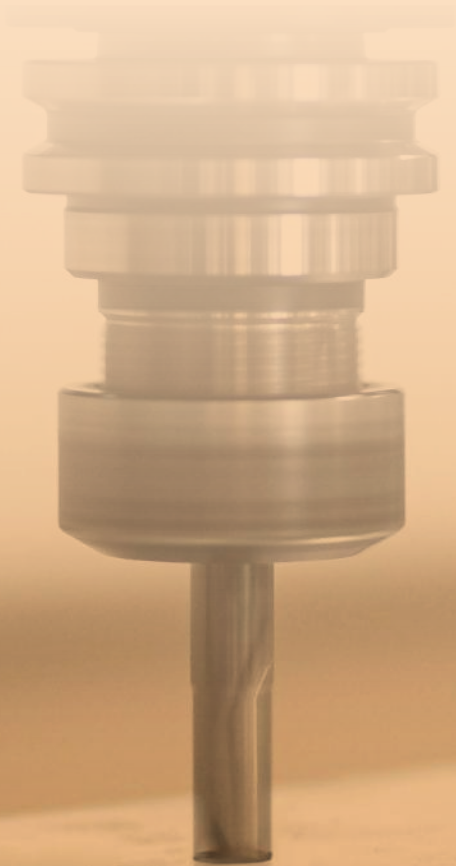


# *Holemaking*

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**High Performance Series**

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 DPN - for Universal, External Coolant, Ø3~Ø20mm, 3D~5D.....B014  
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**Technical Data**

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Appearance	Items	Series	Coolant	ØRange	Degree Tip Angle	Work Materials						Page
						P	M	K	N	S	H	

### High Performance Series



<b>DP Series for Universal (Reinforced Shank)</b>												
	DPC - Internal Coolant · 3D	DPC3	Internal	Ø3-Ø20	140	●	○	●	○	○	○	B006
	DPC - Internal Coolant · 5D	DPC5	Internal	Ø3-Ø20	140	●	○	●	○	○	○	B008
	DPC - Internal Coolant · 7D	DPC7	Internal	Ø4-Ø16	140	●	○	●	○	○	○	B010
	DPC - Internal Coolant · 10D	DPC9	Internal	Ø3-Ø12	135	●	○	●	○	○	○	B011
	DPC - Internal Coolant · 15D	DPC9	Internal	Ø3-Ø12	135	●	○	●	○	○	○	B012
	DPC - Internal Coolant · 20D	DPC9	Internal	Ø3-Ø10	135	●	○	●	○	○	○	B013
	DPN - External Coolant · 3D	DPN3	External	Ø3-Ø20	140	●	○	●	○	○	○	B014
	DPN - External Coolant · 5D	DPN5	External	Ø3-Ø20	140	●	○	●	○	○	○	B016
<b>DL Series for Universal Mini Hole (Reinforced Shank)</b>												
	DLC - Internal Coolant · 3D~20D	DLC	Internal	Ø1.2-Ø3	135, 140	●	○	●	○	○	○	B019
	DLN - External Coolant · 2D~15D	DLN	External	Ø0.18-Ø3	130	●	○	●	○	○	○	B021
<b>DM Series for Stainless steel (Reinforced Shank)</b>												
	DMC - Internal Coolant · 3D	DMC3	Internal	Ø4-Ø20	140	●	●	●	○	●		B024
	DMC - Internal Coolant · 5D	DMC5	Internal	Ø3.4-Ø20	140	●	●	●	○	●		B025
	DMN - External Coolant · 3D	DMN3	External	Ø4-Ø20	140	●	●	●	○	●		B026
<b>DH Series for High temperature alloy &amp; Hardened steel (Reinforced Shank)</b>												
	DHN - External Coolant · 3D	DHN3	External	Ø0.9-Ø12	140	○	○	○		●	●	B028

Appearance	Items	Series	Coolant	ØRange	Degree Tip Angle	Work Materials						Page
						P	M	K	N	S	H	

### High Performance Series

<i>DF Series with Flat Tip</i>												
	DFN - External Coolant · 3D	DFN3	External	Ø2.2-Ø20	180	●	○	●				B031
<i>DZ Series for Step Hole (Reinforced Shank)</i>												
	DZC - Internal Coolant · 3D	DZC	Internal	Ø3.3-Ø8.5	140	●	●	●			○	B034
	DZN - External Coolant · 3D	DZN	External	Ø3.3-Ø8.5	140	●	○	●				B035
<i>DA Series with Straight Flute</i>												
	DAN - External Coolant · 3D	DAN3	External	Ø4-Ø16	130	○		●	●			B037
	DAN - External Coolant · 5D	DAN5	External	Ø4-Ø16	130	○		●	●			B038

### General Purpose Series

<i>DG Series for Universal (Straight Shank)</i>												
	DGN - External Coolant · 3D	DGN3	External	Ø2-Ø16	130	●	○	●				B040
	DGN - External Coolant · 5D	DGN5	External	Ø5-Ø16	130	●	○	●				B042

Holemaking

Solid Carbide Drills

*DPC, DPN for Universal Drilling*



**Features**

- Superior Rigidity
- High Cutting Performance
- Customized Service
- For Steel & Cast iron
- 3xD to 20xD Cutting Depth

**Specs**

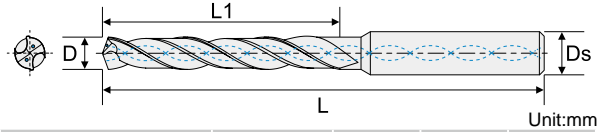
- UNIX Coating
- 135°, 140° TIP ANGLE
- Reinforced Shank

DPC - for Universal · Internal Coolant · 3D



Specification

- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- SX Design



Order No.	D	L1	L	Ds	Order No.	D	L1	L	Ds
DPC303000341	3.00	20	60	4	DPC307300301	7.30	41	79	8
DPC303100341	3.10	20	60	4	DPC307400301	7.40	41	79	8
DPC303170341	3.17(1/8")	20	60	4	DPC307500301	7.50	41	79	8
DPC303200341	3.20	20	60	4	DPC307600301	7.60	41	79	8
DPC303300341	3.30	20	60	4	DPC307700301	7.70	41	79	8
DPC303400341	3.40	20	60	4	DPC307800301	7.80	41	79	8
DPC303500341	3.50	20	60	4	DPC307900301	7.90	41	79	8
DPC303600341	3.60	20	60	4	DPC307940301	7.94(5/16)	41	79	8
DPC303700341	3.70	20	60	4	DPC308000301	8.00	41	79	8
DPC303800341	3.80	24	60	4	DPC308100301	8.10	47	89	10
DPC303900341	3.90	24	60	4	DPC308200301	8.20	47	89	10
DPC304000301	4.00	24	66	6	DPC308300301	8.30	47	89	10
DPC304100301	4.10	24	66	6	DPC308400301	8.40	47	89	10
DPC304200301	4.20	24	66	6	DPC308500301	8.50	47	89	10
DPC304300301	4.30	24	66	6	DPC308600301	8.60	47	89	10
DPC304400301	4.40	24	66	6	DPC308700301	8.70	47	89	10
DPC304500301	4.50	24	66	6	DPC308800301	8.80	47	89	10
DPC304600301	4.60	24	66	6	DPC308900301	8.90	47	89	10
DPC304650301	4.65(13/71")	24	66	6	DPC309000301	9.00	47	89	10
DPC304700301	4.70	24	66	6	DPC309100301	9.10	47	89	10
DPC304760301	4.76(3/16")	28	66	6	DPC309200301	9.20	47	89	10
DPC304800301	4.80	28	66	6	DPC309250301	9.25(23/64")	47	89	10
DPC304900301	4.90	28	66	6	DPC309300301	9.30	47	89	10
DPC305000301	5.00	28	66	6	DPC309400301	9.40	47	89	10
DPC305100301	5.10	28	66	6	DPC309500301	9.50	47	89	10
DPC305200301	5.20	28	66	6	DPC309520301	9.52(3/8")	47	89	10
DPC305300301	5.30	28	66	6	DPC309600301	9.60	47	89	10
DPC305400301	5.40	28	66	6	DPC309700301	9.70	47	89	10
DPC305500301	5.50	28	66	6	DPC309800301	9.80	47	89	10
DPC305560301	5.56	28	66	6	DPC309900301	9.90	47	89	10
DPC305600301	5.60	28	66	6	DPC310000301	10.00	47	89	10
DPC305700301	5.70	28	66	6	DPC310100301	10.10	55	102	12
DPC305800301	5.80	28	66	6	DPC310200301	10.20	55	102	12
DPC305900301	5.90	28	66	6	DPC310300301	10.30	55	102	12
DPC306000301	6.00	28	66	6	DPC310400301	10.40	55	102	12
DPC306100301	6.10	34	79	8	DPC310500301	10.50	55	102	12
DPC306200301	6.20	34	79	8	DPC310600301	10.60	55	102	12
DPC306300301	6.30	34	79	8	DPC310700301	10.70	55	102	12
DPC306350301	6.35(1/4")	34	79	8	DPC310800301	10.80	55	102	12
DPC306400301	6.40	34	79	8	DPC310900301	10.90	55	102	12
DPC306500301	6.50	34	79	8	DPC311000301	11.00	55	102	12
DPC306600301	6.60	34	79	8	DPC311100301	11.10	55	102	12
DPC306700301	6.70	34	79	8	DPC311110301	11.11(7/16")	55	102	12
DPC306800301	6.80	34	79	8	DPC311200301	11.20	55	102	12
DPC306900301	6.90	34	79	8	DPC311300301	11.30	55	102	12
DPC307000301	7.00	34	79	8	DPC311400301	11.40	55	102	12
DPC307100301	7.10	41	79	8	DPC311500301	11.50	55	102	12
DPC307200301	7.20	41	79	8	DPC311600301	11.60	55	102	12

Cutting conditions : Table 01

Holemaking

Solid Carbide Drills

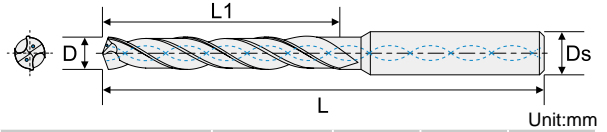


DPC - for Universal · Internal Coolant · 5D



Specification

- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- SX Design



Order No.	D	L1	L	Ds
DPC503000541	3.00	28	60	4
* DPC503170541	3.17(1/8")	28	60	4
DPC503250541	3.25	28	60	4
DPC503300541	3.30	28	60	4
DPC503400541	3.40	28	60	4
DPC503500541	3.50	28	60	4
DPC503600541	3.60	28	60	4
DPC503700541	3.70	28	60	4
DPC503800541	3.80	36	74	4
DPC503970541	3.97(5/32")	36	74	4
DPC504000501	4.00	36	74	6
DPC504100501	4.10	36	74	6
DPC504200501	4.20	36	74	6
DPC504300501	4.30	36	74	6
DPC504400501	4.40	36	74	6
DPC504500501	4.50	36	74	6
DPC504600501	4.60	36	74	6
DPC504650501	4.65(13/71")	36	74	6
DPC504700501	4.70	36	74	6
DPC504760501	4.76(3/16")	44	82	6
DPC504800501	4.80	44	82	6
DPC504900501	4.90	44	82	6
DPC505000501	5.00	44	82	6
DPC505100501	5.10	44	82	6
DPC505200501	5.20	44	82	6
DPC505300501	5.30	44	82	6
DPC505400501	5.40	44	82	6
DPC505500501	5.50	44	82	6
DPC505550501	5.55(7/32")	44	82	6
DPC505600501	5.60	44	82	6
DPC505700501	5.70	44	82	6
DPC505800501	5.80	44	82	6
DPC505900501	5.90	44	82	6
DPC506000501	6.00	44	82	6
DPC506100501	6.10	53	91	8
DPC506200501	6.20	53	91	8
DPC506300501	6.30	53	91	8
DPC506350501	6.35(1/4")	53	91	8
DPC506400501	6.40	53	91	8
DPC506500501	6.50	53	91	8
DPC506600501	6.60	53	91	8
DPC506700501	6.70	53	91	8
DPC506800501	6.80	53	91	8
DPC506900501	6.90	53	91	8
DPC507000501	7.00	53	91	8
DPC507100501	7.10	53	91	8
DPC507200501	7.20	53	91	8
DPC507300501	7.30	53	91	8

