GMO DEBURRING TOOL
MANUAL

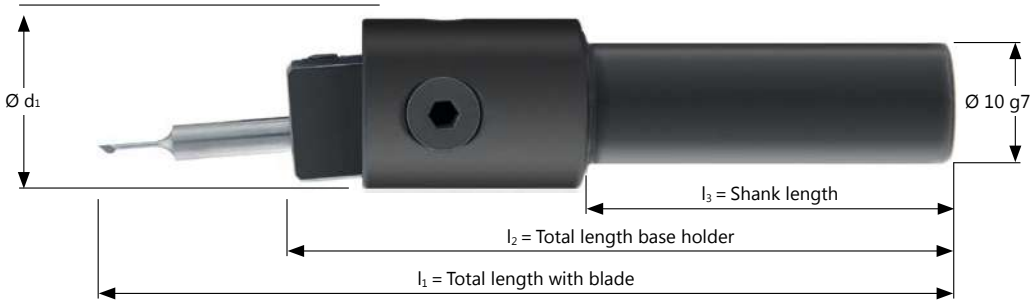
Status: August 2026
P26GMOHBDEEN

KEMPF

CONTENTS

TECHNICAL DATA

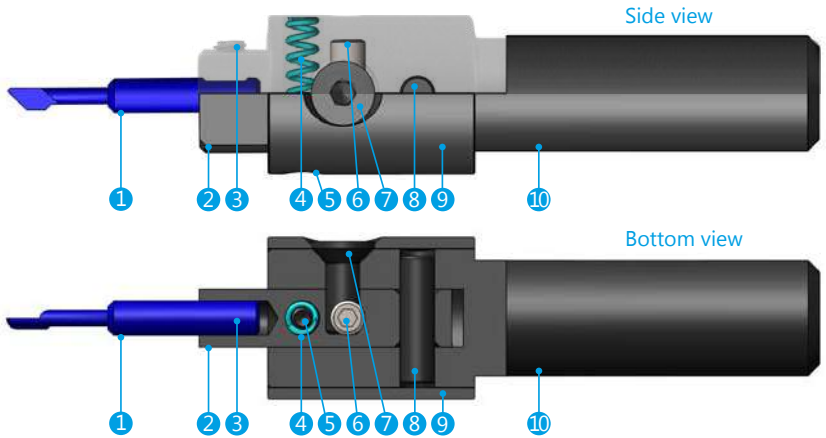
QUALITY TOOLS
MADE IN GERMANY



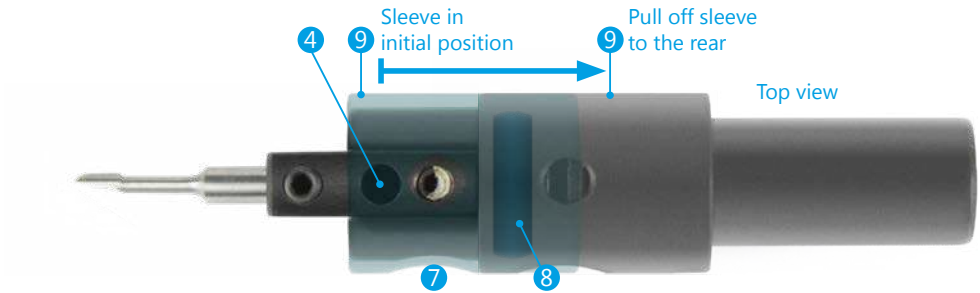
l_1 Total length with blade:	with base holder standard	70 mm*	l_3 Shank length:	with base holder standard	30 mm
	with base holder V	80 mm*		with base holder V	40 mm
	with base holder XL	85 mm**		with base holder XL	40 mm
l_2 Total length base holder:	with base holder standard	54 mm	d_1 Tool diameter:	with base holder standard	14 mm
	with base holder V	64 mm		with base holder V	14 mm
	with base holder XL	68 mm		with base holder XL	17 mm

