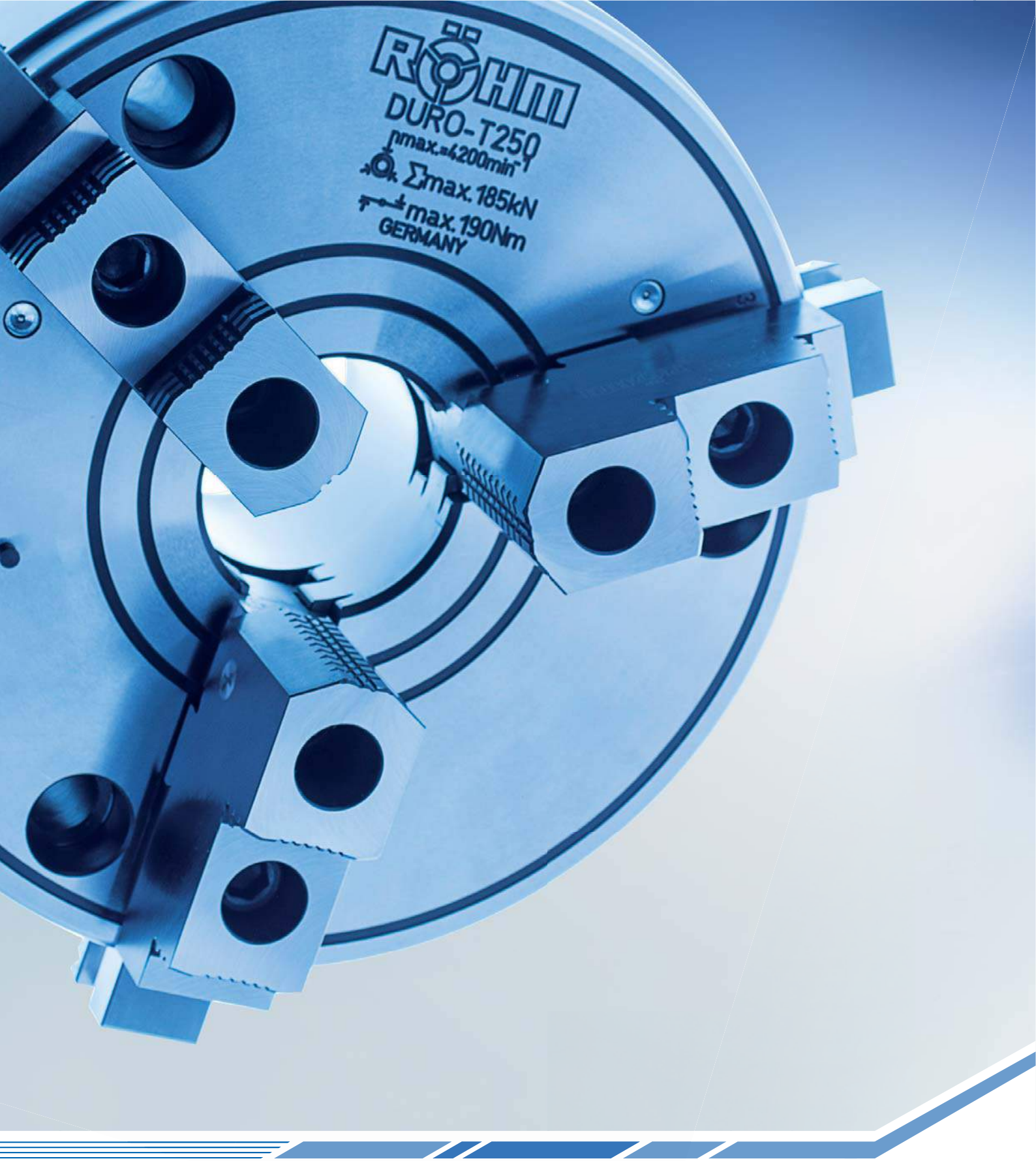


LATHE CHUCKS
INDEPENDENT CHUCKS

RÖHM
driven by technology

EDITION 8

ROHM
DURO-T200
GERMANY
Achtung

Table of contents

LATHE CHUCKS I INDEPENDENT CHUCKS

Key bar chucks with quick jaw change system

DURO-T 3009
DURO-TA 3020
DURO-TA XT 3027

Geared scroll chucks

ZS - ZSU 3036
Orange Line 3046
ZS Hi-Tru 3054
ES 3069
KRF 3074
BAV 3078
Adapter plates 3079

Independent chucks

USE - USU 3084

Clamping force measurement device

F-senso chuck 3090

Zero point clamping system

EASYLOCK 3091

Special solutions 3093

Operation guide

TYPE	DURO-T	DURO-TA	DURO-TA XT	ZS - ZSU	Orange Line
	Key bar chucks with quick jaw change system			Geared scroll chucks	
Chucking capacities	3 - 630 mm	3 - 646 mm	8 - 1190 mm	2 - 1224 mm	3 - 315 mm
Mount	Cylindrical centre mount DIN 6350 ISO 702-3 (DIN 55027)	Cylindrical centre mount DIN 6350	Individual	Cylindrical centre mount DIN 6350 ISO 702-2 (DIN 55029) ISO 702-3 (DIN 55027) DIN 6350 BVV (mounting from front)	Cylindrical centre mount DIN 6350
Through-hole	✔			✔	✔
Number of jaws					
Types of jaws					
Workpiece					
Machining					
Rotating/ Stationary					
Clamping					
Clamping force	■■■■□	■■■■□	■■■■□	■■■□□	■■■□□
Speed max.	■■■■■	■■■■■	■■■□□	■■■□□	■■□□□
Precision	■■■■□	■■■■□	■■■□□	■■□□□	■■□□□
Feature	quick jaw change system	grinding chuck with quick jaw change system	weight reduced	with splash water groove and control edge	with splash water groove and control edge
Page	3009	3020	3027	3034	3042

✔ yes

3-jaw chuck

4-jaw chuck

pipe

bar

disc

flange

asymmetrical workpiece

Operation guide

TYPE	ZS Hi-Tru	ES	KRF	USE - USU
	Geared scroll chucks			Independent chucks
Chucking capacities	2 - 315 mm	3 - 630 mm	2 - 200 mm	20 - 1270 mm
Mount	Cylindrical centre mount DIN 6350	Cylindrical centre mount DIN 6351	Cylindrical centre mount DIN 6350	Cylindrical centre mount ISO 702-2 (DIN 55029) ISO 702-3 (DIN 55027)
Through-hole	✔	✔	✔	✔
Number of jaws				
Types of jaws				
Workpiece				
Machining				
Rotating/ Stationary				
Clamping				
Clamping force	■■■□□	■■■□□	■□□□□	■■□□□
Speed max.	■■■□□	■■■□□	■□□□□	■■□□□
Precision	■■■■■	■■□□□	■□□□□	■■□□□
Feature	radial precision adjustment, with special seal for grinding machines	independently adjustable jaws	keyless clamping, specially for measuring and grinding machines	independently adjustable jaws
Page	3048	3069	3074	3084

inside jaw + outside jaw

base jaw

base and top jaw

reversible jaw

length machining

side machining

rotating machining

stationary machining

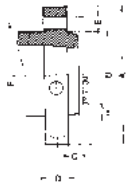
self-centering

independently adjustable jaws

Machine spindle noses for DIN and ASA B 5.9

Machine spindle noses (not included in the scope of delivery)

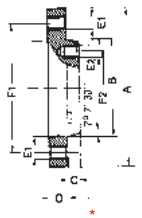
ISO 702-2 (DIN 55029 and ASA B 5.9 D1)
Camlock fixing (ISO 702-2)



Spindle nose size	A	B	C	D	E	F
3	92,1	53,985	11,1	31,8	3x15,1	70,66
4	117,5	63,525	11,1	33,3	3x16,7	82,55
5	146	82,575	12,7	38,1	6x19,8	104,8
6	181	106,390	14,3	44,5	6x23	133,4
8	225,4	139,735	15,9	50,8	6x26,2	171,4
11	298,5	196,885	17,5	60,3	6x31	235
15	403	285,800	19	69,9	6x35,7	330,2
20	546	412,800	21	82,5	6x42,1	463,6

Latest edition of relevant DIN standard applies in each case

Typ A1-A2, B1-B2



A1: **Tapped holes** in flange (outer bolt circle) **and** inner bolt circle. From taper size 4 with driver.

A2: **Tapped holes** in flange (outer bolt circle) **without** inner bolt circle.

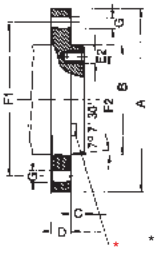
Spindle nose size	A	B	$C_{-0,025}$	D	Holes on outer bolt circle (F1) E1	Outer bolt circle F1	Holes on inner bolt circle (F2) E2	Inner bolt circle F2
A1 (corresponds ISO 702-1)								
5	133,4	82,575	14,288	22,2	11x $^{7}/_{16}$-14 UNC	104,8	8x $^{7}/_{16}$-14 UNC	61,9
6	165,1	106,390	15,875	25,4	11x $^{1}/_{2}$-13 UNC	133,4	8x $^{1}/_{2}$-13 UNC	82,6
8	209,5	139,735	17,462	28,6	11x $^{5}/_{8}$-11 UNC	171,4	8x $^{5}/_{8}$-11 UNC	111,1
11	279,4	196,885	19,05	34,9	11x $^{3}/_{4}$-10 UNC	235	8x $^{3}/_{4}$-10 UNC	165,1
15	381	285,800	20,638	41,3	12x $^{7}/_{8}$-9 UNC	330,2	11x $^{7}/_{8}$-9 UNC	247,6
20	520	412,800	22,225	47,6	12x 1-8 UNC	463,6	12x $^{1-8}$ UNC	368,3

Spindle nose size	A	B	C	D	Holes on outer bolt circle (F1) E1	Outer bolt circle F1
A2 (corresponds ISO 702-1)						
3	92,1	53,985	11,1	15,9	3x $^{7}/_{16}$-14 UNC	70,66
4	108	63,525	11,1	19	11x $^{7}/_{16}$-14 UNC	82,55
5	133,4	82,575	12,7	22,2	11x $^{7}/_{16}$-14 UNC	104,8
6	165,1	106,390	14,3	25,4	11x $^{1}/_{2}$-13 UNC	133,4
8	209,5	139,735	15,9	28,6	11x $^{5}/_{8}$-11 UNC	171,4
11	279,4	196,885	17,5	34,9	11x $^{3}/_{14}$-10 UNC	235
15	381	285,800	19	41,3	12x $^{7}/_{8}$-9 UNC	330,2
20	520	412,800	20,6	47,6	12x 1-8 UNC	463,6

B1: **Through-holes** in flange (outer bolt circle), tapped holes in **inner** bolt circle - from taper size 4 with driver.

B2: **Through-holes i**n flange (outer bolt circle) **without** inner bolt circle.

Spindle nose size	A	B	$C_{-0,025}$	D	F1 G	Outer bolt circle F1	Holes on inner bolt circle (F2) E2	Inner bolt circle F2
B1								
5	133,4	82,575	14,288	22,2	11x11,9	104,8	8x $^{7}/_{16}$-14 UNC	61,9
6	165,1	106,390	15,875	25,4	11x13,5	133,4	8x $^{1}/_{2}$-13 UNC	82,6
8	209,5	139,735	17,462	28,6	11x16,7	171,4	8x $^{5}/_{8}$-11 UNC	111,1
11	279,4	196,885	19,05	34,9	11x20,2	235	8x $^{3}/_{4}$-10 UNC	165,1
15	381	285,800	20,638	41,3	12x23,4	330,2	11x $^{7}/_{8}$-9 UNC	247,6
20	520	412,800	22,225	47,6	12x26,6	463,6	12x 1-8 UNC	368,3



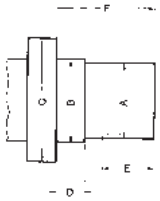
* From taper size 4 with driver

Spindle nose size	A	B	C	D	G	Outer bolt circle F1
B2						
3	92,1	53,985	11,1	15,9	3x11,9	70,66
4	108	63,525	11,1	19	11x11,9	82,55
5	133,4	82,575	12,7	22,2	11x11,9	104,8
6	165,1	106,390	14,3	25,4	11x13,5	133,4
8	209,5	139,735	15,9	28,6	11x16,7	171,4
11	279,4	196,885	17,5	34,9	11x20,2	235
15	381	285,800	19	41,3	12x23,4	330,2
20	520	412,800	20,6	47,6	12x26,6	463,6

Machine spindle noses for DIN and ASA B 5.9

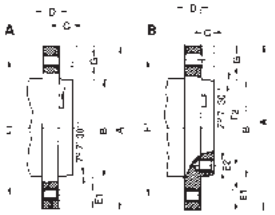
Machine spindle noses (not included in the scope of delivery)

DIN 800, with thread



Mean tol. A	Bg5	Minimum C	D	E	F
M20	21	30	6,3	10	20
M24	25	36	8	12	24
M33	34	50	9	14	30
M39	40	56	10	16	35
M45	46	67	11	18	40
M52	55	80	12	20	45
M60	62	90	14	22	50
M76x6	78	112	16	30	63
M105x6	106	150	20	40	80

DIN 55021
From taper size 4 with driver

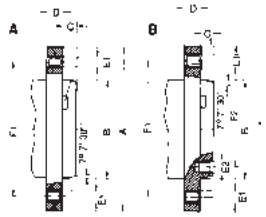


Spindle nose size	A	B	C	D	Holes on outer bolt circle (F1) E1	G	Outer bolt circle F1	Holes on inner bolt-circle (F2) E2	Inner bolt circle F2
3	102	53,985	11	16	3xM10	3x10,5	75	-	-
4	112	63,525	11	20	3xM10	3x10,5	85	-	-
5	135	82,575	13	22	7xM10	4x10,5	104,8	8xM10	61,9
6	170	106,390	14	25	7xM12	4x13	133,4	8xM12	82,6
8	220	139,735	16	28	7xM16	4x17	171,4	8xM16	111,1
11	290	196,885	18	35	12xM20	6x21	235	11xM20	165,1
15	380	285,800	20	42	12xM24	6x25	330,2	11xM24	247,6
20	520	412,800	21	48	12xM24	6x25	463,6	11xM24	368,3

Form A: Tapped holes and through-holes in flange (**without** inner bolt circle)

Form B: Tapped holes and through-holes in flange (outer bolt circle) **and** tapped holes in inner bolt circle

ISO 702-1 (DIN 55026)
From taper size 4 with driver

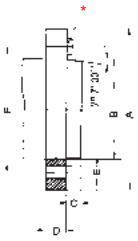


Spindle nose size	A	B	C	C_1	D	Holes on outer bolt circle E1	Outer bolt circle F1	Holes on inner bolt circle (F2) E2	Inner bolt circle F2
3	92	53,983	11	-	16	3xM10	70,6	-	-
4	108	63,521	11	-	20	11xM10	82,6	-	-
5	133	82,573	13	14,288	22	11xM10	104,8	8xM10	61,9
6	165	106,385	14	15,875	25	11xM12	133,4	8xM12	82,6
8	210	139,731	16	17,462	28	11xM16	171,4	8xM16	111,1
11	280	196,883	18	19,05	35	11xM20	235	8xM20	165,1
15	380	285,791	19	20,638	42	12xM24	330,2	11xM24	247,6
20	520	412,795	21	22,225	48	12xM24	463,6	11xM24	368,3

Form A: Tapped holes in flange (outer bolt circle) **without** inner bolt circle.

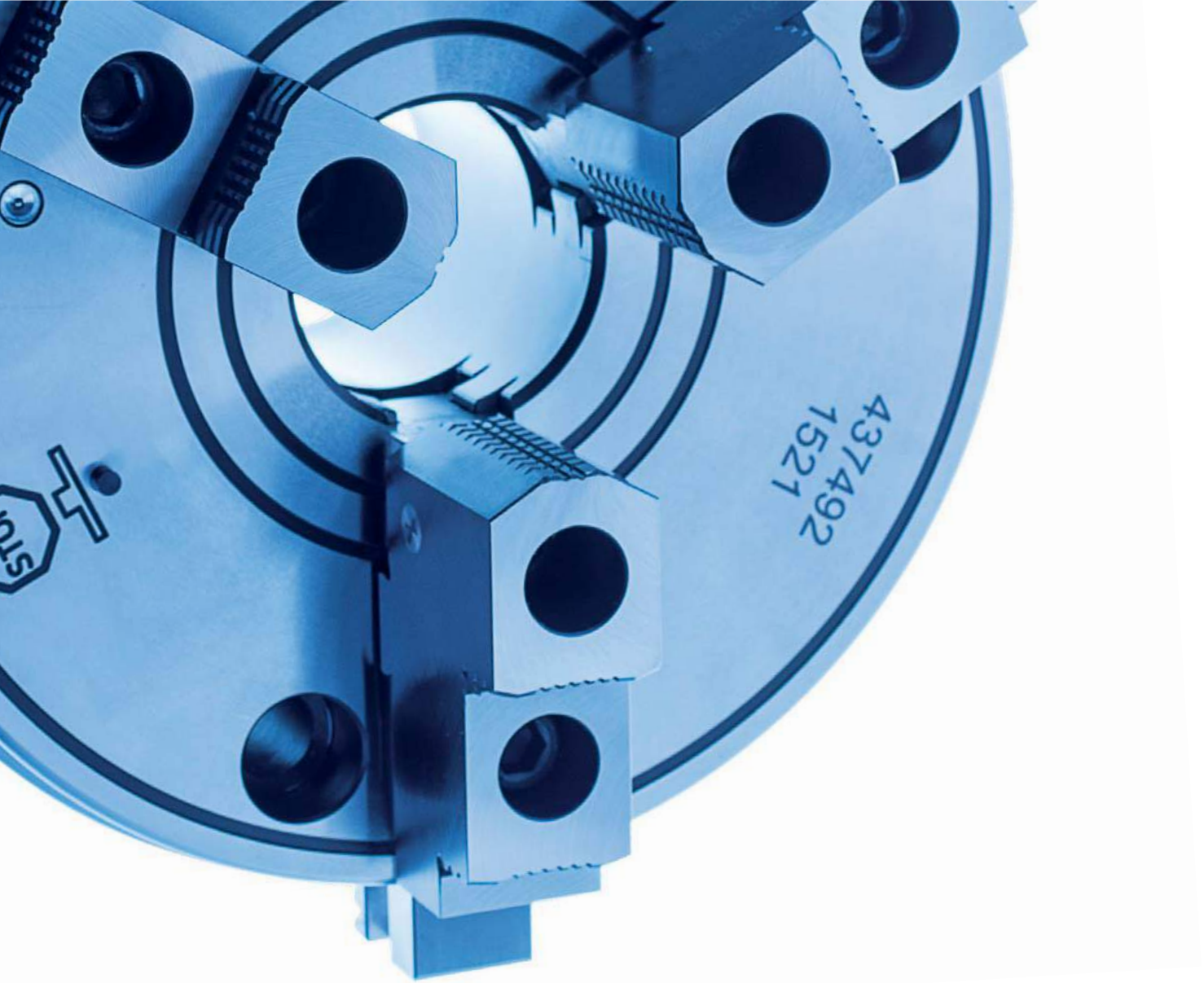
Form B: Tapped holes in flange (outer bolt circle) **and** in inner bolt circle.

ISO 702-3 (DIN 55027 und 55022)
With bayonet ring fixing (ISO 702/III)



* From taper size 4 with driver

Spindle nose size	A	B	C	D	Number of holes x E	F
3	102	53,985	11	16	3x21	75
4	112	63,525	11	20	3x21	85
5	135	82,575	13	22	4x21	104,8
6	170	106,390	14	25	4x23	133,4
8	220	139,735	16	28	4x29	171,4
11	290	196,885	18	35	6x36	235
15	400	285,800	19	42	6x43	330,2
20	540	412,800	21	48	6x43	463,6



QUICK JAW CHANGE SYSTEM

The RÖHM key bar chucks with quick jaw change system convince in two ways. On the one hand the jaws can be quickly and easily turned, changed or offset over the entire clamping range within a few seconds. On the other the key bar chucks convince with maximum clamping forces and maximum accurancy thanks to direct force transfer via the key bar system. Large, straight surfaces transmitting the force from the key bar to the jaw teeth guarantee long life and produce a very high clamping force combined with an accurancy which is twice high as required by DIN 6386. The high clamping force is achieved without much physical effort by manually turning the key.

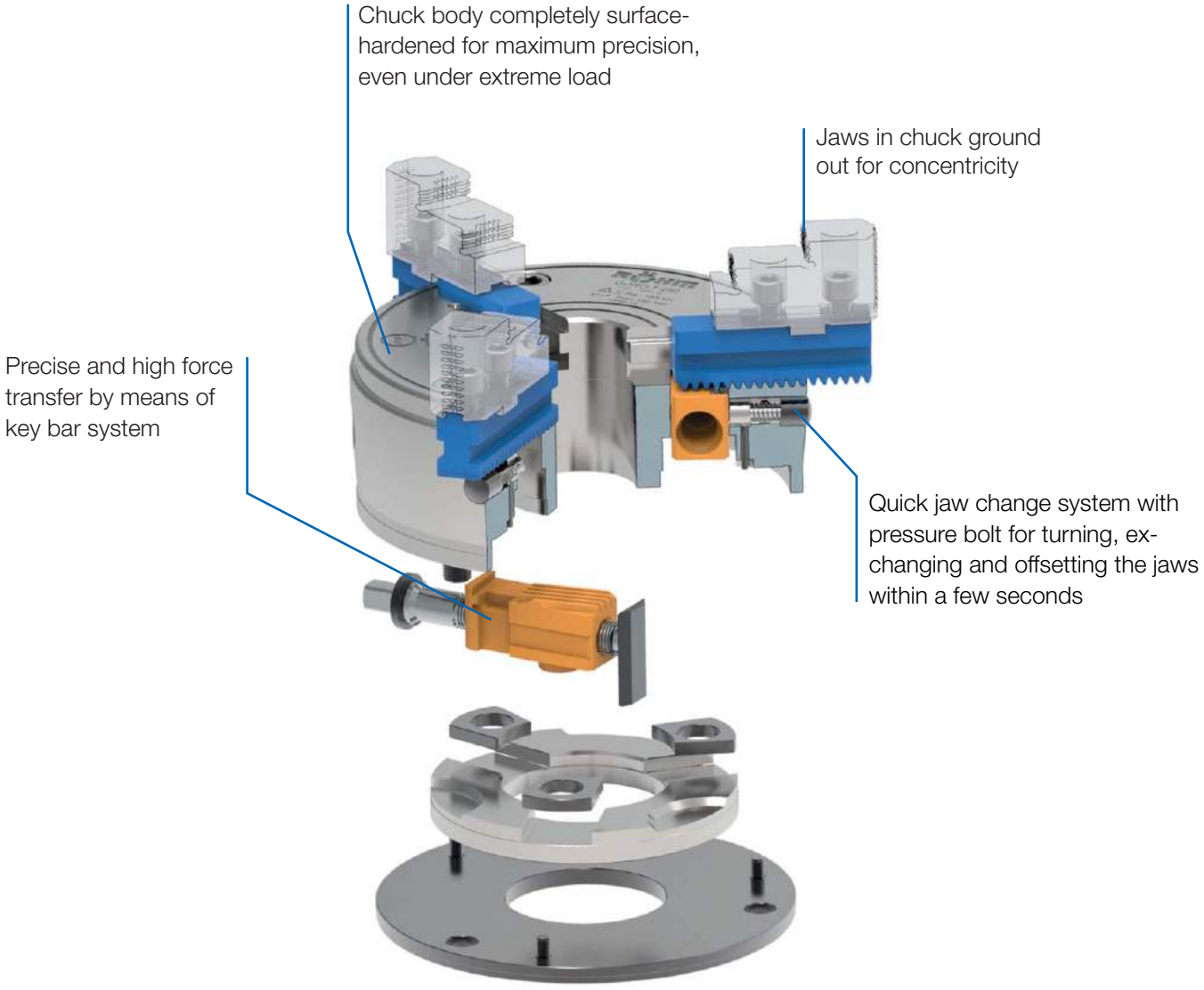
Video DURO-T

KEY BAR CHUCK WITH QUICK JAW CHANGE SYSTEM

The RÖHM key bar chucks with quick jaw change system are used successfully in areas where extremely high clamping forces, high concentricity and reliable long-term repeatability are required. Thanks to the quick jaw change system, the jaws can be quickly and easily turned, changed or offset over the entire clamping range within a few seconds.

ADVANTAGES AT A GLANCE

- Maximum clamping forces thanks to direct force transfer via the key bar system
- Maximum concentricity and axial run-out tolerance
- High user-friendliness thanks to quick jaw change system



DURO-T

The DURO-T key bar chuck guarantees maximum precision, maximum clamping force and is completely balanced ex works.

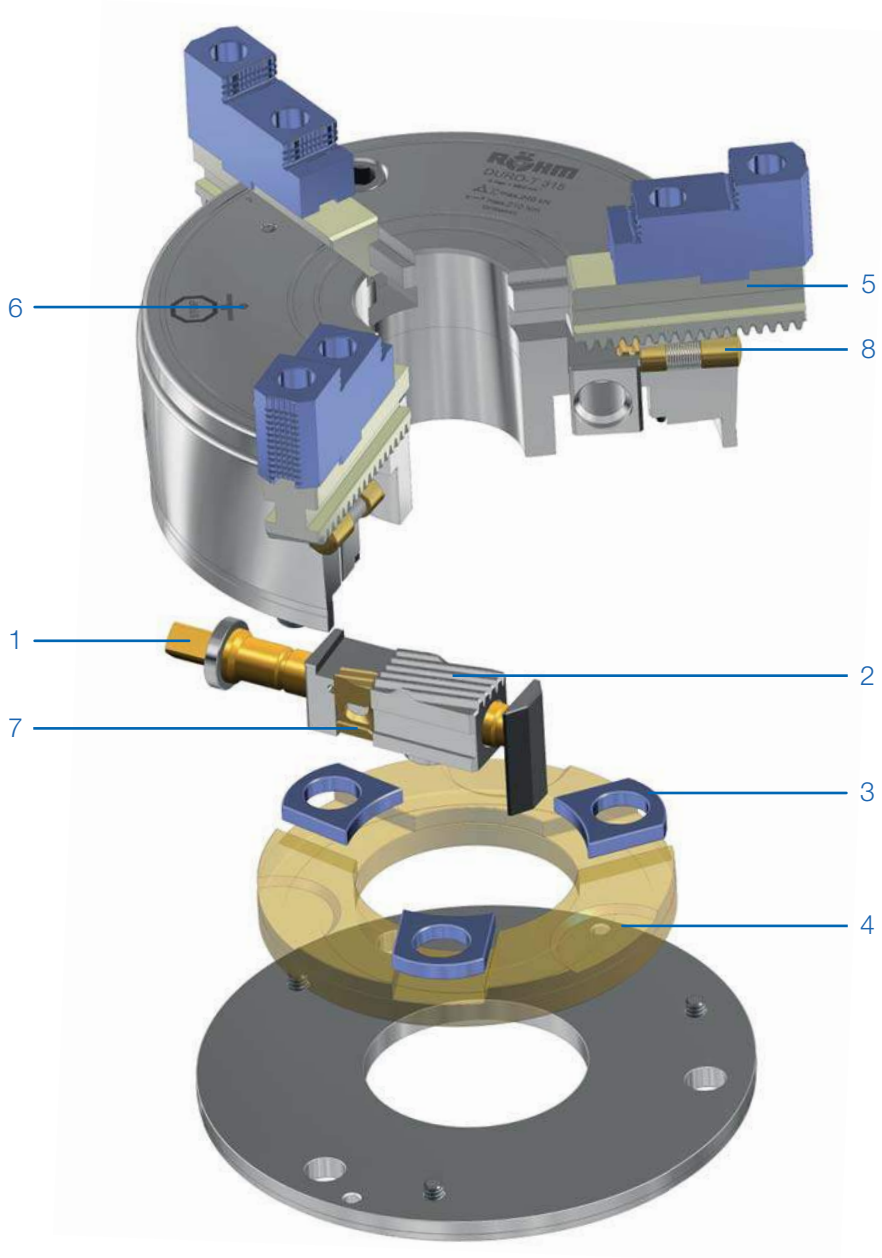
Principle of operation

Thanks to the tangentially arranged threaded spindle (**1**), the force is transferred via a key bar (**2**) having an internal thread. The key bar moves the drive ring via a slide (**3**). Two other slides in the drive ring (**4**) transfer the forces to the other two key bars. The key bars having an inclined profile engage in the base jaws (**5**), thereby guaranteeing exact, centric clamping. The jaws can be quickly and easily turned, changed or offset over the entire clamping range within a few seconds. To do this, the key bars must be disengaged by turning the key to the left; the indicator pin (**6**) will project here. In this position, the jaws are secured against being hurled out in the event the machine spindle is started up unintentionally. Therefore, the gate valve (**7**) of each jaw must be unlocked via the corresponding pressure bolt (**8**) on the outer diameter of the chuck.

Large, straight-line force transfer surfaces between the key bar and jaw toothing yield a very high clamping force over a long service life and precision which is twice as high as prescribed by DIN 6386. The high clamping force is achieved without exerting any special amount of force by manually turning the key.

Lubrication

To maintain the clamping force, key bar chucks must be lubricated regularly. You will find corresponding information in the operating instructions which are enclosed with every chuck. For easy maintenance, DURO-T chucks are equipped with three additional grease nipples on the front side.



DURO-T - with quick jaw change system

APPLICATION

Optimized for turning applications, which require extremely high clamping forces, maximum concentricity, as well as reliable long-term repeatability.
In combination with a base plate, stationary use on milling machines, dividing units and machining centers.

TYPE

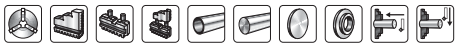
Key bar chuck with quick jaw change system.
Guaranteed maximum jaw precision as far as these are only used on the same chuck, and base and top jaws are kept screwed on for recurring work.

CUSTOMER BENEFITS

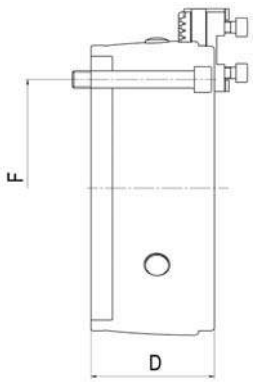
- Maximum clamping force thanks to key bar system
- Concentricity and axial run-out tolerance twice as exact as required in DIN precision class 1
- Very high jaw change repeatability
- Balanced and jaws in chuck ground out for concentricity

TECHNICAL FEATURES

- With jaw safeguard
- Chuck body completely surface-hardened
- Visual marking for quick jaw adjustment
- External shape incl. splash-water edge
- Fastening options for strongly stressed sliding surfaces
- Incl. safety key
- High corrosion protection



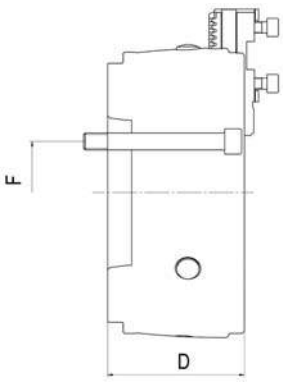
A08
Cylindrical centre mount



Size	Inch	Through-hole mm	With one-piece reversible jaws	With base jaws	With base jaws and reversible top jaws	D mm	F mm	Speed max. min^{-1}	Max. Torque Nm	Max. total clamping force kN
125	5	32	**437475**	**437482▲**	**-**	46,5	100	6000	40	23
160	6 1/4	42	**437476▲**	**437483▲**	**437490**	63	125	5400	120	73
200	8	52	**437477**	**437484▲**	**437491**	81	160	4600	155	114
250	10	62	**437478▲**	**437485▲**	**437492**	92	200	4200	190	185
315	12 1/2	87	**437479▲**	**437486▲**	**437493**	111	250	3300	210	240
400	15 3/4	102	**437480**	**437487▲**	**437494▲**	118	315	2200	260	260
500	20	162	**437481**	**437488▲**	**437495▲**	118	400	1900	320	290
630	25	252	**-**	**437489▲**	**437496▲**	143	520	1100	350	320

At size 630 chuck body without convex outer contours
Further sizes and mountings available on request

A08
ISO 702-1 (DIN 55026), DIN 55021, ASA B 5.9, mounting from front

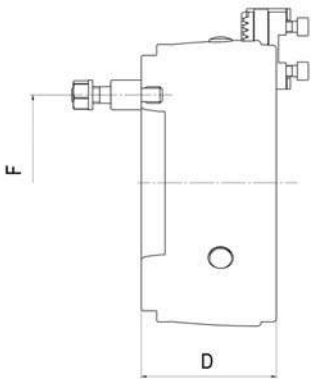


Size	Mount short taper	Through-hole mm	With one-piece reversible jaws	With base jaws	With base jaws and reversible top jaws	D mm	F mm	Speed max. min^{-1}	Max. Torque Nm	Max. total clamping force kN
160	4	42	**437570▲**	**437580▲**	**437591▲**	76	82,62	5400	120	73
160	5	42	**437571▲**	**437581▲**	**437592▲**	79	104,8	5400	120	73
200	5	52	**437572▲**	**437582▲**	**437593▲**	93	104,8	4600	155	114
200	6	52	**437573▲**	**437583▲**	**437594▲**	97	133,4	4600	155	114
250	6	62	**437574▲**	**437584▲**	**437595▲**	108	133,4	4200	190	185
315	6	87	**437575▲**	**437585▲**	**437596▲**	124	133,4	3300	210	240
315	8	87	**437576▲**	**437586▲**	**437597▲**	130	171,4	3300	210	240
400	8	102	**437577▲**	**437587▲**	**437598▲**	135	171,4	2200	260	260
500	11	162	**437578▲**	**437588▲**	**437599▲**	138	235	1900	320	290
630	15	252	**-**	**437590**[1)]**▲**	**437601▲**	167	330,2	1100	350	320

[1)] By conserving the precision
At size 630 chuck body without convex outer contours
Further sizes and mountings available on request

DURO-T - with quick jaw change system

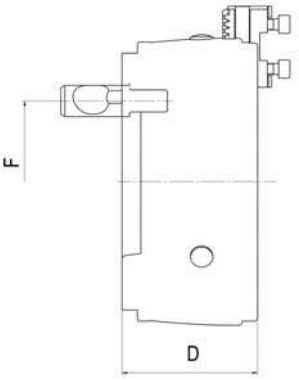
A08
ISO 702-3 (DIN 55027), with studs and locknuts



Size	Mount short taper	Through-hole mm	With one-piece reversible jaws	With base jaws	With base jaws and reversible top jaws	D mm	F mm	Speed max. min^{-1}	Max. Torque Nm	Max. total clamping force kN
125	5	32	**437499**	**437523▲**	**-**	67	104,8	6000	40	23
160	5	42	**437501**	**437525▲**	**437548**	78	104,8	5400	120	73
160	6	42	**437502**	**437526▲**	**437549**	85	133,4	5400	120	73
200	5	52	**437504▲**	**437528▲**	**437551**	96	104,8	4600	155	114
200	6	52	**437505**	**437529▲**	**437552**	97	133,4	4600	155	114
250	6	62	**437509▲**	**437533▲**	**437556**	108	133,4	4200	190	185
250	8	62	**437510▲**	**437534▲**	**437557▲**	110	171,4	4200	190	185
315	8	87	**437512▲**	**437536▲**	**437559**	129	171,4	3300	210	240
315	11	87	**437513▲**	**437537▲**	**437560▲**	131	235	3300	210	240
400	8	102	**437515▲**	**437539▲**	**437562▲**	138	171,4	2200	260	260
400	11	102	**437516▲**	**437540▲**	**437563▲**	138	235	2200	260	260
500	11	162	**437519▲**	**437543▲**	**437566▲**	156	235	1900	320	290
500	15	162	**437520▲**	**437544▲**	**437567▲**	163	330,2	1900	320	290
630	11	192	**-**	**437545[1)]▲**	**437568▲**	165	235	1100	350	320
630	15	252	**-**	**437546[1)]▲**	**437569▲**	167	330,2	1100	350	320

[1)] By conserving the precision
At size 630 chuck body without convex outer contours
Further mountings available on request.