Order No.	D	L1	L	Ds
DPC507400501	7.40	53	91	8
DPC507500501	7.50	53	91	8
DPC507600501	7.60	53	91	8
DPC507700501	7.70	53	91	8
DPC507800501	7.80	53	91	8
DPC507900501	7.90	53	91	8
DPC507940501	7.94(5/16")	53	91	8
DPC508000501	8.00	53	91	8
DPC508100501	8.10	61	103	10
DPC508200501	8.20	61	103	10
DPC508300501	8.30	61	103	10
DPC508400501	8.40	61	103	10
DPC508500501	8.50	61	103	10
DPC508600501	8.60	61	103	10
DPC508700501	8.70	61	103	10
DPC508800501	8.80	61	103	10
DPC508900501	8.90	61	103	10
DPC509000501	9.00	61	103	10
DPC509100501	9.10	61	103	10
DPC509200501	9.20	61	103	10
DPC509250501	9.25(23/64")	61	103	10
DPC509300501	9.30	61	103	10
DPC509400501	9.40	61	103	10
DPC509500501	9.50	61	103	10
DPC509520501	9.52(3/8")	61	103	10
DPC509600501	9.60	61	103	10
DPC509700501	9.70	61	103	10
DPC509800501	9.80	61	103	10
DPC509900501	9.90	61	103	10
DPC510000501	10.00	61	103	10
DPC510100501	10.10	71	118	12
DPC510200501	10.20	71	118	12
DPC510300501	10.30	71	118	12
DPC510400501	10.40	71	118	12
DPC510500501	10.50	71	118	12
DPC510600501	10.60	71	118	12
DPC510700501	10.70	71	118	12
DPC510800501	10.80	71	118	12
DPC510900501	10.90	71	118	12
DPC511000501	11.00	71	118	12
DPC511100501	11.10	71	118	12
DPC51110501	11.11(7/16")	71	118	12
DPC511200501	11.20	71	118	12
DPC511300501	11.30	71	118	12
DPC511400501	11.40	71	118	12
DPC511500501	11.50	71	118	12
DPC511600501	11.60	71	118	12
DPC511700501	11.70	71	118	12

Cutting conditions : Table 01

Holemaking

Solid Carbide Drills



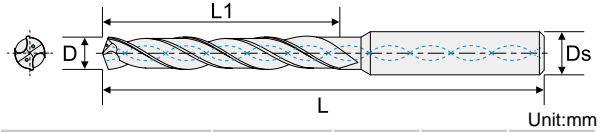


DPC - for Universal · Internal Coolant · 7D



Specification

- 7xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8 standard
- Double Margins Design
- SX Design



Order No.	D	L1	L	Ds
* DPC704000701	4.00	40	80	6
* DPC704100701	4.10	40	80	6
* DPC704200701	4.20	40	80	6
* DPC704300701	4.30	45	80	6
* DPC704400701	4.40	45	80	6
* DPC704500701	4.50	45	80	6
* DPC704600701	4.60	45	80	6
* DPC704650701	4.65(13/71")	45	80	6
* DPC704700701	4.70	45	80	6
* DPC704800701	4.80	50	97	6
* DPC704900701	4.90	50	97	6
* DPC705000701	5.00	50	97	6
* DPC705100701	5.10	50	97	6
* DPC705200701	5.20	50	97	6
* DPC705300701	5.30	50	97	6
DPC705400701	5.40	57	97	6
DPC705500701	5.50	57	97	6
DPC705700701	5.70	57	97	6
DPC705800701	5.80	57	97	6
DPC705900701	5.90	57	97	6
DPC706000701	6.00	57	97	6
DPC706200701	6.20	66	106	8
DPC706300701	6.30	66	106	8
DPC706350701	6.35(1/4")	66	106	8
DPC706500701	6.50	66	106	8
DPC706600701	6.60	66	106	8
DPC706700701	6.70	66	106	8
DPC706800701	6.80	66	106	8
DPC706900701	6.90	76	116	8
DPC707000701	7.00	76	116	8
DPC707100701	7.10	76	116	8
DPC707200701	7.20	76	116	8
DPC707500701	7.50	76	116	8
DPC707600701	7.60	76	116	8
DPC707700701	7.70	76	116	8
DPC707800701	7.80	76	116	8
DPC708000701	8.00	76	116	8
DPC708100701	8.10	87	131	10
DPC708200701	8.20	87	131	10
DPC708400701	8.40	87	131	10
DPC708500701	8.50	87	131	10
DPC708600701	8.60	87	131	10
DPC708700701	8.70	87	131	10
DPC708800701	8.80	87	131	10
DPC708900701	8.90	87	131	10
DPC709000701	9.00	95	139	10

Order No.	D	L1	L	Ds
DPC709100701	9.10	95	139	10
DPC709200701	9.20	95	139	10
DPC709300701	9.30	95	139	10
DPC709400701	9.40	95	139	10
DPC709500701	9.50	95	139	10
DPC709520701	9.52	95	139	10
DPC709700701	9.70	95	139	10
DPC709800701	9.80	95	139	10
DPC710000701	10.00	95	139	10
DPC710200701	10.20	106	155	12
DPC710300701	10.30	106	155	12
DPC710500701	10.50	106	155	12
DPC710720701	10.72(27/64")	106	155	12
DPC710800701	10.80	106	155	12
DPC711000701	11.00	106	155	12
DPC711200701	11.20	114	155	12
DPC711500701	11.50	114	155	12
DPC711800701	11.80	114	155	12
DPC712000701	12.00	114	155	12
DPC712100701	12.10	133	182	14
DPC712200701	12.20	133	182	14
DPC712300701	12.30	133	182	14
DPC712500701	12.50	133	182	14
DPC712700701	12.70	133	182	14
DPC713000701	13.00	133	182	14
DPC713500701	13.50	133	182	14
DPC714000701	14.00	133	182	14
DPC714100701	14.10	152	200	16
DPC714200701	14.20	152	200	16
DPC714500701	14.50	152	200	16
DPC715000701	15.00	152	200	16
DPC715500701	15.50	152	200	16
DPC715870701	15.87	152	200	16
DPC716000701	16.00	152	200	16

\* Made to order

Cutting conditions : Table 01





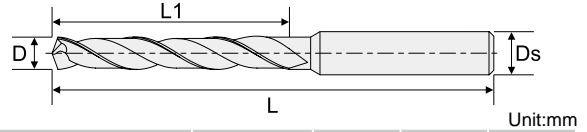


DPN - for Universal · External Coolant · 3D



Specification

- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- SX Design



Order No.	D	L1	L	Ds	Order No.	D	L1	L	Ds
DPN303000341	3.00	20	60	4	DPN305800301	5.80	28	66	6
DPN303100341	3.10	20	60	4	DPN305900301	5.90	28	66	6
DPN303170341	3.17(1/8")	20	60	4	DPN306000301	6.00	28	66	6
DPN303200341	3.20	20	60	4	DPN306100301	6.10	34	79	8
DPN303250341	3.25(5/39")	20	60	4	DPN306200301	6.20	34	79	8
DPN303300341	3.30	20	60	4	DPN306300301	6.30	34	79	8
DPN303400341	3.40	20	60	4	DPN306350301	6.35(1/4")	34	79	8
DPN303500341	3.50	20	60	4	DPN306400301	6.40	34	79	8
DPN303600341	3.60	20	60	4	DPN306500301	6.50	34	79	8
DPN303700341	3.70	20	60	4	DPN306600301	6.60	34	79	8
DPN303800341	3.80	24	60	4	DPN306700301	6.70	34	79	8
DPN303900341	3.90	24	60	4	DPN306800301	6.80	34	79	8
DPN303970341	3.97(5/32")	24	60	4	DPN306900301	6.90	34	79	8
DPN303000301	3.00	20	62	6	DPN307000301	7.00	34	79	8
DPN303100301	3.10	20	62	6	DPN307100301	7.10	41	79	8
DPN303170301	3.17(1/8")	20	62	6	DPN307200301	7.20	41	79	8
DPN303200301	3.20	20	62	6	DPN307300301	7.30	41	79	8
DPN303230301	3.23	20	62	6	DPN307400301	7.40	41	79	8
DPN303250301	3.25(5/39")	20	62	6	DPN307500301	7.50	41	79	8
DPN303300301	3.30	20	62	6	DPN307600301	7.60	41	79	8
DPN303400301	3.40	20	62	6	DPN307700301	7.70	41	79	8
DPN303500301	3.50	20	62	6	DPN307800301	7.80	41	79	8
DPN303600301	3.60	20	62	6	DPN307900301	7.90	41	79	8
DPN303700301	3.70	20	62	6	DPN307940301	7.94(5/16")	41	79	8
DPN303800301	3.80	24	66	6	DPN308000301	8.00	41	79	8
DPN303900301	3.90	24	66	6	DPN308100301	8.10	47	89	10
DPN303970301	3.97(5/32")	24	66	6	DPN308200301	8.20	47	89	10
DPN304000301	4.00	24	66	6	DPN308300301	8.30	47	89	10
DPN304100301	4.10	24	66	6	DPN308400301	8.40	47	89	10
DPN304200301	4.20	24	66	6	DPN308500301	8.50	47	89	10
DPN304300301	4.30	24	66	6	DPN308600301	8.60	47	89	10
DPN304400301	4.40	24	66	6	DPN308700301	8.70	47	89	10
DPN304500301	4.50	24	66	6	DPN308800301	8.80	47	89	10
DPN304600301	4.60	24	66	6	DPN308900301	8.90	47	89	10
DPN304650301	4.65(13/71")	24	66	6	DPN309000301	9.00	47	89	10
DPN304700301	4.70	24	66	6	DPN309100301	9.10	47	89	10
DPN304760301	4.76(3/16")	28	66	6	DPN309200301	9.20	47	89	10
DPN304800301	4.80	28	66	6	DPN309250301	9.25(23/64")	47	89	10
DPN304900301	4.90	28	66	6	DPN309300301	9.30	47	89	10
DPN305000301	5.00	28	66	6	DPN309400301	9.40	47	89	10
DPN305100301	5.10	28	66	6	DPN309500301	9.50	47	89	10
DPN305200301	5.20	28	66	6	DPN309520301	9.52(3/8")	47	89	10
DPN305300301	5.30	28	66	6	DPN309600301	9.60	47	89	10
DPN305400301	5.40	28	66	6	DPN309700301	9.70	47	89	10
DPN305500301	5.50	28	66	6	DPN309800301	9.80	47	89	10
DPN305560301	5.56(7/32")	28	66	6	DPN309900301	9.90	47	89	10
DPN305600301	5.60	28	66	6	DPN310000301	10.00	47	89	10
DPN305700301	5.70	28	66	6	DPN310100301	10.10	55	102	12

