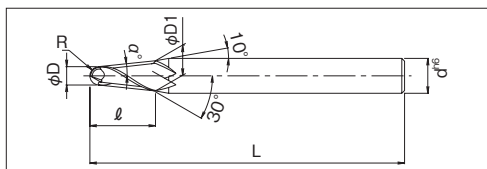


テーパボールエンドミル

2-Flute Taper Ball End Mill

ATBES-2



■ 最大テーパ角15° まで標準化した小径テーパボールエンドミルです。

Micro Taper Ball End Mill with largest taper angle to 15°

外径公差	R公差
φD Tolerance	R Tolerance
+0~-0.015	+0~-0.005
+0~-0.025	+0~-0.01
+0~-0.035	+0~-0.015

R0.05~0.45
R0.5~0.95
R1~1.5



単位 Unit : mm

型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-20101	0.05	0.5	30°	0.11	35	3	33,300
ATBES-20102	0.05	0.5	1°	0.12	35	3	33,300
ATBES-20103	0.05	0.5	1°30′	0.12	35	3	33,300
ATBES-20104	0.05	0.5	2°	0.13	35	3	33,300
ATBES-20105	0.05	0.5	2°30′	0.14	35	3	33,300
ATBES-20106	0.05	0.5	3°	0.15	35	3	33,300
ATBES-20107	0.05	0.5	4°	0.16	35	3	33,300
ATBES-20108	0.05	0.5	5°	0.18	35	3	34,800
ATBES-20109	0.05	0.5	7°	0.21	35	3	34,800
ATBES-20110	0.05	0.5	10°	0.26	35	3	36,700
ATBES-20111	0.05	0.5	15°	0.34	35	3	42,200
ATBES-20201	0.1	1	30°	0.22	35	3	33,300
ATBES-20202	0.1	1	1°	0.23	35	3	33,300
ATBES-20203	0.1	1	1°30′	0.25	35	3	33,300
ATBES-20204	0.1	1	2°	0.26	35	3	33,300
ATBES-20205	0.1	1	2°30′	0.28	35	3	33,300
ATBES-20206	0.1	1	3°	0.29	35	3	33,300
ATBES-20207	0.1	1	4°	0.33	35	3	33,300
ATBES-20208	0.1	1	5°	0.36	35	3	34,200
ATBES-20209	0.1	1	7°	0.42	35	3	34,200
ATBES-20210	0.1	1	10°	0.52	35	3	35,800
ATBES-20211	0.1	1	15°	0.69	35	3	38,300
ATBES-20301	0.15	1.5	30°	0.32	35	3	21,700
ATBES-20302	0.15	1.5	1°	0.35	35	3	21,700
ATBES-20303	0.15	1.5	1°30′	0.37	35	3	21,700
ATBES-20304	0.15	1.5	2°	0.39	35	3	21,700
ATBES-20305	0.15	1.5	2°30′	0.42	35	3	21,700

