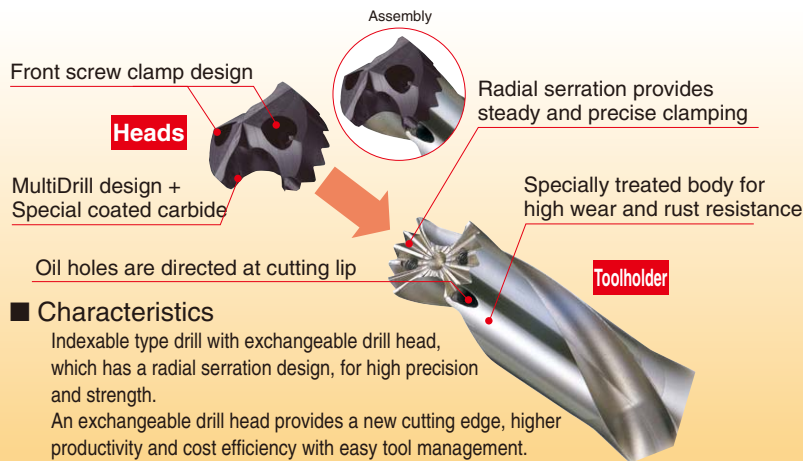




Characteristics

Indexable type drill with exchangeable drill head, which has a radial serration design, for high precision and strength.

An exchangeable drill head provides a new cutting edge, higher productivity and cost efficiency with easy tool management.

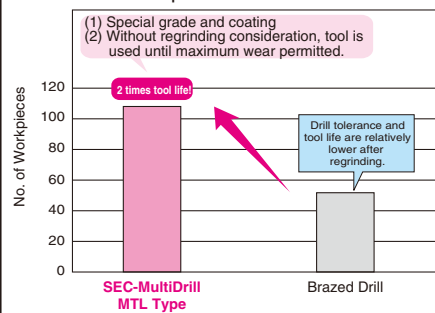
Regrinding allowance of 1.5mm to 3.0mm makes further tool cost reductions possible.

Series

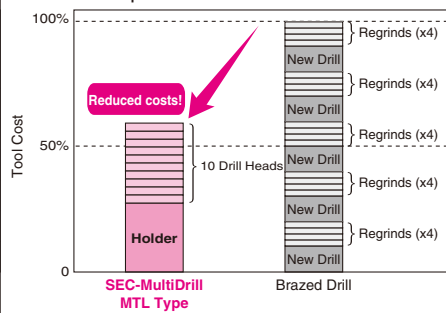
Heads	Toolholder(L/D)	Applications	ϕD_c range
MTLType	MType(3D)	General Steel	$\phi 12.0$ to $\phi 42.5$
	LType(5D)		$\phi 12.0$ to $\phi 42.5$
	DType(8D)		$\phi 13.5$ to $\phi 42.5$
MELType	MType(3D)	SUS SS FC	$\phi 12.0$ to $\phi 30.5$
	LType(5D)		$\phi 12.0$ to $\phi 30.5$
	DType(8D)		$\phi 13.5$ to $\phi 30.5$
MBType	B3Type(3D)	Structural Steel	$\phi 24.5$ to $\phi 26.7$

Tool Life And Cost Comparison

Tool Life Comparison



Cost Comparison



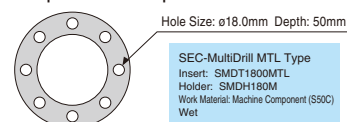
Results

For regrinding purpose, brazed drill are used only up to 50-70% of its actual tool life potential.

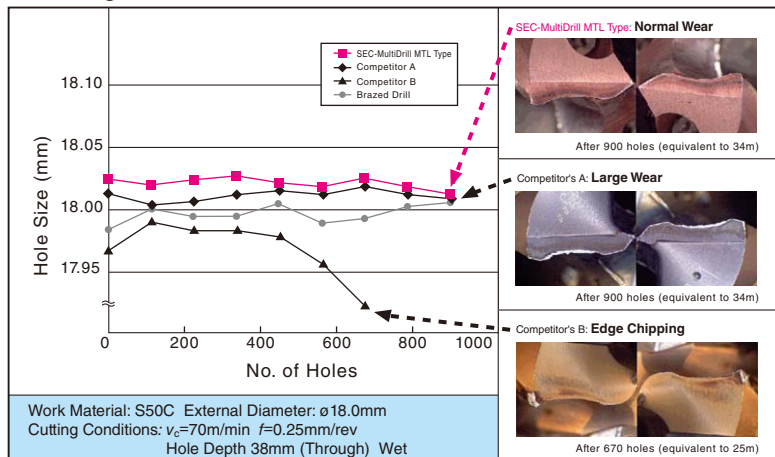
SEC-MultiDrill MTL Type is used up to 100%

MTL Type SEC-MultiDrills offer:
Double the tool life of brazed drills!
Faster tool replacement!

Workpiece Example

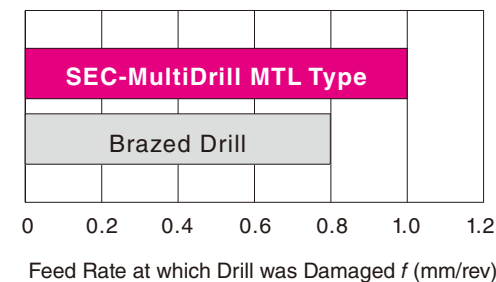


Drilling Precision



Tool Strength

Durability Comparison



Work Material: S50C External Diameter: $\phi 16.0$ mm
Cutting Conditions: $v_c=80$ m/min
Hole Depth 38mm

Characteristics of Next Generation DEX Coating

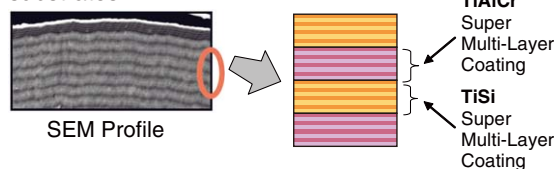
Sumitomo Electric Hardmetal's next-generation drill coating utilizes nano-coating technology to provide more than double the tool life of conventional coatings.

