

MNS drill series for machining of aluminium alloys!

The central holes provide an increase in lubrication to the drill point.

High-feed & high efficiency drilling with feed rates up to $F=10,000\text{mm}/\text{min}$.

- Drill sizes available in 0.1mm increments from $\varnothing 3.0$ to $\varnothing 20.0$.
- L/D 3, 5, 8, 10, 12, 15, 20, 25, 30 types are available as standard.
- Non-step deep hole drilling (L/D 10 – 30)



Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS

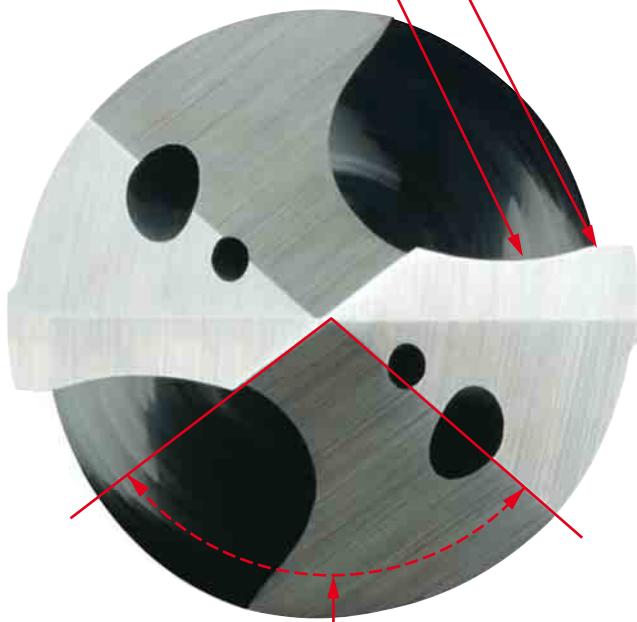
Features

Optimum flute & cutting edge geometry for machining of aluminium alloy

Cutting edge shape

Wavy cutting edge

The wave edge design achieves a sharp peripheral edge cutting performance with a strong initial cutting point near the centre.

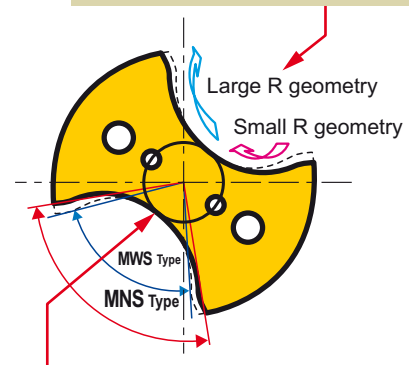


Cross sectional shape

(Cutting edge shoulder cross section)

Flutes of top edge

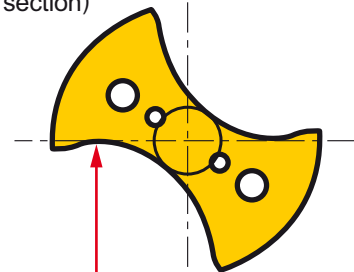
The small R geometry generates initial curling of the chips and combines with the larger geometry to promote smooth chip evacuation.



Special flute geometry

The wide flute is optimally designed for machining of aluminium alloy.

(Mid flute cross section)



Flute geometry

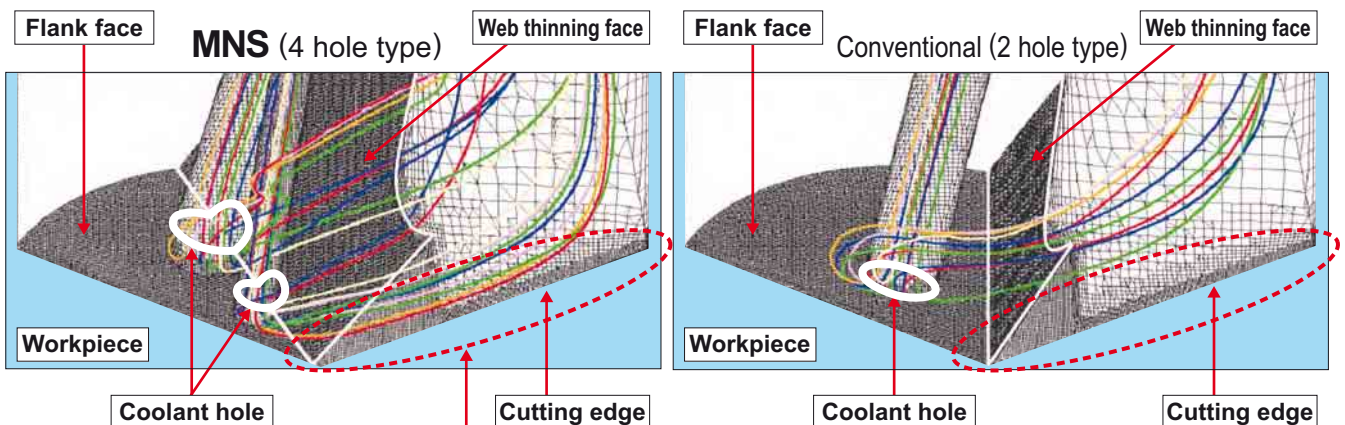
Large flute to prevent chip jamming.

PAT. pending

Web thinning pocket

Large thinning pocket for smooth evacuation of the chips prevents welding of the cutting edge.

Computerized flow simulation was used to determine the best positioning of the coolant holes



Effective lubrication for the cutting edge point and rake face that are usually prone to welding

Cutting Performance

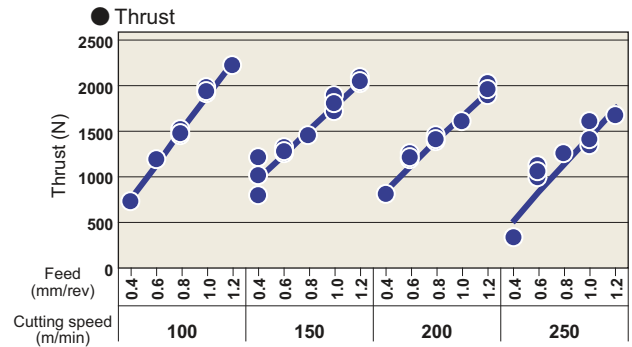
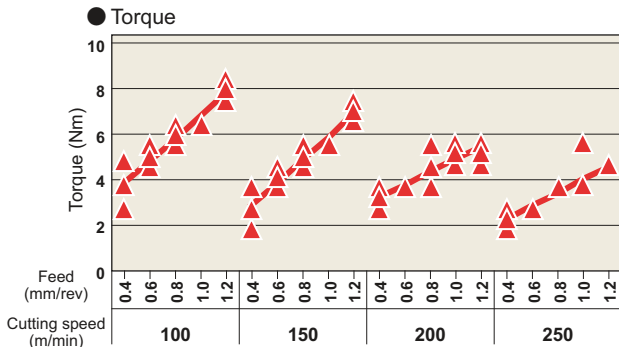
Enables stable, high feed drilling at 1.0mm/rev!

<Cutting conditions>

Workpiece : Aluminium alloy
Machine : Machining centre

Drill : MNS0600LB(L/D=5)
Hole depth : 30mm(L/D=5)

Coolant : W.S.O.
Emission pressure : 3MPa (Internal coolant)



Suitable for non-step feed drilling of holes up to 30xD!

<Cutting conditions>

Workpiece : Aluminium alloy
Machine : Machining centre
Drill : $\phi 6.0$, L/D 30 drill

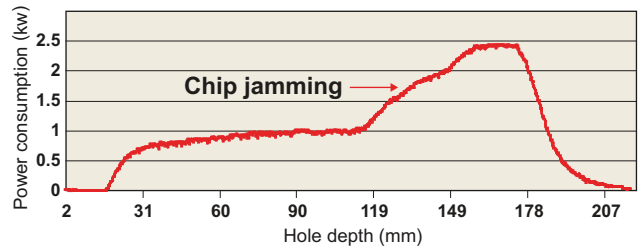
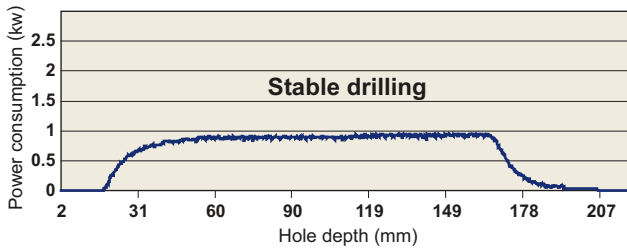
Hole depth : 180mm(L/D=29)
Pilot drill : MAS0600MB
Pilot hole depth : 18mm

Cutting speed : 100m/min Emission pressure : 0.5MPa (Internal coolant)
Feed per revolution : 0.4mm/rev
Coolant : Semi-dry machining (M.Q.L.)

MNS
Deep hole
MNS0600X30DB
(4 hole type)



Competitor's
deep hole for
aluminium
(2 hole type)



Stable deep hole performance in difficult to machine high tensile material (A6082)

<Cutting conditions>

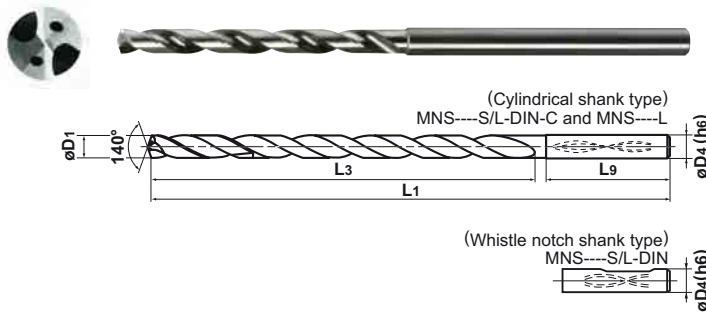
Workpiece : Aluminium alloy
Machine : Machining centre
Drill : MNS0550X20DB (L/D=20)

Hole depth : 100mm(L/D=18)
Pilot drill : MAS0550MB
Pilot hole depth : 15mm

Coolant : W.S.O.
Emission pressure : 1MPa (Internal coolant)

	Cutting speed: 100m/min Feed: 0.25mm/rev	Cutting speed: 100m/min Feed: 0.50mm/rev	Cutting speed: 200m/min Feed: 0.25mm/rev
Power consumption			
Chip breaking			

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys



■ MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

■ MNS○○○○-LOC, MNS○○○○-LOC C Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note 1) 4.5 or smaller diameter drills are designed with 2 coolant holes.
 (Note 2) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
3.0	3	Int.	□	MNS0300S-DIN	62	20	36	6
	3	Int.	□	0300S-DIN-C	62	20	36	6
	5	Int.	□	0300L-DIN	66	28	36	6
	5	Int.	●	0300L-DIN-C	66	28	36	6
	8	Int.	□	0300-L8C	74	34	36	6
	10	Int.	□	0300-L10C	80	40	36	6
	12	Int.	●	0300-L12C	86	46	36	6
	15	Int.	□	0300-L15C	95	55	36	6
	20	Int.	●	0300-L20C	110	70	36	6
	25	Int.	□	0300-L25C	125	85	36	6
30	Int.	●	0300-L30C	140	100	36	6	
3.1	3	Int.	□	0310S-DIN	62	20	36	6
	3	Int.	□	0310S-DIN-C	62	20	36	6
	5	Int.	□	0310L-DIN	66	28	36	6
	5	Int.	□	0310L-DIN-C	66	28	36	6
	8	Int.	□	0310-L8C	80	40	36	6
	10	Int.	□	0310-L10C	87	47	36	6
	12	Int.	□	0310-L12C	94	54	36	6
	15	Int.	□	0310-L15C	104	64	36	6
	20	Int.	□	0310-L20C	122	82	36	6
	25	Int.	□	0310-L25C	139	99	36	6
30	Int.	□	0310-L30C	157	117	36	6	
3.2	3	Int.	□	0320S-DIN	62	20	36	6
	3	Int.	□	0320S-DIN-C	62	20	36	6
	5	Int.	□	0320L-DIN	66	28	36	6
	5	Int.	●	0320L-DIN-C	66	28	36	6
	8	Int.	□	0320-L8C	80	40	36	6
	10	Int.	□	0320-L10C	87	47	36	6
	12	Int.	●	0320-L12C	94	54	36	6
	15	Int.	□	0320-L15C	104	64	36	6
	20	Int.	●	0320-L20C	122	82	36	6
	25	Int.	□	0320-L25C	139	99	36	6
30	Int.	●	0320-L30C	157	117	36	6	

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
3.3	3	Int.	□	MNS0330S-DIN	62	20	36	6
	3	Int.	□	0330S-DIN-C	62	20	36	6
	5	Int.	□	0330L-DIN	66	28	36	6
	5	Int.	●	0330L-DIN-C	66	28	36	6
	8	Int.	□	0330-L8C	80	40	36	6
	10	Int.	□	0330-L10C	87	47	36	6
	12	Int.	●	0330-L12C	94	54	36	6
	15	Int.	□	0330-L15C	104	64	36	6
	20	Int.	●	0330-L20C	122	82	36	6
	25	Int.	□	0330-L25C	139	99	36	6
30	Int.	●	0330-L30C	157	117	36	6	
3.4	3	Int.	□	0340S-DIN	62	20	36	6
	3	Int.	□	0340S-DIN-C	62	20	36	6
	5	Int.	□	0340L-DIN	66	28	36	6
	5	Int.	□	0340L-DIN-C	66	28	36	6
	8	Int.	□	0340-L8C	80	40	36	6
	10	Int.	□	0340-L10C	87	47	36	6
	12	Int.	□	0340-L12C	94	54	36	6
	15	Int.	□	0340-L15C	104	64	36	6
	20	Int.	□	0340-L20C	122	82	36	6
	25	Int.	□	0340-L25C	139	99	36	6
30	Int.	□	0340-L30C	157	117	36	6	
3.5	3	Int.	□	0350S-DIN	62	20	36	6
	3	Int.	□	0350S-DIN-C	62	20	36	6
	5	Int.	□	0350L-DIN	66	28	36	6
	5	Int.	●	0350L-DIN-C	66	28	36	6
	8	Int.	□	0350-L8C	80	40	36	6
	10	Int.	□	0350-L10C	87	47	36	6
	12	Int.	●	0350-L12C	94	54	36	6
	15	Int.	□	0350-L15C	104	64	36	6
	20	Int.	●	0350-L20C	122	82	36	6
	25	Int.	□	0350-L25C	139	99	36	6
30	Int.	●	0350-L30C	157	117	36	6	

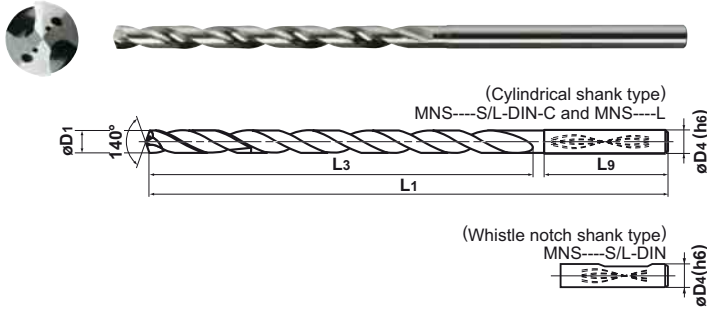
(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
3.6	3	Int.	□	MNS0360S-DIN	62	20	36	6
	3	Int.	□	0360S-DIN-C	62	20	36	6
	5	Int.	□	0360L-DIN	66	28	36	6
	5	Int.	□	0360L-DIN-C	66	28	36	6
	8	Int.	□	0360-L8C	85	45	36	6
	10	Int.	□	0360-L10C	93	53	36	6
	12	Int.	□	0360-L12C	101	61	36	6
	15	Int.	□	0360-L15C	113	73	36	6
	20	Int.	□	0360-L20C	133	93	36	6
	25	Int.	□	0360-L25C	153	113	36	6
30	Int.	□	0360-L30C	173	133	36	6	
3.7	3	Int.	□	0370S-DIN	62	20	36	6
	3	Int.	□	0370S-DIN-C	62	20	36	6
	5	Int.	□	0370L-DIN	66	28	36	6
	5	Int.	□	0370L-DIN-C	66	28	36	6
	8	Int.	□	0370-L8C	85	45	36	6
	10	Int.	□	0370-L10C	93	53	36	6
	12	Int.	□	0370-L12C	101	61	36	6
	15	Int.	□	0370-L15C	113	73	36	6
	20	Int.	□	0370-L20C	133	93	36	6
	25	Int.	□	0370-L25C	153	113	36	6
30	Int.	□	0370-L30C	173	133	36	6	
3.8	3	Int.	□	0380S-DIN	66	24	36	6
	3	Int.	□	0380S-DIN-C	66	24	36	6
	5	Int.	□	0380L-DIN	74	36	36	6
	5	Int.	□	0380L-DIN-C	74	36	36	6
	8	Int.	□	0380-L8C	85	45	36	6
	10	Int.	□	0380-L10C	93	53	36	6
	12	Int.	□	0380-L12C	101	61	36	6
	15	Int.	□	0380-L15C	113	73	36	6
	20	Int.	□	0380-L20C	133	93	36	6
	25	Int.	□	0380-L25C	153	113	36	6
30	Int.	□	0380-L30C	173	133	36	6	
3.9	3	Int.	□	0390S-DIN	66	24	36	6
	3	Int.	□	0390S-DIN-C	66	24	36	6
	5	Int.	□	0390L-DIN	74	36	36	6
	5	Int.	□	0390L-DIN-C	74	36	36	6
	8	Int.	□	0390-L8C	85	45	36	6
	10	Int.	□	0390-L10C	93	53	36	6
	12	Int.	□	0390-L12C	101	61	36	6
	15	Int.	□	0390-L15C	113	73	36	6
	20	Int.	□	0390-L20C	133	93	36	6
	25	Int.	□	0390-L25C	153	113	36	6
30	Int.	□	0390-L30C	173	133	36	6	
4.0	3	Int.	□	0400S-DIN	66	24	36	6
	3	Int.	□	0400S-DIN-C	66	24	36	6
	5	Int.	□	0400L-DIN	74	36	36	6
	5	Int.	●	0400L-DIN-C	74	36	36	6
	8	Int.	□	0400-L8C	85	45	36	6
	10	Int.	□	0400-L10C	93	53	36	6
	12	Int.	●	0400-L12C	101	61	36	6
	15	Int.	□	0400-L15C	113	73	36	6
	20	Int.	●	0400-L20C	133	93	36	6
	25	Int.	□	0400-L25C	153	113	36	6
30	Int.	●	0400-L30C	173	133	36	6	

