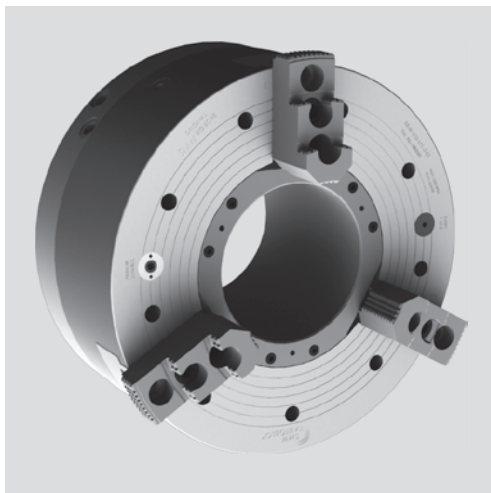


# BIG BORE® ES

INCH  
serration

## Front-end pneumatic power chucks Ø 140 - 560 mm

- EXTRA LARGE THROUGH HOLE
- 3 jaws - extended jaw stroke



### Application/customer benefits

- End machining of long pipe with collars
- Rapid and clamping stroke for short clamping cycles
- Full spindle bore can be used

### Technical features

- Air chuck for external clamping with built-in pneumatic cylinder
- Rapid and clamping stroke
- Air feed via distributor ring and SMW-profile seals, at stopped spindle
- Built in non-return valves maintain the air pressure during machining
- Clamping pressure level constantly checked by a safety control system (only for external clamping).
- Clamping stroke control (no clamping in rapid stroke) is monitored.

### Standard equipment

- 3 jaw chuck
- 2 elbow unions G 1/2" (4 for BB-N 1000)
- 12 mounting bolts (9 for the BB-N ES 400)
- 1 lifting eye bolt
- 1 set T-nuts with bolts
- 1 set soft top jaws
- without distributor ring bracket

### Ordering example

BIG BORE BB-N ES 400/Z310

### Accessories

Control unit AC-BB/AC-X  
(see pages 258-261)

## The principle invented by SMW: air supply via distributor ring and SMW-profile seal rings

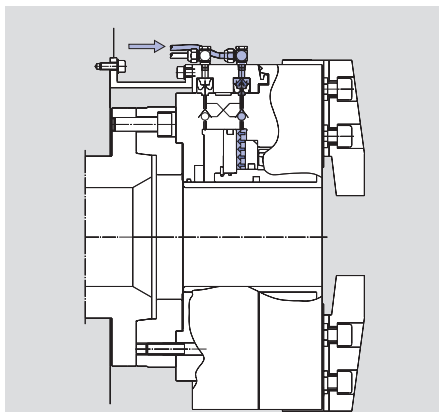


Fig. 1

Open/close movement (only possible at stopped spindle). The profile seals deform radially under the pneumatic pressure, sealing on the chuck body and filling the cylinder chamber. When the clamping pressure is reached, the air feed is stopped, closing the twin non-return valve.

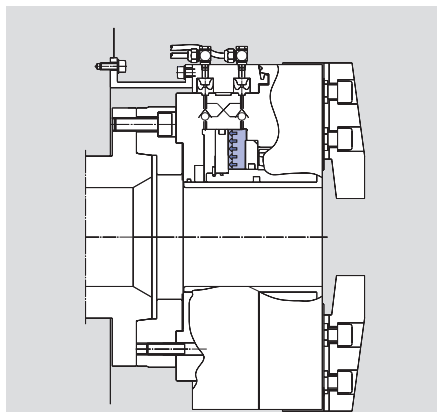


Fig. 2

The SMW-profile seals lift to the expanded position, not touching the chuck body anymore. The clamping pressure is maintained by the twin non-return valve. The chuck can start to rotate.