A08
ISO 702-2 (DIN 55029), stud for Camlock



Size	Mount short taper	Through-hole mm	With one-piece reversible jaws	With base jaws	With base jaws and reversible top jaws	D mm	F mm	Speed max. min^{-1}	Max. Torque Nm	Max. total clamping force kN
125	3	32	**437602▲**	**437625▲**	**-**	67	70,66	6000	40	23
125	4	32	**437603▲**	**437626▲**	**-**	68	82,6	6000	40	23
160	4	42	**437604▲**	**437627▲**	**437650▲**	83,5	82,6	5400	120	73
160	5	42	**437605▲**	**437628▲**	**437651▲**	87	104,8	5400	120	73
160	6	42	**437606▲**	**437629▲**	**437652▲**	104	133,4	5400	120	73
200	4	52	**437607▲**	**437630▲**	**437653▲**	97,5	82,6	4600	155	114
200	5	52	**437608▲**	**437631▲**	**437654▲**	101	104,8	4600	155	114
200	6	52	**437609▲**	**437632▲**	**437655▲**	106	133,4	4600	155	114
200	8	52	**437610▲**	**437633▲**	**437656▲**	125	171,4	4600	155	114
250	4	60	**437611▲**	**437634▲**	**437657▲**	118,5	82,6	4200	190	185
250	5	62	**437612▲**	**437635▲**	**437658▲**	112	104,8	4200	190	185
250	6	62	**437613▲**	**437636▲**	**437659▲**	117	133,4	4200	190	185
250	8	62	**437614▲**	**437637▲**	**437660▲**	120	171,4	4200	190	185
315	6	87	**437615▲**	**437638▲**	**437661▲**	145	133,4	3300	210	240
315	8	87	**437616▲**	**437639▲**	**437662▲**	136	171,4	3300	210	240
315	11	87	**437617▲**	**437640▲**	**437663▲**	143	235	3300	210	240
400	6	102	**437618▲**	**437641▲**	**437664▲**	153	133,4	2200	260	260
400	8	102	**437619▲**	**437642▲**	**437665▲**	141	171,4	2200	260	260
400	11	102	**437620▲**	**437643▲**	**437666▲**	148	235	2200	260	260
400	15	102	**437621▲**	**437644▲**	**437667▲**	168	330,2	2200	260	260
500	8	135	**437622▲**	**437645▲**	**437668▲**	143	171,4	1900	320	290
500	11	162	**437623▲**	**437646▲**	**437669▲**	148	235	1900	320	290
500	15	162	**437624▲**	**437647▲**	**437670▲**	153	330,2	1900	320	290
630	11	192	**-**	**437648[1)]▲**	**437671▲**	170	235	1100	350	320
630	15	252	**-**	**437649[1)]▲**	**437672▲**	175	330,2	1100	350	320

[1)] By conserving the precision
At size 630 chuck body without convex outer contours

Jaws DURO-T

A28
One-piece jaw EB, 3-jaw set, diagonally toothing, hardened

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
212121 ▲	125	3	set	50	34	14
094000	160	3	set	77,7	45	20
094001	200	3	set	94,7	60	22
094002	250	3	set	114	70	26
094003	315	3	set	130	79	32
094043	400/500	3	set	167	93	45

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A28
Unstepped jaw BL, 3-jaw set, diagonally toothing, unstepped, soft, material 16MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
304864	125	3	set	53	34	14
241699	160	3	set	84,4	45	20
249678	200	3	set	98,4	60	22
249679	250	3	set	118,7	70	26
249680	315	3	set	136,6	79	32
249681	400/500	3	set	173,6	93	45

A28
Reversible top jaw UB, 3-jaw set, hardened tongue and groove for **external and internal clamping,** material 16 MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
094012	160	3	set	61,5	32,5	20,4
094013	200	3	set	70,5	38	24,4
094014	250	3	set	92	50	34,4
094015	315	3	set	107	56	35,7
094045	400/500	3	set	130	72	50,4
140715	630	3	set	185	102	68

Additionally or later applied hardened jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A28
Unstepped top jaw AB, 3-jaw set, standard design, soft, material 16 MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
212123	125	3	set	55	25,5	20,7
094008	160	3	set	85	36,5	20,3
094009	200	3	set	105	40	22
094010	250	3	set	125	50	30,4
094011	315	3	set	145	50	34,3
094046	400/500	3	set	180	73	50,5
140716	630	3	set	260	102	68

A28
Unstepped top jaw AB, 3-jaw set, extendend design, soft, material 16MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
137055	160	3	set	85	42,5	24,4
137056	200	3	set	105	51	34,3
137057	250	3	set	125	75	50,5
137058	315	3	set	145	74	50,5

Jaws DURO-T

A28
Base jaw GB, 3-jaw set, diagonally toothing, with mounting bolts

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw width mm
212119	125	3	set	47	14
094004	160	3	set	74	20
094005	200	3	set	90	22
094006	250	3	set	110	26
094007	315	3	set	125	32
094044	400/500	3	set	160	45
140194	630	3	set	230	65

C 21
Reversible claw-type top jaws, standard design, tongue and groove, **large clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137060	160	66	37,5	24
137119	400/500	124	62	50
151289	630	144	78	70

C 21
Reversible claw-type top jaws, standard design, tongue and groove, **small clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137061	160	66	37,5	20
137064	200	81	43	24
137108	250	90	55	34
137114	315	100	62	34
137120	400/500	124	62	50

C 21
Reversible claw-type top jaws, standard design, tongue and groove, **medium clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137062	160	56	37,5	20
137065	200	66	43	24
137109	250	72	55	34
137115	315	86	62	34
137121	400/500	100	62	50

C 21
Reversible claw-type top jaws, large design, tongue and groove, **small clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137066	160/200	79	43	34
137110	250	80	55	50
137116	315	93	62	50

Jaws DURO-T

C 21
Reversible claw-type top jaws, large design, tongue and groove, **large clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137067	160/200	81	43	34
137111	250	90	55	50
137117	315	106	62	50

C 21
Reversible claw-type top jaws, large design, tongue and groove, **medium clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137068	160/200	66	43	34
137112	250	72	55	50
137118	315	86	62	50

C 21
Draw-down jaws, for interchangeable clamping inserts, **diagonally toothing,** 1 piece, without clamping inserts

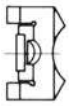
Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
141037	160	84,4	43,5	20
141039	200	98,4	47,5	22
141041	250	118,7	58,5	26
141043	315	136,4	63,9	32
141045	400/500	173,6	73,4	45

C 21
Draw-down jaws, additional clamping range, for interchangeable clamping inserts, **diagonally toothing,** 1 piece, without clamping inserts

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
141038	160	84,4	43,5	20
141040	200	98,4	47,5	22
141042	250	118,7	58,5	26
141044	315	136,4	63,9	32
141046	400	173,6	73,4	45
141048	500	173,6	73,4	45

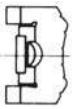
Jaws DURO-T

C 15
Interchangeable clamping inserts, 1 piece, **with claws**



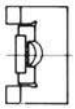
Item no.	Chuck Size
141049	160/200
141052	250/315
141055▲	400/500/630

C 15
Interchangeable clamping inserts, 1 piece, **with serrated toothing**



Item no.	Chuck Size
141050	160/200
141053	250/315
141056▲	400/500

C 15
Interchangeable clamping inserts, 1 piece, **with heat treatable surface**



Item no.	Chuck Size
141051	160/200
141054	250/315
141057▲	400/500

C15
Jaw mounting bolt, piece

Item no.	Size	Thread	Contents of delivery
243893	125	M6x10	piece
200182	160/200	M8x22	piece
200183	250	M12x30	piece
202402	315	M12x35	piece
227618	400/500	M16x40	piece
249388	630	M20x50	piece

Accessories DURO-T

A08 **Base plate with fixing slots**
Complete with mounting screws and fixed T-slot nuts.
Other sizes available on request.

Item no.	Size
143163▲	160
143165▲	200
143167▲	250

A08 **Key**

Item no.	Size	Square	L mm
212124▲	125	8	85
094016	160	10	140
094017	200	12	160
094018	250	14	220
094019	315	17	230
094047▲	500	19	250
332938▲	630	24	410

Only for stationary used chucks

A08 **Safety key**

Item no.	Size	Square	L mm
242172▲	125	8	85
242173	160	10	140
242174	200	12	160
242175	250	14	220
242176	315	17	230
242177	500	19	250
332939▲	630	24	410

Corresponding with DIN 1550 for rotating chucks

A08 **Torque wrench**

Item no.	Torque Nm	Length mm	Output	Working accuracy
10004116	20-120	435	12,7=1/2"	3%
10004117	60-320	659	12,7=1/2"	3%

A08 **Chip guard set**

Item no.	Size	Contents of delivery
212122▲	125	set
236439▲	160	set
236440	200	set
236441	250	set
236442	315	set
236443	500	set

A08 **Safety adapter**

Item no.	Size	Square	Length mm	Mount
1333585	125	8	85	1/2"
1333587	160	10	120	1/2"
1293349	200	12	132	1/2"
1129759	250	14	186	1/2"
1129449	315	17	192	1/2"
1111583	400/500	19	220	1/2"
1162787	630	24	250	1/2"

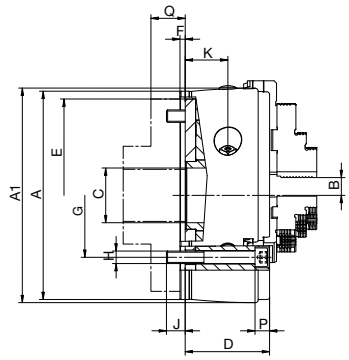
A08 **Special grease** F80 for **lathe chucks**
for lubrication and conservation of chucking power

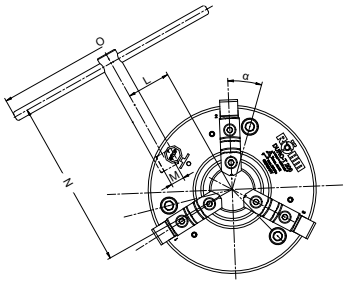
Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

C15 **Grease gun DIN1283**

Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

Technical Data DURO-T





Chuck size A		125	160	200	250	315	400	500	630
Outer diameter	A1	128	164	206	256	322	407	507	630
Jaw movement	B	4,8	6,2	6,8	8	10,2	12,5	12,5	14
Bore	C	32	42	52	62	87	102	162	252
Bore cab be enlarged	C max.	35	45	55	75	102	130	180	270
	D	46,5	63	81	92	111	118	118	143
	E H6	115	145	185	235	300	380	460	580
	F	4	5	5	6	6	6	6	6
	G	100	125	160	200	250	315	400	520
	H	3xM8	3xM10	3xM12	3xM16	3xM20	3xM24	3xM24	3xM24
	J	12	15	18	25	30	37	37	37
	K	22,5	31,5	43	47	59	57,7	57,5	72
	L	32,5	42	53,5	66,5	86	110	152,5	196
	M	SW8	SW10	SW12	SW14	SW17	SW19	SW19	SW24
	N	117	182	211	284	309	359	356	570
	O	180	210	270	450	500	600	600	600
	P	8,5	13	14	17	21	25	25	29
Min. thickness of flange	Q	17	30	30	35	35	40	45	55
Moment of inertia GD2 1)	kgm²	0,01	0,03	0,10	0,29	0,87	2,37	5,78	17,04
	α	21° 35´	22°	18°	19°	17°	20°	42°	69° 30´
approx. kg	kg	4,0	9,3	18,6	34,5	64	112	166	300

1) The moment of inertia was measured with base jaws but without top jaws or back plate
The bore could be enlarged (measure C, at surcharge)
Enlarged bore max.

Max. permissible speed

The maximum permissible speed has been fixed so that 1/3 of the gripping force is still available as residual gripping force if the maximum grippping is applied and the chuck is fitted with its heaviest jaws. The jaws may not project beyond the outside diameter of the chuck. The chuck must be in perfect condition. The specification DIN 6386 Part 1 shall be observed.

Chuck size		125	160	200	250	315	400	500	630
Max. speed	min-1	6000	5400	4600	4200	3300	2200	1900	1100

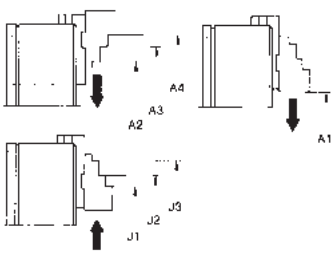
Gripping force

The gripping force is the sum total of all jaw forces acting radially on the stationary workpiece.
The specified gripping forces are standard values.
They apply to chucks in a perfect condition which have been lubricated with RÖHM grease F79 and F80.

Chuck size		125	160	200	250	315	400	500	630
Torque applied on key 1)	Nm	10	40	60	70	80	90	100	100
Total gripping force 1)	kN	8,5	30	48	66	80	95	102	102
Torque applied on key	Nm	40	120	155	190	210	260	320	350
Max. total gripping force	kN	23	73	114	185	240	260	290	320

1) Maintaining the accuracy

At this torque the clamping jaws have been ground at the factory; for testing the chuck must be clamped with this torque

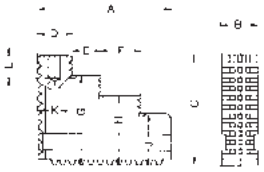


Chuck capacities of jaw steps

Chuck size			125	160	200	250	315	400	500	630
External chucking	Jaw position	A1	3-30	5-51	7-70	8-97	12-131	16-168	40-256	20-322
		A2	31-65	45-91	58-123	82-172	93-216	119-278	167-360	200-490
		A3	63-97	89-135	114-179	-	-	-	-	-
		A4	95-129	115-161	142-207	163-253	201-323	260-413	308-501	360-650
Internal chucking		J1	26-59	67-105	71-131	99-182	102-213	120-272	166-360	184-489
		J2	57-91	93-132	99-159	-	-	-	-	-
		J3	89-123	135-174	154-214	178-261	207-319	260-412	306-500	341-646

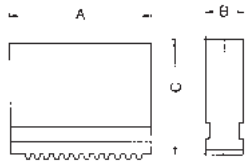
Jaw dimensions DURO-T

Reversible one-piece jaw **EB**,
hardened and ground,
jaw steps not ground



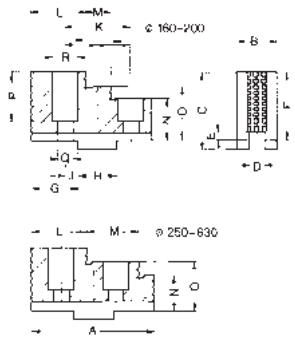
Chuck size	125	160	200	250	315	400+500
A	50	77,7	94,7	114	130	167
B	14	20	22	26	32	45
C	34	45	60	70	79	93
D	10,7	20,6	23	41,5	40,2	50,5
E	16	18,9	19,5	40,3	54	71
F	16	22	28	-	-	-
G	29	37,5	50	56	64	73
H	24	30	40	-	-	-
J	19	22,5	30	42	49	53
K	-	8	10	13	13	20
L	-	16	15	19,5	19,5	30
Jaw approx. kg	0,400	0,500	0,635	1,135	1,835	3,665

Block jaw **BL**, unstepped, soft, thread
and jaw guides hardened and ground



Chuck size	125	160	200	250	315	400+500
A	53	84,4	98,4	118,7	136,6	173,6
B	14	20	22	26	32	45
C	34	45	60	70	79	93
Jaw approx. kg	0,435	0,500	0,900	1,535	2,400	5

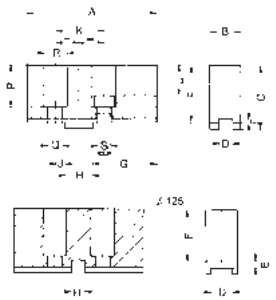
Reversible top jaw **UB**,
completely hardened, cross tenon ground,
jaw steps not ground



Chuck size	160	200	250	315	400+500	630
A	61,5	70,5	92	107	130	185
B	20,4	24,4	34,4	35,7	50,4	68
C	37	43	55	62	79	110
D	8	10	12	12	18	24
E	3	3,5	3,5	3,5	4,5	4,5
F	32,5	38	50	56	72	102
G	22,5	25,5	30	35,5	41,4	59
H	18	20	20	26	30	40
J	7	10	10	14	15	21
K	32	40	40	54	60	82
L	26,5	28,5	41	40	51	80
M	13	14	40,5	54	71	80
N	17,5	18	22	26	32	42
O	25	28	36	41	52	72
P	23,5	29	39	40	57	82
Q	9	9	14	14	18	22
R	15	15	20	20	26	33
T[1)]	38,5	45	57	63,6	80,6	114
Jaw approx. kg	0,200	0,335	0,800	1,135	2,535	6,350

1) Dimension marked on base jaw

Unstepped soft top jaw **AB**,
for turning out special chucking diameters

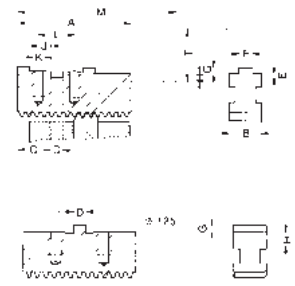


Dimensions for extendend design

Chuck size	125	160		200		250		315		400+500	630
A	55	85	**85**	105	**105**	125	**125**	145	**145**	180	260
B	20,7	20,3	**24,4**	22	**34,3**	30,4	**50,5**	34,3	**50,5**	50,5	68
C	31,3	41	**47**	45	**56**	55	**80**	56	**80**	80	110
D	14	8	**8**	10	**10**	12	**12**	12	**12**	18	24
E	3,3	3	**3**	3,5	**3,5**	3,5	**3,5**	3,5	**3,5**	4,5	4,5
F	25,5	36,5	**42,5**	40	**51**	50	**75**	50	**74**	73	102
G	25	42	**42**	50	**50**	70	**70**	74	**74**	100	150
H	5	18	**18**	20	**20**	20	**20**	26	**26**	30	40
J	7,5	7	**7**	10	**10**	10	**10**	14	**14**	15	21
K	20	32	**32**	40	**40**	40	**40**	54	**54**	60	82
P	24	27,5	**33,5**	31	**42**	39	**54**	34	**48**	58	83
Q	6,5	9	**9**	9	**9**	14	**14**	14	**14**	18	22
R	11	15	**15**	15	**15**	20	**20**	20	**20**	26	33
S	M6	M8x1	**M8x1**	M8x1	**M8x1**	M12x1,5	**M12x1,5**	M12x1,5	**M12x1,5**	M16x1,5	M20
T[1)]	32	42,5	**48,5**	47	**58**	57	**72**	57,6	**71,6**	81,6	114
U	18	19,5	**25,5**	23	**34**	27	**42**	22	**36**	42	63
Jaw approx. kg	0,200	0,435	**0,600**	0,735	**1,400**	1,500	**3,700**	2,265	**4,800**	4,500	13,350

1) Dimension marked on base jaw

Base jaws **GB**,
hardened and ground



Chuck size	125	160	200	250	315	400+500	630
A	47	74	90	110	125	160	230
B	14	20	22	26	32	45	65
C	21	19	23	26	30	35	52
D	5	18	20	20	26	30	40
E	-	5	5,5	5,5	6,5	7,5	9
F	-	8	10	12	12	18	24
G	2,8	2,5	3	3	3	4	4
H	3,55	6	7	7	7,6	8,6	12
J	7,5	7	10	10	14	15	21
K	M6	M8x1	M8x1	M12x1,5	M12x1,5	M16x1,5	M20
L	20	32	40	40	54	60	82
M	72	103	129	163	196	250 | 294	399
Jaw approx. kg	0,200	0,265	0,365	0,700	1,065	2,350	5,665

Chucking capacities DURO-T

Reversible claw-type top jaws KB, standard design

	Reversible claw-type top jaw, large clamping range			
Chuck size	160	400	500	630
Item no.	**137060**	**137119**	**137119**	**151289**
Capacities external Ø min. - max.	142,5 - 187,5	314 - 446	311 - 534	391 - 670
Capacities internal Ø min. - max.	22,5 - 67,5	99 - 231	95 - 317	176 - 456
Interfering contour	224	528	592	800

	Reversible claw-type top jaw, small clamping range					
Chuck size	160	200	250	315	400	500
Item no.	**137061**	**137064**	**137108**	**137114**	**137120**	**137120**
Capacities external Ø min. - max.	37,5 - 82,5	56 - 116	90 - 170	82 - 210	142 - 274	139 - 360
Capacities internal Ø min. - max.	133 - 178	160 - 220	177 - 257	242 - 370	301 - 433	266 - 488
Interfering contour	209	264	330	446	535	592

	Reversible claw-type top jaw, medium clamping range					
Chuck size	160	200	250	315	400	500
Item no.	**136062**	**137065**	**137109**	**137115**	**137121**	**137121**
Capacities external Ø min. - max.	103 - 148	117 - 181	167 - 248	178 - 306	270 - 402	267 - 489
Capacities internal Ø min. - max.	71 - 116	91 - 155	100 - 184	97 - 225	142 - 274	139 - 361
Interfering contour	209	264	330	396	504	592

Notes

DURO-TA - sealed design

APPLICATION

Specially for grinding machines.
Optimized for extremely high clamping forces, maximum concentricity, as well as reliable long-term repeatability.

TYPE

Key bar chuck with quick jaw change system.
Guaranteed maximum jaw precision as far as these are only used on the same chuck, and base and top jaws are kept screwed on for recurring work.

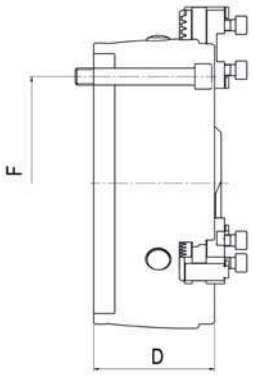
CUSTOMER BENEFITS

- Maximum clamping force thanks to key bar system
- With cover for protection against dust on the face
- Very high jaw change repeatability

TECHNICAL FEATURES

- With jaw safeguard
- Chuck body completely surface-hardened
- Visual marking for quick jaw adjustment
- External shape incl. splash-water edge
- Fastening options for strongly stressed sliding surfaces
- Incl. safety key
- High corrosion protection

A08
Cylindrical centre mount



Size	Inch	With base jaws	With inside and outside jaw	D mm	Speed max. min^{-1}	Max. Torque Nm	Max. total clamping force kN
160	6 1/4	**439606▲**	**439605**	63	5400	120	73
200	8	**439608**	**439607**	81	4600	155	114
250	10	**439610**	**439609**	92	4200	190	185

Further sizes and mountings available on request

Jaws DURO-TA

A28
Outside jaw DB, set, inward stepped jaw, hardened

Item no.	Chuck Size	Contents of delivery	Jaw width mm
329041	160	set	20
329042	200	set	22
329043	250	set	26

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A28
Inside jaw BB, set, outward stepped jaw, hardened

Item no.	Chuck Size	Contents of delivery	Jaw width mm
329038	160	set	20
329039	200	set	22
329040	250	set	26

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A28
Unstepped top jaw AB, 3-jaw set, soft, material 16MnCr5

Item no.	Chuck Size	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
329044	160	set	90	36,5	20,3
329045	200	set	100	40	22
094010	250	set	125	50	30,4

A28
Base jaw GB, 3-jaw set, hardened, with mounting bolts

Item no.	Chuck Size	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
329047	160	set	74	8	20
329048	200	set	90	10	22
329049	250	set	110	12	26

C15
Jaw mounting bolt, piece

Item no.	Size	Thread	Contents of delivery
200182	160/200	M8x22	piece
200183	250	M12x30	piece

Accessories DURO-TA

A08 **Base plate with fixing slots**
Complete with mounting screws and fixed T-slot nuts.
Other sizes available on request.

Item no.	Size
143163 ▲	160
143165 ▲	200
143167 ▲	250

A08 **Key**

Item no.	Size	Square	L mm
094016	160	10	140
094017	200	12	160
094018	250	14	220

Only for stationary used chucks

A08 **Safety key**

Item no.	Size	Square	L mm
242173	160	10	140
242174	200	12	160
242175	250	14	220

Corresponding with DIN 1550 for rotating chucks

A08 **Torque wrench**

Item no.	Torque Nm	Length mm	Output	Working accuracy
10004116	20-120	435	12,7=1/2“	3%
10004117	60-320	659	12,7=1/2“	3%

A08 **Chip guard set**

Item no.	Size	Contents of delivery
236439 ▲	160	set
236440	200	set
236441	250	set

A08 **Safety adapter**

Item no.	Size	Square	Length mm	Mount
1333587	160	10	120	1/2“
1293349	200	12	132	1/2“
1129759	250	14	186	1/2“

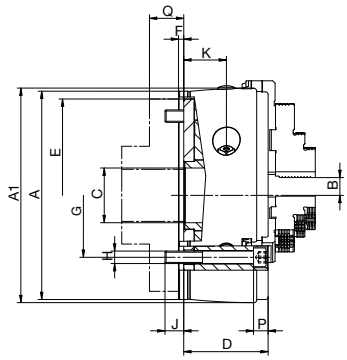
A08 **Special grease** F80 for **lathe chucks**
For lubrication and conservation of chucking power

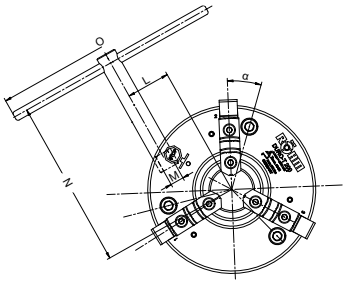
Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

C15 **Grease gun DIN1283**

Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

Technical data DURO-TA





Chuck size		160	200	250
Outer diameter	A	160	206	255
Jaw movement	B	6,2	6,8	8
Bore	C	42	52	62
Bore can be enlarged	C max.	45	55	75
	D	63	81	92
	E^{H6}	145	185	235
	F	5	5	6
	G	125	160	200
	H	3xM10	3xM12	3xM16
	J	15	18	25
	K	31,5	43	47
	L	42	53,5	66,5
	M	SW10	SW12	SW14
	N	182	211	284
	O	210	270	450
	P	13	14	17
Min. thickness of flange	Q	30	30	35
Moment of inertia 1)	kgm^2	0,03	0,10	0,29
	α	22°	18°	19°
Weight approx	kg	9,5	20°	35

1) The moment of inertia was measured with base jaws but without top jaws or back plate
The bore could be enlarged (measure C, at surcharge)

Enlarged bore max.

Max. permissible speed
The maximum permissible speed has been fixed so that 1/3 of the gripping force is still available as residual gripping force if the maximum grippping is applied and the chuck is fitted with its heaviest jaws. The jaws may not project beyond the outside diameter of the chuck. The chuck must be in perfect condition. The specification DIN 6386 Part 1 shall be observed.

Chuck size		160	200	250
Max. speed	min^{-1}	5400	4600	4200

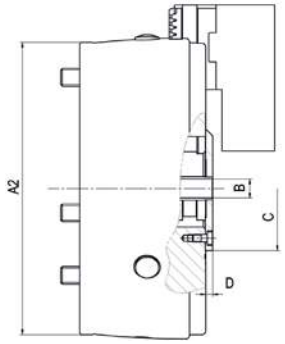
Gripping force
The gripping force is the sum total of all jaw forces acting radially on the stationary workpiece. The specified gripping forces are standard values. They apply to chucks in a perfect condition which have been lubricated with RÖHM grease F79 and F80.

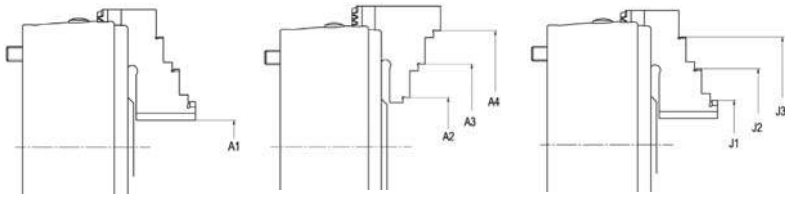
Chuck size		160	200	250
Torque applied on key in 1)	Nm	20	30	35
Total gripping force 1)	kN	15	24	33
Torque applied on key in	Nm	120	155	190
Max. total gripping force	kN	73	114	185

1) Maintaining the accuracy

Chucking capacities of jaw steps

Chuck size			160	200	250
External chucking	Jaw position.	A1	5-51	7-70	8-97
		A2	45-91	58-123	82-172
		A3	89-135	114-179	-
		A4	115-161	142-207	163-253
Internal chucking		J1	67-105	71-131	99-182
		J2	93-132	99-159	-
		J3	135-174	154-214	178-261

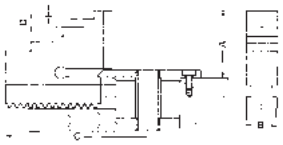




Chuck dimensions DURO-TA - Main dimensions (other dimensions on the table on the top)

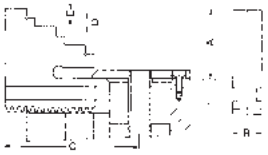
Chuck size		160	200	250
Outer diameter	A	160	206	255
External chucking with BB-jaws		3-46	3-60	5-66
External chucking with DB-jaws		23-160	32-200	65-243
Internal chucking with BB jaws		28-156	32-195	47-225
Central bor for coolant	B	13	13	13
	C	70	85	92
	D	5	6	5

Jaw dimensions and chucking capacity DURO-TA



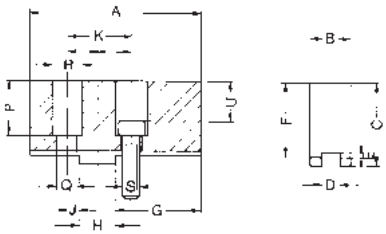
Outward stepped jaw **BB**

Chuck size	160	200	250
A	46	55	60
B	20	22	26
C max.	95	120	143,5
C min.	72	91	113
D	5	7	6
E	6	6	8
Jaw approx. kg	0,465	0,643	1,065



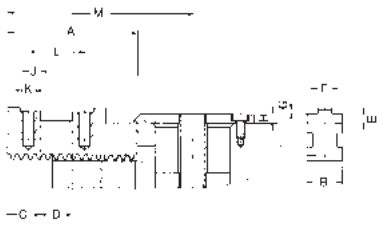
Inward stepped jaw **DB**

Chuck size	160	200	250
A	43	50	50
B	20	22	26
C max.	95	120	143,5
C min.	72	91	113
D	5	7	6
E	6	6	8
Jaw approx. kg	0,435	0,600	1,065



Unstepped soft top jaw **AB**

Chuck size	160	200	250
A	90	100	125
B	20,3	22	30
C	41	45	55
D	8	10	12
E	3	3,5	3,5
F	36,5	40	50
G	55	61	70
H	18	20	20
J	6	6	10
K	30	32	40
P	27,5	31	39
Q	9	9	14
R	15	15	20
S	M8x1	M8x1	M12x1,5
U	19,5	23	27
Jaw approx. kg	0,435	0,800	1,500



Base jaw **GB**

Chuck size	160	200	250
A	74	90	110
B	20	22	26
C	17	19	26
D	18	20	20
E	5	5,5	5,5
F	8	10	12
G	2,5	7	7
H	6	20	20
J	7	6	10
K	M8x1	M8x1	M12x1,5
L	32	32	40
M max.	105	127	148,5
M min.	91	103	125
Jaw approx. kg	0,335	0,365	0,700

Notes

DURO-TA XT

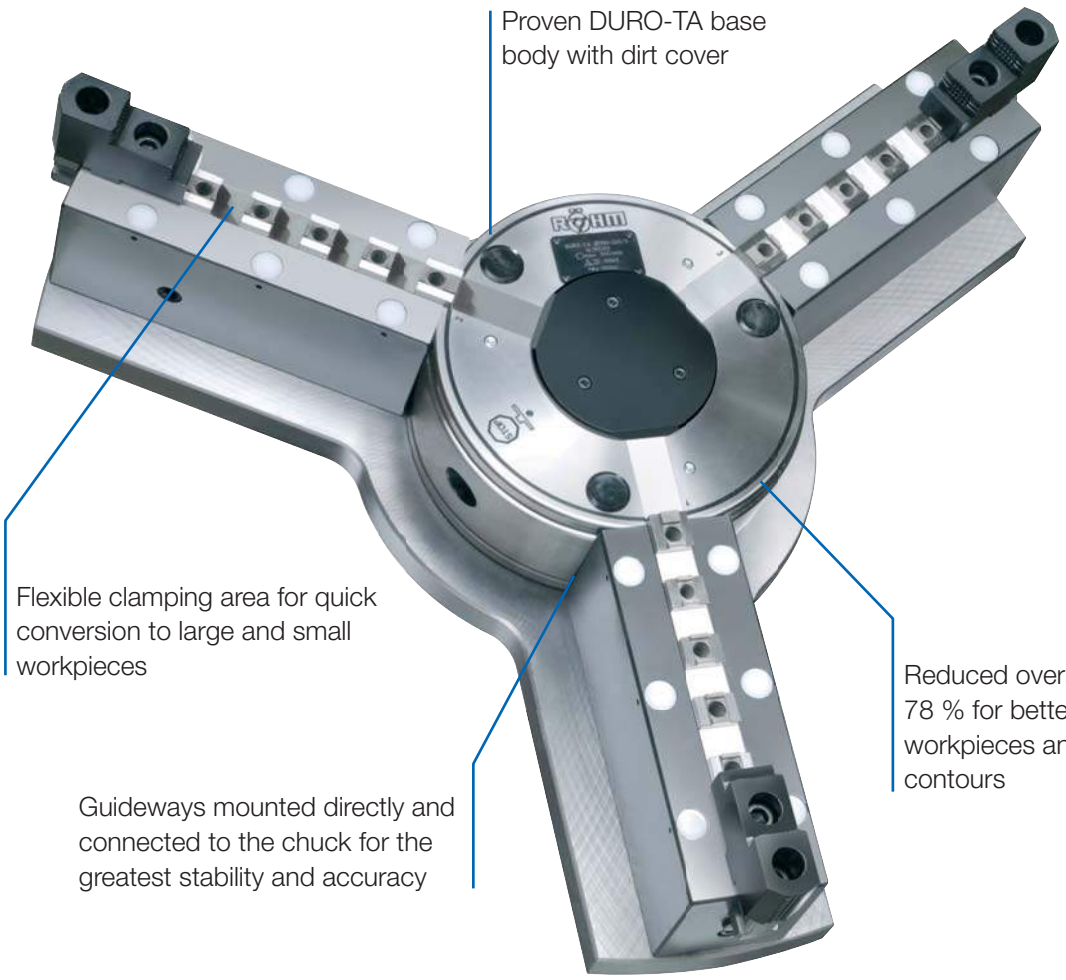
Equipped with extended and easy to assemble guideways the new lightweight DURO-TA XT is convincing with a flexible clamping area for machining large and small workpieces. Weight-reducing by up to 75 % makes maximum utilisation of the machine's potential possible.

Guideways

The new DURO-TA XT has an innovative concept for guideways that guarantees flexible and weight-reducing use. In contrast to other large chucks, the DURO-TA XT is up to 75 % lighter and that way makes maximum utilisation of the machine's potential possible and clamping of higher workpiece weights. Through the extended and easy to assemble guideways, the clamping area can be set flexibly and hence converted quickly to large and small workpieces. Through the direct mount on the base body, the guideways guarantee extremely high rigidity, stability and protection against penetration by dirt and dust.

Principle of operation

Thanks to the tangentially arranged threaded spindle, the force is transferred via a key bar having an internal thread. The key bar moves the drive ring via a slide. Two other slides in the drive ring transfer the forces to the other two key bars. The key bars having an inclined profile engage in the base jaws, thereby guaranteeing exact, centric clamping.



DURO-TA XT - with removable guideways

APPLICATION

On turning and milling machines.

TYPE

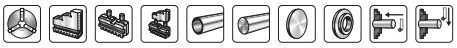
Key bar chuck (DURO-TA) with removable guideways.

CUSTOMER BENEFITS

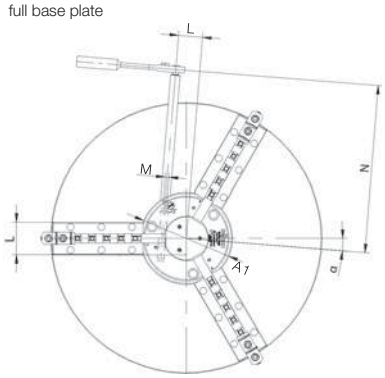
- Weight reduction by up to 75%
- Maximum flexibility and faster retrofitting
- Innovative design with minimum interference contour and maximum stability

TECHNICAL FEATURES

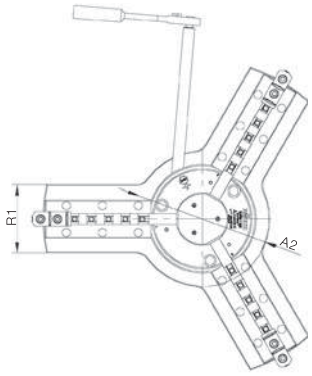
- Weight reduction by up to 75% allows maximum utilization of the machine potential and the clamping of heavier workpieces
- Flexible clamping range thanks to elongated guideways for faster conversion between large and small workpieces
- Easy dismounting of the guideways for clamping smaller workpieces
- Minimum interference contour and better workpiece accessibility thanks to compact design and a reduced design height by up to 78%
- High stability thanks to direct support of the permanently screwed guideways



full base plate



max. lightweight base plate



A08

DURO-TA XT key bar chuck with complete base plate

Item no.	Size	Clamping range external with extended jaws *	Clamping range external with standard jaws **	Interfering contour mm	Jaw travel mm	Weight kg	Speed max. min^{-1}	Max. Torque Nm	Max. total clamping force kN	Weight reduction compared to a standard chuck %
180312▲	750 (250)	145-715	8-253	804 / 769	8	183	800	190	185	75
180313▲	1000 (315)	220-995	12-323	1082 / 1014	10,2	365	570	210	190	68
180314	1250 (500)	220-1190	40-501	1305	12,5	640	570	320	290	65

Customized adaptations of the base plate for further weight reduction on the machine table on request

* By dismounting of the stripping cap and use of standard reversible jaws

** By shortening of the base jaws. Please consider shorter clamping ranges

Further sizes and mountings available on request

Jaws DURO-TA XT

A28
One-piece jaw EB, 3-jaw set, diagonally toothing, hardened

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
094002	750 (250)	3	set	114	70	26
094003	1000 (315)	3	set	130	79	32
094043	1250 (500)	3	set	167	93	45

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.
Jaws only usable in basic chuck.

A28
Unstepped jaw BL, 3-jaw set diagonally toothing, unstepped, soft, material 16MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
249679	750 (250)	3	set	118,7	70	26
249680	1000 (315)	3	set	136,6	79	32
249681	1250 (500)	3	set	173,6	93	45

Jaws only usable in basic chuck.

A28
Reversible top jaw UB, 3-jaw set, hardened tongue and groove for external and internal clamping, material 16 MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
094014	750 (250)	3	set	92	50	34,4
094015	1000 (315)	3	set	107	56	35,7
094045	1250 (500)	3	set	130	72	50,4

Additionally or later applied hardened jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.
Jaws only usable in basic chuck.

A28
Base jaw GB, 3-jaw set, diagonally toothing, with mounting bolts

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw width mm
094006	750 (250)	3	set	110	26
094007	1000 (315)	3	set	125	32
094044	1250 (500)	3	set	160	45

Jaws only usable in basic chuck.

C 21
Draw-down jaws, for interchangeable clamping inserts, **diagonally toothing,** 1 piece, without clamping inserts

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
141041	750 (250)	118,7	58,5	26
141043	1000 (315)	136,4	63,9	32
141045	1250 (500)	173,6	73,4	45

Jaws only usable in basic chuck.

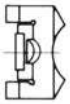
C 21
Draw-down jaws, additional clamping range, for interchangeable clamping inserts, **diagonally toothing,** 1 piece, without clamping inserts

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
141042	750 (250)	118,7	58,5	26
141044	1000 (315)	136,4	63,9	32
141048	1250 (500)	173,6	73,4	45

Jaws only usable in basic chuck.

Jaws DURO-TA XT

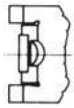
C 15
Interchangeable clamping inserts, 1 piece, **with claws**



Item no.	Chuck Size
141052	750 (250)/1000 (315)
141055▲	1250 (500)

Jaws only usable in basic chuck.

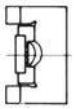
C 15
Interchangeable clamping inserts, 1 piece, **with serrated toothing**



Item no.	Chuck Size
141053	750 (250)/1000 (315)
141056▲	1250 (500)

Jaws only usable in basic chuck.

