

SOLIDDRILL³

8xD



5xD

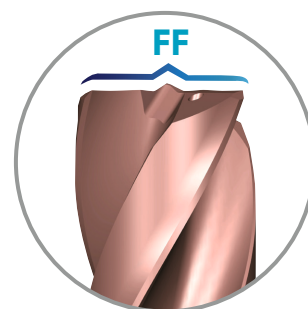
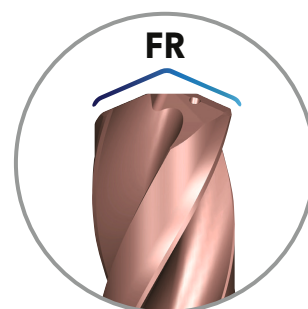


3xD



**8XD DRILLING DEPTH AND
NEW FLAT BOTTOM GEOMETRY**

- ▶ Drill range: Ø4.0-12.0 mm (0.5 mm increments)
 - ▶ 3-flute design improves productivity
 - ▶ Stable drilling under high cutting conditions
- ▶ Polished, optimal geometry flutes enable smooth chip evacuation
- ▶ Internal coolant through-type solid carbide drills
 - ▶ Two machining steps reduced to one



PRODUCT OVERVIEW

A flat bottom geometry and an 8xD drill for drilling deeper holes are now available in the extremely productive SolidDrill³ range.

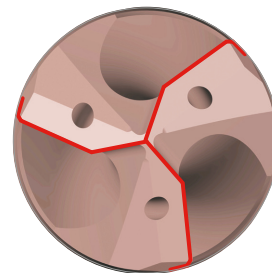
The SolidDrill³ line now includes an 8xD drilling depth option for deeper hole drilling and a flat-bottom geometry type. With three flutes and a unique point design for self-centering, the line outperforms two effective edge drills in terms of productivity.

With the expansion to 8xD, following the current 3xD and 5xD depths, end-users can experience the same high tolerance hole precision at various drilling depths.

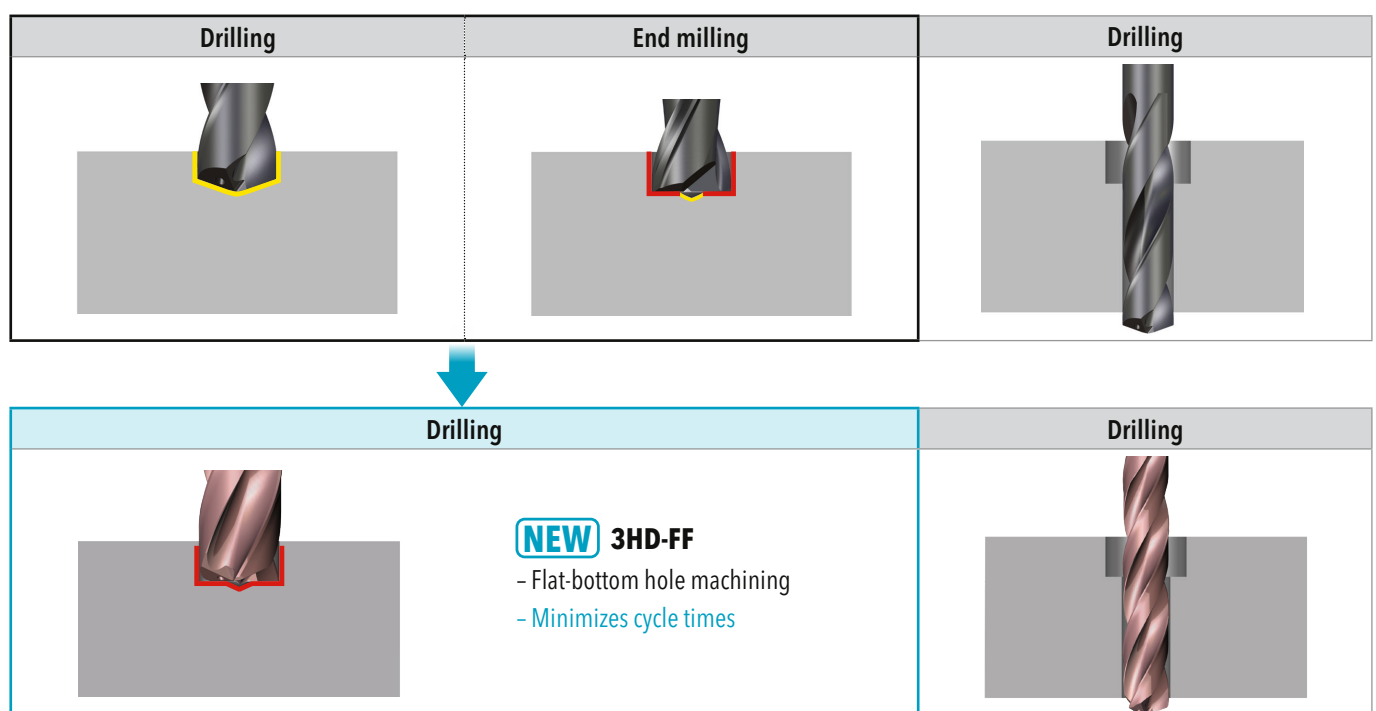
The new flat bottom design of the SolidDrill³ is ideal for drilling cavities in bolts and ensures excellent performance in both cast iron and steel applications.

