

DRILLMEISTER

Tungaloy Report No. 412S1-G

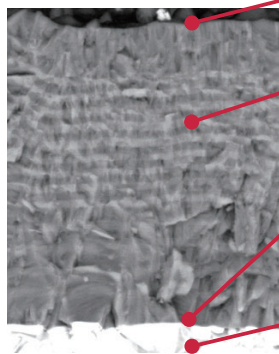
Expansion of wear resistant grade AH9130 with DMP head in range ø6 - 25.9 mm





Excellent-balanced wear resistance by unique multi layered coating optimized for drilling application

New AH9130



Feature 1: Resistance to builtup-edge

Coating layer to resist builtup-edge

Feature 2: Resistance to wear, oxidation, and fracture

2 coating layers for wear and oxidation resistance
Layered alternatively to prevent crack from propagating to fracture

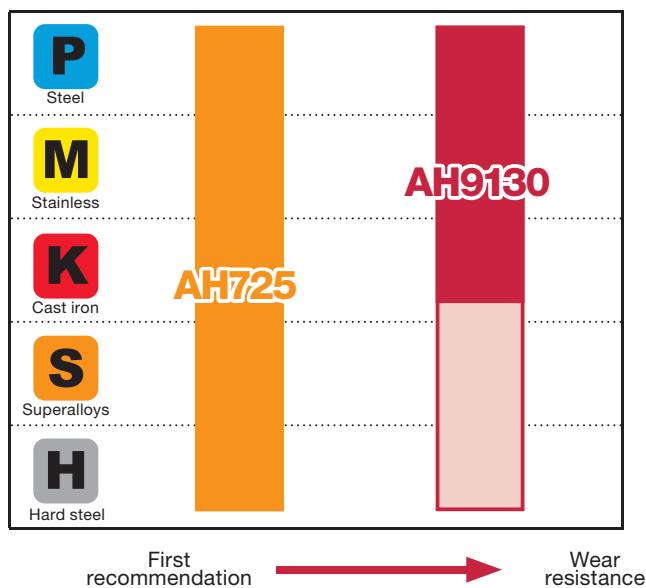
Feature 3: Strong coating-substrate adhesion

Coating is provided with strong adhesion between the coating layer and carbide substrate to prevent coating delamination

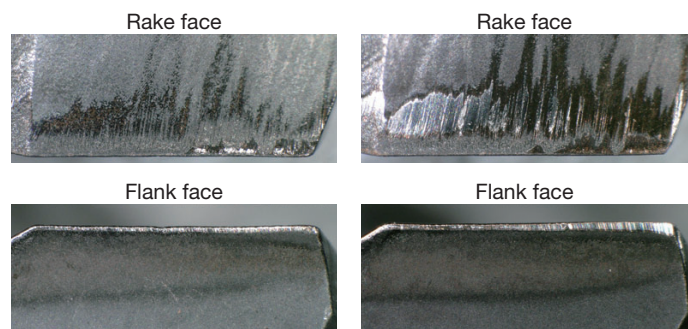
Substrate

Carbide substrate features wear and fracture resistance

Application range



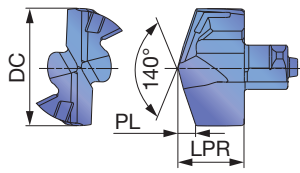
New AH9130



P Drill body	: TID085F12-5
Head	: DMP085 AH9130
Workpiece material	: S55C / C55
Cutting speed	: Vc = 100 m/min
Feed	: f = 0.12 mm/rev
Application	: Blind hole
Machining	: Vertical M/C BT30
Machining length	: 37 m
Coolant	: Internal coolant