C 15
Interchangeable clamping inserts, 1 piece, **with heat treatable surface**



Item no.	Chuck Size
141054	750 (250)/1000 (315)
141057▲	1250 (500)

Jaws only usable in basic chuck.

A28
Reversible top jaw UB, 3-jaw set, hardened tongue and groove for external and internal clamping, material 16 MnCr5

Item no.	Number of jaws	Contents of delivery	Jaw length mm	Jaw width mm
180410▲	3	set	92	34,4
180411▲	3	set	107	35,7
180412▲	3	set	130	50,4

Additionally or later applied hardened jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A28
Unstepped top jaw AB, 3-jaw set, standard design, soft, material 16 MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
094010	750 (250)	3	set	125	50	30,4
094011	1000 (315)	3	set	145	50	34,3
094046	1250 (500)	3	set	180	73	50,5

C 21
Reversible claw-type top jaws, standard design, tongue and groove, **large clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137119	1250 (500)	124	62	50

Jaws DURO-TA XT

C 21
Reversible claw-type top jaws, standard design, tongue and groove, **medium clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137109	750 (250)	72	55	34
137115	1000 (315)	86	62	34
137121	1250 (500)	100	62	50

C 21
Reversible claw-type top jaws, standard design, tongue and groove, **small clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137108	750 (250)	90	55	34
137114	1000 (315)	100	62	34
137120	1250 (500)	124	62	50

C 21
Reversible claw-type top jaws, large design, tongue and groove, **small clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137110	750 (250)	80	55	50
137116	1000 (315)	93	62	50

C 21
Reversible claw-type top jaws, large design, tongue and groove, **medium clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137112	750 (250)	72	55	50
137118	1000 (315)	86	62	50

C 21
Reversible claw-type top jaws, large design, tongue and groove, **large clamping range,** 1 piece, hardened

Item no.	Chuck Size	Jaw length mm	Jaw height mm	Jaw width mm
137111	750 (250)	90	55	50
137117	1000 (315)	106	62	50

Accessories DURO-TA XT

C15 **Special grease** F80 for **lathe chucks**
For lubrication and conservation of chucking power

Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

C15 **Torque wrench**

Item no.	Torque Nm	Length mm	Output	Working accuracy
10004116	20-120	435	12,7=1/2“	3%
10004117	60-320	659	12,7=1/2“	3%

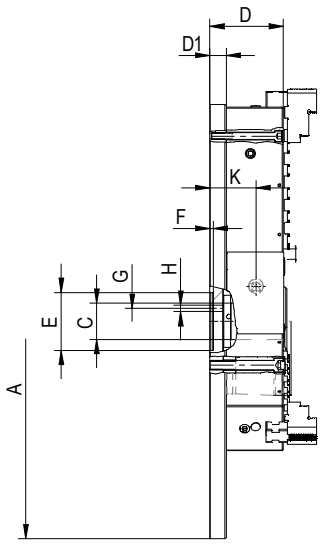
C15 **Grease gun DIN1283**

Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

A08 **Safety adapter**

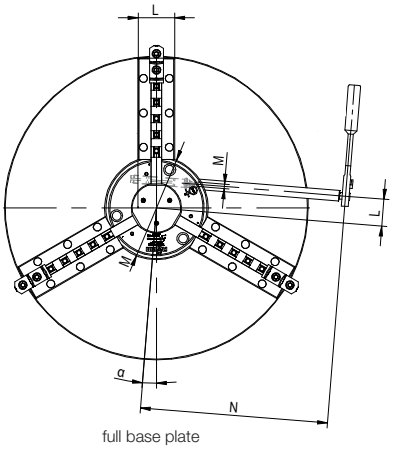
Item no.	Size	Square	Length mm	Mount
1129759	750 (250)	14	186	1/2“
1129449	1000 (315)	17	192	1/2“
1111583	1250 (500)	19	220	1/2“

Technical data DURO-TA XT

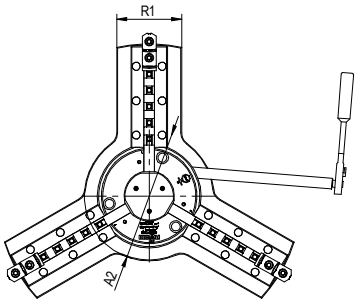


Chuck size A		750	1000	1250
Outer diameter Chuck	A1	256	322	507
Outer diameter Base plate	A2	320	400	590
Jaw movement	B	8	10,2	12,5
Bore 1)	C	62	87	162
	D	127	152	160
	D^1	28	34	35
	E^{H6}	100	100	100
	F	6	6	6
	G	45	45	45
	H	11	11	11
	K	79,5	98,0	97,5
	L	66,5	86	152,5
	M	SW14	SW17	SW19
	N	464	565	724
	R	90	100	130
	R1	160	180	210
	S	370	495	615
Moment of inertia GD2 2)	kgm^2	10,52	37,92	98,70
Moment of inertia GD2 2) 3)	kgm^2	5,66	18,10	48,93
	α	4,6°	4,6°	4,5°
approx. kg	kg	183	365	640
approx. kg 3)	kg	127	233	436

1) With dirt cover
2) The moment of inertia was measured with base jaws but without top jaws
3) With max. lightweight base plate



full base plate



max. lightweight base plate

Max. permissible speed
The maximum permissible speed has been fixed so that 1/3 of the gripping force is still available as residual gripping force if the maximum grippping is applied and the chuck is fitted with its heaviest jaws. The jaws may not project beyond the outside diameter of the chuck. The chuck must be in perfect condition. The specification DIN 6386 Part 1 shall be observed.

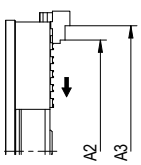
Chuck size		750	1000	1250
Max. speed	min^{-1}	800	570	450

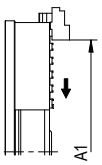
Gripping force
The gripping force is the sum total of all jaw forces acting radially on the stationary workpiece. The specified gripping forces are standard values. They apply to chucks in a perfect condition which have been lubricated with RÖHM grease F79 and F80.

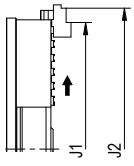
Chuck size		750	1000	1250
Torque applied on key 1)	Nm	70	80	100
Total gripping force 1)	kN	66	80	102
Torque applied on key	Nm	190	210	320
Max. total gripping force	kN	185	240	290

1) Maintaining the accuracy

At this torque the clamping jaws have been ground at the factory; for testing the chuck must be clamped with this torque







Chuck capacities of jaw steps

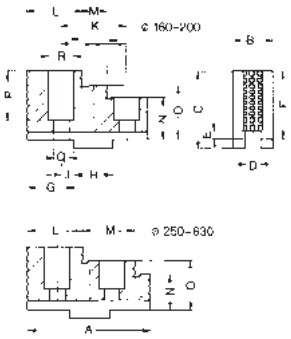
Chuck size			750	1000	1250
External chucking	Jaw position	A1	144-618	215-864	215-1140
		A2	144-638	330-890	199-1159
		A3	224-719	223-995	340-1200
Internal chucking		J1	227-700	298-946	318-1141
		J2	307-780	404-1052	459-1282
max. interfering contour			808/**773	1086/**1018	1309

** By shortening of the base jaws. Please consider shorter clamping ranges.

Jaw dimensions DURO-TA XT

Reversible top jaw **UB**,
completely hardened, cross tenon ground,
jaw steps not ground

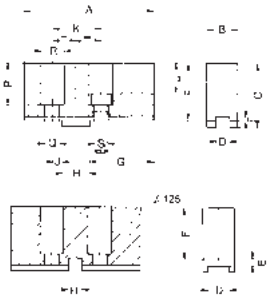
Jaws only usable in basic chuck.



Chuck size	750	1000	1250
A	92	107	130
B	34,4	35,7	50,4
C	55	62	79
D	12	12	18
E	3,5	3,5	4,5
F	50	56	72
G	30	35,5	41,4
H	20	26	30
J	10	14	15
K	40	54	60
L	41	40	51
M	40,5	54	71
N	22	26	32
O	36	41	52
P	39	40	57
Q	14	14	18
R	20	20	26
T[1)]	57	63,6	80,6
Jaw approx. kg	0,800	1,135	2,535

1) Dimension marked on base jaw

Unstepped soft top jaw **AB**,
for turning out special chucking diameters

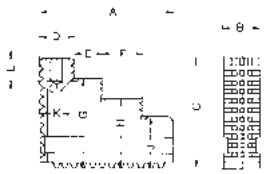


Dimensions for extendend design

Chuck size	750		1000		1250
A	125	**125**	145	**145**	180
B	30,4	**50,5**	34,3	**50,5**	50,5
C	55	**80**	56	**80**	80
D	12	**12**	12	**12**	18
E	3,5	**3,5**	3,5	**3,5**	4,5
F	50	**75**	50	**74**	73
G	70	**70**	74	**74**	100
H	20	**20**	26	**26**	30
J	10	**10**	14	**14**	15
K	40	**40**	54	**54**	60
P	39	**54**	34	**48**	58
Q	14	**14**	14	**14**	18
R	20	**20**	20	**20**	26
S	M12x1,5	**M12x1,5**	M12x1,5	**M12x1,5**	M16x1,5
T[1)]	57	**72**	57,6	**71,6**	81,6
U	27	**42**	22	**36**	42
Jaw approx. kg	1,500	**3,700**	2,265	**4,800**	4,500

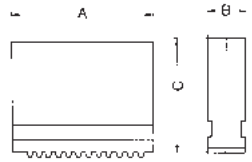
1) Dimension marked on base jaw

Reversible one-piece jaw **EB**,
hardened and ground, jaw steps not ground
Jaws only usable in basic chuck.



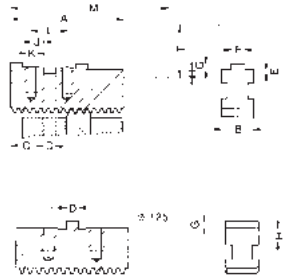
Chuck size	750	1000	1250
A	114	130	167
B	26	32	45
C	70	79	93
D	41,5	40,2	50,5
E	40,3	54	71
F	-	-	-
G	56	64	73
H	-	-	-
J	42	49	53
K	13	13	20
L	19,5	19,5	30
Jaw approx. kg	1,135	1,835	3,665

Blockbacken **BL**, ungestuft, ungehärtet,
Verzahnung und Führung gehärtet und
geschliffen. **Jaws only usable in basic chuck.**



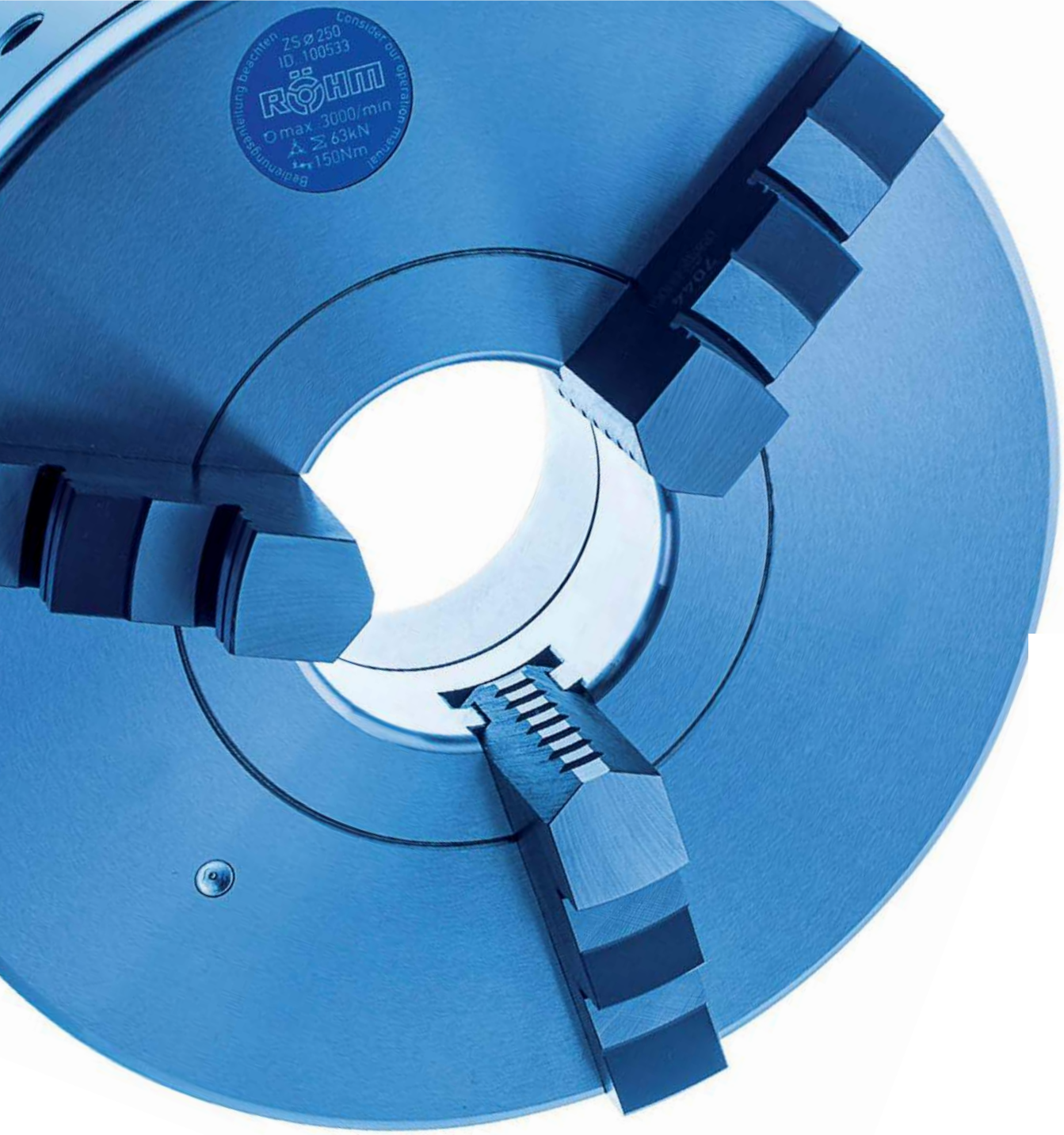
Chuck size	750	1000	1250
A	118,7	136,6	173,6
B	26	32	45
C	70	79	93
Jaw approx. kg	1,535	2,400	5

Base jaws **GB**,
hardened and ground
Jaws only usable in basic chuck.



Chuck size	750	1000	1250
A	110	125	160
B	26	32	45
C	26	30	35
D	20	26	30
E	5,5	6,5	7,5
F	12	12	18
G	3	3	4
H	7	7,6	8,6
J	10	14	15
K	M12x1,5	M12x1,5	M16x1,5
L	40	54	60
M	163	196	250 294
Jaw approx. kg	0,700	1,065	2,350

Notes



PROVEN CHUCK WITH SPIRAL RING

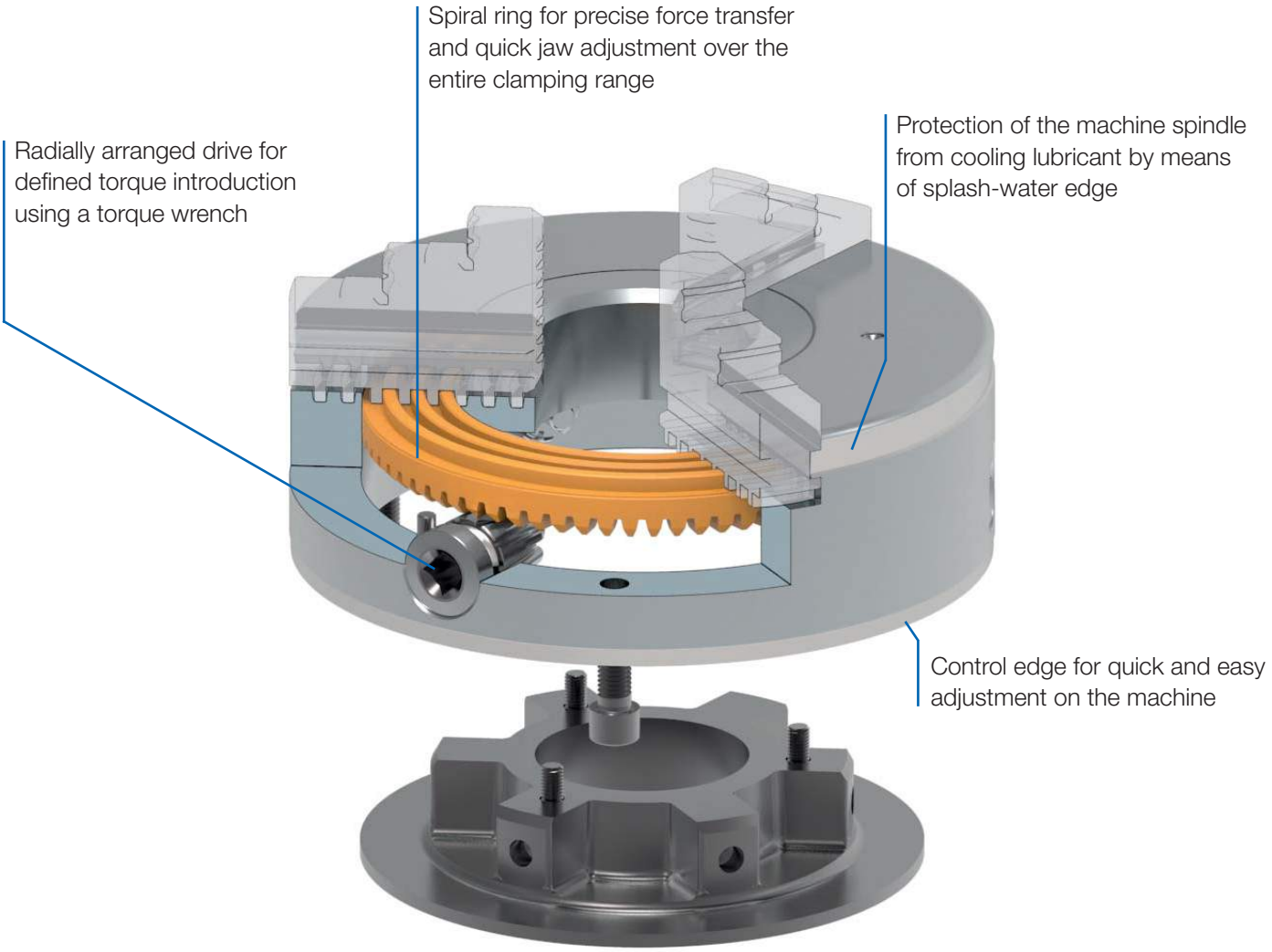
The RÖHM geared scroll chucks have already been in use for decades and have proven themselves a thousand times over. The jaws can be quickly adjusted over the entire clamping range by means of the spiral ring. Using the radially arranged drive, the force is transferred to the hardened spiral ring via a bevel gearing and further conducted to the clamping jaws via the spiral.

GEARED SCROLL CHUCKS

The RÖHM geared scroll chucks have proven themselves a thousand times over and have already been used successfully on lathes, rotary tables and dividing attachments for decades. The jaws can be adjusted over the entire clamping range in order to be able to very quickly clamp workpieces with a wide clamping diameter range without offsetting the jaws.

ADVANTAGE AT A GLANCE

- Quick jaw adjustment over the entire clamping range
- Proven chuck with optimal price/performance ratio
- Protection of the machine spindle by means of splash-water edge



ZS - ZSU - centric clamping

APPLICATION

Proven geared scroll chuck for use in areas requiring high clamping forces, high concentricity as well as reliable long-term repeatability.
For universal use on lathes, rotary tables, dividing units, etc.

TYPE

Geared scroll chucks in steel design.
3-jaw and 4-jaw version.

CUSTOMER BENEFITS

- High clamping force
- Special flat design for minimum interfering contours
- The jaws can be adjusted over the entire clamping range by turning the key. This allows workpieces with different clamping diameters to be quickly clamped
- Jaws in chuck ground out for concentricity

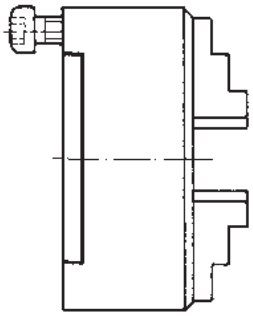
TECHNICAL FEATURES

- With one-piece jaws or with base and top jaws
- Steel body and spiral ring die-forged
- Series-balanced and hardened

ZS = centric clamping, steel

ZSU = centric clamping, steel, reversible top jaws

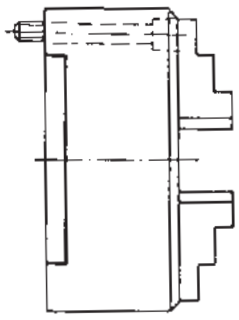
A09
DIN 6350, cylindrical centre mount, form A



Size	ZA	Through-hole mm	3-jaw chuck with inside and outside jaw	4-jaw chuck with inside and outside jaw	3-jaw chuck with base and reversible top jaw	4-jaw chuck with base and reversible top jaw	Speed max. min^{-1}	Torque Nm	Total clamping force kN
80	56	19	**102513**	**102505**	-	-	7000	30	13
100	70	20	**101782**	**102130**	**101788**	**102136▲**	6300	60	27
125	95	32	**101672**	**106075**	**101678**	**106081**	5500	80	31
160	125	42	**100717**	**101164**	**100725**	**101170▲**	4600	110	47
200	160	55	**100186**	**100466**	**100189**	**100484▲**	4000	140	55
250	200	76	**100533**	**101030**	**100541**	**101036▲**	3000	150	63
315	260	103	**101344**	**101598**	**101350**	**101901▲**	2300	180	69
400	330	136	**102062**	**102330▲**	**102068▲**	**102336**	1800	240	92
500	420	190	**102555▲**	**103340**	**102585▲**	**103346**	1300	260	100
630	545	240	**102720▲**	**102856**	**102726**	**102862**	850	280	105
800	710	380	-	-	**104913▲**	**104917▲**	700	300	110
1000	910	460	-	-	**104925**	**104929▲**	560	450	115
1250	910	550	-	-	**104941**	**104945**	450	450	115

Further sizes and mountings available on request
Geared scroll chucks in 6-jaw design available on request

A09
Mounting from front, DIN 6350, cylindrical centre mount

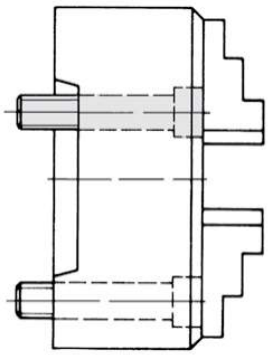


Size	ZA	Through-hole mm	3-jaw chuck with inside and outside jaw	4-jaw chuck with inside and outside jaw	Speed max. min^{-1}	Torque Nm	Total clamping force kN
125	95	32	**120155**	**124447▲**	5500	80	31
160	125	42	**115568**	**125802▲**	4600	110	47
200	160	55	**113158**	**113160**	4000	140	55
250	200	76	**114304**	**114306▲**	3000	150	63
315	260	103	**120270**	**129946▲**	2300	180	69
400	330	136	**123475▲**	**134401▲**	1800	240	92
500	420	190	**127616▲**	**123465▲**	1300	260	100
630	545	240	**128545▲**	**135061▲**	850	280	105

Further sizes and mountings available on request

ZS - ZSU - centric clamping

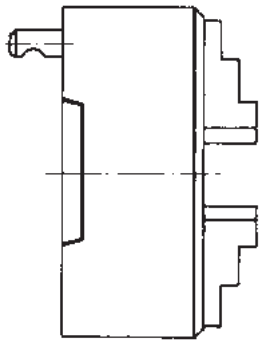
A09
ISO 702-1 (DIN 55026), DIN 55021, ASA B 5.9, A1/A2 metr.; mounting from front



Size	Mount short taper	Through-hole mm	3-jaw chuck with inside and outside jaw	4-jaw chuck with inside and outside jaw	3-jaw chuck with base and reversible top jaw	4-jaw chuck with base and reversible top jaw	Speed max. min^{-1}	Torque Nm	Total clamping force kN
160	5	42	100753[1] ▲	101196 ▲	100757 ▲	101199 ▲	4600	110	47
200	5	42	100168[1] ▲	101446 ▲	100172 ▲	101452 ▲	4000	140	55
200	6	55	100173[1] ▲	101454 ▲	100177 ▲	101460 ▲	4000	140	55
250	5	76	100571 ▲	101064 ▲	100580 ▲	101073 ▲	3000	150	63
250	6	55	100567[1] ▲	101062 ▲	100578 ▲	101071 ▲	3000	150	63
250	8	76	100569[1] ▲	101063 ▲	100579 ▲	101072 ▲	3000	150	63
315	6	103	101376 ▲	101931 ▲	101385 ▲	101937 ▲	2300	180	69
315	8	76	101377[1] ▲	101939 ▲	101386 ▲	101945 ▲	2300	180	69
350	6	103	114643 ▲	127557 ▲	127848 ▲	127850 ▲	1900	210	74
350	8	76	117319[1] ▲	117320 ▲	127847 ▲	127849 ▲	1900	210	74
400	8	136	102226 ▲	102353 ▲	102232 ▲	102359 ▲	1800	240	92
400	11	125	102234[1] ▲	102361 ▲	102240 ▲	102367 ▲	1800	240	92
500	11	190	102562 ▲	102979 ▲	102568 ▲	102985 ▲	1300	260	100
630	11	190	102768 ▲	102896 ▲	102774 ▲	103002 ▲	850	280	105
630	15	190	102784[1] ▲	103012 ▲	102790 ▲	103018 ▲	850	280	105

[1] Mounting from front in the inner bolt circle

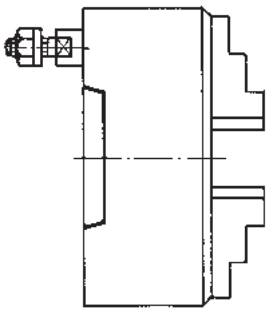
A09
ISO 702-2 (DIN 55029), ASA B 5.9, type D, with studs for Camlock



Size	Mount short taper	Through-hole mm	3-jaw chuck with inside and outside jaw	4-jaw chuck with inside and outside jaw	3-jaw chuck with base and reversible top jaw	4-jaw chuck with base and reversible top jaw	Speed max. min^{-1}	Torque Nm	Total clamping force kN
125	4	32	108895	109208	105870	105872	5500	80	31
160	4	42	108897	109210 ▲	105882 ▲	105886 ▲	4600	110	47
160	5	42	109150 ▲	109213 ▲	105898	106302	4600	110	47
200	5	55	109151	109214	106330	106334	4000	140	55
200	6	55	109154	109217	106346 ▲	106350	4000	140	55
250	6	76	109155	109218	106386 ▲	106390 ▲	3000	150	63
250	8	76	109159	109222 ▲	106402	106406	3000	150	63
315	6	103	109156 ▲	109219	106442	106446 ▲	2300	180	69
315	8	103	109160	109223 ▲	106458 ▲	106462	2300	180	69
315	11	103	109165	109228	106474	106478	2300	180	69
400	8	136	109161 ▲	109224	106498	106602	1800	240	92
400	11	136	109166 ▲	109229	106614	106618	1800	240	92
500	11	190	109167 ▲	109230 ▲	103274 ▲	106646 ▲	1300	260	100
500	15	190	109170 ▲	109233 ▲	103275 ▲	103271 ▲	1300	260	100
630	11	192,7	109168 ▲	109231 ▲	106658 ▲	106662 ▲	850	280	105
630	15	240	109171 ▲	109234 ▲	103328 ▲	106251 ▲	850	280	105

Further sizes and mountings available on request

A09
ISO 702-3 (DIN 55027), with studs and locknuts, optional DIN 55021 with set screw and nut



Size	Mount short taper	Through-hole mm	3-jaw chuck with inside and outside jaw	4-jaw chuck with inside and outside jaw	3-jaw chuck with base and reversible top jaw	4-jaw chuck with base and reversible top jaw	Speed max. min^{-1}	Torque Nm	Total clamping force kN
125	4	32	101692	107015	101695	107021	5500	80	31
160	4	42	100740	101184	100743 ▲	101187	4600	110	47
160	5	42	100744	101188	100747 ▲	101191	4600	110	47
200	5	55	100152	100472	100155 ▲	101420 ▲	4000	140	55
200	6	55	100156	101422	100159	101428 ▲	4000	140	55
250	6	76	100555	101050	100564	101059	3000	150	63
250	8	76	100556	101051	100565 ▲	101060 ▲	3000	150	63
315	6	103	101364	101919 ▲	101373 ▲	101922	2300	180	69
315	8	103	101365	101923 ▲	101374 ▲	101926	2300	180	69
315	11	103	101366 ▲	101927 ▲	101375 ▲	101930 ▲	2300	180	69
400	8	136	102202 ▲	101876 ▲	102208	101882	1800	240	92
400	11	136	102210 ▲	101884 ▲	102216 ▲	101890	1800	240	92
500	11	190	102548 ▲	102971 ▲	102554 ▲	102977 ▲	1300	260	100
500	15	190	102915 ▲	103227 ▲	102921 ▲	103233 ▲	1300	260	100
630	11	192,7	102752 ▲	102888 ▲	102758 ▲	102894 ▲	850	280	105
630	15	240	102760 ▲	103084 ▲	102766 ▲	103090 ▲	850	280	105

Further sizes and mountings available on request

Jaws ZS - ZSU

A09
Inside jaw BB, DIN 6350, outward stepped jaw, hardened

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
80	**110155**	**110063**	37	26	12
100	**110156**	**110064**	48	33,5	14
125	**110157**	**110065**	52	41,5	18
160	**110159**	**110067**	61	47,5	18
200	**110160**	**110068**	69	53,5	20
250	**110161**	**110069**	90	67,5	24
315	**110162**	**110070**	130	79,5	34
350/400	**110163**	**110071**	130	79,5	34
500/630	**110164**	**110072**	190	95	42

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Outside jaw DB, DIN 6350, inward stepped jaw, hardened

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
80	**110165**	**110073**	37	26	12
100	**110166**	**110074**	48	33,5	14
125	**110167**	**110075**	52	41,5	18
160	**110169**	**110077**	61	47,5	18
200	**110170**	**110078**	69	53,5	20
250	**110171**	**110079**	90	67,5	24
315	**110016**	**110080**	130	79,5	34
350/400	**110017**	**110081**	130	79,5	34
500/630	**110018**	**110082**	190	95	42

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Unstepped jaw BL, DIN 6350, unstepped, soft, material 16MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
80	**107588**	**107598**	37	26	12
100	**107589**	**107599**	48	33,5	14
125	**107590**	**107600**	52	41,5	18
160	**107592**	**107602**	61	47,5	18
200	**107593**	**107603**	69	53,5	20
250	**107594**	**107604**	90	67,5	24
315	**107595**	**107605**	130	79,5	34
350/400	**107596**	**107644**	130	79,5	34
500/630	**107597**	**107645**	190	95	42

Jaws ZS - ZSU

A09
Base jaw GB, DIN 6350, with fixing screw

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw width mm
100	**107500**	**107542**	46	14
125	**107501**	**107543**	55	18
160	**107503**	**107545**	65	18
200	**107504**	**107546**	78	20
250	**107505**	**107547**	92	24
315	**107506**	**107548**	108	34
350/400	**107507**	**107549**	127	34
500	**107508**	**107550**	165	42
630	**107509**	**107551**	203	42
800	**105272**	**141616**	291	55
1000	**105274**	**141611**	329	55
1250	**105275**	**141614**	367	55

A09
Reversible top jaws UB, DIN 6350, hardened tongue and groove for external and internal clamping, material 16 MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
100	**108045**	**108053**	47	29,5	22
125	**108046**	**108054**	56	37,5	26
160	**107936**	**107938**	66,7	41,5	28
200	**107937**	**107939**	79,5	42,5	30
250	**108049**	**108057**	95,3	52,5	36
315	**108050**	**108058**	109,5	57,5	42
350/400	**108051**	**108059**	127	64,5	42
500/630	**108052**	**108060**	127	79,5	50
800	**105081**	**105085**	210	89	68
1000/1250	**105098**	**105101**	210	110	68

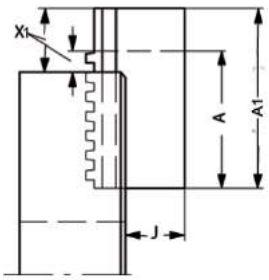
Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Unstepped top jaw AB, DIN 6350, soft, material 16MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
100	**107633**	**107641**	53	30	22,5
125	**107634**	**107642**	62	38	26,5
160	**108581**	**108583**	74	42	28,5
200	**108582**	**108584**	87	43	30,5
250	**107637**	**107579**	103	53	36,5
315	**107638**	**107580**	120	58	42,5
350/400	**107639**	**107581**	137	65	42,5
500/630	**107640**	**107582**	140	80	50,5
800	**105103**	**105105**	210	89	68
1000/1250	**105107**	**105109**	210	110	68

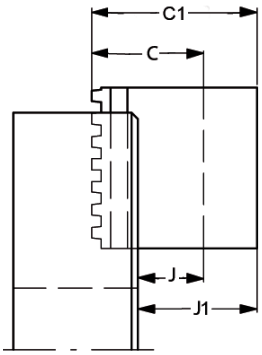
Jaws ZS - ZSU

A09
Unstepped jaw BL, special length, soft, material 16MnCr5, DIN 6350



Chuck Size	3-jaw set	4-jaw set	A1 mm	X1 max.	A mm	J mm	X max. mm
200	**130031**	**137073**	100	50	69	32,5	19
250	**132658**	**137074**	120	56	90	41	26
315	**132184**	**129894**	160	70	130	46	40
350/400	**137075**	**130442**	160	70	130	42	40
500/630	**131540**	**137076**	220	80	190	55	50
200	**130033**	**137077**	120	70	69	32,5	19
250	**128880**	**130610**	140	76	90	41	26
315	**118908**	**137078**	200	110	130	46	40
350/400	**137079**	**137080**	200	110	130	42	40
500/630	**137081**	**137082**	280	140	190	55	50
315	**121367**	**133691**	250	160	130	46	40
350/400	**137087**	**137088**	250	160	130	42	40

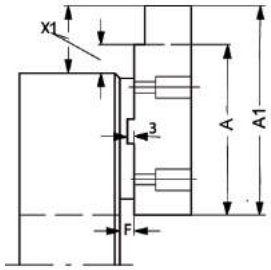
A09
Unstepped jaw BL, special height, soft, material 16MnCr5, DIN 6350



Chuck Size	3-jaw set	4-jaw set	C1 mm	J1 mm	C mm	J mm
200	**125710**	**132972**	80	58,5	54	32,5
250	**122188**	**134796**	100	73	68	41
315	**132186**	**137091**	110	76	80	46
350/400	**137092**	**131655**	110	72	80	42
500/630	**137093**	**137094**	150	110	95	55
200	**125712**	**137095**	120	98,5	54	32,5
250	**122189**	**130630**	130	103	68	41
315	**137096**	**137097**	140	106	80	46
350/400	**137098**	**137099**	140	102	80	42
500/630	**125117**	**137100**	200	160	95	55
200	**125714**	**137101**	150	128,5	54	32,5
250	**137102**	**137103**	150	123	68	41
315	**137104**	**130340**	160	126	80	46
350/400	**132879**	**110109**	160	122	80	42

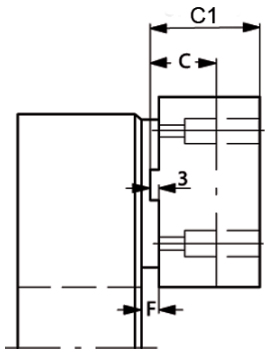
Jaws ZS - ZSU

A09
Top jaw AB, special length, soft, material 16MnCr5, DIN 6350



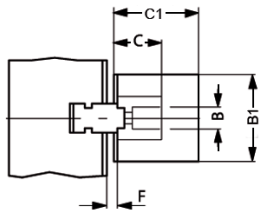
Chuck Size	3-jaw set	4-jaw set	A1 mm	X1 max.	F mm	A mm	X max. mm
200	**110086**	**148139**	100	43	6,8	87	30
250	**112122**	**129289**	130	63	8	103	36
315	**110624**	**143764**	160	76	5,5	120	36
350/400	**110626**	**141277**	160	53	8,5	137	30
500/630	**103014**	**103393**	170	75	8,5	140	45
200	**112120**	**148657**	120	63	6,8	87	30
250	**125428**	**128700**	150	83	8	103	36
315	**112091**	**147754**	200	116	5,5	120	36
350/400	**112118**	**141263**	200	93	8,5	137	30
500/630	**110632▲**	**148234**	220	125	8,5	140	45
250	**104710**	**146013**	180	113	8	103	36
315	**112089**	**147860**	250	166	5,5	120	36
350/400	**103654**	**149974**	260	153	8,5	137	30
500/630	**112127**	**148235**	280	185	8,5	140	45

A09
Top jaw AB, special height, soft, material 16MnCr5, DIN 6350



Chuck Size	3-jaw set	4-jaw set	C1 mm	C mm	F mm
200	**132155**	**132181**	60	43	6,8
250	**119645**	**135867**	70	53	8
315	**110435**	**149975**	80	58	5,5
350/400	**126385**	**118373**	90	65	8,5
500/630	**128590**	**149985**	100	80	8,5
200	**128564**	**149976**	80	43	6,8
250	**128571**	**134999**	100	53	8
315	**110437**	**129691**	110	58	5,5
350/400	**110628**	**135426**	120	65	8,5
500/630	**110630**	**149977**	130	80	8,5
250	**128573**	**149978**	150	53	8
315	**128569**	**141671**	150	58	5,5
350/400	**128567**	**139591**	160	65	8,5
500/630	**128588**	**140427**	160	80	8,5

A09
Top jaw AB, special width and height, soft, material 16MnCr5, DIN 6350



Chuck Size	3-jaw set	4-jaw set	B1 mm	C1 mm	B mm	C mm
200	**105057**	**105061**	40	70	30.5	43
250	**137090**	**141338**	50	80	36.5	53
315	**143053**	**149979**	60	90	42	58
350/400	**131567**	**149980**	60	90	42.5	65
500/630	**137084**	**149981**	80	110	50.5	80
200	**133259**	**149982**	50	80	30.5	43
250	**133653**	**137526**	60	90	36.5	53
315	**143057**	**149983**	80	110	42	58
350/400	**137086**	**149984**	80	110	42.5	65