単位 Unit : mm

型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-20306	0.15	1.5	3°	0.44	35	3	21,700
ATBES-20307	0.15	1.5	4°	0.49	35	3	21,700
ATBES-20308	0.15	1.5	5°	0.54	35	3	22,700
ATBES-20309	0.15	1.5	7°	0.63	35	3	22,700
ATBES-20310	0.15	1.5	10°	0.78	35	3	26,000
ATBES-20311	0.15	1.5	15°	1.03	35	3	28,800
ATBES-20401	0.2	2	30'	0.43	35	3	21,500
ATBES-20402	0.2	2	1°	0.46	35	3	21,500
ATBES-20403	0.2	2	1°30'	0.49	35	3	21,500
ATBES-20404	0.2	2	2°	0.53	35	3	21,500
ATBES-20405	0.2	2	2°30'	0.56	35	3	21,500
ATBES-20406	0.2	2	3°	0.59	35	3	21,500
ATBES-20407	0.2	2	4°	0.65	35	3	21,500
ATBES-20408	0.2	2	5°	0.72	35	3	22,700
ATBES-20409	0.2	2	7°	0.85	35	3	22,700
ATBES-20410	0.2	2	10°	1.04	35	3	26,000
ATBES-20411	0.2	2	15°	1.38	35	3	28,800
ATBES-20501	0.25	2	30'	0.53	35	3	20,200
ATBES-20502	0.25	2	1°	0.56	35	3	20,200
ATBES-20503	0.25	2	1°30'	0.59	35	3	20,200
ATBES-20504	0.25	2	2°	0.62	35	3	20,200
ATBES-20505	0.25	2	2°30'	0.65	35	3	20,200
ATBES-20506	0.25	2	3°	0.68	35	3	20,200
ATBES-20507	0.25	2	4°	0.75	35	3	20,200
ATBES-20508	0.25	2	5°	0.81	35	3	21,700
ATBES-20509	0.25	2	7°	0.93	35	3	21,700
ATBES-20510	0.25	2	10°	1.12	35	3	24,200
ATBES-20511	0.25	2	15°	1.46	35	3	27,800
ATBES-20601	0.3	3	30'	0.65	35	3	20,200
ATBES-20602	0.3	3	1°	0.69	35	3	20,200
ATBES-20603	0.3	3	1°30'	0.74	35	3	20,200
ATBES-20604	0.3	3	2°	0.79	35	3	20,200
ATBES-20605	0.3	3	2°30'	0.84	35	3	20,200
ATBES-20606	0.3	3	3°	0.88	35	3	20,200
ATBES-20607	0.3	3	4°	0.98	35	3	20,200
ATBES-20608	0.3	3	5°	1.07	35	3	21,700
ATBES-20609	0.3	3	7°	1.27	35	3	21,700
ATBES-20610	0.3	3	10°	1.56	35	3	24,200
ATBES-20611	0.3	3	15°	2.07	35	3	27,800
ATBES-20701	0.35	3	30'	0.75	35	3	19,000
ATBES-20702	0.35	3	1°	0.79	35	3	19,000
ATBES-20703	0.35	3	1°30'	0.84	35	3	19,000
ATBES-20704	0.35	3	2°	0.89	35	3	19,000
ATBES-20705	0.35	3	2°30'	0.93	35	3	19,000

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型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-20706	0.35	3	3°	0.98	35	3	19,000
ATBES-20707	0.35	3	4°	1.07	35	3	19,000
ATBES-20708	0.35	3	5°	1.17	35	3	19,000
ATBES-20709	0.35	3	7°	1.36	35	3	20,500
ATBES-20710	0.35	3	10°	1.65	35	3	20,500
ATBES-20711	0.35	3	15°	2.14	35	3	24,200
ATBES-20801	0.4	4	30'	0.86	35	3	19,000
ATBES-20802	0.4	4	1°	0.93	35	3	19,000
ATBES-20803	0.4	4	1°30'	0.99	35	3	19,000
ATBES-20804	0.4	4	2°	1.05	35	3	19,000
ATBES-20805	0.4	4	2°30'	1.12	35	3	19,000
ATBES-20806	0.4	4	3°	1.18	35	3	19,000
ATBES-20807	0.4	4	4°	1.31	35	3	19,000
ATBES-20808	0.4	4	5°	1.43	35	3	19,000
ATBES-20809	0.4	4	7°	1.69	35	3	20,500
ATBES-20810	0.4	4	10°	2.08	35	3	20,500
ATBES-20811	0.4	4	15°	2.76	35	3	24,200
ATBES-20901	0.45	4	30'	0.96	35	3	17,500
ATBES-20902	0.45	4	1°	1.02	35	3	17,500
ATBES-20903	0.45	4	1°30'	1.09	35	3	17,500
ATBES-20904	0.45	4	2°	1.15	35	3	17,500
ATBES-20905	0.45	4	2°30'	1.21	35	3	17,500
ATBES-20906	0.45	4	3°	1.27	35	3	17,500
ATBES-20907	0.45	4	4°	1.4	35	3	17,500
ATBES-20908	0.45	4	5°	1.52	35	3	19,000
ATBES-20909	0.45	4	7°	1.78	35	3	20,500
ATBES-20910	0.45	4	10°	2.17	35	3	20,500
ATBES-20911	0.45	4	15°	2.83	35	3	24,200
ATBES-21001	0.5	8	30'	1.13	50	4	16,300
ATBES-21002	0.5	8	1°	1.26	50	4	16,300
ATBES-21003	0.5	8	1°30'	1.39	50	4	16,300
ATBES-21004	0.5	8	2°	1.52	50	4	16,300
ATBES-21005	0.5	8	2°30'	1.66	50	4	16,300
ATBES-21006	0.5	8	3°	1.79	50	4	16,300
ATBES-21007	0.5	8	4°	2.05	50	4	16,300
ATBES-21008	0.5	8	5°	2.32	50	4	16,300
ATBES-21009	0.5	8	7°	2.85	50	4	17,000
ATBES-21010	0.5	8	10°	3.66	50	4	18,300
ATBES-21011	0.5	8	15°	5.05	50	6	23,000
ATBES-21101	0.55	8	30'	1.23	50	4	17,000
ATBES-21102	0.55	8	1°	1.36	50	4	17,000
ATBES-21103	0.55	8	1°30'	1.49	50	4	17,000
ATBES-21104	0.55	8	2°	1.62	50	4	17,000
ATBES-21105	0.55	8	2°30'	1.75	50	4	17,000

