

The daily drill
with indexable inserts

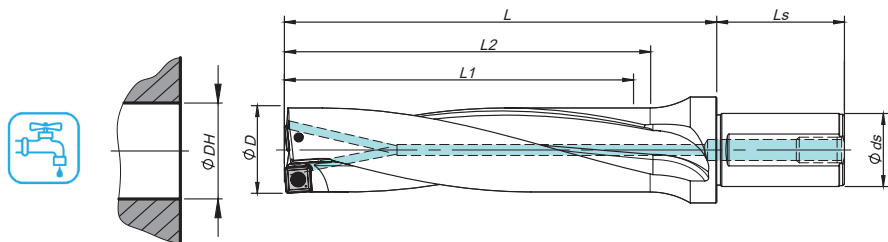


JET DRILLS

SCS & TDS


































SINCE 1916


































Øds	Ls	BP / SP
20	50	PT - 1/8
25	56	PT - 1/8
32	60	PT - 1/4
40	70	PT - 1/4


ØDH tolerance (mm)	
ØD	3D
13,0 - 21,5	-0,10 / +0,15
22,0 - 50,0	-0,12 / +0,20

Order code Código	Reference Referência Referencia	Dimensions Dimensões Dimensiones (mm)					Insert	Insert Screw 	Torx key 	Stock 
		ØD	Ø ds	L1	L2	L				
184041400	SCS 13020-3D	13,0	20	39	42	62	SPKX 050204	P0200500	XT06	
184041500	SCS 13520-3D	13,5	20	41	44	64	SPKX 050204	P0200500	XT06	
184041600	SCS 14020-3D	14,0	20	42	45	65	SPKX 050204	P0200500	XT06	
184041700	SCS 14520-3D	14,5	20	44	47	67	SPKX 050204	P0200500	XT06	
184041800	SCS 15020-3D	15,0	20	45	48	68	SPKX 050204	P0200500	XT06	
184041900	SCS 15525-3D	15,5	25	47	50	75	SPKX 060204	P0220500	XT07	
184042000	SCS 16025-3D	16,0	25	48	51	76	SPKX 060204	P0220500	XT07	
184042100	SCS 16525-3D	16,5	25	50	53	78	SPKX 060204	P0220500	XT07	
184042200	SCS 17025-3D	17,0	25	51	54	79	SPKX 060204	P0220500	XT07	
184042300	SCS 17525-3D	17,5	25	53	56	81	SPKX 060204	P0220500	XT07	
184042400	SCS 18025-3D	18,0	25	54	57	82	SPKX 060204	P0220500	XT07	
184042500	SCS 18525-3D	18,5	25	56	59	84	SPKX 060204	P0220500	XT07	
184042600	SCS 19025-3D	19,0	25	57	60	85	SPKX 060204	P0220500	XT07	
184042700	SCS 19525-3D	19,5	25	59	62	87	SPKX 060204	P0220500	XT07	
184042800	SCS 20025-3D	20,0	25	60	63	88	SPKX 060204	P0220500	XT07	
184042900	SCS 20525-3D	20,5	25	62	65	90	SPKX 060204	P0220500	XT07	
184043000	SCS 21025-3D	21,0	25	63	66	91	SPKX 060204	P0220500	XT07	
184043100	SCS 21525-3D	21,5	25	65	68	93	SPKX 060204	P0220500	XT07	
184043200	SCS 22032-3D	22,0	32	66	69	99	SPKX 07T308	P0250704	XT08	
184043300	SCS 22532-3D	22,5	32	68	71	101	SPKX 07T308	P0250704	XT08	
184043400	SCS 23032-3D	23,0	32	69	72	102	SPKX 07T308	P0250704	XT08	
184043500	SCS 23532-3D	23,5	32	71	74	104	SPKX 07T308	P0250704	XT08	
184043600	SCS 24032-3D	24,0	32	72	75	105	SPKX 07T308	P0250704	XT08	
184043700	SCS 24532-3D	24,5	32	74	77	107	SPKX 07T308	P0250704	XT08	
184043800	SCS 25032-3D	25,0	32	75	78	108	SPKX 07T308	P0250704	XT08	
184043900	SCS 25532-3D	25,5	32	77	80	110	SPKX 07T308	P0250704	XT08	
184044000	SCS 26032-3D	26,0	32	78	81	111	SPKX 07T308	P0250704	XT08	

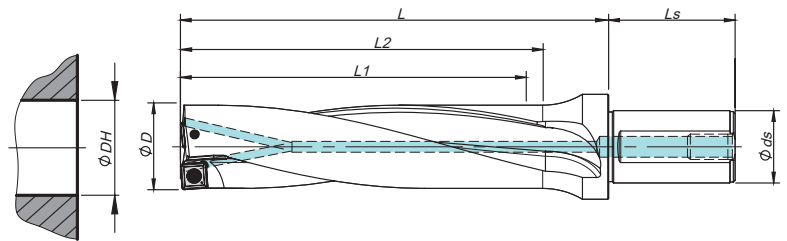
 Stock item | Produto de stock | Itens de stock

 Available under request | Disponível sobre consulta | Disponible bajo consulta































Order code Código	Reference Referência Referencia	Dimensions Dimensões Dimensiones (mm)					Insert	Insert Screw	Torx key	Stock
		ØD	Ø ds	L1	L2	L				
184044100	SCS 26532-3D	26,5	32	80	83	113	SPKX 07T308	P0250704	XT08	
184044200	SCS 27032-3D	27,0	32	81	84	114	SPKX 07T308	P0250704	XT08	
184044400	SCS 27532-3D	27,5	32	83	86	116	SPKX 07T308	P0250704	XT08	
184044500	SCS 28032-3D	28,0	32	84	87	117	SPKX 090408	P0350903	XT15	
184044600	SCS 28532-3D	28,5	32	86	89	119	SPKX 090408	P0350903	XT15	
184044700	SCS 29032-3D	29,0	32	87	90	120	SPKX 090408	P0350903	XT15	
184044800	SCS 29532-3D	29,5	32	89	93	123	SPKX 090408	P0350903	XT15	
184044900	SCS 30032-3D	30,0	32	90	95	125	SPKX 090408	P0350903	XT15	
184045000	SCS 31032-3D	31,0	32	93	98	128	SPKX 090408	P0350903	XT15	
184045100	SCS 32032-3D	32,0	32	96	101	131	SPKX 090408	P0350903	XT15	
184045200	SCS 33032-3D	33,0	32	99	104	134	SPKX 090408	P0350903	XT15	
184045300	SCS 34040-3D	34,0	40	102	107	142	SPKX 110408	P0401200	XT15	
184045400	SCS 35040-3D	35,0	40	105	110	145	SPKX 110408	P0401200	XT15	
184045500	SCS 36040-3D	36,0	40	108	113	148	SPKX 110408	P0401200	XT15	
184045600	SCS 37040-3D	37,0	40	111	116	151	SPKX 110408	P0401200	XT15	
184045700	SCS 38040-3D	38,0	40	114	119	154	SPKX 110408	P0401200	XT15	
184045800	SCS 39040-3D	39,0	40	117	122	157	SPKX 110408	P0401200	XT15	
184045900	SCS 40040-3D	40,0	40	120	125	160	SPKX 110408	P0401200	XT15	
184046000	SCS 41040-3D	41,0	40	123	128	163	SPKX 110408	P0401200	XT15	
184046100	SCS 42040-3D	42,0	40	126	131	166	SPKX 140512	P0501300	XT20	
184046200	SCS 43040-3D	43,0	40	129	134	169	SPKX 140512	P0501300	XT20	
184046300	SCS 44040-3D	44,0	40	132	137	172	SPKX 140512	P0501300	XT20	
184046400	SCS 45040-3D	45,0	40	135	140	175	SPKX 140512	P0501300	XT20	
184046500	SCS 46040-3D	46,0	40	138	143	178	SPKX 140512	P0501300	XT20	
184046600	SCS 47040-3D	47,0	40	141	146	181	SPKX 140512	P0501300	XT20	
184046700	SCS 48040-3D	48,0	40	144	149	184	SPKX 140512	P0501300	XT20	
184046800	SCS 49040-3D	49,0	40	147	152	187	SPKX 140512	P0501300	XT20	
184046900	SCS 50040-3D	50,0	40	150	155	190	SPKX 140512	P0501300	XT20	


