

# Technology at the highest level:

# The SMW-AUTOBLOK

## HFKN

Easy lubrication  
even on vertical machines  
with 3 radial built-in  
grease fittings

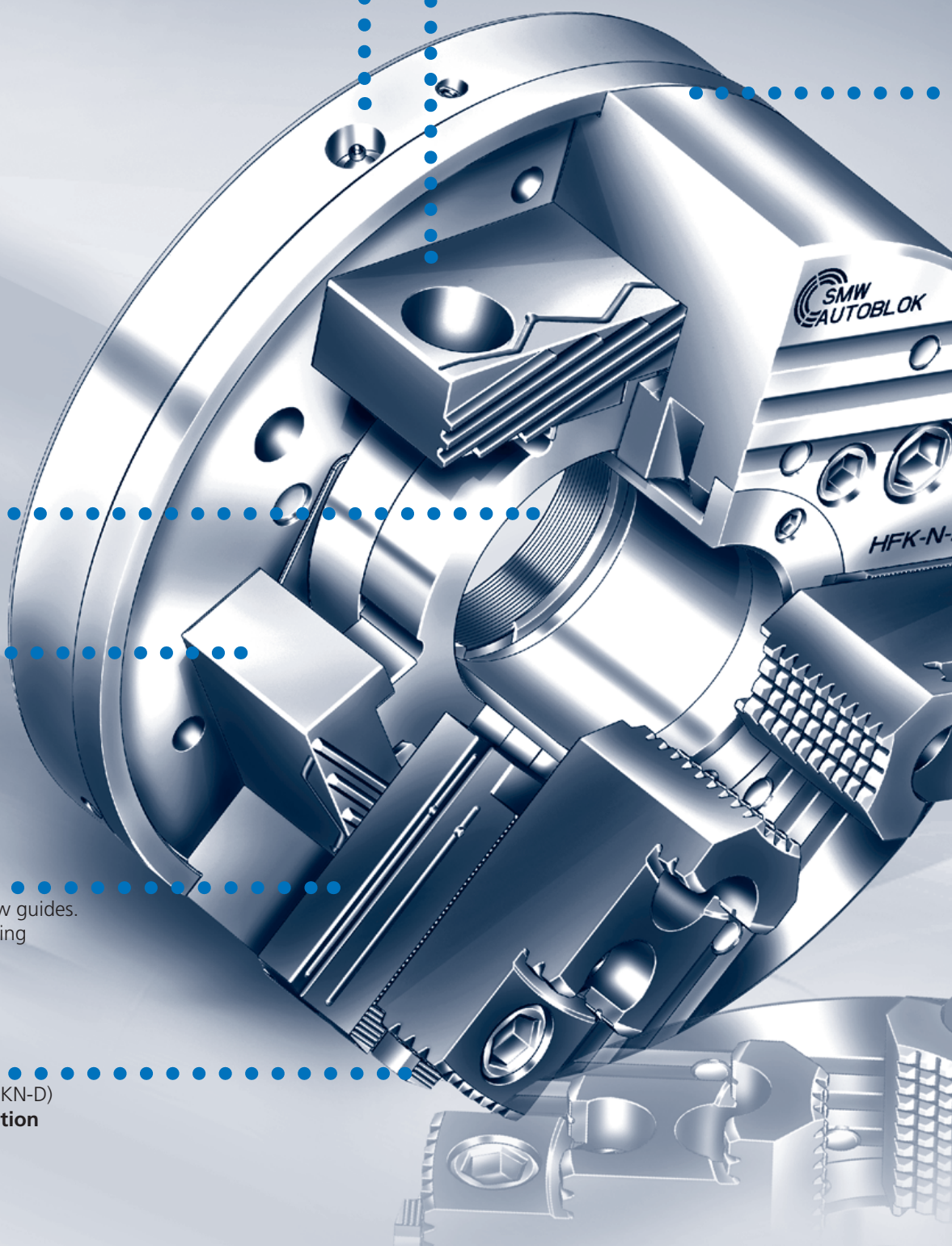
- **Wedge bar drive,**
- minimum loss in gripping force
- even at high speeds because of
- tangentially supported wedge bars.
- Minimum increase of gripping force
- (**hysteresis**) after quick spindle stop