単位 Unit : mm

型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-21106	0.55	8	3°	1.88	50	4	17,000
ATBES-21107	0.55	8	4°	2.14	50	4	17,000
ATBES-21108	0.55	8	5°	2.41	50	4	17,000
ATBES-21109	0.55	8	7°	2.94	50	4	19,800
ATBES-21110	0.55	8	10°	3.74	50	4	19,800
ATBES-21111	0.55	8	15°	5.13	50	6	23,000
ATBES-21201	0.6	8	30'	1.33	50	4	17,000
ATBES-21202	0.6	8	1°	1.46	50	4	17,000
ATBES-21203	0.6	8	1°30'	1.59	50	4	17,000
ATBES-21204	0.6	8	2°	1.72	50	4	17,000
ATBES-21205	0.6	8	2°30'	1.85	50	4	17,000
ATBES-21206	0.6	8	3°	1.98	50	4	17,000
ATBES-21207	0.6	8	4°	2.24	50	4	17,000
ATBES-21208	0.6	8	5°	2.5	50	4	17,000
ATBES-21209	0.6	8	7°	3.03	50	4	19,800
ATBES-21210	0.6	8	10°	3.83	50	4	19,800
ATBES-21211	0.6	8	15°	5.21	50	6	23,000
ATBES-21301	0.65	8	30'	1.43	50	4	17,000
ATBES-21302	0.65	8	1°	1.56	50	4	17,000
ATBES-21303	0.65	8	1°30'	1.69	50	4	17,000
ATBES-21304	0.65	8	2°	1.81	50	4	17,000
ATBES-21305	0.65	8	2°30'	1.94	50	4	17,000
ATBES-21306	0.65	8	3°	2.07	50	4	17,000
ATBES-21307	0.65	8	4°	2.33	50	4	17,000
ATBES-21308	0.65	8	5°	2.59	50	4	17,000
ATBES-21309	0.65	8	7°	3.11	50	4	19,800
ATBES-21310	0.65	8	10°	3.91	50	4	19,800
ATBES-21311	0.65	8	15°	5.28	50	6	23,000
ATBES-21401	0.7	8	30'	1.53	50	4	17,000
ATBES-21402	0.7	8	1°	1.66	50	4	17,000
ATBES-21403	0.7	8	1°30'	1.78	50	4	17,000
ATBES-21404	0.7	8	2°	1.91	50	4	17,000
ATBES-21405	0.7	8	2°30'	2.04	50	4	17,000
ATBES-21406	0.7	8	3°	2.17	50	4	17,000
ATBES-21407	0.7	8	4°	2.42	50	4	17,000
ATBES-21408	0.7	8	5°	2.68	50	4	17,000
ATBES-21409	0.7	8	7°	3.2	50	4	19,700
ATBES-21410	0.7	8	10°	4	50	4	19,700
ATBES-21411	0.7	8	15°	5.36	50	6	23,000
ATBES-21501	0.75	8	30'	1.63	50	4	15,000
ATBES-21502	0.75	8	1°	1.75	50	4	15,000
ATBES-21503	0.75	8	1°30'	1.88	50	4	15,000
ATBES-21504	0.75	8	2°	2.01	50	4	15,000
ATBES-21505	0.75	8	2°30'	2.13	50	4	15,000

