

DrillLine

DRILLMEISTER

www.tungaloy.com

Tungaloy Report No. 412-G

DRILLMEISTER

Full effective head-exchangeable drill for efficient holemaking



Member IMC Group
Tungaloy



ACCELERATED MACHINING



DrillLine

DRILLMEISTER
TUNGALOY



Reduces tool change time
Decreased machining and handling costs

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Fast and easy head-changeable drill

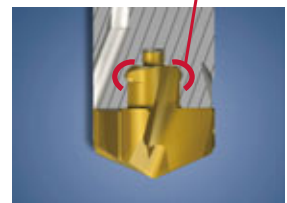
High accuracy, rigidity, and productivity

- Unique clamping structure provides high repeatability and reliability
- Tool change time is significantly reduced by simple and easy tool change steps
- No refurbishing cost and reduced tool inventory requirements



- Contact area that supports the drill head against cutting force
- Contact area that maintains the accurate drill position

Groove to prevent the head from falling off



Improved durability of drill head locking mechanism

- Durable drill body structure to withstand repeating drill head replacements, thus prolonging tool life
- Smart design to keep the drill head in place during drill head replacement, avoiding accidental fall-off.

TID type shank

- Optimized helical flute design enables fast chip evacuation in deep hole drilling
- Ample supply of internal coolant is delivered through the twisted holes

Diameter range	L/D
ø6.0 - ø6.9	1.5, 3, 5
ø7.0 - ø25.9	1.5, 3, 5, 8
ø12.0 - ø22.9	12



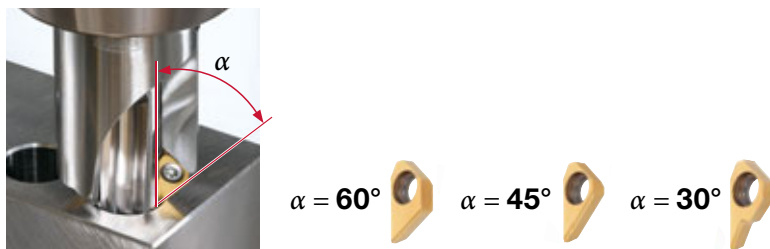
TIDC type shank

- The chamfering adapter can be mounted easily on the straight drill shank with no flange in the way

Diameter range	L/D
ø10 - ø19.9	3, 5

■ Drilling and chamfering in one shot

Three different chamfering angles are available



Long tool life is achieved by a combination of a tough grade and innovative drill edge preparation

AH725: reliable PVD grade

AH725 **PREMIUMTEC**
TUNGALOY

New coating layer drastically improves adhesion strength between the coating and the substrate.

Micro-grain alloy substrate provides plastic deformation resistance and toughness.

Super flash coating
"Triple Force Technology" improves overall coating surface quality.

Conventional

AH725

Unique edge preparation

■ Close-up of edges (new head)

No peeling-off

Radius honing

DRILLMEISTER

Effectively improves adhesion strength

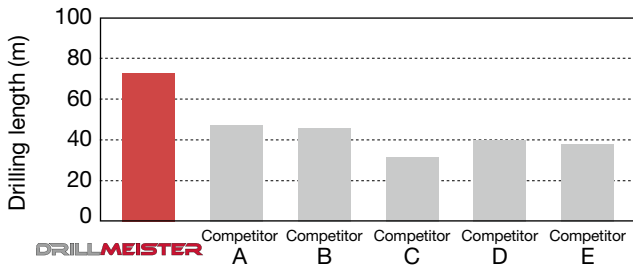
Peeling-off

Chamfered honing

Competitor

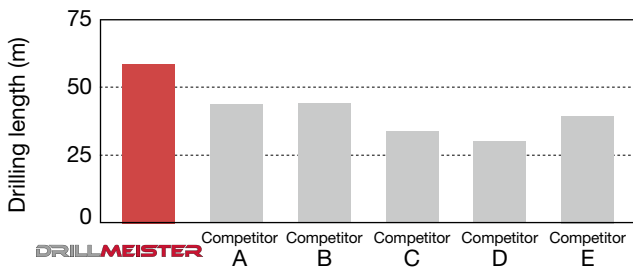
CUTTING PERFORMANCE

Tool life in machining carbon steel (S55C / C55)



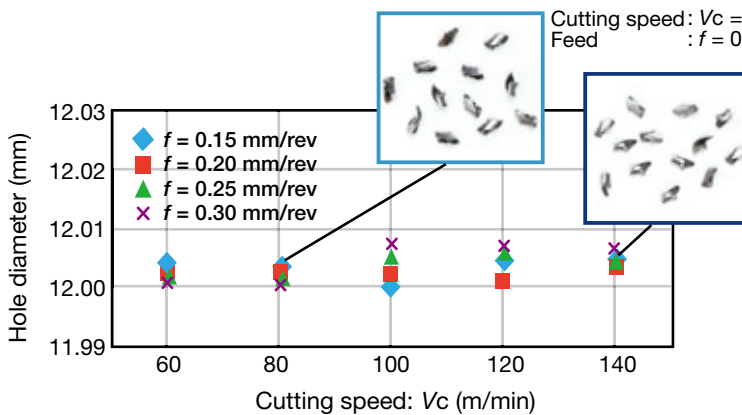
Drill diameter : $\phi D_c = 12$ mm
 Workpiece : S55C / C55
 Cutting speed : $V_c = 100$ m/min
 Feed : $f = 0.25$ mm/rev
 Hole depth : $H = 36$ mm

Tool life in machining ductile cast iron (FCD600 / 600-3)



Drill diameter : $\phi D_c = 12$ mm
 Workpiece : FCD600 / 600-3
 Cutting speed : $V_c = 150$ m/min
 Feed : $f = 0.25$ mm/rev
 Hole depth : $H = 36$ mm

Chip control and accuracy of hole diameter



Cutting speed: $V_c = 80$ m/min
 Feed : $f = 0.15$ mm/rev

Cutting speed: $V_c = 140$ m/min
 Feed : $f = 0.30$ mm/rev

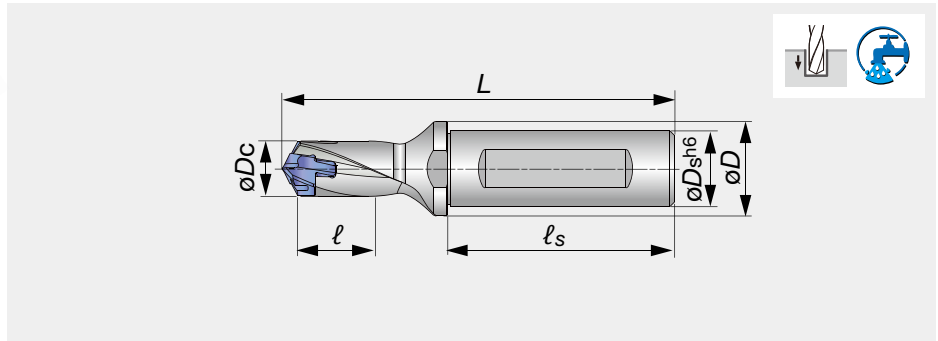
Drill diameter : $\phi D_c = 12$ mm
 Workpiece : SNCM439 (285HB)
 Hole depth : $H = 34$ mm (through hole)
 Coolant : Wet
 Machine : Vertical M/C

DrillMeister shows excellent chip control in a wide range of cutting conditions and provides accurate hole diameters.

Indexable head drill

DRILL TID L/D = 1.5

DrillMeister TID L/D = 1.5



Designation	$\varnothing D_c$	$\varnothing D_s$	$\varnothing D$	l	l_s	L	Pocket size	Head
TID060F12-1.5	6 - 6.4	12	16	9	45	68	6	DMP060 - DMP064
TID065F12-1.5	6.5 - 6.9	12	16	10	45	69.1	6	DMP065 - DMP069
TID070F12-1.5	7 - 7.4	12	16	11	45	70.1	7	DMP070 - DMP074
TID075F12-1.5	7.5 - 7.9	12	16	11.3	45	70.9	7	DMP075 - DMP079
TID080F12-1.5	8 - 8.9	12	16	12	45	72.4	8	DMP080 - DMP089
TID090F12-1.5	9 - 9.9	12	16	14	45	74.3	9	DMP090 - DMP099
TID100F16-1.5	10 - 10.9	16	20	15	48	79.2	10	DMP100 - DMP109
TID110F16-1.5	11 - 11.9	16	20	17	48	81.1	11	DMP110 - DMP119
TID120F16-1.5	12 - 12.9	16	20	18	48	83	12	DMP120 - DMP129
TID130F16-1.5	13 - 13.9	16	20	20	48	85.1	13	DMP130 - DMP139
TID140F16-1.5	14 - 14.9	16	20	21	48	89.1	14	DMP140 - DMP149
TID150F20-1.5	15 - 15.9	20	25	23	50	96.2	15	DMP150 - DMP159
TID160F20-1.5	16 - 16.9	20	25	24	50	99.3	16	DMP160 - DMP169
TID170F20-1.5	17 - 17.9	20	25	26	50	102.4	17	DMP170 - DMP179
TID180F25-1.5	18 - 18.9	25	32	27	56	111.5	18	DMP180 - DMP189
TID190F25-1.5	19 - 19.9	25	32	29	56	114.5	19	DMP190 - DMP199
TID200F25-1.5	20 - 20.9	25	32	30	56	117.6	20	DMP200 - DMP209
TID210F25-1.5	21 - 21.9	25	32	32	56	120.7	21	DMP210 - DMP219
TID220F25-1.5	22 - 22.9	25	32	33	56	123.8	22	DMP220 - DMP229
TID230F32-1.5	23 - 23.9	32	42	35	60	130.8	23	DMP230 - DMP239
TID240F32-1.5	24 - 24.9	32	42	36	60	133.9	24	DMP240 - DMP249
TID250F32-1.5	25 - 25.9	32	42	38	60	137	25	DMP250 - DMP259

$\varnothing D_c$	Hole diameter tolerance*
$\varnothing 6 - \varnothing 25.9$	+0.05 / 0

* Just for reference.

