

**MEDSL**

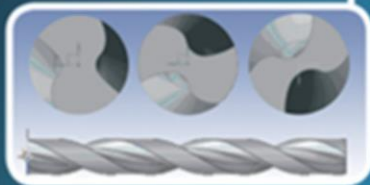
**DEEP HOLE TWIST  
DRILLS**



**MEGACUT**

**DEEP HOLE TWIST DRILLS**

Optimized tool structure achieved through cutting analysis simulations.

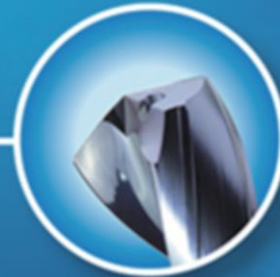


Modified parameter design of the the helical flute, provide good rigidity and chip removal capabilities.

Unique cutting edge design provide high versatility for the tool. Great chip breaking capability for sticky and softer materials.



Unique double guiding margin achieves more stable and reliable machining.



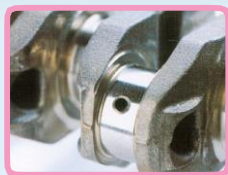
Special nano structure coating with improved self lubricating capability and superb wear resistance.



# **MEDSL** Series Deep Hole Twist Drills

# MEDSL Series Deep Hole Twist Drills

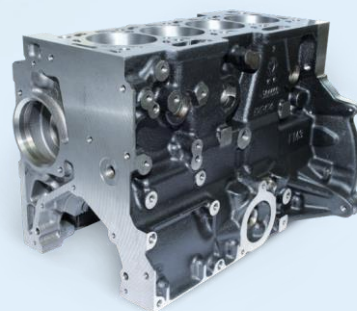
## Outstanding chip breaking capability



Work piece: crank shaft  
 Work piece material: 5140  
 Machining area: inclined oil hole  
 Tool type: MEDSL20C-0690/KDG303  
 Cutting parameters: SFM=260~395f/min  
 $f_r=0.007874$ in/r  
 Cooling system: water-soluble liquid  
 Drilling depth: 4.134in



## Extremely high efficiency and long tool life

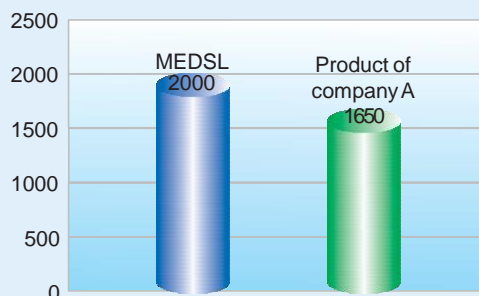


Work piece: cylinder  
 Work material: NO.45  
 Machined area: crank shaft joint surface drilling  
 Drilling depth: 1.181in  
 Tool type: MEDSL12C-0850/KDG303  
 Recommend parameters: SFM=260f/min  
 $f_r=0.011811$ in/r  
 Cooling system: water-soluble liquid



Good chip breaking capability and stable machining with different cutting speed and feed rate.

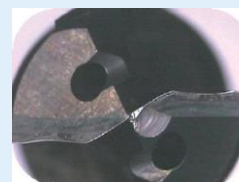
### Comparison of tool life(number of machined holes)



### Comparison of tool life(tool wear)



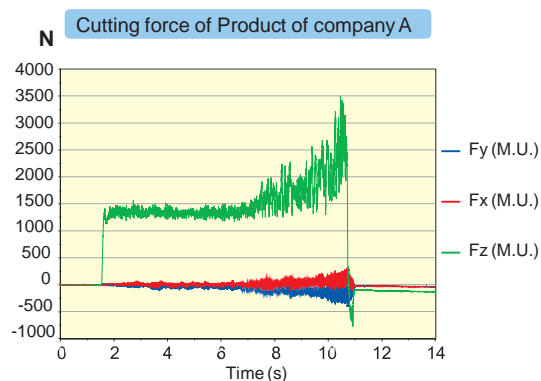
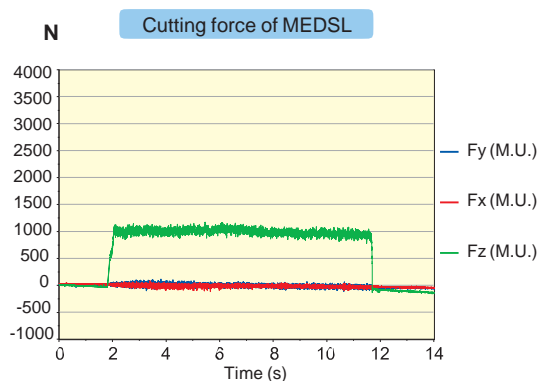
MEDSL(regular wear)



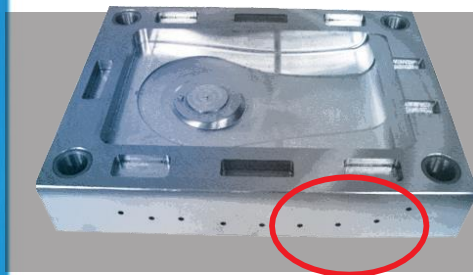
Product of company A(falling)

## Superior cutting performance

Tool type: MEDSL12C-0850/KDG303  
 Feed rate: 0.007874in/r Drilling depth: 2.835in  
 Work material: 4140  
 Cooling system: Emulsified liquid  
 Cutting speed: 260f/min  
 Machine equipment: Vertical machining center

