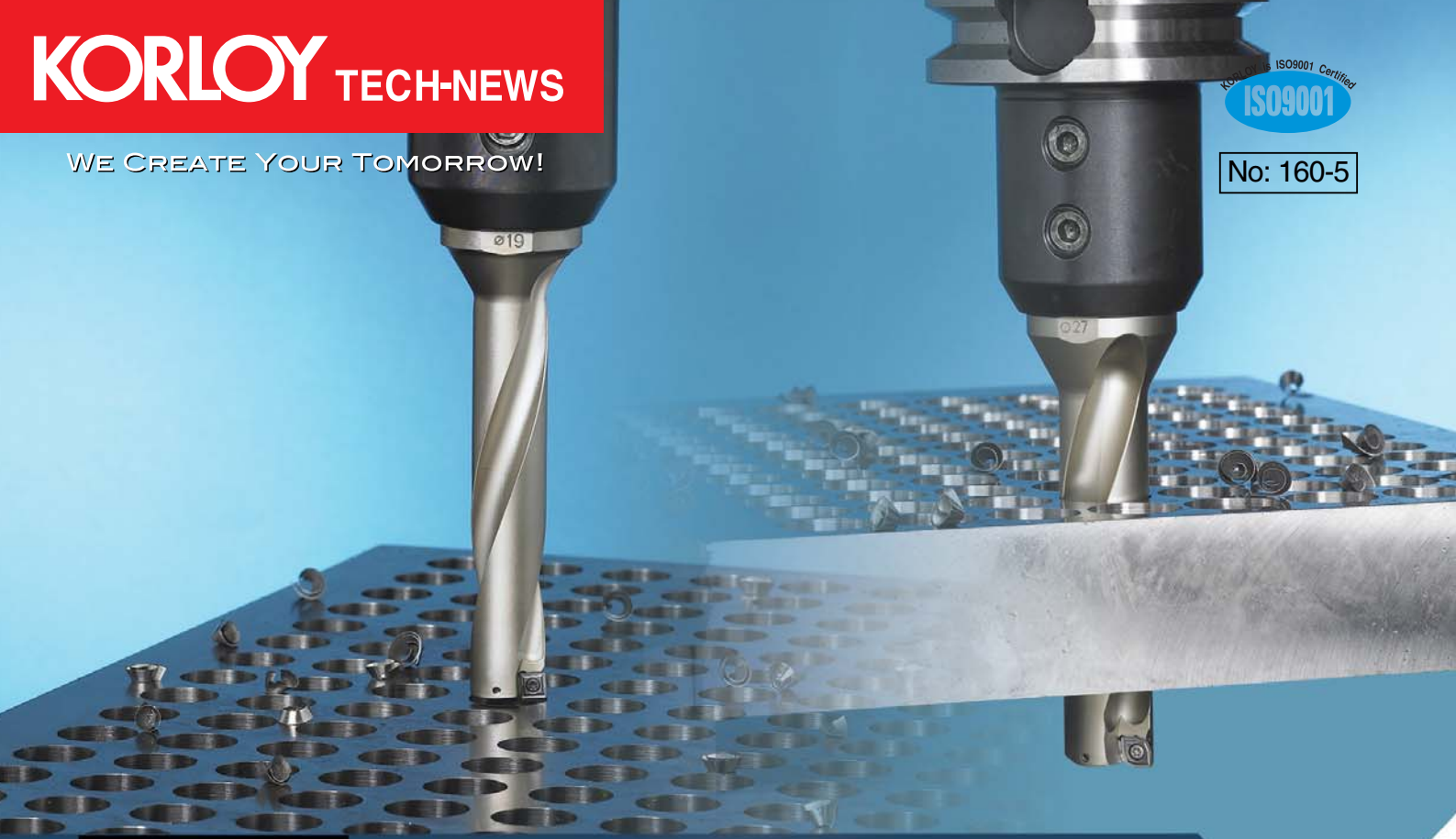
KORLOY TECH-NEWS

WE CREATE YOUR TOMORROW!

No: 160-5



Drill Series

New Indexable Drill For Hole Making

LPD & SPD & NPD

New

Features

Excellent chip evacuation due to the specially designed flute

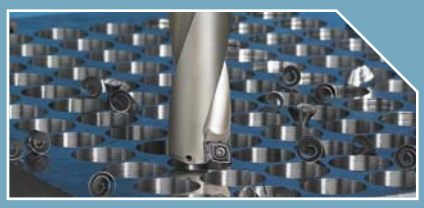
- Special surface treatment of shank provides long durability
- 4 cutting-edge using economical geometry of insert
- Various chip breakers & grades are available for variety of application

- LPD ∅12mm~∅13.5mm SPD ∅13mm~∅22mm
NPD ∅23mm~∅60mm NPD Cartrige ∅61mm~∅100mm

Drilling

Through Coolant System

KORLOY Inc.



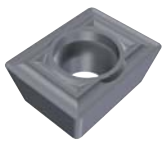
LPD & SPD & NPD

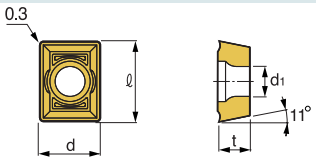
Features

NEW KORLOY
INDEXABLE DRILL SERIES

For small hole drilling
LPD(Ø12~Ø13.5)

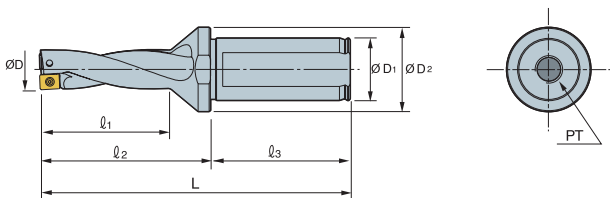
LPD Insert





Holder	Stock	Hole size(mm)	ℓ	d	t	d_1	Grade
LPMT040203-DF	●	Ø12~Ø13.5	6.2	4.7	2.4	2.3	PC3525

LPD



(mm)

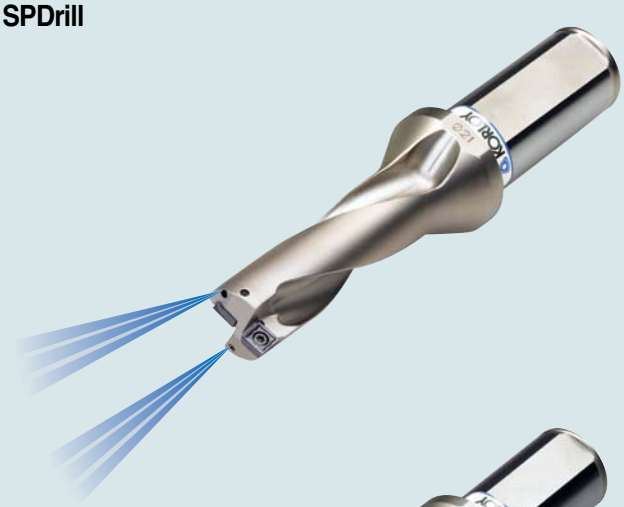
Holder	Stock	Dimensions (mm)								Parts	
		øD	$øD_1$	$øD_2$	$ℓ_1$	$ℓ_2$	$ℓ_3$	L	PT	Screw	Wrench
LPD120-20-2	○	12	20	24	24	41	50	91	PT1/8	FTNA0204	TW06P
LPD125-20-2	○	12.5	20	24	25	42	50	92	PT1/8	FTNA0204	TW06P
LPD130-20-2	○	13	20	24	26	43	50	93	PT1/8	FTNA0204	TW06P
LPD135-20-2	○	13.5	20	24	27	44	50	94	PT1/8	FTNA0204	TW06P
LPD120-20-3	●	12	20	24	36	53	50	103	PT1/8	FTNA0204	TW06P
LPD125-20-3	●	12.5	20	24	37.5	54.5	50	104.5	PT1/8	FTNA0204	TW06P
LPD130-20-3	●	13	20	24	39	56	50	106	PT1/8	FTNA0204	TW06P
LPD135-20-3	●	13.5	20	24	40.5	57.5	50	107.5	PT1/8	FTNA0204	TW06P
LPD120-20-4	○	12	20	24	48	65	50	115	PT1/8	FTNA0204	TW06P
LPD125-20-4	○	12.5	20	24	50	67	50	117	PT1/8	FTNA0204	TW06P
LPD130-20-4	○	13	20	24	52	69	50	119	PT1/8	FTNA0204	TW06P
LPD135-20-4	○	13.5	20	24	54	71	50	121	PT1/8	FTNA0204	TW06P

●Stock item, ○Under preparing for stock

LPD & SPD & NPD

Features

SPDrill



NPDrill

- Rigid Drill
  - Stronger drill shank and excellent design optimize the performance of hole making
  - Abrasive wear resistance of shank with machined chip has been improved due to the special surface treatment
  - It represents good performance even in difficult cutting condition
- Specially designed flute
  - Excellent chip evacuation due to the specially designed flute guarantees long durability
- Economical merits
  - Reducing of tool cost by using 4 cutting edges
  - Using same inset at both positions of insert pocket of drrill
- Recommendation of chip breaker & grade as per workpiece

Workpiece	Insert	Grade
Alloy Steel, Carbon Steel	DM	PC3525
Cast iron	DM	PC6510
Stainless steel	DS	PC9530
Aluminum	DA	H01
Soft steel	DR	PC3525

NPD, SPD

SPD (Superior Piercing Drill)

Available diameter : Ø13 ~ Ø22(mm)

NPD (New Piercing Drill)

Available diameter : Ø23 ~ Ø60(mm)

LPD & SPD & NPD

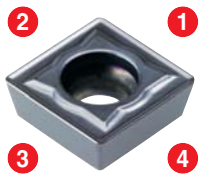
Features of SPD & NPD

Insert for SPD

4 cutting-edge using insert

- Chip breaker of SPD insert provides excellent chip control due to its engineered design
- Easy & simple change of cutting edge

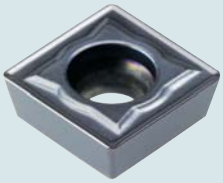
Same insert is available for both position of insert pocket of drill



- Economical by using the same insert at both positions of insert pocket of drill
- Available SPD size : Ø13mm ~ Ø22mm
- Since SPD makes small-sized chip, it is effective for small hole drilling

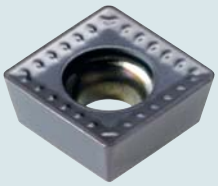
Recommendation of chip breaker & grade as per workpiece

DM



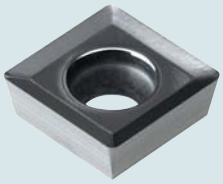
PC3525, PC9530(Steel) / PC6510(Cast iron)

DS



PC9530 (Stainless)

DA



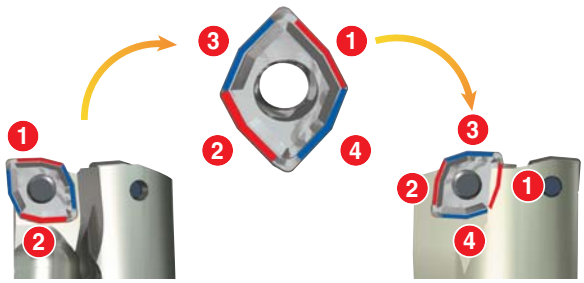
H01(Aluminum)

Insert for NPD

4 cutting-edge using insert

- Since NPD has strong cutting edge, it is suitable for big hole drilling
- Available NPD size : Ø23mm ~ Ø60mm

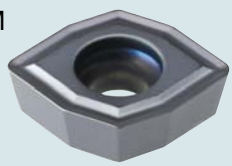
How to use 4 cutting edge of NPD insert



- At first, use No ①,② edges at the outer position of insert pocket and then take the insert to the inner position of insert pocket of drill to use ③,④

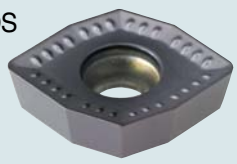
Recommendation of chip breaker & grade as per workpiece

DM



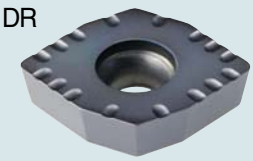
PC3525(Steel) / PC6510(Cast iron)

DS



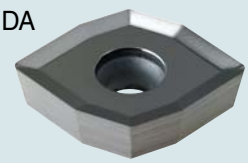
PC9530(Stainless)

DR

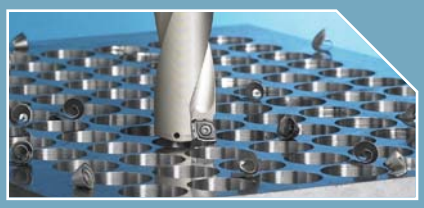


PC3525(Soft steel)

