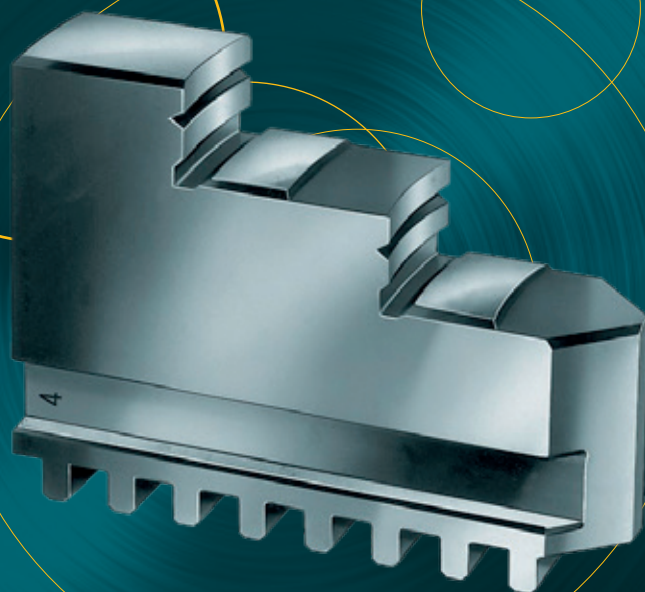


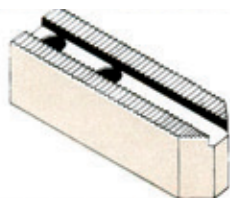
4.1

MORS KLEMMEN



STEMATOOLS

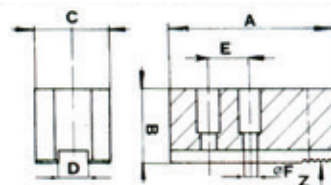
QUALITY TOOLS FOR PROFESSIONALS



TIPO
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AUTOBLOK

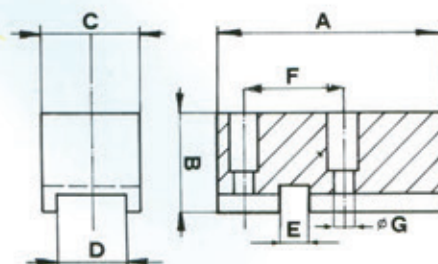
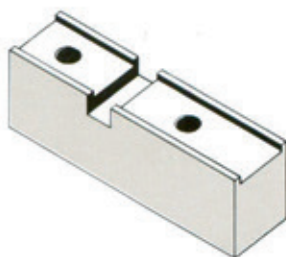
AUTOMATICO
AUTOMATIC
AUTOMATIQUE
AUTOMATISCH



Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	Ø F	Z
125 + 127	10.22.01/A	60	30	30	12	16	9	1/16" x 90°
154 + 160	10.22.02/A	75	35	35	14	16	11	1/16" x 90°
154 + 160	10.22.02/A mat c.40	75	35	35	14	16	11	1/16" x 90°
154 + 160	10.22.02/A H50	75	50	35	14	16	11	1/16" x 90°
154 + 160	10.22.02/A H60	75	60	35	14	16	11	1/16" x 90°
170	10.22.03/A	85	40	40	14	20	11	1/16" x 90°
200 c. 14	10.22.04/A	95	40	40	14	20	11	1/16" x 90°
200 c. 17	10.22.05/A	95	40	40	17	23	13	1/16" x 90°
200 + 220	10.22.05/A mat c.40	95	40	40	17	23	13	1/16" x 90°
200 + 220	10.22.05/A H50	95	50	40	17	23	13	1/16" x 90°
200 + 220	10.22.05/A H60	95	60	40	17	23	13	1/16" x 90°
200 + 220	10.22.05/A H80	95	80	40	17	23	13	1/16" x 90°
200 + 220	10.22.05/A H100	95	100	40	17	23	13	1/16" x 90°
210 + 220	10.22.06/A c.17	105	40	40	17	23	13	1/16" x 90°
220	10.22.06/A c.18	105	45	45	18	28	15	1/16" x 90°
250	10.22.07/A H45	115	45	45	21	30	17	1/16" x 90°
250	10.22.07/A	115	50	50	21	30	17	1/16" x 90°
250	10.22.07/A mat c.40	115	50	50	21	30	17	1/16" x 90°
250	10.22.07/A H60	115	60	50	21	30	17	1/16" x 90°
250 + 315	10.22.07/A 2 CLD	120	60	60	25,5	34	21	1/16" x 90°
250 + 350	10.22.07-8/A H80	125	80	50	21	30	17	1/16" x 90°
250 + 350	10.22.07-8/A H100	125	100	50	21	30	17	1/16" x 90°
250 + 350	10.22.07-8/A H120	125	120	50	21	30	17	1/16" x 90°
300 + 350	10.22.08/A	130	50	50	21	30	17	1/16" x 90°
300 + 350	10.22.08/A mat c.40	130	50	50	21	30	17	1/16" x 90°
300 + 350	10.22.08/A H60	130	60	50	21	30	17	1/16" x 90°
300 + 350	10.22.08/A L. 150	150	50	50	21	30	17	1/16" x 90°
400	10.22.09/A	145	60	60	21	30	17	1/16" x 90°
500	10.22.10/A	170	60	60	28	38	21	3/32" x 90°
500	10.22.10/A c.25,5	170	60	60	25,5	38	21	3/32" x 90°
500 + 630	10.22.11/A	160	70	70	28	38	21	3/32" x 90°
500 + 630	10.22.11/A c.25,5	160	70	70	25,5	38	21	3/32" x 90°

TIPO
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TYPE
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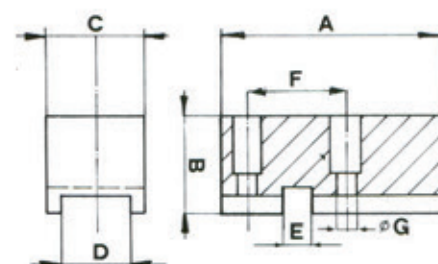
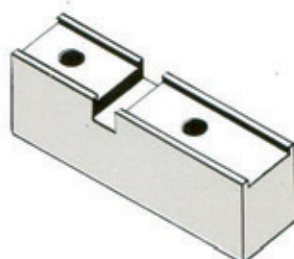
ROTOMORS AM-AT



Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	Ø G
200	18.22.00/R	100	35	35	30	12	50	11
230	18.22.01/R	110	35	35	30	12	50	11
270	18.22.02/R	120	35	35	30	12	70	11
310	18.22.03/R	140	50	50	40	12	70	13
350	18.22.04/R	150	50	50	40	12	80	17
400	18.22.05/R	170	60	60	40	12	90	17

TIPO
TYPE
TYPE
TYP

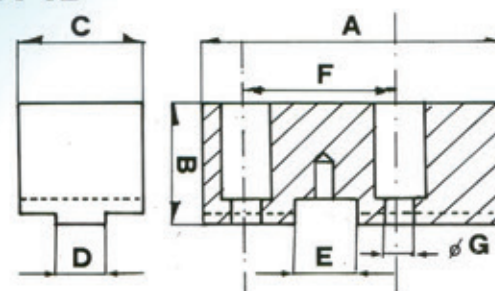
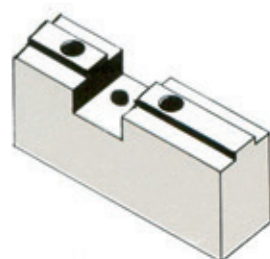
ROTOMORS PN-RA



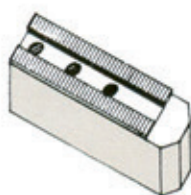
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	Ø G
160	20.22.01/R	70	35	35	27	12	36	9
180	20.22.02/R	75	35	35	27	12	36	9
200	20.22.03/R	80	40	40	32	12	40	11
220	20.22.04/R	85	40	40	35	12	40	11
250	20.22.05/R	100	55	55	45	12	54	13
300	20.22.06/R	130	55	55	45	12	65	15

TIPO
TYPE
TYPE
TYP

ROTOMORS PN-ID



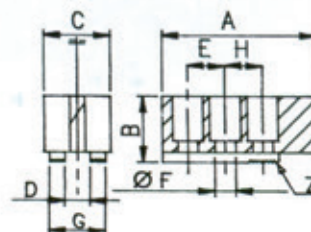
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	Ø G
160	21.22.00/R	70	35	35	10,5	18	36	9
180-200	21.22.01/R	80	35	35	10,5	18	36	9
220	21.22.02/R	85	40	40	13	18	36	9
250	21.22.03/R	100	55	55	16	18	40	13
300-400	21.22.04/R	120	55	55	16	26	54	15



TIPO
TYPE
TYPE
TYP

GAMET N-MO-GO-MF
NIKKO HF-MO-HG-GO-HDM
RÖHM KFN-KFM-KFG-KFE

AUTOMATICO
AUTOMATIC
AUTOMATHIQUE
AUTOMATISCH



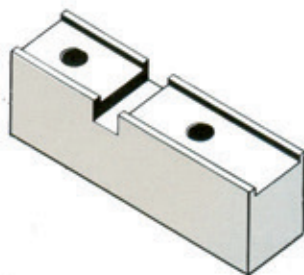
Ø	RIFERIMENTO / REFERENCE RÉFÉRECE / REFERENZ	A	B	C	D	E	Ø F	G	H	Z
105	25.22.00/G	55	30	25	10	15	9	20	-	1.5 x 60°
130	25.22.01/G	65	30	25	11	22	9	25	-	1.5 x 60°
160	25.22.02/G	77	35	35	11	20	9	27	-	1.5 x 60°
215	25.22.03/G	102	45	45	14	22	11	34	22	1.5 x 60°
250-280	25.22.04/G	125	50	50	20	30	13	44	30	1.5 x 60°
350	25.22.05/G	170	60	50	21	40	17	50	40	1.5 x 60°
450	25.22.06/G	220	80	70	30	50	21	69	50	1.5 x 60°

GAMET TIPO "MAC"

Ø	RIFERIMENTO / REFERENCE RÉFÉRECE / REFERENZ	A	B	C	D	E	Ø F	G	H	Z
165	25.22.10/G	75	30	30	14	20	11	-	20	1/16 x 90°
200	25.22.11/G	95	35	35	17	25	13	-	25	1/16 x 90°
250	25.22.12/G	119	45	45	21	32	17	-	32	1/16 x 90°
315	25.22.13/G	150	45	45	21	38	17	-	38	1/16 x 90°
380	25.22.14/G	182	55	55	25,5	42	21	-	42	1/16 x 90°

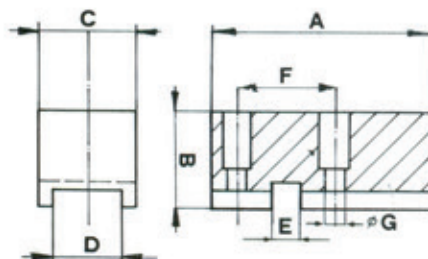
GAMET TIPO "GA"

Ø	RIFERIMENTO / REFERENCE RÉFÉRECE / REFERENZ	A	B	C	D	E	Ø F	G	H	Z
110	25.22.20/G	50	25	25	10	12	7	-	-	1.5 x 60°
130-140	25.22.21/G	58	25	25	11	15	9	-	-	1/16 x 90°
160-170	25.22.22/G	72	35	35	14	18	11	-	-	1/16 x 90°
210	25.22.23/G	93	35	35	17	20	13	-	-	1/16 x 90°
250	25.22.24/G	110	45	45	21	26	17	-	-	1/16 x 90°
315	25.22.25/G	140	45	45	21	31	17	-	-	1/16 x 90°

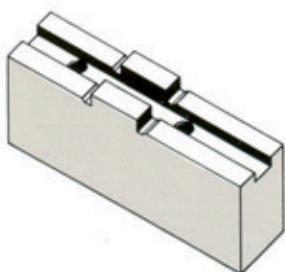


TIPO
TYPE
TYPE
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FORKARDT "F" **REISHAUER** **RÖHM** **SMW**

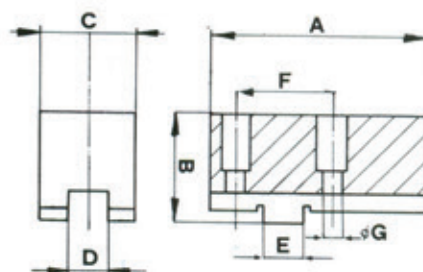


RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	Ø	A	B	C	D	E	F	ØG	FORKARDT	REISHAUER	RÖHM	SMW
23.22.96/F	80	38	25	15	9	4	16	6	F80	—	—	—
23.22.97/F	100	46	30	20	11	5	19	6	F100	—	—	—
23.22.98/F	125	55	30	20	14	5	20	7	F125	RHU 125	DURO 125	RMG 125