Silicon and chrome improve wear, heat, and adhesion resistance.

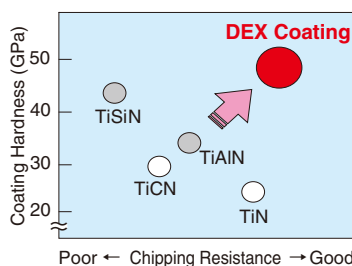
New super multi-layered structure offers significantly improved chip resistance (coating strength).

Coating Design

World's first combined super multi-layered coating is made from alternate layers of super multi-layered substrates.

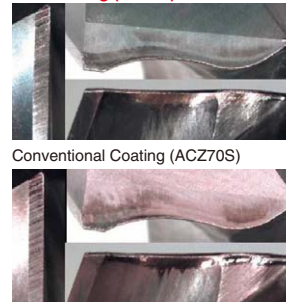


Characteristics of Films



Drastically Reduced Rake Face Wear

DEX Coating (ACX70)

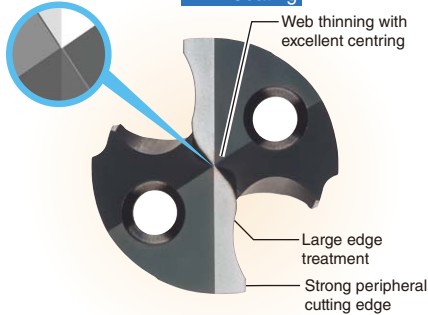


Work Material: S50C
Cutting Conditions: $v_c=80$ m/min $f=0.25$ mm/rev
Hole Depth: 38mm Wet
Cutting Length: 32.8m

MTL Type Suitable for high efficiency drilling of general steel

X-Type Thinning

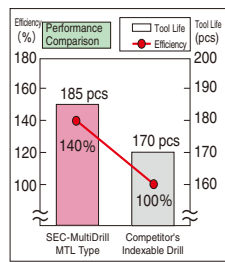
DEX Coating



Application Examples MTL Type

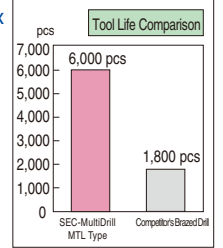
Improved tool life and efficiency

Work Material: Housing (S20C)
Drill size: For $\phi 15 \times 5D$
Cutting Conditions: $v_c=107\text{m/min}$
 $f=0.3\text{mm/rev}$
Hole Depth: 32mm $\times$ 12 holes



Tool life extended by 3.3x

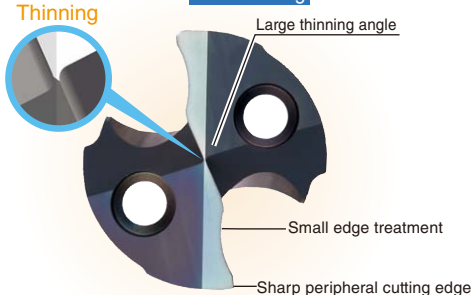
Work Material: Bracket (S45C)
Drill size: For $\phi 20 \times 3D$
Cutting Conditions: $v_c=98\text{m/min}$
 $f=0.18\text{mm/rev}$
Hole Depth: 17mm



MEL Type Suitable for exotic metals such as stainless steel, soft steel, grey cast iron, and low rigidity setups.

Overlap Thinning

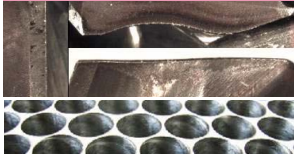
DEX Coating



- **Excellent cutting edge design for stainless steel and soft steel**
Large thinning angle solves the convex R part breakages peculiar to soft steel and reduces adhesion breakages with SUS.
- **Improved chipping resistance around hole openings of cast iron**
Edge sharpness improvements in peripheral areas prevent chipping around hole openings in cast iron.

Application Examples (MEL Type)

MEL (Cutting Length 15m)



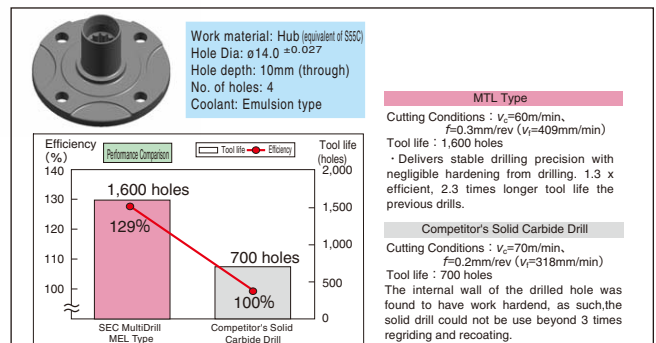
SEC-MultiDrill MEL type has excellent centring, produces no rifle marks and no edge breakage after 15m.

Work Material: SUS304 Drill Size: $\phi 14 \times 5D$
Cutting Conditions: $v_c=60\text{m/min}$, $f=0.15\text{mm/rev}$ Coolant: Emulsion Type

Competitor's Product (Cutting Length 11m)



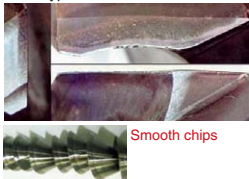
Competitor's indexable drill exhibited poor centring and produced rifle marks. The centre of the drill broke after 11m of drilling.