DA



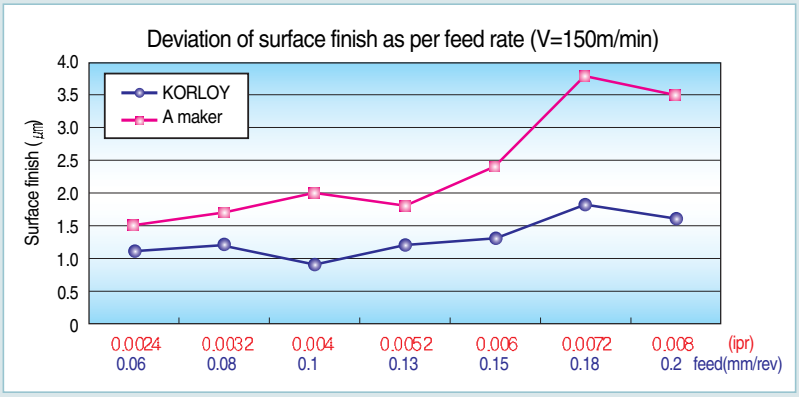
H01(Aluminum)



LPD & SPD & NPD

Excellent surface finish

Deviation of surface finish



- KORLOY's NPD & SPD show excellent surface finish even in high feed operation

Cutting condition

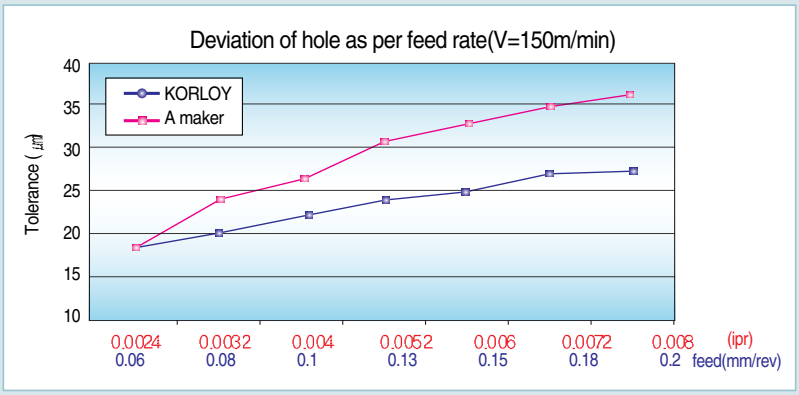
- KORLOY Drill : SPD190-25-3
  Insert : SPMT060204-DM(PC3525)
  V=150m/min, d=25mm, wet
  V=500sfm, d=1inch, wet
- Workpiece : SCM440 (AISI4140, 42CrMo4)

Test result

- SPD has got surface finish Ra under 2.0㎛ which is much better than competitor's

Precise hole diameter

Tolerance of machined hole



Cutting condition

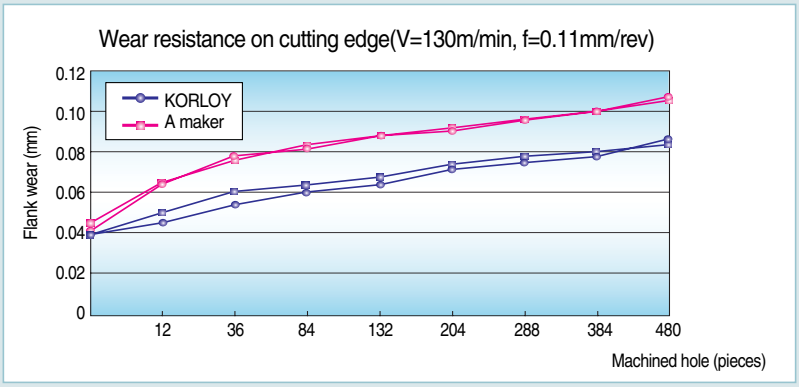
- KORLOY Drill : NPD260-32-3
  Insert : NPMT252808-DM(PC3525)
  V=150m/min, d=25mm, wet
  V=500sfm, d=1inch, wet
- Workpiece : SCM440 (AISI4140, 42CrMo4)

Test result

- NPD has got less tolerance than competitor's as per feed rate variation

Long tool life

Wear on cutting edge as per machined hole



Cutting condition

- KORLOY Drill : SPD190-25-3
  Insert : SPMT060204-DM(PC3525)
  V=110m/min, f=0.11mm/rev, d=25mm, wet
  V=363sfm, f=0.004ipr, d=1inch, wet
- Workpiece : SCM440 (AISI4140, 42CrMo4) 480holes

Test result

- Longer tool life and better wear resistance than A-maker's

LPD & SPD & NPD

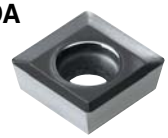
SPD & NPD Insert

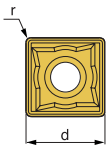
SPD Insert

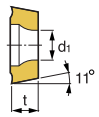
DM

DS

DA







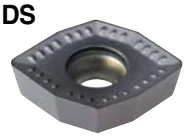
Designation	Stock	Diameter(mm)	d	t	r	d_1	Grade
SPMT050203-DM	●	Ø13~Ø15	5.3	2.4	0.3	2.3	PC3525
SPMT060204-DM	●	Ø16~Ø19	6.2	2.5	0.4	2.5	PC9530
SPMT070204-DM	●	Ø20~Ø22	7.2	2.5	0.4	2.8	PC6510
SPMT050203-DS	●	Ø13~Ø15	5.3	2.4	0.3	2.3	
SPMT060204-DS	●	Ø16~Ø19	6.2	2.5	0.4	2.5	PC9530
SPMT070204-DS	●	Ø20~Ø22	7.2	2.5	0.4	2.8	
SPET050203-DA	●	Ø13~Ø15	5.3	2.4	0.3	2.3	
SPET060204-DA	●	Ø16~Ø19	6.2	2.5	0.4	2.5	H01
SPET070204-DA	●	Ø20~Ø22	7.2	2.5	0.4	2.8	

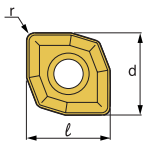
●Stock item, ○Under preparing for stock

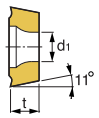
NPD Insert

DM

DS

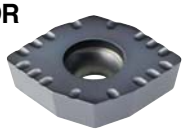




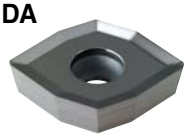


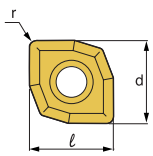
Designation	Stock	Diameter(mm)	ℓ	d	t	r	d_1	Grade
NPMT222408-DM	●	Ø23~Ø24	8.3	8.2	2.5	0.8	2.8	
NPMT252808-DM	●	Ø25~Ø28	9.3	9.2	3.3	0.8	3.4	
NPMT293208-DM	●	Ø29~Ø32	10.3	10.2	3.3	0.8	3.4	PC3525
NPMT334008-DM	●	Ø33~Ø40	13	12.9	3.97	0.8	4	PC6510
NPMT415008-DM	●	Ø41~Ø50	15.3	15.2	4.76	0.8	4.5	
NPMT516012-DM	●	Ø51~Ø60	18.3	18.2	5	1.2	5.5	
NPMT222408-DS	●	Ø23~Ø24	8.3	8.2	2.5	0.8	2.8	
NPMT252808-DS	●	Ø25~Ø28	9.3	9.2	3.3	0.8	3.4	
NPMT293208-DS	●	Ø29~Ø32	10.3	10.2	3.3	0.8	3.4	PC9530
NPMT334008-DS	●	Ø33~Ø40	13	12.9	3.97	0.8	4	
NPMT415008-DS	●	Ø41~Ø50	15.3	15.2	4.76	0.8	4.5	
NPMT516012-DS	●	Ø51~Ø60	18.3	18.2	5	1.2	5.5	

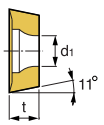
DR



DA





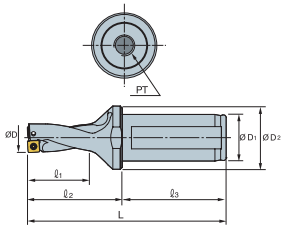


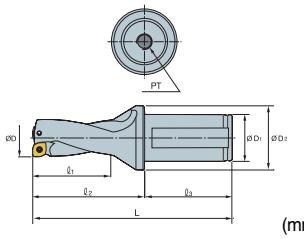
Designation	Stock	Diameter(mm)	ℓ	d	t	r	d_1	Grade
NPET222408-DR	●	Ø23~Ø24	8.3	8.2	2.5	0.8	2.8	
NPET252808-DR	●	Ø25~Ø28	9.3	9.2	3.3	0.8	3.4	
NPET293208-DR	●	Ø29~Ø32	10.3	10.2	3.3	0.8	3.4	
NPET334008-DR	●	Ø33~Ø40	13	12.9	3.97	0.8	4	PC3525
NPET415008-DR	●	Ø41~Ø50	15.3	15.2	4.76	0.8	4.5	
NPET516012-DR	●	Ø51~Ø60	18.3	18.2	5	1.2	5.5	
NPET222408-DA	●	Ø23~Ø24	8.3	8.2	2.5	0.8	2.8	
NPET252808-DA	●	Ø25~Ø28	9.3	9.2	3.3	0.8	3.4	
NPET293208-DA	●	Ø29~Ø32	10.3	10.2	3.3	0.8	3.4	
NPET334008-DA	●	Ø33~Ø40	13	12.9	3.97	0.8	4	H01
NPET415008-DA	●	Ø41~Ø50	15.3	15.2	4.76	0.8	4.5	
NPET516012-DA	●	Ø51~Ø60	18.3	18.2	5	1.2	5.5	

●Stock item, ○Under preparing for stock

LPD & SPD & NPD

SPD, NPD 2D

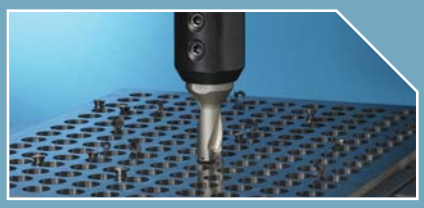




(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		ØD	ØD1	ØD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
SPD130-20-2	●	13	20	24	26	43	50	93	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD135-20-2	○	13.5	20	24	27	43	50	93	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD140-20-2	●	14	20	24	28	46	50	96	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD145-20-2	○	14.5	20	24	29	46	50	96	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD150-20-2	●	15	20	24	30	49	50	99	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD155-20-2	○	15.5	20	24	31	49	50	99	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD160-25-2	●	16	25	34	32	51	56	107	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD165-25-2	○	16.5	25	34	33	51	56	107	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD170-25-2	●	17	25	34	34	53	56	109	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD175-25-2	○	17.5	25	34	35	53	56	109	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD180-25-2	●	18	25	34	36	56	56	112	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD185-25-2	○	18.5	25	34	37	56	56	112	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD190-25-2	●	19	25	34	38	58	56	114	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD195-25-2	○	19.5	25	34	39	58	56	114	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD200-25-2	●	20	25	34	40	62	56	118	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD205-25-2	○	20.5	25	34	41	62	56	118	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD210-25-2	●	21	25	34	42	64	56	120	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD215-25-2	○	21.5	25	34	43	64	56	120	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD220-25-2	●	22	25	34	44	66	56	122	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD225-25-2	○	22.5	25	34	45	66	56	122	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
NPD230-32-2	●	23	32	44	46	70	60	130	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD235-32-2	○	23.5	32	44	47	70	60	130	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD240-32-2	●	24	32	44	48	72	60	132	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD245-32-2	○	24.5	32	44	49	72	60	132	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD250-32-2	●	25	32	44	50	75	60	135	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD255-32-2	○	25.5	32	44	51	75	60	135	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD260-32-2	●	26	32	44	52	77	60	137	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD265-32-2	○	26.5	32	44	53	77	60	137	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD270-32-2	●	27	32	44	54	80	60	140	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD275-32-2	○	27.5	32	44	55	80	60	140	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD280-32-2	●	28	32	44	56	83	60	143	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD285-32-2	○	28.5	32	44	57	83	60	143	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD290-32-2	●	29	32	44	58	85	60	145	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD295-32-2	○	29.5	32	44	59	85	60	145	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD300-32-2	●	30	32	44	60	89	60	149	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD305-32-2	○	30.5	32	44	61	89	60	149	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD310-32-2	●	31	32	44	62	91	60	151	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD315-32-2	○	31.5	32	44	63	91	60	151	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD320-32-2	●	32	32	44	64	93	60	153	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD325-32-2	○	32.5	32	44	65	93	60	153	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD330-40-2	●	33	40	48	66	98	70	168	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD335-40-2	○	33.5	40	48	67	98	70	168	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD340-40-2	●	34	40	48	68	100	70	170	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD345-40-2	○	34.5	40	48	69	100	70	170	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD350-40-2	●	35	40	48	70	102	70	172	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD355-40-2	○	35.5	40	48	71	102	70	172	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD360-40-2	●	36	40	48	72	105	70	175	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD365-40-2	○	36.5	40	48	73	105	70	175	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD370-40-2	○	37	40	48	74	107	70	177	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD375-40-2	○	37.5	40	48	75	107	70	177	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD380-40-2	○	38	40	48	76	110	70	180	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S