Jaws ZS - ZSU

C15
Mounting bolt for top jaws, bolt 1

Item no.	Size	Thread	Contents of delivery
249299	100	M6x20	piece
236949	125	M8x25	piece
334571	160/200	M8x30	piece
233025	250	M12x40	piece
233026	315	M12x45	piece
220565	350/400	M16x50	piece
249003	500/630	M20x80	piece

C15
Mounting bolt for top jaws, bolt 2

Item no.	Size	Thread	Contents of delivery
216528	100	M6x16	piece
233058	125/160/200	M8x20	piece
227692	250	M12x25	piece
233030	315	M12x30	piece
220564	350/400	M16x35	piece
233047	500/630	M20x40	piece

Accessories ZS - ZSU

A09 **Base plates** for lathe chucks with **cylindrical centre mount**, DIN 6350

Item no.	Size	Thread
162793	160	6xM10
162401	200	6xM10
163036	250	6xM12
133705	315	6xM16

A09 **Unfinished adapter plates** for **cylindrical mount**
The unfinished back plate must be machined and fitted on both machine and chuck side

Item no.	Size	Inch	A mm	B mm	C mm	D mm	E mm
017123▲	74	3	80	56	45	15	-
017113▲	80	3 ¼	92	56	47	15	20
017114	100	4	120	80	58	20	25
017115	125	5	135	80	58	20	25
017125▲	140	5 ½	150	80	58	20	25
017116	160	6 ¼	170	80	58	20	30
017117	200	8	210	92	66	22	40
017118▲	250	10	260	105	92	25	50
017119▲	315	12 ½	330	165	100	30	50
017124▲	350	14	365	180	120	30	60

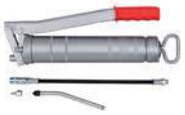
A09 **Chip guard, piece**

Item no.	Size	Contents of delivery
108500	80/85	piece
108501	100/110	piece
108502	125	piece
108503	140/160	piece
108504	200	piece
108505	250	piece
108506	315/350/400	piece
108508	500/630	piece

A09 **Special grease** F80 for **lathe chucks**
For lubrication and conservation of chucking power

Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

C15 **Grease gun DIN1283**



Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

A09 **Scroll**

Item no.	Size
102521	74
102183	80/85
101754	100
112660	110
101721	125
105827	140
100303	160
100003	200
100203	250
101552	315
105228	350
102497	400
162973	500
162964	630

A09 **Driving pinion**

Item no.	Size	Square
102522	74	6
102184	80	6
113198	85	6
101755	100	8
112662	110	8
101722	125	9
105828	140	9
100304	160	10
100005	200	11
100204	250	12
112267	270	12
101553	315	14
105229	350	14
102498	400	17
162974	500	19
162965	630	19

A09 **Pinion holder screw**

Item no.	Size
102523	74
102185	85
100305	100/125/160
100006	200/250
101554	315
102499	400
103300	500/630

A09 **Standard key**

Item no.	Size	Square	Hexagon	Length mm
006325	74	-	6	55
107426	80/85	6	-	62
107427	100/110	8	-	75
107428	125/140	9	-	80
107429	160	10	-	90
107430	200/230	11	-	100
107431	250/270	12	-	100
107432	315	14	-	110
107433	350	14	-	140
107434	400	17	-	140
107435	500/630	19	-	150

Accessories ZS - ZSU

A09 **Safety key with ejector**

Item no.	Size	Square	Length mm
154370▲	80/85	6	110
154371	100/110	8	130
154372	125/140	9	130
154373	160	10	160
154374	200/230	11	160
154375	250/270	12	160
154376	315	14	200
154377	350	14	200
154378	400	17	250
154379▲	500/630	19	250

A09 **Elongated safety key with ejector**

Item no.	Size	Square	Length mm
154683	125/140	9	170
154685	160	10	180
154687	200/230	11	200
154689	250/270	12	200
154695	315	14	250

A09 **Safety adapter with ejector**
For actuating the chuck with torque (defined torque introduction)

Item no.	Size	Square	Inch
178566▲	80/85	6	3/8
178567▲	100/110	8	1/2
178568▲	125/140	9	1/2
178569▲	160	10	1/2
178570	200/230	11	1/2
178571▲	250/270	12	1/2
178572	315/350	14	1/2
178573▲	400	17	1/2
178574▲	500/630/700/800	19	3/4
178575▲	1000/1250	24	3/4

A09 **Torque wrench**

Item no.	Torque Nm	Length mm	Output	Working accuracy
10004116	20-120	435	12,7=1/2“	3%
10004117	60-320	659	12,7=1/2“	3%

C15 **Mounting screws**
For **cylindrical centre rim**

Item no.	Size	Thread	Contents of delivery
249299	74-85	M6x20	piece
334571	100-140	M8x30	piece
249301	160-230	M10x35	piece
233025	250-270	M12x40	piece
220565	315-350	M16x50	piece
229183	400-630	M16x60	piece

C15 **Mounting screws**
For lathe chucks with direct **short-taper**, for **front mounting**

Item no.	Size	Thread	Contents of delivery	Chuck Size	Taper size
302195	74	M10x55	piece	160	5
200184	80	M10x65	piece	200	5
233006	85	M12x65	piece	200	6
233075	100	M10x90	piece	250	5
216549	110	M12x70	piece	250	6
302194	125	M16x70	piece	250	8
242954	140	M12x100	piece	315	6
358816	160	M16x85	piece	315	8
243665	200/230	M12x130	piece	350	6
236516	315	M16x110	piece	400	8
615744	350	M20x95	piece	400	11
010210	400	M20x130	piece	500	11
328925	500	M20x145	piece	630	11
367648	630	M24x125	piece	630	15

A09 **Set screw with nut, DIN 55021**

Item no.	Thread	For taper	Quantity
107453	M10x30	4	3
107455▲	M10x35	5	4
107456▲	M12x40	6	4
107457▲	M16x45	8	4
107458▲	M20x55	11	6
127618▲	M24x65	15	6

A09 **Stud for Camlock ISO 702-2** (DIN 55029) **and cylindrical studs**

Item no.	Thread	For taper	Quantity
178364▲	M10x1	3	3
178365	M10x1	4	3
178366▲	M12x1	5	6
178367	M16x1,5	6	6
178368▲	M20x1,5	8	6
178369▲	M22x1,5	11	6
178370▲	M24x1,5	15	6
178371	M27x2	20	6

Accessories ZS - ZSU

A09 **Stud and locknut ISO 702-3** (DIN 55027)

Item no.	Thread	Contents of delivery	For taper	Quantity
107447	M10x34	piece	3	3
107448	M10x39	piece	4	3
107449	M10x43	piece	5	4
107450	M12x50	piece	6	4
107451	M16x60	piece	8	4
107452	M20x75	piece	11	6
125650	M24x90	piece	15	6
130636	M24x100	piece	20	6

A09 **Stud for Camlock ASA B 5.9** (DIN 55029) **and cylindrical studs**

Item no.	Thread	For taper	Quantity
107465 ▲	7/16-20x35	3	3
107466	7/16-20x37	4	3
107467	½-20x43	5	6
107468	5/8-18x49	6	6
107469	¾-16x55,5	8	6
107470	7/8-14x67	11	6
127621 ▲	1-14x76	15	6
130637 ▲	1½-12x89	20	6

Orange Line - centric clamping

ORANGE LINE

APPLICATION

Proven geared scroll chuck made of special cast iron for use in areas requiring high clamping forces, high concentricity as well as reliable long-term repeatability. For universal use on lathes, rotary tables, dividing units, etc.

TYPE

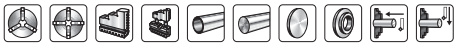
Geared scroll chucks in cast iron design.
Special flat design with direct mounting.
3-jaw and 4-jaw version.

CUSTOMER BENEFITS

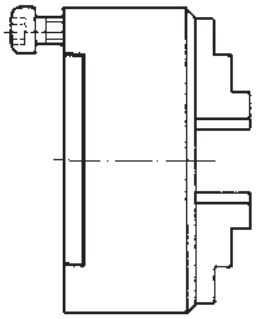
- Optimal price/performance ratio
- Special flat design for minimum interfering contours
- The jaws can be adjusted over the entire clamping range by turning the key. This allows workpieces with different clamping diameters to be quickly clamped
- Jaws in chuck ground out for concentricity

TECHNICAL FEATURES

- With one set each of one-piece outward- and inward stepped jaws
- Vibration-damping body made of special cast iron
- Spiral ring die-forged as well as balanced and hardened

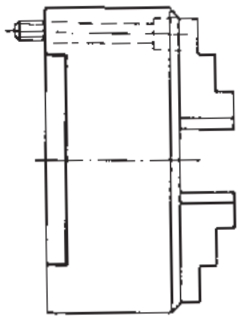


A09
DIN 6350, cylindrical centre mount, form A



Size	ZA	Through-hole mm	**3-jaw chuck with inside and outside jaw**	**4-jaw chuck with inside and outside jaw**	Speed max. min^{-1}	Torque Nm	Total clamping force kN
100	70	20	**101781**	**102129**	4500	60	27
125	95	32	**101628**	**106074**	4000	80	31
160	125	42	**100300**	**100325**	3600	110	47
200	160	55	**100000**	**100465**	3000	140	55
250	200	76	**100200**	**100834**	2500	150	63
315	260	103	**101248**	**101567**	2000	180	69

A09
Mounting from front, DIN 6350, cylindrical centre mount



Size	ZA	Through-hole mm	**3-jaw chuck with inside and outside jaw**	**4-jaw chuck with inside and outside jaw**	Speed max. min^{-1}	Torque Nm	Total clamping force kN
125	95	32	**116304 ▲**	**103053 ▲**	4000	80	31
160	125	42	**115566 ▲**	**115570 ▲**	3600	110	47
200	160	55	**109127 ▲**	**111339 ▲**	3000	140	55
250	200	76	**114301 ▲**	**127916 ▲**	2500	150	63
315	260	103	**109128 ▲**	**120743 ▲**	2000	180	69

Jaws Orange Line

A09
Inside jaw BB, DIN 6350, outward stepped jaw, hardened

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
100	**110156**	**110064**	48	33,5	14
125	**110157**	**110065**	52	41,5	18
160	**110159**	**110067**	61	47,5	18
200	**110160**	**110068**	69	53,5	20
250	**110161**	**110069**	90	67,5	24
315	**110162**	**110070**	130	79,5	34

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Outside jaw DB, DIN 6350, inward stepped jaw, hardened

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
100	**110166**	**110074**	48	33,5	14
125	**110167**	**110075**	52	41,5	18
160	**110169**	**110077**	61	47,5	18
200	**110170**	**110078**	69	53,5	20
250	**110171**	**110079**	90	67,5	24
315	**110016**	**110080**	130	79,5	34

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Unstepped jaw BL, DIN 6350, unstepped, soft, material 16MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
100	**107589**	**107599**	48	33,5	14
125	**107590**	**107600**	52	41,5	18
160	**107592**	**107602**	61	47,5	18
200	**107593**	**107603**	69	53,5	20
250	**107594**	**107604**	90	67,5	24
315	**107595**	**107605**	130	79,5	34

A09
Base jaw GB, DIN 6350, with fixing screw

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw width mm
100	**107500**	**107542**	46	14
125	**107501**	**107543**	55	18
160	**107503**	**107545**	65	18
200	**107504**	**107546**	78	20
250	**107505**	**107547**	92	24
315	**107506**	**107548**	108	34

A09
Reversible top jaws UB, DIN 6350, hardened tongue and groove for external and internal clamping, material 16 MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
100	**108045**	**108053**	47	29,5	22
125	**108046**	**108054**	56	37,5	26
160	**107936**	**107938**	66,7	41,5	28
200	**107937**	**107939**	79,5	42,5	30
250	**108049**	**108057**	95,3	52,5	36
315	**108050**	**108058**	109,5	57,5	42

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

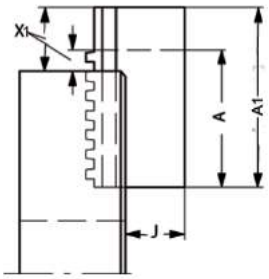
Jaws Orange Line

A09
Unstepped top jaw AB, DIN 6350 soft, material 16MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
100	**107633**	**107641**	53	30	22,5
125	**107634**	**107642**	62	38	26,5
160	**108581**	**108583**	74	42	28,5
200	**108582**	**108584**	87	43	30,5
250	**107637**	**107579**	103	53	36,5
315	**107638**	**107580**	120	58	42,5

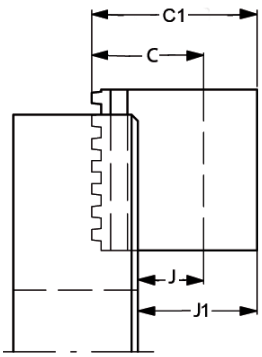
A09
Unstepped jaw BL, special length, soft, material 16MnCr5, DIN 6350

Chuck Size	3-jaw set	4-jaw set	A1 mm	X1 max.	A mm	J mm	X max. mm
200	**130031**	**137073**	100	50	69	32,5	19
250	**132658**	**137074**	120	56	90	41	26
315	**132184**	**129894**	160	70	130	46	40
200	**130033**	**137077**	120	70	69	32,5	19
250	**128880**	**130610**	140	76	90	41	26
315	**118908**	**137078**	200	110	130	46	40
315	**121367**	**133691**	250	160	130	46	40



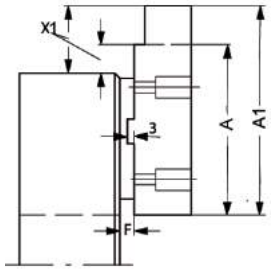
A09
Unstepped jaw BL, special height, soft, material 16MnCr5, DIN 6350

Chuck Size	3-jaw set	4-jaw set	C1 mm	J1	C mm	J mm
200	**125710**	**132972**	80	58,5	54	32,5
250	**122188**	**134796**	100	73	68	41
315	**132186**	**137091**	110	76	80	46
200	**125712**	**137095**	120	98,5	54	32,5
250	**122189**	**130630**	130	103	68	41
315	**137096**	**137097**	140	106	80	46
200	**125714**	**137101**	150	128,5	54	32,5
250	**137102**	**137103**	150	123	68	41
315	**137104**	**130340**	160	126	80	46



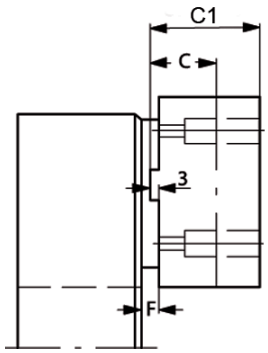
Jaws Orange Line

A09
Top jaw AB, special length, soft, material 16MnCr5, DIN 6350



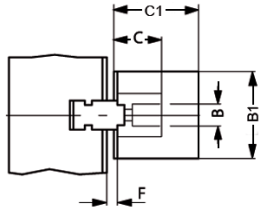
Chuck Size	3-jaw set	4-jaw set	A1 mm	X1 max.	F mm	A mm	X max. mm
200	**110086**	**148139**	100	43	6,8	87	30
250	**112122**	**129289**	130	63	8	103	36
315	**110624**	**143764**	160	76	5,5	120	36
200	**112120**	**148657**	120	63	6,8	87	30
250	**125428**	**128700**	150	83	8	103	36
315	**112091**	**147754**	200	116	5,5	120	36
250	**104710**	**146013**	180	113	8	103	36
315	**112089**	**147860**	250	166	5,5	120	36

A09
Top jaw AB, special height, soft, material 16MnCr5, DIN 6350



Chuck Size	3-jaw set	4-jaw set	C1 mm	C mm	F mm
200	**132155**	**132181**	60	43	6,8
250	**119645**	**135867**	70	53	8
315	**110435**	**149975**	80	58	5,5
200	**128564**	**149976**	80	43	6,8
250	**128571**	**134999**	100	53	8
315	**110437**	**129691**	110	58	5,5
250	**128573**	**149978**	150	53	8
315	**128569**	**141671**	150	58	5,5

A09
Top jaw AB, special width and height, soft, material 16MnCr5, DIN 6350



Chuck Size	3-jaw set	4-jaw set	B1 mm	C1 mm	B mm	C mm
200	**105057**	**105061**	40	70	30.5	43
250	**137090**	**141338**	50	80	36.5	53
315	**143053**	**149979**	60	90	42	58
200	**133259**	**149982**	50	80	30.5	43
250	**133653**	**137526**	60	90	36.5	53
315	**143057**	**149983**	80	110	42	58

Jaws Orange Line

C15
Mounting bolt for top jaws, bolt 1

Item no.	Size	Thread	Contents of delivery
249299	100	M6x20	piece
236949	125	M8x25	piece
334571	160/200	M8x30	piece
233025	250	M12x40	piece
233026	315	M12x45	piece

C15
Mounting bolt for top jaws, bolt 2

Item no.	Size	Thread	Contents of delivery
216528	100	M6x16	piece
233058	125/160/200	M8x20	piece
227692	250	M12x25	piece
233030	315	M12x30	piece

Accessories Orange Line

A09 **Base plates** for lathe chucks with **cylindrical centre mount,** DIN 6350

Item no.	Size	Thread
162793	160	6xM10
162401	200	6xM10
163036	250	
133705	315	

A09 **Unfinished adapter plates** for **cylindrical mount**
The unfinished back plate must be machined and fitted on both machine and chuck side

Item no.	Size	Inch	A mm	B mm	C mm	D mm	E mm
017114	100	4	120	80	58	20	25
017115	125	5	135	80	58	20	25
017116	160	6 ¼	170	80	58	20	30
017117	200	8	210	92	66	22	40
017118▲	250	10	260	105	92	25	50

A09 **Chip guard, piece**

Item no.	Size	Contents of delivery
108501	100/110	piece
108502	125	piece
108503	140/160	piece
108504	200	piece
108505	250	piece
108506	315/350/400	piece

A09 **Special grease** F80 for **lathe chucks**
For lubrication and conservation of chucking power

Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

A09 **Scroll**

Item no.	Size
101754	100
112660	110
101721	125
105827	140
100303	160
100003	200
100203	250
101552	315

A09 **Driving pinion**

Item no.	Size	Square
101755	100	8
112662	110	8
101722	125	9
105828	140	9
100304	160	10
100005	200	11
100204	250	12
112267	270	12
101553	315	14
105229	350	14

A09 **Pinion holder screw**

Item no.	Size
100305	100/125/160
100006	200/250
101554	315

A09 **Standard key**

Item no.	Size	Square	Length mm
107427	100/110	8	75
107428	125/140	9	80
107429	160	10	90
107430	200/230	11	100
107431	250/270	12	100
107432	315	14	110

C15 **Grease gun DIN1283**

Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

Accessories Orange Line

A09 **Safety key with ejector**

Item No.	Size	Square	Length mm
154371	100/110	8	130
154372	125/140	9	130
154373	160	10	160
154374	200/230	11	160
154375	250/270	12	160
154376	315	14	200

A09 **Elongated safety key with ejector**

Item No.	Size	Square	Length mm
154683	125/140	9	170
154685	160	10	180
154687	200/230	11	200
154689	250/270	12	200
154695	315	14	250

A09 **Safety adapter with ejector**
For actuating the chuck with torque (defined torque introduction)

Item No.	Size	Square	Inch
178567 ▲	100/110	8	1/2
178568 ▲	125/140	9	1/2
178569 ▲	160	10	1/2
178570	200/230	11	1/2
178571 ▲	250/270	12	1/2
178572	315/350	14	1/2

A09 **Torque wrench**

Item No.	Torque Nm	Length mm	Output	Working accuracy
10004116	20-120	435	12,7=1/2“	3%
10004117	60-320	659	12,7=1/2“	3%

C15 **Mounting screws**
For **cylindrical centre rim**

Item No.	Size	Thread	Contents of delivery
334571	100-140	M8x30	piece
249301	160-230	M10x35	piece
233025	250-270	M12x40	piece
220565	315-350	M16x50	piece

C15 **Mounting screws**
For lathe chucks with direct **short-taper**, for **front mounting**

Item No.	Size	Thread	Contents of delivery	Chuck Size	Taper size
233075	100	M10x90	piece	250	5
216549	110	M12x70	piece	250	6
302194	125	M16x70	piece	250	8
242954	140	M12x100	piece	315	6
358816	160	M16x85	piece	315	8
243665	200/230	M12x130	piece	350	6
236516	315	M16x110	piece	400	8

A09 **Set screw with nut DIN 55021**

Item No.	Thread	For taper	Quantity
107453	M10x30	4	3
107455 ▲	M10x35	5	4
107456 ▲	M12x40	6	4
107457 ▲	M16x45	8	4
107458 ▲	M20x55	11	6
127618 ▲	M24x65	15	6

A09 **Stud for Camlock ISO 702-2** (DIN 55029) **and cylindrical studs**

Item No.	Thread	For taper	Quantity
178364 ▲	M10x1	3	3
178365	M10x1	4	3
178366 ▲	M12x1	5	6
178367	M16x1,5	6	6
178368 ▲	M20x1,5	8	6
178369 ▲	M22x1,5	11	6
178370 ▲	M24x1,5	15	6
178371	M27x2	20	6

A09 **Stud and locknut ISO 702-3** (DIN 55027)

Item No.	Thread	Contents of delivery	For taper	Quantity
107447	M10x34	piece	3	3
107448	M10x39	piece	4	3
107449	M10x43	piece	5	4
107450	M12x50	piece	6	4
107451	M16x60	piece	8	4
107452	M20x75	piece	11	6
125650	M24x90	piece	15	6
130636	M24x100	piece	20	6

A09 **Stud for Camlock ASA B 5.9** (DIN 55029) **and cylindrical studs**

Item No.	Thread	For taper	Quantity
107465 ▲	7/16-20x35	3	3
107466	7/16-20x37	4	3
107467	½-20x43	5	6
107468	5/8-18x49	6	6
107469	¾-16x55,5	8	6
107470	7/8-14x67	11	6
127621 ▲	1-14x76	15	6
130637 ▲	1½-12x89	20	6

Notes

ZS Hi-Tru - with fine adjustment

APPLICATION

Optimized for machining workpieces which must be produced with **maximum concentricity**.
Can be universally used, but is especially advantageous on turning and grinding machines as well as dividing units.

TYPE

Lathe and grinding chuck in steel design with which the workpiece can be adjusted very sensitively to the desired concentricity via 3 tangentially arranged adjusting spindles.

CUSTOMER BENEFITS

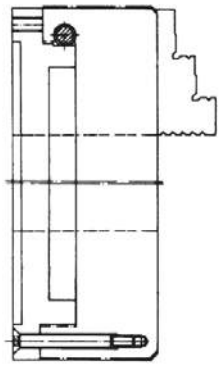
- Radial fine adjustment for maximum concentricity
- Repeatability 0.015 mm
- Adjusting accuracy within 0.005 mm
- Precision adjustment without opening the mounting screws
- Jaws in chuck ground out for concentricity

TECHNICAL FEATURES

- With one set outside jaws and one set inside jaws
- Hardened adjusting spindles as well as their support surfaces
- Hardened spiral ring
- Steel take-up flange

ZS Hi-Tru = centric clamping, steel, maximum precision

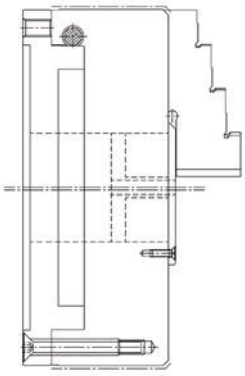
A09
ZS Hi-Tru, with one set outward stepped jaws and one set inward stepped jaws, DIN 6350, cylindrical centre mount, form A



Item no.	Size	ZA	Through-hole mm	Speed max. min^{-1}	Torque Nm	Total clamping force kN
180259▲	80	56	19	7000	30	13
180261	100	70	20	6300	60	27
180263	125	95	32	5500	80	31
180265	160	125	42	4600	110	47
180267	200	160	55	4000	140	55
180269	250	200	76	3000	150	63
180271	315	260	103	2300	180	69

On request from size 125 with 6-jaws or with short-taper mount to ISO 702-3 (DIN 55027) or ISO 702-2 (DIN 55029) Camlock
Further sizes and mountings available on request

A09
ZS Hi-Tru, with special seal for grinding machines, **DIN 6350,** cylindrical centre mount, form A

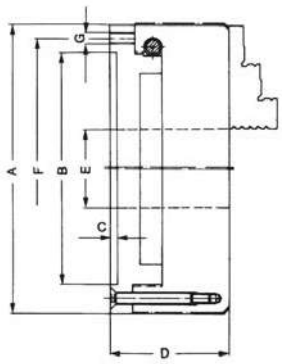


Item no.	Size	ZA	Through-hole mm	Speed max. min^{-1}	Torque Nm	Total clamping force kN
180273▲	80	56		5000	30	13
180275▲	100	70		4500	60	27
180277▲	125	95	7	4000	80	31
180279▲	160	125	7	3600	110	47
180281▲	200	160	8	3000	140	55
180283▲	250	200	10	2500	150	63
180285▲	315	260	16	2000	180	69

On request from size 125 with 6-jaws or with short-taper mount to ISO 702-3 (DIN 55027) or ISO 702-2 (DIN 55029) Camlock

ZS Hi-Tru - with fine adjustment

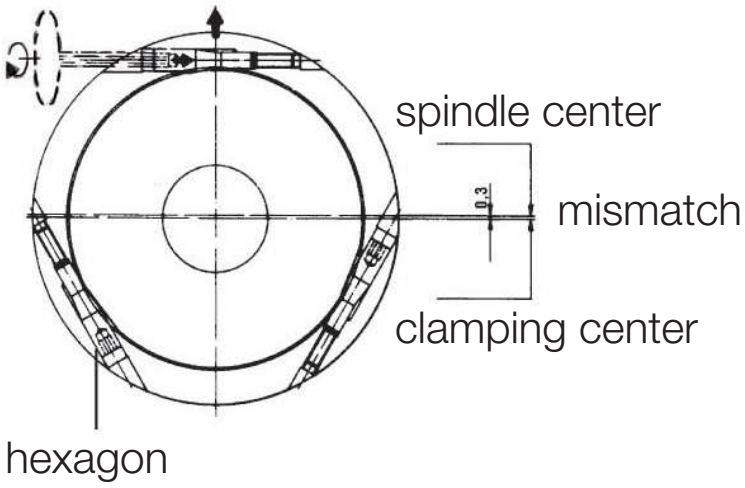
Dimensions ZS Hi-Tru, DIN 6350, cylindrical centre mount, Form A



Size A	Inch	B$^{+0,02}$	C	D	F	G	SW	Weight
ZS Hi-Tru, with 1 set each outward or inward stepped jaws								
80	$3^{1/4}$	56	3	50,5	67	3xM6	4	1,7
100	4	70	3	63	83	3xM8	5	3,6
125	5	95	4	72	108	3xM8	5	5,6
160	$6^{1/4}$	125	4	81	140	3xM10	6	10
200	8	160	4	89,5	176	3xM10	6	17,2
250	10	200	5	102	224	3xM12	8	34,5
315	$12^{1/2}$	260	5	122	286	3xM16	8	57,5

Size A	Inch	B$^{+0,02}$	C	D	F	G	SW	Weight
ZS Hi-Tru, with special seal for grinding machines								
80	$3^{1/4}$	56	3	50,5	67	3xM6	4	1,7
100	4	70	3	63	83	3xM8	5	3,6
125	5	95	4	72	108	3xM8	5	5,6
160	$6^{1/4}$	125	4	81	140	3xM10	6	10
200	8	160	4	89,5	176	3xM10	6	17,2
250	10	200	5	102	224	3xM12	8	34,5
315	$12^{1/2}$	260	5	122	286	3xM16	8	57,5

Fine adjustment



Video functioning ZS Hi-Tru

Jaws ZS Hi-Tru

A09
Inside jaw BB, DIN 6350, outward stepped jaw, hardened

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
110155	80	3	set	37	26	12
110156	100	3	set	48	33,5	14
110157	125	3	set	52	41,5	18
110159	160	3	set	61	47,5	18
110160	200	3	set	69	53,5	20
110161	250	3	set	90	67,5	24
110162	315	3	set	130	79,5	34

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Outside jaw DB, DIN 6350, inward stepped jaw, hardened

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
110165	80	3	set	37	26	12
110166	100	3	set	48	33,5	14
110167	125	3	set	52	41,5	18
110169	160	3	set	61	47,5	18
110170	200	3	set	69	53,5	20
110171	250	3	set	90	67,5	24
110016	315	3	set	130	79,5	34

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Unstepped jaw BL, DIN 6350, unstepped, soft, material 16MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
107588	80	3	set	37	26	12
107589	100	3	set	48	33,5	14
107590	125	3	set	52	41,5	18
107592	160	3	set	61	47,5	18
107593	200	3	set	69	53,5	20
107594	250	3	set	90	67,5	24
107595	315	3	set	130	79,5	34

A09
Base jaw GB, DIN 6350, with fixing screw

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw width mm
107500	100	3	set	46	14
107501	125	3	set	55	18
107503	160	3	set	65	18
107504	200	3	set	78	20
107505	250	3	set	92	24
107506	315	3	set	108	34

A09
Reversible top jaws UB, DIN 6350, hardened tongue and groove for external and internal clamping, material 16 MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
108045	100	3	set	47	29,5	22
108046	125	3	set	56	37,5	26
107936	160	3	set	66,7	41,5	28
107937	200	3	set	79,5	42,5	30
108049	250	3	set	95,3	52,5	36
108050	315	3	set	109,5	57,5	42

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

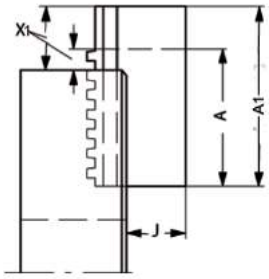
Jaws ZS Hi-Tru

A09
Unstepped top jaw AB DIN 6350, soft, material 16MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
107633	100	3	set	53	30	22,5
107634	125	3	set	62	38	26,5
108581	160	3	set	74	42	28,5
108582	200	3	set	87	43	30,5
107637	250	3	set	103	53	36,5
107638	315	3	set	120	58	42,5

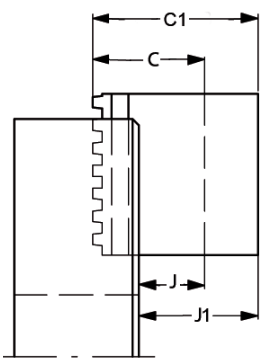
A09
Unstepped jaw BL, special length, soft, material 16MnCr5, DIN 6350

Item no.	Chuck Size	A1 mm	X1 max.	A	J	X max.
130031	200	100	50	69	32,5	19
132658	250	120	56	90	41	26
132184	315	160	70	130	46	40
130033	200	120	70	69	32,5	19
128880	250	140	76	90	41	26
118908	315	200	110	130	46	40
121367	315	250	160	130	46	40



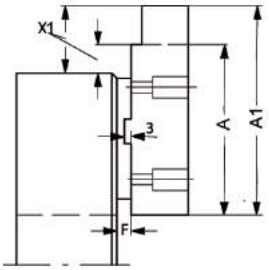
A09
Unstepped jaw BL, special height, soft, material 16MnCr5, DIN 6350

Item no.	Chuck Size	C1	J1	C	J
125710	200	80	58,5	54	32,5
122188	250	100	73	68	41
132186	315	110	76	80	46
125712	200	120	98,5	54	32,5
122189	250	130	103	68	41
137096	315	140	106	80	46
125714	200	150	128,5	54	32,5
137102	250	150	123	68	41
137104	315	160	126	80	46



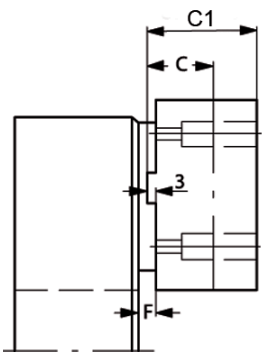
Jaws ZS Hi-Tru

A09
Top jaw AB, special length, soft, material 16MnCr5, DIN 6350



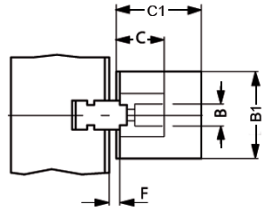
Item no.	Chuck Size	A1 mm	X1 max.	F	A	X max.
110086	200	100	43	6,8	87	30
112122	250	130	63	8	103	36
110624	315	160	76	5,5	120	36
112120	200	120	63	6,8	87	30
125428	250	150	83	8	103	36
112091	315	200	116	5,5	120	36
104710	250	180	113	8	103	36
112089	315	250	166	5,5	120	36

A09
Top jaw AB, special height, soft, material 16MnCr5, DIN 6350



Item no.	Chuck Size	C1	C	F
132155	200	60	43	6,8
119645	250	70	53	8
110435	315	80	58	5,5
128564	200	80	43	6,8
128571	250	100	53	8
110437	315	110	58	5,5
128573	250	150	53	8
128569	315	150	58	5,5

A09
Top jaw AB, special width and height, soft, material 16MnCr5, DIN 6350



Item no.	Chuck Size	B1	C1	B	C
105057	200	40	70	30.5	43
137090	250	50	80	36.5	53
143053	315	60	90	42	58
133259	200	50	80	30.5	43
133653	250	60	90	36.5	53
143057	315	80	110	42	58

Jaws ZS Hi-Tru

C15
Mounting bolt for top jaws, bolt 1

Item no.	Size	Thread	Contents of delivery
249299	100	M6x20	piece
236949	125	M8x25	piece
334571	160/200	M8x30	piece
233025	250	M12x40	piece
233026	315	M12x45	piece

C15
Mounting bolt for top jaws, bolt 2

Item no.	Size	Thread	Contents of delivery
216528	100	M6x16	piece
233058	125/160/200	M8x20	piece
227692	250	M12x25	piece
233030	315	M12x30	piece

Accessories ZS Hi-Tru

A09 **Base plates** for lathe chucks with **cylindrical centre mount,** DIN 6350

Item no.	Size	Thread
162793	160	6xM10
162401	200	6xM10
163036	250	
133705	315	

A09 **Chip guard, piece**

Item no.	Size	Contents of delivery
108500	80/85	piece
108501	100/110	piece
108502	125	piece
108503	140/160	piece
108504	200	piece
108505	250	piece
108506	315/350/400	piece

C15 **Special grease** F80 for **lathe chucks**
For lubrication and conservation of chucking power

Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

C15 **Scroll**

Item no.	Size
102183	80/85
101754	100
101721	125
100303	160
100003	200
100203	250
101552	315

A09 **Driving pinion**

Item no.	Size	Hexagon
178473	100	9
178474▲	110	9
178475	125	10
178476▲	140	10
178477	160	11
178478	200	12
178480	250	14
178482	315	17

A09 **Pinion holder screw**

Item no.	Size
102185	85
100305	100/125/160
100006	200/250
101554	315

A09 **Standard key**

Item no.	Size	Square	Length mm
107426	80/85	6	62
107427	100/110	8	75
107428	125/140	9	80
107429	160	10	90
107430	200/230	11	100
107431	250/270	12	100
107432	315	14	110

A09 **Safety key with ejector**

Item no.	Size	Square	Length mm
154370▲	80/85	6	110
154371	100/110	8	130
154372	125/140	9	130
154373	160	10	160
154374	200/230	11	160
154375	250/270	12	160
154376	315	14	200

C15 **Grease gun DIN1283**

Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

Accessories ZS Hi-Tru

A09 **Elongated safety key with ejector**

Item no.	Size	Square	Length mm
154683	125/140	9	170
154685	160	10	180
154687	200/230	11	200
154689	250/270	12	200
154695	315	14	250

A09 **Safety adapter with ejector**
For actuating the chuck with torque (defined torque introduction)

Item no.	Size	Square	Inch
178566 ▲	80/85	6	3/8
178567 ▲	100/110	8	1/2
178568 ▲	125/140	9	1/2
178569 ▲	160	10	1/2
178570	200/230	11	1/2
178571 ▲	250/270	12	1/2
178572	315/350	14	1/2

A26 **Torque wrench**

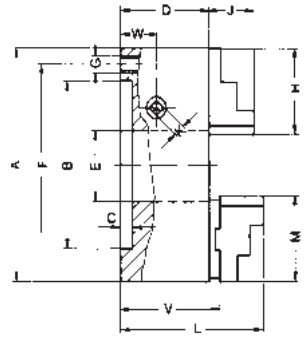
Item no.	Torque Nm	Length mm	Output	Working accuracy
10004116	20-120	435	12,7=1/2"	3%
10004117	60-320	659	12,7=1/2"	3%

A26 **Mounting screws**
For **cylindrical centre rim**

Item no.	Size	Thread	Contents of delivery
249299	74-85	M6x20	piece
334571	100-140	M8x30	piece
249301	160-230	M10x35	piece
233025	250-270	M12x40	piece
220565	315-350	M16x50	piece

Chuck dimensions ZS - ZSU and Orange Line

Cylindrical centre mount DIN 6350



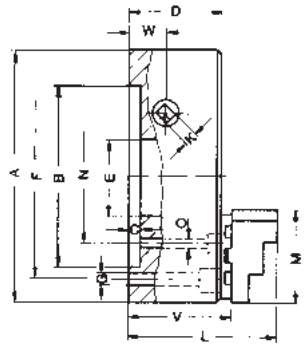
Enlarged bore max.

For mounting on dividing heads and other attachments from the front, the lathe chucks with a cylindrical centre mount can also be supplied pre-drilled (at surcharge) G_1, it is also possible to enlarge the bore (measure E, at surcharge).