Large through-hole  
for full use of  
spindle bore

High **efficiency** of  
the wedge bar drive  
ensures highest  
concentricity and  
repeatability

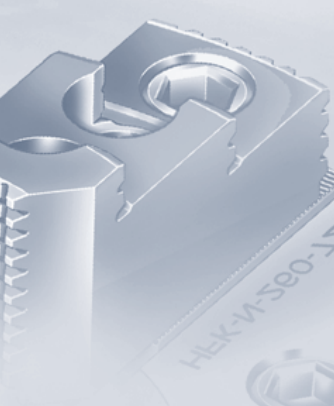
Extra long, symmetrical jaw guides.  
Ideal for O.D. or I.D. gripping

Master jaws with **inch** (HFKN-D)  
or **metric** (HFKN-M) **serration**

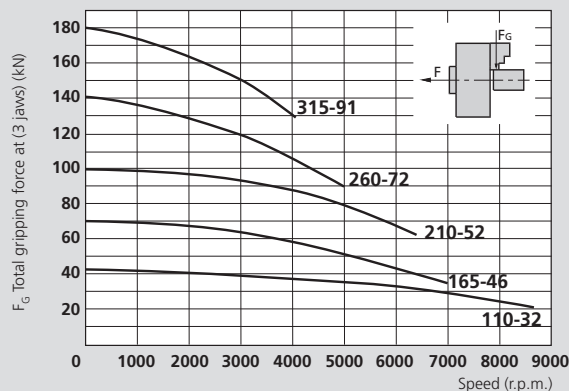


# wedge bar drive

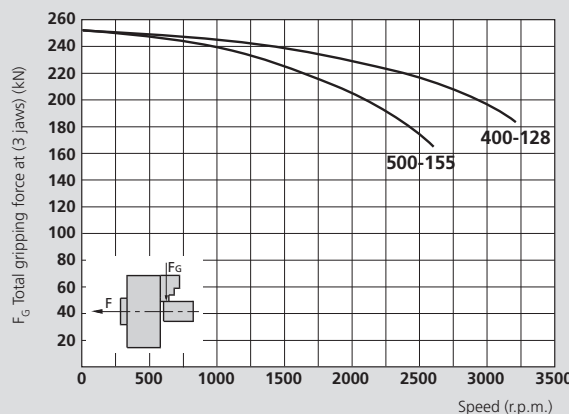
Chuck body and internal parts are **case hardened and polished** for highest rigidity, durability and precision



Flat gripping force curve for high speeds



The data in the diagrams refer to 3 jaw chucks, newly maintained according to their service manuals using SMW-AUTOBLOK K05 grease. The static and dynamic gripping forces have been measured using standard soft top jaws, placed in a position not exceeding the outer diameter of the chuck.



**△ Safety advice / danger of damage:**

When using taller / heavier jaws and / or clamping on a bigger diameter reduce draw pull / rotating speed accordingly.

## Clamping glossary

**Case hardening:** The surface of the components is hardened (60 HRC) to a depth of about 1 mm (0.04"). The core shows a high tensile strength and toughness. Compared to partial inductive hardened and nitrited parts the rigidity and the resistance against wear is greatly increased.

**Hysteresis:** At high speeds the chuck body "grows" due to centrifugal force. The draw pull of the clamping cylinder causes an increase in gripping force which cannot be decreased at a quick spindle stop (or change in speed). This can cause deformation at easily deformed parts. SMW-AUTOBLOK chucks with wedge bar drive have a very low hysteresis.

**Wedge bar drive:** The chuck is driven by tangentially mounted wedge bars. This design allows highest repeatability and rigidity. These chucks have very low loss in gripping force due to centrifugal force. The design does not require counterbalance weights which allows highest speeds without vibration.

