



Solid Carbide

High Performance

CDX-Inox Drill

for Stainless Steel and exotic materials

R563



Features // Benefits



CUSTOMER BENEFITS

- High productivity and consistent tool life when drilling in stainless steel, titanium alloys and nickel alloys to depths of up to 5 x diameter.
- Significant reduction of “built-up edge.”
- Reduction of work hardening of hole surface.
- Consistent quality of surface finish and good hole tolerance.
- Excellent chip management and evacuation gives efficient machining and reduced machine downtime.
- Low thrust force at high penetration rates.
- Improved tool life.



MATERIAL

Micrograin carbide.

LENGTH

To DIN 6537L.

SHANK

To DIN 6535 HA.

TiAlN-TOP COATING

Newly improved TiAlN-Top multi-layer coating resists built-up edge and allows the drill to operate at high speeds and feeds.

MARGIN

The margin has a thin design to reduce the contact with the hole surface - consequently, work hardening is reduced.

FLUTE GEOMETRY

The strong web design offers excellent cross-sectional strength which allows the tool to perform at high feed rates, resulting in high productivity. Heat is transferred away from the hole producing a trouble-free machining operation.

POINT GEOMETRY

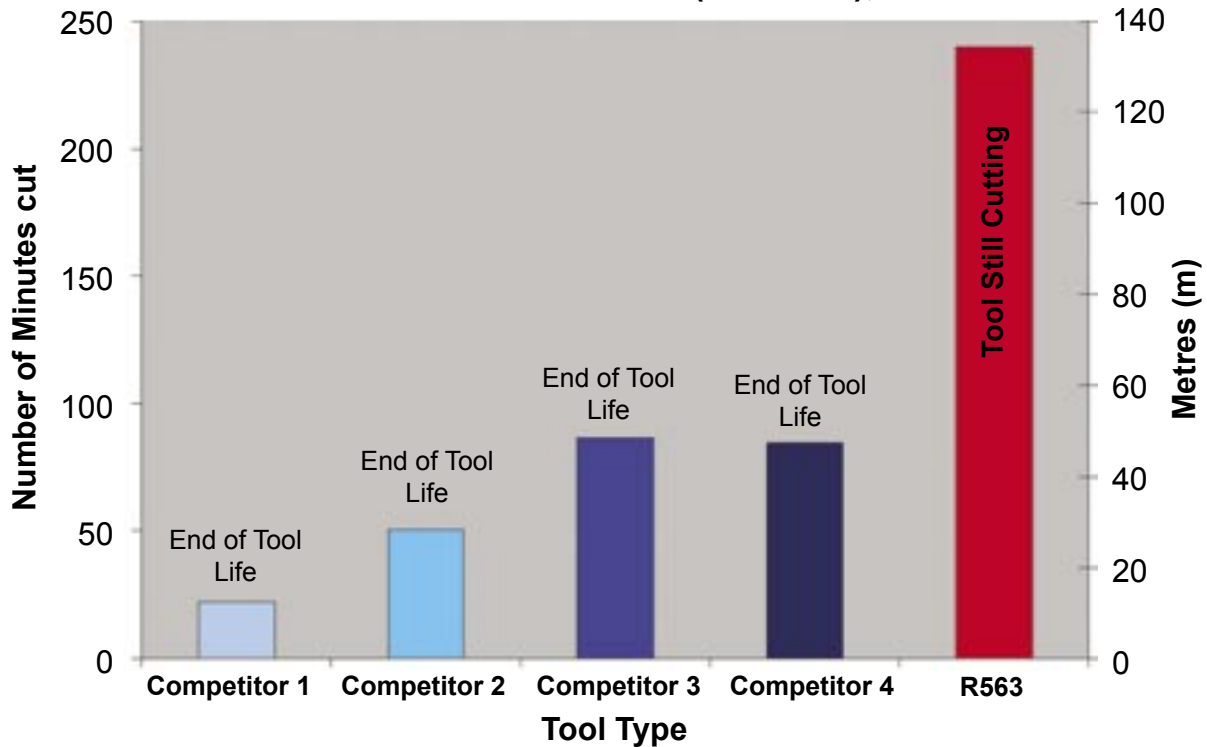
The positive point geometry together with the smooth curved design of the cutting edge results in a uniform wear pattern and therefore an increase in tool life. The 140° point design allows for excellent centring and ensures that thrust force is low.

COOLANT FEED

When drilling at high speeds in stainless steel and exotic materials, internal coolant is essential for optimum performance and to counter the work hardening which would otherwise occur. Internal coolant reduces the high cutting temperatures generated and assists the chip breaking process.