Size A	74	80	85	100	110	125	140	160	200	250	315	350	400	500	630
B^{H6}	56	56	60	70	80	95	105	125	160	200	260	290	330	420	545
C	2,5	3	3	3	3	4	4	4	4	5	5	6	5	5	7
D	32,5	39,5	39,5	50	50	56	60	65	73,5	82	95	100	105	120	135
E	15	19	19	20	27	32	40	42	55	76	103	115	136	190	240
E_{max}	-	-	-	21	-	33	43	50	70	92	114	120	150	210	253
F	63	67	72	83	95	108	120	140	176	224	286	318	362	458	586
G	3xM6	3xM6	3xM6	3xM8	3xM8	3xM8	3xM8	3xM10	3xM10	3xM12	3xM16	3xM16	3xM16	6xM16	6xM16
G_1	-	-	-	-	-	3xØ9*	-	3xØ10,5	3xØ11	3xØ14	3xØ14	-	3xØ18	6xØ18	6xØ18
H	32	37	37	48	48	52	61	61	69	90	130	130	130	190	190
J	14	14	14	18	18	22,5	22,5	26	32,5	40	46	45	43	54,5	54,5
K	6[1)]	6	6	8	8	9	9	10	11	12	14	14	17	19	19
L	-	-	-	80,5	-	95,5	106	108	119,6	139,6	155	168,5	171,5	201,5	216,5
M	-	-	-	47	47	56	66,7	66,7	79,5	95	109,5	127	127	127	127
V	-	-	-	53,6	53,6	61	67,7	69,7	80,2	89,9	100,4	110,4	113,4	128,4	143,3
W	13	14,5	14,5	18	18	20	21	22,45	25,7	26,5	30	34	35	38	48
approx kg.	1	1,3	1,9	2,9	3,4	4,5	5,8	8,2	14,6	25,7	44,2	56	80	126	208

G_1 = Mounting from front * 4-jaw = 4 x Ø 9

Cylindrical centre mount
with front mounting

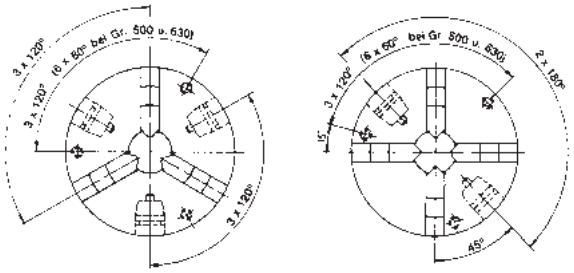


Enlarged bore max.

SIze	ØA	700	800	1000	1250
	B	610	710	910	910
	C[2)]	$7^{+0,03}$	$7^{+0,03}$	$7^{+0,03}$	$7^{+0,03}$
	D	147	147	157	157
	E	310	380	460	550
	$E_{max.}$	330	420	580	580
	F	660	760	950	950
3-Jaw 4-Jaw	G	6xØ22 8xØ22	6xØ22 8xØ22	6xØ26 8xØ26	6xØ26 6xØ26
	K	19	19	24	24
	L	240,6	240,6	269,6	269,6
	M	210	210	210	210
	N	360	460	610	610
3-Jaw 4-Jaw	O	6xØ18 4xØ18	6xØ18 4xØ18	6xØ18 4xØ18	6xØ18 6xØ18
	V	158	158	166	166
	W	48	48	53	53
	ca. kg	280	350	590	850

1) Hexagon 2) Adaptor plate dimension $7_{-0,03}$

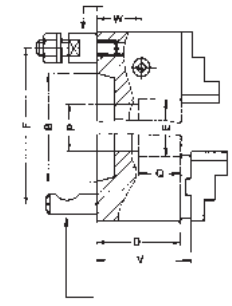
Position of fixing screws and pinions on lathe chucks with cylindrical centre mount sizes 74-630 (size 350 on request)



Short taper mount

DIN 55021
with setscrews and locknuts

DIN 55027
with studs and nuts



DIN 55029 with studs for Camlock

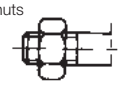
Size	A	100	125		140			160			200			
Taper size		3	3	4	3	4	5	3	4	5	3	4	5	6
	B	53,9	53,9	63,5	53,9	63,5	82,5	53,9	63,5	82,5	53,9	63,5	82,5	106,4
	D	75	69	69	74	74	74	66	66	66	74,5	74,5	74,5	74,5
	E	20	32	32	40	40	40	42	42	42	51,2	55	55	55
DIN Caml.	F	75 70,6	75 70,6	85 82,5	75 70,6	85 82,5	104,8	75 70,6	85 82,5	104,8	75 70,6	85 82,5	104,8	133,4
	P	-	-	-	-	-	-	-	-	-	51,2	-	-	-
	Q	-	-	-	-	-	-	-	-	-	33	-	-	-
	V	78,3	73,7	73,7	81,7	81,7	81,7	70,7	70,7	70,7	81,2	81,2	81,2	81,2
	W	43	33	33	35	35	351)	23,45	23,45	23,45	26,7	26,7	26,7	26,7
Mounting holes	DIN	3 3	3 3	3 3	3 3	3 3	4 6	3 3	3 3	4 6	3 3	3 3	4 6	4 6
	ca. kg	4	5,5		7			8,5			15,5			

1) 50 with Camlock, other dimensions in the table on the top

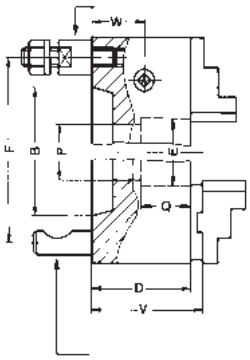
Chuck dimensions ZS - ZSU and Orange Line

Short taper mount

DIN 55021
with setscrews and locknuts



DIN 55027
with studs and nuts



DIN 55029
with studs for Camlock

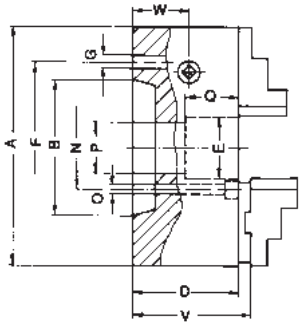
Size A		250				315				350			400		
Taper size		4	5	6	8	5	6	8	11	6	8	11	6	8	11
B		63,5	82,5	106,4	139,7	82,5	106,4	139,7	196,9	106,4	139,7	196,9	106,4	139,7	196,6
D		83	83	83	83	96	96	96	104	122	122	122	106	106	106
E		60,7	76	76	76	79,6	103	103	103	103	115	115	103	136	136
F	DIN	85	104,8	133,4	171,4	104,8	133,4	171,4	235	133,4	171,4	235	133,4	171,4	235
	Caml.	82,5													
P		60,7	-	-	-	79,6	-	-	-	103	-	-	103	-	-
Q		40,5	-	-	-	49	-	-	-	81	-	-	54	-	-
V		90,9	90,9	90,9	90,9	101,4	101,4	101,4	109,4	127,4	127,4	127,4	114,4	114,4	114,4
W		27,5	27,5	27,5	27,5	31	31	31	39	56	56	56	36	36	36
Mounting holes	DIN	3	4	4	4	4	4	4	6	4	4	6	4	4	6
	Caml.	3	6	6	6	6	6	6	6	6	6	6	6	6	6
approx. kg		30				50				71			84		

Size A		500			630		700		800		1000		1250	
Taper size		8	11	15	11	15	11	15	15	20	15	20	15	20
B		139,7	196,9	285,8	196,9	285,8	196,9	285,8	285,8	412,8	285,8	412,8	285,8	412,8
D		122	122	122	137	137	149	149	149	149	159	159	159	159
E		136	190	190	192,7	240	310	310	380	380	460	460	550	550
F		171,4	235	330,2	235	330,2	235	330,2	330,2	463,6	330,2	463,6	330,2	463,6
P		136	-	-	192,7	-	192,7	281,2	281,2	-	281,2	407,5	281,2	407,5
Q		61	-	-	63	-	76	76	76	-	85	85	85	85
V		130,4	130,4	130,4	145,3	145,3	160	160	160	160	168	168	168	168
W		40	40	40	50	50	50	50	50	50	55	55	55	55
Mounting holes	DIN	4	6	6	6	6	6	6	6	6	6	6	6	6
	Caml.	6	6	6	6	6	6	6	6	6	6	6	6	6
approx. kg		150			225		280		350		590		850	

All other dimensions should be taken from the table about chucks with cylindrical centre mount

Short taper mount

DIN 55026
Mounting from front



Size A		160	200		250			315		350		400	
Taper size		5	5	6	5	6	8	6	8	6	8	8	11
B		82,5	82,5	106,4	82,5	106,4	139,7	106,4	139,7	106,4	139,7	139,7	196,9
D		66	74,5	74,5	83	83	83	96	96	122	122	106	106
E		42	42	55	76	55	76	103	76	103	76	136	125
F[2]		-	-	-	104,8	-	-	133,4	-	133,4	-	171,4	-
G		-	-	-	11[1]	-	-	14	-	14	-	18	-
N[3]		61,9	61,9	82,6	-	82,6	111,1	-	111,1	-	111,1	-	165,1
O		11[1]	11[1]	14	-	14	18	-	18	-	18	-	22
V		70,7	81,2	81,2	90,9	90,9	90,9	101,4	101,4	127,4	127,4	114,4	114,4
W		23,45	26,7	26,7	275	275	275	31	31	56	56	36	36
Mounting holes	*	3	3	6	3	6	6	6	6	6	6	6	6
	**	4	4	4	4	4	4	4	4	4	4	4	4
approx. kg		8	14,5		25			44,5		71		82	

Size ØA		500	630		700		800			1000		1250	
Taper Size		11	11	15	11	15	11	15	20	15	20	15	20
B		196,9	196,9	285,9	196,9	285,9	196,9	285,9	412,8	285,9	412,8	285,9	412,8
D		122	137	137	149	149	149	149	149	159	159	159	159
E		190	190	190	310	285	380	380	380	460	505	550	550
F[2]		235	235	-	235	330,2	235	330,2	463,6	330,2	463,6	330,2	463,62
G		22	22	-	22	26	22	26	26	26	26	26	26
N[3]		-	-	247,6	-	-	-	-	-	-	-	-	-
O		-	-	26	-	-	-	-	-	-	-	-	-
P		-	-	-	193	281,2	193	281,2	-	281,2	407,5	281,2	407,5
Q		-	-	-	76	76	76	76	-	85	85	85	85
V		130,4	145,3	145,3	159,9	159,9	159,9	159,9	159,9	168	168	168	168
W		40	50	60	50	50	50	50	50	55	55	55	55
Mounting holes	*	3	6	6	6	6	6	6	6	8	8	8	8
	**	4	8	8	8	8	8	8	8	8	8	8	8
approx. kg		139	220		295		350			590		850	

1) 12 with ASA B 5.9 inch thread

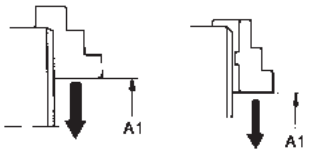
2) For DIN 55026 Form A and B; DIN 55021 Form A and B; ASA B 5.9 A1/A2

3) For DIN 55026 Form B; ASA B 5.9 A1/B1

* 3-Jaw ** 4-Jaw

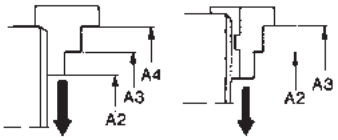
Chuck dimensions ZS - ZSU and Orange Line

External chucking



Chucking capacities of jaw steps (standard values)

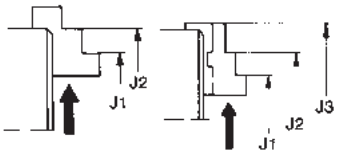
Size	74	80	85	100	110	125	140	160	200	250
A1 (BB)	2-24	2-30	2-30	3-38	3-42	3-53	3-53	4-72	4-100	5-122
A2 (DB)	2-24	2-30	2-30	3-38	3-42	3-53	3-53	3-72	4-100	5-122
A3 (DB)	23-46	27-55	27-55	38-71	39-77	39-89	47-97	47-116	56-152	73-190
A4 (DB)	45-68	52-80	52-80	70-100	70-100	75-125	91-140	91-160	104-200	131-250
max. swing dia.	88	104	104	128	138	157	174	194	238	302
Jaw movement	11	14	14	15	19	25	25	34	48	58



Ø 74-630 Ø 700-1250

Size	315	350	400	500	630	700	800	1000	1250
A1	6-135	20-180	20-200	35-260	50-350	110-350	150-450	250-600	320-600
A2	6-135	20-180	20-200	35-260	50-350	280-672	325-853	425-1070	490-1150
A3	96-225	110-270	110-300	140-360	190-490	356-748	400-928	500-1150	564-1224
A4	186-315	200-350	200-400	280-500	330-630	-	-	-	-
max. swing dia.	395	440	480	600	730	1000	1170	1390	1476
Jaw movement	64	80	100	110	150	120	150	175	140

Internal chucking



Ø 74-630 Ø 700-1250

Size	74	80	85	100	110	125	140	160	200	250
J1	23-46	25-53	26-53	33-66	33-71	37-87	39-89	39-107	44-140	59-165
J2	45-68	50-78	50-78	65-94	65-104	73-123	83-132	83-152	92-186	119-236

Size	315	350	400	500	630	700	800	1000	1250
J1	96-224	100-260	100-300	135-355	150-450	212-648	251-855	356-1080	426-1162
J2	186-305	190-350	190-390	275-460	290-590	290-758	326-930	430-1150	500-1236
J3	-	-	-	-	-	526-922	566-1094	660-1314	740-1400

Clamping ranges for lathe chucks with individual adjustable jaws (ES) are in approximate conformity with the above values. They are valid for 3- and 4-jaw chucks and lathe chucks with reversible jaws.
Do not exceed maximum chucking ranges.

Max. permissible speeds for ZS - ZSU, Orange Line, ZS Hi-Tru to DIN 6350

The maximum permissible speed has been fixed so that 1/3 of the gripping force is still available as residual gripping force if the maximum gripping is applied and the chuck is fitted with its heaviest jaws. The jaws may not project beyond the outside diameter of the chuck. The chuck must be in perfect condition. The speed limit for chucks with cast iron bodies is based on the permissible peripheral speed for cast iron. The specification DIN 6386 Part 1 shall be observed.

Size	3 and 4 jaws	
	Cast iron body	Steel body
74	5000	-
80	5000	7000
100	4500	6300
125	4000	5500
140	3700	5000
160	3600	4600
200	3000	4000
250	2500	3000
315	2000	2300
350	1700	1900
400	1600	1800
500	1000	1300
630	800	850
700	650	800
800	600	700
1000	480	560
1250	380	450

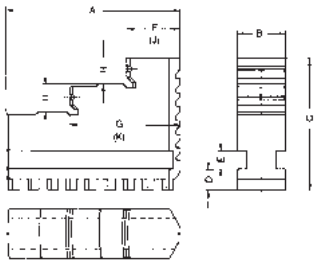
Claming force 3 jaw chuck ZS - ZSU, Orange Line, ZS Hi-Tru to DIN 6350

The clamping force is sum total of all jaw forces acting radially on the stationary workpiece. The clamping forces are approximate values. To obtain the specified clamping forces, the chuck must be in a perfect condition and lubricated with F 80 lubricant recommended by RÖHM.

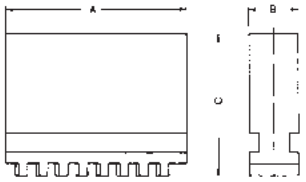
Size	Torque key	Total clamping force
74	30	11
80	30	13
100	60	27
125	80	31
140	90	40
160	110	47
200	140	55
250	150	63
315	180	69
350	210	74
400	240	92
500	260	100
630	280	105
700	280	105
800	300	110
1000	450	115
1250	450	115

Jaw dimensions ZS - ZSU, Orange Line, ZS Hi-Tru

Outward stepped jaw (inside jaw) **BB**



Unstepped jaw, soft (block jaw) **BL**



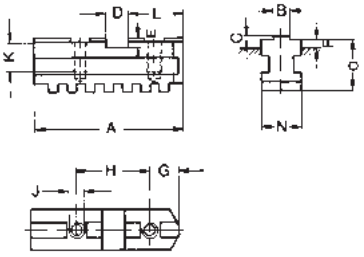
Dimensions F and G apply to outward stepped jaws **BB**
Dimensions J and K apply to inward stepped jaws **DB**

Size		74[1]	80/85	100/110	125	140	160	200	250	315	350/400	500/630
A		32	37	48	52	61	61	69	90	130	130	190
B		10	12	14	18	18	18	20	24	34	34	42
C		23	26	33,5	41,5	41,5	47,5	53,5	67,5	79,5	79,5	95
D		4,7	4,8	6,3	7,3	8,3	8,3	8,3	10,3	11,3	11,3	14,9
E		4	4,5	6	7	7	7	8	10	15	15	15
F		10	12	15	17	18	18	20	27	41,5	41,5	50
G		21	24,5	31	35	40	40	44	57	86,5	86,5	120
H		5	6	6	8	8	10	10	14	15	15	20
J		-	12	14	16	17	17	19	26	40	40	50
K		-	24,5	30	34	39	39	43	56	85	85	120
Jaw approx. kg	BB	0,03	0,05	0,1	0,2	0,22	0,25	0,3	0,7	1,8	1,8	3,8
	BL	0,05	0,08	0,15	0,27	0,32	0,38	0,52	1	2,4	2,4	5,2

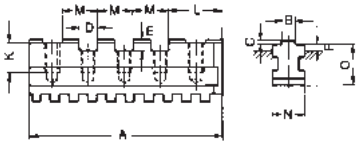
1) Reversible jaws

Base jaw **GB**

Ø 100-400

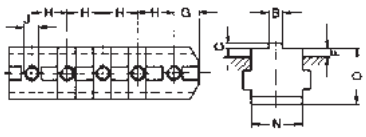


Ø 500-630



Size		100/110	125	140	160	200	250	315	350/400	500	630
A		46	55	65	65	78	92	108	127	165	203
$B_{-0,05}$		7,94	7,94	7,94	7,94	7,94	12,7	12,7	12,7	12,7	12,7
C		2,5	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1
$D^{+0,01}$		9,5	12,68	12,68	12,68	12,68	19,03	19,03	19,03	19,03	19,03
E		6	7,6	7,6	7,6	7,6	7,6	7,6	10,8	10,8	10,8
F		3,4	4,8	7,8	4,8	6,8	8	5,5	10,5[2]	8,5	8,5
G		12	13	15,8	15,8	19	22,2	25,4	28,5	28,5	28,5
H		24	32	38,1	38,1	44,45	54	63,5	76,2	38,1	38,1
J	metr.	M6	M8	M8	M8	M8	M12	M12	M16	M20	M20
	UNC	1/4"-20	5/16"-18	3/8"-16	3/8"-16	3/8"-16	1/2"-13	1/2"-13	5/8"-11	3/4"-10	3/4"-10
K		12	14,5	16	16	16	20	25	29	33	33
L		19,25	22,6	28,5	28,5	34,9	39,7	47,6	57,1	57,1	57,1
M		-	-	-	-	-	-	-	-	38,1	38,1
N		14	18	18	18	20	24	34	34	42	42
O		19,5	24	27	27	28	35	40	45	49	49
Grooves		1	1	1	1	1	1	1	1	2	3
Tapped holes		2	2	2	2	2	2	2	2	4	5
Jaw approx. kg		0,06	0,12	0,17	0,17	0,22	0,4	0,78	1	1,72	2,1

Ø 700-1250

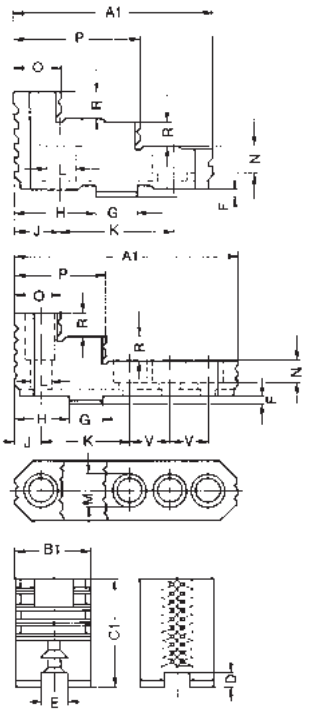


Size		700	800	1000	1250
A		253	291	329	367
$B_{-0,05}$		12,7	12,7	12,7	12,7
C		3,1	3,1	3,1	3,1
$D^{+0,01}$		19,03	19,03	19,03	19,03
E		10,8	10,8	10,8	10,8
F		11	11	9	9
G		28,5	28,5	28,5	28,5
H		38,1	38,1	38,1	38,1
J	metr.	M20	M20	M20	M20
	UNC	3/4"-10	3/4"-10	3/4"-10	3/4"-10
K		37	37	37	37
L		57,1	57,1	57,1	57,1
M		38,1	38,1	38,1	38,1
N		55	55	55	55
O		62	62	62	62
Grooves		4	5	6	7
Tapped holes		6	7	8	9
Jaw approx. kg		6,2	7,1	8	9

1) Reversible jaws 2) Size

Jaw dimensions ZS - ZSU, Orange Line, ZS Hi-Tru

Reversible top jaw **UB**

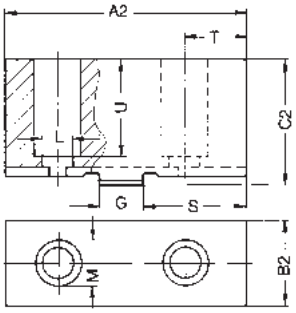


Chuck Size		100 110	125	140 160	200 230	250 270	315	350 400	500 630	700 800	1000 1250
A	1	47	56	66,7	79,5	95,3	109,5	127	127	210	210
	2	53	62	74	87	103	120	137	140	210	210
B	1	22	26	28	30	36	42	42	50	68	68
	2	22,5	26,5	28,5	30,5	36,5	42,5	42,5	50,5	68	68
C	1	29,5	37,5	41,5	42,5	52,5	57,5	64,5	79,5	89	110
	2	30	38	42	43	53	58	65	80	89	110
D		5,5	7,6	7,6	7,6	7,6	7,6	10,8	10,8	10,8	10,8
E		7,96	7,96	7,96	7,96	12,72	12,72	12,72	12,72	12,72	12,72
F		2,5	3,1	3,1	3,1	3,1	3,1	6,35	6,35	6,35	6,35
G		9,50	12,68	12,68	12,68	19,03	19,03	19,03	19,03	19,03	19,03
H		19,25	22,6	28,5	34,9	39,7	47,6	57,1	57,1	57,1	57,1
J		12	13	15,8	19	22,2	25,4	28,5	28,5	28,5	28,5
K		24	32	38,1	44,45	53,95	63,5	76,2	76,2	76,2	76,2
L		6,6	9	9[1] 10,5[2]	9[1] 10,5[2]	14	14	18	22	22	22
M		11	15	15[1] 16[2]	15[1] 16[2]	20	20	26	33	33	33
N		7	9	10	10	13,5	13,5	17	21	21,5	21,5
O		12	13	15,8	19	22,2	25,4	28,5	54,6	51	51
P		29,5	35	42,8	51,5	60,2	67,4	77	88,5	89	89
R		6	8	10	10	14	15	15	20	22	25
S		22,25	25,6	32,2	38,7	43,5	52,9	62,1	63,6	70	70
T		15	16	19,5	22,8	26	30,7	33,55	35	41,5	41,5
U		19	27	30	30	41	43	47	61	65	71
V		-	-	-	-	-	-	-	-	38,1	38,1
Jaw approx. kg	UB	0,12	0,19	0,27	0,39	0,66	1,02	1,27	2	4,45	6,1
	AB	0,21	0,34	0,5	0,7	1,2	1,86	2,18	3,04	8	10,8

Saw-tooth standard model

Cross-grooving
from size 250 available
from size 700 standard-model

Unstepped top jaw soft **AB**



Special-design jaws

For non-rotating clamping devices, for symmetrical components, for machine vices and NC-compact vices available in all desired modifications.

Notes

ES

This chuck is used for aligning irregularly shaped workpieces.

Principle of operation

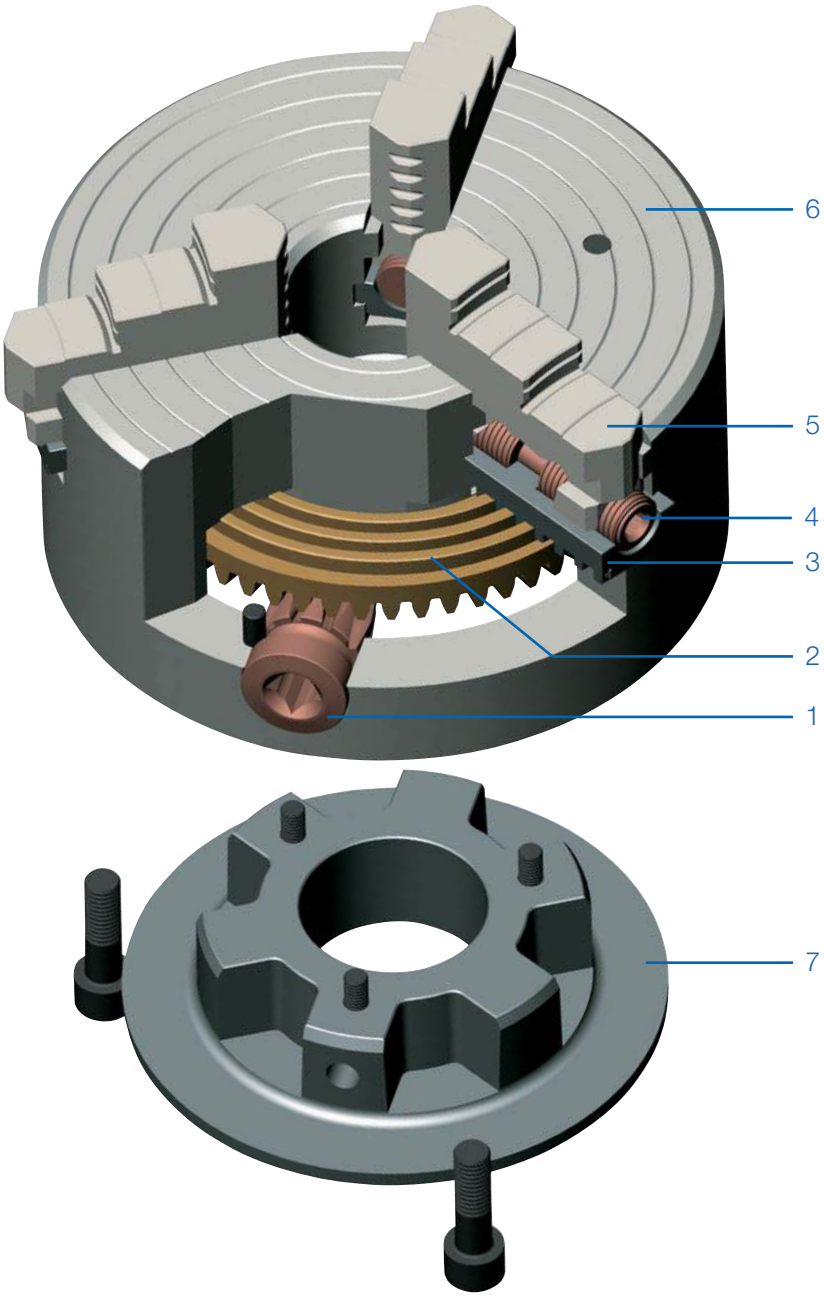
Through a radially arranged drive (**1**, hardened), the force is transferred via a bevel gearing to a hardened spiral ring (**2**) and further conducted via the spiral to the base jaws (3, hardened and ground), spindle (**4**, hardened) and reversible jaws (**5**, hardened and ground). The position of the workpiece can be adjusted by turning the spindle. Steel body (**6**), cover (**7**).

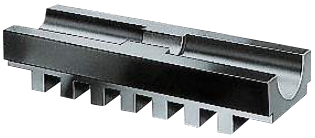
Clamping force transfer system

The jaws can be adjusted over the entire clamping range by turning the key.

Lubrication

To maintain the clamping force, geared scroll chucks must be lubricated regularly. You will find corresponding information in the operating instructions which are enclosed with every chuck. All geared scroll chucks are provided with grease nipples for easy maintenance.





Base jaw GB,
hardened and ground

Reversible top jaw UB,
hardened and ground

Unstepped jaw BL,
unstepped, soft, material 16MnCr5

ES - independently adjustable jaws

APPLICATION

Optimized for the machining of irregularly shaped workpieces.

TYPE

Geared scroll chuck in steel design with which irregularly shaped workpieces can be aligned via adjusting spindles.
3-jaw and 4-jaw version.

CUSTOMER BENEFITS

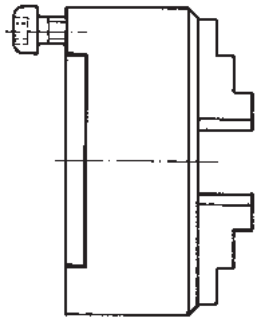
- Exact alignment of irregularly shaped workpieces
- Jaws centrically clamping and individually adjustable
- Die-forged spiral ring, series-balanced and hardened
- Jaws in chuck ground out for concentricity

TECHNICAL FEATURES

- With one set each of base and reversible jaws
- Clamping wrench
- Dimensions and mountings to DIN 6351
- Hardened spiral ring
- Die-forged steel body

ES = independently adjustable jaws, steel

A09
DIN 6351, cylindrical centre mount, form A



Size	ZA	Through-hole mm	3-jaw chuck steel	4-jaw chuck steel	Torque Nm	Total clamping force kN
160	125	42	**111360▲**	**111789▲**	110	47
200	160	55	**111365**	**111793**	140	55
250	200	76	**111370**	**111797**	150	63
315	260	103	**111375▲**	**111801**	180	69
400	330	136	**111380▲**	**111805▲**	240	92
500	420	190	**111385▲**	**111809▲**	260	100
630	545	240	**111390▲**	**111813▲**	280	105

Further sizes and mountings available on request

Jaws ES

A09
Reversible jaw UB, hardened, tongue and groove for external and internal clamping, material 16 MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
160	**110118**	**110124**	69	50	20
200	**139666**	**139670**	85	57,5	24
250	**139667**	**139671**	90	67,5	24
315/400	**139668**	**139672**	130	79,5	34
500/630	**139669**	**139673**	190	95	42

A09
Unstepped jaw BL, unstepped, soft

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
160	**107669**	**107675**	69	50	20
200	**139674**	**139678**	85	57,5	24
250	**139675**	**139679**	90	67,5	24
315/400	**139676**	**139680**	130	79,5	34
500/630	**139677**	**139681**	190	95	42

A09
Base jaw GB, hardened, tongue and groove for external and internal clamping, material 16 MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
160	**107654**	**107662**	62	15,3	26
200	**139682**	**139686**	78	17,8	30
250	**139683**	**139687**	86	17,8	30
315	**139684**	**139688**	118	22,7	44
400	**139685**	**139689**	118	22,7	44
500/630	**107659**	**107667**	176	25	54

Accessories ES

A09 **Base plates** for lathe chucks with **cylindrical centre mount**, DIN 6350

Item no.	Size	Thread
162793	160	6xM10
162401	200	6xM10
163036	250	
133705	315	

A09 **Special grease** F80 for **lathe chucks**
For lubrication and conservation of chucking power

Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

A09 **Adjusting spindle**

Item no.	For chuck size
104251 ▲	125
104271 ▲	160
137735 ▲	200
137643 ▲	250
137701 ▲	400/315
137716	500

A09 **Adjusting key**

Item no.	For chuck size	Square	Hexagon
107444 ▲	125/160	5,5	-
139695 ▲	200/250/315/400	-	8
139696 ▲	500/630	-	12

A09 **Scroll**

Item no.	Size
101721	125
100303	160
100003	200
100203	250
101552	315
102497	400
162973	500
162964	630

A09 **Driving pinion**

Item no.	Size	Square
100304	160	10
100005	200	11
100204	250	12
112267	270	12
101553	315	14
105229	350	14
102498	400	17
162974	500	19
162965	630	19

A09 **Pinion holder screw**

Item no.	Size
100305	160
100006	270
101554	315
102499	400
103300	630

A09 **Standard key**

Item no.	Size	Square	Length mm
107427	100/110	8	75
107428	125/140	9	80
107429	160	10	90
107430	200/230	11	100
107431	250/270	12	100
107432	315	14	110
107433	350	14	140
107434	400	17	140
107435	500/630	19	150

C15 **Grease gun DIN1283**

Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

Accessories ES

A09 **Safety key with ejector**

Item no.	Size	Square	Length mm
154371	100/110	8	130
154372	125/140	9	130
154373	160	10	160
154374	200/230	11	160
154375	250/270	12	160
154376	315	14	200
154377	350	14	200
154378	400	17	250
154379▲	500/630	19	250

A09 **Safety adapter with ejector**
For actuating the chuck with torque (defined torque introduction)

Item no.	Size	Square	Inch
178566▲	80/85	6	3/8
178567▲	100/110	8	1/2
178568▲	125/140	9	1/2
178569▲	160	10	1/2
178570	200/230	11	1/2
178571▲	250/270	12	1/2
178572	315/350	14	1/2

C15 **Mounting screws**
For lathe chucks with direct **short-taper**, for **front mounting**

Item no.	Size	Thread	Contents of delivery	Chuck Size	Taper size
233059	74	M10x70	piece	160	5
308436	80	M10x85	piece	200	5
200186	85	M12x85	piece	200	6
234615	100	M10x110	piece	250	5
302215	110	M12x90	piece	250	6
202439	125	M16x90	piece	250	8
316244	140	M12x120	piece	315	6
308439	160	M16x105	piece	315	8
342701	315	M16x130	piece	400	8
698878	350	M20x115	piece	400	11
011528	400	M20x155	piece	500	11
358815	500	M20x170	piece	630	11
202509	630	M24x150	piece	630	15

A09 **Stud and locknut ISO 702-3** (DIN 55027)

Item no.	Thread	Contents of delivery	For taper	Quantity
107447	M10x34	piece	3	3
107448	M10x39	piece	4	3
107449	M10x43	piece	5	4
107450	M12x50	piece	6	4
107451	M16x60	piece	8	4
107452	M20x75	piece	11	6
125650	M24x90	piece	15	6

A09 **Elongated safety key with ejector**

Item no.	Size	Square	Length mm
154683	125/140	9	170
154685	160	10	180
154687	200/230	11	200
154689	250/270	12	200
154695	315	14	250

A09 **Torque wrench**

Item no.	Torque Nm	Length mm	Output	Working accuracy
10004116	20-120	435	12,7=1/2“	3%
10004117	60-320	659	12,7=1/2“	3%

C15 **Set screw with nut, DIN 55021**

Item no.	Thread	For taper	Quantity
107453	M10x30	4	3
107455▲	M10x35	5	4
107456▲	M12x40	6	4
107457▲	M16x45	8	4
107458▲	M20x55	11	6
127618▲	M24x65	15	6

A09 **Stud for Camlock ASA B 5.9** (DIN 55029) **and cylindrical studs**

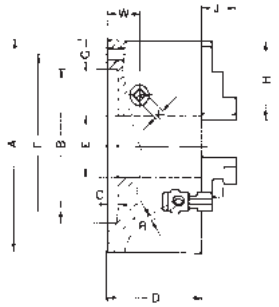
Item no.	Thread	For taper	Quantity
107465▲	7/16-20x35	3	3
107466	7/16-20x37	4	3
107467	½-20x43	5	6
107468	5/8-18x49	6	6
107469	¾-16x55,5	8	6
107470	7/8-14x67	11	6
127621▲	1-14x76	15	6

A09 **Stud for Camlock ISO 702-2** (DIN 55029) **and cylindrical studs**

Item no.	Thread	For taper	Quantity
178364▲	M10x1	3	3
178365	M10x1	4	3
178366▲	M12x1	5	6
178367	M16x1,5	6	6
178368▲	M20x1,5	8	6
178369▲	M22x1,5	11	6
178370▲	M24x1,5	15	6
178371	M27x2	20	6

Chuck dimensions ES

Cylindrical centre mount DIN 6351



The bore (measure E) could be enlarged (at surcharge)

Enlarged bore max.

Size A	100	125	160	200	250	315	400	500	630
B^{H6}	70	95	125	160	200	260	330	420	545
C	3	4	4	4	5	5	5	5	7
D	67	71	80	95,5	100	117	123	145	160
E	20	32	42	55	76	103	136	190	240
$E_{max.}$	21	33	50	70	92	114	150	210	253
F	83	108	140	176	224	286	362	458	586
G	3xM8	3xM8	3xM10	3xM10	3xM12	3xM16	3xM16	6xM16	6xM16
H	56	56	69	85	90	130	130	190	190
J	22	21	28	32,5	40,6	46,5	47	55	55
K	8	9	10	11	12	14	17	19	19
R*	5,5	5,5	5,5	8	8	8	8	12	12
W	20	20	22,45	25,7	26,5	30	35	38	48
approx. kg	4	6	10	18	29	54	88	145	240

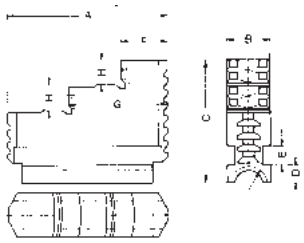
* from Ø 200 hexagon

Max. permissible speeds for chucks ES to DIN 6351

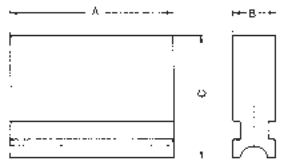
The specified values are only applicable for workpieces not exceeding a specific unbalance of 25 gmm/kg.

Size	3-Jaw Steel body	4-Jaw Steel body
100	-	-
125	-	-
160	3200	2850
200	2650	2350
250	2200	1900
315	1400	1220
400	1400	1220
500	880	770
630	750	660

Reversible jaw **UB**



Left-hand thread



Size	100	125	160	200	250	315	400	500	630
A	56	56	69	85	90	130	130	190	190
B	18	18	20	24	24	34	34	42	42
C	41,5	41,5	50	57,5	67,5	79,5	79,5	95	95
D	8,7	8,7	9,7	9,7	9,7	11,15	11,15	15	15
E	7	7	8	10	10	15	15	15	15
F	17	17	19	25	26	40	40	50	50
G	35	35	43	54	56	85	85	120	120
H	8	8	10	12	14	15	15	20	20
Thread	Tr14x3	Tr14x3	Tr16x4	Tr18x2	Tr18x2	Tr20x2	Tr20x2	Tr26x3	Tr26x3
approx. kg	0,18	0,18	0,3	0,53	0,7	1,7	1,7	3,7	3,7

KRF - actuation by turning the clamping ring

APPLICATION

3- and 4-jaw chuck for positioning and conveying workpieces, e.g. on measuring machines.

TYPE

Lever scroll chuck in cast iron version.
3-jaw and 4-jaw version.

