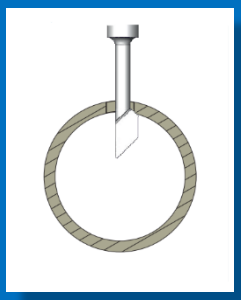
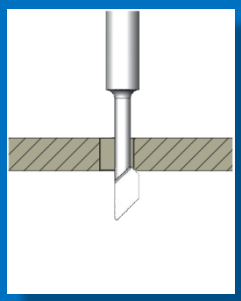
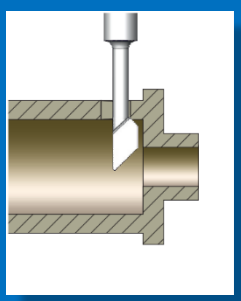
Deburring in perfection







GMO tools
Sonderwerkzeuge

Advantages of the GMO deburring tool

- Deburring process within seconds
- Deburring of smallest bores from Ø 0,80 mm
- Carbide cutting tools
- Deburring diameter variable adjustable
- Ideal for use on CNC processing machines
- Large selection of deburring blades
- Deburring of flat and curved bores
- Selection between two deburring methods

GMO Deburring tools (patented)

Deburring of bore inside and outside edges within seconds

Description

The GMO-Deburrer is designed for bores from Ø 0.8 mm to Ø 15.0 mm. In order to obtain the ideal conditions for the different diameters to be deburred, easily interchangeable inserts are available. These can each be infinitely adjusted exactly to the desired diameter.

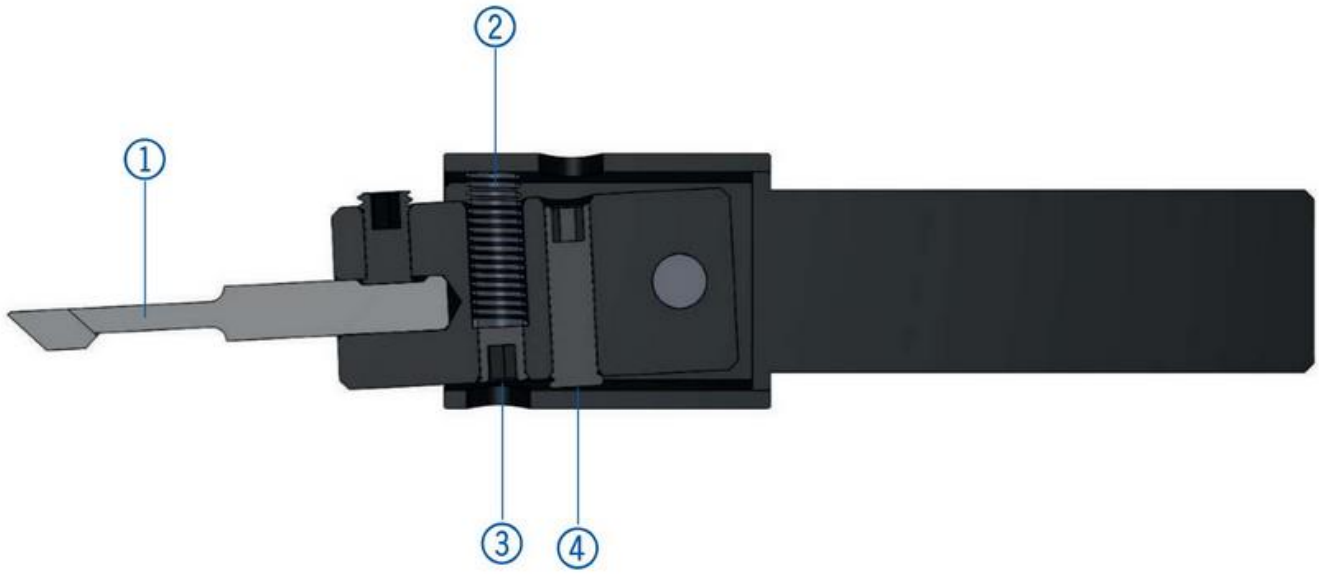
The deburring strength is adjustable by use of 4 different replaceable compression springs. In addition, the spring force can be finely adjusted by a set screw.