●Stock item, ○Under preparing for stock



SPD, NPD 2D

(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
NPD385-40-2	○	38.5	40	48	77	110	70	180	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD390-40-2	○	39	40	48	78	112	70	182	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD395-40-2	○	39.5	40	48	79	112	70	182	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD400-40-2	●	40	40	48	80	115	70	185	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD405-40-2	○	40.5	40	48	81	115	70	185	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD410-40-2	○	41	40	58	82	119	70	189	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD415-40-2	○	41.5	40	58	83	119	70	189	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD420-40-2	○	42	40	58	84	122	70	192	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD425-40-2	○	42.5	40	58	85	122	70	192	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD430-40-2	○	43	40	58	86	124	70	194	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD435-40-2	○	43.5	40	58	87	125	70	194	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD440-40-2	○	44	40	58	88	126	70	196	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD445-40-2	○	44.5	40	58	89	126	70	196	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD450-40-2	●	45	40	58	90	129	70	199	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD455-40-2	○	45.5	40	58	91	129	70	199	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD460-40-2	○	46	40	58	92	131	70	201	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD465-40-2	○	46.5	40	58	93	131	70	201	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD470-40-2	○	47	40	58	94	134	70	204	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD475-40-2	○	47.5	40	58	95	134	70	204	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD480-40-2	○	48	40	58	96	138	70	208	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD485-40-2	○	48.5	40	58	97	138	70	208	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD490-40-2	○	49	40	58	98	140	70	210	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD495-40-2	○	49.5	40	58	99	140	70	210	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD500-40-2	●	50	40	58	100	142	70	212	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD505-40-2	○	50.5	40	58	101	142	70	212	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD510-40-2	○	51	40	68	102	148	70	218	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD515-40-2	○	51.5	40	68	103	148	70	218	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD520-40-2	○	52	40	68	104	150	70	220	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD525-40-2	○	52.5	40	68	105	150	70	220	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD530-40-2	○	53	40	68	106	152	70	222	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD535-40-2	○	53.5	40	68	107	152	70	222	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD540-40-2	○	54	40	68	108	154	70	224	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD545-40-2	○	54.5	40	68	109	154	70	224	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD550-40-2	●	55	40	68	110	156	70	226	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD555-40-2	○	55.5	40	68	111	156	70	226	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD560-40-2	○	56	40	68	112	160	70	230	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD565-40-2	○	56.5	40	68	113	160	70	230	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD570-40-2	○	57	40	68	114	163	70	233	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD575-40-2	○	57.5	40	68	115	163	70	233	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD580-40-2	○	58	40	68	116	166	70	236	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD585-40-2	○	58.5	40	68	117	166	70	236	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD590-40-2	○	59	40	68	118	169	70	239	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD595-40-2	○	59.5	40	68	119	169	70	239	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD600-40-2	●	60	40	68	120	172	70	242	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD605-40-2	○	60.5	40	68	121	172	70	242	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S

●Stock item, ○Under preparing for stock

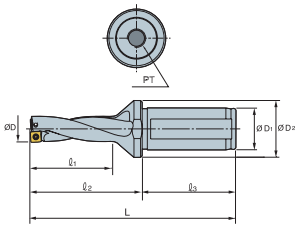
Examples of choosing proper tool

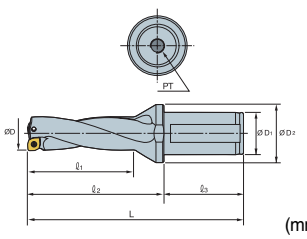
- **Workpiece : SCM440, Hole size : Ø17mm, Depth : 40mm**
  Insert : SPMT060204-DM PC3535
  Drill : SPD170-25-3

- **Workpiece : Stainless steel, Hole size : Ø27mm, Depth : 45mm**
  Insert : NPMT252808-DS PC9530
  Drill : NPD270-32-2

LPD & SPD & NPD

SPD, NPD 3D





(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		ØD	ØD1	ØD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
SPD130-20-3	●	13	20	24	39	56	50	106	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD135-20-3	○	13.5	20	24	40.5	56	50	106	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD140-20-3	●	14	20	24	42	60	50	110	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD145-20-3	●	14.5	20	24	43.5	60	50	110	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD150-20-3	●	15	20	24	45	64	50	114	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD155-20-3	●	15.5	20	24	46.5	64	50	114	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD160-25-3	●	16	25	34	48	67	56	123	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD165-25-3	●	16.5	25	34	49.5	67	56	123	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD170-25-3	●	17	25	34	51	70	56	126	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD175-25-3	●	17.5	25	34	52.5	70	56	126	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD180-25-3	●	18	25	34	54	74	56	130	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD185-25-3	●	18.5	25	34	55.5	74	56	130	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD190-25-3	●	19	25	34	57	77	56	133	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD195-25-3	○	19.5	25	34	58.5	77	56	133	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD200-25-3	●	20	25	34	60	82	56	138	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD205-25-3	○	20.5	25	34	61.5	82	56	138	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD210-25-3	●	21	25	34	63	85	56	141	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD215-25-3	○	21.5	25	34	64.5	85	56	141	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD220-25-3	●	22	25	34	66	88	56	144	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD225-25-3	●	22.5	25	34	67.5	88	56	144	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
NPD230-32-3	●	23	32	44	69	93	60	153	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD235-32-3	●	23.5	32	44	70.5	93	60	153	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD240-32-3	●	24	32	44	72	96	60	156	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD245-32-3	○	24.5	32	44	73.5	96	60	156	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD250-32-3	●	25	32	44	75	100	60	160	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD255-32-3	●	25.5	32	44	76.5	100	60	160	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD260-32-3	●	26	32	44	78	103	60	163	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD265-32-3	●	26.5	32	44	79.5	103	60	163	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD270-32-3	●	27	32	44	81	107	60	167	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD275-32-3	●	27.5	32	44	82.5	107	60	167	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD280-32-3	●	28	32	44	84	111	60	171	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD285-32-3	○	28.5	32	44	85.5	111	60	171	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD290-32-3	●	29	32	44	87	114	60	174	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD295-32-3	○	29.5	32	44	88.5	114	60	174	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD300-32-3	●	30	32	44	90	119	60	179	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD305-32-3	●	30.5	32	44	91.5	119	60	179	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD310-32-3	●	31	32	44	93	122	60	182	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD315-32-3	○	31.5	32	44	94.5	122	60	182	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD320-32-3	●	32	32	44	96	125	60	185	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD325-32-3	●	32.5	32	44	97.5	125	60	185	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD330-32-3	●	33	32	48	99	131	60	191	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD335-32-3	○	33.5	32	48	100.5	131	60	191	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD340-32-3	●	34	32	48	102	134	60	194	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD345-32-3	○	34.5	32	48	103.5	134	60	194	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD350-32-3	●	35	32	48	105	137	60	197	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD355-32-3	○	35.5	32	48	106.5	137	60	197	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD360-32-3	●	36	32	48	108	141	60	201	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD365-32-3	○	36.5	32	48	109.5	141	60	201	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD370-32-3	●	37	32	48	111	144	60	204	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD375-32-3	○	37.5	32	48	112.5	144	60	204	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD380-32-3	●	38	32	48	114	148	60	208	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S

●Stock item, ○Under preparing for stock

LPD & SPD & NPD

SPD, NPD 3D

(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
NPD385-32-3	○	38.5	32	48	115.5	148	60	208	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD390-32-3	●	39	32	48	117	151	60	211	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD395-32-3	○	39.5	32	48	118.5	151	60	211	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD400-32-3	●	40	32	48	120	155	60	215	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD405-32-3	○	40.5	32	48	121.5	155	60	215	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD330-40-3	●	33	40	48	99	131	70	201	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD335-40-3	○	33.5	40	48	100.5	131	70	201	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD340-40-3	●	34	40	48	102	134	70	204	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD345-40-3	○	34.5	40	48	103.5	134	70	204	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD350-40-3	●	35	40	48	105	137	70	207	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD355-40-3	○	35.5	40	48	106.5	137	70	207	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD360-40-3	●	36	40	48	108	141	70	211	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD365-40-3	○	36.5	40	48	109.5	141	70	211	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD370-40-3	●	37	40	48	111	144	70	214	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD375-40-3	○	37.5	40	48	112.5	144	70	214	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD380-40-3	●	38	40	48	114	148	70	218	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD385-40-3	○	38.5	40	48	115.5	148	70	218	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD390-40-3	●	39	40	48	117	151	70	221	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD395-40-3	○	39.5	40	48	118.5	151	70	221	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD400-40-3	●	40	40	48	120	155	70	225	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD405-40-3	○	40.5	40	48	121.5	155	70	225	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD410-40-3	●	41	40	58	123	160	70	230	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD415-40-3	○	41.5	40	58	124.5	160	70	230	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD420-40-3	●	42	40	58	126	164	70	234	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD425-40-3	○	42.5	40	58	127.5	164	70	234	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD430-40-3	●	43	40	58	129	167	70	237	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD435-40-3	○	43.5	40	58	130.5	167	70	237	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD440-40-3	○	44	40	58	132	170	70	240	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD445-40-3	○	44.5	40	58	133.5	170	70	240	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD450-40-3	●	45	40	58	135	174	70	244	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD455-40-3	○	45.5	40	58	136.5	174	70	244	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD460-40-3	●	46	40	58	138	177	70	247	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD465-40-3	○	46.5	40	58	139.5	177	70	247	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD470-40-3	●	47	40	58	141	181	70	251	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD475-40-3	○	47.5	40	58	142.5	181	70	251	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD480-40-3	●	48	40	58	144	186	70	256	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD485-40-3	○	48.5	40	58	145.5	186	70	256	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD490-40-3	○	49	40	58	147	189	70	259	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD495-40-3	○	49.5	40	58	148.5	189	70	259	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD500-40-3	●	50	40	58	150	192	70	262	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD505-40-3	○	50.5	40	58	151.5	192	70	262	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD410-42-3	○	41	42	58	123	160	70	230	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD415-42-3	○	41.5	42	58	124.5	160	70	230	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD420-42-3	○	42	42	58	126	164	70	234	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD425-42-3	○	42.5	42	58	127.5	164	70	234	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD430-42-3	○	43	42	58	129	167	70	237	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD435-42-3	○	43.5	42	58	130.5	167	70	237	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD440-42-3	○	44	42	58	132	170	70	240	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD445-42-3	○	44.5	42	58	133.5	170	70	240	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD450-42-3	●	45	42	58	135	174	70	244	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD455-42-3	○	45.5	42	58	136.5	174	70	244	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD460-42-3	○	46	42	58	138	177	70	247	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD465-42-3	○	46.5	42	58	139.5	177	70	247	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD470-42-3	○	47	42	58	141	181	70	251	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD475-42-3	○	47.5	42	58	142.5	181	70	251	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD480-42-3	○	48	42	58	144	186	70	256	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD485-42-3	○	48.5	42	58	145.5	186	70	256	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD490-42-3	○	49	42	58	147	189	70	259	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD495-42-3	○	49.5	42	58	148.5	189	70	259	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD500-42-3	●	50	42	58	150	192	70	262	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S

●Stock item, ○Under preparing for stock

LPD & SPD & NPD

SPD & NPD 3D, 4D

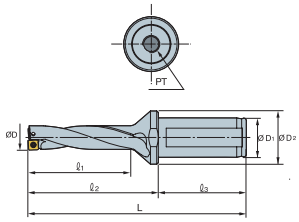
SPD, NPD 3D

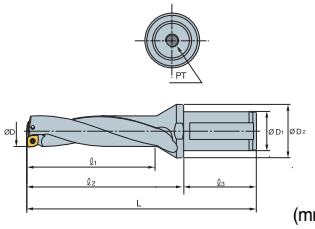
(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
NPD505-42-3	○	50.5	42	58	151.5	192	70	262	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD510-40-3	○	51	40	68	153	199	70	269	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD515-40-3	○	51.5	40	68	154.5	199	70	269	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD520-40-3	●	52	40	68	156	202	70	272	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD525-40-3	○	52.5	40	68	157.5	202	70	272	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD530-40-3	●	53	40	68	159	205	70	275	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD535-40-3	○	53.5	40	68	160.5	205	70	275	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD540-40-3	○	54	40	68	162	208	70	278	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD545-40-3	○	54.5	40	68	163.5	208	70	278	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD550-40-3	●	55	40	68	165	211	70	281	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD555-40-3	○	55.5	40	68	166.5	211	70	281	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD560-40-3	○	56	40	68	168	216	70	286	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD565-40-3	○	56.5	40	68	168.5	216	70	286	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD570-40-3	○	57	40	68	171	220	70	290	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD575-40-3	○	57.5	40	68	172.5	220	70	290	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD580-40-3	○	58	40	68	174	224	70	294	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD585-40-3	○	58.5	40	68	175.5	224	70	294	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD590-40-3	●	59	40	68	177	228	70	298	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD595-40-3	●	59.5	40	68	178.5	228	70	298	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD600-40-3	●	60	40	68	180	232	70	302	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD605-40-3	●	60.5	40	68	181.5	232	70	302	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S