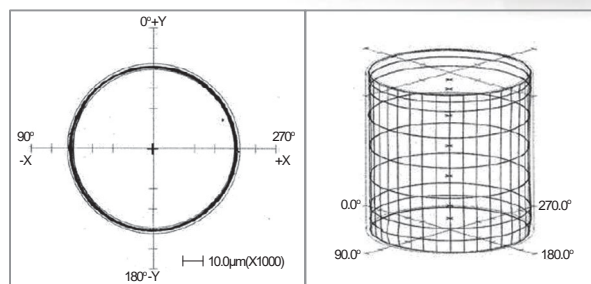


## Machining precision stability

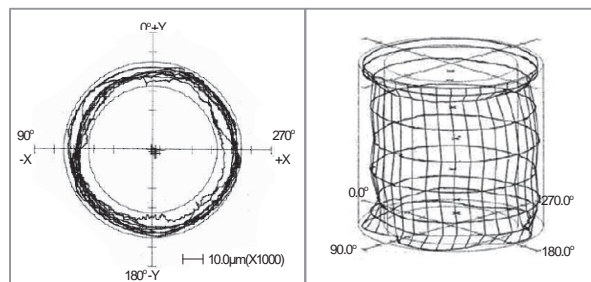


Workpiece: Die  
 Machined materials: P20  
 Machined area: Hole of sidewall  
 Drilling depth: 2.756in  
 Tool type: MEDSL12C-0600/KDG303  
 Recommended parameters: SFM=280f/min,  $f_r=0.007874$ in/r  
 Cooling system: Water-soluble liquid

Comparison of Machined Hole's Accuracy



MEDSL



Product of company A

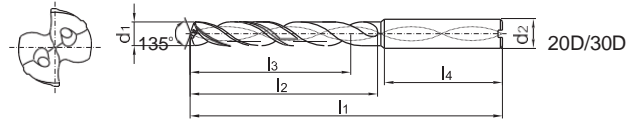
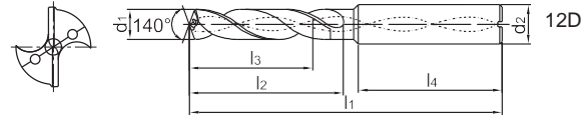
### SL Series Deep Hole Machining



Internal Coolant

Straight Shank

- $d_1$  tolerance 12D m7
- $d_1$  tolerance 20D/30D h7
- Suitable for deep-hole drilling of steel, cast iron etc.



Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			$d_2(h_6)$	$l_1$	$l_2$	$l_3$	$l_4$
3.0	.1181	-	12	MEDSL12C-0300	6	90	50	40	36
		-	20	MEDSL20C-0300	6	110	70	62	36
		-	30	MEDSL30C-0300	6	140	100	92	36
3.1	.1220	-	12	MEDSL12C-0310	6	90	50	40	36
		-	20	MEDSL20C-0310	6	123	83	72	36
		-	30	MEDSL30C-0310	6	160	120	108	36
3.175	.1250	1/8	12	MEDSL12C-03175	6	90	50	40	36
		1/8	20	MEDSL20C-03175	6	123	83	72	36
		1/8	30	MEDSL30C-03175	6	160	120	108	36
3.2	.1260	-	12	MEDSL12C-0320	6	90	50	40	36
		-	20	MEDSL20C-0320	6	123	83	72	36
		-	30	MEDSL30C-0320	6	160	120	108	36
3.3	.1299	-	12	MEDSL12C-0330	6	90	50	40	36
		-	20	MEDSL20C-0330	6	123	83	72	36
		-	30	MEDSL30C-0330	6	160	120	108	36
3.4	.1339	-	12	MEDSL12C-0340	6	90	50	40	36
		-	20	MEDSL20C-0340	6	123	83	72	36
		-	30	MEDSL30C-0340	6	160	120	108	36
3.5	.1378	-	12	MEDSL12C-0350	6	90	50	40	36
		-	20	MEDSL20C-0350	6	123	83	72	36
		-	30	MEDSL30C-0350	6	160	120	108	36
3.6	.1417	-	12	MEDSL12C-0360	6	90	50	40	36
		-	20	MEDSL20C-0360	6	136	96	84	36
		-	30	MEDSL30C-0360	6	176	136	124	36
3.7	.1457	-	12	MEDSL12C-0370	6	90	50	46	36
		-	20	MEDSL20C-0370	6	136	96	84	36
		-	30	MEDSL30C-0370	6	176	136	124	36
3.8	.1496	-	12	MEDSL12C-0380	6	90	50	46	36
		-	20	MEDSL20C-0380	6	136	96	84	36
		-	30	MEDSL30C-0380	6	176	136	124	36
3.9	.1535	-	12	MEDSL12C-0390	6	90	50	46	36
		-	20	MEDSL20C-0390	6	136	96	84	36
		-	30	MEDSL30C-0390	6	176	136	124	36

Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			$d_2(h_6)$	$l_1$	$l_2$	$l_3$	$l_4$
3.970	.1563	5/32	12	MEDSL12C-03970	6	90	50	46	36
		5/32	20	MEDSL20C-03970	6	136	96	84	36
		5/32	30	MEDSL30C-03970	6	176	136	124	36
4.0	.1575	-	12	MEDSL12C-0400	6	102	64	56	36
		-	20	MEDSL20C-0400	6	136	96	84	36
		-	30	MEDSL30C-0400	6	176	136	124	36
4.1	.1614	-	12	MEDSL12C-0410	6	102	64	56	36
		-	20	MEDSL20C-0410	6	148	108	96	36
		-	30	MEDSL30C-0410	6	192	152	140	36
4.2	.1654	-	12	MEDSL12C-0420	6	102	64	56	36
		-	20	MEDSL20C-0420	6	148	108	96	36
		-	30	MEDSL30C-0420	6	192	152	140	36
4.3	.1693	-	12	MEDSL12C-0430	6	102	64	56	36
		-	20	MEDSL20C-0430	6	148	108	96	36
		-	30	MEDSL30C-0430	6	192	152	140	36
4.4	.1732	-	12	MEDSL12C-0440	6	102	64	56	36
		-	20	MEDSL20C-0440	6	148	108	96	36
		-	30	MEDSL30C-0440	6	192	152	140	36
4.5	.1772	-	12	MEDSL12C-0450	6	102	64	56	36
		-	20	MEDSL20C-0450	6	148	108	96	36
		-	30	MEDSL30C-0450	6	192	152	140	36
4.6	.1811	-	12	MEDSL12C-0460	6	102	64	56	36
		-	20	MEDSL20C-0460	6	158	118	106	36
		-	30	MEDSL30C-0460	6	208	168	156	36
4.7	.1850	-	12	MEDSL12C-0470	6	102	64	56	36
		-	20	MEDSL20C-0470	6	158	118	106	36
		-	30	MEDSL30C-0470	6	208	168	156	36
4.763	.1875	3/16	12	MEDSL12C-04763	6	102	64	56	36
		3/16	20	MEDSL20C-04763	6	158	118	106	36
		3/16	30	MEDSL30C-04763	6	208	168	156	36
4.8	.1890	-	12	MEDSL12C-0480	6	102	64	56	36
		-	20	MEDSL20C-0480	6	158	118	106	36
		-	30	MEDSL30C-0480	6	208	168	156	36

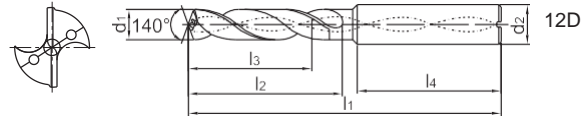
### SL Series Deep Hole Machining



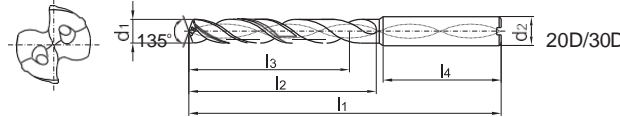
Internal Coolant

Straight Shank

- $d_1$  tolerance 12D m7
- $d_2$  tolerance 20D/30D h7
- Suitable for deep-hole drilling of steel, cast iron etc.



12D



20D/30D

Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			$d_2(h_7)$	$l_1$	$l_2$	$l_3$	$l_4$
4.9	.1929	-	12	MEDSL12C-0490	6	102	64	56	36
		-	20	MEDSL20C-0490	6	158	118	106	36
		-	30	MEDSL30C-0490	6	208	168	156	36
5.0	.1969	-	12	MEDSL12C-0500	6	116	78	72	36
		-	20	MEDSL20C-0500	6	158	118	106	36
		-	30	MEDSL30C-0500	6	208	168	156	36
5.1	.2008	-	12	MEDSL12C-0510	6	116	78	72	36
		-	20	MEDSL20C-0510	6	168	128	116	36
		-	30	MEDSL30C-0510	6	228	188	170	36
5.2	.2047	-	12	MEDSL12C-0520	6	116	78	72	36
		-	20	MEDSL20C-0520	6	168	128	116	36
		-	30	MEDSL30C-0520	6	228	188	170	36
5.3	.2087	-	12	MEDSL12C-0530	6	116	78	72	36
		-	20	MEDSL20C-0530	6	168	128	116	36
		-	30	MEDSL30C-0530	6	228	188	170	36
5.4	.2126	-	12	MEDSL12C-0540	6	116	78	72	36
		-	20	MEDSL20C-0540	6	168	128	116	36
		-	30	MEDSL30C-0540	6	228	188	170	36
5.5	.2165	-	12	MEDSL12C-0550	6	116	78	72	36
		-	20	MEDSL20C-0550	6	168	128	116	36
		-	30	MEDSL30C-0550	6	228	188	170	36
5.558	.2188	7/32	12	MEDSL12C-05558	6	116	78	72	36
		7/32	20	MEDSL20C-05558	6	180	140	126	36
		7/32	30	MEDSL30C-05558	6	240	200	182	36
5.6	.2205	-	12	MEDSL12C-0560	6	116	78	72	36
		-	20	MEDSL20C-0560	6	180	140	126	36
		-	30	MEDSL30C-0560	6	240	200	182	36
5.7	.2244	-	12	MEDSL12C-0570	6	116	78	72	36
		-	20	MEDSL20C-0570	6	180	140	126	36
		-	30	MEDSL30C-0570	6	240	200	182	36
5.8	.2283	-	12	MEDSL12C-0580	6	116	78	72	36
		-	20	MEDSL20C-0580	6	180	140	126	36
		-	30	MEDSL30C-0580	6	240	200	182	36

Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			$d_2(h_7)$	$l_1$	$l_2$	$l_3$	$l_4$
5.9	.2323	-	12	MEDSL12C-0590	6	116	78	72	36
		-	20	MEDSL20C-0590	6	180	140	126	36
		-	30	MEDSL30C-0590	6	240	200	182	36
6.0	.2362	-	12	MEDSL12C-0600	6	116	78	72	36
		-	20	MEDSL20C-0600	6	180	140	126	36
		-	30	MEDSL30C-0600	6	240	200	182	36
6.1	.2402	-	12	MEDSL12C-0610	8	131	93	84	36
		-	20	MEDSL20C-0610	8	192	150	132	36
		-	30	MEDSL30C-0610	8	260	220	202	36
6.2	.2441	-	12	MEDSL12C-0620	8	131	93	84	36
		-	20	MEDSL20C-0620	8	192	150	132	36
		-	30	MEDSL30C-0620	8	260	220	202	36
6.3	.2480	-	12	MEDSL12C-0630	8	131	93	84	36
		-	20	MEDSL20C-0630	8	192	150	132	36
		-	30	MEDSL30C-0630	8	260	220	202	36
6.350	.2500	1/4	12	MEDSL12C-06350	8	131	93	84	36
		1/4	20	MEDSL20C-06350	8	192	150	132	36
		1/4	30	MEDSL30C-06350	8	260	220	202	36
6.4	.2520	-	12	MEDSL12C-0640	8	131	93	84	36
		-	20	MEDSL20C-0640	8	192	150	132	36
		-	30	MEDSL30C-0640	8	260	220	202	36
6.5	.2559	-	12	MEDSL12C-0650	8	131	93	84	36
		-	20	MEDSL20C-0650	8	192	150	132	36
		-	30	MEDSL30C-0650	8	260	220	202	36
6.6	.2598	-	12	MEDSL12C-0660	8	131	93	84	36
		-	20	MEDSL20C-0660	8	202	162	144	36
		-	30	MEDSL30C-0660	8	272	232	214	36
6.7	.2638	-	12	MEDSL12C-0670	8	131	93	84	36
		-	20	MEDSL20C-0670	8	202	162	144	36
		-	30	MEDSL30C-0670	8	272	232	214	36
6.746	.2656	17/64	12	MEDSL12C-06746	8	131	93	84	36
		17/64	20	MEDSL20C-06746	8	202	162	144	36
		17/64	30	MEDSL30C-06746	8	272	232	214	36

Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			d <sub>2</sub> (h <sub>5</sub> )	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
6.8	.2677	-	12	MEDSL12C-0680	8	131	93	84	36
		-	20	MEDSL20C-0680	8	202	162	144	36
		-	30	MEDSL30C-0680	8	272	232	214	36
6.9	.2717	-	12	MEDSL12C-0690	8	131	93	84	36
		-	20	MEDSL20C-0690	8	202	162	144	36
		-	30	MEDSL30C-0690	8	272	232	214	36
7.0	.2756	-	12	MEDSL12C-0700	8	131	93	84	36
		-	20	MEDSL20C-0700	8	202	162	144	36
		-	30	MEDSL30C-0700	8	272	232	214	36
7.1	.2795	-	12	MEDSL12C-0710	8	146	108	96	36
		-	20	MEDSL20C-0710	8	213	173	155	36
		-	30	MEDSL30C-0710	8	290	250	232	36
7.145	.2813	9/32	12	MEDSL12C-07145	8	146	108	96	36
		9/32	20	MEDSL20C-07145	8	213	173	155	36
		9/32	30	MEDSL30C-07145	8	290	250	232	36
7.2	.2835	-	12	MEDSL12C-0720	8	146	108	96	36
		-	20	MEDSL20C-0720	8	213	173	155	36
		-	30	MEDSL30C-0720	8	290	250	232	36
7.3	.2874	-	12	MEDSL12C-0730	8	146	108	96	36
		-	20	MEDSL20C-0730	8	213	173	155	36
		-	30	MEDSL30C-0730	8	290	250	232	36
7.4	.2913	-	12	MEDSL12C-0740	8	146	108	96	36
		-	20	MEDSL20C-0740	8	213	173	155	36
		-	30	MEDSL30C-0740	8	290	250	232	36
7.5	.2953	-	12	MEDSL12C-0750	8	146	108	96	36
		-	20	MEDSL20C-0750	8	213	173	155	36
		-	30	MEDSL30C-0750	8	290	250	232	36
7.541	.2969	19/64	12	MEDSL12C-07541	8	146	108	96	36
		19/64	20	MEDSL20C-07541	8	223	183	165	36
		19/64	30	MEDSL30C-07541	8	305	265	246	36
7.6	.2992	-	12	MEDSL12C-0760	8	146	108	96	36
		-	20	MEDSL20C-0760	8	223	183	165	36
		-	30	MEDSL30C-0760	8	305	265	246	36
7.7	.3031	-	12	MEDSL12C-0770	8	146	108	96	36
		-	20	MEDSL20C-0770	8	223	183	165	36
		-	30	MEDSL30C-0770	8	305	265	246	36
7.8	.3071	-	12	MEDSL12C-0780	8	146	108	96	36
		-	20	MEDSL20C-0780	8	223	183	165	36
		-	30	MEDSL30C-0780	8	305	265	246	36
7.9	.3110	-	12	MEDSL12C-0790	8	146	108	96	36
		-	20	MEDSL20C-0790	8	223	183	165	36
		-	30	MEDSL30C-0790	8	305	265	246	36
7.938	.3125	5/16	12	MEDSL12C-07938	8	146	108	96	36
		5/16	20	MEDSL20C-07938	8	223	183	165	36

Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			d <sub>2</sub> (h <sub>5</sub> )	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
7.938	.3125	5/16	30	MEDSL30C-07938	8	305	265	246	36
8.0	.3150	-	12	MEDSL12C-0800	8	146	108	96	36
		-	20	MEDSL20C-0800	8	223	183	165	36
		-	30	MEDSL30C-0800	8	305	265	246	36
8.1	.3189	-	12	MEDSL12C-0810	10	162	120	108	40
		-	20	MEDSL20C-0810	10	239	195	176	40
		-	30	MEDSL30C-0810	10	330	285	265	40
8.2	.3228	-	12	MEDSL12C-0820	10	162	120	108	40
		-	20	MEDSL20C-0820	10	239	195	176	40
		-	30	MEDSL30C-0820	10	330	285	265	40
8.3	.3268	-	12	MEDSL12C-0830	10	162	120	108	40
		-	20	MEDSL20C-0830	10	239	195	176	40
		-	30	MEDSL30C-0830	10	330	285	265	40
8.334	.3281	21/64	12	MEDSL12C-08334	10	162	120	108	40
		21/64	20	MEDSL20C-08334	10	239	195	176	40
		21/64	30	MEDSL30C-08334	10	330	285	265	40
8.4	.3307	-	12	MEDSL12C-0840	10	162	120	108	40
		-	20	MEDSL20C-0840	10	239	195	176	40
		-	30	MEDSL30C-0840	10	330	285	265	40
8.5	.3346	-	12	MEDSL12C-0850	10	162	120	108	40
		-	20	MEDSL20C-0850	10	239	195	176	40
		-	30	MEDSL30C-0850	10	330	285	265	40
8.6	.3386	-	12	MEDSL12C-0860	10	162	120	108	40
		-	20	MEDSL20C-0860	10	249	205	186	40
		-	30	MEDSL30C-0860	10	340	295	275	40
8.7	.3425	-	12	MEDSL12C-0870	10	162	120	108	40
		-	20	MEDSL20C-0870	10	249	205	186	40
		-	30	MEDSL30C-0870	10	340	295	275	40
8.733	.3438	11/32	12	MEDSL12C-08733	10	162	120	108	40
		11/32	20	MEDSL20C-08733	10	249	205	186	40
		11/32	30	MEDSL30C-08733	10	340	295	275	40
8.8	.3465	-	12	MEDSL12C-0880	10	162	120	108	40
		-	20	MEDSL20C-0880	10	249	205	186	40
		-	30	MEDSL30C-0880	10	340	295	275	40
8.9	.3504	-	12	MEDSL12C-0890	10	162	120	108	40
		-	20	MEDSL20C-0890	10	249	205	186	40
		-	30	MEDSL30C-0890	10	340	295	275	40
9.0	.3543	-	12	MEDSL12C-0900	10	162	120	108	40
		-	20	MEDSL20C-0900	10	249	205	186	40
		-	30	MEDSL30C-0900	10	340	295	275	40
9.1	.3583	-	12	MEDSL12C-0910	10	174	132	120	40
		-	20	MEDSL20C-0910	10	262	218	196	40
		-	30	MEDSL30C-0910	10	360	315	292	40
9.129	.3594	23/64	12	MEDSL12C-09129	10	174	132	120	40

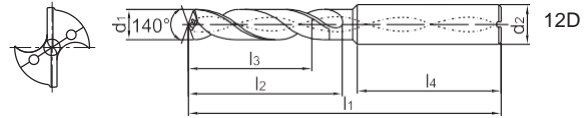
### SL Series Deep Hole Machining



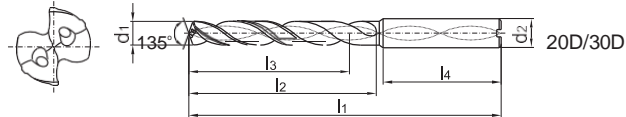
Internal Coolant

Straight Shank

- $d_1$  tolerance 12D m7
- $d_2$  tolerance 20D/30D h7
- Suitable for deep-hole drilling of steel, cast iron etc.



