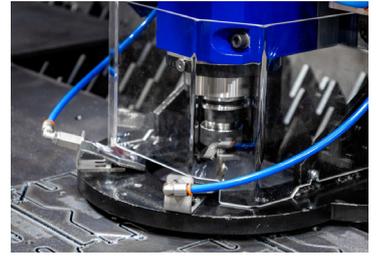


# KRUZ

# MODULAR

# DRILLING

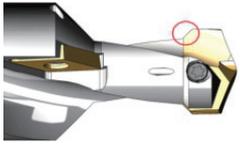
# SYSTEM



Spis treści

<p><b>KRUZ -FSL flanged body</b> <span style="float: right;">6</span></p>	<p><b>Carbide inserts IDP, IDF, ID</b> <span style="float: right;">6</span></p>
<p>3xD, 5xD, 7xD, 10xD, <math>\Phi</math>8.0~50.0mm</p>	<p><math>\Phi</math>8.0~50.4mm</p>
	
<p><b>KRUZ - H flanged body</b> <span style="float: right;">12</span></p>	<p><b>Carbide inserts IDPH, IDFH, IDH, IDSH</b> <span style="float: right;">12</span></p>
<p>3xD, 5xD, 7xD, 10xD, <math>\Phi</math>12.0~50.0mm</p>	<p><math>\Phi</math>12.0~50.4mm</p>
	
<p><b>KRUZ - SLK short body</b> <span style="float: right;">17</span></p>	<p><b>Carbide inserts IDPK, IDFK</b> <span style="float: right;">17</span></p>
<p><math>\Phi</math>12.0~50.0mm</p>	<p><math>\Phi</math>12.0~50.4mm</p>
	
<p><b>KRUZ -FSLK flanged body</b> <span style="float: right;">20</span></p>	<p><b>TDMH drilling and milling holder</b> <span style="float: right;">25</span></p>
<p>5XD, 7XD, <math>\Phi</math>12.0~50.4mm</p>	<p><b>TDM drill</b> <span style="float: right;">25</span></p>
	
<p><b>TSTH engraving holder</b> <span style="float: right;">26</span></p>	<p><b>TSD engraving scribe</b> <span style="float: right;">26</span></p>
	

**Spis treści**

<b>Morse taper holder</b>	<b>25</b>		<b>SK45 holder for structural applications</b>	<b>27</b>	
<b>HSK holder for structural applications</b>	<b>27</b>		<b>PR extension adapter</b>	<b>27</b>	
<b>WSL reducing sleeve</b>	<b>28</b>		<b>Special step drill body</b>	<b>29</b>	drilling, chamfering, reaming 
<b>THUB combined tool</b>	<b>29</b>	drilling + chamfering 	<b>Carbide inserts IDCH</b>	<b>30</b>	chamfer angle 45°, 60°, special execution 
<b>"One Pass" drilling bodies</b>	<b>30</b>	$\Phi 8.0 \sim 50.0 \text{mm}$ 	<b>Carbide inserts DBI</b>	<b>30</b>	chamfer angle 45°, 60° 
<b>New "back spot-facing" tool</b>	<b>31</b>	special execution 	<b>KRUZ chamfering tool</b>	<b>31</b>	special execution 



**KRUZ-FSL**

- Locking by means of double screws: clamping screw and fixing screw
- Flanged body design to reduce vibrations
- Enhanced clamping force through larger screws

**IDP - 209**



- Geometry designed for producing deep holes and heavy-duty tasks
- Patented double point angle: 130° + 150°
- New PVD coating

**IDF - 210**

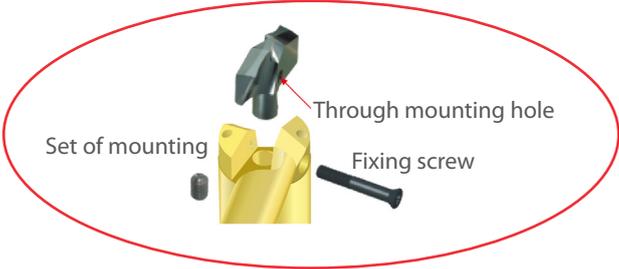


- Machining of thin plates and shallow holes
- Double point angle: 140° + 170° (almost flat bottom)
- Alternative solution for interrupted holes

**ID - 207**



- General-purpose application
- Standard point angle: 140°



**KRUZ-H**

- Larger helix angle to reduce machine load
- Double clamping using clamping and fixing screws
- Flanged drill body provides vibration reduction during machining

**IDPH**



- Larger helix angle matching the "H"-series body
- Geometry designed for producing deep holes and heavy-duty tasks
- Patented double point angle: 130° + 150°

**IDFH**



- Larger helix angle matching the "H"-series body
- Machining of thin plates and shallow holes
- Optimised geometry for use in steel constructions
- Double point angle: 140° + 170°
- Suitable for machining interrupted holes

**IDH**



- Tip matched to the flute spiral of the "H"-series body
- Designed for general applications
- Standard point angle: 140°

**IDSH**

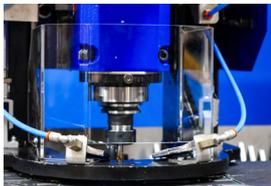


- Larger helix angle matching the "H"-series body
- Geometry intended for machining stainless steels, titanium alloys and exotic materials
- Point angle: 140°
- Lubrication groove along the tool axis

**KRUZ body**

- Tool steel, heat-treated; flute polished for improved chip evacuation
- Cooling channel inside the body
- Weldon shank as standard (except for small diameters Ø 8 – 11.5, where a cylindrical HA shank is used)
- Hole depth-to-diameter ratio available as 3xD, 5xD, 7xD, 10xD
- Set of mounting accessories supplied with each body order

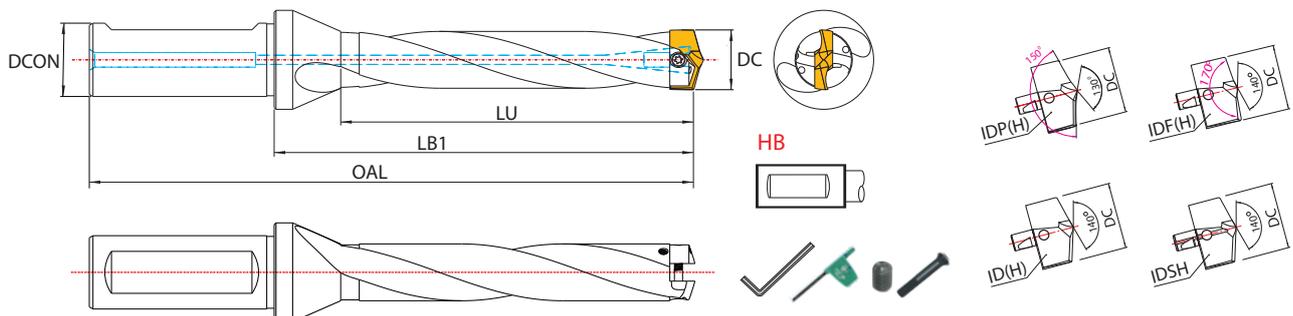
The KRUZ drill delivers outstanding performance at high speeds.



Chips after drilling



Application of 6 KRUZ drills with IDPK inserts on a multi-spindle machineZ



## Carbide inserts

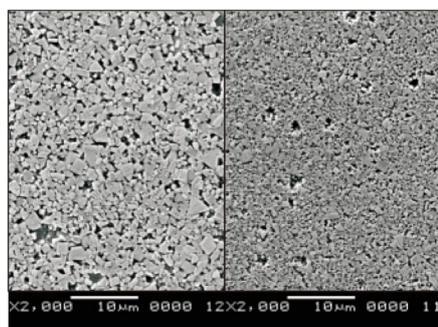
- The tool material is ultra-fine-grain cemented carbide for machining a wide range of materials – from soft metals to very hard, hardened steels.
- Fully ground drill geometry.
- Proprietary chisel-edge geometry for increased performance.
- Wide range of diameters from Ø 8 mm to Ø 50.4 mm in 0.1 mm increments.
- Available with short lead times.

### Standard and optional geometry for different materials

- ID and IDF inserts coated with TiAlN; IDP inserts coated with Y+ as standard.
- AL: for aluminium; available on request; uncoated but polished.
- SUS: for stainless steel or titanium; available on request.
- FC: for cast iron; available on request.

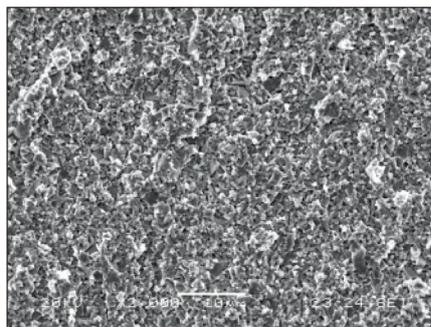
## Cemented-carbide substrate

All VHM inserts, in addition to their micro-grain structure, contain 13 % cobalt, which significantly improves the tool's performance and durability, not only in construction steels and difficult-to-machine materials but also in exotic alloys.



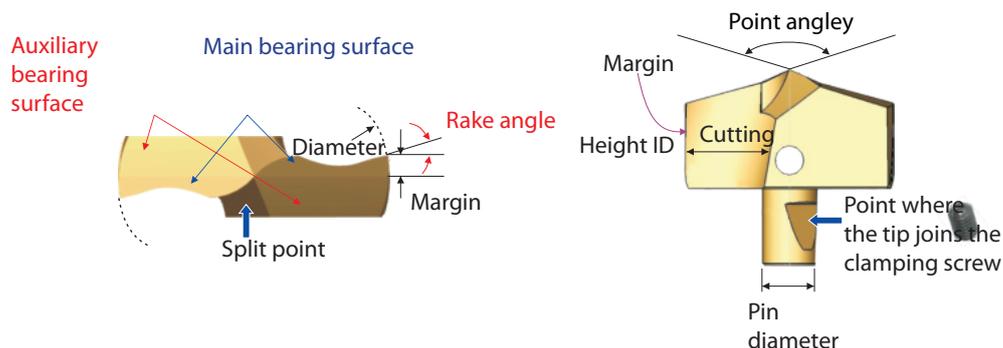
↑  
Conventional carbide

↑  
Our standard carbide

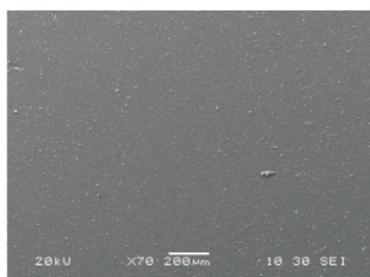


↑  
New carbide material (0.2 + 0.5 + 0.8 µm ultra-micro-grain size)

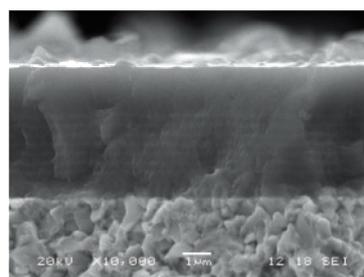
## Carbide insert nomenclature



## Y+ coating



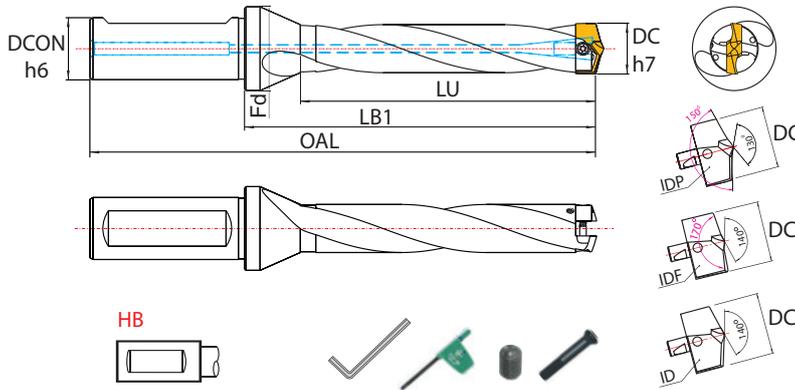
Coated surface



Coating layers

## KRUZ-FSL

- Robust flanged body, designed to reduce unwanted vibrations
- Replaceable carbide insert types IDP, IDF, ID
- Drill body made of high-quality, heat-treated tool steel
- Extended tool life through vibration reduction
- Internal channels supplying the coolant/lubricant medium



HB



### IDP - 209



deep holes and heavy-duty task

### IDF - 210



machining thin plates and shallow holes

### ID - 207



general-purpose applications

Diameter range	Body	Dimensions (mm)					Fd	Inserts				
		DCON (L)	XD	OAL	LB1	LU						
8.0 - 8.4	4320080	10.0 (HA) (45)	3xD	87	42	32	18	IDP080, IDP081, IDP082, IDP083, IDP084, IDF080, IDF081, IDF082, IDF083, IDF084, ID080, ID081, ID082, ID083, ID084	CS 080 -085 SL			
	4330080		5xD	103	58	48						
	4340080		7xD	119	74	64						
	4350080		10xD	143	98	88						
8.5 - 8.9	4320085		3xD	89	44	34		IDP085, IDP086, IDP087, IDP088, IDP089, IDF085, IDF086, IDF087, IDF088, IDF089, ID085, ID086, ID087, ID088, ID089				
	4330085		5xD	106	61	51						
	4340085		7xD	123	78	68						
	4350085		10xD	149	104	94						
9.0 - 9.4	4320090		3xD	92	47	36		IDP090, IDP091, IDP092, IDP093, IDP094, IDF090, IDF091, IDF092, IDF093, IDF094, ID090, ID091, ID092, ID093, ID094				
	4330090		5xD	110	65	54						
	4340090		7xD	128	83	72						
	4350090		10xD	155	110	99						
9.5 - 9.9	4320095		3xD	97	49	38		IDP095, IDP096, IDP097, IDP098, IDP099, IDF095, IDF096, IDF097, IDF098, IDF099, ID095, ID096, ID097, ID098, ID099				
	4330095		5xD	116	68	57						
	4340095		7xD	135	87	76						
	4350095		10xD	164	116	105						
10.0 - 10.4	4320100	3xD	99	51	40	IDP100, IDP101, IDP102, IDP103, IDP104, IDF100, IDF101, IDF102, IDF103, IDF104, ID100, ID101, ID102, ID103, ID104						
	4330100	5xD	119	71	60							
	4340100	7xD	139	91	80							
	4350100	10xD	169	121	110							
10.5 - 10.9	4320105	3xD	102	54	42	IDP105, IDP106, IDP107, IDP108, IDP109, IDF105, IDF106, IDF107, IDF108, IDF109, ID105, ID106, ID107, ID108, ID109						
	4330105	5xD	123	75	63							
	4340105	7xD	144	96	84							
	4350105	10xD	176	128	116							
11.0 - 11.4	4320110	3xD	104	56	44	IDP110, IDP111, IDP112, IDP113, IDP114, IDF110, IDF111, IDF112, IDF113, IDF114, ID110, ID111, ID112, ID113, ID114						
	4330110	5xD	126	78	66							
	4340110	7xD	148	100	88							
	4350110	10xD	181	133	121							
11.5 - 11.9	4320115	3xD	107	59	46	IDP115, IDP116, IDP117, IDP118, IDP119, IDF115, IDF116, IDF117, IDF118, IDF119, ID115, ID116, ID117, ID118, ID119						
	4330115	5xD	130	82	69							
	4340115	7xD	153	105	92							
	4350115	10xD	188	140	127							
12.0 - 12.4	4320120	3xD	109	61	48	IDP120, IDP121, IDP122, IDP123, IDP124, IDF120, IDF121, IDF122, IDF123, IDF124, ID120, ID121, ID122, ID123, ID124						
	4330120	5xD	133	85	72							
	4340120	7xD	157	109	96							
	4350120	10xD	193	145	132							
12.5 - 12.9	4320125	3xD	111	63	50	IDP125, IDP126, IDP127, IDP128, IDP129, IDF125, IDF126, IDF127, IDF128, IDF129, ID125, ID126, ID127, ID128, ID129						
	4330125	5xD	136	88	75							
	4340125	7xD	161	113	100							
	4350125	10xD	199	151	138							
13.0 - 13.4	4320130	3xD	114	66	52	IDP130, IDP131, IDP132, IDP133, IDP134, IDF130, IDF131, IDF132, IDF133, IDF134, ID130, ID131, ID132, ID133, ID134						
	4330130	5xD	140	92	78							
	4340130	7xD	166	118	104							
	4350130	10xD	205	157	143							

## KRUZ-FSL

Diameter range	Body	Wymiary (mm)						Fd	Inserts					
		DCON (L)	XD	OAL	LB1	LU								
13.5 -13.9	4320135	16.0 (48)	3xD	116	68	54	21	IDP135, IDP136, IDP137, IDP138, IDP139, IDF135, IDF136, IDF137, IDF138, IDF139, ID135, ID136, ID137, ID138, ID139	CS120 -135 SL	T6				
	4330135		5xD	143	95	81								
	4340135		7xD	170	122	108								
	4350135		10xD	211	163	149								
14.0 -14.4	4320140		3xD	119	71	56							21	IDP140, IDP141, IDP142, IDP143, IDP144, IDF140, IDF141, IDF142, IDF143, IDF144, ID140, ID141, ID142, ID143, ID144
	4330140		5xD	147	99	84								
	4340140		7xD	175	127	112								
	4350140		10xD	217	169	154								
14.5 -14.9	4320145		3xD	123	73	58	21	IDP145, IDP146, IDP147, IDP148, IDP149, IDF145, IDF146, IDF147, IDF148, IDF149, ID145, ID146, ID147, ID148, ID149						
	4330145		5xD	152	102	87								
	4340145		7xD	181	131	116								
	4350145		10xD	225	175	160								
15.0 -15.4	4320150		3xD	127	77	60							21	IDP150, IDP151, IDP152, IDP153, IDP154, IDF150, IDF151, IDF152, IDF153, IDF154, ID150, ID151, ID152, ID153, ID154
	4330150		5xD	157	107	90								
	4340150		7xD	187	137	120								
	4350150		10xD	232	182	165								
15.5 -15.9	4320155	3xD	130	80	62	21	IDP155, IDP156, IDP157, IDP158, IDP159, IDF155, IDF156, IDF157, IDF158, IDF159, ID155, ID156, ID157, ID158, ID159							
	4330155	5xD	161	111	93									
	4340155	7xD	192	142	124									
	4350155	10xD	239	189	171									
16.0 -16.4	4320160	3xD	132	82	64			21	IDP160, IDP161, IDP162, IDP163, IDP164, IDF160, IDF161, IDF162, IDF163, IDF164, ID160, ID161, ID162, ID163, ID164					
	4330160	5xD	164	114	96									
	4340160	7xD	196	146	128									
	4350160	10xD	244	194	176									
16.5 -16.9	4320165	3xD	135	85	66	21	IDP165, IDP166, IDP167, IDP168, IDP169, IDF165, IDF166, IDF167, IDF168, IDF169, ID165, ID166, ID167, ID168, ID169							
	4330165	5xD	168	118	99									
	4340165	7xD	201	151	132									
	4350165	10xD	251	201	182									
17.0 -17.4	4320170	3xD	137	87	68			27	IDP170, IDP171, IDP172, IDP173, IDP174, IDF170, IDF171, IDF172, IDF173, IDF174, ID170, ID171, ID172, ID173, ID174					
	4330170	5xD	171	121	102									
	4340170	7xD	205	155	136									
	4350170	10xD	256	206	187									
17.5 -17.9	4320175	3xD	139	89	70	27	IDP175, IDP176, IDP177, IDP178, IDP179, IDF175, IDF176, IDF177, IDF178, IDF179, ID175, ID176, ID177, ID178, ID179							
	4330175	5xD	174	124	105									
	4340175	7xD	209	159	140									
	4350175	10xD	262	212	193									
18.0 -18.4	4320180	3xD	142	92	72			27	IDP180, IDP181, IDP182, IDP183, IDP184, IDF180, IDF181, IDF182, IDF183, IDF184, ID180, ID181, ID182, ID183, ID184					
	4330180	5xD	178	128	108									
	4340180	7xD	214	164	144									
	4350180	10xD	268	218	198									
18.5 -18.9	4320185	3xD	144	94	74	27	IDP185, IDP186, IDP187, IDP188, IDP189, IDF185, IDF186, IDF187, IDF188, IDF189, ID185, ID186, ID187, ID188, ID189							
	4330185	5xD	181	131	111									
	4340185	7xD	218	168	148									
	4350185	10xD	274	224	204									
19.0 -19.4	4320190	3xD	147	97	76			27	IDP190, IDP191, IDP192, IDP193, IDP194, IDF190, IDF191, IDF192, IDF193, IDF194, ID190, ID191, ID192, ID193, ID194					
	4330190	5xD	185	135	114									
	4340190	7xD	223	173	152									
	4350190	10xD	280	230	209									
19.5 -19.9	4320195	3xD	149	99	78	27	IDP195, IDP196, IDP197, IDP198, IDP199, IDF195, IDF196, IDF197, IDF198, IDF199, ID195, ID196, ID197, ID198, ID199							
	4330195	5xD	188	138	117									
	4340195	7xD	227	177	156									
	4350195	10xD	286	236	215									
20.0 -20.4	4320200	3xD	157	101	80			32	IDP200, IDP201, IDP202, IDP203, IDP204, IDF200, IDF201, IDF202, IDF203, IDF204, ID200, ID201, ID202, ID203, ID204					
	4330200	5xD	197	141	120									
	4340200	7xD	237	181	160									
	4350200	10xD	297	241	220									
20.5 -20.9	4320205	3xD	160	104	82	32	IDP205, IDP206, IDP207, IDP208, IDP209, IDF205, IDF206, IDF207, IDF208, IDF209, ID205, ID206, ID207, ID208, ID209							
	4330205	5xD	201	145	123									
	4340205	7xD	242	186	164									
	4350205	10xD	304	248	226									
21.0 -21.4	4320210	3xD	162	106	84			32	IDP210, IDP211, IDP212, IDP213, IDP214, IDF210, IDF211, IDF212, IDF213, IDF214, ID210, ID211, ID212, ID213, ID214					
	4330210	5xD	204	148	126									
	4340210	7xD	246	190	168									
	4350210	10xD	309	253	231									
21.5 -21.9	4320215	3xD	165	109	86	32	IDP215, IDP216, IDP217, IDP218, IDP219, IDF215, IDF216, IDF217, IDF218, IDF219, ID215, ID216, ID217, ID218, ID219							
	4330215	5xD	208	152	129									
	4340215	7xD	251	195	172									
	4350215	10xD	316	260	237									