DRILL HEAD

DMP General purpose



Tool diameter	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

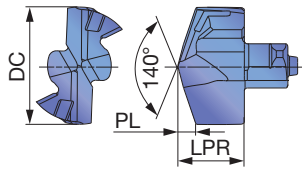
★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated		PL	SSC	Pocket Size	Body
			AH725	AH9130				
DMP060	6	3.9	●		1.09	6	6	TID*060...
DMP061	6.1	3.9	●		1.11	6	6	TID*060...
DMP062	6.2	3.9	●		1.13	6	6	TID*060...
DMP063	6.3	3.9	●		1.14	6	6	TID*060...
DMP064	6.4	3.9	●		1.16	6	6	TID*060...
DMP065	6.5	4.2	●		1.27	6.5	6.5	TID*065...
DMP066	6.6	4.2	●		1.29	6.5	6.5	TID*065...
DMP067	6.7	4.2	●		1.31	6.5	6.5	TID*065...
DMP068	6.8	4.2	●	●	1.33	6.5	6.5	TID*065...
DMP069	6.9	4.2	●		1.34	6.5	6.5	TID*065...
DMP070	7	4.5	●		1.03	7	7	TID*070...
DMP071	7.1	4.5	●		1.05	7	7	TID*070...
DMP072	7.2	4.5	●		1.07	7	7	TID*070...
DMP073	7.3	4.5	●		1.08	7	7	TID*070...
DMP074	7.4	4.5	●		1.1	7	7	TID*070...
DMP075	7.5	4.5	●	●	1.12	7	7	TID*075...
DMP076	7.6	4.5	●		1.14	7	7	TID*075...
DMP077	7.7	4.5	●		1.16	7	7	TID*075...
DMP078	7.8	4.5	●		1.18	7	7	TID*075...
DMP079	7.9	4.5	●		1.19	7	7	TID*075...
DMP080	8	5.3	●	●	1.2	8	8	TID*080...
DMP081	8.1	5.3	●		1.22	8	8	TID*080...
DMP082	8.2	5.3	●		1.24	8	8	TID*080...
DMP083	8.3	5.3	●		1.25	8	8	TID*080...
DMP084	8.4	5.3	●		1.27	8	8	TID*080...
DMP085	8.5	5.3	●	●	1.29	8	8	TID*085...
DMP086	8.6	5.3	●		1.31	8	8	TID*085...
DMP087	8.7	5.3	●		1.33	8	8	TID*085...
DMP088	8.8	5.3	●		1.35	8	8	TID*085...
DMP089	8.9	5.3	●		1.36	8	8	TID*085...
DMP090	9	5.7	●	●	1.37	9	9	TID*090...
DMP091	9.1	5.7	●		1.39	9	9	TID*090...
DMP092	9.2	5.7	●		1.41	9	9	TID*090...
DMP093	9.3	5.7	●		1.42	9	9	TID*090...
DMP094	9.4	5.7	●		1.44	9	9	TID*090...
DMP095	9.5	5.7	●	●	1.46	9	9	TID*095...
DMP096	9.6	5.7	●		1.48	9	9	TID*095...
DMP097	9.7	5.7	●		1.5	9	9	TID*095...
DMP098	9.8	5.7	●		1.52	9	9	TID*095...
DMP099	9.9	5.7	●		1.53	9	9	TID*095...
DMP100	10	6.1	●	●	1.47	10	10	TID*100...
DMP101	10.1	6.1	●		1.49	10	10	TID*100...

ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : New product
● : Line up

DMP General purpose



Tool diameter	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated		PL	SSC	Pocket Size	Body
			AH725	AH9130				
DMP102	10.2	6.1	●	●	1.51	10	10	TID*100...
DMP103	10.3	6.1	●	●	1.52	10	10	TID*100...
DMP104	10.4	6.1	●	●	1.54	10	10	TID*100...
DMP105	10.5	6.1	●	●	1.56	10	10	TID*105...
DMP106	10.6	6.1	●	●	1.58	10	10	TID*105...
DMP107	10.7	6.1	●	●	1.6	10	10	TID*105...
DMP108	10.8	6.1	●	●	1.62	10	10	TID*105...
DMP109	10.9	6.1	●	●	1.63	10	10	TID*105...
DMP110	11	6.5	●	●	1.67	11	11	TID*110...
DMP111	11.1	6.5	●	●	1.69	11	11	TID*110...
DMP112	11.2	6.5	●	●	1.71	11	11	TID*110...
DMP113	11.3	6.5	●	●	1.72	11	11	TID*110...
DMP114	11.4	6.5	●	●	1.74	11	11	TID*110...
DMP115	11.5	6.5	●	●	1.76	11	11	TID*115...
DMP116	11.6	6.5	●	●	1.78	11	11	TID*115...
DMP117	11.7	6.5	●	●	1.8	11	11	TID*115...
DMP118	11.8	6.5	●	●	1.82	11	11	TID*115...
DMP119	11.9	6.5	●	●	1.83	11	11	TID*115...
DMP120	12	6.8	●	●	1.82	12	12	TID*120...
DMP121	12.1	6.8	●	●	1.84	12	12	TID*120...
DMP122	12.2	6.8	●	●	1.86	12	12	TID*120...
DMP123	12.3	6.8	●	●	1.87	12	12	TID*120...
DMP124	12.4	6.8	●	●	1.89	12	12	TID*120...
DMP125	12.5	6.8	●	●	1.91	12	12	TID*125..
DMP126	12.6	6.8	●	●	1.93	12	12	TID*125..
DMP127	12.7	6.8	●	●	1.95	12	12	TID*125..
DMP128	12.8	6.8	●	●	1.97	12	12	TID*125..
DMP129	12.9	6.8	●	●	1.98	12	12	TID*125..
DMP130	13	7.4	●	●	1.96	13	13	TID*130...
DMP131	13.1	7.4	●	●	1.98	13	13	TID*130...
DMP132	13.2	7.4	●	●	2	13	13	TID*130...
DMP133	13.3	7.4	●	●	2.01	13	13	TID*130...
DMP134	13.4	7.4	●	●	2.03	13	13	TID*130...
DMP135	13.5	7.4	●	●	2.05	13	13	TID*135...
DMP136	13.6	7.4	●	●	2.07	13	13	TID*135...
DMP137	13.7	7.4	●	●	2.09	13	13	TID*135...
DMP138	13.8	7.4	●	●	2.11	13	13	TID*135...
DMP139	13.9	7.4	●	●	2.12	13	13	TID*135...
DMP140	14	8	●	●	2.12	14	14	TID*140...

ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

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● : Line up

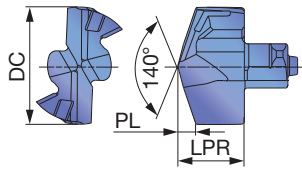
P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated		PL	SSC	Pocket Size	Body
			AH725	AH9130				
DMP141	14.1	8	●	●	2.14	14	14	TID*140...
DMP142	14.2	8	●	●	2.16	14	14	TID*140...
DMP143	14.3	8	●	●	2.17	14	14	TID*140...
DMP144	14.4	8	●	●	2.19	14	14	TID*140...
DMP145	14.5	8	●	●	2.21	14	14	TID*145...
DMP146	14.6	8	●	●	2.23	14	14	TID*145...
DMP147	14.7	8	●	●	2.25	14	14	TID*145...
DMP148	14.8	8	●	●	2.27	14	14	TID*145...
DMP149	14.9	8	●	●	2.28	14	14	TID*145...
DMP150	15	8.5	●	●	2.27	15	15	TID*150...
DMP151	15.1	8.5	●	●	2.29	15	15	TID*150...
DMP152	15.2	8.5	●	●	2.31	15	15	TID*150...
DMP153	15.3	8.5	●	●	2.32	15	15	TID*150...
DMP154	15.4	8.5	●	●	2.34	15	15	TID*150...
DMP155	15.5	8.5	●	●	2.36	15	15	TID*150...
DMP156	15.6	8.5	●	●	2.38	15	15	TID*150...
DMP157	15.7	8.5	●	●	2.4	15	15	TID*150...
DMP158	15.8	8.5	●	●	2.42	15	15	TID*150...
DMP159	15.9	8.5	●	●	2.43	15	15	TID*150...
DMP160	16	9.1	●	●	2.42	16	16	TID*160...
DMP161	16.1	9.1	●	●	2.44	16	16	TID*160...
DMP162	16.2	9.1	●	●	2.46	16	16	TID*160...
DMP163	16.3	9.1	●	●	2.47	16	16	TID*160...
DMP164	16.4	9.1	●	●	2.49	16	16	TID*160...
DMP165	16.5	9.1	●	●	2.51	16	16	TID*160...
DMP166	16.6	9.1	●	●	2.53	16	16	TID*160...
DMP167	16.7	9.1	●	●	2.55	16	16	TID*160...
DMP168	16.8	9.1	●	●	2.57	16	16	TID*160...
DMP169	16.9	9.1	●	●	2.58	16	16	TID*160...
DMP170	17	9.7	●	●	2.59	17	17	TID*170...
DMP171	17.1	9.7	●	●	2.61	17	17	TID*170...
DMP172	17.2	9.7	●	●	2.63	17	17	TID*170...
DMP173	17.3	9.7	●	●	2.64	17	17	TID*170...
DMP174	17.4	9.7	●	●	2.66	17	17	TID*170...
DMP175	17.5	9.7	●	●	2.68	17	17	TID*170...
DMP176	17.6	9.7	●	●	2.7	17	17	TID*170...
DMP177	17.7	9.7	●	●	2.72	17	17	TID*170...
DMP178	17.8	9.7	●	●	2.74	17	17	TID*170...
DMP179	17.9	9.7	●	●	2.75	17	17	TID*170...
DMP180	18	10.3	●	●	2.73	18	18	TID*180...
DMP181	18.1	10.3	●	●	2.75	18	18	TID*180...
DMP182	18.2	10.3	●	●	2.77	18	18	TID*180...
DMP183	18.3	10.3	●	●	2.78	18	18	TID*180...
DMP184	18.4	10.3	●	●	2.8	18	18	TID*180...
DMP185	18.5	10.3	●	●	2.82	18	18	TID*180...
DMP186	18.6	10.3	●	●	2.84	18	18	TID*180...
DMP187	18.7	10.3	●	●	2.86	18	18	TID*180...
DMP188	18.8	10.3	●	●	2.88	18	18	TID*180...
DMP189	18.9	10.3	●	●	2.89	18	18	TID*180...
DMP190	19	10.8	●	●	2.88	19	19	TID*180...
DMP1905	19.05	10.8	●	●	2.89	19	19	TID*190...
DMP191	19.1	10.8	●	●	2.9	19	19	TID*190...
DMP192	19.2	10.8	●	●	2.92	19	19	TID*190...
DMP1927	19.27	10.8	●	●	2.93	19	19	TID*190...