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型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-21506	0.75	8	3°	2.26	50	4	15,000
ATBES-21507	0.75	8	4°	2.52	50	4	15,000
ATBES-21508	0.75	8	5°	2.77	50	4	15,000
ATBES-21509	0.75	8	7°	3.29	50	4	15,000
ATBES-21510	0.75	8	10°	4.08	50	6	17,800
ATBES-21511	0.75	8	15°	5.44	50	6	20,500
ATBES-21601	0.8	8	30'	1.73	50	4	15,800
ATBES-21602	0.8	8	1°	1.85	50	4	15,800
ATBES-21603	0.8	8	1°30'	1.98	50	4	15,800
ATBES-21604	0.8	8	2°	2.1	50	4	15,800
ATBES-21605	0.8	8	2°30'	2.23	50	4	15,800
ATBES-21606	0.8	8	3°	2.36	50	4	15,800
ATBES-21607	0.8	8	4°	2.61	50	4	15,800
ATBES-21608	0.8	8	5°	2.87	50	4	15,800
ATBES-21609	0.8	8	7°	3.38	50	4	18,000
ATBES-21610	0.8	8	10°	4.16	50	6	18,000
ATBES-21611	0.8	8	15°	5.51	50	6	20,500
ATBES-21701	0.85	8	30'	1.82	50	4	15,800
ATBES-21702	0.85	8	1°	1.95	50	4	15,800
ATBES-21703	0.85	8	1°30'	2.08	50	4	15,800
ATBES-21704	0.85	8	2°	2.2	50	4	15,800
ATBES-21705	0.85	8	2°30'	2.33	50	4	15,800
ATBES-21706	0.85	8	3°	2.45	50	4	15,800
ATBES-21707	0.85	8	4°	2.7	50	4	15,800
ATBES-21708	0.85	8	5°	2.96	50	4	15,800
ATBES-21709	0.85	8	7°	3.47	50	4	18,000
ATBES-21710	0.85	8	10°	4.25	50	6	18,000
ATBES-21711	0.85	8	15°	5.59	50	6	20,500
ATBES-21801	0.9	8	30'	1.92	50	4	15,800
ATBES-21802	0.9	8	1°	2.05	50	4	15,800
ATBES-21803	0.9	8	1°30'	2.17	50	4	15,800
ATBES-21804	0.9	8	2°	2.3	50	4	15,800
ATBES-21805	0.9	8	2°30'	2.42	50	4	15,800
ATBES-21806	0.9	8	3°	2.55	50	4	15,800
ATBES-21807	0.9	8	4°	2.8	50	4	15,800
ATBES-21808	0.9	8	5°	3.05	50	4	15,800
ATBES-21809	0.9	8	7°	3.56	50	4	18,000
ATBES-21810	0.9	8	10°	4.33	50	6	18,000
ATBES-21811	0.9	8	15°	5.67	50	6	20,500
ATBES-21901	0.95	8	30'	2.02	50	4	15,800
ATBES-21902	0.95	8	1°	2.15	50	4	15,800
ATBES-21903	0.95	8	1°30'	2.27	50	4	15,800
ATBES-21904	0.95	8	2°	2.39	50	4	15,800
ATBES-21905	0.95	8	2°30'	2.52	50	4	15,800

