	0.09-0.17	0.11-0.18	0.16-0.28	0.25-0.37	0.27-0.42
			1.50	50	M30	0.07-0.10	0.09-0.12	0.12-0.21	0.14-0.21	0.18-0.31
			2.50	45	M30	0.05-0.10	0.06-0.10	0.10-0.16	0.11-0.17	0.15-0.26
			3.50	40	M30	-	0.05-0.10	0.09-0.15	0.10-0.16	0.13-0.24
			4.5+	35	M30	-	-	0.09-0.15	0.10-0.15	0.11-0.19
K 주철 Cast iron	회주철 Grey Cast iron		0.75	210	K10	0.12-0.20	0.12-0.23	0.24-0.34	0.32-0.45	0.32-0.55
			1.50	170	K10	0.09-0.14	0.10-0.18	0.17-0.24	0.18-0.25	0.21-0.36
			2.50	140	K10	0.08-0.12	0.09-0.15	0.13-0.18	0.15-0.21	0.18-0.31
			3.50	120	K10	-	0.09-0.14	0.12-0.17	0.14-0.20	0.16-0.27
			4.5+	110	K10	-	-	0.12-0.17	0.13-0.18	0.14-0.24
	가단주철 Malleable Cast iron		0.75	210	K10	0.12-0.20	0.12-0.23	0.24-0.34	0.32-0.45	0.32-0.55
			1.50	170	K10	0.09-0.14	0.10-0.18	0.17-0.24	0.18-0.25	0.21-0.36
			2.50	140	K10	0.08-0.12	0.09-0.15	0.13-0.18	0.15-0.21	0.18-0.31
			3.50	130	K10	-	0.09-0.14	0.12-0.17	0.14-0.20	0.16-0.27
			4.5+	120	K10	-	-	0.12-0.17	0.13-0.18	0.14-0.24
N 비철금속 Nonferrous metals	알루미늄합금 Aluminium Alloy		0.75	500+	K10	-	-	-	0.8-1.5	-
			1.50	500+	K10	-	-	-	0.7-1.4	-
			2.50	500+	K10	-	-	-	0.6-1.2	-
			3.50	450+	K10	-	-	-	0.5-0.8	-
			4.5+	400+	K10	-	-	-	0.3-0.7	-
S 내열합금 Super-alloys and titanium	Inconel 하스텔로이 와스팔로이		0.75	180	M30	0.11-0.25	0.12-0.24	0.24-0.40	0.32-0.52	0.32-0.55
			1.50	170	M30	0.08-0.17	0.10-0.17	0.17-0.25	0.18-0.27	0.21-0.35
			2.50	150	M30	0.07-0.11	0.09-0.14	0.13-0.18	0.15-0.21	0.18-0.30
			3.50	130	M30	-	0.09-0.12	0.12-0.16	0.14-0.17	0.16-0.25
			4.5+	110	M30	-	-	0.12-0.15	0.13-0.16	0.14-0.22
	티타늄 Titanium 6AL-4V		0.75	220	M30	0.11-0.19	0.12-0.24	0.24-0.40	0.32-0.52	0.32-0.55
			1.50	180	M30	0.08-0.12	0.10-0.17	0.17-0.25	0.18-0.27	0.21-0.36
			2.50	160	M30	0.07-0.12	0.09-0.14	0.13-0.18	0.15-0.21	0.18-0.31
			3.50	140	M30	-	0.09-0.12	0.12-0.16	0.14-0.17	0.16-0.27
			4.5+	110	M30	-	-	0.12-0.15	0.13-0.16	0.14-0.24

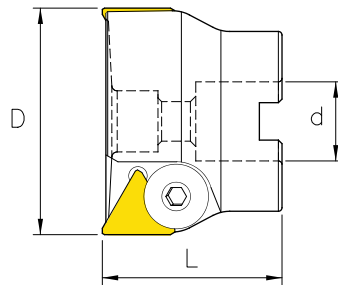


TP..1603, 2204

• INSERT ⇒ ISO

Order No. 주문형번	Dimension (mm)									Price
	D	d	L	L1	L2					
SSC-4016120	40	32	120	85	40	3	TP..1603	CSB-6012	L-4	71,000
SSC-4016150	40	32	150	110	40	3				75,000
SSC-4016200	40	32	200	160	40	3				89,000
SSC-5016120	50	32	120	80	40	3				75,000
SSC-5016150	50	32	150	110	40	3				79,000
SSC-6316120	63	32	120	80	40	3				94,000
SSC-5022150	50	32	150	100	40	3	TP..2204	CSB-8012	L-4	91,000
SSC-5022150X	50	42	150	100	40	3				98,000
SSC-5022200	50	32	200	150	40	3				106,000
SSC-5022200X	50	42	200	150	40	3				106,000
SSC-5022250	50	32	250	150	40	3				128,000
SSC-5022250X	50	42	250	150	40	3				128,000
SSC-6322150	63	32	150	110	40	3				114,000
SSC-6322150X	63	42	150	100	40	3				116,000
SSC-6322200X	63	42	200	160	40	3				144,000