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
4.1	3	Int.	□	MNS0410S-DIN	66	24	36	6
	3	Int.	□	0410S-DIN-C	66	24	36	6
	5	Int.	□	0410L-DIN	74	36	36	6
	5	Int.	□	0410L-DIN-C	74	36	36	6
	8	Int.	□	0410-L8C	91	51	36	6
	10	Int.	□	0410-L10C	100	60	36	6
	12	Int.	□	0410-L12C	109	69	36	6
	15	Int.	□	0410-L15C	122	82	36	6
	20	Int.	□	0410-L20C	145	105	36	6
	25	Int.	□	0410-L25C	167	127	36	6
30	Int.	□	0410-L30C	190	150	36	6	
4.2	3	Int.	□	0420S-DIN	66	24	36	6
	3	Int.	□	0420S-DIN-C	66	24	36	6
	5	Int.	□	0420L-DIN	74	36	36	6
	5	Int.	●	0420L-DIN-C	74	36	36	6
	8	Int.	□	0420-L8C	91	51	36	6
	10	Int.	□	0420-L10C	100	60	36	6
	12	Int.	●	0420-L12C	109	69	36	6
	15	Int.	□	0420-L15C	122	82	36	6
	20	Int.	●	0420-L20C	145	105	36	6
	25	Int.	□	0420-L25C	167	127	36	6
30	Int.	●	0420-L30C	190	150	36	6	
4.3	3	Int.	□	0430S-DIN	66	24	36	6
	3	Int.	□	0430S-DIN-C	66	24	36	6
	5	Int.	□	0430L-DIN	74	36	36	6
	5	Int.	□	0430L-DIN-C	74	36	36	6
	8	Int.	□	0430-L8C	91	51	36	6
	10	Int.	□	0430-L10C	100	60	36	6
	12	Int.	□	0430-L12C	109	69	36	6
	15	Int.	□	0430-L15C	122	82	36	6
	20	Int.	□	0430-L20C	145	105	36	6
	25	Int.	□	0430-L25C	167	127	36	6
30	Int.	□	0430-L30C	190	150	36	6	
4.4	3	Int.	□	0440S-DIN	66	24	36	6
	3	Int.	□	0440S-DIN-C	66	24	36	6
	5	Int.	□	0440L-DIN	74	36	36	6
	5	Int.	□	0440L-DIN-C	74	36	36	6
	8	Int.	□	0440-L8C	91	51	36	6
	10	Int.	□	0440-L10C	100	60	36	6
	12	Int.	□	0440-L12C	109	69	36	6
	15	Int.	□	0440-L15C	122	82	36	6
	20	Int.	□	0440-L20C	145	105	36	6
	25	Int.	□	0440-L25C	167	127	36	6
30	Int.	□	0440-L30C	190	150	36	6	
4.5	3	Int.	□	0450S-DIN	66	24	36	6
	3	Int.	□	0450S-DIN-C	66	24	36	6
	5	Int.	□	0450L-DIN	74	36	36	6
	5	Int.	□	0450L-DIN-C	74	36	36	6
	8	Int.	□	0450-L8C	91	51	36	6
	10	Int.	□	0450-L10C	100	60	36	6
	12	Int.	□	0450-L12C	109	69	36	6
	15	Int.	□	0450-L15C	122	82	36	6
	20	Int.	□	0450-L20C	145	105	36	6
	25	Int.	□	0450-L25C	167	127	36	6
30	Int.	□	0450-L30C	190	150	36	6	

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



■ MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

■ MNS○○○○-LOC, MNS○○○○-LOC-C Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
4.6	3	Int.	□	MNS0460S-DIN	66	24	36	6
	3	Int.	□	0460S-DIN-C	66	24	36	6
	5	Int.	□	0460L-DIN	74	36	36	6
	5	Int.	□	0460L-DIN-C	74	36	36	6
	8	Int.	□	0460-L8C	96	55	36	6
	10	Int.	□	0460-L10C	106	66	36	6
	12	Int.	□	0460-L12C	116	76	36	6
	15	Int.	□	0460-L15C	131	91	36	6
	20	Int.	□	0460-L20C	156	116	36	6
	25	Int.	□	0460-L25C	181	141	36	6
4.65	3	Int.	□	0465S-DIN	66	24	36	6
	3	Int.	□	0465S-DIN-C	66	24	36	6
	5	Int.	□	0465L-DIN	74	36	36	6
	5	Int.	□	0465L-DIN-C	74	36	36	6
4.7	3	Int.	□	0470S-DIN	66	24	36	6
	3	Int.	□	0470S-DIN-C	66	24	36	6
	5	Int.	□	0470L-DIN	74	36	36	6
	5	Int.	□	0470L-DIN-C	74	36	36	6
	8	Int.	□	0470-L8C	96	55	36	6
	10	Int.	□	0470-L10C	106	66	36	6
	12	Int.	□	0470-L12C	116	76	36	6
	15	Int.	□	0470-L15C	131	91	36	6
	20	Int.	□	0470-L20C	156	116	36	6
	25	Int.	□	0470-L25C	181	141	36	6
4.8	3	Int.	□	0480S-DIN	66	28	36	6
	3	Int.	□	0480S-DIN-C	66	28	36	6
	5	Int.	□	0480L-DIN	82	44	36	6
	5	Int.	□	0480L-DIN-C	82	44	36	6
	8	Int.	□	0480-L8C	96	55	36	6
	10	Int.	□	0480-L10C	106	66	36	6
	12	Int.	□	0480-L12C	116	76	36	6
	15	Int.	□	0480-L15C	131	91	36	6
	20	Int.	□	0480-L20C	156	116	36	6
	25	Int.	□	0480-L25C	181	141	36	6

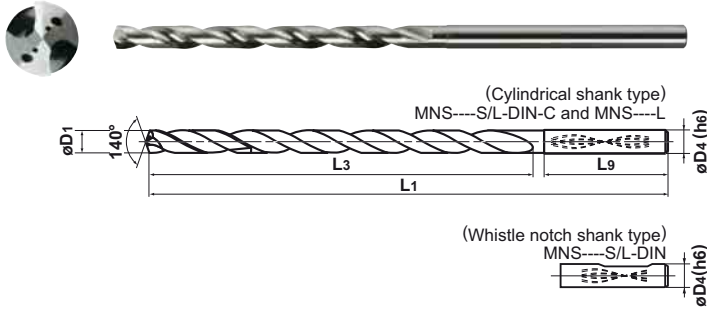
Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
4.9	3	Int.	□	MNS0490S-DIN	66	28	36	6
	3	Int.	□	0490S-DIN-C	66	28	36	6
	5	Int.	□	0490L-DIN	82	44	36	6
	5	Int.	□	0490L-DIN-C	82	44	36	6
	8	Int.	□	0490-L8C	96	55	36	6
	10	Int.	□	0490-L10C	106	66	36	6
	12	Int.	□	0490-L12C	116	76	36	6
	15	Int.	□	0490-L15C	131	91	36	6
	20	Int.	□	0490-L20C	156	116	36	6
	25	Int.	□	0490-L25C	181	141	36	6
5.0	3	Int.	□	0500S-DIN	66	28	36	6
	3	Int.	□	0500S-DIN-C	66	28	36	6
	5	Int.	□	0500L-DIN	82	44	36	6
	5	Int.	●	0500L-DIN-C	82	44	36	6
	8	Int.	□	0500-L8C	96	55	36	6
	10	Int.	□	0500-L10C	106	66	36	6
	12	Int.	●	0500-L12C	116	76	36	6
	15	Int.	□	0500-L15C	131	91	36	6
	20	Int.	●	0500-L20C	156	116	36	6
	25	Int.	□	0500-L25C	181	141	36	6
5.1	3	Int.	□	0510S-DIN	66	28	36	6
	3	Int.	□	0510S-DIN-C	66	28	36	6
	5	Int.	□	0510L-DIN	82	44	36	6
	5	Int.	●	0510L-DIN-C	82	44	36	6
	8	Int.	□	0510-L8C	102	62	36	6
	10	Int.	□	0510-L10C	113	73	36	6
	12	Int.	□	0510-L12C	124	84	36	6
	15	Int.	□	0510-L15C	140	100	36	6
	20	Int.	□	0510-L20C	168	128	36	6
	25	Int.	□	0510-L25C	195	155	36	6

(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D ₁ (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
5.2	3	Int.	□	MNS0520S-DIN	66	28	36	6
	3	Int.	□	0520S-DIN-C	66	28	36	6
	5	Int.	□	0520L-DIN	82	44	36	6
	5	Int.	□	0520L-DIN-C	82	44	36	6
	8	Int.	□	0520-L8C	102	62	36	6
	10	Int.	□	0520-L10C	113	73	36	6
	12	Int.	□	0520-L12C	124	84	36	6
	15	Int.	□	0520-L15C	140	100	36	6
	20	Int.	□	0520-L20C	168	128	36	6
	25	Int.	□	0520-L25C	195	155	36	6
30	Int.	□	0520-L30C	223	183	36	6	
5.3	3	Int.	□	0530S-DIN	66	28	36	6
	3	Int.	□	0530S-DIN-C	66	28	36	6
	5	Int.	□	0530L-DIN	82	44	36	6
	5	Int.	□	0530L-DIN-C	82	44	36	6
	8	Int.	□	0530-L8C	102	62	36	6
	10	Int.	□	0530-L10C	113	73	36	6
	12	Int.	□	0530-L12C	124	84	36	6
	15	Int.	□	0530-L15C	140	100	36	6
	20	Int.	□	0530-L20C	168	128	36	6
	25	Int.	□	0530-L25C	195	155	36	6
30	Int.	□	0530-L30C	223	183	36	6	
5.4	3	Int.	□	0540S-DIN	66	28	36	6
	3	Int.	□	0540S-DIN-C	66	28	36	6
	5	Int.	□	0540L-DIN	82	44	36	6
	5	Int.	□	0540L-DIN-C	82	44	36	6
	8	Int.	□	0540-L8C	102	62	36	6
	10	Int.	□	0540-L10C	113	73	36	6
	12	Int.	□	0540-L12C	124	84	36	6
	15	Int.	□	0540-L15C	140	100	36	6
	20	Int.	□	0540-L20C	168	128	36	6
	25	Int.	□	0540-L25C	195	155	36	6
30	Int.	□	0540-L30C	223	183	36	6	
5.5	3	Int.	□	0550S-DIN	66	28	36	6
	3	Int.	□	0550S-DIN-C	66	28	36	6
	5	Int.	□	0550L-DIN	82	44	36	6
	5	Int.	●	0550L-DIN-C	82	44	36	6
	8	Int.	□	0550-L8C	102	62	36	6
	10	Int.	□	0550-L10C	113	73	36	6
	12	Int.	●	0550-L12C	124	84	36	6
	15	Int.	□	0550-L15C	140	100	36	6
	20	Int.	●	0550-L20C	168	128	36	6
	25	Int.	□	0550-L25C	195	155	36	6
30	Int.	●	0550-L30C	223	183	36	6	
5.55	3	Int.	□	0555S-DIN	66	28	36	6
	3	Int.	□	0555S-DIN-C	66	28	36	6
	5	Int.	□	0555L-DIN	82	44	36	6
	5	Int.	●	0555L-DIN-C	82	44	36	6
5.6	3	Int.	□	0560S-DIN	66	28	36	6
	3	Int.	□	0560S-DIN-C	66	28	36	6
	5	Int.	□	0560L-DIN	82	44	36	6
	5	Int.	□	0560L-DIN-C	82	44	36	6
	8	Int.	□	0560-L8C	107	67	36	6
	10	Int.	□	0560-L10C	119	79	36	6
	12	Int.	□	0560-L12C	131	91	36	6
	15	Int.	□	0560-L15C	149	109	36	6
	20	Int.	□	0560-L20C	179	139	36	6

Drill Dia. D ₁ (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
5.6	25	Int.	□	MNS0560-L25C	209	169	36	6
	30	Int.	□	0560-L30C	239	199	36	6
5.7	3	Int.	□	0570S-DIN	66	28	36	6
	3	Int.	□	0570S-DIN-C	66	28	36	6
	5	Int.	□	0570L-DIN	82	44	36	6
	5	Int.	□	0570L-DIN-C	82	44	36	6
	8	Int.	□	0570-L8C	107	67	36	6
	10	Int.	□	0570-L10C	119	79	36	6
	12	Int.	□	0570-L12C	131	91	36	6
	15	Int.	□	0570-L15C	149	109	36	6
	20	Int.	□	0570-L20C	179	139	36	6
	25	Int.	□	0570-L25C	209	169	36	6
30	Int.	□	0570-L30C	239	199	36	6	
5.8	3	Int.	□	0580S-DIN	66	28	36	6
	3	Int.	□	0580S-DIN-C	66	28	36	6
	5	Int.	□	0580L-DIN	82	44	36	6
	5	Int.	□	0580L-DIN-C	82	44	36	6
	8	Int.	□	0580-L8C	107	67	36	6
	10	Int.	□	0580-L10C	119	79	36	6
	12	Int.	□	0580-L12C	131	91	36	6
	15	Int.	□	0580-L15C	149	109	36	6
	20	Int.	□	0580-L20C	179	139	36	6
	25	Int.	□	0580-L25C	209	169	36	6
30	Int.	□	0580-L30C	239	199	36	6	
5.9	3	Int.	□	0590S-DIN	66	28	36	6
	3	Int.	□	0590S-DIN-C	66	28	36	6
	5	Int.	□	0590L-DIN	82	44	36	6
	5	Int.	□	0590L-DIN-C	82	44	36	6
	8	Int.	□	0590-L8C	107	67	36	6
	10	Int.	□	0590-L10C	119	79	36	6
	12	Int.	□	0590-L12C	131	91	36	6
	15	Int.	□	0590-L15C	149	109	36	6
	20	Int.	□	0590-L20C	179	139	36	6
	25	Int.	□	0590-L25C	209	169	36	6
30	Int.	□	0590-L30C	239	199	36	6	
6.0	3	Int.	□	0600S-DIN	66	28	36	6
	3	Int.	□	0600S-DIN-C	66	28	36	6
	5	Int.	□	0600L-DIN	82	44	36	6
	5	Int.	●	0600L-DIN-C	82	44	36	6
	8	Int.	□	0600-L8C	107	67	36	6
	10	Int.	□	0600-L10C	119	79	36	6
	12	Int.	●	0600-L12C	131	91	36	6
	15	Int.	□	0600-L15C	149	109	36	6
	20	Int.	●	0600-L20C	179	139	36	6
	25	Int.	□	0600-L25C	209	169	36	6
30	Int.	●	0600-L30C	239	199	36	6	
6.1	3	Int.	□	0610S-DIN	79	34	36	8
	3	Int.	□	0610S-DIN-C	79	34	36	8
	5	Int.	□	0610L-DIN	91	53	36	8
	5	Int.	□	0610L-DIN-C	91	53	36	8
	8	Int.	□	0610-L8C	113	73	36	8
	10	Int.	□	0610-L10C	126	86	36	8
	12	Int.	□	0610-L12C	139	99	36	8
	15	Int.	□	0610-L15C	158	118	36	8
	20	Int.	□	0610-L20C	191	151	36	8
	25	Int.	□	0610-L25C	223	183	36	8
30	Int.	□	0610-L30C	256	216	36	8	

