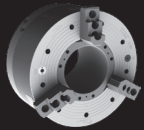
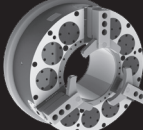
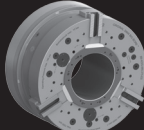
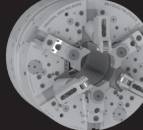
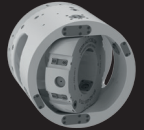




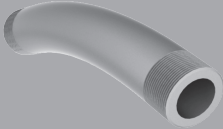





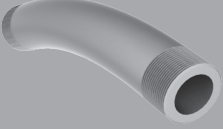

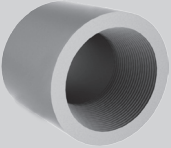

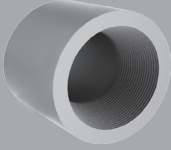




Chuck finder for Oil Country Tubular Goods:

Introduction

- Straight Pipe
- Bent Pipe
- Couplings

Chuck Type					
Machining OCTG Product	BB-N/BB-N-ES	BB-SC	BB-AZ2G	BB-FZA2G	SF-RZ/SF-RAZ
 Straight Pipe	 Page 12/14	 Page 16	 Page 18		
 Bent Pipe with shimming	 Page 12/14	 Page 16	 Page 18		
 Bent Pipe with external centering chuck			 Page 18		
 Bent Pipe with integrated centering chuck				 Page 22	
 Threading of Couplings in 1 set up					 Page 28/30
 Threading of Couplings in 2 set ups	 Page 32/34				 Page 28/30



Ideal



Possible

Performance Characteristics

Explanation of the end product properties

Big Bore



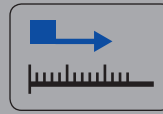
Big Bore is synonymous with **self contained air chucks with large through holes**. Big Bore chucks allow for the full spindle bore of the machine to be utilized.

Quick Clamping Circle



Optimal sized air feeds and valve systems guarantee a **quick clamping cycle**.

ES



ES chucks offer **extended jaw stroke** for greater clearance to ensure safe loading and unloading of pipe.

Spring Clamp



Spring clamp technology ensures the quickest clamping cycles and the highest degree of safety under any conditions.

Low Maintenance



Proofline chucks are **fully sealed, low maintenance** allowing for long service intervals, minimizing machine downtime.

AZ

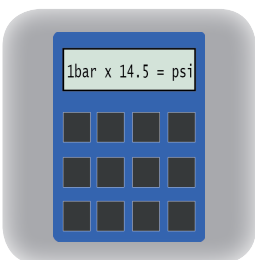


AZ chucks offer the versatility of clamping either **compensating** or **self centering**.

FZA



FZA chucks **sequence 3 centering jaws** along with **3 compensating jaws** integrated within the same chuck body.



Conversion Table (US)

1 mm	=	0.03937 Inch	1 cm ²	=	0.155 square inches
1 bar	=	14.5 psi	1 liter	=	1.05 quarts (qt)
1 kN	=	220.46 lbf	1 kg·m ²	=	3417 lb square inches
1 kg	=	2.2046 lbs	1 liter/min	=	0.264 gallon/min