 Stock item | Produto de stock | Itens de stock


 Available under request | Disponível sobre consulta | Disponible bajo consulta


































Øds	Ls	BP / SP	ØDH tolerance (mm)	
			ØD	4D
20	50	PT-1/8	13,0 - 21,5	-0,15 / +0,20
25	56	PT-1/8	22,0 - 50,0	-0,15 / +0,25
32	60	PT-1/4		
40	70	PT-1/4		

Order code Código	Reference Referência Referencia	Dimensions Dimensões Dimensiones (mm)					Insert	Insert Screw 	Torx key 	Stock 
		ØD	Ø ds	L1	L2	L				
184047100	SCS 13020-4D	13,0	20	52	55	75	SPKX 050204	P0200500	XT06	
184047200	SCS 13520-4D	13,5	20	54	57	77	SPKX 050204	P0200500	XT06	
184047300	SCS 14020-4D	14,0	20	56	59	79	SPKX 050204	P0200500	XT06	
184047400	SCS 14520-4D	14,5	20	58	61	81	SPKX 050204	P0200500	XT06	
184047500	SCS 15020-4D	15,0	20	60	63	83	SPKX 050204	P0200500	XT06	
184047600	SCS 15525-4D	15,5	25	62	65	90	SPKX 060204	P0220500	XT07	
184047700	SCS 16025-4D	16,0	25	64	67	92	SPKX 060204	P0220500	XT07	
184047800	SCS 16525-4D	16,5	25	66	69	94	SPKX 060204	P0220500	XT07	
184047900	SCS 17025-4D	17,0	25	68	71	96	SPKX 060204	P0220500	XT07	
184048000	SCS 17525-4D	17,5	25	70	73	98	SPKX 060204	P0220500	XT07	
184048100	SCS 18025-4D	18,0	25	72	75	100	SPKX 060204	P0220500	XT07	
184048200	SCS 18525-4D	18,5	25	74	77	102	SPKX 060204	P0220500	XT07	
184048300	SCS 19025-4D	19,0	25	76	79	104	SPKX 060204	P0220500	XT07	
184048400	SCS 19525-4D	19,5	25	78	81	106	SPKX 060204	P0220500	XT07	
184048500	SCS 20025-4D	20,0	25	80	83	108	SPKX 060204	P0220500	XT07	
184048600	SCS 20525-4D	20,5	25	82	85	110	SPKX 060204	P0220500	XT07	
184048700	SCS 21025-4D	21,0	25	84	87	112	SPKX 060204	P0220500	XT07	
184048800	SCS 21525-4D	21,5	25	86	89	114	SPKX 060204	P0220500	XT07	
184048900	SCS 22032-4D	22,0	32	88	91	121	SPKX 07T308	P0250704	XT08	
184049000	SCS 22532-4D	22,5	32	90	93	123	SPKX 07T308	P0250704	XT08	
184049100	SCS 23032-4D	23,0	32	92	95	125	SPKX 07T308	P0250704	XT08	
184049200	SCS 23532-4D	23,5	32	94	97	127	SPKX 07T308	P0250704	XT08	
184049300	SCS 24032-4D	24,0	32	96	99	129	SPKX 07T308	P0250704	XT08	
184049400	SCS 24532-4D	24,5	32	98	101	131	SPKX 07T308	P0250704	XT08	
184049500	SCS 25032-4D	25,0	32	100	103	133	SPKX 07T308	P0250704	XT08	
184049600	SCS 25532-4D	25,5	32	102	105	135	SPKX 07T308	P0250704	XT08	
184049700	SCS 26032-4D	26,0	32	104	107	137	SPKX 07T308	P0250704	XT08	

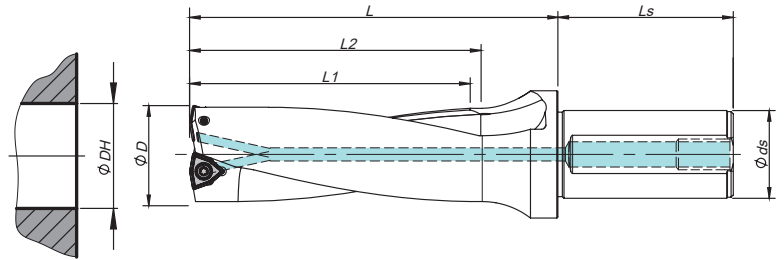
 Stock item | Produto de stock | Itens de stock

 Available under request | Disponível sobre consulta | Disponible bajo consulta































Order code Código	Reference Referência Referencia	Dimensions Dimensões Dimensiones (mm)					Insert	Insert Screw	Torx key	Stock
		ØD	Ø ds	L1	L2	L				
184049800	SCS 26532-4D	26,5	32	106	109	139	SP... 07T308	P0250704	XT08	
184049900	SCS 27032-4D	27,0	32	108	111	141	SP... 07T308	P0250704	XT08	
184050000	SCS 27532-4D	27,5	32	110	113	143	SP... 07T308	P0250704	XT08	
184050100	SCS 28032-4D	28,0	32	112	115	145	SP... 090408	P0350903	XT15	
184050200	SCS 28532-4D	28,5	32	114	117	147	SP... 090408	P0350903	XT15	
184050300	SCS 29032-4D	29,0	32	116	120	150	SP... 090408	P0350903	XT15	
184050400	SCS 29532-4D	29,5	32	118	123	153	SP... 090408	P0350903	XT15	
184050500	SCS 30032-4D	30,0	32	120	125	155	SP... 090408	P0350903	XT15	
184050600	SCS 31032-4D	31,0	32	124	129	159	SP... 090408	P0350903	XT15	
184050700	SCS 32032-4D	32,0	32	128	133	163	SP... 090408	P0350903	XT15	
184050800	SCS 33032-4D	33,0	32	132	137	167	SP... 090408	P0350903	XT15	
184050900	SCS 34040-4D	34,0	40	136	141	176	SP... 110408	P0401200	XT15	
184051000	SCS 35040-4D	35,0	40	140	145	180	SP... 110408	P0401200	XT15	
184051100	SCS 36040-4D	36,0	40	144	149	184	SP... 110408	P0401200	XT15	
184051200	SCS 37040-4D	37,0	40	148	153	188	SP... 110408	P0401200	XT15	
184051300	SCS 38040-4D	38,0	40	152	157	192	SP... 110408	P0401200	XT15	
184051400	SCS 39040-4D	39,0	40	156	161	196	SP... 110408	P0401200	XT15	
184051500	SCS 40040-4D	40,0	40	160	165	200	SP... 110408	P0401200	XT15	
184051600	SCS 41040-4D	41,0	40	164	169	204	SP... 110408	P0401200	XT15	
184051700	SCS 42040-4D	42,0	40	168	173	208	SP... 140512	P0501300	XT20	
184051800	SCS 43040-4D	43,0	40	172	177	212	SP... 140512	P0501300	XT20	
184051900	SCS 44040-4D	44,0	40	176	181	216	SP... 140512	P0501300	XT20	
184052000	SCS 45040-4D	45,0	40	180	185	220	SP... 140512	P0501300	XT20	
184052100	SCS 46040-4D	46,0	40	184	189	224	SP... 140512	P0501300	XT20	
184052200	SCS 47040-4D	47,0	40	188	193	228	SP... 140512	P0501300	XT20	
184052300	SCS 48040-4D	48,0	40	192	197	232	SP... 140512	P0501300	XT20	
184052400	SCS 49040-4D	49,0	40	196	201	236	SP... 140512	P0501300	XT20	
184052500	SCS 50040-4D	50,0	40	200	205	240	SP... 140512	P0501300	XT20	