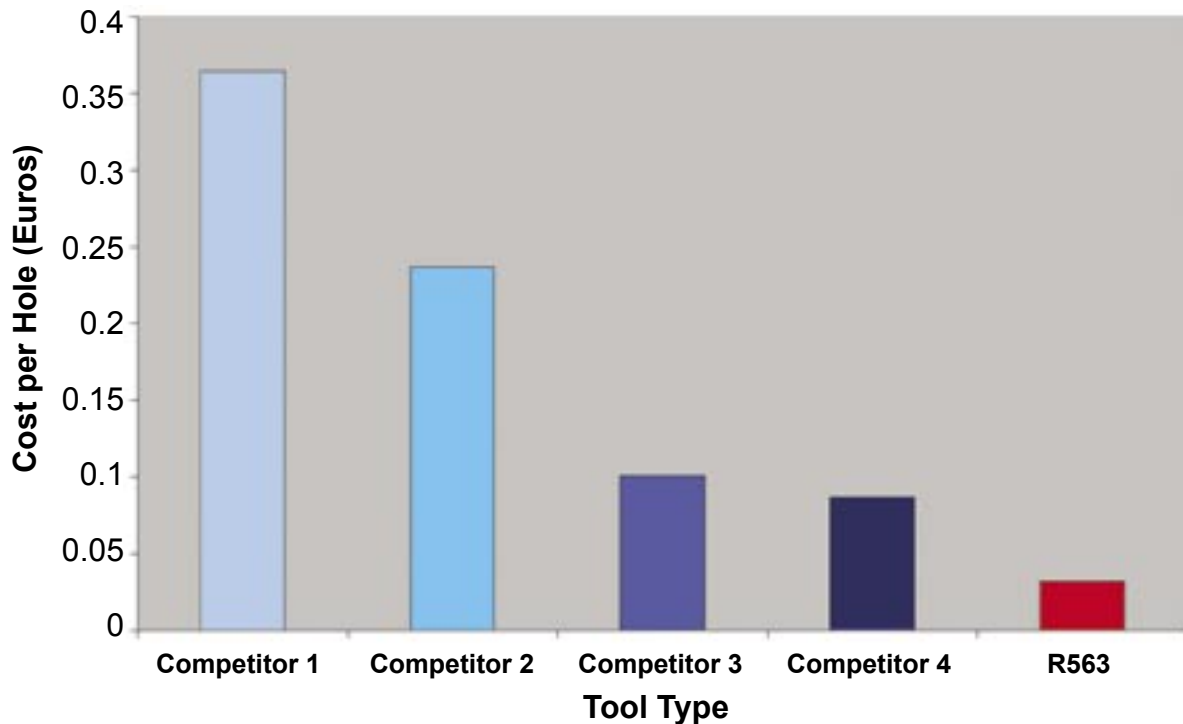


R563 Tool Life in Minutes Cut and in Metres vs Competitors in Stainless Steel 316L (AMG 2.2), Ø 8.0mm



Tested against four competitor equivalent drills, the R563 drilled an average of 175% more metres than the nearest competitor in 316L (AMG 2.2) Stainless Steel material, running at 65m/min / 0.2mm/rev, Dormer's recommended conditions on this application.

Cost per Hole Comparison in Stainless Steel 316L (AMG 2.2), Ø 8.0mm



The graph shows that the cost per hole for the competitor equivalent drills is up to 12 times higher than cost per hole for R563, running at Dormer's recommended cutting conditions to end of tool life.

Footnote: All tests have been performed with 70 bar internal coolant pressure and 6% coolant concentration.

Application Material Groups (AMG)

■ Excellent for Application

● Good for Application

Example

110 = Peripheral speed in metres/minute mid range +/- 10%

V = Feed range - see drill feed chart below

R563

HM



Fn	Ø								
	3mm	4mm	5mm	6mm	8mm	10mm	12mm	15mm	16mm
U	0.070	0.080	0.090	0.107	0.140	0.170	0.200	0.223	0.230
V	0.100	0.115	0.130	0.153	0.200	0.250	0.280	0.310	0.320
	mm/rev +/- 25%								