●Stock item, ○Under preparing for stock

SPD, NPD 4D

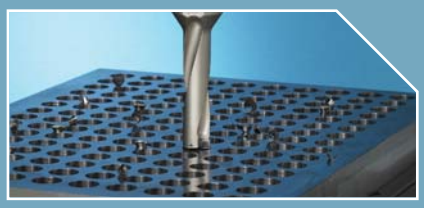




(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
SPD130-20-4	●	13	20	24	52	69	50	119	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD135-20-4	○	13.5	20	24	54	69	50	119	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD140-20-4	●	14	20	24	56	74	50	124	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD145-20-4	○	14.5	20	24	58	74	50	124	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD150-20-4	●	15	20	24	60	79	50	129	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD155-20-4	○	15.5	20	24	62	79	50	129	PT1/8	SPM(E)T050203-□□	FTNA0204	TW06P
SPD160-25-4	●	16	25	34	64	83	56	139	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD165-25-4	○	16.5	25	34	66	83	56	139	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD170-25-4	●	17	25	34	68	87	56	143	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD175-25-4	○	17.5	25	34	70	87	56	143	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD180-25-4	●	18	25	34	72	92	56	148	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD185-25-4	○	18.5	25	34	74	92	56	148	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD190-25-4	●	19	25	34	76	96	56	152	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD195-25-4	○	19.5	25	34	78	96	56	152	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD200-25-4	●	20	25	34	80	102	56	158	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD205-25-4	○	20.5	25	34	82	102	56	158	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD210-25-4	●	21	25	34	84	106	56	162	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD215-25-4	○	21.5	25	34	86	106	56	162	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD220-25-4	●	22	25	34	88	110	56	166	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD225-25-4	○	22.5	25	34	90	110	56	166	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
NPD230-32-4	●	23	32	44	92	116	60	176	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD235-32-4	○	23.5	32	44	94	116	60	176	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S

●Stock item, ○Under preparing for stock



SPD, NPD 4D

(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
NPD240-32-4	●	24	32	44	96	120	60	180	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD245-32-4	○	24.5	32	44	98	120	60	180	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD250-32-4	●	25	32	44	100	125	60	185	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD255-32-4	○	25.5	32	44	102	125	60	185	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD260-32-4	●	26	32	44	104	129	60	189	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD265-32-4	○	26.5	32	44	106	129	60	189	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD270-32-4	●	27	32	44	108	134	60	194	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD275-32-4	○	27.5	32	44	110	134	60	194	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD280-32-4	●	28	32	44	112	139	60	199	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD285-32-4	○	28.5	32	44	114	139	60	199	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD290-32-4	●	29	32	44	116	143	60	203	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD295-32-4	○	29.5	32	44	118	143	60	203	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD300-32-4	●	30	32	44	120	149	60	209	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD305-32-4	○	30.5	32	44	122	149	60	209	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD310-32-4	●	31	32	44	124	153	60	213	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD315-32-4	○	31.5	32	44	126	153	60	213	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD320-32-4	●	32	32	44	128	157	60	217	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD325-32-4	○	32.5	32	44	130	157	60	217	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD330-32-4	●	33	32	48	132	164	60	224	PT1/4	NPM(E)T334008-□□	FTKA03508	TW15S
NPD330-40-4	●	33	40	48	132	164	70	234	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD335-40-4	○	33.5	40	48	134	164	70	234	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD340-40-4	●	34	40	48	136	168	70	238	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD345-40-4	○	34.5	40	48	138	168	70	238	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD350-40-4	●	35	40	48	140	172	70	242	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD355-40-4	○	35.5	40	48	142	172	70	242	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD360-40-4	●	36	40	48	144	177	70	247	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD365-40-4	○	36.5	40	48	146	177	70	247	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD370-40-4	●	37	40	48	148	181	70	251	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD375-40-4	○	37.5	40	48	150	181	70	251	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD380-40-4	●	38	40	48	152	186	70	256	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD385-40-4	○	38.5	40	48	154	186	70	256	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD390-40-4	●	39	40	48	156	190	70	260	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD395-40-4	○	39.5	40	48	158	190	70	260	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD400-40-4	●	40	40	48	160	195	70	265	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD405-40-4	○	40.5	40	48	162	195	70	265	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD410-40-4	●	41	40	58	164	201	70	271	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD415-40-4	○	41.5	40	58	166	201	70	271	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD420-40-4	●	42	40	58	168	206	70	276	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD425-40-4	○	42.5	40	58	170	206	70	276	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD430-40-4	●	43	40	58	172	210	70	280	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD435-40-4	○	43.5	40	58	174	210	70	280	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD440-40-4	●	44	40	58	176	214	70	284	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD445-40-4	○	44.5	40	58	178	214	70	284	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD450-40-4	●	45	40	58	180	219	70	289	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD455-40-4	○	45.5	40	58	182	219	70	289	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD460-40-4	●	46	40	58	184	223	70	293	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD465-40-4	○	46.5	40	58	186	223	70	293	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD470-40-4	●	47	40	58	188	228	70	298	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD475-40-4	○	47.5	40	58	190	228	70	298	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD480-40-4	●	48	40	58	192	234	70	304	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD485-40-4	○	48.5	40	58	194	234	70	304	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD490-40-4	●	49	40	58	196	238	70	308	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD495-40-4	○	49.5	40	58	198	238	70	308	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD500-40-4	●	50	40	58	200	242	70	312	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD505-40-4	○	50.5	40	58	202	242	70	312	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD510-40-4	○	51	40	68	204	250	70	320	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD515-40-4	○	51.5	40	68	206	250	70	320	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD520-40-4	○	52	40	68	208	254	70	324	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD525-40-4	○	52.5	40	68	210	254	70	324	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD530-40-4	●	53	40	68	212	258	70	328	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD535-40-4	○	53.5	40	68	214	258	70	328	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S

●Stock item, ○Under preparing for stock

LPD & SPD & NPD

SPD & NPD 4D, 5D

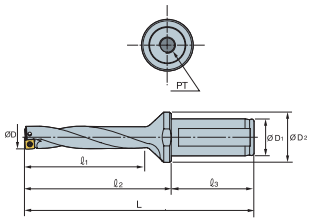
SPD, NPD 4D

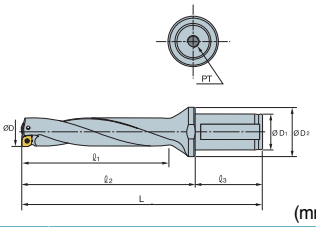
(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
NPD540-40-4	●	54	40	68	216	262	70	332	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD545-40-4	○	54.5	40	68	218	262	70	332	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD550-40-4	●	55	40	68	220	266	70	336	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD555-40-4	○	55.5	40	68	222	266	70	336	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD560-40-4	○	56	40	68	224	272	70	342	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD565-40-4	○	56.5	40	68	226	272	70	342	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD570-40-4	○	57	40	68	228	277	70	347	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD575-40-4	○	57.5	40	68	230	277	70	347	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD580-40-4	○	58	40	68	232	282	70	352	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD585-40-4	○	58.5	40	68	234	282	70	352	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD590-40-4	●	59	40	68	236	287	70	357	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD595-40-4	○	59.5	40	68	238	287	70	357	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD600-40-4	●	60	40	68	240	292	70	362	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD605-40-4	○	60.5	40	68	242	292	70	362	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S

●Stock item, ○Under preparing for stock

SPD, NPD 5D

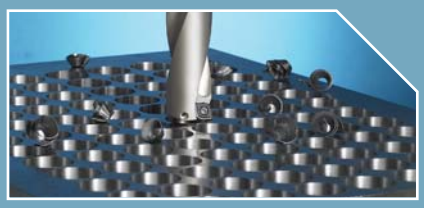




(mm)

Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
SPD160-25-5	●	16	25	34	80	99	56	155	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD165-25-5	○	16.5	25	34	82.5	99	56	155	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD170-25-5	●	17	25	34	85	104	56	160	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD175-25-5	○	17.5	25	34	87.5	104	56	160	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD180-25-5	●	18	25	34	90	110	56	166	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD185-25-5	○	18.5	25	34	92.5	110	56	166	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD190-25-5	●	19	25	34	95	115	56	171	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD195-25-5	○	19.5	25	34	97.5	115	56	171	PT1/8	SPM(E)T060204-□□	FTKA02206S	TW07S
SPD200-25-5	●	20	25	34	100	122	56	178	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD205-25-5	○	20.5	25	34	102.5	122	56	178	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD210-25-5	●	21	25	34	105	127	56	183	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD215-25-5	○	21.5	25	34	107.5	127	56	183	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD220-25-5	●	22	25	34	110	132	56	188	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
SPD225-25-5	○	22.5	25	34	112.5	132	56	188	PT1/8	SPM(E)T070204-□□	FTKA02565	TW07S
NPD230-32-5	●	23	32	44	115	139	60	199	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD235-32-5	○	23.5	32	44	117.5	139	60	199	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD240-32-5	●	24	32	44	120	144	60	204	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD245-32-5	○	24.5	32	44	122.5	144	60	204	PT1/4	NPM(E)T222408-□□	FTKA02565	TW07S
NPD250-32-5	●	25	32	44	125	150	60	210	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD255-32-5	○	25.5	32	44	127.5	150	60	210	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD260-32-5	●	26	`	44	130	155	60	215	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD265-32-5	○	26.5	32	44	132.5	155	60	215	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD270-32-5	●	27	32	44	135	161	60	221	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD275-32-5	○	27.5	32	44	137.5	161	60	221	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD280-32-5	●	28	32	44	140	167	60	227	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD285-32-5	○	28.5	32	44	142.5	167	60	227	PT1/4	NPM(E)T252808-□□	FTKA0307	TW09S
NPD290-32-5	●	29	32	44	145	172	60	232	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD295-32-5	○	29.5	32	44	147.5	172	60	232	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD300-32-5	●	30	32	44	150	179	60	239	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S

●Stock item, ○Under preparing for stock



LPD & SPD & NPD

SPD, NPD 5D

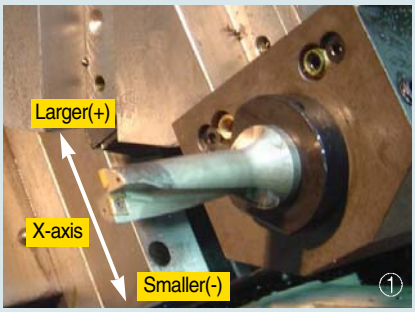
(mm)