*for cutting edge length 22 mm; **for cutting edge length 24,3 mm

TOOL DESIGN



1. Solid carbide blade
2. Insert (e.g. type E00); inter-changeable in each case to suit the hole diameter
3. Locking screw for blade
4. Compression spring
5. Adjustment screw for setting the spring load
6. Adjustment screw for setting the swing-out dimension depending on the hole diameter
7. Screw for body housing
8. Dowel pin
9. Sleeve
10. Shank



REPLACING THE COMPRESSION SPRING

1. Loosen countersunk screw (7) and push sleeve (9) back (Caution: use finger to hold back pressure spring (4)).
2. Push the sleeve to the rear until the spring is free.
3. Replace the spring and push sleeve back to initial position and fix it with countersunk screw (7).

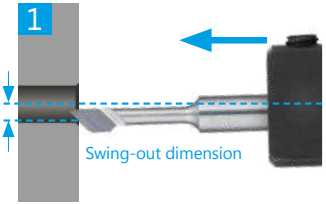
INSERT CHANGE

1. Loosen countersunk screw (7) and pull off sleeve (9) completely (Caution: hold back pressure spring (4) with finger).
2. Carefully drive out the dowel pin (8).
3. When inserting the new insert, lightly grease the bearing point.
4. Push the dowel pin back into the bore and mount the sleeve.

DEBURRING WITH SPRING FORCE

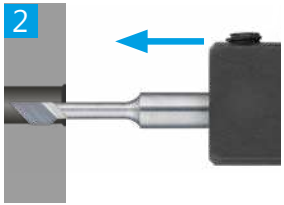
There are several compression springs with different compression forces available. The spring is selected depending on deburring intensity or workpiece material properties. E.g. for aluminum a soft spring, for stainless steel a strong pressure spring. In addition, the pressure force can be set by an adjusting screw. The spring force determines the chamfer size or deburring intensity.

APPROACHING THE HOLE



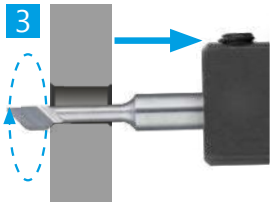
Position the center axis of the tool on the center of the hole. Set the swing-out dimension so that the center of the cutting edge meets the edge of the bore. The tool is pressed towards the axis against the spring force.

PASSING THROUGH HOLE



Drive into the bore with rotating tool and large feed rate (approx. f=500 mm/min). The front edge of the blade is rounded to allow an easy drive-through and to prevent damage to the outer chamfer.

BACK DEBURRING



Only drive in until the tool swings outwards and the offset neck of the blade contacts the bore. Then move backwards at a low feed rate, depending on the desired deburring intensity (about f=100 mm/min), removing the burr as the cutting edge is pressed against it by the spring force. After contact with the workpiece, move out of the bore at an increased feed rate.

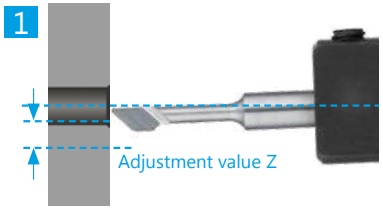
NOTE ABOUT ADJUSTMENT SCREW FOR SETTING THE SWING-OUT DIMENSION

The adjustment screw (6) is secured against rotation with threadlocking varnish. If the adjustment screw is too loose so that it can become misaligned during use, it should be replaced with a spare screw. Each tool is supplied with an additional M3x3 and M3x10 adjustment screw with threadlocking varnish and M3x4 and M3x5 locking screws as replacements.

DEBURRING WITH FIXED SETTING

The spring is removed and replaced with the included M3x10 screw. The swing-out dimension is now precisely set and fixed with two screws. A tool simulation and the free programming assistance enable optimal machine programming (www.kempf-tools.de/gmo/en).

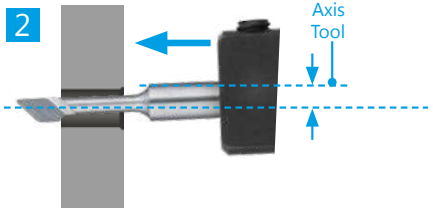
ADJUST CUTTING EDGE



Position the center axis of the tool on the center of the hole. Adjust the swing-out dimension so that the center of the cutting edge meets the edge of the bore.