● : New product
● : Line up

DMP General purpose



Tool diameter	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated		PL	SSC	Pocket Size	Body
			AH725	AH9130				
DMP193	19.3	10.8	●	●	2.93	19	19	TID*190...
DMP194	19.4	10.8	●	●	2.95	19	19	TID*190...
DMP195	19.5	10.8	●	●	2.97	19	19	TID*190...
DMP196	19.6	10.8	●		2.99	19	19	TID*190...
DMP197	19.7	10.8	●		3.01	19	19	TID*190...
DMP198	19.8	10.8	●	●	3.03	19	19	TID*190...
DMP199	19.9	10.8	●		3.04	19	19	TID*190...
DMP200	20	11.4	●	★	3.02	20	20	TID*200...
DMP201	20.1	11.4	●	★	3.04	20	20	TID*200...
DMP202	20.2	11.4	●		3.06	20	20	TID*200...
DMP203	20.3	11.4	●		3.07	20	20	TID*200...
DMP204	20.4	11.4	●		3.09	20	20	TID*200...
DMP205	20.5	11.4	●	★	3.11	20	20	TID*200...
DMP206	20.6	11.4	●		3.13	20	20	TID*200...
DMP207	20.7	11.4	●		3.15	20	20	TID*200...
DMP208	20.8	11.4	●		3.17	20	20	TID*200...
DMP209	20.9	11.4	●		3.18	20	20	TID*200...
DMP210	21	12	●	★	3.18	21	21	TID*210...
DMP211	21.1	12	●		3.2	21	21	TID*210...
DMP212	21.2	12	●		3.22	21	21	TID*210...
DMP213	21.3	12	●		3.23	21	21	TID*210...
DMP214	21.4	12	●		3.25	21	21	TID*210...
DMP215	21.5	12	●		3.27	21	21	TID*210...
DMP216	21.6	12	●		3.29	21	21	TID*210...
DMP217	21.7	12	●		3.31	21	21	TID*210...
DMP218	21.8	12	●		3.33	21	21	TID*210...
DMP219	21.9	12	●		3.34	21	21	TID*210...
DMP220	22	12.6	●	★	3.32	22	22	TID*220...
DMP221	22.1	12.6	●		3.34	22	22	TID*220...
DMP222	22.2	12.6	●		3.36	22	22	TID*220...
DMP223	22.3	12.6	●	★	3.37	22	22	TID*220...
DMP224	22.4	12.6	●		3.39	22	22	TID*220...
DMP225	22.5	12.6	●		3.41	22	22	TID*220...
DMP226	22.6	12.6	●		3.43	22	22	TID*220...
DMP227	22.7	12.6	●		3.45	22	22	TID*220...
DMP228	22.8	12.6	●		3.47	22	22	TID*220...
DMP229	22.9	12.6	●		3.48	22	22	TID*220...
DMP230	23	13.1	●		3.46	23	23	TID*230...
DMP231	23.1	13.1	●		3.48	23	23	TID*230...

ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up
★ : Will be released in 2021

P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	DC	LPR	Coated		PL	SSC	Pocket Size	Body
			AH725	AH9130				
DMP232	23.2	13.1	●		3.5	23	23	TID*230...
DMP233	23.3	13.1	●		3.51	23	23	TID*230...
DMP234	23.4	13.1	●		3.53	23	23	TID*230...
DMP235	23.5	13.1	●		3.55	23	23	TID*230...
DMP236	23.6	13.1	●		3.57	23	23	TID*230...
DMP237	23.7	13.1	●		3.59	23	23	TID*230...
DMP238	23.8	13.1	●		3.61	23	23	TID*230...
DMP239	23.9	13.1	●		3.62	23	23	TID*230...
DMP240	24	13.7	●	★	3.62	24	24	TID*240...
DMP241	24.1	13.7	●		3.64	24	24	TID*240...
DMP242	24.2	13.7	●		3.66	24	24	TID*240...
DMP243	24.3	13.7	●		3.67	24	24	TID*240...
DMP244	24.4	13.7	●		3.69	24	24	TID*240...
DMP245	24.5	13.7	●		3.71	24	24	TID*240...
DMP246	24.6	13.7	●		3.73	24	24	TID*240...
DMP247	24.7	13.7	●		3.75	24	24	TID*240...
DMP248	24.8	13.7	●		3.77	24	24	TID*240...
DMP249	24.9	13.7	●		3.78	24	24	TID*240...
DMP250	25	14.3	●	★	3.8	25	25	TID*250...
DMP251	25.1	14.3	●		3.82	25	25	TID*250...
DMP252	25.2	14.3	●		3.84	25	25	TID*250...
DMP253	25.3	14.3	●		3.85	25	25	TID*250...
DMP254	25.4	14.3	●		3.87	25	25	TID*250...
DMP255	25.5	14.3	●		3.89	25	25	TID*250...
DMP256	25.6	14.3	●		3.91	25	25	TID*250...
DMP2567	25.67	14.3	●		3.92	25	25	TID*250...
DMP257	25.7	14.3	●		3.93	25	25	TID*250...
DMP258	25.8	14.3	●		3.95	25	25	TID*250...
DMP259	25.9	14.3	●	★	3.96	25	25	TID*250...

