

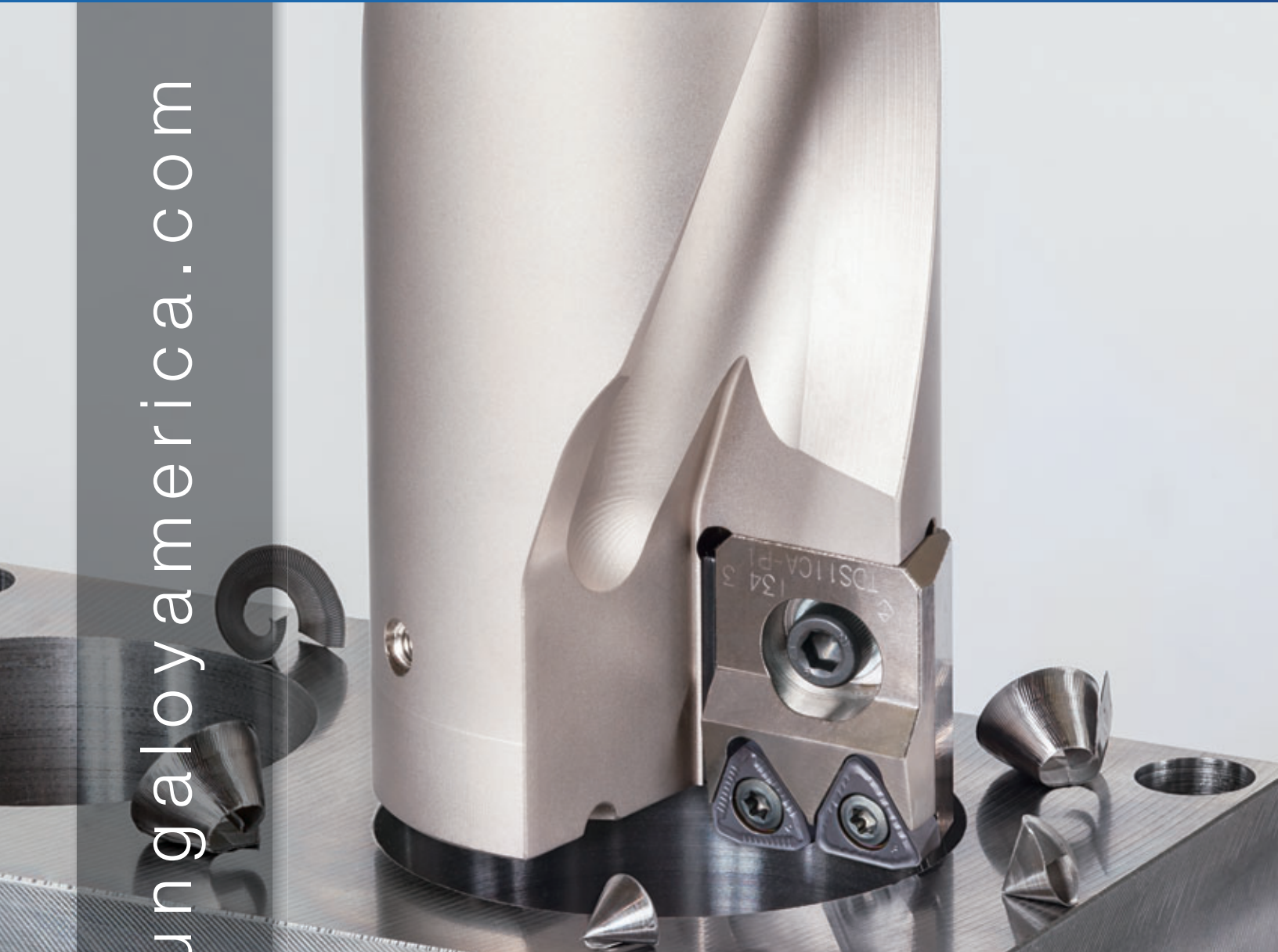


TUNGDRILLBIG

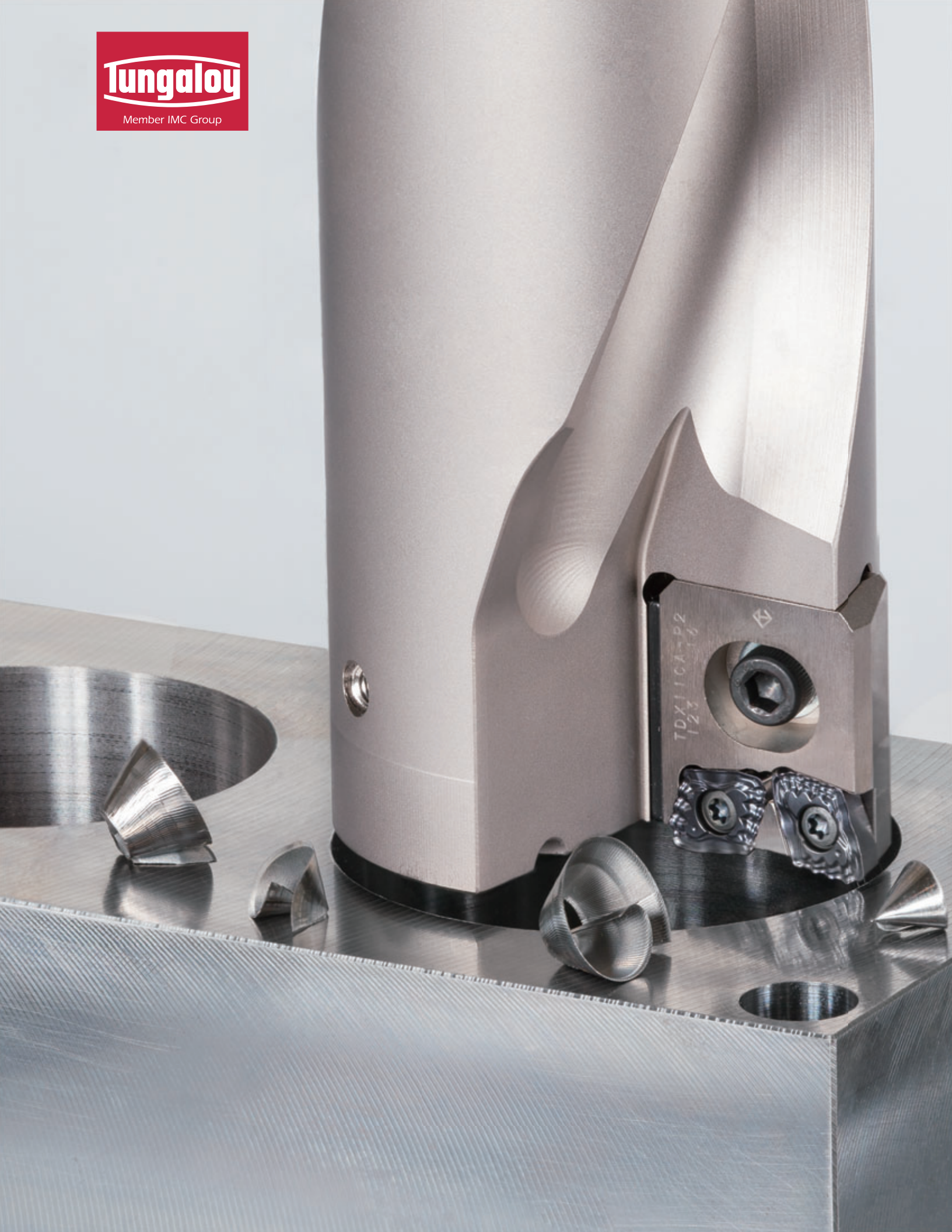
DRILLLINE

Tungaloy Report No. 401-US

www.tungaloyamerica.com



Adjustable tool reduces
the number of drills
required





TUNGDRILLBIG
TUNGALOY

A large diameter drill providing a more complete offering with the versatility of TDX and the economy of a 6 cornered TDS insert

TUNGDRILLBIG

TUNGALOY

Drill body with adjustable cartridge covers
hole diameter ranges from:

ØDc: Ø2.250" - Ø3.157", L/D = 2.5

1 Highly rigid body and optimized insert position

Provides well balanced cutting forces and stable machining conditions for highly accurate hole making.

Setting plate
for adjusting
diameter

2 Adjustable tool diameter

TungDrillBig features 4 drill body sizes that can accommodate a range of setting plates covering a diameter range from Ø2.250" - Ø3.157".



3 Drill body protection

The cartridge design protects the drill body from damage during demanding machining applications.

4 Variety of design options

TDX and TDS type cartridges can be affixed to the same body.



TDS type

Double sided insert with
6 cutting edges



DJ type



DS type



TDX type

Single sided insert with
4 cutting edges



DJ type



DW type



DS type



DG type

● Ordering system

Please order both "Body" and "Cartridge set"

Body

New Description for Body
TDBU****-****-2.5



Tool dia. øDc (inch)	Cat. No.