**INCH SERRATION:** The connection between top jaws and master jaws is done through serration, T-nuts and bolts according to DIN 6353 (serration 90°, pitch in inches). This is standard on European chucks. HFKN chucks can be supplied either with inch serration or metric serration.

**METRIC SERRATION:** The connection between top jaws and master jaws is done through serration, T-nuts and bolts according to ISO 9401 (serration 60°, pitch in mm). This is standard on Japanese chucks.

**Efficiency:** Efficiency is the ratio between the calculated theoretical gripping force (disregarding friction) and the actual (measured) gripping force.

# HFKN-C

# HFKN-D

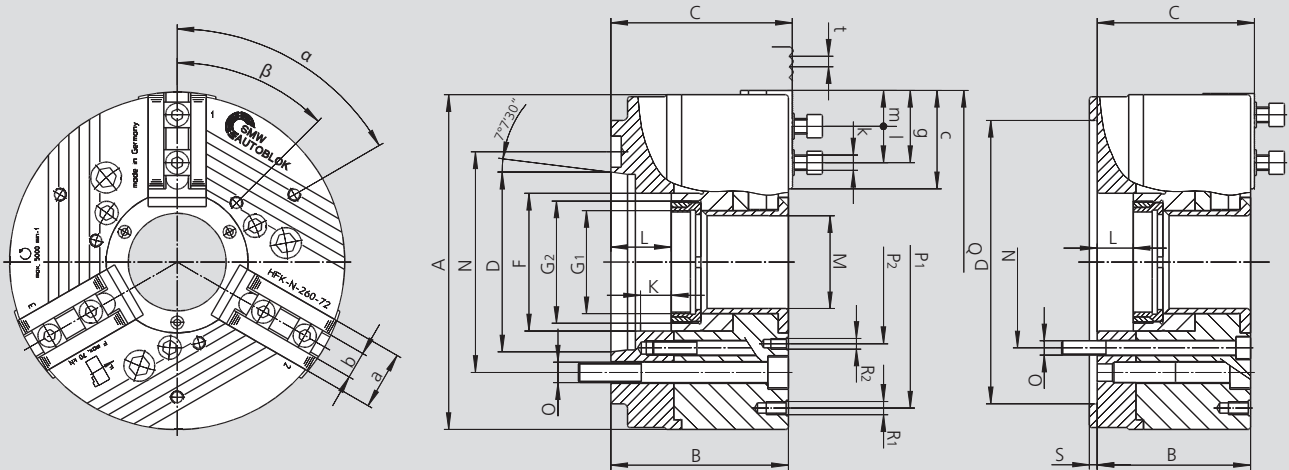
# HFKN-M

TONGUE & GROOVE

INCH  
SERRATION

METRIC  
SERRATION

■ Main dimensions and technical data



Subject to technical changes.  
For more detailed information please ask our customer service.