KRUZ-FSL

Diameter range	Body	Dimensions (mm)					Fd	Inserts				
		DCON (L)	XD	OAL	LB1	LU						
22.0 -22.4	4320220	25.0 (56)	3xD	167	111	88	32	IDP220, IDP221, IDP222, IDP223, IDP224, IDF220, IDF221, IDF222, IDF223, IDF224, ID220, ID221, ID222, ID223, ID224	CS 220 -235 SL	T8		
	4330220		5xD	211	155	132						
	4340220		7xD	255	199	176						
	4350220		10xD	321	265	242						
22.5 -22.9	4320225		3xD	169	113	90		IDP225, IDP226, IDP227, IDP228, IDP229, IDF225, IDF226, IDF227, IDF228, IDF229, ID225, ID226, ID227, ID228, ID229				
	4330225		5xD	214	158	135						
	4340225		7xD	259	203	180						
	4350225		10xD	327	271	248						
23.0 -23.4	4320230		3xD	172	116	92		IDP230, IDP231, IDP232, IDP233, IDP234, IDF230, IDF231, IDF232, IDF233, IDF234, ID230, ID231, ID232, ID233, ID234				
	4330230		5xD	218	162	138						
	4340230		7xD	264	208	184						
	4350230		10xD	333	277	253						
23.5 -23.9	4320235		3xD	174	118	94		IDP235, IDP236, IDP237, IDP238, IDP239, IDF235, IDF236, IDF237, IDF238, IDF239, ID235, ID236, ID237, ID238, ID239				
	4330235		5xD	221	165	141						
	4340235		7xD	268	212	188						
	4350235		10xD	339	283	259						
24.0 -24.4	4320240	3xD	181	121	96	IDP240, IDP241, IDP242, IDP243, IDP244, IDF240, IDF241, IDF242, IDF243, IDF244, ID240, ID241, ID242, ID243, ID244						
	4330240	5xD	229	169	144							
	4340240	7xD	277	217	192							
	4350240	10xD	349	289	264							
24.5 -24.9	4320245	3xD	183	123	98	IDP245, IDP246, IDP247, IDP248, IDP249, IDF245, IDF246, IDF247, IDF248, IDF249, ID245, ID246, ID247, ID248, ID249						
	4330245	5xD	232	172	147							
	4340245	7xD	281	221	196							
	4350245	10xD	355	295	270							
25.0 -25.4	4320250	3xD	185	125	100	IDP250, IDP251, IDP252, IDP253, IDP254, IDF250, IDF251, IDF252, IDF253, IDF254, ID250, ID251, ID252, ID253, ID254						
	4330250	5xD	235	175	150							
	4340250	7xD	285	225	200							
	4350250	10xD	360	300	275							
25.5 -25.9	4320255	3xD	188	128	102	IDP255, IDP256, IDP257, IDP258, IDP259, IDF255, IDF256, IDF257, IDF258, IDF259, ID255, ID256, ID257, ID258, ID259						
	4330255	5xD	239	179	153							
	4340255	7xD	290	230	204							
	4350255	10xD	367	307	281							
26.0 -26.4	4320260	3xD	190	130	104	IDP260, IDP261, IDP262, IDP263, IDP264, IDF260, IDF261, IDF262, IDF263, IDF264, ID260, ID261, ID262, ID263, ID264						
	4330260	5xD	242	182	156							
	4340260	7xD	294	234	208							
	4350260	10xD	372	312	286							
26.5 -26.9	4320265	3xD	193	133	106	IDP265, IDP266, IDP267, IDP268, IDP269, IDF265, IDF266, IDF267, IDF268, IDF269, ID265, ID266, ID267, ID268, ID269						
	4330265	5xD	246	186	159							
	4340265	7xD	299	239	212							
	4350265	10xD	379	319	292							
27.0 -27.4	4320270	3xD	195	135	108	IDP270, IDP271, IDP272, IDP273, IDP274, IDF270, IDF271, IDF272, IDF273, IDF274, ID270, ID271, ID272, ID273, ID274						
	4330270	5xD	249	189	162							
	4340270	7xD	303	243	216							
	4350270	10xD	384	324	297							
27.5 -27.9	4320275	3xD	197	137	110	IDP275, IDP276, IDP277, IDP278, IDP279, IDF275, IDF276, IDF277, IDF278, IDF279, ID275, ID276, ID277, ID278, ID279						
	4330275	5xD	252	192	165							
	4340275	7xD	307	247	220							
	4350275	10xD	390	330	303							
28.0 -28.4	4320280	3xD	200	140	112	IDP280, IDP281, IDP282, IDP283, IDP284, IDF280, IDF281, IDF282, IDF283, IDF284, ID280, ID281, ID282, ID283, ID284						
	4330280	5xD	256	196	168							
	4340280	7xD	312	252	224							
	4350280	10xD	396	336	308							
28.5 -28.9	4320285	3xD	202	142	114	IDP285, IDP286, IDP287, IDP288, IDP289, IDF285, IDF286, IDF287, IDF288, IDF289, ID285, ID286, ID287, ID288, ID289						
	4330285	5xD	259	199	171							
	4340285	7xD	316	256	228							
	4350285	10xD	402	342	314							
29.0 -29.4	4320290	3xD	205	145	116	IDP290, IDP291, IDP292, IDP293, IDP294, IDF290, IDF291, IDF292, IDF293, IDF294, ID290, ID291, ID292, ID293, ID294						
	4330290	5xD	263	203	174							
	4340290	7xD	321	261	232							
	4350290	10xD	408	348	319							
29.5 -29.9	4320295	3xD	207	147	118	IDP295, IDP296, IDP297, IDP298, IDP299, IDF295, IDF296, IDF297, IDF298, IDF299, ID295, ID296, ID297, ID298, ID299						
	4330295	5xD	266	206	177							
	4340295	7xD	325	265	236							
	4350295	10xD	414	354	325							
30.0 -30.4	4320300	3xD	209	149	120	IDP300, IDP301, IDP302, IDP303, IDP304, IDF300, IDF301, IDF302, IDF303, IDF304, ID300, ID301, ID302, ID303, ID304						
	4330300	5xD	269	209	180							
	4340300	7xD	329	269	240							
	4350300	10xD	419	359	330							

## KRUZ-FSL

Diameter range	Body	Dimensions (mm)						Fd	Inserts				
		DCON (L)	XD	OAL	LB1	LU							
30.5 -30.9	4320305	32.0 (60)	3xD	212	152	122	39	IDP305, IDP306, IDP307, IDP308, IDP309, IDF305, IDF306, IDF307, IDF308, IDF309, ID305, ID306, ID307, ID308, ID309	CS 300 -315 SL			M4x8	2.0mm
	4330305		5xD	273	213	183							
	4340305		7xD	334	274	244							
	4350305		10xD	426	366	336							
31.0 -31.4	4320310		3xD	214	154	124		IDP310, IDP311, IDP312, IDP313, IDP314, IDF310, IDF311, IDF312, IDF313, IDF314, ID310, ID311, ID312, ID313, ID314					
	4330310		5xD	276	216	186							
	4340310		7xD	338	278	248							
	4350310		10xD	431	371	341							
31.5 -31.9	4320315		3xD	217	157	126		IDP315, IDP316, IDP317, IDP318, IDP319, IDF315, IDF316, IDF317, IDF318, IDF319, ID315, ID316, ID317, ID318, ID319					
	4330315		5xD	280	220	189							
	4340315		7xD	343	283	252							
	4350315		10xD	438	378	347							
32.0 -32.4	4320320		3xD	219	159	128		IDP320, IDP321, IDP322, IDP323, IDP324, IDF320, IDF321, IDF322, IDF323, IDF324, ID320, ID321, ID322, ID323, ID324					
	4330320		5xD	283	223	192							
	4340320		7xD	347	287	256							
	4350320		10xD	443	383	352							
32.5 -32.9	4320325		3xD	221	161	130		IDP325, IDP326, IDP327, IDP328, IDP329, IDF325, IDF326, IDF327, IDF328, IDF329, ID325, ID326, ID327, ID328, ID329					
	4330325		5xD	286	226	195							
	4340325		7xD	351	291	260							
	4350325		10xD	449	389	358							
33.0 -33.4	4320330		3xD	224	164	132		IDP330, IDP331, IDP332, IDP333, IDP334, IDF330, IDF331, IDF332, IDF333, IDF334, ID330, ID331, ID332, ID333, ID334					
	4330330		5xD	290	230	198							
	4340330		7xD	356	296	264							
	4350330		10xD	455	395	363							
33.5 -33.9	4320335		3xD	226	166	134		IDP335, IDP336, IDP337, IDP338, IDP339, IDF335, IDF336, IDF337, IDF338, IDF339, ID335, ID336, ID337, ID338, ID339					
	4330335		5xD	293	233	201							
	4340335		7xD	360	300	268							
	4350335		10xD	461	401	369							
34.0 -34.4	4320340	3xD	239	169	136	IDP340, IDP341, IDP342, IDP343, IDP344, IDF340, IDF341, IDF342, IDF343, IDF344, ID340, ID341, ID342, ID343, ID344							
	4330340	5xD	307	237	204								
	4340340	7xD	375	305	272								
	4350340	10xD	477	407	374								
34.5 -34.9	4320345	3xD	241	171	138	IDP345, IDP346, IDP347, IDP348, IDP349, IDF345, IDF346, IDF347, IDF348, IDF349, ID345, ID346, ID347, ID348, ID349							
	4330345	5xD	310	240	207								
	4340345	7xD	379	309	276								
	4350345	10xD	483	413	380								
35.0 -35.4	4320350	3xD	243	173	140	IDP350, IDP351, IDP352, IDP353, IDP354, IDF350, IDF351, IDF352, IDF353, IDF354, ID350, ID351, ID352, ID353, ID354							
	4330350	5xD	313	243	210								
	4340350	7xD	383	313	280								
	4350350	10xD	488	418	385								
35.5 -35.9	4320355	3xD	246	176	142	IDP355, IDP356, IDP357, IDP358, IDP359, IDF355, IDF356, IDF357, IDF358, IDF359, ID355, ID356, ID357, ID358, ID359							
	4330355	5xD	317	247	213								
	4340355	7xD	388	318	284								
	4350355	10xD	495	425	391								
36.0 -36.4	4320360	3xD	248	178	144	IDP360, IDP361, IDP362, IDP363, IDP364, IDF360, IDF361, IDF362, IDF363, IDF364, ID360, ID361, ID362, ID363, ID364							
	4330360	5xD	320	250	216								
	4340360	7xD	392	322	288								
	4350360	10xD	500	430	396								
36.5 -36.9	4320365	3xD	251	181	146	IDP365, IDP366, IDP367, IDP368, IDP369, IDF365, IDF366, IDF367, IDF368, IDF369, ID365, ID366, ID367, ID368, ID369							
	4330365	5xD	324	254	219								
	4340365	7xD	397	327	292								
	4350365	10xD	507	437	402								
37.0 -37.4	4320370	3xD	253	183	148	IDP370, IDP371, IDP372, IDP373, IDP374, IDF370, IDF371, IDF372, IDF373, IDF374, ID370, ID371, ID372, ID373, ID374							
	4330370	5xD	327	257	222								
	4340370	7xD	401	331	296								
	4350370	10xD	512	442	407								
37.5 -37.9	4320375	3xD	255	185	150	IDP375, IDP376, IDP377, IDP378, IDP379, IDF375, IDF376, IDF377, IDF378, IDF379, ID375, ID376, ID377, ID378, ID379							
	4330375	5xD	330	260	225								
	4340375	7xD	405	335	300								
	4350375	10xD	518	448	413								
38.0 -38.4	4320380	3xD	258	188	152	IDP380, IDP381, IDP382, IDP383, IDP384, IDF380, IDF381, IDF382, IDF383, IDF384, ID380, ID381, ID382, ID383, ID384							
	4330380	5xD	334	264	228								
	4340380	7xD	410	340	304								
	4350380	10xD	524	454	418								
38.5 -38.9	4320385	3xD	260	196	154	IDP385, IDP386, IDP387, IDP388, IDP389, IDF385, IDF386, IDF387, IDF388, IDF389, ID385, ID386, ID387, ID388, ID389							
	4330385	5xD	337	267	231								
	4340385	7xD	414	344	308								
	4350385	10xD	530	460	424								

## KRUZ-FSL

Diameter range	Body	Dimensions (mm)						Fd	Inserts				
		DCON (L)	XD	OAL	LB1	LU							
39.0 -39.4	4320390	40.0 (70)	3xD	263	193	156	55	IDP390, IDP391, IDP392, IDP393, IDP394, IDF390, IDF391, IDF392, IDF393, IDF394, ID390, ID391, ID392, ID393, ID394	CS 360 -395 SL	T20	M5x10	2.5mm	
	4330390		5xD	341	271	234							
	4340390		7xD	419	349	312							
	4350390		10xD	536	466	429							
39.5 -39.9	4320395		3xD	265	195	158		IDP395, IDP396, IDP397, IDP398, IDP399, IDF395, IDF396, IDF397, IDF398, IDF399, ID395, ID396, ID397, ID398, ID399					
	4330395		5xD	344	274	237							
	4340395		7xD	423	353	316							
	4350395		10xD	542	472	435							
40.0 -40.4	4320400		3xD	267	197	160		IDP400, IDP401, IDP402, IDP403, IDP404, IDF400, IDF401, IDF402, IDF403, IDF404, ID400, ID401, ID402, ID403, ID404					
	4330400		5xD	347	277	240							
	4340400		7xD	427	357	320							
	4350400		10xD	547	477	440							
40.5 -40.9	4320405		3xD	270	200	162		IDP405, IDP406, IDP407, IDP408, IDP409, IDF405, IDF406, IDF407, IDF408, IDF409, ID405, ID406, ID407, ID408, ID409					
	4330405		5xD	351	281	243							
	4340405		7xD	432	362	324							
	4350405		10xD	554	484	446							
41.0 -41.4	4320410		3xD	272	202	164		IDP410, IDP411, IDP412, IDP413, IDP414, IDF410, IDF411, IDF412, IDF413, IDF414, ID410, ID411, ID412, ID413, ID414					
	4330410		5xD	354	284	246							
	4340410		7xD	436	366	328							
	4350410		10xD	559	489	451							
41.5 -41.9	4320415		3xD	275	205	166		IDP415, IDP416, IDP417, IDP418, IDP419, IDF415, IDF416, IDF417, IDF418, IDF419, ID415, ID416, ID417, ID418, ID419					
	4330415		5xD	358	288	249							
	4340415		7xD	441	371	332							
	4350415		10xD	566	496	457							
42.0 -42.4	4320420		3xD	277	207	168		IDP420, IDP421, IDP422, IDP423, IDP424, IDF420, IDF421, IDF422, IDF423, IDF424, ID420, ID421, ID422, ID423, ID424					
	4330420		5xD	361	291	252							
	4340420		7xD	445	375	336							
	4350420		10xD	571	501	462							
42.5 -42.9	4320425	3xD	279	209	170	IDP425, IDP426, IDP427, IDP428, IDP429, IDF425, IDF426, IDF427, IDF428, IDF429, ID425, ID426, ID427, ID428, ID429							
	4330425	5xD	364	294	255								
	4340425	7xD	449	379	340								
	4350425	10xD	577	507	468								
43.0 -43.4	4320430	3xD	282	212	172	IDP430, IDP431, IDP432, IDP433, IDP434, IDF430, IDF431, IDF432, IDF433, IDF434, ID430, ID431, ID432, ID433, ID434							
	4330430	5xD	368	298	258								
	4340430	7xD	454	384	344								
	4350430	10xD	583	513	473								
43.5 -43.9	4320435	3xD	284	214	174	IDP435, IDP436, IDP437, IDP438, IDP439, IDF435, IDF436, IDF437, IDF438, IDF439, ID435, ID436, ID437, ID438, ID439							
	4330435	5xD	371	301	261								
	4340435	7xD	458	388	348								
	4350435	10xD	589	519	479								
44.0 -44.4	4320440	3xD	287	217	176	IDP440, IDP441, IDP442, IDP443, IDP444, IDF440, IDF441, IDF442, IDF443, IDF444, ID440, ID441, ID442, ID443, ID444							
	4330440	5xD	375	305	264								
	4340440	7xD	463	393	352								
	4350440	10xD	595	525	484								
44.5 -44.9	4320445	3xD	289	219	178	IDP445, IDP446, IDP447, IDP448, IDP449, IDF445, IDF446, IDF447, IDF448, IDF449, ID445, ID446, ID447, ID448, ID449							
	4330445	5xD	378	308	267								
	4340445	7xD	467	397	356								
	4350445	10xD	601	531	490								
45.0 -45.4	4320450	3xD	291	221	180	IDP450, IDP451, IDP452, IDP453, IDP454, IDF450, IDF451, IDF452, IDF453, IDF454, ID450, ID451, ID452, ID453, ID454							
	4330450	5xD	381	311	270								
	4340450	7xD	471	401	360								
	4350450	10xD	606	536	495								
45.5 -45.9	4320455	3xD	294	224	182	IDP455, IDP456, IDP457, IDP458, IDP459, IDF455, IDF456, IDF457, IDF458, IDF459, ID455, ID456, ID457, ID458, ID459							
	4330455	5xD	385	315	273								
	4340455	7xD	476	406	364								
	4350455	10xD	613	543	501								
46.0 -46.4	4320460	3xD	296	226	184	IDP460, IDP461, IDP462, IDP463, IDP464, IDF460, IDF461, IDF462, IDF463, IDF464, ID460, ID461, ID462, ID463, ID464							
	4330460	5xD	388	318	276								
	4340460	7xD	480	410	368								
	4350460	10xD	618	548	506								
46.5 -46.9	4320465	3xD	299	229	186	IDP465, IDP466, IDP467, IDP468, IDP469, IDF465, IDF466, IDF467, IDF468, IDF469, ID465, ID466, ID467, ID468, ID469							
	4330465	5xD	392	322	279								
	4340465	7xD	485	415	372								
	4350465	10xD	625	555	512								
47.0 -47.4	4320470	3xD	301	231	188	IDP470, IDP471, IDP472, IDP473, IDP474, IDF470, IDF471, IDF472, IDF473, IDF474, ID470, ID471, ID472, ID473, ID474							
	4330470	5xD	395	325	282								
	4340470	7xD	489	419	376								
	4350470	10xD	630	560	517								

## KRUZ-FSL

Diameter range	Body	Dimensions (mm)						Inserts				
		D <sub>CON</sub> (L)	X <sub>D</sub>	OAL	LB1	LU	F <sub>d</sub>					
47.5 - 47.9	4320475	40.0 (70)	3xD	303	233	190	55	IDP475, IDP476, IDP477, IDP478, IDP479, IDF475, IDF476, IDF477, IDF478, IDF479, ID475, ID476, ID477, ID478, ID479	CS 450 -500 SL	T20	M6x12	3.0mm
	4330475		5xD	398	328	285						
	4340475		7xD	493	423	380						
	4350475		10xD	636	566	523						
48.0 - 48.4	4320480		3xD	306	236	192		IDP480, IDP481, IDP482, IDP483, IDP484, IDF480, IDF481, IDF482, IDF483, IDF484, ID480, ID481, ID482, ID483, ID484				
	4330480		5xD	402	332	288						
	4340480		7xD	498	428	384						
	4350480		10xD	642	572	528						
48.5 - 48.9	4320485		3xD	308	238	194		IDP485, IDP486, IDP487, IDP488, IDP489, IDF485, IDF486, IDF487, IDF488, IDF489, ID485, ID486, ID487, ID488, ID489				
	4330485		5xD	405	335	291						
	4340485		7xD	502	432	388						
	4350485		10xD	648	578	534						
49.0 - 49.4	4320490		3xD	311	241	196		IDP490, IDP491, IDP492, IDP493, IDP494, IDF490, IDF491, IDF492, IDF493, IDF494, ID490, ID491, ID492, ID493, ID494				
	4330490		5xD	409	339	294						
	4340490		7xD	507	437	392						
	4350490		10xD	654	584	539						
49.5 - 49.9	4320495	3xD	313	243	198	IDP495, IDP496, IDP497, IDP498, IDP499, IDF495, IDF496, IDF497, IDF498, IDF499, ID495, ID496, ID497, ID498, ID499						
	4330495	5xD	412	342	297							
	4340495	7xD	511	441	396							
	4350495	10xD	660	590	545							
50.0 - 50.4	4320500	3xD	315	245	200	IDP500, IDP501, IDP502, IDP503, IDP504, IDF500, IDF501, IDF502, IDF503, IDF504, ID500, ID501, ID502, ID503, ID504						
	4330500	5xD	415	345	300							
	4340500	7xD	515	445	400							
	4350500	10xD	665	595	550							

## CUTTING PARAMETERS

Grupa materiałowa		DC 8-16mm		DC 16-25mm		DC 25-32mm		DC 32-40mm		DC 40-50mm	
		V <sub>c</sub> (m/min)	Feed (mm/obr)								
Grey cast iron	(FC)	80-150	0,20-0,30	80-150	0,25-0,45	80-160	0,35-0,55	90-200	0,34-0,58	90-200	0,38-0,60
Ductile cast iron	(FCD)	80-140	0,15-0,25	80-140	0,22-0,45	80-150	0,32-0,52	90-160	0,35-0,62	90-200	0,38-0,60
Carbon steel	(S45C)	80-140	0,15-0,30	80-140	0,16-0,40	80-150	0,20-0,40	80-150	0,22-0,48	80-160	0,25-0,54
Alloy steel	(SCM440)	70-140	0,15-0,30	70-140	0,15-0,40	70-140	0,18-0,40	80-140	0,25-0,47	80-140	0,27-0,52
Hardened steel	(SKD11)	40-50	0,10-0,20	40-50	0,12-0,28	40-50	0,16-0,35	40-60	0,20-0,38	40-60	0,22-0,42
Stainless steel	(SUS)	30-40	0,10-0,20	35-50	0,10-0,22	35-50	0,15-0,28	40-55	0,18-0,30	40-55	0,22-0,32
Aluminium 130HB	(AL)	120-200	0,20-0,30	120-200	0,25-0,40	120-200	0,30-0,45	120-200	0,30-0,45	120-200	0,30-0,50

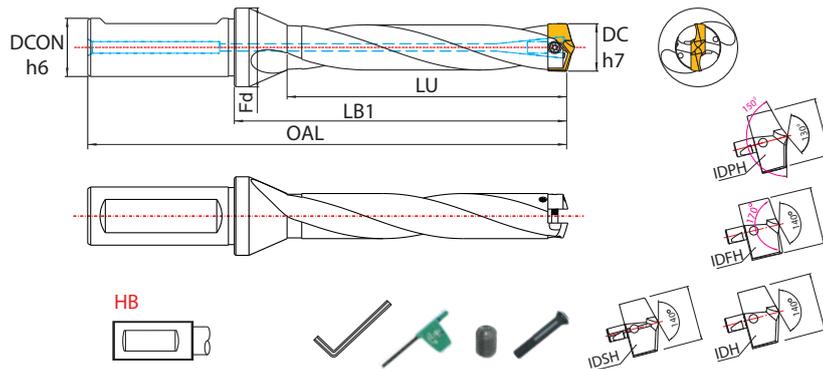
These data are recommended for 3xD. They should be reduced by about 15–20 % for 5xD, 7xD and 10xD drills.