12D



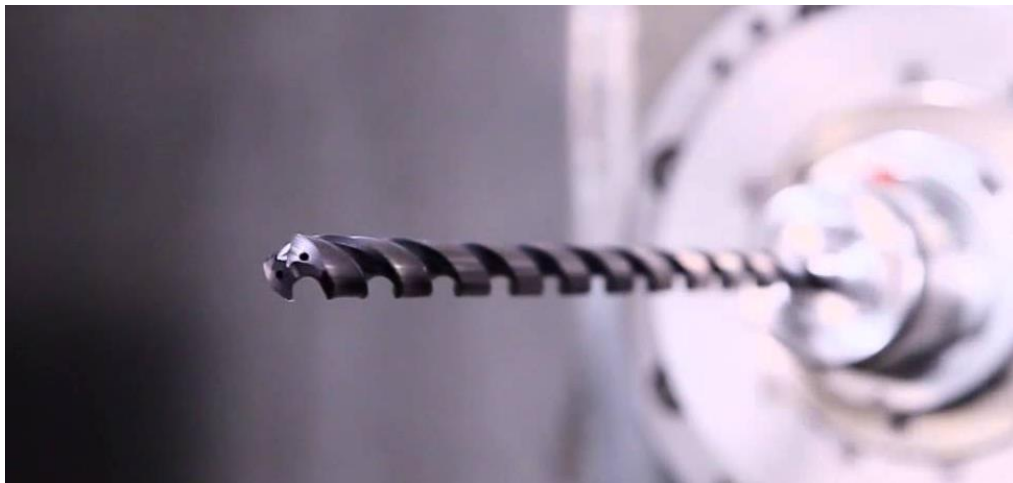
20D/30D

Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			$d_2(h_7)$	$l_1$	$l_2$	$l_3$	$l_4$
9.129	.3594	23/64	20	MEDSL20C-09129	10	262	218	196	40
		23/64	30	MEDSL30C-09129	10	360	315	292	40
9.2	.3622	-	12	MEDSL12C-0920	10	174	132	120	40
		-	20	MEDSL20C-0920	10	262	218	196	40
9.3	.3661	-	12	MEDSL12C-0930	10	174	132	120	40
		-	20	MEDSL20C-0930	10	262	218	196	40
9.4	.3701	-	12	MEDSL12C-0940	10	174	132	120	40
		-	20	MEDSL20C-0940	10	262	218	196	40
9.5	.3740	-	12	MEDSL12C-0950	10	174	132	120	40
		-	20	MEDSL20C-0950	10	262	218	196	40
9.525	.3750	3/8	12	MEDSL12C-09525	10	174	132	120	40
		3/8	20	MEDSL20C-09525	10	272	228	206	40
9.6	.3780	-	12	MEDSL12C-0960	10	174	132	120	40
		-	20	MEDSL20C-0960	10	272	228	206	40
9.7	.3819	-	12	MEDSL12C-0970	10	174	132	120	40
		-	20	MEDSL20C-0970	10	272	228	206	40
9.8	.3858	-	12	MEDSL12C-0980	10	174	132	120	40
		-	20	MEDSL20C-0980	10	272	228	206	40
9.9	.3898	-	12	MEDSL12C-0990	10	174	132	120	40
		-	20	MEDSL20C-0990	10	272	228	206	40
9.921	.3906	25/64	12	MEDSL12C-09921	10	174	132	120	40
		25/64	20	MEDSL20C-09921	10	272	228	206	40
10.0	.3937	-	12	MEDSL12C-1000	10	174	132	120	40

Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			$d_2(h_7)$	$l_1$	$l_2$	$l_3$	$l_4$
10.0	.3937	-	20	MEDSL20C-1000	10	272	228	206	40
		-	30	MEDSL30C-1000	10	372	328	305	40
10.1	.3976	-	12	MEDSL12C-1010	12	204	156	144	45
		-	20	MEDSL20C-1010	12	292	242	220	45
10.2	.4016	-	12	MEDSL12C-1020	12	204	156	144	45
		-	20	MEDSL20C-1020	12	292	242	220	45
10.3	.4055	-	12	MEDSL12C-1030	12	204	156	144	45
		-	20	MEDSL20C-1030	12	292	242	220	45
10.320	.4063	13/32	12	MEDSL12C-10320	12	204	156	144	45
		13/32	20	MEDSL20C-10320	12	292	242	220	45
10.4	.4094	-	12	MEDSL12C-1040	12	204	156	144	45
		-	20	MEDSL20C-1040	12	292	242	220	45
10.5	.4134	-	12	MEDSL12C-1050	12	204	156	144	45
		-	20	MEDSL20C-1050	12	292	242	220	45
10.6	.4173	-	12	MEDSL12C-1060	12	204	156	144	45
		-	20	MEDSL20C-1060	12	300	250	228	45
10.7	.4213	-	12	MEDSL12C-1070	12	204	156	144	45
		-	20	MEDSL20C-1070	12	300	250	228	45
10.716	.4219	27/64	12	MEDSL12C-10716	12	204	156	144	45
		27/64	20	MEDSL20C-10716	12	300	250	228	45
10.8	.4252	-	12	MEDSL12C-1080	12	204	156	144	45
		-	20	MEDSL20C-1080	12	300	250	228	45
10.9	.4291	-	12	MEDSL12C-1090	12	204	156	144	45
		-	20	MEDSL20C-1090	12	300	250	228	45
11.0	.4331	-	12	MEDSL12C-1100	12	204	156	144	45
		-	20	MEDSL20C-1100	12	300	250	228	45
11.1	.4370	-	12	MEDSL12C-1110	12	204	156	144	45
		-	20	MEDSL20C-1110	12	315	265	240	45
11.113	.4375	7/16	12	MEDSL12C-11113	12	204	156	144	45
		7/16	20	MEDSL20C-11113	12	315	265	240	45
11.2	.4409	-	12	MEDSL12C-1120	12	204	156	144	45
		-	20	MEDSL20C-1120	12	315	265	240	45
11.3	.4449	-	12	MEDSL12C-1130	12	204	156	144	45



Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)					Drill diameter			Drilling depth (l/d)	Type	Basic dimension(mm)				
mm	inch	Fraction			d <sub>2</sub> (h <sub>5</sub> )	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	mm	inch	Fraction			d <sub>2</sub> (h <sub>5</sub> )	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>
11.3	.4449	-	20	MEDSL20C-1130	12	315	265	240	45	13.0	.5118	-	20	MEDSL20C-1300	14	338	290	265	45
11.4	.4488	-	12	MEDSL12C-1140	12	204	156	144	45	13.5	.5315	-	12	MEDSL12C-1350	14	230	182	168	45
		-	20	MEDSL20C-1140	12	315	265	240	45			-	20	MEDSL20C-1350	14	338	290	265	45
11.5	.4528	-	12	MEDSL12C-1150	12	204	156	144	45	14.0	.5512	-	12	MEDSL12C-1400	14	230	182	168	45
		-	20	MEDSL20C-1150	12	315	265	240	45			-	20	MEDSL20C-1400	14	367	318	290	45
11.6	.4567	-	12	MEDSL12C-1160	12	204	156	144	45	14.288	.5625	9/16	12	MEDSL12C-14288	16	260	208	194	48
		-	20	MEDSL20C-1160	12	325	275	250	45	14.5	.5709	-	12	MEDSL12C-1450	16	260	208	194	48
11.7	.4606	-	12	MEDSL12C-1170	12	204	156	144	45	14.684	.5781	37/64	12	MEDSL12C-14684	16	260	208	194	48
		-	20	MEDSL20C-1170	12	325	275	250	45	15.0	.5906	-	12	MEDSL12C-1500	16	260	208	194	48
11.8	.4646	-	12	MEDSL12C-1180	12	204	156	144	45	15.5	.6102	-	12	MEDSL12C-1550	16	260	208	194	48
		-	20	MEDSL20C-1180	12	325	275	250	45	15.875	.6250	5/8	12	MEDSL12C-15875	16	260	208	194	48
11.9	.4685	-	12	MEDSL12C-1190	12	204	156	144	45	16.0	.6299	-	12	MEDSL12C-1600	16	260	208	194	48
		-	20	MEDSL20C-1190	12	325	275	250	45	16.5	.6496	-	12	MEDSL12C-1650	18	286	234	218	48
12.0	.4724	-	12	MEDSL12C-1200	12	204	156	144	45	17.0	.6693	-	12	MEDSL12C-1700	18	286	234	218	48
		-	20	MEDSL20C-1200	12	325	275	250	45	17.463	.6875	11/16	12	MEDSL12C-17463	18	286	234	218	48
12.304	.4844	31/64	12	MEDSL12C-12304	14	230	182	168	45	17.5	.6890	-	12	MEDSL12C-1750	18	286	234	218	48
		31/64	20	MEDSL20C-12304	14	325	275	250	45	18.0	.7087	-	12	MEDSL12C-1800	18	286	234	218	48
12.5	.4921	-	12	MEDSL12C-1250	14	230	182	168	45	18.5	.7283	-	12	MEDSL12C-1850	20	310	258	240	48
		-	20	MEDSL20C-1250	14	325	275	250	45	19.0	.7480	-	12	MEDSL12C-1900	20	310	258	240	48
12.7	.5000	1/2	12	MEDSL12C-1270	14	230	182	168	45	19.050	.7500	3/4	12	MEDSL12C-19050	20	310	258	240	48
		1/2	20	MEDSL20C-1270	14	338	290	265	45	19.5	.7677	-	12	MEDSL12C-1950	20	310	258	240	48
12.8	.5039	-	12	MEDSL12C-1280	14	230	182	168	45	20.0	.7874	-	12	MEDSL12C-2000	20	310	258	240	48



### ➤ Applicable Material Table

⊙ Very suitable ○ Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG303	○	⊙	⊙			○	⊙	⊙	○		○

### SL series deep twist drills(internal coolant)

12D

workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)
Cutting speed	60~120m/min		60~120m/min		50~80m/min		40~60m/min		80~150m/min		60~120m/min		100~180m/min		10~20m/min	
Diameter (mm)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)
3	10600	0.06~0.1	10600	0.06~0.1	7400	0.06~0.1	5300	0.03~0.07	12700	0.06~0.1	9500	0.06~0.1	15000	0.09~0.12	2100	0.03~0.06
4	8000	0.08~0.12	8000	0.08~0.12	5600	0.08~0.12	4000	0.04~0.08	96000	0.08~0.12	7000	0.08~0.12	11000	0.10~0.15	1600	0.04~0.07
5	6400	0.10~0.14	6400	0.10~0.14	4500	0.10~0.14	3200	0.05~0.10	7600	0.10~0.14	5700	0.10~0.14	9000	0.10~0.15	1250	0.05~0.9
6	5300	0.11~0.16	5300	0.11~0.16	3700	0.11~0.16	2700	0.06~0.12	6400	0.11~0.16	4700	0.11~0.16	7400	0.11~0.16	1050	0.06~0.11
8	4000	0.13~0.19	4000	0.13~0.19	2800	0.13~0.19	2000	0.08~0.16	4800	0.13~0.19	3600	0.13~0.19	5600	0.13~0.19	800	0.08~0.14
10	3200	0.14~0.22	3200	0.14~0.22	2200	0.14~0.22	1600	0.10~0.18	3800	0.14~0.22	2800	0.14~0.22	4500	0.14~0.22	600	0.10~0.16
12	2700	0.16~0.24	2700	0.16~0.24	1900	0.16~0.24	1300	0.12~0.20	3200	0.16~0.24	2400	0.16~0.24	3700	0.16~0.24	500	0.12~0.18
14	2300	0.18~0.28	2300	0.18~0.28	1600	0.18~0.28	1100	0.13~0.22	2700	0.18~0.28	2100	0.18~0.28	3200	0.18~0.28	450	0.13~0.20
16	2100	0.20~0.30	2100	0.20~0.30	1400	0.20~0.30	1050	0.14~0.25	2100	0.20~0.30	1800	0.20~0.30	2800	0.25~0.36	400	0.14~0.23
18	1800	0.22~0.32	1800	0.22~0.32	1200	0.22~0.32	950	0.15~0.28	1800	0.22~0.32	1600	0.22~0.32	2500	0.28~0.38	350	0.15~0.25
20	1600	0.25~0.35	1600	0.25~0.35	1100	0.25~0.35	800	0.16~0.30	1600	0.25~0.35	1400	0.25~0.35	2300	0.30~0.40	320	0.16~0.28