Type HFKN-D	110-32	165-46			210-52			260-72				315-91				400-128				500-155				
Type HFKN-M	-	165-46			210-52			260-72				315-91				400-128				500-155				
Type HFKN-C	110-32	-			-			-				-				-				-				
Mounting	Z100	A4	Z140	A5	A6	Z170	A6	A8	Z170	Z220	A6	A8	Z220	Z300	A8	A11	Z300	Z380	A11	A15	Z380	A11	A15	
A	115	165			215			260				315				400				500				
B	64	75	90	105	107	102	119	121	119	119	136	138	127	127	146	148	143	143	164	166	157	178	180	
C	68.1	77.5	92.5	107.5	109.5	105	122	124	122	122	139	141	130	130	149	151	148	148	169	171	162	183	185	
D H6	100	63.51	140	82.57	106.39	170	106.39	139.73	170	220	106.39	139.73	220	300	139.73	196.88	300	380	196.88	285.77	380	196.88	285.77	
F	46	67			85			107				134				180				207				
Threaded ring / depth	G1	*	*			M60 x 1.5 / 16			M80 x 2 / 20				M100 x 2 / 22				M138 x 2 / 22				M165 x 2 / 25			
Piston thread / depth	G2	M38 x 1.5 / 15	M60 x 1.5 / 18			M75 x 2 / 19			M95 x 2 / 23				M120 x 2 / 25				M160 x 2 / 25				M185 x 2 / 28			
Piston stroke	K	9	15			19			23				23				30				32			
Max.	L	10.5	21.5	15	30	32	19	36	38	23	23	40	42	23	23	42	44	32	32	53	55	33	54	56
	M	32	46			52			72				91				128				155			
Fixing bolt circle	N	82.6	104.8	104.8	133.4	133.4	133.4	171.4	133.4	171.4	133.4	171.4	171.4	235	171.4	235	235	330.2	235	330.2	330.2	235	330.2	
Fixing bolt	O	M10	M10	M10	M12	M12	M12	M16	M12	M16	M12	M16	M16	M20	M16	M20	M20	M24	M20	M24	M24	M20	M24	
	P1	100	120			168			210				268				330				430			
	P2	65	90			110			130				155				200				220			
	Q	118	167			219			264				319				408				508			
Thread / thread depth	R1	M6 / 12	M8 / 16			M10 / 20			M10 / 20				M10 / 20				M12 / 18				M16 / 25			
Thread / thread depth	R2	M6 / 12	M8 / 16			M10 / 20			M10 / 20				M10 / 20				M12 / 18				M12 / 18			
	S	6	6			6			6				6				8				8			
	a	20	32			40			45				50				60				60			
	b f7	8 (g6)	14			17			21				21				25.5				25.5			
	c	34	47.5			69			75				92.5				115				150			
	g	25	39			58.5			65.5				74				100				136			
Bolt ISO 4762 12.9	k	M6	M10			M12			M16				M16				M20				M20			
	l	12	16			22			28				30				35				35			
	m	2	5			6			8				8				10				10			
HFKN-D inch serration	t	1/16" 90°	1/16" 90°			1/16" 90°			1/16" 90°				1/16" 90°				3/32" 90°				3/32" 90°			
HFKN-M metric serration	t		1.5 x 60°			1.5 x 60°			1.5 x 60°				1.5 x 60°				3 x 60°				3 x 60°			
HFKN-C tongue & groove		S08 N08																						
	α	60°		40°			60°			60°				60°				60°				60°		
	β	60°		60°			60°			45°				45°				60°				60°		
Stroke per jaw	mm	2.4	4			5.0			6.1				6.1				8.0				8.0			
Max. actuating force	kN	20	35			53			70				95				125				125			
Max. total gripping force	kN	40	70			100			140				190				250				250			
Max. speed	r.p.m.	8500**	7000**			6300			5000				4400				3200				2600			
Weight (without jaws)	kg	4.4	4.7	14	15	15	24	26	26	40	40	43	43	63	63	66	66	111	111	116	116	225	231	231
Moment of inertia	kg-m <sup>2</sup>	0.007	0.06			0.11			0.38				0.85				2.5				6.5			

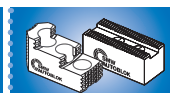
Rec. closed center cylinder	Type	SIN-S 85	SIN-S 100 / 125	SIN-S 125 / 150	SIN-S 150 / 175	SIN-S 150 / 175 / 200	SIN-S 175 / 200	SIN-S 175 / 200
Rec. open center cylinder	Type	VNK-T2 70-37	VNK-T2 102-46	VNK-T2 130-52	VNK-T2 170-77	VNK-T2 225-95	VNK-T2 320-127	VSG 450-165

\* HFKN 110-32 and HFKN 165-46 available with fixed piston thread only.

\*\* Higher speed with special top jaws only.