Application Material Groups (AMG)		Hardness HB	Tensile Strength N/mm ²
1. Steel	1.1 Magnetic soft steel	<120	<400
	1.2 Structural Steel / case carburising steel	<200	<700
	1.3 Plain Carbon steel	<250	<850
	1.4 Alloy steel	<250	<850
	1.5 Alloy steel/ Hardened and tempered steel	>250 <350	>850 <1200
	1.6 Alloy steel/ Hardened and tempered steel	>350	>1200 <1620
	1.7 Alloy steel Hardened	49-55HRC	>1620
	1.8 Alloy steel Hardened	55-63HRC	<1960
2. Stainless Steel	2.1 Free machining Stainless Steel	<250	<850
	2.2 Austenitic	<320	<1100
	2.3 Ferritic + Austenitic, Martensitic	<300	<1000
	2.4 Precipitation Hardened	>320 <410	>1100 <1400
3. Cast Iron	3.1 Lamellar graphite	<150	<500
	3.2 Lamellar graphite	>150 <300	>500 <1000
	3.3 Nodular graphite/ Malleable Cast Iron	<200	<700
	3.4 Nodular graphite/ Malleable Cast Iron	>200 <300	>700 <1000
4. Titanium	4.1 Titanium, unalloyed	<200	<700
	4.2 Titanium, alloyed	<270	<900
	4.3 Titanium, alloyed	>270 <350	>900 <1250
5. Nickel	5.1 Nickel, unalloyed	<150	<500
	5.2 Nickel, alloyed	<270	<900
	5.3 Nickel, alloyed	>270 <350	>900 <1200
6. Copper	6.1 Copper	<100	<350
	6.2 β-Brass, Bronze	<200	<700
	6.3 α-Brass	<200	<700
	6.4 High Strength Bronze	<470	<1500
7. Aluminium Magnesium	7.1 Al, Mg, unalloyed	<100	<350
	7.2 Al alloyed, Si<0.5%	<150	<500
	7.3 Al alloyed, Si>0.5%<10%	<120	<400
	7.4 Al alloyed, Si>10% Whisker reinforced Al-alloys, Mg alloys	<120	<400
8. Synthetic Materials	8.1 Thermoplastics	---	---
	8.2 Thermosetting plastics	---	---
	8.3 Reinforced plastic materials	---	---
9. Hard Materials	9.1 Cermet (Metal-ceramics)	<550	<1700
10. Graphite	10.1 Standard graphite	---	<100

3.00

- 16.00

CDX-Inox

2007.04

■110V

■65V

■50U

■50U

■50V

■45U

■35U

■50U

■35U

■25U

- CDX-Inox Drill
- CDX-Inox Spiralbohrer
- CDX-Inox boor
- Foret CDX-Inox
- Broca CDX-Inox
- Broca CDX-Inox



D-product
2007.04

R563



- **2.1 2.2 2.3 2.4 4.1 4.2 4.3 5.1 5.2 5.3**

d ₁ Ø mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Ø mm	e-Code	d ₁ Ø mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Ø mm	e-Code
3.00	0.1181	28	66	36	6	R5633.0	9.00	0.3543	61	103	40	10	R5639.0
3.30	0.1299	28	66	36	6	R5633.3	9.30	0.3661	61	103	40	10	R5639.3
3.40	0.1339	28	66	36	6	R5633.4	9.50	0.3740	61	103	40	10	R5639.5
3.50	0.1378	28	66	36	6	R5633.5	10.00	0.3937	61	103	40	10	R56310.0
3.70	0.1457	28	66	36	6	R5633.7	10.20	0.4016	70	118	45	12	R56310.2
4.00	0.1575	36	74	36	6	R5634.0	10.30	0.4055	70	118	45	12	R56310.3
4.20	0.1654	36	74	36	6	R5634.2	10.40	0.4094	70	118	45	12	R56310.4
4.30	0.1693	36	74	36	6	R5634.3	10.50	0.4134	70	118	45	12	R56310.5
4.50	0.1772	36	74	36	6	R5634.5	11.00	0.4331	70	118	45	12	R56311.0
4.60	0.1811	36	74	36	6	R5634.6	11.20	0.4409	70	118	45	12	R56311.2
5.00	0.1969	44	82	36	6	R5635.0	11.50	0.4528	70	118	45	12	R56311.5
5.10	0.2008	44	82	36	6	R5635.1	12.00	0.4724	70	118	45	12	R56312.0
5.50	0.2165	44	82	36	6	R5635.5	12.20	0.4803	76	124	45	14	R56312.2
6.00	0.2362	44	82	36	6	R5636.0	12.50	0.4921	76	124	45	14	R56312.5
6.50	0.2559	53	91	36	8	R5636.5	13.00	0.5118	76	124	45	14	R56313.0
6.80	0.2677	53	91	36	8	R5636.8	13.50	0.5315	76	124	45	14	R56313.5
6.90	0.2717	53	91	36	8	R5636.9	14.00	0.5512	76	124	45	16	R56314.0
7.00	0.2756	53	91	36	8	R5637.0	14.25	0.5610	82	133	48	16	R56314.25
7.40	0.2913	53	91	36	8	R5637.4	14.50	0.5709	82	133	48	16	R56314.5
7.50	0.2953	53	91	36	8	R5637.5	15.00	0.5906	82	133	48	16	R56315.0
8.00	0.3150	53	91	36	8	R5638.0	15.50	0.6102	82	133	48	16	R56315.5
8.50	0.3346	61	103	40	10	R5638.5	16.00	0.6299	82	133	48	16	R56316.0
8.60	0.3386	61	103	40	10	R5638.6							
8.70	0.3425	61	103	40	10	R5638.7							



For details on the full Dormer product range, please order a copy of our current tooling catalogue.



For correct tool selection and operation, please also refer to our Product Selector CD.



Further useful technical information can be found in our Technical Handbook.

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