These data are usually suggested for mist-lubrication (MQL) conditions, but they can also be used under other normal conditions, provided the machining environment – such as workholding – is properly secured.

## KRUZ-H

- Larger helix angle matching the "H"-series body
- Machining thin plates and shallow holes
- Optimised geometry for steel-structure applications
- Double point angle: 140° + 170°
- Suitable for machining interrupted holes
- Drill body and "H"-series insert available on request

**Important!**  
H"-series inserts should only be used with "H"-series bodies.



- IDPH** deep holes and heavy-duty tasks
- IDFH** thin plate and shallow holes
- IDH** general-purpose applications
- IDSH** machining stainless steel, titanium alloys and other exotic materials

Diameter range	Body	Dimensions (mm)						Inserts					
		DCON (L)	XD	OAL	LB1	LU	Fd						
12.0 -12.4	5521200	16.0 (48)	3xD	109	61	48	21	IDPH120, IDPH121, IDPH122, IDPH123, IDPH124, IDFH120, IDFH121, IDFH122, IDFH123, IDFH124, IDH120, IDH121, IDH122, IDH123, IDH124, IDSH120, IDSH121, IDSH122, IDSH123, IDSH124	CS120 -135 SL				
	5531200		5xD	133	85	72							
	5541200		7xD	157	109	96							
	5551200		10xD	193	145	132							
12.5 -12.9	5521250		3xD	111	63	50		IDPH125, IDPH126, IDPH127, IDPH128, IDPH129, IDFH125, IDFH126, IDFH127, IDFH128, IDFH129, IDH125, IDH126, IDH127, IDH128, IDH129, IDSH125, IDSH126, IDSH127, IDSH128, IDSH129					
	5531250		5xD	136	88	75							
	5541250		7xD	161	113	100							
	5551250		10xD	199	151	138							
13.0 -13.4	5521300		3xD	114	66	52		IDPH130, IDPH131, IDPH132, IDPH133, IDPH134, IDFH130, IDFH131, IDFH132, IDFH133, IDFH134, IDH130, IDH131, IDH132, IDH133, IDH134, IDSH130, IDSH131, IDSH132, IDSH133, IDSH134					
	5531300		5xD	140	92	78							
	5541300		7xD	166	118	104							
	5551300		10xD	205	157	143							
13.5 -13.9	5521350		3xD	116	68	54		IDPH135, IDPH136, IDPH137, IDPH138, IDPH139, IDFH135, IDFH136, IDFH137, IDFH138, IDFH139, IDH135, IDH136, IDH137, IDH138, IDH139, IDSH135, IDSH136, IDSH137, IDSH138, IDSH139					
	5531350		5xD	143	95	81							
	5541350		7xD	170	122	108							
	5551350		10xD	211	163	149							
14.0 -14.4	5521400	3xD	119	71	56	IDPH140, IDPH141, IDPH142, IDPH143, IDPH144, IDFH140, IDFH141, IDFH142, IDFH143, IDFH144, IDH140, IDH141, IDH142, IDH143, IDH144, IDSH140, IDSH141, IDSH142, IDSH143, IDSH144							
	5531400	5xD	147	99	84								
	5541400	7xD	175	127	112								
	5551400	10xD	217	169	154								
14.5 -14.9	5521450	3xD	123	73	58	IDPH145, IDPH146, IDPH147, IDPH148, IDPH149, IDFH145, IDFH146, IDFH147, IDFH148, IDFH149, IDH145, IDH146, IDH147, IDH148, IDH149, IDSH145, IDSH146, IDSH147, IDSH148, IDSH149							
	5531450	5xD	152	102	87								
	5541450	7xD	181	131	116								
	5551450	10xD	225	175	160								
15.0 -15.4	5521500	3xD	127	77	60	IDPH150, IDPH151, IDPH152, IDPH153, IDPH154, IDFH150, IDFH151, IDFH152, IDFH153, IDFH154, IDH150, IDH151, IDH152, IDH153, IDH154, IDSH150, IDSH151, IDSH152, IDSH153, IDSH154							
	5531500	5xD	157	107	90								
	5541500	7xD	187	137	120								
	5551500	10xD	232	182	165								
15.5 -15.9	5521550	3xD	130	80	62	IDPH 155, IDPH156, IDPH157, IDPH158, IDPH159, IDFH155, IDFH156, IDFH157, IDFH158, IDFH159, IDH155, IDH156, IDH157, IDH158, IDH159, IDSH 155, IDSH156, IDSH157, IDSH158, IDSH159							
	5531550	5xD	161	111	93								
	5541550	7xD	192	142	124								
	5551550	10xD	239	189	171								
16.0 -16.4	5521600	3xD	132	82	64	IDPH160, IDPH161, IDPH162, IDPH163, IDPH164, IDFH160, IDFH161, IDFH162, IDFH163, IDFH164, IDH160, IDH161, IDH162, IDH163, IDH164, IDSH160, IDSH161, IDSH162, IDSH163, IDSH164							
	5531600	5xD	164	114	96								
	5541600	7xD	196	146	128								
	5551600	10xD	244	194	176								
16.5 -16.9	5521650	3xD	135	85	66	IDPH165, IDPH166, IDPH167, IDPH168, IDPH169, IDFH165, IDFH166, IDFH167, IDFH168, IDFH169, IDH165, IDH166, IDH167, IDH168, IDH169, IDSH165, IDSH166, IDSH167, IDSH168, IDSH169							
	5531650	5xD	168	118	99								
	5541650	7xD	201	151	132								
	5551650	10xD	251	201	182								

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Diameter range	Body	Dimensions (mm)						Fd	Inserts				
		DCON (L)	XD	OAL	LB1	LU							
17.0 - 17.4	5521700	20.0 (50)	3xD	137	87	68	27	IDPH170, IDPH171, IDPH172, IDPH173, IDPH174 IDFH170, IDFH171, IDFH172, IDFH173, IDFH174 IDH170, IDH171, IDH172, IDH173, IDH174, IDSH170, IDSH171, IDSH172, IDSH173, IDSH174	CS 160 -175 SL	T7			
	5531700		5xD	171	121	102							
	5541700		7xD	205	155	136							
	5551700		10xD	256	206	187							
17.5 - 17.9	5521750		3xD	139	89	70		IDPH175, IDPH176, IDPH177, IDPH178, IDPH179 IDFH175, IDFH176, IDFH177, IDFH178, IDFH179 IDH175, IDH176, IDH177, IDH178, IDH179, IDSH175, IDSH176, IDSH177, IDSH178, IDSH179					
	5531750		5xD	174	124	105							
	5541750		7xD	209	159	140							
	5551750		10xD	262	212	193							
18.0 - 18.4	5521800		3xD	142	92	72		IDPH180, IDPH181, IDPH182, IDPH183, IDPH184 IDFH180, IDFH181, IDFH182, IDFH183, IDFH184 IDH180, IDH181, IDH182, IDH183, IDH184 IDSH180, IDSH181, IDSH182, IDSH183, IDSH184	CS 180 -195 SL		M2.5x4	1.3mm	
	5531800		5xD	178	128	108							
	5541800		7xD	214	164	144							
	5551800		10xD	268	218	198							
18.5 - 18.9	5521850		3xD	144	94	74		IDPH185, IDPH186, IDPH187, IDPH188, IDPH189 IDFH185, IDFH186, IDFH187, IDFH188, IDFH189 IDH185, IDH186, IDH187, IDH188, IDH189, IDSH185, IDSH186, IDSH187, IDSH188, IDSH189					
	5531850		5xD	181	131	111							
	5541850		7xD	218	168	148							
	5551850		10xD	274	224	204							
19.0 - 19.4	5521900		3xD	147	97	76		IDPH190, IDPH191, IDPH192, IDPH193, IDPH194 IDFH190, IDFH191, IDFH192, IDFH193, IDFH194 IDH190, IDH191, IDH192, IDH193, IDH194, IDSH190, IDSH191, IDSH192, IDSH193, IDSH194	CS 180 -195 SL				
	5531900		5xD	185	135	114							
	5541900		7xD	223	173	152							
	5551900		10xD	280	230	209							
19.5 - 19.9	5521950	3xD	149	99	78	IDPH195, IDPH196, IDPH197, IDPH198, IDPH199 IDFH195, IDFH196, IDFH197, IDFH198, IDFH199 IDH195, IDH196, IDH197, IDH198, IDH199 IDSH195, IDSH196, IDSH197, IDSH198, IDSH199							
	5531950	5xD	188	138	117								
	5541950	7xD	227	177	156								
	5551950	10xD	286	236	215								
20.0 - 20.4	5522000	3xD	157	101	80	IDPH200, IDPH201, IDPH202, IDPH203, IDPH204 IDFH200, IDFH201, IDFH202, IDFH203, IDFH204 IDH200, IDH201, IDH202, IDH203, IDH204, IDSH200, IDSH201, IDSH202, IDSH203, IDSH204	CS 200 -215 SL	T8					
	5532000	5xD	197	141	120								
	5542000	7xD	237	181	160								
	5552000	10xD	297	241	220								
20.5 - 20.9	5522050	3xD	160	104	82	IDPH205, IDPH206, IDPH207, IDPH208, IDPH209 IDFH205, IDFH206, IDFH207, IDFH208, IDFH209 IDH205, IDH206, IDH207, IDH208, IDH209, IDSH205, IDSH206, IDSH207, IDSH208, IDSH209							
	5532050	5xD	201	145	123								
	5542050	7xD	242	186	164								
	5552050	10xD	304	248	226								
21.0 - 21.4	5522100	3xD	162	106	84	IDPH210, IDPH211, IDPH212, IDPH213, IDPH214 IDFH210, IDFH211, IDFH212, IDFH213, IDFH214 IDH210, IDH211, IDH212, IDH213, IDH214, IDSH210, IDSH211, IDSH212, IDSH213, IDSH214	CS 200 -215 SL						
	5532100	5xD	204	148	126								
	5542100	7xD	246	190	168								
	5552100	10xD	309	253	231								
21.5 - 21.9	5522150	3xD	165	109	86	IDPH215, IDPH216, IDPH217, IDPH218, IDPH219 IDFH215, IDFH216, IDFH217, IDFH218, IDFH219 IDH215, IDH216, IDH217, IDH218, IDH219, IDSH215, IDSH216, IDSH217, IDSH218, IDSH219							
	5532150	5xD	208	152	129								
	5542150	7xD	251	195	172								
	5552150	10xD	316	260	237								
22.0 - 22.4	5522200	3xD	167	111	88	IDPH220, IDPH221, IDPH222, IDPH223, IDPH224 IDFH220, IDFH221, IDFH222, IDFH223, IDFH224 IDH220, IDH221, IDH222, IDH223, IDH224, IDSH220, IDSH221, IDSH222, IDSH223, IDSH224	CS 220 -235 SL		M3x6	1.5mm			
	5532200	5xD	211	155	132								
	5542200	7xD	255	199	176								
	5552200	10xD	321	265	242								
22.5 - 22.9	5522250	3xD	169	113	90	IDPH225, IDPH226, IDPH227, IDPH228, IDPH229 IDFH225, IDFH226, IDFH227, IDFH228, IDFH229 IDH225, IDH226, IDH227, IDH228, IDH229, IDSH225, IDSH226, IDSH227, IDSH228, IDSH229							
	5532250	5xD	214	158	135								
	5542250	7xD	259	203	180								
	5552250	10xD	327	271	248								
23.0 - 23.4	5522300	3xD	172	116	92	IDPH230, IDPH231, IDPH232, IDPH233, IDPH234 IDFH230, IDFH231, IDFH232, IDFH233, IDFH234 IDH230, IDH231, IDH232, IDH233, IDH234, IDSH230, IDSH231, IDSH232, IDSH233, IDSH234	CS 240 -255 SL	T15					
	5532300	5xD	218	162	138								
	5542300	7xD	264	208	184								
	5552300	10xD	333	277	253								
23.5 - 23.9	5522350	3xD	174	118	94	IDPH235, IDPH236, IDPH237, IDPH238, IDPH239 IDFH235, IDFH236, IDFH237, IDFH238, IDFH239 IDH235, IDH236, IDH237, IDH238, IDH239, IDSH235, IDSH236, IDSH237, IDSH238, IDSH239							
	5532350	5xD	221	165	141								
	5542350	7xD	268	212	188								
	5552350	10xD	339	283	259								
24.0 - 24.4	5522400	3xD	181	121	96	IDPH240, IDPH241, IDPH242, IDPH243, IDPH244 IDFH240, IDFH241, IDFH242, IDFH243, IDFH244 IDH240, IDH241, IDH242, IDH243, IDH244, IDSH240, IDSH241, IDSH242, IDSH243, IDSH244	CS 240 -255 SL						
	5532400	5xD	229	169	144								
	5542400	7xD	277	217	192								
	5552400	10xD	349	289	264								
24.5 - 24.9	5522450	3xD	183	123	98	IDPH245, IDPH246, IDPH247, IDPH248, IDPH249 IDFH245, IDFH246, IDFH247, IDFH248, IDFH249 IDH245, IDH246, IDH247, IDH248, IDH249, IDSH245, IDSH246, IDSH247, IDSH248, IDSH249							
	5532450	5xD	232	172	147								
	5542450	7xD	281	221	196								
	5552450	10xD	355	295	270								
25.0 - 25.4	5522500	3xD	185	125	100	IDPH250, IDPH251, IDPH252, IDPH253, IDPH254 IDFH250, IDFH251, IDFH252, IDFH253, IDFH254 IDH250, IDH251, IDH252, IDH253, IDH254, IDSH250, IDSH251, IDSH252, IDSH253, IDSH254	CS 240 -255 SL						
	5532500	5xD	235	175	150								
	5542500	7xD	285	225	200								
	5552500	10xD	360	300	275								

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Diameter range	Body	Dimensions (mm)						Fd	Inserts					
		DCON (L)	XD	OAL	LB1	LU								
25.5 -25.9	5522550	32.0 (60)	3xD	188	128	102	39	IDPH255, IDPH256, IDPH257, IDPH258, IDPH259 IDFH255, IDFH256, IDFH257, IDFH258, IDFH259 IDH255, IDH256, IDH257, IDH258, IDH259, IDSH255, IDSH256, IDSH257, IDSH258, IDSH259	CS 240 -255 SL					
	5532550		5xD	239	179	153								
	5542550		7xD	290	230	204								
	5552550		10xD	367	307	281								
26.0 -26.4	5522600	32.0 (60)	3xD	190	130	104	39	IDPH260, IDPH261, IDPH262, IDPH263, IDPH264 IDFH260, IDFH261, IDFH262, IDFH263, IDFH264 IDH260, IDH261, IDH262, IDH263, IDH264, IDSH260, IDSH261, IDSH262, IDSH263, IDSH264	CS 260 -275 SL		M3x6	1.5mm		
	5532600		5xD	242	182	156								
	5542600		7xD	294	234	208								
	5552600		10xD	372	312	286								
26.5 -26.9	5522650	32.0 (60)	3xD	193	133	106	39	IDPH265, IDPH266, IDPH267, IDPH268, IDPH269 IDFH265, IDFH266, IDFH267, IDFH268, IDFH269 IDH265, IDH266, IDH267, IDH268, IDH269, IDSH265, IDSH266, IDSH267, IDSH268, IDSH269	CS 260 -275 SL					
	5532650		5xD	246	186	159								
	5542650		7xD	299	239	212								
	5552650		10xD	379	319	292								
27.0 -27.4	5522700	32.0 (60)	3xD	195	135	108	39	IDPH270, IDPH271, IDPH272, IDPH273, IDPH274 IDFH270, IDFH271, IDFH272, IDFH273, IDFH274 IDH270, IDH271, IDH272, IDH273, IDH274, IDSH270, IDSH271, IDSH272, IDSH273, IDSH274	CS 260 -275 SL					
	5532700		5xD	249	189	162								
	5542700		7xD	303	243	216								
	5552700		10xD	384	324	297								
27.5 -27.9	5522750	32.0 (60)	3xD	197	137	110	39	IDPH275, IDPH276, IDPH277, IDPH278, IDPH279 IDFH275, IDFH276, IDFH277, IDFH278, IDFH279 IDH275, IDH276, IDH277, IDH278, IDH279, IDSH275, IDSH276, IDSH277, IDSH278, IDSH279	CS 260 -275 SL		T15			
	5532750		5xD	252	192	165								
	5542750		7xD	307	247	220								
	5552750		10xD	390	330	303								
28.0 -28.4	5522800	32.0 (60)	3xD	200	140	112	39	IDPH280, IDPH281, IDPH282, IDPH283, IDPH284 IDFH280, IDFH281, IDFH282, IDFH283, IDFH284 IDH280, IDH281, IDH282, IDH283, IDH284, IDSH280, IDSH281, IDSH282, IDSH283, IDSH284	CS 280 -295 SL					
	5532800		5xD	256	196	168								
	5542800		7xD	312	252	224								
	5552800		10xD	396	336	308								
28.5 -28.9	5522850	32.0 (60)	3xD	202	142	114	39	IDPH285, IDPH286, IDPH287, IDPH288, IDPH289 IDFH285, IDFH286, IDFH287, IDFH288, IDFH289 IDH285, IDH286, IDH287, IDH288, IDH289, IDSH285, IDSH286, IDSH287, IDSH288, IDSH289	CS 280 -295 SL			M4x8	2.0mm	
	5532850		5xD	259	199	171								
	5542850		7xD	316	256	228								
	5552850		10xD	402	342	314								
29.0 -29.4	5522900	32.0 (60)	3xD	205	145	116	39	IDPH290, IDPH291, IDPH292, IDPH293, IDPH294 IDFH290, IDFH291, IDFH292, IDFH293, IDFH294 IDH290, IDH291, IDH292, IDH293, IDH294, IDSH290, IDSH291, IDSH292, IDSH293, IDSH294	CS 280 -295 SL					
	5532900		5xD	263	203	174								
	5542900		7xD	321	261	232								
	5552900		10xD	408	348	319								
29.5 -29.9	5522950	32.0 (60)	3xD	207	147	118	39	IDPH295, IDPH296, IDPH297, IDPH298, IDPH299 IDFH295, IDFH296, IDFH297, IDFH298, IDFH299 IDH295, IDH296, IDH297, IDH298, IDH299, IDSH295, IDSH296, IDSH297, IDSH298, IDSH299	CS 280 -295 SL					
	5532950		5xD	266	206	177								
	5542950		7xD	325	265	236								
	5552950		10xD	414	354	325								
30.0 -30.4	5523000	32.0 (60)	3xD	209	149	120	39	IDPH300, IDPH301, IDPH302, IDPH303, IDPH304 IDFH300, IDFH301, IDFH302, IDFH303, IDFH304 IDH300, IDH301, IDH302, IDH303, IDH304, IDSH300, IDSH301, IDSH302, IDSH303, IDSH304	CS 300 -315 SL					
	5533000		5xD	269	209	180								
	5543000		7xD	329	269	240								
	5553000		10xD	419	359	330								
30.5 -30.9	5523050	32.0 (60)	3xD	212	152	122	39	IDPH305, IDPH306, IDPH307, IDPH308, IDPH309 IDFH305, IDFH306, IDFH307, IDFH308, IDFH309 IDH305, IDH306, IDH307, IDH308, IDH309, IDSH305, IDSH306, IDSH307, IDSH308, IDSH309	CS 300 -315 SL					
	5533050		5xD	273	213	183								
	5543050		7xD	334	274	244								
	5553050		10xD	426	366	336								
31.0 -31.4	5523100	32.0 (60)	3xD	214	154	124	39	IDPH310, IDPH311, IDPH312, IDPH313, IDPH314 IDFH310, IDFH311, IDFH312, IDFH313, IDFH314 IDH310, IDH311, IDH312, IDH313, IDH314, IDSH310, IDSH311, IDSH312, IDSH313, IDSH314	CS 300 -315 SL					
	5533100		5xD	276	216	186								
	5543100		7xD	338	278	248								
	5553100		10xD	431	371	341								
31.5 -31.9	5523150	32.0 (60)	3xD	217	157	126	39	IDPH315, IDPH316, IDPH317, IDPH318, IDPH319 IDFH315, IDFH316, IDFH317, IDFH318, IDFH319 IDH315, IDH316, IDH317, IDH318, IDH319, IDSH315, IDSH316, IDSH317, IDSH318, IDSH319	CS 300 -315 SL					
	5533150		5xD	280	220	189								
	5543150		7xD	343	283	252								
	5553150		10xD	438	378	347								
32.0 -32.4	5523200	32.0 (60)	3xD	219	159	128	39	IDPH320, IDPH321, IDPH322, IDPH323, IDPH324 IDFH320, IDFH321, IDFH322, IDFH323, IDFH324 IDH320, IDH321, IDH322, IDH323, IDH324, IDSH320, IDSH321, IDSH322, IDSH323, IDSH324	CS 320 -355 SL					
	5533200		5xD	283	223	192								
	5543200		7xD	347	287	256								
	5553200		10xD	443	383	352								
32.5 -32.9	5523250	32.0 (60)	3xD	221	161	130	39	IDPH325, IDPH326, IDPH327, IDPH328, IDPH329 IDFH325, IDFH326, IDFH327, IDFH328, IDFH329 IDH325, IDH326, IDH327, IDH328, IDH329, IDSH325, IDSH326, IDSH327, IDSH328, IDSH329	CS 320 -355 SL				M5x10	2.5mm
	5533250		5xD	286	226	195								
	5543250		7xD	351	291	260								
	5553250		10xD	449	389	358								
33.0 -33.4	5523300	32.0 (60)	3xD	224	164	132	39	IDPH330, IDPH331, IDPH332, IDPH333, IDPH334 IDFH330, IDFH331, IDFH332, IDFH333, IDFH334 IDH330, IDH331, IDH332, IDH333, IDH334, IDSH330, IDSH331, IDSH332, IDSH333, IDSH334	CS 320 -355 SL					
	5533300		5xD	290	230	198								
	5543300		7xD	356	296	264								
	5553300		10xD	455	395	363								
33.5 -33.9	5523350	32.0 (60)	3xD	226	166	134	39	IDPH335, IDPH336, IDPH337, IDPH338, IDPH339 IDFH335, IDFH336, IDFH337, IDFH338, IDFH339 IDH335, IDH336, IDH337, IDH338, IDH339, IDSH335, IDSH336, IDSH337, IDSH338, IDSH339	CS 320 -355 SL					
	5533350		5xD	293	233	201								
	5543350		7xD	360	300	268								
	5553350		10xD	461	401	369								

