CUSTOMER BENEFITS

SMW-AUTOBLOK is the inventor

SMW-AUTOBLOK - the inventor and pacemaker in technology for OCTG chucks. More than 40 years of experience ensure the highest productivity for all of our customers.

Worldwide Service + Support

Our worldwide SMW-AUTOBLOK network guarantees immediate service, availability of parts and support wherever needed.

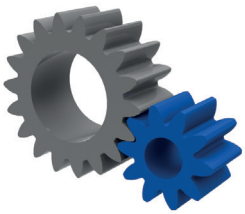
Partner of oil industry

Working closely with our customers, we are able to provide new and innovative solutions as challenges arise.

Widest range of OCTG products

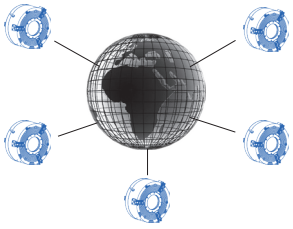
SMW-AUTOBLOK offers a complete range of OCTG chucks as standard products. The need for expensive "special product" chucks with long lead times is eliminated.

Fast time and high accuracy



Improving production processes with rapid chuck actuation, SMW-AUTOBLOK's OCTG chucks increase productivity and decrease machine downtimes.

Applications worldwide

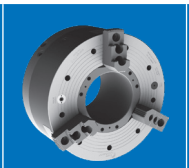
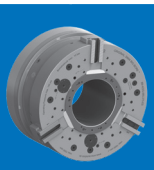
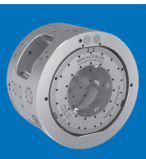
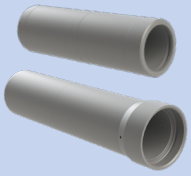
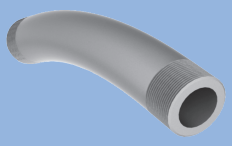
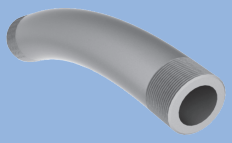
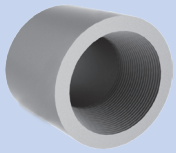
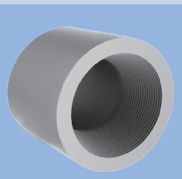


5 continents - 1 partner: All major players in the OCTG industry on 5 continents trust in SMW-AUTOBLOK as their reliable workholding partner.

Chuck finder for Oil Country Tubular Goods:

- Straight pipes
- Bent pipes
- Couplings

Introduction

Machining OCTG product \ Chuck type	 BB-N / BB-N-ES	BB-EXL2G	BB-SC	 BB-AZ2G	BB-FZA2G	 SF-RAZ2G
 **Straight pipes**	Page 12 / 14	Page 16	Page 18	Page 20		
 **Bent pipes with shimming**	~ Page 12 / 14	~ Page 16	Page 18	~ Page 20		
Bent pipes with external centering chuck				Page 20		
 **Bent pipes with integrated centering chuck**					Page 24	
 **Threadings of couplings in 1 set-up**						Page 30
 **Threadings of couplings in 2 set-ups**	~ Page 12 / 14	~ Page 16	~ Page 18			~ Page 30

Ideal

~ Possible

Performance characteristics

Explanation of the end product properties

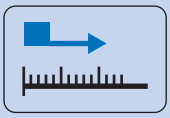
Big Bore

Big Bore is synonymous for **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

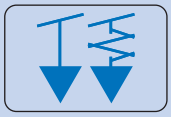
Spring clamp technology ensures the quickest clamping cycles and the highest degree of safety under any conditions.

Low maintenance

proofline® series
fully sealed – low maintenance

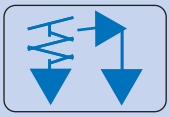
Proofline chucks are **fully sealed** and **low maintenance** allowing for long service intervals, minimizing machine downtime.

AZ-2G

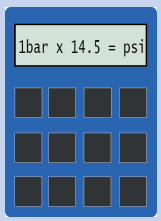


AZ-2G chucks offer the versatility of clamping either **compensating** or **self centering**.