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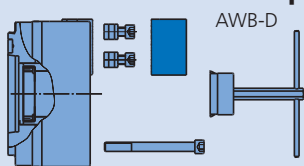
SMW-AUTOBLOK  
118



SMW-AUTOBLOK  
327

## Ordering review HFKN-D (inch serration)

### HFKN-D with soft top jaws AWB-D

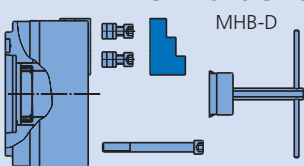


Spindle mounting \ Size	HFKN-D 110-32	HFKN-D 165-46	HFKN-D 210-52	HFKN-D 260-72	HFKN-D 315-91	HFKN-D 400-128	HFKN-D 500-155
Centering rim small	-	-	-	Z 170 090316	Z 220 090320	Z 300 090324	Z 300 090328
Centering rim large	Z 100 065354	Z 140 090310	Z 170 090313	Z 220 090317	Z 300 090321	Z 380 090325	Z 380 090329
A 04	065355	-	-	-	-	-	-
A 05	-	090311	-	-	-	-	-
A 06	-	090312	090314	090318	-	-	-
A 08	-	-	090315	090319	090322	-	-
A 11	-	-	-	-	090323	090326	090330
A 15	-	-	-	-	-	090327	090331

#### Supply range:

- Chuck + mounting bolts
- Soft top jaws AWB-D
- 1 set (= 6 pieces) T-nuts with bolts
- Key

### HFKN-D with hardened reversible top jaws MHB-D



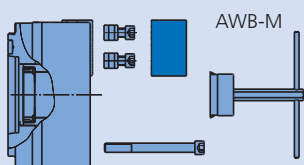
Spindle mounting \ Size	HFKN-D 110-32	HFKN-D 165-46	HFKN-D 210-52	HFKN-D 260-72	HFKN-D 315-91	HFKN-D 400-128	HFKN-D 500-155
Centering rim small	-	-	-	Z 170 090338	Z 220 090342	Z 300 090346	Z 300 090350
Centering rim large	Z 100 065356	Z 140 090332	Z 170 090335	Z 220 090339	Z 300 090343	Z 380 090347	Z 380 090351
A 04	065357	-	-	-	-	-	-
A 05	-	090333	-	-	-	-	-
A 06	-	090334	090336	090340	-	-	-
A 08	-	-	090337	090341	090344	-	-
A 11	-	-	-	-	090345	090348	090352
A 15	-	-	-	-	-	090349	090353

#### Supply range:

- Chuck + mounting bolts
- Hardened ground reversible top jaws MHB-D
- 1 set (= 6 pieces) T-nuts with bolts
- Key

## Ordering review HFKN-M / -C (metric serration) / size 110 with tongue and groove

### HFKN-M / HFKN-C with soft top jaws AWB-M

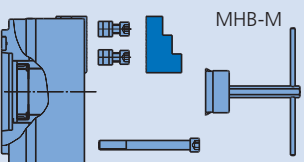


Spindle mounting \ Size	HFKN-C 110-32	HFKN-M 165-46	HFKN-M 210-52	HFKN-M 260-72	HFKN-M 315-91	HFKN-M 400-128	HFKN-M 500-155
Centering rim small	-	-	-	Z 170 090360	Z 220 090364	Z 300 090368	Z 300 090372
Centering rim large	Z 100 065466	Z 140 090354	Z 170 090357	Z 220 090361	Z 300 090365	Z 380 090369	Z 380 090373
A 04	065467	-	-	-	-	-	-
A 05	-	090355	-	-	-	-	-
A 06	-	090356	090358	090362	-	-	-
A 08	-	-	090359	090363	090366	-	-
A 11	-	-	-	-	090367	090370	090374
A 15	-	-	-	-	-	090371	090375

#### Supply range:

- Chuck + mounting bolts
- Soft top jaws AWB-M
- 1 set (= 6 pieces) T-nuts with bolts
- Key