SPARE PARTS

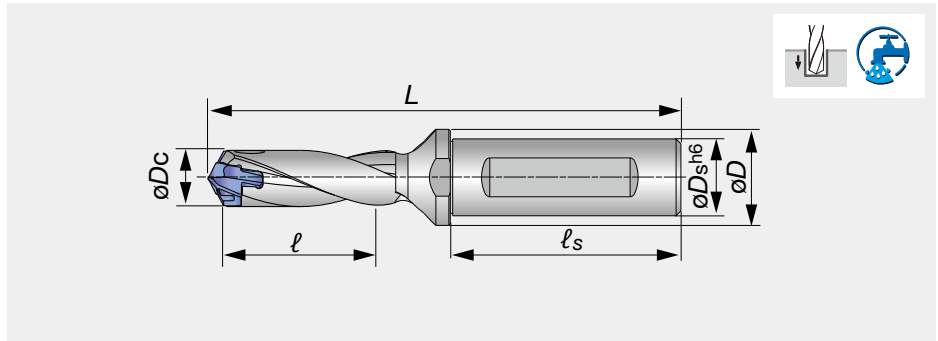


Drill diameter	Clamping key (included)
$\varnothing 6 - \varnothing 9.9$	K-TID6-9.99
$\varnothing 10 - \varnothing 19.9$	K-TID10-19.99
$\varnothing 20 - \varnothing 25.9$	K-TID20-26.99

Indexable head drill

DRILL TID L/D = 3

DrillMeister TID L/D = 3



Designation	$\varnothing D_c$	$\varnothing D_s$	$\varnothing D$	l	l_s	L	Pocket size	Head
TID060F12-3	6 - 6.4	12	16	18	45	77	6	DMP060-DMP064
TID065F12-3	6.5 - 6.9	12	16	20	45	78.8	6	DMP065-DMP069
TID070F12-3	7 - 7.4	12	16	21	45	80.6	7	DMP070-DMP074
TID075F12-3	7.5 - 7.9	12	16	23	45	82.1	7	DMP075-DMP079
TID080F12-3	8 - 8.4	12	16	24	45	84.4	8	DMP080-DMP084
TID085F12-3	8.5 - 8.9	12	16	26	45	85.9	8	DMP085-DMP089
TID090F12-3	9 - 9.4	12	16	27	45	87.8	9	DMP090-DMP094
TID095F12-3	9.5 - 9.9	12	16	29	45	89.3	9	DMP095-DMP099
TID100F16-3	10 - 10.4	16	20	30	48	94.2	10	DMP100 - DMP104
TID105F16-3	10.5 - 10.9	16	20	32	48	95.7	10	DMP105 - DMP109
TID110F16-3	11 - 11.4	16	20	33	48	97.6	11	DMP110 - DMP114
TID115F16-3	11.5 - 11.9	16	20	35	48	99.1	11	DMP115 - DMP119
TID120F16-3	12 - 12.4	16	20	36	48	101	12	DMP120 - DMP124
TID125F16-3	12.5 - 12.9	16	20	37	48	102.5	12	DMP125 - DMP129
TID130F16-3	13 - 13.4	16	20	39	48	104.6	13	DMP130 - DMP134
TID135F16-3	13.5 - 13.9	16	20	41	48	106.1	13	DMP135 - DMP139
TID140F16-3	14 - 14.4	16	20	42	48	110.1	14	DMP140 - DMP144
TID145F16-3	14.5 - 14.9	16	20	44	48	111.6	14	DMP145 - DMP149
TID150F20-3	15 - 15.9	20	25	45	50	118.7	15	DMP150 - DMP159
TID160F20-3	16 - 16.9	20	25	48	50	123.3	16	DMP160 - DMP169
TID170F20-3	17 - 17.9	20	25	51	50	127.9	17	DMP170 - DMP179
TID180F25-3	18 - 18.9	25	32	54	56	138.5	18	DMP180 - DMP189
TID190F25-3	19 - 19.9	25	32	57	56	143	19	DMP190 - DMP199
TID200F25-3	20 - 20.9	25	32	60	56	147.6	20	DMP200 - DMP209
TID210F25-3	21 - 21.9	25	32	63	56	152.2	21	DMP210 - DMP219
TID220F25-3	22 - 22.9	25	32	66	56	156.8	22	DMP220 - DMP229
TID230F32-3	23 - 23.9	32	42	69	60	165.3	23	DMP230 - DMP239
TID240F32-3	24 - 24.9	32	42	72	60	169.9	24	DMP240 - DMP249
TID250F32-3	25 - 25.9	32	42	75	60	174.5	25	DMP250 - DMP259

$\varnothing D_c$	Hole diameter tolerance*
$\varnothing 6 - \varnothing 25.9$	+0.05 / 0

* Just for reference.

SPARE PARTS

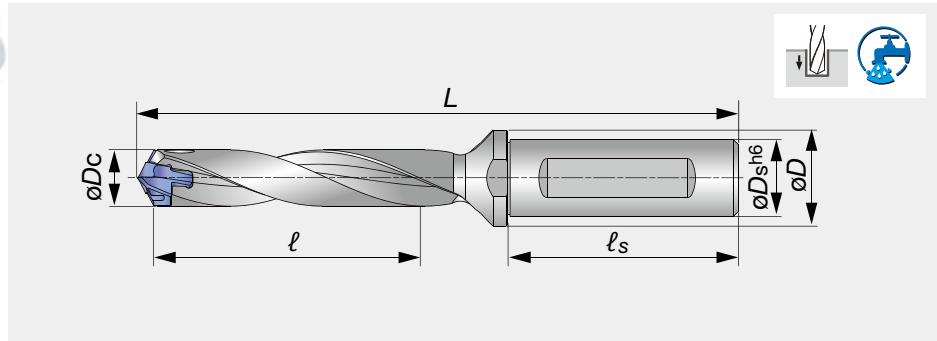


Drill diameter	Clamping key (included)
$\varnothing 6 - \varnothing 9.9$	K-TID6-9.99
$\varnothing 10 - \varnothing 19.9$	K-TID10-19.99
$\varnothing 20 - \varnothing 25.9$	K-TID20-26.99

Indexable head drill

DRILL TID L/D = 5

DrillMeister TID L/D = 5



Designation	$\varnothing D_c$	$\varnothing D_s$	$\varnothing D$	ℓ	ℓ_s	L	Pocket size	Head
TID060F12-5	6 - 6.4	12	16	30	45	89	6	DMP060-DMP064
TID065F12-5	6.5 - 6.9	12	16	33	45	91.8	6	DMP065-DMP069
TID070F12-5	7 - 7.4	12	16	35	45	94.6	7	DMP070-DMP074
TID075F12-5	7.5 - 7.9	12	16	38	45	97.1	7	DMP075-DMP079
TID080F12-5	8 - 8.4	12	16	40	45	100.4	8	DMP080-DMP084
TID085F12-5	8.5 - 8.9	12	16	43	45	102.9	8	DMP085-DMP089
TID090F12-5	9 - 9.4	12	16	45	45	105.8	9	DMP090-DMP094
TID095F12-5	9.5 - 9.9	12	16	48	45	108.3	9	DMP095-DMP099
TID100F16-5	10 - 10.4	16	20	50	48	114.2	10	DMP100 - DMP104
TID105F16-5	10.5 - 10.9	16	20	53	48	116.7	10	DMP105 - DMP109
TID110F16-5	11 - 11.4	16	20	55	48	119.6	11	DMP110 - DMP114
TID115F16-5	11.5 - 11.9	16	20	58	48	122.1	11	DMP115 - DMP119
TID120F16-5	12 - 12.4	16	20	60	48	125	12	DMP120 - DMP124
TID125F16-5	12.5 - 12.9	16	20	62	48	127.5	12	DMP125 - DMP129
TID130F16-5	13 - 13.4	16	20	65	48	130.6	13	DMP130 - DMP134
TID135F16-5	13.5 - 13.9	16	20	68	48	133.1	13	DMP135 - DMP139
TID140F16-5	14 - 14.4	16	20	70	48	138.2	14	DMP140 - DMP144
TID145F16-5	14.5 - 14.9	16	20	73	48	140.7	14	DMP145 - DMP149
TID150F20-5	15 - 15.9	20	25	75	50	148.7	15	DMP150 - DMP159
TID160F20-5	16 - 16.9	20	25	80	50	155.3	16	DMP160 - DMP169
TID170F20-5	17 - 17.9	20	25	85	50	161.9	17	DMP170 - DMP179
TID180F25-5	18 - 18.9	25	32	90	56	174.5	18	DMP180 - DMP189
TID190F25-5	19 - 19.9	25	32	95	56	181	19	DMP190 - DMP199
TID200F25-5	20 - 20.9	25	32	100	56	187.6	20	DMP200 - DMP209
TID210F25-5	21 - 21.9	25	32	105	56	194.2	21	DMP210 - DMP219
TID220F25-5	22 - 22.9	25	32	110	56	200.8	22	DMP220 - DMP229
TID230F32-5	23 - 23.9	32	42	115	60	211.3	23	DMP230 - DMP239
TID240F32-5	24 - 24.9	32	42	120	60	217.9	24	DMP240 - DMP249
TID250F32-5	25 - 25.9	32	42	125	60	224.5	25	DMP250 - DMP259

$\varnothing D_c$	Hole diameter tolerance*
$\varnothing 6 - \varnothing 17.9$	+0.06 / 0
$\varnothing 18 - \varnothing 25.9$	+0.065 / 0

* Just for reference.