FZA-2G



FZA-2G 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 cm²	=	0.155 square inches
1 bar	=	14.5 psi	1 liter	=	1.05 quarts (qt)
1 kN	=	220.46 lbf	1 kg·m²	=	3417 lb square inches
1 kg	=	2.2046 lbs	1 liter / min	=	0.264 galon / min

Data sheet

Performance characteristics

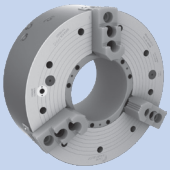
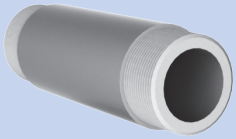
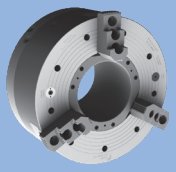
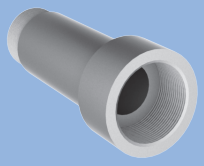
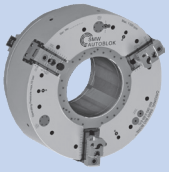
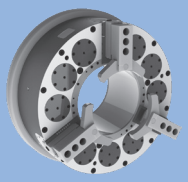
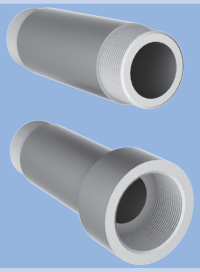
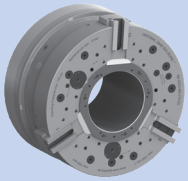
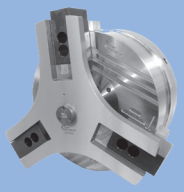
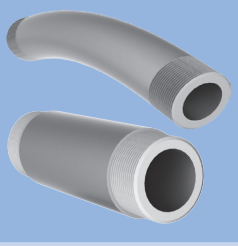
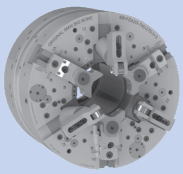
OCTG chuck	Size	Outside dia. max	Work piece capacity	Time for a full clamping	Time for a full opening	Max. grip force (at max. pressure)	Height of chuck without adapter	Weight without jaws and adapter
	mm	mm	mm	max.	max.	kN	mm	kg
BB-N ▪ Big Bore ▪ Quick clamping circle	400 - 140	467	140	-	-	266	196	155
	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-RAZ2G ▪ 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 information please contact SMW-AUTOBLOK.

Overview Pipes

Customer's OCTG product:

- Straight pipes
- Bent pipes

CHUCK	APPLICATION	OCTG PRODUCT	CUSTOMER BENEFITS
BB-N Page 12 	Threading of straight pipes with the original SMW Big Bore type BB-N.		▪ **Quick jaw movement** more pipes 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 pipes with upset ends with the original SMW Big Bore type BB-N-ES.		▪ **Quick jaw movement** more pipes per hour ▪ Large jaw stroke for easy loading of pipe and less danger of damaging threads when unloading
BB-EXL2G Page 16 	Threading of straight pipes with collars with the original SMW Big Bore Type BB-EXL2G.		
BB-SC Page 18 	High production **spring clamp** chuck for threading of straight pipes 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 availabitlity of the machine ▪ Safe clamping of pipes even in longer machining processes with spring clamp technology
BB-AZ2G Page 20 	Threading of straight and bent pipes 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
CC Page 22 	Threading of straight pipes with upset ends with the original SMW Big Bore type CC.		
BB-FZA2G Page 24 	Threading of straight and bent pipes 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 programable cycle

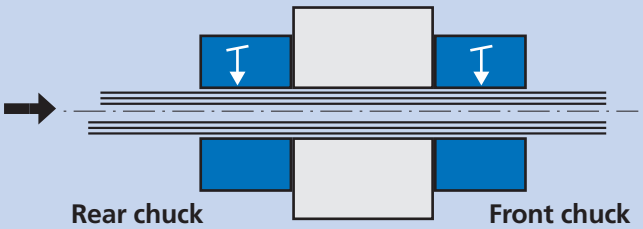
Pipe clamping

Recommended combinations

Self-centering clamping | Self-centering or compensating clamping | 3+3 combination

Combination A

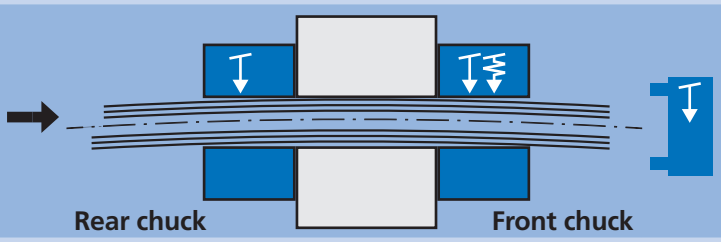
Pipe
Loading



Note:
This combination can only be used for straight pipes!