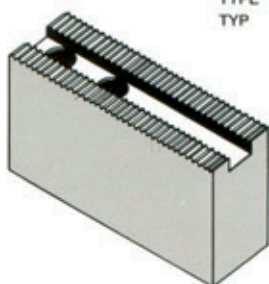


TIPO
TYPE
TYPE
TYP

BERG **FORKARDT "F"** **REISHAUER** **RÖHM** **SMW**



RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	Ø	A	B	C	D	E	F	ØG	BERG	FORKARDT	REISHAUER	RÖHM	SMW
23.22.99/F	140	69	40	20	8	18	32	9				Duro-NC140	KNCS 140
23.22.00/F	160	85	40	20	8	18	32	9	KHNC 160	F 160	RHU 160	Duro 160	RMG 160
									KHNC 185	KTNC 160		Duro-NC 160	HG 160
										KTNCV 175		Duro-NCE 160	KNSP 160
													KNCS 160
													KNCS 175
23.22.01/F	200	105	50	25	10	20	40	9	KHNC 200	F 200	RHU 200	Duro 200	RMG 200
										KTNC 200		Duro-NC 200	HG 200
										KTNCV 200		Duro-NCE 200	KNSP 200
													KNCS 200
23.22.02/F	250	125	50	30	12	20	40	13	KHNC 250	F 250	RHU 250	Duro 250	RMG 250
									KHNC 315	UNC 250/315		Duro-NC 250	HG 250
										KTNC 250		Duro-NCE 250	HG 315
										KTNCV 250		Duro-NCE 315	KNCS 250
										KTNC 265			KNCS 260
										KTNC 280			KNCS 315
										KTNC 315			
										KTNCV 315			
23.22.03/F	315	145	60	35	12	26	54	13	KHNC 400	F 315	RHU 315	Duro 315	RMG 315
										UNC 400		Duro-NC 315	HG 400
										KTNC 360		Duro-NCE 400	KNCS 400
										KTNC 400			
										KTNCV 400			
23.22.04/F	400	180	80	50	18	30	60	17	KHNC 500	F 400/500 L		Duro 400	HG 500
										UNC 500		Duro-NC 400	HG 630
										KTNC 500		Duro 500	KNCS 500
										KTNC 630		Duro-NC 500	KNCS 630
										KTNCV 500		Duro-NCE 500	
										KTNCV 630			
23.22.05/F	500	220	90	60	18	40	76	17		F 500			
23.22.06/F	630	260	120	60	24	40	82	21		F 630			



TIPO
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AUTOBLOK (PER SERIE COMPLETA VEDI PAG. 3)

BERG

FORKARDT

GAMET (MAC)

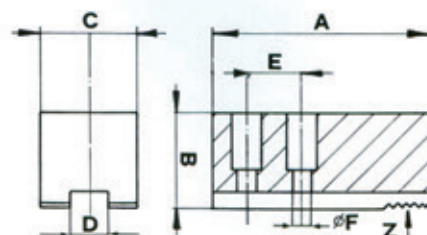
GEIGER + HAAG

HOFMANN

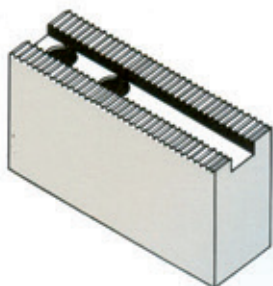
RÖHM

SMW

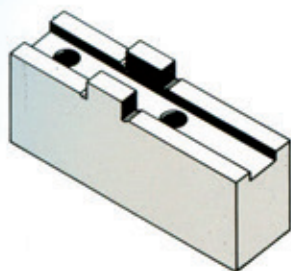
AUTOMATICO
AUTOMATIC
AUTOMATIQUE
AUTOMATISCH



RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	Ø	A	B	C	D	E	ØF	Z	AUTOBLOK	BERG	FORKARDT
10.22.01/A	125	60	30	30	12	16	9	1/16" × 90°	IDN 125 GHDN 125	KF 130	
10.22.03/A	170	85	40	40	14	20	11	1/16" × 90°	IDN 170; HDB170 IDL 170 HDN 170 HDL 170 GHDN 165 GHD/FC 165		
24.22.00/F	160	70	60	40	17	22	13	1/16" × 90°		KF 160-200 HES 160-200 KHFF 200	3KGH160-175-200; KTG160-200 3KGHF160-175-200; KTN160-200 KS 160-200-250; KL 160-200 KSPS 160-200; KSF 175-200 3 KTGF 200; KSHF 200 UVE 160-200-250; KP 200 KG 200 3 NHF 200; 3 NH 200 KSH 160-200; KLNC 200
24.22.01/F	200	90	60	40	17	22	13	1/16" × 90°		KF 200 HES 200 KHFF 200	3 KGH 200; KTG 200 3 KGHF 200; KTN 200 KS 200-250; KSH 200 KL 200; KSF 200 3 KTGF 200; KSHF 200 UVE 200-250 KG 200; KSPS 200 3 NHF200; KSHF250-55 (Index) 3 NH200; 3 NHF 250-65 (Index) 3 NHF 290-104 (Index) KL 250 Mo; KS 250 Mo KLNC 200; KP 200
24.22.02/F	250	120	80	50	21	28	17	1/16" × 90°		KF 250-315 HES 250-315 KHFF 250-315	KS 315-400; KSH 250-315-400 KG 250-315; KP 250-315 3 KTGF 250-315 UVE 315; KSHF 250-315-400 KTG 250-315. KLNC 250-315 KTN 250-315 3 NHF 250-315 3 NH 250-315 3 NHF 290; 3 NHF 400 (Index) KL 250; KSPS 250-300
24.22.03/F	300	140	90	60	25,5	35	21	1/16" × 90°			KL 300 KSHF 560
24.22.04/F	400	155	90	60	25,5	35	21	3/32" × 90°		KF 400-500-630 HES 400-500-630 KHFF 400	KS 500-630; KSH 500 KSL 630; KSHF 630 3 KTGF 400-500 UVE 400-500-630-800 KTG 400-500; KTN 400-500 KG 400-500; 3 NHF 400-500-630 3 NH 400-500-630; KL 400-500 KLNC 400-500; KP 400



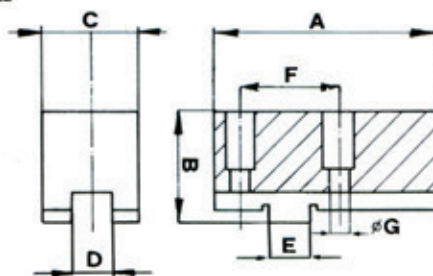
GAMET	GEIGER + HAAG	HOFMANN	RÖHM	SMW
	GHGY 120-130	LK 130	KFD 130	KDV 130
	GHGY 160-200	LK 140	KFH 140	
MAC 165				
MAC 200	GHFA 175	LKL 160-200-250	KFH 160-200	HFKS 160-200
MAC 220	GHHFA 200-250	KHC 160-200	KFH-NC 160-200	KDV 160-200-250
	GHN 160-200	KHC-B 160-200-250	KFH-F 160-200	KDVG 160-200-250
	GHS 160-200		KFH-G 160-200	
	GHS 160-200-250		KFD-HF 160-200	
	GHL 160-200		KFD 160-200	
	GHL 160-200-250		SPD 160-215	
	GHS 160-190-210-225		SPO 160-215	
	GHS/GHS 160-215			
	GHL 250 Mo			
MAC 200	GHHFA 200-250	LKL 200-250	KFH 200	HFK 200
MAC 220	GHN 200	KHC 200	KFH-NC 200	HFKS 200
	GHS 200	KHC-B 200-250	KFH-F 200	KDV 200-250
	GHS 200-250		KFH-G 200	KDVG 200-250
	GHL 200		KFD-HF 200	
	GHL 200-250		KFL 250	
	GHS 190-210-225		SPD 215	
	GHGY 250-300		SPO 215	
	GHL 250 Mo			
	GHS/GHS 215			
MAC 250-315	GHN 250-315	LKL 315-400	KFH 250-315	HFK 250-315
	GHS 250-315	KHC 250-315-400	KFH-NC 250-315	HFKS 250-315
	GHS 315	KHC-B 315-400	KFH-F 250-315	KDV 315-400
	GHL 250-280		KFH-G 250-315	KDVG 315-400
	GHL 280		KFD-HF 250-315	
	GHS/GHS 300		KFD 250-315	
			KFL 315-400	
			LVE 305	
			SPD 300	
			SPO 300	
MAC 380		LK 315		
		KHB 400		
		LKL 500	KFH 400-500	HFK 400-500
		KHC 500	KFH-NC 400-500	HFKS 400-500
			KFH-F 400-500	KDV 500
			KFH-G 400-500	KDVG 500
			KFD-HF 400-500	
			LVE 400-500-630-1000	
			KFD 400-500-630-800	
			KFL 500-600	



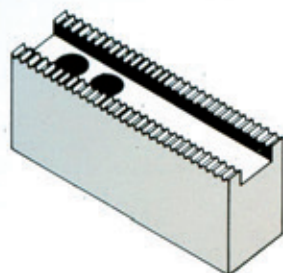
TIPO
TYPE
TYPE
TYP

RÖHM

MANUALE
MANUAL
MANUEL
MANUELL



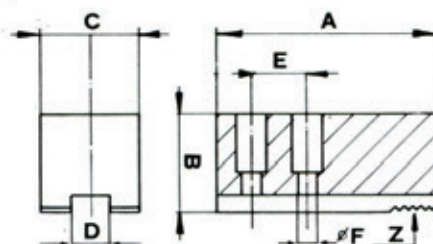
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	Ø G
100	26.22.00/R	53	30	25	7.96	9.49	24	7
125	26.22.01/R	62	40	25	7.96	12.67	32	9
160	26.22.02/R	74	45	30	7.96	12.67	38.1	9
200	26.22.03/R	87	45	30	7.96	12.67	44.45	9
250	26.22.04/R	103	50	35	12.72	19.02	53.95	13
315	26.22.05/R	120	60	40	12.72	19.02	63.5	13
350-400	26.22.06/R	140	70	50	12.72	19.02	76.2	17
450-800	26.22.07/R	160	80	50	12.72	19.02	76.2	21



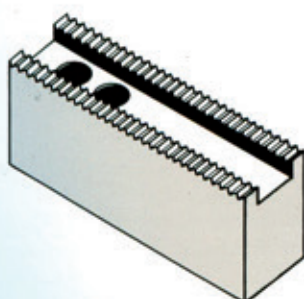
TIPO
TYPE
TYPE
TYP

RÖHM

AUTOMATICO
AUTOMATIC
AUTOMATHIQUE
AUTOMATISCH



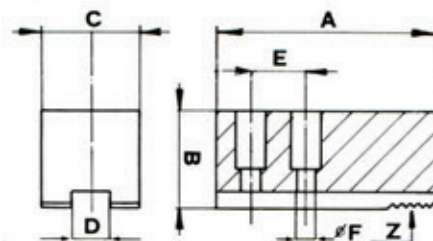
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	Ø F	Z
110	27.22.00/R	53	30	20	10	13	7	1/16" x 90°
130	27.22.01/R	55	40	25	12	15	9	1/16" x 90°
160	27.22.02/R	80	50	35	17	20	13	1/16" x 90°
200	27.22.03/R	95	50	35	17	20	13	1/16" x 90°
250	27.22.04/R	110	50	50	21	26	17	1/16" x 90°
315	27.22.05/R	120	80	50	21	28	17	1/16" x 90°



TIPO
TYPE
TYPE
TYP

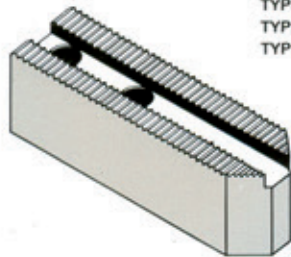
RÖHM LVE

AUTOMATICO
AUTOMATIC
AUTOMATHIQUE
AUTOMATISCH



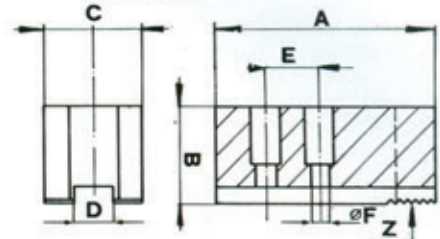
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	Ø F	Z
160	27.22.10/R	80	40	30	13	18	9	1/16" x 90°
200	27.22.11/R	95	50	35	17	22	11	1/16" x 90°
250	27.22.12/R	110	50	50	21	25	13	1/16" x 90°
315	27.22.13/R	130	50	50	21	30	13	1/16" x 90°

BERG "KH"

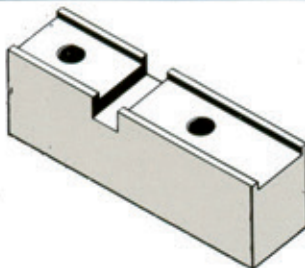


TIPO
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AUTOMATICO
AUTOMATIC
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AUTOMATISCH



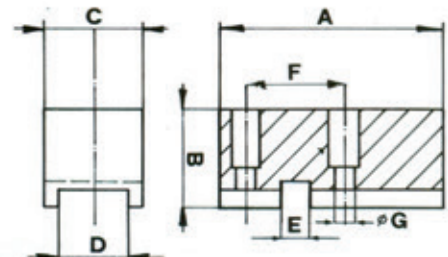
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	Ø F	Z
110	31.22.01/B	55	40	25	8	14	9	1/16" x 90°
140-160	31.22.02/B	70	45	30	10	19	11	1/16" x 90°
175-200	31.22.03/B	84	45	30	12	21	13	1/16" x 90°
175-200	31.22.04/B	90	60	30	12	21	13	1/16" x 90°
250-315	31.22.05/B	111	60	40	16	29	17	1/16" x 90°
400-500-630	31.22.06/B	150	80	50	20	38	22	3/32" x 90°