2.250	TDBU2250-2447-2.5
2.289	
2.329	
2.368	
2.407	
2.447	TDBU2461-2579-2.5
2.461	
2.500	
2.539	
2.579	
2.632	TDBU2632-2868-2.5
2.671	
2.711	
2.750	
2.789	
2.829	TDBU2921-3157-2.5
2.868	
2.921	
2.961	
3.000	
3.039	TDBU2921-3157-2.5
3.079	
3.118	
3.157	

+

Cartridge set

TDS type

NEW



Tool dia. øDc (inch)	Cat. No.
2.250 - 2.447	TDSCA57-62
2.461 - 2.579	TDSCA63-66
2.632 - 2.868	TDSCA67-73
2.921 - 3.157	TDSCA74-80

or

TDX type



Tool dia. øDc (inch)	Cat. No.
2.250 - 2.447	TDXCA57-62
2.461 - 2.579	TDXCA63-66
2.632 - 2.868	TDXCA67-73
2.921 - 3.157	TDXCA74-80

Notes:
Cartridge set consists of inner and outer cartridge.
Please order inner or outer cartridge separately.

■ Ordering example: TDBU2250-2447-2.5 with TDS cartridge

① Body

TDBU2250-2447-2.5

+

② Cartridge set

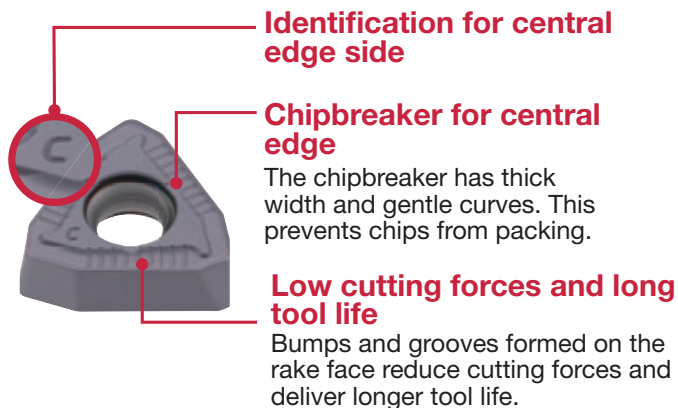
TDXCA57-62

NEW TDS type inserts

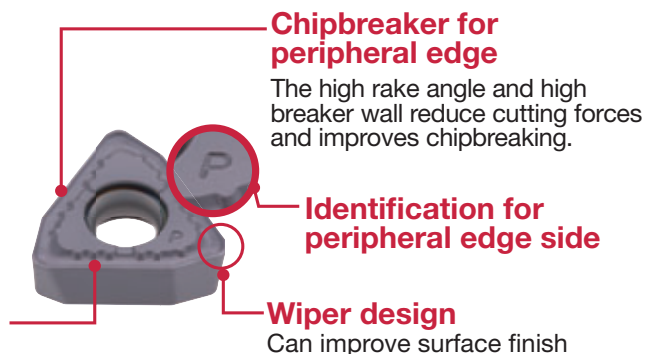
● Chipbreakers

DJ type For General purpose
Suitable for cutting a wide range of materials

Central insert

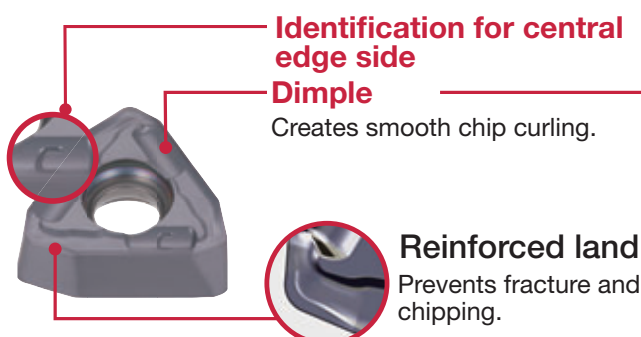


Peripheral insert

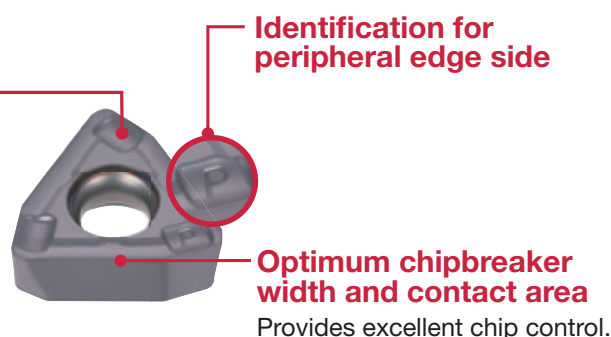


DS type For drilling stainless and gummy steels
Demonstrates exceptional chip control

Central insert



Peripheral insert



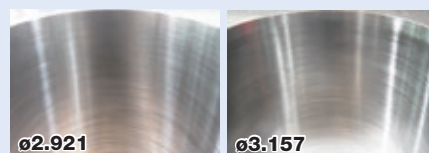
● Cutting performance

● Chip control

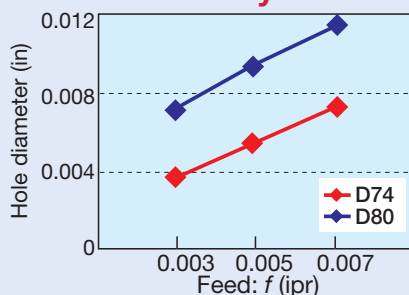
Chips are well controlled and shortened.