Holmaking

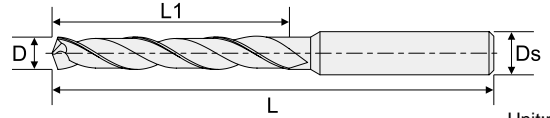
Solid Carbide Drills

DPN - for Universal · External Coolant · 3D



Specification

- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- SX Design



Unit:mm

Order No.	D	L1	L	Ds
DPN310200301	10.20	55	102	12
DPN310300301	10.30	55	102	12
DPN310400301	10.40	55	102	12
DPN310500301	10.50	55	102	12
DPN310600301	10.60	55	102	12
DPN310700301	10.70	55	102	12
DPN310800301	10.80	55	102	12
DPN310900301	10.90	55	102	12
DPN311000301	11.00	55	102	12
DPN311100301	11.10	55	102	12
DPN311110301	11.11(7/16")	55	102	12
DPN311200301	11.20	55	102	12
DPN311300301	11.30	55	102	12
DPN311400301	11.40	55	102	12
DPN311500301	11.50	55	102	12
DPN311600301	11.60	55	102	12
DPN311700301	11.70	55	102	12
DPN311800301	11.80	55	102	12
DPN311900301	11.90	55	102	12
DPN312000301	12.00	55	102	12
DPN312100301	12.10	60	107	14
DPN312200301	12.20	60	107	14
DPN312300301	12.30	60	107	14
DPN312400301	12.40	60	107	14
DPN312500301	12.50	60	107	14
DPN312600301	12.60	60	107	14
DPN312700301	12.70(1/2")	60	107	14
DPN312800301	12.80	60	107	14
DPN312900301	12.90	60	107	14
DPN313000301	13.00	60	107	14
DPN313200301	13.20	60	107	14
DPN313300301	13.30	60	107	14
DPN313500301	13.50	60	107	14
DPN313700301	13.70	60	107	14
DPN313800301	13.80	60	107	14
DPN314000301	14.00	60	107	14
DPN314200301	14.20	65	115	16
DPN314290301	14.29(9/16")	65	115	16
DPN314300301	14.30	65	115	16
DPN314400301	14.40	65	115	16
DPN314500301	14.50	65	115	16
DPN314700301	14.70	65	115	16
DPN315000301	15.00	65	115	16
DPN315200301	15.20	65	115	16
DPN315500301	15.50	65	115	16
DPN315600301	15.60	65	115	16
DPN315700301	15.70	65	115	16
DPN315800301	15.80	65	115	16

Order No.	D	L1	L	Ds
DPN315870301	15.87(5/8")	65	115	16
DPN316000301	16.00	65	115	16
DPN316500301	16.50	73	123	18
DPN317000301	17.00	73	123	18
DPN317500301	17.50	73	123	18
DPN318000301	18.00	73	123	18
DPN318500301	18.50	79	131	20
DPN319000301	19.00	79	131	20
DPN319050301	19.05(3/4")	79	131	20
DPN319500301	19.50	79	131	20
DPN320000301	20.00	79	131	20

Cutting conditions : Table 02

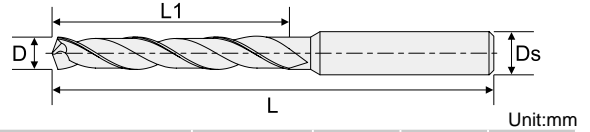
DPN - for Universal · External Coolant · 5D



Specification

- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- SX Design

\*Peck drilling (G73/G83 code) is recommended for M, S, H materials.



Order No.	D	L1	L	Ds	Order No.	D	L1	L	Ds
DPN503000501	3.00	28	66	6	DPN507100501	7.10	53	91	8
DPN503170501	3.17(1/8")	28	66	6	DPN507200501	7.20	53	91	8
DPN503250501	3.25	28	66	6	DPN507300501	7.30	53	91	8
DPN503300501	3.30	28	66	6	DPN507400501	7.40	53	91	8
DPN503400501	3.40	28	66	6	DPN507500501	7.50	53	91	8
DPN503500501	3.50	28	66	6	DPN507600501	7.60	53	91	8
DPN503570501	3.57	28	66	6	DPN507700501	7.70	53	91	8
DPN503600501	3.60	28	66	6	DPN507800501	7.80	53	91	8
DPN503700501	3.70	28	66	6	DPN507900501	7.90	53	91	8
DPN503800501	3.80	36	74	6	DPN507940501	7.94(5/16")	53	91	8
DPN503900501	3.90	36	74	6	DPN508000501	8.00	53	91	8
DPN503970501	3.97(5/32")	36	74	6	DPN508100501	8.10	61	103	10
DPN504000501	4.00	36	74	6	DPN508200501	8.20	61	103	10
DPN504100501	4.10	36	74	6	DPN508300501	8.30	61	103	10
DPN504200501	4.20	36	74	6	DPN508400501	8.40	61	103	10
DPN504300501	4.30	36	74	6	DPN508500501	8.50	61	103	10
DPN504400501	4.40	36	74	6	DPN508600501	8.60	61	103	10
DPN504500501	4.50	36	74	6	DPN508700501	8.70	61	103	10
DPN504600501	4.60	36	74	6	DPN508800501	8.80	61	103	10
DPN504650501	4.65(13/71")	36	74	6	DPN508900501	8.90	61	103	10
DPN504700501	4.70	36	74	6	DPN509000501	9.00	61	103	10
DPN504760501	4.76(3/16")	44	82	6	DPN509100501	9.10	61	103	10
DPN504800501	4.80	44	82	6	DPN509200501	9.20	61	103	10
DPN504900501	4.90	44	82	6	DPN509250501	9.25(23/64")	61	103	10
DPN505000501	5.00	44	82	6	DPN509300501	9.30	61	103	10
DPN505100501	5.10	44	82	6	DPN509400501	9.40	61	103	10
DPN505200501	5.20	44	82	6	DPN509500501	9.50	61	103	10
DPN505300501	5.30	44	82	6	DPN509520501	9.52(3/8")	61	103	10
DPN505400501	5.40	44	82	6	DPN509600501	9.60	61	103	10
DPN505500501	5.50	44	82	6	DPN509700501	9.70	61	103	10
DPN505550501	5.55	44	82	6	DPN509800501	9.80	61	103	10
DPN505560501	5.56(7/32")	44	82	6	DPN509900501	9.90	61	103	10
DPN505600501	5.60	44	82	6	DPN510000501	10.00	61	103	10
DPN505700501	5.70	44	82	6	DPN510100501	10.10	71	118	12
DPN505800501	5.80	44	82	6	DPN510200501	10.20	71	118	12
DPN505900501	5.90	44	82	6	DPN510300501	10.30	71	118	12
DPN506000501	6.00	44	82	6	DPN510400501	10.40	71	118	12
DPN506100501	6.10	53	91	8	DPN510500501	10.50	71	118	12
DPN506200501	6.20	53	91	8	DPN510600501	10.60	71	118	12
DPN506300501	6.30	53	91	8	DPN510700501	10.70	71	118	12
DPN506350501	6.35(1/4")	53	91	8	DPN510800501	10.80	71	118	12
DPN506400501	6.40	53	91	8	DPN510900501	10.90	71	118	12
DPN506500501	6.50	53	91	8	DPN511000501	11.00	71	118	12
DPN506600501	6.60	53	91	8	DPN511100501	11.10	71	118	12
DPN506700501	6.70	53	91	8	DPN511110501	11.11(7/16")	71	118	12
DPN506800501	6.80	53	91	8	DPN511200501	11.20	71	118	12
DPN506900501	6.90	53	91	8	DPN511300501	11.30	71	118	12
DPN507000501	7.00	53	91	8	DPN511400501	11.40	71	118	12

Cutting conditions : Table 02

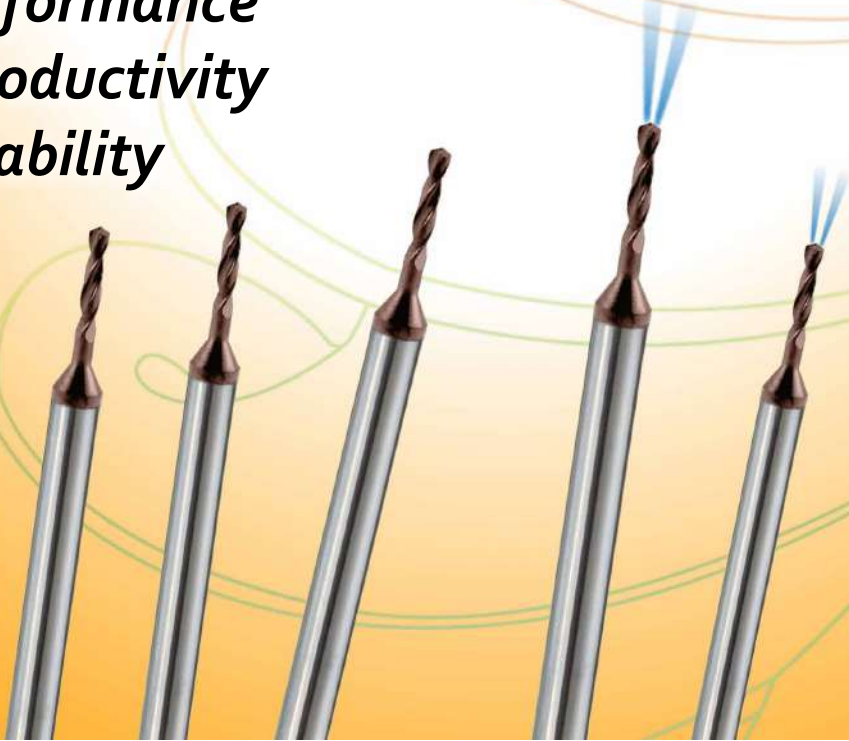
Holemaking

Solid Carbide Drills





**High Performance**  
**High Productivity**  
**High Stability**



## **Features**

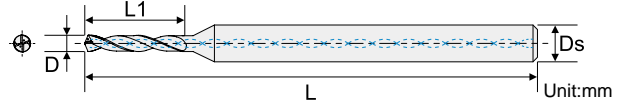
- Internal coolant design
- Unique UNIX coating improves tool life
- Optimized flute improves drilling efficiency
- Customized available
- Diameter 0.18 ~ 3.0mm

DLC - for Universal · Mini · Internal Coolant · 3D~5D

P	M	K	N	S	H
●	○	●	○	○	○

Specification

- 3~5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8
- NX Design
- For Alloy Steel, Stainless Steel, Cast Iron and High Temperature Alloy.



3xD

140° Tip Angle

Order No.	D	L1	L	Ds
DLC301200311	1.20	8	50	3
DLC301300311	1.30	8	50	3
DLC301400311	1.40	8	50	3
DLC301500311	1.50	10	50	3
DLC301600311	1.60	10	50	3
DLC301700311	1.70	10	50	3
DLC301800311	1.80	12	50	3
DLC301900311	1.90	12	50	3
DLC302000311	2.00	12	50	3
DLC302100311	2.10	12	50	3
DLC302200311	2.20	12	50	3
DLC302300311	2.30	14	50	3
DLC302400311	2.40	14	50	3
DLC302500311	2.50	16	50	3
DLC302600311	2.60	16	50	3
DLC302700311	2.70	16	50	3
DLC302800311	2.80	16	50	3
DLC302900311	2.90	16	50	3
DLC303000311	3.00	16	50	3

5xD

140° Tip Angle

Order No.	D	L1	L	Ds
DLC501200511	1.20	10	50	3
DLC501300511	1.30	10	50	3
DLC501400511	1.40	10	50	3
DLC501500511	1.50	12	50	3
DLC501600511	1.60	12	50	3
DLC501700511	1.70	12	50	3
DLC501800511	1.80	14	50	3
DLC501900511	1.90	14	50	3
DLC502000511	2.00	14	50	3
DLC502100511	2.10	16	50	3
DLC502200511	2.20	16	50	3
DLC502300511	2.30	18	50	3
DLC502400511	2.40	18	50	3
DLC502500511	2.50	20	60	3
DLC502600511	2.60	20	60	3
DLC502700511	2.70	20	60	3
DLC502800511	2.80	20	60	3
DLC502900511	2.90	22	60	3
DLC503000511	3.00	22	60	3

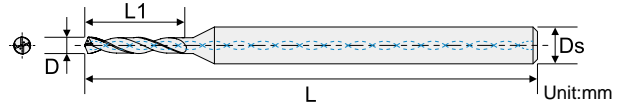
Cutting conditions : Table 03

DLC - for Universal · Mini · Internal Coolant · 10D~20D



Specification

- 10~20xD Cutting depth
- Reinforced Shank
- 135° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8
- NX Design
- For Alloy Steel, Stainless Steel, Cast Iron and High Temperature Alloy.