単位 Unit : mm

型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-21906	0.95	8	3°	2.64	50	4	15,800
ATBES-21907	0.95	8	4°	2.89	50	4	15,800
ATBES-21908	0.95	8	5°	3.14	50	4	15,800
ATBES-21909	0.95	8	7°	3.65	50	4	17,800
ATBES-21910	0.95	8	10°	4.42	50	6	17,800
ATBES-21911	0.95	8	15°	5.75	50	6	20,500
ATBES-22001	1	12	30'	2.19	55	4	12,800
ATBES-22002	1	12	1°	2.38	55	4	12,800
ATBES-22003	1	12	1°30'	2.58	55	4	12,800
ATBES-22004	1	12	2°	2.77	55	4	12,800
ATBES-22005	1	12	2°30'	2.96	55	4	12,800
ATBES-22006	1	12	3°	3.16	55	4	12,800
ATBES-22007	1	12	4°	3.54	55	4	16,500
ATBES-22008	1	12	5°	3.93	55	4	16,500
ATBES-22009	1	12	7°	4.72	55	6	16,500
ATBES-22010	1	12	10°	5.91	55	6	19,700
ATBES-22011	1	12	15°	7.97	55	8	22,000
ATBES-22101	1.05	12	30'	2.29	55	4	12,800
ATBES-22102	1.05	12	1°	2.48	55	4	12,800
ATBES-22103	1.05	12	1°30'	2.67	55	4	12,800
ATBES-22104	1.05	12	2°	2.87	55	4	12,800
ATBES-22105	1.05	12	2°30'	3.06	55	4	12,800
ATBES-22106	1.05	12	3°	3.25	55	4	12,800
ATBES-22107	1.05	12	4°	3.64	55	4	16,500
ATBES-22108	1.05	12	5°	4.02	55	6	16,500
ATBES-22109	1.05	12	7°	4.8	55	6	16,500
ATBES-22110	1.05	12	10°	5.99	55	6	19,700
ATBES-22111	1.05	12	15°	8.04	55	10	22,000
ATBES-22201	1.1	12	30'	2.39	55	4	12,800
ATBES-22202	1.1	12	1°	2.58	55	4	12,800
ATBES-22203	1.1	12	1°30'	2.77	55	4	12,800
ATBES-22204	1.1	12	2°	2.96	55	4	12,800
ATBES-22205	1.1	12	2°30'	3.15	55	4	12,800
ATBES-22206	1.1	12	3°	3.35	55	4	12,800
ATBES-22207	1.1	12	4°	3.73	55	4	16,500
ATBES-22208	1.1	12	5°	4.12	55	6	16,500
ATBES-22209	1.1	12	7°	4.89	55	6	16,500
ATBES-22210	1.1	12	10°	6.08	55	8	19,700
ATBES-22211	1.1	12	15°	8.12	55	10	22,000
ATBES-22301	1.15	12	30'	2.49	55	4	12,800
ATBES-22302	1.15	12	1°	2.68	55	4	12,800
ATBES-22303	1.15	12	1°30'	2.87	55	4	12,800
ATBES-22304	1.15	12	2°	3.06	55	4	12,800
ATBES-22305	1.15	12	2°30'	3.25	55	4	12,800

