MODULAR DRILL SYSTEMS

- Insert diameter range: 12.5-40mm, depth: 3,5,7,10x diameter.
- Excellent centering performance.
- Equipped with internal cooling holes to enhance tool life.
- Special design of inserts with low axial force for improved feed and machining efficien .
- Optimized coating for better wear resistance.

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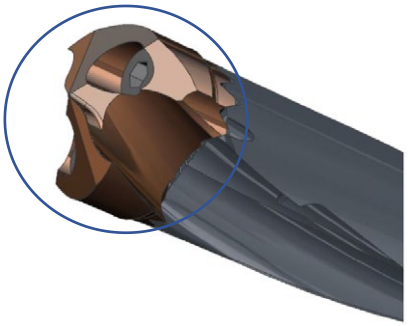
LION DRILL BODIES,MODELS AND SİZES

- Insert diameter range: 12-33.5mm, depth: 1.5x, 3x, 5x, 8x,10x,12x diameter.
- Resharpening allowance of 1.5mm-3mm is reserved for inserts to further reduce tool costs.
- Interchangeable carbide inserts and high rigidity alloy drill body greatly improve machining accuary and efficiency.
- The radial tooth design of the insert and the drill body realizes high precision and high strength.
- Designed with internal coolant holes, it makes drilling cold enough for longer tool life and smoother chip evacuation.
- The same drill body can be assembled with different diameters of blades, saving tooling costs.
- Optimized spiral design for smooth chip evacuation control.
- Enhanced edge treatment dramatically improves machining life.
- Shank design suitable for a wide range of shank systems.
- Quick and easy insert change without removing the drill body from the machine.

OFFER CONDITIONS	
1,5D	6 pıece
3D	6 pıece
5D	8 pıece
8D	15 pıece
10D	20 pıece
12D	25 pıece

LION DRILL BODIES,MODELS AND SİZES

Installation Status

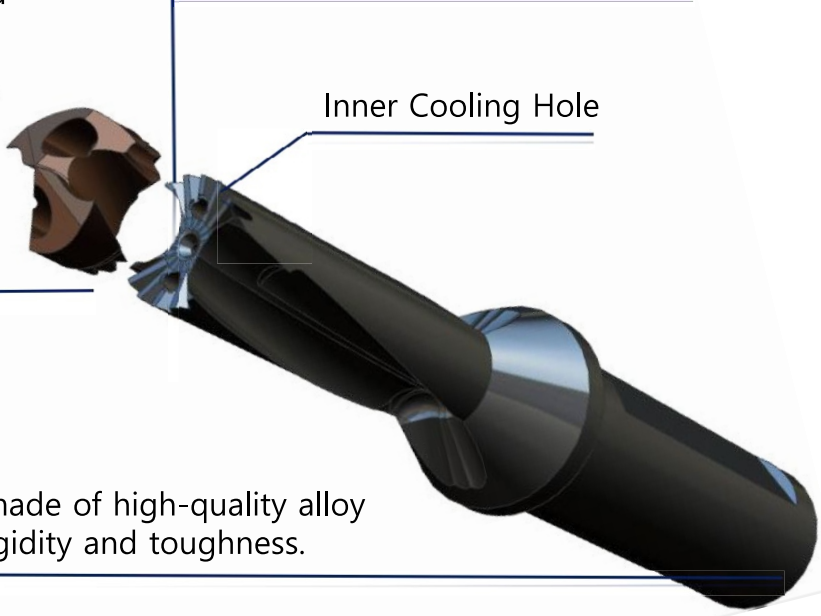


Screws High-strength screws for stable locking of inserts from the head

High-precision mating tooth profile for a solid connection

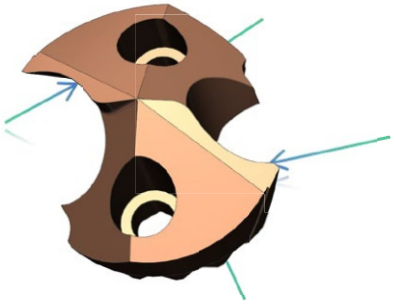
Inner Cooling Hole

Insert A wide range of different cutting edges for different workpiece materials.