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys



■ MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

■ MNS○○○○-LOC, MNS○○○○-LOC C Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
6.2	3	Int.	□	MNS0620S-DIN	79	34	36	8
	3	Int.	□	0620S-DIN-C	79	34	36	8
	5	Int.	□	0620L-DIN	91	53	36	8
	5	Int.	□	0620L-DIN-C	91	53	36	8
	8	Int.	□	0620-L8C	113	73	36	8
	10	Int.	□	0620-L10C	126	86	36	8
	12	Int.	□	0620-L12C	139	99	36	8
	15	Int.	□	0620-L15C	158	118	36	8
	20	Int.	□	0620-L20C	191	151	36	8
	25	Int.	□	0620-L25C	223	183	36	8
30	Int.	□	0620-L30C	256	216	36	8	
6.3	3	Int.	□	0630S-DIN	79	34	36	8
	3	Int.	□	0630S-DIN-C	79	34	36	8
	5	Int.	□	0630L-DIN	91	53	36	8
	5	Int.	□	0630L-DIN-C	91	53	36	8
	8	Int.	□	0630-L8C	113	73	36	8
	10	Int.	□	0630-L10C	126	86	36	8
	12	Int.	□	0630-L12C	139	99	36	8
	15	Int.	□	0630-L15C	158	118	36	8
	20	Int.	□	0630-L20C	191	151	36	8
	25	Int.	□	0630-L25C	223	183	36	8
30	Int.	□	0630-L30C	256	216	36	8	
6.4	3	Int.	□	0640S-DIN	79	34	36	8
	3	Int.	□	0640S-DIN-C	79	34	36	8
	5	Int.	□	0640L-DIN	91	53	36	8
	5	Int.	□	0640L-DIN-C	91	53	36	8
	8	Int.	□	0640-L8C	113	73	36	8
	10	Int.	□	0640-L10C	126	86	36	8
	12	Int.	□	0640-L12C	139	99	36	8
	15	Int.	□	0640-L15C	158	118	36	8
	20	Int.	□	0640-L20C	191	151	36	8
	25	Int.	□	0640-L25C	223	183	36	8
30	Int.	□	0640-L30C	256	216	36	8	

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
6.5	3	Int.	□	MNS0650S-DIN	79	34	36	8
	3	Int.	□	0650S-DIN-C	79	34	36	8
	5	Int.	□	0650L-DIN	91	53	36	8
	5	Int.	●	0650L-DIN-C	91	53	36	8
	8	Int.	□	0650-L8C	113	73	36	8
	10	Int.	□	0650-L10C	126	86	36	8
	12	Int.	●	0650-L12C	139	99	36	8
	15	Int.	□	0650-L15C	158	118	36	8
	20	Int.	●	0650-L20C	191	151	36	8
	25	Int.	□	0650-L25C	223	183	36	8
30	Int.	●	0650-L30C	256	216	36	8	
6.6	3	Int.	□	0660S-DIN	79	34	36	8
	3	Int.	□	0660S-DIN-C	79	34	36	8
	5	Int.	□	0660L-DIN	91	53	36	8
	5	Int.	□	0660L-DIN-C	91	53	36	8
	8	Int.	□	0660-L8C	118	78	36	8
	10	Int.	□	0660-L10C	132	92	36	8
	12	Int.	□	0660-L12C	146	106	36	8
	15	Int.	□	0660-L15C	167	127	36	8
	20	Int.	□	0660-L20C	202	162	36	8
	25	Int.	□	0660-L25C	237	197	36	8
30	Int.	□	0660-L30C	272	232	36	8	
6.7	3	Int.	□	0670S-DIN	79	34	36	8
	3	Int.	□	0670S-DIN-C	79	34	36	8
	5	Int.	□	0670L-DIN	91	53	36	8
	5	Int.	□	0670L-DIN-C	91	53	36	8
	8	Int.	□	0670-L8C	118	78	36	8
	10	Int.	□	0670-L10C	132	92	36	8
	12	Int.	□	0670-L12C	146	106	36	8
	15	Int.	□	0670-L15C	167	127	36	8
	20	Int.	□	0670-L20C	202	162	36	8
	25	Int.	□	0670-L25C	237	197	36	8
30	Int.	□	0670-L30C	272	232	36	8	

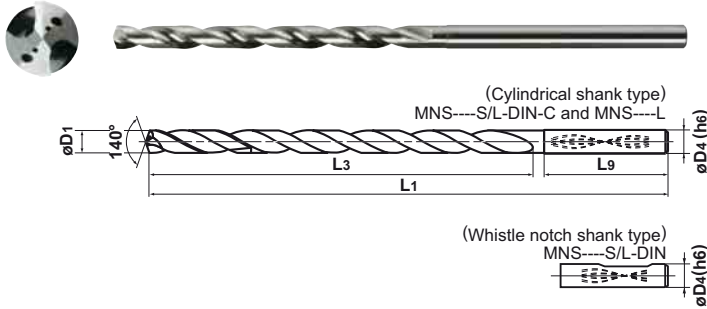
(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
6.8	3	Int.	□	MNS0680S-DIN	79	34	36	8
	3	Int.	□	0680S-DIN-C	79	34	36	8
	5	Int.	□	0680L-DIN	79	34	36	8
	5	Int.	●	0680L-DIN-C	91	53	36	8
	8	Int.	□	0680-L8C	118	78	36	8
	10	Int.	□	0680-L10C	132	92	36	8
	12	Int.	●	0680-L12C	146	106	36	8
	15	Int.	□	0680-L15C	167	127	36	8
	20	Int.	●	0680-L20C	202	162	36	8
	25	Int.	□	0680-L25C	237	197	36	8
30	Int.	●	0680-L30C	272	232	36	8	
6.9	3	Int.	□	0690S-DIN	79	34	36	8
	3	Int.	□	0690S-DIN-C	79	34	36	8
	5	Int.	□	0690L-DIN	91	53	36	8
	5	Int.	□	0690L-DIN-C	91	53	36	8
	8	Int.	□	0690-L8C	118	78	36	8
	10	Int.	□	0690-L10C	132	92	36	8
	12	Int.	□	0690-L12C	146	106	36	8
	15	Int.	□	0690-L15C	167	127	36	8
	20	Int.	□	0690-L20C	202	162	36	8
	25	Int.	□	0690-L25C	237	197	36	8
30	Int.	□	0690-L30C	272	232	36	8	
7.0	3	Int.	□	0700S-DIN	79	34	36	8
	3	Int.	□	0700S-DIN-C	79	34	36	8
	5	Int.	□	0700L-DIN	91	53	36	8
	5	Int.	●	0700L-DIN-C	91	53	36	8
	8	Int.	□	0700-L8C	118	78	36	8
	10	Int.	□	0700-L10C	132	92	36	8
	12	Int.	●	0700-L12C	146	106	36	8
	15	Int.	□	0700-L15C	167	127	36	8
	20	Int.	●	0700-L20C	202	162	36	8
	25	Int.	□	0700-L25C	237	197	36	8
30	Int.	●	0700-L30C	272	232	36	8	
7.1	3	Int.	□	0710S-DIN	79	41	36	8
	3	Int.	□	0710S-DIN-C	79	41	36	8
	5	Int.	□	0710L-DIN	91	53	36	8
	5	Int.	□	0710L-DIN-C	91	53	36	8
	8	Int.	□	0710-L8C	124	84	36	8
	10	Int.	□	0710-L10C	139	99	36	8
	12	Int.	□	0710-L12C	154	114	36	8
	15	Int.	□	0710-L15C	176	136	36	8
	20	Int.	□	0710-L20C	214	174	36	8
	25	Int.	□	0710-L25C	251	211	36	8
30	Int.	□	0710-L30C	289	249	36	8	
7.2	3	Int.	□	0720S-DIN	79	41	36	8
	3	Int.	□	0720S-DIN-C	79	41	36	8
	5	Int.	□	0720L-DIN	91	53	36	8
	5	Int.	□	0720L-DIN-C	91	53	36	8
	8	Int.	□	0720-L8C	124	84	36	8
	10	Int.	□	0720-L10C	139	99	36	8
	12	Int.	□	0720-L12C	154	114	36	8
	15	Int.	□	0720-L15C	176	136	36	8
	20	Int.	□	0720-L20C	214	174	36	8
	25	Int.	□	0720-L25C	251	211	36	8
30	Int.	□	0720-L30C	289	249	36	8	

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
7.3	3	Int.	□	MNS0730S-DIN	79	41	36	8
	3	Int.	□	0730S-DIN-C	79	41	36	8
	5	Int.	□	0730L-DIN	91	53	36	8
	5	Int.	□	0730L-DIN-C	91	53	36	8
	8	Int.	□	0730-L8C	124	84	36	8
	10	Int.	□	0730-L10C	139	99	36	8
	12	Int.	□	0730-L12C	154	114	36	8
	15	Int.	□	0730-L15C	176	136	36	8
	20	Int.	□	0730-L20C	214	174	36	8
	25	Int.	□	0730-L25C	251	211	36	8
30	Int.	□	0730-L30C	289	249	36	8	
7.4	3	Int.	□	0740S-DIN	79	41	36	8
	3	Int.	□	0740S-DIN-C	79	41	36	8
	5	Int.	□	0740L-DIN	91	53	36	8
	5	Int.	□	0740L-DIN-C	91	53	36	8
	8	Int.	□	0740-L8C	124	84	36	8
	10	Int.	□	0740-L10C	139	99	36	8
	12	Int.	□	0740-L12C	154	114	36	8
	15	Int.	□	0740-L15C	176	136	36	8
	20	Int.	□	0740-L20C	214	174	36	8
	25	Int.	□	0740-L25C	251	211	36	8
30	Int.	□	0740-L30C	289	249	36	8	
7.5	3	Int.	□	0750S-DIN	79	41	36	8
	3	Int.	□	0750S-DIN-C	79	41	36	8
	5	Int.	□	0750L-DIN	91	53	36	8
	5	Int.	□	0750L-DIN-C	91	53	36	8
	8	Int.	□	0750-L8C	124	84	36	8
	10	Int.	□	0750-L10C	139	99	36	8
	12	Int.	□	0750-L12C	154	114	36	8
	15	Int.	□	0750-L15C	176	136	36	8
	20	Int.	□	0750-L20C	214	174	36	8
	25	Int.	□	0750-L25C	251	211	36	8
30	Int.	□	0750-L30C	289	249	36	8	
7.6	3	Int.	□	0760S-DIN	79	41	36	8
	3	Int.	□	0760S-DIN-C	79	41	36	8
	5	Int.	□	0760L-DIN	91	53	36	8
	5	Int.	□	0760L-DIN-C	91	53	36	8
	8	Int.	□	0760-L8C	129	89	36	8
	10	Int.	□	0760-L10C	145	105	36	8
	12	Int.	□	0760-L12C	161	121	36	8
	15	Int.	□	0760-L15C	185	145	36	8
	20	Int.	□	0760-L20C	225	185	36	8
	25	Int.	□	0760-L25C	265	225	36	8
30	Int.	□	0760-L30C	305	265	36	8	
7.7	3	Int.	□	0770S-DIN	79	41	36	8
	3	Int.	□	0770S-DIN-C	79	41	36	8
	5	Int.	□	0770L-DIN	91	53	36	8
	5	Int.	□	0770L-DIN-C	91	53	36	8
	8	Int.	□	0770-L8C	129	89	36	8
	10	Int.	□	0770-L10C	145	105	36	8
	12	Int.	□	0770-L12C	161	121	36	8
	15	Int.	□	0770-L15C	185	145	36	8
	20	Int.	□	0770-L20C	225	185	36	8
	25	Int.	□	0770-L25C	265	225	36	8
30	Int.	□	0770-L30C	305	265	36	8	

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



■ MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

■ MNS○○○○-LOC, MNS○○○○-LOC-C Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
7.8	3	Int.	□	MNS0780S-DIN	79	41	36	8
	3	Int.	□	0780S-DIN-C	79	41	36	8
	5	Int.	□	0780L-DIN	91	53	36	8
	5	Int.	□	0780L-DIN-C	91	53	36	8
	8	Int.	□	0780-L8C	129	89	36	8
	10	Int.	□	0780-L10C	145	105	36	8
	12	Int.	□	0780-L12C	161	121	36	8
	15	Int.	□	0780-L15C	185	145	36	8
	20	Int.	□	0780-L20C	225	185	36	8
	25	Int.	□	0780-L25C	265	225	36	8
7.9	3	Int.	□	0790S-DIN	79	41	36	8
	3	Int.	□	0790S-DIN-C	79	41	36	8
	5	Int.	□	0790L-DIN	91	53	36	8
	5	Int.	□	0790L-DIN-C	91	53	36	8
	8	Int.	□	0790-L8C	129	89	36	8
	10	Int.	□	0790-L10C	145	105	36	8
	12	Int.	□	0790-L12C	161	121	36	8
	15	Int.	□	0790-L15C	185	145	36	8
	20	Int.	□	0790-L20C	225	185	36	8
	25	Int.	□	0790-L25C	265	225	36	8
8.0	3	Int.	□	0800S-DIN	79	41	36	8
	3	Int.	□	0800S-DIN-C	79	41	36	8
	5	Int.	□	0800L-DIN	91	53	36	8
	5	Int.	●	0800L-DIN-C	91	53	36	8
	8	Int.	□	0800-L8C	129	89	36	8
	10	Int.	□	0800-L10C	145	105	36	8
	12	Int.	●	0800-L12C	161	121	36	8
	15	Int.	□	0800-L15C	185	145	36	8
	20	Int.	●	0800-L20C	225	185	36	8
	25	Int.	□	0800-L25C	265	225	36	8

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
8.1	3	Int.	□	MNS0810S-DIN	88	46	40	10
	3	Int.	□	0810S-DIN-C	88	46	40	10
	5	Int.	□	0810L-DIN	102	60	40	10
	5	Int.	□	0810L-DIN-C	102	60	40	10
	8	Int.	□	0810-L8C	139	95	40	10
	10	Int.	□	0810-L10C	156	112	40	10
	12	Int.	□	0810-L12C	173	129	40	10
	15	Int.	□	0810-L15C	198	154	40	10
	20	Int.	□	0810-L20C	241	197	40	10
	25	Int.	□	0810-L25C	283	239	40	10
8.2	3	Int.	□	0820S-DIN	88	46	40	10
	3	Int.	□	0820S-DIN-C	88	46	40	10
	5	Int.	□	0820L-DIN	102	60	40	10
	5	Int.	□	0820L-DIN-C	102	60	40	10
	8	Int.	□	0820-L8C	139	95	40	10
	10	Int.	□	0820-L10C	156	112	40	10
	12	Int.	□	0820-L12C	173	129	40	10
	15	Int.	□	0820-L15C	198	154	40	10
	20	Int.	□	0820-L20C	241	197	40	10
	25	Int.	□	0820-L25C	283	239	40	10
8.3	3	Int.	□	0830S-DIN	88	46	40	10
	3	Int.	□	0830S-DIN-C	88	46	40	10
	5	Int.	□	0830L-DIN	102	60	40	10
	5	Int.	□	0830L-DIN-C	102	60	40	10
	8	Int.	□	0830-L8C	139	95	40	10
	10	Int.	□	0830-L10C	156	112	40	10
	12	Int.	□	0830-L12C	173	129	40	10
	15	Int.	□	0830-L15C	198	154	40	10
	20	Int.	□	0830-L20C	241	197	40	10
	25	Int.	□	0830-L25C	283	239	40	10

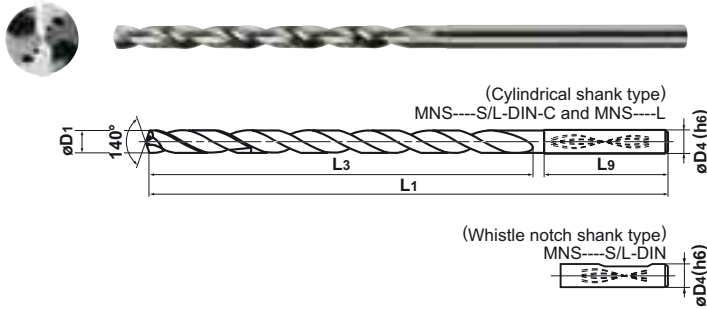
(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
8.4	3	Int.	□	MNS0840S-DIN	88	46	40	10
	3	Int.	□	0840S-DIN-C	88	46	40	10
	5	Int.	□	0840L-DIN	102	60	40	10
	5	Int.	□	0840L-DIN-C	102	60	40	10
	8	Int.	□	0840-L8C	139	95	40	10
	10	Int.	□	0840-L10C	156	112	40	10
	12	Int.	□	0840-L12C	173	129	40	10
	15	Int.	□	0840-L15C	198	154	40	10
	20	Int.	□	0840-L20C	241	197	40	10
	25	Int.	□	0840-L25C	283	239	40	10
30	Int.	□	0840-L30C	326	282	40	10	
8.5	3	Int.	□	0850S-DIN	88	46	40	10
	3	Int.	□	0850S-DIN-C	88	46	40	10
	5	Int.	□	0850L-DIN	102	60	40	10
	5	Int.	●	0850L-DIN-C	102	60	40	10
	8	Int.	□	0850-L8C	139	95	40	10
	10	Int.	□	0850-L10C	156	112	40	10
	12	Int.	●	0850-L12C	173	129	40	10
	15	Int.	□	0850-L15C	198	154	40	10
	20	Int.	●	0850-L20C	241	197	40	10
	25	Int.	□	0850-L25C	283	239	40	10
30	Int.	●	0850-L30C	326	282	40	10	
8.6	3	Int.	□	0860S-DIN	88	46	40	10
	3	Int.	□	0860S-DIN-C	88	46	40	10
	5	Int.	□	0860L-DIN	102	60	40	10
	5	Int.	□	0860L-DIN-C	102	60	40	10
	8	Int.	□	0860-L8C	144	100	40	10
	10	Int.	□	0860-L10C	162	118	40	10
	12	Int.	□	0860-L12C	180	136	40	10
	15	Int.	□	0860-L15C	207	163	40	10
	20	Int.	□	0860-L20C	252	208	40	10
	25	Int.	□	0860-L25C	297	253	40	10
30	Int.	□	0860-L30C	342	298	40	10	
8.7	3	Int.	□	0870S-DIN	88	46	40	10
	3	Int.	□	0870S-DIN-C	88	46	40	10
	5	Int.	□	0870L-DIN	102	60	40	10
	5	Int.	□	0870L-DIN-C	102	60	40	10
	8	Int.	□	0870-L8C	144	100	40	10
	10	Int.	□	0870-L10C	162	118	40	10
	12	Int.	□	0870-L12C	180	136	40	10
	15	Int.	□	0870-L15C	207	163	40	10
	20	Int.	□	0870-L20C	252	208	40	10
	25	Int.	□	0870-L25C	297	253	40	10
30	Int.	□	0870-L30C	342	298	40	10	
8.8	3	Int.	□	0880S-DIN	88	46	40	10
	3	Int.	□	0880S-DIN-C	88	46	40	10
	5	Int.	□	0880L-DIN	102	60	40	10
	5	Int.	□	0880L-DIN-C	102	60	40	10
	8	Int.	□	0880-L8C	144	100	40	10
	10	Int.	□	0880-L10C	162	118	40	10
	12	Int.	□	0880-L12C	180	136	40	10
	15	Int.	□	0880-L15C	207	163	40	10
	20	Int.	□	0880-L20C	252	208	40	10
	25	Int.	□	0880-L25C	297	253	40	10
30	Int.	□	0880-L30C	342	298	40	10	

