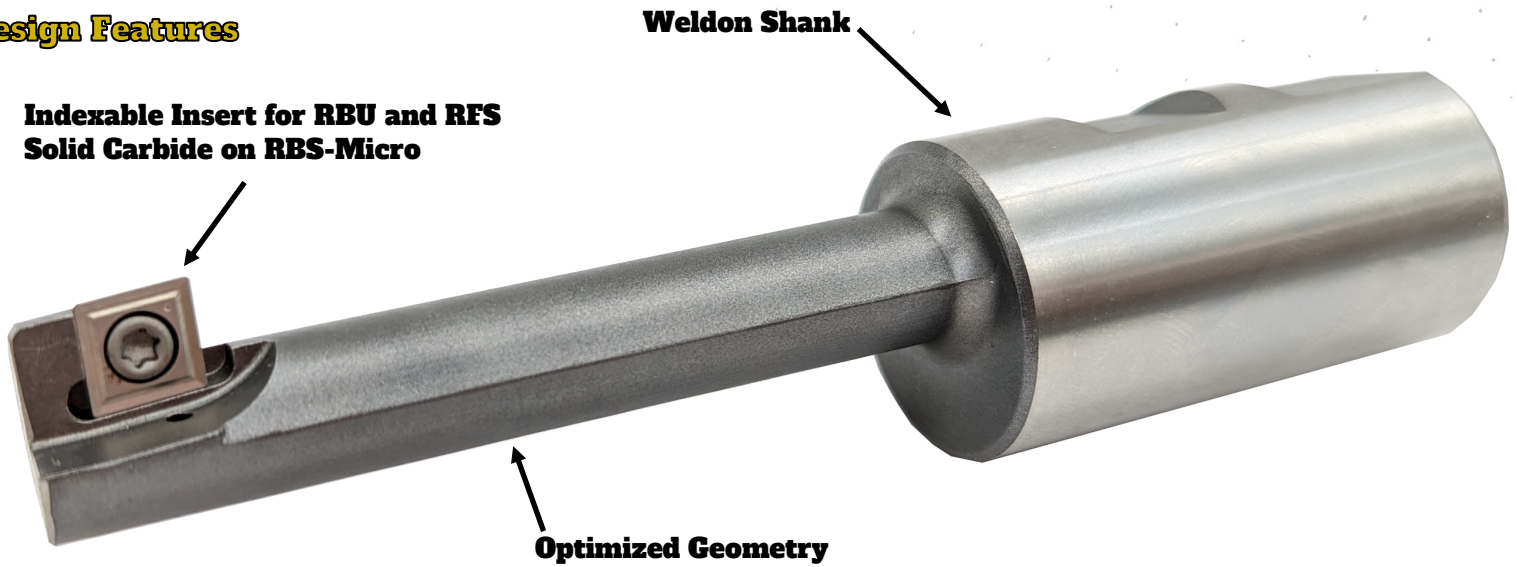


Offset Entry Back Counterboring

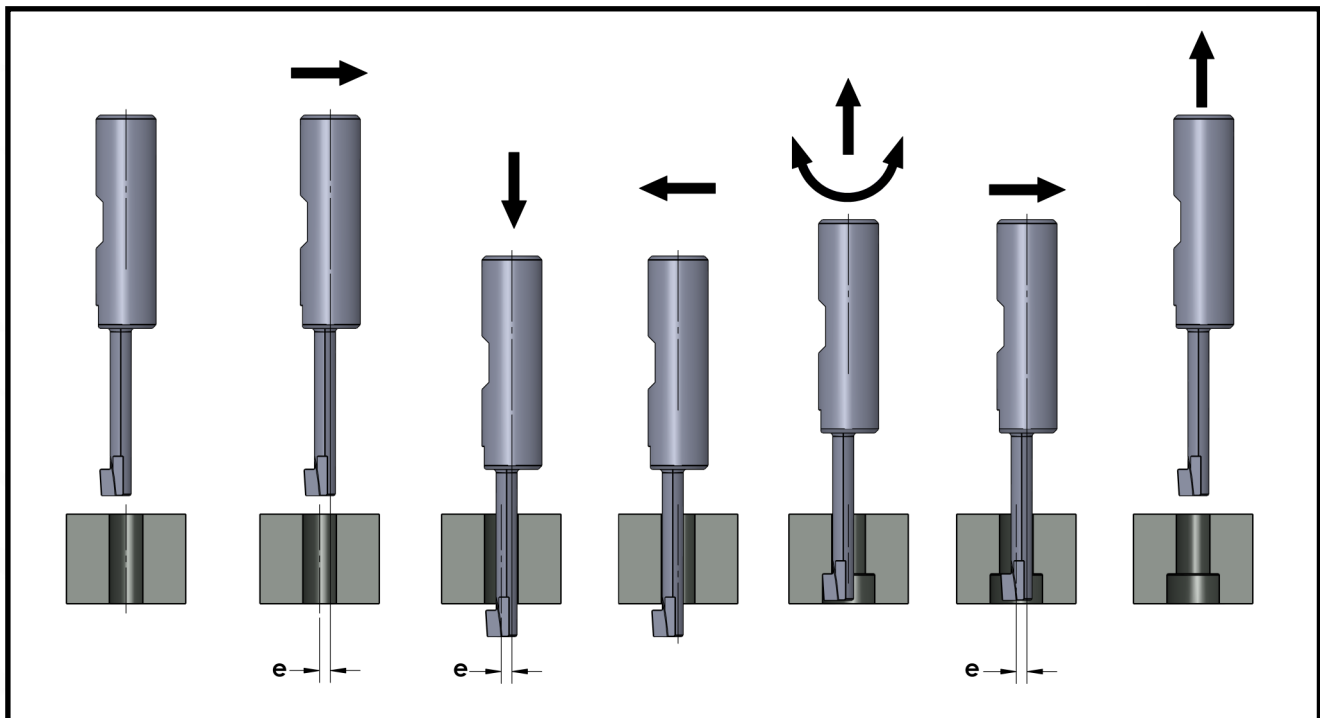
Advantages:

- For spotfacing, chamfering and deep counterboring of areas with difficult access
- For screw head counterbores M3 to M48 in common materials.
- For counterboring up to 1.9 times the bore diameter
- RBU and RFS are very stable and rigid with surface treatment and FEM-optimized geometry.
- Internal Coolant for RBU and RFS starting from $d=18$
- Wide choice of different PCD, Carbide and Indexable inserts
- For requests of specials, ex. larger cutting width, solid carbide or heavy metal, adjustable, radius cutting, grooving and chamfering, please visit www.steintertechnologies.com

Design Features



Operation Sequence

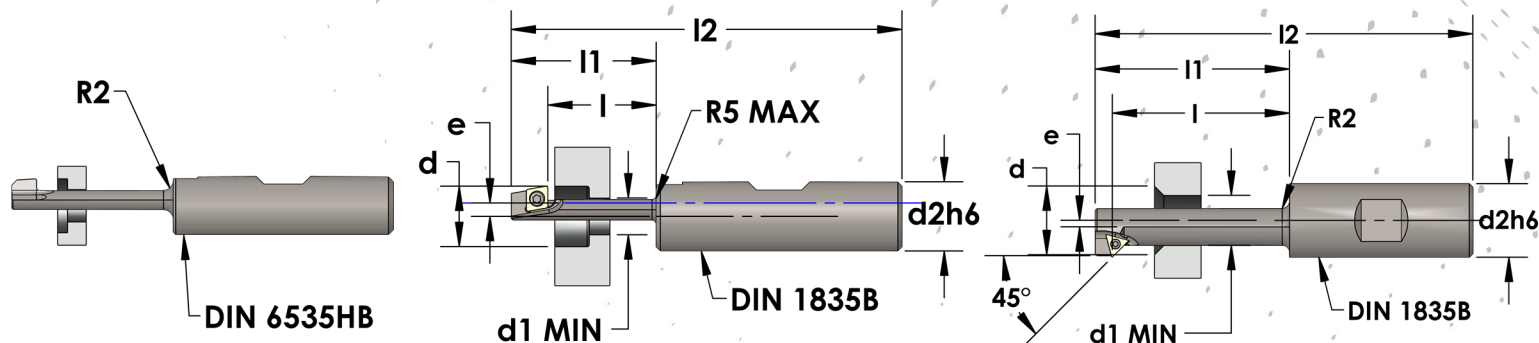


Counterbore Ø | 6.5mm (0.256in) - 50mm (1.969in)

RBSM (Micro Reverse Boring Bar)

RBU (Reverse Boring Bar)

RFS (Reverse Chamfering)



RBSM/RBU/RFS

RBS-Micro: RBSM (Solid carbide, counter clockwise)							
d	d _{1min}	l	d ₂	e	l ₁	l ₂	Order Number
6.5	3.4	12	8	1.7	15.4	51.4	RBSM 34065
8	4.5	19	10	1.9	23	63	RBSM 45080
10	5.5	23	12	2.4	28	73	RBSM 55100
11	6.6	28	12	2.4	33	78	RBSM 66110
15	9	35	16	3.0	42	90	RBSM 90150