Drill Body The drill body is made of high-quality alloy steel with good rigidity and toughness.

Optimized drill tips for better centering performance



Chamfered main cutting edge for enhanced insert strength and wear resistance

Reinforced cutting edge protection for better chipping resistance during the cutting process

Superior coating for more wear-resistant inserts

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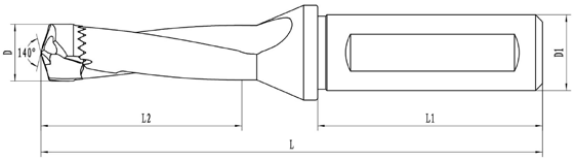

Diameter (D) (h7)	1.5D			3D			5D			universal		Screw	Wrench
	Model	Size		Model	Size		Model	Size		Size			
		L2	L		L2	L		L2	L	L1	D1		
12.0-12.49	TC1.5-120-XP16	28	91	TC03-120-XP16	46	107	TC05-120-XP16	71	132	48	16	M2.2*8	T6
12.5-13.49	TC1.5-130-XP16	30	92	TC03-130-XP16	49	112	TC05-130-XP16	76	142				
13.5-14.5	TC1.5-140-XP16	34	96	TC03-140-XP16	55	119	TC05-140-XP16	84	149				
14.51-15.5	TC1.5-150-XP20	35	100	TC03-150-XP20	58	129	TC05-150-XP20	89	159	50	20		
15.51-16.5	TC1.5-160-XP20	38	103	TC03-160-XP20	62	134	TC05-160-XP20	95	169			M2.5*9	T8
16.51-17.5	TC1.5-170-XP20	39	105	TC03-170-XP20	66	140	TC05-170-XP20	101	175				
17.51-18.5	TC1.5-180-XP20	43	107	TC03-180-XP20	70	145	TC05-180-XP20	107	180				
18.51-19.5	TC1.5-190-XP25	44	115	TC03-190-XP25	73	160	TC05-190-XP25	112	195	56	25	M3.0*11	
19.51-20.5	TC1.5-200-XP25	47	118	TC03-200-XP25	77	160	TC05-200-XP25	118	200				
20.51-21.5	TC1.5-210-XP25	48	119	TC03-210-XP25	80	160	TC05-210-XP25	123	200				
21.51-22.8	TC1.5-220-XP25	51	121	TC03-220-XP25	84	165	TC05-220-XP25	129	205			M3.5*12	T15
22.81-23.8	TC1.5-230-XP25	51	122	TC03-230-XP25	81	165	TC05-230-XP25	134	215				
23.81-24.8	TC1.5-240-XP32	54	129	TC03-240-XP32	91	175	TC05-240-XP32	140	225	60	32		
24.81-25.8	TC1.5-250-XP32	54	129	TC03-250-XP32	93	175	TC05-250-XP32	145	230			M4.0*14	
25.81-26.8	TC1.5-260-XP32	57	132	TC03-260-XP32	97	180	TC05-260-XP32	151	235				
26.81-27.8	TC1.5-270-XP32	58	133	TC03-270-XP32	99	180	TC05-270-XP32	156	245				
27.81-28.8	TC1.5-280-XP32	60	135	TC03-280-XP32	102	185	TC05-280-XP32	162	245			M4.5*15	
28.81-29.9	TC1.5-290-XP32	61	136	TC03-290-XP32	105	190	TC05-290-XP32	167	250				
29.81-30.8	TC1.5-300-XP32	64	139	TC03-300-XP32	110	191	TC05-300-XP32	173	261				
30.81-32.0	TC1.5-320-XP32	67	143	TC03-320-XP32	116	201	TC05-320-XP32	181	266				
32.01-33.5	TC1.5-330-XP32	69	146	TC03-330-XP32	121	206	TC05-330-XP32	191	276				