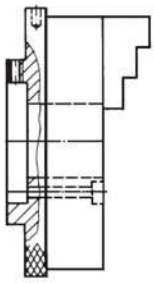
CUSTOMER BENEFITS

- Easy clamping of the workpiece by turning the clamping ring
- Sizes 125 - 200: incl. 4 setscrews for fine adjustment
- Cast iron body
- Jaws in chuck ground out for concentricity

TECHNICAL FEATURES

- 6 jaw chuck for grinding twist drills on request available

A09
Lever scroll chuck KRF, cylindrical centre mount

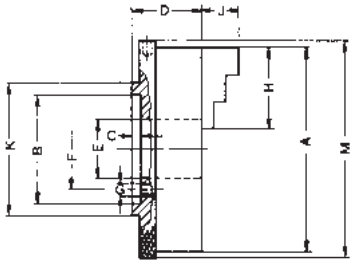


Size	ZA	Through-hole mm	**3-jaw chuck with inside and outside jaw**	**4-jaw chuck with inside and outside jaw**	Torque Nm	Total clamping force kN
70	48	16	**148793**[1)]	**148794▲**	12	2,5
110	75	26	**148757**	**148772**	26	3,2
125	70	35	**150757**	**150758▲**	36	3,5
160	78,5	52	**150759**	**150760▲**	50	4
200	115	64	**150761**	**150762▲**	60	4,5

[1)] Jaws reversible
Sizes 125 - 200: 4 setscrews for fine adjustment
Further sizes and mountings available on request

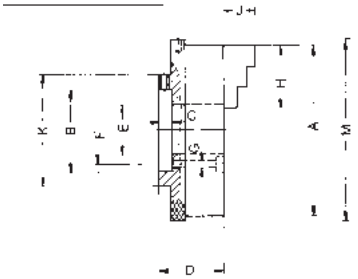
Dimensions KRF, cylindrical centre mount

A	B^{H6}	C	D	F	3-jaws G	4-jaws G	H	J	K	M	Clamping range external	Clamping range internal	Weight ca. kg 3-jaws	Weight ca. kg 4-jaws
70	48	1,5	33	39	3xM6	3xM6	32	13,6	52	72	2-70	23-70	1	1,4
110	75	2	38	62	3xM8	3xM8	48	19	85	112	3-110	33-104	3	3,4
125	70	8	53	56	3xØ6,6	4xØ6,6	52	22,5	83	129	3-125	37-123	4	4,5
160	78,5	8	52	65	3xØ6,6	4xØ6,6	61	26,6	96	164	3-160	39-152	7	7,5
200	115	13	66	84	3xØ9	4xØ9	69	31	147	205	4-200	44-186	13	14



Size 70-100

4 setscrews for fine adjustment



KRF - on base plate

APPLICATION

3-jaw chuck with base plate for positioning and conveying workpieces, e.g. on measuring machines.

TYPE

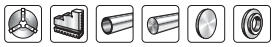
Lever scroll chuck in cast iron version.

CUSTOMER BENEFITS

- Easy clamping of the workpiece by turning the clamping ring
- Sizes 125 - 200: incl. 4 setscrews for fine adjustment
- Cast iron body

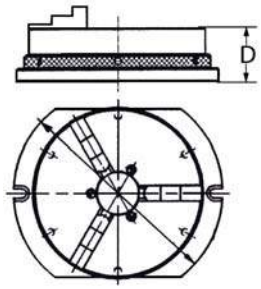
TECHNICAL FEATURES

- Mounted in the chuck with one set of jaws stepped outward (BB)
- One set of jaws stepped inward (DB)
- Size 70 with reversible jaws
- Mounting screws



A09

Lever scroll chucks with base plate, 3-jaw-chuck cast iron body



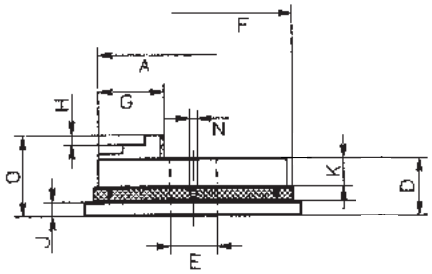
Item no.	Size	Through-hole mm	D mm	Torque Nm	Total clamping force kN
150595[1)]	70	16	46,4	12	2,5
150596	110	26	50	26	3,2
150597▲	125	35	59	36	3,5
150598▲	160	52	59	50	4
150599	200	64	69	60	4,5

[1)] Jaws reversible

Further sizes and mountings available on request

Dimensions KRF, cylindrical centre mount

Size	A_1	B	C	F	G	H	J	K	M	N	O	Clamping range external	internal
70	100	70	87	72	32	5	13	21	9	6	60	2-70	23-70
110	140	110	126	112	48	6	13	23	9	8	67,5	3-110	33-104
125	170	125	154	129	52	8	14	32	11	8	81,5	3-125	37-123
160	200	160	184	164	61	10	15	31	11	8	85	3-160	39-152
200	250	200	230	205	69	10	15	39	11	8	100	4-200	44-186



Jaws KRF

A09
Inside jaw BB, DIN 6350, outward stepped jaw, hardened

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
70	**110154**[1)]▲	**149305**▲	32	23	10
110	**110156**	**110064**	48	33,5	14
125	**110157**	**110065**	52	41,5	18
160	**110159**	**110067**	61	47,5	18
200	**110160**	**110068**	69	53,5	20

[1)] Reversible for use a turning or inside jaw
Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Outside jaw DB, DIN 6350, inward stepped jaw, hardened

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
70/110	**110166**	**110074**	48	33,5	14
125	**110167**	**110075**	52	41,5	18
160	**110169**	**110077**	61	47,5	18
200	**110170**	**110078**	69	53,5	20

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Unstepped jaw BL, DIN 6350, unstepped, soft, material 16MnCr5

Chuck Size	3-jaw set	4-jaw set	Jaw length mm	Jaw height mm	Jaw width mm
70	**109114**[1)]▲	**149304**▲[1)]	32	23	10
110	**107589**	**107599**	48	33,5	14
125	**107590**	**107600**	52	41,5	18
160	**107592**	**107602**	61	47,5	18
200	**107593**	**107603**	69	53,5	20

[1)] Reversible

Accessories KRF

A09 **Chip guard, piece**

Item no.	Size	Contents of delivery
108501	100/110	piece
108502	125	piece
108503	140/160	piece
108504	200	piece

A09 **Special grease** F80 for **lathe chucks**
For lubrication and conservation of chucking power

Item no.	Design	Contents
308555	Cartridge (DIN 1284) Ø 53.5x235mm	0,5 kg
028975	Tin	1 kg

C15 **Grease gun DIN1283**

Item no.	Connec-tion	Contents of delivery
329093	M10x1	150 mm nozzle tube bent, needlepoint mouthpiece, top mouthpiece, 300 mm high pressure hose with 4 jaw hydraulics cross mouthpiece

Notes

BAV

APPLICATION

For turning out unhardened and grinding out hardened jaws. Adjusting jaws reversible and infinitely variably adjustable.

TYPE

Lightweight design.

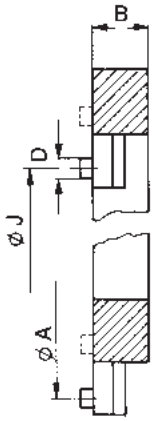
CUSTOMER BENEFITS

- Using the BAV, the chuck can be put into the status it assumes later during workpiece machining (preclamping) within a few seconds
- The turned clamping surfaces of the chuck jaws are thus form-fit and exactly concentric in the clamped state
- Bypassing a large clamping range

TECHNICAL FEATURES

- Only applicable with base jaws (GB) and top jaws (AB)

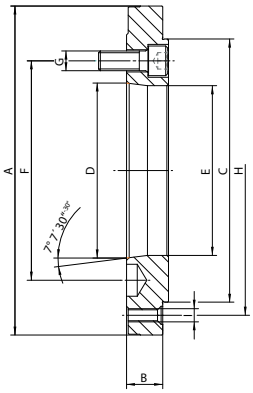
A09
Jaw cutting attachment for **3-jaw chucks**



Item no.	Size	For chuck size	Clamping force max. kN	External Ø mm	Inner Ø mm	Overhang distance		B	Thread	Weight approx. kg
						Ø J	Ø A			
220206	0	125	15	153	110	50-115	150-215	20	M5	1,6
220207	1	200	30	176	110	35-125	170-260	31	M8	3,4
220208	2	250	30	215	135	70-140	215-285	31	M8	5
220209	3	250	30	244	162	100-175	240-315	31	M8	5,7
220210	4	315	30	290	208	145-215	290-360	31	M8	6,9
220211 ▲	5	400	40	342	260	160-270	330-440	31	M10	8,5

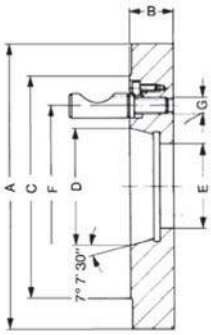
Adapter plates

A09
Short-taper adapter plate for **ISO 702-1** (DIN 55026), finished on both sides (without mounting bolts)



Item no.	Ø A mm	Taper	B mm	C mm	D mm	E mm	F mm	G	H mm	I	Weight approx. kg
182900 ▲	140	3	17	95	53,975	51,20	70,60	M10	108/120	3x/6x M8	1,4
182902 ▲	140	4	21	95	63,513	61,00	82,60	M10	108/120	3x/6x M8	1,55
182904 ▲	140	5	21	95	82,563	79,60	104,80	M10	108/120	3x/6x M8	1,4
182906 ▲	165	6	25	95	106,375	80,00	133,40	M12	108/120	6x M8	2,7
182908 ▲	160	4	18	125	63,513	61,00	82,60	M10	140	6x M10	2,5
182910 ▲	160	5	18	125	82,563	79,60	104,80	M10	140	6x M10	2,2
182912 ▲	165	6	25	125	106,375	103,20	133,40	M12	140	6x M10	2,5
182914 ▲	210	8	32	125	139,719	100,00	171,40	M16	140	6x M10	5,8
182916 ▲	200	4	18	160	63,513	61,00	82,60	M10	176	6x M10	5
182918 ▲	200	5	18	160	82,563	79,60	104,80	M10	176	6x M10	3,9
182920 ▲	200	6	22	160	106,375	103,20	133,40	M12	176	6x M10	4,1
182922 ▲	210	8	32	160	139,719	136,20	171,40	M16	176	6x M10	5
182924 ▲	250	5	21	200	82,563	79,00	104,80	M10	224	3x M12	7,7
182926 ▲	250	6	26	200	106,375	103,00	133,40	M12	224	3x M12	8,7
182928 ▲	250	8	30	200	139,719	136,20	171,40	M16	224	3x M12	7,3
182930 ▲	315	6	24	260	106,375	103,00	133,40	M12	286	3x M12	14,5
182932 ▲	315	8	30	260	139,719	136,00	171,40	M16	286	3x M12	16
182934 ▲	315	11	42	260	196,869	192,90	235,00	M20	286	3x M12	16,2
182936 ▲	400	6	32	330	106,375	103,00	133,40	M12	362	3x M16	30,8
182938 ▲	400	8	32	330	139,719	136,00	171,40	M16	362	3x M16	29
182940 ▲	400	11	38	330	196,869	192,90	235,00	M20	362	3x M16	29,7
182942 ▲	400	15	49	330	285,775	281,50	330,00	M24	362	3x M16	24,5
182944 ▲	500	8	36	420	139,719	136,20	171,40	M16	458	6x M16	53,1
182946 ▲	500	11	36	420	196,869	192,90	235,00	M20	458	6x M16	49
182948 ▲	500	15	46	420	285,775	281,50	330,00	M24	458	6x M16	49,5
182950 ▲	630	11	42	545	196,869	192,90	235,00	M20	586	6x M16	100
182952 ▲	630	15	43	545	285,775	281,50	330,00	M24	586	6x M16	90
182954 ▲	630	20	42	545	412,775	408,00	463,60	M24	586	6x M16	63

A09
Short-taper adapter plate ISO 702-2 (DIN 55029) and **ASA B 5.9 D1,** Camlock



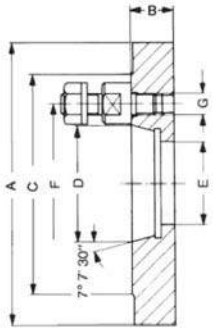
Item no.	Ø A mm	Taper	Inch	B mm	C mm	D mm	E mm	F mm	G	Weight approx. kg
319673 ▲	125	3	5	27	92,1	53,975	40	70,66	7/16 - 20	2,3
319674 ▲	125	4	5	28	117,5	63,513	40	82,55	7/16 - 20	2,2
319675 ▲	160	3	6 ¼	27	92,1	53,975	40	70,66	7/16 - 20	3,9
319676 ▲	160	4	6 ¼	28	117,5	63,513	40	82,55	7/16 - 20	3,9
319677 ▲	160	5	6 ¼	31	146	82,563	40	104,8	½ - 20	4,6
319678 ▲	200	4	8	28	117,5	63,513	50	82,55	7/16 - 20	6,4
319679 ▲	200	5	8	31	146	82,563	50	104,8	½ - 20	7,4
319680	200	6	8	36	181	106,375	50	133,4	5/8 - 18	8,4
319681 ▲	250	4	1	28	117,5	63,513	61	82,55	7/16 - 20	10,2
319682 ▲	250	5	10	31	146	82,563	63	104,8	½ - 20	11,6
319683	250	6	10	36	181	106,375	63	133,4	5/8 - 18	13,3
319684	250	8	10	39	225,4	139,719	63	171,4	¾ - 16	13,8
319685 ▲	315	5	12 ¼	31	146	82,563	63	104,8	½ - 20	18,6
319686 ▲	315	6	12 ¼	36	181	106,375	63	133,4	5/8 - 18	21,5
319687 ▲	315	8	12 ¼	39	225,4	139,719	63	171,4	¾ - 16	22,6
319688 ▲	315	11	12 ¼	45	298,4	196,869	63	235	7/8 - 14	25,2
319689 ▲	400	6	15 ¾	36	181	106,375	63	133,4	5/8 - 18	35
319690 ▲	400	8	15,75	39	225,4	139,719	63	171,4	¾ - 16	37,2
319691 ▲	400	11	15,75	45	298,4	196,869	63	235	7/8 - 14	42
319692 ▲	400	15	15,75	50	403	285,775	63	330,2	1 - 14	42,1
319693 ▲	500	8	20	41	225,4	139,719	80	171,4	¾ - 16	62
319694 ▲	500	11	20	45	298,4	196,869	80	235	7/8 - 14	67
319695 ▲	500	15	20	50	403	285,775	80	330,2	1 - 14	68

Further sizes and designs, such as ISO 702-1, available on request!

Adapter plates

A09

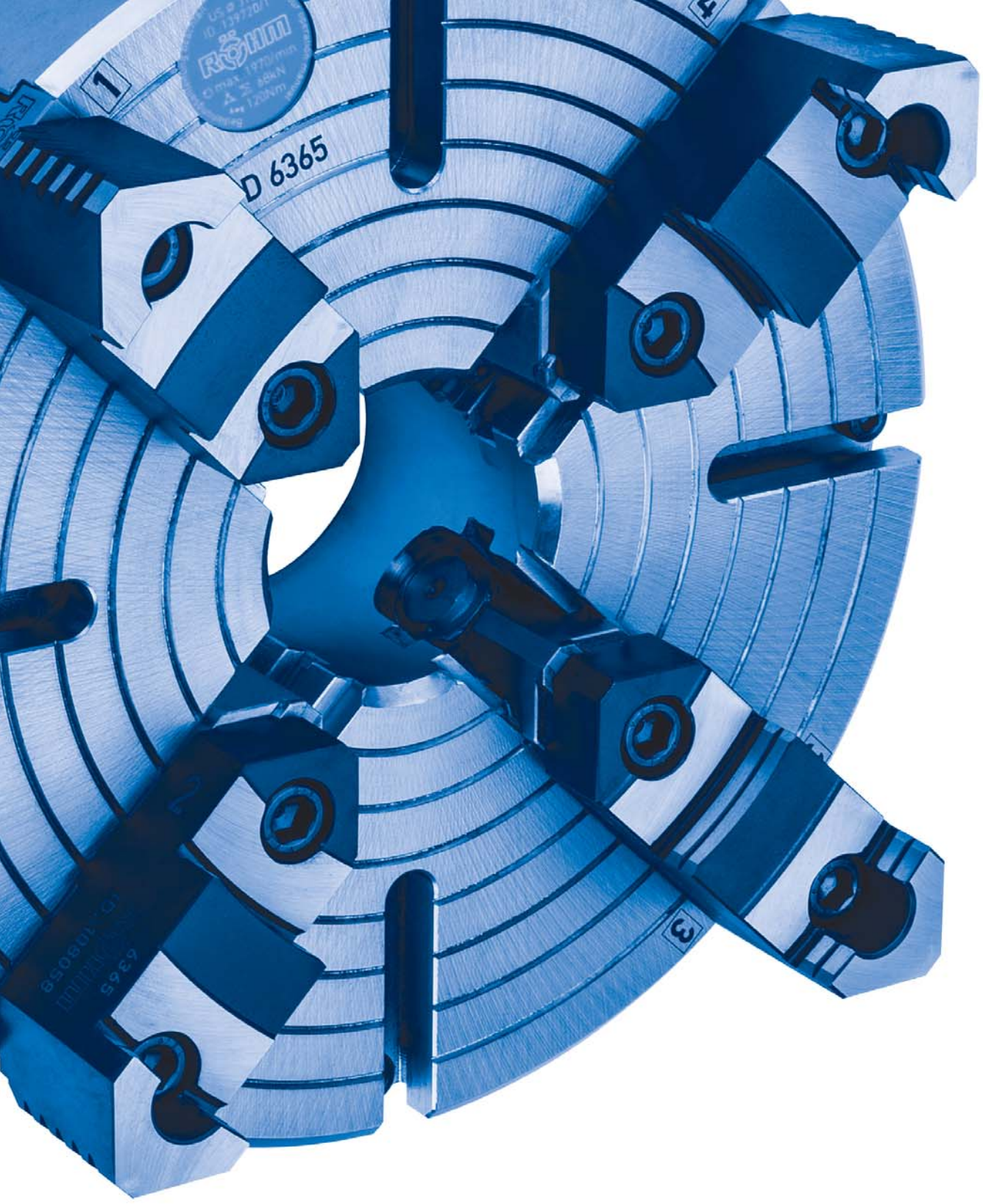
Short-taper adapter plate ISO 702-3 (DIN 55027) and 55022 with studs and locknuts



Item no.	Ø A mm	Taper	Inch	B mm	C mm	D mm	E mm	F mm	G	Weight approx. kg
319650 ▲	125	3	5	19	102	53,975	40	75	M10	2,3
319651 ▲	125	4	5	19	112	63,513	40	85	M10	2,2
319652 ▲	160	3	6 ¼	21	102	53,975	40	75	M10	3,9
319653 ▲	160	4	6 ¼	21	112	63,513	40	85	M10	3,9
319654	160	5	6 ¼	21	135	82,563	40	104,8	M10	4,6
319655 ▲	200	4	8	21	112	63,513	50	85	M10	6,4
319656	200	5	8	21	135	82,563	50	104,8	M10	7,4
319657	200	6	8	23	170	106,375	50	133,4	M12	8,4
319658 ▲	250	4	1	21	112	63,513	61	85	M10	10,2
319659 ▲	250	5	10	21	135	82,563	63	104,8	M10	11,6
319660	250	6	10	23	170	106,375	63	133,4	M12	13,3
319661	250	8	10	26	220	139,719	63	171,4	M16	13,8
319662 ▲	315	5	12 ¼	26	135	82,563	63	104,8	M10	18,6
319663 ▲	315	6	12 ¼	26	170	106,375	63	133,4	M12	21,5
319664	315	8	12 ¼	26	220	139,719	63	171,4	M16	22,6
319665 ▲	315	11	12 ¼	33	290	196,869	63	235	M20	25,2
319666 ▲	400	6	15 ¾	31	170	106,375	63	133,4	M12	35
319667 ▲	400	8	15,75	31	220	139,719	63	171,4	M16	37,2
319668 ▲	400	11	15,75	31	290	196,869	63	235	M20	42
319669 ▲	400	15	15,75	33	400	285,775	63	330,2	M24	42,1
319670 ▲	500	8	20	41	220	139,719	80	171,4	M16	62
319671 ▲	500	11	20	41	290	196,869	80	235	M20	67
319672 ▲	500	15	20	41	400	285,775	80	330,2	M24	68

Further sizes and designs, such as ISO 702-1, available on request!

Notes



JAWS INDIVIDUALLY ADJUSTABLE

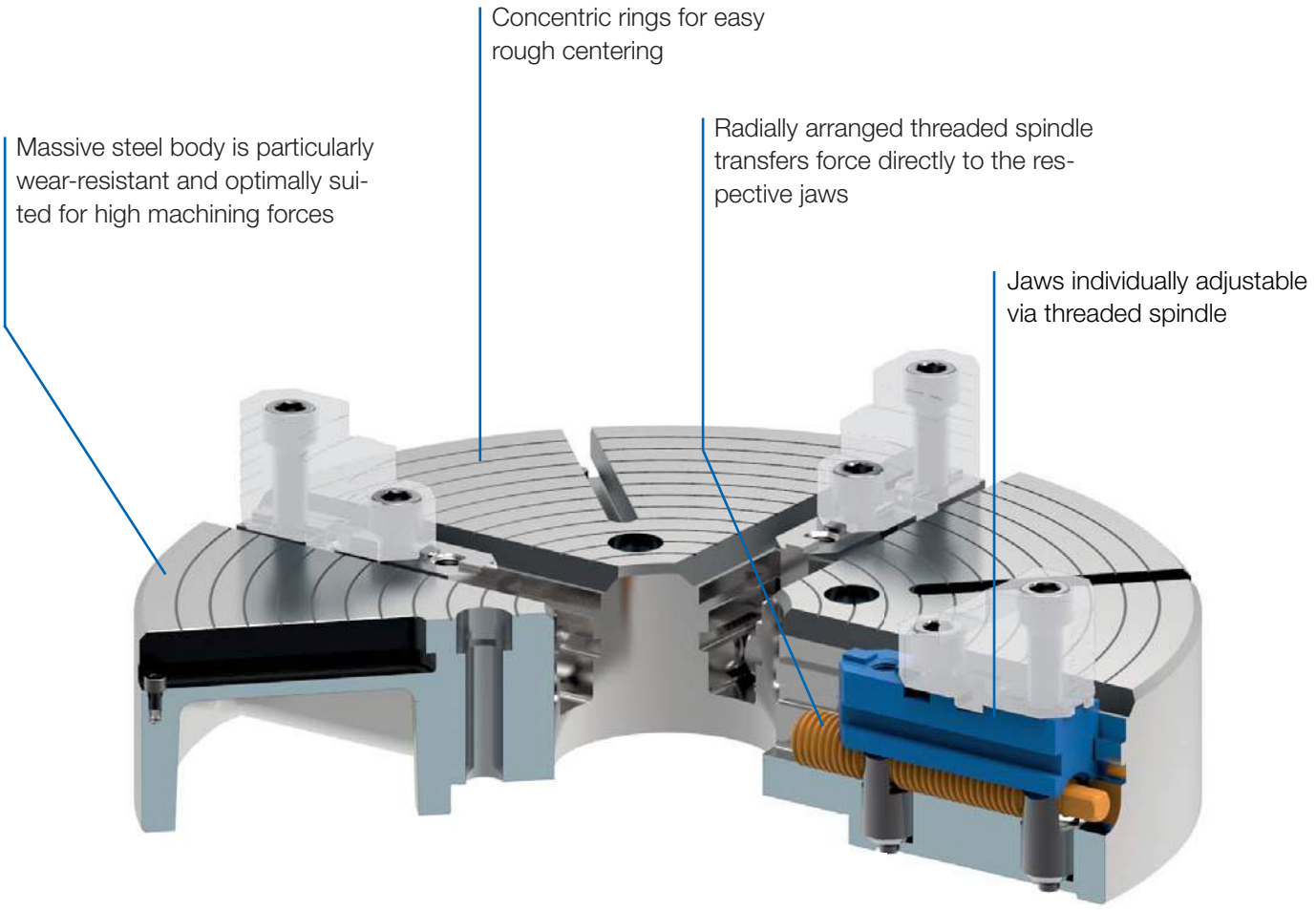
The four jaws can be independently adjusted via the threaded spindle, thereby allowing the safe and secure clamping of irregular, regular, as well as round workpieces.

INDEPENDENT CHUCKS

Independent chucks from RÖHM are particularly successful and effective when force has top priority. Due to the increased rigidity and optimal wear behavior, they are especially suitable for the initial machining of irregular, regular and round workpieces and make high machining forces and a longer machine service life possible.

ADVANTAGES AT A GLANCE

- Safe and easy clamping of irregular, regular, as well as round workpieces by four independently adjustable jaws
- Easy rough centering by means of concentric rings on the chuck body
- Direct force transfer through radially arranged threaded spindles



USE - USU - individually adjustable jaws

APPLICATION

Clamping chucks for lathes on which large, heavy or irregularly shaped workpieces are clamped.

TYPE

Independent 4-jaw chuck in steel design. Jaws individually adjustable via threaded spindle (no central drive). Starting from size 315 with T-slots. Starting from size 1100 with T-slots and set-up slots.

CUSTOMER BENEFITS

- Concentric rings for visual rough centering, fine centering using dial gauge

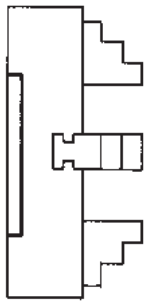
TECHNICAL FEATURES

- Steel design incl. clamping wrench and fastening screws, as well as 1 set of reversible or base and top jaws

USE = individually adjustable jaws, steel, one-piece jaws

USU = individually adjustable jaws, steel, reversible top jaws

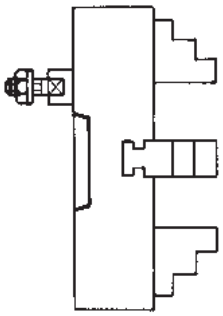
A26
Cylindrical centre mount (without mounting bolts)



Size	With one-piece reversible jaws	With base jaws and top jaws	Through-hole mm	Speed max. min^{-1}	Torque Nm	Clamping force/ jaw kN
260	**139781** ▲	**137147** ▲	70	2350	120	17
310	**139796** ▲	**139720** ▲	75	1970	120	17
400	**139827** ▲	**135368** ▲	95	1530	170	23
450	**139842** ▲	**136944** ▲	95	1360	170	23
500	**139857** ▲	**135631** ▲	95	1220	170	23
630	**139887** ▲	**139723** ▲	135	970	240	37
710	**140800** ▲	**141097** ▲	135	860	240	37
800	**140801** ▲	**141106** ▲	190	765	300	45

Further sizes and mountings available on request

A26
ISO 702-3 (DIN 55027), DIN 55022, with studs and locknuts, optional DIN 55021 with set screw and nut



Size	Mount short taper	With one-piece reversible jaws	With base jaws and top jaws	Through-hole mm	Speed max. min^{-1}	Torque Nm	Clamping force/ jaw kN
260	4	**139782** ▲	**137163** ▲	61	2350	120	17
260	5	**139783** ▲	**137164** ▲	70	2350	120	17
260	6	**139784** ▲	**137165** ▲	70	2350	120	17
310	5	**139797** ▲	**139724** ▲	75	1970	120	17
310	6	**139798** ▲	**139725** ▲	75	1970	120	17
310	8	**139799** ▲	**139726** ▲	75	1970	120	17
400	6	**139828** ▲	**135371** ▲	95	1530	170	23
400	8	**139829** ▲	**135372** ▲	95	1530	170	23
400	11	**139830** ▲	**135358** ▲	95	1530	170	23
450	6	**139843** ▲	**136947** ▲	95	1360	170	23
450	8	**139844** ▲	**136948** ▲	95	1360	170	23
450	11	**139845** ▲	**136957** ▲	95	1360	170	23
500	6	**139858** ▲	**135632** ▲	95	1220	170	23
500	8	**139859** ▲	**135633** ▲	95	1220	170	23
500	11	**139860** ▲	**135696** ▲	95	1220	170	23
630	8	**139888** ▲	**139767** ▲	136	970	240	37
630	11	**139889** ▲	**139768** ▲	136	970	240	37
630	15	**139890** ▲	**139769** ▲	136	970	240	37
710	8	**141088** ▲	**141098** ▲	136	860	240	37
710	11	**141089** ▲	**141099** ▲	136	860	240	37
800	8	**141092** ▲	**600638** ▲	200	765	300	45
800	11	**141093** ▲	**141107** ▲	192	765	300	45

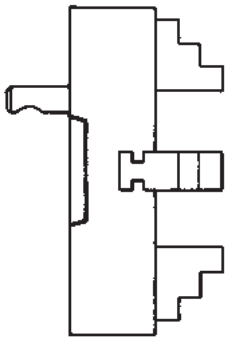
Further sizes and mountings available on request

USE - USU - individually adjustable jaws

Size	Mount short taper	With one-piece reversible jaws	With base jaws and top jaws	Through-hole mm	Speed max. min^{-1}	Torque Nm	Clamping force/ jaw kN
800	15	**141094▲**	**141108▲**	192	765	300	45
900	11	-	**600639▲**	190	680	300	45
900	15	-	**600641▲**	190	680	300	45
1000	11	-	**141115▲**	190	610	320	47
1000	15	-	**141116▲**	190	610	320	47
1000	20	-	**600645▲**	190	610	320	47
1100	11	-	**150500▲**	190	555	320	47
1100	15	-	**600642▲**	190	555	320	47
1100	20	-	**600646▲**	190	555	320	47
1200	11	-	**150501▲**	190	510	450	64
1200	15	-	**600643▲**	190	510	450	64
1200	20	-	**600647▲**	190	510	450	64

Further sizes and mountings available on request

A26
ISO 702-2 (DIN 55029), ASA B 5.9, type D, with studs for Camlock



Size	Mount short taper	With one-piece reversible jaws	With base jaws and top jaws	Through-hole mm	Speed max. min^{-1}	Torque Nm	Clamping force/ jaw kN
260	4	**139791▲**	**137166▲**	60	2350	120	17
260	5	**139792▲**	**137254▲**	70	2350	120	17
260	6	**139793▲**	**137255▲**	70	2350	120	17
310	5	**139806▲**	**139733▲**	75	1970	120	17
310	6	**139807▲**	**139734▲**	75	1970	120	17
310	8	**139808▲**	**139735▲**	75	1970	120	17
400	6	**139837▲**	**135375▲**	95	1530	170	23
400	8	**139838▲**	**135376▲**	95	1530	170	23
400	11	**139839▲**	**135359▲**	95	1530	170	23
450	6	**139852▲**	**136951▲**	95	1360	170	23
450	8	**139853▲**	**136952▲**	95	1360	170	23
450	11	**139854▲**	**136955▲**	95	1360	170	23
500	6	**139867▲**	**135703▲**	95	1220	170	23
500	8	**139868▲**	**135704▲**	95	1220	170	23
500	11	**139869▲**	**135705▲**	95	1220	170	23
630	8	**139897▲**	**139776▲**	136	970	240	37
630	11	**139898▲**	**139777▲**	136	970	240	37
630	15	**139899▲**	**139778▲**	136	970	240	37
710	8	**140804▲**	**141102▲**	136	860	240	37
710	11	**140805▲**	**141103▲**	136	860	240	37
710	15	-	**141418**	136	860	240	37
800	11	**140810▲**	**141418▲**	192	765	300	45
800	15	**140811▲**	**141112**	192	765	300	45
900	11	-	**600660▲**	190	680	300	45
900	15	-	**600661▲**	190	680	300	45
1000	11	-	**141119▲**	190	610	320	47
1000	15	-	**141120▲**	190	610	320	47
1000	20	-	**600665▲**	190	610	320	47
1100	11	-	**150504▲**	190	555	320	47
1100	15	-	**600662▲**	190	555	320	47
1100	20	-	**600666▲**	190	555	320	47
1200	11	-	**150505▲**	190	510	450	64
1200	15	-	**600663▲**	190	510	450	64
1200	20	-	**600667▲**	190	510	450	64

Further sizes and mountings available on request

Jaws USE - USU

A09
Reversible jaw EB, 4-jaw set, hardened tongue and groove for external and internal clamping, material 16 MnCr5

Item no.	Chuck Size	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
022985	260	set	85	64	35
022986	310	set	94	66	35
163108▲	400/450	set	112	80	40
163109▲	500	set	136	88	40
175358▲	630/710	set	172	108	45
247823▲	800	set	185	130	60

A09
Base jaw GB, 4-jaw set, with fixing screw

Item no.	Chuck Size	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
304656▲	260	set	91	40,1	35
304657▲	310	set	107	40,1	35
304658▲	400/450	set	126	47,1	40
304659▲	500	set	164,4	47,1	40
304660▲	630	set	165	51,1	45
304661▲	710	set	202	51,1	45
304662▲	800/900/1000/1100	set	240	61,1	60
150543▲	1200	set	350	92,2	70

A09
Reversible top jaws UB DIN 6350, hardened, tongue and groove for external and internal clamping, material 16 MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
108057	260	4	set	95,3	52,5	36
108058	310	4	set	109,5	57,5	42
108059	400/450	4	set	127	64,5	42
108060	500/630/710	4	set	127	79,5	50
105085	800/900	4	set	210	89	68
105101	1000/1100/1200	4	set	210	110	68

Additionally or later applied, hardened stepped jaws must be ground out in the chuck.
For jaws which are applied later, send in the chuck.

A09
Unstepped top jaw AB DIN 6350, 4-jaw set, soft, material 16MnCr5

Item no.	Chuck Size	Number of jaws	Contents of delivery	Jaw length mm	Jaw height mm	Jaw width mm
107579	260	4	set	103	53	36,5
107580	310	4	set	120	58	42,5
107581	400/450	4	set	137	65	42,5
107582	500/630/710	4	set	140	80	50,5
105105	800/900	4	set	210	89	68
105109	1000/1100/1200	4	set	210	110	68

Accessories USE - USU

A26
Adjusting spindle

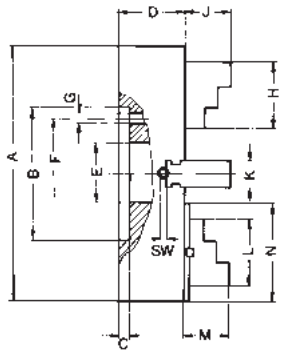
Item no.	Size	Square	Hexagon
169142▲	260	10	-
166565▲	310	10	-
162110▲	400	13	-
162121▲	450	13	-
161629▲	500	13	-
161611▲	630	16	-
161583▲	710	16	-
247826▲	800	18	-
150544▲	900	18	-
150545▲	1000	18	-
150546▲	1100	18	-
149776▲	1200	-	24

A26
Safety key

Item no.	Size	Square	Hexagon
160096▲	260/310	10	-
160097▲	400	13	-
160098▲	450/500	13	-
160099▲	630/710	16	-
160100▲	800/900/1000/1100	18	-
150548▲	1200	-	24

Chuck dimensions USE - USU

Cylindrical centre mount



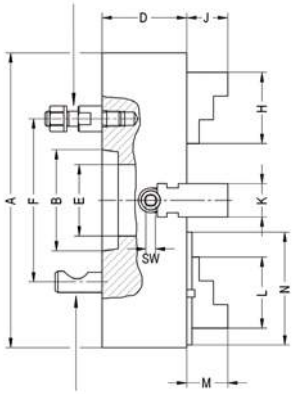
Size A		260	310	400	450	500	630	710	800
B^{H8}		130	130	210	210	210	260	260	370
C		8	8	18	18	18	18	18	18
D	USE - USU	85	95	112,5	112,5	112,5	122,5	132,5	145
E	USE - USU	70	75	95	95	95	135	135	180
F		105	105	175	175	175	220	220	330
G		4x13,5	4x13,5	4x17	4x17	4x17	4x20,5	4x20,5	8x22
H		85	94	112	112	136	172	172	185
J		34	35	41,5	42	50	55,5	55,5	80
K		35	35	40	40	40	45	45	60
L		80	87	105	114	126	140	165	210
M		56,5	60,5	54	54	69	69	69	91
N		100	105	125	135	145	165	185	240
SW		10	10	13	13	13	16	16	18
approx. kg		23	32	52	76	91	150	190	270

1) Outer hexagon

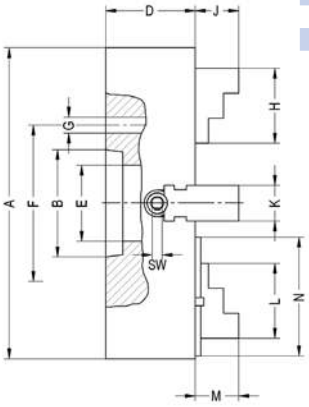
Short taper mount

DIN 55021 with setscrews and locknuts

DIN 55027 with studs and nuts



DIN 55029 with studs for camlock



DIN 55026 mounting from front

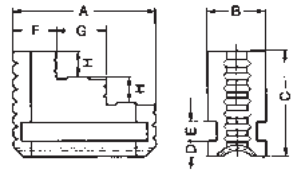
Size A		260			310			400			450			500			630		
Taper size		4[1]	5[2]	6	5	6	8	6	8	11	6	8	11	6	8	11	8	11	15
B		63,5	82,5	106,4	82,5	106,4	139,7	106,4	139,7	196,9	106,4	139,7	196,9	106,4	139,7	196,9	139,7	196,9	285,8
D		75			82			112,5			112,5			112,5			122,5		
E		61	70	70	75			95			95			95			135		
F	DIN	85	104,8	133,4	104,8	133,4	171,4	133,4	171,4	235	133,4	171,4	235	133,4	171,4	235	171,4	235	330,2
	Camlock	82,6																	
G		11	11	14	11	14	18	14	18	22	14	18	22	14	18	22	18	22	26
H		85			94			112			112			136			172		
J		34			35			42			42			50			55,5		
K	USE	35			35			40			40			40			45		
	USU	36			42			42			42			50			50		
L		95,3			109,5			127			127			127			127		
M		56,5			60,5			54			54			69			69		
N		91			107			126			126			164,4			165		
SW		10			10			13			13			13			16		
approx. kg		23			32			52			76			91			150		

Size A		710			800		
Taper size		8	11	15	8	11	15
B		139,7	196,9	285,8	139,7	196,9	285,8
D		132,5			145		
E		135			180		
F		171,4	235	330,2	171,4	235	330,2
G		18	22	26	18	22	16
H		172			185		
J		55,5			80		
K	USE	45			60		
	USU	68			68		
L		210			210		
M		69			91		
N		202			240		
SW		16			18		
approx. kg		190			270		

1) Not for DIN 55021 or A1/A2 inch
2) Not for A1/A2 inch

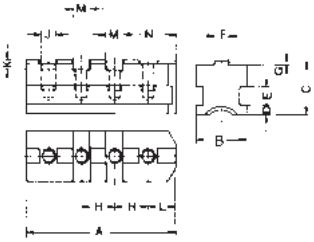
Jaw dimensions USE - USU

Reversible one-piece jaw EB



Size	260	310	400	450	500	630	710	800
A	85	94	112		136	172		185
B	35	35	40		40	45		60
C	64	66	80		88	108		130
D	10	10	10		10	12		14
E	12	12	14		14	14		18
F	27	30	36		42	52		55
G	29	32	38		46	60		65
H	14	15	19		23	26		30
approx. kg	0,8	0,9	1,6		2,25	3,5		4,2

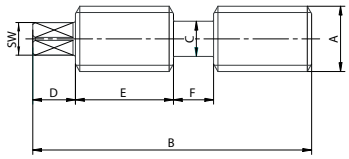
Base jaw GB



Size	260	310	400	450	630	710	800
A	91	107	126		165	202	240
B	35	35	40		45	45	60
C	40,1	40,1	47,1		51,1	51,1	61,1
D	10	10	10		12	12	14
E	12	12	14		14	14	18
F	12,7	12,7	12,7		12,7	12,7	12,7
G	3,1	3,1	3,1		3,1	3,1	3,1
H	54	63,5	76,2		38,1	38,1	38,1
J	M12	M12	M16		M20	M20	M20
K	7,6	7,6	10,8		10,8	10,8	10,8
L	21,2	24,4	27,5		27,5	27,5	27,5
M	19,03	19,03	19,03		19,03	19,03	19,03
N	38,7	46,6	56,1		56,1	56,1	56,1
Grooves	1	1	1		2	3	4
Tapped holes	2	2	2		4	5	6
approx. kg	0,8	0,9	1,1		1,4	2,2	2,8

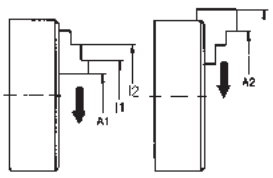
Reversible top jaw UB and unstepped top jaw

Adjusting spindle



Size	260	310	400	450	500	630	710	800	900	1000	1100	1200
A	26	26	30	30	30	34	34	40	40	40	40	48
B	92	111	145	170	170	215	255	260	310	343	393	425
C	14	14	16	16	16	20	20	22	22	22	22	28
D	14	17	38	38	41	48	48	48	48	48	48	65
E	27,5	39	55	70	62	95	105	127	177	201	251	210
F	16	16	20	20	20	20	20	24	24	24	24	30
SW	10	10	13	13	13	16	16	18	18	18	18	24 [1]

[1] With outer hexagon



Chucking capacities of jaw steps (standard values)

Size mm	260	310	400	450	500	630	710	800
A1 min.	20	20	35	40	40	60	130	190
A2 max.	260	295	400	450	500	585	690	800
l1 min.	75	80	90	100	145	145	245	170
l2 max.	260	310	360	450	520	650	730	820
max. swing. dia.	305	355	465	510	610	675	785	870

F-senso chuck clamping force measuring device

APPLICATION

Suitable for 3 jaw chucks and vices.
The F-senso clamping force measurement device enables you to check the clamping force as well as the rotational speed of your clamping tools.
The centrifugal behavior is thus directly related to the accompanying software evaluated.

