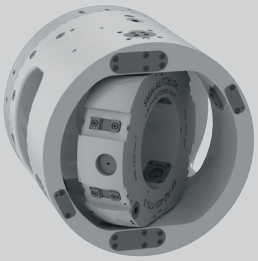
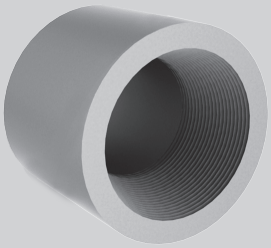
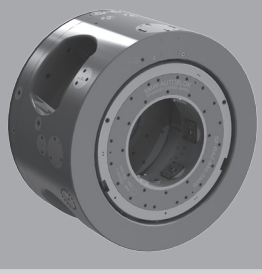
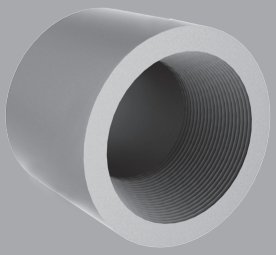
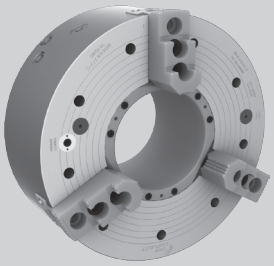
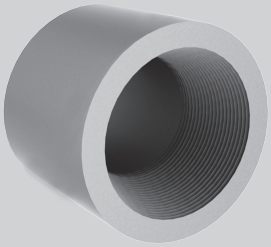
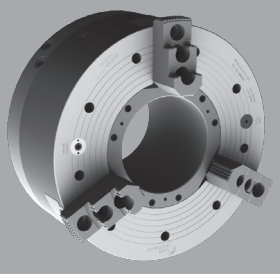
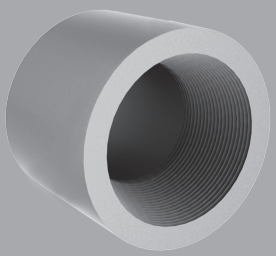
# Overview Couplings

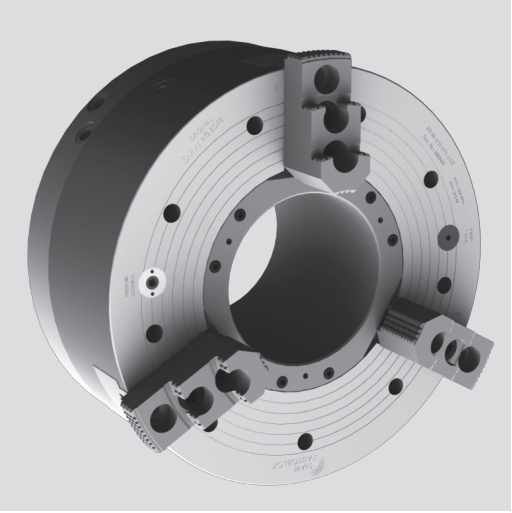
| CHUCK | APPLICATION | OCTG PRODUCT | CUSTOMER BENEFITS |
|---|---|---|---|
| **SF-RZ** NEW<br>Page 28<br>  | Hydraulic ring indexing chuck for threading of couplings in **1 set up** with the original SMW Type SF-RZ (3 jaw self centering clamping). |  | ▪ **3 jaw self centering clamping**<br>▪ **Quick jaw movement** more couplings per hour<br>▪ Compact design and light weight<br>▪ Easy retrofit on excisting machines |
| **SF-RAZ**<br>Page 30<br>  | Hydraulic ring indexing chuck for threading of couplings in **1 set up** with the original SMW Type SF-RAZ (6 jaw clamping: 3 jaw self centering, 3 jaw compensating). |  | ▪ **6 jaw clamping for low deformation of coupling**<br>▪ **Quick jaw movement** more couplings per hour<br>▪ Rigid strong design and highest accuracy for all premium couplings |
| **BB-N**<br>Page 32<br>  | Threading of couplings in 2 set ups with the original SMW Big Bore Type BB-N (3-jaw clamping). |  | ▪ **Quick jaw movement** more couplings per hour<br>▪ Can be used for other work pieces besides coupling<br>▪ O.D. and I.D. clamping |
| **BB-N ES**<br>Page 34<br>  | Threading of couplings in 2 set ups with the original SMW Big Bore Type BB-N ES (3-jaw clamping). |  | ▪ **Quick jaw movement** more couplings per hour<br>▪ Large jaw stroke for easy loading of couplings |

