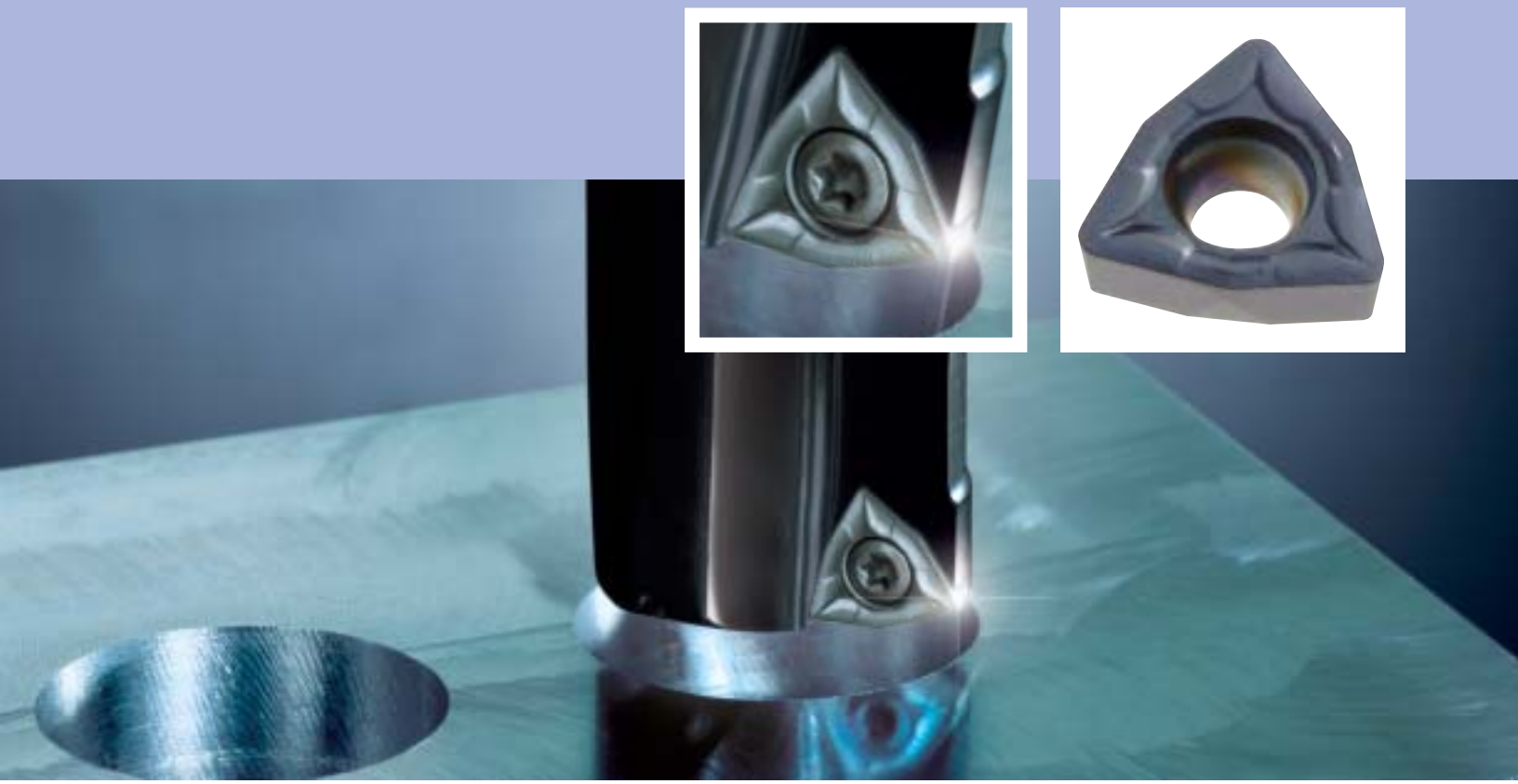
STELLRAM™

Posidrill Plus™



THE TOOLING:

- 3 x diameter short-hole drilling.