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
8.9	3	Int.	□	MNS0890S-DIN	88	46	40	10
	3	Int.	□	0890S-DIN-C	88	46	40	10
	5	Int.	□	0890L-DIN	102	60	40	10
	5	Int.	□	0890L-DIN-C	102	60	40	10
	8	Int.	□	0890-L8C	144	100	40	10
	10	Int.	□	0890-L10C	162	118	40	10
	12	Int.	□	0890-L12C	180	136	40	10
	15	Int.	□	0890-L15C	207	163	40	10
	20	Int.	□	0890-L20C	252	208	40	10
	25	Int.	□	0890-L25C	297	253	40	10
30	Int.	□	0890-L30C	342	298	40	10	
9.0	3	Int.	□	0900S-DIN	88	46	40	10
	3	Int.	□	0900S-DIN-C	88	46	40	10
	5	Int.	□	0900L-DIN	102	60	40	10
	5	Int.	●	0900L-DIN-C	102	60	40	10
	8	Int.	□	0900-L8C	144	100	40	10
	10	Int.	□	0900-L10C	162	118	40	10
	12	Int.	●	0900-L12C	180	136	40	10
	15	Int.	□	0900-L15C	207	163	40	10
	20	Int.	●	0900-L20C	252	208	40	10
	25	Int.	□	0900-L25C	297	253	40	10
30	Int.	●	0900-L30C	342	298	40	10	
9.1	3	Int.	□	0910S-DIN	89	47	40	10
	3	Int.	□	0910S-DIN-C	89	47	40	10
	5	Int.	□	0910L-DIN	103	62	40	10
	5	Int.	□	0910L-DIN-C	103	62	40	10
	8	Int.	□	0910-L8C	151	107	40	10
	10	Int.	□	0910-L10C	170	126	40	10
	12	Int.	□	0910-L12C	189	145	40	10
	15	Int.	□	0910-L15C	217	173	40	10
	20	Int.	□	0910-L20C	265	221	40	10
	25	Int.	□	0910-L25C	312	268	40	10
30	Int.	□	0910-L30C	360	316	40	10	
9.2	3	Int.	□	0920S-DIN	89	47	40	10
	3	Int.	□	0920S-DIN-C	89	47	40	10
	5	Int.	□	0920L-DIN	103	62	40	10
	5	Int.	□	0920L-DIN-C	103	62	40	10
	8	Int.	□	0920-L8C	151	107	40	10
	10	Int.	□	0920-L10C	170	126	40	10
	12	Int.	□	0920-L12C	189	145	40	10
	15	Int.	□	0920-L15C	217	173	40	10
	20	Int.	□	0920-L20C	265	221	40	10
	25	Int.	□	0920-L25C	312	268	40	10
30	Int.	□	0920-L30C	360	316	40	10	
9.3	3	Int.	□	0930S-DIN	89	47	40	10
	3	Int.	□	0930S-DIN-C	89	47	40	10
	5	Int.	□	0930L-DIN	103	62	40	10
	5	Int.	□	0930L-DIN-C	103	62	40	10
	8	Int.	□	0930-L8C	151	107	40	10
	10	Int.	□	0930-L10C	170	126	40	10
	12	Int.	□	0930-L12C	189	145	40	10
	15	Int.	□	0930-L15C	217	173	40	10
	20	Int.	□	0930-L20C	265	221	40	10
	25	Int.	□	0930-L25C	312	268	40	10
30	Int.	□	0930-L30C	360	316	40	10	

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



■ MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

■ MNS○○○○-LOC, MNS○○○○-LOC C Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
9.4	3	Int.	□	MNS0940S-DIN	89	47	40	10
	3	Int.	□	0940S-DIN-C	89	47	40	10
	5	Int.	□	0940L-DIN	103	62	40	10
	5	Int.	□	0940L-DIN-C	103	62	40	10
	8	Int.	□	0940-L8C	151	107	40	10
	10	Int.	□	0940-L10C	170	126	40	10
	12	Int.	□	0940-L12C	189	145	40	10
	15	Int.	□	0940-L15C	217	173	40	10
	20	Int.	□	0940-L20C	265	221	40	10
	25	Int.	□	0940-L25C	312	268	40	10
30	Int.	□	0940-L30C	360	316	40	10	
9.5	3	Int.	□	0950S-DIN	89	47	40	10
	3	Int.	□	0950S-DIN-C	89	47	40	10
	5	Int.	□	0950L-DIN	103	62	40	10
	5	Int.	□	0950L-DIN-C	103	62	40	10
	8	Int.	□	0950-L8C	151	107	40	10
	10	Int.	□	0950-L10C	170	126	40	10
	12	Int.	□	0950-L12C	189	145	40	10
	15	Int.	□	0950-L15C	217	173	40	10
	20	Int.	□	0950-L20C	265	221	40	10
	25	Int.	□	0950-L25C	312	268	40	10
30	Int.	□	0950-L30C	360	316	40	10	
9.6	3	Int.	□	0960S-DIN	89	47	40	10
	3	Int.	□	0960S-DIN-C	89	47	40	10
	5	Int.	□	0960L-DIN	103	62	40	10
	5	Int.	□	0960L-DIN-C	103	62	40	10
	8	Int.	□	0960-L8C	156	112	40	10
	10	Int.	□	0960-L10C	176	132	40	10
	12	Int.	□	0960-L12C	196	152	40	10
	15	Int.	□	0960-L15C	226	182	40	10
	20	Int.	□	0960-L20C	276	232	40	10
	25	Int.	□	0960-L25C	326	282	40	10
30	Int.	□	0960-L30C	376	332	40	10	

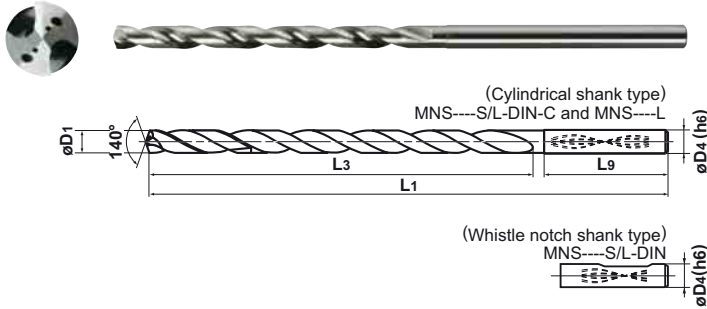
Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
9.7	3	Int.	□	MNS0970S-DIN	89	47	40	10
	3	Int.	□	0970S-DIN-C	89	47	40	10
	5	Int.	□	0970L-DIN	103	62	40	10
	5	Int.	□	0970L-DIN-C	103	62	40	10
	8	Int.	□	0970-L8C	156	112	40	10
	10	Int.	□	0970-L10C	176	132	40	10
	12	Int.	□	0970-L12C	196	152	40	10
	15	Int.	□	0970-L15C	226	182	40	10
	20	Int.	□	0970-L20C	276	232	40	10
	25	Int.	□	0970-L25C	326	282	40	10
30	Int.	□	0970-L30C	376	332	40	10	
9.8	3	Int.	□	0980S-DIN	89	47	40	10
	3	Int.	□	0980S-DIN-C	89	47	40	10
	5	Int.	□	0980L-DIN	103	62	40	10
	5	Int.	□	0980L-DIN-C	103	62	40	10
	8	Int.	□	0980-L8C	156	112	40	10
	10	Int.	□	0980-L10C	176	132	40	10
	12	Int.	□	0980-L12C	196	152	40	10
	15	Int.	□	0980-L15C	226	182	40	10
	20	Int.	□	0980-L20C	276	232	40	10
	25	Int.	□	0980-L25C	326	282	40	10
30	Int.	□	0980-L30C	376	332	40	10	
9.9	3	Int.	□	0990S-DIN	89	47	40	10
	3	Int.	□	0990S-DIN-C	89	47	40	10
	5	Int.	□	0990L-DIN	103	62	40	10
	5	Int.	□	0990L-DIN-C	103	62	40	10
	8	Int.	□	0990-L8C	156	112	40	10
	10	Int.	□	0990-L10C	176	132	40	10
	12	Int.	□	0990-L12C	196	152	40	10
	15	Int.	□	0990-L15C	226	182	40	10
	20	Int.	□	0990-L20C	276	232	40	10
	25	Int.	□	0990-L25C	326	282	40	10
30	Int.	□	0990-L30C	376	332	40	10	

(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
10.0	3	Int.	□	MNS1000S-DIN	89	47	40	10
	3	Int.	□	1000S-DIN-C	89	47	40	10
	5	Int.	□	1000L-DIN	103	62	40	10
	5	Int.	●	1000L-DIN-C	103	62	40	10
	8	Int.	□	1000-L8C	156	112	40	10
	10	Int.	□	1000-L10C	176	132	40	10
	12	Int.	●	1000-L12C	196	152	40	10
	15	Int.	□	1000-L15C	226	182	40	10
	20	Int.	●	1000-L20C	276	232	40	10
	25	Int.	□	1000-L25C	326	282	40	10
30	Int.	●	1000-L30C	376	332	40	10	
10.1	3	Int.	□	1010S-DIN	102	55	45	12
	3	Int.	□	1010S-DIN-C	102	55	45	12
	5	Int.	□	1010L-DIN	118	71	45	12
	5	Int.	□	1010L-DIN-C	118	71	45	12
	8	Int.	□	1010-L8C	167	118	45	12
	10	Int.	□	1010-L10C	188	139	45	12
	12	Int.	□	1010-L12C	209	160	45	12
	15	Int.	□	1010-L15C	240	191	45	12
	20	Int.	□	1010-L20C	293	244	45	12
	25	Int.	□	1010-L25C	345	296	45	12
10.2	3	Int.	□	1020S-DIN	102	55	45	12
	3	Int.	□	1020S-DIN-C	102	55	45	12
	5	Int.	□	1020L-DIN	118	71	45	12
	5	Int.	□	1020L-DIN-C	118	71	45	12
	8	Int.	□	1020-L8C	167	118	45	12
	10	Int.	□	1020-L10C	188	139	45	12
	12	Int.	□	1020-L12C	209	160	45	12
	15	Int.	□	1020-L15C	240	191	45	12
	20	Int.	□	1020-L20C	293	244	45	12
	25	Int.	□	1020-L25C	345	296	45	12
10.3	3	Int.	□	1030S-DIN	102	55	45	12
	3	Int.	□	1030S-DIN-C	102	55	45	12
	5	Int.	□	1030L-DIN	118	71	45	12
	5	Int.	□	1030L-DIN-C	118	71	45	12
	8	Int.	□	1030-L8C	167	118	45	12
	10	Int.	□	1030-L10C	188	139	45	12
	12	Int.	□	1030-L12C	209	160	45	12
	15	Int.	□	1030-L15C	240	191	45	12
	20	Int.	□	1030-L20C	293	244	45	12
	25	Int.	□	1030-L25C	345	296	45	12
10.4	3	Int.	□	1040S-DIN	102	55	45	12
	3	Int.	□	1040S-DIN-C	102	55	45	12
	5	Int.	□	1040L-DIN	118	71	45	12
	5	Int.	□	1040L-DIN-C	118	71	45	12
	8	Int.	□	1040-L8C	167	118	45	12
	10	Int.	□	1040-L10C	188	139	45	12
	12	Int.	□	1040-L12C	209	160	45	12
	15	Int.	□	1040-L15C	240	191	45	12
	20	Int.	□	1040-L20C	293	244	45	12
	25	Int.	□	1040-L25C	345	296	45	12

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
10.5	3	Int.	□	MNS1050S-DIN	102	55	45	12
	3	Int.	□	1050S-DIN-C	102	55	45	12
	5	Int.	□	1050L-DIN	118	71	45	12
	5	Int.	□	1050L-DIN-C	118	71	45	12
	8	Int.	□	1050-L8C	167	118	45	12
	10	Int.	□	1050-L10C	188	139	45	12
	12	Int.	□	1050-L12C	209	160	45	12
	15	Int.	□	1050-L15C	240	191	45	12
	20	Int.	□	1050-L20C	293	244	45	12
	25	Int.	□	1050-L25C	345	296	45	12
10.6	3	Int.	□	1060S-DIN	102	55	45	12
	3	Int.	□	1060S-DIN-C	102	55	45	12
	5	Int.	□	1060L-DIN	118	71	45	12
	5	Int.	□	1060L-DIN-C	118	71	45	12
	8	Int.	□	1060-L8C	172	123	45	12
	10	Int.	□	1060-L10C	194	145	45	12
	12	Int.	□	1060-L12C	216	167	45	12
	15	Int.	□	1060-L15C	249	200	45	12
	20	Int.	□	1060-L20C	304	255	45	12
	25	Int.	□	1060-L25C	359	310	45	12
10.7	3	Int.	□	1070S-DIN	102	55	45	12
	3	Int.	□	1070S-DIN-C	102	55	45	12
	5	Int.	□	1070L-DIN	118	71	45	12
	5	Int.	□	1070L-DIN-C	118	71	45	12
	8	Int.	□	1070-L8C	172	123	45	12
	10	Int.	□	1070-L10C	194	145	45	12
	12	Int.	□	1070-L12C	216	167	45	12
	15	Int.	□	1070-L15C	249	200	45	12
	20	Int.	□	1070-L20C	304	255	45	12
	25	Int.	□	1070-L25C	359	310	45	12
10.8	3	Int.	□	1080S-DIN	102	55	45	12
	3	Int.	□	1080S-DIN-C	102	55	45	12
	5	Int.	□	1080L-DIN	118	71	45	12
	5	Int.	□	1080L-DIN-C	118	71	45	12
	8	Int.	□	1080-L8C	172	123	45	12
	10	Int.	□	1080-L10C	194	145	45	12
	12	Int.	□	1080-L12C	216	167	45	12
	15	Int.	□	1080-L15C	249	200	45	12
	20	Int.	□	1080-L20C	304	255	45	12
	25	Int.	□	1080-L25C	359	310	45	12
10.9	3	Int.	□	1090S-DIN	102	55	45	12
	3	Int.	□	1090S-DIN-C	102	55	45	12
	5	Int.	□	1090L-DIN	118	71	45	12
	5	Int.	□	1090L-DIN-C	118	71	45	12
	8	Int.	□	1090-L8C	172	123	45	12
	10	Int.	□	1090-L10C	194	145	45	12
	12	Int.	□	1090-L12C	216	167	45	12
	15	Int.	□	1090-L15C	249	200	45	12
	20	Int.	□	1090-L20C	304	255	45	12
	25	Int.	□	1090-L25C	359	310	45	12

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys



■ MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

■ MNS○○○○-LOC, MNS○○○○-LOCDC Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
11.0	3	Int.	□	MNS1100S-DIN	102	55	45	12
	3	Int.	□	1100S-DIN-C	102	55	45	12
	5	Int.	□	1100L-DIN	118	71	45	12
	5	Int.	●	1100L-DIN-C	118	71	45	12
	8	Int.	□	1100-L8C	172	123	45	12
	10	Int.	□	1100-L10C	194	145	45	12
	12	Int.	●	1100-L12C	216	167	45	12
	15	Int.	□	1100-L15C	249	200	45	12
	20	Int.	●	1100-L20C	304	255	45	12
25	Int.	□	1100-L25C	359	310	45	12	
11.1	3	Int.	□	1110S-DIN	102	55	45	12
	3	Int.	□	1110S-DIN-C	102	55	45	12
	5	Int.	□	1110L-DIN	118	71	45	12
	5	Int.	□	1110L-DIN-C	118	71	45	12
	8	Int.	□	1110-L8C	178	129	45	12
	10	Int.	□	1110-L10C	201	152	45	12
	12	Int.	□	1110-L12C	224	175	45	12
	15	Int.	□	1110-L15C	258	209	45	12
	20	Int.	□	1110-L20C	316	267	45	12
25	Int.	□	1110-L25C	373	324	45	12	
11.2	3	Int.	□	1120S-DIN	102	55	45	12
	3	Int.	□	1120S-DIN-C	102	55	45	12
	5	Int.	□	1120L-DIN	118	71	45	12
	5	Int.	□	1120L-DIN-C	118	71	45	12
	8	Int.	□	1120-L8C	178	129	45	12
	10	Int.	□	1120-L10C	201	152	45	12
	12	Int.	□	1120-L12C	224	175	45	12
	15	Int.	□	1120-L15C	258	209	45	12
	20	Int.	□	1120-L20C	316	267	45	12
25	Int.	□	1120-L25C	373	324	45	12	
11.3	3	Int.	□	1130S-DIN	102	55	45	12
	3	Int.	□	1130S-DIN-C	102	55	45	12
	5	Int.	□	1130L-DIN	118	71	45	12
	5	Int.	□	1130L-DIN-C	118	71	45	12
	8	Int.	□	1130-L8C	178	129	45	12
	10	Int.	□	1130-L10C	201	152	45	12
	12	Int.	□	1130-L12C	224	175	45	12
	15	Int.	□	1130-L15C	258	209	45	12
	20	Int.	□	1130-L20C	316	267	45	12
25	Int.	□	1130-L25C	373	324	45	12	