Tool diameter øDc (inch)	ø2.921 (without setting plate)		ø3.157 (with setting plate)			
	Feed f (ipr)	0.005	0.007	0.005	0.007	
1055						
						

● Surface quality



● Hole accuracy

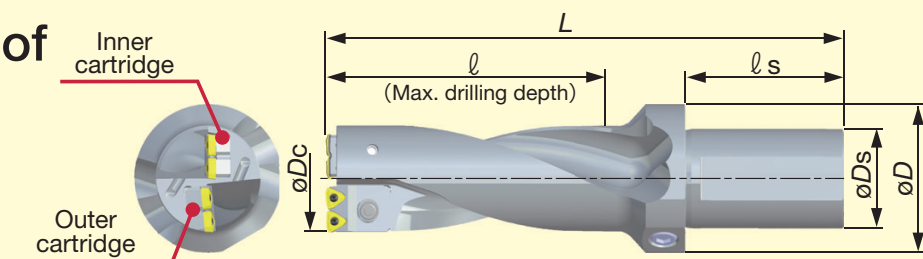


► Good chip control and hole diameter, surface quality

Drill : TDBU2921-3157-2.5
Cartridge : TDS11CA-C-74-80
 TDS11CA-P-74-80
Insert : WWMU11X512R-DJ
Grade : AH9030
Machine : Vertical M/C, CAT50

Cutting speed : $V_c = 460$ sfm
Feed : $f = 0.005$ ipr
Tool diameter : $\phi D_c = 2.921, 3.157$
Hole depth : $H = 5.9"$
Coolant : Wet (Internal)

Specifications of TDB with TDS cartridge



øDc (inch)	Body		Cartridge set		Dimensions (inch)					Weight (lb)	Setting plate		Applicable inserts
	Cat. No.	Stock	Cat. No.	Stock	øDs	øD	l	ls	L		Cat. No.	(inch)	
2.250	TDBU2250-2447-2.5	●	TDSCA57-62	●	2.0	2.953	6.117	4.0	11.957	8.8	-	-	WWMU08X408R-D*
2.289	TDBU2250-2447-2.5	●	TDSCA57-62	●	2.0	2.953	6.117	4.0	11.957	8.8	AP0801	0.020	WWMU08X408R-D*
2.329	TDBU2250-2447-2.5	●	TDSCA57-62	●	2.0	2.953	6.117	4.0	11.957	8.8	AP0802	0.039	WWMU08X408R-D*
2.368	TDBU2250-2447-2.5	●	TDSCA57-62	●	2.0	2.953	6.117	4.0	11.957	8.8	AP0803	0.059	WWMU08X408R-D*
2.407	TDBU2250-2447-2.5	●	TDSCA57-62	●	2.0	2.953	6.117	4.0	11.957	8.8	AP0804	0.079	WWMU08X408R-D*
2.447	TDBU2250-2447-2.5	●	TDSCA57-62	●	2.0	2.953	6.117	4.0	11.957	8.8	AP0805	0.098	WWMU08X408R-D*
2.461	TDBU2461-2579-2.5	●	TDSCA63-66	●	2.0	2.953	6.447	4.0	12.567	10.1	-	-	WWMU08X408R-D*
2.500	TDBU2461-2579-2.5	●	TDSCA63-66	●	2.0	2.953	6.447	4.0	12.567	10.1	AP0801	0.020	WWMU08X408R-D*
2.539	TDBU2461-2579-2.5	●	TDSCA63-66	●	2.0	2.953	6.447	4.0	12.567	10.1	AP0802	0.039	WWMU08X408R-D*
2.579	TDBU2461-2579-2.5	●	TDSCA63-66	●	2.0	2.953	6.447	4.0	12.567	10.1	AP0803	0.059	WWMU08X408R-D*
2.632	TDBU2632-2868-2.5	●	TDSCA67-73	●	2.0	2.953	7.170	4.0	13.544	11.9	-	-	WWMU09X510R-D*
2.671	TDBU2632-2868-2.5	●	TDSCA67-73	●	2.0	2.953	7.170	4.0	13.544	11.9	AP1101	0.020	WWMU09X510R-D*
2.711	TDBU2632-2868-2.5	●	TDSCA67-73	●	2.0	2.953	7.170	4.0	13.544	11.9	AP1102	0.039	WWMU09X510R-D*
2.750	TDBU2632-2868-2.5	●	TDSCA67-73	●	2.0	2.953	7.170	4.0	13.544	11.9	AP1103	0.059	WWMU09X510R-D*
2.789	TDBU2632-2868-2.5	●	TDSCA67-73	●	2.0	2.953	7.170	4.0	13.544	11.9	AP1104	0.079	WWMU09X510R-D*
2.829	TDBU2632-2868-2.5	●	TDSCA67-73	●	2.0	2.953	7.170	4.0	13.544	11.9	AP1105	0.098	WWMU09X510R-D*
2.868	TDBU2632-2868-2.5	●	TDSCA67-73	●	2.0	2.953	7.170	4.0	13.544	11.9	AP1106	0.118	WWMU09X510R-D*
2.921	TDBU2921-3157-2.5	●	TDSCA74-80	●	2.0	2.953	7.894	4.0	13.973	13.7	-	-	WWMU11X512R-D*
2.961	TDBU2921-3157-2.5	●	TDSCA74-80	●	2.0	2.953	7.894	4.0	13.973	13.7	AP1101	0.020	WWMU11X512R-D*
3.000	TDBU2921-3157-2.5	●	TDSCA74-80	●	2.0	2.953	7.894	4.0	13.973	13.7	AP1102	0.039	WWMU11X512R-D*
3.039	TDBU2921-3157-2.5	●	TDSCA74-80	●	2.0	2.953	7.894	4.0	13.973	13.7	AP1103	0.059	WWMU11X512R-D*
3.079	TDBU2921-3157-2.5	●	TDSCA74-80	●	2.0	2.953	7.894	4.0	13.973	13.7	AP1104	0.079	WWMU11X512R-D*
3.118	TDBU2921-3157-2.5	●	TDSCA74-80	●	2.0	2.953	7.894	4.0	13.973	13.7	AP1105	0.098	WWMU11X512R-D*
3.157	TDBU2921-3157-2.5	●	TDSCA74-80	●	2.0	2.953	7.894	4.0	13.973	13.7	AP1106	0.118	WWMU11X512R-D*