TECHNICAL FEATURES & ADVANTAGES

- Drill range: Ø4.0-12.0 mm (0.5 mm increments)
- 3-flute design improves productivity
- Stable drilling under high cutting conditions
- Polished, optimal geometry flutes enable smooth chip evacuation
- Internal coolant through-type solid carbide drills



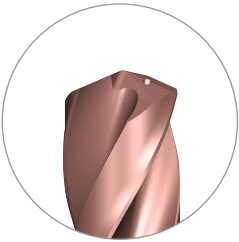
TWO STEPS REDUCED TO ONE



TECHNICAL FEATURES

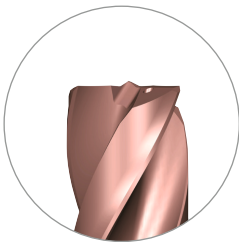
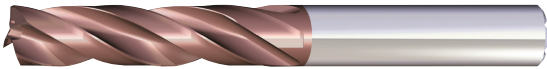
3 flute solid carbide drill for deep hole drilling (3HD-FR8)

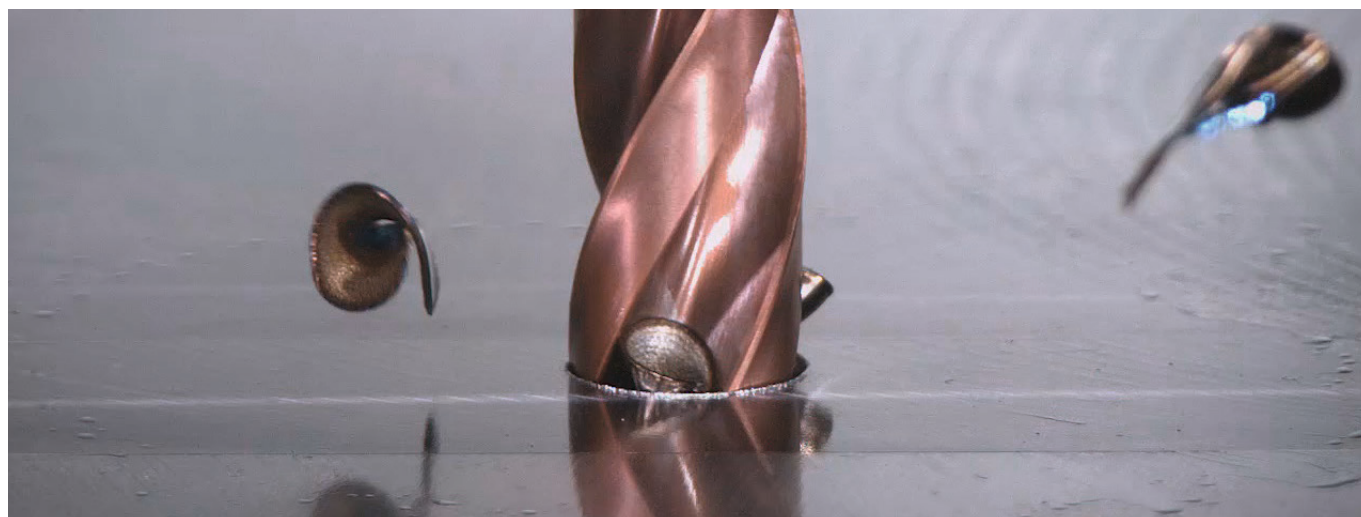
- Drilling depth: 3xD, 5xD and 8xD
- Symmetric point design enables drilling without a pre-hole