SPARE PARTS

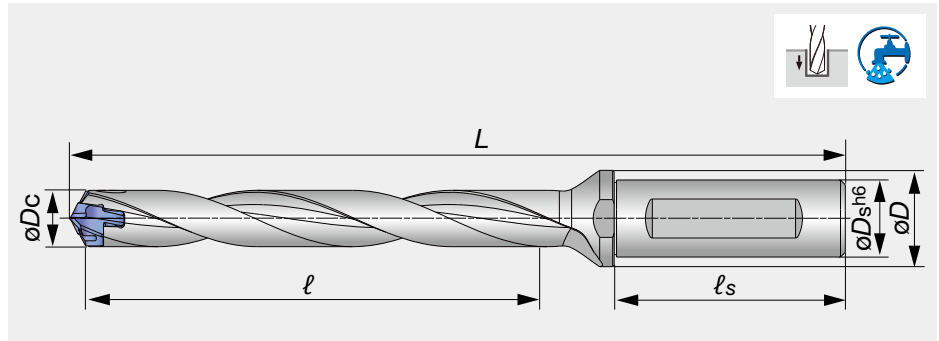
Drill diameter	Clamping key (included)
$\varnothing 6 - \varnothing 9.9$	K-TID6-9.99
$\varnothing 10 - \varnothing 19.9$	K-TID10-19.99
$\varnothing 20 - \varnothing 25.9$	K-TID20-26.99



Indexable head drill

DRILL TID L/D = 8

DrillMeister TID L/D = 8



Designation	øDc	øDs	øD	l	ls	L	Pocket size	Head
TID070F12-8	7 - 7.4	12	16	56	45	115.6	7	DMP070-DMP074
TID075F12-8	7.5 - 7.9	12	16	60	45	119.6	7	DMP075-DMP079
TID080F12-8	8 - 8.4	12	16	64	45	124.4	8	DMP080-DMP084
TID085F12-8	8.5 - 8.9	12	16	68	45	128.4	8	DMP085-DMP089
TID090F12-8	9 - 9.4	12	16	72	45	132.8	9	DMP090-DMP094
TID095F12-8	9.5 - 9.9	12	16	76	45	136.8	9	DMP095-DMP099
TID100F16-8	10 - 10.4	16	20	80	48	144.2	10	DMP100 - DMP104
TID105F16-8	10.5 - 10.9	16	20	84	48	148.2	10	DMP105 - DMP109
TID110F16-8	11 - 11.4	16	20	88	48	152.6	11	DMP110 - DMP114
TID115F16-8	11.5 - 11.9	16	20	92	48	156.6	11	DMP115 - DMP119
TID120F16-8	12 - 12.4	16	20	96	48	161	12	DMP120 - DMP124
TID125F16-8	12.5 - 12.9	16	20	100	48	165	12	DMP125 - DMP129
TID130F16-8	13 - 13.4	16	20	104	48	169.6	13	DMP130 - DMP134
TID135F16-8	13.5 - 13.9	16	20	108	48	173.6	13	DMP135 - DMP139
TID140F16-8	14 - 14.4	16	20	112	48	180.1	14	DMP140 - DMP144
TID145F16-8	14.5 - 14.9	16	20	116	48	184.2	14	DMP145 - DMP149
TID150F20-8	15 - 15.9	20	25	120	50	193.7	15	DMP150 - DMP159
TID160F20-8	16 - 16.9	20	25	128	50	203.3	16	DMP160 - DMP169
TID170F20-8	17 - 17.9	20	25	136	50	212.9	17	DMP170 - DMP179
TID180F25-8	18 - 18.9	25	32	144	56	228.5	18	DMP180 - DMP189
TID190F25-8	19 - 19.9	25	32	152	56	238	19	DMP190 - DMP199
TID200F25-8	20 - 20.9	25	32	160	56	247.6	20	DMP200 - DMP209
TID210F25-8	21 - 21.9	25	32	168	56	257.2	21	DMP210 - DMP219
TID220F25-8	22 - 22.9	25	32	176	56	266.8	22	DMP220 - DMP229
TID230F32-8	23 - 23.9	32	42	184	60	280.3	23	DMP230 - DMP239
TID240F32-8	24 - 24.9	32	42	192	60	289.9	24	DMP240 - DMP249
TID250F32-8	25 - 25.9	32	42	200	60	299.5	25	DMP250 - DMP259

øDc	Hole diameter tolerance*
ø7 - ø17.9	+0.07 / 0
ø18 - ø25.9	+0.085 / 0

* Just for reference.

SPARE PARTS

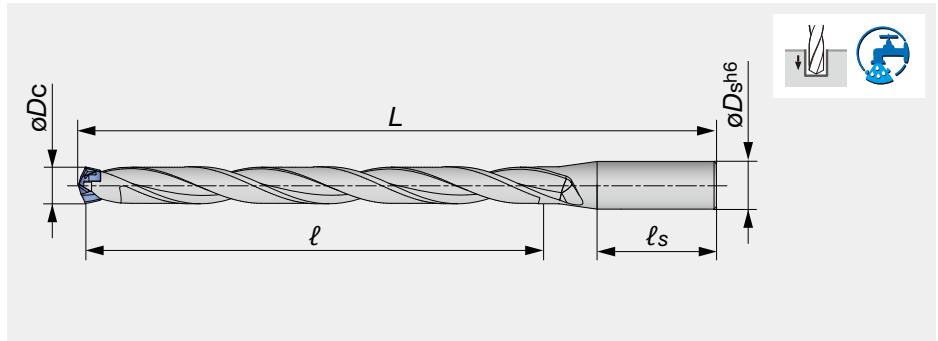


Drill diameter	Clamping key (included)
ø7 - ø9.9	K-TID6-9.99
ø10 - ø19.9	K-TID10-19.99
ø20 - ø25.9	K-TID20-26.99

Indexable head drill

DRILL TID L/D = 12

DrillMeister TID L/D = 12



* Cylindrical shank

Designation	$\varnothing D_c$	$\varnothing D_s$	l	l_s	L	Pocket size	Head
TID120R16-12	12 - 12.4	16	144	48	209	12	DMP120-124
TID125R16-12	12.5 - 12.9	16	150	48	215	12	DMP125-129
TID130R16-12	13 - 13.4	16	156	48	221.6	13	DMP130-134
TID135R16-12	13.5 - 13.9	16	162	48	227.6	13	DMP135-139
TID140R16-12	14 - 14.4	16	168	48	236.2	14	DMP140-144
TID145R16-12	14.5 - 14.9	16	174	48	242.2	14	DMP145-149
TID150R20-12	15 - 15.9	20	180	50	253.7	15	DMP150-159
TID160R20-12	16 - 16.9	20	192	50	267.3	16	DMP160-169
TID170R20-12	17 - 17.9	20	204	50	280.9	17	DMP170-179
TID180R25-12	18 - 18.9	25	216	56	300.5	18	DMP180-189
TID190R25-12	19 - 19.9	25	228	56	314	19	DMP190-199
TID200R25-12	20 - 20.9	25	240	56	327.6	20	DMP200-209
TID210R25-12	21 - 21.9	25	252	56	341.2	21	DMP210-219
TID220R25-12	22 - 22.9	25	264	56	354.8	22	DMP220-229

$\varnothing D_c$	Hole diameter tolerance*
$\varnothing 12 - \varnothing 17.9$	+0.08 / 0
$\varnothing 18 - \varnothing 22.9$	+0.095 / 0

* Just for reference.