Inserts

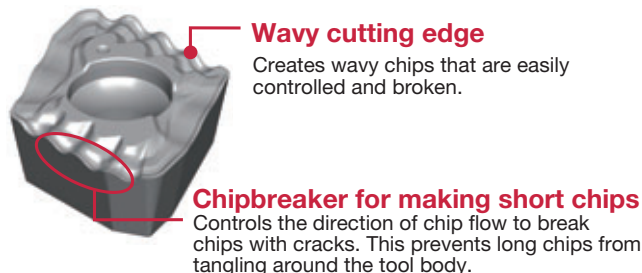
Chipbreaker Appearance	Cat. No.	Stocked grades PREMIUMTEC		Dimensions (inch)				Applicable drill diameters øDc (inch)
		AH9030	AH6030	ød	T	ød1	r _ε	
DJ 	WWMU08X408R-DJ	●		0.315	0.154	0.134	0.031	ø2.250 - ø2.579
	WWMU09X510R-DJ	●		0.382	0.193	0.173	0.039	ø2.632 - ø2.868
	WWMU11X512R-DJ	●		0.445	0.224	0.217	0.047	ø2.921 - ø3.157
DS 	WWMU08X408R-DS		●	0.315	0.154	0.134	0.031	ø2.250 - ø2.579
	WWMU09X510R-DS		●	0.382	0.193	0.173	0.039	ø2.632 - ø2.868
	WWMU11X512R-DS		●	0.445	0.224	0.217	0.047	ø2.921 - ø3.157

TDX type inserts

● Chipbreakers

DG type

Applicable for low speed machining. Prevents long chips from tangling around the tool body, even when the cutting speed is low on heavy machines with a low-rpm spindle.



DW type

In comparison with conventional inserts, this chipbreaker allows higher feeds and produces superior surface finishes.



Strong chipbreaker for high feeds
Can forcibly curl thick chips produced at high feeds, causing them to break into short sections.

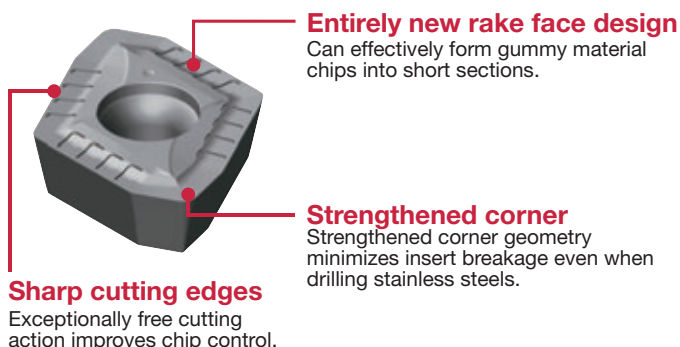
DJ type

General purpose chipbreaker for almost all applications. Features low cutting forces and allows stable drilling.



DS type

Performs excellent chip control for gummy materials such as stainless steels and low carbon steels.



● Cutting performance

● Chip control

Chips are well controlled and shortened.

Tool diameter øDc (inch)	ø2.250 (without setting plate)		ø2.447 (with setting plate)	
	Feed f (ipr)	0.003	0.005	0.003
AISI 4140				
AISI 1045				



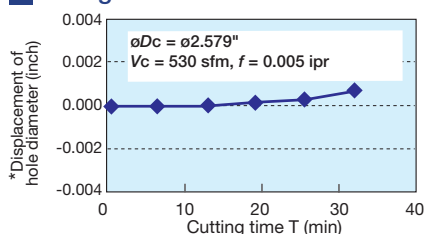
▶ No chip control difference with or without setting plates. This ensures stable machining in each diameter range.

Drill : TDBU2250-2447-2.5
Insert : XPMT08T308R-DJ
Grade : AH725
Machine : Vertical M/C, CAT50
Cutting speed : $V_c = 530$ sfm
Hole depth : $H = 3.0"$
Coolant : Wet (Internal)

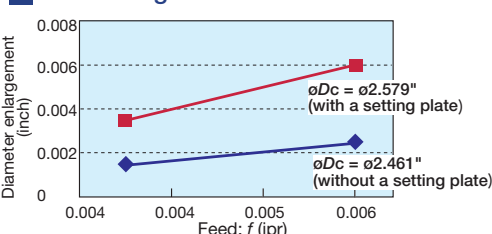
● Hole accuracy

Highly rigid body and optimized insert position provides stable machining for high accuracy.

■ Change of hole diameter



■ Hole enlargement



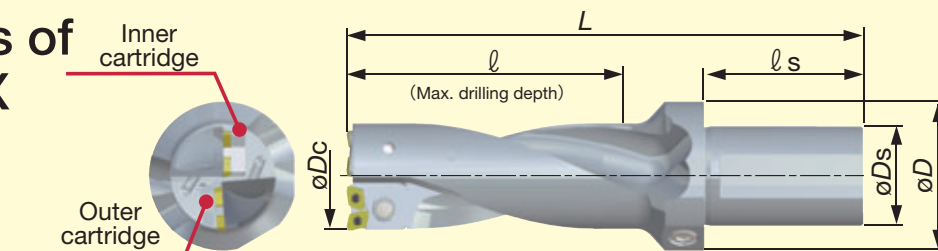
▶ The variation in hole diameter is minimal when drilling continuously.

*(Above graph shows the displacement value compared with diameter of 1st hole.)

▶ The value of diameter enlargement with setting plate is similar to the value without setting plate.