TYPE

- Broad clamping range of 75 - 175 mm through interchangeable pressure pins
- Broad measuring range from 0 - 100 kN per jaw
- Dynamic clamping force measurement under rotation up to 8250 rpm
- Real-time data transmission via Bluetooth to included tablet
- Delivered in the practical hard-shell case

TECHNICAL FEATURES

- No additional attachments necessary on the machine
- Easy positioning through positioning aid
- Automated switch-off

Video F-senso chuck

ADVANTAGES AT A GLANCE

- Direct output of the centrifugal force behavior through combined measurement of clamping force and speed
- Flexibility through large clamping and measuring range
- Easy handling without additional set-ups on the machine

Included in the scope of delivery:
- Base with foam insert
- Clamping force measuring head, F-senso chuck
- Pressure bolts in lengths 5 mm, 15 mm, 25 mm and 30 mm
- Pressure bolt elongation in length 25 mm
- Practical insertion aid
- Tablet PC with pre-installed measuring and evaluation program

C 15
Clamping force measurement device F-senso chuck

Id.-Nr.	179800
Measuring range / Clamping force kN	2 jaws: 0 - 200; 3 jaws: 0 - 300
Measuring range / Rotation speed min-1	0 - 8250
Accuracy	Force <0.5% / Rotation speed ±10 rpm within the complete measuring range
Clamping Ø mm	75 - 175
Dimensions (base unit)	Ø 75/80 x 130

EASYLOCK zero point clamping system

Palletising systems such as the EASYLOCK zero point clamping system from RÖHM achieve a considerable productivity increase. This modular system meets the requirements of customer-specific solutions with the best-possible utilisation of machine capacity. Although the machine tool had to stop for the set-up time until now, the workpiece can now be clamped and positioned on the pallet outside the machine tool. The set-up time is now only limited to loading and unloading the pallet, which happens in seconds. If multiple manufacturing processes are necessary for machining, then the pallet including the workpiece can be used without zero point loss. Due to the robust and rust-resistant construction, EASYLOCK zero point clamping can be used throughout, starting with machining up to the measuring machines.

THE BENEFITS AT A GLANCE

INCREASED PRODUCTIVITY

- Free machine capacity through reduction of set-up time by up to 90%
- Very rapid change of workpiece and clamping fixtures on tilt-free clamping and positioning with long insert

HIGH PRECISION

- Repeat accurancy of < 0.005 mm thanks to precision balls
- Positive-locking self-inhibition unaffected by tensile and lateral forces

HIGHEST MODULARITY

- Modular base carrier design variants for maximum flexibility
- Flexible extension options

The pin system

HOW IT WORKS

With the RÖHM EASYLOCK zero point clamping system, the clamping pin is the interface between the machine table and the workpiece or fixture. The exact positioning guarantees secure clamping. At the same time the resulting machining forces are transferred via the clamping pin to the pressure cup. The high-precision pressure cups of the EASYLOCK system ensure an absolutely secure hold of the workpiece or fixture. The high locking and holding forces make the system suitable for all kinds of use.

Machining with EASYLOCK?

EASYLOCK is ideally suited to all machining processes like grinding, milling, drilling and measuring.

What is meant by holding force?

Holding force is the force at which the pallet still rests securely on the clamping system. This force must not be exceeded during machining.

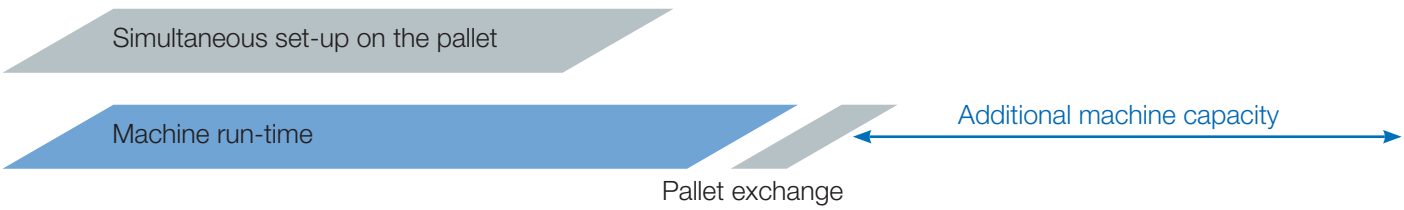
What is meant by repeat accuracy?

The repeat accuracy gives the tolerance range for the recorded workpiece references when the workpiece is removed and subsequently reclamped. The repeat accuracy of the EASYLOCK system is around < 0.005 mm.

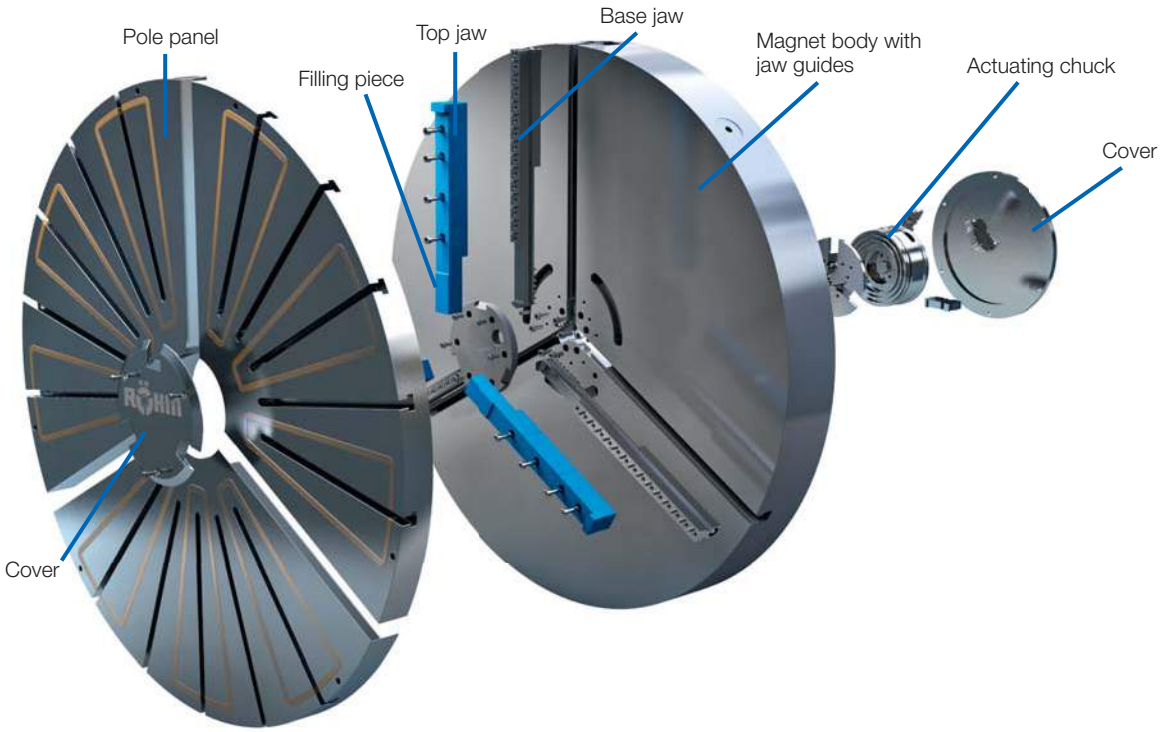
REDUCED SET-UP TIMES BY UP TO 90%

Without palletising system

With EASYLOCK zero point clamping system



MZMF Hybrid chuck



Combined 2-jaw centering chuck with magnetic clamping plate

A precisely centered and deformation-free setup is of utmost importance, especially for easily deformable workpieces which require turning machining from all three sides within one working operation. Thanks to the combination of magnetic clamping force and deformation-free centering, workpieces, such as rings or other hard-to-grip parts having a wide range of sizes and contours, can be precisely clamped within seconds with the hybrid chuck MZMF.

Technische Merkmale:

- Set-up times reduced by up to 50%
- Machine downtimes reduced to a minimum
- 3-side machining for turning and grinding parts
- 16 individually adjustable adhesion stages
- Uniform and deformation-free setup
- Combined magnetic and centering chuck clamping are possible
- High process reliability for rational series production
- Fast amortization

Other special solutions

For special customer demands, RÖHM offers an individual range of special solutions, which goes far beyond the standard product range. From the smallest „Micro Technology“ clamping chuck for watches and jewelry machining to impressive chucks with a diameter of over 5.5 meters and weight of 25 tons for rail vehicles or the energy sector.

Machining of large bearings and rotary unions
Chuck for turning machining

- Constant clamping force at high speeds by means of centrifugal force compensation
- Integrated quick jaw change system for minimum setup times

Machining of large bearings and rotary unions
Chuck for drilling machining

- Centrically clamping wedge hook chuck
- Quickly adjustable clamping jaws and stops for minimum set-up times

Clamping chucks for rail traffic

- Clamping diameters of up to 1.3 meters with flexible set-up for individually changing workpiece sizes
- Automated jaw adjustment for inner and outer machining

Independent chucks for power plants and steel mills

- Clamping diameter of up to 5 meters
- Safe clamping using power spindles allows up to 50 tons of clamping force per jaw

For further informations of our special solutions in any areas visit our homepage:
http://www.roehm.biz/downloads/

Notes

The headquarters: our main plant in Sontheim/Brenz

The RÖHM main plant is located in Sontheim/Brenz. In this ultra-modern production facility comprising 41,000 m² optimum conditions have been achieved in order to solve the extensive range of discerning construction and production tasks making the company even better, faster and more efficient in the future.

Sontheim/Brenz

Sontheim I All national and international activities are planned and coordinated at the administrative headquarters in Sontheim. Thanks to the excellent infrastructure and transport routes, this location is ideal for a company relying on perfect product quality as well as maximum flexibility. Furthermore, the region around Sontheim offers another key basis for the success of our company: it is rich in quality awareness and motivated employees with the result that we are ideally prepared for the challenges of the future. The main plant uniquely unites mass production, serial production and customised individual production under a single roof.

Key locations for the company: Dillingen and St. Georgen

Such strong growth on the part of the RÖHM Group is also obviously associated with higher requirements on development and production capacities. The demands of today and tomorrow can be complied with the two facilities in Dillingen and St. Georgen.

Dillingen/Danube

St. Georgen

Plant Dillingen/Danube | This branch plant in Dillingen was put into operation by the RÖHM Group as early as 1953. Thanks to extremely positive development, the plant is subject to constant expansion and modernisation. For this reason, new modern production facilities were built in 1982 and 1991. In 2007 RÖHM built a new production hall for two portal turning and milling machines. This enables machining of workpieces up to 4 metres in length which will secure a leading market position for RÖHM in the future. More than 300 employees are primarily involved in engineering and manufacturing lathechucks, machine vices and special clamping equipment for turning and milling machinery as well as for machining centres.

Engineering and sales department St. Georgen | Apart from standard mandrels, tailor-made solutions for a wide variety of requirements are also manufactured here in this small but accomplished high-tech forge. RÖHM retains mechanical or power-operated mandrels, sliding jaw mandrels and hydraulic mandrels for its customers for tensioning workpieces in drill holes or interior contours.

Always close to our customers.
With locations all around the world.

Customer orientation at RÖHM has less to do with marketing than with attitude. We consider customer proximity as an intensive dialogue with our partners as well as direct presence on key international markets.

Your contacts at RÖHM

Manufacturing and distribution bases

Germany:
RÖHM GmbH
Heinrich-Röhm-Straße 50
89567 Sontheim/Brenz
Tel 0049 73 25 – 16 0
Fax 0049 73 25 – 16 510
info@roehm.biz
www.roehm.biz

RÖHM GmbH
Röhmstraße 6
89407 Dillingen
Tel 0049 90 71 – 5 08-0
Fax 0049 90 71 – 5 08-174
infodlg@roehm.biz

RÖHM GmbH
Feldbergstr. 5
78112 St. Georgen
Tel 0049 – 77 24 – 94 68 12
Fax 0049 – 77 24 – 51 89
Mobil 0152 – 22 88 70 50
stg.info@roehm.biz

Brazil:
RÖHM IND. E COM. DE
FERRAMENTAS DE FIXAÇÃO LTDA.
Rod. Raposo Tavares, Km 14 - Bloco A
2º andar - sala 2 - CEP 05576-100
São Paulo
Tel 0055 – 11 – 37 32 22 22
Fax 0055 – 11 – 37 35 30 97
vendas@rohm.com.br
www.br.roehm.biz

China:
ROEHM China Co., Ltd.
Room 702, Building 24,
No. 518 Xinzhuan Road,
Songjiang District,
201612 Shanghai
Tel 0086 – 21 – 37 70 53 95
Fax 0086 – 21 – 37 70 53 76
roehmcn@roehm.biz

ROEHM WEIDA MACHINERY
(Shandong) Co. Ltd. (Joint Venture)
ADD: 2 Zhonghan Road
Manshan Town Wendeng Shandong
China 264414
Tel 0086 – 631 – 8 54 99 86
Fax 0086 – 631 – 8 54 50 18
lts@weidapeacock.com

France:
RÖHM S.A.R.L.
325 rue Paul Langevin
BP 90204
F-60744 Saint Maximin cedex
Tel 0033 – 344 64 10 00
Fax 0033 – 344 64 00 68
fr.roehm@roehm.biz
www.rohm.fr

Great Britain:
ROHM (Great Britain) LTD.
Unit 12 the ashway centre
Elm cresent Kingston-upon-Thames
Surrey KT 2 6 HH
Tel 0044 – 20 85 49 66 47
Fax 0044 – 20 85 41 17 83
rohmgb@roehm.biz
www.uk.roehm.biz

Italy:
RÖHM Italia S.R.L.
Via Reiss Romoli 17-19
20019 Settimo Milanese (MI)
Palazzo Rothenberger
Tel 0039 – 02 – 92 10 35 31
Fax 0039 – 02 – 92 10 17 53
rohmitalia@roehm.biz
www.roehm-italia.it

Mexico:
RÖHM Products México S. de R.L.
Emilio Garza Meléndez #6606
Col. Campestre Mederos
Monterrey, N.L., México, C.P. 64970
Tel 0052 81 – 9627 – 0686
info@rohm-products.com

Switzerland:
RÖHM Spanntechnik AG
Feldstraße 39, 3360 Herzogenbuchsee
Tel 0041 – 629 56 30 20
Fax 0041 – 629 56 30 29
roehmch@roehm-spanntechnik.ch
www.ch.roehm.biz

Singapore:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

Slovakia:
RÖHM SLOVAKIA S.R.O.
Partizanska 73
95701 Banovce nad Bebravou
Slovakia
Tel 00421 – 3 87 60 02 22
Fax 00421 – 3 87 60 02 24
Mobil 00421 – 9 14 12 29 32
info@roehm.sk

Spain + Portugal:
RÖHM Iberica S.A.
C/Rejas, No. 9 Nave 11 D
28022 Madrid
Tel 0034 – 91 – 3 13 57 90
Fax 0034 – 91 – 3 13 57 93
rohmiberica@roehm.biz
www.roehm-iberica.es

Taiwan:
Röhm Taiwan Office
3F-3, No3 lane 2
1th Road Taichung industrial Park
Xitun District
Taichung Taiwan
Tel 00886 – 4 23593626
Fax 00886 – 975 105 983

USA:
ROHM Products of America
2500 Northlake Drive
30024 Suwanee, GA
Tel 001 – 770 – 963 – 8440
Fax 001 – 770 – 963 – 8407
rohmusa@roehm.biz
www.us.roehm.biz

Poland:
RÖHM Polska Sp. z o.o.
Aleje Jerozolimskie 424A
05-800 Pruszków
Tel 0048 – 22 – 759 – 59 90
Fax 0048 – 22 – 759 – 59 99
roehmpolska@roehm.biz

Hungary:
RÖHM Hungaria Kft.
Gyár u. 2. (BITEP Ipari Park)
H-2040 Budaörs
Tel 0036 – 209 – 324 597
jozsef.alker@roehm.biz

Presence on all continents from A for Australia to V for Vietnam. You can receive the contact information of our worldwide representations easily through **www.roehm.biz.**

Sales Agents in Germany

Baden-Wuerttemberg:
Thomas Haas
Tel 0 77 25 / 91 48 95
Mobile 0152 / 22 88 71 20
thomas.haas@roehm.biz

Dominik Gotthelf
Mobile 0152 / 22 88 70 93
dominik.gotthelf@roehm.biz

Werner Schmautz
Tel 0 78 02 / 98 27 51
Mobile 0152 / 22 88 70 23
werner.schmautz@roehm.biz

Richard Sedlak
Tel 0 70 21 / 94 98 970
Mobile 0152 / 22 88 70 30
richard.sedlak@roehm.biz

Baden-Wuerttemberg / Rhineland-Palatinate / Saarland:
Michael Schmitz
Tel 00 33 3 88 72 04 03
Mobile 0152 / 22 88 70 18
michael.schmitz@roehm.biz

Baden-Wuerttemberg / Bavaria:
Jochen Staudenmaier
Mobile 0152 / 22 88 71 68
jochen.staudenmaier@roehm.biz

Bavaria:
Jan Birkholz
Mobile 0152 / 22 88 70 14
jan.birkholz@roehm.biz

Gerhard Häutle
Tel 0 90 71 / 7 29 93 22
Mobile 0152 / 22 88 70 15
gerhard.haeutle@roehm.biz

Christian Heigl
Mobile 0152 / 22 88 70 26
christian.heigl@roehm.biz

Bavaria / Thuringia:
Steffen Blatz
Mobile 0152 / 22 88 70 16
steffen.blatz@roehm.biz

North Rhine-Westphalia / Rhineland-Palatinate
Ralf Schnichels
Tel 0 21 52 / 8 97 35 47
Mobile 0152 / 22 88 70 25
ralf.schnichels@roehm.biz

North Rhine-Westphalia:
Friedhelm Schneider
Tel 0 27 62 / 49 07 28
Mobile 0152 / 22 88 70 17
friedhelm.schneider@roehm.biz

North Rhine-Westphalia / Lower Saxony
Thorsten Nolte
Tel 0 27 21 / 12 01 82
Mobile 0152 / 22 88 70 31
thorsten.nolte@roehm.biz

Lower Saxony / Saxony
Susanne Bormann
Mobile 0152 / 22 88 70 88
susanne.bormann@roehm.biz

Berlin, Mecklenburg-Western Pomerania, Brandenburg, Saxony-Anhalt:
Hendrik Seifert
Tel 0 30 / 70 07 24 59
Mobile 0152 / 22 88 70 32
hendrik.seifert@roehm.biz

Hesse:
Klaus Dieter Hofmann
Tel 0 64 06 / 90 67 40
Mobile 0152 / 22 88 70 29
k.d.hofmann@roehm.biz

Hamburg / Bremen / Schleswig-Holstein / Lower Saxony:
René de Jong
Tel 0031 6 24 11 88 84
Mobile 0152 / 22 88 71 53
rene.dejong@roehm.biz

Agents worldwide

Algerien:
RÖHM S.A.R.L.
325, rue Paul Langevin
60740 St. Maximin, FRANCE
Tel 0033 / 344 64 10 00
Fax 0033 / 34 64 00 68
fr.roehm@roehm.biz
www.rohm.fr

Argentina:
Himaq S.R.L.,
Venezuela 3652,
1603 Villa Martelli
Prov. Buenos Aires
Tel 00 541 / 147 093 505,
Fax 00 541 / 147 093 472
himaq@himaq.com.ar

Australia:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

FISHER LAMCO PTY LTD
Tel 00 61 / 2 4968 7200
mark.hughes@fisherlamco.com.au

Austria:
Richard Schörkhuber
Lichtenhof 2 b
8511 St. Stefan ob Stainz
Tel 00 43 / 34 63 / 8 15 10
Fax 00 43 / 34 63 / 8 15 60
Mobil 00 43 / 664 / 9 23 77 10
richard.schoerkhuber@roehm.biz

Schachermayer GmbH,
Schachermayer Str. 2
Postfach 3000, 4021 Linz
Tel 00 43 / 732 / 65 99-0
Fax 00 43 /732 / 65 99 14 44
maschinenmetall@schachermayer.at

Lackner u. Urnitsch GmbH
Bahnhofgürtel 37, 8020 Graz
Tel 00 43 / 316 / 71 14 80-0
Fax 00 43 / 316 / 71 14 80 39
lackner@urnitsch.at

Haberkorn Ulmer GmbH
Hohe Brücke, 6961 Wolfurt
Tel 00 43 / 55 74 / 69 5-0
Fax 00 43 / 55 74 / 69 5-99
nfo.wolfurt@haberkorn.com

Metzler GmbH u. Co. KG
Oberer Paspelsweg 6-8, 6830 Rankweil
Tel. 00 43 / 55 22 / 7 79 63 - 0
Fax 00 43 / 55 22 / 7 79 63 - 6
office@metzler.at

Belgium:
RÖHM S.A.R.L.
325, rue Paul Langevin
60740 St. Maximin, FRANCE
Tel 0032 495 72 73 99
Fax 0032 42 86 69 48
frederik.hamels@roehm.biz
www.rohm.fr

BELTRACY
Bergensesteenweg 189
1600 Sint-Pieters-Leeuw
BELGIUM
Tel. 00 32 / 25 43 68 90
Fax 00 32 / 25 38 59 10
info@beltracy.be
www.beltracy.be

Bosnia-Herzegovina:
Elaphusa d.o.o
Augusta Piazze 9
10000 Zagreb (Croatia)
Tel 00 38 / 5 13 69 51 38
Fax 00 38 / 5 13 63 95 30
kruhek@zg.t-com.hr

Canada:
ROHM Products of America
2500 Northlake Drive, 30024 Suwanee, GA
Tel 001 – 770 - 963 - 8440
Fax 001 – 770 - 963 - 8407
rohmusa@roehm.biz
www.us.roehm.biz

(Greiftechnik)
Sempress Canada Inc.
L5L 5Y6 Mississauga, Ontario
Tel 001 905 606 2324
Fax 001 905 606 2544
sempress@sempress.ca
www.sempress.ca

Chile:
Robert Kralemann
SERVICOMP Ltda.
Av. Departamental 1595
La Florida - Santiago
Tel 00 56 / 2 / 8 89 47 00
rkralemann@gmail.com

Colombia:
Imocom S. A.
Apartado Aereo 12287, Bogota D. E. 6
Tel 00 57-1 / 2 62 38 00
Fax 00 57-1 / 2 62 49 82
imocom@imocom.com.co

Costa Rica:
Servicios Centroamericanos, S.A.
625 Mts. Este del Parque de Tibás,
frente a Autos La Florida, San José, Costa Rica
P.O. Box : 4711-1000 San José, Costa Rica
Tel 00 506 / 2 40 11 11
Fax 00 506 /2 40 22 22
sercensa@sercensa.com

Croatia:
Elaphusa d.o.o
Augusta Piazze 9
10000 Zagreb (Croatia)
Tel 00 38 / 5 13 69 51 38
Fax 00 38 / 5 13 63 95 30
kruhek@zg.t-com.hr

PFEIFER - TTI D.O.O.
40000 Cakovec, Croatia
Tel 00 385-9/ 83 03 52 2
Fax 00 385-1/ 36 39 53 0
marijan.pfeifer@pfeifer-tti.hr

Czech Republic:
RÖHM SLOVAKIA S.R.O.
Partizanska 73
95701 Banovce nad Bebravou
Slovakia
Tel 00421 – 3 87 60 02 22
Fax 00421 – 3 87 60 02 24
Mobil 00421 - 9 14 12 29 32
info@roehm.sk

Jan Vyslouzil
Jiráskova 551
76824 Hulin
Tel. 00 420 / 5 73 35 18 00
janvyslouzil@iol.cz

Denmark:
RÖHM Værktoj A. S.
Gunnekær 2,
2610 Rødovre
Tel 0045 – 36 – 41 22 66
Fax 0045 – 36 – 41 44 72
info@roehm.dk
www.roehm.dk

Ecuador:
Inocencio Ferreira Alexandre
Duran, Ecuador
Tel 00 593 - 4 / 2807323
Fax 00 593 - 4 / 2807799
inocencioferreira@gmail.com

Egypt:
Dirk Jaegemann Trade Agency
GmbH&Co.KG
28279 Bremen
Tel 0049 / 42 18 39 21 30
Fax 00 49 / 42 18 39 89 21
info@djta.de

Finland:
(Clamping technology - manual)
Teräskonttori Oy,
Muuntotie 3,
1510 Vantaa
Tel 00 358 / 10 219 22 00
Fax 00 358 / 10 219 22 45
info@teraskonttori.fi

Oy Interfii Ltd.
Teollisuuskatu 35-39 LH4
20520 Turku, Y-tunnus 2374026-3
Tel 00 358 / 2 01 47 45 00
Fax 00 358 / 2 01 47 45 01
info@interfii.com

Greece:
Stefanos Papadopoulos
Kifisiasstr. 15, 54655 Thessaloniki
Tel 00 30 / 23 10-48 87 58
Fax 00 30 / 23 10-48 87 53
ST-papas@otenet.gr

Hungary:
Fairtool GmbH
Koebanyai ut. 47/B, H-1101 Budapest
Tel 00 361 / 2608025
fairtool@fairtool.hu

India:
Röhm Clamping Technologies Pvt. Ltd.
No.14A-1, Belmar Industrial Estate,
Nagasandra Post, (Off Andrahalli Main Road)
Bangalore-560 073, Karnataka
Tel : 0091-80-28372233
kthomas_64@yahoo.com

Indonesia:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

Iran:
Sakht Abzar Pars Co. (SAP)
No. 19/4 Saeb Tabrizi St.,
North Abbas Shirazi Ave,
Molla Sadra Ave., Tehran post code 19917
Tel. 00 98 / 21 / 88 03 18 88
Fax 00 98 / 21 / 88 03 77 33
sales@sap-iran.com

Ireland:
ROHM (Great Britain) LTD.
Unit 12 the ashway centre
Elm cresent Kingston-upon-Thames
Surrey KT 2 6 HH
Tel 0044 - 20 85 49 66 47
Fax 0044 - 20 85 41 17 83
rohmgb@roehm.biz
www.uk.roehm.biz

Iceland:
Fossberg Ltd.
Dugguvogi 6, 104 Reykjavik
Tel. 00 354 / 57 57 606
E-mail: fossberg@fossberg.is

Israel:
ETMOS Tool Distributing Co. Ltd.
34 HAHOFER ST., 5811702 Holon
Tel. 00 972 - 3 / 55 81 933
Fax 00 972 - 3 / 55 81 934
etmos@etmos.co.il

Japan:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

Takeda Trade Co., Ltd.
NAKANOSHIMA DAI-BUILDING 603, 3-3-23,
NAKANOSHIMA, KITA-KU
530-6106 OSAKA
Tel. 00 81 3 6806 0757
hata@takeda-trade.co.jp

(Gripping technology)
Sempress Canada Inc.
L5L 5Y6 Mississauga, Ontario
Tel 001 905 606 2324
Fax 001 905 606 2544
sempress@sempress.ca
www.sempress.ca

Latvia:
RÖHM GmbH
Heinrich-Röhm-Straße 50
89567 Sontheim/Brenz
Tel 0049 73 25 – 16 0
Fax 0049 73 25 – 16 510
info@roehm.biz
www.roehm.biz

Agents worldwide

Luxemburg:
RÖHM S.A.R.L.
325 rue Paul Langevin
60740 St. Maximin, FRANCE
Tel 00 33 / 3 44 64 10 00
Fax 00 33 / 3 44 64 00 68
fr.roehm@roehm.biz

Malaysia:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

YOMAX SDN BHD
Tel. 00 604 643 8740
bbtan@yomax.com.my

Marocco:
RÖHM S.A.R.L.
325, rue Paul Langevin
60740 St. Maximin, FRANCE
Tel 0033 / 344 64 10 00
Fax 0033 / 34 64 00 68
fr.roehm@roehm.biz
www.rohm.fr

Macedonia:
G.T.M.Co. d.o.o. Export - Import
Autoput Bg - Zg br. 22
11080 Beograd, Srbija i Crna Gora
Tel 00 381 / 1 13 14 90 24
Fax 00 381 / 1 13 14 90 21
vladimir.rackovic@gtmco.rs

New Zealand:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

Trade Tools Ltd
23 Olive Road, Penrose
PO Box 112114
Auckland 1642, New Zealand
Tel 0064 9 525 88 82
sales@tradetools.co.nz

Netherlands:
(Clamping technology - manual)
Boorwerk B.V.,
Flevolaan 52 A,
Industrieterrian Noord
1382 JZ Weesp
Tel 00 31 / 294 / 43 20 50
Fax 00 31 / 294 / 43 21 52
mail@boorwerk.nl

(Clamping technology - power operated)
RÖHM S. A. R. L.
325 rue Paul Langevin
BP 90204
F-60744 Saint Maximin cedex
Tel 0033 – 344 64 10 00
Fax 0033 – 344 64 00 68
fr.roehm@roehm.biz
www.rohm.fr

Norway:
Ing. Yngve Ege A/S
Ryenstubben 5
0679 Oslo 11
Tel 00 47 / 23 24 10 00
Fax 00 47 / 23 24 1001
ege@ege.no

Peru:
Sucesión Carlos Kaufmann
Lima 27 San Isidro, Peru
Tel 00 51-14 / 228631
Fax 00 51-14 / 424130
kaufmann@terra.com.pe

Philippines:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

Portugal:
RÖHM Iberica S. A.
C/Rejas, No. 9 Nave 11 D
28022 Madrid
Tel 0034 / 91 / 3 13 57 90
Fax 0034 / 91 / 3 13 57 93
rohmiberica@roehm.biz
www.rohm-iberica.es

Romania:
KSN Technik Srl
Str. Tabacarilor 15B/103
400139 CLUJ-NAPOCA, Romania
Tel 00 40 / 264 / 449 - 533
Fax 00 40 / 264 / 449 - 533
office@ksntechnik.ro

Russia:
Promintech Zoo
Leninsky PR.151, OF.432
196247 St. Petersburg
Russia
Tel 007 812 703 7418
Tel 007 812 718 8255
niktechnika@prominteh.ru

OOO TORENCO
456318 Miass Chelyabinsk Region,
Russia
Tel 007 / 951 815 - 8004
Torenco2010@mail.ru

OOO T.W.L -Group
Kosmonawta wolkowa 5, stroenie 1,
127299 Moscow, Russia
Tel 007 / 495 / 5 04 72 39
007 / 903 / 1 03 29 02
Fax 007 / 495 / 9 26 95 39
sales@twl-group.ru

Saudi Arabia, UAE, Bahrain, Kuwait, Oman, Quatar, Kazakhstan, Lebanon, Bahrain:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

Sweden:
(Clamping technology - power operated)
Techpoint Systemteknik AB
Nyponvaegen 4
19144 Sollentuna
Tel 00 46 / 86 23 13 30
Fax 00 46 / 86 23 13 45
info@techpoint.se

(Clamping technology- manual)
Luna AB
Sandbergsvägen 3,
44180 Alingsås
Tel. 00 46 / 322 60 60 00
Fax 00 46 / 322 60 62 03
info@luna.se

(Gripping technology)
Robot System Products AB
Isolatorvägen 4,
72137 Västeras
Tel 00 46 021 816 603
Fax 00 46 021 816 601
contact@robsyspro.com

Serbia-Montenegro:
G.T.M.Co. d.o.o. Export - Import
Autoput Bg - Zg br. 22
11080 Beograd, Srbija i Crna Gora
Tel. 00 381 / 1 13 14 90 24
Fax 00 381 / 1 13 14 90 21
vladimir.rackovic@gtmco.rs

Singapore:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

GP System Singapur PTE LTD
No. 51, Bukit Batok Crescent,
#04-04/05 Unity Centre,
Singapur 658077
Tel. 00 65 / 68 61 - 26 63
Fax 00 65 / 68 61 - 35 00
enquiry@gpsystem.com

INTEC Precision Equipment Pte Ltd
No. 7 Gul Street 4,
Singapore 629237
Tel 0065 68 62 10 90
intec@intecsg.com

Slovenia:
Elaphusa d.o.o
Augusta Piazze 9
10000 Zagreb (Croatia)
Tel 00 38 / 5 13 69 51 38
Fax 00 38 / 5 13 63 95 30
kruhek@zg.t-com.hr

B T S COMPANY TRGOVINA IN ZASTOPANJE, D.O.O.
Bratislavka 5
1000 Ljubljana
Tel 00 38 / 6 1 584 14 40
masa.bitenc@bts-company.si

Slovakia:
RÖHM SLOVAKIA S.R.O.
Partizanska 73
95701 Banovce nad Bebravou
Slovakia
Tel 00421 – 3 87 60 02 22
Fax 00421 – 3 87 60 02 24
Mobil 00421 - 9 14 12 29 32
info@roehm.sk

South Africa:
Supra Tooling and Accessoires (Pty) Ltd
P.O. Box 1892
1460 Boksburg, Gauteng
South Africa
Tel. 0027 6467 4284
Fax 0027 11918 5492
supratoolig@mweb.co.za
www.supratooling.co.za

Tooling Promotions
P.O. Box 3989
Vanderbijlpark 1900, Gauteng
South Africa
Tel 0027 016 931 1266
Fax 0027 016 931 1269
info@toolingpromotions.co.za
www.toolingpromotions.co.za

South Korea:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

CHEONG DO TRADING CO., LTD.
NO. 7, GUL STREET 4, SINGAPORE 629237
Tel 0082 2 26 78 41 55
Fax 0082 2 26 72 54 83
cdmt@chol.com

ENT Co., Ltd.
Zip code 15090
42-404, 204, Gongdan 1-daero, Siheung-si,
Gyeonggi-do, Korea
Tel 0082 31 430 67 89
roehm1909@gmail.com

Thailand:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

Krasstec Company Limited
42-404-204, GONGDAN 1-DAERO,
SIHEUNG-SI, GYEONGGI-DO, SEOUL
15090, KOREA
Tel. 00662 732 1144
chaithat@krasstec.com

Tunisia:
RÖHM S.A.R.L.,
325 rue Paul Langevin
60740 St. Maximin, FRANCE
Tel. 00 33 / 3 44 64 10 00
Fax 00 33 / 3 44 64 00 68
fr.roehm@roehm.biz

Turkey:
Sintek Mühendislik Makina San. Ve Tic. Ltd. Sti.
Tarabya Mahallesi
Yumak Sok. No: 3/A1
34457 SARIYER – ISTANBUL
Tel. 00 90 / 212 / 2 99 61 84
Fax 00 90 / 212 / 2 99 56 75
sinan.onurlu@sintekmuhendislik.com

Ukraine:
T.W.L.-JUGA-Service
41, Gradonochalnitzkaya str. 1
65005 Odessa, Ukraine
Tel. 00380 / 48 / 79 5 85 64
Fax 00380 / 48 / 79 4 94 68
jugtech@twlweb.biz

Venezuela:
Hartung Hnos. Sucr. C. A.,
Apartado 2480
Caracas 1010-A / Venezuela
Tel. 00 58 / 212 / 54 20 820
Fax 00 58 / 212 / 54 19 449
claus@hartung.com.ve

Maquinaria Diekmann S.A.
AV. Humboldt – Las Acacias
CARACAS 1040 / VENEZUELA
Tel 00 58 / 212 / 633 36 30 or
Tel 00 58 / 212 / 633 62 30
Fax 00 58 / 212 / 633 22 62 or
Fax 00 58 / 212 / 632 80 13
purchase@diekmann.com.ve

Vietnam:
RÖHM Asia Pacific Pte. Ltd.
8 Ubi Road 2
#07-10 Zervex
Singapore 408538
Tel 0065 – 64 43 77 48
Mobil 0065 – 83 28 89 80
info@sg.roehm.biz
www.sg.roehm.biz

HIEP MINH PHAT TRADING CO LTD
Tel 0084 8 542 70 442
lequochiep@hiepminhphat.com.vn

General Terms of Sale and Delivery

§ 1 Offer, conclusion of contract and contractual contents

1. Our Terms of Sale shall apply exclusively; we do not recognise contradictory terms and conditions or terms and conditions which deviate from our Terms of Sale unless we had explicitly approved their validity in writing. Our Terms of Sale shall also apply if we carry out the delivery to the buyer without reservation in the knowledge of contradictory terms and conditions of the buyer or terms and conditions which deviate from our Terms of Sale.
2. Our Terms of Sale shall only apply towards an entrepreneur within the meaning of Section 14 BGB [German Civil Code].
3. Our General Service Terms shall apply with precedence over these Terms of Sale in the respective valid version in cases, which comprise the service offer of RÖHM GmbH.
4. Our offers are always to be understood as invitatio ad offerendum and are therefore without obligation insofar as they have not explicitly been described as binding. The contract shall only be concluded with our written confirmation and in line with its contents and – if a written confirmation is missing – by the service/delivery. If a delivery/service is carried out immediately without a confirmation then the invoice shall at the same time be deemed as an order confirmation.
5. Costs for the production of drawings for special constructions are to be borne by the orderer insofar as the offer does not lead to an order for reasons, for which we are not responsible.
6. All details concerning weights, dimensions, services and technical data, which are contained in our printed material, catalogues, price lists or in other contractual documents, merely serve for purposes of information and are only binding insofar as they are explicitly described as binding.
7. We reserve the right to make construction and form changes to the object of contract insofar as no changes are made hereto, which are deemed unreasonable for the orderer.
8. The documentation consists of the compilation drawing, the BOM with marking of the parts subject to wear and tear and spare parts as well as assembly instructions upon request. Respectively in German and/or, upon request, in English. This free documentation will be supplied in a digital form. The PDF format shall apply to drawings, BOMs and texts. Any scope of documentation beyond this is liable to costs respectively requires a special agreement. The documents may not be reproduced in full or in part, not made accessible to third parties or used for any other purpose apart from that for which they were handed over to the customer without our prior written authorization.
9. The corresponding measurement methods for tests, with which certain temperatures, times and other measured or control values should apply, must be stipulated before start of delivery and recognised by both parties. If no stipulation is made the measurement methods usually applied by RÖHM shall apply, we shall provide the details thereof upon request.
10. Samples will only be supplied against payment and owing to a separately placed order.
11. Assurances, collateral agreements and amendments to the contract require a written form in order to be valid. This requirement cannot be waived orally.
12. Placed orders are irrevocable unless the supplier has approved the revocation in writing.
13. In case of export business the delivery is carried out at the conditions agreed on the order confirmation, the international regulations for the interpretation of customary contractual forms shall apply in addition (incoterms 2010 of the International Chamber of Commerce, respective valid status).
14. Our General Business Terms shall apply to the RÖHM online shop with the following supplementations:
a) The offer on the part of the customer is submitted binding as soon as the customer orders the products in the shopping basket by using the function „binding order".
b) A purchase in the online shop is only possible if the customer actively agrees to our General Business Terms.
c) Mistakes and errors with regard to the goods availability, prices and other details and data excepted. Diagrams in the online shop are merely for the purpose of illustration respectively as visual aids; the description is binding.
d) We will inform the customer if the product ordered by the customer is temporarily or permanently not available.
15. Our „product information", technical information leaflets as well as other product-specific publications shall apply in addition to the General Business Terms. These are always to be complied with in their current version.