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Diameter range	Body	Dimensions (mm)						Fd	Inserts				
		DCON (L)	XD	OAL	LB1	LU							
34.0 -34.4	5523400	40.0 (70)	3xD	239	169	136	55	IDPH340, IDPH341, IDPH342, IDPH343, IDPH344	CS 320 -355 SL				
	5533400		5xD	307	237	204		IDFH340, IDFH341, IDFH342, IDFH343, IDFH344					
	5543400		7xD	375	305	272		IDH340, IDH341, IDH342, IDH343, IDH344					
	5553400		10xD	477	407	374		IDSH340, IDSH341, IDSH342, IDSH343, IDSH344					
34.5 -34.9	5523450		3xD	241	171	138		IDPH345, IDPH346, IDPH347, IDPH348, IDPH349					
	5533450		5xD	310	240	207		IDFH345, IDFH346, IDFH347, IDFH348, IDFH349					
	5543450		7xD	379	309	276		IDH345, IDH346, IDH347, IDH348, IDH349					
	5553450		10xD	483	413	380		IDSH345, IDSH346, IDSH347, IDSH348, IDSH349					
35.0 -35.4	5523500		3xD	243	173	140		IDPH350, IDPH351, IDPH352, IDPH353, IDPH354					
	5533500		5xD	313	243	210		IDFH350, IDFH351, IDFH352, IDFH353, IDFH354					
	5543500		7xD	383	313	280		IDH350, IDH351, IDH352, IDH353, IDH354					
	5553500		10xD	488	418	385		IDSH350, IDSH351, IDSH352, IDSH353, IDSH354					
35.5 -35.9	5523550		3xD	246	176	142		IDPH355, IDPH356, IDPH357, IDPH358, IDPH359					
	5533550		5xD	317	247	213		IDFH355, IDFH356, IDFH357, IDFH358, IDFH359					
	5543550		7xD	388	318	284		IDH355, IDH356, IDH357, IDH358, IDH359					
	5553550		10xD	495	425	391		IDSH355, IDSH356, IDSH357, IDSH358, IDSH359					
36.0 -36.4	5523600		3xD	248	178	144		IDPH360, IDPH361, IDPH362, IDPH363, IDPH364					
	5533600		5xD	320	250	216		IDFH360, IDFH361, IDFH362, IDFH363, IDFH364					
	5543600		7xD	392	322	288		IDH360, IDH361, IDH362, IDH363, IDH364					
	5553600		10xD	500	430	396		IDSH360, IDSH361, IDSH362, IDSH363, IDSH364					
36.5 -36.9	5523650	3xD	251	181	146	IDPH365, IDPH366, IDPH367, IDPH368, IDPH369							
	5533650	5xD	324	254	219	IDFH365, IDFH366, IDFH367, IDFH368, IDFH369							
	5543650	7xD	397	327	292	IDH365, IDH366, IDH367, IDH368, IDH369							
	5553650	10xD	507	437	402	IDSH365, IDSH366, IDSH367, IDSH368, IDSH369							
37.0 -37.4	5523700	3xD	253	183	148	IDPH370, IDPH371, IDPH372, IDPH373, IDPH374							
	5533700	5xD	327	257	222	IDFH370, IDFH371, IDFH372, IDFH373, IDFH374							
	5543700	7xD	401	331	296	IDH370, IDH371, IDH372, IDH373, IDH374							
	5553700	10xD	512	442	407	IDSH370, IDSH371, IDSH372, IDSH373, IDSH374							
37.5 -37.9	5523750	3xD	255	185	150	IDPH375, IDPH376, IDPH377, IDPH378, IDPH379							
	5533750	5xD	330	260	225	IDFH375, IDFH376, IDFH377, IDFH378, IDFH379							
	5543750	7xD	405	335	300	IDH375, IDH376, IDH377, IDH378, IDH379							
	5553750	10xD	518	448	413	IDSH375, IDSH376, IDSH377, IDSH378, IDSH379							
38.0 -38.4	5523800	3xD	258	188	152	IDPH380, IDPH381, IDPH382, IDPH383, IDPH384							
	5533800	5xD	334	264	228	IDFH380, IDFH381, IDFH382, IDFH383, IDFH384							
	5543800	7xD	410	340	304	IDH380, IDH381, IDH382, IDH383, IDH384							
	5553800	10xD	524	454	418	IDSH380, IDSH381, IDSH382, IDSH383, IDSH384							
38.5 -38.9	5523850	3xD	260	196	154	IDPH385, IDPH386, IDPH387, IDPH388, IDPH389							
	5533850	5xD	337	267	231	IDFH385, IDFH386, IDFH387, IDFH388, IDFH389							
	5543850	7xD	414	344	308	IDH385, IDH386, IDH387, IDH388, IDH389							
	5553850	10xD	530	460	424	IDSH385, IDSH386, IDSH387, IDSH388, IDSH389							
39.0 -39.4	5523900	3xD	263	193	156	IDPH390, IDPH391, IDPH392, IDPH393, IDPH394							
	5533900	5xD	341	271	234	IDFH390, IDFH391, IDFH392, IDFH393, IDFH394							
	5543900	7xD	419	349	312	IDH390, IDH391, IDH392, IDH393, IDH394							
	5553900	10xD	536	466	429	IDSH390, IDSH391, IDSH392, IDSH393, IDSH394							
39.5 -39.9	5523950	3xD	265	195	158	IDPH395, IDPH396, IDPH397, IDPH398, IDPH399							
	5533950	5xD	344	274	237	IDFH395, IDFH396, IDFH397, IDFH398, IDFH399							
	5543950	7xD	423	353	316	IDH395, IDH396, IDH397, IDH398, IDH399							
	5553950	10xD	542	472	435	IDSH395, IDSH396, IDSH397, IDSH398, IDSH399							
40.0 -40.4	5524000	3xD	267	197	160	IDPH400, IDPH401, IDPH402, IDPH403, IDPH404							
	5534000	5xD	347	277	240	IDFH400, IDFH401, IDFH402, IDFH403, IDFH404							
	5544000	7xD	427	357	320	IDH400, IDH401, IDH402, IDH403, IDH404							
	5554000	10xD	547	477	440	IDSH400, IDSH401, IDSH402, IDSH403, IDSH404							
40.5 -40.9	5524050	3xD	270	200	162	IDPH405, IDPH406, IDPH407, IDPH408, IDPH409							
	5534050	5xD	351	281	243	IDFH405, IDFH406, IDFH407, IDFH408, IDFH409							
	5544050	7xD	432	362	324	IDH405, IDH406, IDH407, IDH408, IDH409							
	5554050	10xD	554	484	446	IDSH405, IDSH406, IDSH407, IDSH408, IDSH409							
41.0 -41.4	5524100	3xD	272	202	164	IDPH410, IDPH411, IDPH412, IDPH413, IDPH414							
	5534100	5xD	354	284	246	IDFH410, IDFH411, IDFH412, IDFH413, IDFH414							
	5544100	7xD	436	366	328	IDH410, IDH411, IDH412, IDH413, IDH414							
	5554100	10xD	559	489	451	IDSH410, IDSH411, IDSH412, IDSH413, IDSH414							
41.5 -41.9	5524150	3xD	275	205	166	IDPH415, IDPH416, IDPH417, IDPH418, IDPH419							
	5534150	5xD	358	288	249	IDFH415, IDFH416, IDFH417, IDFH418, IDFH419							
	5544150	7xD	441	371	332	IDH415, IDH416, IDH417, IDH418, IDH419							
	5554150	10xD	566	496	457	IDSH415, IDSH416, IDSH417, IDSH418, IDSH419							
42.0 -42.4	5524200	3xD	277	207	168	IDPH420, IDPH421, IDPH422, IDPH423, IDPH424							
	5534200	5xD	361	291	252	IDFH420, IDFH421, IDFH422, IDFH423, IDFH424							
	5544200	7xD	445	375	336	IDH420, IDH421, IDH422, IDH423, IDH424							
	5554200	10xD	571	501	462	IDSH420, IDSH421, IDSH422, IDSH423, IDSH424							

## KRUZ-H

Diameter range	Body	Dimensions (mm)						Fd	Inserts				
		D <sub>CON</sub> (L)	XD	OAL	LB1	LU							
42.5 -42.9	5524250	40.0 (70)	3xD	279	209	170	55	IDPH425, IDPH426, IDPH427, IDPH428, IDPH429 IDFH425, IDFH426, IDFH427, IDFH428, IDFH429 IDH425, IDH426, IDH427, IDH428, IDH429 IDSH425, IDSH426, IDSH427, IDSH428, IDSH429	CS 400 -445 SL				
	5534250		5xD	364	294	255							
	5544250		7xD	449	379	340							
	5554250		10xD	577	507	468							
43.0 -43.4	5524300		3xD	282	212	172		IDPH430, IDPH431, IDPH432, IDPH433, IDPH434 IDFH430, IDFH431, IDFH432, IDFH433, IDFH434 IDH430, IDH431, IDH432, IDH433, IDH434 IDSH430, IDSH431, IDSH432, IDSH433, IDSH434					
	5534300		5xD	368	298	258							
	5544300		7xD	454	384	344							
	5554300		10xD	583	513	473							
43.5 -43.9	5524350		3xD	284	214	174		IDPH435, IDPH436, IDPH437, IDPH438, IDPH439 IDFH435, IDFH436, IDFH437, IDFH438, IDFH439 IDH435, IDH436, IDH437, IDH438, IDH439 IDSH435, IDSH436, IDSH437, IDSH438, IDSH439					
	5534350		5xD	371	301	261							
	5544350		7xD	458	388	348							
	5554350		10xD	589	519	479							
44.0 -44.4	5524400		3xD	287	217	176		IDPH440, IDPH441, IDPH442, IDPH443, IDPH444 IDFH440, IDFH441, IDFH442, IDFH443, IDFH444 IDH440, IDH441, IDH442, IDH443, IDH444 IDSH440, IDSH441, IDSH442, IDSH443, IDSH444					
	5534400		5xD	375	305	264							
	5544400		7xD	463	393	352							
	5554400		10xD	595	525	484							
44.5 -44.9	5524450		3xD	289	219	178		IDPH445, IDPH446, IDPH447, IDPH448, IDPH449 IDFH445, IDFH446, IDFH447, IDFH448, IDFH449 IDH445, IDH446, IDH447, IDH448, IDH449 IDSH445, IDSH446, IDSH447, IDSH448, IDSH449					
	5534450		5xD	378	308	267							
	5544450		7xD	467	397	356							
	5554450		10xD	601	531	490							
45.0 -45.4	5524500		3xD	291	221	180		IDPH450, IDPH451, IDPH452, IDPH453, IDPH454 IDFH450, IDFH451, IDFH452, IDFH453, IDFH454 IDH450, IDH451, IDH452, IDH453, IDH454 IDSH450, IDSH451, IDSH452, IDSH453, IDSH454					
	5534500		5xD	381	311	270							
	5544500		7xD	471	401	360							
	5554500		10xD	606	536	495							
45.5 -45.9	5524550		3xD	294	224	182		IDPH455, IDPH456, IDPH457, IDPH458, IDPH459 IDFH455, IDFH456, IDFH457, IDFH458, IDFH459 IDH455, IDH456, IDH457, IDH458, IDH459 IDSH455, IDSH456, IDSH457, IDSH458, IDSH459					
	5534550		5xD	385	315	273							
	5544550		7xD	476	406	364							
	5554550		10xD	613	543	501							
46.0 -46.4	5524600		3xD	296	226	184		IDPH460, IDPH461, IDPH462, IDPH463, IDPH464 IDFH460, IDFH461, IDFH462, IDFH463, IDFH464 IDH460, IDH461, IDH462, IDH463, IDH464 IDSH460, IDSH461, IDSH462, IDSH463, IDSH464					
	5534600		5xD	388	318	276							
	5544600		7xD	480	410	368							
	5554600		10xD	618	548	506							
46.5 -46.9	5524650		3xD	299	229	186		IDPH465, IDPH466, IDPH467, IDPH468, IDPH469 IDFH465, IDFH466, IDFH467, IDFH468, IDFH469 IDH465, IDH466, IDH467, IDH468, IDH469 IDSH465, IDSH466, IDSH467, IDSH468, IDSH469					
	5534650		5xD	392	322	279							
	5544650		7xD	485	415	372							
	5554650		10xD	625	555	512							
47.0 -47.4	5524700		3xD	301	231	188		IDPH470, IDPH471, IDPH472, IDPH473, IDPH474 IDFH470, IDFH471, IDFH472, IDFH473, IDFH474 IDH470, IDH471, IDH472, IDH473, IDH474 IDSH470, IDSH471, IDSH472, IDSH473, IDSH474					
	5534700		5xD	395	325	282							
	5544700		7xD	489	419	376							
	5554700		10xD	630	560	517							
47.5 -47.9	5524750	3xD	303	233	190	IDPH475, IDPH476, IDPH477, IDPH478, IDPH479 IDFH475, IDFH476, IDFH477, IDFH478, IDFH479 IDH475, IDH476, IDH477, IDH478, IDH479 IDSH475, IDSH476, IDSH477, IDSH478, IDSH479							
	5534750	5xD	398	328	285								
	5544750	7xD	493	423	380								
	5554750	10xD	636	566	523								
48.0 -48.4	5524800	3xD	306	236	192	IDPH480, IDPH481, IDPH482, IDPH483, IDPH484 IDFH480, IDFH481, IDFH482, IDFH483, IDFH484 IDH480, IDH481, IDH482, IDH483, IDH484 IDSH480, IDSH481, IDSH482, IDSH483, IDSH484							
	5534800	5xD	402	332	288								
	5544800	7xD	498	428	384								
	5554800	10xD	642	572	528								
48.5 -48.9	5524850	3xD	308	238	194	IDPH485, IDPH486, IDPH487, IDPH488, IDPH489 IDFH485, IDFH486, IDFH487, IDFH488, IDFH489 IDH485, IDH486, IDH487, IDH488, IDH489 IDSH485, IDSH486, IDSH487, IDSH488, IDSH489							
	5534850	5xD	405	335	291								
	5544850	7xD	502	432	388								
	5554850	10xD	648	578	534								
49.0 -49.4	5524900	3xD	311	241	196	IDPH490, IDPH491, IDPH492, IDPH493, IDPH494 IDFH490, IDFH491, IDFH492, IDFH493, IDFH494 IDH490, IDH491, IDH492, IDH493, IDH494 IDSH490, IDSH491, IDSH492, IDSH493, IDSH494							
	5534900	5xD	409	339	294								
	5544900	7xD	507	437	392								
	5554900	10xD	654	584	539								
49.5 -49.9	5524950	3xD	313	243	198	IDPH495, IDPH496, IDPH497, IDPH498, IDPH499 IDFH495, IDFH496, IDFH497, IDFH498, IDFH499 IDH495, IDH496, IDH497, IDH498, IDH499 IDSH495, IDSH496, IDSH497, IDSH498, IDSH499							
	5534950	5xD	412	342	297								
	5544950	7xD	511	441	396								
	5554950	10xD	660	590	545								
50.0 -50.4	5525000	3xD	315	245	200	IDPH500, IDPH501, IDPH502, IDPH503, IDPH504 IDFH500, IDFH501, IDFH502, IDFH503, IDFH504 IDH500, IDH501, IDH502, IDH503, IDH504 IDSH500, IDSH501, IDSH502, IDSH503, IDSH504							
	5535000	5xD	415	345	300								
	5545000	7xD	515	445	400								
	5555000	10xD	665	595	550								

Parametry skrawania : patrz tabela Kruz FSL strona 11

## Series "K" KRUZ – bodies and inserts

### Attention!

"K" series inserts (IDFK or IDPK) should only be used with "K" series bodies (KRUZ-SLK or FSLK).