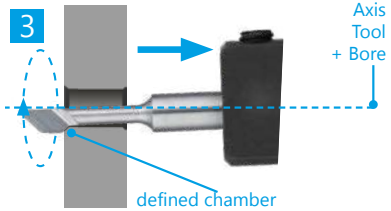
The spindle or the workpiece must be adjusted in Z-direction so that the blade can drive through the hole without contact.

PASSING THROUGH HOLE



After adjusting the blade, move through the hole in rapid traverse and without rotation.

BACK CHAMFERING



Then the spindle or workpiece is set back by the adjustment value Z. Now, switch on rotation and slowly retract until the desired chamfer size is reached.

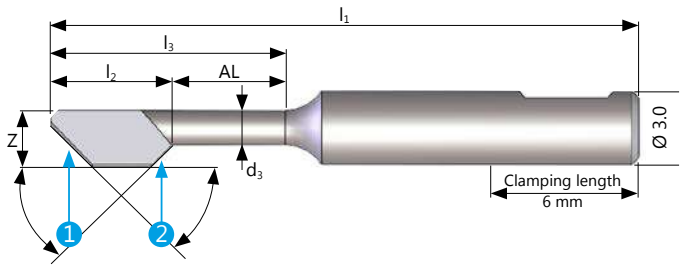
Rotation is now switched off. The spindle or the workpiece is moved again by the adjustment value so that the tool can be moved out of the hole at rapid traverse.

GMO SOLID CARBIDE BLADES

GMO solid carbide blades are available in different variants. First, please determine whether deburring is required only on the inner edges or on both the inner and outer edges of the workpiece.

1 OUTER CUTTING EDGE 45°
- cutting (for front and back deburring) or
- rounded = non-cutting (only front deburring)

2 INNER CUTTING EDGE 45° (STANDARD)
For special applications also available with 25° angle

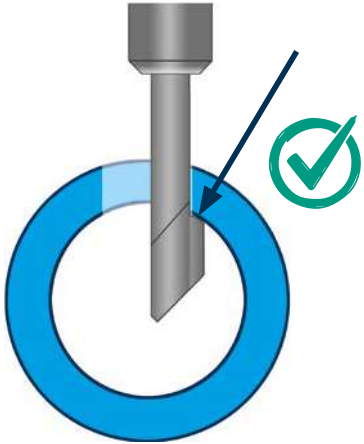


1. STANDARD Inner cutting edge 45°	2. FORM B Inner & outer cutting edge 45°	3. FORM 25 Inner cutting edge 25°	4. FORM B25 Inner cutting edge 25°, outer cutting edge 45°	5. POSITIVE Inner cutting edge 45°	6. FORM 25 POSITIVE Inner cutting edge 25°
Only for back deburring. The outer cutting edge is rounded here.	Front and back deburring is possible.	Suitable for cross holes in strongly curved workpiece areas.	For strongly curved workpiece surfaces as well as for front deburring.	Only for back deburring. 7° positive chip angle for soft cutting.	For strongly curved contours. 7° positive chip angle for soft cutting.

NOTE: In addition, we also offer modified blades with extended working depth by increasing the l_3 dimensions (special production).

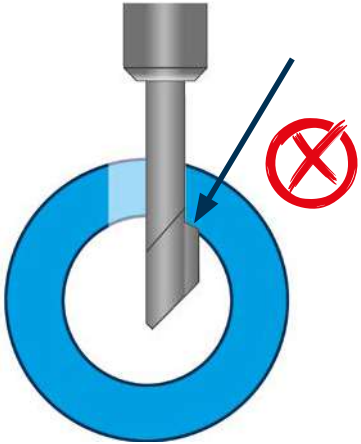
CUTTING EDGE ANGLE 45°

Ratio of cross hole to main hole is ok.