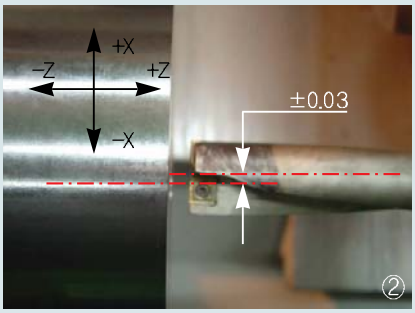
Holder	Stock	Dimensions (mm)								Insert	Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Screw	Wrench
NPD305-32-5	○	30.5	32	44	152.5	179	60	239	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD310-32-5	●	31	32	44	155	184	60	244	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD315-32-5	○	31.5	32	44	157.5	184	60	244	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD320-32-5	●	32	32	44	160	189	60	249	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD325-32-5	○	32.5	32	44	162.5	189	60	249	PT1/4	NPM(E)T293208-□□	FTKA0307	TW09S
NPD330-40-5	●	33	40	48	165	197	70	267	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD335-40-5	○	33.5	40	48	167.5	197	70	267	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD340-40-5	●	34	40	48	170	202	70	272	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD345-40-5	○	34.5	40	48	172.5	202	70	272	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD350-40-5	●	35	40	48	175	207	70	277	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD355-40-5	○	35.5	40	48	177.5	207	70	277	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD360-40-5	●	36	40	48	180	213	70	283	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD365-40-5	○	36.5	40	48	182.5	213	70	283	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD370-40-5	○	37	40	48	185	218	70	288	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD375-40-5	○	37.5	40	48	187.5	218	70	288	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD380-40-5	○	38	40	48	190	224	70	294	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD385-40-5	○	38.5	40	48	192.5	224	70	294	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD390-40-5	○	39	40	48	195	229	70	299	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD395-40-5	○	39.5	40	48	197.5	229	70	299	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD400-40-5	●	40	40	48	200	235	70	305	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD405-40-5	○	40.5	40	48	202.5	235	70	305	PT3/8	NPM(E)T334008-□□	FTKA03508	TW15S
NPD410-40-5	○	41	40	58	205	242	70	312	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD415-40-5	○	41.5	40	58	207.5	242	70	312	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD420-40-5	○	42	40	58	210	248	70	318	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD425-40-5	○	42.5	40	58	212.5	248	70	318	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD430-40-5	○	43	40	58	215	253	70	323	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD435-40-5	○	43.5	40	58	215.5	253	70	323	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD440-40-5	○	44	40	58	220	258	70	328	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD445-40-5	○	44.5	40	58	222.5	258	70	328	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD450-40-5	●	45	40	58	225	264	70	334	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD455-40-5	○	45.5	40	58	227.5	264	70	334	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD460-40-5	○	46	40	58	230	269	70	339	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD465-40-5	○	46.5	40	58	232.5	269	70	339	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD470-40-5	○	47	40	58	235	275	70	345	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD475-40-5	○	47.5	40	58	237.5	275	70	345	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD480-40-5	○	48	40	58	240	282	70	352	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD485-40-5	○	48.5	40	58	242.5	282	70	352	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD490-40-5	○	49	40	58	245	287	70	357	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD495-40-5	○	49.5	40	58	247.5	287	70	357	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD500-40-5	●	50	40	58	200	292	70	362	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD505-40-5	○	50.5	40	58	202.5	292	70	362	PT3/8	NPM(E)T415008-□□	FTKA0410	TW15S
NPD510-40-5	○	51	40	68	255	301	70	371	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD515-40-5	○	51.5	40	68	257.5	301	70	371	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD520-40-5	○	52	40	68	260	306	70	376	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD525-40-5	○	52.5	40	68	262.5	306	70	376	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD530-40-5	○	53	40	68	265	311	70	381	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD535-40-5	○	53.5	40	68	265.5	311	70	381	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD540-40-5	○	54	40	68	270	316	70	386	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD545-40-5	○	54.5	40	68	272.5	316	70	386	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD550-40-5	●	55	40	68	275	321	70	391	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD555-40-5	○	55.5	40	68	277.5	321	70	391	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD560-40-5	○	56	40	68	280	328	70	398	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD565-40-5	○	56.5	40	68	282.5	328	70	398	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD570-40-5	○	57	40	68	285	334	70	404	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD575-40-5	○	57.5	40	68	287.5	334	70	404	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD580-40-5	○	58	40	68	290	340	70	410	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD585-40-5	○	58.5	40	68	292.5	340	70	410	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD590-40-5	○	59	40	68	295	346	70	416	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD595-40-5	○	59.5	40	68	297.5	346	70	416	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD600-40-5	●	60	40	68	240	352	70	422	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S
NPD605-40-5	○	60.5	40	68	242.5	352	70	422	PT3/8	NPM(E)T516012-□□	FTNC04511	TW20S

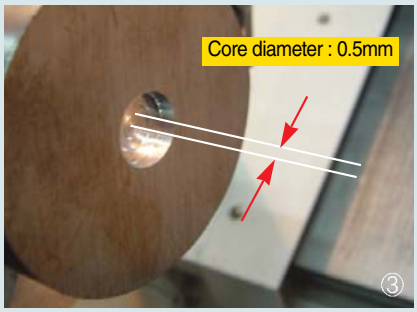
●Stock item, ○Under preparing for stock

Setting of drill in turning machine

Setting of drill in turning machine







①The cutting edge of insert should be parallel to X-axis to make it possible to do offset cutting.
Since a flat part on shank for side lock clamping has been made parallel with the cutting edge line of insert, operator can set the drill as per flat part of shank.

②The outer insert should be located in the direction(+) of X-axis to allow offset cutting and then the inner insert should face the operator.

③To check up the setting of drill before use, test it by drilling about 5mm depth and then measure the core size if it is around 0.5mm.

* Please check the side lock position when you clamp

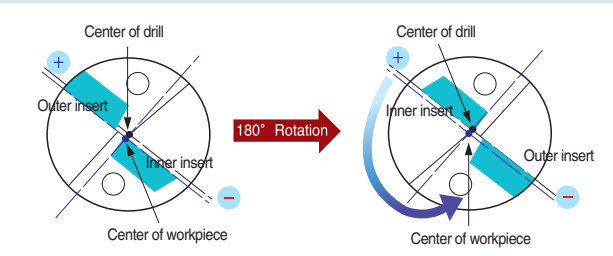
Drill setting by core size

According to machine condition, miss-match between the center of the workpiece and the drill could cause un-preferable core size, like too big core or nothing. Since it is the main point to get good quality, please be fully aware of the data written below.

When the core has not made

①It could cause damage on insert and serious vibration of tool in drilling.

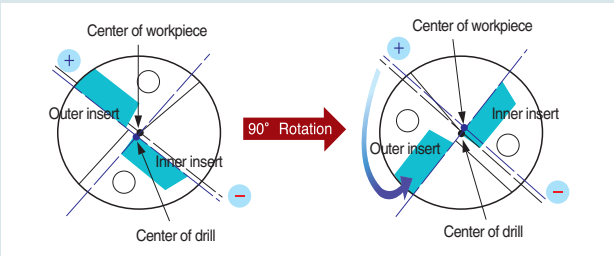
②To fix the trouble, re-clamp it by rotating the holder 180° and check the core size again.



When the core is larger than 1mm

①The big core of workpiece could generate big cutting force against drilling which cause vibration of tool .

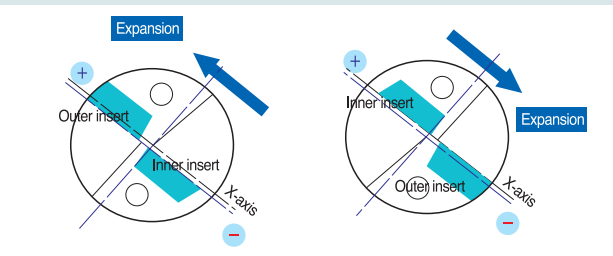
②To figure out the trouble, rotate the drill 90°by countering-clockwise and re-clamping it.



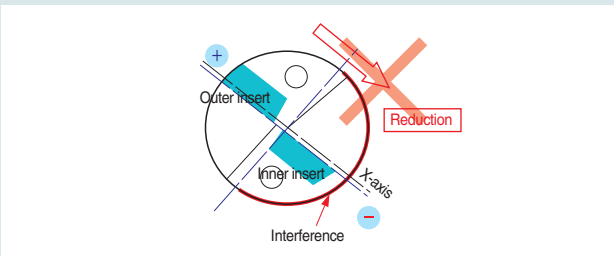
Making expanded hole

①The cutting edge of insert and X-axis of machine should be parallel to each other.

②Expanding of hole size by moving the drill to the outer direction of X-axis is possible.
(Please refer to the expanding hole range by drill diameter at the table shown below.)



③Don't make the reduced operation in the inner direction of X-axis.
: A damage on workpiece could be caused by interference between drill's shank and operated hole.



LPD & SPD & NPD

SPD & NPD Technical information

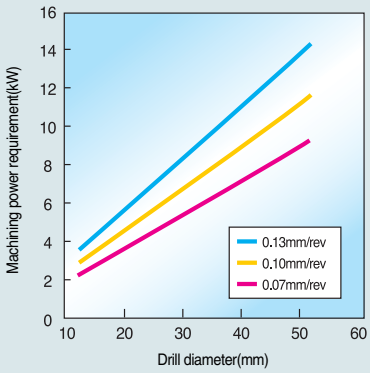
Maximum hole size available as per each drill diameter

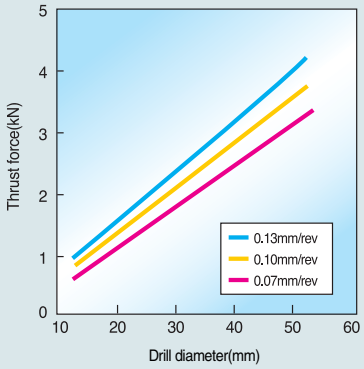
• Expanded hole modification value when moving in the outer direction of X-axis.

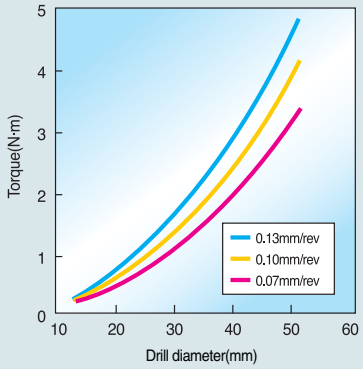
Drill diameter	Max.radial adjustment	Max.drill diameter	Drill diameter	Max.radial adjustment	Max.drill diameter	Drill diameter	Max.radial adjustment	Max.drill diameter
13	+ 0.3	13.6	29	+ 0.5	30.0	45	+ 0.5	46.0
14	+ 0.3	14.6	30	+ 0.5	31.0	46	+ 0.5	47.0
15	+ 0.3	15.6	31	+ 0.5	32.0	47	+ 0.5	48.0
16	+ 0.5	17.0	32	+0.25	32.5	48	+ 0.5	49.0
17	+ 0.5	18.0	33	+ 0.5	34.0	49	+0.25	49.5
18	+ 0.25	18.5	34	+ 0.5	35.0	50	+0.25	50.5
19	+ 0.25	19.5	35	+ 0.5	36.0	51	+ 0.5	52.0
20	+ 0.5	21.0	36	+ 0.5	37.0	52	+ 0.5	53.0
21	+ 0.5	22.0	37	+ 0.5	38.0	53	+ 0.5	54.0
22	+ 0.25	22.5	38	+ 0.5	39.0	54	+ 0.5	55.0
23	+ 0.5	24.0	39	+ 0.5	40.0	55	+ 0.5	56.0
24	+ 0.25	24.5	40	+0.5	41.0	56	+0.5	57.0
25	+ 0.5	26.0	41	+0.5	42.0	57	+0.5	58.0
26	+ 0.5	27.0	42	+0.5	43.0	58	+0.5	59.0
27	+ 0.5	28.0	43	+0.5	44.0	59	+0.25	59.5
28	+ 0.25	28.5	44	+0.5	45.0	60	+0.25	60.5

SPD & NPD Technical information

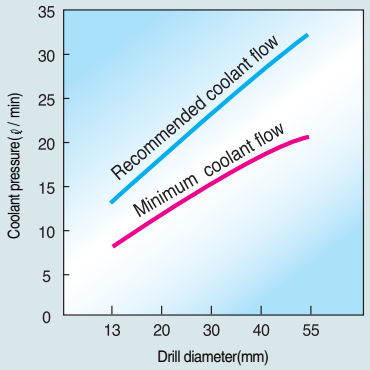
Machining power requirement







Coolant pressure



• Appropriate pressure for NPD & SPD is over 5kg/㎠
• Since the information shown above is basic data for normal drilling, adjustment as per workpiece & cutting conditions are necessary

Machined hole tolerance as per D.O.C

D.O.C	Machined Hole Tolerance	Test Cutting Condition
2 X D	D $^{+0.2}_{-0.1}$	• V : 130 ~200m/min / 430~660 sfm • f : 0.04~0.15mm/rev / 0.0016~0.006ipr • Workpiece : SCM440 / AISI4140 • Coolant : Over 5kg/cm²
3 X D	D $^{+0.3}_{-0.1}$	
4 X D	D $^{+0.4}_{-0.1}$	

• V : 100m/min / 330 sfm
• Workpiece : SCM440 / AISI4140
• Through coolant system

LPD & SPD & NPD

SPD & NPD Technical information

Trouble Shooting

Trouble	Condition	Trouble	Condition
Size change of hole	Size change of the hole between inlet and outlet	**Chip clogging**	Increase 'Velocity' Decrease 'Feed rate'
Reduction of hole size	Reduction of hole size compared to drill diameter	**Center position of workpiece is lower than cutting edge of inner insert.**	Refer to the drill setting by core condition (Previous pages)
Scratch of steel part of holder by touching of wall of hole	Touch of the workpiece and the drill's shank	**The Inaccurate center of workpiece and drill**	
Vibration	Long Chip	**Vibration happens due to poor chip evacuation.**	Soft steel, Stainless steel Increase 'Velocity' Decrease 'Feed rate'
			Alloy steel, Carbon steel Increase 'Velocity' Increase 'Feed rate'
	Short Chip	**Vibration happens due to the overload from severe chip breaking**	Increase 'Velocity' Decrease 'Feed rate' Increase 'Coolant pressure'

• Since the coolant pressure is very important factor for drilling, in-sufficient coolant pressure might cause chattering or wear on cutting edge occuring short tool life.