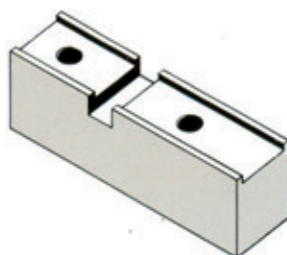
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TOS

MANUALE
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MANUEL
MANUELL



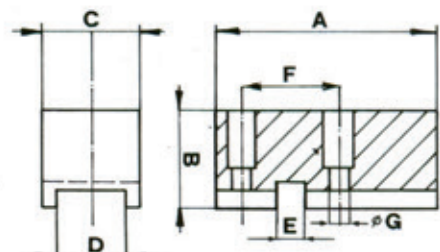
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	Ø G
160	28.22.02/T	80	35	25	18	12	38	7
200	28.22.04/T	100	40	30	22	14	48	11
250	28.22.06/T	125	40	30	25	14	55	11
315	28.22.07/T	155	60	40	32	20	60	13
400	28.22.08/T	165	70	40	32	20	70	13



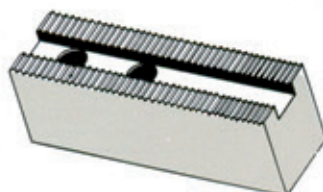
TIPO
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KENNON COREANO

MANUALE
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MANUELL



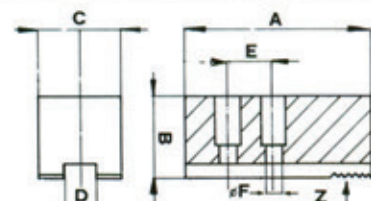
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	G
200	30.22.00/K	100	40	30	13	13	56	11
250	30.22.01/K	120	50	30	13	13	70	11
320	30.22.02/K	140	60	40	16	16	88	13
400	30.22.03/K	180	70	40	16	16	100	13



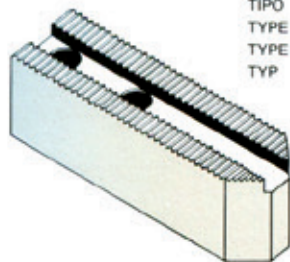
TIPO
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SMW SP-STP-STWP-LP-bb

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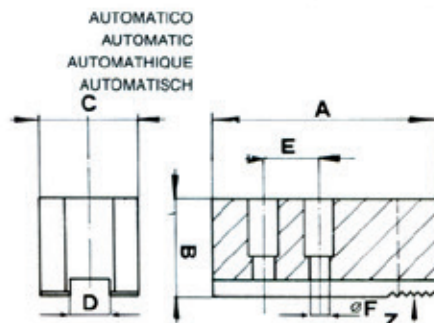


Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	Ø F	Z
125	19.22.00/S	68	40	30	11	18	9	1/16" x 90°
160	19.22.01/S	88	50	35	14	25	11	1/16" x 90°
200	19.22.02/S	98	50	40	17	29	13	1/16" x 90°
250	19.22.03/S	108	70	50	21	30	15	1/16" x 90°
315	19.22.04/S	120	70	50	21	30	17	1/16" x 90°
400	19.22.05/S	160	80	60	25,5	40	19	3/32" x 90°



TIPO
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HOWA-KITAGAWA MATSUMOTO



RIFERIMENTO / REFERENCE REFERENCE / REFERENZ	A	B	C	D	E	ØF	Z	Ø MAND.	HOWA	Ø MAND.	KITAGAWA	Ø MAND.	MATSUMOTO
HKM 11.01	50	25	20	8	15	7	1.5 x 60°	110	HO1MA4	110	HOB-4 B-04		
HKM 11.05	55	25	25	10	14	9	1.5 x 60°			110	NO4-HJ-4 AS 110		
HKM 11.06	55	50	25	10	14	9	1.5 x 60°						
HKM 13.01	55	30	25	10	18	9	1.5 x 60°	135	HO1MA5	135	HOB-5 B-05		
HKM 13.02	55	40	25	10	18	9	1.5 x 60°			135	HJ-5 N-05		
HKM 13.05	55	25	25	10	19	9	1.5 x 60°						
HKM 13.06	55	40	25	10	19	9	1.5 x 60°	110/135	HO27M4 / HO27M5				
HKM 13.11	50	25	25	11	16	9	1.5 x 60°	135	HC9 / 17M5				
HKM 13.15	60	25	25	11	19	9	1.5 x 60°						
HKM 16.01	75	45	30	11	20	9	1.5 x 60°	165	HO1MA6 HO7MA6 HO15M6 HO22M6 HO24M6 HO27M6 HO47M6	165	HJA 5-6 HOS6 AS165 B160 N160 HOH 160 HOB-6 B206A5 HO-6	165	HA5-6 HX-6 H-6 HH-6 HJ-6 STC-6
HKM 16.05	80	30	30	12	20	11	1.5 x 60°						
HKM 16.06	75	40	30	12	20	11	1.5 x 60°						
HKM 16.07	75	50	30	12	20	11	1.5 x 60°						
HKM 16.08	75	60	30	12	20	11	1.5 x 60°						
HKM 21.3.01	95	40	40	14	25	13	3 x 60°	210	HO1MA8 / HO2M8				
HKM 21.00	95	40	35	14	25	13	1.5 x 60°	210	HO7MA8 HO15M8 HO23M8	210	B200 N200 AS210 HOS-8 HJA6-8 HO-8 B208A6 HOB-8 HOH200	210	HA6-8 HX6 H8 HH8 HJ-8 HHJ-8 STC8
HKM 21.01 mat. C 40	95	40	40	14	25	13	1.5 x 60°						
HKM 21.01	95	40	40	14	25	13	1.5 x 60°						
HKM 21.02	95	50	40	14	25	13	1.5 x 60°						
HKM 21.03	95	60	40	14	25	13	1.5 x 60°						
HKM 21.04	95	80	40	14	25	13	1.5 x 60°						
HKM 21.10	95	40	40	16	25	13	1.5 x 60°	210	HO27M8 HO22M8 HO47M8 HO24M8 HO7MA10 HO15M10 HO23M10				
HKM 21.11	95	50	40	16	25	13	1.5 x 60°	254	HO1MA10 / HO2M10	254	B250 HOH-250 B210-A6-A8 HOB-10 AS250 N250 HJA6-10 HJA8-10 HOS-10 HO-10	254 270	HA6-10 HA8-10 HX10 H10 HH10 HHL-10 HJ10 HHJ-10 STC-10 HA8-11
HKM 21.12	95	60	40	16	25	13	1.5 x 60°						
HKM 21.13	95	80	40	16	25	13	1.5 x 60°						
HKM 25.3.01	110	60	40	16	30	13	3 x 60°	254	HO27M10 / HO47M10				
HKM 25.01 mat. C 40	110	40	40	16	30	13	1.5 x 60°	304	HO7MA 12 HO15M 12 HO22M 10 HO23M 12 HO24M 10	304	B300 HOH-300 N300 HOS-12 HO12 HJA8-12 HLA6-12 HJA6-12 HOB-12 HLA6-15 HLA8-15	304	HAB12 HX12 H12 SH12 HH12 HHL-12 HJ-12 HHJ-12
HKM 25.01	110	40	40	16	30	13	1.5 x 60°			254			
HKM 25.02	110	60	40	16	30	13	1.5 x 60°						
HKM 25.03	110	80	40	16	30	13	1.5 x 60°						
HKM 25.10	110	45	45	18	30	15	1.5 x 60°	304	HO27M12 / HO47M12				
HKM 30.01	130	50	50	18	30	15	1.5 x 60°	381	HO1MA12 / HO2M 12	381	B380 HOH380 HOB-15/B450 HOB-18		
HKM 30.02	130	60	50	18	30	15	1.5 x 60°			381	HJ380 HJA11-15 HJA8-18 HLA8-18 HJA8-21 HLA8-21		
HKM 30.03	130	80	50	18	30	15	1.5 x 60°						
HKM 30.04	130	100	50	18	30	15	1.5 x 60°						
HKM 30.10	130	50	50	21	30	17	1.5 x 60°	304	HO27M12 / HO47M12				
HKM 30.15	130	50	50	21	35	17	1.5 x 60°	304	HO1MA12 / HO2M 12				
HKM 30.3.01	130	50	50	18	30	15	3 x 60°	304	HO22M12 / HO24M12 HO7MA15 / HO23M15				
HKM 30.3.05	130	50	50	21	40	17	3 x 60°	381					
HKM 38.01	165	70	70	22	43	21	1.5 x 60°			381 454			
HKM 38.05	156	70	70	22	60	21	1.5 x 60°			381 454 530			
HKM 38.3.01	156	70	70	22	50	21	3 x 60°				381 454	HA11-15 H15HH15 HHL15 HA11-18 H18HH18	
HKM 38.3.05	140	60	60	26	42	21	3 x 60°	381	HO27M15 / HO47M15				
HKM 38.10	135	60	50	25,5	43	21	1.5 x 60°			381	N15A8		
HKM 53.3.01	200	70	70	25	60	21	3 x 60°			530 610 454	B530 HJ530/HOB21 B-600 HJ610 HOB24/HJ450		
HKM 61.3.01	156	70	70	26	50	21	3 x 60°	381/454 530/610	HO 1MA15/HO 1MA18 HO 1MA21/HO 1MA24				

Tutti i morsetti teneri di serie, a catalogo, sono costruiti in acciaio FE42. Su richiesta si costruiscono in qualsiasi tipo di materiale.
All soft standard jaws shown in the catalogue are manufactured in steel FE42. Any material can be used on request.
Alle weichen Standardspannbacken im Katalog sind im Stahl FE42 hergestellt. Jegliches Material kann auf Wunsch verwendet werden.
Tous les mors doux standard illustrés dans le catalogue sont réalisés en acier FE42. Nous pouvons les fabriquer en tout type de matériel sur demande.

Abbiamo inserito nel nostro programma la costruzione di **MORSETTI IN MATERIALE ALLUMINIO SPECIALE, RESISTENZA: 480-530 N/mm².**

Vi presentiamo gli articoli che potete trovare disponibili a magazzino, qualora le Vostre esigenze richiedano articoli o dimensioni diverse, siamo a Vostra disposizione per trovare la soluzione più adatta al Vostro problema.

VANTAGGI DEI MORSETTI RIPORTATI IN ALLUMINIO:

- Peso più leggero (3 volte più leggero dell'acciaio);
- Aumenti dei risultati di lavorazione grazie alle velocità più elevate;
- Forza di serraggio più elevata grazie a una forza centrifuga ridotta;
- Resistenza elevata (equivalente all'acciaio);
- Resistenza all'usura.

We have the pleasure to inform you that we started the manufacturing of **JAWS MADE OF SPECIAL ALUMINIUM, RESISTANCE: 480-530 N/mm².**

We present you our items that you can find available in stock, if your need requested different items or sizes, we are at your disposal to find the solution more suitable for your problem.

BENEFITS OF ALUMINIUM SOFT TOP JAWS:

- Lighter weight (3 times lighter than steel clamps);
- Increase in production results thanks to a higher speed;
- Increase in tightening resistance thanks to a lower centrifugal force;
- Good resistance (it is the same of steel);
- Abrasion resistance.

Nous avons insérée en notre programme la construction des **MORS EN ALUMINIUM SPECIAL, DURETÉ: 480-530 N/mm².**

Nous présentons les articles que vous pouvez trouver disponibles en magasin, si les vôtres exigences demandent différents articles ou dimensions, nous sommes à votre disposition pour trouver la solution plus convenable au votre problème.

AVANTAGE DES MORS RAPPORTÉS EN ALUMINIUM:

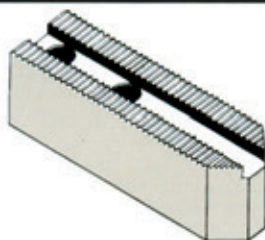
- Poids plus faible (3 fois plus léger que l'acier);
- Augmentation des performances d'usinage grâce aux vitesses de broches plus élevées;
- Force de serrage plus élevée grâce à une force centrifuge réduite;
- Dureté élevée (équivalente à l'acier);
- Résistance à l'usure.

Wir haben die **WEICHE BACKEN IN SPEZIAL-ALUMINIUM** in unseres produktion programm eingefügt,

FESTIGKEIT: 480-530 N/mm². Hier vorzeigen wir die referugborenen artikeln am lager, für weitere erklärungen - rerschidence artikeln oder grössen - bitten wir sich in verbindung mit uns setzen.

VORTEILE DER ALUMINIUM - AUFSATZBAKEN:

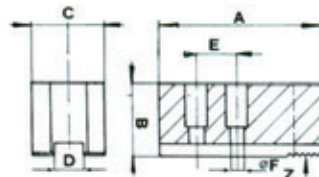
- Geringes eigengewicht (3 x leichter als stahl);
- Verbesserung der drehleistung durch höhere drehzahlen;
- Höhere spannkraft durch geringere fliehkraft;
- Hohe zugfestigkeit (△ stahl);
- Verschleissfest.