10xD

135° Tip Angle

20xD

135° Tip Angle

Order No.	D	L1	L	Ds
DLC901201021	1.20	16	60	3
DLC901301021	1.30	16	60	3
DLC901401021	1.40	18	60	3
DLC901501021	1.50	18	60	3
DLC901601021	1.60	22	60	3
DLC901701021	1.70	22	60	3
DLC901801021	1.80	24	60	3
DLC901901021	1.90	24	60	3
DLC902001021	2.00	26	60	3
DLC902101021	2.10	26	60	3
DLC902201021	2.20	30	75	3
DLC902301021	2.30	30	75	3
DLC902401021	2.40	30	75	3
DLC902501021	2.50	34	75	3
DLC902601021	2.60	34	75	3
DLC902701021	2.70	34	75	3
DLC902801021	2.80	36	75	3
DLC902901021	2.90	36	75	3
DLC903001021	3.00	36	75	3

Order No.	D	L1	L	Ds
DLC901202021	1.20	30	75	3
DLC901302021	1.30	32	75	3
DLC901402021	1.40	34	75	3
DLC901502021	1.50	36	75	3
DLC901602021	1.60	36	75	3
DLC901702021	1.70	40	75	3
DLC901802021	1.80	40	75	3
DLC901902021	1.90	44	79	3
DLC902002021	2.00	44	79	3
DLC902102021	2.10	50	100	3
DLC902202021	2.20	50	100	3
DLC902302021	2.30	54	100	3
DLC902402021	2.40	54	100	3
DLC902502021	2.50	58	100	3
DLC902602021	2.60	58	100	3
DLC902702021	2.70	62	100	3
DLC902802021	2.80	62	100	3
DLC902902021	2.90	66	100	3
DLC903002021	3.00	66	100	3

Holemaking

Solid Carbide Drills

\* Made to order

\* Made to order

Cutting conditions : Table 03

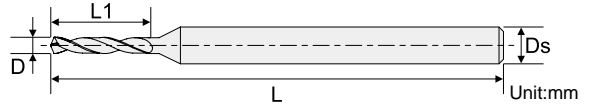
DLN - for Universal · Mini · External Coolant · 2D~7D



Specification

- 2~7xD Cutting depth
- Reinforced Shank
- 130° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- NX Design

※Peck drilling (G73/G83 code) is recommended for M, S, H materials with cutting depth of 5D or more.



2xD ~ 3xD

130° Tip Angle

Order No.	D	L1	L	Ds
DLN300300301	0.30	2	38	3
DLN300500301	0.50	3	38	3
DLN300600301	0.60	3	38	3
DLN300700301	0.70	3	38	3
DLN300800301	0.80	4	38	3
DLN300900301	0.90	4	38	3
DLN301000301	1.00	4	38	3
DLN301100301	1.10	6	38	3
DLN301200301	1.20	6	38	3
DLN301300301	1.30	6	38	3
DLN301400301	1.40	6	38	3
DLN301500301	1.50	6	38	3
DLN301600301	1.60	8	38	3
DLN301700301	1.70	8	38	3
DLN201800201	1.80	8	38	3
DLN201900201	1.90	8	38	3
DLN202000201	2.00	8	38	3
DLN202100201	2.10	8	38	3
DLN302100301	2.10	12	50	3
DLN202200201	2.20	8	38	3
DLN302200301	2.20	12	50	3
DLN202300201	2.30	8	38	3
DLN302300301	2.30	12	50	3
DLN202400201	2.40	8	38	3
DLN302400301	2.40	12	50	3
DLN202500201	2.50	8	38	3
DLN302500301	2.50	16	50	3
DLN202600201	2.60	8	38	3
DLN302600301	2.60	16	50	3
DLN202700201	2.70	8	38	3
DLN302700301	2.70	16	50	3
DLN202800201	2.80	8	38	3
DLN302800301	2.80	16	50	3
DLN202900201	2.90	8	38	3
DLN302900301	2.90	16	50	3
DLN203000201	3.00	8	38	3
DLN303000301	3.00	16	50	3

5xD ~ 7xD

130° Tip Angle

Order No.	D	L1	L	Ds
<b>5xD</b>				
DLN500200501	0.20	1.5	38	3
DLN501200501	1.20	10	50	3
DLN501300501	1.30	10	50	3
DLN501400501	1.40	10	50	3
DLN501500501	1.50	12	50	3
DLN501600501	1.60	12	50	3
DLN501700501	1.70	12	50	3
DLN501800501	1.80	14	50	3
DLN501900501	1.90	14	50	3
DLN502000501	2.00	14	50	3
DLN502100501	2.10	14	50	3
DLN502200501	2.20	16	50	3
DLN502300501	2.30	16	50	3
DLN502400501	2.40	16	50	3
DLN502500501	2.50	20	50	3
DLN502600501	2.60	20	50	3
DLN502700501	2.70	20	50	3
DLN502800501	2.80	20	50	3
DLN502900501	2.90	20	50	3
DLN503000501	3.00	22	60	3
<b>7xD</b>				
DLN700700701	0.70	8	38	3
DLN700750701	0.75	8	38	3
DLN700800701	0.80	8	38	3
DLN700900701	0.90	8	38	3
DLN701000701	1.00	10	50	3
DLN701100701	1.10	10	50	3

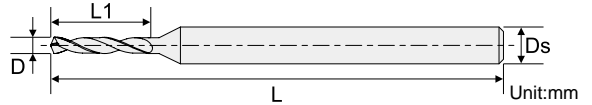
Cutting conditions : Table 03

DLN - for Universal · Mini · External Coolant · 10D~15D

P	M	K	N	S	H
●	○	●	○	○	○

Specification

- 10~15xD Cutting depth
  - Reinforced Shank
  - 130° Tip Angle
  - External Coolant
  - UNIX Coating
  - Tolerance h8
  - NX Design
- ※Peck drilling (G73/G83 code) is recommended for M, S, H materials.



10×D

130° Tip Angle

Order No.	D	L1	L	Ds
DLN900451001	0.45	6	38	3
DLN900501001	0.50	6	38	3
DLN900601001	0.60	8	38	3
DLN900611001	0.61	8	38	3
DLN900621001	0.62	8	38	3
DLN900651001	0.65	8	38	3

12×D ~ 15×D

130° Tip Angle

Order No.	D	L1	L	Ds
<b>12×D</b>				
DLN900181201	0.18	3	38	3
DLN900251201	0.25	4	38	3
DLN900301201	0.30	4.5	38	3
DLN900331201	0.33	5.5	38	3
DLN900351201	0.35	5.5	38	3
DLN900361201	0.36	5.5	38	3
DLN900401201	0.40	6	38	3
DLN900551201	0.55	8	38	3
<b>15×D</b>				
DLN900201501	0.20	4	38	3

Holemaking

Solid Carbide Drills

\* Made to order

\* Made to order

Cutting conditions : Table 03

## High Performance Excellent Tool Life



### Features

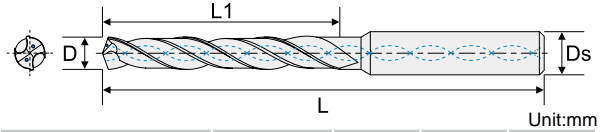
- Suitable for Inconel, Titanium and Stainless Steel machining.
- Special NR geometry design for excellent chip removal.
- Optimized flute design and excellent polishing to enable efficiency chips evacuation.
- Drill performance compete against not of international manufacturers.

DMC - for Stainless steel · Internal Coolant · 3D



Specification

- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- SINIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- NR Tip Design



Order No.	D	L1	L	Ds
DMC304000302	4.00	24	66	6
DMC304100302	4.10	24	66	6
DMC304200302	4.20	24	66	6
DMC304300302	4.30	24	66	6
DMC304400302	4.40	24	66	6
DMC304500302	4.50	24	66	6
DMC304600302	4.60	24	66	6
DMC304650302	4.65	24	66	6
DMC304700302	4.70	24	66	6
DMC304760302	4.76(3/16")	24	66	6
DMC304800302	4.80	28	66	6
DMC304900302	4.90	28	66	6
DMC305000302	5.00	28	66	6
DMC305100302	5.10	28	66	6
DMC305200302	5.20	28	66	6
DMC305300302	5.30	28	66	6
DMC305400302	5.40	28	66	6
DMC305500302	5.50	28	66	6
DMC305560302	5.56(7/32")	28	66	6
DMC305700302	5.70	28	66	6
DMC305800302	5.80	28	66	6
DMC305900302	5.90	28	66	6
DMC306000302	6.00	28	66	6
DMC306100302	6.10	34	79	8
DMC306200302	6.20	34	79	8
DMC306300302	6.30	34	79	8
DMC306350302	6.35(1/4")	34	79	8
DMC306400302	6.40	34	79	8
DMC306500302	6.50	34	79	8
DMC306600302	6.60	34	79	8
DMC306700302	6.70	34	79	8
DMC306800302	6.80	34	79	8
DMC306900302	6.90	34	79	8
DMC307000302	7.00	34	79	8
DMC307100302	7.10	41	79	8
DMC307140302	7.14(9/32")	41	79	8
DMC307200302	7.20	41	79	8
DMC307300302	7.30	41	79	8
DMC307400302	7.40	41	79	8
DMC307500302	7.50	41	79	8
DMC307600302	7.60	41	79	8
DMC307700302	7.70	41	79	8
DMC307800302	7.80	41	79	8
DMC307900302	7.90	41	79	8
DMC307940302	7.94(5/16")	41	79	8
DMC308000302	8.00	41	79	8
DMC308100302	8.10	47	89	10
DMC308200302	8.20	47	89	10

Order No.	D	L1	L	Ds
DMC308300302	8.30	47	89	10
DMC308400302	8.40	47	89	10
DMC308500302	8.50	47	89	10
DMC308600302	8.60	47	89	10
DMC308700302	8.70	47	89	10
DMC308800302	8.80	47	89	10
DMC308900302	8.90	47	89	10
DMC309000302	9.00	47	89	10
DMC309100302	9.10	47	89	10
DMC309200302	9.20	47	89	10
DMC309250302	9.25	47	89	10
DMC309300302	9.30	47	89	10
DMC309400302	9.40	47	89	10
DMC309500302	9.50	47	89	10
DMC309520302	9.52(3/8")	47	89	10
DMC309600302	9.60	47	89	10
DMC309700302	9.70	47	89	10
DMC309800302	9.80	47	89	10
DMC309900302	9.90	47	89	10
DMC310000302	10.00	47	89	10
DMC310200302	10.20	55	102	12
DMC310500302	10.50	55	102	12
DMC310700302	10.70	55	102	12
DMC311000302	11.00	55	102	12
DMC311200302	11.20	55	102	12
DMC311500302	11.50	55	102	12
DMC311700302	11.70	55	102	12
DMC312000302	12.00	55	102	12
DMC312500302	12.50	60	107	14
DMC312700302	12.70(1/2")	60	107	14
DMC313000302	13.00	60	107	14
DMC313500302	13.50	60	107	14
DMC313700302	13.70	60	107	14
DMC314000302	14.00	60	107	14
DMC314500302	14.50	65	115	16
DMC314700302	14.70	65	115	16
DMC315000302	15.00	65	115	16
DMC315500302	15.50	65	115	16
DMC315700302	15.70	65	115	16
DMC316000302	16.00	65	115	16
DMC318000302	18.00	73	123	18
DMC319000302	19.00	79	131	20
DMC320000302	20.00	79	131	20