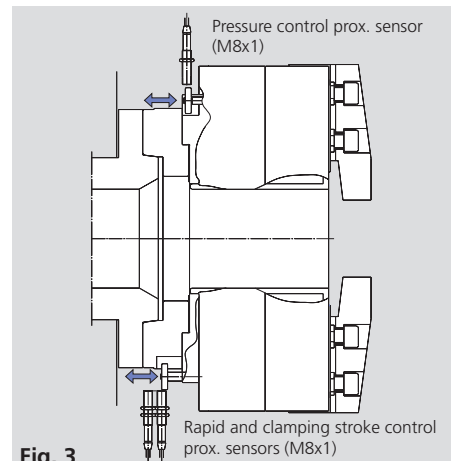
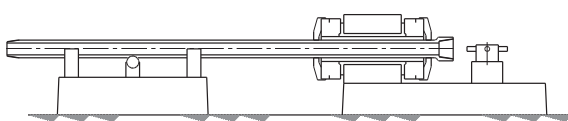


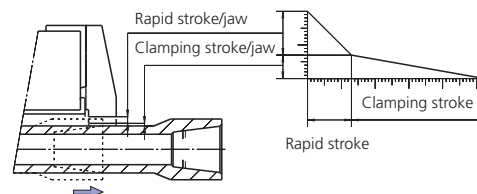
Fig. 3

**Pressure control:** if the pressure is less than a pre-set safety level, the switch ring moves into the proximity-switch field, sending an alarm signal.

**Stroke control:** The proximity switches monitor the following jaw positions: Jaws cpl. open, Jaws in rapid stroke, Jaws cpl. closed.



End machining of pipe with front and rear chucks



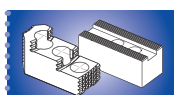
### Technical data

| SMW-AUTOBLOK BB-N ES Type           |                   | 400-140 | 470-191 | 500-205 | 500-230 | 600-275 | 630-325 | 850-375 | 1000-560 |
|-------------------------------------|-------------------|---------|---------|---------|---------|---------|---------|---------|----------|
| Id. No.                             |                   | 052330  | 053536  | 052651  | 052652  | 052990  | 052653  | 052654  | 052655   |
| Through-hole                        | mm                | 140     | 191     | 205     | 230     | 275     | 325     | 375     | 560      |
| Total stroke per jaw                | mm                | 20      | 20      | 25.4    | 25.4    | 25.4    | 25.4    | 25.4    | 25.4     |
| Rapid stroke per jaw*               | mm                | 13      | 13      | 16.9    | 16.9    | 16.9    | 16.9    | 13.4    | 15       |
| Clamping stroke per jaw             | mm                | 7       | 7       | 8.5     | 8.5     | 8.5     | 8.5     | 12      | 10.4     |
| Operating pressure min./max.        | bar               | 2/10    | 2/10    | 2/10    | 2/10    | 2/10    | 2/10    | 2/10    | 3/10     |
| Piston area                         | cm <sup>2</sup>   | 705     | 565     | 1004    | 895     | 954     | 1193    | 1340    | 1090     |
| Gripping force at 6 bar             | kN                | 130     | 115     | 190     | 170     | 185     | 200     | 200     | 170      |
| Max. speed                          | r.p.m.            | 1300    | 1300    | 1300    | 1300    | 1100    | 900     | 750     | 450      |
| Air consumption/jaw stroke at 6 bar | liter             | 29      | 22      | 41      | 37      | 39      | 48      | 79      | 57       |
| Weight (without top jaws)           | kg                | 200     | 190     | 340     | 325     | 360     | 520     | 970     | 960      |
| Moment of inertia                   | kg.m <sup>2</sup> | 6.5     | 9.83    | 16.4    | 16.1    | 19      | 36      | 105     | 160      |