TIPO
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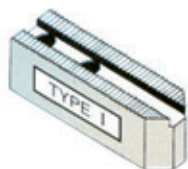
HOWA-KITAGAWA MATSUMOTO

AUTOMATICO
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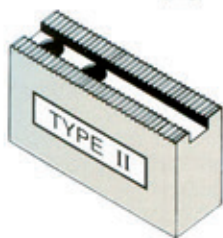


ALLUMINIO SPECIALE, RESISTENZA: 480-530 Nmm2
SPECIAL ALUMINIUM, RESISTANCE: 480-530 Nmm2
ALUMINIUM SPECIAL, DURETÉ: 480-530 Nmm2
SPEZIAL ALUMINIUM, FESTIGKEIT: 480-530 Nmm2

RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	° F	° Z	MAND.	HOWA	MAND.	KITAGAWA	MAND.	MATSUMOTO
HKM 13.01 AL	55	25	25	10	18	9	1.5 x 60°			135	HOB-5 B-05		
HKM 13.11 AL	50	25	25	11	16	9	1.5 x 60°	110/135	HO27M4 / HO27M5				
HKM 16.05 AL	80	35	35	12	20	11	1.5 x 60°	165	HO1MA6 HO7MA6 HO15M6 HO22M6 HO24M6 HO27M6 HO47M6	165	HJA5-6 HOS6A5 165 B160 N160 HOH 160 HOB-6 B206A5 HO-6		
HKM 16.07 AL	75	50	30	12	20	11	1.5 x 60°						
HKM 21.01 AL	95	40	40	14	25	13	1.5 x 60°	210	HO7MA8 HO15M8 HO23M8	210	B200 N200 AS210 HOS-8 HJA6-8 HO-8 B208A6 HOB-8 HOH200	210	HA6-8 HX6 H8 HH8 HJ-8 HHJ-8 STC8
HKM 21.03 AL	95	60	40	14	25	13	1.5 x 60°						
HKM 21.10 AL	95	40	40	16	25	23	1.5 x 60°	210	HO27M8 HO22M8 HO47M8 HO24M8 HO7MA 10 HO15M 10 HO23M 10				
HKM 21.12 AL	95	60	40	16	25	13	1.5 x 60°	254					
HKM 25.01 AL	110	40	40	16	30	13	1.5 x 60°			254	B250 HOH-250 B210-A6-A8 HOB-10 AS250 N250 HJA6-10 HJA8-18 HOS-10 HO-10	254	HA6-10 HA8-10 HX10 H10 HH10 HHL-10 HJ10 HHJ-10 STL-10 HAB-11
HKM 25.02 AL	110	60	40	16	30	13	1.5 x 60°					270	
HKM 30.01 AL	130	50	50	18	30	15	1.5 x 60°	304	HO7MA 12 HO15M 12 HO22M 10 HO23M 12 HO24M 10	304	B300 HOH-300 N300 HOS-12 HO12 HJA8-12 HLA6-12 HJA6-12 HOB-12 HLA6-15 HLA8-15	304	HAB12 HX12 H12 SH12 HH12 HHL-12 HJ-12 HHJ-12
HKM 30.03 AL	130	80	50	18	30	15	1.5 x 60°			381			
HKM 30.10 AL	130	50	50	21	30	17	1.5 x 60°			304	B-212-A8		

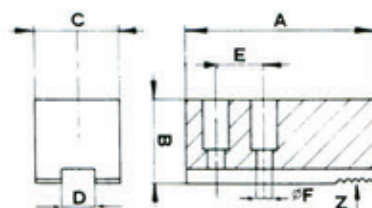


TIPO
TYPE
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TYP



AUTOBLOK BERG FORKARDT GAMET (MAC) GEIGER + HAAG HOFMANN RÖHM SMW

AUTOMATICO
AUTOMATIC
AUTOMATIQUE
AUTOMATISCH



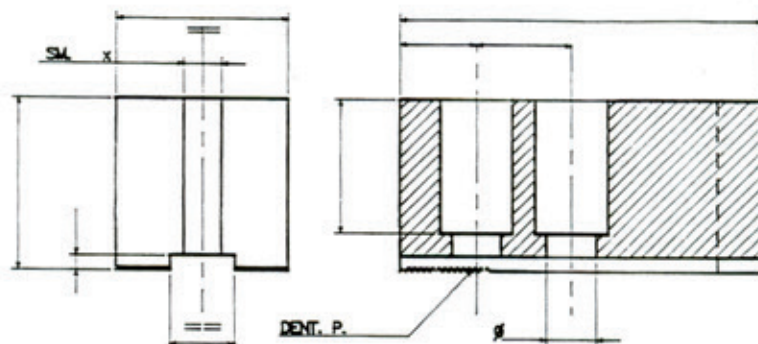
RIFERIM. / REFERENCE REFERENCE / REFERENZ	TYPE	Ø	A	B	C	D	E	ØF	Z	AUTOBLOK	BERG	FORKARDT
10.22.01/AAL	I	125	60	30	30	12	16	9	1/16" x 90°	IDN 125 GHDN 125 BH	KF 130	
10.22.02/AL	I	165	75	35	35	14	16	11	1/16" x 90°	IDN 170; HDB170		
10.22.02/AL 50	I	165	75	50	35	14	16	11	1/16" x 90°	IDL 170		
										HDN 170 HDL 170 BBD GHDN 165 GHM GHD/FC 165 BHD		
24.22.00/F AL	II	160	70	60	40	17	22	13	1/16" x 90°	AND	KF 160-200	3KGH160-175-200; KTG160-200
24.22.01/FAL	II	200	90	60	40	17	22	13	1/16" x 90°	ALD	HES 160-200	3KGHF160-175-200; KTN160-200
10.22.05/AL	I	210	95	40	40	17	23	13	1/16" x 90°	BHD 200-210	KHFF 200	KS 160-200-250; KL 160-200
										BBD BHD/FC HDB PBD RCD IDN IDL HDN HDL GHDN GHD/FC		KSPS 160-200; KSF 175-200 3KTGF 200; KSHF 200 UVE 160-200-250; KP 200 KG 200 3 NHF 200; 3 NH 200 KSH 160-200; KLNC 200 3 KGH 200; KTG 200 3KGHF 200; KTN 200 KS 200-250; KSH 200 KL 200; KSF 200 3KTGF 200; KSHF 200 UVE 200-250 KG 200; KSPS 200 3 NHF200; KSHF250-55 (Index) 3 NH200; 3 NHF 250-65 (Index) 3 NHF 290-104 (Index) KL 250 Mo; KS 250 Mo KLNC 200; KP 200
24.22.02/F AL	II	250	120	80	50	21	28	17	1/16" x 90	AND 250-315	KF 250-315	KS 315-400; KSH 250-315-400
10.22.07/AL	I	250	115	50	50	21	30	17	1/16" x 90	ALD	HES 250-315	KG 250-315; KP 250-315
10.22.08/AL	I	315	130	50	50	21	30	17	1/16" x 90	BHD	KHFF 250-315	3 KTGF 250-315
										BBD BHD/FC HDB; HDN PBD; HDL RCD; GHDN IDM; GHD/FC IDL		UVE 315; KSHF 250-315-400 KTG 250-315; KLNC 250-315 KTN 250-315 3 NHF 250-315 3 NH 250-315 3 NHF 290; 3 NHF 400 (Index) KL 250; KSPS 250-300
24.22.04/F AL	II	400	155	100	60	25,5	35	21	3/32" x 90	500 RCD	KF 400-500-630	KSH 500
10.22.10/AL	II	500	170	60	60	25,5	38	21	3/32" x 90	500 GHDH	HES 400-500-630	KSL 630; KSHF 630
										500-630 HDN/FC	KHFF 400	3 KTGF 400-500 UVE 400-500-630-800 KTG 400-500; KTN 400-500 KG 400-500; 3 NHF 400-500-630 3 NH 400-500-630; KL 400-500 KLNC 400-500; KP 400

IN CASO DI ORDINAZIONI DI MORSETTI SPECIALI ABBIAMO REDATTO LA PRESENTE PAGINA CHE ANDRETE A COMPLETARE COMPILANDO LE MISURE DI VOSTRA NECESSITÀ.

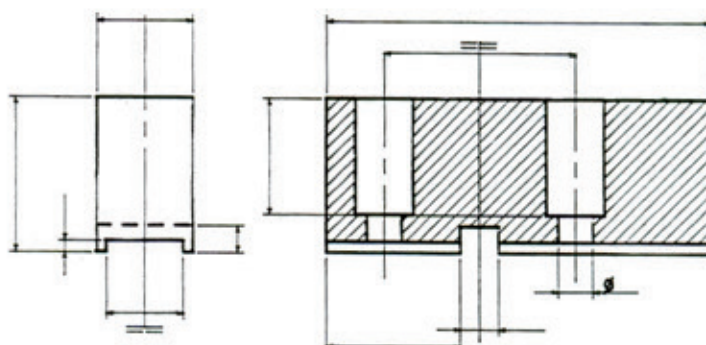
THIS PAGE IS DESIGNED FOR YOUR ORDERS OF SPECIAL JAWS. PLEASE FILL WITH THE DIMENSIONS YOU REQUIRE.

EN CAS DE COMMANDE DE MORS SPECIAUX, NOUS VOUS PRIONS DE COMPLETER LA LISTE DE CETTE PAGE TOUT EN INDIQUANT LES MESURES DE VOTRE NECESSITÉ.

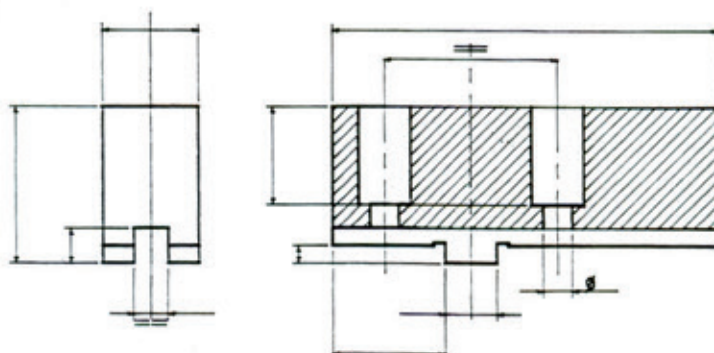
BEI BESTELLUNG VON SPEZIALAUFSATZBACKEN BITTEN WIR SIE, DIE UNTENSTEHENDE ZEICHNUNG MIT ANGABEN DER GEWÜNSCHTEN ABMESSUNGEN ZU VERSEHEN.



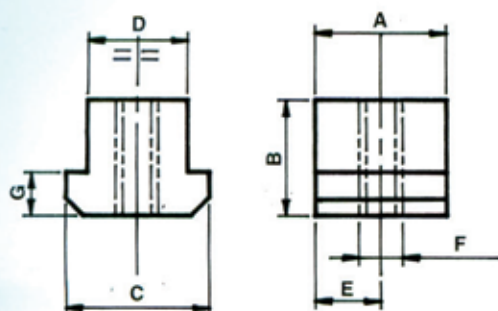
TIPO MANDRINO SPANNFUTTER-TYP	CHUCK-TYP TYPE MANDRIN	MANDRINO SPANNFUTTER	CHUCK MANDRIN	MATERIAL MATERIAL	T.T.	Q.TÀ PCS	STCK Q.TE



TIPO MANDRINO SPANNFUTTER-TYP	CHUCK-TYP TYPE MANDRIN	MANDRINO SPANNFUTTER	CHUCK MANDRIN	MATERIAL MATERIAL	T.T.	Q.TÀ PCS	STCK Q.TE



TIPO MANDRINO SPANNFUTTER-TYP	CHUCK-TYP TYPE MANDRIN	MANDRINO SPANNFUTTER	CHUCK MANDRIN	MATERIAL MATERIAL	T.T.	Q.TÀ PCS	STCK Q.TE



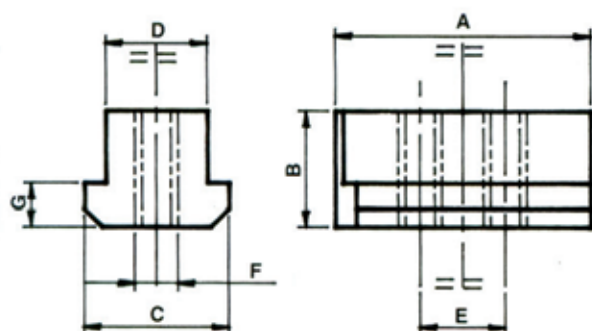
Tasselli a T per Bloccaggio Morsetti

TIPO
TYPE
TYPE
TYP

AUTOBLOK

Blocking devices for jaws - T - Type
Haltevorrichtungen für
Spannbacken - T - Typ
Lardons a - T - fixation des mors

Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	G
125-150	1002/AT	15	15	17	12	= =	M8	6.5
165-170-200	1003/AT	15.50	20	20	14	= =	M10	7.5
200-210-220	1004/AT	20	22	22.5	17	= =	M12	8
250-315-400	1005/AT	25	25	29	21	= =	M16	11
500 GH DN	1006/AT	35	34	36	28	= =	M20	15
500 HDN/F c.	1007/AT	30	34	35	25.5	= =	M20	15
500 + 800	1008/AT	32	40	40	28	= =	M20	15.5