Stable Performance in Low Rigidity Conditions

- **Stable and long tool life even when used with low rigidity work, jigs and equipment**

MEL Type: 2000 uses



Smooth chips

MTL Type: 676 uses

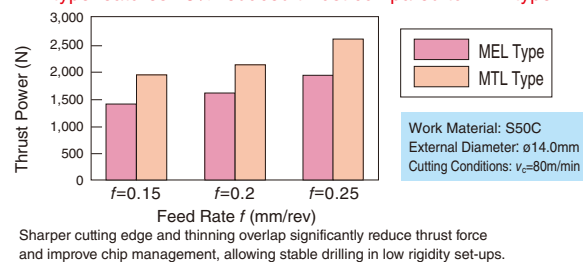


Chips have multiple straight edges

Work Material: S48C (Vehicle Chassis Component) External Diameter: $\phi 28.0\text{mm}$ Equipment: Vertical Machine (BT40)
Cutting Conditions: $v_c=80\text{m/min}$, $f=0.23\text{mm/rev}$, $\phi 28 \times 30\text{mm}$ (Blind Hole), Wet

25% Reduction in Cutting Resistance (Thrust Force)

- **MEL Type features 25% reduced thrust compared to MTL type!**



Recommended Cutting Conditions (MTL Type / MEL Type)

v_c : Cutting Speed (m/min) f : Feed Rate (mm/rev)

Work Material	Soft Steel (Up to 250HB)	General Steel (250 to 320HB)	Hardened Steel (45HRC)	Stainless Steel (Up to 200HB)	Grey Cast Iron	Ductile Cast Iron	Aluminum Alloy*
Recommended Head	MTL Type / MEL Type	MTL Type / MEL Type	MTL Type	MEL Type	MTL Type / MEL Type	MTL Type / MEL Type	MEL Type
Drill Diameter ϕD_2 (mm)	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.
Up to $\phi 16.0$	v_c : 80-100-120 (50-70-80) f : 0.15-0.20-0.35	v_c : 70-100-120 (50-70-80) f : 0.15-0.20-0.30	v_c : 40-60-90 (30-50-70) f : 0.10-0.15-0.20	v_c : 50-60-80 (40-50-60) f : 0.10-0.15-0.20	v_c : 50-70-90 (40-60-80) f : 0.20-0.25-0.30	v_c : 50-60-80 (40-50-70) f : 0.20-0.25-0.30	v_c : 200-240-260 (180-200-240) f : 0.35-0.45-0.55
Up to $\phi 20.0$	v_c : 80-100-120 (50-70-80) f : 0.15-0.25-0.35	v_c : 70-100-120 (50-70-80) f : 0.15-0.25-0.35	v_c : 40-60-90 (30-50-70) f : 0.15-0.20-0.25	v_c : 60-70-90 (40-60-70) f : 0.15-0.20-0.25	v_c : 60-80-100 (50-70-90) f : 0.20-0.30-0.35	v_c : 50-70-90 (40-60-80) f : 0.20-0.25-0.35	v_c : 200-240-260 (180-200-240) f : 0.35-0.50-0.60
Up to $\phi 30.8$	v_c : 80-100-120 (50-70-80) f : 0.20-0.30-0.35	v_c : 70-100-120 (50-70-80) f : 0.20-0.25-0.35	v_c : 40-60-90 (30-50-70) f : 0.15-0.20-0.25	v_c : 60-70-90 (40-60-70) f : 0.15-0.20-0.25	v_c : 60-80-100 (50-70-90) f : 0.20-0.30-0.40	v_c : 50-70-90 (40-60-80) f : 0.25-0.30-0.35	v_c : 200-240-260 (180-200-240) f : 0.35-0.50-0.60

Note: Where machine and work clamp rigidity are good, conditions may be increased up to the maximum.

For 8xD drills, please use feed rates stated within the ().

Before drilling 8xD holes, a guide hole of similar diameter must be made.

(+) Inquire about drills specifically for aluminum.

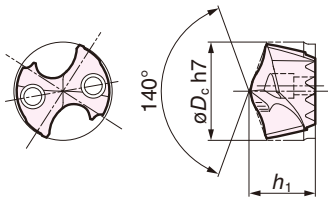
SMD Type

	Carbon Steel Alloy Steel Up to 0.22%	Tempered Steel From 0.22%	Hardened Steel Up to 45HRC	Stainless Steel From 45HRC	Ti Alloy	Heat-resistant steel	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper alloy	Composite CFRP
MTL	◎	◎	○	○	○	○	◎	◎	○	○	○
MEL	◎	○	○	◎	○	○	◎	◎	○	○	○

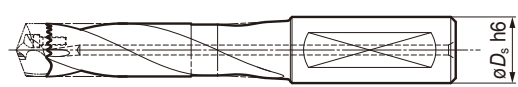


Recommended Cutting Conditions J45

● Drill Heads



● Holder

■ Drill Head ($\phi 12.0$ to $\phi 30.5$) [Grade MTL Type: ACX70 / MEL Type: ACX80]

■ Holders M (3D), L (5D), D (8D)