THE MATERIAL:

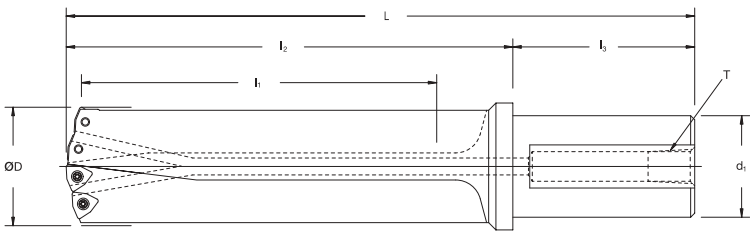
- Steels, stainless steels, cast irons and aluminium.

PERFORMANCE FEATURES:

- Unique pocket design preventing slugs as the drill exits the component.
- Stacked plates and welded assemblies can be drilled.
- One grade and geometry for most materials.
- Insert geometry designed for excellent chip control in stainless steels and ductile steels.
- Able to bore up to 10% hole diameter.

Stellram™ tooling systems for all your drilling requirements.

Toolholders – shank *ISO 9766, parallel with clamping flat*



Drill Bodies

		Dimensions (mm)								
EDP	Part Number	ØD	d_1	L	l_1	l_2	l_3	T	No of inserts	WCMX Size
029571	**P69003WNX1350W040**	13,5	20,0	109,3	40,5	57,5	50,0	1/8" NPT	2	030204E-60
*029572	**P69003WNX1400W042**	14,0	20,0	110,9	42,0	59,0	50,0	1/8" NPT	2	030204E-60
*029573	**P69003WNX1450W043**	14,5	20,0	112,5	43,5	60,5	50,0	1/8" NPT	2	030204E-60
029574	**P69003WNX1500W045**	15,0	20,0	114,1	45,0	62,0	50,0	1/8" NPT	2	030204E-60
*029575	**P69003WNX1550W046**	15,5	20,0	115,7	46,5	63,5	50,0	1/8" NPT	2	030204E-60
029576	**P69003WNX1600W048**	16,0	20,0	117,2	48,0	65,0	50,0	1/8" NPT	2	030204E-60
*029577	**P69003WNX1650W049**	16,5	20,0	118,8	49,5	66,5	50,0	1/8" NPT	2	030204E-60
029578	**P69003WNX1700W051**	17,0	20,0	120,4	51,0	68,0	50,0	1/8" NPT	2	030204E-60
029579	**P69004WNX1750W052**	17,5	20,0	124,8	52,5	72,5	50,0	1/8" NPT	2	040204E-60
029580	**P69004WNX1800W053**	18,0	20,0	126,3	54,0	74,0	50,0	1/8" NPT	2	040204E-60
029581	**P69004WNX1850W055**	18,5	20,0	127,9	55,5	75,5	50,0	1/8" NPT	2	040204E-60
029582	**P69004WNX1900W057**	19,0	20,0	129,6	57,0	77,0	50,0	1/8" NPT	2	040204E-60
029583	**P69004WNX1950W058**	19,5	20,0	131,1	58,5	78,5	50,0	1/8" NPT	2	040204E-60
029584	**P69004WNX2000W060**	20,0	20,0	132,7	60,0	80,0	50,0	1/8" NPT	2	040204E-60
029585	**P69004WNX2050W061**	20,5	20,0	134,3	61,5	81,5	50,0	1/8" NPT	2	040204E-60
029586	**P69004WNX2100W063**	21,0	20,0	135,8	63,0	83,0	50,0	1/8" NPT	2	040204E-60