Data sheet						Performance Characteristics		
OCTG chuck	Size	Outside Dia. Max	Work piece capacity	Time for a full clamping	Time for a full opening	Max. Grip force (at max. pressure)	Height of chuck without adapter	Weight without jaws and adapter
	in mm	in mm	in mm	Max	Max	in kN	in mm	in kg
BB-N ▪ Big Bore ▪ Quick Clamping Circle	400-140	467	140	-	-	266	196	155
	470-191	470	191	4.5	3.0	191	196	160
	500-205	570	205	6.0	6.0	350	225	230
	500-230	570	230	6.0	6.0	316	225	200
	600-275	605	275	6.0	6.0	333	225	270
	630-310	685	310	6.5	6.5	366	263	420
	800-410	850	410	7.0	5.5	550	305	650
BB-N-ES ▪ Big Bore ▪ Quick Clamping Circle ▪ Extended Stroke	400-140	467	140	on request	on request	216	240	200
	470-191	470	191	4.5	3.0	191	240	195
	500-205	570	205	6.0	4.5	316	280	340
	500-230	570	230	6.0	4.5	283	280	325
	600-275	605	275	6.0	4.5	308	280	350
	630-325	685	325	6.0	4.5	333	307.5	630
	850-375	850	375	7.0	5.5	333	354	970
	1000-560	1000	560	7.5	6.0	283	332	960
BB-SC ▪ Big Bore ▪ Spring Clamp ▪ Low Maintenance	600-275	750	275	3	3	150	320.5	516
	850-395	925	395	3	3	170	375.5	1025
	1020-565	1095	565	4.5	4.5	170	375.5	1256
BB-AZ2G ▪ Big Bore ▪ Self centering or compensating ▪ Extended Stroke	685-275	685	275	on request	on request	266	380.5	800
	740-330	740	330	on request	on request	266	380.5	875
	800-390	800	800	on request	on request	300	380.5	1000
	1000-560	1000	560	on request	on request	300	380.5	1420
BB-FZA2G ▪ Big Bore ▪ Sequence chuck	740-275	740	275	on request	on request	149	516.5	1100
	800-330	800	330	on request	on request	133	516.5	1080
	920-390	920	390	on request	on request	255	546.5	1900
SF-RAZ ▪ Hydraulic indexing chuck ▪ Low Maintenance	750	750	185	2	2	250	456	1018
	840	840	275	2	2	250	501	1286
	950	950	368	2	2	250	560	1650

Clamping times have been measured with the corresponding original SMW-AUTOBLOK air control unit on the SMW-AUTOBLOK test stand. For more details please contact SMW-AUTOBLOK.

Overview Pipe

Customer's OCTG product:

- Straight pipe
- Bent pipe

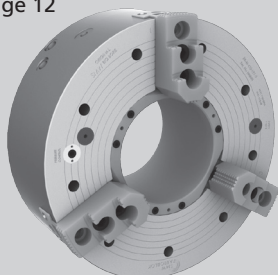
CHUCK

APPLICATION

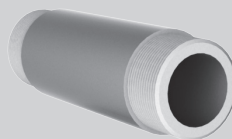
OCTG PRODUCT

CUSTOMER BENEFITS

BB-N
Page 12

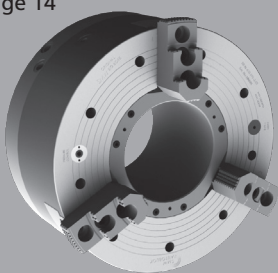


Threading of straight pipe with the original SMW Big Bore Type BB-N.

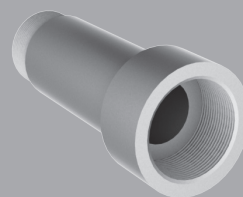


- **Quick jaw movement** more pipe per hour
- Can be used for other work pieces besides piping
- O.D. and I.D. clamping

BB-N-ES
Page 14

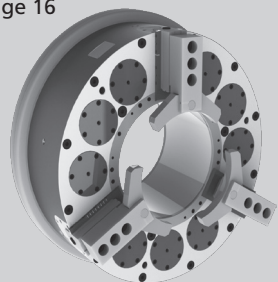


Threading of straight pipe with upset ends with the original SMW Big Bore Type BB-N-ES.

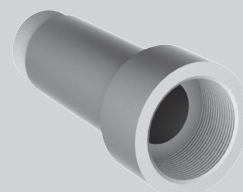
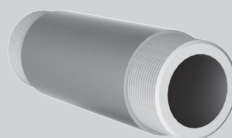


- **Quick jaw movement** more pipe per hour
- Large jaw stroke for easy loading of pipe and less danger of damaging threads when unloading

BB-SC
Page 16

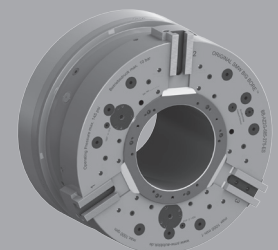


High production **spring clamp** chuck for threading of straight pipe with or without upset ends with the original SMW Big Bore Type BB-SC.