Head shape	Drill	
3HD-FR 	3xD	
	5xD	
	8xD NEW	

3 flute solid carbide drill for flat-bottom hole drilling (3HD-FF)

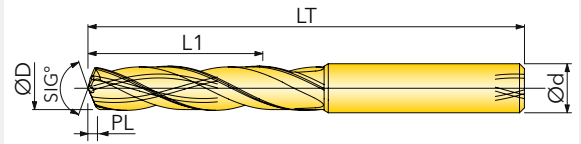
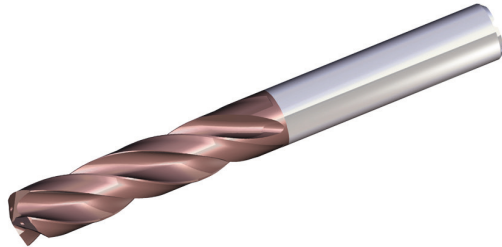
- Drilling depth: 3xD, 5xD
- Premium hole precision and excellent performance in flat bottom hole applications
- Reduced cycle time for improved productivity and cost reduction

Head shape	Drill	
3HD-FF 	3xD	NEW 
	5xD	NEW 



SOLID^{DRILL}³ SOLID CARBIDE DRILL 3D Z=3 Ø4,0-12,0

ADAPTION ACC .TO DIN 6535 HA



Grade	P	M	K	N _(K)	S _(M)	H _(P/K)		D	m7										
IN2205	+		+					d	h6										

✚ first choice ○ second choice

▼ roughing

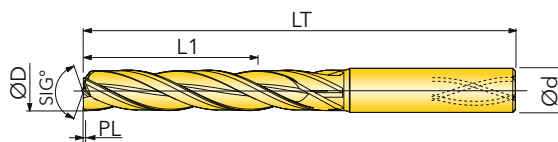
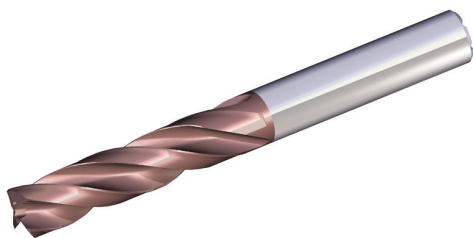
▼▼ semi-finishing

▼▼▼ finishing

Designation	D	d	LT	L1	PL	I	Z		IK	kg
FR0400017T7R01	4	6	66	17	0,82	140	3		✓	0,02
FR0450017T7R01	4,5	6	66	17	0,88	140	3		✓	0,02
FR0500020T7R01	5	6	66	20	0,96	140	3		✓	0,02
FR0550020T7R01	5,5	6	66	20	1,08	140	3		✓	0,02
FR0600020T7R01	6	6	66	20	1,17	140	3		✓	0,02
FR0650024T0R01	6,5	8	79	24	1,26	140	3		✓	0,04
FR0680024T0R01	6,8	8	79	24	1,31	140	3		✓	0,04
FR0700024T0R01	7	8	79	24	1,35	140	3		✓	0,04
FR0750029T0R01	7,5	8	79	29	1,40	140	3		✓	0,04
FR0800029T0R01	8	8	79	29	1,49	140	3		✓	0,05
FR0850035T1R01	8,5	10	89	35	1,63	140	3		✓	0,07
FR0900035T1R01	9	10	89	35	1,72	140	3		✓	0,07
FR0950035T1R01	9,5	10	89	35	1,75	140	3		✓	0,08
FR1000035T1R01	10	10	89	35	1,85	140	3		✓	0,08
FR1050040T2R01	10,5	12	102	40	1,98	140	3		✓	0,12
FR1100040T2R01	11	12	102	40	2,07	140	3		✓	0,12
FR1150040T2R01	11,5	12	102	40	2,12	140	3		✓	0,12
FR1200040T2R01	12	12	102	40	2,21	140	3		✓	0,13