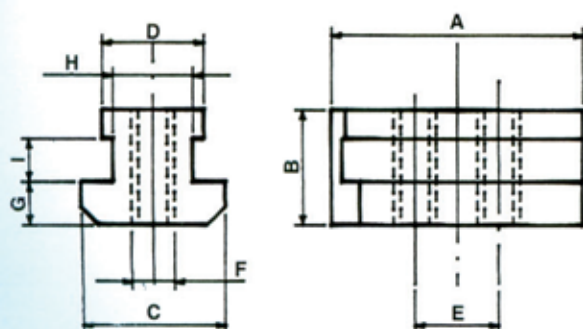
Tasselli a TD per Bloccaggio Morsetti

TIPO
TYPE
TYPE
TYP

AUTOBLOK

Blocking devices for jaws - TD - Type
Haltevorrichtungen für
Spannbacken - TD - Typ
Lardons a - TD - fixation des mors

Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	G
165/170	1003/ATD	35	20	20	14	16	M10	7,5
200/210/220	1004/ATD	41	22	22.5	17	23	M12	8
250/315/400	1005/ATD	54	25	29.0	21	30	M16	11



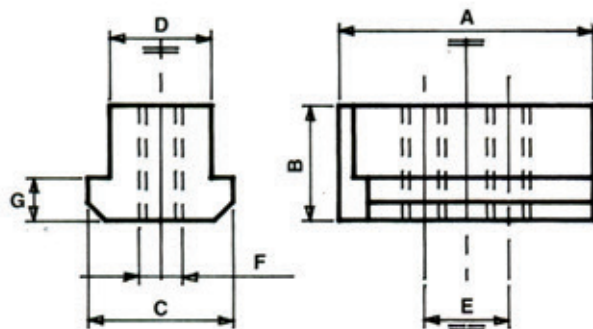
Tasselli a TD per Bloccaggio Morsetti

TIPO
TYPE
TYPE
TYP

**AUTOBLOK
BH**

Blocking devices for jaws - TD - Type
Haltevorrichtungen für
Spannbacken - TD - Typ
Lardons a - TD - fixation des mors

Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	G	H	I
165-170	1003/ATDR	32	18.5	17	14	16	M.10	6.5	10.9	8
210	1004/ATDR	43	20	19	17	23	M.12	7.5	13.5	7.5
250-315	1005/ATDR	56	26.5	25	21	30	M.16	10	17	10



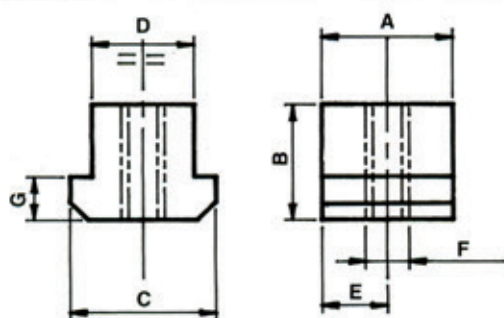
Tasselli a T D per Bloccaggio Morsetti

Blocking devices for jaws - TD - Type
Haltevorrichtungen für spannbacken - TD - TYP
Lardons a - TD - fixage des mors

TIPO
TYPE
TYPE
TYP

**HOWA
KITAGAWA**

RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	G	HOWA	KITAGAWA
2904/GT22	40	22	18	12	20	M10	7	H01MA6.H07MA6 H015M6.H022M6 H024M6.H027M6 H047M6	HJA5-6.H06 B-160.H0B6 N-160.H0S6 AS165.H0H-160
2904/GT18.5	40	18.5	18	12	20	M10	7.5		B-206 A 6
2905/GT23	45	23	20	14	25	M12	8.5		HJA6-8.H08 B-200.H0B8 N-200.H0S8 AS210.H0H-200
2905/GT24.5	45	24.5	20	14	25	M12	8.5	H01MA8.H02M8 H07MA8.H015M8 H023M8	
2905/GT20.5	45	20.5	20	14	25	M12	8.5		B 208 A6
2906/GT24.5	53	24.5	22	16	30	M12	8.5		B250.AS250 H0B-10.H0-10 N-250.H0S-10 HJA8-10.H0H250
2906/GT21.5	53	21.5	22	16	30	M12	8.5		B-210A6B-210A8
2906/GT23	53	23	22	16	30	M12	8	H01MA10.H02M10 H07MA10.H015M10 H023M10.H027M8 H022M8.H047M8 H024M8	
2906/GT26.5	45	26.5	22	16	25	M12	8.5		
2907/GT30	55	30	25	18	30	M14	9.5		B300.H0-12 N300.H0B-12 H0H300.H0S-12 HLA6-12/15 HLA8.12/15
2907/GT33.5	55	33.5	25	18	30	M14	13.5	H01MA12.H02M12	
2907/GT27.5	55	27.5	25	18	30	M14	9.5	H07MA12.H022M10 H024M10.H015M12 H023M12.H027M12 H07MA15.H022M12 H024M12.H023M15	
2909/GT29	68	29	30	21	40	M16	10.5		
2909/GT28	58	28	30	21	30	M16	11.5		B-212AB
2909/GT29-35	61	29	30	21	35	M16	10.5	H027M12.H047M12	



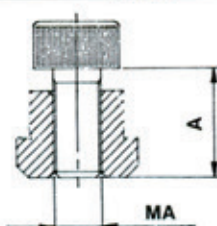
Tasselli a T per Bloccaggio Morsetti

Blocking devices for jaws - T - Type
Haltevorrichtungen für
Spannbacken - T - Typ
Lardons a - T - fixage des mors

TIPO
TYPE
TYPE
TYP

C.M.T.

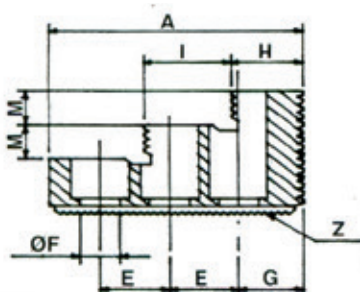
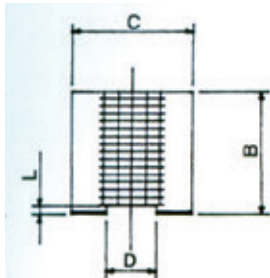
Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	F	G
120	1090/CT	12	14.5	12	8	= =	M6	5.5
140 + 170 150K	1100/CT	19	16	14.5	10	7	M8	7
200 + 230 + 250	1101/CT	26	20	17.5	12	9	M10	8.5
250K	1102/CT	30	29.5	28.5	21	= =	M14	10.5
300-330	1103/CT	32	27.5	24.5	18	12	M12	10.5
400-400 K	1104/CT	35	34.5	30.5	20	15	M16	13.5



VITI FISSAGGIO
VIS DE FIXATION
FIXING SCREWS
BEFESTIGUNGSSCHRAUBEN

ACCIAIO 12.9

MA		A	MAX (NM)
10	x	25	50
12	x	25	70
12	x	30	70
16	x	30	150



TIPO
TYPE
TYPE
TYP

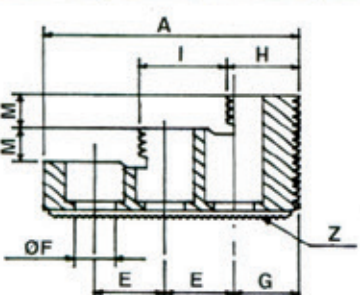
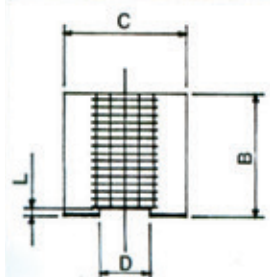
**MORSETTI TEMPRATI REVERSIBILI
MORS CEMENTS REVERSIBLES
REVERSIBLE EINSATZGEHAERTETE BACKEN
REVERSIBLE CASE HARDENED JAWS**

**AUTOBLOK
FORKARDT
GAMET-MAC.
M.P.T.**

**RÖHM
BERG
SMW
HOFMANN**

AUTOMATICO
AUTOMATIC
AUTOMATIQUE
AUTOMATISCH

Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D H7	E	Ø F	G	H	I	L	M	Z
125/150	3101/MTR	58	34	30	12	16	9	13	22	18	4	8.5	1/16" x 90°
160/170	3102/MTR	65	39	34	14	16	11	18	22	24	4	10	1/16" x 90°
200/220	3103/MTR	82	45	40	17	23	13	19	23	37	5	10.5	1/16" x 90°
250/315	3104/MTR	105	56	45	21	30	17	26	30	37	6	13.5	1/16" x 90°
315/350 GHD-GHDN	3105/MTR	122	56	50	21	30	17	43	26	59	6	13.5	1/16" x 90°
400-GHD-HDN/FC	3106/MTR	120	73	55	21	34	17	30	31	44	6	22	1/16" x 90°
400-GHD	3107/MTR	150	73	55	21	34	17	62	41	63	6	22	1/16" x 90°
500/630-GHD-HDN/FC	3108/MTR	145	73	55	28	38	21	46	54	—	6	32	3/32" x 90°
610/800	3109/MTR	145	75	70	28	38	21	46	49	—	6	32	3/32" x 90°



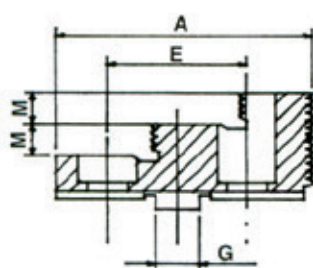
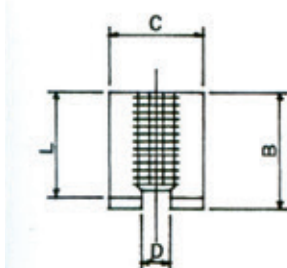
TIPO
TYPE
TYPE
TYP

**MORSETTI TEMPRATI REVERSIBILI
MORS CEMENTS REVERSIBLES
REVERSIBLE EINSATZGEHAERTETE BACKEN
REVERSIBLE CASE HARDENED JAWS**

**KITAGAWA
HOWA
MATSUMOTO**

AUTOMATICO
AUTOMATIC
AUTOMATIQUE
AUTOMATISCH

Ø	RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	Ø F	G	H	I	L	M	Z
165	3201/MTR	67.5	35	31	12	20	11	13.5	28	—	5	12	1,5 x 60°
210	3202/MTR	86	51	35	14	25	13	18	37	18	5	12	1,5 x 60°
254	3203/MTR	99.5	54	40	16	30	13	19.5	39.5	17	5	13	1,5 x 60°
304	3204/MTR	97.5	55	50	18	30	15	18.5	33	—	5	20	1,5 x 60°
304	3205/MTR	103	52	50	21	30	17	21.5	40.5	—	5	17	1,5 x 60°

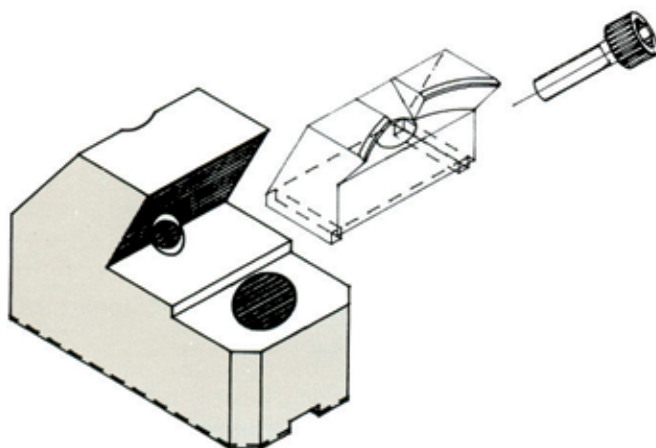


TIPO
TYPE
TYPE
TYP

**MORSETTI TEMPRATI REVERSIBILI
MORS CEMENTS REVERSIBLES
REVERSIBLE EINSATZGEHAERTETE BACKEN
REVERSIBLE CASE HARDENED JAWS**

**BERG
FORKARDT
KITAGAWA
RÖHM
SMW**

RIFERIMENTO / REFERENCE RÉFÉRENCE / REFERENZ	A	B	C	D	E	G	L	M	Berg	Forkardt	Kitagawa	Röhm	SMW
3301/MTR	63	36.5	20	8	32	18	32.5	7.5	KHNC 160	F 160		DURO-160	RMG 160
										KTNC 160		DURO-NC 160	HG 160
												DURO-NCE 160	KNCS 160
												DURO-NC 168	KNSP 160
									KHNC 185	KTNCV 175		DURO-NC 175	KNCS 175
3302/MTR	72	42	22	10	40	20	38	10		FNC 175			KNCS-A 175
									KHNC 200	F 200	QJ 8"	DURO 200	RMG 200
										FNC 200		DURO-NC 200	HG 200
										KTNCV 200		DURO-NCE 200	KNCS 200
										KTNC 200		DURO-NC 225	KNCS-A 200
3303/MTR	90	55	30	12	40	20	50	14					KNSP 200
									KHNC 250	F 250	QJ 10"	DURO 250	RMG 250
										FNC 250	QJ 12"	DURO-NC 250	KNCS 260-65
										FNC 315		DURO-NCE 250	KNCS 250-315
										KTNCV 250		DURO-NCE 315	KNCS-A 250-315
										KTNCV 315			HG 250/315
3304/MTR	103	62	36	12	54	26	56	15		KTNC 250/280/315			
									KHNC 400	F315		DURO 315	RMG 315
										FNC 400		DURO-NC 315	KNCS 400
										KTNCV 400		DURO-NCE 400	KNCS-A 400
										KTNC 360			HG 400
3305/MTR	130	82	45	18	60	30	75	20		KTNC 400			
									KHNC 500	F 400, F-500-L		DURO 400-500	KNCS 500
										FNC 500		DURO-NC 400	KNCS-A 500
										FNC 630		DURO-NC 500	KNCS 630
										KTNCV 500		DURO-NCE 500	HG 500/630
										KTNCV 630			
										KTNC 500/630			