029587	**P69004WNX2150W064**	21,5	20,0	137,4	64,5	84,5	50,0	1/8" NPT	2	040204E-60
029588	**P69005WNX2200W066**	22,0	25,0	145,3	66,0	86,0	56,0	1/8" NPT	2	050308E-60
029589	**P69005WNX2250W067**	22,5	25,0	146,9	67,5	87,5	56,0	1/8" NPT	2	050308E-60
029590	**P69005WNX2300W069**	23,0	25,0	148,4	69,0	89,0	56,0	1/8" NPT	2	050308E-60
029591	**P69005WNX2350W070**	23,5	25,0	150.0	70,5	90,5	56,0	1/8" NPT	2	050308E-60
029592	**P69005WNX2400W072**	24,0	25,0	151,6	72,0	92,0	56,0	1/8" NPT	2	050308E-60
029593	**P69005WNX2450W073**	24,5	25,0	153,1	73,5	93,5	56,0	1/8" NPT	2	050308E-60
029594	**P69005WNX2500W075**	25,0	25,0	154,7	75,0	95,0	56,0	1/8" NPT	2	050308E-60
029595	**P69005WNX2550W076**	25,5	25,0	156,2	76,5	96,5	56,0	1/8" NPT	2	050308E-60
029596	**P69005WNX2600W078**	26,0	25,0	157,8	78,0	98,0	56,0	1/8" NPT	2	050308E-60
029597	**P69005WNX2650W079**	26,5	25,0	159,4	79,5	99,5	56,0	1/8" NPT	2	050308E-60
029598	**P69005WNX2700W081**	27,0	25,0	160,9	81,0	101,0	56,0	1/8" NPT	2	050308E-60
029599	**P69005WNX2800W084**	28,0	25,0	164,1	84,0	104,0	56,0	1/8" NPT	2	050308E-60
029600	**P69005WNX2900W087**	29,0	25,0	167,2	87,0	107,0	56,0	1/8" NPT	2	050308E-60
029601	**P69006WNX3000W090**	30,0	32,0	174,3	90,0	110,0	60,0	1/4" NPT	2	06T308E-60
029602	**P69006WNX3100W093**	31,0	32,0	177,4	93,0	113,0	60,0	1/4" NPT	2	06T308E-60
029603	**P69006WNX3200W096**	32,0	32,0	180,6	96,0	116,0	60,0	1/4" NPT	2	06T308E-60
029604	**P69006WNX3300W099**	33,0	32,0	183,7	99,0	119,0	60,0	1/4" NPT	2	06T308E-60
029605	**P69006WNX3400W102**	34,0	32,0	186,8	102,0	122,0	60,0	1/4" NPT	2	06T308E-60
029606	**P69006WNX3500W105**	35,0	32,0	189,9	105,0	125,0	60,0	1/4" NPT	2	06T308E-60
029607	**P69006WNX3600W108**	36,0	32,0	193,1	108,0	128,0	60,0	1/4" NPT	2	06T308E-60
029608	**P69006WNX3700W111**	37,0	32,0	196,1	111,0	131,0	60,0	1/4" NPT	2	06T308E-60
029609	**P69006WNX3800W114**	38,0	32,0	199,2	114,0	134,0	60,0	1/4" NPT	2	06T308E-60
029610	**P69006WNX3900W117**	39,0	32,0	207,3	117,0	142,0	60,0	1/4" NPT	2	06T308E-60