RBS-Ultra: RBU (Indexable insert version, counter clockwise)										
d	d _{1min}	l	d ₂	e	l ₁	l ₂	Order Number	*	**	**
15	9	35	20	3.2	45	95	RBU150090035			
18	10.5	40	20	4	52	102	RBU180105040	100264	TX 206	04
20	13	45	20	3.7	57	107	RBU200130045	TX 25050	TX 108-25	06
24	15	55	25	4.7	67	123	RBU240150055	TX 25050	TX 108-25	06
26	17	55	25	4.7	67	123	RBU260170055	TX 25050	TX 108-25	06
30	19	65	25	6	77	133	RBU300190065	TX 25050	TX 108-25	06
33	21	70	32	6.5	85	145	RBU330210070	TX 35075	TX 115-35	09
36	23	75	32	7	90	150	RBU360230075	TX 35075	TX 115-35	09
40	25	85	32	8	100	160	RBU400250085	TX 35075	TX 115-35	09
43	30	90	32	7	115	175	RBU430300090	TX 35075	TX 115-35	09
46	30	90	32	8.5	115	175	RBU460300090	TX 35075	TX 115-35	09
48	33	105	32	8	130	190	RBU480330105	TX 35075	TX 115-35	09
50	33	105	32	9	130	190	RBU500330105	TX 35075	TX 115-35	09

RFS (Indexable insert version, clockwise)										
d	d _{1min}	l	d ₂	e	l ₁	l ₂	Order Number	*	**	**
15	10	42	16	2.7	48	96	RFS 01 1015			
20	14	48	20	3.2	53	103	RFS 01 1420	TX 20048	TX 206	06
23	17.5	57	25	3	67	123	RFS 01 1723	TX 22060	TX 207	09
27	21	78	25	3.5	87	143	RFS 01 2127	TX 22060	TX 207	09
31	24	88	25	4	97	153	RFS 01 2431	TX 22060	TX 207	09

* Included with Order Number

** Order Separately

Indexable Inserts for RBU and RFS

RBU		Order Number	Grade									
Precision ground		06	MCEX060204FRH...	AK1		K9	KHX+	P5	P9	PHX+	S6	
indexable inserts		09	MCEX090304FRH...	AK1		K9	KHX+	P5	P9	PHX+	S6	
Precision PCD Inserts		06	MCEW060204FR5...									D1
		09	MCEW090304FR5...									
ISO Indexable Inserts		04	CPGT04T1043...					P5	P9			
		06	MCMT060204EN...			K9	KHX+	P5	P9	PHX+		
		09	MCMT090304EN...			K9	KHX+	P5	P9	PHX+		
RFS		Order Number	Grade									
Precision ground		6	TCEW060104FN...		K1	K9						
Indexable inserts		9	TCEW090204FN...		K1	K9						
Precision ground		6	TCEX060104FL...	AK1	K1	K9						
Indexable inserts		9	TCEX090204FL...	AK1	K1				P9		S6	
ISO Indexable Inserts		9	TCMT090204EN...			K9						

Grades								
Grade	DIN ISO 513	Cutting Material	Steel	Stainless Steel	Cast Iron	Nonferrous Metals	Nickel and Titanium Alloys	Hard Materials
D1	DP-N20	PKD/PCD				+		
AK1	HF-N20	HM/Carbide			o	+	o	
KHX+	HC-K05	HM/Carbide - AlTiN (6µm)		o	++			+
K1	HF-K20	HM/Carbide			+			
K9	HC-K10	HM/Carbide - TiAlN			+			
P2	HF-P30	HM/Carbide	+					
P5	HC-K40/P40	HM/Carbide - TiN	+	+	o			o
P9	HC-P10	HM/Carbide - TiAlN	+	+	o		+	
PHX+	HC-PC5	Carbide - AlTiN (6µm)	++	++	o			
S6	-	HSSE-TiN	+	+	o			

"+" = Main Application

"o" = Minor application

Cutting Data Recommendations:

		Mild Steel	Prehardened Steel	Stainless Steel	Cast Iron	Aluminum
HSS	Speed (SFM)	65-130	50-100	50-80	<i>Not Recommended</i>	<i>Not Recommended</i>
HM / Carbide	Speed (SFM)	295-395	330-390	160-300	260-450	330-490
∅6.5-11.0 (.255-.433)	Feed Rate (IPR)	.002-.004	.002-.003	.001-.002	.0015-.004	.002-.006
∅15.0-30.0 (.590-1.181)	Feed Rate (IPR)	.001-.004	.001-.003	.001-.004	.0015-.005	.002-.006
∅33.0-76.0 (1.300-2.992)	Feed Rate (IPR)	.0025-.005	.002-.005	.0025-.005	.003-.006	.003-.007