**MORSETTO DI TIPO MODULARE CON
GRIFFE INTERCAMBIABILI
MORS MODULAIRE AVEC GRIFFE
INTERCHANGEABLES
MODULARE SPANNBACKE MIT
AUSWECHSELBAREN AUFSATZBACKEN
MODULAR JAWS WITH
INTERCHANGEABLE FALSE JAWS**

CAPACITÀ DI SERRAGGIO DELLA GRIFFA RIPORTATA
CAPACITE DE SERRAGE DES GRIFFES RAPPORTEES
ANLEITUNG FÜR DIE AUSWAHL DER AUFSATZBACKEN
DIRECTIONS FOR SELECTION OF FALSE JAWS

AUTOCENTRANTE AUTO-CENTREUR SELBSTZENTRIERENDES SPANNFUTTER SCROLL CHUCK	BASE DI TIPO BASE TYPE PLATTENTYP	GRIFFA RIPORTATA GRIFFE RAPPORTEE AUFSATZBACKE	SERRAGGIO SERRAGE SPANNWEITE CHUCK OPENING
ø 250 AUTOBLOK - M.P.T. FORKARDT - ROHM aut.	A	A	ø 65-80
	A	B	ø 80-100
	A	C	ø 100-120
	B	A	ø 120-155
	B	B	ø 135-175
	B	C	ø 155-190
ø 315 AUTOBLOK - M.P.T. FORKARDT - ROHM aut.	A	A	ø 80-135
	A	B	ø 98-155
	A	C	ø 118-170
	B	A	ø 140-215
	B	B	ø 155-230
	B	C	ø 175-250

Questo morsetto oltre a garantire una presa sicura, **permette di potere cambiare tipo di presa su vari diametri e forme mediante cambio rapido della griffa.**

Le basi possono essere costruite per tutti i tipi di mandrini.

Ce mors garantit une prise sûre et **permet de changer le genre de prise sur différents diamètres et formes grâce au changement rapide de la griffe.**

Les bases peuvent être construites pour tous les types de mandrins.

Diese Spannbacke garantiert nicht nur ein sicheres Festspannen, sondern darüberhinaus auch die Anpassung an verschiedene Formen und Durchmesser, da ein sehnelles Austauschen der Backe möglich ist.

Der Fuß kann je nach Art des Futters produziert werden.

Besides granting a steady grip, **this jaw enables to change the kind of grip on different diameters and shapes through the rapid change of the jaw.**

Bases can be built for all types of chucks.

GRIFFE TORNIBILI IN ACCIAIO DA cmt PER BASI DI TIPO "A" e "B"

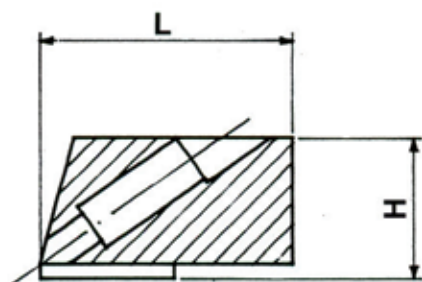
GRIFFES EN ACIER DE CEMENTATION ET TREMPÉ MODIFIABLES SUR TOUT POUR BASES "A" et "B"

BEARBEITBARE AUFSATZBACKEN AUS EINSATZFAHIGEM STAHL, GEEIGNET

FÜR BEIDE UNTERSATZE "A" und "B"

MACHINABLE FALSE JAWS MADE OF CASEHARDENABLE STEEL AND SUITABLE

FOR BOTH PLATES "A" and "B"



POS.	H	L
1	35	55
2	35	65
3	35	75

I morsetti illustrati precedentemente, vengono **anche** costruiti con materiali o dimensioni diverse, a richiesta del cliente.

Abbiamo riscontrato che la **presa** del pezzo può presentare vari problemi, non risolvibili con morsetti di serie. Per questo costruiamo morsetti specifici al tipo di presa richiesta. Vi indichiamo alcuni tipi.

The jaws previously illustrated may **also** be made with different materials or in different sizes, on customer's request.

We have noticed that the **gripping** of the piece may show several problems, which cannot be solved with standard jaws.

For this reason we manufacture special jaws in compliance with different types of grip requested. Here below some types.

Les mors illustres précédemment sont construits même avec des matériaux ou avec des dimensions différentes, sur requête du client.

Nous avons constaté que la prise de la pièce peut présenter plusieurs problèmes, que l'on ne peut pas résoudre avec des mors de série.

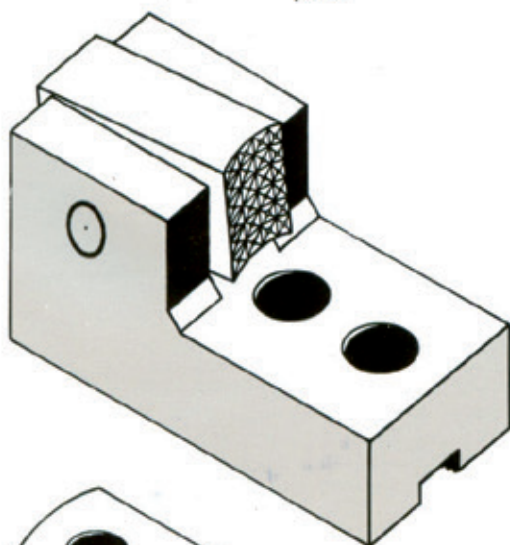
Voilà la raison pour laquelle nous **construisons** des mors spécifiques au genre de prise demandée.

Nous vous indiquons certains types.

Die oben abgebildeten Spannbacken können auf Anfrage auch in anderen Materialien und Größen hergestellt werden.

Wir haben festgestellt, daß beim **Festspannen** des teils verschiedene Probleme auf treten können, die mit Serien mässigen Backen nicht gelöst werden können.

Wir stellen daher ebenso Spezialspannbacken her, um jegliche Art des Spanns zu ermöglichen. Nachstehend können sie einige Modelle finden.

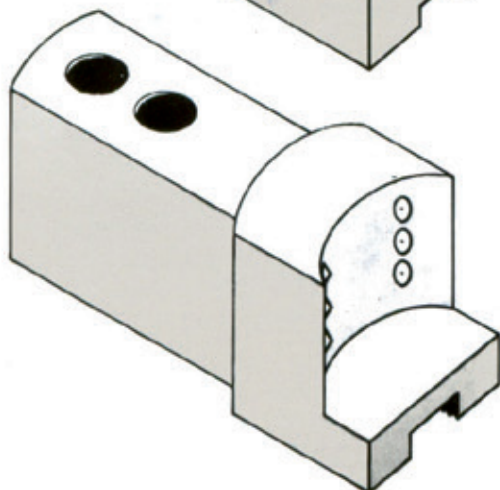


MORSETTO OSCILLANTE SWINGING JAW MORS OSCILLANT SCHWINGENDE SPANNBACKE

Questo morsetto, cementato e temprato, permette un bloccaggio sicuro, mediante l'assettamento del piano di presa, sulla superficie di fusioni coniche. This casehardened and hardened jaw allows a steady clamping, by means of the setting of the grip face on the surface of conical castings.

Cet mors cimenté et trempé permet un blocage sûr, grâce au tassement du plan de prise sur la surface de fusions coniques.

Diese zementierte und gehärtete Spannbacke ermöglichen mittels der Regulierung der Halterungsebene auf der kegelförmigen Schmelzfläche ein sicheres Blockieren.



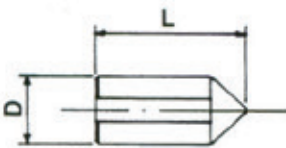
MORSETTO CON RULLINI DURI JAW WITH HARD NEEDLES MORS AVEC ROULEAUX DURS SPANNBACKE MIT HARTEN KELINEN WALZEN

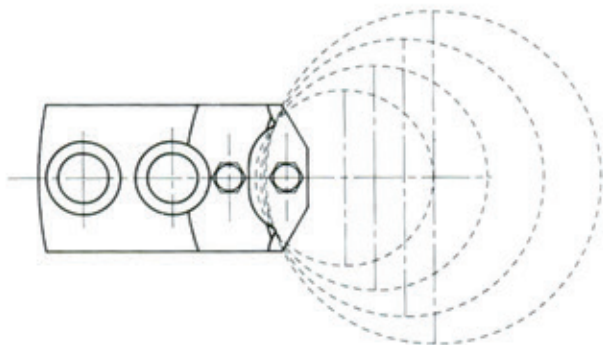
Questo morsetto garantisce una presa sicura, di fusioni cilindriche e malformate. This jaw guarantees a strong grip of cylindrical and faulty castings.

Cet mors garantie une prise sûre, de fusions cylindriques et déformées.

Diese Spannbacke gewährleistet ein sicheres Spannen von zylinder förmigen und unförmigen Schmelzungen.

RULLINI DURI IN HSS HARD NEEDLES IN HSS POINTES DURES EN HSS SPANNSPITZEN HART IM HSS

	RIFERIMENTO / REFERENCE RÉFERENCE / REFERENZ	Ø D	L	CARICO MAX
	RHSS-4	4	10	1000 daN
	RHSS-5	5	12	1000 daN
	RHSS-6	6	16	1000 daN
	RHSS-8	8	16	1000 daN
	RHSS-10	10	16	1000 daN
	RHSS-12	12	18	1000 daN



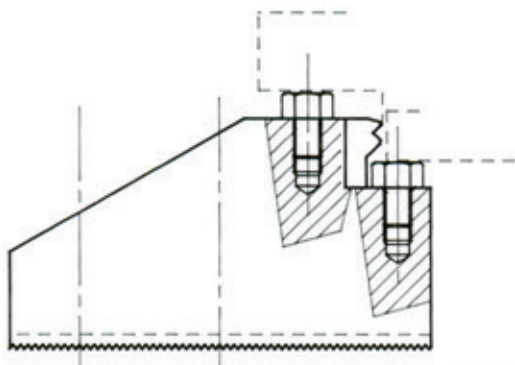
**MORSETTI IN ACCIAIO TEMPERATO
PER PRESE DI VARI DIAMETRI
JAWS IN HARDENED STEEL FOR
CHUCKING DEVICES WITH DIFFERENT DIAMETERS
MORS EN ACIER TREMPÉE
POUR LE SERRAGES DE DIAMETER DIFFERENTS
SPANNBACKEN AUS GEHÄRTETEM STAHL
FÜR SPANNVORRICHTUNGEN MIT
UNTERSCHIEDLICHEN DURCHMESSERN**

Questo morsetto permette una presa sicura mediante la penetrazione di due punti sul particolare grezzo e, la possibilità del serraggio di diametri diversi.

Cet mors permet une préhension certaine grâce à la pénétration de deux points sur la pièce brute et au serrage de diamètres différents.

Diese Spannbacke ermöglicht die Anpassung an verschiedene Durchmesser und ein sicheres Spannen durch zwei in das Werkstück eindringende Spitzen.

This jaw is suitable for a wide diameter range and enables a safe gripping by means of two points penetrating in the unworked piece.



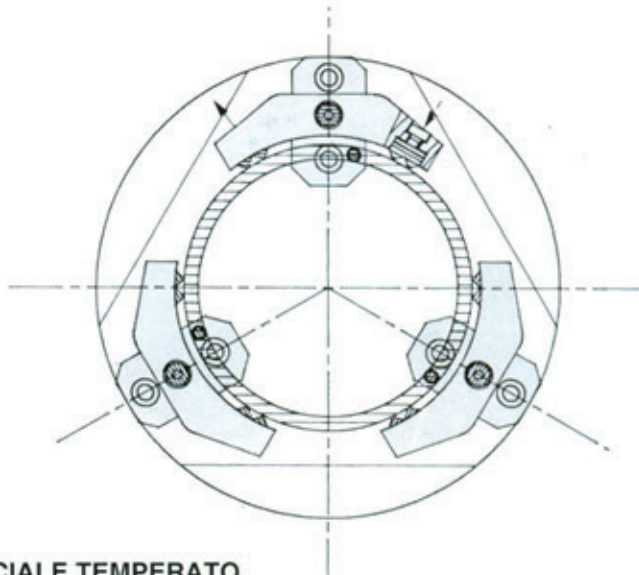
**MORSETTO OSCILLANTE
SWINGING JAW
MORS OSCILLANT
SCHWINGENDE SPANNBACKE**

Questo tipo di morsetto oscillante permette di potere lavorare anelli di piccolo spessore e, di grande diametro riducendo al minimo la deformazione.