Cutting conditions : Table 04

Holemaking

Solid Carbide Drills

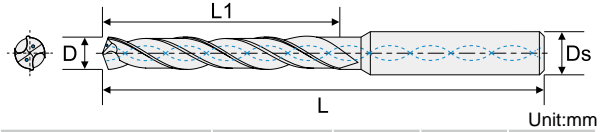


DMC - for Stainless steel · Internal Coolant · 5D



Specification

- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- SINIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- NR Tip Design



Unit:mm

Order No.	D	L1	L	Ds	Order No.	D	L1	L	Ds
DMC503400542	3.40	28	60	4	DMC508000502	8.00	53	91	8
DMC503800542	3.80	36	74	4	DMC508100502	8.10	61	103	10
DMC504000502	4.00	36	74	6	DMC508200502	8.20	61	103	10
DMC504100502	4.10	36	74	6	DMC508300502	8.30	61	103	10
DMC504200502	4.20	36	74	6	DMC508400502	8.40	61	103	10
DMC504300502	4.30	36	74	6	DMC508500502	8.50	61	103	10
DMC504400502	4.40	36	74	6	DMC508600502	8.60	61	103	10
DMC504500502	4.50	36	74	6	DMC508700502	8.70	61	103	10
DMC504600502	4.60	36	74	6	DMC508800502	8.80	61	103	10
DMC504650502	4.65	36	74	6	DMC508900502	8.90	61	103	10
DMC504700502	4.70	36	74	6	DMC509000502	9.00	61	103	10
DMC504760502	4.76(3/16")	36	74	6	DMC509100502	9.10	61	103	10
DMC504800502	4.80	44	82	6	DMC509200502	9.20	61	103	10
DMC504900502	4.90	44	82	6	DMC509250502	9.25	61	103	10
DMC505000502	5.00	44	82	6	DMC509300502	9.30	61	103	10
DMC505100502	5.10	44	82	6	DMC509400502	9.40	61	103	10
DMC505200502	5.20	44	82	6	DMC509500502	9.50	61	103	10
DMC505300502	5.30	44	82	6	DMC509520502	9.52(3/8")	61	103	10
DMC505400502	5.40	44	82	6	DMC509600502	9.60	61	103	10
DMC505500502	5.50	44	82	6	DMC509700502	9.70	61	103	10
DMC505550502	5.55(7/32")	44	82	6	DMC509800502	9.80	61	103	10
DMC505600502	5.60	44	82	6	DMC509900502	9.90	61	103	10
DMC505700502	5.70	44	82	6	DMC510000502	10.00	61	103	10
DMC505800502	5.80	44	82	6	DMC510200502	10.20	71	118	12
DMC505900502	5.90	44	82	6	DMC510500502	10.50	71	118	12
DMC506000502	6.00	44	82	6	DMC510700502	10.70	71	118	12
DMC506100502	6.10	53	91	8	DMC511000502	11.00	71	118	12
DMC506200502	6.20	53	91	8	DMC511200502	11.20	71	118	12
DMC506300502	6.30	53	91	8	DMC511500502	11.50	71	118	12
DMC506350502	6.35(1/4")	53	91	8	DMC511700502	11.70	71	118	12
DMC506400502	6.40	53	91	8	DMC512000502	12.00	71	118	12
DMC506500502	6.50	53	91	8	DMC512500502	12.50	77	124	14
DMC506600502	6.60	53	91	8	DMC512700502	12.70(1/2")	77	124	14
DMC506700502	6.70	53	91	8	DMC513000502	13.00	77	124	14
DMC506800502	6.80	53	91	8	DMC513500502	13.50	77	124	14
DMC506900502	6.90	53	91	8	DMC513700502	13.70	77	124	14
DMC507000502	7.00	53	91	8	DMC514000502	14.00	77	124	14
DMC507100502	7.10	53	91	8	DMC514500502	14.50	83	133	16
DMC507140502	7.14(9/32")	53	91	8	DMC514700502	14.70	83	133	16
DMC507200502	7.20	53	91	8	DMC515000502	15.00	83	133	16
DMC507300502	7.30	53	91	8	DMC515500502	15.50	83	133	16
DMC507400502	7.40	53	91	8	DMC515700502	15.70	83	133	16
DMC507500502	7.50	53	91	8	DMC516000502	16.00	83	133	16
DMC507600502	7.60	53	91	8	DMC518000502	18.00	93	143	18
DMC507700502	7.70	53	91	8	DMC519000502	19.00	101	153	20
DMC507800502	7.80	53	91	8	DMC520000502	20.00	101	153	20
DMC507900502	7.90	53	91	8					
DMC507940502	7.94(5/16")	53	91	8					

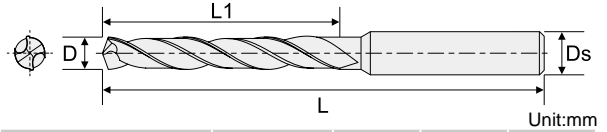
Cutting conditions : Table 04

**DMN - for Stainless steel · External Coolant · 3D**



**Specification**

- 3xD Cutting depth    · Reinforced Shank    · 140° Tip Angle    · External Coolant    · SINIX Coating
- Tolerance h8 standard / m7 possible on request    · Double Margins Design    · NR Tip Design



Unit:mm

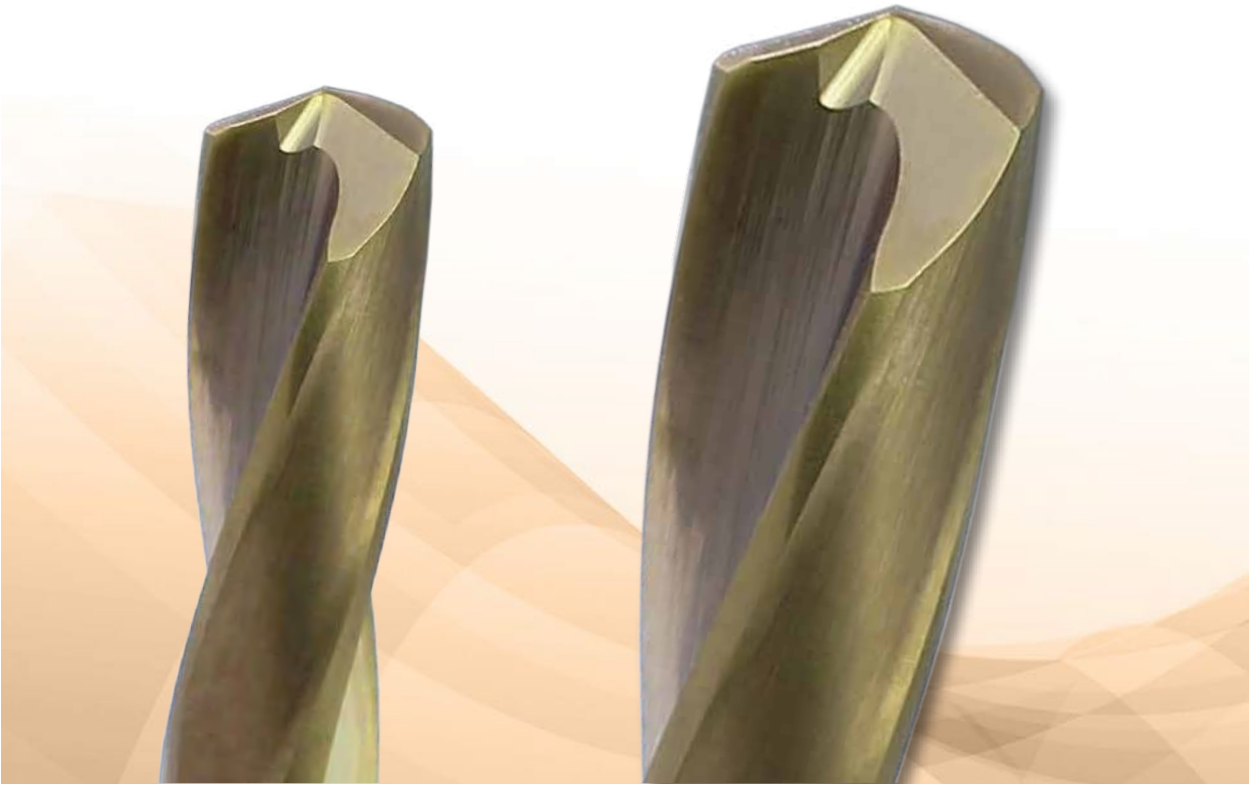
Order No.	D	L1	L	Ds
DMN304000302	4.00	24	66	6
DMN304100302	4.10	24	66	6
DMN304200302	4.20	24	66	6
DMN304300302	4.30	24	66	6
DMN304400302	4.40	24	66	6
DMN304500302	4.50	24	66	6
DMN304600302	4.60	24	66	6
DMN304650302	4.65	24	66	6
DMN304700302	4.70	24	66	6
DMN304760302	4.76(3/16")	24	66	6
DMN304800302	4.80	28	66	6
DMN304900302	4.90	28	66	6
DMN305000302	5.00	28	66	6
DMN305100302	5.10	28	66	6
DMN305200302	5.20	28	66	6
DMN305300302	5.30	28	66	6
DMN305400302	5.40	28	66	6
DMN305500302	5.50	28	66	6
DMN305560302	5.56(7/32")	28	66	6
DMN305600302	5.60	28	66	6
DMN305700302	5.70	28	66	6
DMN305800302	5.80	28	66	6
DMN305900302	5.90	28	66	6
DMN306000302	6.00	28	66	6
DMN306100302	6.10	34	79	8
DMN306200302	6.20	34	79	8
DMN306300302	6.30	34	79	8
DMN306350302	6.35(1/4")	34	79	8
DMN306400302	6.40	34	79	8
DMN306500302	6.50	34	79	8
DMN306600302	6.60	34	79	8
DMN306700302	6.70	34	79	8
DMN306800302	6.80	34	79	8
DMN306900302	6.90	34	79	8
DMN307000302	7.00	34	79	8
DMN307100302	7.10	41	79	8
DMN307140302	7.14(9/32")	41	79	8
DMN307200302	7.20	41	79	8
DMN307300302	7.30	41	79	8
DMN307400302	7.40	41	79	8
DMN307500302	7.50	41	79	8
DMN307600302	7.60	41	79	8
DMN307700302	7.70	41	79	8
DMN307800302	7.80	41	79	8
DMN307900302	7.90	41	79	8
DMN307940302	7.94(5/16")	41	79	8
DMN308000302	8.00	41	79	8
DMN308100302	8.10	47	89	10

Order No.	D	L1	L	Ds
DMN308200302	8.20	47	89	10
DMN308300302	8.30	47	89	10
DMN308400302	8.40	47	89	10
DMN308500302	8.50	47	89	10
DMN308600302	8.60	47	89	10
DMN308700302	8.70	47	89	10
DMN308800302	8.80	47	89	10
DMN308900302	8.90	47	89	10
DMN309000302	9.00	47	89	10
DMN309100302	9.10	47	89	10
DMN309200302	9.20	47	89	10
DMN309250302	9.25	47	89	10
DMN309300302	9.30	47	89	10
DMN309400302	9.40	47	89	10
DMN309500302	9.50	47	89	10
DMN309520302	9.52(3/8")	47	89	10
DMN309600302	9.60	47	89	10
DMN309700302	9.70	47	89	10
DMN309800302	9.80	47	89	10
DMN309900302	9.90	47	89	10
DMN310000302	10.00	47	89	10
DMN310200302	10.20	55	102	12
DMN310500302	10.50	55	102	12
DMN310700302	10.70	55	102	12
DMN311000302	11.00	55	102	12
DMN311200302	11.20	55	102	12
DMN311500302	11.50	55	102	12
DMN311700302	11.70	55	102	12
DMN312000302	12.00	55	102	12
DMN312500302	12.50	60	107	14
DMN312700302	12.70(1/2)	60	107	14
DMN313000302	13.00	60	107	14
DMN313500302	13.50	60	107	14
DMN313700302	13.70	60	107	14
DMN314000302	14.00	60	107	14
DMN314500302	14.50	65	115	16
DMN314700302	14.70	65	115	16
DMN315000302	15.00	65	115	16
DMN315500302	15.50	65	115	16
DMN315700302	15.70	65	115	16
DMN316000302	16.00	65	115	16
DMN318000302	18.00	73	123	18
DMN319000302	19.00	79	131	20
DMN320000302	20.00	79	131	20