# BIG BORE®
# BB-N-ES

**INCH serration**

## Front-end pneumatic power chucks
## EXTRA LARGE THROUGH HOLE Ø 140 - 560 mm

- chuck size 400 - 1000
- extended jaw stroke
- 3 jaws



## 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-XN
(see general catalog pages 298-300)

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

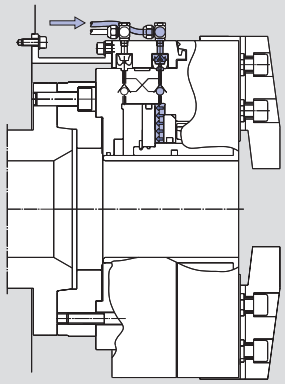


**Fig. 1**
Open/close movement (only possible at stopped spindle). The profile seals deform radially under the pneumatic pressure, sealing on the chuck body and filling the cylinder chamber.
When the clamping pressure is reached, the air feed is stopped, closing the twin non-return valve.

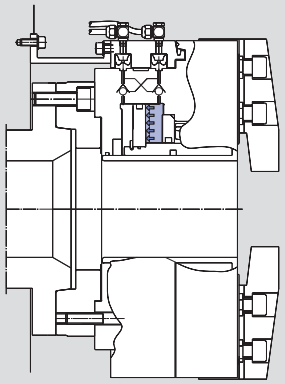


**Fig. 2**
The SMW-profile seals lift to the expanded position, not touching the chuck body anymore.
The clamping pressure is maintained by the twin non-return valve.
The chuck can start to rotate.

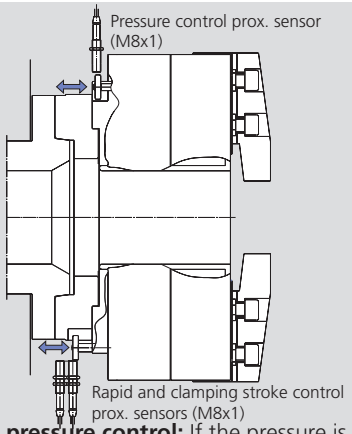
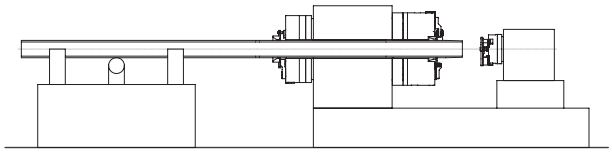
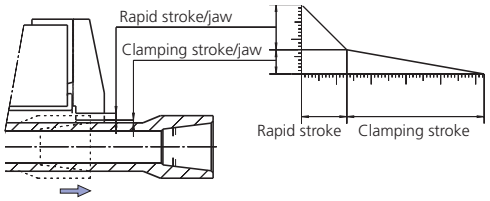



**Fig. 3**
**Safety pressure control:** If the pressure is less than a pre-set safety level, the switch ring moves into the proximity-switch field, sending an alarm signal.
**Jaw stroke control:** If the part is clamped in a not correct jaw stroke position, the switch ring moves into the proximity-switch field sending an alarm signal.