### IDFK

- CNC fully ground carbide insert
- Patented flat-bottom geometry  $140^\circ + 170^\circ$
- TiAlN-coated inserts provide wear resistance and higher feed rates
- Designed for drilling structural beams, angle profiles and individual plates



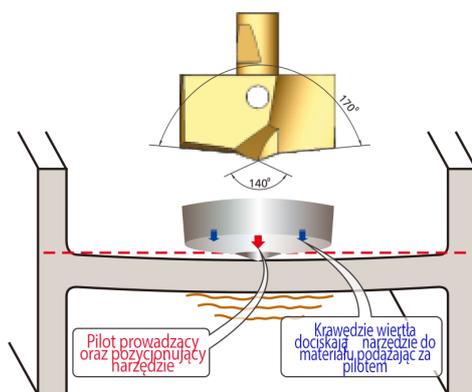
### IDPK

- CNC fully ground carbide insert
- Double point angle  $120^\circ + 150^\circ$
- High dimensional accuracy in deep drilling
- Supplied with a fixing screw for machining plate materials



### SLK drill body

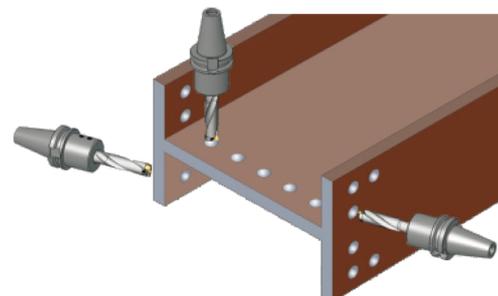
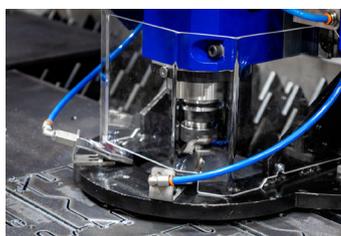
- Rigid drill body made from special high-quality steel subjected to heat treatment
- The IDPK insert allows faster, more aggressive entry into the cutting zone
- Chip flute with an appropriate spiral twist
- Internal channels supplying the coolant/lubricant medium
- Short body used for pilot drilling and making shallow holes



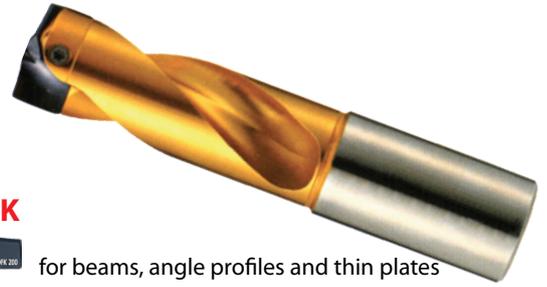
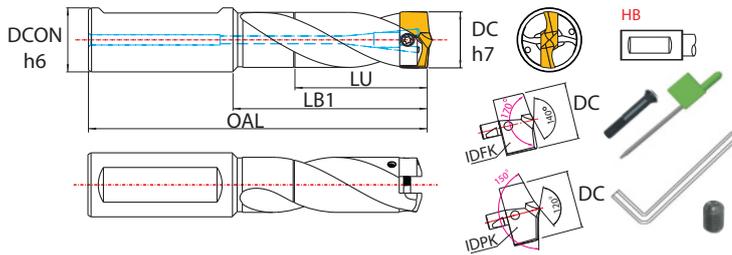
### FSLK 7XD

### FSLK 5XD

### SLK 3XD



## KRUZ-SLK 3XD



**IDFK**  
for beams, angle profiles and thin plates

**IDPK**  
for drilling in stacks

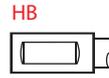
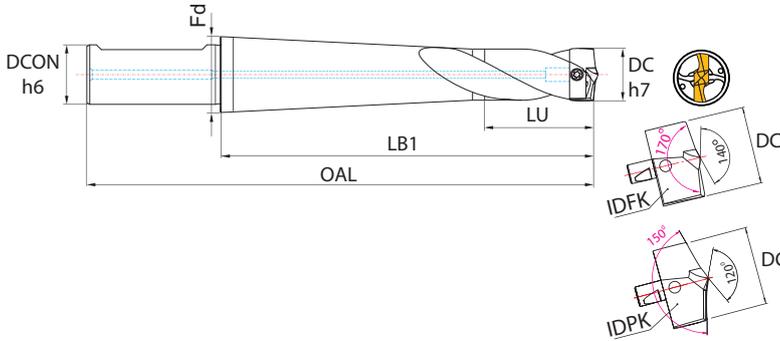
Diameter range	'Stubby' body	Dimensions			body 3XD	Dimensions			DCON (L)	Insert				
		OAL	LB1	LU		OAL	LB1	LU						
12.0-12.4	KRUZSLK120110050	110	62	50	KRUZSLKT120105050	105	57	16 (48)	IDFK 120-124 IDPK 120-124	CS 120 -135SL	T6			
12.5-12.9	KRUZSLK125110050				KRUZSLKT125110050	110	62		IDFK 125-129 IDPK 125-129					
13.0-13.4	KRUZSLK130110050				KRUZSLKT130110050	115	67		IDFK 130-134 IDPK 130-134					
13.5-13.9	KRUZSLK135110050				KRUZSLKT135115055	115	67		IDFK 135-139 IDPK 135-139					
14.0-14.4	KRUZSLK140110050				KRUZSLKT140115055	125	75		IDFK 140-144 IDPK 140-144					
14.5-14.9	KRUZSLK145110050				KRUZSLKT145125058	125	75		IDFK 145-149 IDPK 145-149					
15.0-15.4	KRUZSLK150115050	115	65	60	KRUZSLKT150125060	125	75	20 (50)	IDFK 150-154 IDPK 150-154	CS 140 -155SL	T7			
15.5-15.9	KRUZSLK155115050				KRUZSLKT155125060	130	80		IDFK 155-159 IDPK 155-159					
16.0-16.4	KRUZSLK160115050				KRUZSLKT160130062	130	80		IDFK 160-164 IDPK 160-164					
16.5-16.9	KRUZSLK165115050				KRUZSLKT165130062	130	80		IDFK 165-169 IDPK 165-169					
17.0-17.4	KRUZSLK170118050				KRUZSLKT170130062	140	90		IDFK 170-174 IDPK 170-174					
17.5-17.9	KRUZSLK175118050				KRUZSLKT175130062	140	90		IDFK 175-179 IDPK 175-179					
18.0-18.4	KRUZSLK180118050	118	68	70	KRUZSLKT180140070	140	90	25 (56)	IDFK 180-184 IDPK 180-184	CS 180 -195 SL	T8			
18.5-18.9	KRUZSLK185118050				KRUZSLKT185140070	150	94		IDFK 185-189 IDPK 185-189					
19.0-19.4	KRUZSLK190118050				KRUZSLKT190140070	150	94		IDFK 190-194 IDPK 190-194					
19.5-19.9	KRUZSLK195118050				KRUZSLKT195140070	160	104		IDFK 195-199 IDPK 195-199					
20.0-20.4	KRUZSLK200130050				KRUZSLKT200150070	160	104		IDFK 200-204 IDPK 200-204					
20.5-20.9	KRUZSLK205130050				KRUZSLKT205150070	160	104		IDFK 205-209 IDPK 205-209					
21.0-21.4	KRUZSLK210130050	130	74	80	KRUZSLKT210150070	160	104	32 (60)	IDFK 210-214 IDPK 210-214	CS 200 -215 SL	T8			
21.5-21.9	KRUZSLK215130050				KRUZSLKT215150070	170	110		IDFK 215-219 IDPK 215-219					
22.0-22.4	KRUZSLK220130050				KRUZSLKT220160080	170	110		IDFK 220-224 IDPK 220-224					
22.5-22.9	KRUZSLK225130050				KRUZSLKT225160080	180	120		IDFK 225-229 IDPK 225-229					
23.0-23.4	KRUZSLK230130050				KRUZSLKT230160080	180	120		IDFK 230-234 IDPK 230-234					
23.5-23.9	KRUZSLK235130050				KRUZSLKT235160080	190	130		IDFK 235-239 IDPK 235-239					
24.0-24.4	KRUZSLK240136050	136	76	90	KRUZSLKT240170084	170	110	32 (60)	IDFK 240-244 IDPK 240-244	CS 220 -235 SL	T15			
24.5-24.9	KRUZSLK245136050				KRUZSLKT245170084	180	120		IDFK 245-249 IDPK 245-249					
25.0-25.4	KRUZSLK250136050				KRUZSLKT250170084	180	120		IDFK 250-254 IDPK 250-254					
25.5-25.9	KRUZSLK255136050				KRUZSLKT255170084	180	120		IDFK 255-259 IDPK 255-259					
26.0-26.4	KRUZSLK260140050				KRUZSLKT260180090	190	130		IDFK 260-264 IDPK 260-264					
26.5-26.9	KRUZSLK265140050				KRUZSLKT265180090	190	130		IDFK 265-269 IDPK 265-269					
27.0-27.4	KRUZSLK270140050	140	80	100	KRUZSLKT270180090	190	130	32 (60)	IDFK 270-274 IDPK 270-274	CS 240 -255 SL	T15			
27.5-27.9	KRUZSLK275140050				KRUZSLKT275180090	190	130		IDFK 275-279 IDPK 275-279					
28.0-28.4	KRUZSLK280140050				KRUZSLKT280190100	190	130		IDFK 280-284 IDPK 280-284					
28.5-28.9	KRUZSLK285140050				KRUZSLKT285190100	190	130		IDFK 285-289 IDPK 285-289					

## KRUZ-SLK 3XD

Diameter range	'Stubby' body	Dimensions			body 3XD	Dimensions			DCON (L)	Insert														
		OAL	LB1	LU		OAL	LB1	LU																
29.0-29.4	KRUZSLK290140050	140	80	50	KRUZSLKT290190100	190	130	100	32 (60)	IDFK 290-294 IDPK 290-294	CS 280 -295 SL	T15	M4x8	2.0mm										
29.5-29.9	KRUZSLK295140050				KRUZSLKT295190100					IDFK 295-299 IDPK 295-299														
30.0-30.4	KRUZSLK300155070	155	95	70	KRUZSLKT300200110	200	140	110	32 (60)	IDFK 300-304 IDPK 300-304	CS 300 -315 SL													
30.5-30.9	KRUZSLK305155070				KRUZSLKT305200110					IDFK 305-309 IDPK 305-309														
31.0-31.4	KRUZSLK310155070				KRUZSLKT310200110					IDFK 310-314 IDPK 310-314														
31.5-31.9	KRUZSLK315155070				KRUZSLKT315200110					IDFK 315-319 IDPK 315-319														
32.0-32.4	KRUZSLK320155070				210	150	110	KRUZSLKT320210110		210	150				110	IDFK 320-324 IDPK 320-324	CS 320 -355 SL							
32.5-32.9	KRUZSLK325155070							KRUZSLKT325210110								IDFK 325-329 IDPK 325-329								
33.0-33.4	KRUZSLK330155070							KRUZSLKT330210110								IDFK 330-334 IDPK 330-334								
33.5-33.9	KRUZSLK335155070							KRUZSLKT335210110								IDFK 335-339 IDPK 335-339								
34.0-34.4	KRUZSLK340180080							230								160		120	KRUZSLKT340230120	230	160	120	IDFK 340-344 IDPK 340-344	CS 360 -395 SL
34.5-34.9	KRUZSLK345180080																		KRUZSLKT345230120				IDFK 345-349 IDPK 345-349	
35.0-35.4	KRUZSLK350180080	KRUZSLKT350230120	IDFK 350-354 IDPK 350-354																					
35.5-35.9	KRUZSLK355180080	KRUZSLKT355230120	IDFK 355-359 IDPK 355-359																					
36.0-36.4	KRUZSLK360180080	250	180	130	KRUZSLKT360250130	250	180		130	IDFK 360-364 IDPK 360-364	CS 360 -395 SL													
36.5-36.9	KRUZSLK365180080				KRUZSLKT365250130					IDFK 365-369 IDPK 365-369														
37.0-37.4	KRUZSLK370180080				KRUZSLKT370250130					IDFK 370-374 IDPK 370-374														
37.5-37.9	KRUZSLK375180080				KRUZSLKT375250130					IDFK 375-379 IDPK 375-379														
38.0-38.4	KRUZSLK380180080				250					180		137	KRUZSLKT380250137	250	180		137		IDFK 380-384 IDPK 380-384					
38.5-38.9	KRUZSLK385180080												KRUZSLKT385250137						IDFK 385-389 IDPK 385-389					
39.0-39.4	KRUZSLK390180080	KRUZSLKT390250137	IDFK 390-394 IDPK 390-394																					
39.5-39.9	KRUZSLK395180080	KRUZSLKT395250137	IDFK 395-399 IDPK 395-399																					
40.0-40.4	KRUZSLK400180080	270	200	143	KRUZSLKT400270143	270	200	143	IDFK 400-404 IDPK 400-404	CS 400 -445 SL														
40.5-40.9	KRUZSLK405180080				KRUZSLKT405270143				IDFK 405-409 IDPK 405-409															
41.0-41.4	KRUZSLK410185080				KRUZSLKT410270143				IDFK 410-414 IDPK 410-414															
41.5-41.9	KRUZSLK415185080				KRUZSLKT415270143				IDFK 415-419 IDPK 415-419															
42.0-42.4	KRUZSLK420185080				280	210	150	KRUZSLKT420270150	280	210	150	IDFK 420-424 IDPK 420-424	CS 450 -500 SL											
42.5-42.9	KRUZSLK425185080							KRUZSLKT425270150				IDFK 425-429 IDPK 425-429												
43.0-43.4	KRUZSLK430185080							KRUZSLKT430270150				IDFK 430-434 IDPK 430-434												
43.5-43.9	KRUZSLK435185080							KRUZSLKT435270150				IDFK 435-439 IDPK 435-439												
44.0-44.4	KRUZSLK440185080							280				210		158	KRUZSLKT440280158	280	210	158	IDFK 440-444 IDPK 440-444					
44.5-44.9	KRUZSLK445185080														KRUZSLKT445280158				IDFK 445-449 IDPK 445-449					
45.0-45.4	KRUZSLK450185080	KRUZSLKT450280158	IDFK 450-454 IDPK 450-454																					
45.5-45.9	KRUZSLK455185080	KRUZSLKT455280158	IDFK 455-459 IDPK 455-459																					
46.0-46.4	KRUZSLK460185080	280	210	165	KRUZSLKT460280165	280	210	165	IDFK 460-464 IDPK 460-464															
46.5-46.9	KRUZSLK465185080				KRUZSLKT465280165				IDFK 465-469 IDPK 465-469															
47.0-47.4	KRUZSLK470185080				KRUZSLKT470280165				IDFK 470-474 IDPK 470-474															
47.5-47.9	KRUZSLK475185080				KRUZSLKT475280165				IDFK 475-479 IDPK 475-479															
48.0-48.4	KRUZSLK480200090				200				130	90	KRUZSLKT480300172	200	130	172	IDFK 480-484 IDPK 480-484									
48.5-48.9	KRUZSLK485200090										KRUZSLKT485300172				IDFK 485-489 IDPK 485-489									
49.0-49.4	KRUZSLK490200090	KRUZSLKT490300172	IDFK 490-494 IDPK 490-494																					
49.5-49.9	KRUZSLK495200090	KRUZSLKT495300172	IDFK 495-499 IDPK 495-499																					
50.0-50.4	KRUZSLK500200090	KRUZSLKT500300172	IDFK 500-504 IDPK 500-504																					

### KRUZ-FSLK flanged body 5xD

- When a longer working section is required, choose this body
- Drilling close to channel web arms or I-beams
- Where obstacles or fixturing prevent direct approach
- Increased body stiffness compared to the standard 5xD drill standardowego 5xD
- Flange compensating for vibrations
- Internal cooling



IDFK



for beams, angle profiles and thin plates

IDPK



for drilling in stacks

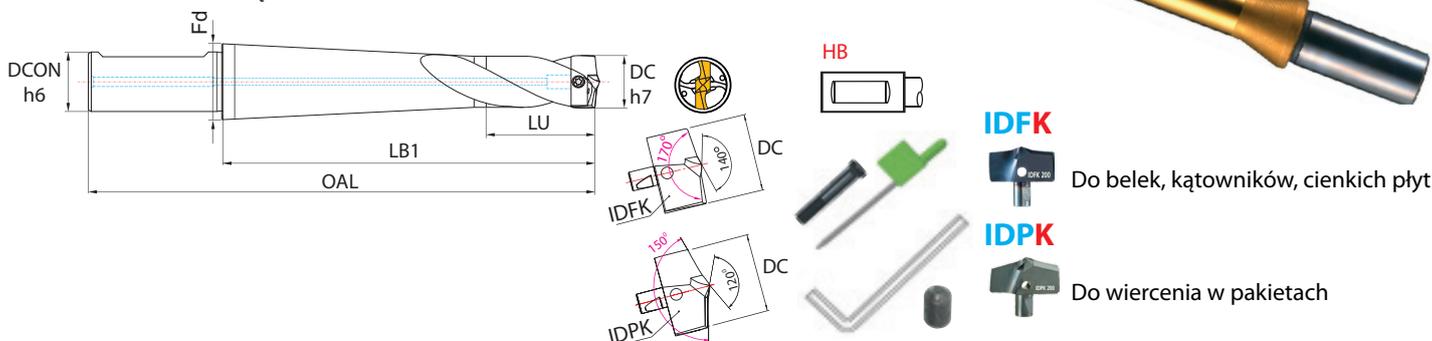
Diameter range	Body	Dimensions (mm)					Insert				
		DCON (L)	OAL	LB1	LU	Fd					
12.0-12.4	KRUZFSLK120133050	16 (48)	133	85	21	IDFK 120, IDFK 121, IDFK 122, IDFK 123, IDFK 124 IDPK 120, IDPK 121, IDPK 122, IDPK 123, IDPK 124	CS 120 -135 SL	T6			
12.5-12.9	KRUZFSLK125136050		136	88		IDFK 125, IDFK 126, IDFK 127, IDFK 128, IDFK 129 IDPK 125, IDPK 126, IDPK 127, IDPK 128, IDPK 129					
13.0-13.4	KRUZFSLK130140050		140	92		IDFK 130, IDFK 131, IDFK 132, IDFK 133, IDFK 134 IDPK 130, IDPK 131, IDPK 132, IDPK 133, IDPK 134					
13.5-13.9	KRUZFSLK135143050		143	95		IDFK 135, IDFK 136, IDFK 137, IDFK 138, IDFK 139 IDPK 135, IDPK 136, IDPK 137, IDPK 138, IDPK 139					
14.0-14.4	KRUZFSLK140147050		147	99		IDFK 140, IDFK 141, IDFK 142, IDFK 143, IDFK 144 IDPK 140, IDPK 141, IDPK 142, IDPK 143, IDPK 144					
14.5-14.9	KRUZFSLK145150050		150	102		IDFK 145, IDFK 146, IDFK 147, IDFK 148, IDFK 149 IDPK 145, IDPK 146, IDPK 147, IDPK 148, IDPK 149					
15.0-15.4	KRUZFSLK150157050	20 (50)	157	107	27	IDFK 150, IDFK 151, IDFK 152, IDFK 153, IDFK 154 IDPK 150, IDPK 151, IDPK 152, IDPK 153, IDPK 154	CS 140 -155 SL	T7	M2.5x4	1.3mm	
15.5-15.9	KRUZFSLK155161050		161	111		IDFK 155, IDFK 156, IDFK 157, IDFK 158, IDFK 159 IDPK 155, IDPK 156, IDPK 157, IDPK 158, IDPK 159					
16.0-16.4	KRUZFSLK160164050		164	114		IDFK 160, IDFK 161, IDFK 162, IDFK 163, IDFK 164 IDPK 160, IDPK 161, IDPK 162, IDPK 163, IDPK 164					
16.5-16.9	KRUZFSLK165168050		168	118		IDFK 165, IDFK 166, IDFK 167, IDFK 168, IDFK 169 IDPK 165, IDPK 166, IDPK 167, IDPK 168, IDPK 169					
17.0-17.4	KRUZFSLK170171050		171	121		IDFK 170, IDFK 171, IDFK 172, IDFK 173, IDFK 174 IDPK 170, IDPK 171, IDPK 172, IDPK 173, IDPK 174					
17.5-17.9	KRUZFSLK175174050		174	124		IDFK 175, IDFK 176, IDFK 177, IDFK 178, IDFK 179 IDPK 175, IDPK 176, IDPK 177, IDPK 178, IDPK 179					
18.0-18.4	KRUZFSLK180178050		178	128		IDFK 180, IDFK 181, IDFK 182, IDFK 183, IDFK 184 IDPK 180, IDPK 181, IDPK 182, IDPK 183, IDPK 184					
18.5-18.9	KRUZFSLK185181050		181	131		IDFK 185, IDFK 186, IDFK 187, IDFK 188, IDFK 189 IDPK 185, IDPK 186, IDPK 187, IDPK 188, IDPK 189					
19.0-19.4	KRUZFSLK190185050		185	135		IDFK 190, IDFK 191, IDFK 192, IDFK 193, IDFK 194 IDPK 190, IDPK 191, IDPK 192, IDPK 193, IDPK 194					
19.5-19.9	KRUZFSLK195188050		188	138		IDFK 195, IDFK 196, IDFK 197, IDFK 198, IDFK 199 IDPK 195, IDPK 196, IDPK 197, IDPK 198, IDPK 199					
20.0-20.4	KRUZFSLK200197050	25 (56)	197	141	32	IDFK 200, IDFK 201, IDFK 202, IDFK 203, IDFK 204 IDPK 200, IDPK 201, IDPK 202, IDPK 203, IDPK 204	CS 200 -215 SL	T8			
20.5-20.9	KRUZFSLK205201050		201	145		IDFK 205, IDFK 206, IDFK 207, IDFK 208, IDFK 209 IDPK 205, IDPK 206, IDPK 207, IDPK 208, IDPK 209					
21.0-21.4	KRUZFSLK210204050		204	148		IDFK 210, IDFK 211, IDFK 212, IDFK 213, IDFK 214 IDPK 210, IDPK 211, IDPK 212, IDPK 213, IDPK 214					
21.5-21.9	KRUZFSLK215208050		208	152		IDFK 215, IDFK 216, IDFK 217, IDFK 218, IDFK 219 IDPK 215, IDPK 216, IDPK 217, IDPK 218, IDPK 219					
22.0-22.4	KRUZFSLK220211050		211	155		IDFK 220, IDFK 221, IDFK 222, IDFK 223, IDFK 224 IDPK 220, IDPK 221, IDPK 222, IDPK 223, IDPK 224					
22.5-22.9	KRUZFSLK225214050		214	158		IDFK 225, IDFK 226, IDFK 227, IDFK 228, IDFK 229 IDPK 225, IDPK 226, IDPK 227, IDPK 228, IDPK 229					
23.0-23.4	KRUZFSLK230218050		218	162		IDFK 230, IDFK 231, IDFK 232, IDFK 233, IDFK 234 IDPK 230, IDPK 231, IDPK 232, IDPK 233, IDPK 234					
23.5-23.9	KRUZFSLK235221050		221	165		IDFK 235, IDFK 236, IDFK 237, IDFK 238, IDFK 239 IDPK 235, IDPK 236, IDPK 237, IDPK 238, IDPK 239					
24.0-24.4	KRUZFSLK240229050		229	169		IDFK 240, IDFK 241, IDFK 242, IDFK 243, IDFK 244 IDPK 240, IDPK 241, IDPK 242, IDPK 243, IDPK 244					
24.5-24.9	KRUZFSLK245232050		232	172		IDFK 245, IDFK 246, IDFK 247, IDFK 248, IDFK 249 IDPK 245, IDPK 246, IDPK 247, IDPK 248, IDPK 249					
25.0-25.4	KRUZFSLK250235050	235	175	IDFK 250, IDFK 251, IDFK 252, IDFK 253, IDFK 254 IDPK 250, IDPK 251, IDPK 252, IDPK 253, IDPK 254							
25.5-25.9	KRUZFSLK255239050	239	179	IDFK 255, IDFK 256, IDFK 257, IDFK 258, IDFK 259 IDPK 255, IDPK 256, IDPK 257, IDPK 258, IDPK 259							
26.0-26.4	KRUZFSLK260242050	32 (60)	242	182	39	IDFK 260, IDFK 261, IDFK 262, IDFK 263, IDFK 264 IDPK 260, IDPK 261, IDPK 262, IDPK 263, IDPK 264	CS 240 -255 SL	T15			
26.5-26.9	KRUZFSLK265246050		246	186		IDFK 265, IDFK 266, IDFK 267, IDFK 268, IDFK 269 IDPK 265, IDPK 266, IDPK 267, IDPK 268, IDPK 269					
27.0-27.4	KRUZFSLK270249050		249	189		IDFK 270, IDFK 271, IDFK 272, IDFK 273, IDFK 274 IDPK 270, IDPK 271, IDPK 272, IDPK 273, IDPK 274					
27.5-27.9	KRUZFSLK275252050		252	192		IDFK 275, IDFK 276, IDFK 277, IDFK 278, IDFK 279 IDPK 275, IDPK 276, IDPK 277, IDPK 278, IDPK 279					