Cutting conditions : Table 05

Holmaking

Solid Carbide Drills



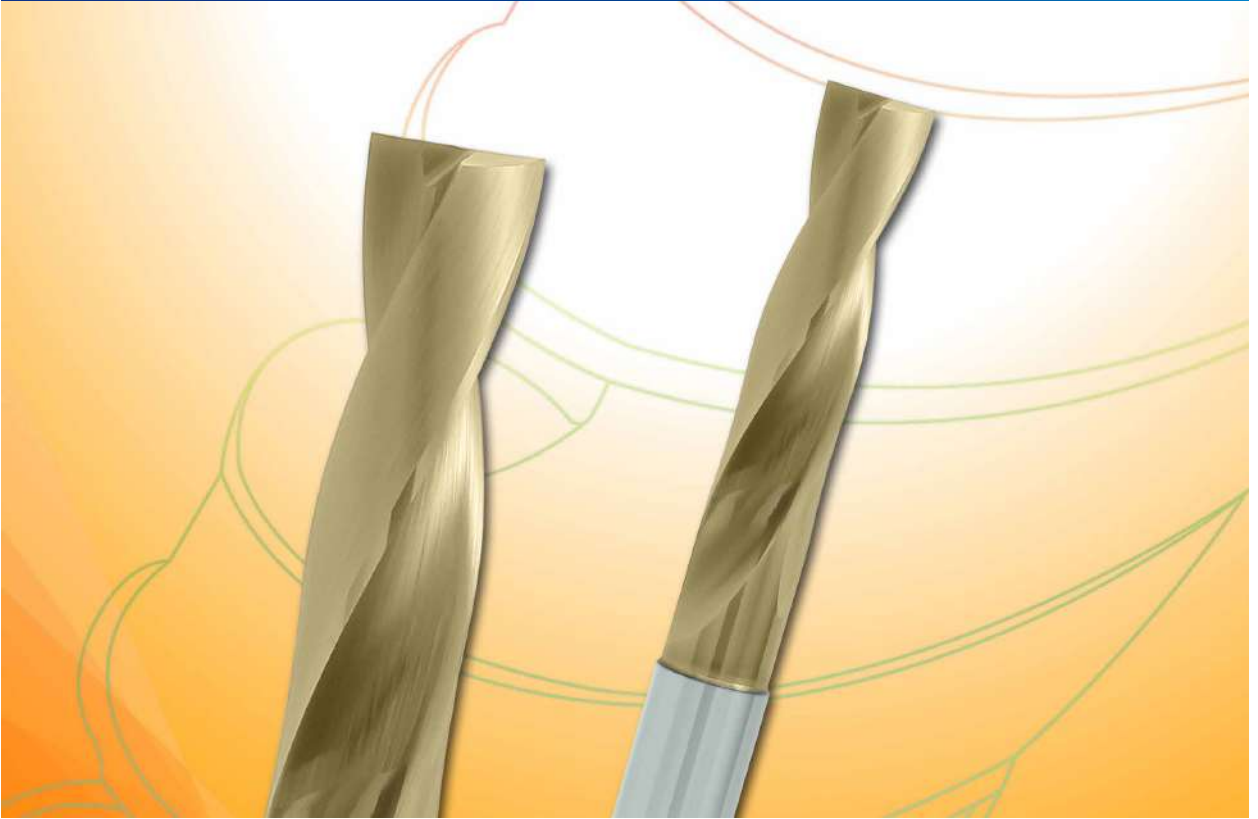
## **Features**

- Suitable for Superalloy and Hardened steel machining.
- Special RX geometry design for tip protecting.
- Low helix and special coating with efficiency cutting ability.





*DFN with Flat tip*



Holemaking

Solid Carbide Drills

## ***Features***

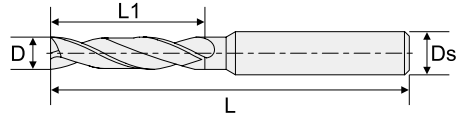
- Multiple application
- Counter boring, Slope, Curve, Cross hole, Thin plate
- Pre-hole
- Hole correction
- Reduce manufacturing procedure

DFN - Flat · External Coolant · 3D



Specification

- 3xD Cutting depth
- Reinforced Shank
- Flat tip
- External Coolant
- SINIX Coating
- Tolerance h8
- FX Design



Unit:mm

Order No.	D	L1	L	Ds	Order No.	D	L1	L	Ds
DFN302200342	2.20	13	60	4	DFN305800302	5.80	28	66	6
DFN302600342	2.60	15	60	4	DFN305900302	5.90	28	66	6
DFN302700342	2.70	15	60	4	DFN306000302	6.00	28	66	6
DFN303000342	3.00	20	60	4	DFN306100302	6.10	34	79	8
DFN303100342	3.10	20	60	4	DFN306200302	6.20	34	79	8
DFN303170342	3.17(1/8")	20	60	4	DFN306300302	6.30	34	79	8
DFN303200342	3.20	20	60	4	DFN306350302	6.35	34	79	8
DFN303250342	3.25(5/39")	20	60	4	DFN306400302	6.40	34	79	8
DFN303300342	3.30	20	60	4	DFN306500302	6.50	34	79	8
DFN303400342	3.40	20	60	4	DFN306600302	6.60	34	79	8
DFN303500342	3.50	20	60	4	DFN306700302	6.70	34	79	8
DFN303600342	3.60	20	60	4	DFN306800302	6.80	34	79	8
DFN303700342	3.70	20	60	4	DFN306900302	6.90	34	79	8
DFN303800342	3.80	24	60	4	DFN307000302	7.00	34	79	8
DFN303900342	3.90	24	60	4	DFN307100302	7.10	41	79	8
DFN303970342	3.97(5/32")	24	60	4	DFN307200302	7.20	41	79	8
DFN303000302	3.00	20	62	6	DFN307300302	7.30	41	79	8
DFN303100302	3.10	20	62	6	DFN307400302	7.40	41	79	8
DFN303200302	3.20	20	62	6	DFN307500302	7.50	41	79	8
DFN303250302	3.25(5/39")	20	62	6	DFN307600302	7.60	41	79	8
DFN303300302	3.30	20	62	6	DFN307700302	7.70	41	79	8
DFN303400302	3.40	20	62	6	DFN307800302	7.80	41	79	8
DFN303500302	3.50	20	62	6	DFN307900302	7.90	41	79	8
DFN303600302	3.60	20	62	6	DFN308000302	8.00	41	79	8
DFN303700302	3.70	20	62	6	DFN308100302	8.10	47	89	10
DFN303800302	3.80	24	66	6	DFN308200302	8.20	47	89	10
DFN303900302	3.90	24	66	6	DFN308300302	8.30	47	89	10
DFN303970302	3.97(5/32")	24	66	6	DFN308400302	8.40	47	89	10
DFN304000302	4.00	24	66	6	DFN308500302	8.50	47	89	10
DFN304100302	4.10	24	66	6	DFN308600302	8.60	47	89	10
DFN304200302	4.20	24	66	6	DFN308700302	8.70	47	89	10
DFN304300302	4.30	24	66	6	DFN308800302	8.80	47	89	10
DFN304400302	4.40	24	66	6	DFN308900302	8.90	47	89	10
DFN304500302	4.50	24	66	6	DFN309000302	9.00	47	89	10
DFN304600302	4.60	24	66	6	DFN309100302	9.10	47	89	10
DFN304650302	4.65(13/71")	24	66	6	DFN309200302	9.20	47	89	10
DFN304700302	4.70	24	66	6	DFN309250302	9.25(23/64")	47	89	10
DFN304800302	4.80	28	66	6	DFN309300302	9.30	47	89	10
DFN304900302	4.90	28	66	6	DFN309400302	9.40	47	89	10
DFN305000302	5.00	28	66	6	DFN309500302	9.50	47	89	10
DFN305100302	5.10	28	66	6	DFN309600302	9.60	47	89	10
DFN305200302	5.20	28	66	6	DFN309700302	9.70	47	89	10
DFN305300302	5.30	28	66	6	DFN309800302	9.80	47	89	10
DFN305400302	5.40	28	66	6	DFN309900302	9.90	47	89	10
DFN305500302	5.50	28	66	6					
DFN305560302	5.56(7/32")	28	66	6					
DFN305600302	5.60	28	66	6					
DFN305700302	5.70	28	66	6					

Cutting conditions : Table 02





## High Performance High CP Value



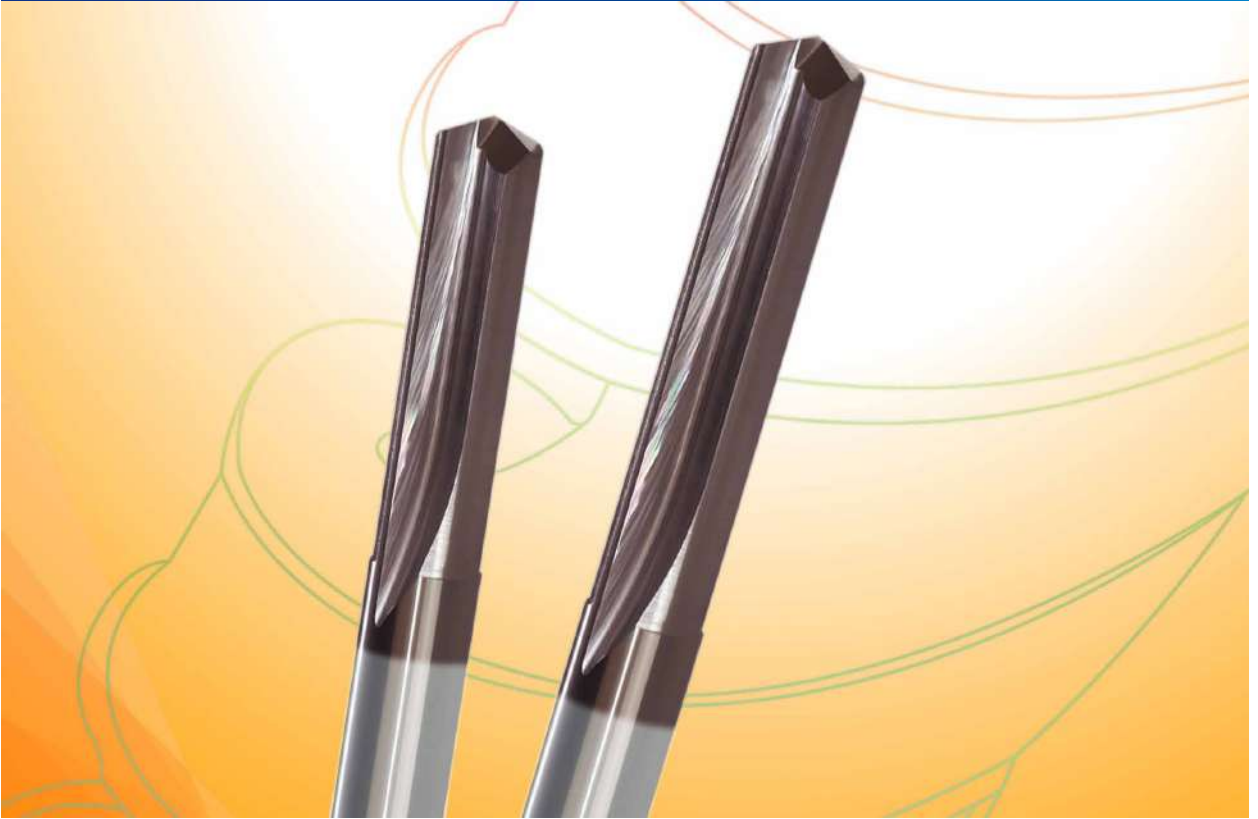
### **Features**

- For drill a hole with counterbore, countersink, or chamfer
- For steel, alloy steel, cast iron
- Customized Service