SOLID^{DRILL} 3D Z=3 Ø4,0-12,0 (FLAT GROUND)

ADAPTION ACC. TO DIN 6535 HA



Grade

P

M

K

N_(K)

S_(M)

H_(PIK)

▼

D

m7

IN2205

+

+

d

h6

+ first choice ○ second choice

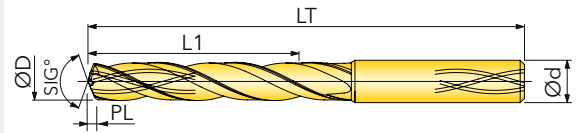
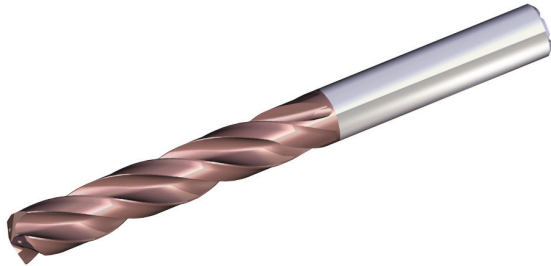
▼ roughing ▼▼ semi-finishing ▼▼▼ finishing



Designation	D	d	LT	L1	PL	I	Z	IK	kg
FF0400017T7R01	4	6	66	17	0,17	125	3	✓	0,02
FF0450017T7R01	4,5	6	66	17	0,19	125	3	✓	0,02
FF0500020T7R01	5	6	66	20	0,21	125	3	✓	0,02
FF0550020T7R01	5,5	6	66	20	0,23	125	3	✓	0,02
FF0600020T7R01	6	6	66	20	0,23	125	3	✓	0,02
FF0650024T0R01	6,5	8	79	24	0,28	125	3	✓	0,04
FF0700024T0R01	7	8	79	24	0,28	125	3	✓	0,04
FF0750029T0R01	7,5	8	79	29	0,32	125	3	✓	0,04
FF0800029T0R01	8	8	79	29	0,32	125	3	✓	0,05
FF0850035T1R01	8,5	10	89	35	0,36	125	3	✓	0,07
FF0900035T1R01	9	10	89	35	0,36	125	3	✓	0,07
FF0950035T1R01	9,5	10	89	35	0,39	125	3	✓	0,08
FF1000035T1R01	10	10	89	35	0,39	125	3	✓	0,08
FF1050040T2R01	10,5	12	102	40	0,43	125	3	✓	0,12
FF1100040T2R01	11	12	102	40	0,43	125	3	✓	0,12
FF1150040R2T01	11,5	12	102	40	0,46	125	3	✓	0,12
FF1200040T2R01	12	12	102	40	0,46	125	3	✓	0,13

SOLID^{DRILL}³ SOLID CARBIDE DRILL 5D Z=3 Ø4,0-12,0

ADAPTION ACC. TO DIN 6535 HA



Grade	P	M	K	N _(K)	S _(M)	H _(P/K)		D	m7										
IN2205	+		+					d	h6										

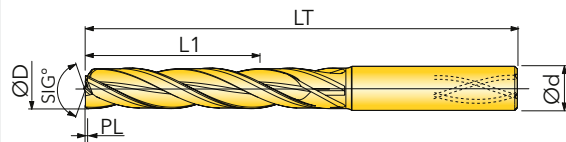
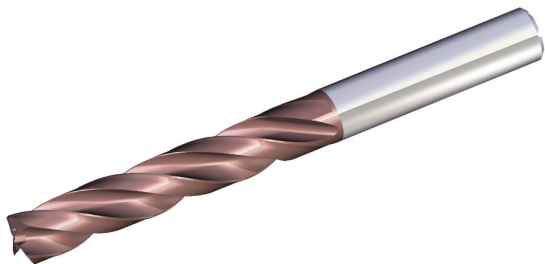
☒ first choice
 ☐ second choice