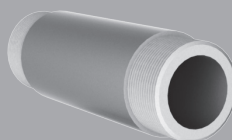
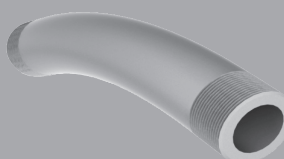


- **Full jaw stroke in 2 seconds** for highest productivity
- Fully sealed/low maintenance for highest availability of the machine
- Safe clamping of pipe even in longer machining processes with spring clamp technology

BB-AZ2G
Page 18

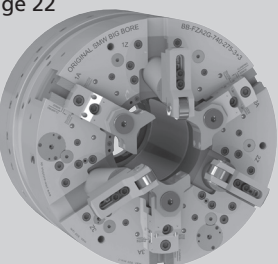


Threading of straight and bent pipe with the original SMW Big Bore Type BB-AZ2G.

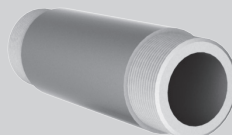
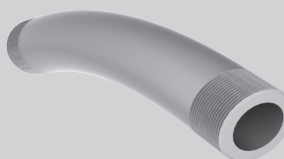


- **Self centering or compensating clamping** for universal use
- Quick jaw movement
- External centering device needed when used in compensating mode
- O.D. clamping only

BB-FZA2G
Page 22



Threading of straight and bent pipe with integrated centering jaws with the original SMW Big Bore Type BB-FZA2G.



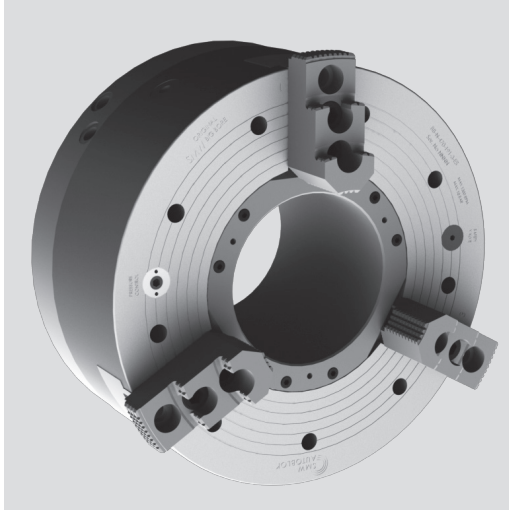
- **Integrated centering jaws for the pipe** = no external centering device needed
- Quick jaw movement
- Fully automatic programmable cycle

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

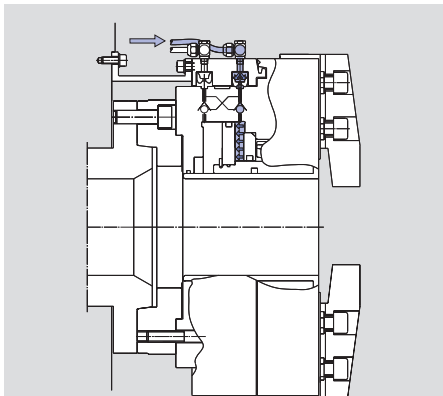


Fig. 1
Open/close movement (only possible at stopped spindle). The profile seals deform radially under the pneumatic pressure, sealing on the chuck body and filling the cylinder chamber. When the clamping pressure is reached, the air feed is stopped, closing the twin non-return valve.

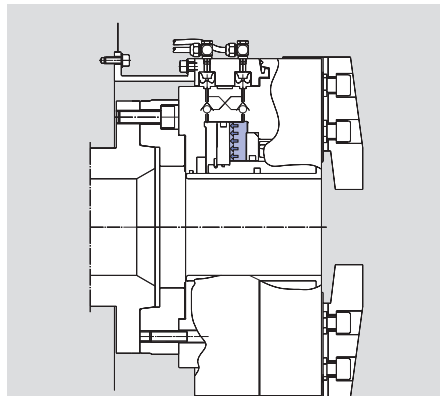


Fig. 2
The SMW-profile seals lift to the expanded position, not touching the chuck body anymore. The clamping pressure is maintained by the twin non-return valve. The chuck can start to rotate.