 Stock item | Produto de stock | Itens de stock


 Available under request | Disponível sobre consulta | Disponible bajo consulta










































Øds	Ls	BP / SP	ØDH tolerance (mm)	
			ØD	3D
20	50	PT-1/8	13,0 - 21,5	-0,10 / +0,15
25	56	PT-1/8	22,0 - 50,0	-0,12 / +0,20
32	60	PT-1/4	50,0 - 58,0	-0,15 / +0,25
40	70	PT-1/4		


Order code Código	Reference Referência Referencia	Dimensions Dimensões Dimensiones (mm)					Insert	Insert Screw 	Torx key 	Stock 
		ØD	Ø ds	L1	L2	L				
184034600	TDS 13020-3D	13,0	20	39	42	62	WCKX 02T104	P0180500	XT06	
184034700	TDS 13520-3D	13,5	20	41	44	64	WCKX 02T104	P0180500	XT06	
184034800	TDS 14020-3D	14,0	20	42	45	65	WCKX 02T104	P0180500	XT06	
184034900	TDS 14520-3D	14,5	20	44	47	67	WCKX 02T104	P0180500	XT06	
184035000	TDS 15020-3D	15,0	20	45	48	68	WCKX 02T104	P0180500	XT06	
184035100	TDS 15520-3D	15,5	20	47	50	70	WCKX 02T104	P0180500	XT06	
184035200	TDS 16025-3D	16,0	25	48	51	76	WCKX 030204	P0220500	XT07	
184035300	TDS 16525-3D	16,5	25	50	53	78	WCKX 030204	P0220500	XT07	
184035400	TDS 17025-3D	17,0	25	51	54	79	WCKX 030204	P0220500	XT07	
184035500	TDS 17525-3D	17,5	25	53	56	81	WCKX 030204	P0220500	XT07	
184035600	TDS 18025-3D	18,0	25	54	57	82	WCKX 030204	P0220500	XT07	
184035700	TDS 18525-3D	18,5	25	56	59	84	WCKX 030204	P0220500	XT07	
184035800	TDS 19025-3D	19,0	25	57	60	85	WCKX 030204	P0220500	XT07	
184035900	TDS 19525-3D	19,5	25	59	62	87	WCKX 030204	P0220500	XT07	
184036000	TDS 20025-3D	20,0	25	60	63	88	WCKX 030204	P0220500	XT07	
184036100	TDS 20525-3D	20,5	25	62	65	90	WCKX 040204	P0250503	XT08	
184036200	TDS 21025-3D	21,0	25	63	66	91	WCKX 040204	P0250503	XT08	
184036300	TDS 21525-3D	21,5	25	65	68	93	WCKX 040204	P0250503	XT08	
184036400	TDS 22025-3D	22,0	25	66	69	94	WCKX 040204	P0250503	XT08	
184036500	TDS 22525-3D	22,5	25	68	71	96	WCKX 040204	P0250503	XT08	
184036600	TDS 23025-3D	23,0	25	69	72	97	WCKX 040204	P0250503	XT08	
184036700	TDS 23525-3D	23,5	25	71	74	99	WCKX 040204	P0250503	XT08	
184036800	TDS 24025-3D	24,0	25	72	75	100	WCKX 040204	P0250503	XT08	
184036900	TDS 24525-3D	24,5	25	74	77	102	WCKX 040204	P0250503	XT08	
184037000	TDS 25025-3D	25,0	25	75	78	103	WCKX 040204	P0250503	XT08	
184037100	TDS 25532-3D	25,5	32	77	80	110	WCKX 050308	P0300701	XT08	
184037200	TDS 26032-3D	26,0	32	78	81	111	WCKX 050308	P0300701	XT08	

 Stock item | Produto de stock | Itens de stock

 Available under request | Disponível sobre consulta | Disponible bajo consulta

Order code Código	Reference Referência Referencia	Dimensions Dimensões Dimensiones (mm)					Insert	Insert Screw	Torx key	Stock
		ØD	Ø ds	L1	L2	L				
184037300	TDS 26532-3D	26,5	32	80	83	113	WCKX 050308	P0300701	XT08	
184037400	TDS 27032-3D	27,0	32	81	84	114	WCKX 050308	P0300701	XT08	
184037500	TDS 27532-3D	27,5	32	83	86	116	WCKX 050308	P0300701	XT08	
184037600	TDS 28032-3D	28,0	32	84	87	117	WCKX 050308	P0300701	XT08	
184037700	TDS 28532-3D	28,5	32	86	89	119	WCKX 050308	P0300701	XT08	
184037800	TDS 29032-3D	29,0	32	87	90	120	WCKX 050308	P0300701	XT08	
184037900	TDS 29532-3D	29,5	32	89	92	122	WCKX 050308	P0300701	XT08	
184038000	TDS 30032-3D	30,0	32	90	93	123	WCKX 050308	P0300701	XT08	
184038100	TDS 31032-3D	31,0	32	93	96	126	WCKX 06T308	P0350903	XT15	
184038200	TDS 32032-3D	32,0	32	96	99	129	WCKX 06T308	P0350903	XT15	
184038300	TDS 33032-3D	33,0	32	99	102	132	WCKX 06T308	P0350903	XT15	
184038400	TDS 34032-3D	34,0	32	102	105	135	WCKX 06T308	P0350903	XT15	
184038500	TDS 35032-3D	35,0	32	105	108	138	WCKX 06T308	P0350903	XT15	
184038600	TDS 36032-3D	36,0	32	108	111	141	WCKX 06T308	P0350903	XT15	
184038700	TDS 37032-3D	37,0	32	111	114	144	WCKX 06T308	P0350903	XT15	
184038800	TDS 38032-3D	38,0	32	114	117	147	WCKX 06T308	P0350903	XT15	
184038900	TDS 39032-3D	39,0	32	117	120	150	WCKX 06T308	P0350903	XT15	
184039000	TDS 40032-3D	40,0	32	120	123	153	WCKX 06T308	P0350903	XT15	
184039100	TDS 41032-3D	41,0	32	123	126	156	WCKX 06T308	P0350903	XT15	
184039200	TDS 42040-3D	42,0	40	126	129	164	WCKX 080408	P0401101	XT15	
184039300	TDS 43040-3D	43,0	40	129	132	167	WCKX 080408	P0401101	XT15	
184039400	TDS 44040-3D	44,0	40	132	135	170	WCKX 080408	P0401101	XT15	
184039500	TDS 45040-3D	45,0	40	135	138	173	WCKX 080408	P0401101	XT15	
184039600	TDS 46040-3D	46,0	40	138	141	176	WCKX 080408	P0401101	XT15	
184039700	TDS 47040-3D	47,0	40	141	144	179	WCKX 080408	P0401101	XT15	
184039800	TDS 48040-3D	48,0	40	144	147	182	WCKX 080408	P0401101	XT15	
184039900	TDS 49040-3D	49,0	40	147	150	185	WCKX 080408	P0401101	XT15	
184040000	TDS 50040-3D	50,0	40	150	153	188	WCKX 080408	P0401101	XT15	
184040100	TDS 51040-3D	51,0	40	153	156	191	WCKX 080408	P0401101	XT15	
184040200	TDS 52040-3D	52,0	40	156	159	194	WCKX 080408	P0401101	XT15	
184040300	TDS 53040-3D	53,0	40	159	162	197	WCKX 080408	P0401101	XT15	
184040400	TDS 54040-3D	54,0	40	162	165	200	WCKX 080408	P0401101	XT15	
184040500	TDS 55040-3D	55,0	40	165	168	203	WCKX 080408	P0401101	XT15	
184040600	TDS 56040-3D	56,0	40	168	171	206	WCKX 080408	P0401101	XT15	
184040700	TDS 57040-3D	57,0	40	171	174	209	WCKX 080408	P0401101	XT15	
184040800	TDS 58040-3D	58,0	40	174	177	212	WCKX 080408	P0401101	XT15	