☒ roughing
 ☒ semi-finishing
 ☒ finishing

Designation	D	d	LT	L1	PL	I	Z		
FR0400029T7R01	4	6	74	29	0,82	140	3	✓	0,02
FR0450029T7R01	4,5	6	74	29	0,88	140	3	✓	0,02
FR0500035T7R01	5	6	82	35	0,96	140	3	✓	0,02
FR0550035T7R01	5,5	6	82	35	1,08	140	3	✓	0,03
FR0600035T7R01	6	6	82	35	1,17	140	3	✓	0,03
FR0650043T0R01	6,5	8	91	43	1,26	140	3	✓	0,04
FR0680043T0R01	6,8	8	91	43	1,31	140	3	✓	0,04
FR0700043T0R01	7	8	91	43	1,35	140	3	✓	0,05
FR0750043T0R01	7,5	8	91	43	1,40	140	3	✓	0,05
FR0800043T0R01	8	8	91	43	1,49	140	3	✓	0,05
FR0850049T1R01	8,5	10	103	49	1,63	140	3	✓	0,08
FR0900049T1R01	9	10	103	49	1,72	140	3	✓	0,08
FR0950049T1R01	9,5	10	103	49	1,75	140	3	✓	0,08
FR1000049T1R01	10	10	103	49	1,85	140	3	✓	0,09
FR1050056T2R01	10,5	12	118	56	1,98	140	3	✓	0,12
FR1100056T2R01	11	12	118	56	2,07	140	3	✓	0,12
FR1150056T2R01	11,5	12	118	56	2,12	140	3	✓	0,13
FR1200056T2R01	12	12	118	56	2,21	140	3	✓	0,13

SOLID^{DRILL}® SOLID CARBIDE DRILL 5D Z=3 Ø4,0-12,0 (FLAT GROUND)

ADAPTION ACC. TO DIN 6535 HA



Grade

P

M

K

N_(K)

S_(M)

H_(PIK)

▼

D

m7

IN2205

+

+

d

d6

+ first choice ○ second choice

▼ roughing ▼▼ semi-finishing ▼▼▼ finishing



Designation

D

d

LT

L1

PL

I

Z

IK

kg

FF0400029T7R01

4

6

74

29

0,17

125

3

✓

0,02

FF0450029T7R01

4,5

6

74

29

0,19

125

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✓

0,02

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0,21

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✓

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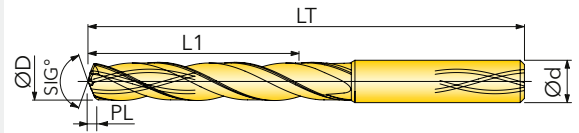
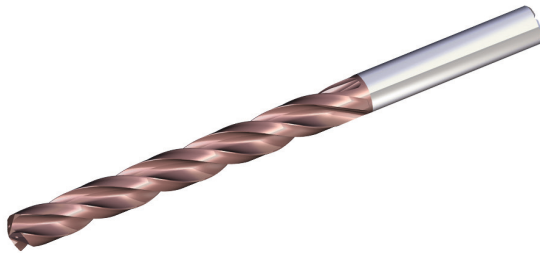
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3