SPARE PARTS

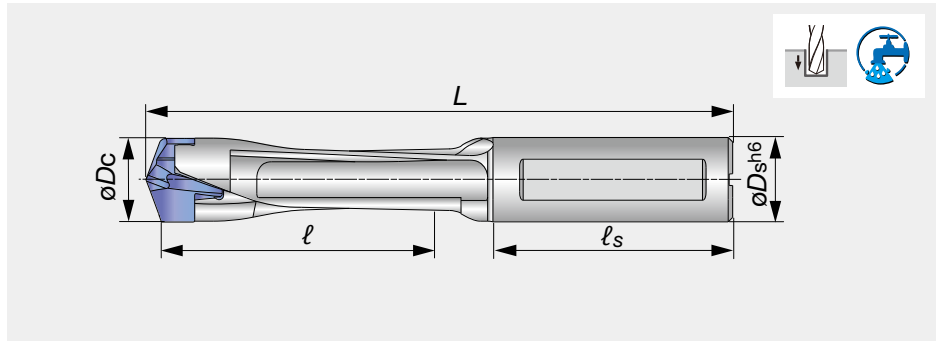


Drill diameter	Clamping key (included)
$\varnothing 12 - \varnothing 19.9$	K-TID10-19.99
$\varnothing 20 - \varnothing 22.9$	K-TID20-26.99

Indexable head drill

DRILL TIDC L/D = 3

DrillMeister TIDC L/D = 3



Designation	øDc	øDs	ℓ	ℓs	L	Pocket size	Head
TIDC100C10-3	10 - 10.4	10	30	41	86.1	10	DMP100 - DMP104
TIDC105C11-3	10.5 - 10.9	11	31.5	41	87.6	10	DMP105 - DMP109
TIDC110C11-3	11 - 11.4	11	33	41	89.5	11	DMP110 - DMP114
TIDC115C12-3	11.5 - 11.9	12	34.5	41	91	11	DMP115 - DMP119
TIDC120C12-3	12 - 12.4	12	36	41	92.8	12	DMP120 - DMP124
TIDC125C13-3	12.5 - 12.9	13	37.5	46	98.3	12	DMP125 - DMP129
TIDC130C13-3	13 - 13.4	13	39	47	102.4	13	DMP130 - DMP134
TIDC135C14-3	13.5 - 13.9	14	40.5	43	99.9	13	DMP135 - DMP139
TIDC140C14-3	14 - 14.4	14	42	44	103	14	DMP140 - DMP144
TIDC145C15-3	14.5 - 14.9	15	43.5	45	105.5	14	DMP145 - DMP149
TIDC150C15-3	15 - 15.9	15	45	45	107.5	15	DMP150 - DMP159
TIDC160C16-3	16 - 16.9	16	48	48	117.5	16	DMP160 - DMP169
TIDC170C17-3	17 - 17.9	17	51	48	119.7	17	DMP170 - DMP179
TIDC180C18-3	18 - 18.9	18	54	48	123.3	18	DMP180 - DMP189
TIDC190C19-3	19 - 19.9	19	57	54	132.4	19	DMP190 - DMP199

øDc	Hole diameter tolerance*
ø10 - ø19.9	+0.05 / 0

* Just for reference.



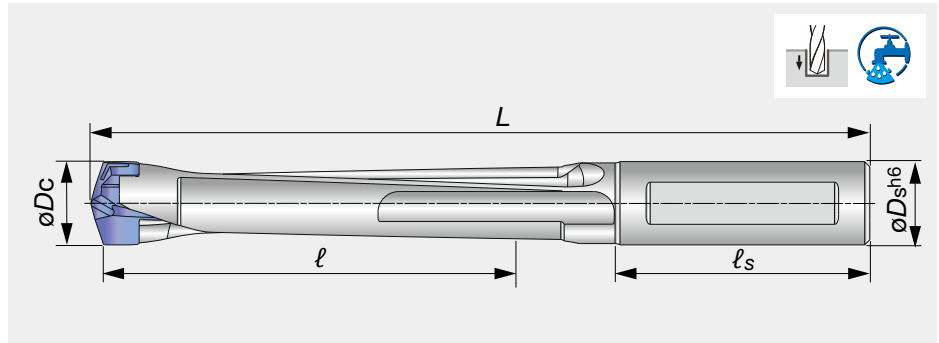
SPARE PARTS

Drill diameter	Clamping key (included)
ø10 - ø19.9	K-TID10-19.99

Indexable head drill

DRILL TIDC L/D = 5

DrillMeister TIDC L/D = 5



Designation	$\varnothing D_c$	$\varnothing D_s$	l	l_s	L	Pocket size	Head
TIDC100C10-5	10 - 10.4	10	50	41	106.1	10	DMP100 - DMP104
TIDC105C11-5	10.5 - 10.9	11	52.5	41	108.6	10	DMP105 - DMP109
TIDC110C11-5	11 - 11.4	11	55	41	111.5	11	DMP110 - DMP114
TIDC115C12-5	11.5 - 11.9	12	57.5	41	114	11	DMP115 - DMP119
TIDC120C12-5	12 - 12.4	12	60	41	116.8	12	DMP120 - DMP124
TIDC125C13-5	12.5 - 12.9	13	62.5	46	124.3	12	DMP125 - DMP129
TIDC130C13-5	13 - 13.4	13	65	47	128.4	13	DMP130 - DMP134
TIDC135C14-5	13.5 - 13.9	14	67.5	43	126.9	13	DMP135 - DMP139
TIDC140C14-5	14 - 14.4	14	70	44	131	14	DMP140 - DMP144
TIDC145C15-5	14.5 - 14.9	15	72.5	45	134.5	14	DMP145 - DMP149
TIDC150C15-5	15 - 15.9	15	75	45	137.5	15	DMP150 - DMP159
TIDC160C16-5	16 - 16.9	16	80	48	149.5	16	DMP160 - DMP169
TIDC170C17-5	17 - 17.9	17	85	48	153.7	17	DMP170 - DMP179
TIDC180C18-5	18 - 18.9	18	90	48	159.3	18	DMP180 - DMP189
TIDC190C19-5	19 - 19.9	19	95	54	170.4	19	DMP190 - DMP199

$\varnothing D_c$	Hole diameter tolerance*
$\varnothing 10 - \varnothing 19.9$	+0.05 / 0

* Just for reference.

SPARE PARTS

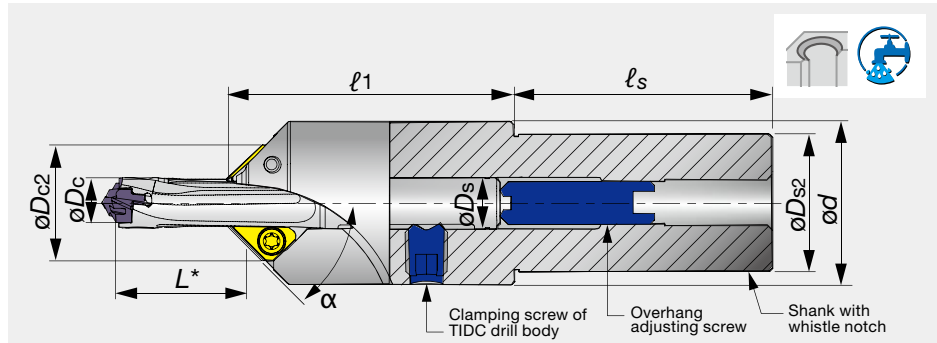


Drill diameter	Clamping key (included)
$\varnothing 10 - \varnothing 19.9$	K-TID10-19.99

Indexable head drill

CHAMFERING ADAPTOR

TIDC TYPE

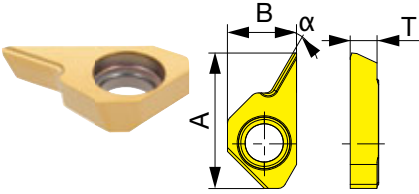


Designation	$\varnothing D_c$	$\varnothing D_{s2}$	$\varnothing d$	$\varnothing D_{c2}$	ℓ_1	ℓ_s	L^*		Drill body	$\varnothing D_s$
							L/D = 3	L/D = 5		
TIDCF100-W32	10 - 10.4	32	38	24.9	67.3	60	14.5 - 31.8	31.7 - 51.8	TIDC100C10-...	10
TIDCF110-W32	10.5 - 10.9	32	38	25.9	67.3	60	15.7 - 33.3	31.2 - 54.2	TIDC105C11-...	11
TIDCF110-W32	11 - 11.4	32	38	25.9	67.3	60	16.2 - 35.3	34.1 - 57.3	TIDC110C11-...	11
TIDCF120-W32	11.5 - 11.9	32	38	26.9	67.3	60	15.1 - 36.7	33.8 - 59.4	TIDC115C12-...	12
TIDCF120-W32	12 - 12.4	32	38	26.9	67.3	60	16.5 - 37.7	36.6 - 61.6	TIDC120C12-...	12
TIDCF130-W32	12.5 - 12.9	32	38	27.9	67.3	60	16.1 - 39.6	39.7 - 64.8	TIDC125C13-...	13
TIDCF130-W32	13 - 13.4	32	38	27.9	67.3	60	17.5 - 41.5	42.7 - 68	TIDC130C13-...	13
TIDCF140-W32	13.5 - 13.9	32	38	28.4	67.3	60	17.7 - 42.9	41.4 - 70.3	TIDC135C14-...	14
TIDCF140-W32	14 - 14.4	32	38	28.4	67.3	60	18.1 - 45	44.8 - 73.1	TIDC140C14-...	14
TIDCF150-W32	14.5 - 14.9	32	38	29.4	67.3	60	19.2 - 44.6	44 - 73.9	TIDC145C15-...	15
TIDCF150-W32	15 - 15.9	32	38	29.4	67.3	60	19.7 - 47.4	47.6 - 80.7	TIDC150C15-...	15
TIDCF160-W32	16 - 16.9	32	38	30.4	67.3	60	19.5 - 55.3	57 - 87.5	TIDC160C16-...	16
TIDCF170-W32	17 - 17.9	32	38	31.4	67.3	60	21.4 - 54.9	55.9 - 88.5	TIDC170C17-...	17
TIDCF180-W32	18 - 18.9	32	38	32.4	67.3	60	24.2 - 65.2	60 - 93	TIDC180C18-...	18
TIDCF190-W32	19 - 19.9	32	38	33.4	75.0	60	28.5 - 62.3	67 - 100	TIDC190C19-...	19