 Stock item | Produto de stock | Itens de stock

 Available under request | Disponível sobre consulta | Disponible bajo consulta

INSERTS | Pastilhas | Plaquetas

SP.X | Inserts | Pastilhas | Plaquetas

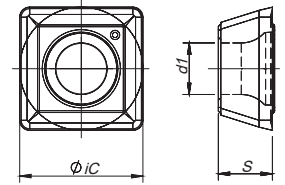
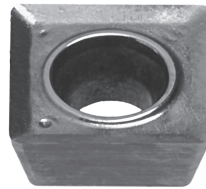
SPKX



SPKX
(PHC | PHL grade)



SPHX-LN



(1) Geometry code	ISO Reference	P				M				K		S				N	Dimensions Dimensões Dimensiones (mm)			
		PVD				PVD				PVD		PVD				UNC				
		68	66	J3	3B	68	66	J3	3B	68	66	68	66	J3	3B	10				
1111281	SPKX 050204	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	5,00	2,38	2,20	0,40
1111282	SPKX 060204	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	6,00	2,38	2,55	0,40
1142099	SPHX 060204-LN															⊗	6,00	2,38	2,55	0,40
1111283	SPKX 07T308	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	7,94	3,97	2,85	0,80
1111284	SPKX 090408	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9,80	4,30	4,10	0,80
1111285	SPKX 110408	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	11,50	4,80	4,40	0,80
1111286	SPKX 140512	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	14,30	5,20	5,75	1,20

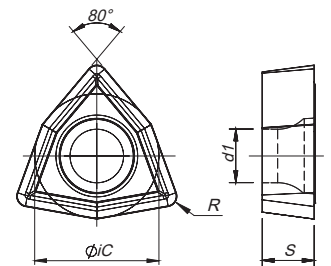
⊗ Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta
Disponível bajo consulta

⊗ Available until sold out | Disponível até acabar o stock
Disponível hasta acabar el stock

Insert order code = (1) Geometry Code + (2) Grade Code

WCKX | Inserts | Pastilhas | Plaquetas



(1) Geometry code	ISO Reference	P				M		K		S		Dimensions Dimensões Dimensiones (mm)			
		PVD				PVD		CVD		PVD					
		68	66	I5	78	68	66	68	66	68	66				
1140300	WCKX 02T104	⊗	⊗	○	○	⊗	⊗	⊗	⊗	⊗	⊗	4,76	1,98	2,00	0,40
1140276	WCKX 030204	⊗	⊗	○	○	⊗	⊗	⊗	⊗	⊗	⊗	5,56	2,38	2,55	0,40
1140277	WCKX 040204	⊗	⊗	○	○	⊗	⊗	⊗	⊗	⊗	⊗	6,35	2,38	2,85	0,40
1140278	WCKX 050308	⊗	⊗	○	○	⊗	⊗	⊗	⊗	⊗	⊗	7,94	3,18	3,50	0,80
1140279	WCKX 06T308	⊗	⊗	○	○	⊗	⊗	⊗	⊗	⊗	⊗	9,55	3,97	4,10	0,80
1140280	WCKX 080408	⊗	⊗	○	○	⊗	⊗	⊗	⊗	⊗	⊗	12,70	4,76	5,60	0,80

⊗ Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta | Disponível bajo consulta

Insert order code = (1) Geometry Code + (2) Grade Code



Order Code	Reference Referência Referencia
290031400	P0200500
290030600	P0220500
290031300	P0250704
290030900	P0350903
290047500	P0401200
290031700	P0501300
290025800	P0180500
290033100	P0250503
290030800	P0300701
290031000	P0401101

Order Code	Reference Referência Referencia
290011400	XT06
290012900	XT07
290011700	XT08
290025700	XT09
290012400	XT15
290013200	XT20
290074700	TT15
290056000	TT20
290056100	TT25

GRADES || Graus | Calidades

PH6920

P10-P35
M10-M25
K10-K30

Coated grade over a tough wear resistance substrate for general purpose machining.

PH6930

P20-P40
M20-M30
K20-K40

Grade suitable for applications with instability conditions. Excellent solution for medium cutting speed applications.

PHC930 | PHL930

P20-P40
M20-M30
K20-K40

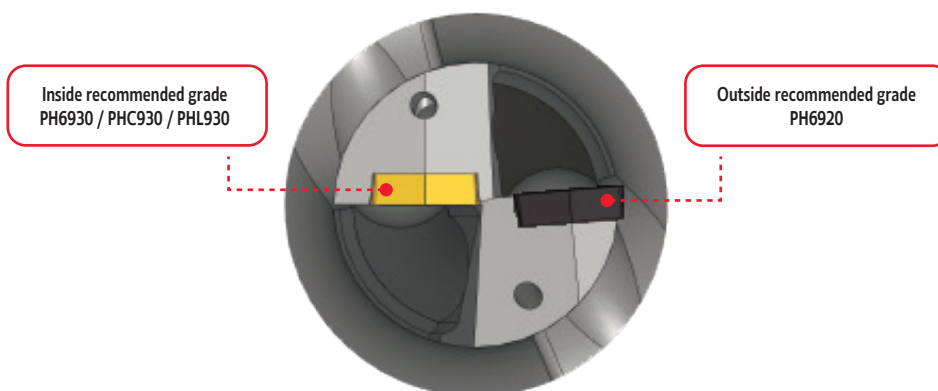
Grade suitable for applications with instability conditions. Excellent solution for medium cutting speed applications. Coated in Yellow to be visually distinguishable.

PH0910

N05-N15

Uncoated carbide micro-grain grade combining a good abrasive wear resistance and toughness. Suitable for rough to finish operations of aluminum alloys.

Grades recommendation for drilling systems



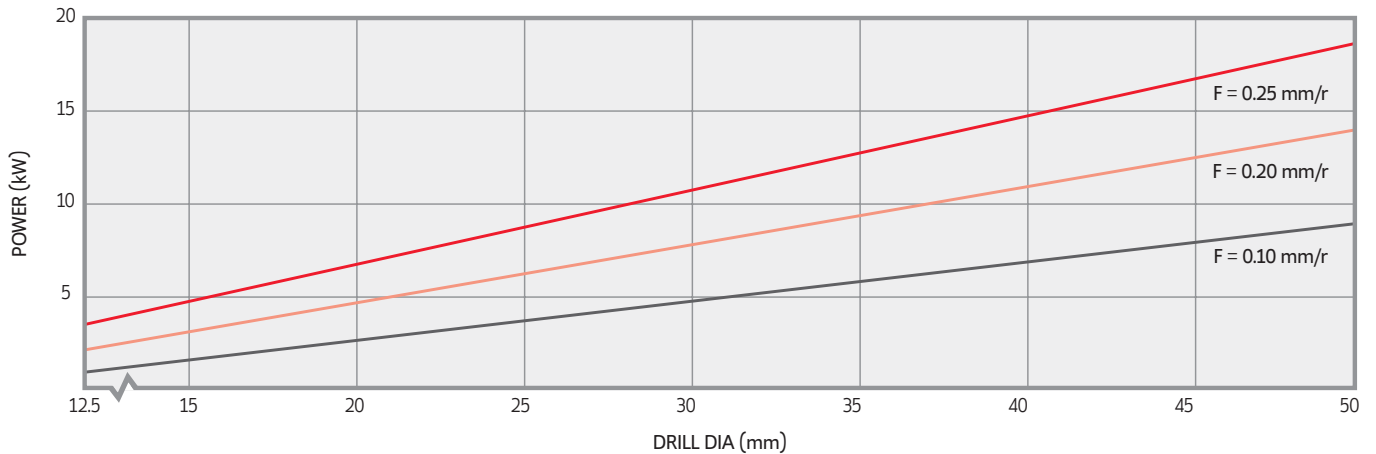
Note: This recommendation should be applied on High Alloy Steels, Stainless Steels and HRSA materials.