Combination B

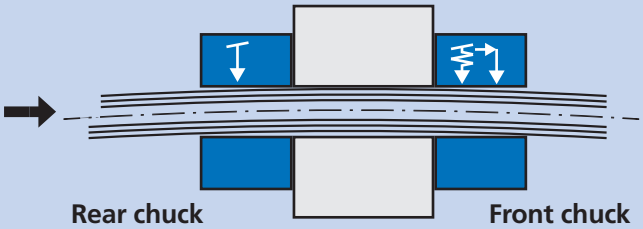
Pipe
Loading



Centering

Combination C

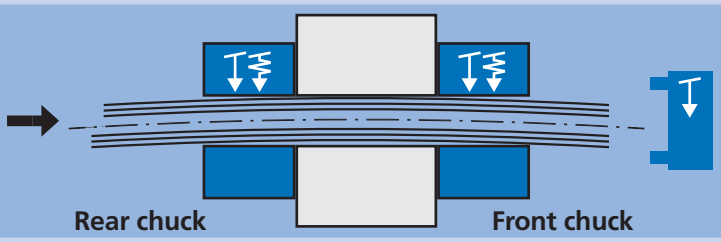
Pipe
Loading



Note:
No centering necessary!

Combination D

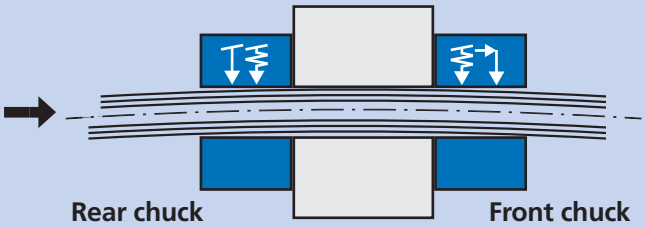
Pipe
Loading



Centering

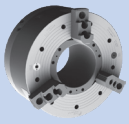
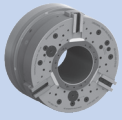
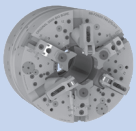
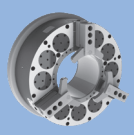
Combination E

Pipe
Loading



Note:
No centering necessary!

Respective chuck matrix:

Self-centering clamping	Self-centering or compensating clamping	3 jaw + 3 jaw combination
 **BB-N / BB-N-ES** Page 12/14 **BB-EXL2G** Page 16	 **BB-AZ2G** Page 20	 **BB-FZA2G** Page 24
 **BB-SC** Page 18		

Centering options:

Chuck CC
Page 22

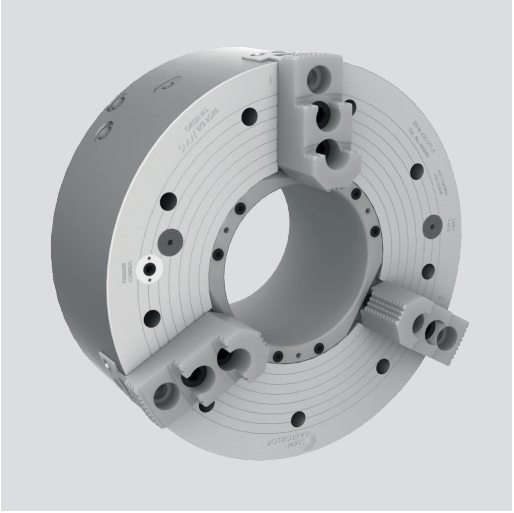
Turret
by customer

BIG BORE® BB-N

Dentatura in POLLICI

Autocentranti con cilindro pneumatico incorporato PASSAGGIO BARRA EXTRA GRANDE Ø 140 - 410 mm

- Ø mandrini 400 - 800
- corsa normale
- 3 griffe



Applicazioni

- Lavorazione delle estremità di tubi lunghi
- È possibile utilizzare il passaggio barra completo della macchina

Caratteristiche tecniche

- Autocentranti automatici per chiusure esterne/interne con cilindro pneum. incorporato
- Alimentazione dell'aria effettuata tramite anello distributore e guarnizione a profilo tipo SMW con mandrino fermo
- Le valvole anti-ritorno mantengono la pressione durante la lavorazione
- La pressione di bloccaggio durante la lavorazione è costantemente controllata tramite sistema di sicurezza, detettori e unità di controllo
- Controllo corsa del morsetti per presa su diametro esterno ed interno (tranne per BB-N 400-140)

Dotazione standard

Mandrino a 3 griffe
2 Raccordi G 1/2"
12 viti di fissaggio (9 per il BB-N 400)
1 golfare di sollevamento
1 serie di morsetti teneri + 1 tasselli a T con viti
Senza supporto fisso del distributore

Esempio di ordine

BIG BORE BB-N 470-191/Z310

Accessori

Unità di controllo AC-BB/AC-XN

Principio inventato da SMW: alimentazione dell'aria con distributore e guarnizioni a profilo SMW

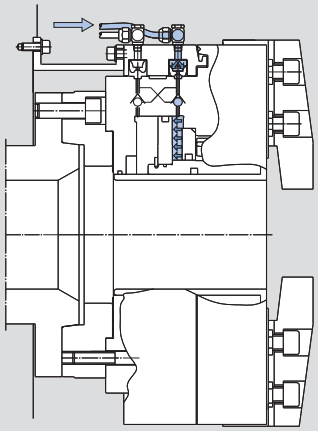


Fig. 1
Movimento di apertura/chiusura (possibile solo a mandrino fermo). Le guarnizioni a profilo si deformano radialmente per effetto della pressione pneumatica e aderiscono al corpo del mandrino, permettendo il riempimento del cilindro. Quando la pressione è raggiunta, l'alimentazione cessa e la doppia valvola anti-ritorno si blocca in posizione.