Drill Diameter $\varnothing D_c$ (mm)	Heads					Holders						
	MTL Type		MEL Type		h_1	Drill Diameter Range ($\varnothing D_c$)	M (3D)		L (5D)		D (8D)	
	Cat. No	Stock	Cat. No	Stock			Cat. No	Stock	Cat. No	Stock	Cat. No	Stock
12.0	SMDT 1200MTL	●	SMDT 1200MEL	●	9.1	From 12.0 to below 12.5	SMDH 120M	●	SMDH 120L	●	—	—
12.1	1210MTL	●	1210MEL	●								
12.2	1220MTL	●	1220MEL	●								
12.3	1230MTL	●	1230MEL	●								
12.5	SMDT 1250MTL	●	SMDT 1250MEL	●	9.4	From 12.5 to below 13.0	SMDH 125M	●	SMDH 125L	●	—	—
12.6	1260MTL	●	1260MEL	●								
12.7	1270MTL	●	1270MEL	●								
13.0	SMDT 1300MTL	●	SMDT 1300MEL	●	9.7	From 13.0 to below 13.5	SMDH 130M	●	SMDH 130L	●	—	—
13.1	1310MTL	●	1310MEL	●								
13.5	SMDT 1350MTL	●	SMDT 1350MEL	●	10.3	From 13.5 to 14.5	SMDH 140M	●	SMDH 140L	●	SMDH 140D	●
14.0	1400MTL	●	1400MEL	●								
14.1	1410MTL	●	1410MEL	●								
14.2	1420MTL	●	1420MEL	●								
14.5	1450MTL	●	1450MEL	●								
15.0	SMDT 1500MTL	●	SMDT 1500MEL	●	11.0	Above 14.5 to 15.5	SMDH 150M	●	SMDH 150L	●	SMDH 150D	●
15.5	1550MTL	●	1550MEL	●								
15.6	SMDT 1560MTL	●	SMDT 1560MEL	●	11.6	Above 15.5 to 16.5	SMDH 160M	●	SMDH 160L	●	SMDH 160D	●
15.7	1570MTL	●	1570MEL	●								
16.0	1600MTL	●	1600MEL	●								
16.3	1630MTL	●	1630MEL	●								
16.5	1650MTL	●	1650MEL	●	12.2	Above 16.5 to 17.5	SMDH 170M	●	SMDH 170L	●	SMDH 170D	●
17.0	SMDT 1700MTL	●	SMDT 1700MEL	●								
17.5	1750MTL	●	1750MEL	●								
17.6	SMDT 1760MTL	●	SMDT 1760MEL	●								
17.7	1770MTL	●	1770MEL	●								
18.0	SMDT 1800MTL	●	SMDT 1800MEL	●	12.9	Above 17.5 to 18.5	SMDH 180M	●	SMDH 180L	●	SMDH 180D	●
18.5	1850MTL	●	1850MEL	●								
19.0	SMDT 1900MTL	●	SMDT 1900MEL	●								
19.5	1950MTL	●	1950MEL	●	13.5	Above 18.5 to 19.5	SMDH 190M	●	SMDH 190L	●	SMDH 190D	●
20.0	SMDT 2000MTL	●	SMDT 2000MEL	●								
20.5	2050MTL	●	2050MEL	●								
21.0	SMDT 2100MTL	●	SMDT 2100MEL	●	14.1	Above 19.5 to 20.5	SMDH 200M	●	SMDH 200L	●	SMDH 200D	●
21.2	2120MTL	●	2120MEL	●								
21.5	2150MTL	●	2150MEL	●								
22.0	SMDT 2200MTL	●	SMDT 2200MEL	●								
22.5	2250MTL	●	2250MEL	●	14.8	Above 20.5 to 21.5	SMDH 210M	●	SMDH 210L	●	SMDH 210D	●
23.0	SMDT 2300MTL	●	SMDT 2300MEL	●								
23.5	2350MTL	●	2350MEL	●								
24.0	SMDT 2400MTL	●	SMDT 2400MEL	●	15.0	Above 21.5 to 22.8	SMDH 220M	●	SMDH 220L	●	SMDH 220D	●
24.1	2410MTL	●	2410MEL	●								
24.5	2450MTL	●	2450MEL	●								
25.0	SMDT 2500MTL	●	SMDT 2500MEL	●								
25.5	2550MTL	●	2550MEL	●	15.1	Above 22.8 to 23.8	SMDH 230M	●	SMDH 230L	●	SMDH 230D	●
26.0	SMDT 2600MTL	●	SMDT 2600MEL	●								
26.5	2650MTL	●	2650MEL	●								
27.0	SMDT 2700MTL	●	SMDT 2700MEL	●	15.4	Above 23.8 to 24.8	SMDH 240M	●	SMDH 240L	●	SMDH 240D	●
27.5	2750MTL	●	2750MEL	●								
28.0	SMDT 2800MTL	●	SMDT 2800MEL	●								
28.5	2850MTL	●	2850MEL	●								
29.0	SMDT 2900MTL	●	SMDT 2900MEL	●	15.8	Above 24.8 to 25.8	SMDH 250M	●	SMDH 250L	●	SMDH 250D	●
29.5	2950MTL	●	2950MEL	●								
30.0	SMDT 3000MTL	●	SMDT 3000MEL	●								
30.5	3050MTL	●	3050MEL	●	16.4	Above 25.8 to 26.8	SMDH 260M	●	SMDH 260L	●	SMDH 260D	●
27.0	SMDT 2700MTL	●	SMDT 2700MEL	●								
27.5	2750MTL	●	2750MEL	●								
28.0	SMDT 2800MTL	●	SMDT 2800MEL	●	17.1	Above 26.8 to 27.8	SMDH 270M	●	SMDH 270L	●	SMDH 270D	●
28.5	2850MTL	●	2850MEL	●								
29.0	SMDT 2900MTL	●	SMDT 2900MEL	●								
29.5	2950MTL	●	2950MEL	●	17.7	Above 27.8 to 28.8	SMDH 280M	●	SMDH 280L	●	SMDH 280D	●
30.0	SMDT 3000MTL	●	SMDT 3000MEL	●								
30.5	3050MTL	●	3050MEL	●								
29.0	SMDT 2900MTL	●	SMDT 2900MEL	●	18.3	Above 28.8 to 29.8	SMDH 290M	●	SMDH 290L	●	SMDH 290D	●
29.5	2950MTL	●	2950MEL	●								
30.0	SMDT 3000MTL	●	SMDT 3000MEL	●								
30.5	3050MTL	●	3050MEL	●	19.0	Above 29.8 to 30.8	SMDH 300M	●	SMDH 300L	●	SMDH 300D	●
31.0	3100MTL	●	3100MEL	●								
31.5	3150MTL	●	3150MEL	●								

 $\phi 31.0$ to $\phi 42.5$

J48

Inquire about production of holders not listed in stock.

MTL Type



MEL Type

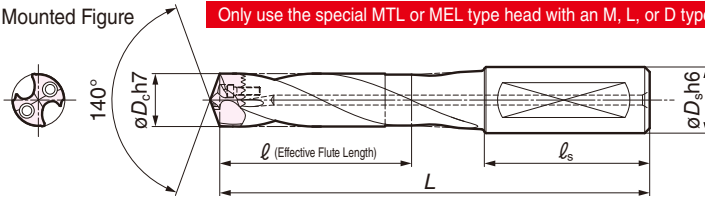


SEC-MultiDrills

SMD Type

● Mounted Figure

Only use the special MTL or MEL type head with an M, L, or D type holder.