SSC

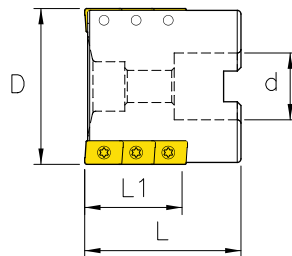


TP..1603, 2204

• INSERT ⇒ ISO

Order No. 주문형번	Dimension (mm)									Price
	D	d	L							
SSC - 632222	63	22	50	3	-	-	TP..2204	CSB-8018	L-5	110,000
SSC - 6322254	63	25.4	50	3	-	-				110,000
SSC - 8022254	80	25.4	50	4	CST 42SE	TSB-30070S				184,000

SEC

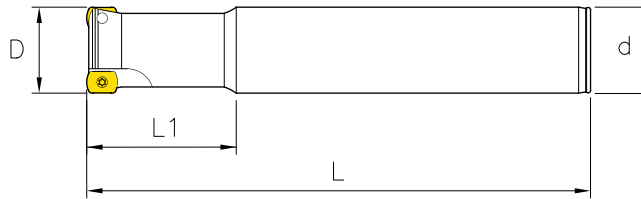


APKT 1604

• INSERT ⇒ KORLOY, SECO

Order No. 주문형번	Dimension (mm)					No. of Insert				Price
	D	d	L	L1						
SEC - 502255 SE	50	22	55	55	3	9	APKT 1604	TSB - 0410	TXD-15	250,000
SEC - 632763 SE	63	27	63	63	4	12				363,000
SEC - 803285 SE	80	32	85	85	5	25				635,000

TEBL-06



• INSERT ⇒ **TAEGUTEC**

Order No. 주문형번	Dimension (mm)									Price
	D	d	L	L1	ap					
TEBL-216-16-06-L200	16	16	200	40	0.7	2	BLMP0603R	TSB-2545	TXL-8	76,000
TEBL-217-16-06-L150	17	16	150	40	0.7	2				72,000
TEBL-217-16-06-L200	17	16	200	20	0.7	2				76,000
TEBL-320-20-06-L200	20	20	200	40	1	3				90,000
TEBL-321-20-06-L200	21	20	200	20	1	3				90,000
TEBL-325-25-06-L200	25	25	200	40	1	3				102,000
TEBL-326-25-06-L200	26	25	200	30	1	3				102,000
TEBL-426-25-06-L200	26	25	200	30	1	4				105,000
TEBL-532-32-06-L200	32	32	200	40	1	5				108,000
TEBL-533-32-06-L200	33	32	200	40	1	5				108,000

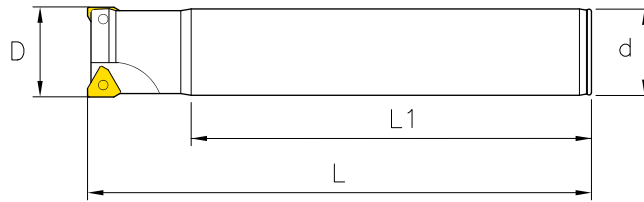
TEBL-09



• INSERT ⇒ **TAEGUTEC**

Order No. 주문형번	Dimension (mm)									Price
	D	d	L	L1	ap					
TEBL-326-25-09-L200	26	25	200	30	1.5	3	BLMP 0904R	TSB-3508C	TXL-10	102,000
TEBL-433-32-09-L200	33	32	200	30	1.5	4				108,000

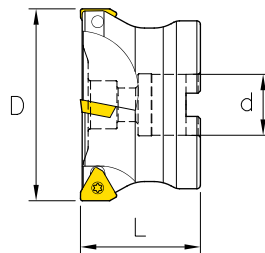
TE90



• INSERT ⇒ **TAEGUTEC**

Order No. 주문형번	Dimension (mm)								Price
	D	d	L	L1					
TE90 220-W20-10-120	20	20	120	92	2	3PKT-1004	TSB-25065R	T-8	87,000
TE90 221-20-10-200	21	20	200	167	2				97,000
TE90 325-W25-10-120	25	25	120	87	3				102,000
TE90 226-25-10-200	26	25	200	167	2				111,000
TE90 330-25-10-250	30	25	250	60	3				123,000
TE90 332-32-10-250	32	32	250	60	3	3PKT-1505	TSB-0410R	T-15	123,000
TE90 332-W32-15-150	32	32	150	107	3				117,000
TE90 332-32-15-250	32	32	250	187	3				123,000
TE90 333-32-15-250	33	32	250	60	3				123,000
TE90 340-W32-15-150	40	32	150	110	3				125,000
TE90 340-32-15-250	40	32	250	165	3	3PKT-1906	TSB-4512R	T-20	138,000
TE90 340-32-19-150	40	32	150	105	3				125,000
TE90 340-32-19-250	40	32	250	205	3				138,000