*DAN with Straight Flute*



Holemaking

Solid Carbide Drills

## ***Features***

- Tolerance: h7
- Tip angle: 130°
- UNIX Coating
- 3xD ~ 5xD Cutting Depth





*DGN for Universal Drilling*



## ***Features***

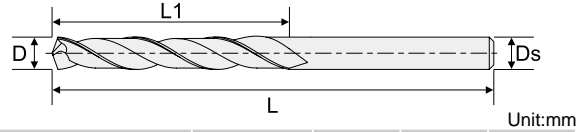
- General Purpose Drilling
- For Steel and Cast Iron
- Longer Tool Life
- Competitive Price

DGN - for Universal · External Coolant · 3D



Product Specs

- 3xD Cutting depth
- Straight Shank
- 130° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- NX Design
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



Order No.	D	L1	L	Ds
DGN302000301	2.00	12	38	2.00
DGN302100301	2.10	12	38	2.10
DGN302200301	2.20	13	40	2.20
DGN302300301	2.30	13	40	2.30
DGN302380301	2.38(3/32")	14	43	2.38
DGN302400301	2.40	14	43	2.40
DGN302500301	2.50	14	43	2.50
DGN302600301	2.60	14	43	2.60
DGN302700301	2.70	16	46	2.70
DGN302780301	2.78(7/64")	16	46	2.78
DGN302800301	2.80	16	46	2.80
DGN302900301	2.90	16	46	2.90
DGN303000301	3.00	16	46	3.00
DGN303100301	3.10	18	49	3.10
DGN303170301	3.17(1/8")	18	49	3.17
DGN303200301	3.20	18	49	3.20
DGN303300301	3.30	18	49	3.30
DGN303400301	3.40	20	52	3.40
DGN303500301	3.50	20	52	3.50
DGN303570301	3.57(9/64")	20	52	3.57
DGN303600301	3.60	20	52	3.60
DGN303700301	3.70	20	52	3.70
DGN303800301	3.80	22	55	3.80
DGN303900301	3.90	22	55	3.90
DGN303970301	3.97(5/32")	22	55	3.97
DGN304000301	4.00	22	55	4.00
DGN304100301	4.10	22	55	4.10
DGN304200301	4.20	24	58	4.20
DGN304300301	4.30	24	58	4.30
DGN304370301	4.37(11/64")	24	58	4.37
DGN304400301	4.40	24	58	4.40
DGN304500301	4.50	24	58	4.50
DGN304600301	4.60	24	58	4.60
DGN304700301	4.70	24	58	4.70
DGN304760301	4.76(3/16")	26	62	4.76
DGN304800301	4.80	26	62	4.80
DGN304900301	4.90	26	62	4.90
DGN305000301	5.00	26	62	5.00
DGN305100301	5.10	26	62	5.10
DGN305200301	5.20	26	62	5.20
DGN305300301	5.30	26	62	5.30
DGN305400301	5.40	28	66	5.40
DGN305500301	5.50	28	66	5.50
DGN305600301	5.60	28	66	5.60
DGN305700301	5.70	28	66	5.70
DGN305800301	5.80	28	66	5.80
DGN305900301	5.90	28	66	5.90

Order No.	D	L1	L	Ds
DGN306000301	6.00	28	66	6.00
DGN306100301	6.10	31	70	6.10
DGN306200301	6.20	31	70	6.20
DGN306300301	6.30	31	70	6.30
DGN306350301	6.35(1/4")	31	70	6.35
DGN306400301	6.40	31	70	6.40
DGN306500301	6.50	31	70	6.50
DGN306600301	6.60	31	70	6.60
DGN306700301	6.70	31	70	6.70
DGN306800301	6.80	34	74	6.80
DGN306900301	6.90	34	74	6.90
DGN307000301	7.00	34	74	7.00
DGN307100301	7.10	34	74	7.10
DGN307140301	7.14(9/32")	34	74	7.14
DGN307200301	7.20	34	74	7.20
DGN307300301	7.30	34	74	7.30
DGN307400301	7.40	34	74	7.40
DGN307500301	7.50	34	74	7.50
DGN307600301	7.60	37	79	7.60
DGN307700301	7.70	37	79	7.70
DGN307800301	7.80	37	79	7.80
DGN307900301	7.90	37	79	7.90
DGN307940301	7.94(5/16")	37	79	7.94
DGN308000301	8.00	37	79	8.00
DGN308100301	8.10	37	79	8.10
DGN308200301	8.20	37	79	8.20
DGN308300301	8.30	37	79	8.30
DGN308400301	8.40	37	79	8.40
DGN308500301	8.50	37	79	8.50
DGN308600301	8.60	37	79	8.60
DGN308700301	8.70	37	79	8.70
DGN308730301	8.73(11/32")	40	84	8.73
DGN308800301	8.80	40	84	8.80
DGN308900301	8.90	40	84	8.90
DGN309000301	9.00	40	84	9.00
DGN309100301	9.10	40	84	9.10
DGN309200301	9.20	40	84	9.20
DGN309300301	9.30	40	84	9.30
DGN309400301	9.40	40	84	9.40
DGN309500301	9.50	40	84	9.50
DGN309700301	9.70	43	89	9.70
DGN309800301	9.80	43	89	9.80
DGN309900301	9.90	43	89	9.90

Cutting conditions : Table 02

Holemaking

Solid Carbide Drills



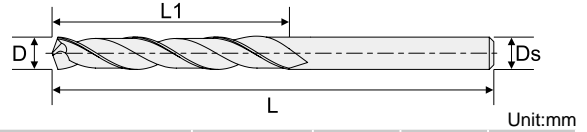


DGN - for Universal · External Coolant · 5D



Product Specs

- 5xD Cutting depth
- Straight Shank
- 130° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- NX Design
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



Order No.	D	L1	L	Ds
DGN505000501	5.00	34	73	5.00
DGN505100501	5.10	38	76	5.10
DGN505200501	5.20	38	76	5.20
DGN505300501	5.30	38	76	5.30
DGN505400501	5.40	38	76	5.40
DGN505500501	5.50	38	76	5.50
DGN505600501	5.60	41	81	5.60
DGN505700501	5.70	41	81	5.70
DGN505800501	5.80	41	81	5.80
DGN505900501	5.90	41	81	5.90
DGN506000501	6.00	41	81	6.00
DGN506100501	6.10	41	81	6.10
DGN506200501	6.20	41	81	6.20
DGN506300501	6.30	41	81	6.30
DGN506400501	6.40	41	81	6.40
DGN506500501	6.50	41	81	6.50
DGN506600501	6.60	43	83	6.60
DGN506700501	6.70	43	83	6.70
DGN506800501	6.80	43	83	6.80
DGN506900501	6.90	43	83	6.90
DGN507000501	7.00	43	83	7.00
DGN507100501	7.10	45	87	7.10
DGN507200501	7.20	45	87	7.20
DGN507300501	7.30	45	87	7.30
DGN507400501	7.40	45	87	7.40
DGN507500501	7.50	45	87	7.50
DGN507600501	7.60	48	90	7.60
DGN507700501	7.70	48	90	7.70
DGN507800501	7.80	48	90	7.80
DGN507900501	7.90	48	90	7.90
DGN508000501	8.00	48	90	8.00
DGN508100501	8.10	53	96	8.10
DGN508200501	8.20	53	96	8.20
DGN508300501	8.30	53	96	8.30
DGN508400501	8.40	53	96	8.40
DGN508500501	8.50	53	96	8.50
DGN508600501	8.60	55	98	8.60
DGN508700501	8.70	55	98	8.70
DGN508800501	8.80	55	98	8.80

Order No.	D	L1	L	Ds
DGN509000501	9.00	55	98	9.00
DGN509100501	9.10	58	102	9.10
DGN509200501	9.20	58	102	9.20
DGN509300501	9.30	58	102	9.30
DGN509500501	9.50	58	102	9.50
DGN509600501	9.60	60	105	9.60
DGN509700501	9.70	60	105	9.70
DGN509800501	9.80	60	105	9.80
DGN510000501	10.00	60	105	10.00
DGN510200501	10.20	66	112	10.20
DGN510300501	10.30	66	112	10.30
DGN510400501	10.40	66	112	10.40
DGN510500501	10.50	66	112	10.50
DGN510600501	10.60	68	114	10.60
DGN510700501	10.70	68	114	10.70
DGN510800501	10.80	68	114	10.80
DGN510900501	10.90	68	114	10.90
DGN511000501	11.00	68	114	11.00
DGN511100501	11.10	71	118	11.10
DGN511200501	11.20	71	118	11.20
DGN511400501	11.40	71	118	11.40
DGN511500501	11.50	71	118	11.50
DGN511600501	11.60	73	121	11.60
DGN511700501	11.70	73	121	11.70
DGN511800501	11.80	73	121	11.80
DGN511900501	11.90	73	121	11.90
DGN512000501	12.00	73	121	12.00
DGN512500501	12.50	76	135	12.50
DGN512700501	12.70	78	137	12.70
DGN513000501	13.00	78	137	13.00
DGN513500501	13.50	84	144	13.50
DGN514000501	14.00	86	147	14.00
DGN514500501	14.50	89	151	14.50
DGN515000501	15.00	91	153	15.00
DGN515500501	15.50	94	157	15.50
DGN516000501	16.00	96	160	16.00

Holmaking

Solid Carbide Drills

**Recommended Cutting Conditions**

**Table 01 - DPC Series (Internal Coolant)**

Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	70~120	0.1~0.2	90~130	0.15~0.3	110~150	0.25~0.4
	Carbon Steel	(180~280HB)	70~110	0.1~0.2	90~120	0.15~0.3	110~140	0.25~0.4
	Alloy Steel	(280~350HB)	60~100	0.08~0.18	65~110	0.15~0.27	80~120	0.22~0.35
M	Stainless Steel	(<200HB)	35~60	0.06~0.15	45~80	0.1~0.25	55~100	0.2~0.3
K	Cast Iron	(<350Mpa)	70~100	0.1~0.2	80~120	0.15~0.3	90~140	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	50~80	0.1~0.2	60~90	0.15~0.3	70~110	0.25~0.4
N	Aluminum <12% Si	-	80~140	0.1~0.25	100~160	0.15~0.35	110~180	0.3~0.45
	Aluminum >12% Si	-	70~120	0.1~0.25	90~130	0.15~0.35	100~150	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

Warning :

For deep hole drills(10xD~20xD), need reduce the Vc to 90% and require an initial pilot hole to help guide the drill.