● : Line up
★ : Will be released in 2021

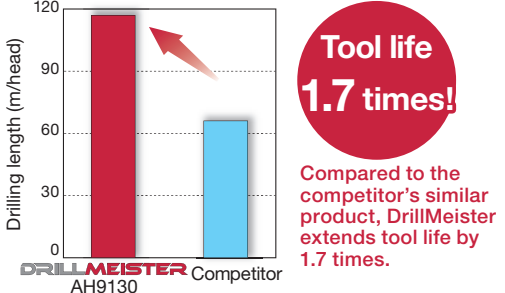

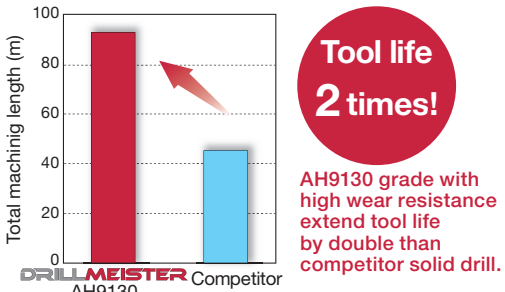
STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Priority	Grade	Cutting speed Vc (m/min)	Feed: f (mm/rev)						
					DC (mm)						
					ø6 - ø7.9	ø8 - ø9.9	ø10 - ø11.9	ø12 - ø13.9	ø14 - ø15.9	ø16 - ø19.9	ø20 - ø25.9
P	Low carbon steel (C < 0.3) (SS400 / St42-1, SM490 / St52-3, S25C / C25, etc.)	First choice	AH725	80 - 140	0.09 - 0.13	0.12 - 0.25	0.15 - 0.28	0.18 - 0.3	0.2 - 0.35	0.25 - 0.45	0.25 - 0.45
		Wear resistance	AH9130								
	High carbon steel (C > 0.3) (S45C / C45, S55C / C55, etc.)	First choice	AH725	70 - 120	0.09 - 0.13	0.12 - 0.25	0.15 - 0.28	0.18 - 0.3	0.2 - 0.35	0.25 - 0.45	0.25 - 0.45
		Wear resistance	AH9130								
	Low alloy steel (SCM415, etc.)	First choice	AH725	70 - 120	0.08 - 0.13	0.11 - 0.25	0.14 - 0.28	0.16 - 0.32	0.18 - 0.35	0.23 - 0.4	0.25 - 0.45
		Wear resistance	AH9130								
	Alloy steel (SCM440 / 42CrMo4, SCr420 / 20Cr4, etc.)	First choice	AH725	40 - 90	0.08 - 0.13	0.11 - 0.25	0.14 - 0.28	0.16 - 0.32	0.18 - 0.35	0.23 - 0.4	0.25 - 0.45
		Wear resistance	AH9130								
M	Stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-2, etc.)	First choice	AH725	30 - 70	0.08 - 0.1	0.1 - 0.15	0.12 - 0.18	0.14 - 0.2	0.16 - 0.24	0.16 - 0.26	0.18 - 0.3
		Wear resistance	AH9130								
K	Grey cast iron (FC250 / GG25, etc.)	First choice	AH725	80 - 180	0.12 - 0.18	0.15 - 0.3	0.2 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
		Wear resistance	AH9130								
	Ductile cast iron (FCD700 / GGG70, etc.)	First choice	AH725	80 - 140	0.12 - 0.18	0.15 - 0.3	0.2 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
		Wear resistance	AH9130								
N	Aluminium alloys (ADC12, etc.)	First choice	AH725	80 - 220	0.1 - 0.2	0.2 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.5	0.4 - 0.6	0.5 - 0.75
		Wear resistance	AH9130								
S	Titanium alloys (Ti-6Al-4V, etc.)	First choice	AH725	20 - 50	0.05 - 0.07	0.06 - 0.12	0.08 - 0.15	0.1 - 0.18	0.12 - 0.2	0.14 - 0.22	0.18 - 0.27
		Wear resistance	AH9130								
	Nickel-based alloys	First choice	AH725	20 - 50	0.05 - 0.07	0.06 - 0.11	0.08 - 0.13	0.1 - 0.15	0.12 - 0.18	0.12 - 0.22	0.14 - 0.25
		Wear resistance	AH9130								
H	Hardened steel	First choice	AH725	20 - 50	0.05 - 0.07	0.06 - 0.12	0.08 - 0.15	0.1 - 0.18	0.12 - 0.2	0.14 - 0.22	0.16 - 0.25
		Wear resistance	AH9130								

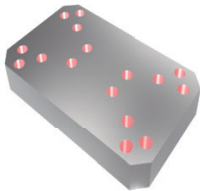

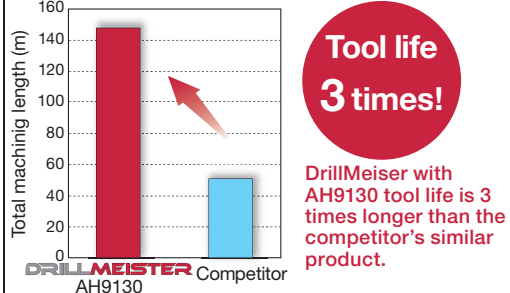
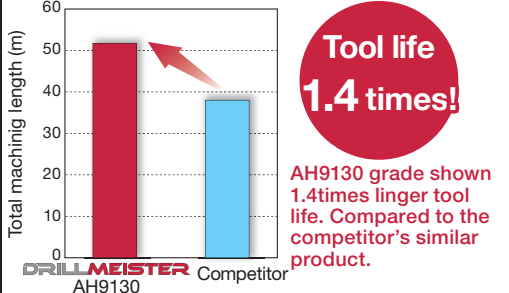