\*must not be used for clamping



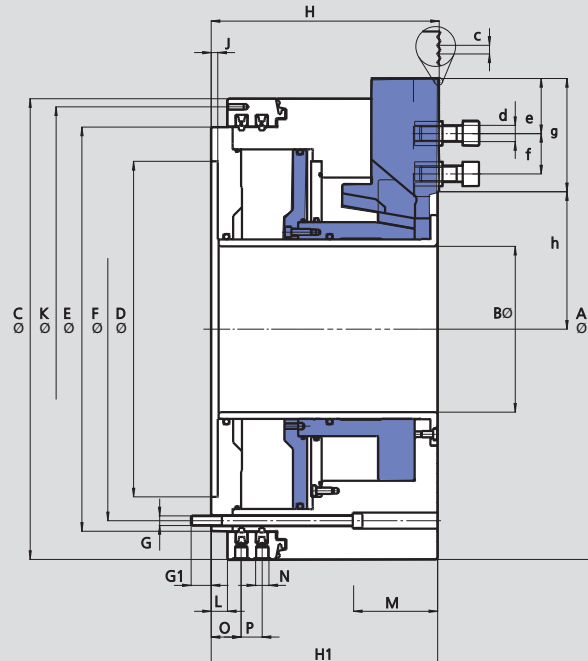
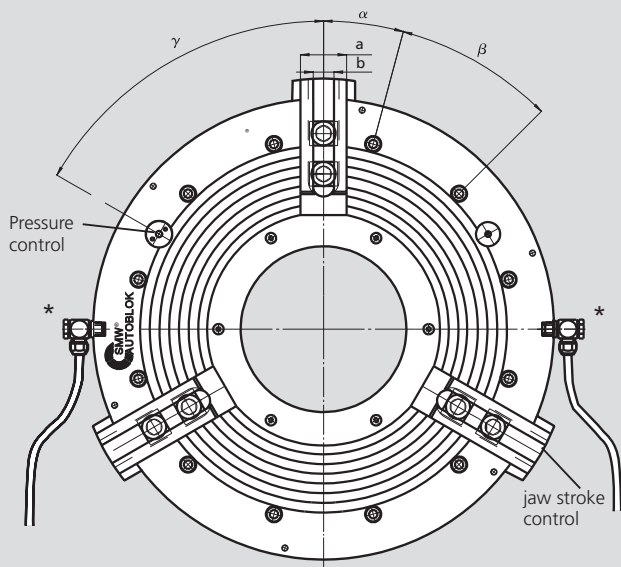
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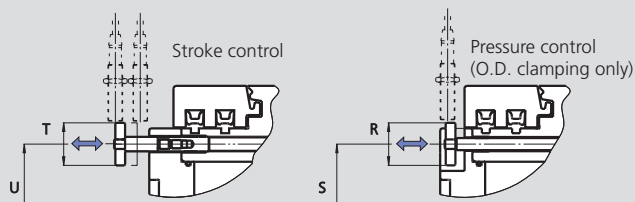
## Main dimensions and technical data

Jaw position: Open for external clamping



\* all hoses must be min. 1/2" up to chuck size 600 and 3/4" from chuck size 630 on!

BB-N ES 1000 needs 2 hoses per function open/close (see installation manual)



enlarged illustration

Subject to technical changes  
For more detailed information please ask for customer drawing