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
11.4	3	Int.	□	MNS1140S-DIN	102	55	45	12
	3	Int.	□	1140S-DIN-C	102	55	45	12
	5	Int.	□	1140L-DIN	118	71	45	12
	5	Int.	□	1140L-DIN-C	118	71	45	12
	8	Int.	□	1140-L8C	178	129	45	12
	10	Int.	□	1140-L10C	201	152	45	12
	12	Int.	□	1140-L12C	224	175	45	12
	15	Int.	□	1140-L15C	258	209	45	12
	20	Int.	□	1140-L20C	316	267	45	12
25	Int.	□	1140-L25C	373	324	45	12	
11.5	3	Int.	□	1150S-DIN	102	55	45	12
	3	Int.	□	1150S-DIN-C	102	55	45	12
	5	Int.	□	1150L-DIN	118	71	45	12
	5	Int.	□	1150L-DIN-C	118	71	45	12
	8	Int.	□	1150-L8C	178	129	45	12
	10	Int.	□	1150-L10C	201	152	45	12
	12	Int.	□	1150-L12C	224	175	45	12
	15	Int.	□	1150-L15C	258	209	45	12
	20	Int.	□	1150-L20C	316	267	45	12
25	Int.	□	1150-L25C	373	324	45	12	
11.6	3	Int.	□	1160S-DIN	102	55	45	12
	3	Int.	□	1160S-DIN-C	102	55	45	12
	5	Int.	□	1160L-DIN	118	71	45	12
	5	Int.	□	1160L-DIN-C	118	71	45	12
	8	Int.	□	1160-L8C	183	134	45	12
	10	Int.	□	1160-L10C	207	158	45	12
	12	Int.	□	1160-L12C	231	182	45	12
	15	Int.	□	1160-L15C	267	218	45	12
	20	Int.	□	1160-L20C	327	278	45	12
25	Int.	□	1160-L25C	387	338	45	12	
11.7	3	Int.	□	1170S-DIN	102	55	45	12
	3	Int.	□	1170S-DIN-C	102	55	45	12
	5	Int.	□	1170L-DIN	118	71	45	12
	5	Int.	□	1170L-DIN-C	118	71	45	12
	8	Int.	□	1170-L8C	183	134	45	12
	10	Int.	□	1170-L10C	207	158	45	12
	12	Int.	□	1170-L12C	231	182	45	12
	15	Int.	□	1170-L15C	267	218	45	12
	20	Int.	□	1170-L20C	327	278	45	12
25	Int.	□	1170-L25C	387	338	45	12	

(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

● : Inventory maintained. □ : Non stock, produced to order only.

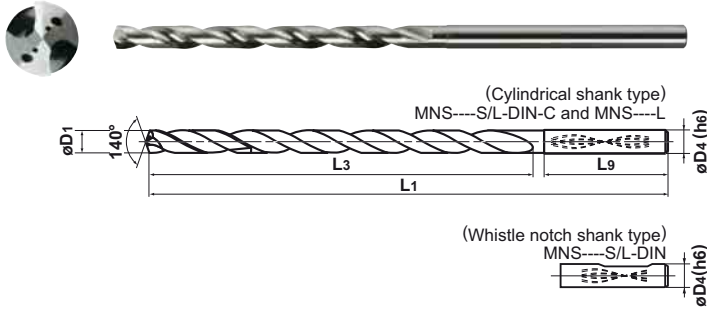
Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
11.8	3	Int.	<input type="checkbox"/>	MNS1180S-DIN	102	55	45	12
	3	Int.	<input type="checkbox"/>	1180S-DIN-C	102	55	45	12
	5	Int.	<input type="checkbox"/>	1180L-DIN	118	71	45	12
	5	Int.	<input type="checkbox"/>	1180L-DIN-C	118	71	45	12
	8	Int.	<input type="checkbox"/>	1180-L8C	183	134	45	12
	10	Int.	<input type="checkbox"/>	1180-L10C	207	158	45	12
	12	Int.	<input type="checkbox"/>	1180-L12C	231	182	45	12
	15	Int.	<input type="checkbox"/>	1180-L15C	267	218	45	12
	20	Int.	<input type="checkbox"/>	1180-L20C	327	278	45	12
	25	Int.	<input type="checkbox"/>	1180-L25C	387	338	45	12
11.9	3	Int.	<input type="checkbox"/>	1190S-DIN	102	55	45	12
	3	Int.	<input type="checkbox"/>	1190S-DIN-C	102	55	45	12
	5	Int.	<input type="checkbox"/>	1190L-DIN	118	71	45	12
	5	Int.	<input type="checkbox"/>	1190L-DIN-C	118	71	45	12
	8	Int.	<input type="checkbox"/>	1190-L8C	183	134	45	12
	10	Int.	<input type="checkbox"/>	1190-L10C	207	158	45	12
	12	Int.	<input type="checkbox"/>	1190-L12C	231	182	45	12
	15	Int.	<input type="checkbox"/>	1190-L15C	267	218	45	12
	20	Int.	<input type="checkbox"/>	1190-L20C	327	278	45	12
	25	Int.	<input type="checkbox"/>	1190-L25C	387	338	45	12
12.0	3	Int.	<input type="checkbox"/>	1200S-DIN	102	55	45	12
	3	Int.	<input type="checkbox"/>	1200S-DIN-C	102	55	45	12
	5	Int.	<input type="checkbox"/>	1200L-DIN	118	71	45	12
	5	Int.	<input checked="" type="checkbox"/>	1200L-DIN-C	118	71	45	12
	8	Int.	<input type="checkbox"/>	1200-L8C	183	134	45	12
	10	Int.	<input type="checkbox"/>	1200-L10C	207	158	45	12
	12	Int.	<input checked="" type="checkbox"/>	1200-L12C	231	182	45	12
	15	Int.	<input type="checkbox"/>	1200-L15C	267	218	45	12
	20	Int.	<input checked="" type="checkbox"/>	1200-L20C	327	278	45	12
	25	Int.	<input type="checkbox"/>	1200-L25C	387	338	45	12
12.1	3	Int.	<input type="checkbox"/>	1210S-DIN	107	60	45	14
	3	Int.	<input type="checkbox"/>	1210S-DIN-C	107	60	45	14
	5	Int.	<input type="checkbox"/>	1210L-DIN	124	77	45	14
	5	Int.	<input type="checkbox"/>	1210L-DIN-C	124	77	45	14
	8	Int.	<input type="checkbox"/>	1210-L8C	189	140	45	14
	10	Int.	<input type="checkbox"/>	1210-L10C	214	165	45	14
	12	Int.	<input type="checkbox"/>	1210-L12C	239	190	45	14
	15	Int.	<input type="checkbox"/>	1210-L15C	276	227	45	14
	20	Int.	<input type="checkbox"/>	1210-L20C	339	290	45	14
	12.2	3	Int.	<input type="checkbox"/>	1220S-DIN	107	60	45
3		Int.	<input type="checkbox"/>	1220S-DIN-C	107	60	45	14
5		Int.	<input type="checkbox"/>	1220L-DIN	124	77	45	14
5		Int.	<input type="checkbox"/>	1220L-DIN-C	124	77	45	14
8		Int.	<input type="checkbox"/>	1220-L8C	189	140	45	14
10		Int.	<input type="checkbox"/>	1220-L10C	214	165	45	14
12		Int.	<input type="checkbox"/>	1220-L12C	239	190	45	14
15		Int.	<input type="checkbox"/>	1220-L15C	276	227	45	14
20		Int.	<input type="checkbox"/>	1220-L20C	339	290	45	14

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
12.3	3	Int.	<input type="checkbox"/>	MNS1230S-DIN	107	60	45	14
	3	Int.	<input type="checkbox"/>	1230S-DIN-C	107	60	45	14
	5	Int.	<input type="checkbox"/>	1230L-DIN	124	77	45	14
	5	Int.	<input type="checkbox"/>	1230L-DIN-C	124	77	45	14
	8	Int.	<input type="checkbox"/>	1230-L8C	189	140	45	14
	10	Int.	<input type="checkbox"/>	1230-L10C	214	165	45	14
	12	Int.	<input type="checkbox"/>	1230-L12C	239	190	45	14
	15	Int.	<input type="checkbox"/>	1230-L15C	276	227	45	14
	20	Int.	<input type="checkbox"/>	1230-L20C	339	290	45	14
	12.4	3	Int.	<input type="checkbox"/>	1240S-DIN	107	60	45
3		Int.	<input type="checkbox"/>	1240S-DIN-C	107	60	45	14
5		Int.	<input type="checkbox"/>	1240L-DIN	124	77	45	14
5		Int.	<input type="checkbox"/>	1240L-DIN-C	124	77	45	14
8		Int.	<input type="checkbox"/>	1240-L8C	189	140	45	14
10		Int.	<input type="checkbox"/>	1240-L10C	214	165	45	14
12		Int.	<input type="checkbox"/>	1240-L12C	239	190	45	14
15		Int.	<input type="checkbox"/>	1240-L15C	276	227	45	14
20		Int.	<input type="checkbox"/>	1240-L20C	339	290	45	14
12.5		3	Int.	<input type="checkbox"/>	1250S-DIN	107	60	45
	3	Int.	<input type="checkbox"/>	1250S-DIN-C	107	60	45	14
	5	Int.	<input type="checkbox"/>	1250L-DIN	124	77	45	14
	5	Int.	<input checked="" type="checkbox"/>	1250L-DIN-C	124	77	45	14
	8	Int.	<input type="checkbox"/>	1250-L8C	189	140	45	14
	10	Int.	<input type="checkbox"/>	1250-L10C	214	165	45	14
	12	Int.	<input checked="" type="checkbox"/>	1250-L12C	239	190	45	14
	15	Int.	<input type="checkbox"/>	1250-L15C	276	227	45	14
	20	Int.	<input checked="" type="checkbox"/>	1250-L20C	339	290	45	14
	12.6	3	Int.	<input type="checkbox"/>	1260S-DIN	107	60	45
3		Int.	<input type="checkbox"/>	1260S-DIN-C	107	60	45	14
5		Int.	<input type="checkbox"/>	1260L-DIN	124	77	45	14
5		Int.	<input type="checkbox"/>	1260L-DIN-C	124	77	45	14
8		Int.	<input type="checkbox"/>	1260-L8C	194	145	45	14
10		Int.	<input type="checkbox"/>	1260-L10C	220	171	45	14
12		Int.	<input type="checkbox"/>	1260-L12C	246	197	45	14
15		Int.	<input type="checkbox"/>	1260-L15C	285	236	45	14
20		Int.	<input type="checkbox"/>	1260-L20C	350	301	45	14
12.7		3	Int.	<input type="checkbox"/>	1270S-DIN	107	60	45
	3	Int.	<input type="checkbox"/>	1270S-DIN-C	107	60	45	14
	5	Int.	<input type="checkbox"/>	1270L-DIN	124	77	45	14
	5	Int.	<input type="checkbox"/>	1270L-DIN-C	124	77	45	14
	8	Int.	<input type="checkbox"/>	1270-L8C	194	145	45	14
	10	Int.	<input type="checkbox"/>	1270-L10C	220	171	45	14
	12	Int.	<input type="checkbox"/>	1270-L12C	246	197	45	14
	15	Int.	<input type="checkbox"/>	1270-L15C	285	236	45	14
	20	Int.	<input type="checkbox"/>	1270-L20C	350	301	45	14



Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



■ MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

■ MNS○○○○-LOC, MNS○○○○-LOC-C Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
12.8	3	Int.	□	MNS1280S-DIN	107	60	45	14
	3	Int.	□	1280S-DIN-C	107	60	45	14
	5	Int.	□	1280L-DIN	124	77	45	14
	5	Int.	□	1280L-DIN-C	124	77	45	14
	8	Int.	□	1280-L8C	194	145	45	14
	10	Int.	□	1280-L10C	220	171	45	14
	12	Int.	□	1280-L12C	246	197	45	14
	15	Int.	□	1280-L15C	285	236	45	14
20	Int.	□	1280-L20C	350	301	45	14	
12.9	3	Int.	□	1290S-DIN	107	60	45	14
	3	Int.	□	1290S-DIN-C	107	60	45	14
	5	Int.	□	1290L-DIN	124	77	45	14
	5	Int.	□	1290L-DIN-C	124	77	45	14
	8	Int.	□	1290-L8C	194	145	45	14
	10	Int.	□	1290-L10C	220	171	45	14
	12	Int.	□	1290-L12C	246	197	45	14
	15	Int.	□	1290-L15C	285	236	45	14
20	Int.	□	1290-L20C	350	301	45	14	
13.0	3	Int.	□	1300S-DIN	107	60	45	14
	3	Int.	□	1300S-DIN-C	107	60	45	14
	5	Int.	□	1300L-DIN	124	77	45	14
	5	Int.	●	1300L-DIN-C	124	77	45	14
	8	Int.	□	1300-L8C	194	145	45	14
	10	Int.	□	1300-L10C	220	171	45	14
	12	Int.	●	1300-L12C	246	197	45	14
	15	Int.	□	1300-L15C	285	236	45	14
20	Int.	●	1300-L20C	350	301	45	14	
13.1	3	Int.	□	1310S-DIN	107	60	45	14
	3	Int.	□	1310S-DIN-C	107	60	45	14
	5	Int.	□	1310L-DIN	124	77	45	14
	5	Int.	□	1310L-DIN-C	124	77	45	14
	8	Int.	□	1310-L8C	200	151	45	14
	10	Int.	□	1310-L10C	227	178	45	14
	12	Int.	□	1310-L12C	254	205	45	14
	15	Int.	□	1310-L15C	294	245	45	14
20	Int.	□	1310-L20C	362	313	45	14	

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
13.2	3	Int.	□	MNS1320S-DIN	107	60	45	14
	3	Int.	□	1320S-DIN-C	107	60	45	14
	5	Int.	□	1320L-DIN	124	77	45	14
	5	Int.	□	1320L-DIN-C	124	77	45	14
	8	Int.	□	1320-L8C	200	151	45	14
	10	Int.	□	1320-L10C	227	178	45	14
	12	Int.	□	1320-L12C	254	205	45	14
	15	Int.	□	1320-L15C	294	245	45	14
20	Int.	□	1320-L20C	362	313	45	14	
13.3	3	Int.	□	1330S-DIN	107	60	45	14
	3	Int.	□	1330S-DIN-C	107	60	45	14
	5	Int.	□	1330L-DIN	124	77	45	14
	5	Int.	□	1330L-DIN-C	124	77	45	14
	8	Int.	□	1330-L8C	200	151	45	14
	10	Int.	□	1330-L10C	227	178	45	14
	12	Int.	□	1330-L12C	254	205	45	14
	15	Int.	□	1330-L15C	294	245	45	14
20	Int.	□	1330-L20C	362	313	45	14	
13.4	3	Int.	□	1340S-DIN	107	60	45	14
	3	Int.	□	1340S-DIN-C	107	60	45	14
	5	Int.	□	1340L-DIN	124	77	45	14
	5	Int.	□	1340L-DIN-C	124	77	45	14
	8	Int.	□	1340-L8C	200	151	45	14
	10	Int.	□	1340-L10C	227	178	45	14
	12	Int.	□	1340-L12C	254	205	45	14
	15	Int.	□	1340-L15C	294	245	45	14
20	Int.	□	1340-L20C	362	313	45	14	
13.5	3	Int.	□	1350S-DIN	107	60	45	14
	3	Int.	□	1350S-DIN-C	107	60	45	14
	5	Int.	□	1350L-DIN	124	77	45	14
	5	Int.	□	1350L-DIN-C	124	77	45	14
	8	Int.	□	1350-L8C	200	151	45	14
	10	Int.	□	1350-L10C	227	178	45	14
	12	Int.	□	1350-L12C	254	205	45	14
	15	Int.	□	1350-L15C	294	245	45	14
20	Int.	□	1350-L20C	362	313	45	14	