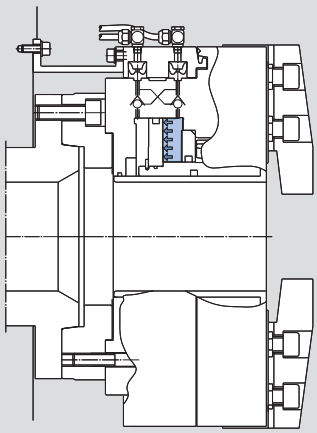


Fig. 2
Senza la pressione dell'aria le guarnizioni a profilo SMW tornano elasticamente in posizione espansa non toccando più il corpo del mandrino. La pressione di serraggio è mantenuta all'interno del cilindro e il mandrino può iniziare la rotazione.

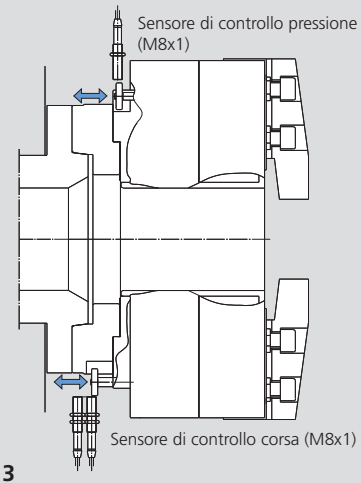
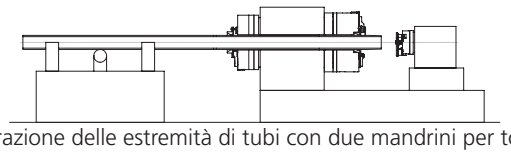


Fig. 3
Controllo di pressione: se la pressione scende al di sotto di un livello prefissato, un'asta di controllo attiva il sensore di prossimità che invia un segnale di allarme.
Controllo corsa: I detettori del controllo corsa monitorano le seguenti posizioni dei morsetti: presa morsetti aperto/ presa morsetti chiuso.*

* BB-N-400-140 non ha il controllo corsa

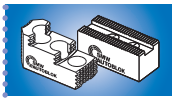


Lavorazione delle estremità di tubi con due mandrini per tornio

Dati tecnici

Modello SMW-AUTOBLOK BB-N		400-140	470-191	500-205	500-230	600-275	630-310	800-410
Cod.		052300	053535	053830	053832	053834	053836	053838
Passaggio barra	mm (poll.)	140 (5.51")	191 (7.52")	205 (8.07")	230 (9.06")	275 (10.83")	310 (12.20")	410 (16.14")
Corsa per griffa	mm (poll.)	7 (0.28")	7 (0.28")	8.5 (0.33")	8.5 (0.33")	8.5 (0.33")	10 (0.39")	12 (0.47")
Pressione di esercizio 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)
Superficie pistone	cm^2	710	565	1024	940	990	1270	2064
Forza di serraggio a 6 bar	kN (lbf)	160 (35969)	115 (25853)	210 (47210)	190 (42714)	200 (44962)	220 (49458)	330 (74186)
Velocità massima	giri/min.	1700	1700	1300	1300	1300	1000	750
Consumo d'aria/corsa delle griffe a 6 bar	litri	21	16	36	32	34	52	108
Massa (senza morsetti)	kg (lbs)	150 (331)	150 (331)	230 (507)	200 (441)	270 (595)	420 (926)	650 (1433)
Momento d'inerzia	$kg \cdot m^2$	3.22	5.66	8.53	8	15	28	71.25