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型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-22306	1.15	12	3°	3.44	55	4	12,800
ATBES-22307	1.15	12	4°	3.82	55	4	16,500
ATBES-22308	1.15	12	5°	4.21	55	6	16,500
ATBES-22309	1.15	12	7°	4.98	55	6	16,500
ATBES-22310	1.15	12	10°	6.16	55	8	19,700
ATBES-22311	1.15	12	15°	8.2	55	10	22,000
ATBES-22401	1.2	12	30'	2.59	55	4	12,800
ATBES-22402	1.2	12	1°	2.78	55	4	12,800
ATBES-22403	1.2	12	1°30'	2.97	55	4	12,800
ATBES-22404	1.2	12	2°	3.16	55	4	12,800
ATBES-22405	1.2	12	2°30'	3.35	55	4	12,800
ATBES-22406	1.2	12	3°	3.54	55	4	12,800
ATBES-22407	1.2	12	4°	3.92	55	4	16,500
ATBES-22408	1.2	12	5°	4.3	55	6	16,500
ATBES-22409	1.2	12	7°	5.07	55	6	16,500
ATBES-22410	1.2	12	10°	6.25	55	8	19,700
ATBES-22411	1.2	12	15°	8.27	55	10	22,000
ATBES-22501	1.25	12	30'	2.69	55	4	15,800
ATBES-22502	1.25	12	1°	2.88	55	4	15,800
ATBES-22503	1.25	12	1°30'	3.06	55	4	15,800
ATBES-22504	1.25	12	2°	3.25	55	4	15,800
ATBES-22505	1.25	12	2°30'	3.44	55	4	15,800
ATBES-22506	1.25	12	3°	3.63	55	4	15,800
ATBES-22507	1.25	12	4°	4.01	55	6	15,800
ATBES-22508	1.25	12	5°	4.39	55	6	16,700
ATBES-22509	1.25	12	7°	5.16	55	6	16,700
ATBES-22510	1.25	12	10°	6.33	55	8	21,200
ATBES-22511	1.25	12	15°	8.35	55	10	24,200
ATBES-22601	1.3	12	30'	2.79	55	4	15,800
ATBES-22602	1.3	12	1°	2.97	55	4	15,800
ATBES-22603	1.3	12	1°30'	3.16	55	4	15,800
ATBES-22604	1.3	12	2°	3.35	55	4	15,800
ATBES-22605	1.3	12	2°30'	3.54	55	4	15,800
ATBES-22606	1.3	12	3°	3.73	55	4	15,800
ATBES-22607	1.3	12	4°	4.1	55	6	15,800
ATBES-22608	1.3	12	5°	4.48	55	6	17,500
ATBES-22609	1.3	12	7°	5.25	55	6	17,500
ATBES-22610	1.3	12	10°	6.41	55	8	19,700
ATBES-22611	1.3	12	15°	8.43	55	10	24,200
ATBES-22701	1.35	12	30'	2.89	55	4	15,800
ATBES-22702	1.35	12	1°	3.07	55	4	15,800
ATBES-22703	1.35	12	1°30'	3.26	55	4	15,800
ATBES-22704	1.35	12	2°	3.45	55	4	15,800
ATBES-22705	1.35	12	2°30'	3.63	55	4	15,800

単位 Unit : mm

型番 CODE NUMBER	R	刃長 ℓ	片角 α°	大端径 φD1	全長 L	シャンク φd	定価 ¥
ATBES-22706	1.35	12	3°	3.82	55	4	15,800
ATBES-22707	1.35	12	4°	4.2	55	6	16,500
ATBES-22708	1.35	12	5°	4.57	55	6	17,500
ATBES-22709	1.35	12	7°	5.34	55	6	17,500
ATBES-22710	1.35	12	10°	6.5	55	8	19,700
ATBES-22711	1.35	12	15°	8.5	55	10	23,300
ATBES-22801	1.4	12	30′	2.99	55	4	15,800
ATBES-22802	1.4	12	1°	3.17	55	4	15,800
ATBES-22803	1.4	12	1°30′	3.36	55	4	15,800
ATBES-22804	1.4	12	2°	3.54	55	4	15,800
ATBES-22805	1.4	12	2°30′	3.73	55	4	15,800
ATBES-22806	1.4	12	3°	3.91	55	4	15,800
ATBES-22807	1.4	12	4°	4.29	55	6	16,500
ATBES-22808	1.4	12	5°	4.67	55	6	17,500
ATBES-22809	1.4	12	7°	5.42	55	6	17,500
ATBES-22810	1.4	12	10°	6.58	55	8	19,700
ATBES-22811	1.4	12	15°	8.58	55	10	23,300
ATBES-22901	1.45	12	30′	3.08	55	4	15,800
ATBES-22902	1.45	12	1°	3.27	55	4	15,800
ATBES-22903	1.45	12	1°30′	3.45	55	4	15,800
ATBES-22904	1.45	12	2°	3.64	55	4	15,800
ATBES-22905	1.45	12	2°30′	3.82	55	4	15,800
ATBES-22906	1.45	12	3°	4.01	55	6	15,800
ATBES-22907	1.45	12	4°	4.38	55	6	16,500
ATBES-22908	1.45	12	5°	4.76	55	6	17,500
ATBES-22909	1.45	12	7°	5.51	55	6	17,500
ATBES-22910	1.45	12	10°	6.67	55	8	19,700
ATBES-22911	1.45	12	15°	8.66	55	10	23,300
ATBES-23001	1.5	12	30′	3.18	55	4	15,800
ATBES-23002	1.5	12	1°	3.37	55	4	15,800
ATBES-23003	1.5	12	1°30′	3.55	55	4	15,800
ATBES-23004	1.5	12	2°	3.74	55	4	15,800
ATBES-23005	1.5	12	2°30′	3.92	55	4	15,800
ATBES-23006	1.5	12	3°	4.1	55	6	15,800
ATBES-23007	1.5	12	4°	4.48	55	6	16,500
ATBES-23008	1.5	12	5°	4.85	55	6	17,500
ATBES-23009	1.5	12	7°	5.6	55	6	17,500
ATBES-23010	1.5	12	10°	6.75	55	8	19,700
ATBES-23011	1.5	12	15°	8.73	55	10	23,300