## KRUZ-FSLK flanged body 5xD

Diameter range	Body	Dimensions (mm)					Insert							
		DCON (L)	OAL	LB1	LU	Fd								
28.0-28.4	KRUZFSLK280256050	32 (60)	256	196	50	39	IDFK 280, IDFK 281, IDFK 282, IDFK 283, IDFK 284 IDPK 280, IDPK 281, IDPK 282, IDPK 283, IDPK 284	CS 280 -295 SL	T15	M4x8	2.0mm			
28.5-28.9	KRUZFSLK285259050		259	199			IDFK 285, IDFK 286, IDFK 287, IDFK 288, IDFK 289 IDPK 285, IDPK 286, IDPK 287, IDPK 288, IDPK 289							
29.0-29.4	KRUZFSLK290263050		263	203			IDFK 290, IDFK 291, IDFK 292, IDFK 293, IDFK 294 IDPK 290, IDPK 291, IDPK 292, IDPK 293, IDPK 294							
29.5-29.9	KRUZFSLK295266050		266	206			IDFK 295, IDFK 296, IDFK 297, IDFK 298, IDFK 299 IDPK 295, IDPK 296, IDPK 297, IDPK 298, IDPK 299							
30.0-30.4	KRUZFSLK300269070		269	209	70		IDFK 300, IDFK 301, IDFK 302, IDFK 303, IDFK 304 IDPK 300, IDPK 301, IDPK 302, IDPK 303, IDPK 304	CS 300 -315 SL				M5x10	2.5mm	
30.5-30.9	KRUZFSLK305273070		273	213			IDFK 305, IDFK 306, IDFK 307, IDFK 308, IDFK 309 IDPK 305, IDPK 306, IDPK 307, IDPK 308, IDPK 309							
31.0-31.4	KRUZFSLK310276070		276	216			IDFK 310, IDFK 311, IDFK 312, IDFK 313, IDFK 314 IDPK 310, IDPK 311, IDPK 312, IDPK 313, IDPK 314							
31.5-31.9	KRUZFSLK315280070		280	220			IDFK 315, IDFK 316, IDFK 317, IDFK 318, IDFK 319 IDPK 315, IDPK 316, IDPK 317, IDPK 318, IDPK 319							
32.0-32.4	KRUZFSLK320283070		283	223	IDFK 320, IDFK 321, IDFK 322, IDFK 323, IDFK 324 IDPK 320, IDPK 321, IDPK 322, IDPK 323, IDPK 324		CS 320 -355 SL	M6x12						3.0mm
32.5-32.9	KRUZFSLK325286070		286	226	IDFK 325, IDFK 326, IDFK 327, IDFK 328, IDFK 329 IDPK 325, IDPK 326, IDPK 327, IDPK 328, IDPK 329									
33.0-33.4	KRUZFSLK330290070		290	230	IDFK 330, IDFK 331, IDFK 332, IDFK 333, IDFK 334 IDPK 330, IDPK 331, IDPK 332, IDPK 333, IDPK 334									
33.5-33.9	KRUZFSLK335293070		293	233	IDFK 335, IDFK 336, IDFK 337, IDFK 338, IDFK 339 IDPK 335, IDPK 336, IDPK 337, IDPK 338, IDPK 339									
34.0-34.4	KRUZFSLK340307080	307	237	80	IDFK 340, IDFK 341, IDFK 342, IDFK 343, IDFK 344 IDPK 340, IDPK 341, IDPK 342, IDPK 343, IDPK 344	CS 360 -395 SL	T20		M6x12	3.0mm				
34.5-34.9	KRUZFSLK345310080	310	240		IDFK 345, IDFK 346, IDFK 347, IDFK 348, IDFK 349 IDPK 345, IDPK 346, IDPK 347, IDPK 348, IDPK 349									
35.0-35.4	KRUZFSLK350313080	313	243		IDFK 350, IDFK 351, IDFK 352, IDFK 353, IDFK 354 IDPK 350, IDPK 351, IDPK 352, IDPK 353, IDPK 354									
35.5-35.9	KRUZFSLK355317080	317	247		IDFK 355, IDFK 356, IDFK 357, IDFK 358, IDFK 359 IDPK 355, IDPK 356, IDPK 357, IDPK 358, IDPK 359									
36.0-36.4	KRUZFSLK360320080	320	250		IDFK 360, IDFK 361, IDFK 362, IDFK 363, IDFK 364 IDPK 360, IDPK 361, IDPK 362, IDPK 363, IDPK 364	CS 400 -445 SL					M6x12	3.0mm		
36.5-36.9	KRUZFSLK365324080	324	254		IDFK 365, IDFK 366, IDFK 367, IDFK 368, IDFK 369 IDPK 365, IDPK 366, IDPK 367, IDPK 368, IDPK 369									
37.0-37.4	KRUZFSLK370327080	327	257		IDFK 370, IDFK 371, IDFK 372, IDFK 373, IDFK 374 IDPK 370, IDPK 371, IDPK 372, IDPK 373, IDPK 374									
37.5-37.9	KRUZFSLK375330080	330	260		IDFK 375, IDFK 376, IDFK 377, IDFK 378, IDFK 379 IDPK 375, IDPK 376, IDPK 377, IDPK 378, IDPK 379									
38.0-38.4	KRUZFSLK380334080	334	264		IDFK 380, IDFK 381, IDFK 382, IDFK 383, IDFK 384 IDPK 380, IDPK 381, IDPK 382, IDPK 383, IDPK 384	CS 450 -500 SL		M6x12					3.0mm	
38.5-38.9	KRUZFSLK385337080	337	267		IDFK 385, IDFK 386, IDFK 387, IDFK 388, IDFK 389 IDPK 385, IDPK 386, IDPK 387, IDPK 388, IDPK 389									
39.0-39.4	KRUZFSLK390341080	341	271		IDFK 390, IDFK 391, IDFK 392, IDFK 393, IDFK 394 IDPK 390, IDPK 391, IDPK 392, IDPK 393, IDPK 394									
39.5-39.9	KRUZFSLK395344080	344	274		IDFK 395, IDFK 396, IDFK 397, IDFK 398, IDFK 399 IDPK 395, IDPK 396, IDPK 397, IDPK 398, IDPK 399									
40.0-40.4	KRUZFSLK400347080	347	277	90	IDFK 400, IDFK 401, IDFK 402, IDFK 403, IDFK 404 IDPK 400, IDPK 401, IDPK 402, IDPK 403, IDPK 404	CS 450 -500 SL	M6x12		3.0mm					
40.5-40.9	KRUZFSLK405351080	351	281		IDFK 405, IDFK 406, IDFK 407, IDFK 408, IDFK 409 IDPK 405, IDPK 406, IDPK 407, IDPK 408, IDPK 409									
41.0-41.4	KRUZFSLK410354080	354	284		IDFK 410, IDFK 411, IDFK 412, IDFK 413, IDFK 414 IDPK 410, IDPK 411, IDPK 412, IDPK 413, IDPK 414									
41.5-41.9	KRUZFSLK415358080	358	288		IDFK 415, IDFK 416, IDFK 417, IDFK 418, IDFK 419 IDPK 415, IDPK 416, IDPK 417, IDPK 418, IDPK 419									
42.0-42.4	KRUZFSLK420361080	361	291		IDFK 420, IDFK 421, IDFK 422, IDFK 423, IDFK 424 IDPK 420, IDPK 421, IDPK 422, IDPK 423, IDPK 424	CS 450 -500 SL				M6x12	3.0mm			
42.5-42.9	KRUZFSLK425364080	364	294		IDFK 425, IDFK 426, IDFK 427, IDFK 428, IDFK 429 IDPK 425, IDPK 426, IDPK 427, IDPK 428, IDPK 429									
43.0-43.4	KRUZFSLK430368080	368	298		IDFK 430, IDFK 431, IDFK 432, IDFK 433, IDFK 434 IDPK 430, IDPK 431, IDPK 432, IDPK 433, IDPK 434									
43.5-43.9	KRUZFSLK435371080	371	301		IDFK 435, IDFK 436, IDFK 437, IDFK 438, IDFK 439 IDPK 435, IDPK 436, IDPK 437, IDPK 438, IDPK 439									
44.0-44.4	KRUZFSLK440375080	375	305		IDFK 440, IDFK 441, IDFK 442, IDFK 443, IDFK 444 IDPK 440, IDPK 441, IDPK 442, IDPK 443, IDPK 444	CS 450 -500 SL		M6x12				3.0mm		
44.5-44.9	KRUZFSLK445378080	378	308		IDFK 445, IDFK 446, IDFK 447, IDFK 448, IDFK 449 IDPK 445, IDPK 446, IDPK 447, IDPK 448, IDPK 449									
45.0-45.4	KRUZFSLK450381080	381	311		IDFK 450, IDFK 451, IDFK 452, IDFK 453, IDFK 454 IDPK 450, IDPK 451, IDPK 452, IDPK 453, IDPK 454									
45.5-45.9	KRUZFSLK455385080	385	315		IDFK 455, IDFK 456, IDFK 457, IDFK 458, IDFK 459 IDPK 455, IDPK 456, IDPK 457, IDPK 458, IDPK 459									
46.0-46.4	KRUZFSLK460388080	388	318	IDFK 460, IDFK 461, IDFK 462, IDFK 463, IDFK 464 IDPK 460, IDPK 461, IDPK 462, IDPK 463, IDPK 464	CS 450 -500 SL	M6x12	3.0mm							
46.5-46.9	KRUZFSLK465392080	392	322	IDFK 465, IDFK 466, IDFK 467, IDFK 468, IDFK 469 IDPK 465, IDPK 466, IDPK 467, IDPK 468, IDPK 469										
47.0-47.4	KRUZFSLK470395080	395	325	IDFK 470, IDFK 471, IDFK 472, IDFK 473, IDFK 474 IDPK 470, IDPK 471, IDPK 472, IDPK 473, IDPK 474										
47.5-47.9	KRUZFSLK475398080	398	328	IDFK 475, IDFK 476, IDFK 477, IDFK 478, IDFK 479 IDPK 475, IDPK 476, IDPK 477, IDPK 478, IDPK 479										
48.0-48.4	KRUZFSLK480402090	402	332	90	IDFK 480, IDFK 481, IDFK 482, IDFK 483, IDFK 484 IDPK 480, IDPK 481, IDPK 482, IDPK 483, IDPK 484				CS 450 -500 SL	M6x12	3.0mm			
48.5-48.9	KRUZFSLK485405090	405	335		IDFK 485, IDFK 486, IDFK 487, IDFK 488, IDFK 489 IDPK 485, IDPK 486, IDPK 487, IDPK 488, IDPK 489									
49.0-49.4	KRUZFSLK490409090	409	339		IDFK 490, IDFK 491, IDFK 492, IDFK 493, IDFK 494 IDPK 490, IDPK 491, IDPK 492, IDPK 493, IDPK 494									
49.5-49.9	KRUZFSLK495412090	412	342		IDFK 495, IDFK 496, IDFK 497, IDFK 498, IDFK 499 IDPK 495, IDPK 496, IDPK 497, IDPK 498, IDPK 499									
50.0-50.4	KRUZFSLK500415090	415	345	IDFK 500, IDFK 501, IDFK 502, IDFK 503, IDFK 504 IDPK 500, IDPK 501, IDPK 502, IDPK 503, IDPK 504	CS 450 -500 SL			M6x12	3.0mm					

## KRUZ-FSLK flanged body 5xD

- Kiedy wymagana jest dłuższa część robocza wybierz ten korpus
- Wiercenie blisko ramion ceownika, dwuteownika
- Gdzie elementy przeszkadzające lub mocowanie uniemożliwiają podejście
- Zwiększona sztywność korpusu w porównaniu do wiertła standardowego 7xD
- Kołnierzyk niwelujący drgania
- Chłodzenie wewnętrzne



Diameter range	Body	Dimensions (mm)					Insert				
		DCON (L)	OAL	LB1	LU	Fd					
12.0-12.4	KRUZFSLK120157050	16 (48)	157	109	21	IDFK 120, IDFK 121, IDFK 122, IDFK 123, IDFK 124 IDPK 120, IDPK 121, IDPK 122, IDPK 123, IDPK 124	CS 120 -135 SL	T6			
12.5-12.9	KRUZFSLK125161050		161	113		IDFK 125, IDFK 126, IDFK 127, IDFK 128, IDFK 129 IDPK 125, IDPK 126, IDPK 127, IDPK 128, IDPK 129					
13.0-13.4	KRUZFSLK130166050		166	118		IDFK 130, IDFK 131, IDFK 132, IDFK 133, IDFK 134 IDPK 130, IDPK 131, IDPK 132, IDPK 133, IDPK 134					
13.5-13.9	KRUZFSLK135170050		170	122		IDFK 135, IDFK 136, IDFK 137, IDFK 138, IDFK 139 IDPK 135, IDPK 136, IDPK 137, IDPK 138, IDPK 139					
14.0-14.4	KRUZFSLK140175050		175	127		IDFK 140, IDFK 141, IDFK 142, IDFK 143, IDFK 144 IDPK 140, IDPK 141, IDPK 142, IDPK 143, IDPK 144					
14.5-14.9	KRUZFSLK145181050		181	131		IDFK 145, IDFK 146, IDFK 147, IDFK 148, IDFK 149 IDPK 145, IDPK 146, IDPK 147, IDPK 148, IDPK 149					
15.0-15.4	KRUZFSLK150187050	20 (50)	187	137	27	IDFK 150, IDFK 151, IDFK 152, IDFK 153, IDFK 154 IDPK 150, IDPK 151, IDPK 152, IDPK 153, IDPK 154	CS 140 -155 SL	T7	M2.5x4	1.3mm	
15.5-15.9	KRUZFSLK155192050		192	142		IDFK 155, IDFK 156, IDFK 157, IDFK 158, IDFK 159 IDPK 155, IDPK 156, IDPK 157, IDPK 158, IDPK 159					
16.0-16.4	KRUZFSLK160196050		196	146		IDFK 160, IDFK 161, IDFK 162, IDFK 163, IDFK 164 IDPK 160, IDPK 161, IDPK 162, IDPK 163, IDPK 164					
16.5-16.9	KRUZFSLK165201050		201	151		IDFK 165, IDFK 166, IDFK 167, IDFK 168, IDFK 169 IDPK 165, IDPK 166, IDPK 167, IDPK 168, IDPK 169					
17.0-17.4	KRUZFSLK170205050		205	155		IDFK 170, IDFK 171, IDFK 172, IDFK 173, IDFK 174 IDPK 170, IDPK 171, IDPK 172, IDPK 173, IDPK 174					
17.5-17.9	KRUZFSLK175209050		209	159		IDFK 175, IDFK 176, IDFK 177, IDFK 178, IDFK 179 IDPK 175, IDPK 176, IDPK 177, IDPK 178, IDPK 179					
18.0-18.4	KRUZFSLK180214050	25 (56)	214	164	32	IDFK 180, IDFK 181, IDFK 182, IDFK 183, IDFK 184 IDPK 180, IDPK 181, IDPK 182, IDPK 183, IDPK 184	CS 160 -175 SL	T8			
18.5-18.9	KRUZFSLK185218050		218	168		IDFK 185, IDFK 186, IDFK 187, IDFK 188, IDFK 189 IDPK 185, IDPK 186, IDPK 187, IDPK 188, IDPK 189					
19.0-19.4	KRUZFSLK190223050		223	173		IDFK 190, IDFK 191, IDFK 192, IDFK 193, IDFK 194 IDPK 190, IDPK 191, IDPK 192, IDPK 193, IDPK 194					
19.5-19.9	KRUZFSLK195227050		227	177		IDFK 195, IDFK 196, IDFK 197, IDFK 198, IDFK 199 IDPK 195, IDPK 196, IDPK 197, IDPK 198, IDPK 199					
20.0-20.4	KRUZFSLK200237050		237	181		IDFK 200, IDFK 201, IDFK 202, IDFK 203, IDFK 204 IDPK 200, IDPK 201, IDPK 202, IDPK 203, IDPK 204					
20.5-20.9	KRUZFSLK205242050		242	186		IDFK 205, IDFK 206, IDFK 207, IDFK 208, IDFK 209 IDPK 205, IDPK 206, IDPK 207, IDPK 208, IDPK 209					
21.0-21.4	KRUZFSLK210246050	32 (60)	246	190	39	IDFK 210, IDFK 211, IDFK 212, IDFK 213, IDFK 214 IDPK 210, IDPK 211, IDPK 212, IDPK 213, IDPK 214	CS 200 -215 SL	T15	M3x6	1.5mm	
21.5-21.9	KRUZFSLK215251050		251	195		IDFK 215, IDFK 216, IDFK 217, IDFK 218, IDFK 219 IDPK 215, IDPK 216, IDPK 217, IDPK 218, IDPK 219					
22.0-22.4	KRUZFSLK220255050		255	199		IDFK 220, IDFK 221, IDFK 222, IDFK 223, IDFK 224 IDPK 220, IDPK 221, IDPK 222, IDPK 223, IDPK 224					
22.5-22.9	KRUZFSLK225259050		259	203		IDFK 225, IDFK 226, IDFK 227, IDFK 228, IDFK 229 IDPK 225, IDPK 226, IDPK 227, IDPK 228, IDPK 229					
23.0-23.4	KRUZFSLK230264050		264	208		IDFK 230, IDFK 231, IDFK 232, IDFK 233, IDFK 234 IDPK 230, IDPK 231, IDPK 232, IDPK 233, IDPK 234					
23.5-23.9	KRUZFSLK235268050		268	212		IDFK 235, IDFK 236, IDFK 237, IDFK 238, IDFK 239 IDPK 235, IDPK 236, IDPK 237, IDPK 238, IDPK 239					
24.0-24.4	KRUZFSLK240277050	32 (60)	277	217	39	IDFK 240, IDFK 241, IDFK 242, IDFK 243, IDFK 244 IDPK 240, IDPK 241, IDPK 242, IDPK 243, IDPK 244	CS 240 -255 SL	T15			
24.5-24.9	KRUZFSLK245281050		281	221		IDFK 245, IDFK 246, IDFK 247, IDFK 248, IDFK 249 IDPK 245, IDPK 246, IDPK 247, IDPK 248, IDPK 249					
25.0-25.4	KRUZFSLK250285050		285	225		IDFK 250, IDFK 251, IDFK 252, IDFK 253, IDFK 254 IDPK 250, IDPK 251, IDPK 252, IDPK 253, IDPK 254					
25.5-25.9	KRUZFSLK255290050		290	230		IDFK 255, IDFK 256, IDFK 257, IDFK 258, IDFK 259 IDPK 255, IDPK 256, IDPK 257, IDPK 258, IDPK 259					
26.0-26.4	KRUZFSLK260294050		294	234		IDFK 260, IDFK 261, IDFK 262, IDFK 263, IDFK 264 IDPK 260, IDPK 261, IDPK 262, IDPK 263, IDPK 264					
26.5-26.9	KRUZFSLK265299050		299	239		IDFK 265, IDFK 266, IDFK 267, IDFK 268, IDFK 269 IDPK 265, IDPK 266, IDPK 267, IDPK 268, IDPK 269					
27.0-27.4	KRUZFSLK270303050	32 (60)	303	243	39	IDFK 270, IDFK 271, IDFK 272, IDFK 273, IDFK 274 IDPK 270, IDPK 271, IDPK 272, IDPK 273, IDPK 274	CS 260 -275 SL	T15	M4x8	2.0mm	
27.5-27.9	KRUZFSLK275307050		307	247		IDFK 275, IDFK 276, IDFK 277, IDFK 278, IDFK 279 IDPK 275, IDPK 276, IDPK 277, IDPK 278, IDPK 279					