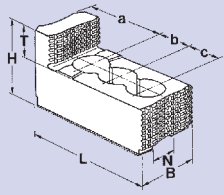
| SMW-AUTOBLOK BB-N ES Type |             |      | 400-140     | 470-191     | 500-205     | 500-230     | 600-275     | 630-325     | 850-375     | 1000-560    |
|---------------------------|-------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Id. No.                   |             |      | 052330      | 053536      | 052651      | 052652      | 052990      | 052653      | 052654      | 052655      |
| Mounting                  |             |      | Z310        | Z310        | Z415        | Z415        | Z450        | Z510        | Z700        | Z700        |
| Fixing bolts circle       | A           | mm   | 467         | 470         | 570         | 570         | 605         | 685         | 850         | 1000        |
|                           | B           | mm   | 140         | 191         | 205         | 230         | 275         | 325         | 375         | 560         |
|                           | C           | mm   | 467         | 467         | 570         | 570         | 605         | 685         | 850         | 925         |
|                           | D H6        | mm   | 310         | 310         | 415         | 415         | 450         | 510         | 700         | 700         |
|                           | E           | mm   | 400         | 400         | 500         | 500         | 535         | 610         | 775         | 850         |
|                           | F           | mm   | 374         | 374         | 474         | 474         | 508         | 580         | 745         | 815         |
|                           | G           | mm   | M12         | M12         | M12         | M12         | M12         | M16         | M16         | M16         |
|                           | G1          | mm   | 26          | 26          | 25          | 25          | 25          | 30          | 30          | 30          |
|                           | H           | mm   | 240         | 240         | 282         | 282         | 282         | 307.5       | 354         | 332         |
|                           | H1          | mm   | 238         | 238         | 280         | 280         | 280         | 305.5       | 352         | 330         |
| Thread circle 6 x M8      | J           | mm   | 8           | 8           | 8           | 8           | 8           | 8           | 8           | 10          |
|                           | K           | mm   | 448         | 448         | 550         | 550         | 585         | 666         | 830         | 910         |
|                           | L           | mm   | 20          | 20          | 20          | 20          | 20          | 20          | 25          | 33          |
|                           | M           | mm   | -           | -           | -           | -           | -           | -           | -           | 224         |
| Pneumatic connection      | N           | inch | G 1/2"      | G 1/2"      | G 1/2"      | G 1/2"      | G 1/2"      | G 1/2"      | G 1/2"      | G 1/2"      |
|                           | O           | mm   | 37          | 37          | 37          | 37          | 37          | 39.5        | 44.5        | 52.5        |
|                           | P           | mm   | 26          | 26          | 26          | 26          | 26          | 33          | 33          | 33          |
|                           | R           | mm   | 35          | 35          | 35          | 35          | 35          | 42          | 35          | 42          |
|                           | S           | mm   | 374         | 374         | 474         | 474         | 508         | 575         | 745         | 815         |
|                           | T           | mm   | 35          | 35          | 35          | 35          | 35          | 35          | 35          | 35          |
|                           | U           | mm   | 374         | 374         | 474         | 474         | 508         | 580         | 745         | 815         |
|                           | a           | mm   | 57          | 57          | 57          | 57          | 57          | 75          | 75          | 75          |
| Serration                 | b           | mm   | 25.5        | 25.5        | 25.5        | 25.5        | 25.5        | 30          | 30          | 30          |
|                           | c           | inch | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° |
| Bolt ISO 4762 12.9        | d           | mm   | M20         | M20         | M20         | M20         | M20         | M24         | M24         | M24         |
|                           | e           | mm   | 14          | 14          | 14          | 14          | 14          | 16          | 16          | 16          |
| T-nuts distance           | min./max. f | mm   | 38/90       | 38/85       | 38/104      | 38/92       | 38/79       | 47/100      | 47/140      | 47/125      |
| Serration length          | g           | mm   | 121         | 106         | 140         | 127.5       | 116.5       | 138         | 182         | 166         |
|                           | min./max. h | mm   | 104/124     | 127/147     | 145.6/171   | 158/182.5   | 179.1/204.5 | 204.6/230   | 242.6/268   | 334.6/360   |
| (Pressure control)        | α°          |      | 20          | 20          | 15          | 15          | 15          | 15          | 15          | 15          |
|                           | β°          |      | 9 x 40      | 9 x 40      | 12 x 30     | 12 x 30     | 12 x 30     | 12 x 30     | 12 x 30     | 12 x 30     |
|                           | γ°          |      | 83          | 83          | 60          | 60          | 60          | 60          | 60          | 60          |

# BIG BORE® ES

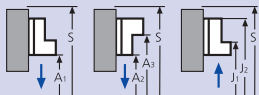
INCH  
serration

■ Top jaws  
■ T-nuts

## GUB Hard reversible top jaws

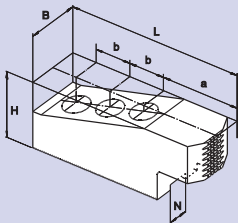


### Gripping ranges

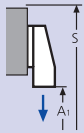


| Chuck<br>BB-N ES | 400-140     | 470-191     | 500-205     | 500-230<br>600-275 | 630-325     | 850-375     | 1000-560    |
|------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| Jaw type         | MHB-D 500   | GUB 500     | GUB 500     | GUB 500            | GUB 630     | GUB 800     | GUB 800     |
| Id. No.          | 12084546    | 12084546    | 12084546    | 12084546           | 12086446    | 12088046    | 12088046    |
| B                | 60          | 60          | 60          | 60                 | 75          | 75          | 75          |
| H                | 75          | 75          | 75          | 75                 | 85          | 85          | 85          |
| L                | 140         | 140         | 140         | 140                | 160         | 220         | 220         |
| T                | 2 x 19      | 2 x 19      | 2 x 19      | 2 x 19             | 30          | 30          | 30          |
| N                | 25.5        | 25.5        | 25.5        | 25.5               | 30          | 30          | 30          |
| Serration        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90°        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° |
| a                | 46          | 46          | 46          | 46                 | 30          | 51          | 51          |
| b                | 38          | 38          | 38          | 38                 | 50          | 62          | 62          |
| c                | 38          | 38          | 38          | 38                 | 50          | 62          | 62          |
| kg/set           | 6.6         | 6.6         | 6.6         | 6.6                | 13.5        | 19.5        | 19.5        |
| A1               | 78-264      | 113-270     | 175-388     | 200-388            | 295-500     | 320-610     | 470-760     |
| A2               | 125-310     | 160-315     | 225-435     | 250-435            | 295-500     | 330-620     | 480-770     |
| A3               | 310-495     | 345-500     | 410-620     | 435-620            | 495-700     | 590-865     | 745-1030    |
| J1               | -           | -           | -           | -                  | -           | -           | -           |
| J2               | -           | -           | -           | -                  | -           | -           | -           |
| S                | 635         | 640         | 765         | 765                | 870         | 1070        | 1250        |