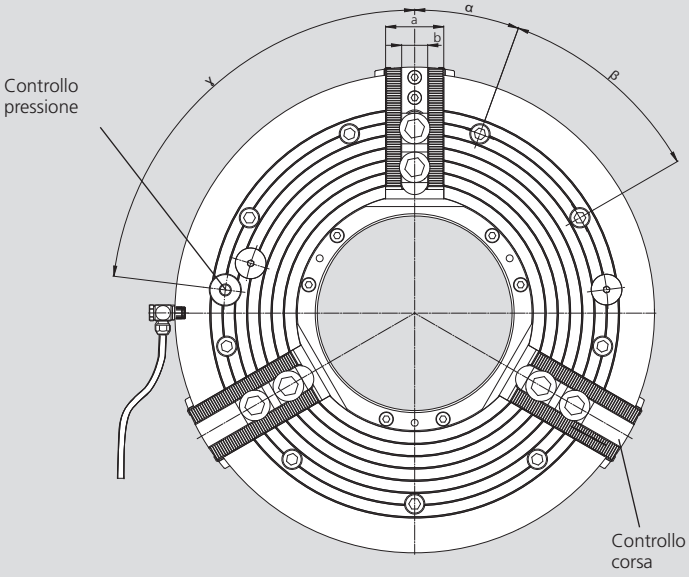
SMW-AUTOBLOK 383

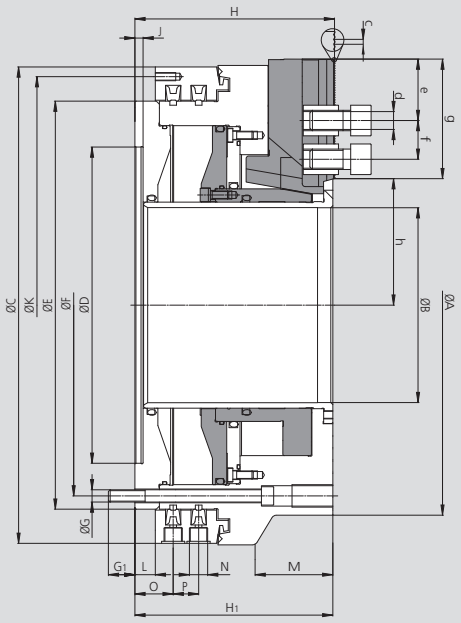

SMW-AUTOBLOK 382

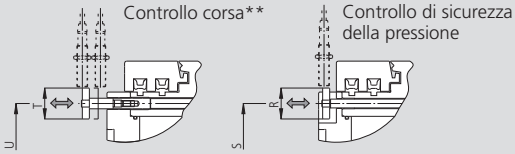
BIG BORE® BB-N

Dentatura in POLLICI

Autocentrante illustrato con griffe aperte







Rappresentazioni ingrandite

* Tutti i tubi di alimentazione devono avere almeno il Ø interno = 1/2", e dalla taglia 630 in su, Ø interno min. 3/4"!

** BBN-400-140 non ha il controllo corsa e nemmeno la valvola per il controllo della pressione durante il bloccaggio.

Per determinare l'esatta posizione del controllo della corsa delle griffe e del controllo pressione, richiedere il disegno di caratteristiche

Con riserva di modifiche tecniche.
Per maggiori informazioni contattare l'ufficio tecnico SMW-AUTOBLOK.

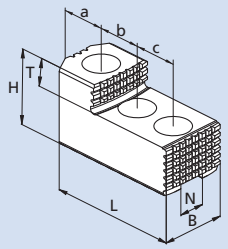
Modello SMW-AUTOBLOK BB-N			400-140	470-191	500-205	500-230	600-275	630-310	800-410
Cod.			052300	053535	053830	053832	053834	053836	053838
Attacco			Z310	Z310	Z415	Z415	Z450	Z510	Z700
	A	mm	422	470	540	570	605	662	800
	B	mm	140	191	205	230	275	310	410
	C	mm	467	467	570	570	605	685	850
	D H6	mm	310	310	415	415	450	510	700
	E	mm	400	400	500	500	535	610	775
Interasse viti di fissaggio	**F**	mm	374	374	474	474	508	580	745
	G	mm	M12	M12	M12	M12	M12	M16	M16
	G1	mm	26	26	27	27	27	30	30
	H	mm	196	196	225	225	225	263	305
	H1	mm	194	194	223	223	223	261	303
	J	mm	8	8	8	8	8	8	8
Interasse viti 6x M8	**K**	mm	448	448	550	550	585	666	830
	L	mm	20	20	20	20	20	20	25
	M	mm	70	-	98	98	-	115	154
Raccordi pneumatici	**N**	pollici	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
	P	mm	26	26	26	26	26	33	33
	R	mm	35	35	35	35	35	42	35
	S	mm	374	374	474	474	508	575	745
	T	mm	35	35	35	35	35	35	35
	U	mm	374	374	474	474	508	580	745
	a	mm	57	57	57	57	57	75	75
	b	mm	25.5	25.5	25.5	25.5	25.5	30	30
Dentatura	**c**	pollici	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°
Vite ISO 4762 12.9	**d**	mm	M20	M20	M20	M20	M20	M24	M24
min.	**e**	mm	13	13	14	14	14	16	16
Distanza tasselli a T min./max.	**f**	mm	38 / 85	38 / 85	38 / 102	38 / 102	38 / 94	47 / 103	47 / 130
Lunghezza della dentatura	**g**	mm	117.5	117	138	138	130	142	171.5
min./max.	**h**	mm	94.5 / 101.5	124 / 131	133.5 / 142	143.5 / 152	165 / 173.5	190.5 / 200.5	243 / 255
	α	ang.	20	20	15	15	15	15	15
	β	ang.	9 x 40	9 x 40	12 x 30	12 x 30	12 x 30	12 x 30	12 x 30
Controllo della pressione	**γ**	ang.	83	83	60	60	60	60	60