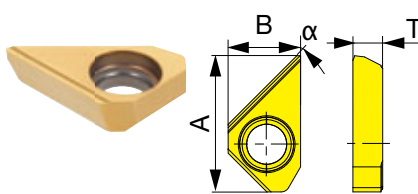
L^* is the dimension when using 45° chamfering insert

CHAMFERING INSERT

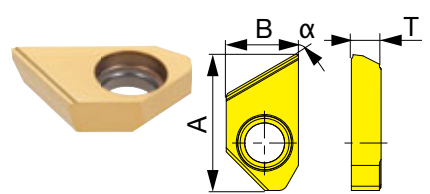
XHGT-30A



XHGR-45A



XHGR-60A



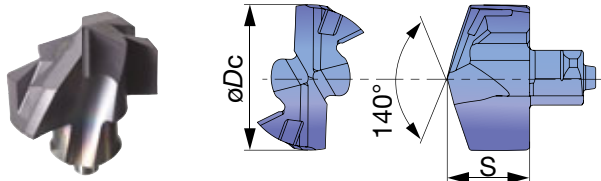
Designation	Grade GH730	A	B	T	Chamfering angle α	Maximum width of chamfer **
XHGT090300-30A	●	16	8.5	3.3	30°	1.5
XHGR090300-45A	●	16	8.5	3.3	45°	6
XHGR090300-60A	●	16	8.5	3.3	60°	3.5

** Please reduce the feed rate to half when chamfering over 60% of maximum width of chamfer

●: Line-up
Package quantity = 2 pcs.

DRILL HEAD

DMP



Tool diameter	$\phi 6 - \phi 17.9$	$\phi 18 - \phi 25.9$
Head diameter tolerance	+0.018 / 0	+0.021 / 0

Designation	ϕD_c	Grade AH725	S	Pocket size	Body	Designation	ϕD_c	Grade AH725	S	Pocket size	Body
DMP060	6	●	4	6	TID*060*	DMP100	10	●	6.05	10	TID*100*
DMP061	6.1	●	4	6	TID*060*	DMP101	10.1	●	6.05	10	TID*100*
DMP062	6.2	●	4	6	TID*060*	DMP102	10.2	●	6.05	10	TID*100*
DMP063	6.3	●	4	6	TID*060*	DMP103	10.3	●	6.05	10	TID*100*
DMP064	6.4	●	4	6	TID*060*	DMP104	10.4	●	6.05	10	TID*100*
DMP065	6.5	●	4.3	6	TID*065*	DMP105	10.5	●	6.05	10	TID*105*
DMP066	6.6	●	4.3	6	TID*065*	DMP106	10.6	●	6.05	10	TID*105*
DMP067	6.7	●	4.3	6	TID*065*	DMP107	10.7	●	6.05	10	TID*105*
DMP068	6.8	●	4.3	6	TID*065*	DMP108	10.8	●	6.05	10	TID*105*
DMP069	6.9	●	4.3	6	TID*065*	DMP109	10.9	●	6.05	10	TID*105*
DMP070	7	●	4.6	7	TID*070*	DMP110	11	●	6.45	11	TID*110*
DMP071	7.1	●	4.6	7	TID*070*	DMP111	11.1	●	6.45	11	TID*110*
DMP072	7.2	●	4.6	7	TID*070*	DMP112	11.2	●	6.45	11	TID*110*
DMP073	7.3	●	4.6	7	TID*070*	DMP113	11.3	●	6.45	11	TID*110*
DMP074	7.4	●	4.6	7	TID*070*	DMP114	11.4	●	6.45	11	TID*110*
DMP075	7.5	●	4.6	7	TID*075*	DMP115	11.5	●	6.45	11	TID*115*
DMP076	7.6	●	4.6	7	TID*075*	DMP116	11.6	●	6.45	11	TID*115*
DMP077	7.7	●	4.6	7	TID*075*	DMP117	11.7	●	6.45	11	TID*115*
DMP078	7.8	●	4.6	7	TID*075*	DMP118	11.8	●	6.45	11	TID*115*
DMP079	7.9	●	4.6	7	TID*075*	DMP119	11.9	●	6.45	11	TID*115*
DMP080	8	●	5.4	8	TID*080*	DMP120	12	●	6.8	12	TID*120*
DMP081	8.1	●	5.4	8	TID*080*	DMP121	12.1	●	6.8	12	TID*120*
DMP082	8.2	●	5.4	8	TID*080*	DMP122	12.2	●	6.8	12	TID*120*
DMP083	8.3	●	5.4	8	TID*080*	DMP123	12.3	●	6.8	12	TID*120*
DMP084	8.4	●	5.4	8	TID*080*	DMP124	12.4	●	6.8	12	TID*120*
DMP085	8.5	●	5.4	8	TID*085*	DMP125	12.5	●	6.8	12	TID*125*
DMP086	8.6	●	5.4	8	TID*085*	DMP126	12.6	●	6.8	12	TID*125*
DMP087	8.7	●	5.4	8	TID*085*	DMP127	12.7	●	6.8	12	TID*125*
DMP088	8.8	●	5.4	8	TID*085*	DMP128	12.8	●	6.8	12	TID*125*
DMP089	8.9	●	5.4	8	TID*085*	DMP129	12.9	●	6.8	12	TID*125*
DMP090	9	●	5.8	9	TID*090*	DMP130	13	●	7.4	13	TID*130*
DMP091	9.1	●	5.8	9	TID*090*	DMP131	13.1	●	7.4	13	TID*130*
DMP092	9.2	●	5.8	9	TID*090*	DMP132	13.2	●	7.4	13	TID*130*
DMP093	9.3	●	5.8	9	TID*090*	DMP133	13.3	●	7.4	13	TID*130*
DMP094	9.4	●	5.8	9	TID*090*	DMP134	13.4	●	7.4	13	TID*130*
DMP095	9.5	●	5.8	9	TID*095*	DMP135	13.5	●	7.4	13	TID*135*
DMP096	9.6	●	5.8	9	TID*095*	DMP136	13.6	●	7.4	13	TID*135*
DMP097	9.7	●	5.8	9	TID*095*	DMP137	13.7	●	7.4	13	TID*135*
DMP098	9.8	●	5.8	9	TID*095*	DMP138	13.8	●	7.4	13	TID*135*
DMP099	9.9	●	5.8	9	TID*095*	DMP139	13.9	●	7.4	13	TID*135*

Designation	øDc	Grade AH725	S	Pocket size	Body	Designation	øDc	Grade AH725	S	Pocket size	Body
DMP140	14	●	7.95	14	TID*140*	DMP180	18	●	10.3	18	TID*180*
DMP141	14.1	●	7.95	14	TID*140*	DMP181	18.1	●	10.3	18	TID*180*
DMP142	14.2	●	7.95	14	TID*140*	DMP182	18.2	●	10.3	18	TID*180*
DMP143	14.3	●	7.95	14	TID*140*	DMP183	18.3	●	10.3	18	TID*180*
DMP144	14.4	●	7.95	14	TID*140*	DMP184	18.4	●	10.3	18	TID*180*
DMP145	14.5	●	7.95	14	TID*145*	DMP185	18.5	●	10.3	18	TID*180*
DMP146	14.6	●	7.95	14	TID*145*	DMP186	18.6	●	10.3	18	TID*180*
DMP147	14.7	●	7.95	14	TID*145*	DMP187	18.7	●	10.3	18	TID*180*
DMP148	14.8	●	7.95	14	TID*145*	DMP188	18.8	●	10.3	18	TID*180*
DMP149	14.9	●	7.95	14	TID*145*	DMP189	18.9	●	10.3	18	TID*180*
DMP150	15	●	8.53	15	TID*150*	DMP190	19	●	10.8	19	TID*190*
DMP151	15.1	●	8.53	15	TID*150*	DMP191	19.1	●	10.8	19	TID*190*
DMP152	15.2	●	8.53	15	TID*150*	DMP192	19.2	●	10.8	19	TID*190*
DMP153	15.3	●	8.53	15	TID*150*	DMP193	19.3	●	10.8	19	TID*190*
DMP154	15.4	●	8.53	15	TID*150*	DMP194	19.4	●	10.8	19	TID*190*
DMP155	15.5	●	8.53	15	TID*150*	DMP195	19.5	●	10.8	19	TID*190*
DMP156	15.6	●	8.53	15	TID*150*	DMP196	19.6	●	10.8	19	TID*190*
DMP157	15.7	●	8.53	15	TID*150*	DMP197	19.7	●	10.8	19	TID*190*
DMP158	15.8	●	8.53	15	TID*150*	DMP198	19.8	●	10.8	19	TID*190*
DMP159	15.9	●	8.53	15	TID*150*	DMP199	19.9	●	10.8	19	TID*190*
DMP160	16	●	9.1	16	TID*160*	DMP200	20	●	11.4	20	TID*200*
DMP161	16.1	●	9.1	16	TID*160*	DMP201	20.1	●	11.4	20	TID*200*
DMP162	16.2	●	9.1	16	TID*160*	DMP202	20.2	●	11.4	20	TID*200*
DMP163	16.3	●	9.1	16	TID*160*	DMP203	20.3	●	11.4	20	TID*200*
DMP164	16.4	●	9.1	16	TID*160*	DMP204	20.4	●	11.4	20	TID*200*
DMP165	16.5	●	9.1	16	TID*160*	DMP205	20.5	●	11.4	20	TID*200*
DMP166	16.6	●	9.1	16	TID*160*	DMP206	20.6	●	11.4	20	TID*200*
DMP167	16.7	●	9.1	16	TID*160*	DMP207	20.7	●	11.4	20	TID*200*
DMP168	16.8	●	9.1	16	TID*160*	DMP208	20.8	●	11.4	20	TID*200*
DMP169	16.9	●	9.1	16	TID*160*	DMP209	20.9	●	11.4	20	TID*200*
DMP170	17	●	9.7	17	TID*170*	DMP210	21	●	11.98	21	TID*210*
DMP171	17.1	●	9.7	17	TID*170*	DMP211	21.1	●	11.98	21	TID*210*
DMP172	17.2	●	9.7	17	TID*170*	DMP212	21.2	●	11.98	21	TID*210*
DMP173	17.3	●	9.7	17	TID*170*	DMP213	21.3	●	11.98	21	TID*210*
DMP174	17.4	●	9.7	17	TID*170*	DMP214	21.4	●	11.98	21	TID*210*
DMP175	17.5	●	9.7	17	TID*170*	DMP215	21.5	●	11.98	21	TID*210*
DMP176	17.6	●	9.7	17	TID*170*	DMP216	21.6	●	11.98	21	TID*210*
DMP177	17.7	●	9.7	17	TID*170*	DMP217	21.7	●	11.98	21	TID*210*
DMP178	17.8	●	9.7	17	TID*170*	DMP218	21.8	●	11.98	21	TID*210*
DMP179	17.9	●	9.7	17	TID*170*	DMP219	21.9	●	11.98	21	TID*210*