JET DRILLS - SCS DRILL TYPE

Recommended Speeds and Feeds | Parâmetros de Corte Recomendados | Recomendaciones de Datos de Corte

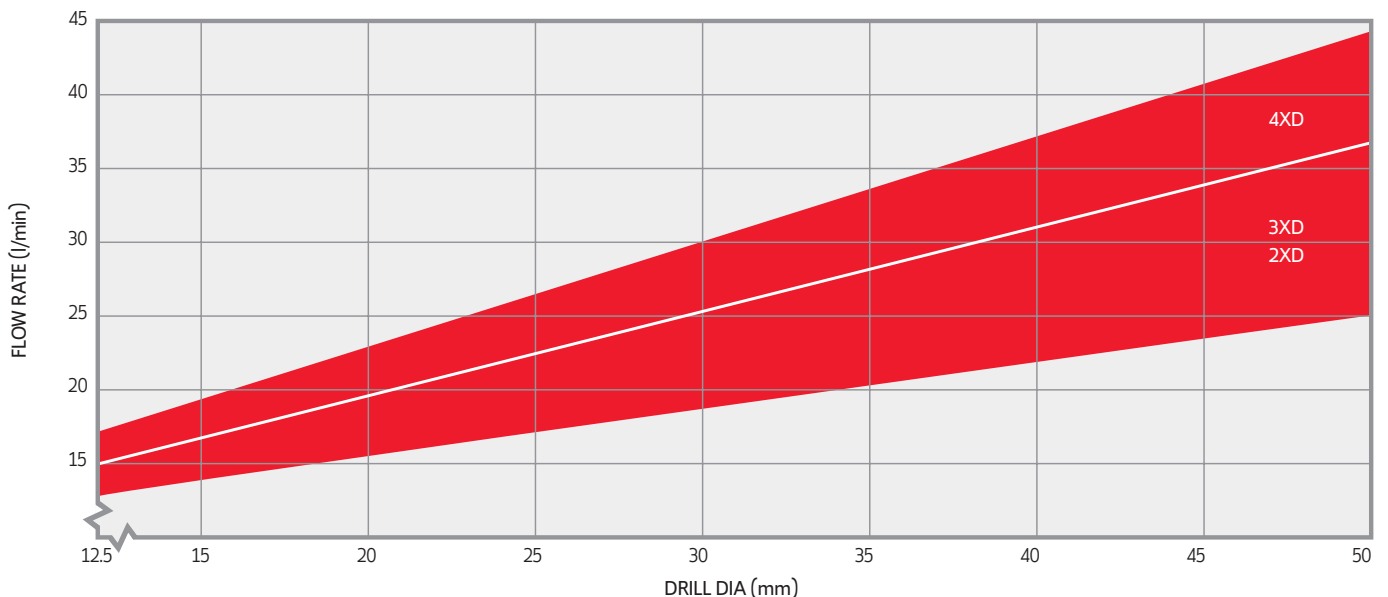
ISO	Material Group Grupo Materiais Grupo Materiales	Vc (m/min)	f (mm/rev)								
			Ø12,5-15	Ø15,5-21,5	Ø22-27,5	Ø28-33	Ø34-41	Ø42-50	Ø50-60	Ø60-75	Ø75-80
P	UNALLOYED STEEL (-0,25%)	180-250	0,05-0,08	0,06-0,10	0,06-0,12	0,07-0,13	0,08-0,15	0,08-0,16	0,06-0,12	0,08-0,12	0,08-0,12
	LOW-ALLOY STEEL (0,25%)	160-220	0,06-0,12	0,08-0,15	0,10-0,18	0,12-0,22	0,12-0,24	0,13-0,25	0,10-0,14	0,12-0,18	0,11-0,18
	LOW-ALLOY STEEL	150-220	0,06-0,12	0,08-0,14	0,10-0,18	0,12-0,22	0,12-0,23	0,13-0,24	0,08-0,15	0,10-0,18	0,10-0,18
	HIGH-ALLOY STEEL	130-180	0,06-0,10	0,08-0,15	0,10-0,20	0,12-0,23	0,12-0,24	0,13-0,25	0,08-0,14	0,09-0,15	0,09-0,14
M	STAINLESS STEEL	170-240	0,05-0,10	0,06-0,12	0,08-0,15	0,09-0,16	0,10-0,17	0,11-0,19	0,06-0,13	0,08-0,15	0,08-0,14
K	GREY CAST IRON	180-250	0,06-0,12	0,08-0,16	0,12-0,20	0,15-0,25	0,16-0,28	0,18-0,30	0,12-0,20	0,15-0,20	0,15-0,20
	CAST IRON WITH NODULAR CAST	130-200	0,06-0,10	0,08-0,15	0,10-0,18	0,12-0,20	0,15-0,23	0,16-0,25	0,10-0,15	0,09-0,18	0,10-0,18

Power Requirements | Requisitos de Potência | Requisitos de Potencia



- These chart is based on machining experiences using steels with a hardness of 200-250HB and cutting speed of 100m/min.
- For cast iron the effective power requirement is around 30% lower.

Coolant Application Chart | Tabela Aplicação de Refrigeração | Tabla Aplicación de Refrigerante



JET DRILLS - SCS DRILL TYPE

Hole Tolerance and Maximum Hole Size With Radial Adjustment Tolerância do Furo e Dimensão Máxima do Furo com Ajuste Radial Tolerancia de los Agujeros y el Tamaño Del agujero Máximo con Ajuste Radial

Drill D	3xD		
	Normal	Radial Adjust	Max. Hole D
13	13.16	0.50	14.0
14	14.10	0.50	15.0
15	15.10	0.50	16.0
16	16.07	0.50	17.0
17	17.08	0.50	18.0
18	18.05	0.50	19.0
19	19.08	0.50	20.0
20	20.06	0.50	21.0
21	20.97	0.25	21.5
22	21.94	0.50	23.0
23	23.10	0.50	24.0
24	24.10	0.50	25.0
25	25.06	0.50	26.0
26	26.03	0.25	26.5
27	27.05	0.25	27.5
28	28.11	0.50	29.0
29	28.54	0.50	30.0
30	30.23	0.50	31.0
31	31.07	0.25	31.5
32	32.06	0.25	32.5
33	33.12	0.25	33.5
34	34.10	0.50	35.0
35	35.07	0.50	36.0
36	36.03	0.50	37.0
37	37.14	0.50	38.0
38	38.05	0.50	39.0
39	39.03	0.50	40.0
40	40.00	0.25	40.5
41	40.99	0.25	41.5
42	42.03	0.50	43.0
43	42.99	0.50	44.0
44	44.17	0.50	45.0
45	45.21	0.50	46.0
46	46.17	0.50	47.0
47	47.15	0.50	48.0
48	48.12	0.25	48.5
49	49.00	0.25	49.5
50	50.02	0.25	50.5