BIG BORE® BB-N

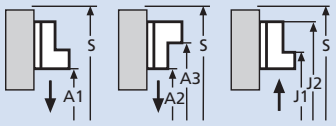
Dentatura in POLLICI

- Morsetti
- Tasselli a T

MHB-D
Morsetti duri reversibili

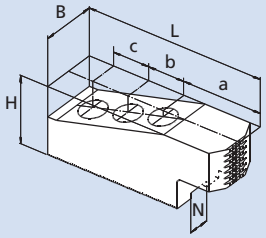


Gamme di serraggio

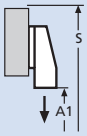


Mandrino BB-N	400-140	470-191	500-205	500-230	600-275	630-310	800-410
Tipo morsetto	MHB-D 500	MHB-D 500	MHB-D 500	MHB-D 500	MHB-D 500	MHB-D 630	MHB-D 800
Cod. (serie)	12084546	12084546	12084546	12084546	12084546	12086446	12088046
B	60	60	60	60	60	75	75
H	75	75	75	75	75	85	85
L	140	140	140	140	140	160	220
T	2x19	2x19	2x19	2x19	2x19	30	30
N	25.5	25.5	25.5	25.5	25.5	30	30
Dentatura	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	46	30	51
b	38	38	38	38	38	50	62
c	38	38	38	38	38	50	62
kg / serie	6.6	6.6	6.6	6.6	6.6	13.5	19.5
A_1	65-238	100-273	150-358	175-378	224-424	275-485	320-590
A_2	110-284	145-320	200-405	225-425	348-548	275-485	330-600
A_3	294-470	330-505	385-590	410-610	447-647	475-685	590-865
J_1	175-350	210-385	265-470	285-490	307-506	395-610	500-770
J_2	355-530	390-565	445-650	465-670	504-704	595-810	760-1030
S	585	620	705	725	735	820	1050

GAB
Morsetti duri

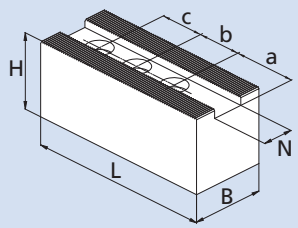


Gamme di serraggio

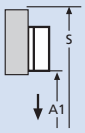


Mandrino BB-N	400-140	470-191	500-205	500-230	600-275	630-310	800-410
Tipo morsetto	GAB 500	GAB 500	GAB 500	GAB 500	GAB 500	GAB 630	GAB 800
Cod. (serie)	12085146	12085146	12085146	12085146	12085146	12086546	12089046
B	55	55	55	55	55	75	75
H	73	73	73	73	73	82	82
L	195	195	195	195	195	245	320
N	25.5	25.5	25.5	25.5	25.5	30	30
Dentatura	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	96	113	165
b	38	38	38	38	38	50	60
c	38	38	38	38	38	50	60
kg / serie	16.5	16.5	16.5	16.5	16.5	31.5	40.5
A_1	25-140	60-175	50-260	70-280	107-308	105-320	95-272
S	585	620	705	725	700	820	1010

WBSA-D / WBC-D
Morsetti teneri



Gamme di serraggio



Mandrino BB-N	400-140	470-191	500-205	500-230	600-275	630-310	800-410
Tipo morsetto	WBSA-D 500	WBSA-D 500	WBSA-D 500	WBSA-D 500	WBSA-D 500	WBC-D 630	WBC-D 800
Cod. (pz.)	12075050	12075050	12075050	12075050	12075050	12076440	12078040
B	60	60	60	60	60	80	80
H	60	60	60	60	60	80	80
L	170	170	170	170	170	240	320
N	25.5	25.5	25.5	25.5	25.5	30	30
Dentatura	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	69	110	165
b	38	38	38	38	38	50	60
c	38	38	38	38	38	50	60
kg / pezzo	3.6	3.6	3.6	3.6	3.6	11	15
A_1	25-195	60-230	105-315	125-325	161-362	110-325	95-272
S	545	580	660	680	707	815	1010

