

G Technical Information for TPDB

High precision grinding and superior clamping precision with auto-centering system

TPDB

- High precision clamping system - High precision grinding and superior clamping precision with auto-centering system
- Screw on clamping system - Easy clamping system of TPDB insert
- Sharp cutting edge - Improved chip evacuation, low cutting load, longer tool life with ultra-fine substrate and exclusive coating layer
- Holder with excellent durability - Holder with high rigidity and superb wear resistance due to special surface treatment

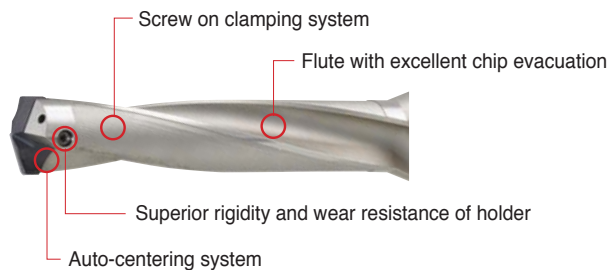
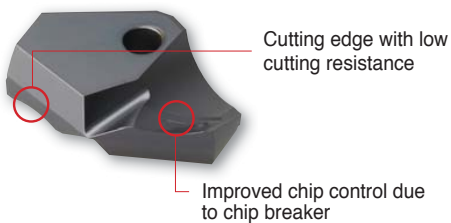
Code system of holder



Code system of insert



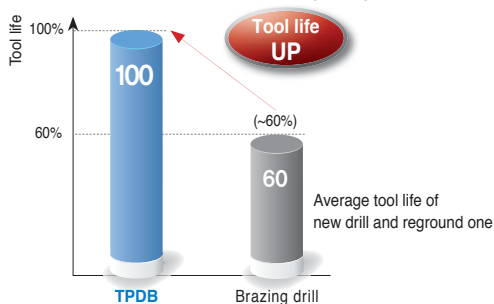
Features



Tool cost

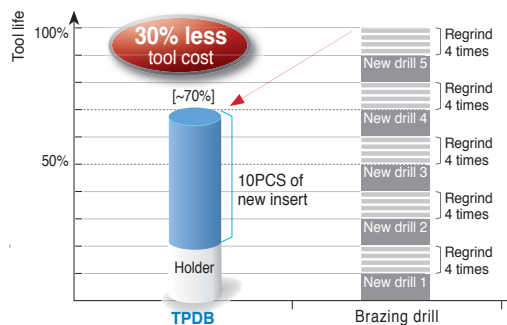
Comparison of 1 insert tool life

- Exclusive coating and substrate
- Usable till the end of wear (no need regrinding)



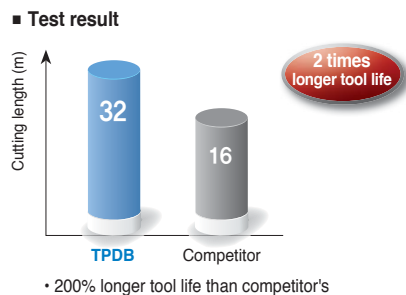
Comparison of tool cost when machining 1000PCS of workpiece

- 40% longer tool life
- No need regrind
- Less insert change
- 30% less tool cost

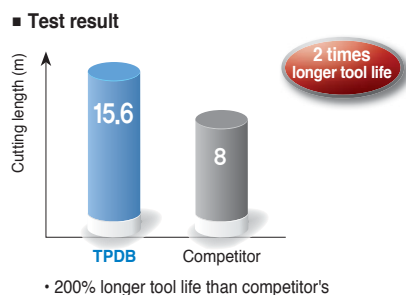


Application example

- **Use** Part of Automobile
- **Workpiece** GDC500
- **Cutting conditions** vc (m/min) = 98, fn (mm/rev) = 0.31
ap (mm) = 40, Inner coolant system
- **Tools** Inserts TPD195B (PC5300)
Holder TPDB195-25-3
- **Machine** MCT (Vertical)