For the different requirements cutting tools in all variations are available.

You can choose blades for inside deburring or for inside and outside deburring. Likewise, special versions for strongly curved bores are available.

A variety of cutting edges are standard tools that can be ordered directly. In addition, we also offer special blades according to customer requirements.

① Solid carbide blades
② Compression spring
③ Setting screw for adjusting the spring force
④ Adjusting screw for setting the swiveling dimension depending on the bore diameter



Functionality

With the GMO deburring tool two different deburring methods are possible.

Deburring under use of a compression spring
Advantage
- very fast deburring process
- cutting blades adapts to the bore edge

Deburring with rigid adjustment (without compression spring)
Advantage
- for bores with a larger burr
- defined chamfer can be produced

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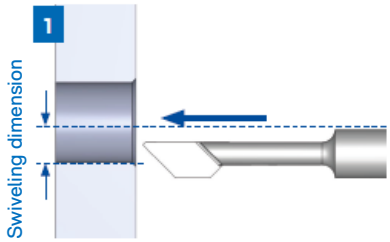
Application samples

Application 1

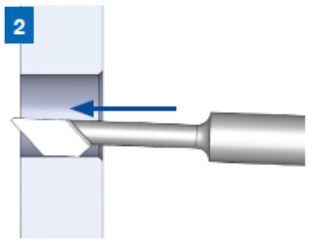
Deburring with spring force	
1.	Adjust the diameter to be deburred using the adjusting screw 4
2.	Position the tool centrally to the bore
3.	Immerse in the bore at full speed until the edge of the cutting tool lies below the bore edge to be deburred
4.	Move back with small feed rate to deburr the hole
5.	Drive out of the bore with full feed and speed

RETRACTION



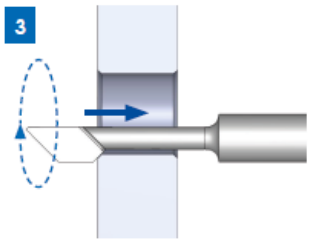
Position the central axis of the deburring tool on the center of the bore. Adjust the swiveling dimension so that the center of the deburring cutting edge meets the edge of the bore. The tool will be pressed to the axis against the spring force.

DRIVING THROUGH THE BORE



Immerse in the bore with rotating tool and large feed. The front edge of the tool is rounded to allow for easy immerse and to prevent damage to the outside bevel.

DEBURRING ON THE BACK OF THE BORE

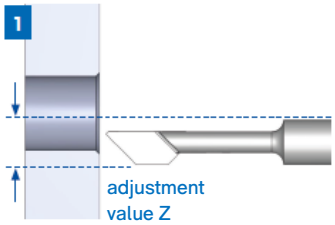


Only immerse until the tool swings outwards and the offset tool neck rests against the bore. Then drive backwards out of the bore with a small feed, depending on the desired deburring intensity (about F=80). In this process the burr will be removed because the blade is pressed by the spring force to the edge to be deburred. As soon as the cutting surface is clear, drive out of the bore with rapid-traverse.

Application 2

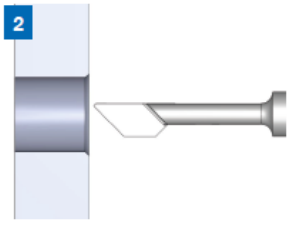
Deburring with rigid adjustment (without compression spring)	
1.	Replace spring with set screw M3 x 10 mm
2.	Adjust the diameter to be deburred using the adjusting screws (see pos. 3 and 4, illustration on side 2)
3.	Position the tool over the bore and move with stopped, oriented spindle out of bore center
4.	Immerse in the bore without speed until the cutting edges lies below the bore edge to be deburred.
5.	Position the spindle back in the center of the bore and switch in the speed
6.	Move back with small feed rate to be deburr the hole
7.	Stop the spindle-rotation, orient the spindle and drive out of the bore-center
8.	Drive out of the bore with full feed

ADJUSTMENT OF CENRAL AXIS



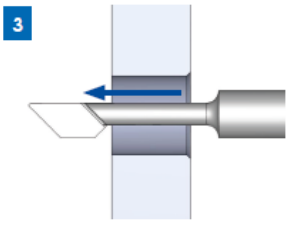
Position the central axis of the deburring tool on the center of the bore. Adjust the swiveling dimension so that the center of the deburring cutting edge meets the edge of the bore.