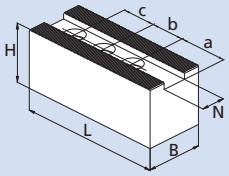
CATALOGO MORSETTI

Richiesta o download da:
www.smwautoblok.com

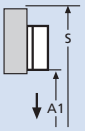
BIG BORE® BB-N

Dentatura in POLLICI

WBC-D, WBCL-D
Morsetti teneri tornibili versione lunga

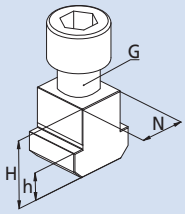


Gamme di serraggio



Mandrino BB-N	400-140	470-191	500-205	500-230	600-275	630-310	800-410
Tipo morsetto	WBC-D 502	WBC-D 502	WBC-D 502	WBC-D 502	WBC-D 502	WBC-D 800	WBCL-D 800
Cod. (pz.)	12075140	12075140	12075140	12075140	12075140	12078040	12079040
B	60	60	60	60	60	80	80
H	60	60	60	60	60	80	80
L	205	205	205	205	205	320	390
N	25.5	25.5	25.5	25.5	25.5	30	30
Dentatura	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	104	165	230
b	38	38	38	38	38	60	60
c	38	38	38	38	38	60	60
kg / pezzo	4.5	4.5	4.5	4.5	4.5	15	18
A_1	-	0-155	35-245	55-265	91-292	25-195	25-235
S	-	575	660	680	707	845	1020

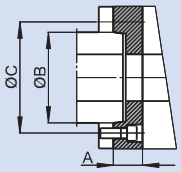
NST
Tasselli a T



Mandrino BB-N	400-140	470-191	500-205	500-230	600-275	630-310	800-410
Tipo tassello	NST	NST	NST	NST	NST	NST	NST
Cod. (pz.)	12065020	12065020	12065020	12065020	12065020	13063900	13063900
N	25.5	25.5	25.5	25.5	25.5	30	30
H	34	34	34	34	34	44	44
h	15	15	15	15	15	18	18
G	M20	M20	M20	M20	M20	M24	M24
Vite ISO 4762 12.9	M20 x 40	M20 x 40	M20 x 40	M20 x 40	M20 x 40	M24 x 60	M24 x 60

Flange per mandrini BIG BORE

ISO-A DIN 55026
Attacco



BB-N	400-140/470-191			500-205/500-230			600-275			630-310			800-410	
Naso macchina	A8	A11	A15	A11	A15	A20	A11	A15	A20	A11	A15	A20	A15	A20
Cod.	24184020	24114020	24124020	24115030	24125020	24175020	24116020	24126020	24176020	24116320	24126320	24176320	24128020	24178020
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
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

Flange di adattamento per montaggi a baionetta e camlock sono disponibili su richiesta

CATALOGO MORSETTI
Richiesta o download da: www.smwautoblok.com

Pneumatic diagrams

Summary of pneumatic cycles and parts

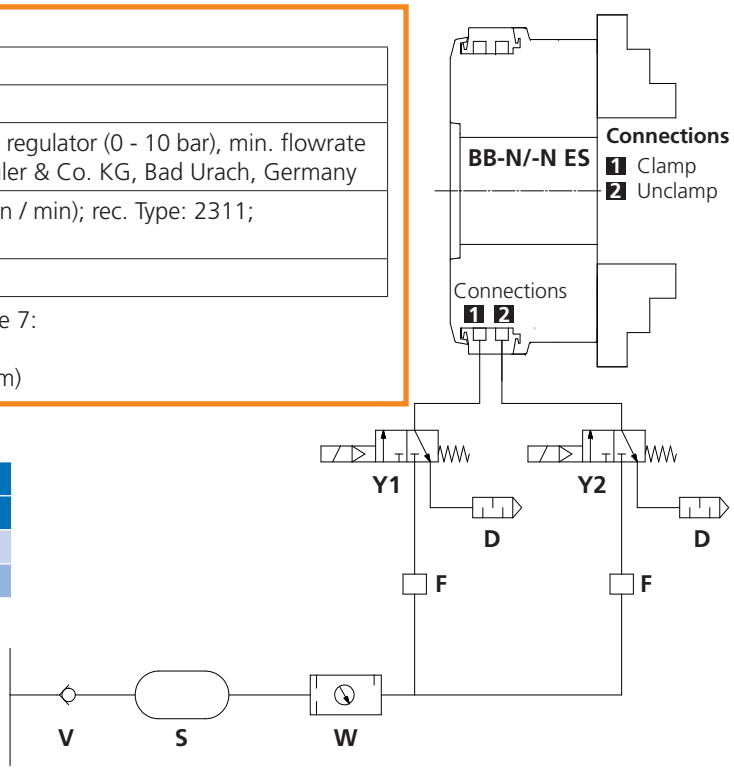
- Cycle clamp BB-N / BB-N ES
- Cycle clamp BB-SC