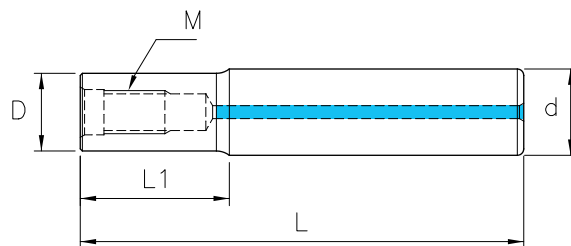
TF90



• INSERT ⇒ **TAEGUTEC**

Order No. 주문형번	Dimension (mm)							Price
	D	d	L					
TF90 450-22R15	50	22	40	4	3PKT-1505	TSB-0410R	T-15	125,000
TF90 463-22R-15	63	22	40	4				159,000
TF90 480-25.4R-15	80	25.4	50	4				201,000
TF90 8100-31.75R-15	100	31.75	50	8				296,000
TF90 663-22R-19	63	22	40	6				172,000
TF90 780-25.4R-19	80	25.4	50	7	3PKT-1906	TSB-4512R	T-20	222,000
TF90 8100-31.75R-19	100	31.75	50	8				296,000

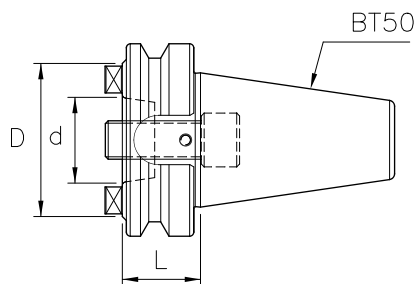
CARBIDE MODULAR SHANK



Order No. 주문형번	Dimension (mm)					Price
	ØD	Ød	L	L1	M	
CMS - 10M06080	9.8	10	80	24	M6	155,000
CMS - 10M06150	9.8	10	150	24	M6	188,000
CMS - 12M06080	10.8	12	80	30	M6	157,000
CMS - 12M06150	10.8	12	150	30	M6	196,000
CMS - 14M08080	14	14	80	80	M8	210,000
CMS - 16M08080	14.4	16	80	24	M8	215,000
CMS - 16M08120	14.4	16	120	24	M8	245,000
CMS - 16M08150	14.4	16	150	24	M8	295,000
CMS - 16M08200	14.4	16	200	24	M8	310,000
CMS - 18M10200	18	18	200	200	M10	420,000
CMS - 20M10120	18	20	120	40	M10	350,000
CMS - 20M10200	18	20	200	40	M10	480,000
CMS - 20M10250	18	20	250	40	M10	520,000
CMS - 25M12125	22.5	25	125	60	M12	470,000
CMS - 25M12165	22.5	25	165	100	M12	580,000
CMS - 25M12200	22.5	25	200	48	M12	635,000
CMS - 25M12250	22.5	25	250	48	M12	680,000
CMS - 25M12300	22.5	25	300	100	M12	830,000
CMS - 32M16200	28.6	32	200	56	M12	930,000
CMS - 32M16300	28.6	32	300	56	M16	1,290,000

※ 초경소재 가격 변동, 정가 변동이 있을 수 있습니다.

BT-WMA WALTER MODULAR ARBOR



Order No. 주문형번	Dimension (mm)				Price
	D	d	L	M	
BT50-WMA-63040	63	31.75	40	M24	212,000
BT50-WMA-80040	80	44.45	40	M24	212,000