ADJUST IN Z-DIRCTION



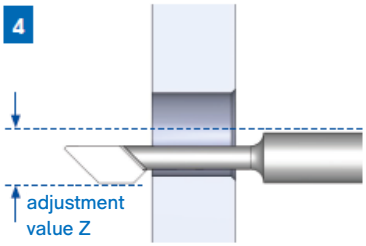
Adjust the spindle or workpiece in Z-direction so that the cutting edge can pass the hole without contact.

DRIVING THROGH THE BORE



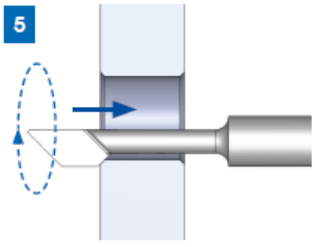
After adjustment, drive in rapid through the bore without rotation.

RESET IN Z-DIRECTION



Then reset the spindle or the workpiece by the adjustment value.

DEBURRING ON THE BACK OF THE BORE



Switch on the rotation and drive slowly upwards until desired chamfer is reached.

Turn off rotation. Orient the spindle or move the workpiece by the adjustment value to exit the bore in rapid traverse.

Technical Support

You can receive the following active support on our homepage:	
1. Tool arrangement	On our homepage in the section “SIMULATION” you can enter your data in a window and get the optimal tool selection.
2. CNC programming	After you have entered your data in the corresponding window, you will also receive the CNC data sets for your programming. By clicking on the individual positions, you can see the position of the tool during machining in the graphic.

GMO-Sets

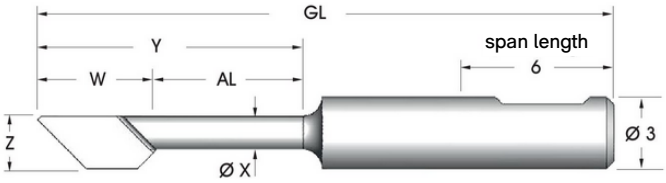
GMO-Set 1
Basic holder with complete accessories (without deburring blade)

Article	Content	Version/Size
GMO-SET1 Standard Basic holder	1x GMO Basic holder 6x Inserts 4x Compression springs 2x Allen keys	Shaft = 30 mm, GL = 48 mm E00, E05, E10, E15, E20, E25 F40, F50, F55, F63
GMO-SET1 V Basic holder V with clamping surface	1x GMO Basic holder 6x Inserts 4x Compression springs 2x Allen keys	Shaft = 40 mm, GL = 58 mm E00, E05, E10, E15, E20, E25 F40, F50, F55, F63
GMO-SET1 XL Basic holder XL with clamping surface	1x GMO Basic holder 6x Inserts 4x Compression springs 3x Allen keys	Shaft = 40 mm, GL = 60 mm E00, E05, E10, E15, E20, E25 F63, F80, F90, F100

GMO-Set 2
Basic holder with Standard accessories (without deburring blade)

Article	Content	Version/Size
GMO-SET2 Standard Basic holder	1x GMO Basic holder 1x Insert 4x Compression springs 2x Allen keys	Shaft = 30 mm, GL = 48 mm Insert of choice F40, F50, F55, F63
GMO-SET2 V Basic holder V with clamping surface	1x GMO Basic holder 1x Insert 4x Compression springs 2x Allen keys	Shaft = 40 mm, GL = 58 mm Insert of choice F40, F50, F55, F63
GMO-SET2 XL Basic holder XL with clamping surface	1x GMO Basic holder 1x Insert 4x Compression springs 3x Allen keys	Shaft = 40 mm, GL = 60 mm Insert of choice F63, F80, F90, F100