- **Use** Part of Heavy Equipment
- **Workpiece** Hot Forged steel
- **Cutting conditions** vc (m/min) = 85, fn (mm/rev) = 0.2
ap (mm) = 20, Inner coolant system
- **Tools** Inserts TPDB210B (PC5300)
Holder TPDB210-25-3
- **Machine** MCT (Vertical)

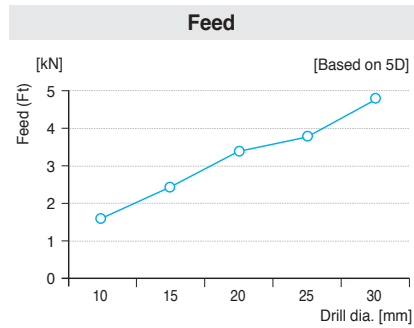
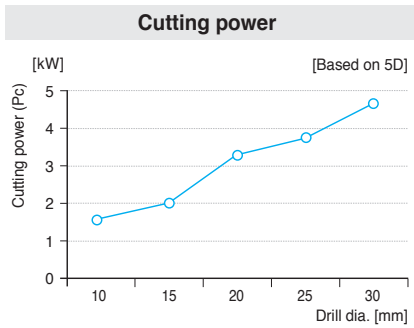
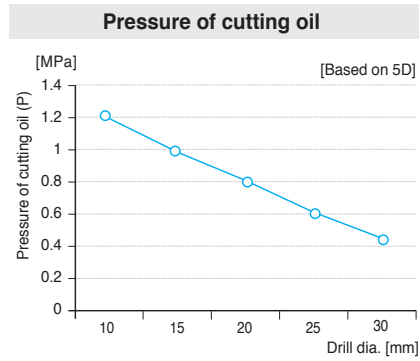
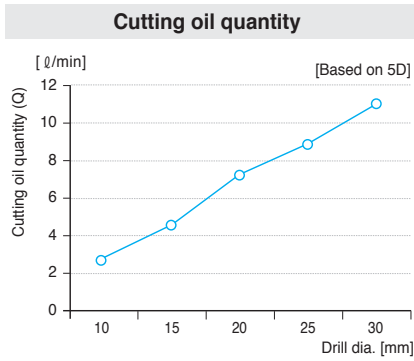


Recommended cutting condition

Workpiece			Grade	vc	Depth of cut = 3D~5D Feed rate (mm/rev) per drill dia. (mm)			
ISO	Workpiece	HB			10~15.9	16~24.9	25~32.9	
P	Carbon steel	Low carbon steel	80~120	PC5300, PC5335	110 (80~140)	0.15~0.30	0.20~0.35	0.25~0.40
		High carbon steel	180~280	PC5300, PC5335	100 (70~130)	0.15~0.30	0.20~0.35	0.25~0.40
	Alloy steel	Low alloy steel	140~260	PC5300	110 (80~140)	0.18~0.35	0.23~0.38	0.28~0.43
		Low pre-hardened steel	200~400	PC5300	75 (50~100)	0.18~0.35	0.23~0.38	0.28~0.43
		High alloy steel	260~320	PC5300	70 (50~90)	0.18~0.30	0.20~0.35	0.25~0.40
		High pre-hardened steel	300~450	PC5300	60 (40~80)	0.18~0.30	0.20~0.35	0.25~0.40
M	Stainless steel	Austenite series	135~275	PC5300	50 (30~70)	0.13~0.25	0.15~0.30	0.17~0.33
		Ferrite series Martensite series	13~275	PC5300	55 (40~70)	0.13~0.25	0.15~0.30	0.17~0.33
K	Cast iron	Gray cast iron	150~230	PC5300	110 (80~140)	0.18~0.35	0.20~0.40	0.25~0.45
		Ductile cast iron	160~260	PC5300	100 (70~130)	0.18~0.35	0.20~0.40	0.25~0.45
S	Heat resisting steel	Ni-heat resisting alloy	130~400	PC5300	40 (20~60)	0.10~0.20	0.12~0.22	0.13~0.25
		Ti-heat resisting alloy	130~400	PC5300	40 (20~60)	0.10~0.20	0.12~0.22	0.13~0.25
		High-hardened steel	Over 400	PC5300	35 (20~50)	0.10~0.20	0.12~0.22	0.13~0.25