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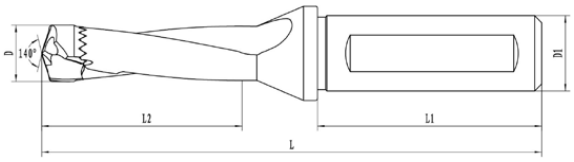

Diameter (D) (h7)	8D			10D			12D			universal		Screw	Wrench
	Model	Size		Model	Size		Model	Size		Size			
		L2	L		L2	L		L2	L	L1	D1		
12.0-12.49	TC08-120-XP16	107	168	TC10-120-XP16	-	-	-	-	-				
12.5-13.49	TC08-130-XP16	115	182	TC10-130-XP16	-	-	-	-	-	48	16		
13.5-14.5	TC08-140-XP16	127	194	TC10-140-XP16	156.5	220.5	TC12-140-XP16	186.5	249.5			M2.2*8	T6
14.51-15.5	TC08-150-XP20	136	204	TC10-150-XP20	166.7	232.7	TC12-150-XP20	198.7	263.7				
15.51-16.5	TC08-160-XP20	144	214	TC10-160-XP20	178.5	243.5	TC12-160-XP20	211.5	276.5				
16.51-17.5	TC08-170-XP20	154	225	TC10-170-XP20	188.7	253.7	TC12-170-XP20	223.7	288.7	50	20	M2.5*9	
17.51-18.5	TC08-180-XP20	162	230	TC10-180-XP20	198.8	264.8	TC12-180-XP20	236.8	301.8				T8
18.51-19.5	TC08-190-XP25	171	255	TC10-190-XP25	209.9	280.9	TC12-190-XP25	248.9	314.8				
19.51-20.5	TC08-200-XP25	179	270	TC10-200-XP25	220.5	291.5	TC12-200-XP25	261.5	332.5			M3.0*11	
20.51-21.5	TC08-210-XP25	188	266	TC10-210-XP25	230.6	361.6	TC12-210-XP25	273.6	344.6	56	25		
21.51-22.8	TC08-220-XP25	196	275	TC10-220-XP25	244.1	315.1	TC12-220-XP25	289.7	360.7				
22.81-23.8	TC08-230-XP25	205	285	TC10-230-XP25	253.7	324.7	TC12-230-XP25	301.3	372.3			M3.5*12	
23.81-24.8	TC08-240-XP32	213	300	TC10-240-XP32	264.9	339.9	TC12-240-XP32	264.9	389.5				
24.81-25.8	TC08-250-XP32	222	305	TC10-250-XP32	270	350	TC12-250-XP32	326.6	401.6				
25.81-26.8	TC08-260-XP32	230	315	TC10-260-XP32	285.3	360.3	TC12-260-XP32	338.9	413.9			M4.0*14	
26.81-27.8	TC08-270-XP32	239	325	TC10-270-XP32	295.3	370.3	TC12-270-XP32	350.9	425.9				T15
27.81-28.8	TC08-280-XP32	247	330	TC10-280-XP32	306.2	381.2	TC12-280-XP32	363.8	438.8				
28.81-29.9	TC08-290-XP32	256	340	TC10-290-XP32	316.4	391.4	TC12-290-XP32	376	451	60	32		
29.81-30.8	TC08-300-XP32	265	351	TC10-300-XP32	327.9	402.9	TC12-300-XP32	389.5	464.5				
30.81-32.0	TC08-320-XP32	276	361	TC10-320-XP32	345.9	424.9	-					M4.5*15	
32.01-33.5	TC08-330-XP32	291	376	TC10-330-XP32	364	443							

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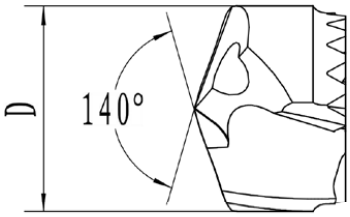