* Delivery 4 – 6 weeks and minimum order quantity 2 pieces.
EDP = Internal Item Number: Please quote this number when ordering.
Note: Intermediate sizes are available on request. Check local pricelist for stock availability.

Toolholders – shank *ISO 9766, parallel with clamping flat*

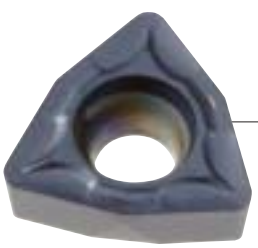
Drill Bodies

		Dimensions (mm)								
EDP	Part Number	ØD	d_1	L	l_1	l_2	l_3	T	No of inserts	WCMX Size
029611	**P69005WNX4000W120**	40,0	40,0	220,3	120,0	145,0	70,0	1/4" NPT	3	050308E-60
*029612	**P69005WNX4100W123**	41,0	40,0	223,4	123,0	148,0	70,0	1/4" NPT	3	050308E-60
*029613	**P69005WNX4200W126**	42,0	40,0	226,5	126,0	151,0	70,0	1/4" NPT	3	050308E-60
*029614	**P69005WNX4300W129**	43,0	40,0	229,6	129,0	154,0	70,0	1/4" NPT	3	050308E-60
*029615	**P69005WNX4400W132**	44,0	40,0	237,7	132,0	162,0	70,0	1/4" NPT	4	050308E-60
029616	**P69005WNX4500W135**	45,0	40,0	240,9	135,0	165,0	70,0	1/4" NPT	4	050308E-60
*029617	**P69005WNX4600W138**	46,0	40,0	243,8	138,0	168,0	70,0	1/4" NPT	4	050308E-60
*029618	**P69005WNX4700W141**	47,0	40,0	246,9	141,0	171,0	70,0	1/4" NPT	4	050308E-60
*029619	**P69005WNX4800W144**	48,0	40,0	250,2	144,0	174,0	70,0	1/4" NPT	4	050308E-60
*029620	**P69005WNX4900W147**	49,0	40,0	253,6	147,0	177,0	70,0	1/4" NPT	4	050308E-60
029621	**P69005WNX5000W150**	50,0	40,0	256,6	150,0	180,0	70,0	1/4" NPT	4	050308E-60
*029622	**P69005WNX5100W153**	51,0	50,0	269,8	153,0	183,0	80,0	1/4" NPT	4	050308E-60
*029623	**P69006WNX5200W156**	52,0	50,0	274,6	156,0	188,0	80,0	1/4" NPT	4	06T308E-60
*029624	**P69006WNX5300W159**	53,0	50,0	277,8	159,0	191,0	80,0	1/4" NPT	4	06T308E-60
*029625	**P69006WNX5400W162**	54,0	50,0	280,8	162,0	194,0	80,0	1/4" NPT	4	06T308E-60
*029626	**P69006WNX5500W165**	55,0	50,0	283,9	165,0	197,0	80,0	1/4" NPT	4	06T308E-60
*029627	**P69006WNX5600W168**	56,0	50,0	287,2	168,0	200,0	80,0	1/4" NPT	4	06T308E-60
*029628	**P69006WNX5700W171**	57,0	50,0	290,1	171,0	203,0	80,0	1/4" NPT	4	06T308E-60
*029629	**P69006WNX5800W174**	58,0	50,0	293,2	174,0	206,0	80,0	1/4" NPT	4	06T308E-60
*029630	**P69006WNX5900W177**	59,0	50,0	296,4	177,0	209,0	80,0	1/4" NPT	4	06T308E-60
*029631	**P69006WNX6000W180**	60,0	50,0	302,7	180,0	215,0	80,0	1/4" NPT	4	06T308E-60
*029632	**P69006WNX6100W183**	61,0	50,0	305,7	183,0	218,0	80,0	1/4" NPT	4	06T308E-60
*029633	**P69006WNX6200W186**	62,0	50,0	308,9	186,0	221,0	80,0	1/4" NPT	4	06T308E-60
*029634	**P69006WNX6300W189**	63,0	50,0	311,9	189,0	224,0	80,0	1/4" NPT	4	06T308E-60

* Delivery 4 – 6 weeks and minimum order quantity 2 pieces.
EDP = Internal Item Number: Please quote this number when ordering.
Note: Intermediate sizes are available on request. Check local pricelist for stock availability.

Inserts

EDP	Description	Grade	EDP	Screw	EDP	Screw Driver
029354	WCMX 030204E - 60	SP4034	029341	F2004TP	018487	T6
029355	WCMX 040204E - 60	SP4034	015061	F2507T	018488	T7
029356	WCMX 050308E - 60	SP4034	015063	F3008T	013214	T9
029357	WCMX 06T308E - 60	SP4034	029460	D3509T	013215	T10