- In case of 8D, reduce the cutting conditions to 40~50% or machine the beginning of hole first.(1.5D)
- In case of interrupted machining, reduce the feed to 30~50% machining around the interrupted part

Technical information



How to clamp a TPDB insert



Clamping an insert on a holder

- Put an insert in the holder
- As the Fig.1, clamp the insert while pushing it to the V shaped groove of the holder
- Screw the insert

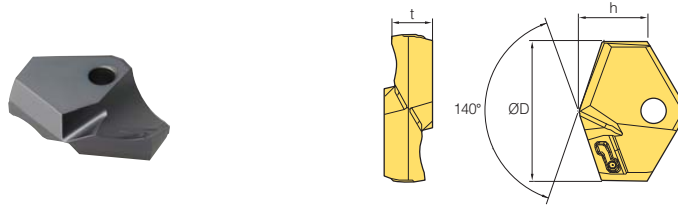


Changing an insert on the machine

- Separate the insert from the holder
- As the Fig.2, clean the insert seat
- Place the insert to the mounting seat
- As the Fig.3, clamp the insert while pushing it to the V shaped groove of the holder



TPDB Insert





(mm)

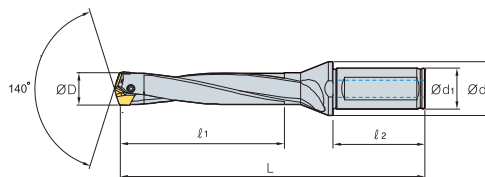
	Designation	Grade	ØD	h	t
TPD	100B~109B	PC5300, PC5335	10.0~10.9	5.5	3.5
	110B~119B	PC5300, PC5335	11.0~11.9	5.8	3.5
	120B~129B	PC5300, PC5335	12.0~12.9	6.3	3.5
	130B~139B	PC5300, PC5335	13.0~13.9	6.5	4.0
	140B~149B	PC5300, PC5335	14.0~14.9	6.8	4.0
	150B~159B	PC5300, PC5335	15.0~15.9	7.0	4.0
	160B~169B	PC5300, PC5335	16.0~16.9	7.7	5.5
	170B~179B	PC5300, PC5335	17.0~17.9	7.9	5.5
	180B~189B	PC5300, PC5335	18.0~18.9	8.1	6.0
	190B~199B	PC5300, PC5335	19.0~19.9	8.3	6.0
	200B~209B	PC5300, PC5335	20.0~20.9	9.7	6.5
	210B~219B	PC5300, PC5335	21.0~21.9	9.4	6.5
	220B~229B	PC5300, PC5335	22.0~22.9	9.6	7.0
	230B~239B	PC5300, PC5335	23.0~23.9	9.8	7.0
	240B~249B	PC5300, PC5335	24.0~24.9	10.7	7.5
	250B~259B	PC5300, PC5335	25.0~25.9	10.9	7.5
	260B~269B	PC5300, PC5335	26.0~26.9	11.0	8.5
	270B~279B	PC5300, PC5335	27.0~27.9	11.8	8.5
	280B~289B	PC5300, PC5335	28.0~28.9	12.6	9.5
	290B~299B	PC5300, PC5335	29.0~29.9	12.9	9.5
300B~309B	PC5300, PC5335	30.0~30.9	13	10	
310B~319B	PC5300, PC5335	31.0~31.9	13.3	10	
320B~329B	PC5300, PC5335	32.0~32.9	13.5	10	

Parts

(mm)

	Designation	Drill dia. (ØD)	Screw 	Wrench 	Torque (NM)
TPD	100B~129B	10.0~12.9	FTNB0209	TW06P	0.4
	130B~149B	13.0~14.9	FTNB02512	TW07S	0.8
	150B~179B	15.0~17.9	FTNB02514	TW07S	0.8
	180B~199B	18.0~19.9	FTNB0316	TW09S	1.2
	200B~239B	20.0~23.9	FTNB0319	TW09S	1.2
	240B~259B	24.0~25.9	FTNB03522	TW15S	3
	260B~279B	26.0~27.9	FTNB03524	TW15S	3
	280B~299B	28.0~29.9	FTNB0426	TW15S	3
	300B~329B	30.0~32.9	FTNB0528	TW20-100	4