✓

0,13

ADAPTION ACC. TO DIN 6535 HA



Grade	P	M	K	N _(K)	S _(M)	H _(P/K)		D	m7								
IN2205	+		+					d	d6								

+ first choice ○ second choice

▼ roughing ▼▼ semi-finishing ▼▼▼ finishing

Designation	D	d	LT	L1	PL	I	Z	IK	kg
FR0400036T7R01	4	6	74	17	0,17	140	3	✓	0,022
FR0450036T7R01	4,5	6	74	17	0,19	140	3	✓	0,023
FR0500048T7R01	5	6	82	20	0,21	140	3	✓	0,023
FR0550048T7R01	5,5	6	82	20	0,23	140	3	✓	0,025
FR0600048T7R01	6	6	82	20	0,23	140	3	✓	0,030
FR0650064T0R01	6,5	8	91	24	0,28	140	3	✓	0,047
FR0700064T0R01	7	8	91	24	0,28	140	3	✓	0,049
FR0750064T0R01	7,5	8	91	29	0,32	140	3	✓	0,052
FR0800064T0R01	8	8	91	29	0,32	140	3	✓	0,055
FR0850080T1R01	8,5	10	103	35	0,36	130	3	✓	0,086
FR0900080T1R01	9	10	103	35	0,36	130	3	✓	0,090
FR0950080T1R01	9,5	10	103	35	0,39	130	3	✓	0,094
FR1000080T1R01	10	10	103	35	0,39	130	3	✓	0,105
FR1050096T2R01	10,5	12	118	40	0,43	130	3	✓	0,142
FR1100096T2R01	11	12	118	40	0,43	130	3	✓	0,146
FR1150096R2T01	11,5	12	118	40	0,46	130	3	✓	0,151
FR1200096T2R01	12	12	118	40	0,46	130	3	✓	0,158

RECOMMENDED CUTTING CONDITIONS

ISO	Material		Condition	Tensile strength (N/mm²)	Hardness HB	Cutting speed V _c (m/min)	Feed (mm/rev) vs. drill diameter				
							Ø4 - Ø5	Ø5.1 - Ø6	Ø6.1 - Ø8	Ø8.1 - Ø10	Ø10.1 - Ø12
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	80-140	0.15-0.25	0.20-0.35	0.25-0.45	0.30-0.55	0.35-0.60
		≥0.25%C	Annealed	650	190	80-130	0.15-0.25	0.20-0.35	0.25-0.45	0.30-0.55	0.35-0.60
		<0.55%C	Quenched/tempered	850	250	80-120	0.15-0.25	0.20-0.35	0.25-0.45	0.30-0.55	0.35-0.60
		≥0.55%C	Annealed	750	220	70-110	0.15-0.25	0.20-0.35	0.25-0.45	0.30-0.55	0.35-0.60
			Quenched/tempered	1000	300	50-90	0.15-0.25	0.20-0.35	0.25-0.45	0.30-0.55	0.35-0.60
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed		600	200	80-120	0.15-0.25	0.20-0.35	0.25-0.40	0.30-0.50	0.35-0.55
				930	275	70-110	0.15-0.25	0.20-0.35	0.25-0.40	0.30-0.50	0.35-0.55
		Quenched and tempered		1000	300	50-90	0.15-0.25	0.20-0.35	0.25-0.40	0.30-0.50	0.35-0.55
				1200	350	40-70	0.15-0.25	0.20-0.35	0.25-0.40	0.30-0.50	0.35-0.55
	High alloy steel, cast steel and tool steel	Annealed		680	200	50-90	0.15-0.20	0.20-0.30	0.25-0.35	0.30-0.45	0.35-0.50
		Quenched/tempered		1100	325	40-80	0.15-0.20	0.20-0.30	0.25-0.35	0.30-0.45	0.35-0.50
K	Gray cast iron (GG)	Ferritic		-	160	80-140	0.20-0.30	0.25-0.45	0.35-0.55	0.40-0.60	0.45-0.65
		Pearlitic		-	250	70-120	0.20-0.30	0.25-0.45	0.35-0.55	0.40-0.60	0.45-0.65
	Cast iron nodular (GGG)	Ferritic			180	80-120	0.20-0.30	0.20-0.40	0.30-0.50	0.35-0.55	0.40-0.60
		Pearlitic			260	70-110	0.20-0.30	0.20-0.40	0.30-0.50	0.35-0.55	0.40-0.60
	Malleable cast iron	Ferritic			130	80-120	0.20-0.30	0.20-0.40	0.30-0.50	0.35-0.55	0.40-0.60
		Pearlitic			230	70-110	0.20-0.30	0.20-0.40	0.30-0.50	0.35-0.55	0.40-0.60

Steel Cast iron

Ingersoll Cutting Tools
Marketing- & Technologie-Standorte

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