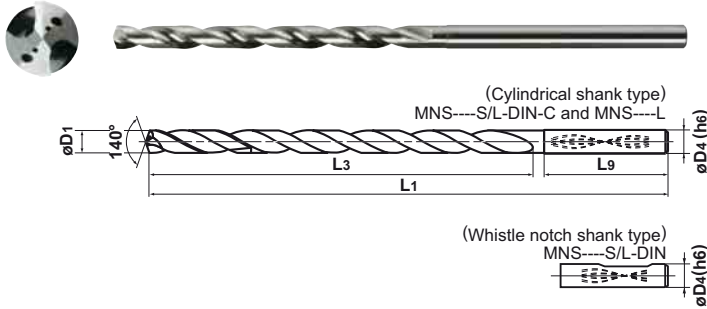
(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
13.6	3	Int.	□	MNS1360S-DIN	107	60	45	14
	3	Int.	□	1360S-DIN-C	107	60	45	14
	5	Int.	□	1360L-DIN	124	77	45	14
	5	Int.	□	1360L-DIN-C	124	77	45	14
	8	Int.	□	1360-L8C	205	156	45	14
	10	Int.	□	1360-L10C	233	184	45	14
	12	Int.	□	1360-L12C	261	212	45	14
	15	Int.	□	1360-L15C	303	254	45	14
	20	Int.	□	1360-L20C	373	324	45	14
13.7	3	Int.	□	1370S-DIN	107	60	45	14
	3	Int.	□	1370S-DIN-C	107	60	45	14
	5	Int.	□	1370L-DIN	124	77	45	14
	5	Int.	□	1370L-DIN-C	124	77	45	14
	8	Int.	□	1370-L8C	205	156	45	14
	10	Int.	□	1370-L10C	233	184	45	14
	12	Int.	□	1370-L12C	261	212	45	14
	15	Int.	□	1370-L15C	303	254	45	14
	20	Int.	□	1370-L20C	373	324	45	14
13.8	3	Int.	□	1380S-DIN	107	60	45	14
	3	Int.	□	1380S-DIN-C	107	60	45	14
	5	Int.	□	1380L-DIN	124	77	45	14
	5	Int.	□	1380L-DIN-C	124	77	45	14
	8	Int.	□	1380-L8C	205	156	45	14
	10	Int.	□	1380-L10C	233	184	45	14
	12	Int.	□	1380-L12C	261	212	45	14
	15	Int.	□	1380-L15C	303	254	45	14
	20	Int.	□	1380-L20C	373	324	45	14
13.9	3	Int.	□	1390S-DIN	107	60	45	14
	3	Int.	□	1390S-DIN-C	107	60	45	14
	5	Int.	□	1390L-DIN	124	77	45	14
	5	Int.	□	1390L-DIN-C	124	77	45	14
	8	Int.	□	1390-L8C	205	156	45	14
	10	Int.	□	1390-L10C	233	184	45	14
	12	Int.	□	1390-L12C	261	212	45	14
	15	Int.	□	1390-L15C	303	254	45	14
	20	Int.	□	1390-L20C	373	324	45	14
14.0	3	Int.	□	1400S-DIN	107	60	45	14
	3	Int.	□	1400S-DIN-C	107	60	45	14
	5	Int.	□	1400L-DIN	124	77	45	14
	5	Int.	●	1400L-DIN-C	124	77	45	14
	8	Int.	□	1400-L8C	205	156	45	14
	10	Int.	□	1400-L10C	233	184	45	14
	12	Int.	●	1400-L12C	261	212	45	14
	15	Int.	□	1400-L15C	303	254	45	14
	20	Int.	●	1400-L20C	373	324	45	14
14.1	3	Int.	□	1410S-DIN	114	64	48	16
	3	Int.	□	1410S-DIN-C	114	64	48	16
	5	Int.	□	1410L-DIN	132	82	48	16
	5	Int.	□	1410L-DIN-C	132	82	48	16
	14.2	3	Int.	□	1420S-DIN	114	64	48
3		Int.	□	1420S-DIN-C	114	64	48	16
5		Int.	□	1420L-DIN	132	82	48	16
5		Int.	□	1420L-DIN-C	132	82	48	16
5		Int.	●	1420L-DIN-C	132	82	48	16

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
14.3	3	Int.	□	MNS1430S-DIN	114	64	48	16
	3	Int.	□	1430S-DIN-C	114	64	48	16
	5	Int.	□	1430L-DIN	132	82	48	16
	5	Int.	□	1430L-DIN-C	132	82	48	16
14.4	3	Int.	□	1440S-DIN	114	64	48	16
	3	Int.	□	1440S-DIN-C	114	64	48	16
	5	Int.	□	1440L-DIN	132	82	48	16
	5	Int.	□	1440L-DIN-C	132	82	48	16
14.5	3	Int.	□	1450S-DIN	114	64	48	16
	3	Int.	□	1450S-DIN-C	114	64	48	16
	5	Int.	□	1450L-DIN	132	82	48	16
	5	Int.	□	1450L-DIN-C	132	82	48	16
14.6	3	Int.	□	1460S-DIN	114	64	48	16
	3	Int.	□	1460S-DIN-C	114	64	48	16
	5	Int.	□	1460L-DIN	132	82	48	16
	5	Int.	□	1460L-DIN-C	132	82	48	16
14.7	3	Int.	□	1470S-DIN	114	64	48	16
	3	Int.	□	1470S-DIN-C	114	64	48	16
	5	Int.	□	1470L-DIN	132	82	48	16
	5	Int.	□	1470L-DIN-C	132	82	48	16
14.8	3	Int.	□	1480S-DIN	114	64	48	16
	3	Int.	□	1480S-DIN-C	114	64	48	16
	5	Int.	□	1480L-DIN	132	82	48	16
	5	Int.	□	1480L-DIN-C	132	82	48	16
14.9	3	Int.	□	1490S-DIN	114	64	48	16
	3	Int.	□	1490S-DIN-C	114	64	48	16
	5	Int.	□	1490L-DIN	132	82	48	16
	5	Int.	□	1490L-DIN-C	132	82	48	16
15.0	3	Int.	□	1500S-DIN	114	64	48	16
	3	Int.	□	1500S-DIN-C	114	64	48	16
	5	Int.	□	1500L-DIN	132	82	48	16
	5	Int.	●	1500L-DIN-C	132	82	48	16
15.1	3	Int.	□	1510S-DIN	115	65	48	16
	3	Int.	□	1510S-DIN-C	115	65	48	16
	5	Int.	□	1510L-DIN	133	83	48	16
	5	Int.	□	1510L-DIN-C	133	83	48	16
15.2	3	Int.	□	1520S-DIN	115	65	48	16
	3	Int.	□	1520S-DIN-C	115	65	48	16
	5	Int.	□	1520L-DIN	133	83	48	16
	5	Int.	□	1520L-DIN-C	133	83	48	16
15.3	3	Int.	□	1530S-DIN	115	65	48	16
	3	Int.	□	1530S-DIN-C	115	65	48	16
	5	Int.	□	1530L-DIN	133	83	48	16
	5	Int.	□	1530L-DIN-C	133	83	48	16
15.4	3	Int.	□	1540S-DIN	115	65	48	16
	3	Int.	□	1540S-DIN-C	115	65	48	16
	5	Int.	□	1540L-DIN	133	83	48	16
	5	Int.	□	1540L-DIN-C	133	83	48	16
15.5	3	Int.	□	1550S-DIN	115	65	48	16
	3	Int.	□	1550S-DIN-C	115	65	48	16
	5	Int.	□	1550L-DIN	133	83	48	16
	5	Int.	□	1550L-DIN-C	133	83	48	16

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



MNS○○○○S/L-DIN, MNS○○○○S/L-DIN-C Type

D1	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008

MNS○○○○-LOC, MNS○○○○-LOC-C Type

D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤20.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
15.6	3	Int.	□	MNS1560S-DIN	115	65	48	16
	3	Int.	□	1560S-DIN-C	115	65	48	16
	5	Int.	□	1560L-DIN	133	83	48	16
	5	Int.	□	1560L-DIN-C	133	83	48	16
15.7	3	Int.	□	1570S-DIN	115	65	48	16
	3	Int.	□	1570S-DIN-C	115	65	48	16
	5	Int.	□	1570L-DIN	133	83	48	16
	5	Int.	□	1570L-DIN-C	133	83	48	16
15.8	3	Int.	□	1580S-DIN	115	65	48	16
	3	Int.	□	1580S-DIN-C	115	65	48	16
	5	Int.	□	1580L-DIN	133	83	48	16
	5	Int.	□	1580L-DIN-C	133	83	48	16
15.9	3	Int.	□	1590S-DIN	115	65	48	16
	3	Int.	□	1590S-DIN-C	115	65	48	16
	5	Int.	□	1590L-DIN	133	83	48	16
	5	Int.	□	1590L-DIN-C	133	83	48	16
16.0	3	Int.	□	1600S-DIN	115	65	48	16
	3	Int.	□	1600S-DIN-C	115	65	48	16
	5	Int.	□	1600L-DIN	133	83	48	16
	5	Int.	●	1600L-DIN-C	133	83	48	16
16.1	3	Int.	□	1610S-DIN	123	73	48	18
	3	Int.	□	1610S-DIN-C	123	73	48	18
	5	Int.	□	1610L-DIN	143	93	48	18
	5	Int.	□	1610L-DIN-C	143	93	48	18
16.2	3	Int.	□	1620S-DIN	123	73	48	18
	3	Int.	□	1620S-DIN-C	123	73	48	18
	5	Int.	□	1620L-DIN	143	93	48	18
	5	Int.	□	1620L-DIN-C	143	93	48	18
16.3	3	Int.	□	1630S-DIN	123	73	48	18
	3	Int.	□	1630S-DIN-C	123	73	48	18
	5	Int.	□	1630L-DIN	143	93	48	18
	5	Int.	□	1630L-DIN-C	143	93	48	18
16.4	3	Int.	□	1640S-DIN	123	73	48	18
	3	Int.	□	1640S-DIN-C	123	73	48	18
	5	Int.	□	1640L-DIN	143	93	48	18
	5	Int.	□	1640L-DIN-C	143	93	48	18
16.5	3	Int.	□	1650S-DIN	123	73	48	18
	3	Int.	□	1650S-DIN-C	123	73	48	18
	5	Int.	□	1650L-DIN	143	93	48	18
	5	Int.	□	1650L-DIN-C	143	93	48	18

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
16.6	3	Int.	□	MNS1660S-DIN	123	73	48	18
	3	Int.	□	1660S-DIN-C	123	73	48	18
	5	Int.	□	1660L-DIN	143	93	48	18
	5	Int.	□	1660L-DIN-C	143	93	48	18
16.7	3	Int.	□	1670S-DIN	123	73	48	18
	3	Int.	□	1670S-DIN-C	123	73	48	18
	5	Int.	□	1670L-DIN	143	93	48	18
	5	Int.	□	1670L-DIN-C	143	93	48	18
16.8	3	Int.	□	1680S-DIN	123	73	48	18
	3	Int.	□	1680S-DIN-C	123	73	48	18
	5	Int.	□	1680L-DIN	143	93	48	18
	5	Int.	□	1680L-DIN-C	143	93	48	18
16.9	3	Int.	□	1690S-DIN	123	73	48	18
	3	Int.	□	1690S-DIN-C	123	73	48	18
	5	Int.	□	1690L-DIN	143	93	48	18
	5	Int.	□	1690L-DIN-C	143	93	48	18
17.0	3	Int.	□	1700S-DIN	123	73	48	18
	3	Int.	□	1700S-DIN-C	123	73	48	18
	5	Int.	□	1700L-DIN	143	93	48	18
	5	Int.	●	1700L-DIN-C	143	93	48	18
17.1	3	Int.	□	1710S-DIN	123	73	48	18
	3	Int.	□	1710S-DIN-C	123	73	48	18
	5	Int.	□	1710L-DIN	143	93	48	18
	5	Int.	□	1710L-DIN-C	143	93	48	18
17.2	3	Int.	□	1720S-DIN	123	73	48	18
	3	Int.	□	1720S-DIN-C	123	73	48	18
	5	Int.	□	1720L-DIN	143	93	48	18
	5	Int.	□	1720L-DIN-C	143	93	48	18
17.3	3	Int.	□	1730S-DIN	123	73	48	18
	3	Int.	□	1730S-DIN-C	123	73	48	18
	5	Int.	□	1730L-DIN	143	93	48	18
	5	Int.	□	1730L-DIN-C	143	93	48	18
17.4	3	Int.	□	1740S-DIN	123	73	48	18
	3	Int.	□	1740S-DIN-C	123	73	48	18
	5	Int.	□	1740L-DIN	143	93	48	18
	5	Int.	□	1740L-DIN-C	143	93	48	18
17.5	3	Int.	□	1750S-DIN	123	73	48	18
	3	Int.	□	1750S-DIN-C	123	73	48	18
	5	Int.	□	1750L-DIN	143	93	48	18
	5	Int.	●	1750L-DIN-C	143	93	48	18

(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

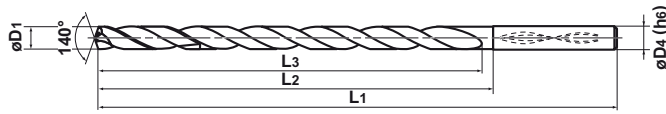
● : Inventory maintained. □ : Non stock, produced to order only.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
17.6	3	Int.	<input type="checkbox"/>	MNS1760S-DIN	123	73	48	18
	3	Int.	<input type="checkbox"/>	1760S-DIN-C	123	73	48	18
	5	Int.	<input type="checkbox"/>	1760L-DIN	143	93	48	18
	5	Int.	<input type="checkbox"/>	1760L-DIN-C	143	93	48	18
17.7	3	Int.	<input type="checkbox"/>	1770S-DIN	123	73	48	18
	3	Int.	<input type="checkbox"/>	1770S-DIN-C	123	73	48	18
	5	Int.	<input type="checkbox"/>	1770L-DIN	143	93	48	18
	5	Int.	<input type="checkbox"/>	1770L-DIN-C	143	93	48	18
17.8	3	Int.	<input type="checkbox"/>	1780S-DIN	123	73	48	18
	3	Int.	<input type="checkbox"/>	1780S-DIN-C	123	73	48	18
	5	Int.	<input type="checkbox"/>	1780L-DIN	143	93	48	18
	5	Int.	<input type="checkbox"/>	1780L-DIN-C	143	93	48	18
17.9	3	Int.	<input type="checkbox"/>	1790S-DIN	123	73	48	18
	3	Int.	<input type="checkbox"/>	1790S-DIN-C	123	73	48	18
	5	Int.	<input type="checkbox"/>	1790L-DIN	143	93	48	18
	5	Int.	<input type="checkbox"/>	1790L-DIN-C	143	93	48	18
18.0	3	Int.	<input type="checkbox"/>	1800S-DIN	123	73	48	18
	3	Int.	<input type="checkbox"/>	1800S-DIN-C	123	73	48	18
	5	Int.	<input type="checkbox"/>	1800L-DIN	143	93	48	18
	5	Int.	<input checked="" type="checkbox"/>	1800L-DIN-C	143	93	48	18
18.1	3	Int.	<input type="checkbox"/>	1810S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1810S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1810L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1810L-DIN-C	153	101	50	20
18.2	3	Int.	<input type="checkbox"/>	1820S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1820S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1820L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1820L-DIN-C	153	101	50	20
18.3	3	Int.	<input type="checkbox"/>	1830S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1830S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1830L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1830L-DIN-C	153	101	50	20
18.4	3	Int.	<input type="checkbox"/>	1840S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1840S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1840L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1840L-DIN-C	153	101	50	20
18.5	3	Int.	<input type="checkbox"/>	1850S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1850S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1850L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1850L-DIN-C	153	101	50	20
18.6	3	Int.	<input type="checkbox"/>	1860S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1860S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1860L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1860L-DIN-C	153	101	50	20
18.7	3	Int.	<input type="checkbox"/>	1870S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1870S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1870L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1870L-DIN-C	153	101	50	20
18.8	3	Int.	<input type="checkbox"/>	1880S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1880S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1880L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1880L-DIN-C	153	101	50	20

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L1	L3	L9	D4
18.9	3	Int.	<input type="checkbox"/>	MNS1890S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1890S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1890L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1890L-DIN-C	153	101	50	20
19.0	3	Int.	<input type="checkbox"/>	1900S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1900S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1900L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1900L-DIN-C	153	101	50	20
19.1	3	Int.	<input type="checkbox"/>	1910S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1910S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1910L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1910L-DIN-C	153	101	50	20
19.2	3	Int.	<input type="checkbox"/>	1920S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1920S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1920L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1920L-DIN-C	153	101	50	20
19.3	3	Int.	<input type="checkbox"/>	1930S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1930S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1930L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1930L-DIN-C	153	101	50	20
19.4	3	Int.	<input type="checkbox"/>	1940S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1940S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1940L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1940L-DIN-C	153	101	50	20
19.5	3	Int.	<input type="checkbox"/>	1950S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1950S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1950L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1950L-DIN-C	153	101	50	20
19.6	3	Int.	<input type="checkbox"/>	1960S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1960S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1960L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1960L-DIN-C	153	101	50	20
19.7	3	Int.	<input type="checkbox"/>	1970S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1970S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1970L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1970L-DIN-C	153	101	50	20
19.8	3	Int.	<input type="checkbox"/>	1980S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1980S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1980L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1980L-DIN-C	153	101	50	20
19.9	3	Int.	<input type="checkbox"/>	1990S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	1990S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	1990L-DIN	153	101	50	20
	5	Int.	<input type="checkbox"/>	1990L-DIN-C	153	101	50	20
20.0	3	Int.	<input type="checkbox"/>	2000S-DIN	131	79	50	20
	3	Int.	<input type="checkbox"/>	2000S-DIN-C	131	79	50	20
	5	Int.	<input type="checkbox"/>	2000L-DIN	153	101	50	20
	5	Int.	<input checked="" type="checkbox"/>	2000L-DIN-C	153	101	50	20