## GAB Hard top jaws

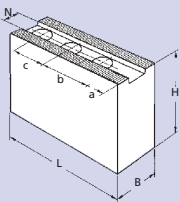


### Gripping ranges

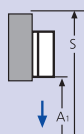


| Chuck<br>BB-N ES | 400-140     | 470-191     | 500-205     | 500-230<br>600-275 | 630-325     | 850-375     | 1000-560    |
|------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| Jaw type         | GAB 500     | GAB 500     | GAB 500     | GAB 500            | GAB 630     | GAB 800     | GAB 800     |
| Id. No.          | 12085146    | 12085146    | 12085146    | 12085146           | 12086546    | 12089046    | 12089046    |
| B                | 55          | 55          | 55          | 55                 | 75          | 75          | 75          |
| H                | 73          | 73          | 73          | 73                 | 82          | 82          | 82          |
| L                | 195         | 195         | 195         | 195                | 245         | 320         | 320         |
| N                | 25.5        | 25.5        | 25.5        | 25.5               | 30          | 30          | 30          |
| Serration        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90°        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° |
| a                | 96          | 96          | 96          | 96                 | 113         | 165         | 165         |
| b                | 38          | 38          | 38          | 38                 | 50          | 60          | 60          |
| c                | 38          | 38          | 38          | 38                 | 50          | 60          | 60          |
| kg/set           | 16.5        | 16.5        | 16.5        | 16.5               | 31.5        | 40.5        | 40.5        |
| A1               | 25-160      | 60-165      | 75-290      | 100-290            | 130-335     | 95-385      | 245-535     |
| S                | 635         | 640         | 765         | 765                | 870         | 1060        | 1210        |

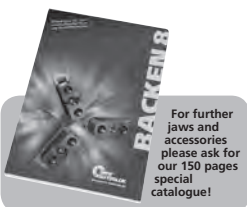
## WBSA-D/WBC-D Soft top jaws



### Gripping ranges



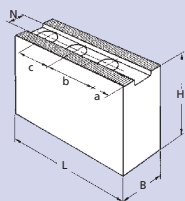
| Chuck<br>BB-N ES | 400-140     | 470-191     | 500-205     | 500-230<br>600-275 | 630-325     | 850-375     | 1000-560    |
|------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| Jaw type         | WBSA-D 500  | WBSA-D 500  | WBSA-D 500  | WBSA-D 500         | WBC-D 630   | WBC 800     | WBC-D 800   |
| Id. No.          | 12075050    | 12075050    | 12075050    | 12075050           | 12076440    | 12078040    | 12078040    |
| B                | 60          | 60          | 60          | 60                 | 80          | 80          | 80          |
| H                | 60          | 60          | 60          | 60                 | 80          | 80          | 80          |
| L                | 170         | 170         | 170         | 170                | 240         | 320         | 320         |
| N                | 25.5        | 25.5        | 25.5        | 25.5               | 30          | 30          | 30          |
| Serration        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90°        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° |
| a                | 69          | 69          | 69          | 69                 | 110         | 165         | 165         |
| b                | 38          | 38          | 38          | 38                 | 50          | 60          | 60          |
| c                | 38          | 38          | 38          | 38                 | 50          | 60          | 60          |
| kg/piece         | 3.6         | 3.6         | 3.6         | 3.6                | 11          | 15          | 15          |
| A1               | 35-220      | 70-225      | 130-335     | 155-335            | 135-340     | 95-385      | 245-535     |
| S                | 590         | 595         | 720         | 720                | 865         | 1060        | 1210        |