Assortment



GMO deburring blade	bore-Ø to be deburred [mm]	possible bore-depth [mm]	AL	GL	W	X	Y	Z
GMO S08 A2	0,8 – 1,0	2,0	2	22,0	1,40	0,50	3,40	0,75
GMO S08 A3	0,8 – 1,0	3,0	3	22,0	1,40	0,50	4,40	0,75
GMO S10 A3	1,0 – 1,2	3,0	3	22,0	2,00	0,65	5,00	0,95
GMO S10 A4	1,0 – 1,2	4,0	4	22,0	2,00	0,65	6,00	0,95
GMO S12 A3	1,2 – 1,5	3,0	3	22,0	2,65	0,70	5,65	1,10
GMO S12 A4	1,2 – 1,5	4,0	4	22,0	2,65	0,70	6,65	1,10
GMO S12 A5	1,2 – 1,5	5,0	5	22,0	2,65	0,70	7,65	1,10
GMO S15 A4	1,5 – 2,0	4,0	4	22,0	3,10	1,00	7,10	1,40
GMO S15 A5	1,5 – 2,0	5,0	5	22,0	3,10	1,00	8,10	1,40
GMO S15 A6	1,5 – 2,0	6,0	6	22,0	3,10	1,00	9,10	1,40
GMO S15 A7	1,5 – 2,0	7,0	7	22,0	3,10	1,00	10,1	1,40
GMO S20 A5	2,0 – 2,5	5,0	5	22,0	3,80	1,40	8,80	1,90
GMO S20 A6	2,0 – 2,5	6,0	6	22,0	3,80	1,40	9,80	1,90
GMO S20 A7	2,0 – 2,5	7,0	7	22,0	3,80	1,40	10,8	1,90
GMO S20 A8	2,0 – 2,5	8,0	8	23,0	3,80	1,40	11,8	1,90
GMO S20 A10	2,0 – 2,5	10,0	10	24,0	3,80	1,40	13,8	1,90
GMO S20 A12	2,0 – 2,5	12,0	12	25,0	3,80	1,40	15,8	1,90
GMO S23 A5	2,3 – 7,5	5,0	5	24,3	5,00	1,40	10,0	2,20
GMO S23 A6	2,3 – 7,5	6,0	6	24,3	5,00	1,40	11,0	2,20
GMO S23 A7	2,3 – 7,5	7,0	7	24,3	5,00	1,40	12,0	2,20
GMO S23 A8	2,3 – 7,5	8,0	8	24,3	5,00	1,40	13,0	2,20
GMO S23 A10	2,3 – 7,5	10,0	10	25,0	5,00	1,40	15,0	2,20
GMO S23 A12	2,3 – 7,5	12,0	12	26,0	5,00	1,40	17,0	2,20
GMO S30 A6	3,0 – 8,0	6,0	6	24,3	5,50	1,80	11,0	2,90
GMO S30 A10	3,0 – 8,0	10,0	10	25,0	5,50	1,80	15,0	2,90
GMO S30 A14	3,0 – 8,0	14,0	14	28,0	5,50	1,80	19,0	2,90
GMO S40 A17	4,0 – 15,0	17,0	17	29,0	5,90	3,00	22,9	3,90
GMO S40 A25	4,0 – 15,0	25,0	25	37,0	5,90	3,00	30,9	3,90

The above-mentioned deburring blades are available in the following variants:

GMO S.. A..	cutting angle 45°	only inside deburring	e.g. S23 / A5
GMO S.. B A..	cutting angle 45°	inside and outside deburring	e.g. S23B / A5
GMO S.. W25 A..	cutting angle 25°	only inside deburring	e.g. S23 / W25 / A5
GMO S.. B W25 A..	cutting angle 25°	inside and outside deburring	e.g. S23B / W25 / A5

GMO tools
Sonderwerkzeuge

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