TPDB-3D



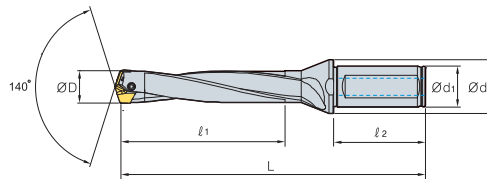
(mm)

Designation	ØD	Ød ₁	Ød ₂	ℓ ₁	ℓ ₂	L	Insert	
TPDB	100-16-3	10.0~10.4	16	20	30.0	48	95	TPD100B~104B
	105-16-3	10.5~10.9	16	20	31.5	48	96	TPD105B~109B
	110-16-3	11.0~11.4	16	20	33.0	48	98	TPD110B~114B
	115-16-3	11.5~11.9	16	20	34.5	48	99	TPD115B~119B
	120-16-3	12.0~12.4	16	20	36.0	48	102	TPD120B~124B
	125-16-3	12.5~12.9	16	20	37.5	48	104	TPD125B~129B
	130-16-3	13.0~13.4	16	20	39.0	48	107	TPD130B~134B
	135-16-3	13.5~13.9	16	20	40.5	48	109	TPD135B~139B
	140-16-3	14.0~14.4	16	20	42.0	48	111	TPD140B~144B
	145-16-3	14.5~14.9	16	20	43.5	48	114	TPD145B~149B
	150-20-3	15.0~15.4	20	25	45.0	50	118	TPD150B~154B
	155-20-3	15.5~15.9	20	25	46.5	50	120	TPD155B~159B
	160-20-3	16.0~16.4	20	25	48.0	50	122	TPD160B~164B
	165-20-3	16.5~16.9	20	25	49.5	50	124	TPD165B~169B
	170-20-3	17.0~17.4	20	25	51.0	50	127	TPD170B~174B
	175-20-3	17.5~17.9	20	25	52.5	50	129	TPD175B~179B
	180-25-3	18.0~18.4	25	33	54.0	56	137	TPD180B~184B
	185-25-3	18.5~18.9	25	33	55.5	56	139	TPD185B~189B
	190-25-3	19.0~19.4	25	33	57.0	56	142	TPD190B~194B
	195-25-3	19.5~19.9	25	33	58.5	56	144	TPD195B~199B
	200-25-3	20.0~20.4	25	33	60.0	56	146	TPD200B~204B
	205-25-3	20.5~20.9	25	33	61.5	56	148	TPD205B~209B
	210-25-3	21.0~21.4	25	33	63.0	60	151	TPD210B~214B
	215-25-3	21.5~21.9	25	33	64.5	60	153	TPD215B~219B
	220-25-3	22.0~22.4	25	33	66.0	60	155	TPD220B~224B
	225-25-3	22.5~22.9	25	33	67.5	60	157	TPD225B~229B
	230-25-3	23.0~23.4	25	33	69.0	60	160	TPD230B~234B
	235-25-3	23.5~23.9	25	33	70.5	60	162	TPD235B~239B
	240-32-3	24.0~24.4	32	43	72.0	60	168	TPD240B~244B
	245-32-3	24.5~24.9	32	43	73.5	60	170	TPD245B~249B
	250-32-3	25.0~25.4	32	43	75.0	60	173	TPD250B~254B
	255-32-3	25.5~25.9	32	43	76.5	60	175	TPD255B~259B
260-32-3	26.0~26.9	32	43	78.0	60	177	TPD260B~269B	
270-32-3	27.0~27.9	32	43	81.0	60	182	TPD270B~279B	
280-32-3	28.0~28.9	32	43	84.0	60	186	TPD280B~289B	
290-32-3	29.0~29.9	32	43	87.0	60	191	TPD290B~299B	
300-32-3	30.0~30.9	32	43	90.0	60	194	TPD300B~309B	
310-32-3	31.0~31.9	32	43	93.0	60	199	TPD310B~319B	
320-32-3	32.0~32.9	32	43	96.0	60	201	TPD320B~329B	