### HFKN-M with hardened reversible top jaws MHB-M



Spindle mounting \ Size	-	HFKN-M 165-46	HFKN-M 210-52	HFKN-M 260-72	HFKN-M 315-91	HFKN-M 400-128	HFKN-M 500-155
Centering rim small	-	-	-	Z 170 090382	Z 220 090386	Z 300 090390	Z 300 090394
Centering rim large	-	Z 140 090376	Z 170 090379	Z 220 090383	Z 300 090387	Z 380 090391	Z 380 090395
A 04	-	-	-	-	-	-	-
A 05	-	090377	-	-	-	-	-
A 06	-	090378	090380	090384	-	-	-
A 08	-	-	090381	090385	090388	-	-
A 11	-	-	-	-	090389	090392	090396
A 15	-	-	-	-	-	090393	090397

#### Supply range:

- Chuck + mounting bolts
- Hardened ground reversible top jaws MHB-M
- 1 set (= 6 pieces) T-nuts with bolts
- Key

# HFKN-D

# HFKN-M

# HFKN-C

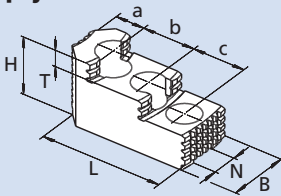
INCH  
SERRATION

METRIC  
SERRATION

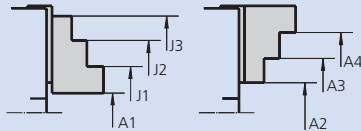
TONGUE & GROOVE

■ Jaws

## MHB-D (INCH SERRATION) Hardened reversible top jaws

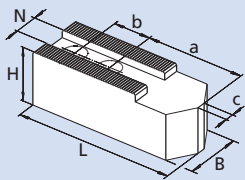


### Clamping ranges



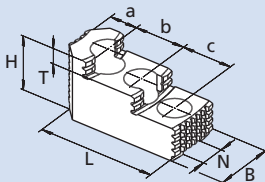
Chuck	HFKN-D 110	HFKN-D 165	HFKN-D 210	HFKN-D 260	HFKN-D 315	HFKN-D 400	HFKN-D 500
Jaw type	MHB-D	MHB-D	MHB-D	MHB-D	MHB-D	MHB-D	MHB-D
Id. No.	007076	12081636	12082036	12083036	12083036	12084546	12084546
Serration	1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	3/32" x 90°	3/32" x 90°
B	20	34	40	45	45	60	60
H	31	39	45	56	56	75	75
L	48	65	82	105	105	140	140
T	7	10	10.5	13.5	13.5	32	19
N	8	14	17	21	21	25.5	25.5
a	9.5	18	19	26	26	38	38
b	12	16	23	30	30	38	38
c	12	16	23	30	30	38	38
kg / set	0.35	0.9	1.71	2.85	2.85	7.5	7.5
A1	5-59	15-75	10-100	15-115	50-170	40-205	80-320
A2	15-70	-	-	-	-	-	-
A3	46-100	62-120	62-150	100-205	115-265	160-330	220-450
A4	70-125	110-175	140-230	185-285	200-350	260-420	320-560
J1	49-102	65-125	65-150	75-165	90-225	120-285	180-410
J2	72-126	115-175	135-230	150-250	160-310	220-385	280-510
J3	101-155	145-210	180-265	225-325	235-380	330-480	370-670

## AWB-D (INCH SERRATION) Soft top jaws

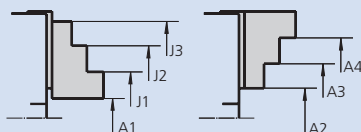


Chuck	HFKN-D 110	HFKN-D 165	HFKN-D 210	HFKN-D 260	HFKN-D 315	HFKN-D 400	HFKN-D 500
Jaw type	AWB-D	AWB-D	AWB-D	AWB-D	AWB-D	AWB-D	AWB-D
Id. No.	038258	035954	081616	081618	081618	081620	081620
Serration	1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	1/16" x 90°	3/32" x 90°	3/32" x 90°
B	20	40	40	50	50	60	60
H	30	40	40	50	50	60	60
L	55	80	90	120	120	140	140
N	8	14	17	21	21	25.5	25.5
a	30	43	53	70	70	80	80
b	12	22	22	28	28	35	35
c	0	4	4	6	6	-	-
kg / set	0.55	2.0	2.7	5.1	5.1	9.65	9.65

