

# Axial-Pulsator

**For an efficient and process reliable application of our tools when machining steel and long chipping material**

## Operation mode:

By a defined stroke of the tool in axial direction an in- and decreasing chip thickness is achieved. This leads, with a chip thickness of "0", to a chip breakage. The stroke of the Pulsator is generated mechanically and optimally adapted for the tool, respectively the drilling process.

## Installation:

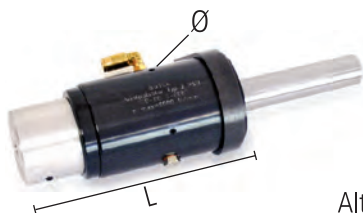
The spindle connection of the Axial Pulsator is made according to customers requirements (CAT, cylindrical shaft, weldon style, etc.). The Pulsator housing must be fixed on the machine to avoid rotation. The lubrication of the Pulsator is done by an air lubrication unit (oil mist). The Pulsator can be used for all types of machines with rotating spindle and infinitely variable. Assembly can be done with minimal effort by the user.

## Results:

The feed rate when processing so far difficult to machine materials, e.g. copper, can now be increased up to 4-times using the Axial Pulsator due to extremely short chips. For drilling steel, feed rates of  $v_f = 500 - 1000$  mm/min had been achieved by using botek solid carbide 2-fluted drill (type 123) with optimized nose grind geometry. Higher feed rates can also be achieved with single flute gundrills depending on the material and the drilling conditions. In general no tool life reduction is to be expected when using botek tools with optimized nose grind geometry in combination with the Axial Pulsator. For long chipping material higher tool life had been achieved because of the different chip form. Fluctuations of the material quality hardly influence the process capability, respectively the tool life.

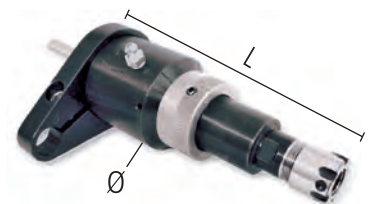
## Large Pulsator

Drill diameter: 4.0 mm to 12.0 mm  
Max. speed: 6000 RPM  
Adjustable only by the manufacturer (stroke)  
Ø: 70 mm  
Weight: 4.4 kg  
L: 160 mm



## Small Pulsator

Drill diameter: up to 4.0 mm  
Max. speed: 11000 RPM  
Adjustable stroke  
Ø: 50 mm  
Weight: 1.3 kg  
L: 140 mm



Alternative measurements on request

Copper	without Pulsator	with Pulsator	with Pulsator
Tool	Single flute gundrill type 110	Single flute gundrill type 110	Solid carbide 2-fluted drill type 123
Diameter [mm]	8.0	8.0	8.0
$v_f$ [mm/min]	40	120	200
Steel	without Pulsator	with Pulsator	with Pulsator
Tool	Single flute gundrill type 110	Single flute gundrill type 110	Solid carbide 2-fluted drill type 123
Diameter [mm]	8.0	8.0	8.0
$v_f$ [mm/min]	90 - 100	150 - 180	200 - 1000

Above mentioned values are guide values which could differ from your application.

# Quotation Request for botek Axial Pulsator

inquiry       order

Fax to: +49 - (0) - 71 23 - 38 08 - 138

1. Drilling method     solid drilling       counterboring  
drill-dia.: \_\_\_\_\_      drilling depth: \_\_\_\_\_      material: \_\_\_\_\_

2. Tool type       solid carbide gundrill      type 113  
 single flute gundrill      type 110  
 twin fluted gundrill      type 120  
 solide carbide 2-fluted drill      type 123

3. Driver (tool shank)     with driver      driver description: \_\_\_\_\_      dia.: \_\_\_\_\_      length: \_\_\_\_\_  
 without driver      shank dia.: \_\_\_\_\_  
 special driver (please supply information on dimensions and version): \_\_\_\_\_

4. Spindle type for     HSK      size / dimension: \_\_\_\_\_  
 BTA or CAT      size / dimension: \_\_\_\_\_  
 cylindrical      size / dimension: \_\_\_\_\_  
 special design      \_\_\_\_\_

5. Lubrication unit (air)       available       not available

6. Machine       gundrilling machine      manufacturer: \_\_\_\_\_      type: \_\_\_\_\_  
 machining centre      manufacturer: \_\_\_\_\_      type: \_\_\_\_\_

7. Machine / coolant     deep-hole drilling oil       emulsion       minimum quantity lubrication (MQL)  
coolant pressure (p): \_\_\_\_\_ bar

8. Quantity      \_\_\_\_\_

9. Delivery date      \_\_\_\_\_

10. Customer      \_\_\_\_\_

Contact      \_\_\_\_\_

Phone / Fax      \_\_\_\_\_

Date / Signature      \_\_\_\_\_

company stamp