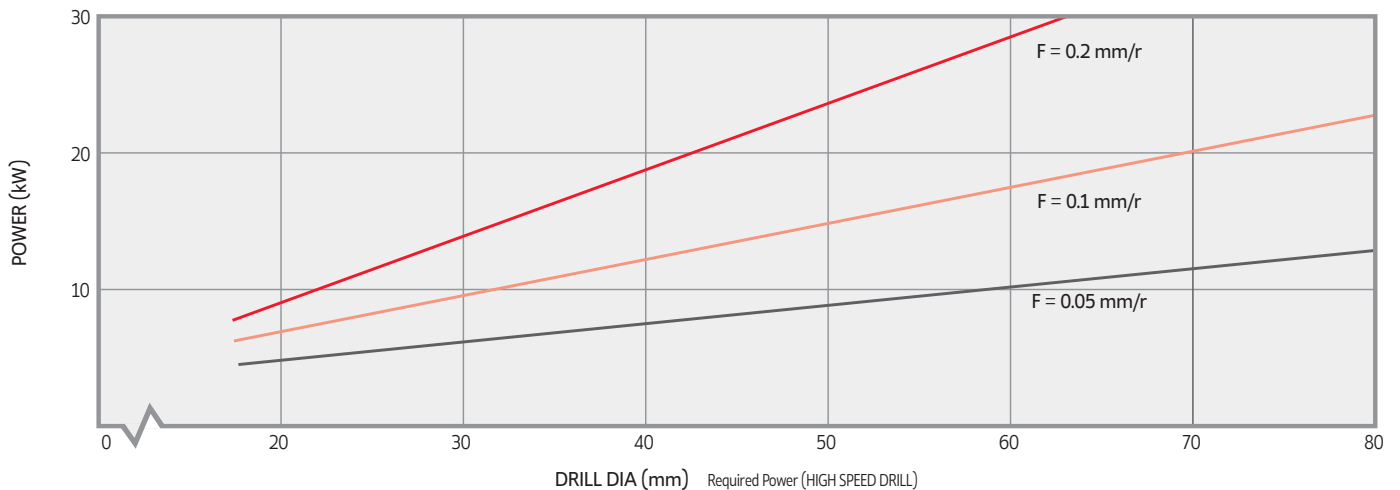
Drill D	4xD		
	Normal	Radial Adjust	Max. Hole D
13	13.22	0.50	14.0
14	14.15	0.50	15.0
15	15.17	0.50	16.0
16	16.09	0.50	17.0
17	17.13	0.50	18.0
18	18.20	0.50	19.0
19	19.18	0.50	20.0
20	20.05	0.50	21.0
21	21.00	0.25	21.5
22	22.01	0.50	23.0
23	23.10	0.50	24.0
24	24.15	0.50	25.0
25	25.13	0.50	26.0
26	26.09	0.25	26.5
27	26.96	0.25	27.5
28	27.97	0.50	29.0
29	29.07	0.50	30.0
30	30.13	0.50	31.0
31	31.12	0.25	31.5
32	32.11	0.25	32.5
33	33.17	0.25	33.5
34	34.15	0.50	35.0
35	35.12	0.50	36.0
36	36.08	0.50	37.0
37	37.19	0.50	38.0
38	38.08	0.50	39.0
39	39.08	0.50	40.0
40	40.05	0.25	40.5
41	41.04	0.25	41.5
42	42.08	0.50	43.0
43	43.04	0.50	44.0
44	44.22	0.50	45.0
45	45.26	0.50	46.0
46	46.23	0.50	47.0
47	47.20	0.50	48.0
48	48.17	0.25	48.5
49	49.05	0.25	49.5
50	50.07	0.25	50.5

JET DRILLS = TDS DRILL TYPE

Recommended Speeds and Feeds | Parâmetros de Corte Recomendados Recomendaciones de Datos de Corte

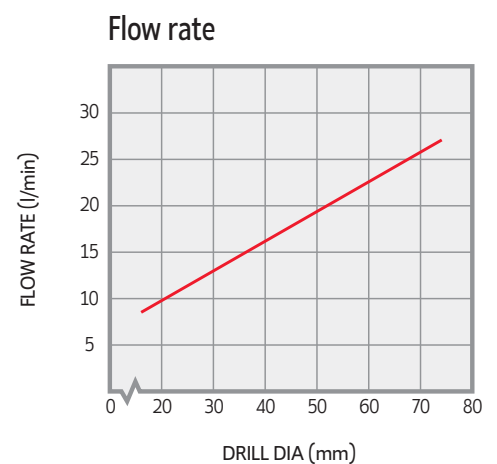
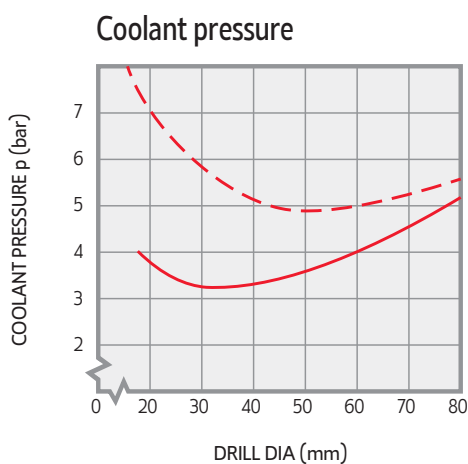
ISO	Material Group Grupo Materiais Grupo Materiales	Vc (m/min)	f (mm/rev)						
			Ø13-15,5	Ø16-20	Ø20,5-25	Ø25,5-30	Ø31-41	Ø42-58	Ø59-80
P	UNALLOYED STEEL (-0,25%)	180-260	0,05-0,08	0,06-0,10	0,07-0,12	0,09-0,15	0,11-0,18	0,15-0,28	0,11-0,18
	LOW-ALLOY STEEL (0,25%-)	150-240	0,05-0,08	0,06-0,10	0,07-0,12	0,09-0,15	0,11-0,18	0,15-0,28	0,11-0,18
	LOW-ALLOY STEEL	120-240	0,05-0,08	0,06-0,10	0,07-0,12	0,09-0,15	0,11-0,18	0,15-0,28	0,11-0,18
	HIGH-ALLOY STEEL	130-220	0,05-0,08	0,06-0,10	0,07-0,12	0,09-0,15	0,11-0,18	0,15-0,28	0,11-0,18
M	STAINLESS STEEL	150-220	0,04-0,08	0,05-0,09	0,06-0,12	0,07-0,13	0,08-0,16	0,10-0,20	0,08-0,16
K	GREY CAST IRON	150-250	0,05-0,11	0,07-0,13	0,08-0,12	0,10-0,18	0,14-0,26	0,18-0,35	0,14-0,26
	CAST IRON WITH NODULAR CAST	120-200	0,05-0,11	0,06-0,13	0,07-0,12	0,08-0,18	0,14-0,26	0,18-0,35	0,14-0,26
N	ALUMINIUM FORGING ALLOYS	180-280	0,04-0,06	0,07-0,12	0,08-0,13	0,09-0,15	0,12-0,20	0,08-0,13	0,09-0,15
	ALUMINIUM CAST ALLOYS	120-270	0,04-0,06	0,06-0,12	0,08-0,13	0,09-0,15	0,12-0,20	0,08-0,13	0,09-0,15

Power Requirements | Requisitos de Potência | Requisitos de Potencia



- This chart is based on machining experiences using steels with a hardness of 200-250HB and cutting speed of 100m/min.
- For cast iron the effective power requirement is around 30% lower.

Coolant Application Chart | Tabela Aplicação de Refrigeração | Tabla Aplicación de Refrigerante



TDS DRILL TYPE


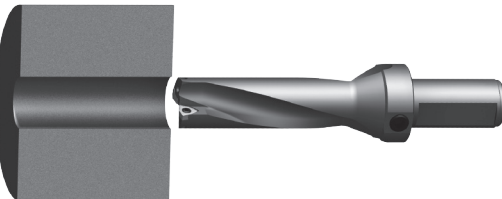
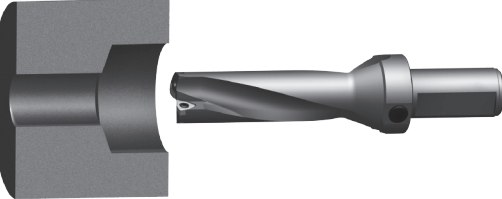
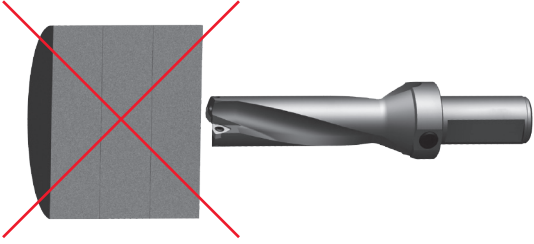
Hole Tolerance and Maximum Hole Size With Radial Adjustment | Tolerância do Furo e Dimensão Máxima do Furo com Ajuste Radial | Tolerancia de los Agujeros y el Tamaño Del agujero Máximo con Ajuste Radial