LPD & SPD & NPD Code System

SPD	170	-	25	-	3
SPDrill	Hole size: Ø17mm		Shank diameter Ø25mm		Aspect ratio (2, 3, 4, 5)

• Use SPD for diameter Ø13mm~ Ø22mm, use NPD for diameter Ø23mm~ Ø60mm.
• When choosing drill, please consider about the aspect ratio (flute length / hole diameter) of drill.

How to calculate machining power of drilling : P(kW)

$$P = 425 \times Ks \times V \times f \times D / 10^{7} (kW)$$

• Specific cutting force : Ks(kg/mm²)_see KORLOY catalogue
• Cutting speed : V(m/min) Feed rate: f(mm/rev) Drill diameter : ØD(mm)

● Example

Workpiece = SCM440, Ks=254kg/mm², V=100m/min, f=0.1mm/rev, D=20mm
P(kW)=425 X 254 X 100 X 0.1 X 20/10,000,000=2.159kW

Applications need special care


Inclined surface


Half circle


Hole expanding


Interfered hole


Piled up plates

• In case of applications shown above, please decrease the feed rate 30~50% from the recommended data

LPD & SPD & NPD

Recommended cutting condition (Metric)

Recommended cutting condition (Metric)

Workpiece				C/B and Grade			V	Condition(L=3D) Feed(mm/rev)			
ISO	KS	Material	Hardnesss (HB)		C/B	Grade	m/min	~15	16~24	25~32	33~40
P	SM15C SM25C SM35C	Low carbon steel	80-180	1st	DM	PC3525	190(130-250)	0.04-0.08	0.04-0.08	0.04-0.08	0.05-0.10
				2차	DS	PC9530	170(110-230)	0.04-0.08	0.04-0.08	0.04-0.08	0.05-0.10
	SM45C SM58C SCMn1 SMn438(H) SUM22 SNC236	High carbon steel	180-280	1st	DM	PC3525	140(80-200)	0.04-0.10	0.04-0.12	0.05-0.16	0.08-0.18
	SCM4105 SCM440 SCMnH1	Low alloy steel	140-260	1st	DM	PC3525	130(70-200)	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.20
				2st	DS	PC9530	120(50-180)	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.20
	SCr440 SNCM220 SNCM240	Low alloy steel (heat)	200-400	1st	DM	PC3525	100(50-150)	0.04-0.10	0.04-0.12	0.06-0.16	0.08-0.20
				2st	DR	PC3525	90(50-140)	0.04-0.10	0.04-0.12	0.06-0.16	0.08-0.20
	STD1 STD61 STS43 SKH55 SKH3 SKH51 SKH51	High alloy steel	50-260	1st	DM	PC3525	100(50-160)	0.04-0.08	0.04-0.12	0.06-0.16	0.08-0.18
				2st	DS	PC9530	90(50-150)	0.04-0.08	0.04-0.12	0.06-0.16	0.08-0.18
		High alloy steel (heat)	220-450	1st	DM	PC3525	70(30-120)	0.04-0.08	0.04-0.12	0.06-0.14	0.08-0.17
				2st	DR	PC3525	60(30-110)	0.04-0.08	0.04-0.12	0.06-0.14	0.08-0.17
M	STS304 STR31 STR316 STS316 B11SSC16 STS321 STS12 STS403 STS410	Austenite	135-275 Ni>8%	1st	DS	PC9530	100(50-150)	0.04-0.10	0.04-0.12	0.06-0.14	0.06-0.16
				2st	DM	PC9530	90(40-150)	0.04-0.10	0.04-0.12	0.06-0.14	0.06-0.16
		Austenite (Cast steel)	150-250	1st	DS	PC9530	80(40-130)	0.04-0.08	0.04-0.12	0.06-0.14	0.06-0.16
				2st	DM	PC9530	80(40-120)	0.04-0.08	0.04-0.12	0.06-0.14	0.06-0.16
	STS420 STS430 STR446 STR36 STR446	Ferrite Martensite	135-275	1st	DR	PC3530	120(60-170)	0.04-0.10	0.04-0.12	0.06-0.14	0.06-0.16
				2st	DS	PC9530	110(60-160)	0.04-0.10	0.04-0.12	0.06-0.14	0.06-0.16
	HRSC15 STR330 NiCu30Al CoCr22W 14Ni	Ni-alloy	130-400	1st	DS	PC9530	50(30-100)	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12
				2st	DM	PC9530	40(30-90)	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12
	TiAl5Sn2.5	Ti-alloy	130-400	1st	DR	PC3530	50(30-90)	0.04-0.08	0.04-0.10	0.06-0.12	0.08-0.14
		High hardness	400 Over	1st	DR	PC3530	40(20-80)	0.04-0.08	0.04-0.10	0.06-0.12	0.08-0.14
K	GC100 GC150	Gray	150-220	1st	DM	PC6510	190(150-250)	0.04-0.12	0.06-0.16	0.08-0.18	0.10-0.22
	GC200 GC250 GC350 GC400 GCD500 GCD600 GCD700	Ductile	130-240	1st	DM	PC6510	150(100-200)	0.04-0.10	0.05-0.14	0.06-0.16	0.08-0.20
				2st	DR	PC6510	130(90-180)	0.04-0.10	0.05-0.14	0.06-0.16	0.08-0.20
	GTS-35 GTS 45 GTS-55	Graphite	200-300	1st	DM	PC6510	130(70-170)	0.04-0.10	0.05-0.12	0.06-0.16	0.08-0.18
				2st	DR	PC6510	110(70-150)	0.04-0.10	0.05-0.12	0.06-0.16	0.08-0.18
	Aluminum		30-150	1st	DA	H01	300(200-400)	0.04-0.12	0.06-0.16	0.08-0.18	0.10-0.22
				2st	DM	H01	280(200-350)	0.04-0.12	0.06-0.16	0.08-0.18	0.10-0.22
	Copper		150-160	1st	DA	H01	280(200-350)	0.04-0.12	0.06-0.16	0.08-0.18	0.10-0.22
				2st	DM	H01	250(200-300)	0.04-0.12	0.06-0.16	0.08-0.18	0.10-0.22

- Decrease feed rate 20~50% when using aspect ratio 4D, 5D drill.
  (You may increse feed rate 10~20% when using aspect ratio 2D drill)
- Apply appropriate cutting condition according to workpiece shape and hardness.
- Decrease feed rate 30~50% when overlapped board drilling.

LPD & SPD & NPD

Recommended cutting condition (Metric)

	Condition(L=4D)					Condition(L=5D)				
	Feed(mm/rev)					Feed(mm/rev)				
Over 41	~15	16~24	25~32	33~40	Over 41	~15	16~24	25~32	33~40	Over 41
0.06-0.12	0.04-0.08	0.04-0.08	0.04-0.08	0.05-0.10	0.08-0.12	0.04-0.05	0.04-0.05	0.04-0.05	0.05-0.07	0.08-0.09
0.08-0.12	0.04-0.08	0.04-0.08	0.04-0.08	0.05-0.10	0.08-0.12	0.04-0.05	0.04-0.05	0.04-0.05	0.05-0.07	0.08-0.09
0.10-0.22	0.04-0.10	0.04-0.12	0.05-0.16	0.08-0.16	0.10-0.18	0.04-0.07	0.04-0.09	0.05-0.12	0.08-0.14	0.10-0.14
0.08-0.24	0.04-0.10	0.06-0.12	0.08-0.14	0.08-0.18	0.08-0.20	0.04-0.07	0.06-0.09	0.08-0.11	0.08-0.13	0.08-0.15
0.08-0.24	0.04-0.10	0.06-0.12	0.08-0.14	0.08-0.18	0.08-0.20	0.04-0.07	0.06-0.09	0.08-0.11	0.08-0.13	0.08-0.15
0.08-0.24	0.04-0.10	0.06-0.12	0.08-0.14	0.08-0.18	0.08-0.20	0.04-0.07	0.06-0.09	0.08-0.11	0.08-0.13	0.08-0.15
0.08-0.22	0.04-0.10	0.06-0.12	0.08-0.14	0.08-0.16	0.08-0.18	0.04-0.07	0.06-0.09	0.08-0.11	0.08-0.13	0.08-0.15
0.08-0.22	0.04-0.08	0.04-0.12	0.06-0.16	0.08-0.18	0.08-0.22	0.04-0.06	0.04-0.09	0.06-0.11	0.08-0.13	0.08-0.15
0.08-0.22	0.04-0.08	0.04-0.12	0.06-0.16	0.08-0.18	0.08-0.22	0.04-0.06	0.04-0.09	0.06-0.11	0.08-0.13	0.08-0.15
0.08-0.20	0.04-0.08	0.04-0.12	0.06-0.14	0.08-0.17	0.08-0.20	0.04-0.06	0.04-0.08	0.06-0.10	0.08-0.12	0.08-0.14
0.08-0.20	0.04-0.08	0.04-0.12	0.06-0.14	0.08-0.17	0.08-0.20	0.04-0.06	0.04-0.08	0.06-0.10	0.08-0.12	0.08-0.14
0.06-0.20	0.04-0.10	0.04-0.12	0.06-0.12	0.06-0.14	0.06-0.16	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12	0.06-0.12
0.06-0.20	0.04-0.10	0.04-0.12	0.06-0.12	0.06-0.14	0.06-0.16	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12	0.06-0.12
0.06-0.20	0.04-0.08	0.04-0.12	0.06-0.12	0.06-0.14	0.06-0.15	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12	0.06-0.12
0.06-0.20	0.04-0.08	0.04-0.12	0.06-0.12	0.06-0.14	0.06-0.15	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12	0.06-0.12
0.06-0.20	0.04-0.10	0.04-0.12	0.06-0.12	0.06-0.14	0.06-0.16	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12	0.06-0.12
0.06-0.20	0.04-0.10	0.04-0.12	0.06-0.12	0.06-0.14	0.06-0.16	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.12	0.06-0.12
0.06-0.12	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.10	0.06-0.10	0.04-0.06	0.04-0.06	0.06-0.08	0.06-0.08	0.06-0.08
0.06-0.12	0.04-0.06	0.04-0.08	0.06-0.10	0.06-0.10	0.06-0.10	0.04-0.06	0.04-0.06	0.06-0.08	0.06-0.08	0.06-0.08
0.08-0.16	0.04-0.07	0.04-0.09	0.06-0.11	0.08-0.14	0.08-0.16	0.04-0.06	0.04-0.09	0.06-0.09	0.08-0.11	0.08-0.12
0.08-0.16	0.04-0.07	0.04-0.09	0.06-0.11	0.08-0.14	0.08-0.16	0.04-0.06	0.04-0.09	0.06-0.09	0.08-0.11	0.08-0.12
0.10-0.26	0.04-0.11	0.06-0.14	0.08-0.16	0.10-0.20	0.12-0.22	0.04-0.10	0.06-0.12	0.08-0.12	0.10-0.14	0.12-0.16
0.10-0.22	0.04-0.09	0.05-0.12	0.06-0.15	0.08-0.18	0.10-0.20	0.04-0.07	0.05-0.09	0.06-0.09	0.08-0.12	0.10-0.14
0.10-0.22	0.04-0.09	0.05-0.12	0.06-0.15	0.08-0.18	0.10-0.20	0.04-0.07	0.05-0.09	0.06-0.09	0.08-0.12	0.10-0.14
0.10-0.20	0.04-0.09	0.05-0.12	0.06-0.15	0.08-0.18	0.10-0.20	0.04-0.07	0.05-0.09	0.06-0.09	0.08-0.12	0.10-0.14
0.10-0.20	0.04-0.09	0.05-0.12	0.06-0.15	0.08-0.18	0.10-0.20	0.04-0.07	0.05-0.09	0.06-0.09	0.08-0.12	0.10-0.14
0.10-0.24	0.04-0.10	0.06-0.14	0.08-0.16	0.10-0.20	0.10-0.20	0.04-0.09	0.06-0.11	0.08-0.12	0.10-0.14	0.10-0.16
0.10-0.24	0.04-0.10	0.06-0.14	0.08-0.16	0.10-0.20	0.10-0.20	0.04-0.09	0.06-0.11	0.08-0.12	0.10-0.14	0.10-0.16
0.10-0.24	0.04-0.10	0.06-0.14	0.08-0.16	0.10-0.20	0.10-0.20	0.04-0.09	0.06-0.11	0.08-0.12	0.10-0.14	0.10-0.16
0.10-0.24	0.04-0.10	0.06-0.14	0.08-0.16	0.10-0.20	0.10-0.20	0.04-0.09	0.06-0.11	0.08-0.12	0.10-0.14	0.10-0.16