SPARE PART

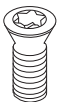
Screw / Wrench



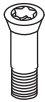
SCREW

Type of Screw	Part No.	Dimension (mm)		Wrench	Applicable Holder	Price
		M	L			
	TSB-3508	M 3.5	8.0	TX - 15	CMN	3,200
	TSB - 0204	M 2.0	4.0	TX - 6	B2S	3,200
	TSB - 22060	M 2.2	6.0	TX - 6		3,200
	TSB - 25065	M 2.5	6.5	TX - 7		3,200
	TSB - 0307	M 3.0	7.0	TX - 9		3,200
	TSB - 3508	M 3.5	8.0	TX - 15		3,200
	TSB - 0410	M 4.0	10.0	TX - 15		3,800
	TSB - 45110	M 4.5	11.0	TX - 20		3,800
	TSB - 0204	M 2.0	4.0	TX - 6	B3S	3,800
	TSB - 25055M	M 2.5	5.5	TX - 8		3,000
	TSB - 0307	M 3.0	7.0	TX - 9		3,200
	TSB - 3508	M 3.5	8.0	TX - 15		3,200
	TSB - 0510	M 5.0	10.0	TX - 20		3,800
	TSB - 20045	M 2.0	4.5	TX - 6	B4	3,800
	TSB - 22060	M 2.2	6.0	TX - 6		3,200
	TSB - 25065	M 2.5	6.5	TX - 7		3,200
	TSB - 0408	M 4.0	8.0	TX - 15		3,800
	TSB - 0510	M 5.0	10.0	TX - 20		3,800
	TSB - 60120	M 6.0	12.0	TX - 25		3,800
	TSB - 18045	M 1.8	4.5	TX - 6	B5S	3,200
	TSB - 22060	M 2.2	6.0	TX - 6		3,200
	TSB - 25065	M 2.5	6.5	TX - 7		3,200
	TSB - 0307	M 3.0	7.0	TX - 9		3,200
	TSB - 3508	M 3.5	8.0	TX - 15		3,200
	TSB - 0410	M 4.0	10.0	TX - 15		3,800
	TSB - 0204	M 2.0	4.0	TX - 6	B6	3,200
	TSB - 22060	M 2.2	6.0	TX - 6		3,200
	TSB - 25065	M 2.5	6.5	TX - 7		3,200
	TSB - 3508	M 3.5	8.0	TX - 15		3,200
	TSB - 0410	M 4.0	10.0	TX - 15		3,800
	TSB - 243	M 5.0	11.0	TX - 20		4,300
	BS7 - 20040	M 2.0	4.0	TX - 7	B7	4,300
	BS7 - 20050	M 2.0	5.0	TX - 7		4,300
	BS7 - 25060	M 2.5	6.0	TX - 8		4,300
	BS7 - 30070	M 3.0	7.0	TX - 9		4,300
	BS7 - 40095	M 4.0	9.5	TX - 15		4,900
	BS7 - 50150	M 5.0	15.0	TX - 20		4,900
	BS7 - 60190	M 6.0	18.0	TX - 25		5,700
	JTB - 08115	M 8.0	11.5	L - 4.0	MUE, MUB	3,500
	JTB - 10145	M 10.0	14.5	L - 5.0		3,500
	JTB - 12175	M 12.0	17.5	L - 6.0		3,500
	JTB - 12195	M 12.0	19.5	L - 6.0		3,500

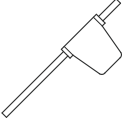
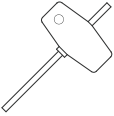
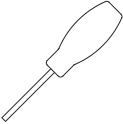
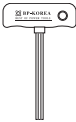
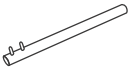
SCREW