## KRUZ-FSLK flanged body 5xD

Diameter range	Body	Dimensions (mm)				Insert				
		DCON (L)	OAL	LB1	LU					
28.0-28.4	KRUZFSLK280312050	32 (60)	312	252	50	IDFK 280, IDFK 281, IDFK 282, IDFK 283, IDFK 284 IDPK 280, IDPK 281, IDPK 282, IDPK 283, IDPK 284	CS 280 -295 SL	T15	M4x8	2.0mm
28.5-28.9	KRUZFSLK285316050		316	256		IDFK 285, IDFK 286, IDFK 287, IDFK 288, IDFK 289 IDPK 285, IDPK 286, IDPK 287, IDPK 288, IDPK 289				
29.0-29.4	KRUZFSLK290321050		321	261		IDFK 290, IDFK 291, IDFK 292, IDFK 293, IDFK 294 IDPK 290, IDPK 291, IDPK 292, IDPK 293, IDPK 294				
29.5-29.9	KRUZFSLK295325050		325	265	39	IDFK 295, IDFK 296, IDFK 297, IDFK 298, IDFK 299 IDPK 295, IDPK 296, IDPK 297, IDPK 298, IDPK 299	CS 300 -315 SL			
30.0-30.4	KRUZFSLK300329070		329	269		IDFK 300, IDFK 301, IDFK 302, IDFK 303, IDFK 304 IDPK 300, IDPK 301, IDPK 302, IDPK 303, IDPK 304				
30.5-30.9	KRUZFSLK305334070		334	274		IDFK 305, IDFK 306, IDFK 307, IDFK 308, IDFK 309 IDPK 305, IDPK 306, IDPK 307, IDPK 308, IDPK 309				
31.0-31.4	KRUZFSLK310338070		338	278		IDFK 310, IDFK 311, IDFK 312, IDFK 313, IDFK 314 IDPK 310, IDPK 311, IDPK 312, IDPK 313, IDPK 314				
31.5-31.9	KRUZFSLK315343070		343	283	70	IDFK 315, IDFK 316, IDFK 317, IDFK 318, IDFK 319 IDPK 315, IDPK 316, IDPK 317, IDPK 318, IDPK 319	CS 320 -355 SL			
32.0-32.4	KRUZFSLK320347070		347	287		IDFK 320, IDFK 321, IDFK 322, IDFK 323, IDFK 324 IDPK 320, IDPK 321, IDPK 322, IDPK 323, IDPK 324				
32.5-32.9	KRUZFSLK325351070		351	291		IDFK 325, IDFK 326, IDFK 327, IDFK 328, IDFK 329 IDPK 325, IDPK 326, IDPK 327, IDPK 328, IDPK 329				
33.0-33.4	KRUZFSLK330356070		356	296	80	IDFK 330, IDFK 331, IDFK 332, IDFK 333, IDFK 334 IDPK 330, IDPK 331, IDPK 332, IDPK 333, IDPK 334	CS 360 -395 SL			
33.5-33.9	KRUZFSLK335360070		360	300		IDFK 335, IDFK 336, IDFK 337, IDFK 338, IDFK 339 IDPK 335, IDPK 336, IDPK 337, IDPK 338, IDPK 339				
34.0-34.4	KRUZFSLK340375080		375	305		IDFK 340, IDFK 341, IDFK 342, IDFK 343, IDFK 344 IDPK 340, IDPK 341, IDPK 342, IDPK 343, IDPK 344				
34.5-34.9	KRUZFSLK345379080	379	309	IDFK 345, IDFK 346, IDFK 347, IDFK 348, IDFK 349 IDPK 345, IDPK 346, IDPK 347, IDPK 348, IDPK 349						
35.0-35.4	KRUZFSLK350383080	383	313	IDFK 350, IDFK 351, IDFK 352, IDFK 353, IDFK 354 IDPK 350, IDPK 351, IDPK 352, IDPK 353, IDPK 354						
35.5-35.9	KRUZFSLK355388080	388	318	IDFK 355, IDFK 356, IDFK 357, IDFK 358, IDFK 359 IDPK 355, IDPK 356, IDPK 357, IDPK 358, IDPK 359						
36.0-36.4	KRUZFSLK360392080	392	322	IDFK 360, IDFK 361, IDFK 362, IDFK 363, IDFK 364 IDPK 360, IDPK 361, IDPK 362, IDPK 363, IDPK 364						
36.5-36.9	KRUZFSLK365397080	397	327	IDFK 365, IDFK 366, IDFK 367, IDFK 368, IDFK 369 IDPK 365, IDPK 366, IDPK 367, IDPK 368, IDPK 369						
37.0-37.4	KRUZFSLK370401080	401	331	IDFK 370, IDFK 371, IDFK 372, IDFK 373, IDFK 374 IDPK 370, IDPK 371, IDPK 372, IDPK 373, IDPK 374						
37.5-37.9	KRUZFSLK375405080	405	335	IDFK 375, IDFK 376, IDFK 377, IDFK 378, IDFK 379 IDPK 375, IDPK 376, IDPK 377, IDPK 378, IDPK 379						
38.0-38.4	KRUZFSLK380410080	410	340	IDFK 380, IDFK 381, IDFK 382, IDFK 383, IDFK 384 IDPK 380, IDPK 381, IDPK 382, IDPK 383, IDPK 384						
38.5-38.9	KRUZFSLK385414080	414	344	IDFK 385, IDFK 386, IDFK 387, IDFK 388, IDFK 389 IDPK 385, IDPK 386, IDPK 387, IDPK 388, IDPK 389						
39.0-39.4	KRUZFSLK390419080	419	349	IDFK 390, IDFK 391, IDFK 392, IDFK 393, IDFK 394 IDPK 390, IDPK 391, IDPK 392, IDPK 393, IDPK 394						
39.5-39.9	KRUZFSLK395423080	423	353	IDFK 395, IDFK 396, IDFK 397, IDFK 398, IDFK 399 IDPK 395, IDPK 396, IDPK 397, IDPK 398, IDPK 399						
40.0-40.4	KRUZFSLK400427080	427	357	IDFK 400, IDFK 401, IDFK 402, IDFK 403, IDFK 404 IDPK 400, IDPK 401, IDPK 402, IDPK 403, IDPK 404						
40.5-40.9	KRUZFSLK405432080	432	362	IDFK 405, IDFK 406, IDFK 407, IDFK 408, IDFK 409 IDPK 405, IDPK 406, IDPK 407, IDPK 408, IDPK 409						
41.0-41.4	KRUZFSLK410436080	436	366	54	IDFK 410, IDFK 411, IDFK 412, IDFK 413, IDFK 414 IDPK 410, IDPK 411, IDPK 412, IDPK 413, IDPK 414	CS 400 -445 SL	Torque 5.0Nm (Max)			
41.5-41.9	KRUZFSLK415441080	441	371		IDFK 415, IDFK 416, IDFK 417, IDFK 418, IDFK 419 IDPK 415, IDPK 416, IDPK 417, IDPK 418, IDPK 419					
42.0-42.4	KRUZFSLK420445080	445	375		IDFK 420, IDFK 421, IDFK 422, IDFK 423, IDFK 424 IDPK 420, IDPK 421, IDPK 422, IDPK 423, IDPK 424					
42.5-42.9	KRUZFSLK425449080	449	379	IDFK 425, IDFK 426, IDFK 427, IDFK 428, IDFK 429 IDPK 425, IDPK 426, IDPK 427, IDPK 428, IDPK 429						
43.0-43.4	KRUZFSLK430454080	454	384	IDFK 430, IDFK 431, IDFK 432, IDFK 433, IDFK 434 IDPK 430, IDPK 431, IDPK 432, IDPK 433, IDPK 434						
43.5-43.9	KRUZFSLK435458080	458	388	IDFK 435, IDFK 436, IDFK 437, IDFK 438, IDFK 439 IDPK 435, IDPK 436, IDPK 437, IDPK 438, IDPK 439						
44.0-44.4	KRUZFSLK440463080	463	393	IDFK 440, IDFK 441, IDFK 442, IDFK 443, IDFK 444 IDPK 440, IDPK 441, IDPK 442, IDPK 443, IDPK 444						
44.5-44.9	KRUZFSLK445467080	467	397	IDFK 445, IDFK 446, IDFK 447, IDFK 448, IDFK 449 IDPK 445, IDPK 446, IDPK 447, IDPK 448, IDPK 449						
45.0-45.4	KRUZFSLK450471080	471	401	IDFK 450, IDFK 451, IDFK 452, IDFK 453, IDFK 454 IDPK 450, IDPK 451, IDPK 452, IDPK 453, IDPK 454						
45.5-45.9	KRUZFSLK455476080	476	406	IDFK 455, IDFK 456, IDFK 457, IDFK 458, IDFK 459 IDPK 455, IDPK 456, IDPK 457, IDPK 458, IDPK 459						
46.0-46.4	KRUZFSLK460480080	480	410	IDFK 460, IDFK 461, IDFK 462, IDFK 463, IDFK 464 IDPK 460, IDPK 461, IDPK 462, IDPK 463, IDPK 464						
46.5-46.9	KRUZFSLK465485080	485	415	IDFK 465, IDFK 466, IDFK 467, IDFK 468, IDFK 469 IDPK 465, IDPK 466, IDPK 467, IDPK 468, IDPK 469						
47.0-47.4	KRUZFSLK470489080	489	419	IDFK 470, IDFK 471, IDFK 472, IDFK 473, IDFK 474 IDPK 470, IDPK 471, IDPK 472, IDPK 473, IDPK 474						
47.5-47.9	KRUZFSLK475493080	493	423	IDFK 475, IDFK 476, IDFK 477, IDFK 478, IDFK 479 IDPK 475, IDPK 476, IDPK 477, IDPK 478, IDPK 479						
48.0-48.4	KRUZFSLK480498090	498	428	IDFK 480, IDFK 481, IDFK 482, IDFK 483, IDFK 484 IDPK 480, IDPK 481, IDPK 482, IDPK 483, IDPK 484						
48.5-48.9	KRUZFSLK485502090	502	432	IDFK 485, IDFK 486, IDFK 487, IDFK 488, IDFK 489 IDPK 485, IDPK 486, IDPK 487, IDPK 488, IDPK 489						
49.0-49.4	KRUZFSLK490507090	507	437	IDFK 490, IDFK 491, IDFK 492, IDFK 493, IDFK 494 IDPK 490, IDPK 491, IDPK 492, IDPK 493, IDPK 494						
49.5-49.9	KRUZFSLK495511090	511	441	IDFK 495, IDFK 496, IDFK 497, IDFK 498, IDFK 499 IDPK 495, IDPK 496, IDPK 497, IDPK 498, IDPK 499						
50.0-50.4	KRUZFSLK500515090	515	445	IDFK 500, IDFK 501, IDFK 502, IDFK 503, IDFK 504 IDPK 500, IDPK 501, IDPK 502, IDPK 503, IDPK 504						

Parametry skrawania (dla stali konstrukcyjnej) KRUZ-SLK + IDFK

Drilling options	Drill diameter	Speed n	Feed f	Cutting speed Vc	Feed rate Vf	Power requirement P	Feed force	Machining	Durability	Hole completion time
	mm	obr/min	mm/obr	m/min	mm/min	kW	KGf			
Opcja 1	12.0	780	0.20	29	156	1.3	286	↑	↑	↑
	14.0	760	0.20	33	152	1.7	331			
	16.0	740	0.21	37	155	2.2	387			
	17.5	720	0.22	40	158	2.6	434			
	18.0	700	0.22	40	154	2.6	445			
	20.5	660	0.23	42	152	3.2	518			
	21.5	620	0.24	42	149	3.3	556			
	22.0	600	0.24	41	144	3.3	568			
	24.0	570	0.26	43	148	3.9	648			
	26.0	520	0.28	42	146	4.2	732			
	27.0	500	0.28	42	140	4.3	758			
	30.0	400	0.29	38	116	4.1	856			
	32.0	380	0.29	38	110	4.3	911			
	34.0	360	0.29	38	104	4.5	964			
	36.0	340	0.29	38	99	4.7	1018			
	38.0	320	0.29	38	93	4.9	1072			
40.0	300	0.29	38	87	5.0	1126				
Opcja 2	12.0	970	0.21	37	204	1.7	295	↑	↑	↑
	14.0	970	0.21	43	204	2.3	341			
	16.0	950	0.22	48	209	3.0	398			
	17.5	930	0.24	51	223	3.7	457			
	18.0	900	0.24	51	216	3.8	470			
	20.5	850	0.25	55	213	4.6	545			
	21.5	800	0.26	54	208	4.8	584			
	22.0	780	0.26	54	203	4.9	597			
	24.0	710	0.28	54	199	5.3	678			
	26.0	640	0.30	52	192	5.7	763			
	27.0	610	0.30	52	183	5.8	791			
	30.0	500	0.30	47	150	5.5	874			
	32.0	470	0.30	47	141	5.8	930			
	34.0	440	0.31	47	136	6.1	1005			
	36.0	410	0.31	46	127	6.2	1061			
	38.0	380	0.31	45	118	6.3	1116			
40.0	350	0.31	44	109	6.3	1172				
Opcja 3	12.0	1.180	0.22	44	260	2.3	303	↑	↑	↑
	14.0	1.180	0.22	52	260	3.1	351			
	16.0	1.160	0.23	58	267	4.0	409			
	17.5	1.140	0.26	63	296	5.0	480			
	18.0	1.100	0.26	62	286	5.1	493			
	20.5	1.040	0.27	67	281	6.3	571			
	21.5	980	0.28	66	274	6.5	611			
	22.0	960	0.28	66	269	6.6	624			
	24.0	850	0.30	64	255	7.0	707			
	26.0	760	0.32	62	243	7.4	794			
	27.0	720	0.32	61	230	7.4	823			
	30.0	600	0.32	57	192	7.2	909			
	32.0	560	0.32	56	179	7.5	967			
	34.0	520	0.33	56	172	7.8	1044			
	36.0	480	0.33	54	158	7.9	1102			
	38.0	440	0.33	53	145	7.9	1160			
40.0	400	0.33	50	132	7.7	1218				
Opcja 4	12.0	1.330	0.23	50	306	2.7	311	↑	↑	↑
	14.0	1.330	0.23	58	306	3.7	360			
	16.0	1.310	0.24	66	314	4.8	420			
	17.5	1.290	0.28	71	361	6.2	502			
	18.0	1.240	0.28	70	347	6.2	516			
	20.5	1.170	0.29	75	339	7.6	596			
	21.5	1.100	0.30	74	330	7.8	637			
	22.0	1.080	0.30	75	324	8.0	651			
	24.0	930	0.32	70	298	8.2	736			
	26.0	850	0.33	69	281	8.7	809			
	27.0	800	0.33	68	264	8.6	838			
	30.0	700	0.33	66	231	8.9	927			
	32.0	650	0.33	65	215	9.2	985			
	34.0	600	0.34	64	204	9.6	1063			
	36.0	550	0.34	62	187	9.6	1122			
	38.0	500	0.34	60	170	9.4	1181			
40.0	450	0.34	57	153	9.1	1240				
Opcja 5	12.0	1.800	0.24	68	432	4.1	320	↑	↑	↑
	14.0	1.800	0.24	79	432	5.6	370			
	16.0	1.780	0.25	89	445	7.3	431			
	17.5	1.760	0.30	97	528	9.5	524			
	18.0	1.660	0.30	94	498	9.3	538			
	20.5	1.580	0.31	102	490	11.5	621			
	21.5	1.500	0.32	101	480	12.1	663			
	22.0	1.440	0.32	99	461	12.0	677			
	24.0	1.250	0.34	94	425	12.3	763			
	26.0	1.120	0.35	91	392	12.7	838			
	27.0	1.020	0.35	86	357	12.2	869			
	30.0	800	0.35	75	280	11.0	960			
	32.0	740	0.35	74	259	11.3	1021			
	34.0	680	0.36	73	245	11.6	1100			
	36.0	620	0.36	70	223	11.5	1162			
	38.0	560	0.36	67	202	11.2	1223			
40.0	500	0.36	63	180	10.8	1284				
Opcja 6	12.0	2.040	0.25	77	510	4.9	328	↓	↓	↓
	14.0	2.040	0.25	90	510	6.7	379			
	16.0	2.020	0.26	101	525	8.8	441			
	17.5	2.000	0.31	110	620	11.4	535			
	18.0	1.900	0.31	107	589	11.3	549			
	20.5	1.800	0.32	116	576	13.9	633			
	21.5	1.700	0.33	115	561	14.4	675			
	22.0	1.650	0.33	114	545	14.5	690			
	24.0	1.400	0.35	106	490	14.5	777			
	26.0	1.250	0.36	102	450	14.9	853			
	27.0	1.170	0.36	99	421	14.7	884			
	30.0	900	0.36	85	324	13.0	977			
	32.0	830	0.36	83	299	13.3	1039			
	34.0	760	0.37	81	281	13.6	1119			
	36.0	680	0.37	77	252	13.2	1181			
	38.0	610	0.37	73	226	12.7	1244			
40.0	550	0.37	69	204	12.3	1306				



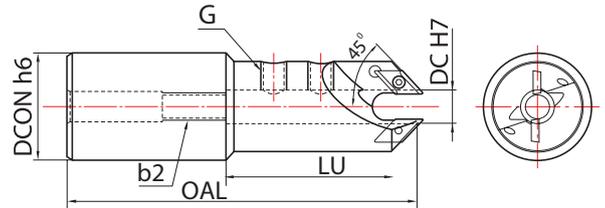


### TDMH drilling and milling tool

- Tool with interchangeable milling heads and clamping inserts
- Special HM cutting geometry and TiAlN coating allow both drilling and milling of elongated (slot) holes
- Reversible inserts enable chamfering or deburring of the hole
- Multipurpose 2-in-1 tool: drilling and milling in a single operation
- Mount the TDMH cutter in the TDMH holder before attaching XCGX inserts

Holder code	Dimensions (mm)				G
	DC	DCON	OAL	LU	
TDMH032008	8	32	110	40	M8
TDMH032010	10				
TDMH032012	12				

Other special sizes are available on request.  
Mount the TDMH cutter in the TDMH holder first before attaching the XCGX inserts..

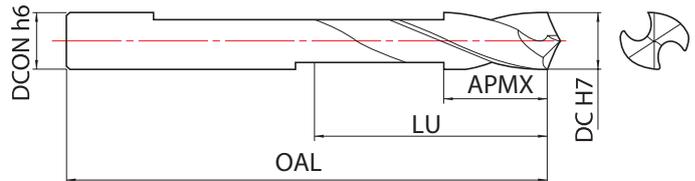


### TDM drill

- Solid carbide material with TiAlN coating
- Designed for both drilling and milling
- Ground flats matching the two XCGX inserts
- Used with the TDMH holder
- TiAlN coating for extended tool life

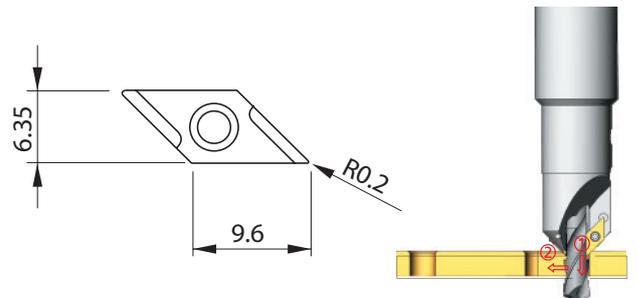
Drill code	Dimensions (mm)				
	DC	DCON	OAL	LU	APMX
TDM0080	8.0	8.0	70	30	14.6
TDM0100	10.0	10.0			
TDM0120	12.0	12.0			

The TDM drill should be used for hole depths up to 14 mm.  
If you require a deeper hole, please contact us specifying the necessary hole depth.



### XCGX 1102 insert

- Carbide insert with precision-ground edges
- Economical use of two cutting edges
- Milling insert

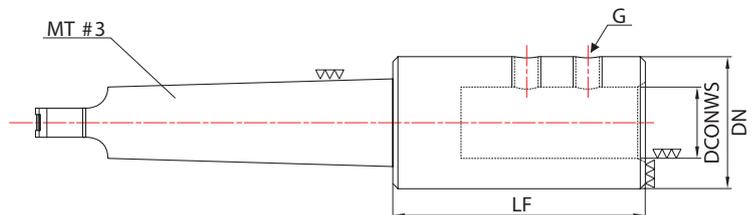


### Morse taper holder

- Morse taper holder designed to match the KRUZ body
- Side locking via retaining screw matching the body with cylindrical HA shank
- Alternative tool for overly long HSS twist drills
- Intended for conventional or unstable machining operations

Code	MT	Dimensions (mm)			G
		DN	LF	DCONWS	
MT3WLD1695	3	16	95	33	M12
MT3WLD2070		20		37	
MT3WLD2570		25	70	40	
MT3WLD3270		32	80	48	
MT3WLD4080		40		56	

MT2 and MT4 are available on customer request.