- Decrease feed rate 20~30% when poor workpiece clamping and low rigidity of machine.
- Decrease feed rate 30~50% early in the operation when inclined surface drilling.
  (In case of bad chip evacuation, apply step drilling of change to longer drill)
- When hole expanding, adjust cutting speed and feed rate. (It may cause long chip)

LPD & SPD & NPD

Recommended cutting condition (Inch)

Recommended cutting condition (Inch)

Workpiece				C/B and Grade			V	Condition(L=3D) Feed(ipr)			
ISO	KS	Material	Hardnesss (HB)		C/B	Grade	sfm	~15	16~24	25~32	33~40
P	SM15C SM25C SM35C	Low carbon steel	80-180	1st	DM	PC3525	630(430-825)	0.0016-0.003	0.0016-0.003	0.0016-0.003	0.002-0.004
				2st	DS	PC9530	560(360-760)	0.0016-0.003	0.0016-0.003	0.0016-0.003	0.002-0.004
	SM45C SM58C SCMn1 SMn438(H) SUM22 SNC236	High carbon steel	180-280	1st	DM	PC3525	460(265-660)	0.0016-0.004	0.0016-0.005	0.002-0.006	0.003-0.007
	SCM4105 SCM440 SCMnH1 SCr440 SNCM220 SNCM240	Low alloy steel	140-260	1st	DM	PC3525	430(230-660)	0.0016-0.004	0.0024-0.005	0.003-0.006	0.003-0.008
				2st	DS	PC9530	400(165-595)	0.0016-0.004	0.0024-0.005	0.003-0.006	0.003-0.008
		Low alloy steel (heat)	200-400	1st	DM	PC3525	330(165-495)	0.0016-0.004	0.0016-0.005	0.0024-0.006	0.003-0.008
				2st	DR	PC3525	300(165-460)	0.0016-0.004	0.0016-0.005	0.0024-0.0065	0.003-0.008
	STD1 STD61 STS43 SKH55 SKH3 SKH51 SKH51	High alloy steel	50-260	1st	DM	PC3525	330(165-530)	0.0016-0.003	0.0016-0.005	0.0024-0.0065	0.003-0.007
				2st	DS	PC9530	300(165-495)	0.0016-0.003	0.0016-0.005	0.0024-0.0065	0.003-0.007
		High alloy steel (heat)	220-450	1st	DM	PC3525	230(100-400)	0.0016-0.003	0.0016-0.005	0.0024-0.0055	0.003-0.0065
				2st	DR	PC3525	200(100-365)	0.0016-0.003	0.0016-0.005	0.0024-0.0055	0.003-0.0065
M	STS304 STR31 STR316 STS316 B11SSC16 STS321 STS12 STS403 STS410	Austenite	135-275 Ni>8%	1st	DS	PC9530	330(165-495)	0.0016-0.004	0.0016-0.005	0.0024-0.0055	0.0024-0.0065
				2st	DM	PC9530	300(130-495)	0.0016-0.004	0.0016-0.005	0.0024-0.0055	0.0024-0.0065
		Austenite (Cast steel)	150-250	1st	DS	PC9530	265(130-430)	0.0016-0.003	0.0016-0.005	0.0024-0.0055	0.0024-0.0065
				2st	DM	PC9530	265(130-400)	0.0016-0.003	0.0016-0.005	0.0024-0.0055	0.0024-0.0065
	STS420 STS430 STR446 STR36 STR446	Ferrite Martensite	135-275	1st	DR	PC3530	400(200-560)	0.0016-0.004	0.0016-0.005	0.0024-0.0055	0.0024-0.0065
				2st	DS	PC9530	365(200-530)	0.0016-0.004	0.0016-0.005	0.0024-0.0055	0.0024-0.0065
	HRSC15 STR330 NiCu30Al CoCr22W 14Ni	Ni-alloy	130-400	1st	DS	PC9530	165(100-330)	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005
				2st	DM	PC9530	130(100-300)	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005
	TiAl5Sn2.5	Ti-alloy	130-400	1st	DR	PC3530	165(100-300)	0.0016-0.003	0.0016-0.004	0.0024-0.005	0.003-0.0055
		High hardness	400 Over	1st	DR	PC3530	130(65-265)	0.0016-0.003	0.0016-0.004	0.0024-0.005	0.003-0.0055
K	GC100 GC150 GC200 GC250 GC350 GC400 GCD500 GCD600 GCD700	Gray	150-220	1st	DM	PC6510	630(495-825)	0.0016-0.005	0.0024-0.0065	0.003-0.007	0.004-0.0085
		Ductile	130-240	1st	DM	PC6510	495(330-660)	0.0016-0.004	0.002-0.0055	0.0024-0.0065	0.003-0.008
				2st	DR	PC6510	430(300-595)	0.0016-0.004	0.002-0.0055	0.0024-0.0065	0.003-0.008
	GTS-35 GTS 45 GTS-55	Graphite	200-300	1st	DM	PC6510	430(230-560)	0.0016-0.004	0.002-0.005	0.0024-0.0065	0.003-0.007
				2st	DR	PC6510	365(230-495)	0.0016-0.004	0.002-0.005	0.0024-0.0065	0.003-0.007
	Aluminum		30-150	1st	DA	H01	990(660-1320)	0.0016-0.005	0.0024-0.0065	0.003-0.007	0.004-0.0085
				2st	DM	H01	925(660-1155)	0.0016-0.005	0.0024-0.0065	0.003-0.007	0.004-0.0085
	Copper		150-160	1st	DA	H01	925(660-1155)	0.0016-0.005	0.0024-0.0065	0.003-0.007	0.004-0.0085
				2st	DM	H01	925(660-990)	0.0016-0.005	0.0024-0.0065	0.003-0.007	0.004-0.0085

- Decrease feed rate 20~50% when using aspect ratio 4D, 5D drill.
  (You may increse feed rate 10~20% when using aspect ratio 2D drill)
- Apply appropriate cutting condition according to workpiece shape and hardness.
- Decrease feed rate 30~50% when overlapped board drilling.

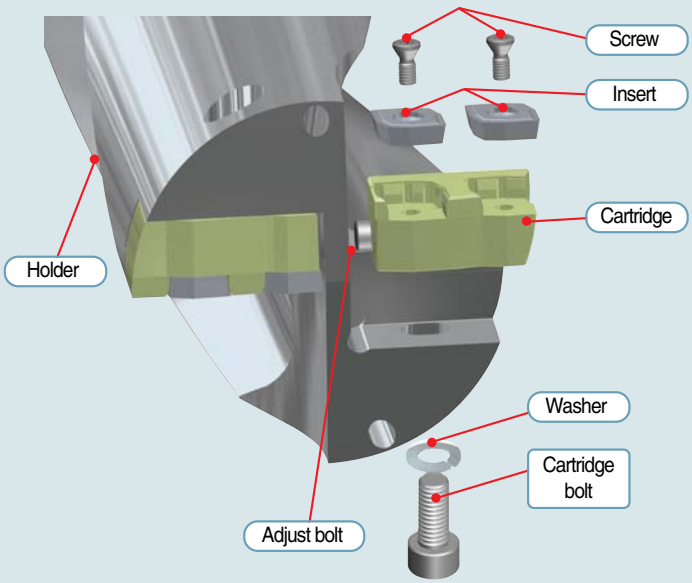
LPD & SPD & NPD

Recommended cutting condition (Inch)

	Condition(L=4D)					Condition(L=5D)				
	Feed(ipr)					Feed(ipr)				
Over 41	~15	16~24	25~32	33~40	Over 41	~15	16~24	25~32	33~40	Over 41
0.0024-0.005	0.0016-0.003	0.0016-0.003	0.0016-0.003	0.002-0.004	0.003-0.005	0.0016-0.002	0.0016-0.002	0.0016-0.002	0.002-0.003	0.003-0.0035
0.003-0.005	0.0016-0.003	0.0016-0.003	0.0016-0.003	0.002-0.004	0.003-0.005	0.0016-0.002	0.0016-0.002	0.0016-0.002	0.002-0.003	0.003-0.0035
0.004-0.0085	0.0016-0.004	0.0016-0.005	0.002-0.0065	0.003-0.0065	0.004-0.007	0.0016-0.003	0.0016-0.0035	0.002-0.005	0.003-0.0055	0.004-0.0055
0.003-0.0095	0.0016-0.004	0.0024-0.005	0.003-0.0055	0.003-0.007	0.003-0.008	0.0016-0.003	0.0024-0.0035	0.003-0.0045	0.003-0.005	0.003-0.006
0.003-0.0095	0.0016-0.004	0.0024-0.005	0.003-0.0055	0.003-0.007	0.003-0.008	0.0016-0.003	0.0024-0.0035	0.003-0.0045	0.003-0.005	0.003-0.006
0.003-0.0095	0.0016-0.004	0.0024-0.005	0.003-0.0055	0.003-0.007	0.003-0.008	0.0016-0.003	0.0024-0.0035	0.003-0.0045	0.003-0.005	0.003-0.006
0.003-0.0085	0.0016-0.004	0.0024-0.005	0.003-0.0055	0.003-0.0065	0.003-0.007	0.0016-0.003	0.0024-0.0035	0.003-0.0045	0.003-0.005	0.003-0.006
0.003-0.0085	0.0016-0.003	0.0016-0.005	0.0024-0.0065	0.003-0.007	0.003-0.0085	0.0016-0.0024	0.0016-0.0035	0.0024-0.0045	0.003-0.005	0.003-0.006
0.003-0.0085	0.0016-0.003	0.0016-0.005	0.0024-0.0065	0.003-0.007	0.003-0.0085	0.0016-0.0024	0.0016-0.0035	0.0024-0.0045	0.003-0.005	0.003-0.006
0.003-0.008	0.0016-0.003	0.0016-0.005	0.0024-0.0055	0.003-0.0065	0.003-0.008	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.003-0.005	0.003-0.0055
0.003-0.008	0.0016-0.003	0.0016-0.005	0.0024-0.0055	0.003-0.0065	0.003-0.008	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.003-0.005	0.003-0.0055
0.0024-0.008	0.0016-0.004	0.0016-0.005	0.0024-0.005	0.0024-0.0055	0.0024-0.0065	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005	0.0024-0.005
0.0024-0.008	0.0016-0.004	0.0016-0.005	0.0024-0.005	0.0024-0.0055	0.0024-0.0065	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005	0.0024-0.005
0.0024-0.008	0.0016-0.003	0.0016-0.005	0.0024-0.005	0.0024-0.0055	0.0024-0.006	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005	0.0024-0.005
0.0024-0.008	0.0016-0.003	0.0016-0.005	0.0024-0.005	0.0024-0.0055	0.0024-0.006	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005	0.0024-0.005
0.0024-0.008	0.0016-0.004	0.0016-0.005	0.0024-0.005	0.0024-0.0055	0.0024-0.0065	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005	0.0024-0.005
0.0024-0.008	0.0016-0.004	0.0016-0.005	0.0024-0.005	0.0024-0.0055	0.0024-0.0065	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.005	0.0024-0.005
0.0024-0.005	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.004	0.0024-0.004	0.0016-0.0024	0.0016-0.0024	0.0024-0.003	0.0024-0.003	0.0024-0.003
0.0024-0.005	0.0016-0.0024	0.0016-0.003	0.0024-0.004	0.0024-0.004	0.0024-0.004	0.0016-0.0024	0.0016-0.0024	0.0024-0.003	0.0024-0.003	0.0024-0.003
0.003-0.0065	0.0016-0.003	0.0016-0.0035	0.0024-0.0045	0.003-0.0055	0.003-0.0065	0.0016-0.0024	0.0016-0.0035	0.0024-0.0035	0.003-0.0045	0.003-0.005
0.003-0.0065	0.0016-0.003	0.0016-0.0035	0.0024-0.0045	0.003-0.0055	0.003-0.0065	0.0016-0.0024	0.0016-0.0035	0.0024-0.0035	0.003-0.0045	0.003-0.005
0.004-0.010	0.0016-0.0045	0.0024-0.0055	0.003-0.0065	0.004-0.008	0.005-0.0085	0.0016-0.004	0.0024-0.005	0.003-0.005	0.004-0.0055	0.005-0.0065
0.004-0.0085	0.0016-0.0035	0.002-0.005	0.0024-0.006	0.003-0.007	0.004-0.008	0.0016-0.003	0.002-0.0035	0.0024-0.0035	0.003-0.005	0.004-0.0055
0.004-0.0085	0.0016-0.0035	0.002-0.005	0.0024-0.006	0.003-0.007	0.004-0.008	0.0016-0.003	0.002-0.0035	0.0024-0.0035	0.003-0.005	0.004-0.0055
0.004-0.008	0.0016-0.0035	0.002-0.005	0.0024-0.006	0.003-0.007	0.004-0.008	0.0016-0.003	0.002-0.0035	0.0024-0.0035	0.003-0.005	0.004-0.0055
0.004-0.008	0.0016-0.0035	0.002-0.005	0.0024-0.006	0.003-0.007	0.004-0.008	0.0016-0.003	0.002-0.0035	0.0024-0.0035	0.003-0.005	0.004-0.0055
0.004-0.0095	0.0016-0.004	0.0024-0.0055	0.003-0.0065	0.004-0.008	0.004-0.008	0.0016-0.0035	0.0024-0.0045	0.003-0.005	0.004-0.0055	0.004-0.0065
0.004-0.0095	0.0016-0.004	0.0024-0.0055	0.003-0.0065	0.004-0.008	0.004-0.008	0.0016-0.0035	0.0024-0.0045	0.003-0.005	0.004-0.0055	0.004-0.0065
0.004-0.0095	0.0016-0.004	0.0024-0.0055	0.003-0.0065	0.004-0.008	0.004-0.008	0.0016-0.0035	0.0024-0.0045	0.003-0.005	0.004-0.0055	0.004-0.0065
0.004-0.0095	0.0016-0.004	0.0024-0.0055	0.003-0.0065	0.004-0.008	0.004-0.008	0.0016-0.0035	0.0024-0.0045	0.003-0.005	0.004-0.0055	0.004-0.0065