Drill : TDBU2461-2579-2.5
Insert : XPMT08T308R-DJ
Grade : AH725
Workpiece : AISI 4140
Machine : Vertical M/C, CAT50
Cutting speed: $V_c = 530$ sfm
Feed : $f = 0.004 \sim 0.006$ ipr
Hole depth : $H = 3.0"$
Coolant : Wet (Internal)

Specifications of TDB with TDX cartridge



øDc (inch)	Body		Cartridge set		Dimensions (inch)					Weight (lb)	Setting plate		Applicable inserts
	Cat. No.	Stock	Cat. No.	Stock	øDs	øD	l	ls	L		Cat. No.	(inch)	
2.250	TDBU2250-2447-2.5	●	TDXCA57-62	●	2.0	2.953	6.117	4.0	11.874	8.8	-	-	XPMT08T308R-D*
2.289	TDBU2250-2447-2.5	●	TDXCA57-62	●	2.0	2.953	6.117	4.0	11.874	8.8	AP0801	0.020	XPMT08T308R-D*
2.329	TDBU2250-2447-2.5	●	TDXCA57-62	●	2.0	2.953	6.117	4.0	11.874	8.8	AP0802	0.039	XPMT08T308R-D*
2.368	TDBU2250-2447-2.5	●	TDXCA57-62	●	2.0	2.953	6.117	4.0	11.874	8.8	AP0803	0.059	XPMT08T308R-D*
2.407	TDBU2250-2447-2.5	●	TDXCA57-62	●	2.0	2.953	6.117	4.0	11.874	8.8	AP0804	0.079	XPMT08T308R-D*
2.447	TDBU2250-2447-2.5	●	TDXCA57-62	●	2.0	2.953	6.117	4.0	11.874	8.8	AP0805	0.098	XPMT08T308R-D*
2.461	TDBU2461-2579-2.5	●	TDXCA63-66	●	2.0	2.953	6.447	4.0	12.465	10.1	-	-	XPMT08T308R-D*
2.500	TDBU2461-2579-2.5	●	TDXCA63-66	●	2.0	2.953	6.447	4.0	12.465	10.1	AP0801	0.020	XPMT08T308R-D*
2.539	TDBU2461-2579-2.5	●	TDXCA63-66	●	2.0	2.953	6.447	4.0	12.465	10.1	AP0802	0.039	XPMT08T308R-D*
2.579	TDBU2461-2579-2.5	●	TDXCA63-66	●	2.0	2.953	6.447	4.0	12.465	10.1	AP0803	0.059	XPMT08T308R-D*
2.632	TDBU2632-2868-2.5	●	TDXCA67-73	●	2.0	2.953	7.170	4.0	13.449	11.9	-	-	XPMT110412R-D*
2.671	TDBU2632-2868-2.5	●	TDXCA67-73	●	2.0	2.953	7.170	4.0	13.449	11.9	AP1101	0.020	XPMT110412R-D*
2.711	TDBU2632-2868-2.5	●	TDXCA67-73	●	2.0	2.953	7.170	4.0	13.449	11.9	AP1102	0.039	XPMT110412R-D*
2.750	TDBU2632-2868-2.5	●	TDXCA67-73	●	2.0	2.953	7.170	4.0	13.449	11.9	AP1103	0.059	XPMT110412R-D*
2.789	TDBU2632-2868-2.5	●	TDXCA67-73	●	2.0	2.953	7.170	4.0	13.449	11.9	AP1104	0.079	XPMT110412R-D*
2.829	TDBU2632-2868-2.5	●	TDXCA67-73	●	2.0	2.953	7.170	4.0	13.449	11.9	AP1105	0.098	XPMT110412R-D*
2.868	TDBU2632-2868-2.5	●	TDXCA67-73	●	2.0	2.953	7.170	4.0	13.449	11.9	AP1106	0.118	XPMT110412R-D*
2.921	TDBU2921-3157-2.5	●	TDXCA74-80	●	2.0	2.953	7.894	4.0	13.843	13.7	-	-	XPMT110412R-D*
2.961	TDBU2921-3157-2.5	●	TDXCA74-80	●	2.0	2.953	7.894	4.0	13.843	13.7	AP1101	0.020	XPMT110412R-D*
3.000	TDBU2921-3157-2.5	●	TDXCA74-80	●	2.0	2.953	7.894	4.0	13.843	13.7	AP1102	0.039	XPMT110412R-D*
3.039	TDBU2921-3157-2.5	●	TDXCA74-80	●	2.0	2.953	7.894	4.0	13.843	13.7	AP1103	0.059	XPMT110412R-D*
3.079	TDBU2921-3157-2.5	●	TDXCA74-80	●	2.0	2.953	7.894	4.0	13.843	13.7	AP1104	0.079	XPMT110412R-D*
3.118	TDBU2921-3157-2.5	●	TDXCA74-80	●	2.0	2.953	7.894	4.0	13.843	13.7	AP1105	0.098	XPMT110412R-D*
3.157	TDBU2921-3157-2.5	●	TDXCA74-80	●	2.0	2.953	7.894	4.0	13.843	13.7	AP1106	0.118	XPMT110412R-D*

Inserts

Chipbreaker Appearance	Cat. No.	Stocked grades				Dimensions (inch)					Applicable drill dia. øDc (inch)
		AH725	AH120	AH740	T1115	A	B	T	ød1	r _ε	
DJ 	XPMT08T308R-DJ	●		●	●	0.335	0.390	0.156	0.134	0.031	ø2.250 - ø2.579
	XPMT110412R-DJ	●		●	●	0.441	0.492	0.187	0.173	0.047	ø2.632 - ø3.157
DS 	XPMT08T308R-DS	●	●			0.335	0.390	0.156	0.134	0.031	ø2.250 - ø2.579
	XPMT110412R-DS	●	●			0.441	0.492	0.187	0.173	0.047	ø2.632 - ø3.157
DW 	XPMT08T308R-DW	●	●	●		0.335	0.390	0.156	0.134	0.031	ø2.250 - ø2.579
	XPMT110412R-DW	●	●	●		0.441	0.492	0.187	0.173	0.047	ø2.632 - ø3.157
DG 	XPMT08T308R-DG	●				0.335	0.390	0.156	0.134	0.031	ø2.250 - ø2.579
	XPMT110412R-DG	●				0.441	0.492	0.187	0.173	0.047	ø2.632 - ø3.157