- When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
- The cutting conditions above are applicable for drilling with emulsion.
- When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.

### SL series deep twist drills(internal coolant)

20D

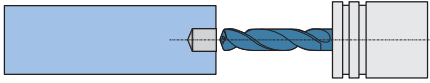
30D

workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)
Cutting speed	70~90m/min		50~80m/min		40~60m/min		40~60m/min		50~80m/min		60~80m/min		100~180m/min		8~15m/min	
Diameter (mm)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)	Rotating speed (min <sup>-1</sup> )	Feed rate (mm/r)
3	8250	0.06~0.1	7650	0.06~0.1	5200	0.06~0.1	4750	0.03~0.07	7100	0.06~0.1	7600	0.06~0.1	12750	0.09~0.12	1350	0.03~0.06
4	6250	0.08~0.12	5750	0.08~0.12	3900	0.08~0.12	3600	0.04~0.08	5400	0.08~0.12	5600	0.08~0.12	9350	0.10~0.15	1050	0.04~0.07
5	5000	0.10~0.14	4600	0.10~0.14	3150	0.10~0.14	2900	0.05~0.10	4250	0.10~0.14	4550	0.10~0.14	7650	0.10~0.15	800	0.05~0.09
6	4150	0.11~0.16	3800	0.11~0.16	2600	0.11~0.16	2450	0.06~0.12	3600	0.11~0.16	3750	0.11~0.16	6300	0.11~0.16	700	0.06~0.11
8	3100	0.13~0.19	2900	0.13~0.19	1950	0.13~0.19	1800	0.08~0.16	2700	0.13~0.19	2900	0.13~0.19	4750	0.13~0.19	500	0.08~0.14
10	2500	0.14~0.22	2300	0.14~0.22	1550	0.14~0.22	1450	0.10~0.18	2150	0.14~0.22	2250	0.14~0.22	3850	0.14~0.22	400	0.10~0.16
12	2100	0.16~0.24	1950	0.16~0.24	1350	0.16~0.24	1150	0.12~0.20	1800	0.16~0.24	1900	0.16~0.24	3150	0.16~0.24	350	0.12~0.18~
14	1800	0.18~0.28	1650	0.18~0.28	1100	0.18~0.28	1000	0.13~0.22	1500	0.18~0.28	1700	0.18~0.28	2700	0.18~0.28	300	0.13~0.20

- When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
- The cutting conditions above are applicable for drilling with emulsion.
- When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.

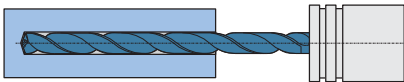
## Recommended Machining Method for SL Series Deep Hole Drills

### 1. Hole-guided Machining



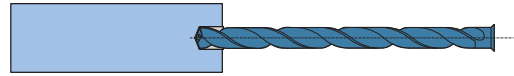
- ◆ The apex angle of drills used for hole-guided machining has to be greater than the apex angle of deep-hole drills.
- ◆ Diameter of drills used for hole-guided machining has to be respectively greater than the diameter of deep-hole drills. Generally the diameter range of deep-hole drills is between 0 and positive 0.1.
- ◆ Generally the depth of pre-drilling hole is 1-3D (D is the diameter of pre-drilling holes). Also, it basically needs to ensure the accuracy of pre-drilling holes at the same time.

### 3. Deep Hole Machining (Start to Finish)



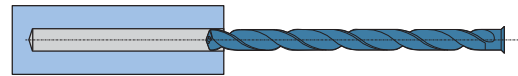
- ◆ Uninterrupted machining with fixed speed and feed rates. (Complete machining in one go, not a "Step-by-Step" machining).

### 2. Deep Hole Machining (Inserting into the Pre-drilling Holes)



- ◆ Lower speed should be applied in the process of inserting deep-hole drills into the pre-drilling holes.
- ◆ Insert deep hole drill to the location 1-3mm away from the bottom of pre-drilling holes (Please make sure that the parts of drilling point are entirely inserted).

### 4. Deep Hole Machining (Retract from hole)



- ◆ At the end of machining, reduce drill speed 1-2mm away from drilled hole's opening.
- ◆ Quickly secedes drill back to the location where machining first started.
- ◆ Apply retraction under the same conditions when inserting pre-drilling holes.



**MEGACUT**

**MEDSL SERIES**

*Deep Hole Twist Drills*

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