ATES テーパーエンドミル/ATBES テーパーボール(2枚刃)

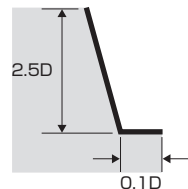
ATES-2 Taper End Mill/ATBES-2 Taper Ball End Mill

被削材 Work Materials	炭素鋼 SS材 S50C Carbon Steel			合金鋼 SCM SK材 Alloy Steel			調質鋼 NAK Prehardened Steel		
	刃径 Diameter	回転数 Speed (RPM)	側面 SideMilling (mm/min)	溝 Slotting (mm/min)	回転数 Speed (RPM)	側面 SideMilling (mm/min)	溝 Slotting (mm/min)	回転数 Speed (RPM)	側面 SideMilling (mm/min)
0.1	20,000	30	20~30	15,000	20	15~20	15,000	15	10~20
0.2	20,000	50	30	15,000	40	20	15,000	30	20
0.3	18,000	70	40	13,000	50	30	13,000	40	20
0.4~0.5	15,000	80	50	11,300	55	40	10,000	45	30
0.8	13,000	100	60	10,000	70	45	8,500	50	30
1	12,700	130	75	9,600	90	50	8,000	70	45
1.5	8,500	130	75	6,400	90	50	5,300	70	45
2	6,400	150	90	4,800	100	60	4,000	80	55
2.5	5,100	150	90	3,800	100	60	3,200	80	55
3	4,200	160	100	3,200	110	70	2,700	90	60

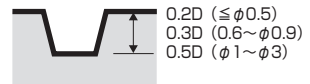
被削材 Work Materials	アルミ合金 Aluminium Alloy			銅合金 Copper Alloy		
	刃径 Diameter	回転数 Speed (RPM)	側面 SideMilling (mm/min)	溝 Slotting (mm/min)	回転数 Speed (RPM)	側面 SideMilling (mm/min)
0.1	25,000	100	60	20,000	70	40
0.2	25,000	100	60	20,000	70	40
0.3	22,000	150	60	18,000	100	40
0.4~0.5	20,000	150	90	18,000	100	60
0.8	18,000	200	90	15,000	150	60
1	17,500	250	150	14,300	190	100
1.5	11,700	250	150	9,600	190	100
2	8,800	300	180	7,200	230	130
2.5	7,000	300	180	5,700	230	130
3	5,800	330	210	4,800	250	150

ATES/ATBES 切り込み量
Depth of cut

側面加工 Side Milling



溝加工 Slotting



備考

- 1) 機械、チャックは剛性のある精度の高いものをご使用下さい。
- 2) チャッキング時のエンドミルの振れ精度は0.01mm以下に抑えて下さい。
- 3) ご使用の機械の最高回転数が上記切削条件に達しない場合は、なるべく安定領域での高い回転数で使用し、送り速度を調整して下さい。

Remarks:

- 1) Use a rigid and precise machine and holder.
- 2) The run out with an end mill in a spindle should be within 0.01mm.
- 3) When using low speed machines, use the maximum speed but in stable rotation range and adjust the feed rate.