●: Line-up
 Package Quantity: ø6.0 - ø19.9 = 2 pcs.
 ø20 - ø25.9 = 1 pc.

Designation	øDc	Grade AH725	S	Pocket size	Body
DMP220	22	●	12.56	22	TID*220*
DMP221	22.1	●	12.56	22	TID*220*
DMP222	22.2	●	12.56	22	TID*220*
DMP223	22.3	●	12.56	22	TID*220*
DMP224	22.4	●	12.56	22	TID*220*
DMP225	22.5	●	12.56	22	TID*220*
DMP226	22.6	●	12.56	22	TID*220*
DMP227	22.7	●	12.56	22	TID*220*
DMP228	22.8	●	12.56	22	TID*220*
DMP229	22.9	●	12.56	22	TID*220*
DMP230	23	●	13.13	23	TID*230*
DMP231	23.1	●	13.13	23	TID*230*
DMP232	23.2	●	13.13	23	TID*230*
DMP233	23.3	●	13.13	23	TID*230*
DMP234	23.4	●	13.13	23	TID*230*
DMP235	23.5	●	13.13	23	TID*230*
DMP236	23.6	●	13.13	23	TID*230*
DMP237	23.7	●	13.13	23	TID*230*
DMP238	23.8	●	13.13	23	TID*230*
DMP239	23.9	●	13.13	23	TID*230*
DMP240	24	●	13.7	24	TID*240*
DMP241	24.1	●	13.7	24	TID*240*
DMP242	24.2	●	13.7	24	TID*240*
DMP243	24.3	●	13.7	24	TID*240*
DMP244	24.4	●	13.7	24	TID*240*
DMP245	24.5	●	13.7	24	TID*240*
DMP246	24.6	●	13.7	24	TID*240*
DMP247	24.7	●	13.7	24	TID*240*
DMP248	24.8	●	13.7	24	TID*240*
DMP249	24.9	●	13.7	24	TID*240*
DMP250	25	●	14.3	25	TID*250*
DMP251	25.1	●	14.3	25	TID*250*
DMP252	25.2	●	14.3	25	TID*250*
DMP253	25.3	●	14.3	25	TID*250*
DMP254	25.4	●	14.3	25	TID*250*
DMP255	25.5	●	14.3	25	TID*250*
DMP256	25.6	●	14.3	25	TID*250*
DMP257	25.7	●	14.3	25	TID*250*
DMP258	25.8	●	14.3	25	TID*250*
DMP259	25.9	●	14.3	25	TID*250*

●: Line-up

Package Quantity: ø6.0 - ø19.9 = 2 pcs.
ø20 - ø25.9 = 1 pc.

STANDARD CUTTING CONDITIONS

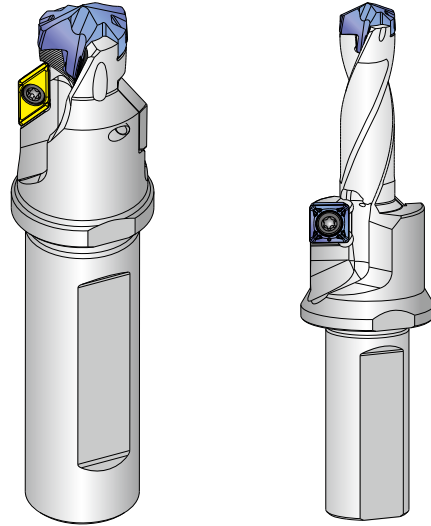
ISO	Workpiece materials	Cutting speed Vc (m/min)	Feed: f (mm/rev)						
			øDc (mm)						
			ø6 - 7.9	ø8 - 9.9	ø10 - ø11.9	ø12 - ø13.9	ø14 - ø15.9	ø16 - ø19.9	ø20 - ø25.9
P	Low carbon steel (C < 0.3) (SS400 / St42-1, SM490 / St52-3, S25C / C25, etc.)	80 - 140	0.09 - 0.13	0.12 - 0.25	0.15 - 0.28	0.18 - 0.3	0.20 - 0.35	0.25 - 0.45	0.25 - 0.45
	High carbon steel (C > 0.3) (S45C / C45, S55C / C55, etc.)	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
	Low alloy steel (SCM415, etc.)	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
	Alloy steel (SCM440 / 42CrMo4, SCr420 / 20Cr4, etc.)	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
M	Stainless steel (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-2, etc.)	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
K	Grey cast iron (FC250 / GG25, etc.)	80 - 180	0.12 - 0.18	0.15 - 0.3	0.20 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
	Ductile cast iron (FCD700 / GGG70, etc.)	80 - 140	0.12 - 0.18	0.15 - 0.3	0.20 - 0.35	0.25 - 0.4	0.3 - 0.45	0.35 - 0.55	0.35 - 0.6
N	Aluminium alloys (ADC12, etc.)	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
S	Titanium alloys (Ti-6Al-4V, etc.)	20 - 50	0.05 - 0.07	0.06 - 0.12	0.08 - 0.15	0.1 - 0.28	0.12 - 0.2	0.14 - 0.22	0.18 - 0.27
	Nickel-based alloys	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 - 0.22
H	Hardened steel	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

- 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.

SPECIALLY-DESIGNED DRILL BODY

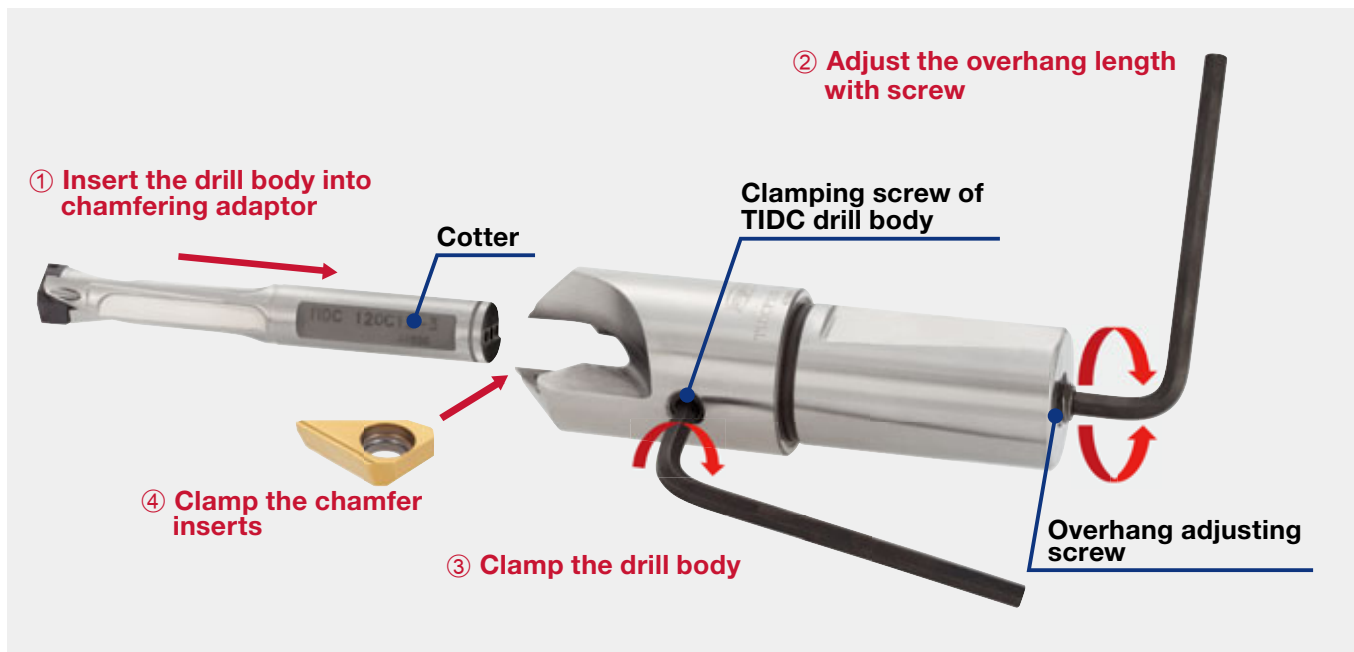
Special drill bodies, such as the one featuring chamfering or counter boring capabilities, will be available upon request. Please contact your sales representative for the details.