↻ Applicable inserts **G35**



TPDB-5D

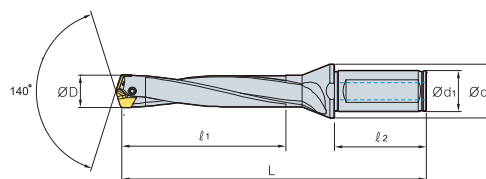


(mm)

Designation	ØD	Ød ₁	Ød ₂	ℓ ₁	ℓ ₂	L	Insert
TPDB 100-16-5	10.0~10.4	16	20	50.0	48	115	TPD100B~104B
105-16-5	10.5~10.9	16	20	52.5	48	117	TPD105B~109B
110-16-5	11.0~11.4	16	20	55.0	48	120	TPD110B~114B
115-16-5	11.5~11.9	16	20	57.5	48	123	TPD115B~119B
120-16-5	12.0~12.4	16	20	60.0	48	126	TPD120B~124B
125-16-5	12.5~12.9	16	20	62.5	48	129	TPD125B~129B
130-16-5	13.0~13.4	16	20	65.0	48	133	TPD130B~134B
135-16-5	13.5~13.9	16	20	67.5	48	136	TPD135B~139B
140-16-5	14.0~14.4	16	20	70.0	48	139	TPD140B~144B
145-16-5	14.5~14.9	16	20	72.5	48	143	TPD145B~149B
150-20-5	15.0~15.4	20	25	75.0	50	148	TPD150B~154B
155-20-5	15.5~15.9	20	25	77.5	50	151	TPD155B~159B
160-20-5	16.0~16.4	20	25	80.0	50	154	TPD160B~164B
165-20-5	16.5~16.9	20	25	82.5	50	157	TPD165B~169B
170-20-5	17.0~17.4	20	25	85.0	50	161	TPD170B~174B
175-20-5	17.5~17.9	20	25	87.5	50	164	TPD175B~179B
180-25-5	18.0~18.4	25	33	90.0	56	173	TPD180B~184B
185-25-5	18.5~18.9	25	33	92.5	56	176	TPD185B~189B
190-25-5	19.0~19.4	25	33	95.0	56	180	TPD190B~194B
195-25-5	19.5~19.9	25	33	97.5	56	183	TPD195B~199B
200-25-5	20.0~20.4	25	33	100.0	56	186	TPD200B~204B
205-25-5	20.5~20.9	25	33	102.5	56	189	TPD205B~209B
210-25-5	21.0~21.4	25	33	105.0	60	193	TPD210B~214B
215-25-5	21.5~21.9	25	33	107.5	60	196	TPD215B~219B
220-25-5	22.0~22.4	25	33	110.0	60	199	TPD220B~224B
225-25-5	22.5~22.9	25	33	112.5	60	202	TPD225B~229B
230-25-5	23.0~23.4	25	33	115.0	60	206	TPD230B~234B
235-25-5	23.5~23.9	25	33	117.5	60	209	TPD235B~239B
240-32-5	24.0~24.4	32	43	120.0	60	216	TPD240B~244B
245-32-5	24.5~24.9	32	43	122.5	60	219	TPD245B~249B
250-32-5	25.0~25.4	32	43	125.0	60	223	TPD250B~254B
255-32-5	25.5~25.9	32	43	127.5	60	226	TPD255B~259B
260-32-5	26.0~26.9	32	43	130.0	60	229	TPD260B~269B
270-32-5	27.0~27.9	32	43	135.0	60	236	TPD270B~279B
280-32-5	28.0~28.9	32	43	140.0	60	242	TPD280B~289B
290-32-5	29.0~29.9	32	43	145.0	60	249	TPD290B~299B
300-32-5	30.0~30.9	32	43	150.0	60	254	TPD300B~309B
310-32-5	31.0~31.9	32	43	155.0	60	261	TPD310B~319B
320-32-5	32.0~32.9	32	43	160.0	60	265	TPD320B~329B