## MHB-M (METRIC SERRATION) Hardened reversible top jaws

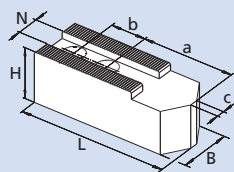


### Clamping ranges



Chuck	HFKN-M 110	HFKN-M 165	HFKN-M 210	HFKN-M 260	HFKN-M 315	HFKN-M 400	HFKN-M 500
Jaw type		MHB-M	MHB-M	MHB-M	MHB-M	MHB-M	MHB-M
Id. No.		12081627	12082127	12082627	12083037	on request	on request
Serration		1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	3 x 60°	3 x 60°
B		34	40	45	45	55	55
H		39	45	56	56	73	73
L		67	86	100	105	145	145
T		10	10.5	15.5	13.5	32	32
N		12	14	16	21	25.5	25.5
a		14	19	23	26	46	46
b		20	25	30	30	38	38
c		20	25	30	30	38	38
kg / set		0.9	1.8	2.55	2.85	6.7	6.7
A1		15-75	10-100	15-115	50-170	40-190	80-320
A2		-	-	-	-	85-235	125-365
A3		62-120	62-150	100-205	115-265	-	-
A4		110-175	140-230	185-285	200-350	270-420	320-560
J1		65-125	65-150	75-165	90-225	150-300	180-420
J2		115-175	135-230	150-250	160-310	-	-
J3		145-210	180-265	225-325	235-380	330-480	370-610

## AWB-M (METRIC SERRATION) Soft top jaws



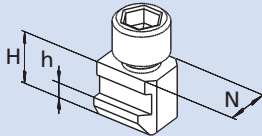
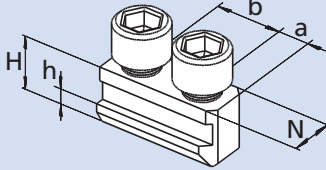
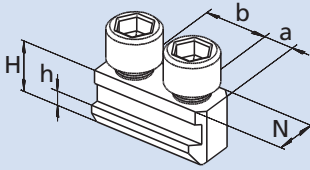
Chuck	HFKN-C 110*	HFKN-M 165	HFKN-M 210	HFKN-M 260	HFKN-M 315	HFKN-M 400	HFKN-M 500
Jaw type	WBR	AWB-M	AWB-M	AWB-M	AWB-M	AWB-M	AWB-M
Id. No.	013843	081719	081720	081722	035957	036791	036791
Serration	S08 N08	1.5 x 60°	1.5 x 60°	1.5 x 60°	1.5 x 60°	3 x 60°	3 x 60°
B	20	30	35	40	50	60	60
H	25	32	40	40	50	60	60
L	53	82	102	125	120	140	140
N	S08 N08	12	14	16	21	25.5	25.5
a	30.5	47	57	65	70	80	80
b	15	20	25	30	30	35	35
c	0	4	4	6	6	-	-
kg / set	0.45	1.4	2.5	3.95	5.1	9.65	-

\* Size 110 with TONGUE & GROOVE.