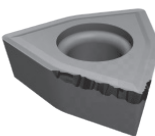
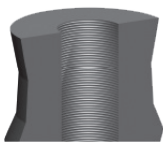
Drill D	Radial Adjust	Max Hole D
13.00	1.50	16.00
13.50	1.50	16.50
14.00	1.50	17.00
14.50	1.50	17.50
15.00	1.50	18.00
15.50	1.50	18.50
16.00	1.50	19.00
16.50	1.50	19.50
17.00	1.50	20.00
17.50	1.50	20.50
18.00	1.40	20.80
18.50	1.30	21.10
19.00	1.20	21.40
20.00	1.00	22.00
21.00	1.60	24.20
22.00	1.50	25.00
23.00	1.25	25.50
24.00	1.00	26.00
25.00	0.80	26.60
26.00	2.50	31.00
27.00	2.20	31.40
28.00	2.10	32.20
29.00	1.80	32.60
30.00	1.50	33.00
31.00	3.50	38.00
32.00	3.20	38.40

Drill D	Radial Adjust	Max Hole D
33.00	3.00	39.00
34.00	2.80	39.60
35.00	2.50	40.00
36.00	2.30	40.60
37.00	2.00	41.00
38.00	1.80	41.60
39.00	1.50	42.00
40.00	1.20	42.40
41.00	1.00	43.00
42.00	4.20	50.40
43.00	4.00	51.00
44.00	3.70	51.40
45.00	3.50	52.00
46.00	3.30	52.60
47.00	3.00	53.00
48.00	2.70	53.40
49.00	2.50	54.00
50.00	2.20	54.40
51.00	2.00	55.00
52.00	1.80	55.60
53.00	1.50	56.00
54.00	1.20	56.40
55.00	0.80	56.60
56.00	0.60	57.20
58.00	0.40	58.80

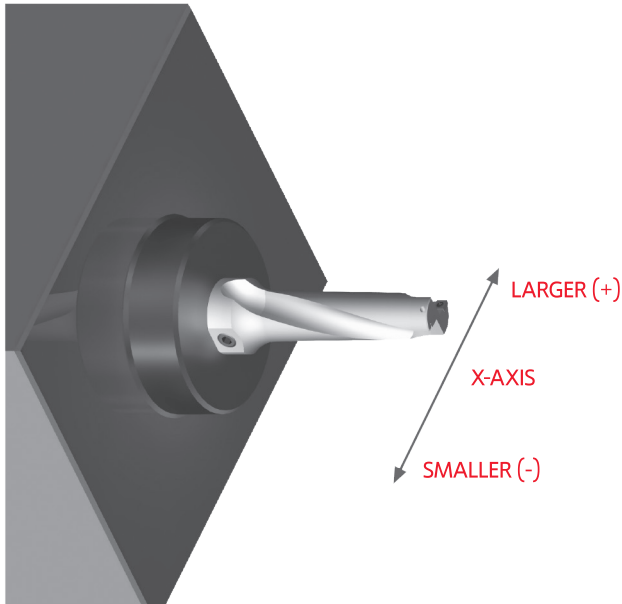
JET DRILLS - TDS DRILL TYPE

Rules & Tips | Regras e Dicas | Normas e Consejos

Operation Operação Operación	Description Descrição Descripción
<ul style="list-style-type: none"> • SPOT DRILLING THROUGH ON INCLINED SURFACES • FURAÇÃO LOCALIZADA E FURAÇÃO ATRAVÉS DE SUPERFÍCIES INCLINADAS • PERFORACIÓN LOCALIZADA Y PERFORACION SOBRE SUPERFÍCIES INCLINADAS 	<ul style="list-style-type: none"> • Up to a 30° inclination angle is possible without reducing the cutting parameters. For angles between 30-40°, reduce feed force at incline surface by 50% • Até um ângulo de 30° é possível sem a redução dos parametros de corte. Para ângulos entre 30-40°, reduza o avanço na superfície inclinada em 50%. • Hasta un ângulo de inclinación de 30° és posible sin la reducción de los parametros de corte. En ângulos entre 30-40°, reduzca el avance en 50%.
<ul style="list-style-type: none"> • INTERRUPTED CUTS • CORTE INTERROMPIDO • CORTE INTERRUPTIDO 	<ul style="list-style-type: none"> • For problem-free drilling in interrupted cuts (cross drilling, etc.), reduce the cutting force and feed by 30% to maintain maximum stability of the machine and clamping mechanisms. • Para furação em corte interrompido, reduza a velocidade de corte e o avanço em 30% para manter a estabilidade máxima da máquina e sistemas de aperto. • En perforación en corte interrumpido, reduzca la velocidad de corte e el avance en 30% para mantener la estabilidad.
<ul style="list-style-type: none"> • BORING • MADRILAGEM • MANDRILAGEM 	<ul style="list-style-type: none"> • Used as boring tool, offset the drill in the direction of the cutter insert. Watch the outer insert for wear because is cutting more metal than the inner insert and may require more frequent indexing. • Usadas para operações de mandrilamento oriente a broca pela pastilha exterior. Observe o desgaste da pastilha exterior uma vez que esta debasta mais metal que a pastilha interior e poderá requerer uma indexação mais frequente. • En operaciones de mandrilage, oriente el inserto exterior. Se deve observar el desgaste del inserto interior una vez que podrá necesitar de una indexación mas regular.
<ul style="list-style-type: none"> • DRILLING OF STACKED PLATES • FURAÇÃO DE CHAPAS EMPILHADAS • PERFORACIÓN DE PLACAS APILADAS 	<ul style="list-style-type: none"> • This is not possible with the standart TDS or TDC drills. A final disc will form when the drill breaks through. • Esta operação não é possível com as brocas standart TDS ou TDC. Um disco forma-se e poderá saltar no final da operação quando trespassa a peça. • Esta operación no és posible com brocas standart TDS o TDC.

Problem Problema	Corrective Action	Possível Solução	Solución Posible
<p>INNER CUTTING EDGE CRACKING</p> 	<p>On Lathes:</p> <ul style="list-style-type: none"> • Check machine alignment. • Check clamping accuracy. If tool clamping cannot be improved and/or optimum machine stability is doubtful, reduce feed by 30%. • User tougher carbide grade. <p>TIP: Grades can be mixed to achieve optimum performance.</p> <p>Example: Use grade PH6125 in the inside pocket with PH6135 in the outside pocket.</p>	<p>Em Tornos:</p> <ul style="list-style-type: none"> • Verifique o alinhamento máquina. • Verifique a precisão do aperto. Se o aperto não puder ser melhorado e/ou a otimização da estabilidade da máquina é duvidosa, reduza o avanço em 30%. • Usar classes de graus mais duras. <p>DICA: Misture classes Graus para alcançar o desempenho ideal.</p> <p>Exemplo: Utilize PH6125 na pastilha interior e PH6135 na pastilha exterior.</p>	<p>Tornos en:</p> <ul style="list-style-type: none"> • Compruebe la alineación de máquinas. • Verificar la precisión de sujeción. Si la herramienta de sujeción no puede mejorar y/o optimizar la estabilidad de la máquina es dudosa, reducir los piensos en un 30%. • El usuario de carburo de calidad es más estrictas. <p>SUGERENCIA: Las calificaciones se pueden mezclar para lograr un rendimiento óptimo.</p> <p>Ejemplo: Utilice PH6125 en el inserto interior e PH6135 en el inserto exterior.</p>
<p>CHIP EVACUATION NOT OPTIMAL</p> 	<ul style="list-style-type: none"> • Increase coolant pressure and volume (coolant helps support chip evacuation as well as cooling the cutting edges). • Optimize chip control for a given application. • Increase cutting speed by 20%. 	<ul style="list-style-type: none"> • Aumente a pressão e volume do líquido de refrigeração (este permite uma melhor evacuação da apar, bem como um arrefecimento das arestas de corte). • Optimize o controlo das aparas para cada operação. • Aumentar a velocidade de corte de 20%. 	<ul style="list-style-type: none"> • Aumentar la presión del refrigerante y el volumen (el líquido de refrigeración de chips de apoyo ayuda a la evacuación, así como el enfriamiento de la corte de los bordes). • Optimizar el control de chip para una aplicación determinada. • Aumentar la velocidad de corte un 20%.
<p>EXCESSIVE INSERT WEAR</p> 	<ul style="list-style-type: none"> • Increase coolant pressure and volume. • Reduce cutting speed by 20%. • Use a more wear – resistant grade. 	<ul style="list-style-type: none"> • Aumente o volume e a pressão do líquido de refrigeração. • Reduzir a velocidade de corte de 20%. • Utilize um grau mais resistente ao desgaste. 	<ul style="list-style-type: none"> • Aumentar la presión del refrigerante y el volumen. • Reducir la velocidad de corte en un 20%. • Utilice un mayor desgaste - resistente grado.
<p>POOR DRILL HOLE QUALITY</p> 	<ul style="list-style-type: none"> • Increase coolant pressure and volume. • Increase cutting speed by 20% • Check clamping accuracy (tool and workpiece) for possible improvement. <p>TIP: Use higher speed with lighter feed to produce better hole quality.</p>	<ul style="list-style-type: none"> • Aumente o volume e a pressão do líquido de refrigeração. • Aumentar a velocidade de cortede 20% • Verifique a precisão do aperto (ferramenta e peça). <p>DICA: Utilize velocidades com avanços menores para produzir uma melhor qualidade do furo.</p>	<ul style="list-style-type: none"> • Aumentar la presión del refrigerante y el volumen. • Aumentar la velocidad de corte en un 20% • Verificar la precisión de sujeción(herramienta y pieza de trabajo) para una posible mejora. <p>SUGERENCIA: El uso ligero con mayor velocidad de alimentación para producir una mejor calidad agujero.</p>