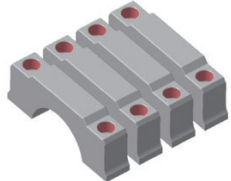
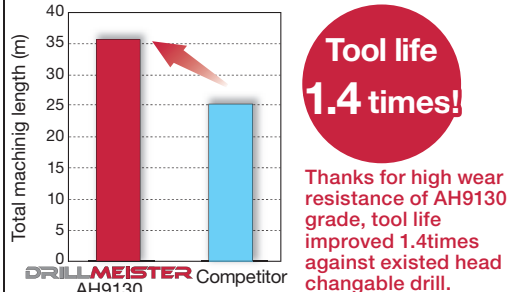
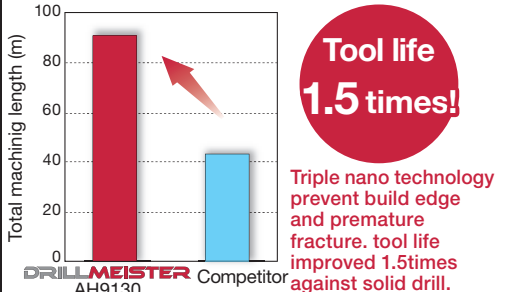
- Cutting conditions in the above table show standard cutting conditions.
 - Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.

- Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions.
 - In case of L/D = 8 & 12 drill, the recommended range of cutting speeds and feeds is between the minimum and median values listed above.