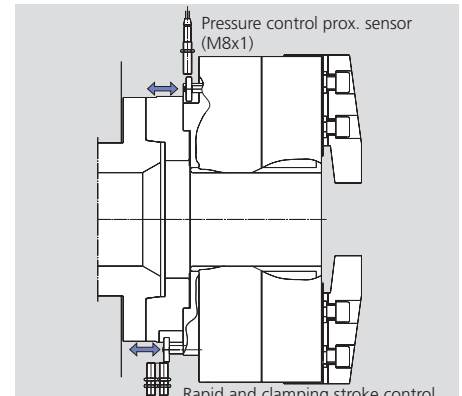
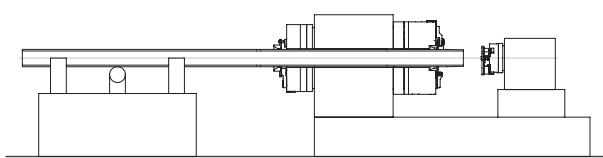
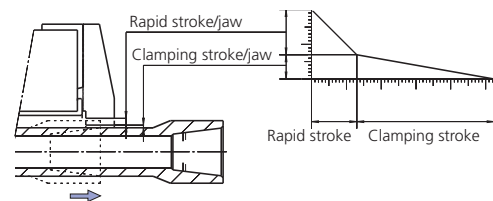


Fig. 3
Safety pressure control: If the pressure is less than a pre-set safety level, the switch ring moves into the proximity-switch field, sending an alarm signal.
Jaw stroke control: If the part is clamped in a not correct jaw stroke position, the switch ring moves into the proximity-switch field sending 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·m ²	6.5	9.83	16.4	16.1	19	36	105	160

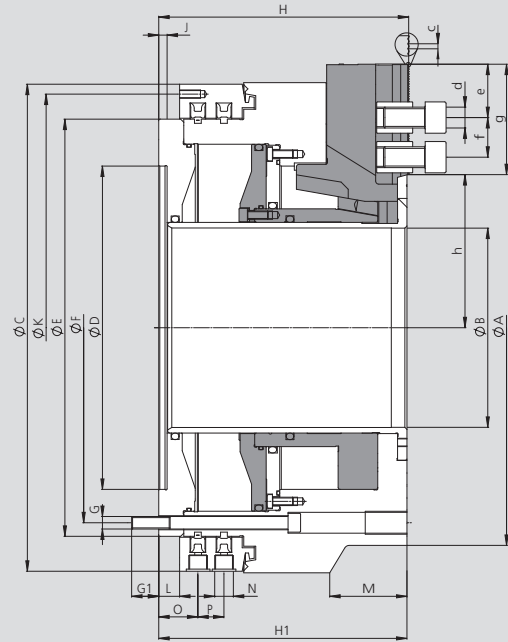
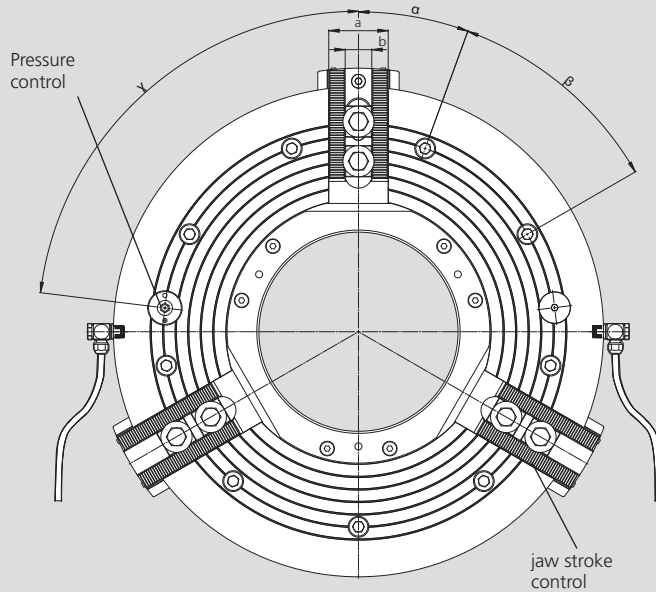
* must not be used for clamping

BIG BORE® BB-N-ES

INCH serration

Main dimensions and technical data

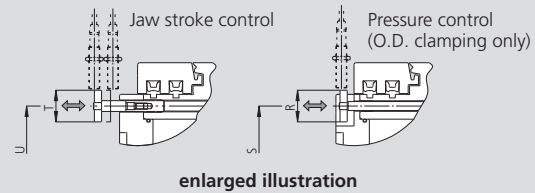
Jaw position: Open for external clamping



* 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