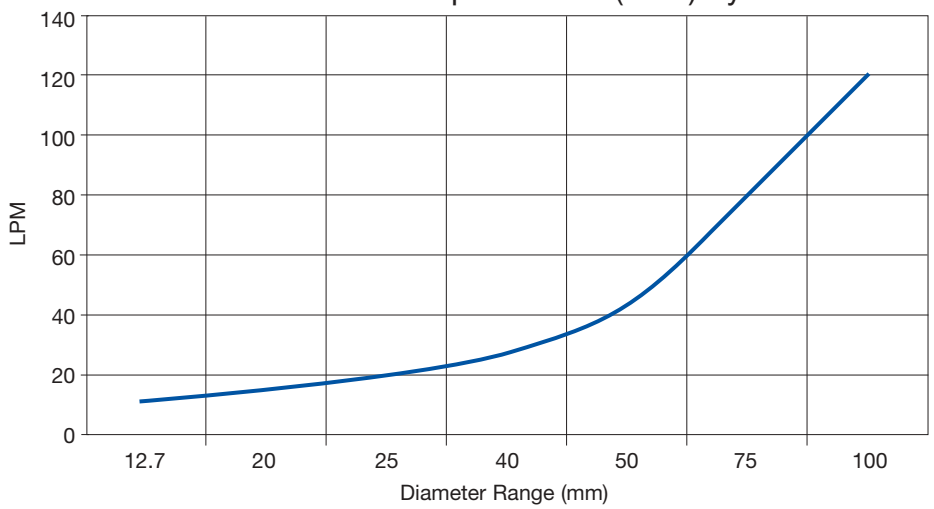


GEOMETRY 60 *Grade SP4034*

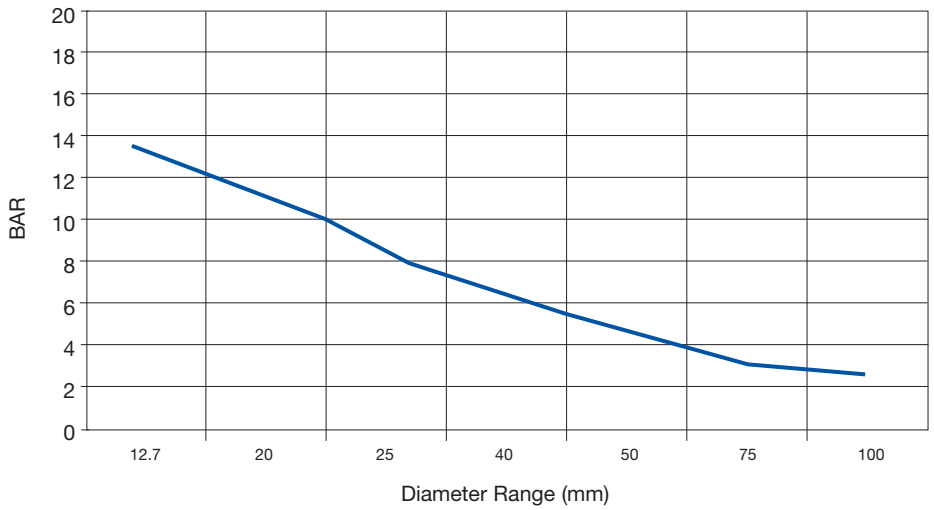
Micrograin carbide with TiAlN PVD coating and lubricity layer
SP4034 offers excellent wear resistance due to its micrograin substrate. Its lubricity layer offers a lower coefficient of friction, especially in softer materials.
The 60 geometry offers excellent chip control in softer materials.