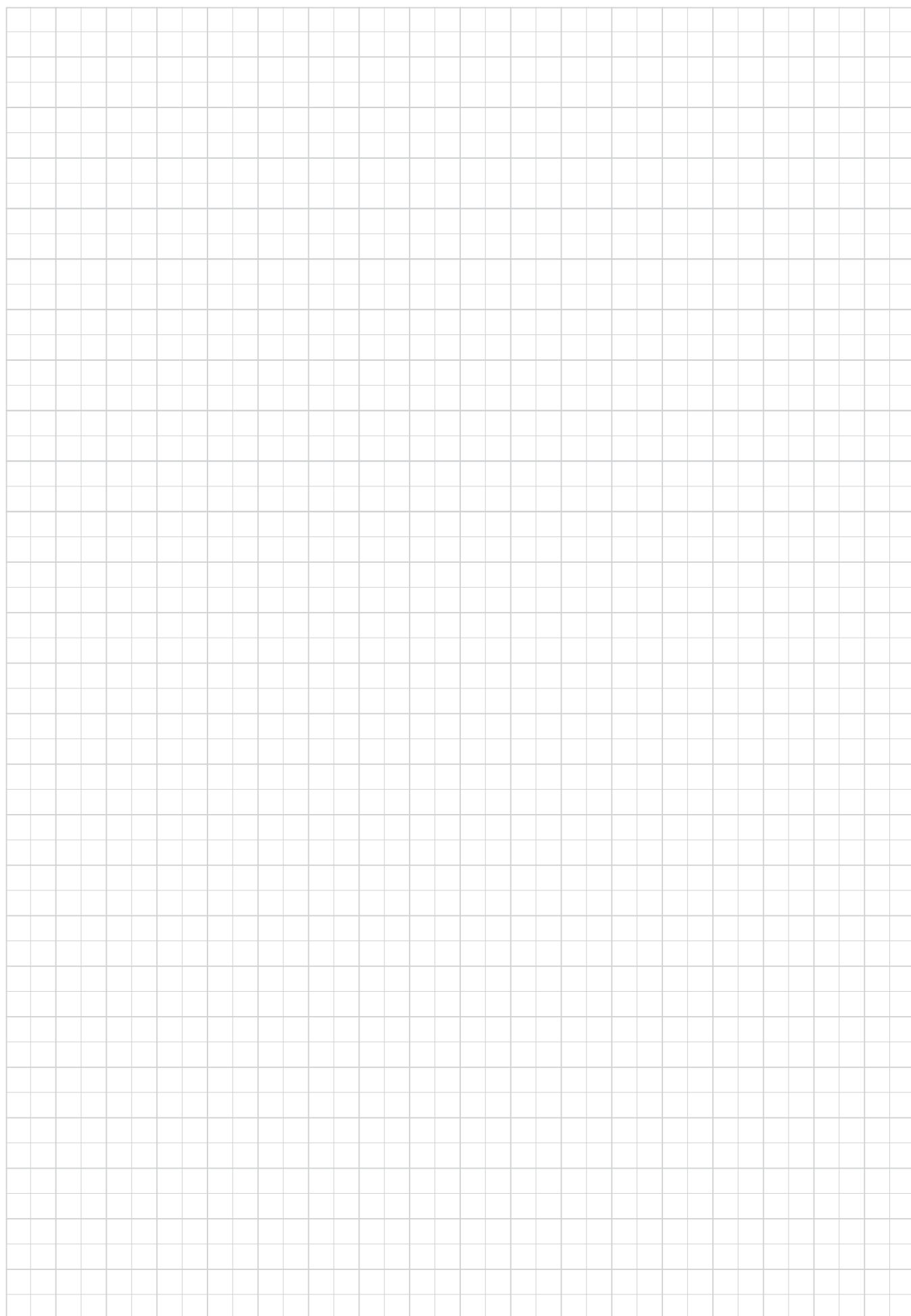
PRACTICAL EXAMPLES

Workpiece type		Out put shaft	Drive pinion shaft
Drill body		TIDC160C16-5	TID160F20-5
Head		DMP165 AH9130	DMP160 AH9130
Workpiece material		SCr420 / 20Cr4	SCM415 / Low carbon alloy
Cutting conditions			
Cutting speed: V_c (m/min)		80	110
Feed : f (mm/rev)		0.18	0.25
Feed speed : V_f (mm/min)		277.9	547
Drill diameter : ϕD_c (mm)		16.5	16
Hole depth : H (mm)		30	72.2
Machine		Vertical M/C	NC lathe
Coolant		Wet (Internal)	Wet (Internal)
Results		 <p>Tool life 1.7 times!</p> <p>Compared to the competitor's similar product, DrillMeister extends tool life by 1.7 times.</p>	 <p>Tool life 2 times!</p> <p>DrillMeister's tool life is 2 times longer than the competitor's similar product.</p>
Workpiece type		Hub	
Drill body		TID105F16-3	
Head		DMP108 AH9130	
Workpiece material		S35C	
Cutting conditions			
Cutting speed: V_c (m/min)		90	
Feed : f (mm/rev)		0.18	
Feed speed : V_f (mm/min)		477.7	
Drill diameter : ϕD_c (mm)		10.8	
Hole depth : H (mm)		13	
Machine		Vertical M/C	
Coolant		Wet (External)	
Results		 <p>Tool life 2 times!</p> <p>AH9130 grade with high wear resistance extend tool life by double than competitor solid drill.</p>	

■ PRACTICAL EXAMPLES

Workpiece type		Plate	Pin	
Drill body		TID190F25-3	TID150F20-8	
Head		DMP190 AH9130	DMP150 AH9130	
		HT590	SS400 / E275A	
Workpiece material		 P	 P	
Cutting conditions	Cutting speed: V_c (m/min)	54	120	
	Feed : f (mm/rev)	0.22	0.2	
	Feed speed : V_f (mm/min)	199.1	509.6	
	Drill diameter : ϕD_c (mm)	19	15	
	Hole depth : H (mm)	30	95	
	Machine	Vertical M/C	NC lathe	
	Coolant	Wet (Internal)	Wet (Internal)	
Results	 <p>Tool life 3 times!</p> <p>DrillMeister with AH9130 tool life is 3 times longer than the competitor's similar product.</p>		 <p>Tool life 1.4 times!</p> <p>AH9130 grade shown 1.4times longer tool life. Compared to the competitor's similar product.</p>	
Workpiece type		Ring gear	Clank cap	
Drill body		TID200F32-5	TID075F12-5	
Head		DMP200 AH9130	DMP075 AH9130	
		S48C	FCD250 / GG25 / 250	
Workpiece material		 P	 K	
Cutting conditions	Cutting speed: V_c (m/min)	70	100	
	Feed : f (mm/rev)	0.35	0.27	
	Feed speed : V_f (mm/min)	1114	1146.4	
	Drill diameter : ϕD_c (mm)	20	7.5	
	Hole depth : H (mm)	100	30	
	Machine	Vertical M/C	Vertical M/C	
	Coolant	Wet (Internal)	Wet (Internal)	
Results	 <p>Tool life 1.4 times!</p> <p>Thanks for high wear resistance of AH9130 grade, tool life improved 1.4times against existed head changeable drill.</p>		 <p>Tool life 1.5 times!</p> <p>Triple nano technology prevent build edge and premature fracture, tool life improved 1.5times against solid drill.</p>	

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