Diameter D(mm)	Model	Model	Model	L	Model	L
12.0	TCEA-1200	TCPA-1200	TCMA-1200	9.1	TCFA-1200	7.1
12.5	TCEA-1250	TCPA-1250	TCMA-1250	9.4	TCFA-1250	7.2
13.0	TCEA-1300	TCPA-1300	TCMA-1300	9.7	TCFA-1300	7.5
13.5	TCEA-1350	TCPA-1350	TCMA-1350	10.3	TCFA-1350	7.9
14.0	TCEA-1400	TCPA-1400	TCMA-1400		TCFA-1400	
14.5	TCEA-1450	TCPA-1450	TCMA-1450		TCFA-1450	
15.0	TCEA-1500	TCPA-1500	TCMA-1500	11.0	TCFA-1500	8.3
15.5	TCEA-1550	TCPA-1550	TCMA-1550		TCFA-1550	
16.0	TCEA-1600	TCPA-1600	TCMA-1600	11.6	TCFA-1600	8.8
16.5	TCEA-1650	TCPA-1650	TCMA-1650		TCFA-1650	
17.0	TCEA-1700	TCPA-1700	TCMA-1700	12.3	TCFA-1700	9.3
17.5	TCEA-1750	TCPA-1750	TCMA-1750		TCFA-1750	
18.0	TCEA-1800	TCPA-1800	TCMA-1800	12.9	TCFA-1800	9.8
18.5	TCEA-1850	TCPA-1850	TCMA-1850		TCFA-1850	
19.0	TCEA-1900	TCPA-1900	TCMA-1900	13.6	TCFA-1900	10.2
19.5	TCEA-1950	TCPA-1950	TCMA-1950		TCFA-1950	
20.0	TCEA-2000	TCPA-2000	TCMA-2000	14.1	TCFA-2000	10.7
20.5	TCEA-2050	TCPA-2050	TCMA-2050		TCFA-2050	
21.0	TCEA-2100	TCPA-2100	TCMA-2100	14.8	TCFA-2100	11.2
21.5	TCEA-2150	TCPA-2150	TCMA-2150		TCFA-2150	
22.0	TCEA-2200	TCPA-2200	TCMA-2200	15.0	TCFA-2200	
22.5	TCEA-2250	TCPA-2250	TCMA-2250		TCFA-2250	
23.0	TCEA-2300	TCPA-2300	TCMA-2300	15.2	TCFA-2300	
23.5	TCEA-2350	TCPA-2350	TCMA-2350		TCFA-2350	

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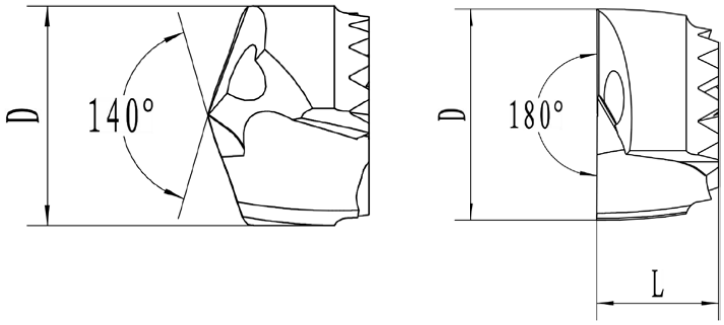