§ 2 Prices

1. In the absence of special written agreements the prices in the Federal Republic of Germany shall apply „carriage paid" recipient plus the statutory value added tax. With export business the object of delivery shall be deemed as sold „ex works" if nothing is determined in the contract concerning the type of sale. A processing fee of EUR 1.00 will be charged for individual orders with a goods value of less than EUR 150.00 net, a processing fee of EUR 30.00 for orders with a goods value of less than EUR 50.00 net respectively plus the applicable rate of value added tax. This shall apply to deliveries within the domestic country and overseas. At the customer's request the goods can be delivered to an alternative shipping address against a logistics fee in the amount of EUR 10.00.
2. We would like to point out that we will only carry out the shipment at the customer's request. This shall have no effect on the regulations according to Section 5.
3. We shall charge the prices valid upon conclusion of the contract, which are based on the cost factors which are valid at this time. Should these cost factors (in particular material, wages, energy, etc.) change between conclusion of the contract and the agreed delivery time then we are entitled to make a corresponding change to the prices. In case of export business the supplier is entitled to terminate the contract extraordinarily with regard to the part of the order that has not yet been completed or to adjust the prices for this accordingly in the event of a substantial devaluation in the currency, in which the order is concluded.
4. In case of conclusion ex works the goods will be conveyed at the costs and risk of the orderer. With all other consignments the provisions stipulated in the incoterms 2010, respective valid status, will apply with regard to insurance and the assumption of risks.
5. We will inform the buyer of our production quantity for parts/products, which are produced especially according to the buyer's requests. The buyer undertakes to purchase the quantities confirmed to him.
6. Excess and shortfalls in deliveries of up to 5 %, with special tools up to 10 %, at least however 2 pieces, are permitted and do not substantiate any quality defects. The respective delivery will be charged.

§ 3 Terms of payment

1. In the absence of a special agreement the payment is to be made without any deduction free paying agent within 10 days after the invoice date – also with partial deliveries.
2. In case of default of payment interest will be charged in the amount of the credit costs charged by banks, at least however interest in the amount of 9 % above the respective base lending rate of the ECB.
3. In case of export business the payments are to be made in line with the agreed terms of payment.
4. Costs of the payment transactions, in particular bank charges for overseas transfers to us, shall principally be for the expense of the customer.

§ 4 Delivery time

1. The start of the delivery deadline stated by us presumes the clarification of all technical questions. Delivery dates stated by us are – insofar as not explicitly agreed or described as binding – non-binding and shall merely represent an expected delivery date.
2. The compliance with our delivery obligation further presumes the timely and proper fulfilment of the buyer's obligations, in particular the compliance with the agreed terms of payment. The right is reserved to the plea of the unfulfilled contract.
This right shall also consist of obligations from previous deliveries which have not been satisfied in full.
3. The delivery deadline shall begin with the sending of the order confirmation, however not before the provision of the documents, permit, releases, etc., which are to be procured by the orderer, as well as not before the receipt of the agreed down payment.
4. If a binding delivery date has been agreed then the supplier also has to deliver within the deadline. The delivery deadline shall have been adhered to if the object of delivery has left the plant by the time it expires or notification has been given that the object is ready for delivery, the right is reserved to the timely and correct self-delivery. If the orderer changes his order with regard to parts of the delivery then the delivery deadline shall only begin to apply new again with the confirmation of the change.
5. Force majeure, war, civil commotion, strike, lock-out or measures of authorities, no matter for what reason, which oppose a delivery, as well as deficiencies of raw materials, of transport means as well as theft – also at the sub-suppliers – shall release the supplier from the obligation to deliver within the agreed deadline. The orderer is to be notified immediately of the occurrence of the event and of the expected implications.
6. Deliveries before expiry of the delivery time and in reasonable parts are permitted.
7. The adherence to the delivery time presumes the fulfilment of the orderer's contractual obligations.
8. The regulations of Subclause 10 shall apply in the event of the delay in delivery or impossibility.

§ 5 Passing of risk and acceptance

1. The risk shall pass to the orderer by no later than with the despatch of the delivered parts also if partial deliveries are made or we have taken over other services e.g. the shipping costs or delivery to the location and installation.
2. At the orderer's request the shipment shall be insured by us against theft, damages caused by breakage, transport, fire and water and other insurable risks at his costs.
3. If the shipment is delayed as a result of circumstances, for which the orderer is responsible, then the risk shall pass to the orderer from the day upon which the goods are ready for shipment; however we are obliged to procure the insurances, which he requests, at the request and costs of the orderer.
4. Delivered objects are, even if they feature insignificant features, to be accepted by the orderer irrespective of the rights from Section 8.

§ 6 Delay in acceptance, order on call

1. If the orderer does not accept the object of contract within the deadline we are entitled to set him a reasonable final deadline, to dispose otherwise over the object after its expiry and to supply the orderer with a reasonably extended deadline. Our rights to cancel the contract under the pre-requisites of Section 326 BGB and to request damages owing to the non-fulfilment shall remain unaffected hereby. If we request damages owing to non-fulfilment we can request 40 % of the agreed price plus value added tax as compensation unless the orderer proves less damages. We reserve the right to assert higher actual damages.
2. Orders, which are confirmed by us on call, must – insofar as nothing special has been agreed – be accepted by no later than within one year from the order date. The same shall apply in case of date reservations or sustainable „on call position". Subclause 6.1 shall apply accordingly in case the goods are not called within the stated deadline.

§ 7 Reservation of title

1. The objects of the deliveries (reserved goods) shall remain our property until the fulfilment of all claims to which we are entitled against the buyer from the business relationship. Insofar as the value of all security rights, to which we are entitled against the buyer, exceed the amount of all secured claims by more than 10 %, we will release a corresponding part of the security rights at the buyer's request.
2. During the existence of the reservation of title the buyer is prohibited from a pledge or assignment as collateral and the resale only permitted for resellers in the customary course of business and only under the condition that the reseller receives a payment from his customer or stipulates the reservation that the property shall only pass to the customer when he has satisfied his payment obligations.
3. In case of attachments, seizures or other disposals or interventions of third parties the buyer has to inform us immediately so that we can file an action according to Section 771 ZPO [German Code of Civil Procedure]. Insofar as the third party is not in the position to reimburse us the court and out-of-court costs of an action according to Section 771 ZPO, the buyer will be liable for the loss incurred to us.
4. The buyer undertakes to treat the object of purchase with due care and attention; he is in particular obliged to sufficiently insure these at the value as new at his own costs against damages caused by fire, water and theft. Insofar as maintenance and inspection work is necessary the buyer must carry this out in time at his own costs.

General Terms of Sale and Delivery

5. In case of breaches of duty by the buyer, in particular with default of payment we are entitled to cancellation and to take the goods back; the buyer is obliged to hand the goods over. The taking back of goods respectively the assertion of the reservation of title does not require any cancellation of the supplier; these acts or an attachment of the reserved goods by us shall not represent a cancellation of the contract unless we had explicitly declared this.
6. If the buyer has resold the object of purchase in the ordinary course of business then he shall hereby now already assign all claims to us in the amount of the final invoice amount (including value added tax) of our claim, to which he is entitled from the resale against his buyers or third parties, irrespective of whether the object of purchase has been resold without or after processing. The buyer shall also remain authorized to collect this claim after the assignment. Our authorization to collect the claim ourselves shall remain unaffected hereby. However, we undertake not to collect the claim as long as the buyer satisfies his payment obligations from the collected proceedings, is not in default of payment and in particular no application has been filed for the opening of insolvency proceedings or payments have been suspended. If this is however the case we can request that the buyer announces the assigned claims and their debtors to us, provides us all details which are necessary for the collection, hands over the associated documents and informs the debtors (third parties) of the assignment.
7. The processing or conversion of the object of purchase by the buyer is always carried out on our behalf. If the object of purchase is processed with other objects, which do not belong to us, then we shall acquire the co-ownership to the new object in the ratio of the value of the object of purchase (end invoice amount, including value added tax) to the other processed objects at the time of the processing. Incidentally, the same shall apply to the object produced by processing as to the object of purchase delivered under reservation.
8. If the object of purchase is inseparably mixed with other objects that do not belong to us then we shall acquire the co-ownership to the new object in the ratio of the value of the object of purchase (end invoice amount, including value added tax) to the other mixed objects at the time of the mixing. If the mixing is carried out to the extent that the object of the buyer is to be seen as the main object then it shall be deemed as agreed that the buyer assigns us the pro rata co-ownership. The buyer shall store the thus produced sole ownership or co-ownership on our behalf.

§ 8 Quality defects

We shall be liable for quality defects as follows:
1. All those parts or services are to be subsequently improved free of charge at our choice, delivered or provided new, which – irrespective of the operating duration – feature a quality defect if this cause existed already at the time when the risk was passed.
2. Claims for quality defects shall become statute-barred in 12 months. The deadline will begin with the passing of the risk (Subclause 6).
3. The buyer has to report quality defects to us immediately in writing.
4. In case of reports of defects payments of the buyer may be withheld in a scope, which is in reasonable relation to the occurred quality defects. If the defect is unjustifiably reported we are entitled to request reimbursement of the expenses incurred to us by the buyer.
5. We are first of all always to be granted the opportunity for the subsequent fulfilment within a reasonable period of time.
6. If the subsequent fulfilment fails the buyer can – irrespective of possible claims for damages – cancel the contract or reduce the remuneration. The buyer can only request reimbursement for fruitless expenses if we are responsible for the defect owing to wilful intent or gross negligence.
7. Defects shall not exist with an only insignificant deviation from the agreed conditions, with an only insignificant impairment to the usability, with natural wear and tear or damages, which are caused after the risk has passed as a result of faulty or negligent treatment, excessive use, unsuitable operating equipment or owing to special external influences, which are not presumed according to the contract, as well as with software faults that cannot be reproduced. If improper changes or repair work is carried out by the buyer or by third parties then this and the thus incurred consequences shall not substantiate any defects either. The same shall apply if our stipulations concerning the handling and other instructions are not complied with and a proper maintenance is not carried out.
8. Claims of the buyer owing to the expenses, which are necessary for the purpose of the subsequent fulfilment, in particular transport, route, labour and material costs, are excluded if the expenses increase, because the object of the delivery has subsequently been taken to another location than the buyer's branch unless the transportation corresponds with its use as intended.
9. Statutory claims for recourse of the buyer against us shall only exist to the extent that the buyer has not reached any agreements with its buyer that go beyond the statutory claims for defects.
10. Subclause 9 shall apply to claims for damages. Further or other than claims regulated in this Subclause or in Subclause 9 owing to a quality defect are excluded.

§ 9 Industrial property rights and copyrights, defects of title

Insofar as not otherwise agreed, we are obliged to merely provide the delivery in the country of the place of delivery free of industrial property rights and copyrights of third parties (hereinafter property rights). Insofar as a third party asserts justified claims owing to the infringement of property rights due to deliveries provided by us and used as per contract against the buyer, we shall be liable towards the buyer as follows within the deadline determined in Subclause 8.2:
1. We will, at our choice and at our costs, either obtain a right of use for the deliveries concerned, change these so that the property right is not infringed, or exchange these. If this is not possible for us at reasonable conditions, the buyer shall be entitled to the statutory rights to cancellation or reduction. The buyer can only request reimbursement for fruitless expenses if we are responsible for wilful intent or gross negligence. Our obligation to pay compensation is oriented to Subclause 10.
2. The afore-mentioned obligations shall only exist if the buyer informs us immediately in writing about the claims asserted by third parties, does not recognise an infringement and we reserve the right to all defence measures and settlement negotiations. If the buyer discontinues the use of the delivery for reasons to minimise damages or for other important reasons he undertakes to inform the third party that the discontinuation of the use is not associated with a recognition of an infringement of a property right.
3. Claims of the buyer are excluded insofar as he is responsible for the infringement of property right.
4. Claims of the buyer are further excluded insofar as the infringement of property right is caused by special stipulations of the buyer, due to an application that is not foreseeable for us or by the fact that the delivery is changed by the buyer or is used together with products not delivered by us.
5. In the event of infringements of property rights the provisions of Subclauses 8.4, 8.5 and 8.9 shall apply accordingly to the claims of the buyer regulated in Subclause 13.
6. Further or other claims of the buyer against us or our vicarious agents owing to a defect of title than those regulated in this Subclause 9 are excluded.

§ 10 Joint and several liability

1. Claims of the buyer for damages – irrespective of the legal nature of the asserted claim – are excluded.
2. Excluded from this are:
a) Damages owing to the breach of essential contractual obligations. Deemed as essential are such contractual obligations, the fulfilment of which makes the proper execution of the contract possible at all and on the compliance with which the contractual partner may as a rule rely and depend on.
b) Damages from the injury to life, the body or the health if we are responsible for the breach of obligation.
c) For other damages, which are due to a wilful or grossly negligent breach of duty, whereby our breach of duty is deemed equivalent to that of our legal representatives or vicarious agents.
d) Liability according to the ProdHaftG [German Product Liability Act]
3. A change to the burden of proof for the disadvantage of the buyer is not associated with the afore-mentioned regulations.
4. Insofar as the liability for damages is excluded or limited against us, this shall also apply with regard to the personal liability for damages of our employees, our commercial agents and our vicarious agents.

§ 11 Obligations of the buyer to provide assistance

1. Assistance services of the buyer, which are explicitly or tacitly agreed within the framework of the contract, shall be carried out without a special remuneration unless explicitly otherwise agreed.
2. The buyer is obliged to inform us about all facts in time, from which it can be derived that goods and products in stock in our company, which we have made available with regard to the production capacities reported to us, cannot be used or not used in full. If residual stocks remain the buyer shall take over the stocks and the, if applicable incurred destruction costs in the event of a premature change to its material scheduling. This shall also apply to products, with which we had to order minimum quantities on the part of our suppliers if we have informed the customer hereof in advance.
3. The buyer guarantees that the products supplied by him for processing are suitable for this purpose. We are not obliged to examine the products supplied by the buyer for the condition and the suitability for the further processing. Within the framework of ongoing business relationships as well as if an object for processing has initially been inspected, tested and released, the buyer undertakes to inform us of each product change without request in writing. In the case of regular processing of objects the buyer is further obliged to examine the object that is to be processed by us for deviations and changes for each change to the production conditions and in his company, in particular with the exchange of tools, machines or with the introduction of new production processes and to notify us of such changes and modifications in writing.
4. We do not have to examine the instructions of our buyers, the material selection or other regulations, which are made by our buyer, for their accuracy.
5. Therefore, the buyer has to examine all instructions, which he issues as well as the quality of the materials stipulated or made available to us for the compliance with the statutory and technical regulations.
6. If the buyer is in default with regard to his obligation for provision or to provide assistance after a written warning we are entitled to the statutory rights.
7. Goods may in each case only be carried out with the explicit consent of the supplier. The return must be carried out carriage paid, by stating the order number and delivery date in the original packaging. The goods have to be in the original condition, thus in an undamaged condition. We will charge 20 % of the goods value, at least however EUR 50.00 plus the applicable rate of value added tax for the processing work relating to the return. The supplier reserves the right, against proof, to charge a higher volume of work to the orderer in an individual case; the orderer is at liberty to prove less damages.

§ 12 Place of performance and place of jurisdiction/miscellaneous

1. The place of performance and place of payment is the registered seat of our company in Sontheim/Brenz.
2. The law of the Federal Republic of Germany is to be exclusively applied to the contractual relationship. The application of the Convention of the United Nations of 11 April 1980 concerning Contracts for the International Sale of Goods (CISG „Law governing the sale of goods of Vienna") is excluded.
3. With all disputes ensuing from the contractual relationship, if the orderer is a merchant, a legal entity under public law or a special fund under public law, the action is to be filed at the court that has jurisdiction for our headquarters. We are also entitled to file action at the headquarters of the orderer.
4. We store your data according to Section23 Federal Data Protection Act.

RÖHM GmbH

89565 Sontheim (Germany)

Status: October 2015

General Service Terms (ASB) of RÖHM GmbH, Sontheim

1. Validity
1.1 These ASB form the basis for all business transactions with our customers, which refer to the repair or maintenance of the products manufactured or delivered by us insofar as these customers concern entrepreneurs within the meaning of Section 14 BGB [German Civil Code].
1.2 Contradictory, supplementary contractual terms and conditions of the customer or those which deviate from these ASB will not be recognised.
1.3 Within the framework of a regular business relationship these ASB will also be valid after the effective inclusion for the first time if we do not explicitly refer hereto in follow-up transactions.
1.4 Insofar as the ASB do not include any regulations, the General Terms of Sale and Delivery of RÖHM GmbH shall apply.

2. Offer and conclusion of the contract
2.1 Our offers are – insofar as not explicitly marked as binding – without obligation and merely to be understood as invitatio ad offerendum. The right is reserved to an interim sale.
2.2 Contracts with us will only be concluded with our written acceptance declaration or – if such is not carried out – by our delivery and service. Changes and supplementations to the contracts concluded with us require a written form.
2.3 If the object of maintenance or repair was not delivered by us then the customer has to point out existing industrial property rights with regard to the object if we are not responsible for any fault the customer shall indemnify us from possible claims of third parties from industrial property rights.
2.4 Insofar as we are responsible for negligence Par. 2.3 shall apply accordingly.

3. Contractual parts
The offer and the product list respectively available to us and the customer are a part of the contract.

4. Technical documents and plans
4.1 All rights to our offer documents as well as documents, which have been handed over, shall remain reserved.
4.2 The customer shall recognise our rights and will not reproduce the documents in full or in part, not make these accessible to third parties or use these for any other purpose than that for which they were handed over to him without our prior written authorization.

5. Scope of services, maintenance, condition of device, repair
5.1 Decisive for the scope of our delivery and service is our binding offer or – if such is not available – our written declaration of acceptance. Both individual services can be agreed, which are principally to be remunerated according to Subclause 12.1, as well as the service packages described under Subclause 5.2, which are to be remunerated according to 12.2 respectively 12.3.
5.2 The following activities are a part of our service obligation with the processing of service packages:
5.2.1 Commissioning of service
- skilled execution of the necessary commissioning of the clamping device and control at the place of installation in line with the regulations of the manufacturer.
- assembly work over the course of the commissioning together with the machine manufacturer
- first instructions and operator training
- we will invoice separate requests for the training with regard to the maintenance and use as separate work.

5.2.2 Inspection service
Skilled execution of the necessary inspection of the clamping device and control at the place of installation in line with the regulations of the manufacturer. Insofar as additional maintenance or repairs become necessary at the customer's request or owing to special loads, these are to be remunerated separately by the customer.
5.2.3 Maintenance service
Skilled execution of the necessary maintenance of the clamping device and control at the place of installation in line with the regulations of the manufacturer. Insofar as additional repairs become necessary at the customer's request or owing to special loads, these are to be remunerated separately by the customer.
5.3 The service obligation shall begin with the purchase or conclusion of a service package. With the purchase or conclusion of a service package after the expiry of the warranty period the service obligation of RÖHM shall only refer to such products, which are capable of use and free of defects at the time of the conclusion or purchase of the service package. This is to be ensured by an inspection of the products; if defects are determined these are to be remedied before the start of validity of the service package by a necessary repair liable to costs; this repair is not part of the service package.
5.4 Our service obligation shall not include carrying out work on products and accessories, which was(were) not delivered by us.
5.5 Our service obligation shall lapse if the product was not subjected to the function and safety tests according to the details in the operating instructions or third parties have carried out work on the products concerned without our prior written consent unless this work has no disadvantageous influence on the provision of our service. The same shall apply if the products have been damaged due to causes for which we are not responsible, for example by water, fire, stroke of lightning or other implications of force majeure as well as with improper treatment by the customer or third parties.
5.6 Depending on the use and type of the product an overhaul may be necessary after longer use. This is the case if the costs of a repair exceed the current value of the product. Overhaul within this meaning is also the necessary new acquisition of a product in the absence of available spare parts. Overhauls are not part of the service obligation within the service packages. If we are of the opinion that a products that is to be maintained by us under a service package requires an overhaul, we will inform the customer hereof by stating the current value estimated by us and submit an offer for the overhaul to the customer with a remuneration calculated according to 12.1.

6. Repair/service that cannot be carried out
6.1 The services provided concerning the details of a cost estimate as well as the further incurred and to be proven work (fault search time equal to working hours) will be invoiced to the customer if the repair cannot be carried out due to reasons for which RÖHM GmbH is not responsible, in particular because the fault for which a complaint will be made did not occur during the inspection, spare parts cannot be procured, the customer culpably missed the agreed date or the contract was terminated during the execution.
6.2 The object of repair only needs to be restored to the original condition again at the explicit request of the customer against reimbursement of the costs unless the undertaken work was not necessary.
6.3 In case of a repair that cannot be carried out RÖHM GmbH shall not be liable subject to sentence 2 for damages to the object of repair, the breach of contractual secondary obligations and for damages, which were not suffered to the object of repair itself, no matter to which legal grounds the customer refers. RÖHM, on the other hand, will be liable in case of wilful intent, with gross negligence of the owner / the executive bodies or executives as well as with the culpable breach of essential contractual duties. Such contractual obligations are deemed essential, the fulfilment of which makes the proper execution of the contract possible at all and the compliance with which the contractual partner may as a rule rely and depend upon.

7. Duration of the service
7.1 The details with regard to the duration of repairs and services are based upon estimates and merely serve as information and a first estimate by the customer. They are therefore not binding if they have not been explicitly marked as binding.
7.2 In case of subsequently placed additional and extension orders or with necessary additional repair work the agreed repair deadline shall be extended accordingly.

8. Obligations to provide assistance of the customer
8.1 The customer has to draw our attention to the statutory, official and company safety and other regulations applicable at the place of destination of our delivery and service, which refer to the delivery, the assembly and the operation.
8.2 The customer will inform us with or immediately after his order about possible special features of the place of installation, which may have an implication on the proper function of the products, in particular about the structural condition and the concrete operating environment.
8.3 The customer shall ensure – also during the warranty period according to Subclause 17.5 – a regular and skilled maintenance of the products delivered by us insofar as this was not taken over by us as per contract.
8.4 The customer shall dispose of the goods delivered by us at his own responsibility and at his own costs according to the respective valid regulations. We are not obliged to create a possibility for the return unless this would have been stipulated by law.
8.5 The customer has to support the repair / maintenance personnel with the execution of the repair at his own costs.
8.6 The customer has to take the special measures, which are necessary for the protection of persons and objects at the workplace. He also has to inform the repair managers about existing special safety regulations insofar as these are of significance for the repair personnel. He shall inform us in case of breaches of the repair personnel of such safety regulations. In case of serious breaches he can refuse the infringing party access to the repair location by mutual agreement with the repair manager.
8.7 The customer shall bear a supervisory and assistance obligation for the compliance with the statutory working time limits. Breaches are to be reported to RÖHM GmbH.
8.8 The customer is obliged to provide the reasonable and necessary technical assistance at his costs, in particular to:
a. Provision of the necessary, suitable assistants in the number that is necessary for the repair and for the necessary time; the assistants have to follow the instructions of the repair manager. We do not assume any liability for the assistants. If a defect or damages were caused by the assistants owing to instructions of the repair manager, then the regulations of Sections 17 and 18 shall apply accordingly.
b. Undertaking of all construction, bedding and scaffolding work including the procurement of the necessary building materials.
c. Provision of the necessary devices and heavy tools as well as the necessary commodities and required materials.
d. Provision of heating, lighting, operating power, water, including the necessary connections.
e. Provision of necessary, dry rooms, which can be locked for the storage of the tool for the repair personnel.
f. Protection of the repair place and materials against harmful influences of all kinds, cleaning of the repair place.
g. Provision of suitable, theft-proof recreation rooms and work rooms (with heating, lighting, washing possibility, sanitary facilities) and First Aid for the repair personnel.
h. Provision of the materials and undertaking of all other acts, which are necessary for the adjustment of the object of repair and for carrying out a testing that is envisaged as per contract.
8.9 The technical assistance of the orderer must guarantee that the service can be started immediately after the arrival of our personnel and carried out without delay until the acceptance by the orderer. Insofar as special plans or instructions of RÖHM are necessary, RÖHM shall make these available to the orderer in time.

9. Obligations of the customer to provide assistance in case of maintenance
9.1 The products are to be used as intended and according to their protection type and in line with the operating instructions together with their annexes.
9.2 In case of an agreement of one of the service packages described in Subclause 5, the customer will place the products that are to be installed, maintained or repaired into a faultless condition, capable of use before conclusion of the contract at his own costs if the products are not already in such a condition. If the customer does not properly satisfy this obligation either after a warning on our part and within the deadline we are entitled to accordingly cancel the contract or the delivery. Further claims for damages on our part shall remain unaffected.
9.3 If the customer uses the maintenance service interferences are to be reported to us immediately in writing, in detail and in an understandable manner.
9.4 Our employees and vicarious agents are to be granted the unimpeded and safe access to the products. In case of delays for which the customer is responsible he is obliged to remunerate the waiting times of our employees and vicarious agents resulting from the delay separately.
9.5 The customer shall refrain from commission third parties with the services during the term of a service agreement, which we have to provide according to the agreement or from performing this work himself.
9.6 The customer has to draw our attention to the statutory, official and company safety regulations and other regulations applicable at the place of destination of our delivery and service, which refer to the delivery, the assembly and the operation.

10. Inspection and acceptance
10.1 Services will be provided by us according to the guidelines of our quality control and deliveries inspected accordingly. If the customer requests further inspections then these are to be agreed in writing and paid by the customer. This shall relate e.g. to special tests for the acceptance.

General Service Terms (ASB) of RÖHM GmbH, Sontheim

10.2 The customer undertakes to accept our services under this contract immediately after the report that they have been completed. Upon request he has to declare their acceptance in writing towards our employees or vicarious agents insofar as there is no essential defect. This is carried out by the signing of the service report.
10.3 Our services shall be deemed as accepted free of defects with the re-commencement of the operational use of the maintained or repaired product, in particular for production purposes, if no defects have been previously reported by the customer.

11. Cost details and cost estimate
11.1 The creation of the cost estimates is liable to costs if the execution of the repair is not approved.
11.2. The costs for a cost estimate amount to the flat rates fixed in the current price list.
11.3 If the repair cannot be carried out at these costs or if our employees or vicarious agents consider the execution of additional work to be necessary during the repair the customer's consent is to be obtained if the stated costs are exceeded by more than 15%.

12. Remuneration, maturity and terms of payment
12.1 Insofar as not otherwise agreed and there is no warranty case our services are to be remunerated according to the actual work requirement pursuant to our respectively valid general price lists. The time required by our employees will be settled in time sections of 15 min. In addition to the time required for the work that is to be performed in these cases the customer will pay the travelling and waiting times, overtime surcharges, expenses, travelling and accommodation costs as well as the costs of spare parts, materials subject to wear and tear and consumables and replacement part sets according to our prices lists or in line with the offer.
12.2 Insofar as a flat rate remuneration was agreed for a service package, our work and travelling costs and expenses are thus covered, not however the costs for waiting times, overtime at the customer's request, spare parts, materials subject to wear and tear and consumables, replacement parts sets as well as other accessories. Our work for if applicable necessary repairs is to be remunerated separately by the customer according to Subclause 12.1.
12.3 The prices for our services can be derived from the respective price list valid upon conclusion of the contract and are deemed ex works plus value added tax. The calculation basis for the remuneration is the one-shift operation, i.e. a use of the products up to 160 hours in a calendar month. A surcharge to the list price of 50% is charged for the two-shift operation, a surcharge of 100% for the three-shift operation. The above two rates shall only apply to the service packages described under Subclause 5.. If the customer requests assignments outside of our normal working hours (Mo - Fr, 6:30 am - 6:30 pm, a max. of 7 h per day) surcharges will be calculated according to the respective valid price list.
12.4 If our personnel and material costs are increased then we are entitled to adjust the contractual prices after the expiry of the first year up to a maximum of 5% above the price of the previous year. Price changes will be announced to the customer at least one month before the new contractual prices come into force. The customer is entitled to terminate the contract effective as of the time at which the new price would become valid for him for the first time.

13. Transport and insurance with the repair in the plant of RÖHM GmbH
13.1 The object for repair will be delivered by the customer to us at his costs together with the repair and service form and after execution of the repair collected by the customer again or return to him at the customer's costs.
13.2 The customer shall bear the risk of transport.
13.3 At the customer's request a shipment carried out by us will be insured at the customer's costs against the insurable transport risks, e.g. theft, breakage and fire.
13.4 No insurance cover exists during the repair time in our plant. The customer has to ensure the maintenance of the existing insurance cover for the object of repair e.g. with regard to fire, pipe water, storm and machine breakage insurance. Insurance cover can only be procured for these risks at the explicit wish and costs of the customer.
13.5 In case of delay of the customer with the take-over we can charge a storage fee for the storage in our plant. The object of repair can also be stored otherwise at our discretion. The costs and risk of the storage during the delay shall be for the expense of the customer.

14. Repair deadline
14.1. The details concerning the repair deadlines are based on estimates and merely serve for the purpose of information and first orientation. They are therefore not binding unless this is explicitly agreed.
14.2. The agreement of a binding repair deadline, which must be described as binding, can only be requested by the customer if the scope of the work has been precisely determined.
14.3. The binding repair deadline will have been adhered to if by the time that it expires the object of repair is ready for take-over by the customer, in the event of a contractually envisaged testing ready for its execution.
14.4. In case of subsequently placed additional and extension orders or with necessary additional repair work the agreed repair deadline will be extended accordingly.
14.5. If the repair is delayed due to measures within the scope of industrial disputes, in particular strike and lock-out as well as the occurrence of circumstances, which were not caused by us, a reasonable extension to the repair deadline will occur insofar as such impediments have as proven a substantial influence on the completion of the repair; this shall also apply if such circumstances occur after we are in default.

15. Ban on offsetting and assignment; subcontractors
15.1 The customer is only entitled to offsetting in the event of undisputed claims or claims which have been declared final and binding. This shall not apply if the customer asserts claims in the reciprocal relationship, in particular claims for defects.
15.2 The assignment of rights of the customer from contractual relationships with us presumes our prior consent in order to be valid. This shall not apply insofar as Section 354 a HGB [German Commercial Code] applies.
15.3 We are entitled to use third parties in order to fulfil our contractual obligations.

16. Reservation of title
16.1 The goods delivered by us shall remain our property until the payment of all of our claims against the customer, no matter for what legal grounds, also future ones. In case of current account the afore-mentioned property shall be deemed as security for our balance claim.
16.2 The customer may only sell within the framework of his customary business transactions and neither pledge, nor assign the goods as collateral. The customer hereby assigns us for security of our payment claims against him, in the amount of the value of our delivery and service, all claims with all secondary rights, which he acquires against his buyer owing to such a sale.
16.3 As long as the property has not yet been assigned, the customer has to inform us immediately in writing if the delivered object is attached or is exposed to other interventions of third parties. Insofar as the third party is not in the position to reimburse us the court and out-of-court costs of an action according to Section 771 ZPO [German Code of Civil Procedure] the customer shall be liable for the loss incurred to us.
16.4. We undertake to release the securities to which we are entitled at the customer's request insofar as their value exceeds the claims which are to be secured by more than 20 %."

17. Warranty
17.1 Insofar as the creation of a work has been agreed and thus the law governing contracts for work and services applies the following shall apply: If our services are faulty then we are first of all entitled and obliged to subsequent satisfaction according to Section 634 No. 1 BGB. If the subsequent satisfaction finally fails the customer can according to Section 634 No. 3 cancel the contract or reduce the remuneration and according to Section 634 No. 4 BGB request damages. Claims of the customer for reimbursement of expenses according to Section 634 No. 2 BGB (self-execution) are excluded. Subclause 18 shall apply to claims for damages.
17.2 Insofar as we provide planning services without executing these and thus the law governing service contracts applies (e.g. in the event of a breach of our duties under Subclauses 5.2.1, 5.2.2 and 5.2.3) the following applies: If our services are faulty then we are first of all entitled and obliged to subsequent improvement. If the subsequent improvement finally fails the customer is entitled to damages according to Subclause 18.
17.3 Excluded from the warranty are damages as a result of natural wear and tear, faulty maintenance – insofar as we have not carried out this maintenance as per contract, failure to comply with operating equipment regulations, excessive use, unsuitable operating equipment, chemical or electrolytic influences, faulty construction and assembly work of third parties as well as other causes, for which we are not responsible.
17.4 The warranty shall lapse if the customer or third party makes changes or repairs to our services /products without our prior written consent unless the defect is not a result thereof.
17.5 Claims of the customer owing to defects of quality and title shall become statute-barred with the expiry of 12 months after the acceptance of the work or the knowledge of defects with the provision of planning services.

18. Liability
18.1 We shall be liable to an unlimited extent in case of wilful intent and gross negligence as well as with the injury to life, the body and the health as well as with the culpable breach of essential contractual obligations. Deemed as essential are such contractual obligations, the fulfilment of which makes the proper execution of the contract possible at all and the compliance with which the contractual partner may as a rule rely and depend on.
18.3 Incidentally our liability is excluded.
18.4 A liability according to the Product Liability Act remains unaffected.
18.5 The personal liability of our legal representatives and vicarious agents is limited as our own liability according to the afore-mentioned provisions.

19. Term of the contract; termination
19.1 Service agreements according to Subclause 5. shall come into force when signed by both parties and shall initially apply until the end of the calendar year, that follows the year in which the contract was concluded. The contractual relationship will subsequently be extended respectively by one further year unless it is terminated by one of the parties with a period of notice of 3 months to the end of the second or a following year. Contractual relationships can be terminated on the whole or only with regard to individual products.
19.2 The right to the extraordinary termination for an important reason remains unaffected.

20. Place of jurisdiction; applicable law
20.1 With all disputes ensuing from the contractual relationship if the orderer is a merchant, a legal entity under public law or a special fund under public law, the action is to be filed at the court that has jurisdiction for our headquarters. We are also entitled to file an action at the headquarters of the orderer.
20.2 The legal relationship is subject to the law of the Federal Republic of Germany. German international private law and the Viennese Convention of the United Nations concerning Contracts for the International Sale of Goods (CISG) will not apply.

RÖHM GmbH

89565 Sontheim (Germany)

Status: October 2015

RÖHM GmbH
Heinrich-Röhm-Straße 50
89567 Sontheim/Brenz
Germany
Tel +49 7325 16 0
Fax +49 7325 16 510
info@roehm.biz
www.roehm.biz

driven by technology

Id.-Nr. 1178263 / 1118 AU