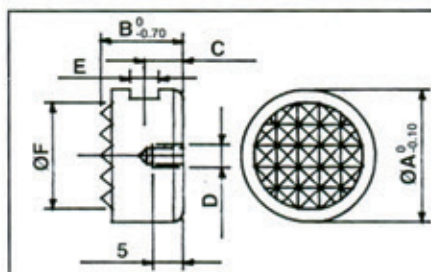
This floating jaw allows to machine this rings with large diameters, thus reducing strain to a minimum.

Cet mors oscillant permet de façonner des anneaux de petite épaisseur et de grand diamètre en réduisant au minimum la déformation.

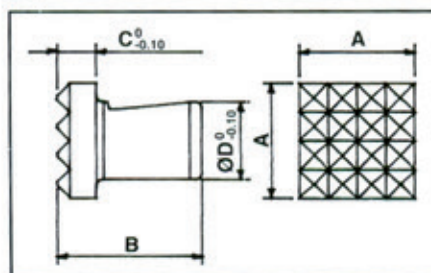
Diese Schwing-Spannbacke ermöglicht die Bearbeitung dünner Ringe mit grossem Durchmesser bei minimaler Verformung.



**INSERTI IN ACCIAIO SPECIALE TEMPERATO
INSERTS IN SPECIAL HARDENED STEEL
INSERTS EN ACIER SPECIAUX TREMPÉE
SPANNEINSÄTZE AUS GEHÄRTETEM SONDERSTAHL**

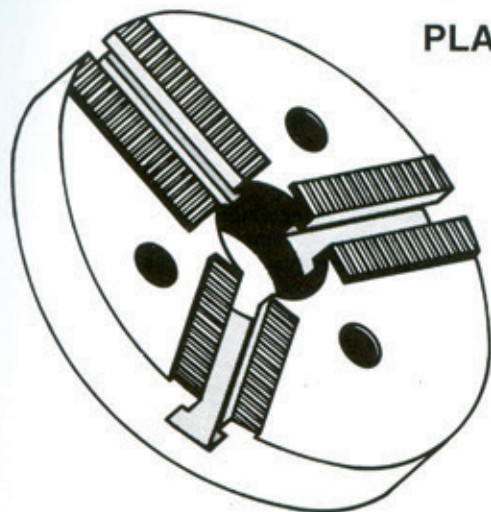


RIFERIMENTO/REFERENCE RÉFÉRENCE/REFERENZ	A	B	C	D	E	F	CARICO MAX
IHSS-6	6	10	—	M3	—	5	450 daN
IHSS-8	8	10	—	M4	—	6	600 daN
IHSS-10	10	10	4.5	M5	5	8	800 daN
IHSS-12	12.7	9.5	4.5	M5	5	9.5	1100 daN
IHSS-12A	12.7	12.7	—	M6	—	9.5	1100 daN
IHSS-15	15.8	9.5	4.5	M6	5	13	2000 daN
IHSS-19	19	9.5	4.5	M6	5	16	3000 daN



RIFERIMENTO/REFERENCE RÉFÉRENCE/REFERENZ	A	B	C	D	E	F	CARICO MAX
IKHS-12	12	16	5	8	—	—	1100 daN
IKHS-15	15	19.5	5	10.15	—	—	2000 daN
IKHS-20	20	19.5	8	12	—	—	3000 daN

PIATTAFORMA PER TORNIRE MORSETTI FACEPLATE TO TURN JAWS PLATEAU POUR TOURNER LES MORS PLANSCHKEIBE ZUM DREHEN DER SPANNBACKEN



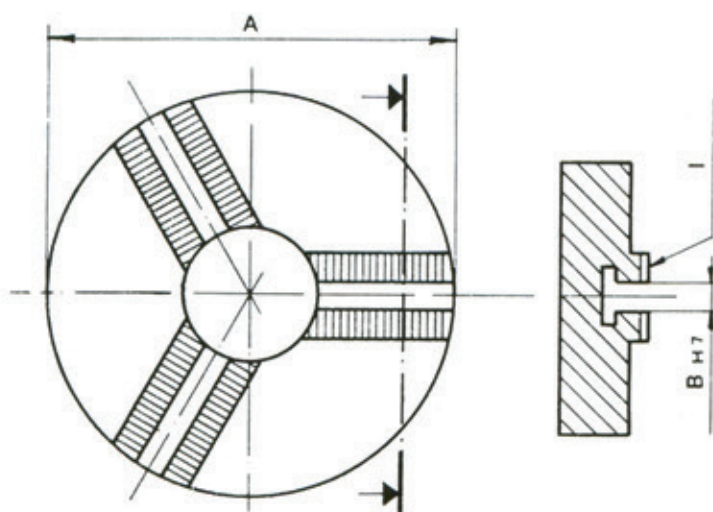
Questa piattafoma montata su tornio parallelo, **permette di anticipare la tornitura dei morsetti teneri** destinati al montaggio su tornitrici a programma o controllo. Si evita così il fermo macchina, con un notevole abbassamento dei tempi improduttivi.

This faceplate, mounted on center lathes, **allows the advancing of soft jaws turning** designed to be mounted on programme or control lathes. This implies a remarkable dead time decrease. Cette plate-forme, appliquée sur un tour parallèle, **permet d'anticiper le tournage des mors tendres**; destinés à l'application sur des tours à programme ou à contrôle.

On évite ainsi l'arrêt de la machine, avec une forte diminution des périodes **improductives**.

Die auf eine gleichlaufende Drehbank montierte Planscheibe ermöglicht das Drehen vor weichen Spannbacken, die für die Montage auf Drehbank mit Programm oder Kontrolle bestimmt sind, vorwegzunehmen.

Somit kann der Stillstand der Maschine vermieden werden, was eine beträchtliche Reduzierung des Ruhezeiten ermöglicht.



TIPO
TYPE
TYPE
TYP

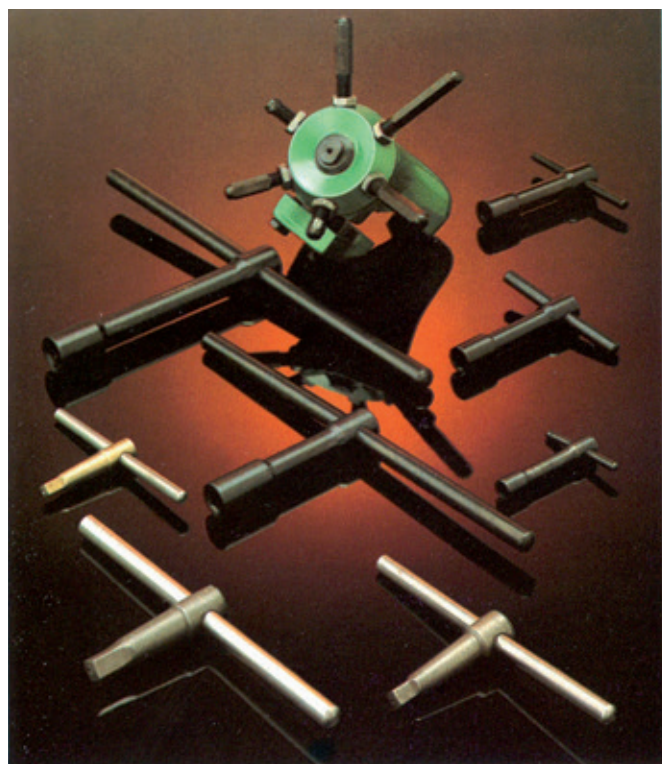
AUTOBLOK
M.P.T. CON DENTATURA
C.M.T. SERIE K
FORKARDT - RÖHM AUT.

TIPO
TYPE
TYPE
TYP

HOWA
KITAGAWA

TIPO TYPE	A	BH7	ix90°	
160	160	14	1/16"	
200	200	17	1/16"	
250	250	21	1/16"	
315	315	21	1/16"	
400	400	21	1/16"	

TIPO TYPE	A	BH7	ix60°	
165	165	12	1,5	
210	210	14	1,5	
254	254	16	1,5	

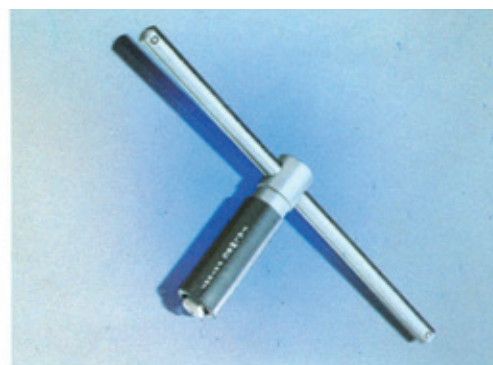


CHIAVI PER AUTOCENTRANTI
CLES POUR CENTRAGE AUTOMATIQUE
SPANNERS FOR SELF-CENTERING CHUCKS
SCHLUESSEL FUER SPANNFUTTER
MASCHIO-MALE - MALE-FEDER

CHIAVI PER PIATTAFORMA
CLES POUR PLATEAU
SPANNERS FOR FACEPLATE
SCHLUESSEL FUER PLANSCHBEI
FEMMINA - FEMELLE - FEMALE - NUT

FERMO ROTANTE PER TORNO
PARALLELO
ARRET ROTATIF POUR TOUR
PARALLELE
ROTATING LOCK FOR CENTER
LATHES
ROTIERENDE HALTEVORRICHTUNG
FUER
PARALLELE DREHMASCHINE

Maschio Q mm. 6-7-8	Femmina Q mm. 9	TIPO A
Maschio Q mm. 9	Femmina Q mm. 10	TIPO B
Maschio Q mm. 9,5	Femmina Q mm. 11	TIPO C
Maschio Q mm. 10	Femmina Q mm. 12	TIPO D
Maschio Q mm. 11	Femmina Q mm. 13	TIPO E
Maschio Q mm. 12	Femmina Q mm. 14	
Maschio Q mm. 13	Femmina Q mm. 15	
Maschio Q mm. 14	Femmina Q mm. 16	
Maschio Q mm. 15	Femmina Q mm. 17	
Maschio Q mm. 16	Femmina Q mm. 18	
Maschio Q mm. 17	Femmina Q mm. 19	
Maschio Q mm. 18	Femmina Q mm. 20	
Maschio Q mm. 19	Femmina Q mm. 22	
Maschio Q mm. 20	Femmina Q mm. 23	
Maschio Q mm. 22	Femmina Q mm. 24-25	
	Femmina Q mm. 28	



CHIAVE DI SICUREZZA PER MANDRINO
AUTOCENTRANTE A COMANDO MANUALE
SAFETY SPANNERS FOR MANUAL SELF-
CENTERING CHUCKS
CLEF DE SÛRETÉ POUR MANDRINS MANUEL
SICHERHEITSSCHLÜSSEL FÜR MANUELLE
SPANNFUTTER

CHIAVE DI SICUREZZA PER PIATTAFORMA A
COMANDO MANUALE
SAFETY SPANNERS FOR MANUAL
FACEPLATES
CLEF DE SÛRETÉ POUR PLATEAU MANUEL
SICHERHEITSSCHLÜSSEL FÜR MANUELLE
PLANSCHBEI

Maschio Q mm. 6	Femmina Q mm. 9
Maschio Q mm. 7	Femmina Q mm. 10
Maschio Q mm. 8	Femmina Q mm. 11
Maschio Q mm. 9,5	Femmina Q mm. 12
Maschio Q mm. 10	Femmina Q mm. 13
Maschio Q mm. 11	Femmina Q mm. 14
Maschio Q mm. 12	Femmina Q mm. 15
Maschio Q mm. 13	Femmina Q mm. 16
Maschio Q mm. 14	Femmina Q mm. 17
Maschio Q mm. 15	Femmina Q mm. 18
Maschio Q mm. 16	Femmina Q mm. 19
Maschio Q mm. 17	Femmina Q mm. 20
Maschio Q mm. 18	Femmina Q mm. 22
Maschio Q mm. 19	Femmina Q mm. 23
Maschio Q mm. 20	Femmina Q mm. 24
Maschio Q mm. 22	Femmina Q mm. 25
	Femmina Q mm. 28

CHIAVI PER AUTOCENTRANTE C.L.
CLES POUR CENTRAGE AUTOMATIQUE C.L.
SPANNERS FOR SELF-CENTERING CHUCK
SCHLUESSEL FUER C.L. SPANNFUTTER