**Table 02 - DPN, DFN, DGN Series (External Coolant)**

Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	40~70	0.1~0.2	55~85	0.15~0.3	60~100	0.25~0.4
	Carbon Steel	(180~280HB)	35~65	0.1~0.2	50~80	0.15~0.3	55~90	0.25~0.4
	Alloy Steel	(280~350HB)	30~60	0.08~0.18	40~75	0.15~0.27	50~85	0.22~0.35
M	Stainless Steel	(<200HB)	20~40	0.06~0.15	25~50	0.1~0.25	30~60	0.2~0.3
K	Cast Iron	(<350Mpa)	40~60	0.1~0.2	50~75	0.15~0.3	55~85	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	35~55	0.1~0.2	45~70	0.15~0.3	50~80	0.25~0.4
N	Aluminum <12% Si	-	60~100	0.1~0.25	65~115	0.15~0.35	70~130	0.3~0.45
	Aluminum >12% Si	-	50~90	0.1~0.25	60~110	0.15~0.35	65~120	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

Warning :For slope drilling, please adjust cutting data according to inclined angle

1. For inclined angle under 20 degree, reduce the feed to 50%
2. For inclined angle between 20 to 50 degree, reduce the feed to 40%, and reduce rotation to 70%
3. For inclined angle between 50 to 65 degree, reduce the feed to 30%, and reduce rotation to 70%
4. Not recommend to side milling

**Recommended Cutting Conditions**

**Table 03 - DLC, DLN Series**

Work Material	ØD < 1mm		1mm ≤ ØD < 3mm	
	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)
P Steel	30 - 45 - 60	0.005 - 0.018 - 0.03	40 - 50 - 60	0.015 - 0.038 - 0.06
M Stainless Steel	20 - 30 - 40	0.005 - 0.018 - 0.03	20 - 30 - 40	0.015 - 0.038 - 0.06
K Cast Iron	30 - 45 - 60	0.005 - 0.018 - 0.03	40 - 50 - 60	0.015 - 0.038 - 0.06
N Aluminum	45 - 68 - 90	0.015 - 0.053 - 0.09	60 - 75 - 90	0.045 - 0.113 - 0.18
S High Temperature Alloy	15 - 23 - 30	0.005 - 0.013 - 0.02	20 - 25 - 30	0.01 - 0.02 - 0.03
H Hardened Material	15 - 23 - 30	0.005 - 0.013 - 0.02	20 - 25 - 30	0.01 - 0.02 - 0.03

※ Deep hole machining is suitable for DLN series and uses peck drilling.  
To choose uncoating tool for aluminum machining.

**Table 04 - DMC Series (Internal Coolant)**

Material	Stainless Steel				Titanium Alloy		Nickel Alloy		Carbon Steel / Alloy Steel	
Hardness	< HRC 20		≥ HRC 20		HRC 33 ~ 45		HRC 33 ~ 45		< HRC 35	
Vc	60 ~ 100 m/min		40 ~ 80 m/min		20 ~ 40 m/min		18 ~ 30 m/min		60 ~ 100 m/min	
Dia (mm)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)
4	4800 ~ 8000	0.06 ~ 0.11	3200 ~ 6400	0.06 ~ 0.11	1600 ~ 3200	0.05 ~ 0.08	1400 ~ 2400	0.05 ~ 0.08	4800 ~ 8000	0.07 ~ 0.12
6	3200 ~ 5300	0.09 ~ 0.17	2100 ~ 4200	0.09 ~ 0.17	1000 ~ 2100	0.07 ~ 0.12	1000 ~ 1600	0.07 ~ 0.12	3200 ~ 5300	0.11 ~ 0.18
8	2400 ~ 4000	0.12 ~ 0.22	1600 ~ 3200	0.12 ~ 0.22	800 ~ 1600	0.10 ~ 0.16	700 ~ 1200	0.10 ~ 0.16	2400 ~ 4000	0.14 ~ 0.24
10	1900 ~ 3200	0.17 ~ 0.28	1300 ~ 2500	0.17 ~ 0.28	600 ~ 1300	0.12 ~ 0.20	600 ~ 1000	0.12 ~ 0.20	1900 ~ 3200	0.18 ~ 0.30
12	1600 ~ 2700	0.19 ~ 0.33	1000 ~ 2100	0.19 ~ 0.33	500 ~ 1100	0.14 ~ 0.24	500 ~ 800	0.14 ~ 0.24	1600 ~ 2700	0.21 ~ 0.36
16	1200 ~ 2000	0.22 ~ 0.32	800 ~ 1600	0.22 ~ 0.32	400 ~ 800	0.19 ~ 0.32	400 ~ 600	0.19 ~ 0.32	1200 ~ 2000	0.28 ~ 0.40
20	1000 ~ 1600	0.28 ~ 0.40	600 ~ 1300	0.28 ~ 0.40	300 ~ 600	0.24 ~ 0.40	300 ~ 500	0.24 ~ 0.40	1000 ~ 1600	0.35 ~ 0.50

**Table 05 - DMN Series (External Coolant)**

Material	Stainless Steel				Titanium Alloy		Nickel Alloy		Carbon Steel / Alloy Steel	
Hardness	< HRC 20		≥ HRC 20		HRC 33 ~ 45		HRC 33 ~ 45		< HRC 35	
Vc	60 ~ 100 m/min		40 ~ 80 m/min		20 ~ 40 m/min		18 ~ 30 m/min		60 ~ 100 m/min	
Dia (mm)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)	RPM	Feed (mm/rev)
4	4800 ~ 8000	0.05 ~ 0.08	3200 ~ 6400	0.05 ~ 0.08	1600 ~ 3200	0.05 ~ 0.07	1400 ~ 2400	0.05 ~ 0.07	4800 ~ 8000	0.06 ~ 0.10
6	3200 ~ 5300	0.08 ~ 0.12	2100 ~ 4200	0.08 ~ 0.12	1000 ~ 2100	0.06 ~ 0.11	1000 ~ 1600	0.06 ~ 0.11	3200 ~ 5300	0.09 ~ 0.15
8	2400 ~ 4000	0.10 ~ 0.16	1600 ~ 3200	0.10 ~ 0.16	800 ~ 1600	0.09 ~ 0.14	700 ~ 1200	0.09 ~ 0.14	2400 ~ 4000	0.12 ~ 0.20
10	1900 ~ 3200	0.13 ~ 0.20	1300 ~ 2500	0.13 ~ 0.20	600 ~ 1300	0.11 ~ 0.18	600 ~ 1000	0.11 ~ 0.18	1900 ~ 3200	0.15 ~ 0.25
12	1600 ~ 2700	0.15 ~ 0.24	1000 ~ 2100	0.15 ~ 0.24	500 ~ 1100	0.13 ~ 0.22	500 ~ 800	0.13 ~ 0.22	1600 ~ 2700	0.18 ~ 0.30
16	1200 ~ 2000	0.20 ~ 0.32	800 ~ 1600	0.20 ~ 0.32	400 ~ 800	0.17 ~ 0.29	400 ~ 600	0.17 ~ 0.29	1200 ~ 2000	0.24 ~ 0.40
20	1000 ~ 1600	0.25 ~ 0.40	600 ~ 1300	0.25 ~ 0.40	300 ~ 600	0.22 ~ 0.36	300 ~ 500	0.22 ~ 0.36	1000 ~ 1600	0.30 ~ 0.50

**Recommended Cutting Conditions**

**Table 06 - DHN Series (External Coolant)**

Material	Hardened Steel / Pre-Hardened Steel						Nickel Alloy	
Hardness	HRC 40 ~ 45		HRC 45 ~ 50		HRC 50 ~ 60		HRC 33 ~ 45	
Vc	30 ~ 50 m/min		20 ~ 30 m/min		20 ~ 30 m/min		15 ~ 30 m/min	
Dia (mm)	RPM	Feed(mm/rev)	RPM	Feed(mm/rev)	RPM	Feed(mm/rev)	RPM	Feed(mm/rev)
4	3200	0.04 ~ 0.08	2000	0.04 ~ 0.08	2000	0.03 ~ 0.06	1600	0.04 ~ 0.08
5	2500	0.05 ~ 0.10	1600	0.05 ~ 0.10	1600	0.04 ~ 0.08	1300	0.05 ~ 0.10
6	2100	0.06 ~ 0.12	1300	0.06 ~ 0.12	1300	0.05 ~ 0.09	1100	0.06 ~ 0.12
7	1800	0.07 ~ 0.14	1100	0.07 ~ 0.14	1100	0.06 ~ 0.11	900	0.07 ~ 0.14
8	1600	0.08 ~ 0.16	1000	0.08 ~ 0.16	1000	0.06 ~ 0.12	800	0.08 ~ 0.16
9	1400	0.09 ~ 0.18	900	0.09 ~ 0.18	900	0.07 ~ 0.14	700	0.09 ~ 0.18
10	1300	0.10 ~ 0.20	800	0.10 ~ 0.20	800	0.08 ~ 0.15	600	0.10 ~ 0.20
11	1150	0.11 ~ 0.22	720	0.11 ~ 0.22	720	0.09 ~ 0.17	600	0.11 ~ 0.22
12	1100	0.12 ~ 0.24	700	0.12 ~ 0.24	700	0.10 ~ 0.18	500	0.12 ~ 0.24

**Table 07 - DZC Series (Internal Coolant)**

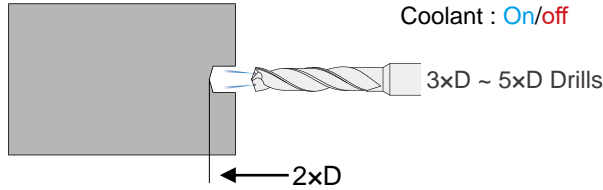
Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	60~100	0.1~0.2	80~120	0.15~0.3	100~140	0.25~0.4
	Carbon Steel	(180~280HB)	60~90	0.1~0.2	80~110	0.15~0.3	100~130	0.25~0.4
	Alloy Steel	(280~350HB)	50~80	0.08~0.18	60~100	0.15~0.27	70~110	0.22~0.35
M	Stainless Steel	(<200HB)	30~50	0.06~0.15	40~70	0.1~0.25	50~90	0.2~0.3
K	Cast Iron	(<350Mpa)	70~100	0.1~0.2	80~120	0.15~0.3	90~140	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	50~80	0.1~0.2	60~90	0.15~0.3	70~110	0.25~0.4
N	Aluminum <12% Si	-	70~120	0.1~0.25	80~140	0.15~0.35	90~160	0.3~0.45
	Aluminum >12% Si	-	60~100	0.1~0.25	70~120	0.15~0.35	90~140	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

**Table 08 - DZN Series (External Coolant)**

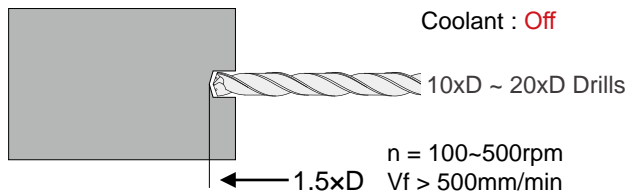
Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)	Vc (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	35~60	0.1~0.2	45~75	0.15~0.3	50~85	0.25~0.4
	Carbon Steel	(180~280HB)	30~55	0.1~0.2	40~70	0.15~0.3	45~80	0.25~0.4
	Alloy Steel	(280~350HB)	25~50	0.08~0.18	35~65	0.15~0.27	40~75	0.22~0.35
M	Stainless Steel	(<200HB)	20~40	0.06~0.15	25~50	0.1~0.25	30~60	0.2~0.3
K	Cast Iron	(<350Mpa)	40~60	0.1~0.2	50~75	0.15~0.3	55~85	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	35~55	0.1~0.2	45~70	0.15~0.3	50~80	0.25~0.4
N	Aluminum <12% Si	-	60~100	0.1~0.25	65~115	0.15~0.35	70~130	0.3~0.45
	Aluminum >12% Si	-	50~90	0.1~0.25	60~110	0.15~0.35	65~120	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

Deep Hole Drilling Application Guide

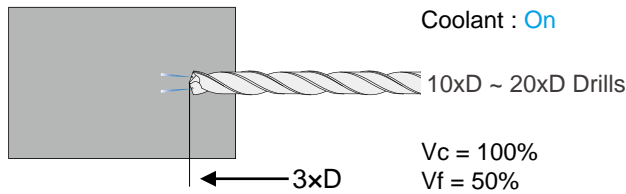
1 Short drill for piloting



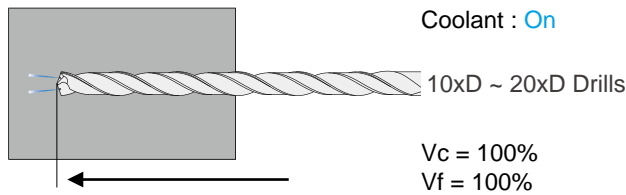
2 Long drill into pilot hole



3 Spotting



4 Deep Hole drilling



5 Retracting

