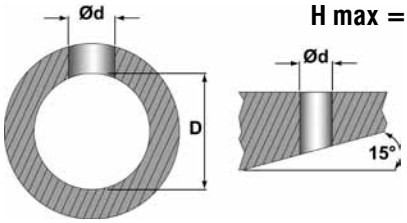
Technical Information

For the standard COFA tool, the maximum cross hole to main hole ratio is 2:1 and the maximum surface angle is 15°. Above these values, the cutting insert may not have enough clearance. All cutting data below are standard values. Deburr more extreme contours by using the 30° blade with extra clearance relief.

H = d/D
H max = 0.5



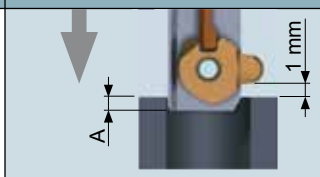
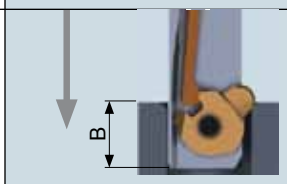
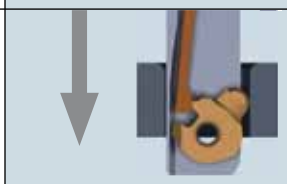
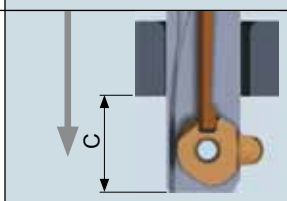
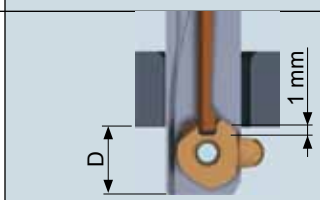
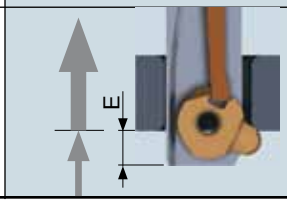
Spring Information

The spring gives cutting force to the carbide blade and the COFA tool easily accommodates several spring sizes. For easier cutting materials such as aluminum, a softer "W" spring is recommended. For harder materials or alloys, a stiffer spring is recommended.

Cutting Data

Material	Hardness BHN	Spring Index	COFA 2/3/4/5 Carbide-TiN IPR mm/rev	COFA 2/3/4/5 Carbide-TiN SFM MPM	COFA 6/8/12 Carbide-TiN IPR mm/rev	COFA 6/8/12 Carbide-TiN SFM MPM
Carbon Steels	*100-250*	H-Z	.002-.006 .05-.15	40-160 12-49	.006-.012 .15-.3	100-340 30-104
Free Machining Alloy	*125-340*	H-S S-Z	.002-.006 .05-.15	22-100 7-30	.006-.014 .15-.3	60-240 18-73
High Alloy Steel	*250-350*	S-Z1	.002-.006 .05-.15	22-85 7-26	.006-.010 .15-.25	60-200 18-60
Stainless Steel	*140-250*	S-Z2	.002-.006 .05-.15	15-110 4-34	.006-.010 .15-.25	40-175 12-53
Grey Cast Iron	*150-330*	H H-S	.002-.006 .05-.15	18-110 5-34	.008-.016 .2-.4	50-330 15-100
Nodular Cast Iron	*140-310*	H H-S	.002-.006 .05-.15	18-130 5-40	.006-.012 .15-.3	50-300 15-91
Aluminum Alloys	*30-180*	W-H	.002-.006 .05-.15	30-200 9-61	.008-.016 .2-.35	80-600 24-183
Nickel-based Alloys	*220-310*	Z1-Z3	.002-.006 .05-.15	7-38 2-12	.005-.010 .125-.25	15-80 5-24
Titanium Alloys		Z1-Z3	.002-.006 .05-.15	7-38 2-12	.005-.010 .125-.25	15-80 5-24
Copper-Brass-Bronze	*80-202*	S	.002-.006 .05-.15	30-200 9-61	.008-.016 .2-.4	80-600 24-183

NOTE: All listed cutting data are standard values only. The cutting values depend on the amount of slope of the uneven bore edge (i.e. high slope=low cutting value). The feed also depends on the sloping ratio. In case of hard-to-machine materials or uneven bore edges, we recommend applying cutting speeds that are at the lower end of the range for uneven bore edges.

For Front & Back Deburring		For Back Only Deburring
Step 1: Referencing the front of the tool. Rapid traverse the tool the distance "A" into the hole. This will give .040"(1) clearance from the cutter.		For back deburring only, the COFA tool can rapid traverse through the top hole without damage to your hole surface.
Step 2: In forward working feed machine the top surface of the hole by moving to distance "B". *(Ref. the front of the tool)*		
Step 3: Rapid traverse through the hole. The hole will not be damaged.		**Step 1:** Rapid traverse through the hole. The hole cannot be damaged.
Step 4: In order to make the blade pop out again, the tool has to be positioned beyond the rear bore edge by the distance "C". *(Ref. the front of the tool)*		**Step 2:** In order to make the blade pop out again, the tool has to be positioned beyond the rear bore edge by the distance "C". *(Ref. the front of the tool)*
Step 5: *(optional)* Travel the tool in back rapid feed below the rear material surface of the hole or burr to reduce cycle time. Move to distance "D". *(Ref. the front of the tool)*		**Step 3:** *(optional)* Travel the tool in back rapid feed below the rear material surface of the hole or burr to reduce cycle time. Move to distance "D". *(Ref. the front of the tool)*
Step 6: In back working feed, move to distance "E" to machine the rear surface. *(Ref. the front of the tool)* Rapid out.		**Step 4:** In back working feed, move to distance "E" to machine the rear surface. *(Ref. the front of the tool)* Rapid out.

Tool Type	A	B-Flat	B-Irregular	C*	D*	E-Flat*	E-Irregular*
COFA 2	.067" (1.7)	.177" (4.5)	.194" (4.9)	.177" (4.5)	.169" (4.3)	.059" (1.5)	.040" (1.0)
COFA 3	.098" (2.5)	.236" (6.0)	.260" (6.6)	.236" (6.0)	.217" (5.5)	.078" (2.0)	.055" (1.4)
COFA 4	.079" *(2.0)*	.217" *(5.5)*	.240" *(6.1)*	.217" *(5.5)*	.209" *(5.3)*	.071" *(1.8)*	.048" *(1.2)*
COFA 5	.090" *(2.3)*	.276" *(7.0)*	.286" *(7.3)*	.272" *(6.9)*	.252" *(6.4)*	.087" *(2.2)*	.037" *(0.9)*
COFA 6	.039" *(1.0)*	.217" *(5.5)*	.258" *(6.5)*	.236" *(6.0)*	.197" *(5.0)*	.020" *(0.5)*	-.018" *(-0.5)*
COFA 8	.059" *(1.5)*	.276" *(7.0)*	.324" *(8.2)*	.315" *(8.0)*	.256" *(6.5)*	.0 *(0)*	-.049" *(-1.2)*
COFA 12	.118" (3.0)	.394" *(10)*	.468" *(11.9)*	.472" *(12)*	.354" (9.0)	.079" (2.0)	0

*Plus Material Thickness