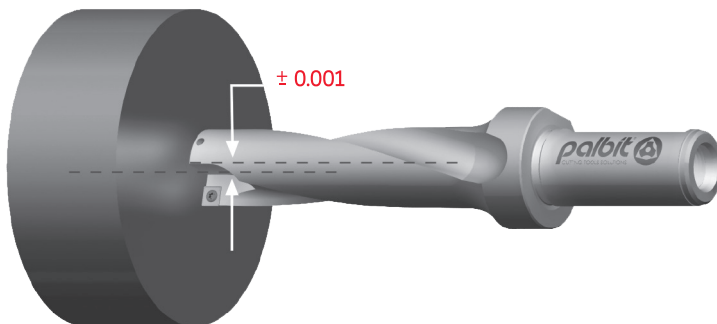
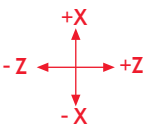
Initial Drill Set Up and Check | Ajuste Inicial da Broca e Verificação | Ajuste Inicial de la Broca e su Verificación



- The cutting edge of insert should be parallel to X-axis to make it possible to do offset cutting. Since a flat part on shank for side lock clamping has been made parallel with the cutting edge line of insert, operator can set the drill as per flat part of shank.

- A aresta de corte da pastilha deve ser paralela ao eixo X tornando possível o alinhamento de corte.

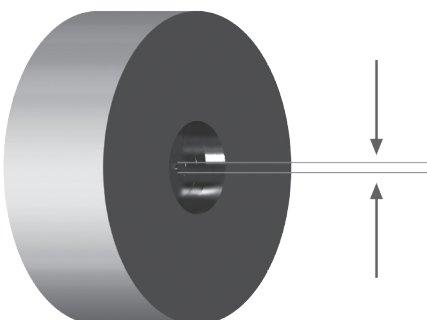
- El hilo de corte del inserto se debe posicionar paralelamente al axis-X tornando posible el aliñamiento de corte.



- The outer insert should be located in the direction (+) of X-axis to allow offset cutting and then the inner insert should face the operator.

- A pastilha exterior deve estar localizada na direcção (+) do eixo-X, permitindo assim o alinhamento do corte, a pastilha interior deve estar virada ao operador.

- El inserto exterior se debe localizar en la dirección (+) del axis-X, permitiendo el aliñamiento del corte, el inserto interior debe quedar-se virado para el operador.



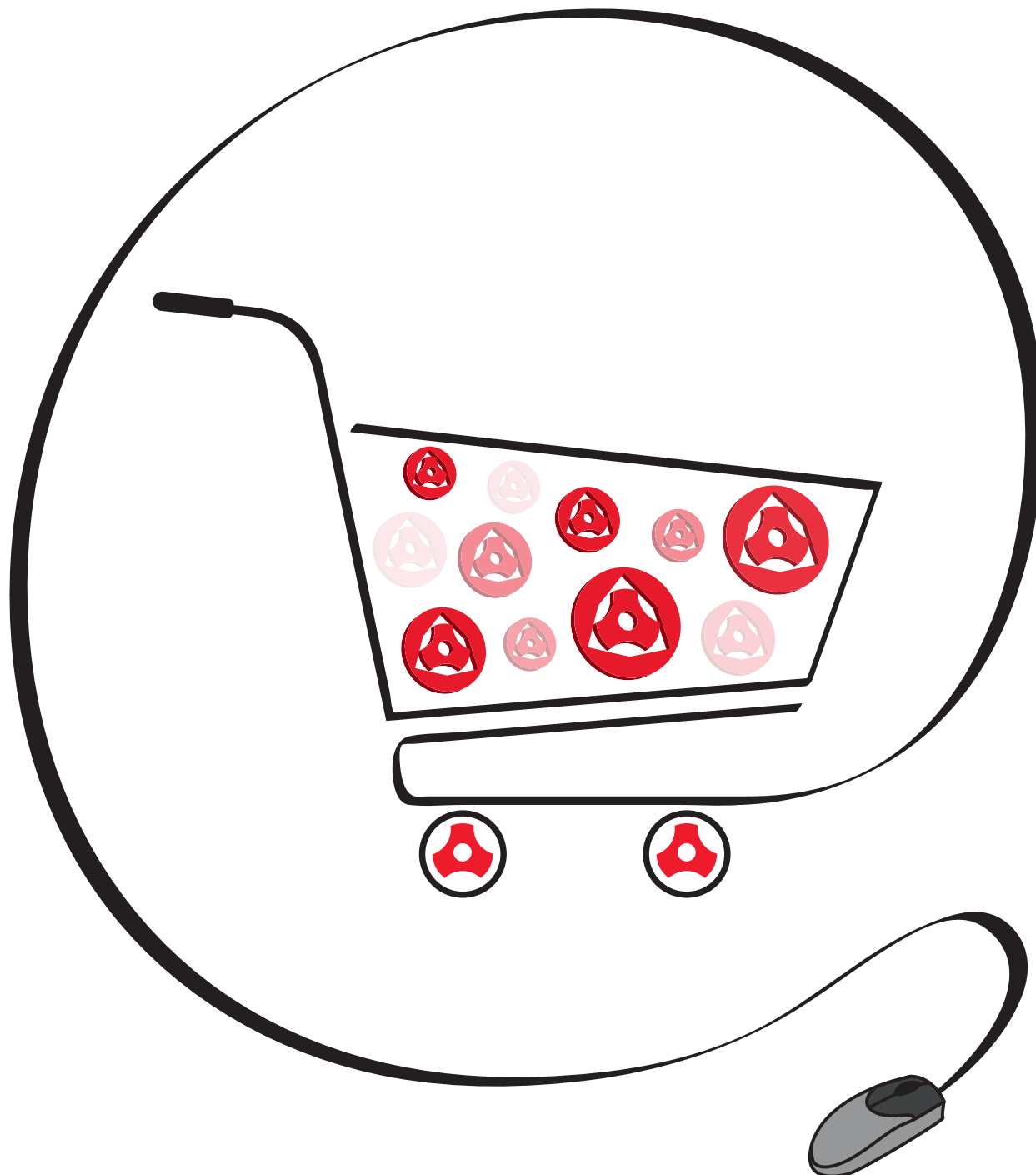
- To check up the setting of drill before use, test it by drilling about 5mm depth and then measure the core size if it is around 0,2mm - 0,7mm.

- Para verificar o ajuste faça o teste furando cerca de 5mm de profundidade medindo depois o núcleo verificando se este tem aproximadamente 0,2 a 0,7mm.

- Para comprobar el ajuste hacer un taladro de cerca de 5 mm de profundidad, medido después su núcleo si se trata de 0,2 a 0,7 mm.

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