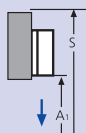
- Top jaws
- T-nuts
- Adapters

INCH  
serration

## WBCL Soft top jaws long version

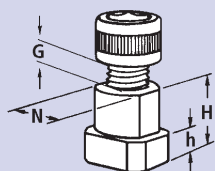


### Gripping ranges



| Chuck<br>BB-N ES | 400-140     | 470-191     | 500-205     | 500-230<br>600-275 | 630-325     | 850-375     | 1000-560    |
|------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| Jaw type         | WBC-D 502   | WBC-D 502   | WBC-D 502   | WBC-D 502          | WBC-D 800   | WBCL-D 800  | WBCL-D 800  |
| Id. No.          | 12075140    | 12075140    | 12075140    | 12075140           | 12078040    | 12079040    | 12079040    |
| B                | 60          | 60          | 60          | 60                 | 80          | 80          | 80          |
| H                | 60          | 60          | 60          | 60                 | 80          | 80          | 80          |
| L                | 205         | 205         | 205         | 205                | 320         | 390         | 390         |
| N                | 25.5        | 25.5        | 25.5        | 25.5               | 30          | 30          | 30          |
| Serration        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° | 3/32" x 90°        | 3/32" x 90° | 3/32" x 90° | 3/32" x 90° |
| a                | 104         | 104         | 104         | 104                | 165         | 230         | 230         |
| b                | 38          | 38          | 38          | 38                 | 60          | 60          | 60          |
| c                | 38          | 38          | 38          | 38                 | 60          | 60          | 60          |
| kg               | 4.5         | 4.5         | 4.5         | 4.5                | 15          | 18          | 18          |
| A1               | -           | 0-150       | 60-275      | 85-275             | 25-210      | 25-255      | 115-405     |
| S                | -           | 595         | 720         | 720                | 895         | 1070        | 1220        |

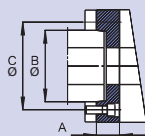
## NST T-nuts



| Chuck<br>BB-N ES                 | 400-140  | 470-191  | 500-205  | 500-230<br>600-275 | 630-325  | 850-375   | 1000-560 |
|----------------------------------|----------|----------|----------|--------------------|----------|-----------|----------|
| Jaw type                         | NST      | NST      | NST      | NST                | NST      | NST       | NST      |
| Id. No.                          | 12065020 | 12065020 | 12065020 | 12065020           | 13063900 | 13063900  | 13063900 |
| N                                | 25.5     | 25.5     | 25.5     | 25.5               | 30       | 30        | 30       |
| H                                | 34       | 34       | 34       | 34                 | 44       | 44        | 44       |
| h                                | 15       | 15       | 15       | 15                 | 18       | 18        | 18       |
| G                                | M 20     | M 20     | M 20     | M 20               | M 24     | M 24      | M 24     |
| Bolt<br>ISO 4762 12.9            | M20 x 40 | M20 x 40 | M20 x 40 | M20 x 40           | M24 x 60 | M24 x 60w | M24 x 60 |
| Tighten<br>torque<br>Md max (Nm) | 300      | 300      | 300      | 300                | 450      | 450       | 450      |

## Adapters for BIG BORE chucks

### ISO-A DIN 55026 mounting adapters



| BB-N ES      | 400-140/470-191 |          |          | 500-205/500-230 |          |          | 600-275  |          |          | 630-325  |          |          | 850-375  |          | 1000-560   |         |
|--------------|-----------------|----------|----------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------|---------|
| Spindle nose | A8              | A11      | A15      | A11             | A15      | A20      | A11      | A15      | A20      | A11      | A15      | A20      | A15      | A20      | A15        | A20     |
| Id. No.      | 24184020        | 24114020 | 24124020 | 24115030        | 24125020 | 24175020 | 24116020 | 24126020 | 24176020 | 24116320 | 24126320 | 24176320 | 24128020 | 24178020 | on request |         |
| A mm         | 40              | 40       | 40       | 40              | 40       | 40       | 40       | 40       | 40       | 50       | 50       | 50       | 50       | 50       |            |         |
| B mm         | 139.719         | 196.869  | 285.775  | 196.869         | 285.775  | 412.775  | 196.869  | 285.775  | 412.775  | 196.869  | 285.775  | 412.775  | 285.775  | 412.775  | 265.775    | 412.775 |
| C mm         | 171.4           | 235      | 330.2    | 235             | 330.2    | 463.6    | 235      | 330.2    | 463.6    | 235      | 330.2    | 463.6    | 330.2    | 463.6    | 330.2      | 463.6   |

Bayonet and camlock flanges are available on request



For further  
jaws and  
accessories  
please ask for  
our 150 pages  
special  
catalogue!