■ Dimensions of Assembled Drill with SMD Type

■ Spare Parts, Recommended Tightening Torque

Drill Diameter ϕD_c (mm)	M (3D)		L (5D)		D (8D)		Shank		Cap Screw	Spanner	Recommended Tightening Torque (N·m)	Drill Diameter ϕD_c
	Dimensions		Dimensions		Dimensions		Dimensions					
	ℓ	L	ℓ	L	ℓ	L	ℓ_s	ϕD_s				
12.0	44	105	69	130	—	—	48	16	BXD02208IP	TRDR08IP	0.75 to 1.0	12.0
12.1												12.1
12.2												12.2
12.3												12.3
12.5	44	105	69	130	—	—	48	16				12.5
12.6												12.6
12.7												12.7
13.0												13.0
13.1	47	110	74	140	—	—	48	16				13.1
13.5	52.5	116.5	81.5	146.5	124.5	191.5	48	16				13.5
14.0												14.0
14.1												14.1
14.2												14.2
14.5												14.5
15.0	55.5	126.5	86.5	156.5	133.5	201.5	50	20				15.0
15.5												15.5
15.6	59.5	131.5	92.5	166.5	141.5	211.5	50	20	BXD02509IP	TRDR10IP	0.93 to 1.24	15.6
15.7												15.7
16.0												16.0
16.3												16.3
16.5												16.5
17.0	62.5	136.5	97.5	171.5	150.5	221.5	50	20				17.0
17.5												17.5
17.6	66.5	141.5	103.5	176.5	158.5	226.5	50	20				17.6
17.7												17.7
18.0												18.0
18.5	69.5	156.5	108.5	191.5	167.5	251.5	56	25	BXD03011IP	TRDR15IP	1.83 to 2.44	18.5
19.0												19.0
19.5												19.5
20.0												20.0
20.5												20.5
21.0	21.0											
21.2	76.5	156.5	119.5	196.5	184.5	266.5	56	25	21.2			
21.5									21.5			
22.0	80.1	161.1	125.1	201.1	192.1	271.1	56	25	BXD03512IP	TRDR15IP	2.79 to 3.72	22.0
22.5												22.5
23.0	82.6	160.6	129.6	210.6	200.6	280.6	56	25				23.0
23.5												23.5
24.0	86.2	170.2	135.2	220.2	208.2	295.2	60	32				24.0
24.1									24.1			
24.5	88	170	140	225	217	300	60	32	BXD04014IP	TRDR20IP	4.14 to 5.52	24.5
25.0												25.0
25.5												25.5
26.0												26.0
26.5												26.5
27.0	92	175	146	230	225	310	60	32				27.0
27.5									27.5			
28.0	94	175	151	235	234	320	60	32	BXD04515IP	TRDR25IP	4.98 to 6.64	28.0
28.5												28.5
29.0	100	185	162	245	251	335	60	32				29.0
29.5												29.5
30.0	104	185	167	255	259	345	60	32				30.0
30.5									30.5			

J

Drilling

Solid

Special

Indexable

Reamer

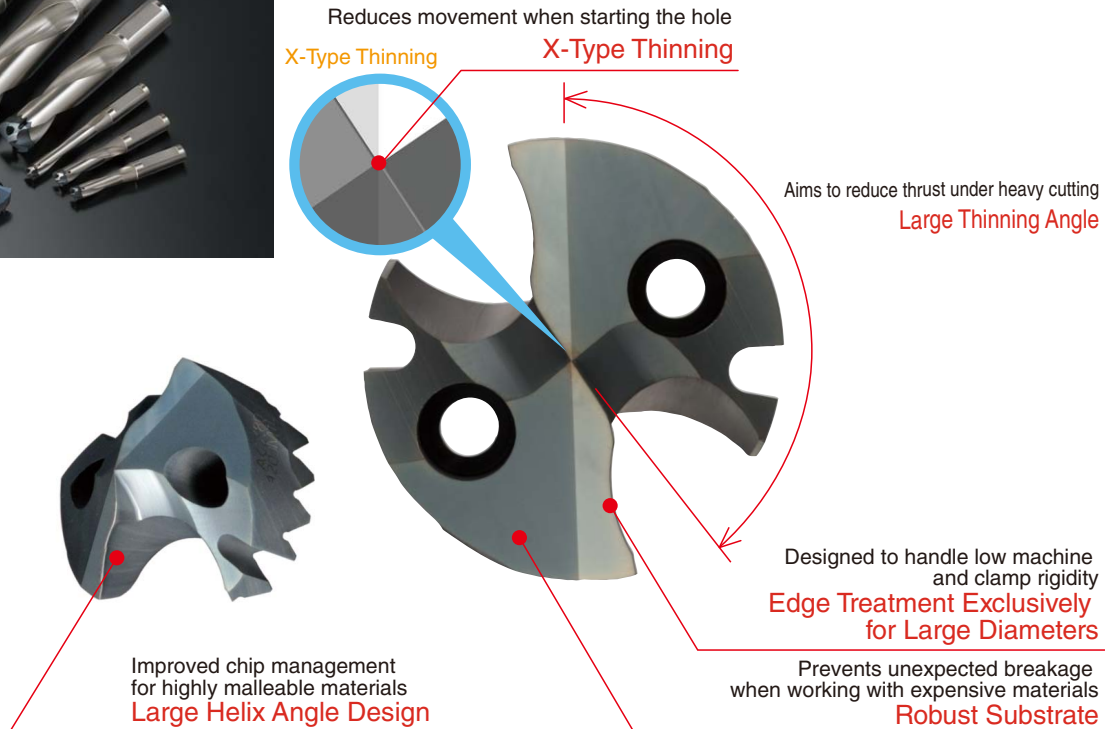
Brazed

Others

SMD Type (Large Holes)

Large Hole MTL Type

Tool edge design ideal for malleable material used for large casings, etc.
Edge design suitable for malleable material commonly used for large hole drilling.