Posidrill Plus™ Technical Information

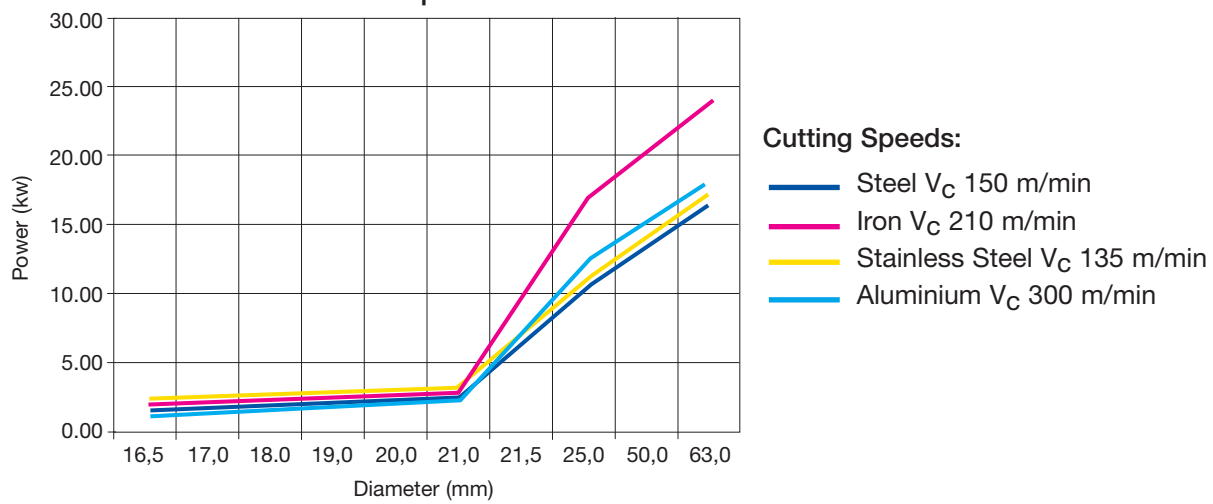
Coolant Flow – Litres per minute (LPM) by diameter



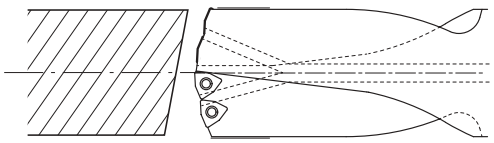
Coolant Pressure – kg/cm² (BAR) by diameter



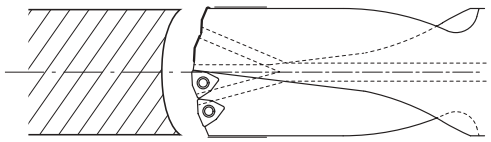
Power Consumption Guidelines



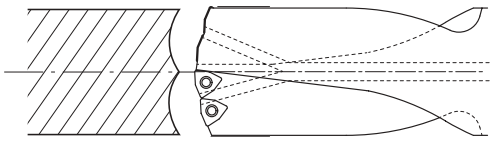
Special length-to-diameter ratios, up to 4 x diameter, are available upon request. ABS, HSK and other special shanks are also available upon request.



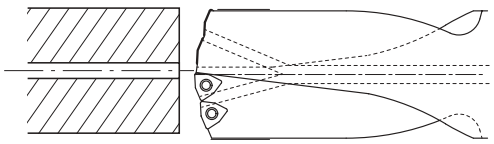
Drilled surfaces should be flat whenever possible.
If the surface angle exceeds 2°, reduce feed by 1/3.



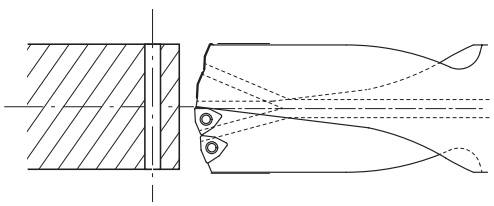
Reduce feed by 1/3 when drilling a concave surface.



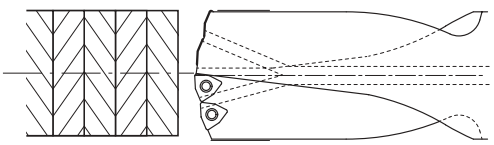
Reduce feed on irregular surfaces to prevent insert chipping. This may also be the case when breaking through the back end of the hole.