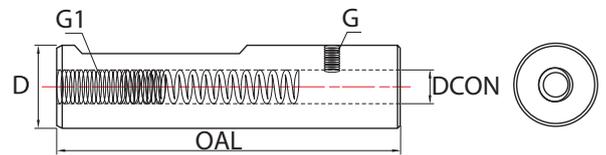


## Engraving tools – TSTH holder

- Replaceable solid-carbide scribe
- Tool body made of heat-treated tool steel
- Spring system with a retraction option for uneven surfaces
- Capability to chamfer the hole



Holder code	Dimensions (mm)			G	G1
	D	DCON	OAL		
TSTH080	20	8	83	M4x6	M8x20
TSTH-Sprężyna	6		40		

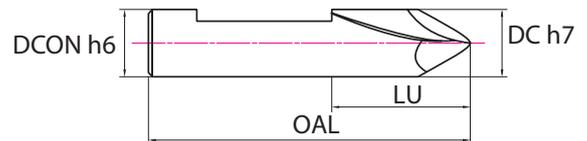


## TSD drill

- Solid-carbide tool with TN2 coating and a double cutting-edge angle for a stable engraving process
- Fits the TSTH arbor
- Geometry preventing tool chipping
- Chamfered shank section allows length adjustment

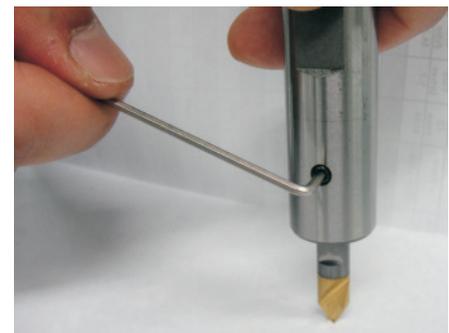
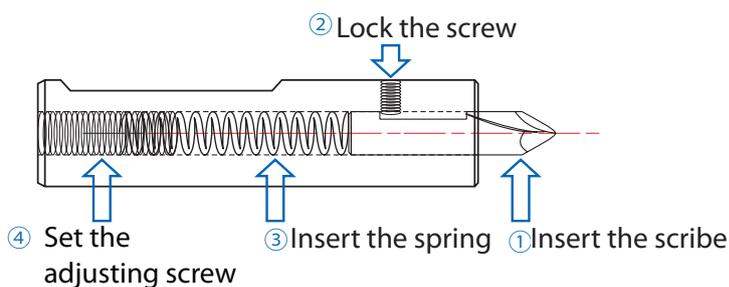


Tool code	Dimensions (mm)			
	DCON	DC	OAL	LU
TSD080TIN	8	8	37	13



## Assembly of the engraving tool

1. Insert the scribe into the body until the flat on the tool is completely covered.
2. Lock the insert using the side screw.
3. Insert the TSTH tension spring into the body.
4. Turn the adjusting screw clockwise the appropriate amount and screw it into the end of the body.
5. Loosen the locking screw by 1/8 turn to allow the spring to be tensioned or adjusted.



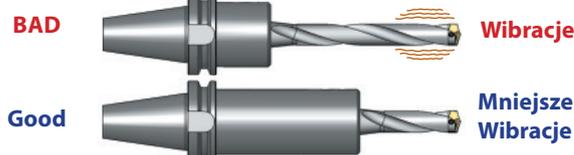
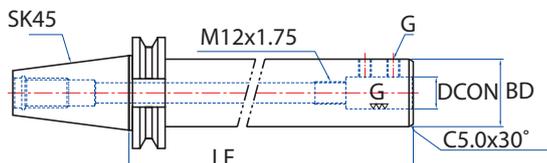
## Disassembly of the engraving tool

1. Unscrew the adjusting screw to the left.
2. Remove the TSTH spring from the tool body.
3. Loosen the locking screw.
4. Remove the TSD from the tool body.

Warning: For safety reasons, when disassembling, position the drill head lower while the end of the tool body remains in the upper position (see photo above).

## SK45/HSK holders

- SK45/HSK holders can help achieve greater rigidity
- Internal coolant supply
- Side tool clamping using fixing screws
- Ideal holder for KRUZ-SLK drill bodies and IDFK inserts
- HSK holder available on request



Code	Dimensions (mm)				Code	Dimensions (mm)				Code	Dimensions (mm)			
	DCON	LF	BD	G		DCON	LF	BD	G		DCON	LF	BD	G
SK45(A80)WLD160080	16	80	56	M10	SK45(A80)WLD200400	20	400	M12	56	SK45(A80)WLD320270	32	270	M14	60
SK45(A80)WLD160160		160			SK45(A80)WLD200450		450			SK45(A80)WLD320300		300		
SK45(A80)WLD160210		210			SK45(A80)WLD200500		500			SK45(A80)WLD320350		350		
SK45(A80)WLD160240		240			SK45(A80)WLD250080	80	SK45(A80)WLD320400			400				
SK45(A80)WLD160270		270			SK45(A80)WLD250160	160	SK45(A80)WLD320450			450				
SK45(A80)WLD160300		300			SK45(A80)WLD250210	210	SK45(A80)WLD320500			500				
SK45(A80)WLD160350		350			SK45(A80)WLD250240	240	SK45(A80)WLD400090			40	90			
SK45(A80)WLD160400		400			SK45(A80)WLD250270	270	SK45(A80)WLD400160				160			
SK45(A80)WLD160450		450			SK45(A80)WLD250300	300	SK45(A80)WLD400210				210			
SK45(A80)WLD160500		500			SK45(A80)WLD250350	350	SK45(A80)WLD400240				240			
SK45(A80)WLD200080		80			SK45(A80)WLD250400	400	SK45(A80)WLD400270				270			
SK45(A80)WLD200160		160			SK45(A80)WLD250450	450	SK45(A80)WLD400300				300			
SK45(A80)WLD200210		210			SK45(A80)WLD250500	500	SK45(A80)WLD400350				350			
SK45(A80)WLD200240		240			SK45(A80)WLD320080	80	SK45(A80)WLD400400				400			
SK45(A80)WLD200270	270	SK45(A80)WLD320160	160	SK45(A80)WLD400450	450									
SK45(A80)WLD200300	300	SK45(A80)WLD320210	210	SK45(A80)WLD400500	500									
SK45(A80)WLD200350	350	SK45(A80)WLD320240	240											

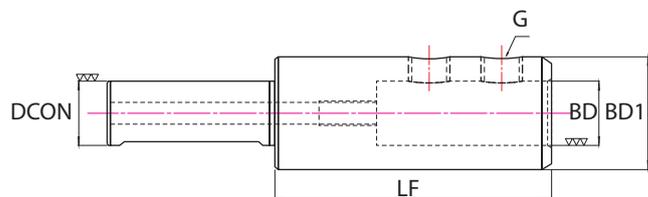
The double-ended pull stud is not included with the above holder.

\* An ISO40 holder is available on request.

## PR extension adapter

- If the drill length is too short, use the extension adapter
- Side locking
- Holds the same drill shank diameter

Code	Dimensions (mm)				G
	DCON	BD	LF	BD1	
PR16WLD16080	16	16	80	50	M10
PR16WLD16125			125		
PR16WLD16150			150		
PR16WLD16200			200		
PR16WLD16250			250		
PR20WLD20080	20	20	80	50	M12
PR20WLD20125			125		
PR20WLD20150			150		
PR20WLD20200			200		
PR20WLD20250			250		
PR25WLD25080	25	25	80	50	M14
PR25WLD25125			125		
PR25WLD25150			150		
PR25WLD25200			200		
PR25WLD25250			250		
PR32WLD32080	32	32	80	50	M14
PR32WLD32125			125		
PR32WLD32150			150		
PR32WLD32200			200		
PR32WLD32250			250		

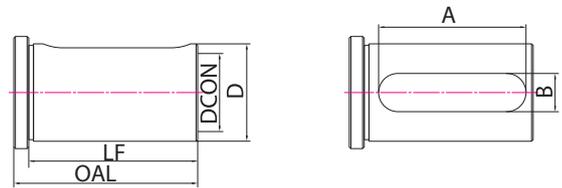


Code	Dimensions (mm)				G
	DCON	BD	LF	BD1	
PR40WLD40080	40	40	80	60	M14
PR40WLD40125			125		
PR40WLD40150			150		
PR40WLD40200			200		
PR40WLD40250			250		

## Tulejka redukcyjna WSL

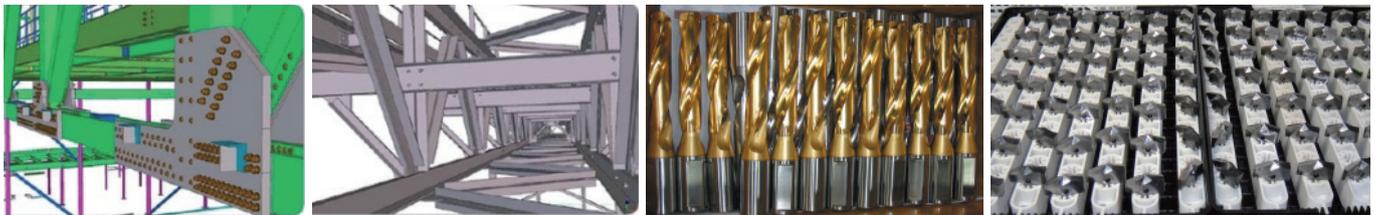
- Sleeve designed for using a smaller shank in a larger holder
- enables easy installation of the KRUZ drill body with a straight shank.

Code	Dimensions (mm)					
	D	DCON	OAL	LF	A	B
WSL3216	32	16	65	59	50	15
WSL3220		20				16
WSL3225		25				16
WSL4032	40	32	75	69	60	16



## Technical tips for machining structural steel

Remember that structural steel workpieces are often large and long, making them more difficult to clamp compared with small industrial components. As the drill moves through the structure, the workpiece can flex, bend or vibrate in ways that are not visible. To achieve better drilling results, consider the following points:

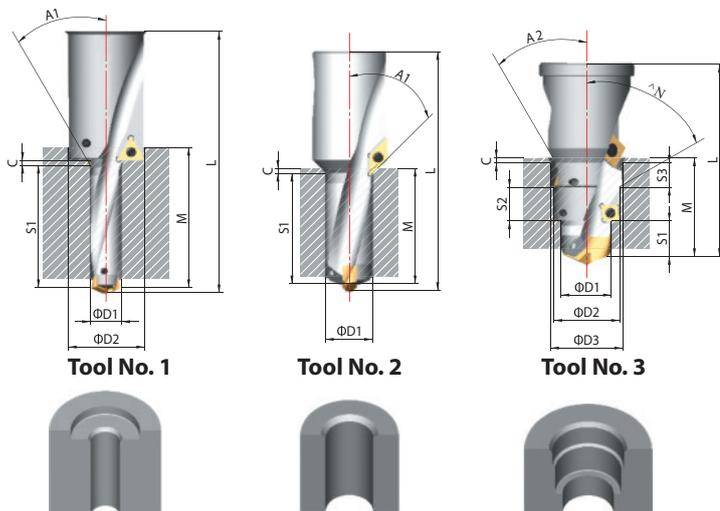


1. Do not use excessively long drills. Choose the shortest possible drill to maximise rigidity and avoid problems with vibration or breakage.
2. Structural steel usually has a thickness below 50 mm. Use KRUZ-SLK drills accordingly when drilling through these materials.
3. Avoid unnecessarily long drills (e.g. with an HSS shank). Such tools increase vibration, degrade results and require higher cutting forces.
4. If a shorter drill is needed to reduce vibration, opt for a 3xD drill; in other cases a 5xD drill may be used.
5. For severe vibration problems, use the standardised 3xD KRUZ-SLK holder instead of a longer drill.
6. The reducing sleeve lets you use a smaller-shank drill in a larger holder without having to change to a new holder.
7. The cutting-parameter table is for reference only. The machine operator must determine the appropriate cutting speeds and feeds based on the specific workpiece, clamping method and machining conditions.
8. Hole machining may require different inserts (see the photos on the opposite page).



## Special stepped drill body KRUZ

- Spiral chip flutes combined with central cooling provide excellent chip evacuation.
- The special body uses standard IDP, ID and IDF inserts.
- Inserts on stepped tools are standard R/TSC type inserts.
- Shorter cycle time delivers higher productivity at lower cost.



### Combination drills Performing multiple operations (using a single tool)

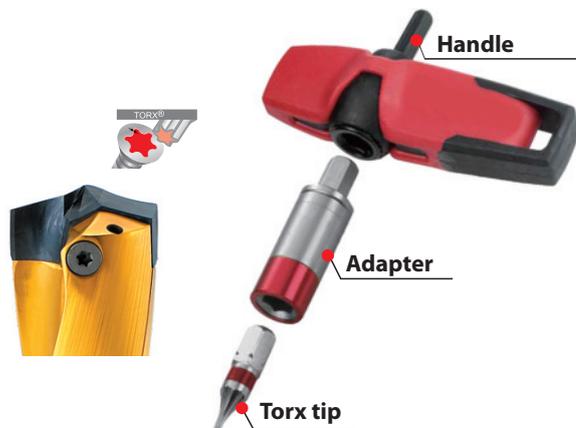
To obtain a quote, specify the tool style and provide the following information:

- Type of workpiece material
- Type of shank (HA, HB, HE or special)
- Type of chamfers or front inserts (if applicable)
- Coolant or dry cutting
- Drawing of the workpiece, if available

## Simple torque wrench

- Makes it easier to tighten screws when installing inserts
- Provides ideal protection against excessive torque thanks to dual-direction click action
- Helps prevent damage to the Torx screw from over-tightening with a conventional screwdriver

Name		Code				
Końcówka	25mm	T6	T7	T8	T15	T20
	50mm	T6L	T7L	T8L	T15L	T20L
Adapter		TX6	TX7	TX8	TX15	TX20
Max. moment obrotowy		0.6Nm	0.9Nm	1.5Nm	3.5Nm	5.0Nm



## Combined THUB tool

- Drilling + chamfering + back-chamfering in a single tool
- Uses standard ID or IDP inserts
- Lower chamfer is produced by circular interpolation
- Custom designs available on request and produced through a reference manufacturing process
- Wide industrial application, e.g. machining automotive hubs
- Short lead times



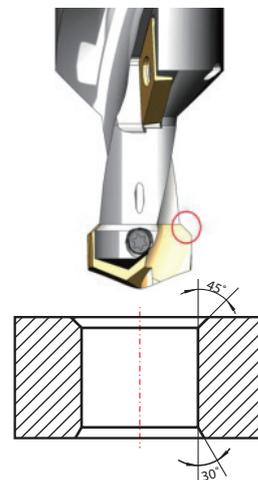
Hub part machining test



After drilling and front chamfering



After drilling and back chamfering



## “One pass” bodies

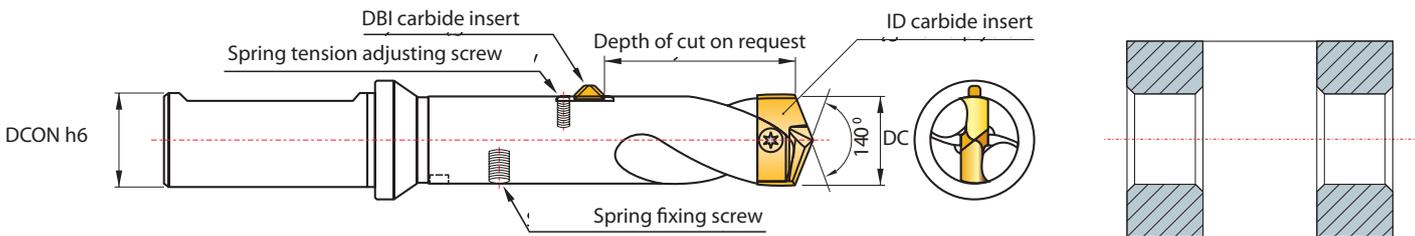
- Drilling and deburring both the lower and upper part of the hole in a single operation
- The drill body uses the standard Kruz replaceable insert
- Adjustable chamfer width via appropriate spring tension
- Replaceable chamfering insert
- Length of the working section designed according to customer requirements



**DBI**  
**DBI insert for deburring – cemented-carbide insert with a 45-degree angle (Available TiN, TiAlN)**



**Standard ID inserts**  
**(Available TiN, TiAlN)**

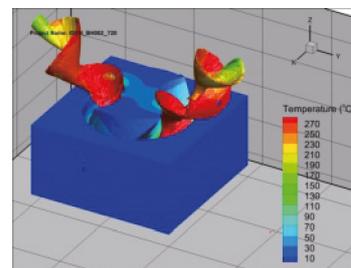
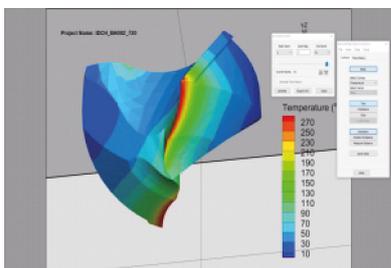


## New IDCH insert

- Patented chisel-edge geometry and tapered chip groove reduce cutting load
- Ideal tool centering
- Compatible with all bodies of the KRUZ Modular System
- Geometry for machining stainless steels and titanium
- New NaCo coating increases cutting-edge durability
- Reduces feed force by 20–30 % compared with a standard-geometry insert
- Special execution available for any diameter from Ø 8 to Ø 50.4 mm



**Heat generation during the drilling process**  
**– all heat is removed with the chip.**



## New "back spot-facing" tool

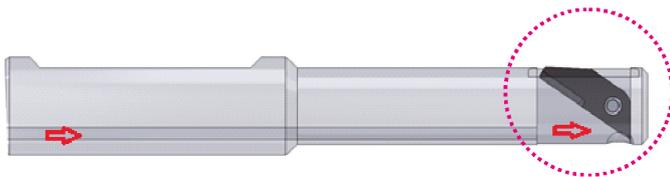
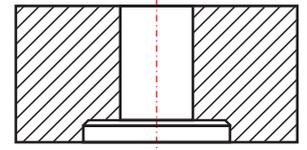
- Retractable solid-carbide blade controlled by air or coolant supply
- Insert extension adjusted by centrifugal force
- Ground insert with chipbreaker
- Replaceable blade with TiAlN coating
- Ideal for performing back spot facing
- Suitable for hard-to-reach areas, e.g. near interfering contours
- Tool made to customer drawing



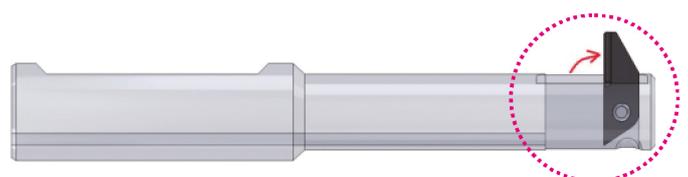
After spot facing (hole  $\varnothing$  13.1 spot faced  $\varnothing$  26)



After machining forged steel (hole  $\varnothing$  13.1 and spot-faced  $\varnothing$  26)



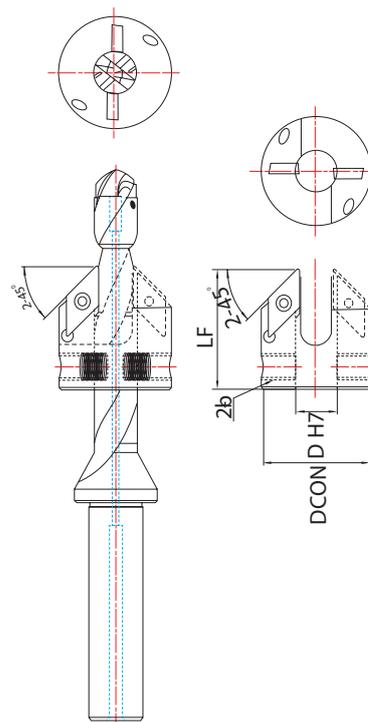
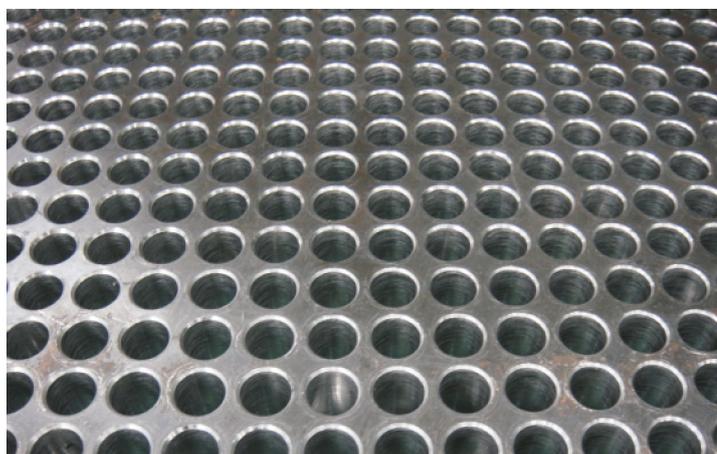
The blade is closed when air (coolant) is supplied



The blade is deployed by centrifugal force

## KRUZ combination tool for chamfering

- Combined chamfering ring fitting a modified standard KRUZ body
- YCHR chamfering ring with two XCGX 1102 chamfering inserts
- Two positioning screws mounted on the fluted part of the KRUZ body
- Available for KRUZ body diameters 8.0–50.0 mm
- Special execution on request after determining the required depth of cut





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