JAWS-CATALOG

Request or  
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[www.smw-autoblok.de](http://www.smw-autoblok.de)

		<b>HFKN-C</b>		<b>HFKN-D</b>		<b>HFKN-M</b>		
■ T-Nuts ■ Grease		TONGUE & GROOVE		INCH SERRATION		METRIC SERRATION		
<b>NST</b> <b>T-nuts</b> <b>suitable for HFKN-D</b> 	<b>Chuck</b>	-	HFKN-D 165	HFKN-D 210	HFKN-D 260	HFKN-D 315	HFKN-D 400	HFKN-D 500
	T-nut type	-	NST	NST	NST	NST	NST	NST
	Id. No.	-	035958	034245	034197	034197	014812	014812
	N	-	14	17	21	21	25.5	25.5
	H	-	18.5	20.5	26.5	26.5	29	29
	h	-	6.5	7.5	10	10	11	11
	Cyl.-screw ISO 4762-12.9	-	M10 x 20	M12 x 25	M16 x 35	M16 x 35	M20 x 40	M20 x 40
Torque Md max. (Nm)	-	50	70	150	150	300	300	
<b>NSTE</b> <b>T-nuts</b> <b>suitable for HFKN-D</b> 	<b>Chuck</b>	HFKN-D 110	HFKN-D 165	HFKN-D 210	HFKN-D 260	HFKN-D 315	HFKN-D 400	HFKN-D 500
	T-nut type	NSTE	NSTE	NSTE	NSTE	NSTE	NSTE	NSTE
	Id. No.	038265	73061650	73062150	73063050	73063050	081817	081817
	N	8	14	17	21	21	25.5	25.5
	H	13.5	18.5	20.5	26.5	26.5	29	29
	h	5.0	6.5	7.5	10	10	11	11
	a	5	8	10	13	13	16	16
b	12	16	23	30	30	35	35	
Cyl.-screw ISO 4762-12.9	M6 x 20	M10 x 20	M12 x 25	M16 x 35	M16 x 35	M20 x 40	M20 x 40	
Torque Md max. (Nm)	16	50	70	150	150	300	300	
<b>NSTE</b> <b>T-nuts</b> <b>suitable for HFKN-M</b> 	<b>Chuck</b>	HFKN-M 110	HFKN-M 165	HFKN-M 210	HFKN-M 260	HFKN-M 315	HFKN-M 400	HFKN-M 500
	T-nut type	-	NSTE-M	NSTE-M	NSTE-M	NSTE-M	NSTE-M	NSTE-M
	Id. No.	-	73061602	73062101	73062501	73063050	081817	081817
	N	-	12	14	16	21	25.5	25.5
	H	-	18.5	20.5	26.5	26.5	29	29
	h	-	6.5	7.5	10	10	11	11
	a	-	8	10	13	13	16	16
b	-	20	25	30	30	35	35	
Cyl.-screw ISO 4762-12.9	-	M10 x 20	M12 x 25	M12 x 35	M16 x 35	M20 x 40	M20 x 40	
Torque Md max. (Nm)	-	50	70	70	150	300	300	

**Important for maintenance and safe operation,  
to be ordered with the chuck**

## Grease KO5®

Special grease for  
manual and power chucks



Cartridge 14 Oz. (DIN 1284)  
Grease content 500 g  
Id. No. 016440



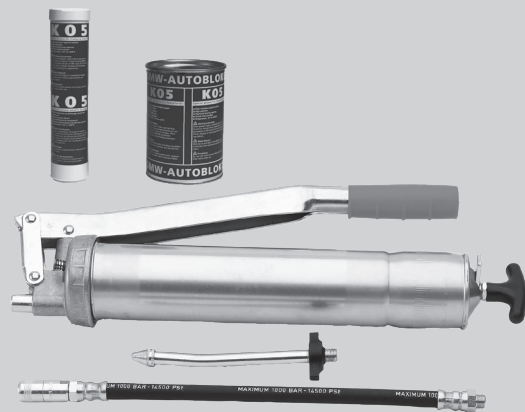
Can 1000 g  
Id. No. 011881

- High adhesion
- High resistance against coolant
- High load bearing capacity
- Low friction coefficient
- Avoids tribocorrosion

## Grease gun

Grease gun (DIN 1283) for  
cartridges 14 Oz. (DIN 1284)

- Also refillable from grease can 1000 g.



**Lubrication set Id. No. 083726**

Supply range

- Grease gun
- 1 Adapter flexible for high pressure grease nipple
- 1 Adapter for cone grease nipple