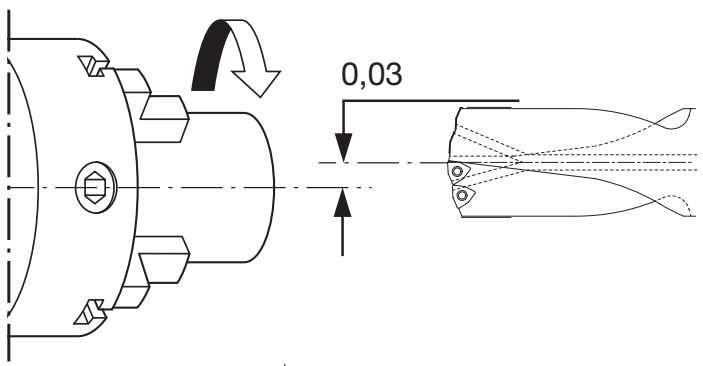
Drill deflection may occur if a predrilled hole exists larger than 1/4 of the finished hole.



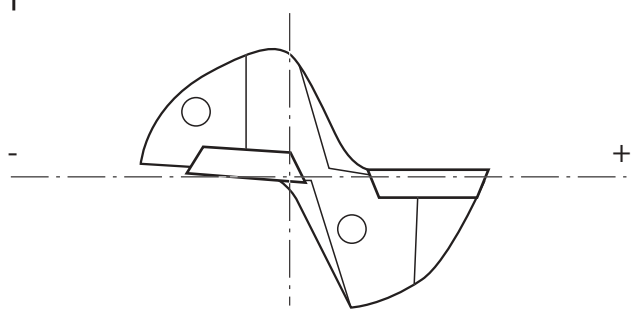
Reduce the feed when passing through a cross-drilled hole larger than 1/4 of the drill diameter.



Stacked plates and welded assemblies can be drilled with Posidrill Plus™.



For best results, a runout of 0,03mm between the the workpiece and drill centerline should not be exceeded.



The peripheral insert should be parallel to the machine's axis of transverse movement when mounting the drill.

Posidrill Plus™ Trouble Shooting Chart

PROBLEM	Long unmanageable chips	Chips jamming in the hole	Excessive wear on outer insert	Outer insert chipping	Inner insert chipping	Hole oversize	Hole undersize	Drill body rubbing in hole	Bad surface finish	Drill back cutting on retraction	SOLUTION
	SYMPTOM										
Incorrect cutting conditions	■		■	■	■				■	■	Check recommended speeds and feeds and adjust accordingly
Insufficient coolant pressure	■	■	■						■		Check coolant lines for leaks. Increase pump pressure
Inferior coolant quality			■						■		Check emulsion; should be strongest recommended by supplier. Do not use synthetic coolant when drilling stainless steels
Drill off center			■	■	■	■	■	■	■	■	Check alignment; maximum allowable with stationary drills is +/- 0.03mm per 25mm in X and Y axis. Maximum allowable with rotating drill is 0.13mm T.I.R.
Deflection				■				■	■	■	Reduce feed. Check alignment
Vibration			■	■	■				■		Check rigidity of workpiece. Reduce speed. Increase feed
Recutting chips				■	■				■		Increase coolant pressure. Check speed and feed
Feed rate too high		■		■	■					■	Reduce feed
Feed rate too low	■	■									Increase feed
Speed too high			■								Reduce speed
Drill incorrectly located			■	■	■	■	■	■	■	■	Check shank and toolholder for damage, clean thoroughly and replace
Inserts incorrectly located			■	■	■	■	■	■	■	■	Check pocket and screw for damage, clean thoroughly and replace

Cutting Speed (V_c) metres/minute

			SP4034
ISO	Material	Rm and Hardness	Speed (V_c) m/min max – min
P	Unalloyed Steels	<600 N/mm² <180HBN	180 - 290
		<950 N/mm² <280HBN	180 - 275
	Alloyed Steels	700-950 N/mm² 200-280 HBN	120 - 245
		950-1200 N/mm² 280-355 HBN	105 - 200
		1200-1400 N/mm² 355-415 HBN	65 - 135
M	Stainless Steels	Austenitic + Ferritic 300 series	120 - 215
		Martensitic 400 series	125 - 220
		Refractory P.H.	-
K	Cast Irons	Grey GG-Ft	120 - 335
		Spheroidal-Ductile GGG-FGS	120 - 275
		Malleable GTS - MN/MP	105 - 180
N	Aluminium & Alloys	< 16% Si 116HBN	245 - 520
		> 16% Si 92HBN	150 - 305
S	High Temperature Alloys	Iron Based	-
		Cobalt Based	-
		Nickel Based	-
		Titanium Based	20 - 45
H	Hard Materials (52-56 HRC)	Hard Materials (52-56 HRC)	-