HOW TO MOUNT THE TIDC DRILL BODY INTO THE CHAMFER ADAPTOR

The overhang length of the drill can be changed by the adjusting screw at the bottom of the adaptor.

The rear end of the drill body must be in contact with the adjusting screw as the screw supports the drill against thrust force when drilling.



Procedure

- ① Place the TIDC drill body into the chamfer adaptor without chamfer inserts.
- ② Adjust the overhang length of the drill body with the adjusting screw at the bottom of the adaptor.
- ③ Adjust the position of the drill body so that the drill body is fixed at the cotter and tighten the clamping screw of the drill body. This aligns the flutes of the TIDC drill body with the chamfer inserts.
- ④ To clamp the chamfer inserts, tighten the clamping screw of the insert while pushing the insert into the insert pocket.

Notice

Before removing the drill body from the adaptor, chamfer inserts must be unclamped.
The overhang adjusting screw can be handled from the top of the adaptor with flat-blade screwdriver. In this way, the overhang length of the drill body can be adjusted after the adaptor is positioned on the drill shank.

PARTS

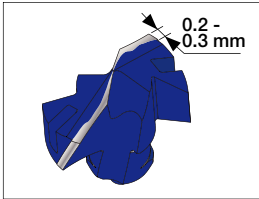
Clamping screw of TIDC drill body	Overhang adjusting screw	Wrench	Clamping screw of insert	Wrench	
				Torx bit	Grip
SRM10x10DIN916	SRM10x1.5S	HW5.0	SR14-544/S ***	BT15S	SW6-SD

*** SR14-544/S Package Quantity = 5 pcs.

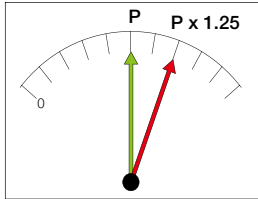
TECHNICAL GUIDELINES

● When to change drill heads (Criteria for the end of tool life)

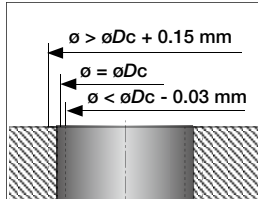
The criteria to identify the time for tool change are as follows:



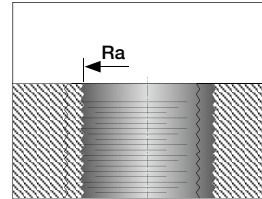
Width of corner wear reaches 0.2 – 0.3 mm.



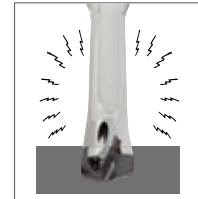
Spindle load exceeds 125% of the normal value.



Hole diameter is 0.15 mm larger or 0.03 mm smaller than the drill diameter.



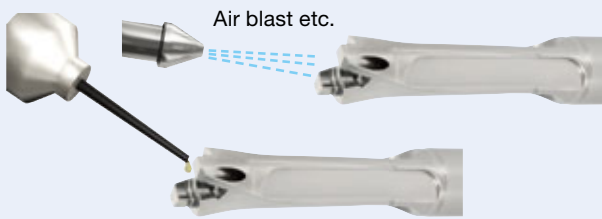
Surface roughness deteriorates.



Vibration or unusual noise occurs.

● How to clamp the drill head

① Clean and lubricate the pocket.



② Set the drill head into the pocket.



③ Set the clamping key on the drill head



④ Clamp

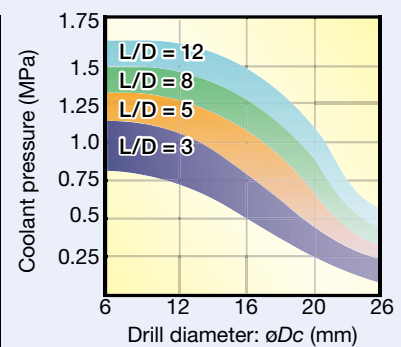
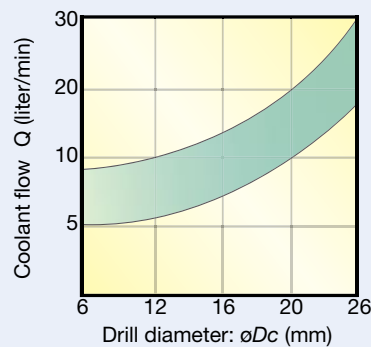


● Coolant supply

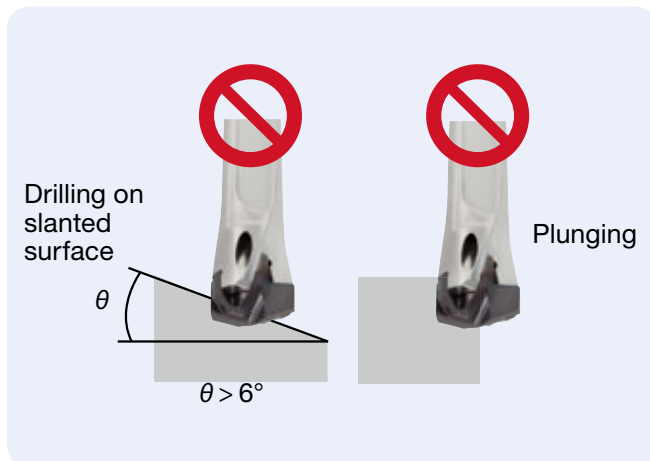
Internal coolant supply is recommended.



■ The required coolant flow and pressure

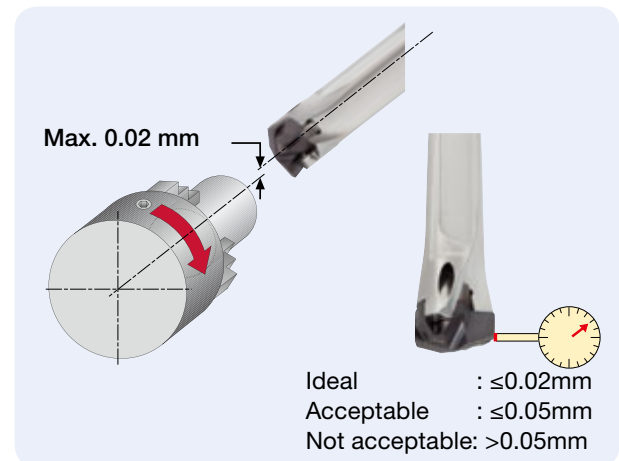


● Applications that are not recommended



● Run-out

Run-out should be less than 0.02 mm.



INSTRUCTION OF CLAMPING HEAD



Fig. #1



Fig. #2



Fig. #3

Procedure

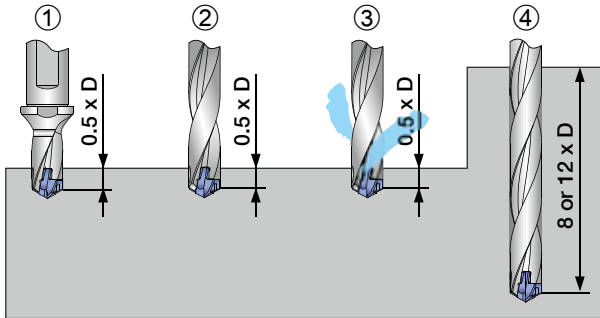
- ① Clean the clamping areas on the drill body and the head with an air blast, lubricate them, and put the drill head in the pocket.
- ② Set the clamping key in the groove on the drill head. Push the head toward the pocket with equal torque on the right and the left sides, and turn the clamping key to clamp the head completely. (Fig. #1)
- ③ Be sure that there is no gap between the bottom of the head and the drill body. A shim in the thickness of around 0.01 mm is useful to check the gap. (Fig. #2)
- ④ If there is a gap thicker than 0.01 mm, unclamp the head and return to the procedure No. ①
- ⑤ Check the run-out at the margin of the drill head. Run-out must be less than 0.05 mm. (Fig. #3) (Recommended value: less than 0.02 mm)
 If the run-out exceeds 0.05 mm, unclamp the head and return to the procedure No. ①.

Note #1: If the clamping torque is not equally applied on the right and the left sides of the drill head, there may be a gap between the head and the body, which increases the run-out of the head.

Note #2: The low accuracy in holding the drill body may affect the run-out. If the run-out is large, check the accuracy in holding the drill body.

CAUTION FOR USING DRILLS WITH L/D = 8 & 12

Prior to using the drill with L/D = 8 & 12, a pilot hole should be drilled with a short or centering drill.