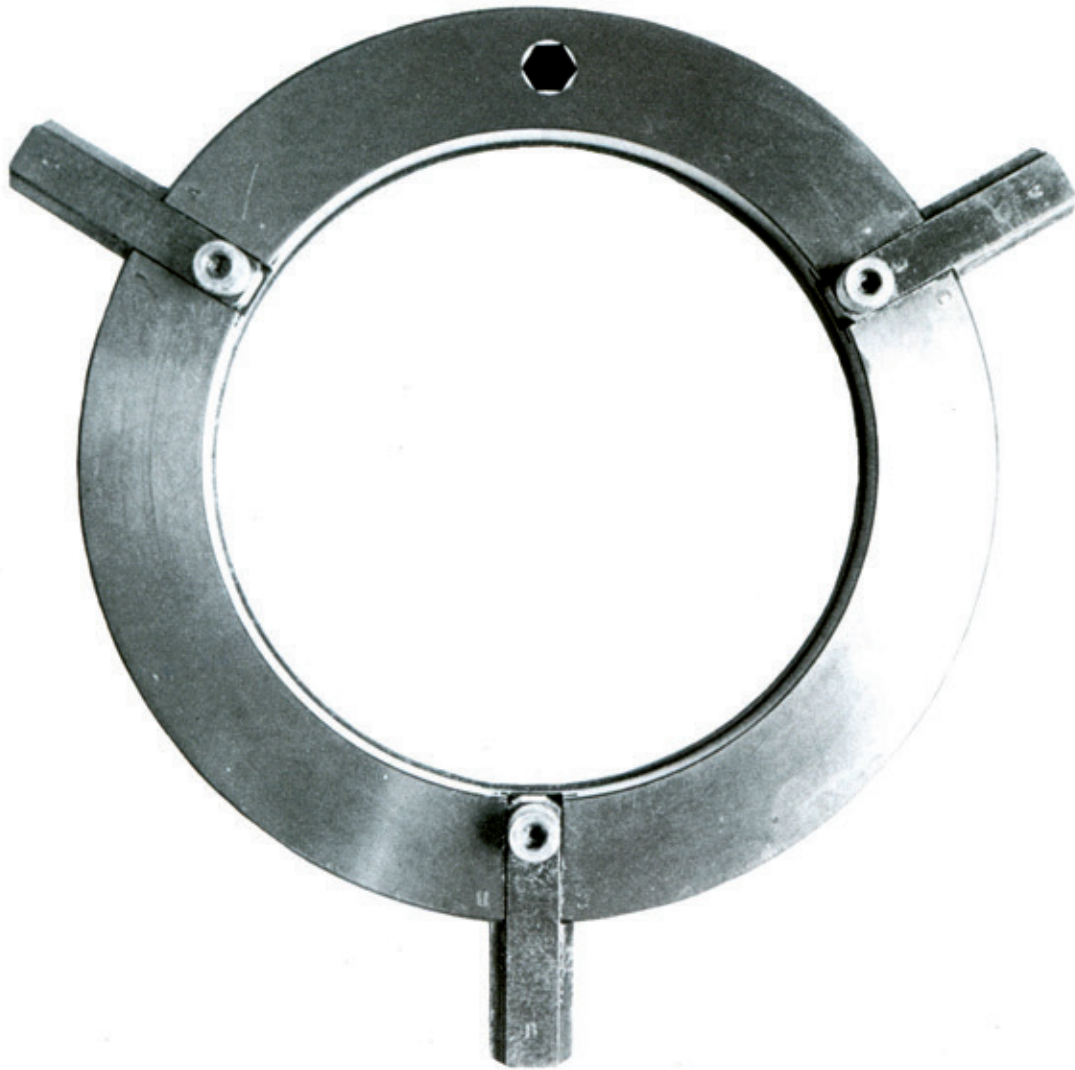
CHIAVI PER TORRETTA PORTAUTENSILI
CLES POUR TOURELLE PORTE-OUTILS
SPANNERS FOR TOOLHOLDER TURRET
SCHLUESSEL FUER REVOLVERKOPF

CHIAVI A PIPA
CLES A PIPE
ELBOWED WRENCHES
FITTINGSCHLÜSSEL

Q mm. 10	Q mm. 8	Es. mm. 12
Q mm. 11	Q mm. 9-10	Es. mm. 14
Q mm. 12	Q mm. 12	Es. mm. 17
Q mm. 13	Q mm. 13-14	Es. mm. 19
Q mm. 14	Q mm. 16	Es. mm. 21

Eventuali altri tipi di chiavi sono costruiti a richiesta del cliente mediante invio di disegni o campionatura.
D'autres clés peuvent être fabriquées sur demande du client en envoyant dessins ou modèles désirés.
Other possible kinds of spanners will be produced upon the client request through sending of designs or samples.
Eventuelle weitere Schlüsselmodelle werden auf Nachfrage des Kunden - nach Entwurf oder Musterzusendung - hergestellt.

OUTLOCK



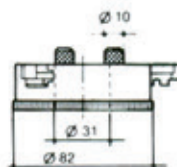
DISPOSITIVO per tornitura e rettifica morsetti teneri

DEVICE for turning or grinding soft jaws

DISPOSITIF pour le tournage ou rectification de mors doux

GERÄT zum Drehen oder Schleifen von weichen Aufsatzbacken

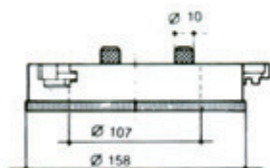
Caratteristiche tecniche
Technical characteristics
Technische Merkmale
Caracteristiques techniques



Il tipo 400 è integrativo dei tipi 450-500-550
 The type 400 integrates the types 450-500-550
 Modell 400 ergänzt die Modelle 450-500-550 für Futter bis 140 mm Durchmesser
 Le modèle 400 intègre les modèles 450-500-550

OUTLOCK 400

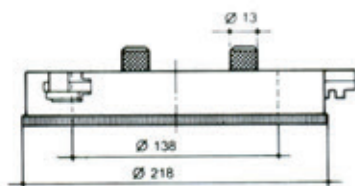
DIAMETRO DEL CAMPO DI ESPANSIONE CON GRIFFE IN POSIZIONE DIAMETER OF THE EXPANSION FIELD WITH JAWS IN POSITION DURCHMESSER DES AUSDEHNUNGSFELDES MIT BACKEN IN POSITION DIAMÈTRE DU CHAMP D'EXPANSION AVEC GRIFFES EN POSITION	
NORMAL - NORMAL NORMAL - NORMAL (1-2-3)	ROVESCIALE - REVERSED UMGEKEHRT - RENVERSEES (A-B-C)
da 1 a 31 mm from .039 to 1.3/16" von 1 bis 31 mm de 1 à 31 mm	da 90 a 115 mm from 3.9/16" to 4.1/2" von 90 bis 115 mm de 90 à 115 mm



Il tipo 450 è utilizzabile per autocentri fino a 180 mm di diametro
 The type 450 can be used for chucks with a diameter up to 180 mm (7")
 Modell 450 für Futter mit Durchmesser von 200 mm bis 180 mm Durchmesser
 Le modèle 450 peut être utilisé pour mandrins autocentrants avec un diamètre jusqu'à 180 mm

OUTLOCK 450

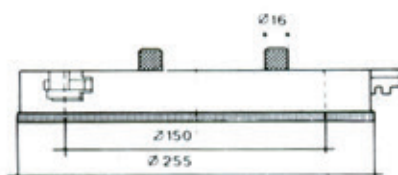
DIAMETRO DEL CAMPO DI ESPANSIONE CON GRIFFE IN POSIZIONE DIAMETER OF THE EXPANSION FIELD WITH JAWS IN POSITION DURCHMESSER DES AUSDEHNUNGSFELDES MIT BACKEN IN POSITION DIAMÈTRE DU CHAMP D'EXPANSION AVEC GRIFFES EN POSITION	
NORMALE - NORMAL NORMAL - NORMAL (1-2-3)	ROVESCIALE - REVERSED UMGEKEHRT - RENVERSEES (A-B-C)
da 1 a 107 mm from .039 to 4.3/16" von 1 bis 107 mm de 1 à 107 mm	da 159 a 220 mm from 6.1/4" to 8.5/8" von 159 bis 220 mm de 159 à 220 mm



Il tipo 500 è utilizzabile per autocentri da 200 mm a 300 mm di diametro
 The type 500 can be used for chucks with diameter from 200 mm (7 7/8") to 300 mm (11 13/16")
 Modell 500 für Futter mit Durchmesser von 200 mm bis 315 mm
 Le modèle 500 peut être utilisé pour mandrins autocentrants avec un diamètre de 200 mm à 300 mm

OUTLOCK 500

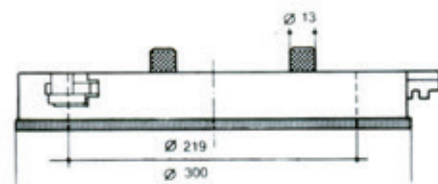
DIAMETRO DEL CAMPO DI ESPANSIONE CON GRIFFE IN POSIZIONE DIAMETER OF THE EXPANSION FIELD WITH JAWS IN POSITION DURCHMESSER DES AUSDEHNUNGSFELDES MIT BACKEN IN POSITION DIAMÈTRE DU CHAMP D'EXPANSION AVEC GRIFFES EN POSITION	
NORMALE - NORMAL NORMAL - NORMAL (1-2-3)	ROVESCIALE - REVERSED UMGEKEHRT - RENVERSEES (A-B-C)
da 1 a 138 mm from .039 to 5.7/16" von 1 bis 138 mm de 1 à 138 mm	da 219 a 295 mm from 8.5/8" to 11.5/8" von 219 bis 295 mm de 219 à 295 mm



Il tipo 525NC è utilizzabile per autocentri da 200 mm a 330 mm di diametro
 The type 525NC can be used for chucks with diameter from 200 mm (7 7/8") to 330 mm (13")
 Modell 525NC für Futter mit Durchmesser von 200 mm bis 330 mm
 Le modèle 525NC peut être utilisé pour mandrins autocentrants avec un diamètre de 200 mm à 330 mm

OUTLOCK 525 NC

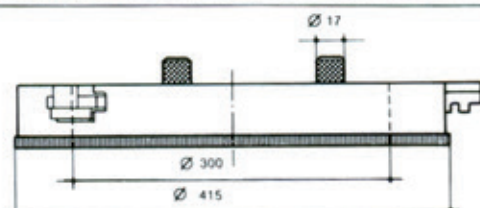
DIAMETRO DEL CAMPO DI ESPANSIONE CON GRIFFE IN POSIZIONE DIAMETER OF THE EXPANSION FIELD WITH JAWS IN POSITION DURCHMESSER DES AUSDEHNUNGSFELDES MIT BACKEN IN POSITION DIAMÈTRE DU CHAMP D'EXPANSION AVEC GRIFFES EN POSITION		
NORMALE - NORMAL NORMAL - NORMAL (1-2-3)	ROVESCIALE - REVERSED UMGEKEHRT - RENVERSEES (A-B-C)	Carico di serraggio Grip load
da 1 a 150 mm from .039 to 5.7/8" von 1 bis 150 mm de 1 à 150 mm	da 256 a 345 mm from 10.1/16" to 13.9/16" von 256 bis 345 mm de 256 à 345 mm	Kg. 13.000



Il tipo 550 è utilizzabile per autocentri da 300 mm a 400 mm di diametro
 The type 550 can be used for chucks with diameter from 300 mm (11 13/16") to 400 mm (15 3/4")
 Modell 550 für Futter mit Durchmesser von 315 mm bis 400 mm
 Le modèle 550 peut être utilisé pour mandrins autocentrants avec un diamètre de 300 mm à 400 mm

OUTLOCK 550

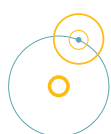
DIAMETRO DEL CAMPO DI ESPANSIONE CON GRIFFE IN POSIZIONE DIAMETER OF THE EXPANSION FIELD WITH JAWS IN POSITION DURCHMESSER DES AUSDEHNUNGSFELDES MIT BACKEN IN POSITION DIAMÈTRE DU CHAMP D'EXPANSION AVEC GRIFFES EN POSITION	
NORMALE - NORMAL NORMAL - NORMAL (1-2-3)	ROVESCIALE - REVERSED UMGEKEHRT - RENVERSEES (A-B-C)
da 1 a 219 mm from .039 to 8.5/8" von 1 bis 219 mm de 1 à 219 mm	da 301 a 377 mm from 11.7/8" to 14.7/8" von 301 bis 377 mm de 301 à 377 mm



Il tipo 575NC è utilizzabile per autocentri da 300 mm a 450 mm di diametro
 The type 575NC can be used for chucks with diameter from 300 mm (11 13/16") to 450 mm (17 3/4")
 Modell 575NC für Futter mit Durchmesser von 300 mm bis 450 mm
 Le modèle 575NC peut être utilisé pour mandrins autocentrants avec un diamètre de 300 mm à 450 mm

OUTLOCK 575 NC

DIAMETRO DEL CAMPO DI ESPANSIONE CON GRIFFE IN POSIZIONE DIAMETER OF THE EXPANSION FIELD WITH JAWS IN POSITION DURCHMESSER DES AUSDEHNUNGSFELDES MIT BACKEN IN POSITION DIAMÈTRE DU CHAMP D'EXPANSION AVEC GRIFFES EN POSITION		
NORMALE - NORMAL NORMAL - NORMAL (1-2-3)	ROVESCIALE - REVERSED UMGEKEHRT - RENVERSEES (A-B-C)	Carico di serraggio Grip load
da 10 a 300 mm from .39 to 11.13/16" von 10 bis 300 mm de 10 à 300 mm	da 415 a 700 mm from 16.15/16" to 27.9/16" von 415 bis 700 mm de 415 à 700 mm	Kg. 13.000



STEMATOOLS
QUALITY TOOLS FOR PROFESSIONALS

Chaussée de Wavre 362
1390 Grez-Doiceau
Belgique

T. + 32 (0)2 361 25 80
F. + 32 (0)2 360 11 22
info@stematools.be

www.stematools.com