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



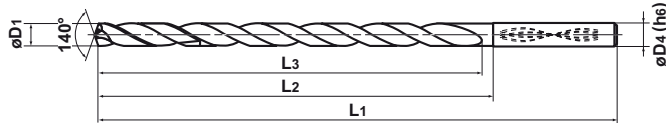
D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤14.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027

(Note 1) 4.5 or smaller diameter drills are designed with 2 coolant holes.
 (Note 2) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
3.0	5	Int.	★	MNS0300LB	33	33	81	3
	10	Int.	★	0300X10DB	39	42	90	3
	20	Int.	★	0300X20DB	69	72	120	3
	30	Int.	★	0300X30DB	99	102	150	3
3.1	5	Int.	★	0310LB	39	39	87	4
	10	Int.	□	0310X10DB	46	49	97	4
	20	Int.	□	0310X20DB	81	84	132	4
	30	Int.	□	0310X30DB	116	119	167	4
3.2	5	Int.	★	0320LB	39	39	87	4
	10	Int.	★	0320X10DB	46	49	97	4
	20	Int.	★	0320X20DB	81	84	132	4
	30	Int.	★	0320X30DB	116	119	167	4
3.3	5	Int.	★	0330LB	39	39	87	4
	10	Int.	□	0330X10DB	46	49	97	4
	20	Int.	□	0330X20DB	81	84	132	4
	30	Int.	□	0330X30DB	116	119	167	4
3.4	5	Int.	★	0340LB	39	39	87	4
	10	Int.	★	0340X10DB	46	49	97	4
	20	Int.	★	0340X20DB	81	84	132	4
	30	Int.	★	0340X30DB	116	119	167	4
3.5	5	Int.	★	0350LB	39	39	87	4
	10	Int.	□	0350X10DB	46	49	97	4
	20	Int.	□	0350X20DB	81	84	132	4
	30	Int.	□	0350X30DB	116	119	167	4
3.6	5	Int.	★	0360LB	44	44	92	4
	10	Int.	★	0360X10DB	52	55	103	4
	20	Int.	★	0360X20DB	92	95	143	4
	30	Int.	★	0360X30DB	132	135	183	4
3.7	5	Int.	★	0370LB	44	44	92	4
	10	Int.	□	0370X10DB	52	55	103	4
	20	Int.	□	0370X20DB	92	95	143	4
	30	Int.	□	0370X30DB	132	135	183	4

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
3.8	5	Int.	★	MNS0380LB	44	44	92	4
	10	Int.	□	0380X10DB	52	55	103	4
	20	Int.	□	0380X20DB	92	95	143	4
	30	Int.	□	0380X30DB	132	135	183	4
3.9	5	Int.	★	0390LB	44	44	92	4
	10	Int.	★	0390X10DB	52	55	103	4
	20	Int.	★	0390X20DB	92	95	143	4
	30	Int.	★	0390X30DB	132	135	183	4
4.0	5	Int.	★	0400LB	44	44	92	4
	10	Int.	★	0400X10DB	52	55	103	4
	20	Int.	★	0400X20DB	92	95	143	4
	30	Int.	★	0400X30DB	132	135	183	4
4.1	5	Int.	★	0410LB	50	50	100	5
	10	Int.	□	0410X10DB	59	62	112	5
	20	Int.	□	0410X20DB	104	107	157	5
	30	Int.	□	0410X30DB	149	152	202	5
4.2	5	Int.	★	0420LB	50	50	100	5
	10	Int.	□	0420X10DB	59	62	112	5
	20	Int.	□	0420X20DB	104	107	157	5
	30	Int.	□	0420X30DB	149	152	202	5
4.3	5	Int.	★	0430LB	50	50	100	5
	10	Int.	□	0430X10DB	59	62	112	5
	20	Int.	□	0430X20DB	104	107	157	5
	30	Int.	□	0430X30DB	149	152	202	5
4.4	5	Int.	★	0440LB	50	50	100	5
	10	Int.	□	0440X10DB	59	62	112	5
	20	Int.	□	0440X20DB	104	107	157	5
	30	Int.	□	0440X30DB	149	152	202	5
4.5	5	Int.	★	0450LB	50	50	100	5
	10	Int.	□	0450X10DB	59	62	112	5
	20	Int.	□	0450X20DB	104	107	157	5
	30	Int.	□	0450X30DB	149	152	202	5

(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).



D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤14.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027

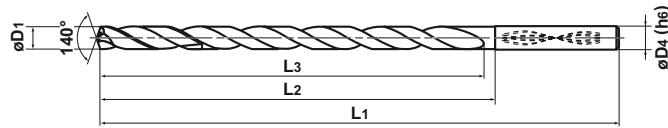
Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
4.6	5	Int.	★	MNS0460LB	55	55	105	5
	10	Int.	□	0460X10DB	65	68	118	5
	20	Int.	□	0460X20DB	115	118	168	5
	30	Int.	□	0460X30DB	165	168	218	5
4.7	5	Int.	★	0470LB	55	55	105	5
	10	Int.	□	0470X10DB	65	68	118	5
	20	Int.	□	0470X20DB	115	118	168	5
	30	Int.	□	0470X30DB	165	168	218	5
4.8	5	Int.	★	0480LB	55	55	105	5
	10	Int.	□	0480X10DB	65	68	118	5
	20	Int.	□	0480X20DB	115	118	168	5
	30	Int.	□	0480X30DB	165	168	218	5
4.9	5	Int.	★	0490LB	55	55	105	5
	10	Int.	★	0490X10DB	65	68	118	5
	20	Int.	★	0490X20DB	115	118	168	5
	30	Int.	★	0490X30DB	165	168	218	5
5.0	5	Int.	★	0500LB	44	44	100	6
	10	Int.	★	0500X10DB	65	68	118	5
	20	Int.	★	0500X20DB	115	118	168	5
	30	Int.	★	0500X30DB	165	168	218	5
5.1	5	Int.	★	0510LB	44	44	100	6
	10	Int.	★	0510X10DB	72	75	127	6
	20	Int.	★	0510X20DB	127	130	182	6
	30	Int.	★	0510X30DB	182	185	237	6
5.2	5	Int.	★	0520LB	44	44	100	6
	10	Int.	□	0520X10DB	72	75	127	6
	20	Int.	□	0520X20DB	127	130	182	6
	30	Int.	□	0520X30DB	182	185	237	6
5.3	5	Int.	★	0530LB	44	44	100	6
	10	Int.	□	0530X10DB	72	75	127	6
	20	Int.	□	0530X20DB	127	130	182	6
	30	Int.	□	0530X30DB	182	185	237	6
5.4	5	Int.	★	0540LB	44	44	100	6
	10	Int.	□	0540X10DB	72	75	127	6
	20	Int.	□	0540X20DB	127	130	182	6
	30	Int.	□	0540X30DB	182	185	237	6

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
5.5	5	Int.	★	MNS0550LB	44	44	100	6
	10	Int.	★	0550X10DB	72	75	127	6
	20	Int.	★	0550X20DB	127	130	182	6
	30	Int.	★	0550X30DB	182	185	237	6
5.6	5	Int.	★	0560LB	48	48	100	6
	10	Int.	□	0560X10DB	78	81	133	6
	20	Int.	□	0560X20DB	138	141	193	6
	30	Int.	□	0560X30DB	198	201	253	6
5.7	5	Int.	★	0570LB	48	48	100	6
	10	Int.	□	0570X10DB	78	81	133	6
	20	Int.	□	0570X20DB	138	141	193	6
	30	Int.	□	0570X30DB	198	201	253	6
5.8	5	Int.	★	0580LB	48	48	100	6
	10	Int.	□	0580X10DB	78	81	133	6
	20	Int.	□	0580X20DB	138	141	193	6
	30	Int.	□	0580X30DB	198	201	253	6
5.9	5	Int.	★	0590LB	48	48	100	6
	10	Int.	□	0590X10DB	78	81	133	6
	20	Int.	□	0590X20DB	138	141	193	6
	30	Int.	□	0590X30DB	198	201	253	6
6.0	5	Int.	★	0600LB	48	48	100	6
	10	Int.	★	0600X10DB	78	81	133	6
	20	Int.	★	0600X20DB	138	141	193	6
	30	Int.	★	0600X30DB	198	201	253	6
6.1	5	Int.	★	0610LB	52	52	109	7
	10	Int.	★	0610X10DB	85	88	141	7
	20	Int.	★	0610X20DB	150	153	206	7
	30	Int.	★	0610X30DB	215	218	271	7
6.2	5	Int.	★	0620LB	52	52	109	7
	10	Int.	□	0620X10DB	85	88	141	7
	20	Int.	□	0620X20DB	150	153	206	7
	30	Int.	□	0620X30DB	215	218	271	7
6.3	5	Int.	★	0630LB	52	52	109	7
	10	Int.	□	0630X10DB	85	88	141	7
	20	Int.	□	0630X20DB	150	153	206	7
	30	Int.	□	0630X30DB	215	218	271	7



Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤14.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
6.4	5	Int.	★	MNS0640LB	52	52	109	7
	10	Int.	□	0640X10DB	85	88	141	7
	20	Int.	□	0640X20DB	150	153	206	7
	30	Int.	□	0640X30DB	215	218	271	7
6.5	5	Int.	★	0650LB	52	52	109	7
	10	Int.	★	0650X10DB	85	88	141	7
	20	Int.	★	0650X20DB	150	153	206	7
	30	Int.	★	0650X30DB	215	218	271	7
6.6	5	Int.	★	0660LB	56	56	109	7
	10	Int.	□	0660X10DB	91	94	147	7
	20	Int.	□	0660X20DB	161	164	217	7
	30	Int.	□	0660X30DB	231	234	287	7
6.7	5	Int.	★	0670LB	56	56	109	7
	10	Int.	★	0670X10DB	91	94	147	7
	20	Int.	★	0670X20DB	161	164	217	7
	30	Int.	★	0670X30DB	231	234	287	7
6.8	5	Int.	★	0680LB	56	56	109	7
	10	Int.	□	0680X10DB	91	94	147	7
	20	Int.	□	0680X20DB	161	164	217	7
	30	Int.	□	0680X30DB	231	234	287	7
6.9	5	Int.	★	0690LB	56	56	109	7
	10	Int.	□	0690X10DB	91	94	147	7
	20	Int.	□	0690X20DB	161	164	217	7
	30	Int.	□	0690X30DB	231	234	287	7
7.0	5	Int.	★	0700LB	56	56	109	7
	10	Int.	★	0700X10DB	91	94	147	7
	20	Int.	★	0700X20DB	161	164	217	7
	30	Int.	★	0700X30DB	231	234	287	7
7.1	5	Int.	★	0710LB	60	64	118	8
	10	Int.	□	0710X10DB	98	101	155	8
	20	Int.	□	0710X20DB	173	176	230	8
	30	Int.	□	0710X30DB	248	251	305	8
7.2	5	Int.	★	0720LB	60	64	118	8
	10	Int.	★	0720X10DB	98	101	155	8
	20	Int.	★	0720X20DB	173	176	230	8
	30	Int.	★	0720X30DB	248	251	305	8

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
7.3	5	Int.	★	MNS0730LB	60	64	118	8
	10	Int.	□	0730X10DB	98	101	155	8
	20	Int.	□	0730X20DB	173	176	230	8
	30	Int.	□	0730X30DB	248	251	305	8
7.4	5	Int.	★	0740LB	60	64	118	8
	10	Int.	□	0740X10DB	98	101	155	8
	20	Int.	□	0740X20DB	173	176	230	8
	30	Int.	□	0740X30DB	248	251	305	8
7.5	5	Int.	★	0750LB	60	64	118	8
	10	Int.	□	0750X10DB	98	101	155	8
	20	Int.	□	0750X20DB	173	176	230	8
	30	Int.	□	0750X30DB	248	251	305	8
7.6	5	Int.	★	0760LB	64	64	118	8
	10	Int.	□	0760X10DB	104	107	161	8
	20	Int.	□	0760X20DB	184	187	241	8
	30	Int.	□	0760X30DB	264	267	321	8
7.7	5	Int.	★	0770LB	64	64	118	8
	10	Int.	□	0770X10DB	104	107	161	8
	20	Int.	□	0770X20DB	184	187	241	8
	30	Int.	□	0770X30DB	264	267	321	8
7.8	5	Int.	★	0780LB	64	64	118	8
	10	Int.	★	0780X10DB	104	107	161	8
	20	Int.	★	0780X20DB	184	187	241	8
	30	Int.	★	0780X30DB	264	267	321	8
7.9	5	Int.	★	0790LB	64	64	118	8
	10	Int.	□	0790X10DB	104	107	161	8
	20	Int.	□	0790X20DB	184	187	241	8
	30	Int.	□	0790X30DB	264	267	321	8
8.0	5	Int.	★	0800LB	64	64	118	8
	10	Int.	★	0800X10DB	104	107	161	8
	20	Int.	★	0800X20DB	184	187	241	8
	30	Int.	★	0800X30DB	264	267	321	8
8.1	5	Int.	★	0810LB	68	72	127	9
	10	Int.	□	0810X10DB	111	114	169	9
	20	Int.	□	0810X20DB	196	199	254	9
	30	Int.	□	0810X30DB	281	284	339	9

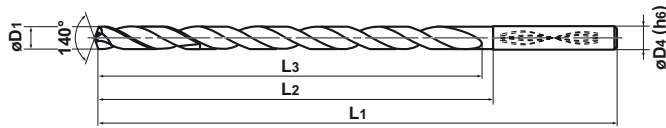
(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
8.2	5	Int.	★	MNS0820LB	68	72	127	9
	10	Int.	□	0820X10DB	111	114	169	9
	20	Int.	□	0820X20DB	196	199	254	9
	30	Int.	□	0820X30DB	281	284	339	9
8.3	5	Int.	★	0830LB	68	72	127	9
	10	Int.	□	0830X10DB	111	114	169	9
	20	Int.	□	0830X20DB	196	199	254	9
	30	Int.	□	0830X30DB	281	284	339	9
8.4	5	Int.	★	0840LB	68	72	127	9
	10	Int.	□	0840X10DB	111	114	169	9
	20	Int.	□	0840X20DB	196	199	254	9
	30	Int.	□	0840X30DB	281	284	339	9
8.5	5	Int.	★	0850LB	68	72	127	9
	10	Int.	□	0850X10DB	111	114	169	9
	20	Int.	□	0850X20DB	196	199	254	9
	30	Int.	□	0850X30DB	281	284	339	9
8.6	5	Int.	★	0860LB	72	72	127	9
	10	Int.	□	0860X10DB	117	120	175	9
	20	Int.	□	0860X20DB	207	210	265	9
	30	Int.	□	0860X30DB	297	300	355	9
8.7	5	Int.	★	0870LB	72	72	127	9
	10	Int.	□	0870X10DB	117	120	175	9
	20	Int.	□	0870X20DB	207	210	265	9
	30	Int.	□	0870X30DB	297	300	355	9
8.8	5	Int.	★	0880LB	72	72	127	9
	10	Int.	□	0880X10DB	117	120	175	9
	20	Int.	□	0880X20DB	207	210	265	9
	30	Int.	□	0880X30DB	297	300	355	9
8.9	5	Int.	★	0890LB	72	72	127	9
	10	Int.	□	0890X10DB	117	120	175	9
	20	Int.	□	0890X20DB	207	210	265	9
	30	Int.	□	0890X30DB	297	300	355	9
9.0	5	Int.	★	0900LB	72	72	127	9
	10	Int.	★	0900X10DB	117	120	175	9
	20	Int.	★	0900X20DB	207	210	265	9
	30	Int.	★	0900X30DB	297	300	355	9
9.1	5	Int.	★	0910LB	76	80	136	10
	10	Int.	□	0910X10DB	124	127	182	10
	20	Int.	□	0910X20DB	219	222	277	10
	30	Int.	□	0910X30DB	314	317	372	10
9.2	5	Int.	★	0920LB	76	80	136	10
	10	Int.	□	0920X10DB	124	127	182	10
	20	Int.	□	0920X20DB	219	222	277	10
	30	Int.	□	0920X30DB	314	317	372	10
9.3	5	Int.	★	0930LB	76	80	136	10
	10	Int.	□	0930X10DB	124	127	182	10
	20	Int.	□	0930X20DB	219	222	277	10
	30	Int.	□	0930X30DB	314	317	372	10

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
9.4	5	Int.	★	MNS0940LB	76	80	136	10
	10	Int.	□	0940X10DB	124	127	182	10
	20	Int.	□	0940X20DB	219	222	277	10
	30	Int.	□	0940X30DB	314	317	372	10
9.5	5	Int.	★	0950LB	76	80	136	10
	10	Int.	□	0950X10DB	124	127	182	10
	20	Int.	□	0950X20DB	219	222	277	10
	30	Int.	□	0950X30DB	314	317	372	10
9.6	5	Int.	★	0960LB	80	80	136	10
	10	Int.	□	0960X10DB	130	133	188	10
	20	Int.	□	0960X20DB	230	233	288	10
	30	Int.	□	0960X30DB	330	333	388	10
9.7	5	Int.	★	0970LB	80	80	136	10
	10	Int.	□	0970X10DB	130	133	188	10
	20	Int.	□	0970X20DB	230	233	288	10
	30	Int.	□	0970X30DB	330	333	388	10
9.8	5	Int.	★	0980LB	80	80	136	10
	10	Int.	★	0980X10DB	130	133	188	10
	20	Int.	★	0980X20DB	230	233	288	10
	30	Int.	★	0980X30DB	330	333	388	10
9.9	5	Int.	★	0990LB	80	80	136	10
	10	Int.	□	0990X10DB	130	133	188	10
	20	Int.	□	0990X20DB	230	233	288	10
	30	Int.	□	0990X30DB	330	333	388	10
10.0	5	Int.	★	1000LB	80	80	136	10
	10	Int.	★	1000X10DB	130	133	188	10
	20	Int.	★	1000X20DB	230	233	288	10
	30	Int.	★	1000X30DB	330	333	388	10
10.1	5	Int.	★	1010LB	84	88	149	11
	10	Int.	□	1010X10DB	137	140	201	11
	20	Int.	□	1010X20DB	242	245	306	11
10.2	5	Int.	★	1020LB	84	88	149	11
	10	Int.	□	1020X10DB	137	140	201	11
10.3	5	Int.	★	1030LB	84	88	149	11
	10	Int.	□	1030X10DB	137	140	201	11
	20	Int.	□	1030X20DB	242	245	306	11
10.4	5	Int.	★	1040LB	84	88	149	11
	10	Int.	□	1040X10DB	137	140	201	11
	20	Int.	□	1040X20DB	242	245	306	11
10.5	5	Int.	★	1050LB	84	88	149	11
	10	Int.	★	1050X10DB	137	140	201	11
	20	Int.	★	1050X20DB	242	245	306	11
10.6	5	Int.	★	1060LB	88	88	149	11
	10	Int.	□	1060X10DB	143	146	207	11
	20	Int.	□	1060X20DB	253	256	317	11

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

MNS



D1	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤14.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027

(Note) MNS type can be used for shrink fit holders.