TDS type

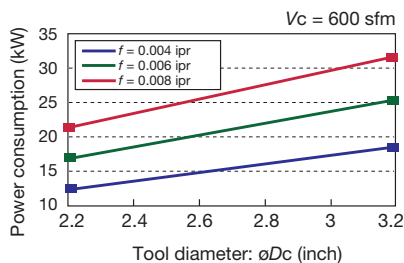
Standard cutting conditions

ISO	Workpiece materials	Selection criteria	Chip-breaker	Grade	Cutting speed Vc (sfm)	Feed: f (ipr)	
						øDc (inch)	
						ø2.250 - 2.868	ø2.921 - 3.157
P	Low carbon steels (C<0.3) 70, 1025 etc.	First choice	DS	AH6030	525 - 1050	0.0015 - 0.004	0.0015 - 0.004
		For wear resistance	DJ	AH9030	525 - 820	0.0015 - 0.004	0.0015 - 0.004
	Carbon steels (C>0.3) 1045C, 1055 etc.	First choice	DJ	AH9030	260 - 820	0.002 - 0.007	0.002 - 0.008
		For impact resistance	DS	AH6030	260 - 820	0.002 - 0.006	0.002 - 0.006
	Low alloy steels	First choice	DS	AH6030	260 - 660	0.0015 - 0.005	0.0015 - 0.005
		For wear resistance	DJ	AH9030	260 - 660	0.002 - 0.006	0.002 - 0.006
	Alloy steels 4140 etc.	First choice	DJ	AH9030	330 - 660	0.002 - 0.007	0.002 - 0.008
		For impact resistance	DS	AH6030	260 - 660	0.0015 - 0.006	0.0015 - 0.006
M	Stainless steels (Austenitic) 304, 316 etc.	First choice	DS	AH6030	330 - 660	0.0015 - 0.005	0.0015 - 0.005
		—	DJ	AH9030	330 - 660	0.0015 - 0.005	0.0015 - 0.005
	Stainless steels (Martensitic and ferritic) 430, 416 etc.	First choice	DS	AH6030	330 - 660	0.0015 - 0.005	0.0015 - 0.005
		—	DJ	AH9030	330 - 660	0.0015 - 0.005	0.0015 - 0.005
	Stainless steels (Precipitation hardening) S17400 etc.	First choice	DS	AH6030	260 - 400	0.0015 - 0.004	0.0015 - 0.004
		—	DJ	AH9030	260 - 400	0.0015 - 0.004	0.0015 - 0.004
K	Gray cast irons No.250B etc.	First choice	DJ	AH9030	260 - 820	0.002 - 0.008	0.002 - 0.009
		For impact resistance	DS	AH6030	260 - 660	0.002 - 0.006	0.002 - 0.007
	Ductile cast irons 700 etc.	First choice	DJ	AH9030	260 - 660	0.002 - 0.007	0.002 - 0.008
		For impact resistance	DS	AH6030	260 - 500	0.002 - 0.006	0.002 - 0.007
N	Aluminum alloy	First choice	DS	AH6030	660 - 1300	0.004 - 0.009	0.004 - 0.010
		—	DJ	AH9030	660 - 1300	0.004 - 0.009	0.004 - 0.010
S	High temperature alloy Innconel718 etc.	First choice	DS	AH6030	60 - 200	0.0015 - 0.004	0.0015 - 0.004
		—	DJ	AH9030	60 - 200	0.0015 - 0.004	0.0015 - 0.004
	Titanium alloy Ti-6Al-4V etc.	First choice	DS	AH6030	130 - 400	0.002 - 0.006	0.002 - 0.006
		—	DJ	AH9030	130 - 400	0.002 - 0.006	0.002 - 0.006
H	Hardened steel Over 40HRC	First choice	DJ	AH9030	170 - 330	0.0015 - 0.004	0.0015 - 0.004
		For impact resistance	DS	AH6030	130 - 260	0.0015 - 0.004	0.0015 - 0.004

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a CAT50.
- Figure on right shows reference of required machine power.



Cutting coolant

- Use water soluble type coolant with internal supply.
- Coolant pressure higher than 1MPa is essential.

TDX type

Inserts recommendation

ISO	Workpiece materials	First choice	High feed	High speed	Troubleshooting		
					Breakage	Wear	Surface finish
P	Low carbon steels (C < 0.3) AISI 1015, 1025 etc.	DS, AH725		DJ, AH725	DS, AH120		DW, AH725
	Carbon steels (C > 0.3) AISI 1045, 1055 etc.	DJ, AH725	DW, AH725	DJ, AH725	DW, AH740	DJ, T1115	DW, AH725
	Low alloy steels AISI 4130 etc.	DS, AH725		DJ, AH725	DS, AH120		DW, AH725
	Alloy steels AISI 4140, 5120 etc.	DJ, AH725	DW, AH725	DJ, AH725	DW, AH740	DJ, T1115	DW, AH725
M	Stainless steels (Austenitic) AISI 304, 316 etc.	DS, AH725		DS, AH725	DS, AH120		DW, AH725
	Stainless steels (Martensitic and ferritic) AISI 430, 416 etc.	DS, AH725		DS, AH725	DS, AH120		DW, AH725
	Stainless steels (Precipitation hardening) AISI 630 etc.	DS, AH725		DS, AH725	DS, AH120		DW, AH725
K	Gray cast irons ASTM No.35B etc.	DJ, AH725	DW, AH725	DJ, T1115	DW, AH740	DJ, T1115	DW, AH725
	Ductile cast irons AISI 60-40-18 etc.	DJ, AH725	DW, AH725	DJ, T1115	DW, AH740	DJ, T1115	DW, AH725
N	Aluminum alloys AISI 333.0, 383.0 etc.	DW, AH725	DW, AH725	DJ, AH725	DW, AH740		

Standard cutting conditions

ISO	Workpiece materials	Cutting speed Vc (sfm)	Feed: f (ipr)	
			ø2.250 ~ ø2.579	ø2.632 ~ ø3.157
P	Low carbon steels (C < 0.3) AISI 1015, 1025 etc.	520 - 1000	0.002 - 0.005	0.003 - 0.006
	Carbon steels (C > 0.3) AISI 1045, 1055 etc.	260 - 820	0.003 - 0.007	0.004 - 0.008
	Low alloy steels AISI 4130 etc.	520 - 820	0.002 - 0.006	0.003 - 0.007
	Alloy steels AISI 4140, 5120 etc.	260 - 660	0.002 - 0.006	0.003 - 0.007
M	Stainless steels (Austenitic) AISI 304, 316 etc.	330 - 660	0.002 - 0.005	0.003 - 0.006
	Stainless steels (Martensitic and ferritic) AISI 430, 416 etc.	330 - 660	0.002 - 0.005	0.003 - 0.006
	Stainless steels (Precipitation hardening) AISI 630 etc.	260 - 390	0.002 - 0.004	0.002 - 0.005
K	Gray cast irons ASTM No.35B etc.	260 - 820	0.003 - 0.008	0.004 - 0.009
	Ductile cast irons AISI 60-40-18 etc.	260 - 660	0.003 - 0.008	0.004 - 0.009
N	Aluminum alloys AISI 333.0, 383.0 etc.	660 - 1300	0.006 - 0.010	0.007 - 0.110

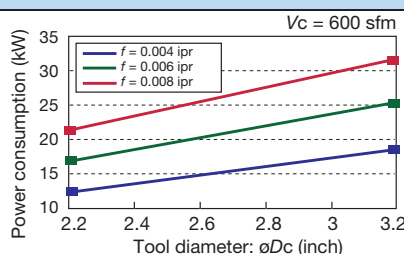
Standard cutting conditions for DG chipbreaker

ISO	Workpiece materials	Cutting speed Vc (sfm)	Feed: f (ipr)
			ø2.250 ~ ø3.157
P	Low carbon steels (C < 0.3) AISI 1010, 1025 etc.	200 - 580	0.002 - 0.003

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a CAT50.
- Figure on right shows reference of required machine power.