Diameter D(mm)	Model	Model	Model	L	Model	L
24.0	TCEA-2400	TCPA-2400	TCMA-2400	15.4	TCFA-2400	11.3
24.5	TCEA-2450	TCPA-2450	TCMA-2450		TCFA-2450	
25.0	TCEA-2500	TCPA-2500	TCMA-2500	15.9	TCFA-2500	11.7
25.5	TCEA-2550	TCPA-2550	TCMA-2550		TCFA-2550	
26.0	TCEA-2600	TCPA-2600	TCMA-2600	16.5	TCFA-2600	12.2
26.5	TCEA-2650	TCPA-2650	TCMA-2650		TCFA-2650	
27.0	TCEA-2700	TCPA-2700	TCMA-2700	17.2	TCFA-2700	12.7
27.5	TCEA-2750	TCPA-2750	TCMA-2750		TCFA-2750	
28.0	TCEA-2800	TCPA-2800	TCMA-2800	17.8	TCFA-2800	13.2
28.5	TCEA-2850	TCPA-2850	TCMA-2850		TCFA-2850	
29.0	TCEA-2900	TCPA-2900	TCMA-2900	18.4	TCFA-2900	13.6
29.5	TCEA-2950	TCPA-2950	TCMA-2950		TCFA-2950	
30.0	TCEA-3000	TCPA-3000	TCMA-3000	19.0	TCFA-3000	14.1
30.5	TCEA-3050	TCPA-3050	TCMA-3050		TCFA-3050	
31.0	TCEA-3100	TCPA-3100	TCMA-3100			
31.5	TCEA-3150	TCPA-3150	TCMA-3150			
32.0	TCEA-3200	TCPA-3200	TCMA-3200			
32.5	TCEA-3250	TCPA-3250	TCMA-3250			
33.0	TCEA-3300	TCPA-3300	TCMA-3300			
33.5	TCEA-3350	TCPA-3350	TCMA-3350			

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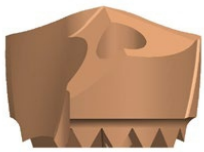
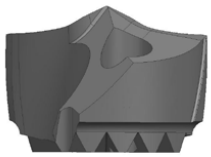

TCPA


TCEA


TCMA


TCZA


TCJA


TCFA

- TCPA: High tip strength for machining common steel parts, AlCr coating(P).
- TCEA: Relatively sharp tip for machining mild steel and cast iron, AlCrN coating(P/K).
- TCMA: Dedicated to machining stainless steel with a tough, chipping-resistant matrix, AlTiN coating(M/K).
- TCZA: Self-centering drill tip with double top corner design, there's no need to make a pilot hole when using 8x diameter drills, AlCr coating(P/K).
- TCJA: Double top angle design for machining structural steel, AlCrN coating.
- TCFA: Top angle design for inlet beveling or bottom flat holemaking requirements, AlCr coating(P/K/M).

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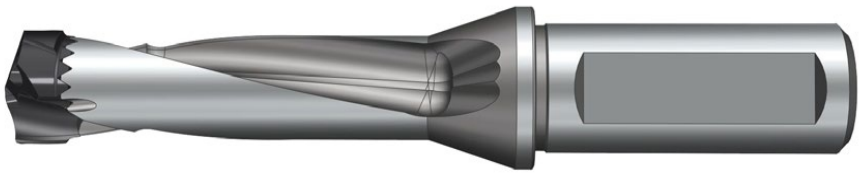
RECOMMENDED PROCESSING PARAMETER OF LIONS DRILL



			Diameter(mm)		
Workpiece Material	**Recommended Insert Models**	**Cutting Speed Vc (m/min)**	**12 ~ 16**	**16 ~ 20**	**20-30.8**
Mild Steel (~ 250HB)	TCPA/TCEA	80-120 (50-80)	0.15-0.3	0.15-0.3	0.15-0.35
Plain Steel(250-320HB)	TCPA/TCEA	70-120 (50-80)	0.15-0.3	0.15-0.3	0.15-0.35
Highly Hardened Steel(45HRC)	TCPA	40-90 (30-70)	0.1-0.2	0.1-0.2	0.15-0.25
Stainless Steel(~ 200HB)	TCMA/TCEA	50-90 (40-60)	0.1-0.2	0.1-0.2	0.15-0.25
Gray Cast Iron	TCPA/TCEA	50-100 (40-80)	0.15-0.3	0.15-0.35	0.15-0.4
Ductile Iron	TCPA/TCEA	50-90 (40-70)	0.15-0.3	0.15-0.35	0.15-0.35
It needs to make a pilot hole when processing with 8x and 12x diameter drill, processing parameters refer to the parameters in parentheses					

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