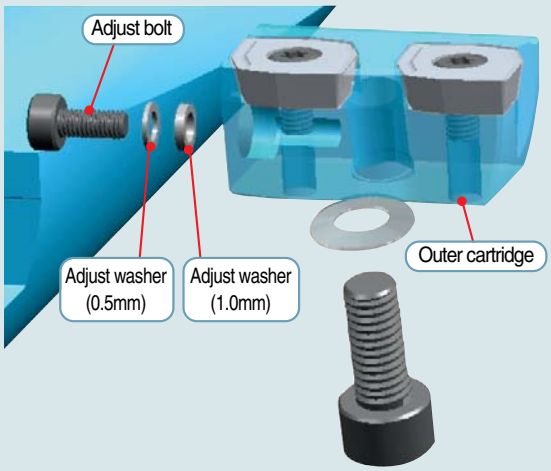
- Decrease feed rate 20~30% when poor workpiece clamping and low rigidity of machine.
- Decrease feed rate 30~50% early in the operation when inclined surface drilling.
  (In case of bad chip evacuation, apply step drilling of change to longer drill)
- When hole expanding, adjust cutting speed and feed rate. (It may cause long chip)

NPD Cartridge system



- Using big hole drilling Ø61 ~ Ø100
- Indexable cartridge & insert are able to pursue the economy and convenience of customer
- Drill diameter can be extended up to 5mm by adjusting outer cartridge
- An adjust bolt makes handling easy for extension of drill diameter
- Excellent chip control guarantees good cutting performance in deep hole drilling
- Various chip breakers & grades are available for variety of application

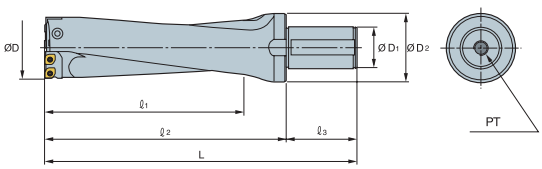
Adjustment of drill diameter



Extension of drill diameter(mm)	Washer	
	Designation	Thickness(mm)
1	WA0305	0.5
2	WA0310	1.0
3	WA0305+WA0310	1.5
4	WA0310 x 2	2.0
5	WA0305+WA0310 x 2	2.5

- Drill diameter could be extended up to 5mm from adjusting of washer.

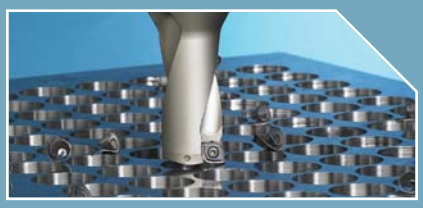
NPD Cartridge Type



(mm)

Holder	Stock	Dimensions (mm)								Insert	Cartridge		Parts	
		øD	øD1	øD2	ℓ1	ℓ2	ℓ3	L	PT		Inner	Outer	Screw	Wrench
NPD6165-50-3	○	61~65	50	80	195	240	85	325	PT3/8	NPM(E)T293208-□□	NPC6165C	NPC6165P	FTKA0307	TW15S
NPD6570-50-3	○	65~70	50	88	210	255	85	340	PT3/8	NPM(E)T334008-□□	NPC6570C	NPC6570P	FTKA03508	TW15S
NPD7075-50-3	○	70~75	50	88	225	270	85	355	PT3/8	NPM(E)T334008-□□	NPC7075C	NPC7075P	FTKA03508	TW15S
NPD7580-50-3	○	75~80	50	88	240	285	85	370	PT3/8	NPM(E)T334008-□□	NPC7580C	NPC7580P	FTKA03508	TW15S
NPD8085-50-3	○	80~85	50	88	255	300	85	385	PT3/8	NPM(E)T415008-□□	NPC8085C	NPC8085P	FTKA0410	TW15S
NPD8590-50-3	○	85~90	50	95	270	315	85	400	PT3/8	NPM(E)T415008-□□	NPC8590C	NPC8590P	FTKA0410	TW15S
NPD9095-50-3	○	90~95	50	95	285	330	85	415	PT3/8	NPM(E)T415008-□□	NPC9095C	NPC9095P	FTKA0410	TW15S
NPD95100-50-3	○	95~100	50	95	300	345	85	430	PT3/8	NPM(E)T516012-□□	NPC95100C	NPC95100P	FTNC04511	TW20S
NPD6165-50-4	○	61~65	50	80	260	305	85	390	PT3/8	NPM(E)T293208-□□	NPC6165C	NPC6165P	FTKA0307	TW15S
NPD6570-50-4	○	60~70	50	88	280	325	85	410	PT3/8	NPM(E)T334008-□□	NPC6570C	NPC6570P	FTKA03508	TW15S
NPD7075-50-4	○	70~75	50	88	300	345	85	430	PT3/8	NPM(E)T334008-□□	NPC7075C	NPC7075P	FTKA03508	TW15S
NPD7580-50-4	○	75~80	50	88	320	365	85	450	PT3/8	NPM(E)T334008-□□	NPC7580C	NPC7580P	FTKA03508	TW15S
NPD8085-50-4	○	80~85	50	88	340	385	85	470	PT3/8	NPM(E)T415008-□□	NPC8085C	NPC8085P	FTKA0410	TW15S
NPD8590-50-4	○	85~90	50	95	360	405	85	490	PT3/8	NPM(E)T415008-□□	NPC8590C	NPC8590P	FTKA0410	TW15S
NPD9095-50-4	○	90~95	50	95	380	425	85	510	PT3/8	NPM(E)T415008-□□	NPC9095C	NPC9095P	FTKA0410	TW15S
NPD95100-50-4	○	95~100	50	95	400	445	85	530	PT3/8	NPM(E)T516012-□□	NPC95100C	NPC95100P	FTNC04511	TW20S

●Stock item, ○Under preparing for stock



LPD & SPD & NPD

SPD & NPD special item order form

■ Customer : _____ ■ Tel : _____ ■ Person in charge : _____

■ Machine part : _____ ■ Workpiece : _____ ■ Order quantity : _____ pcs

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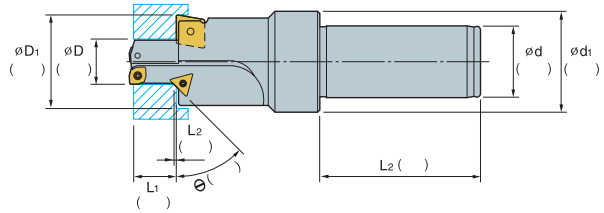

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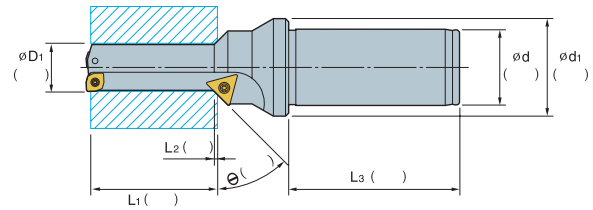

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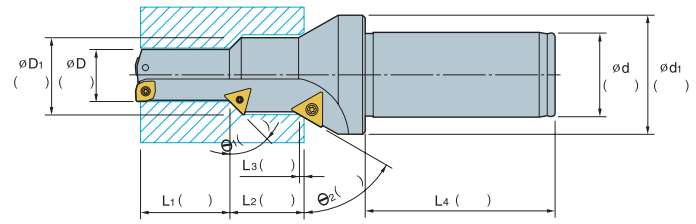

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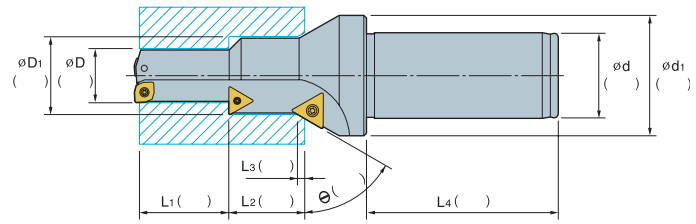

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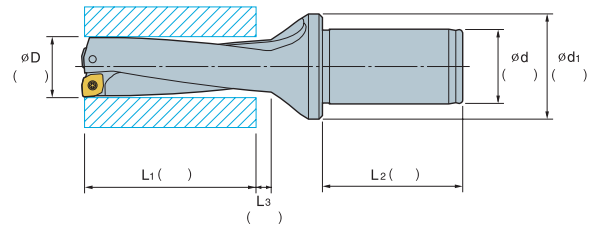


※ Please fill out the requirement of tolerance for ØD, ØD1

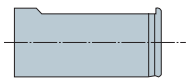
■ Coolant

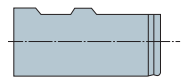
- ☐ Through coolant
- ☐ Outer coolant(no oil hole)
- ☐ Side coolant(CNC)

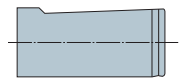
■ Machining type

☐ Blind hole ☐ Through hole

■ Shank type

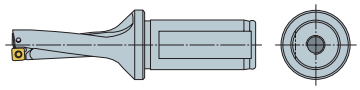
☐  F : Flat type

☐  W : Weldon type

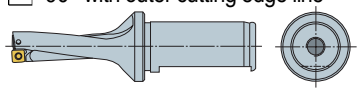
☐  T : Whistle notch type

■ Position of side lock flat

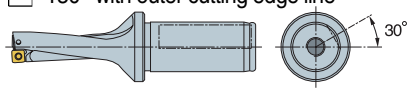
☐ General-Parallel with outer cutting edge line



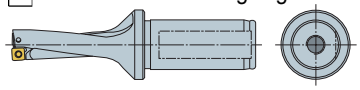
☐ 90° with outer cutting edge line



☐ 150° with outer cutting edge line

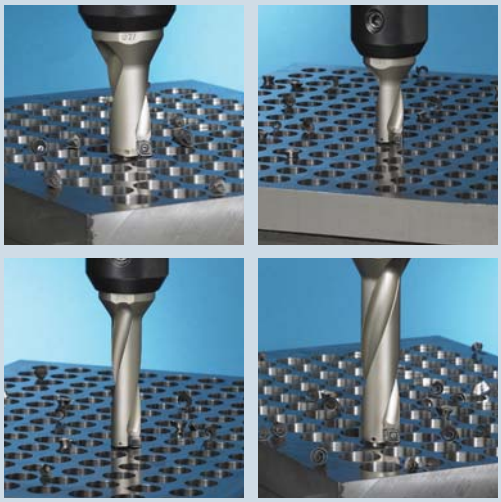


☐ 180° with outer cutting edge line



■ Note

- ☐ Present tool
- ☐ Cutting condition
  - N(rpm) or V(m/min) :
  - F(mm/min) or f(mm/rev) :
  - Depth(mm) :
- ☐ Tool life
- ☐ Facilities
  - Machining center
  - General lathe
  - CNC lathe



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KORLOY Inc.

Warning

※ Safety instruction

- Use glasses safely and face cover with protective equipment. If cutting condition and use method are inaccurate, you may be injured by broken tools or scattered chips.
- Excessive cutting load may influence badly on both tool and machine. Make suitable tool replacement for preventing failure of machining.
- After machine stopped, clean remained chips from machine with special cleaning equipment.
- Keep safety distance from acute and hot chip during machining.
- Make precaution for prevention of fire in advance when you use insoluble cutting oil.
- Assembled parts may be scattered at high speed cutting. Please use protective equipment.