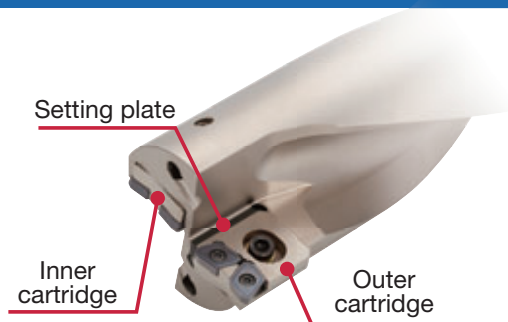
Cutting coolant

- Use water soluble type coolant with internal supply.
- Coolant pressure higher than 1MPa is essential.

Parts list

NEW

Body



Cat. No.	Clamp Screw			Wrench			Setting plate					
	For cartridge (Outer, Inner)	For taper screw	Washer	For cartridge	For taper screw	For setting plate						
TDBU2250-2447-2.5	CM5x0.8x12	PT1/4GN	5.3x10x1	P-4	P-6	T-9D	AP0801	AP0802	AP0803	AP0804	AP0805	-
TDBU2461-2579-2.5	CM6x15	PT1/4GN	6.4x12.5x1.6	P-5	P-6	T-9D	AP0801	AP0802	AP0803	-	-	-
TDBU2632-2868-2.5	CM6x16	PT1/4GN	6.4x12.5x1.6	P-5	P-6	T-9D	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106
TDBU2921-3157-2.5	CM6x16	PT1/4GN	6.4x12.5x1.6	P-5	P-6	T-9D	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106

TDS type Cartridge set

Cat. No.	Cartridge		Clamp screw		Wrench for insert
	Outer	Inner	For inserts (x4)	For setting plate (x2)	
TDSCA57-62	TDS08CA-P-57-62	TDS08CA-C-57-62	CSTB-3	CSTB-3	T-9F
TDSCA63-66	TDS08CA-P-63-66	TDS08CA-C-63-66	CSTB-3	CSTB-3	T-9F
TDSCA67-73	TDS09CA-P-67-73	TDS09CA-C-67-73	CSTB-4	CSTB-3	T-15F
TDSCA74-80	TDS11CA-P-74-80	TDS11CA-C-74-80	CSTB-5	CSTB-3	T-20F

TDS type individual cartridge

Inner cartridge Cat. No.	Stock	Clamp screw	
		For insert (x2)	For setting plate
TDS08CA-C-57-62	●	CSTB-3	-
TDS08CA-C-63-66	●	CSTB-3	-
TDS09CA-C-67-73	●	CSTB-4	-
TDS11CA-C-74-80	●	CSTB-5	-

Outer cartridge Cat. No.	Stock	Clamp screw	
		For insert (x2)	For setting plate (x2)
TDS08CA-P-57-62	●	CSTB-3	CSTB-3
TDS08CA-P-63-66	●	CSTB-3	CSTB-3
TDS09CA-P-67-73	●	CSTB-4	CSTB-3
TDS11CA-P-74-80	●	CSTB-5	CSTB-3

TDX type Cartridge set

Cat. No.	Cartridge		Clamp screw		Wrench for insert
	Outer	Inner	For insert (x4)	For setting plate (x2)	
TDXCA57-62	TDX08CA-P1	TDX08CA-C1	CSTB-3	CSTB-3	T-9F
TDXCA63-66	TDX08CA-P2	TDX08CA-C2	CSTB-3	CSTB-3	T-9F
TDXCA67-73	TDX11CA-P1	TDX11CA-C1	CSTB-4	CSTB-3	T-15F
TDXCA74-80	TDX11CA-P2	TDX11CA-C2	CSTB-4	CSTB-3	T-15F

TDX type individual cartridge

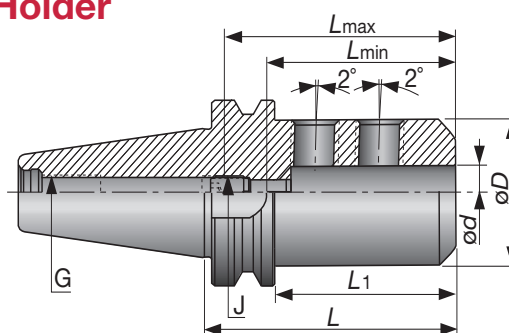
Inner cartridge Cat. No.	Stock	Clamp screw	
		For insert (x2)	For setting plate
TDX08CA-C1	●	CSTB-3	-
TDX08CA-C2	●	CSTB-3	-
TDX11CA-C1	●	CSTB-4	-
TDX11CA-C2	●	CSTB-4	-

Outer cartridge Cat. No.	Stock	Clamp screw	
		For insert (x2)	For setting plate
TDX08CA-P1	●	CSTB-3	CSTB-3
TDX08CA-P2	●	CSTB-3	CSTB-3
TDX11CA-P1	●	CSTB-4	CSTB-3
TDX11CA-P2	●	CSTB-4	CSTB-3

● Holder

CAT type for drill Chuck Holder

TUNGALOID
TUNGALOY



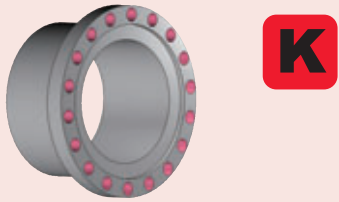
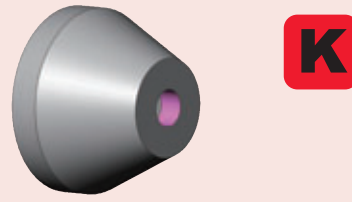
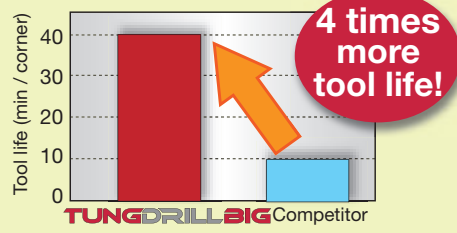
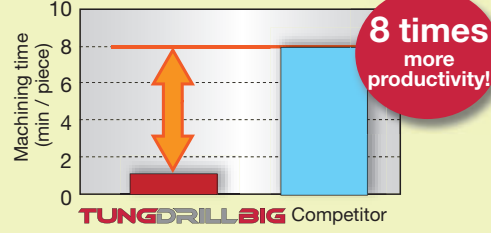
Cat. No.	Stock	Dimensions (inch)				J *	G
		ϕd	ϕD	L	L_1		
CAT50EM2X5.625		2	3.740	5.625	4.875	SCREW114x718EM	1-8