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
10.7	5	Int.	★	MNS1070LB	88	88	149	11
	10	Int.	□	1070X10DB	143	146	207	11
	20	Int.	□	1070X20DB	253	256	317	11
10.8	5	Int.	★	1080LB	88	88	149	11
	10	Int.	□	1080X10DB	143	146	207	11
	20	Int.	□	1080X20DB	253	256	317	11
10.9	5	Int.	★	1090LB	88	88	149	11
	10	Int.	□	1090X10DB	143	146	207	11
	20	Int.	□	1090X20DB	253	256	317	11
11.0	5	Int.	★	1100LB	88	88	149	11
	10	Int.	★	1100X10DB	143	146	207	11
	20	Int.	★	1100X20DB	253	256	317	11
11.1	5	Int.	★	1110LB	92	96	158	12
	10	Int.	□	1110X10DB	150	153	215	12
	20	Int.	□	1110X20DB	265	268	330	12
11.2	5	Int.	★	1120LB	92	96	158	12
	10	Int.	□	1120X10DB	150	153	215	12
	20	Int.	□	1120X20DB	265	268	330	12
11.3	5	Int.	★	1130LB	92	96	158	12
	10	Int.	□	1130X10DB	150	153	215	12
	20	Int.	□	1130X20DB	265	268	330	12
11.4	5	Int.	★	1140LB	92	96	158	12
	10	Int.	□	1140X10DB	150	153	215	12
	20	Int.	□	1140X20DB	265	268	330	12
11.5	5	Int.	★	1150LB	92	96	158	12
	10	Int.	□	1150X10DB	150	153	215	12
	20	Int.	□	1150X20DB	265	268	330	12
11.6	5	Int.	★	1160LB	96	96	158	12
	10	Int.	□	1160X10DB	156	159	221	12
	20	Int.	□	1160X20DB	276	279	341	12
11.7	5	Int.	★	1170LB	96	96	158	12
	10	Int.	□	1170X10DB	156	159	221	12
	20	Int.	□	1170X20DB	276	279	341	12
11.8	5	Int.	★	1180LB	96	96	158	12
	10	Int.	□	1180X10DB	156	159	221	12
	20	Int.	□	1180X20DB	276	279	341	12

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
11.9	5	Int.	★	MNS1190LB	96	96	158	12
	10	Int.	□	1190X10DB	156	159	221	12
	20	Int.	□	1190X20DB	276	279	341	12
12.0	5	Int.	★	1200LB	96	96	158	12
	10	Int.	★	1200X10DB	156	159	221	12
	20	Int.	★	1200X20DB	276	279	341	12
12.1	5	Int.	★	1210LB	100	104	167	13
	10	Int.	□	1210X10DB	163	166	229	13
	20	Int.	□	1210X20DB	288	291	354	13
12.2	5	Int.	★	1220LB	100	104	167	13
	10	Int.	□	1220X10DB	163	166	229	13
	20	Int.	□	1220X20DB	288	291	354	13
12.3	5	Int.	★	1230LB	100	104	167	13
	10	Int.	□	1230X10DB	163	166	229	13
	20	Int.	□	1230X20DB	288	291	354	13
12.4	5	Int.	★	1240LB	100	104	167	13
	10	Int.	□	1240X10DB	163	166	229	13
	20	Int.	□	1240X20DB	288	291	354	13
12.5	5	Int.	★	1250LB	100	104	167	13
	10	Int.	□	1250X10DB	163	166	229	13
	20	Int.	□	1250X20DB	288	291	354	13
12.6	5	Int.	★	1260LB	104	104	167	13
	10	Int.	□	1260X10DB	169	172	235	13
	20	Int.	□	1260X20DB	299	302	365	13
12.7	5	Int.	★	1270LB	104	104	167	13
	10	Int.	□	1270X10DB	169	172	235	13
	20	Int.	□	1270X20DB	299	302	365	13
12.8	5	Int.	★	1280LB	104	104	167	13
	10	Int.	□	1280X10DB	169	172	235	13
	20	Int.	□	1280X20DB	299	302	365	13
12.9	5	Int.	★	1290LB	104	104	167	13
	10	Int.	□	1290X10DB	169	172	235	13
	20	Int.	□	1290X20DB	299	302	365	13
13.0	5	Int.	★	1300LB	104	104	167	13
	10	Int.	★	1300X10DB	169	172	235	13
	20	Int.	★	1300X20DB	299	302	365	13

(Note) Please contact Mitsubishi Carbide for any geometry that is not in the brochure (e.g. different diameter and length).

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
13.1	5	Int.	★	MNS1310LB	108	112	176	14
	10	Int.	□	1310X10DB	176	179	243	14
	20	Int.	□	1310X20DB	311	314	378	14
13.2	5	Int.	★	1320LB	108	112	176	14
	10	Int.	□	1320X10DB	176	179	243	14
	20	Int.	□	1320X20DB	311	314	378	14
13.3	5	Int.	★	1330LB	108	112	176	14
	10	Int.	□	1330X10DB	176	179	243	14
	20	Int.	□	1330X20DB	311	314	378	14
13.4	5	Int.	★	1340LB	108	112	176	14
	10	Int.	□	1340X10DB	176	179	243	14
	20	Int.	□	1340X20DB	311	314	378	14
13.5	5	Int.	★	1350LB	108	112	176	14
	10	Int.	□	1350X10DB	176	179	243	14
	20	Int.	□	1350X20DB	311	314	378	14

Drill Dia. D1 (mm)	Hole Depth (l/d)	Coolant (Int./Ext.)	Stock TF15	Order Number	Dimensions (mm)			
					L3	L2	L1	D4
13.6	5	Int.	★	MNS1360LB	112	112	176	14
	10	Int.	□	1360X10DB	182	185	249	14
	20	Int.	□	1360X20DB	322	325	389	14
13.7	5	Int.	★	1370LB	112	112	176	14
	10	Int.	□	1370X10DB	182	185	249	14
	20	Int.	□	1370X20DB	322	325	389	14
13.8	5	Int.	★	1380LB	112	112	176	14
	10	Int.	□	1380X10DB	182	185	249	14
	20	Int.	□	1380X20DB	322	325	389	14
13.9	5	Int.	★	1390LB	112	112	176	14
	10	Int.	□	1390X10DB	182	185	249	14
	20	Int.	□	1390X20DB	322	325	389	14
14.0	5	Int.	★	1400LB	112	112	176	14
	10	Int.	★	1400X10DB	182	185	249	14
	20	Int.	★	1400X20DB	322	325	389	14

Recommended Cutting Conditions

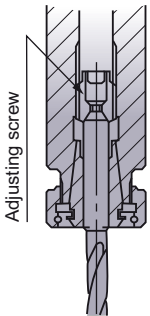
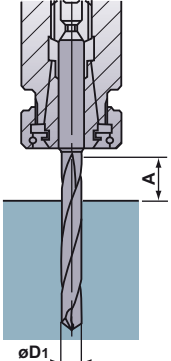
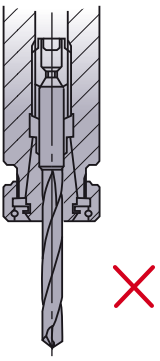
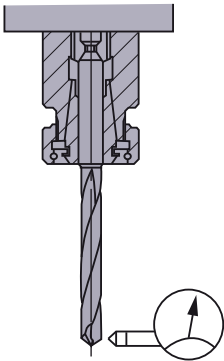
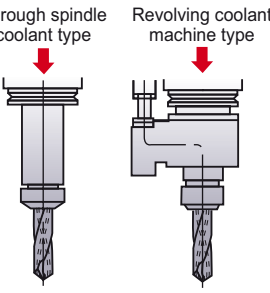
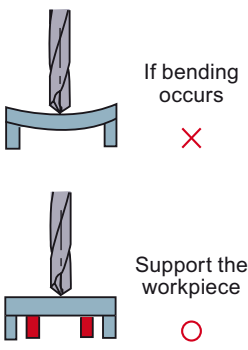
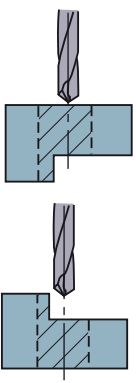
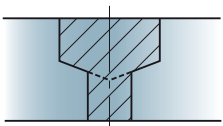
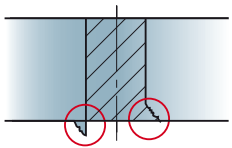
Work Material	Drill Type	Drill Diameter					
		φ3.0—φ6.0		φ6.0—φ10.0		φ10.0—φ14.0	
		Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
N Aluminium Alloy Casting Aluminium Die Casting	L/D 3, 5, 8	80—150	0.20—0.50	100—200	0.30—1.00	150—250	0.30—1.00
	L/D 10—30	60—120	0.20—0.50	80—150	0.30—1.00	120—200	0.30—1.00
Wrought Aluminium Alloy	L/D 3, 5, 8	80—150	0.15—0.30	100—200	0.20—0.40	150—250	0.20—0.40
	L/D 10—30	60—120	0.15—0.30	80—150	0.20—0.40	120—200	0.20—0.40

Work Material	Drill Type	Drill Diameter	
		φ14.0—φ20.0	
		Cutting Speed (m/min)	Feed (mm/rev)
N Aluminium Alloy Casting Aluminium Die Casting	L/D 3, 5, 8	150—250	0.30—1.00
	L/D 10—30	—	—
Wrought Aluminium Alloy	L/D 3, 5, 8	150—250	0.30—1.00
	L/D 10—30	—	—

(Note 1) When using the drill with a length over l/d 10, it is necessary to use a prep holes as a guide. (If no prep-hole is used then drill breakage can occur)

(Note 2) For pilot hole drilling, Mitsubishi Materials MNS, MAE-MB or MAS-MB drill is recommended.

Operational Guidance for the MNS Drill (L/D 3, 5, 8)

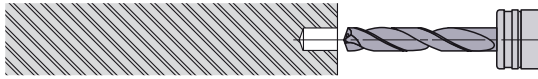
<p>Drill holding</p>  <p>Adjusting screw</p> <p>Thrust bearing type collet chuck holds the drill securely.</p>	<p>Drill length</p>  <p>$A : \geq D1 \times 1.5$</p>	<p>Drill installation</p>  <p>Do not clamp on the flutes.</p>	<p>Installation tolerance</p>  <p>Runout $\leq 0.03\text{mm}$</p>
<p>Coolant method (MNS)</p>  <p>Through spindle coolant type Revolving coolant machine type</p> <p>Coolant pressure is approx. 0.5 - 7MPa.</p>	<p>Coolant handling</p> <p>< MNS type ></p> <ol style="list-style-type: none"> 1) Dirt and dust particles in old coolant can clog the oil hole and prevent effective flow. Regular coolant exchange is recommended. 2) Small particles of swarf will jam in the oil hole. Use a filter as a preventative measure. When using small diameter drills, use a fine mesh filter. 	<p>Thin workpieces</p>  <p>If bending occurs</p> <p>Support the workpiece</p>	<p>Interrupted cutting</p>  <p>One process</p> <p>① Lower the feed when drilling the interrupted part.</p> <p>Requires prior machining</p> <p>① Spot face with an end mill prior to drilling.</p>
<p>Stepped holes</p>  <ol style="list-style-type: none"> ① Divide the machining into two processes. ② Drill the larger hole first. <p>*Tools for chamfering and spot facing can be produced to order.</p>	<p>Burring and workpiece chipping</p>  <ol style="list-style-type: none"> ① Lower the feed rate when breaking through. ② Add a chamfer. ③ Change the point angle. 		

Operational Guidance for the MNS Type Long Drill (L/D 10, 12, 15, 20, 25, 30)

Flat Face Drilling

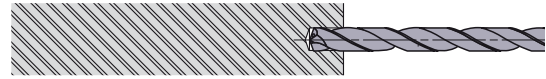
● Drilling a blind hole

1. Drilling a pilot hole



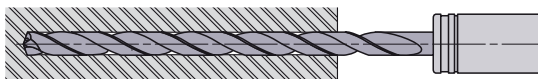
- ① Use a drill with a larger (flatter) point angle than the super long type. Mitsubishi type MNS, MAE-MB or MAS-MB drill is recommended.
- ② Ensure a high precision hole is drilled for the guide.
- ③ Drill depth : Approx 1D or deeper.
(Adjust the pilot hole depth according to the length of the super long type.)

2. Initial cutting with the long type drill



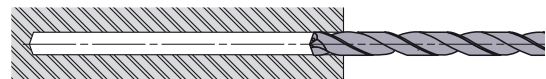
- ① Penetrate the pilot hole at low revolution. (Cutting speed 20m-30m/min, feed rate 0.2mm-0.3mm/rev)
- ② Stop the long type drill 1mm-3mm short of the pilot hole bottom.

3. Drill the deep hole



- ① Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

4. Drill retraction

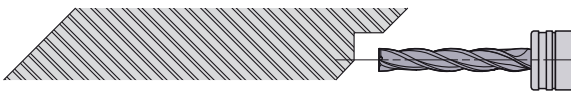


- ① After drilling, lower the cutting revolution about 1mm-2mm short of the hole end. (Cutting speed of around 20m-30m/min)
- ② Retract the drill to the pilot hole depth starting point at a feed rate of 3000mm/min.
- ③ Finally, clear the hole at a cutting speed of 20m-30m/min and feed rate of 0.2mm-0.3mm/rev.

Interrupted Drilling

● Drilling and breaking through on irregular faces or angles

1. Spot facing



- ① Machine a flat on the irregular face by using an end mill or slot drill capable of spot facing. Make the spot face diameter the same size as the required deep hole diameter.

2. Drilling a pilot hole



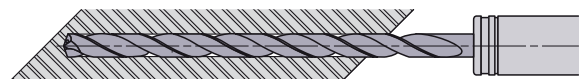
- ① Use a drill with a larger (flatter) point angle than the super long type. Mitsubishi type MNS, MAE-MB or MAS-MB drill is recommended.
- ② Ensure a high precision hole is drilled for the guide.
- ③ Drill depth : Approx 1D or deeper.
(Adjust the pilot hole depth according to the length of the super long type.)

3. Initial cutting with the long type drill



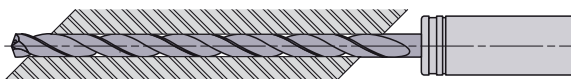
- ① Penetrate the pilot hole at a low revolution. (Cutting speed 20m-30m/min, feed rate 0.2mm-0.3mm/rev)
- ② Stop the long type drill 1mm-3mm short of the pilot hole bottom.

4. Drill the deep hole



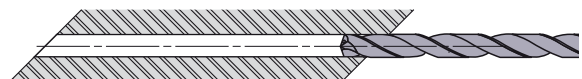
- ① Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

5. Breaking through



- ① When breaking through, the cutting edge can be damaged.
- ② A feed rate of 0.05mm-0.1mm/rev is recommended.

6. Drill retraction



- ① Retract the drill to the pilot hole depth starting point at a feed rate of 3000mm/min.
- ② Finally clear the hole at a cutting speed of 20m-30m/min and feed rate of 0.2mm-0.3mm/rev.

Solid Carbide Drill for High Efficiency Machining of Aluminium Alloys

For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc. ●Grinding or heating of cutting tools produces dust and mist. Inhaling large amount of dust or contacting with eyes and skins may harm your body.



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