● Indexable head MTL Type



● Toolholder



■ Drill Head (ø31.0 to ø42.5mm) [Grade MTL Type: ACX80]

■ Holders M (3D), L (5D), D (8D)

Diameter øD _c (mm)	Heads			Diameter Range (øD _c)	Toolholder					
	MTLType		h ₁		M (3D)		L (5D)		D (8D)	
	Cat. No.	Stock			Cat. No	Stock	Cat. No	Stock	Cat. No	Stock
31.0	SMDT 3100MTL	●	21.0	Above 30.8 to 32.0	SMDH 320M	●	SMDH 320L	●	SMDH 320D	●
31.5	3150MTL	●								
32.0	3200MTL	●								
32.5	SMDT 3250MTL	●	21.0	Above 32.0 to 33.5	SMDH 335M	●	SMDH 335L	●	SMDH 335D	●
33.0	3300MTL	●								
33.5	3350MTL	●								
34.0	SMDT 3400MTL	●	23.0	Above 33.5 to 35.0	SMDH 350M	●	SMDH 350L	●	SMDH 350D	●
34.5	3450MTL	●								
35.0	3500MTL	●								
35.5	SMDT 3550MTL	●	23.0	Above 35.0 to 36.5	SMDH 365M	●	SMDH 365L	●	SMDH 365D	●
36.0	3600MTL	●								
36.5	3650MTL	●								
37.0	SMDT 3700MTL	●	25.0	Above 36.5 to 38.0	SMDH 380M	●	SMDH 380L	●	SMDH 380D	●
37.5	3750MTL	●								
38.0	3800MTL	●								
38.5	SMDT 3850MTL	●	25.0	Above 38.0 to 39.5	SMDH 395M	●	SMDH 395L	●	SMDH 395D	●
39.0	3900MTL	●								
39.5	3950MTL	●								
40.0	SMDT 4000MTL	●	27.0	Above 39.5 to 41.0	SMDH 410M	●	SMDH 410L	●	SMDH 410D	●
40.5	4050MTL	●								
41.0	4100MTL	●								
41.5	SMDT 4150MTL	●	27.0	Above 41.0 to 42.5	SMDH 425M	●	SMDH 425L	●	SMDH 425D	●
42.0	4200MTL	●								
42.5	4250MTL	●								



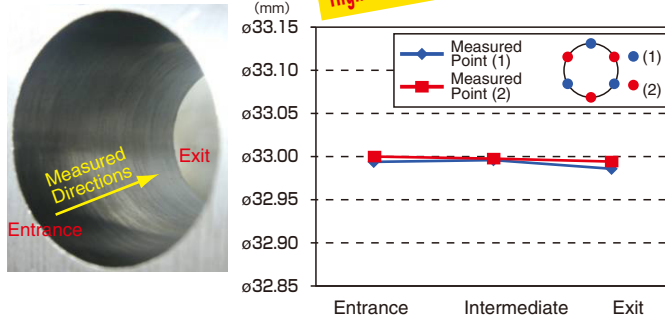
SEC-MultiDrills

SMD Type (Large Holes)

Carbon Steel, Alloy Steel Up to 0.28% C, Up to 0.28% S	Tempered Steel	Hardened Steel Up to 45HRC From 48HRC	Stainless steel	Ti Alloy	Heat-resistant steel	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper alloy	Composite CFRP	DEX Coat	W/Oil Hole	Indexable	3D	5D	8D
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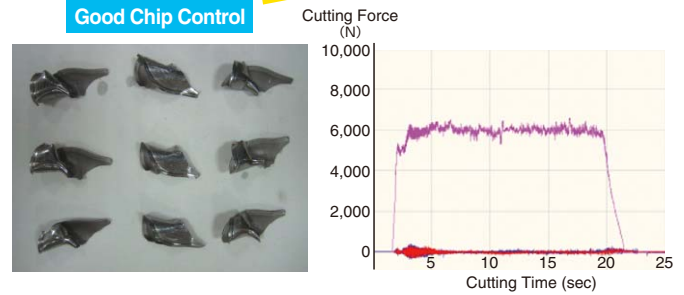
Machined Surface Accuracy

Work Material: SM490 (Base substrate for construction use)
Drill Size: $\phi 33.0\text{mm} \times 5\text{D}$
Cutting Conditions: $v_c=120\text{m/min}$, $f=0.25\text{mm/rev}$
Cutting Environment: Emulsion Type



Cutting Force Comparison (Thrust)

Work Material: SS400 (Stacked plates)
Drill Size: $\phi 37.5\text{mm} \times 5\text{D}$
Cutting Conditions: $v_c=90\text{m/min}$, $f=0.35\text{mm/rev}$
Cutting Environment: Emulsion Type



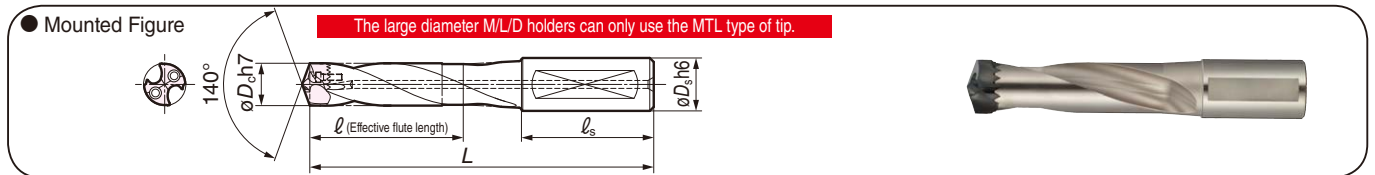
Recommended Cutting Conditions (Large MTL Type)

v_c : Cutting Speed(m/min) f : Feed Rate(mm/rev)

Work material	Soft Steel (Up to 250 HB)	General Steel (250 to 320 HB)	Hardened Steel (45HRC)	Stainless Steel (Up to 200HB)	Grey Cast Iron	Ductile Cast Iron	Aluminium Alloy*
Diameter ϕD_c (mm)	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.
$\phi 31.0$ to $\phi 42.5$	v_c 40-60-120 (30-50-80)	60-80-120 (40-50-80)	40-50-80 (30-40-60)	40-60-80 (30-40-60)	50-70-100 (40-60-90)	50-60-90 (40-50-70)	200-240-260
	f 0.25-0.35-0.45	0.25-0.30-0.40	0.15-0.25-0.30	0.20-0.25-0.30	0.25-0.35-0.45	0.25-0.30-0.35	0.35-0.50-0.60

Note: Where machine and work clamp rigidity are good, conditions may be increased up to the maximum.
For 8D drills, please use feed rates stated within the (). Before drilling 8D holes, a guide hole of similar diameter must be made.