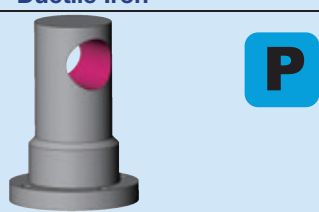
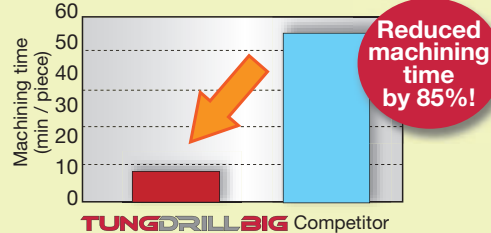
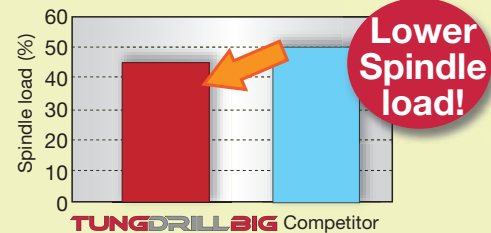
* The adjustment screw has an internal coolant hole.

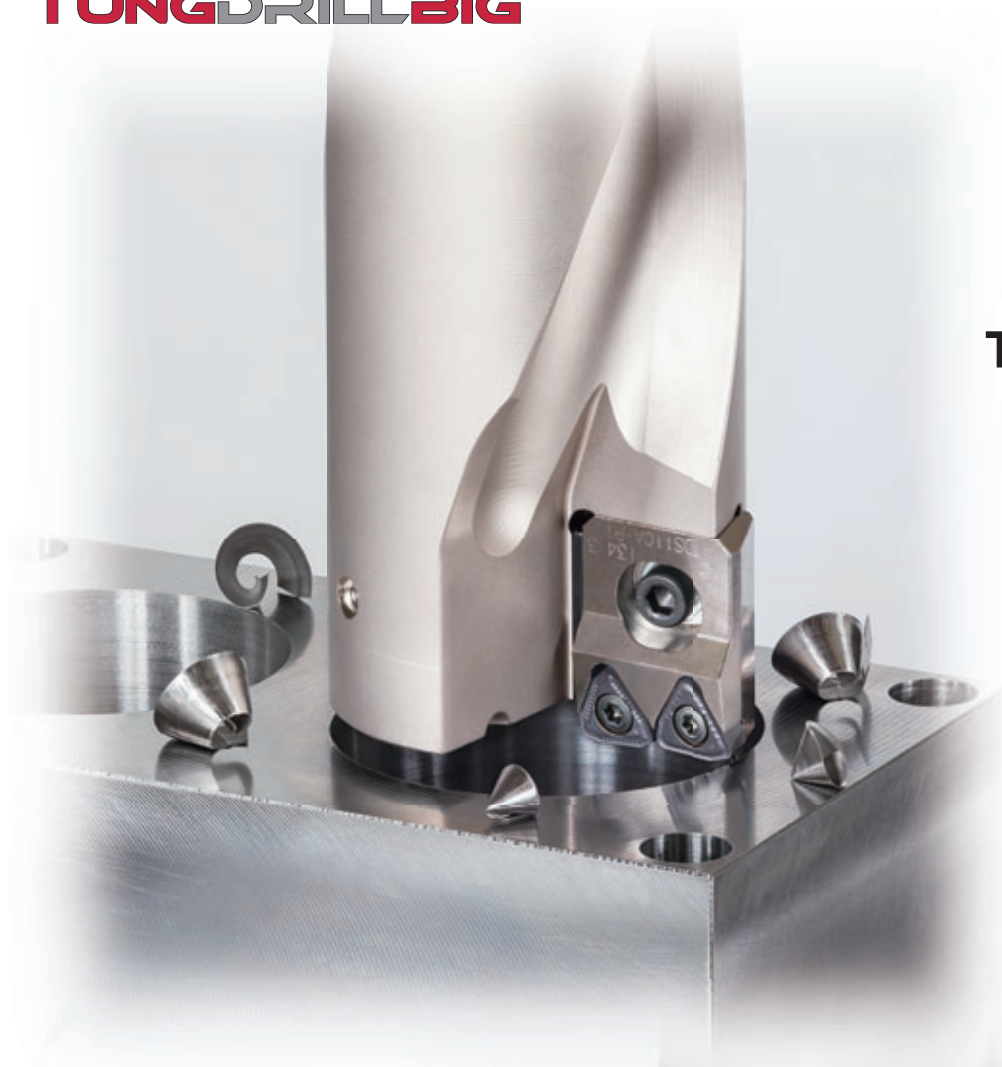
● : Stocked items



Practical examples

Workpiece type		Flange on tube	Housing of machine
Drill		TDBU2921-3157-2.5	TDBU2632-2868-2.5
Cartridge		TDX11CA-C2, TDX11CA-P2	TDX11CA-C1, TDX11CA-P1
Insert		XPMT110412R-DJ	XPMT110412R-DJ
Grade		AH725	AH725
Workpiece material		Ductile Iron	Ductile Iron
			
Cutting conditions	Cutting speed: V_c (sfm)	500	400
	Feed: f (ipr)	0.006	0.006
	Tool diameter: ϕD_c (in)	$\phi 3.000$	$\phi 2.750$
	Drilling depth: H (in)	3	3
	Coolant	MQL (Internal)	Wet (Internal)
Results		 The stable drilling of TungDrillBig significantly reduces scratches in the hole wall. The AH725 grade provides 4 times longer tool life than its competitors.	 TungDrillBig provides 8 times higher productivity than current HSS drill.

Workpiece type		Shaft	Valve
Drill		TDBU2921-3157-2.5	TDBU2921-3157-2.5
Cartridge		TDX11CA-C2, TDX11CA-P2	TDS11CA-C-74-80, TDS11CA-P-74-80
Insert		XPMT110412R-DJ	WWMU11X512R-DJ
Grade		AH725	AH9030
Workpiece material		Ductile Iron	A217 - WCI Alloy Steel
			
Cutting conditions	Cutting speed: V_c (sfm)	490	390
	Feed: f (ipr)	0.006	0.006
	Tool diameter: ϕD_c (in)	3.2	3.0
	Drilling depth: H (in)	2.9	5.9
	Coolant	Wet (Internal)	Wet (Internal)
Results		 TungDrillBig reduces total machining time by reducing the number of passes.	 TungDrillBig reduces cutting force and achieves stable drilling when compared to competitors. In addition, the six cornered insert is more economical.



TDS type

TDX type



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