Common parts for all Big Bore air circuits:

V	Non return valve towards the pneumatic system
S	Accumulator (approx. 90 normal liter / 23 gallon)
W	Air service unit 3/4" with filter, dryer, oiler and pressure regulator (0 - 10 bar), min. flowrate 3100 l/min (819 gallon / min); rec. Type: FRL 34S; Riegler & Co. KG, Bad Urach, Germany
D	Silencer 3/4", min. flowrate 15000 l / min (3963 gallon / min); rec. Type: 2311; Festo, Esslingen, Germany
F	Air flow sensor

Used connection parts for time measuring according to page 7:

- Length of hoses from air control to chuck: 3000 mm
- Inside dia. of hoses from air control to chuck 3/4" (19 mm)



Cycle clamp BB-N / BB-N ES

action	Valve Y1	Valve Y2
clamp / unclamp	clamp	unclamp
1. chuck open		O
2. chuck clamp	O	

O = Valve actuated for jaw movement

NOTE:
All valves, hoses and fittings must be at least:
1/2" inside dia. per function up to chuck size 600
3/4" inside dia. per function on larger chuck sizes

Cycle standard clamp BB-SC

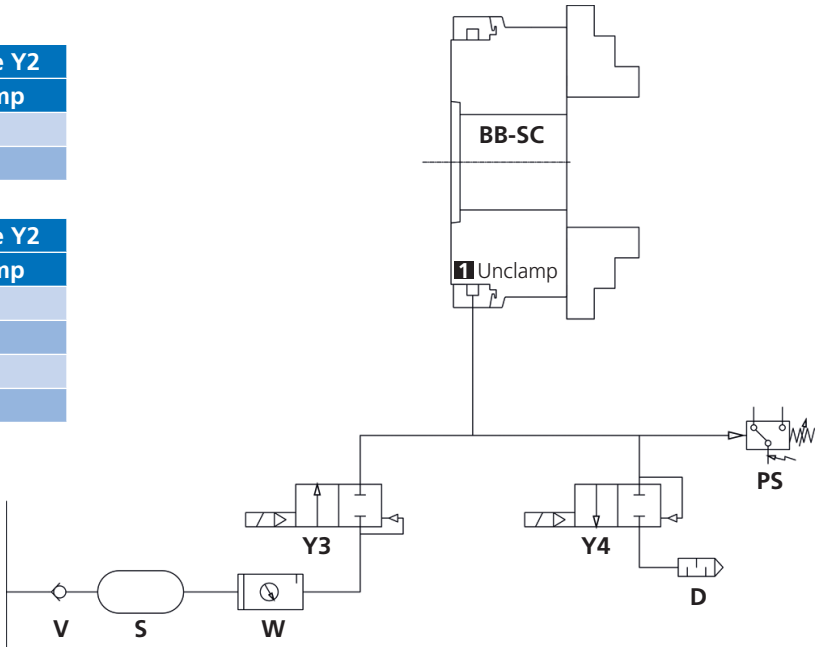
action	Valve Y1	Valve Y2
clamp / unclamp	unclamp	clamp
1. chuck open	X	
2. chuck clamp		O

Cycle step mode / inching BB-SC

action	Valve Y1	Valve Y2
clamp / unclamp	unclamp	clamp
1. chuck open	X	
2. chuck clamp		O
3. step open	O	
4. step close		O

X = Valve permanently actuated
O = Valve actuated for jaw movement

NOTE:
All valves, hoses and fittings must be at least 3/4"



Pneumatic connection parts for BB-N/-N ES and BB-SC:

Y1/Y2	3/2 solenoid valve 1", min. flowrate 3900 l / min (1031 gallon / min); rec. Type: NL6-SOV; Bosch Rexroth, Germany
Y3/Y4	2/2 solenoid valve 3/4", min. flowrate 3100 l / min (819 gallon / min); rec. Type: EGV 121/C78/3/4"BN; AVS Roemer GmbH, Koenigsdorf, Germany
PS	Pressure switch, 0 - 10 bar, 4 - 20 mA; rec. Type: A-10-6-BG410-HD1Z-AA-AGZ; WIKA, Klingenberg, Germany
Q	Quick exhaust valves, min. flowrate 6800 l / min (1765 gallon/min) rec. Type: 573, 1"; Bosch Rexroth, Germany