End machining of pipe with front and rear chucks




## Technical data

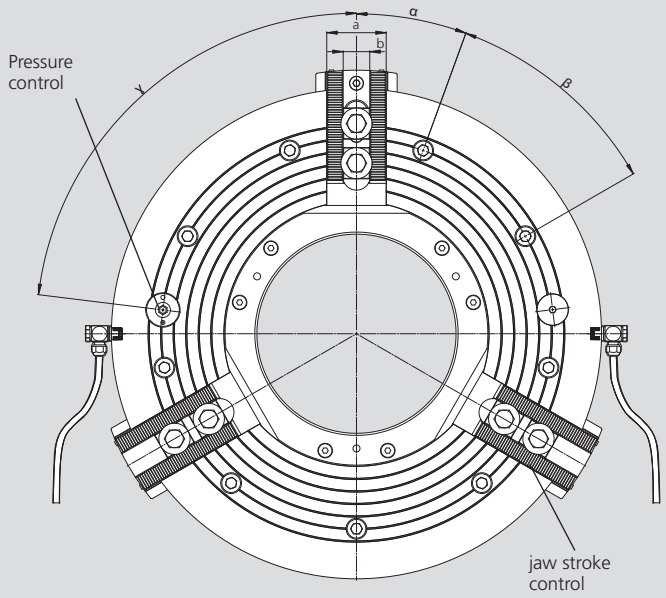
| SMW-AUTOBLOK BB-N-ES Type | | 400-140 | 470-191 | 500-205 | 500-230 | 600-275 | 630-325 | 850-375 | 1000-560 |
|---|---|---|---|---|---|---|---|---|---|
| **Id. No.** | | 052330 | 053536 | 052651 | 052652 | 052990 | 052653 | 052654 | 052655 |
| **Through-hole** | mm (inch) | 140 (5.51") | 191 (7.52") | 205 (8.07") | 230 (9.06") | 275 (10.83") | 325 (12.80") | 375 (14.76") | 560 (22.05") |
| **Total stroke per jaw** | mm (inch) | 20 (0.79") | 20 (0.79") | 25.4 (1") | 25.4 (1") | 25.4 (1") | 25.4 (1") | 25.4 (1") | 25.4 (1") |
| **Rapid stroke per jaw*** | mm (inch) | 13 (0.51") | 13 (0.51") | 16.9 (0.67") | 16.9 (0.67") | 16.9 (0.67") | 17.2 (0.67") | 13.4 (0.53") | 15 (0.59") |
| **Clamping stroke per jaw** | mm (inch) | 7 (0.28") | 7 (0.28") | 8.5 (0.33") | 8.5 (0.33") | 8.5 (0.33") | 8.2 (0.32") | 12 (0.47") | 10.4 (0.41") |
| **Operating pressure** min./max. | bar (psi) | 2/10 (29/145) | 2/10 (29/145) | 2/10 (29/145) | 2/10 (29/145) | 2/10 (29/145) | 2/10 (29/145) | 2/10 (29/145) | 2/10 (29/145) |
| **Piston area** | $cm^2$ | 705 | 565 | 1004 | 895 | 954 | 1270 | 1340 | 1090 |
| **Gripping force** at 6 bar | kN (lbf) | 130 (29225) | 115 (25853) | 190 (42714) | 170 (38218) | 185 (41590) | 220 (49458) | 200 (44962) | 170 (38218) |
| **Max. speed** | r.p.m. | 1300 | 1300 | 1100 | 1300 | 1100 | 1000 | 750 | 450 |
| **Air consumption/jaw stroke** at 6 bar | liter | 29 | 22 | 41 | 37 | 39 | 48 | 79 | 57 |
| **Weight** (without top jaws) | kg (lbs) | 200 (441) | 190 (419) | 340 (750) | 325 (717) | 360 (794) | 630 (1389) | 970 (2138) | 960 (2116) |
| **Moment of inertia** | $kg \cdot m^2$ | 6.5 | 9.83 | 16.4 | 16.1 | 19 | 36 | 105 | 160 |

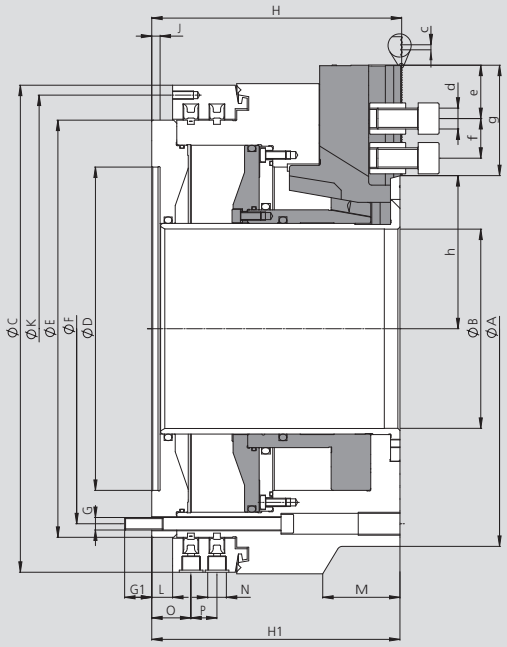
* must not be used for clamping

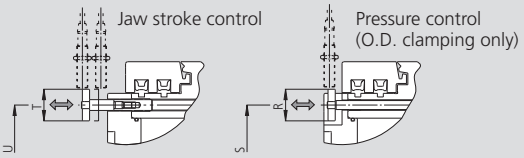
# BIG BORE®
# BB-N-ES

**INCH serration**

**Jaw position: Open for external clamping**




**enlarged illustration**

* All hoses/piping must be at least 1/2" ID, and min 3/4" ID from chuck size 630 on.

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

To determine the exact position of the jaw stroke control and the pressure control please ask for a customer drawing.

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** |
| | **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 |
| Fixing bolts circle | **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 |
| | **J** | mm | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 10 |
| Thread circle 6 x M8 | **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 |
| | **b** | mm | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 30 | 30 | 30 |
| Serration | **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 |
| min. | **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 |
| | **α** | deg. | 20 | 20 | 15 | 15 | 15 | 15 | 15 | 15 |
| | **β** | deg. | 9 x 40 | 9 x 40 | 12 x 30 | 12 x 30 | 12 x 30 | 12 x 30 | 12 x 30 | 12 x 30 |
| (Pressure control) | **γ** | deg. | 83 | 83 | 60 | 60 | 60 | 60 | 60 | 60 |