(*) Inquire about drills specifically for aluminium.



Diameter ϕD_c (mm)	M (3D)		L (5D)		D (8D)		Shank		Cap Screw	Wrench	Recommended Tightening Torque (N·m)
	Dimensions		Dimensions		Dimensions		Dimensions				
	ℓ	L	ℓ	L	ℓ	L	ℓ_s	ϕD_s			
31.0	110	195	175	260	270	355	60	32.0	BXD04515IP	TRDR25IP	4.98 to 6.44
31.5											
32.0											
32.5											
33.0											
33.5	115	200	185	270	285	370	70	40.0	BX0515	HD040	7.2
34.0											
34.5											
35.0											
35.5											
36.0	125	220	200	295	310	405	70	40.0	BX0515	HD040	7.2
36.5											
37.0											
37.5											
38.0											
38.5	130	225	210	305	325	420	70	40.0	BX0515	HD040	7.2
39.0											
39.5											
40.0											
40.5											
41.0	145	245	225	325	350	450	70	40.0	BX0515	HD040	7.2
41.5											
42.0											
42.5											
43.0											

J

Drilling

Solid

Special

Indexable

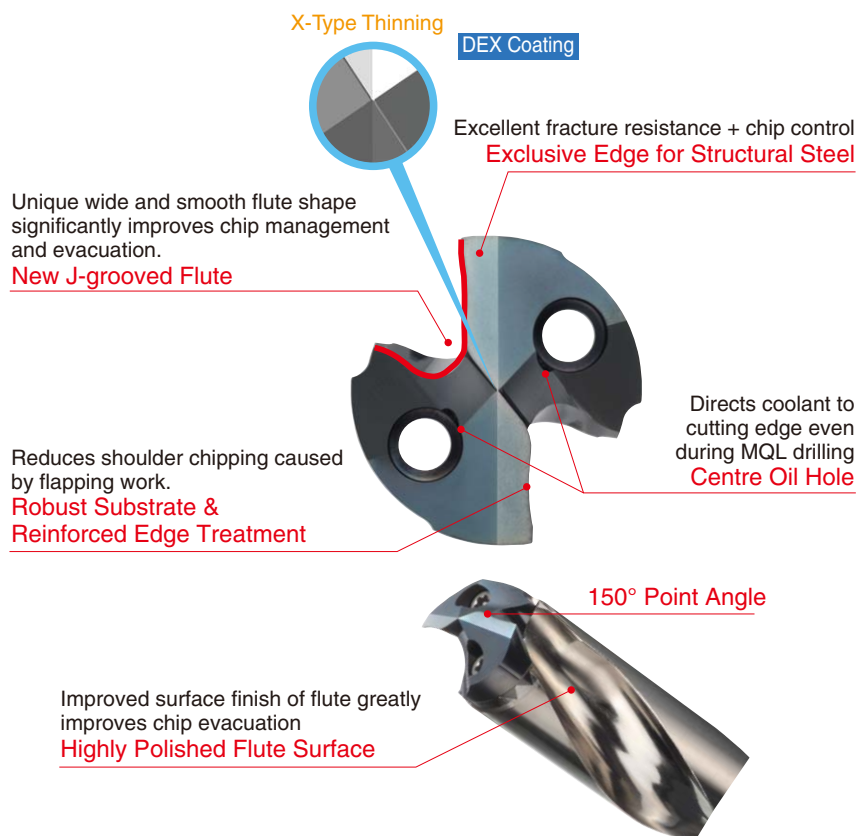
Reamer

Brazed

Others

MB Type

Ideal for Drilling Rolled Steels for Structural Weldments(single or stacked plates)



Application Examples

MB Type for structural steel

Good chip control



Comp. Drill

Elongated chips



MB Type Cutting Length Comparison

Case	Current Tool	Tool Life Comparison (Cutting Length)		Cutting Conditions
Case. 1	Comp. A Indexable Head Model	Current Tool MB Type	17m 42m 2.5x tool life	$v_c=46\text{ m/min}$ $f=0.35\text{ mm/rev}$ Coolant : MQL
Case. 2	Comp. B Indexable Head	Current Tool MB Type	50m 87m 1.7x tool life	$v_c=56\text{ m/min}$ $f=0.30\text{ mm/rev}$ Coolant : MQL
Case. 3	Comp. C Brazed Head	Current Tool MB Type	32m 95m 3.0x tool life	$v_c=54\text{ m/min}$ $f=0.30\text{ mm/rev}$ Coolant : MQL
Case. 4	Comp. D Indexable Head Model	Current Tool MB Type	70m 120m 1.7x tool life	$v_c=60\text{ m/min}$ $f=0.30\text{ mm/rev}$ Coolant : MQL

Compared to current tool life

1.7x to 3x

Longer Tool Life



Tool Cost

Huge Potential Savings

Recommended Cutting Conditions, MB Type for Structural Steel

v_c : Cutting Speed (m/min) f : Feed Rate (mm/rev)