Star Guide Key to Recommended Inserts

Material Designations

P	Unalloyed Steels	M	Stainless Steels	K	Cast Irons	S	High Temp. Alloys
P	Alloyed Steels	M	PH Stainless	N	Aluminium & Alloys	H	Hard Materials

STELLRAM™

Feed per diameter range

ISO	Material	Rm and Hardness	Fn= Feed per revolution mm/rev: min. & max.					
			Diameter range inserts (mm)					
			13,5 - 17,0	17,5 - 21,5	22,0 - 29.0	30.0 - 40,0	41,0 - 51,0	52,0 - 63,0
P	Unalloyed Steels	<600 N/mm² <180HBN	0,038 - 0,051	0,064 - 0,076	0,064 - 0,089	0,064 - 0,102	0,064 - 0,089	0,064 - 0,102
		<950 N/mm² <280HBN	0,038 - 0,051	0,064 - 0,076	0,064 - 0,089	0,064 - 0,102	0,064 - 0,089	0,064 - 0,102
	Alloyed Steels	700-950 N/mm² 200-280 HBN	0,051 - 0,076	0,051 - 0,127	0,076 - 0,152	0,102 - 0,178	0,076 - 0,152	0,102 - 0,178
		950-1200 N/mm² 280-355 HBN	0,038 - 0,064	0,038 - 0,102	0,064 - 0,127	0,076 - 0,152	0,064 - 0,127	0,076 - 0,152
		1200-1400 N/mm² 355-415 HBN	0,025 - 0,051	0,051 - 0,076	0,051 - 0,102	0,064 - 0,127	0,051 - 0,102	0,064 - 0,127
M	Stainless Steels	Austenitic + Ferritic 300 series	0,038 - 0,064	0,051 - 0,102	0,076 - 0,102	0,089 - 0,127	0,076 - 0,102	0,089 - 0,127
		Martensitic 400 series	0,038 - 0,056	0,051 - 0,089	0,076 - 0,089	0,089 - 0,114	0,076 - 0,089	0,089 - 0,114
		Refractory P.H.	-	-	-	-	-	-
K	Cast Irons	Grey GG-Ft	0,038 - 0,089	0,064 - 0,152	0,076 - 0,178	0,076 - 0,203	0,076 - 0,178	0,076 - 0,203
		Spheroidal-Ductile GGG-FGS	0,038 - 0,076	0,051 - 0,152	0,076 - 0,178	0,076 - 0,191	0,076 - 0,178	0,076 - 0,191
		Malleable GTS - MN/MP	0,038 - 0,064	0,051 - 0,127	0,076 - 0,152	0,076 - 0,152	0,076 - 0,152	0,076 - 0,152
N	Aluminium & Alloys	< 16% Si 116HBN	0,051 - 0,102	0,076 - 0,152	0,076 - 0,191	0,076 - 0,229	0,076 - 0,191	0,076 - 0,229
		> 16% Si 92HBN	0,051 - 0,076	0,076 - 0,127	0,076 - 0,152	0,076 - 0,178	0,076 - 0,152	0,076 - 0,178
S	High Temperature Alloys	Iron Based	-	-	-	-	-	-
		Cobalt Based	-	-	-	-	-	-
		Nickel Based	-	-	-	-	-	-
		Titanium Based	0,051 - 0,089	0,064 - 0,102	0,051 - 0,114	0,064 - 0,127	0,051 - 0,114	0,064 - 0,127
H	Hard Steel	>1400 N/mm² >415 HBN	-	-	-	-	-	-
	Chilled Cast Iron	1400 N/mm² 400 HBN	-	-	-	-	-	-

Star Guide Key to Recommended Inserts

Material Designations

P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminium & Alloys	H Hard Materials

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