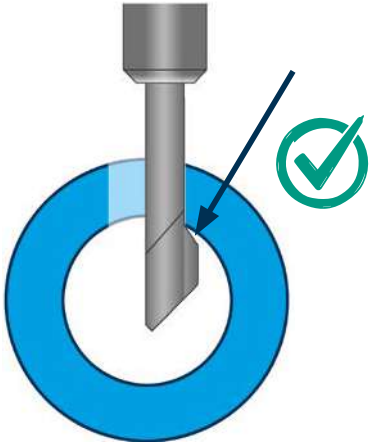
CUTTING EDGE ANGLE 45°

Ratio of cross hole to main hole is too small.



CUTTING EDGE ANGLE 25°

Ratio of cross hole to main hole with 25° angle is ok.



NOTES

Problem	Possible cause	Solution
Chamfer too large	Spring pressure too high	Reduce spring pressure
	Cutting circle too large	Reduce cutting circle
Chamfer uneven	Cutting circle too large	Reduce cutting circle
	Rotation speed too high	Reduce rotation speed
	Unfavorable bore ratio	Use 25° cutting edge
Deburring insufficient	Spring pressure too low	Increase spring pressure
	Cutting circle too small	Increase cutting circle
	Unfavorable bore ratio	Use 25° cutting edge
Secondary burr	Spring pressure too high	Reduce spring pressure
	Feed rate too high	Reduce feed rate
Chattered edge	Spring pressure too low	Increase spring pressure
	Feed rate too low	Increase feed rate
	Rotation speed too high	Reduce rotation speed

CUTTING DATA (RECOMMENDATIONS)

Materials	Feed (mm/min)	Speed (rpm)
Nonferrous metals	150 to 200	Plain surface: 300 to 500 Curved surface: 200 to 300
Unalloyed steels	100 till 150	
High alloy steels	50 to 100	

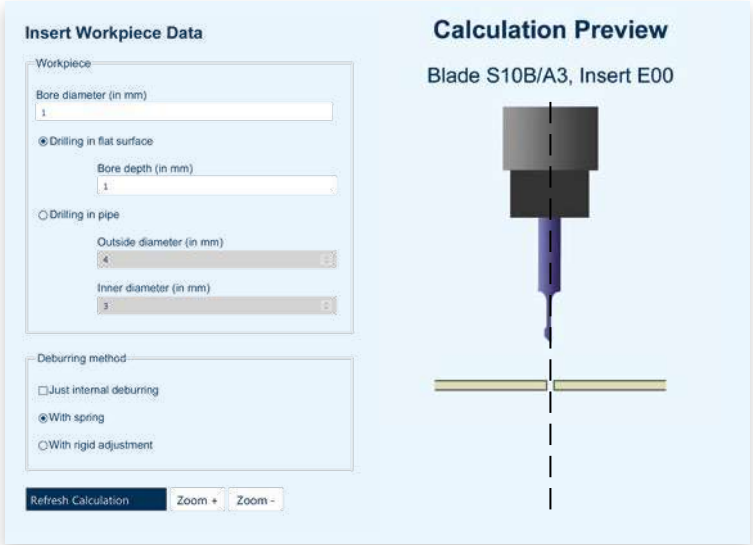
SPRING SELECTION

Materials	for base holder V	for base holder XL
Aluminium, brass,... (soft)	F40	FXL63
Steel (normal)	F50	FXL80
Stainless steel	F55	FXL90
Highly quenched and tempered steels (hard)	F63	FXL100

SPARE PARTS & ACCESSORIES

For information on available items, part numbers, and current prices, please refer to our deburring catalog.

GMO DEBURRING TOOL
ONLINE SIMULATION & PROGRAMMING ASSISTANCE



On our website we have set up a programming assistance which allows to check the appliability of the GMO Deburring Tool for a specific application by entering application data. The appropriate cutting edge and insert are displayed.
In addition, the required G-code program steps are output at the same time and a movement simulation of the tool is created.

www.kempf-tools.de/gmo/en

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