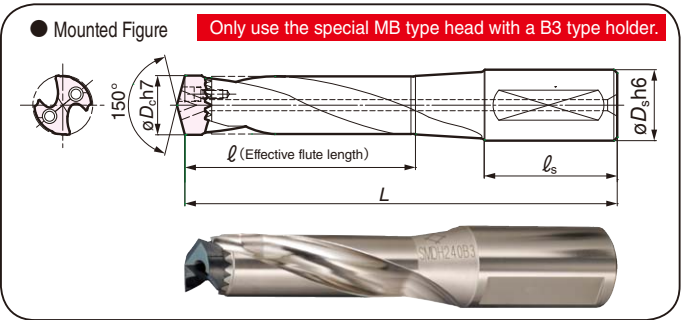
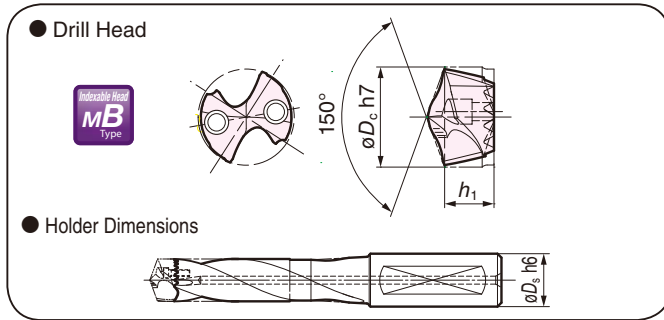
Work Material		Rolled Steel for Welded Structures SS400	Rolled Steel for Welded Structures SM490	Rolled Steel for Welded Structures SM520	Rolled Steel for Welded Structures SM570
Diameter ϕD_c (mm)	Cutting Conditions	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.	Min. - Optimum - Max.
$\phi 24.5$ to $\phi 26.7$	v_c	60-70-80	55-65-75	55-65-75	55-65-75
	f	0.20-0.30-0.40	0.20-0.30-0.40	0.20-0.25-0.35	0.20-0.25-0.35



SEC-MultiDrills

SMD Type (Structural Steel)

Carbon Steel, Alloy Steel Up to 0.28% From 0.29%	Tempered Steel	Hardened Steel Up to 49HRC From 49HRC	Stainless Steel	Ti-Alloy	Inconel	Grey Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper Alloy	Composite CFRP	DEX Coat	W/Oil Hole	Indexable	3D
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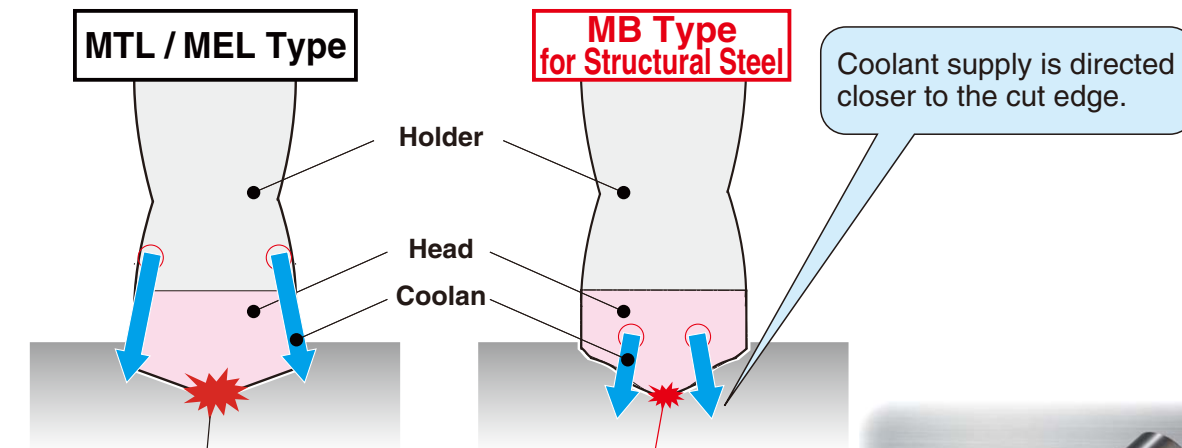


■ Drill Head (Insert) [Material MB Type: ACX80] ■ Toolholder B3 (3D) ■ Dimensions of Assembled Drill with SMD Type ■ Spare Parts, Recommended Tightening Torque

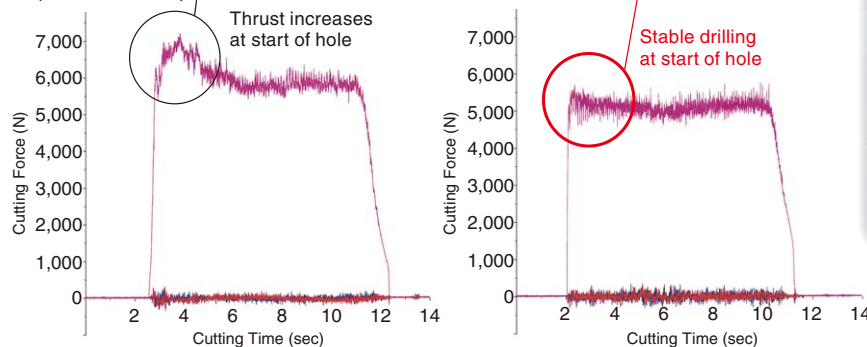
Diameter $\varnothing D_c$ (mm)	Heads			Toolholder				Shank		Cap Screw	Wrench	Recommended Tightening Torque (N·m)
	MB Type		h_1	B3 (3D)		Dimensions		Dimensions				
	Cat. No	Stock		Cat. No.	Stock	ℓ	L	ℓ_s	$\varnothing D_s$			
24.5	SMDT 2450MB	●	14.1	SMDH 240B3	●	87	170	60	32	BXD03512IP	TRDR15IP	2.79 to 3.72
24.7	2470MB	●										
26.5	SMDT 2650MB	●	15.3	SMDH 260B3	●	92	175	60	32	BXD04014IP	TRDR20IP	4.14 to 5.52
26.7	2670MB	●										

Inquire about production of holders not listed in stock.

● Improved Lubrication Flow to Edge



■ Comparison of Cutting Resistance (Thrust Force)



Diameter: $\phi 24.7$ Cutting Conditions: $v_c=70\text{m/min}$ $f=0.35\text{mm/rev}$
Work Material: SS400 Coolant: MQL

- Due to the position of the oil hole and the groove shapes, MB style heads cannot be used on normal holders, and MTL/MEL style heads cannot be used on B3 holders.

J

Drilling

Solid

Special

Indexable

Reamer

Brazed

Others