↻ Applicable inserts G35

TPDB-8D



(mm)

Designation	ØD	Ød ₁	Ød ₂	ℓ ₁	ℓ ₂	L	Insert	
TPDB	100-16-8	10.0~10.4	16	20	80	48	145.0	TPD100B~104B
	105-16-8	10.5~10.9	16	20	84	48	149.0	TPD105B~109B
	110-16-8	11.0~11.4	16	20	88	48	153.0	TPD110B~114B
	115-16-8	11.5~11.9	16	20	92	48	157.0	TPD115B~119B
	120-16-8	12.0~12.4	16	20	96	48	162.0	TPD120B~124B
	125-16-8	12.5~12.9	16	20	100	48	166.5	TPD125B~129B
	130-16-8	13.0~13.4	16	20	104	48	172.0	TPD130B~134B
	135-16-8	13.5~13.9	16	20	108	48	176.5	TPD135B~139B
	140-16-8	14.0~14.4	16	20	112	48	181.0	TPD140B~144B
	145-16-8	14.5~14.9	16	20	116	48	186.5	TPD145B~149B
	150-20-8	15.0~15.4	20	25	120	50	193.0	TPD150B~154B
	155-20-8	15.5~15.9	20	25	124	50	197.5	TPD155B~159B
	160-20-8	16.0~16.4	20	25	128	50	202.0	TPD160B~164B
	165-20-8	16.5~16.9	20	25	132	50	206.5	TPD165B~169B
	170-20-8	17.0~17.4	20	25	136	50	212.0	TPD170B~174B
	175-20-8	17.5~17.9	20	25	140	50	216.5	TPD175B~179B
	180-25-8	18.0~18.4	25	33	144	56	227.0	TPD180B~184B
	185-25-8	18.5~18.9	25	33	148	56	231.5	TPD185B~189B
	190-25-8	19.0~19.4	25	33	152	56	237.0	TPD190B~194B
	195-25-8	19.5~19.9	25	33	156	56	241.5	TPD195B~199B
	200-25-8	20.0~20.4	25	33	160	56	246.0	TPD200B~204B
	205-25-8	20.5~20.9	25	33	164	56	250.5	TPD205B~209B
	210-25-8	21.0~21.4	25	33	168	60	256.0	TPD210B~214B
	215-25-8	21.5~21.9	25	33	172	60	260.5	TPD215B~219B
	220-25-8	22.0~22.4	25	33	176	60	265.0	TPD220B~224B
	225-25-8	22.5~22.9	25	33	180	60	269.5	TPD225B~229B
	230-25-8	23.0~23.4	25	33	184	60	275.0	TPD230B~234B
	235-25-8	23.5~23.9	25	33	188	60	279.5	TPD235B~239B
	240-32-8	24.0~24.4	32	43	192	60	288.0	TPD240B~244B
	245-32-8	24.5~24.9	32	43	196	60	292.5	TPD245B~249B
	250-32-8	25.0~25.4	32	43	200	60	298.0	TPD250B~254B
	255-32-8	25.5~25.9	32	43	204	60	302.5	TPD255B~259B
260-32-8	26.0~26.9	32	43	208	60	307.0	TPD260B~269B	
270-32-8	27.0~27.9	32	43	216	60	317.0	TPD270B~279B	
280-32-8	28.0~28.9	32	43	224	60	326.0	TPD280B~289B	
290-32-8	29.0~29.9	32	43	232	60	336.0	TPD290B~299B	
300-32-8	30.0~30.9	32	43	240	60	344.0	TPD300B~309B	
310-32-8	31.0~31.9	32	43	248	60	354.0	TPD310B~319B	
320-32-8	32.0~32.9	32	43	256	60	361.0	TPD320B~329B	

Applicable inserts G35