Type of Screw	Part No.	Dimension (mm)		Wrench	Applicable Holder	Price
		M	L			
	TSB-18045	M 1.8	4.5	T 6	EMC-06, C-RDT	3,200
	TSB-0204	M 2.0	4	T 6	AQX	3,200
	TSB-2245	M 2.2	4.5	T 6	CET	3,200
	TSB-2545	M 2.5	5.2	T 8	AJX, TEBL	3,200
	TSB-25055S	M 2.5	5.5	T 7		3,200
	TSB-25055	M 2.5	5.5	T 8	BNC, EMC-09, EMC-11, AQX	3,200
	TSB-0305	M 3.0	5	T 9	RDT	3,200
	TSB-0307	M 3.0	7	T 9	WN09	3,200
	TSB-3007S	M 3.0	7	T 9	SSC	3,200
	TSB-319	M 4.0	8	T 15	BNC	4,300
	TSB-03565	M 3.5	6.5	T 15	ASRL	4,300
	TSB-3508A	M 3.5	8	T 15	AJX	3,200
	TSB-3508S	M 3.5	7	T 10	TEBL, EMC-12	3,200
	TSB-3508C	M 3.5	8	T 10	TEBL, EMC-12	3,200
	TSB-3508	M 3.5	8	T 15	CMN, RSC, BMC	3,200
	TSB-0408	M 4.0	8	T 15	EMC-17, EMC-16, AQX	3,800
	TSB-0410	M 4.0	10	T 15	EMC-17, EMC-16, HEC, ESC	3,800
	TSB-45110	M 4.5	11	T 20	RSC	3,800
	TSB-5010	M 5.0	10	T 20	AQX, CSC	3,800
	TSB-243	M 5.0	11	T 20	BNC	4,300
	TSB-1635	M 1.6	3.5	T 6	SCLCR 03	6,000
	TSB-2035	M 2.0	3.0	T 6	SCLCR 04	3,200
	TSB-0204	M 2.0	4.0	T 6	SCLCR 04	3,200
	TSB-2245	M 2.2	4.5	T 6	STFPR 08	3,200
	TSB-2545	M 2.5	5.0	T 8	SCLCR 06	3,200
	TSB-25055	M 2.5	5.5	T 8	SCLCR, SDUCR 07, STFPR 11	3,200
	TSB-0307	M 3.0	7	T 9	STFPR 11	3,200
	TSB-3508	M 3.5	8	T 15	SCLCR 09, SDUCR 11	3,200
	TSB-3507	M 3.5	7	T 15	SCLCR 09	3,200
	WS - 08M	M 8.0	17	L - 4	FSC, SSC	6,000
	WS - 08	M 8.0	21	L - 4		6,000
	CS - 3012	M 3.0	12	L - 2.5	FSC, SSC	3,200
	CS - 4010	M 4.0	10	L - 2.5		3,200
	CSB - 6012	M 6.0	12	L - 4	SSC, CAC, CPC	7,000
	CSB - 8012	M 8.0	12	L - 4		8,600
	CSB - 8018	M 8.0	18	L - 5		8,600
	FPB - 5024	M 12	54	L - 8	HMC	12,000
	FPB - 5034	M 12	64	L - 8		14,000
	FPB - 5050	M 12	80	L - 8		21,000
	FPB - 6334	M 16	71	L - 10		15,000
	FPB - 6344	M 16	81	L - 10		18,500
	FPB - 8034	M 16	82	L - 12		22,500

SCREW

Type of Screw	Part No.	Dimension (mm)		Wrench	Applicable Holder	Price
		M	L			
	TSB-5841	M 3.0	6.7	T - 8	ABP	8,600
	TSB-5842	M 3.5	8.2	T - 10		8,600
	TSB-5843	M 5.0	9.9	T - 20		8,600
	TSB-5844	M 5.0	13.4	T - 20		8,600
	TSB-5845	M 6.0	16.9	T - 25		8,600
	TSB-5846	M 6.0	21.8	T - 30		8,600
	TSB-5847	M 8.0	25	T - 30		8,600
	BWM-1650	M 16.0		L - 14	WMA-ARBOR	16,500
	BWM-2050	M 20.0		L - 17		16,500
	BSM-2615	M 26.0				30,000
	BSM-3015	M 30.0				30,000
	MHB-12170	M 12.0	17	L - 5	BNC-WM	3,500
	M506SS	M 5.0	6	L - 2.5	B6T	600
	M508SS	M 5.0	8	L - 2.5		600
	M608SS	M 6.0	8	L - 3		600
	M506CP	M 5.0	6	L - 2.5		1,000
	M508CP	M 5.0	8	L - 2.5		1,000
	M610CP	M 6.0	10	L - 3		1,200
	TSB-25065R	M 2.5	6.5	T - 8	TE90, TF90	3,200
	TSB-0410R	M 4.0	10	T - 15		3,800
	TSB-4512R	M 4.5	12	T - 20		3,800
	LC-04				RSC	8,000
	CST-42SE				RSC	8,500
	C - 04				AIX, ASRL, RDT	6,000
	C - 05					6,000
	C - 06					6,000

WRENCH

Type of Wrench	Type	Wrench	Price
	Flag Type	TXL-6	7,500
		TXL-7	7,500
		TXL-8	7,500
		TXL-9	7,500
		TXL-10	7,500
		TXL-15	7,500
		TXL-20	7,500
	Butterfly Type	TXK-8	16,000
		TXK-9	16,000
		TXK-10	16,000
		TXK-15	19,500
		TXK-20	19,500
	Driver Type	TXD-8	13,000
		TXD-9	13,000
		TXD-10	13,000
		TXD-15	13,000
		TXD-20	13,000
	T Type	TXT-8	15,000
		TXT-15	17,500
		TXT-20	17,500
		TXT-25	20,500
		TXT-30	21,500
	L - Wrench	L-4	3,000
		L-5	3,000
		L-6	3,300
		L-8	3,300
		L10	3,300
	T - Wrench	TL-4	18,500
		TL-5	18,500
	BLADE Wrench	KWN-120	3,500

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