- ① Drill a pilot hole in the depth of 0.5 x D.
- ② Rotate the drill at a low speed, such as 100 min⁻¹, and feed it slowly into the pilot hole until the drill reaches several millimeters from the bottom.
- ③ Supply the coolant and rotate the drill at the recommended speed.
- ④ Drill the required depth under the recommended cutting conditions.

HOLDERS RECOMMENDED FOR M/C

First recommendation



Power chuck





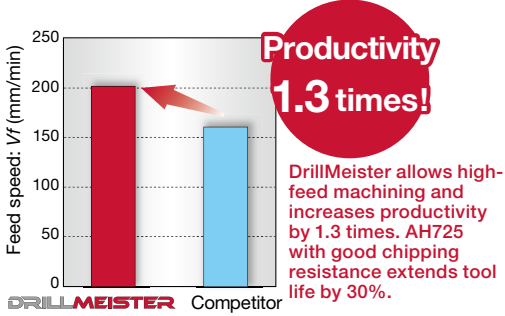
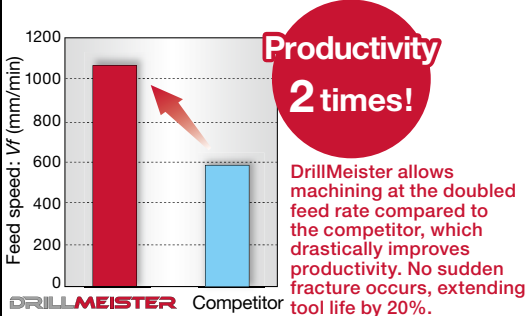


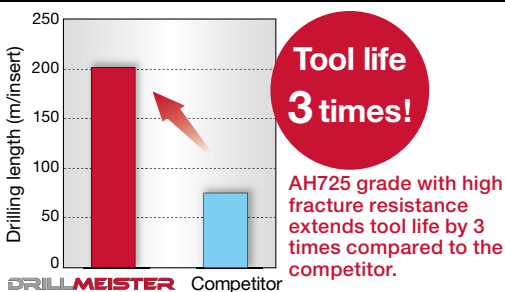
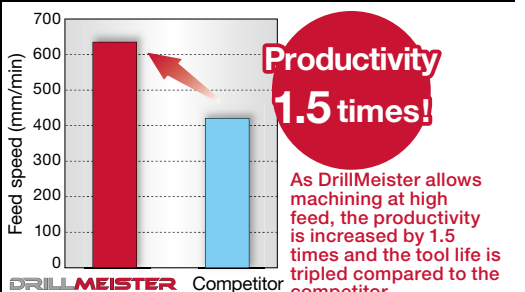
Collet chuck



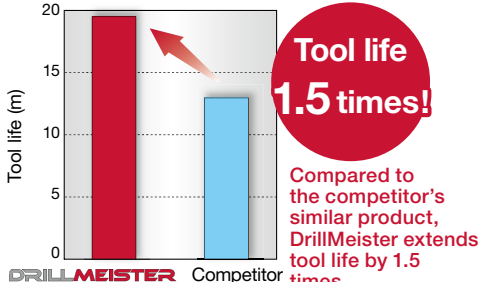
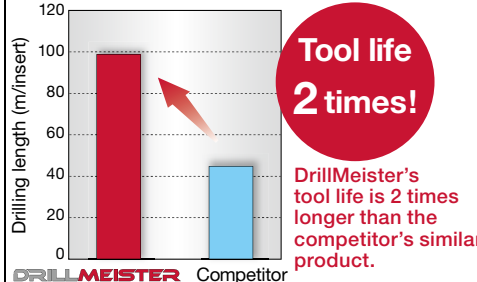


Side lock

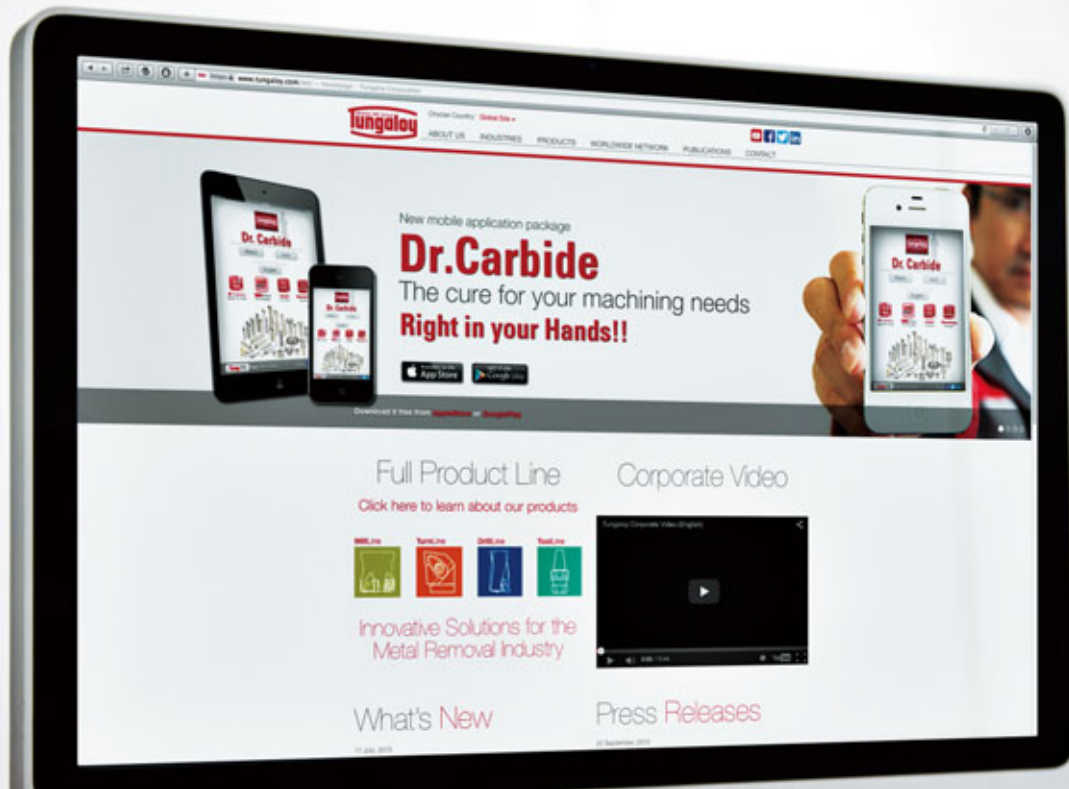
Note: If you need to use a 12xD body with a side-lock holder, the shank will need to have a flat area which may be placed additionally.

PRACTICAL EXAMPLES

Workpiece type		Ball valve	Ring gear
Drill body		TIDC100C10-3	TIDC100C10-3
Head		DMP105	DMP100
Grade		AH725	AH725
Workpiece material		SUS304 / X5CrNi18-9	SCM440 / 42CrMo4
		 M	 P
Cutting conditions	Cutting speed: V_c (m/min)	45	122
	Feed : f (mm/rev)	0.15	0.28
	Drill diameter : ϕD_c (mm)	10.5	10
	Hole depth : H (mm)	23	35
	Coolant	Wet (Internal supply)	Wet (Internal supply)
Results		 <p>Productivity 1.3 times!</p> <p>DrillMeister allows high-feed machining and increases productivity by 1.3 times. AH725 with good chipping resistance extends tool life by 30%.</p>	 <p>Productivity 2 times!</p> <p>DrillMeister allows machining at the doubled feed rate compared to the competitor, which drastically improves productivity. No sudden fracture occurs, extending tool life by 20%.</p>
Workpiece type		Wheel hub	Brake disk
Drill body		TID135F16-3	TID125F16-3
Insert		DMP139 AH725	DMP126 AH725
Workpiece material		S50C / C55	FC250 / 250
		 P	 K
Cutting conditions	Cutting speed: V_c (m/min)	90	100
	Feed : f (mm/rev)	0.2	0.2
	Feed speed : V_f (mm/min)	412	633
	Drill diameter : ϕD_c (mm)	13.9	12.6
	Hole depth : H (mm)	15	6
	Coolant	Wet (External)	Wet (External)
Results		 <p>Tool life 3 times!</p> <p>AH725 grade with high fracture resistance extends tool life by 3 times compared to the competitor.</p>	 <p>Productivity 1.5 times!</p> <p>As DrillMeister allows machining at high feed, the productivity is increased by 1.5 times and the tool life is tripled compared to the competitor.</p>

Workpiece type	CVT pulley	Drive pinion shaft	
Drill body	TIDC160C16-5	TID160F20-5	
Insert	DMP165 AH725	DMP160 AH725	
	SCr420 / 20Cr4	SCM415 / Low carbon alloy	
Workpiece material	 P	 P	
Cutting conditions	Cutting speed: V_c (m/min)	104	108
	Feed : f (mm/rev)	0.3	0.17
	Feed speed : V_f (mm/min)	600	365
	Drill diameter : ϕD_c (mm)	16.5	16
	Hole depth : H (mm)	50	90
	Machine	Horizontal M/C	NC lathe
	Coolant	Wet (Internal)	Wet (Internal)
Results	 <p>Tool life 1.5 times!</p> <p>Compared to the competitor's similar product, DrillMeister extends tool life by 1.5 times.</p>	 <p>Tool life 2 times!</p> <p>DrillMeister's tool life is 2 times longer than the competitor's similar product.</p>	

Check our site and our App to get more info!



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